| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 1 | 897 |
| | | | | (2) | HWY. 112-I-49 (S) | | | |

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS

# HWY. 112-I-49 (S)

## BENTON COUNTY

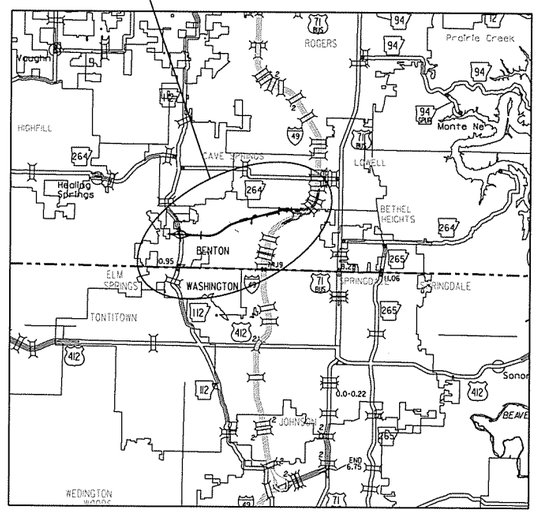
## ROUTE 412 SECTION 2

## FEDERAL AID PROJECT 9991-HSIP-9399(17)

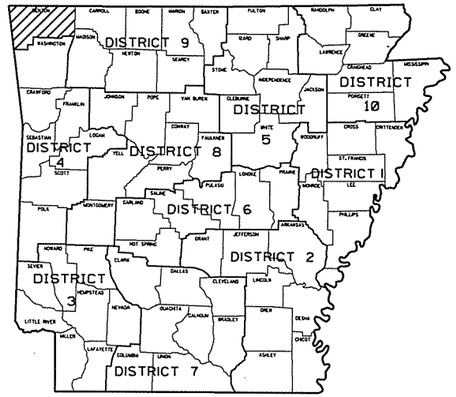
# JOB CA0907

NOT TO SCALE

PROJECT LOCATION



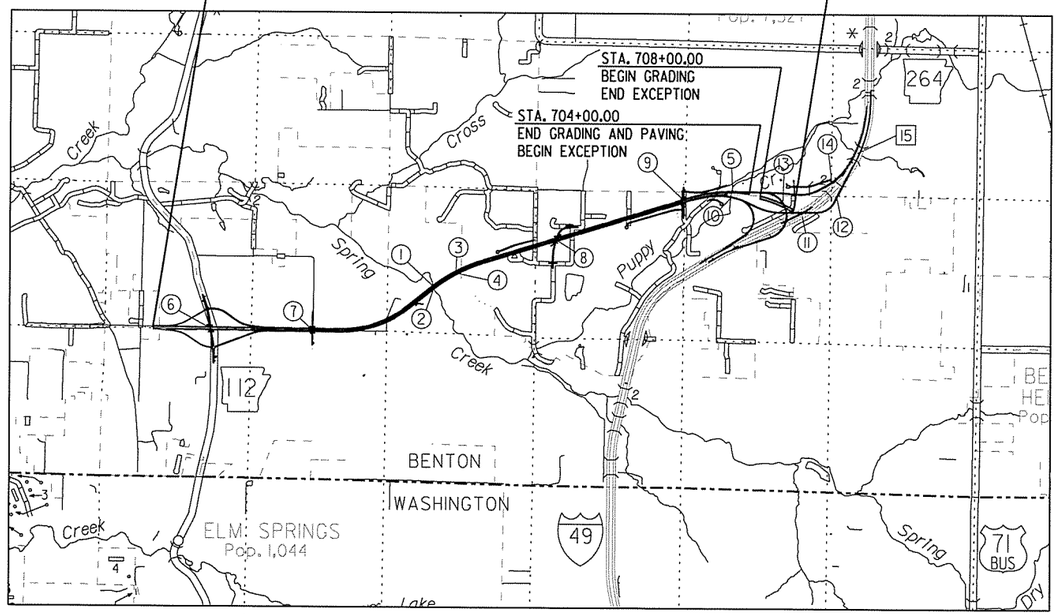

VICINITY MAP




ARKANSAS HIGHWAY DISTRICT 9

STA. 478+50.00
BEGIN JOB CA0907

STA. 721+00.00
END JOB CA0907




N

· DESIGN TRAFFIC DATA ·

| | |
|---|---|
| DESIGN YEAR | 2034 |
| 2014 ADT | 30,500 |
| 2034 ADT | 74,000 |
| 2034 DHV | 8,140 |
| DIRECTIONAL DISTRIBUTION | 60% |
| TRUCKS | 12% |
| DESIGN SPEED | 70 MPH |

FOR BRIDGE DATA AND STRUCTURES OVER 20'-0" SPAN SEE SHEET NO. 2.

EQUATIONS

STA. 625+00.00 BK. = STA. 625+81.89 AHD.
STA. 681+00.00 BK. = STA. 681+58.56 AHD.

EXCEPTIONS

STA. 704+00.00 TO STA. 708+00.00 = 400.00'

| BEGIN PROJECT | MID POINT OF PROJECT | END PROJECT |
|---|---|---|
| LATITUDE N 36°13'38" | LATITUDE N 36°14'00" | LATITUDE N 36°14'19" |
| LONGITUDE W 94°14'15" | LONGITUDE W 94°11'31" | LONGITUDE W 94°09'35" |

LENGTH COMPUTED ALONG C.L. MEDIAN

| | | |
|---|---|---|
| GROSS LENGTH OF PROJECT | 24109.55 FEET OR | 4.566 MILES |
| NET LENGTH OF ROADWAY | 22102.94 FEET OR | 4.186 MILES |
| NET LENGTH OF BRIDGES | 1606.61 FEET OR | 0.304 MILES |
| NET LENGTH OF PROJECT | 23709.55 FEET OR | 4.490 MILES |

GARVER LLC CERTIFICATE OF AUTHORIZATION No. 766 ARKANSAS-ENGINEER

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 13422 JOHN F. CANTABERY

9-5-14

P.E. JOB 001966

sadonaldson 9/4/2014 3:19:43 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_CO_ALL_01.dgn
L:\2005\G59I680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 2 | 897 |
| | | | | (2) | | BRIDGE DATA | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

# BRIDGE DATA

(1) STA. 579+48.91 BRIDGE END
BRIDGE NO. A7304 OVER SPRING CREEK
1005'-0" CONT. COMP. PRESTRESSED
CONCRETE GIRDER UNIT (3 @ 110'-125'-5 @ 110')
40'-0" CLEAR ROADWAY
1007'-2⅛" BRIDGE LENGTH
(1001.50' ALONG C.L. MEDIAN)
STA. 589+50.41 BRIDGE END

(2) STA. 579+48.91 BRIDGE END
BRIDGE NO. B7304 OVER SPRING CREEK
1005'-0" CONT. COMP. PRESTRESSED
CONCRETE GIRDER UNIT (3 @ 110'-125'-5 @ 110')
40'-0" CLEAR ROADWAY
1007'-2⅛" BRIDGE LENGTH
(1012.93' ALONG C.L. MEDIAN)
STA. 589+61.84 BRIDGE END

(3) STA. 592+27.50 BRIDGE END
BRIDGE NO. A7305 OVER E. WAGON WHEEL RD.
205'-0" CONT. COMP. PRESTRESSED
CONCRETE GIRDER UNIT (60'-85'-60')
40'-0" CLEAR ROADWAY
11°38'05" RT. FORWARD SKEW
207'-2⅜" BRIDGE LENGTH
(205.64' ALONG C.L. MEDIAN)
STA. 594+33.14 BRIDGE END

(4) STA. 592+44.03 BRIDGE END
BRIDGE NO. B7305 OVER E. WAGON WHEEL RD.
205'-0" CONT. COMP. PRESTRESSED
CONCRETE GIRDER UNIT (60'-85'-60')
40'-0" CLEAR ROADWAY
11°38'05" RT. FORWARD SKEW
207'-2⅜" BRIDGE LENGTH
(208.82' ALONG C.L. MEDIAN)
STA. 594+52.85 BRIDGE END

(5) STA. 696+22.74 BRIDGE END
BRIDGE NO. A7306 OVER PUPPY CREEK
392'-6" CONT. COMP. PRESTRESSED
CONCRETE GIRDER UNIT (5 @ 78'-6")
48'-0" MIN. CLEAR ROADWAY
9°14'25" LT. FORWARD SKEW
394'-8¾" BRIDGE LENGTH
(392.16' ALONG C.L. MEDIAN)
STA. 700+14.90 BRIDGE END

(6) STA. 18+99.90 BRIDGE END
BRIDGE NO. 07307 HIGHWAY 112
198'-0" CONT. COMP. PLATE GIRDER UNIT (99'-99')
40'-0" CLEAR ROADWAY
9°28'02" LT. FORWARD SKEW
200'-2⅜" BRIDGE LENGTH
STA. 21+00.10 BRIDGE END

(7) STA. 19+00.92 BRIDGE END
BRIDGE NO. 07308 GRIMSLEY RD.
196'-0" CONT. COMP. PLATE GIRDER UNIT (98'-98')
28'-0" CLEAR ROADWAY
198'-2" BRIDGE LENGTH
STA. 20+99.08 BRIDGE END

(8) STA. 18+79.67 BRIDGE END
BRIDGE NO. 07309 COUNTY ROAD 236
247'-0" CONT. COMP. PLATE GIRDER UNIT (119'-128')
28'-0" CLEAR ROADWAY
35°00'00" RT. FORWARD SKEW
249'-7⅞" BRIDGE LENGTH
STA. 21+29.33 BRIDGE END

(9) STA. 18+94.87 BRIDGE END
BRIDGE NO. 07310 SPRING CREEK ST.
207'-0" CONT. COMP. PLATE GIRDER UNIT (104'-103')
30'-0" CLEAR ROADWAY
17°15'04" RT. FORWARD SKEW
209'-3¼" BRIDGE LENGTH
STA. 21+04.13 BRIDGE END

(10) STA. 695+94.05 BRIDGE END
BRIDGE NO. 07311 RAMP EN
OVER PUPPY CREEK
360'-0" CONT. COMP. PRESTRESSED
CONCRETE GIRDER UNIT (5 @ 72')
25'-0" CLEAR ROADWAY
362'-2½" BRIDGE LENGTH
STA. 699+56.25 BRIDGE END

(11) STA. 718+71.24 BRIDGE END
BRIDGE NO. 07312 I-49 INTERCHANGE
RAMP EN OVER U.S. 412 BYPASS
977'-8" CONT. COMP. PLATE GIRDER UNIT
(125'-192'-240'-8"-215'-205')
25'-0" CLEAR ROADWAY
979'-10¼" BRIDGE LENGTH
STA. 728+51.09 BRIDGE END

(12) STA. 736+70.93 BRIDGE END
BRIDGE NO. 07313 I-49 INTERCHANGE
RAMP EN OVER SILENT GROVE RD.
413'-0" CONT. COMP. PLATE GIRDER UNIT
(97'-121'-118'-77')
29'-0" CLEAR ROADWAY
40°00'00" RT. FORWARD SKEW
415'-10⅝" BRIDGE LENGTH
STA. 740+86.81 BRIDGE END

(13) STA. 715+92.35 BRIDGE END
BRIDGE NO. 07314 I-49 INTERCHANGE
I-49 INTERCHANGE RAMP NW OVER U.S. HWY. 412 BYPASS
1100'-0" CONT. COMP. PLATE GIRDER UNIT
(110'-170'-132'-130'-124'-2 @ 155'-124')
27'-2" CLEAR ROADWAY
1102'-2½" BRIDGE LENGTH
STA. 726+94.55 BRIDGE END

(14) STA. 708+81.66 BRIDGE END
BRIDGE NO. 07315 I-49 INTERCHANGE
RAMP SE OVER GOAD SPRINGS RD.
233'-0" CONT. COMP. W-BEAM UNIT
(66'-101'-66')
40'-0" CLEAR ROADWAY
33°00'00" LT. FORWARD SKEW
235'-7 1/16" BRIDGE LENGTH
STA. 711+17.25 BRIDGE END

## STRUCTURES OVER 20'-0" SPAN

[15] I-49 STA. 122+60 IN PLACE
TRIPLE 8' X 7' X 293' R.C. BOX CULVERT
8° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
RETAIN AND EXTEND 20' LT. & 28' RT.
Q50 = 1637 CFS D.A. = 1037.3 ACRES
SPAN = 27.24'



cgarrison 9/5/2014 11:24:22 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_CO_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 3 | 897 |

(2) INDEX OF SHEETS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 1 | TITLE SHEET | | | |
| 2 | BRIDGE DATA | | | |
| 3-6 | INDEX OF SHEETS | | | |
| 7 | GOVERNING SPECIFICATIONS AND GENERAL NOTES | | | |
| 8-28 | TYPICAL SECTIONS OF IMPROVEMENT | | | |
| 29-62 | SPECIAL DETAILS | | | |
| 63-102 | TEMPORARY EROSION CONTROL PLANS | | | |
| 103-123 | MAINTENANCE OF TRAFFIC DETAILS | | | |
| 124-134 | PERMANENT PAVEMENT MARKING DETAILS | | | |
| 135-155 | SIGN PLACEMENT SHEET | | | |
| 156-157 | SIGN QUANTITIES | | | |
| 158-159 | SOIL BORING LOG | | | |
| 160-168 | QUANTITIES | | | |
| 169 | SCHEDULE OF BRIDGE QUANTITIES (SHEET 1 OF 3) | * | 55105 | |
| 170 | SCHEDULE OF BRIDGE QUANTITIES (SHEET 2 OF 3) | ** | 55106 | |
| 171 | SCHEDULE OF BRIDGE QUANTITIES (SHEET 3 OF 3) | *** | 55107 | |
| 172-174 | SUMMARY OF QUANTITIES AND REVISIONS | | | |
| 175-186 | SURVEY CONTROL DETAILS | | | |
| 187 | INTERCHANGE LAYOUT - HWY. 412 BYPASS @ HWY. 112 | | | |
| 188 | INTERCHANGE LAYOUT - HWY. 412 BYPASS @ I-49 | | | |
| 189 | INTERCHANGE ROW - HWY. 412 BYPASS @ HWY. 112 | | | |
| 190-210 | PLAN AND PROFILE - MAIN LANES | | | |
| 211-216 | PLAN AND PROFILE - RAMP EN | | | |
| 217 | PLAN AND PROFILE - RAMP ES | | | |
| 218-221 | PLAN AND PROFILE - RAMP NW | | | |
| 222-223 | PLAN AND PROFILE - RAMP SE | | | |
| 224-225 | PLAN AND PROFILE - RAMP SW | | | |
| 226 | PLAN AND PROFILE - RAMP WS | | | |
| 227-233 | PLAN AND PROFILE - I-49 | | | |
| 234 | RAMP 1 AND RAMP 4 PROFILES HWY. 112 INTERCHANGE | | | |
| 235 | RAMP 2 AND RAMP 3 PROFILES HWY. 112 INTERCHANGE | | | |
| 236-237 | PLAN AND PROFILE - HWY. 112 | | | |
| 238 | PLAN AND PROFILE - GRIMSLEY RD. | | | |
| 239 | PLAN AND PROFILE - WAGON WHEEL ROAD | | | |
| 240 | PLAN AND PROFILE - SHARP SPRINGS ACCESS RD. | | | |
| 241-242 | PLAN AND PROFILE - S. ZION ROAD | | | |
| 243-244 | PLAN AND PROFILE - SPRING CREEK ACCESS RD. | | | |
| 245 | PLAN AND PROFILE - SPRING CREEK ST. | | | |
| 246-247 | PLAN AND PROFILE - PUPPY CREEK RD. | | | |
| 248 | PLAN AND PROFILE - PUPPY CREEK ACCESS RD. | | | |
| 249-250 | PLAN AND PROFILE - GOAD SPRINGS ACCESS RD. | | | |
| 251 | MAINTENANCE OF TRAFFIC PROFILES | | | |
| 252-253 | CULVERT DIAGRAM | | | |
| 254 | LAYOUT OF BRIDGE A U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 1 OF 9) | A7304 & B7304 | 55108 | |
| 255 | LAYOUT OF BRIDGE A U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 2 OF 9) | A7304 & B7304 | 55109 | |
| 256 | LAYOUT OF BRIDGE A U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 3 OF 9) | A7304 & B7304 | 55110 | |
| 257 | LAYOUT OF BRIDGE B U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 4 OF 9) | A7304 & B7304 | 55111 | |
| 258 | LAYOUT OF BRIDGE B U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 5 OF 9) | A7304 & B7304 | 55112 | |
| 259 | LAYOUT OF BRIDGE B U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 6 OF 9) | A7304 & B7304 | 55113 | |
| 260 | LAYOUT OF BRIDGE U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 7 OF 9) | A7304 & B7304 | 55114 | |
| 261 | LAYOUT OF BRIDGE U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 8 OF 9) | A7304 & B7304 | 55115 | |
| 262 | LAYOUT OF BRIDGE U.S. HIGHWAY 412 OVER SPRING CREEK (SHEET 9 OF 9) | A7304 & B7304 | 55116 | |
| 263 | DETAILS OF END BENTS (SHEET 1 OF 7) | A7304 & B7304 | 55117 | |
| 264 | DETAILS OF END BENTS (SHEET 2 OF 7) | A7304 & B7304 | 55118 | |
| 265 | DETAILS OF END BENTS (SHEET 3 OF 7) | A7304 & B7304 | 55119 | |
| 266 | DETAILS OF END BENTS (SHEET 4 OF 7) | A7304 & B7304 | 55120 | |
| 267 | DETAILS OF END BENTS (SHEET 5 OF 7) | A7304 & B7304 | 55121 | |
| 268 | DETAILS OF END BENTS (SHEET 6 OF 7) | A7304 & B7304 | 55122 | |
| 269 | DETAILS OF END BENTS (SHEET 7 OF 7) | A7304 & B7304 | 55123 | |
| 270 | DETAILS OF INTERMEDIATE BENTS (SHEET 1 OF 7) | A7304 & B7304 | 55124 | |
| 271 | DETAILS OF INTERMEDIATE BENTS (SHEET 2 OF 7) | A7304 & B7304 | 55125 | |
| 272 | DETAILS OF INTERMEDIATE BENTS (SHEET 3 OF 7) | A7304 & B7304 | 55126 | |
| 273 | DETAILS OF INTERMEDIATE BENTS (SHEET 4 OF 7) | A7304 & B7304 | 55127 | |
| 274 | DETAILS OF INTERMEDIATE BENTS (SHEET 5 OF 7) | A7304 & B7304 | 55128 | |
| 275 | DETAILS OF INTERMEDIATE BENTS (SHEET 6 OF 7) | A7304 & B7304 | 55129 | |
| 276 | DETAILS OF INTERMEDIATE BENTS (SHEET 7 OF 7) | A7304 & B7304 | 55130 | |

* A7304, B7304, A7305, B7305

** A7306, 07307, 07308, 07309, 07310

*** 07311, 07312, 07313, 07314, 07315

## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 277 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 1 OF 9) | A7304 & B7304 | 55131 | |
| 278 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 2 OF 9) | A7304 & B7304 | 55132 | |
| 279 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 3 OF 9) | A7304 & B7304 | 55133 | |
| 280 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 4 OF 9) | A7304 & B7304 | 55134 | |
| 281 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 5 OF 9) | A7304 & B7304 | 55135 | |
| 282 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 6 OF 9) | A7304 & B7304 | 55136 | |
| 283 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 7 OF 9) | A7304 & B7304 | 55137 | |
| 284 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 8 OF 9) | A7304 & B7304 | 55138 | |
| 285 | DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 9 OF 9) | A7304 & B7304 | 55139 | |
| 286 | DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 1 OF 5) | A7304 & B7304 | 55140 | |
| 287 | DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 2 OF 5) | A7304 & B7304 | 55141 | |
| 288 | DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 3 OF 5) | A7304 & B7304 | 55142 | |
| 289 | DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 4 OF 5) | A7304 & B7304 | 55143 | |
| 290 | DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 5 OF 5) | A7304 & B7304 | 55144 | |
| 291 | DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 1 OF 6) | A7304 & B7304 | 55145 | |
| 292 | DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 2 OF 6) | A7304 & B7304 | 55146 | |
| 293 | DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 3 OF 6) | A7304 & B7304 | 55147 | |
| 294 | DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 4 OF 6) | A7304 & B7304 | 55148 | |
| 295 | DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 5 OF 6) | A7304 & B7304 | 55149 | |
| 296 | DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 6 OF 6) | A7304 & B7304 | 55150 | |
| 297 | DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 1 OF 5) | A7304 & B7304 | 55151 | |
| 298 | DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 2 OF 5) | A7304 & B7304 | 55152 | |
| 299 | DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 3 OF 5) | A7304 & B7304 | 55153 | |
| 300 | DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 4 OF 5) | A7304 & B7304 | 55154 | |
| 301 | DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (SHEET 5 OF 5) | A7304 & B7304 | 55155 | |
| 302 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 1 OF 9) | A7304 & B7304 | 55156 | |
| 303 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 2 OF 9) | A7304 & B7304 | 55157 | |
| 304 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 3 OF 9) | A7304 & B7304 | 55158 | |
| 305 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 4 OF 9) | A7304 & B7304 | 55159 | |
| 306 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 5 OF 9) | A7304 & B7304 | 55160 | |
| 307 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 6 OF 9) | A7304 & B7304 | 55161 | |
| 308 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 7 OF 9) | A7304 & B7304 | 55162 | |
| 309 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 8 OF 9) | A7304 & B7304 | 55163 | |
| 310 | DETAILS OF PARAPET RAIL PRECAST CONCRETE GIRDER UNIT (SHEET 9 OF 9) | A7304 & B7304 | 55164 | |
| 311 | DETAILS OF STRIP SEAL JOINT (SHEET 1 OF 2) | A7304 & B7304 | 55165 | |
| 312 | DETAILS OF STRIP SEAL JOINT (SHEET 2 OF 2) | A7304 & B7304 | 55166 | |
| 313 | DETAILS OF ELASTOMERIC BEARINGS | A7304 & B7304 | 55167 | |
| 314 | DETAILS OF TYPE SPECIAL 1 APPROACH GUTTERS | A7304 & B7304 | 55168 | |
| 315 | LAYOUT OF BRIDGE A U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) (SHEET 1 OF 5) | A7305 & B7305 | 55169 | |
| 316 | LAYOUT OF BRIDGE B U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) (SHEET 2 OF 5) | A7305 & B7305 | 55170 | |
| 317 | LAYOUT OF BRIDGE U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) (SHEET 3 OF 5) | A7305 & B7305 | 55171 | |
| 318 | LAYOUT OF BRIDGE U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) (SHEET 4 OF 5) | A7305 & B7305 | 55172 | |
| 319 | LAYOUT OF BRIDGE U.S. HIGHWAY 412 OVER FUTURE COUNTY ROAD 60 (E. WAGON WHEEL RD.) (SHEET 5 OF 5) | A7305 & B7305 | 55173 | |
| 320 | DETAILS OF END BENTS (SHEET 1 OF 8) | A7305 & B7305 | 55174 | |
| 321 | DETAILS OF END BENTS (SHEET 2 OF 8) | A7305 & B7305 | 55175 | |
| 322 | DETAILS OF END BENTS (SHEET 3 OF 8) | A7305 & B7305 | 55176 | |
| 323 | DETAILS OF END BENTS (SHEET 4 OF 8) | A7305 & B7305 | 55177 | |
| 324 | DETAILS OF END BENTS (SHEET 5 OF 8) | A7305 & B7305 | 55178 | |
| 325 | DETAILS OF END BENTS (SHEET 6 OF 8) | A7305 & B7305 | 55179 | |
| 326 | DETAILS OF END BENTS (SHEET 7 OF 8) | A7305 & B7305 | 55180 | |
| 327 | DETAILS OF END BENTS (SHEET 8 OF 8) | A7305 & B7305 | 55181 | |
| 328 | DETAILS OF INTERMEDIATE BENTS (SHEET 1 OF 3) | A7305 & B7305 | 55182 | |
| 329 | DETAILS OF INTERMEDIATE BENTS (SHEET 2 OF 3) | A7305 & B7305 | 55183 | |
| 330 | DETAILS OF INTERMEDIATE BENTS (SHEET 3 OF 3) | A7305 & B7305 | 55184 | |
| 331 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 1 OF 13) | A7305 & B7305 | 55185 | |
| 332 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 2 OF 13) | A7305 & B7305 | 55186 | |
| 333 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 3 OF 13) | A7305 & B7305 | 55187 | |
| 334 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 4 OF 13) | A7305 & B7305 | 55188 | |
| 335 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 5 OF 13) | A7305 & B7305 | 55189 | |
| 336 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 6 OF 13) | A7305 & B7305 | 55190 | |
| 337 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 7 OF 13) | A7305 & B7305 | 55191 | |
| 338 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 8 OF 13) | A7305 & B7305 | 55192 | |

INDEX OF SHEETS CONTINUED ON NEXT SHEET

INDEX OF SHEETS

sadonaldson 9/4/2014 4:07:51 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_INDEX_01.dgn
REVISED DATE:

9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 4 | 897 |

(2) INDEX OF SHEETS

## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 339 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 9 OF 13) | A7305 & B7305 | 55193 | |
| 340 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 10 OF 13) | A7305 & B7305 | 55194 | |
| 341 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 11 OF 13) | A7305 & B7305 | 55195 | |
| 342 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 12 OF 13) | A7305 & B7305 | 55196 | |
| 343 | DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT (SHEET 13 OF 13) | A7305 & B7305 | 55197 | |
| 344 | DETAILS OF ELASTOMERIC BEARINGS | A7305 & B7305 | 55198 | |
| 345 | DETAILS OF TYPE SPECIAL 1 APPROACH SLAB (SHEET 1 OF 2) | A7305 & B7305 | 55199 | |
| 346 | DETAILS OF TYPE SPECIAL 1 APPROACH SLAB (SHEET 2 OF 2) | A7305 & B7305 | 55200 | |
| 347 | DETAILS OF TYPE SPECIAL 2 APPROACH SLAB (SHEET 1 OF 2) | A7305 & B7305 | 55201 | |
| 348 | DETAILS OF TYPE SPECIAL 2 APPROACH SLAB (SHEET 2 OF 2) | A7305 & B7305 | 55202 | |
| 349 | DETAILS OF TYPE SPECIAL 2 APPROACH GUTTERS | A7305 & B7305 | 55203 | |
| 350 | LAYOUT OF BRIDGE A U.S. HWY. 412 BYPASS OVER PUPPY CREEK | A7306 | 55204 | |
| 351 | LAYOUT OF FUTURE BRIDGE B U.S. HWY. 412 BYPASS OVER PUPPY CREEK | B7306 | 55205 | |
| 352 | STAKING DIAGRAM | A7306 | 55206 | |
| 353 | GENERAL NOTES AND BORING LEGEND | A7306 | 55207 | |
| 354 | DETAILS OF END BENTS (SHEET 1 OF 4) | A7306 | 55208 | |
| 355 | DETAILS OF END BENTS (SHEET 2 OF 4) | A7306 | 55209 | |
| 356 | DETAILS OF END BENTS (SHEET 3 OF 4) | A7306 | 55210 | |
| 357 | DETAILS OF END BENTS (SHEET 4 OF 4) | A7306 | 55211 | |
| 358 | DETAILS OF INTERMEDIATE BENT NO. 2 | A7306 | 55212 | |
| 359 | DETAILS OF INTERMEDIATE BENT NO. 3 | A7306 | 55213 | |
| 360 | DETAILS OF INTERMEDIATE BENT NO. 4 | A7306 | 55214 | |
| 361 | DETAILS OF INTERMEDIATE BENT NO. 5 | A7306 | 55215 | |
| 362 | DETAILS OF INTERMEDIATE BENTS | A7306 | 55216 | |
| 363 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 1 OF 7) | A7306 | 55217 | |
| 364 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 2 OF 7) | A7306 | 55218 | |
| 365 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 3 OF 7) | A7306 | 55219 | |
| 366 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 4 OF 7) | A7306 | 55220 | |
| 367 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 5 OF 7) | A7306 | 55221 | |
| 368 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 6 OF 7) | A7306 | 55222 | |
| 369 | DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 7 OF 7) | A7306 | 55223 | |
| 370 | DETAILS OF POURED SILICONE JOINT | A7306 | 55224 | |
| 371 | DETAILS OF ELASTOMERIC BEARINGS | A7306 | 55225 | |
| 372 | DETAILS OF TYPE SPECIAL 3 APPROACH SLAB (SHEET 1 OF 2) | A7306 | 55226 | |
| 373 | DETAILS OF TYPE SPECIAL 3 APPROACH SLAB (SHEET 2 OF 2) | A7306 | 55227 | |
| 374 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 1 OF 7) | 07307 | 55228 | |
| 375 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 2 OF 7) | 07307 | 55229 | |
| 376 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 3 OF 7) | 07307 | 55230 | |
| 377 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 4 OF 7) | 07307 | 55231 | |
| 378 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 5 OF 7) | 07307 | 55232 | |
| 379 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 6 OF 7) | 07307 | 55233 | |
| 380 | LAYOUT OF BRIDGE HIGHWAY 112 OVER U.S. HIGHWAY 412 (SHEET 7 OF 7) | 07307 | 55234 | |
| 381 | DETAILS OF END BENTS (SHEET 1 OF 5) | 07307 | 55235 | |
| 382 | DETAILS OF END BENTS (SHEET 2 OF 5) | 07307 | 55236 | |
| 383 | DETAILS OF END BENTS (SHEET 3 OF 5) | 07307 | 55237 | |
| 384 | DETAILS OF END BENTS (SHEET 4 OF 5) | 07307 | 55238 | |
| 385 | DETAILS OF END BENTS (SHEET 5 OF 5) | 07307 | 55239 | |
| 386 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 1 OF 2) | 07307 | 55240 | |
| 387 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 2 OF 2) | 07307 | 55241 | |
| 388 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 8) | 07307 | 55242 | |
| 389 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 8) | 07307 | 55243 | |
| 390 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 8) | 07307 | 55244 | |
| 391 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 8) | 07307 | 55245 | |
| 392 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 8) | 07307 | 55246 | |
| 393 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 8) | 07307 | 55247 | |
| 394 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 8) | 07307 | 55248 | |
| 395 | DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF 8) | 07307 | 55249 | |
| 396 | DETAILS OF ELASTOMERIC BEARINGS | 07307 | 55250 | |
| 397 | LAYOUT OF BRIDGE GRIMSLEY ROAD OVER U.S. HIGHWAY 412 (SHEET 1 OF 6) | 07308 | 55251 | |
| 398 | LAYOUT OF BRIDGE GRIMSLEY ROAD OVER U.S. HIGHWAY 412 (SHEET 2 OF 6) | 07308 | 55252 | |
| 399 | LAYOUT OF BRIDGE GRIMSLEY ROAD OVER U.S. HIGHWAY 412 (SHEET 3 OF 6) | 07308 | 55253 | |
| 400 | LAYOUT OF BRIDGE GRIMSLEY ROAD OVER U.S. HIGHWAY 412 (SHEET 4 OF 6) | 07308 | 55254 | |
| 401 | LAYOUT OF BRIDGE GRIMSLEY ROAD OVER U.S. HIGHWAY 412 (SHEET 5 OF 6) | 07308 | 55255 | |
| 402 | LAYOUT OF BRIDGE GRIMSLEY ROAD OVER U.S. HIGHWAY 412 (SHEET 6 OF 6) | 07308 | 55256 | |
| 403 | DETAILS OF END BENTS (SHEET 1 OF 5) | 07308 | 55257 | |
| 404 | DETAILS OF END BENTS (SHEET 2 OF 5) | 07308 | 55258 | |
| 405 | DETAILS OF END BENTS (SHEET 3 OF 5) | 07308 | 55259 | |
| 406 | DETAILS OF END BENTS (SHEET 4 OF 5) | 07308 | 55260 | |
| 407 | DETAILS OF END BENTS (SHEET 5 OF 5) | 07308 | 55261 | |
| 408 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 1 OF 2) | 07308 | 55262 | |
| 409 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 2 OF 2) | 07308 | 55263 | |

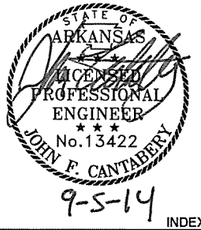
## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 410 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 8) | 07308 | 55264 | |
| 411 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 8) | 07308 | 55265 | |
| 412 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 8) | 07308 | 55266 | |
| 413 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 8) | 07308 | 55267 | |
| 414 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 8) | 07308 | 55268 | |
| 415 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 8) | 07308 | 55269 | |
| 416 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 8) | 07308 | 55270 | |
| 417 | DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF 8) | 07308 | 55271 | |
| 418 | DETAILS OF ELASTOMERIC BEARINGS | 07308 | 55272 | |
| 419 | LAYOUT OF BRIDGE COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412 (SHEET 1 OF 6) | 07309 | 55273 | |
| 420 | LAYOUT OF BRIDGE COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412 (SHEET 2 OF 6) | 07309 | 55274 | |
| 421 | LAYOUT OF BRIDGE COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412 (SHEET 3 OF 6) | 07309 | 55275 | |
| 422 | LAYOUT OF BRIDGE COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412 (SHEET 4 OF 6) | 07309 | 55276 | |
| 423 | LAYOUT OF BRIDGE COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412 (SHEET 5 OF 6) | 07309 | 55277 | |
| 424 | LAYOUT OF BRIDGE COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412 (SHEET 6 OF 6) | 07309 | 55278 | |
| 425 | DETAILS OF END BENTS (SHEET 1 OF 5) | 07309 | 55279 | |
| 426 | DETAILS OF END BENTS (SHEET 2 OF 5) | 07309 | 55280 | |
| 427 | DETAILS OF END BENTS (SHEET 3 OF 5) | 07309 | 55281 | |
| 428 | DETAILS OF END BENTS (SHEET 4 OF 5) | 07309 | 55282 | |
| 429 | DETAILS OF END BENTS (SHEET 5 OF 5) | 07309 | 55283 | |
| 430 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 1 OF 2) | 07309 | 55284 | |
| 431 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 2 OF 2) | 07309 | 55285 | |
| 432 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 10) | 07309 | 55286 | |
| 433 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 10) | 07309 | 55287 | |
| 434 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 10) | 07309 | 55288 | |
| 435 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 10) | 07309 | 55289 | |
| 436 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 10) | 07309 | 55290 | |
| 437 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 10) | 07309 | 55291 | |
| 438 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 10) | 07309 | 55292 | |
| 439 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF 10) | 07309 | 55293 | |
| 440 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 9 OF 10) | 07309 | 55294 | |
| 441 | DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 10 OF 10) | 07309 | 55295 | |
| 442 | DETAILS OF ELASTOMERIC BEARINGS | 07309 | 55296 | |
| 443 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 1 OF 7) | 07310 | 55297 | |
| 444 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 2 OF 7) | 07310 | 55298 | |
| 445 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 3 OF 7) | 07310 | 55299 | |
| 446 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 4 OF 7) | 07310 | 55300 | |
| 447 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 5 OF 7) | 07310 | 55301 | |
| 448 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 6 OF 7) | 07310 | 55302 | |
| 449 | LAYOUT OF BRIDGE SPRING CREEK STREET OVER U.S. HIGHWAY 412 (SHEET 7 OF 7) | 07310 | 55303 | |
| 450 | DETAILS OF END BENTS (SHEET 1 OF 5) | 07310 | 55304 | |
| 451 | DETAILS OF END BENTS (SHEET 2 OF 5) | 07310 | 55305 | |
| 452 | DETAILS OF END BENTS (SHEET 3 OF 5) | 07310 | 55306 | |
| 453 | DETAILS OF END BENTS (SHEET 4 OF 5) | 07310 | 55307 | |
| 454 | DETAILS OF END BENTS (SHEET 5 OF 5) | 07310 | 55308 | |
| 455 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 1 OF 2) | 07310 | 55309 | |
| 456 | DETAILS OF INTERMEDIATE BENT NO. 2 (SHEET 2 OF 2) | 07310 | 55310 | |
| 457 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 9) | 07310 | 55311 | |
| 458 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 9) | 07310 | 55312 | |
| 459 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 9) | 07310 | 55313 | |
| 460 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 9) | 07310 | 55314 | |
| 461 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 9) | 07310 | 55315 | |
| 462 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 9) | 07310 | 55316 | |
| 463 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 9) | 07310 | 55317 | |
| 464 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF 9) | 07310 | 55318 | |
| 465 | DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT (SHEET 9 OF 9) | 07310 | 55319 | |
| 466 | DETAILS OF ELASTOMERIC BEARINGS | 07310 | 55320 | |
| 467 | LAYOUT OF BRIDGE RAMP EN OVER PUPPY CREEK | 07311 | 55321 | |
| 468 | GENERAL NOTES AND BORING LEGEND | 07311 | 55322 | |
| 469 | DETAILS OF GRAVITY RETAINING WALL | 07311 | 55322a | |
| 470 | DETAILS OF END BENTS (SHEET 1 OF 3) | 07311 | 55323 | |

INDEX OF SHEETS CONTINUED ON NEXT SHEET

INDEX OF SHEETS

sadonaldson 9/4/2014 4:08:06 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_INDEX_01.dgn
L:\2005\0591680
REVISED DATE:




| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 5 | 897 |

(2) INDEX OF SHEETS

## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 471 | DETAILS OF END BENTS (SHEET 2 OF 3) | 07311 | 55324 | |
| 472 | DETAILS OF END BENTS (SHEET 3 OF 3) | 07311 | 55325 | |
| 473 | DETAILS OF INTERMEDIATE BENT NO. 2 | 07311 | 55326 | |
| 474 | DETAILS OF INTERMEDIATE BENT NO. 3 | 07311 | 55327 | |
| 475 | DETAILS OF INTERMEDIATE BENTS NO. 4 & 5 | 07311 | 55328 | |
| 476 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 1 OF 7) | 07311 | 55329 | |
| 477 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 2 OF 7) | 07311 | 55330 | |
| 478 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 3 OF 7) | 07311 | 55331 | |
| 479 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 4 OF 7) | 07311 | 55332 | |
| 480 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 5 OF 7) | 07311 | 55333 | |
| 481 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 6 OF 7) | 07311 | 55334 | |
| 482 | DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT (SHEET 7 OF 7) | 07311 | 55335 | |
| 483 | DETAILS OF JOINT WITH POURED SEAL | 07311 | 55336 | |
| 484 | DETAILS OF ELASTOMERIC BEARINGS | 07311 | 55337 | |
| 485 | DETAILS OF TYPE SPECIAL 3 APPROACH GUTTER | 07311 | 55338 | |
| 486 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS (SHEET 1 OF 3) | 07312 | 55339 | |
| 487 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS (SHEET 2 OF 3) | 07312 | 55340 | |
| 488 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS (SHEET 3 OF 3) | 07312 | 55341 | |
| 489 | FUTURE LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN WIDENED I-49 | 07312 | 55342 | |
| 490 | DETAILS OF END BENTS (SHEET 1 OF 3) | 07312 | 55343 | |
| 491 | DETAILS OF END BENTS (SHEET 2 OF 3) | 07312 | 55344 | |
| 492 | DETAILS OF END BENTS (SHEET 3 OF 3) | 07312 | 55345 | |
| 493 | DETAILS OF INTERMEDIATE BENT NO. 2 | 07312 | 55346 | |
| 494 | DETAILS OF INTERMEDIATE BENTS NO. 2-3 & 5 | 07312 | 55347 | |
| 495 | DETAILS OF INTERMEDIATE BENT NO. 3 | 07312 | 55348 | |
| 496 | DETAILS OF INTERMEDIATE BENT NO. 4 (SHEET 1 OF 2) | 07312 | 55349 | |
| 497 | DETAILS OF INTERMEDIATE BENT NO. 4 (SHEET 2 OF 2) | 07312 | 55350 | |
| 498 | DETAILS OF INTERMEDIATE BENT NO. 5 | 07312 | 55351 | |
| 499 | DETAILS OF 556'-5 5/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 5) | 07312 | 55352 | |
| 500 | DETAILS OF 556'-5 5/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 5) | 07312 | 55353 | |
| 501 | DETAILS OF 556'-5 5/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 5) | 07312 | 55354 | |
| 502 | DETAILS OF 556'-5 5/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 5) | 07312 | 55355 | |
| 503 | DETAILS OF 556'-5 5/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 5) | 07312 | 55356 | |
| 504 | DETAILS OF 417'-5 7/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 4) | 07312 | 55357 | |
| 505 | DETAILS OF 417'-5 7/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 4) | 07312 | 55358 | |
| 506 | DETAILS OF 417'-5 7/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 4) | 07312 | 55359 | |
| 507 | DETAILS OF 417'-5 7/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 4) | 07312 | 55360 | |
| 508 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 1 OF 5) | 07312 | 55361 | |
| 509 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 2 OF 5) | 07312 | 55362 | |
| 510 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 3 OF 5) | 07312 | 55363 | |
| 511 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 4 OF 5) | 07312 | 55364 | |
| 512 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 5 OF 5) | 07312 | 55365 | |
| 513 | DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL (SHEET 1 OF 2) | 07312 | 55366 | |
| 514 | DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL (SHEET 2 OF 2) | 07312 | 55367 | |
| 515 | DETAILS OF ELASTOMERIC BEARINGS | 07312 | 55368 | |
| 516 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN OVER SILENT GROVE ROAD (SHEET 1 OF 2) | 07313 | 55369 | |
| 517 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN OVER SILENT GROVE ROAD (SHEET 2 OF 2) | 07313 | 55370 | |
| 518 | CHANNEL RELOCATION | 07313 | 55371 | |
| 519 | GENERAL NOTES | 07313 | 55372 | |
| 520 | DETAILS OF END BENT 1 (SHEET 1 OF 4) | 07313 | 55373 | |
| 521 | DETAILS OF END BENT 1 (SHEET 2 OF 4) | 07313 | 55374 | |
| 522 | DETAILS OF END BENT 1 (SHEET 3 OF 4) | 07313 | 55375 | |
| 523 | DETAILS OF END BENT 1 (SHEET 4 OF 4) | 07313 | 55376 | |
| 524 | DETAILS OF BENT 2 (SHEET 1 OF 2) | 07313 | 55377 | |
| 525 | DETAILS OF BENT 2 (SHEET 2 OF 2) | 07313 | 55378 | |
| 526 | DETAILS OF BENT 3 & 4 (SHEET 1 OF 2) | 07313 | 55379 | |
| 527 | DETAILS OF BENT 3 & 4 (SHEET 2 OF 2) | 07313 | 55380 | |
| 528 | DETAILS OF END BENT 5 (SHEET 1 OF 4) | 07313 | 55381 | |
| 529 | DETAILS OF END BENT 5 (SHEET 2 OF 4) | 07313 | 55382 | |
| 530 | DETAILS OF END BENT 5 (SHEET 3 OF 4) | 07313 | 55383 | |
| 531 | DETAILS OF END BENT 5 (SHEET 4 OF 4) | 07313 | 55384 | |
| 532 | DETAILS OF STANDARD STATE OF ARKANSAS FORM INSERT | 07313 | 55385 | |
| 533 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF10) | 07313 | 55386 | |
| 534 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF10) | 07313 | 55387 | |
| 535 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF10) | 07313 | 55388 | |
| 536 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF10) | 07313 | 55389 | |
| 537 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF10) | 07313 | 55390 | |
| 538 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF10) | 07313 | 55391 | |
| 539 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF10) | 07313 | 55392 | |
| 540 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 8 OF10) | 07313 | 55393 | |
| 541 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 9 OF10) | 07313 | 55394 | |
| 542 | DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 10 OF10) | 07313 | 55395 | |

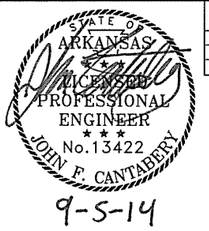
## INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 543 | DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL | 07313 | 55396 | |
| 544 | DETAILS OF ELASTOMERIC BEARINGS | 07313 | 55397 | |
| 545 | DETAILS OF TYPE SPECIAL 4 APPROACH SLAB (1 OF 2) | 07313 | 55398 | |
| 546 | DETAILS OF TYPE SPECIAL 4 APPROACH SLAB (2 OF 2) | 07313 | 55399 | |
| 547 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP NW OVER U.S. HWY. 412 BYPASS (SHEET 1 OF 3) | 07314 | 55400 | |
| 548 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP NW OVER U.S. HWY. 412 BYPASS (SHEET 2 OF 3) | 07314 | 55401 | |
| 549 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP NW OVER U.S. HWY. 412 BYPASS (SHEET 3 OF 3) | 07314 | 55402 | |
| 550 | DETAILS OF END BENT 1 (SHEET 1 OF 3) | 07314 | 55403 | |
| 551 | DETAILS OF END BENT 1 (SHEET 2 OF 3) | 07314 | 55404 | |
| 552 | DETAILS OF END BENT 1 (SHEET 3 OF 3) | 07314 | 55405 | |
| 553 | DETAILS OF BENTS 2 & 8 | 07314 | 55406 | |
| 554 | DETAILS OF BENTS 2-4 & 6-8 | 07314 | 55407 | |
| 555 | DETAILS OF BENT 3 | 07314 | 55408 | |
| 556 | DETAILS OF BENT 4 | 07314 | 55409 | |
| 557 | DETAILS OF BENT 5 (SHEET 1 OF 2) | 07314 | 55410 | |
| 558 | DETAILS OF BENT 5 (SHEET 2 OF 2) | 07314 | 55411 | |
| 559 | DETAILS OF BENT 6 | 07314 | 55412 | |
| 560 | DETAILS OF BENT 7 | 07314 | 55413 | |
| 561 | DETAILS OF END BENT 9 (SHEET 1 OF 3) | 07314 | 55414 | |
| 562 | DETAILS OF END BENT 9 (SHEET 2 OF 3) | 07314 | 55415 | |
| 563 | DETAILS OF END BENT 9 (SHEET 3 OF 3) | 07314 | 55416 | |
| 564 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 7) | 07314 | 55417 | |
| 565 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 7) | 07314 | 55418 | |
| 566 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 7) | 07314 | 55419 | |
| 567 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 7) | 07314 | 55420 | |
| 568 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 7) | 07314 | 55421 | |
| 569 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 7) | 07314 | 55422 | |
| 570 | DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 7) | 07314 | 55423 | |
| 571 | DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 6) | 07314 | 55424 | |
| 572 | DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 6) | 07314 | 55425 | |
| 573 | DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 6) | 07314 | 55426 | |
| 574 | DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 6) | 07314 | 55427 | |
| 575 | DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 6) | 07314 | 55428 | |
| 576 | DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 6) | 07314 | 55429 | |
| 577 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 1 OF 3) | 07314 | 55430 | |
| 578 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 2 OF 3) | 07314 | 55431 | |
| 579 | COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS (SHEET 3 OF 3) | 07314 | 55432 | |
| 580 | DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL | 07314 | 55433 | |
| 581 | DETAILS OF FINGER JOINT | 07314 | 55434 | |
| 582 | DETAILS OF ELASTOMERIC BEARINGS | 07314 | 55435 | |
| 583 | DETAILS OF TYPE SPECIAL 4 APPROACH GUTTERS | 07314 | 55436 | |
| 584 | LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP SE OVER GOAD SPRINGS ROAD | 07315 | 55437 | |
| 585 | GENERAL NOTES | 07315 | 55438 | |
| 586 | DETAILS OF END BENT 1 (SHEET 1 OF 4) | 07315 | 55439 | |
| 587 | DETAILS OF END BENT 1 (SHEET 2 OF 4) | 07315 | 55440 | |
| 588 | DETAILS OF END BENT 1 (SHEET 3 OF 4) | 07315 | 55441 | |
| 589 | DETAILS OF END BENT 1 (SHEET 4 OF 4) | 07315 | 55442 | |
| 590 | DETAILS OF STANDARD STATE OF ARKANSAS FORM INSERT | 07315 | 55443 | |
| 591 | DETAILS OF BENT 2 | 07315 | 55444 | |
| 592 | COMMON DETAILS OF BENTS 2 & 3 | 07315 | 55445 | |
| 593 | DETAILS OF BENT 3 | 07315 | 55446 | |
| 594 | DETAILS OF END BENT 4 (SHEET 1 OF 4) | 07315 | 55447 | |
| 595 | DETAILS OF END BENT 4 (SHEET 2 OF 4) | 07315 | 55448 | |
| 596 | DETAILS OF END BENT 4 (SHEET 3 OF 4) | 07315 | 55449 | |
| 597 | DETAILS OF END BENT 4 (SHEET 4 OF 4) | 07315 | 55450 | |
| 598 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 1 OF 7) | 07315 | 55451 | |
| 599 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 2 OF 7) | 07315 | 55452 | |
| 600 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 3 OF 7) | 07315 | 55453 | |
| 601 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 4 OF 7) | 07315 | 55454 | |
| 602 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 5 OF 7) | 07315 | 55455 | |
| 603 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 6 OF 7) | 07315 | 55456 | |

INDEX OF SHEETS CONTINUED ON NEXT SHEET

INDEX OF SHEETS

sadonaldson 9/4/2014 4:08:24 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_INDEX_01.dgn
REVISED DATE:




9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 6 | 897 |

(2) INDEX OF SHEETS

INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 604 | DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 7 OF 7) | 07315 | 55457 | |
| 605 | DETAILS OF POURED SILICONE JOINT | 07315 | 55458 | |
| 606 | DETAILS OF ELASTOMERIC BEARINGS | 07315 | 55459 | |
| 607 | DETAILS OF TYPE SPECIAL 5 APPROACH SLAB (SHEET 1 OF 2) | 07315 | 55460 | |
| 608 | DETAILS OF TYPE SPECIAL 5 APPROACH SLAB (SHEET 2 OF 2) | 07315 | 55461 | |
| 609 | DETAILS OF MSE RETAINING WALL NO. 12 | | 55462 | |
| 610 | DETAILS OF MSE RETAINING WALL NO. 13 | | 55463 | |
| 611 | DETAILS OF MSE RETAINING WALL NO. 14 | | 55464 | |
| 612 | DETAILS OF MSE RETAINING WALL NO. 15 | | 55465 | |
| 613 | DETAILS OF MSE RETAINING WALLS 12-15 | | 55466 | |
| 614 | DETAILS FOR 60' TO 85' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 1 OF 5) | | 55467 | |
| 615 | DETAILS FOR 60' TO 85' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 2 OF 5) | | 55467a | |
| 616 | DETAILS FOR 60' TO 85' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 3 OF 5) | | 55467b | |
| 617 | DETAILS FOR 60' TO 85' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 4 OF 5) | | 55467c | |
| 618 | DETAILS FOR 60' TO 85' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 5 OF 5) | | 55467d | |
| 619 | DETAILS FOR 95' TO 105' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 1 OF 5) | | 55468 | |
| 620 | DETAILS FOR 95' TO 105' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 2 OF 5) | | 55468a | |
| 621 | DETAILS FOR 95' TO 105' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 3 OF 5) | | 55468b | |
| 622 | DETAILS FOR 95' TO 105' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 4 OF 5) | | 55468c | |
| 623 | DETAILS FOR 95' TO 105' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION (SHEET 5 OF 5) | | 55468d | |
| 624 | STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS | | 55000 | 2/27/14 |
| 625 | STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATIONS FOR STRUCTURES | | 55001 | 2/27/14 |
| 626 | STANDARD DETAILS FOR CONCRETE RIPRAP | | 55002 | 2/27/14 |
| 627 | STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS | | 55005 | 2/27/14 |
| 628 | STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE | | 55010 | 2/27/14 |
| 629 | STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS | | 55020 | 2/27/14 |
| 630 | STANDARD DETAILS FOR TYPE A APPROACH GUTTERS | | 55030A | 2/27/14 |
| 631 | STANDARD DETAILS FOR TYPE C APPROACH GUTTERS | | 55030C | 2/27/14 |
| 632 | STANDARD DETAILS FOR TYPE C1 APPROACH SLAB | | 55040C1 | 2/27/14 |
| 633 | CONCRETE DITCH PAVING | | CDP-1 | 11/17/10 |
| 634 | TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED) | | CPTJ-6A | 5/25/06 |
| 635 | DETAILS OF DRIVEWAYS & ISLANDS | | DR-1 | 2/27/14 |
| 636 | FLARED END SECTION | | FES-1 | 10/18/96 |
| 637 | FLARED END SECTION | | FES-2 | 10/18/96 |
| 638 | DETAILS OF DROP INLETS | | FPC-9D | 8/22/02 |
| 639 | DETAILS OF DROP INLETS AND SPILLWAY OUTLET | | FPC-9N | 7/2/98 |
| 640 | DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST) | | FPC-9S | 7/26/12 |
| 641 | GUARD RAIL DETAILS (TYPE C) STREET/ROAD BARRICADE OR TEMPORARY INSTALLATION | | GR-7 | 7/14/10 |
| 642 | GUARD RAIL DETAILS | | GR-8 | 7/14/10 |
| 643 | GUARD RAIL DETAILS | | GR-8A | 7/14/10 |
| 644 | GUARD RAIL DETAILS | | GR-9 | 4/17/08 |
| 645 | GUARD RAIL DETAILS | | GR-9A | 4/17/08 |
| 646 | GUARD RAIL DETAILS | | GR-10 | 7/14/10 |
| 647 | GUARD RAIL DETAILS | | GR-10A | 7/14/10 |
| 648 | GUARD RAIL DETAILS | | GRT-1 | 7/14/10 |

INDEX OF SHEETS

| SHEET NO. | TITLE | BRIDGE NO. | DRAWING NO. | DATE |
|---|---|---|---|---|
| 649 | MAILBOX DETAILS | | MB-1 | 11/18/04 |
| 650 | PRECAST CONCRETE BOX CULVERTS | | PBC-1 | 12/15/11 |
| 651 | CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING | | PCC-1 | 2/27/14 |
| 652 | METAL PIPE CULVERT FILL HEIGHTS & BEDDING | | PCM-1 | 2/27/14 |
| 653 | PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE) | | PCP-1 | 2/27/14 |
| 654 | PLASTIC PIPE CULVERT (PVC F949) | | PCP-2 | 2/27/14 |
| 655 | PAVEMENT MARKING DETAILS | | PM-1 | 9/12/13 |
| 656 | PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS | | PM-2 | 9/12/13 |
| 657 | DETAILS OF PIPE UNDERDRAIN | | PU-1 | 4/10/03 |
| 658 | REINFORCED CONCRETE BOX CULVERT DETAILS | | RCB-1 | 7/26/12 |
| 659 | EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS | | RCB-2 | 11/20/03 |
| 660 | METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS | | RCB-3 | 10/12/95 |
| 661 | TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC | | SE-1 | 1/9/87 |
| 662 | TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC | | SE-2 | 10/18/96 |
| 663 | STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES | | SHS-1 | 9/12/13 |
| 664 | U-CHANNEL POST ASSEMBLIES | | SHS-2 | 2/27/14 |
| 665 | DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS | | SHS-3 | 9/12/13 |
| 666 | DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS | | SHS-4 | 9/12/13 |
| 667 | DETAILS OF GUIDE SIGN PANELS | | SHS-5 | 9/12/13 |
| 668 | MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS | | SHS-6 | 9/12/13 |
| 669 | DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS | | SHS-7 | 9/12/13 |
| 670 | TYPICAL DELINEATOR PLACEMENT ALONG THE INTERSTATE SYSTEAM | | SHS-8 | 9/12/13 |
| 671 | DETAILS OF SPECIAL ITEMS | | SI-1 | 9/12/13 |
| 672 | REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE) | | SI-2 | 2/27/14 |
| 673 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | | TC-1 | 12/15/11 |
| 674 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | | TC-2 | 9/12/13 |
| 675 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION | | TC-3 | 10/15/09 |
| 676 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER | | TC-4 | 2/27/14 |
| 677 | STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER | | TC-5 | 10/15/09 |
| 678 | TEMPORARY EROSION CONTROL DEVICES | | TEC-1 | 12/15/11 |
| 679 | TEMPORARY EROSION CONTROL DEVICES | | TEC-2 | 6/2/94 |
| 680 | TEMPORARY EROSION CONTROL DEVICES | | TEC-3 | 11/3/94 |
| 681 | DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED) | | TR-1A | 8/22/02 |
| 682 | WIRE FENCE TYPE A AND B | | WF-1 | 8/22/02 |
| 683 | WIRE FENCE WATER GAPS | | WF-2 | 4/20/79 |
| 684 | WIRE FENCE TYPE C AND D | | WF-4 | 8/22/02 |
| 685 | DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS | | R-300X-X2 | 1/13/65 |
| 686 | DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS | | W-X003-1 | 5/10/66 |
| 687-897 | CROSS SECTIONS | | | |

NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS, BUT MAY BE HAD UPON REQUEST.

sdonaldson 9/4/2014 4:08:45 PM
WORKSPACE: AHTD
L:\2005\059I68D - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_INDEX_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 7 | 897 |
| | | | | (2) | GOVERNING SPECIFICATIONS AND GENERAL NOTES | | | |

GENERAL NOTES:

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
8. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENT REMOVED SHALL BE PAID FOR UNDER PAY ITEM 210 - EXCAVATION AND EMBANKMENT, UNLESS OTHERWISE NOTED.

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS.

| NUMBER | TITLE |
|---|---|
| ERRATA | ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS |
| FHWA-1273 | REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS |
| FHWA-1273 | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS |
| FHWA-1273 | SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140) |
| FHWA-1273 | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES |
| FHWA-1273 | SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS |
| FHWA-1273 | SUPPLEMENT - TRAINING PROGRAM - JOB CA0907 |
| FHWA-1273 | SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS |
| FHWA-1273 | SUPPLEMENT - WAGE RATE DETERMINATION |
| 108-1 | LIQUIDATED DAMAGES |
| 410-1 | CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES |
| 620-1 | MULCH COVER |
| JOB CA0907 | AIRPORT CLEARANCE REQUIREMENTS |
| JOB CA0907 | ASSESSMENT OF WORKING DAYS - SATURDAYS |
| JOB CA0907 | ANTENNA SUPPORT WITH CAMERA |
| JOB CA0907 | BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT |
| JOB CA0907 | BROADBAND INTERNET SERVICE FOR FIELD OFFICE |
| JOB CA0907 | CAVE DISCOVERY |
| JOB CA0907 | CHANNEL POST SIGN SUPPORT |
| JOB CA0907 | COMPACTED EMBANKMENT |
| JOB CA0907 | CONCRETE DITCH PAVING |
| JOB CA0907 | CONCRETE RETAINING WALL |
| JOB CA0907 | CONSTRUCTION DELAY DUE TO ARCHEOLOGICAL MITIGATION |
| JOB CA0907 | CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS |
| JOB CA0907 | CONTRA-COSTA ENERGY DISSIPATOR |
| JOB CA0907 | COORDINATION OF WORK |
| JOB CA0907 | ELECTRONIC SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS |
| JOB CA0907 | EMPLOYMENT REPORTING |
| JOB CA0907 | EXCAVATION AND EMBANKMENT |
| JOB CA0907 | EXPLORATORY HOLES |
| JOB CA0907 | EXTENSION FOR PIPE CULVERTS |
| JOB CA0907 | GOALS FOR ARKANSAS OWNED MINORITY BUSINESS ENTERPRISE |
| JOB CA0907 | GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION |
| JOB CA0907 | GRAVITY BLOCK RETAINING WALL |
| JOB CA0907 | HIGH PERFORMANCE PAVEMENT MARKING |
| JOB CA0907 | MAINTENANCE OF TRAFFIC |
| JOB CA0907 | MANDATORY USE OF INTERNET BIDDING |
| JOB CA0907 | MOBILE SPEED NOTIFICATION SYSTEM |
| JOB CA0907 | NESTING SITES OF MIGRATORY BIRDS |
| JOB CA0907 | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT |
| JOB CA0907 | OVERHEAD VARIABLE MESSAGE SIGN ASSEMBLY |
| JOB CA0907 | PARTNERING REQUIREMENTS |
| JOB CA0907 | PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS |
| JOB CA0907 | PLASTIC PIPE |
| JOB CA0907 | PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS |
| JOB CA0907 | PRECAST CONCRETE BARRIER |
| JOB CA0907 | PRESTRESSED CONCRETE BULB-TEE GIRDERS |
| JOB CA0907 | PROSECUTION AND PROGRESS - CONNECTING ARKANSAS PROGRAM |
| JOB CA0907 | RESTRAINING CONDITION |
| JOB CA0907 | RETAINING WALLS |
| JOB CA0907 | RIPRAP BASIN |
| JOB CA0907 | ROCK FILL |
| JOB CA0907 | SECTION 404 STANDARD PERMIT REQUIREMENTS |
| JOB CA0907 | SEQUENCE OF CONSTRUCTION |
| JOB CA0907 | SHORING |
| JOB CA0907 | SIGN PANEL MATERIALS AND FABRICATION |
| JOB CA0907 | SITE USE (A+C METHOD) |
| JOB CA0907 | SOIL STABILIZATION |
| JOB CA0907 | SPECIAL SAFETY REQUIREMENTS FOR BRIDGES |
| JOB CA0907 | SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS |
| JOB CA0907 | STEEL SIGN STRUCTURES |
| JOB CA0907 | STORM WATER POLLUTION PREVENTION PLAN |
| JOB CA0907 | TEMPORARY PORTABLE RUMBLE STRIPS |
| JOB CA0907 | TEXTURED COATING FINISH |
| JOB CA0907 | TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES |
| JOB CA0907 | TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE |
| JOB CA0907 | UTILITY ADJUSTMENTS |
| JOB CA0907 | VALUE ENGINEERING |
| JOB CA0907 | WARM MIX ASPHALT |
| JOB CA0907 | WELLHEAD PROTECTION |
| JOB CA0907 | WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS |
| JOB CA0907 | WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
12-11-14

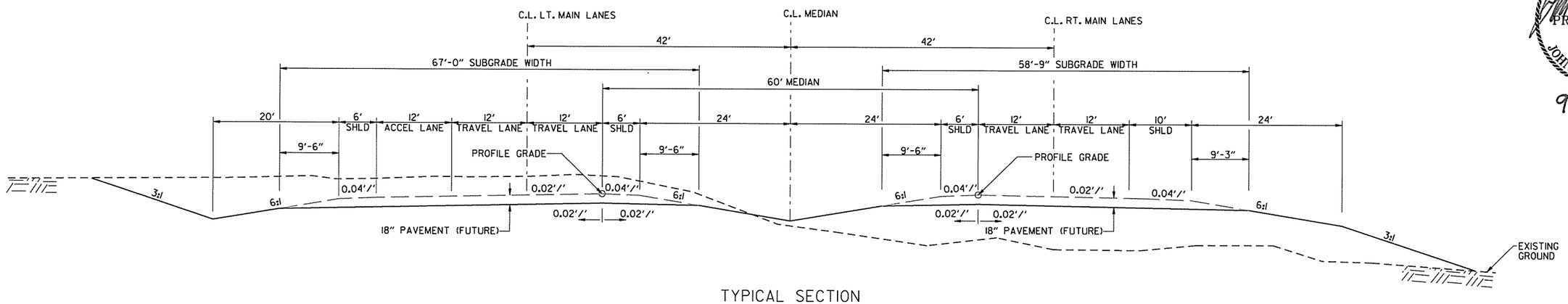
GOVERNING SPECIFICATIONS AND GENERAL NOTES

JFCantabery 12/11/2014 3:08:07 PM
WORKSPACE: AHTD
\\garverinc\ltprojects\2005\059116B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_GS_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 8 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT

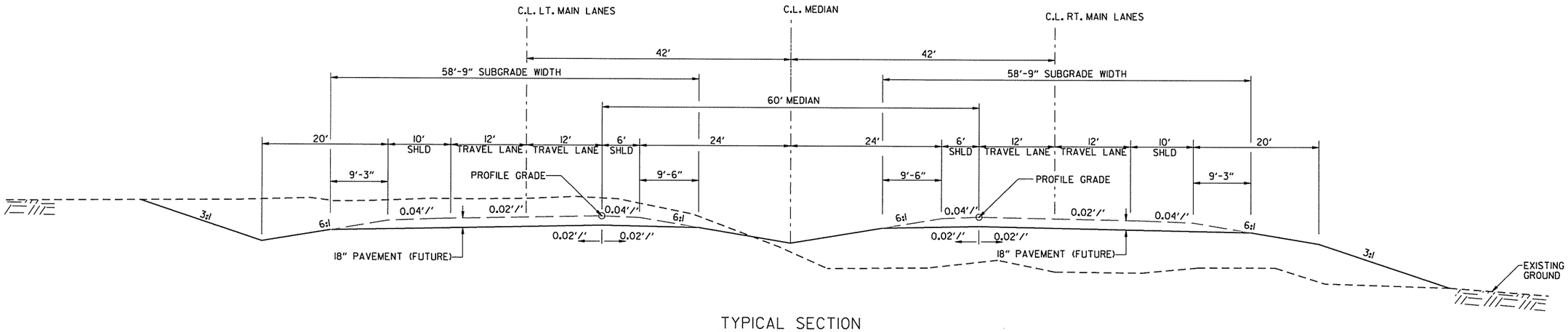
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## TYPICAL SECTION

MAIN LANES
W/ ACCELERATION LANE

STA. 478+50.00 TO STA. 484+53.69




## TYPICAL SECTION

MAIN LANES

STA. 484+53.69 TO STA. 514+00.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.



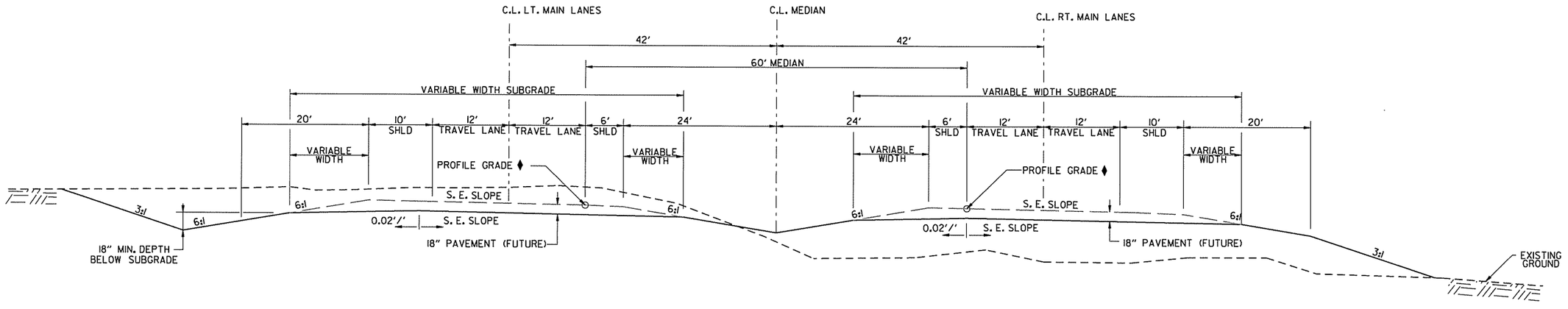
cggervasini 9/5/2014 12:07:42 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 9 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

9-5-14




## TYPICAL SUPERELEVATED SECTION

MAIN LANES

STA. 708+00.00 TO STA. 721+00.00

♦ POINT OF SUPERELEVATION ROTATION

NOTES:

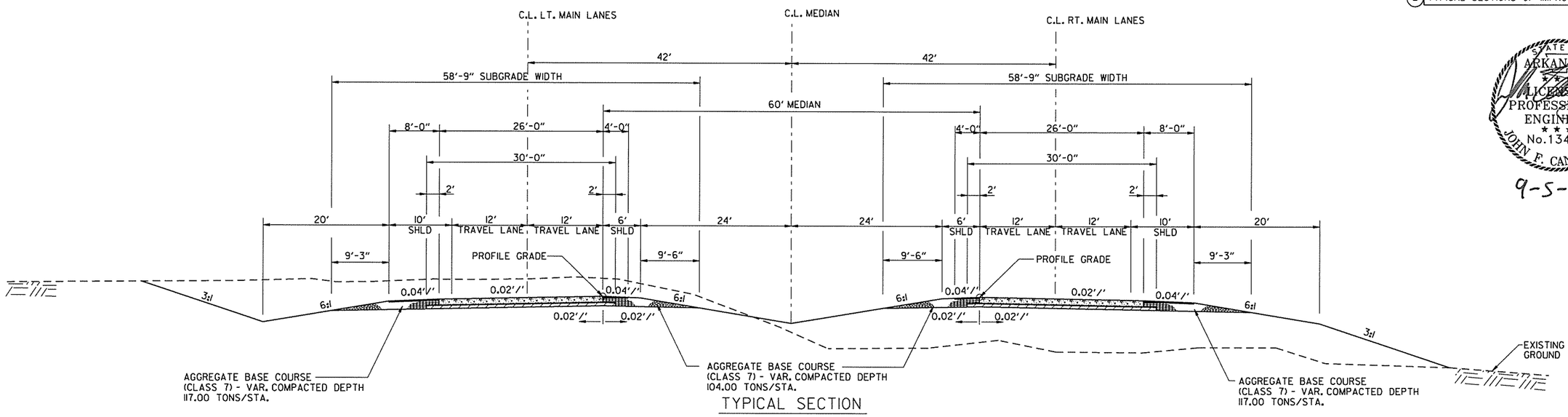
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.

cggervosinl 9/5/2014 12:08:10 PM
WORKSPACE: AHTD
L:\2005\059II680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 10 | 897 |

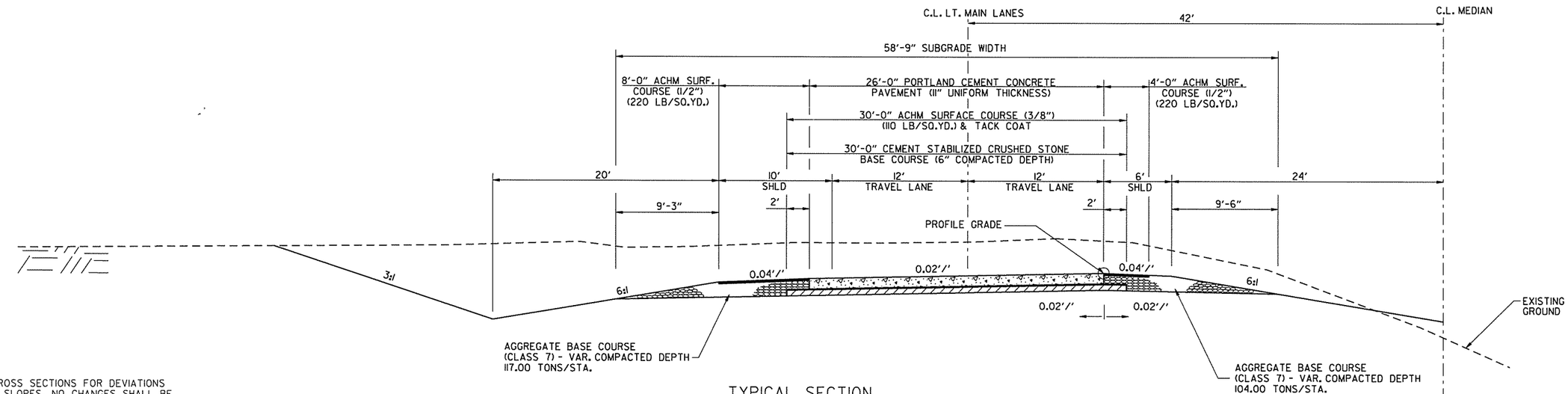
(2) TYPICAL SECTIONS OF IMPROVEMENT




TYPICAL SECTION

MAIN LANES

STA. 514+00.00 TO STA. 517+94.97
STA. 527+94.97 TO STA. 543+09.34
STA. 574+74.74 TO STA. 579+48.67
STA. 606+61.89 TO STA. 679+96.07




TYPICAL SECTION

MAIN LANES
(ENLARGED TO SHOW PAVEMENT DETAILS)

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

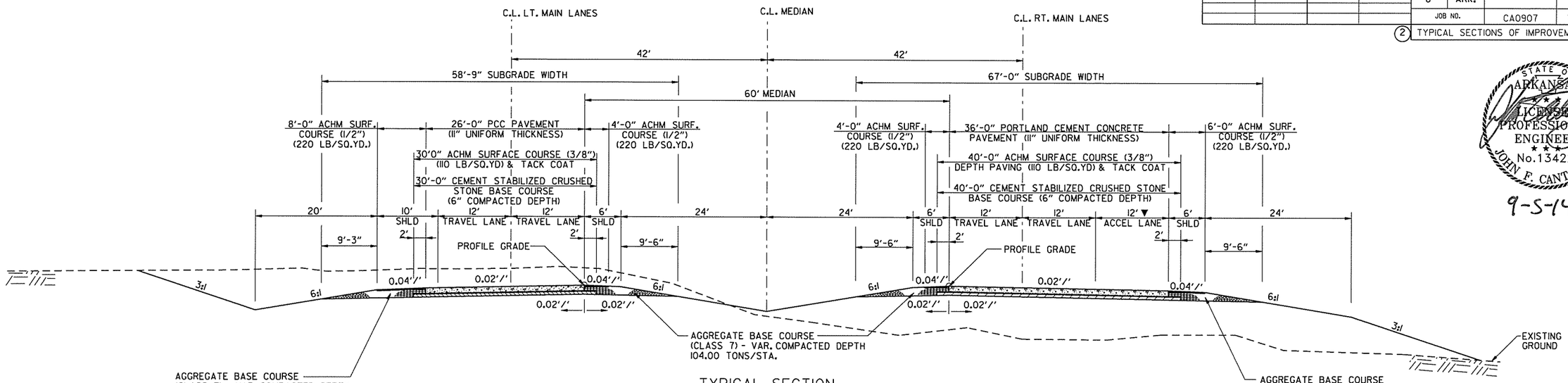
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:19:51 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RMY 112 TO I-540\SBG_TS_ALL_01.dgn
L:\2005\05911680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 11 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT

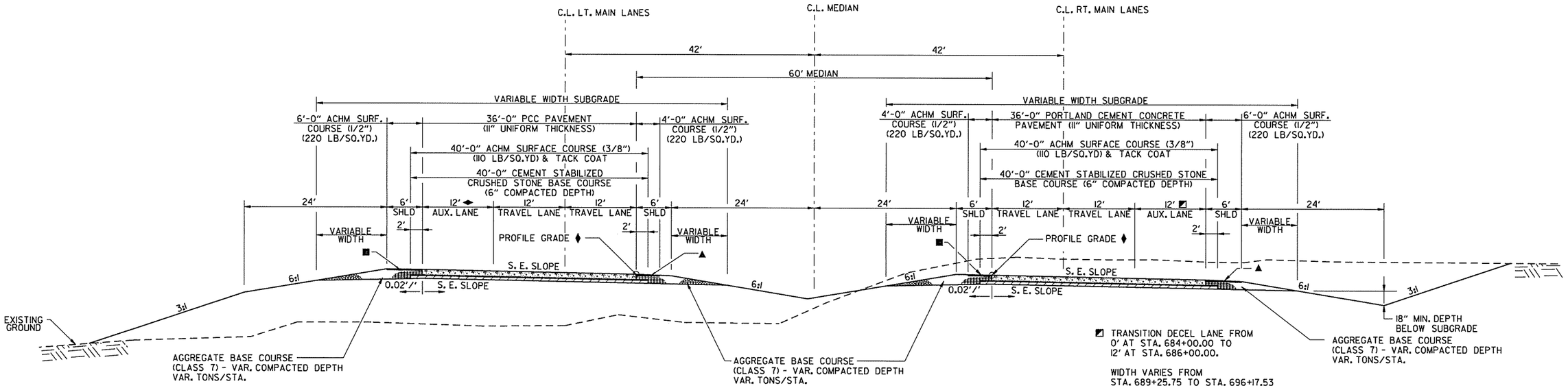



## TYPICAL SECTION

MAIN LANES
W/ ACCELERATION LANE

STA. 517+94.97 TO STA. 527+94.97

▼ TRANSITION ACCEL LANE FROM 12' AT STA. 524+94.97 TO 0' AT STA. 527+94.97




## TYPICAL SUPERELEVATED SECTION

MAIN LANES
W/ ACCELERATION OR AUXILIARY LANE

STA. 684+00.00 TO STA. 696+17.53

◪ TRANSITION DECEL LANE FROM 0' AT STA. 684+00.00 TO 12' AT STA. 686+00.00.

WIDTH VARIES FROM STA. 689+25.75 TO STA. 696+17.53

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

♦ POINT OF SUPERELEVATION ROTATION

■ ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

◆ TRANSITION ACCEL LANE FROM 0' AT STA. 686+00.00 TO 12' AT STA. 689+00.00.

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

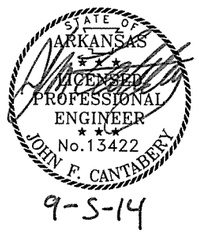
TYPICAL SECTIONS OF IMPROVEMENT

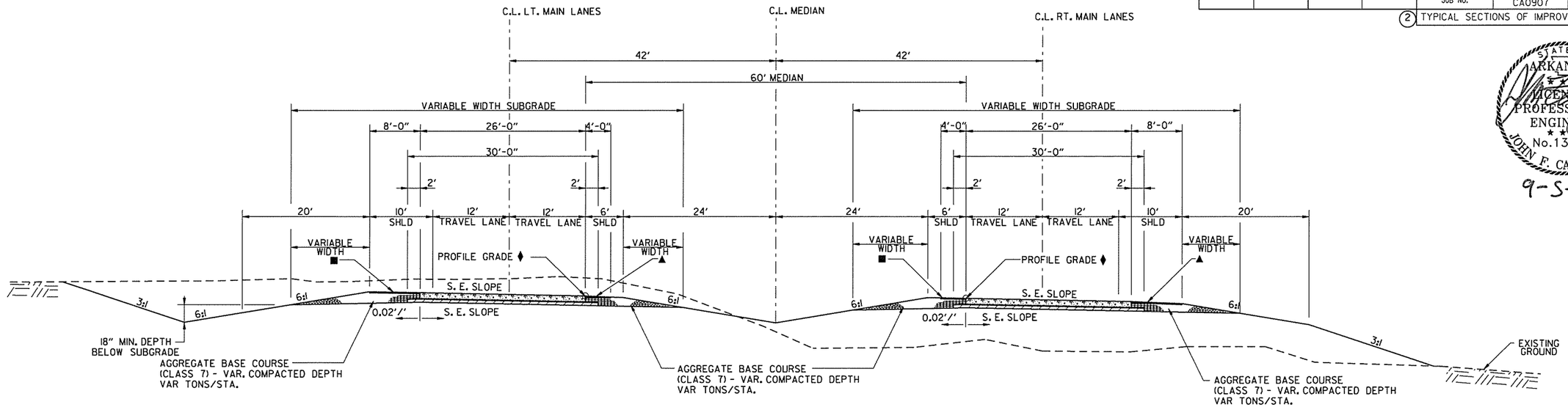
sadonaldson 9/4/2014 3:49:51 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 12 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT




## TYPICAL SUPERELEVATED SECTION

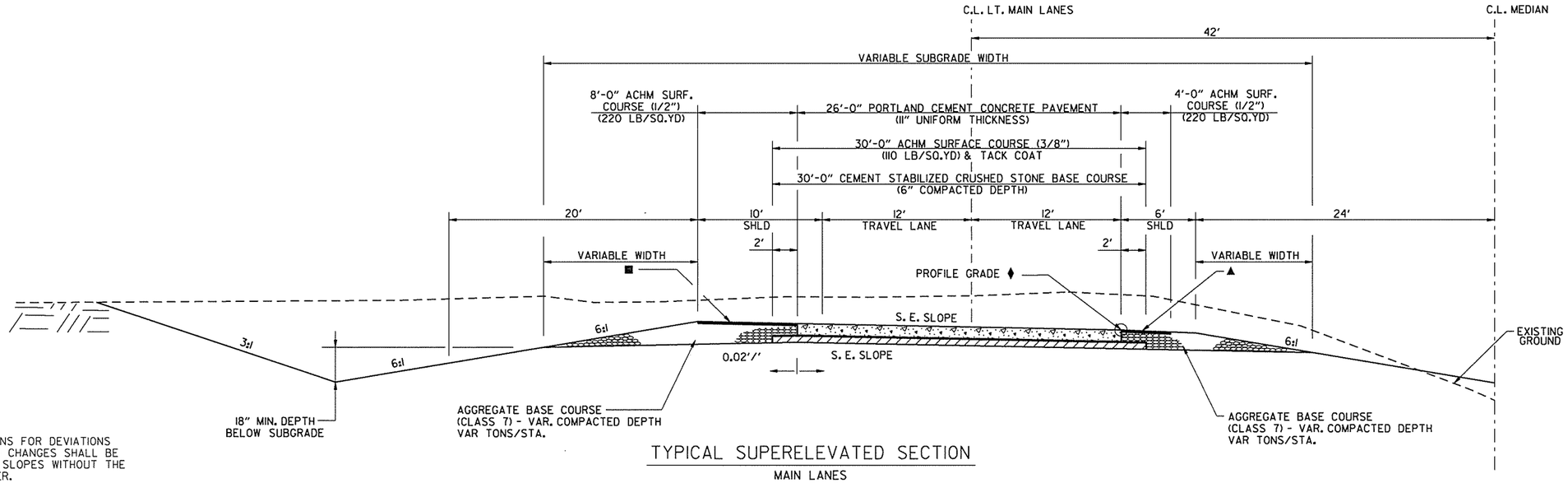
MAIN LANES

STA. 543+09.34 TO STA. 574+74.74
STA. 579+48.67 TO STA. 606+61.89
STA. 679+96.07 TO STA. 684+00.00

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

♦ POINT OF SUPERELEVATION ROTATION

■ ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.




## TYPICAL SUPERELEVATED SECTION

MAIN LANES

(ENLARGED TO SHOW PAVEMENT DETAILS)

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

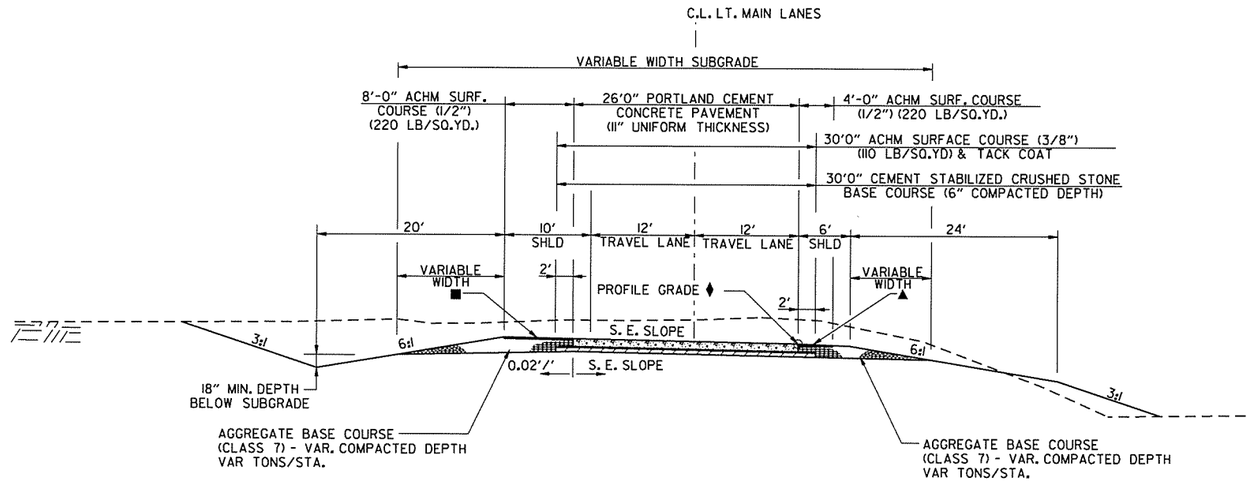
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.



sadonaldson 9/4/2014 3:19:52 PM
WORKSPACE: AHTD
L:\2005\059I1680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 13 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT




TYPICAL SUPERELEVATED SECTION

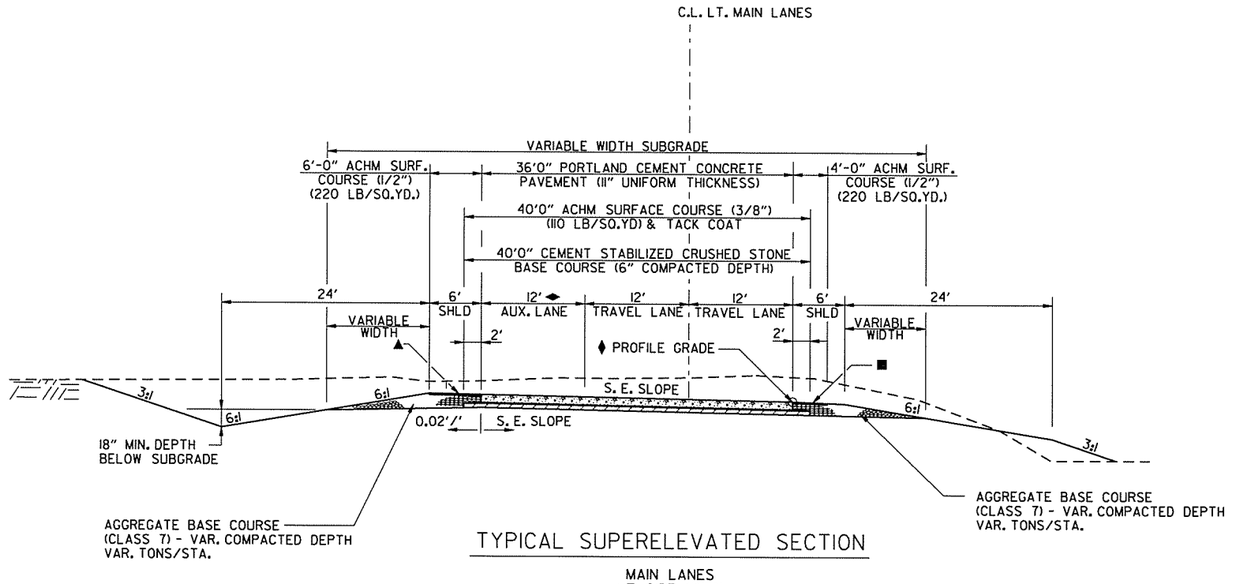
MAIN LANES
LT. SIDE ONLY

STA. 700+40.33 TO STA. 704+00.00

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

♦ POINT OF SUPERELEVATION ROTATION

■ ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.




▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

♦ POINT OF SUPERELEVATION ROTATION

■ ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

◆ TRANSITION AUX. LANE FROM 12' AT STA. 698+00 TO 18.92' AT STA. 700+40.33

TYPICAL SUPERELEVATED SECTION

MAIN LANES
LT. SIDE ONLY
W/ ACCELERATION OR AUXILIARY LANE

STA. 696+17.53 TO STA. 700+40.33

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

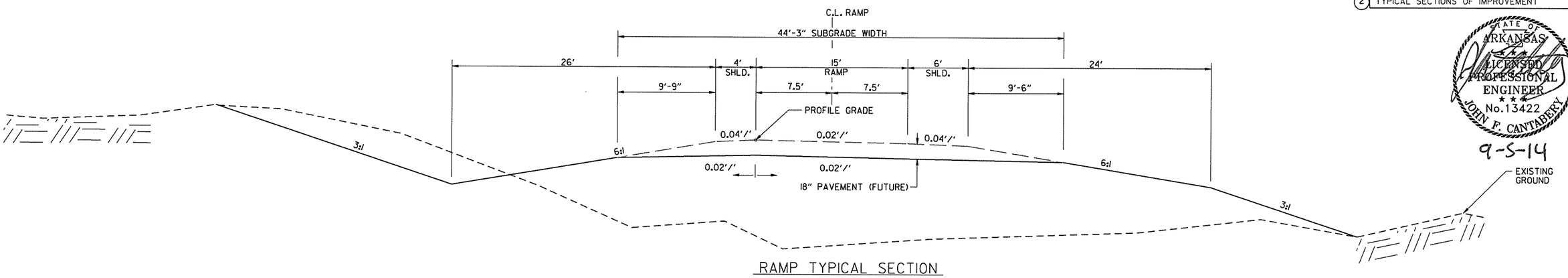
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY

9-5-14

cggervasini 9/5/2014 12:09:02 PM
WORKSPACE: AHTD
L:\2005\059180 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 14 | 897 |

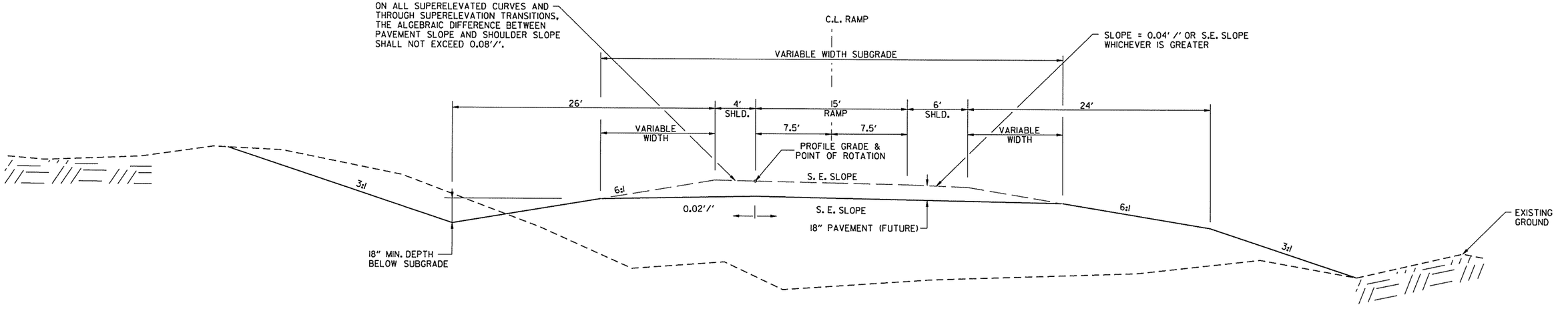
(2) TYPICAL SECTIONS OF IMPROVEMENT




RAMP TYPICAL SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

HWY 112. RAMP 1 STA. 483+30.39 TO STA. 483+71.30 AND STA. 493+74.64 TO 494+18.77

HWY 112. RAMP 4 STA. 493+60.68 TO STA. 499+12.74




RAMP TYPICAL SUPERELEVATED SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

HWY. 112 RAMP 1 STA. 483+71.30 TO STA. 493+74.64 AND STA. 494+18.77 TO STA. 498+30.00

HWY. 112 RAMP 4 STA. 484+53.20 TO STA. 493+60.68

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.

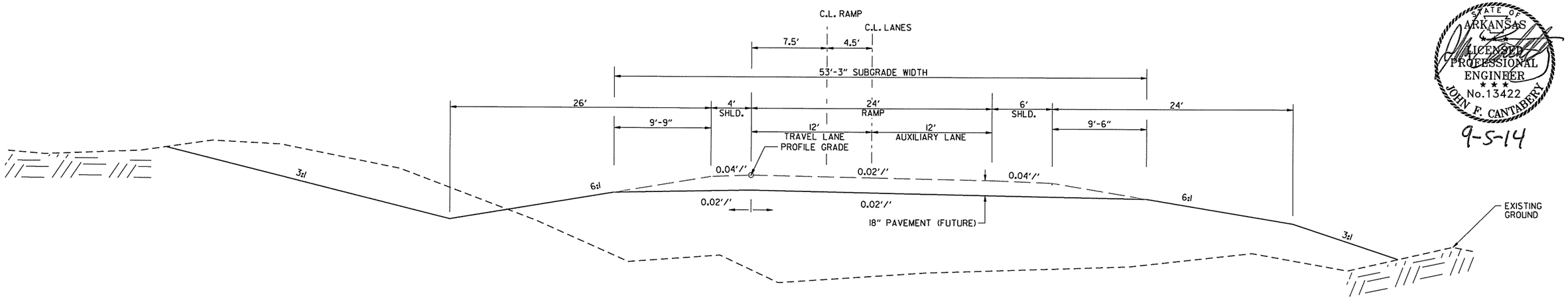
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

cggervaslnl 9/5/2014 12:09:42 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 15 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14



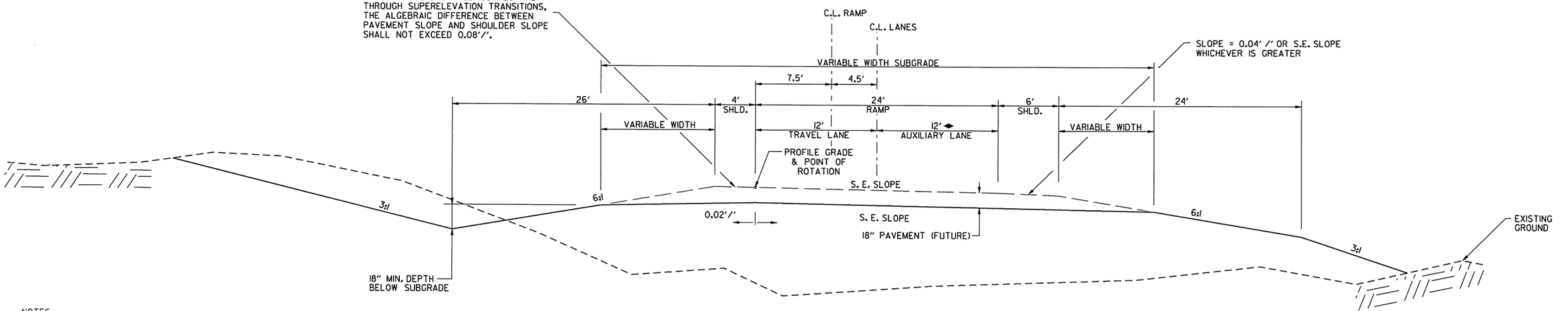

## RAMP WITH AUXILIARY LANE TYPICAL SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

HWY. 112 RAMP 1 STA. 501+00.61 TO STA. 501+41.07

◆ TRANSITION TURN LANE FROM 0' AT HWY. 112 RAMP 1 STA. 498+30.00 TO 12' AT HWY. 112 RAMP 1 STA. 499+30.00

NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.




## RAMP WITH AUXILIARY LANE TYPICAL SUPERELEVATED SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

HWY. 112 RAMP 1 STA. 498+30.00 TO STA. 501+00.61

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

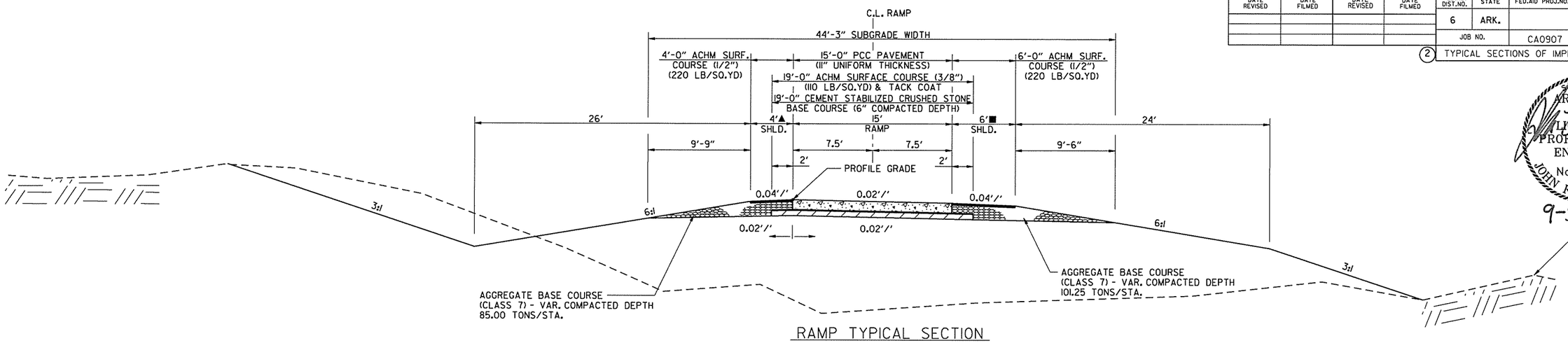
2. IT IS INTENDED THAT THE SUBGRADE SHALL BE FINISHED IN CONFORMITY WITH THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE PLANS. HOWEVER, A TOLERANCE OF PLUS OR MINUS ONE-TENTH FOOT WILL BE ALLOWED.

cggervasini 9/5/2014 12:10:26 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

TYPICAL SECTIONS OF IMPROVEMENT

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 16 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT




## RAMP TYPICAL SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

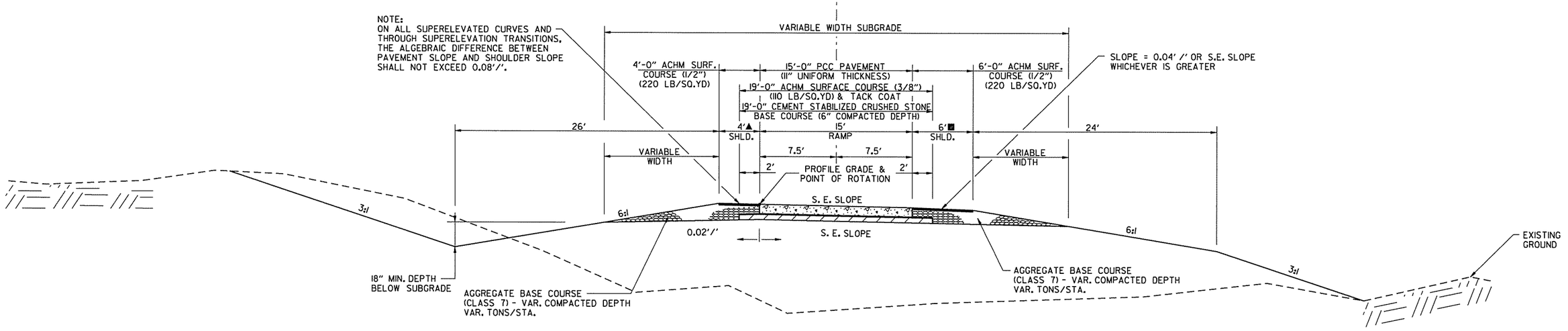
HWY. 112 RAMP 2 STA. 499+29.79 TO STA. 511+49.93
HWY. 112 RAMP 3 STA. 505+09.74 TO STA. 505+56.96 AND STA. 515+62.46 TO STA. 516+08.17

RAMP EN STA. 705+82.58 TO STA. 706+30.86 AND STA. 737+19.30 TO STA. 742+00.00
RAMP NW STA. 732+08.89 TO STA. 746+45.39
RAMP SW STA. 716+47.73 TO STA. 719+29.07

▲ TRANSITION PAVED SHOULDER FROM 6' AT RAMP EN STA. 740+85.00 TO 4' AT RAMP EN STA. 742+00.00. CONTINUE 6' GRADED SHOULDER TO STA. 742+00

■ TRANSITION SHOULDER FROM 8' AT RAMP EN STA. 741+10.00 TO 6' AT RAMP EN STA. 742+00.00

NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.




## RAMP TYPICAL SUPERELEVATED SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

HWY. 112 RAMP 2 STA. 511+49.93 TO STA. 517+95.47
HWY. 112 RAMP 3 STA. 500+40.00 TO STA. 505+09.74 AND STA. 505+56.96 TO STA. 515+62.46

RAMP EN STA. 693+95.95 TO STA. 705+82.58, STA. 706+30.86 TO STA. 737+19.30
RAMP ES STA. 703+83.47 TO STA. 715+58.20
RAMP NW STA. 710+77.94 TO STA. 732+08.89 AND STA. 746+45.39 TO STA. 746+61.61
RAMP SW STA. 710+79.26 TO STA. 716+47.73 AND STA. 719+29.07 TO STA. 727+27.49

▲ TRANSITION SHOULDER FROM 4' AT RAMP EN STA. 735+90.00 TO 6' AT RAMP EN STA. 736+40.00.

■ TRANSITION SHOULDER FROM 6' AT RAMP EN STA. 736+10.00 TO 8' AT RAMP EN STA. 736+60.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

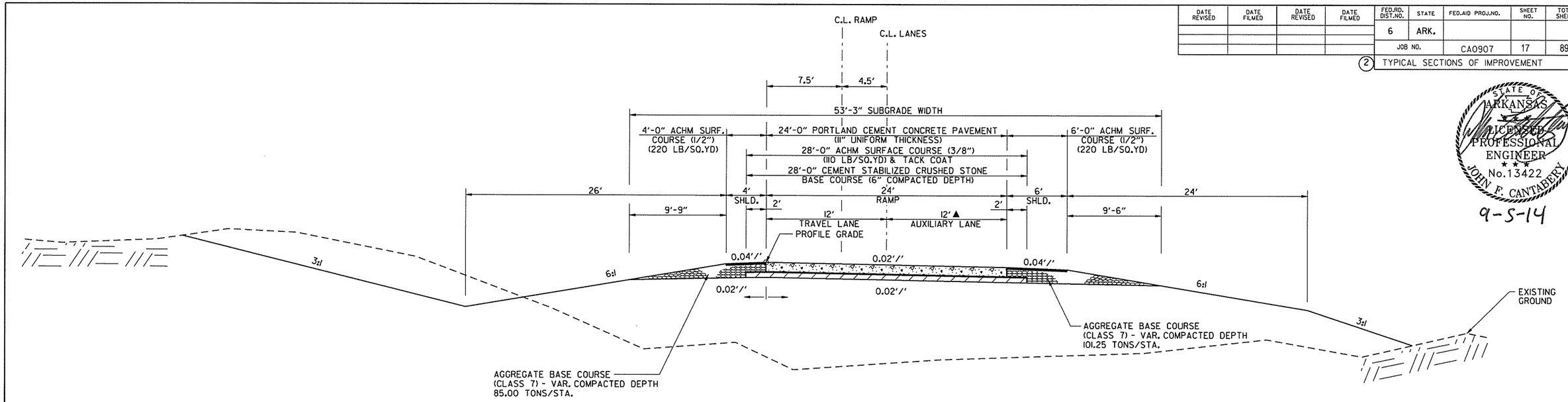
sadonaldson 9/4/2014 3:19:53 PM
WORKSPACE_AHTD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
L:\C2005\05I680

REVISED DATE:

TYPICAL SECTIONS OF IMPROVEMENT

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 17 | 897 |
| | | | | (2) | TYPICAL SECTIONS OF IMPROVEMENT | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




## RAMP WITH AUXILIARY LANE TYPICAL SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

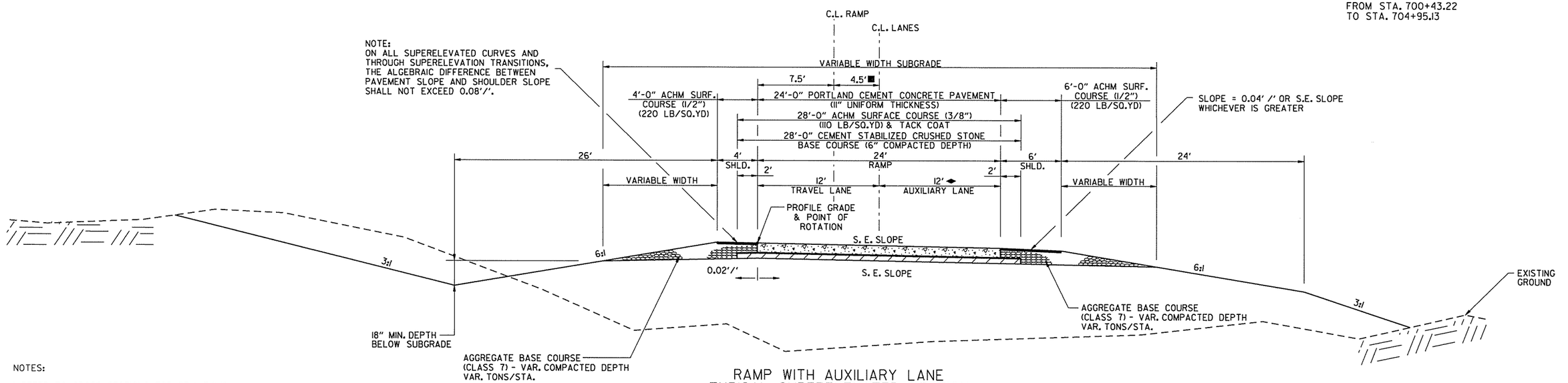
HWY. 112 RAMP 3 STA. 496+49.18 TO STA. 496+89.70

RAMP WS STA. 693+63.37 TO STA. 702+25.35

▲ TRANSITION LANE FROM 0' AT RAMP WS STA. 691+83.44 TO 12' AT RAMP WS STA. 696+23.44

◆ TRANSITION TURN LANE FROM 12' AT HWY. 112 RAMP 3 STA. 499+40.00 TO 0' AT HWY. 112 RAMP 3 STA. 500+40.00

■ SEE RAMP NW WIDENING TYPICAL SECTION FOR VARIABLE WIDTH FROM STA. 700+43.22 TO STA. 704+95.13




## RAMP WITH AUXILIARY LANE TYPICAL SUPERELEVATED SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

HWY. 112 RAMP 3 STA. 496+89.70 TO STA. 500+40.00

RAMP WS STA. 692+63.37 TO STA. 693+63.37

RAMP NW STA. 700+43.22 TO STA. 710+77.94

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

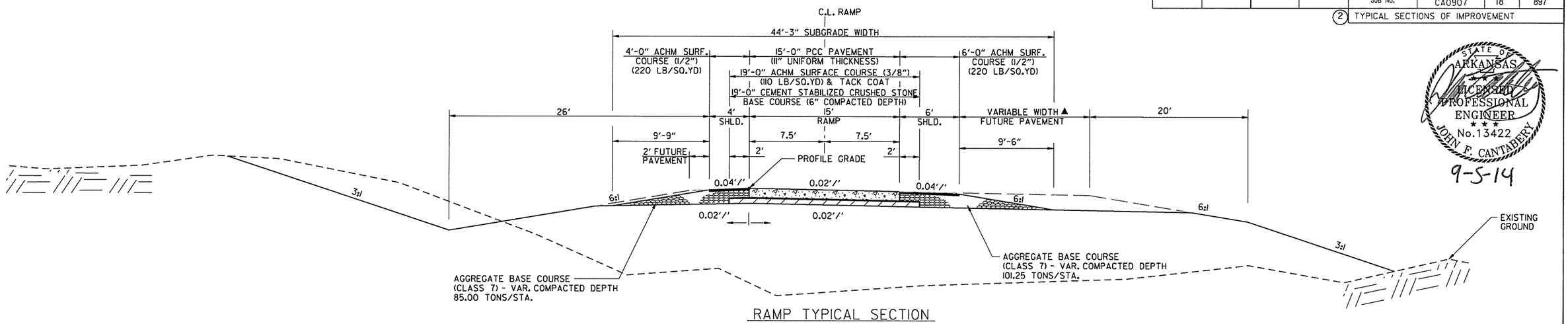
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:19:53 PM
W:\ROADS\AHTD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 18 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT




## RAMP TYPICAL SECTION

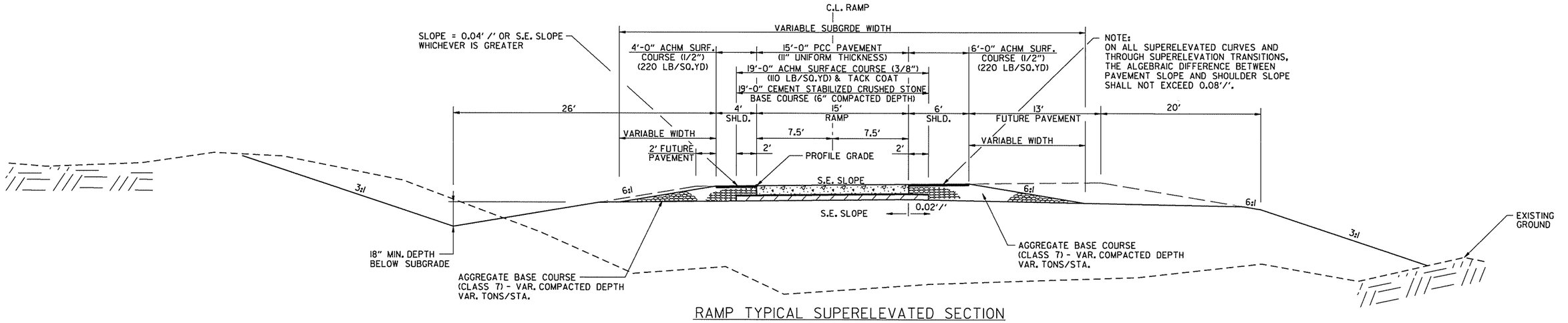
(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP EN STA. 742+00.00 TO STA. 748+81.60

▲ TRANSITION GRADING FROM 4' AT RAMP EN STA. 742+00.00 TO 20' AT RAMP EN STA. 743+00.00

▲ TRANSITION GRADING FROM 20' AT RAMP EN STA. 743+00.00 TO 13' AT RAMP EN STA. 746+60.50

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## RAMP TYPICAL SUPERELEVATED SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP EN STA. 748+81.60 TO STA. 751+81.60

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

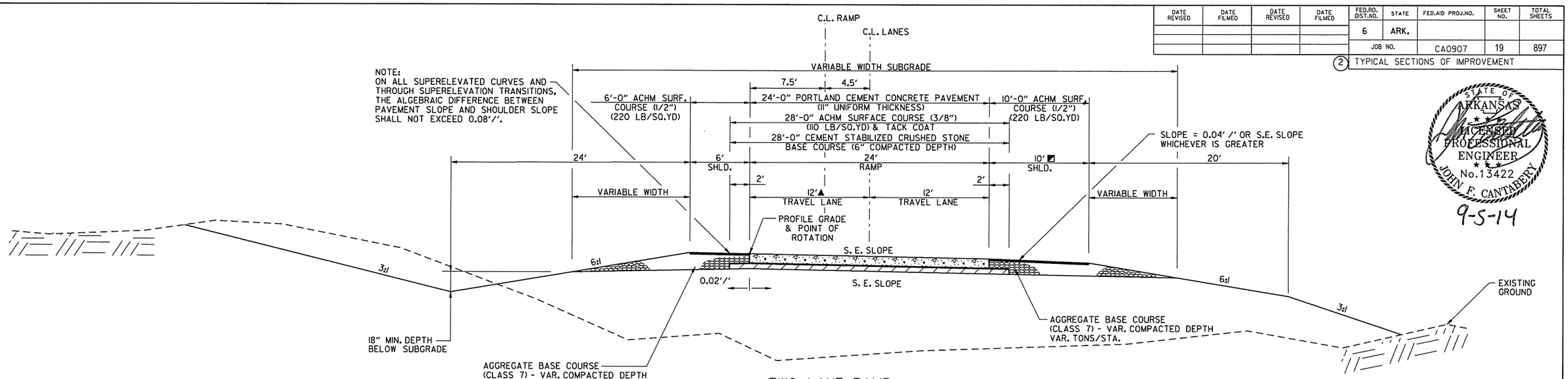
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:19:53 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 19 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT




NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

## TWO LANE RAMP
## TYPICAL SUPERELEVATED SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

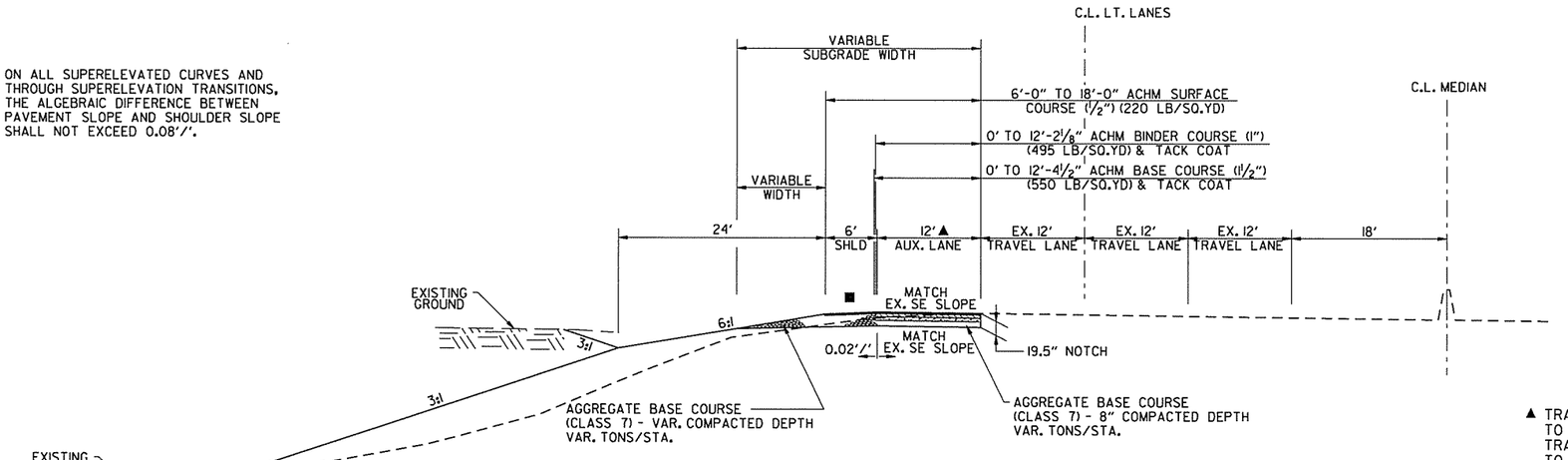
RAMP SE STA. 703+13.80 TO STA. 716+09.99
RAMP SW STA. 727+27.49 TO STA. 728+17.66

▲ TRANSITION LANE FROM 3' AT RAMP SW STA. 727+27.49 TO 12' AT RAMP SW STA. 728+17.66

◪ TRANSITION SHOULDER FROM 6' AT RAMP SW STA. 729+00.00 TO 10' AT RAMP SW STA. 730+94.09

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

■ ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.




## TYPICAL NOTCH & WIDEN SECTION

I-49
W/ 1 AUXILIARY LANE
LEFT LANE SHOWN, RIGHT LANE SIMILAR BY ORIENTATION

STA. 51+82.86 TO STA. 62+63.21 LEFT LANES
STA. 54+88.53 TO STA. 64+88.53 AND STA. 130+09.99 TO STA. 145+78.16 RIGHT LANES

▲ TRANSITION FROM 0' AT STA. 51+82.86 TO 12' AT STA. 54+82.86 LEFT LANES. TRANSITION FROM 0' AT STA. 54+88.53 TO 12' AT STA. 56+88.53 RIGHT LANES.

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. ANY DAMAGE TO THE PAVEMENT THAT IS TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

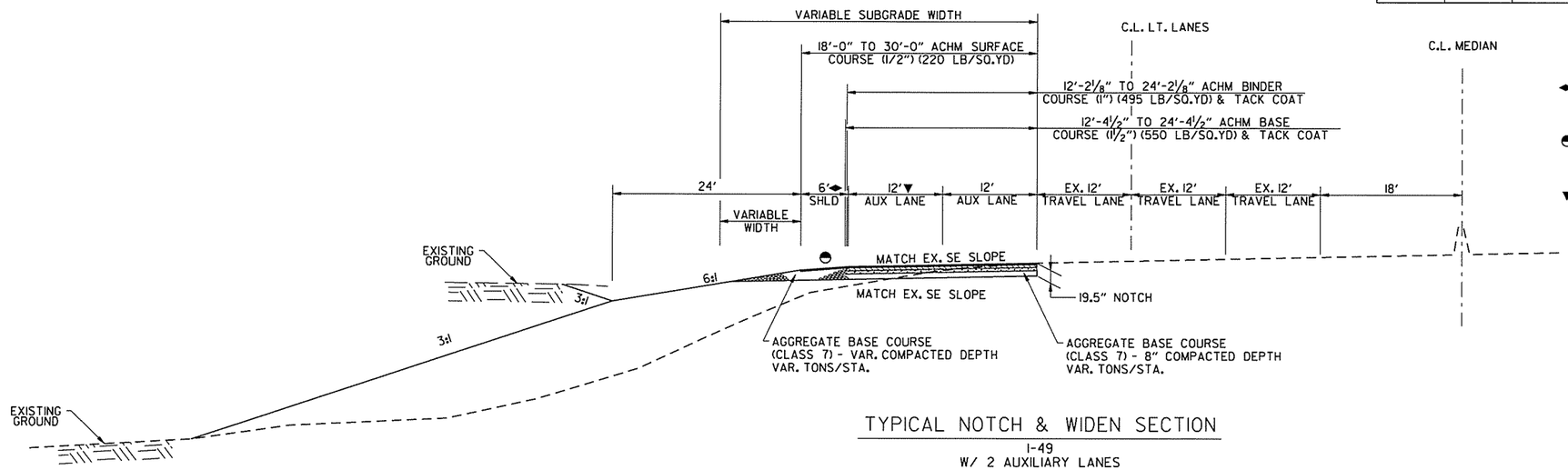
4. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:19:53 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 20 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT




◆ TRANSITION FROM 10' AT STA. 119+52.00 TO 6' AT STA. 120+52.00 LEFT LANES.

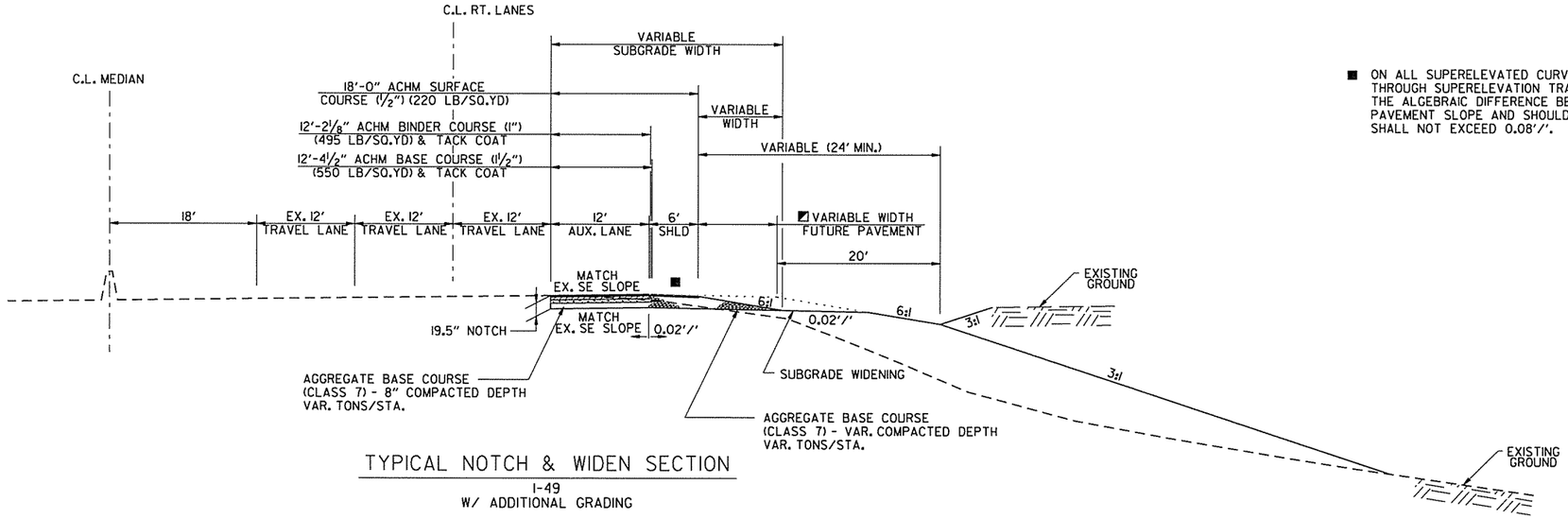
◓ SLOPE = 0.04'/' OR S.E. SLOPE, WHICHEVER IS GREATER

▼ TRANSITION FROM 12' AT STA. 134+52.00 TO 0' AT STA. 137+52.00 LEFT LANES.

## TYPICAL NOTCH & WIDEN SECTION

I-49
W/ 2 AUXILIARY LANES
STA. 114+97.87 TO STA. 140+09.99 LEFT LANES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## TYPICAL NOTCH & WIDEN SECTION

I-49
W/ ADDITIONAL GRADING

STA. 118+09.99 TO STA. 130.09.99 RIGHT LANES

■ ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

■ 13' AT STA. 118+09.99 TO 120+16.50
TRANSITION FROM 13' AT STA. 120+16.50 TO 16' AT STA. 123+09.99
TRANSITION FROM 16' AT STA. 123+09.99 TO 4' AT STA. 129+09.99

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. ANY DAMAGE TO THE PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

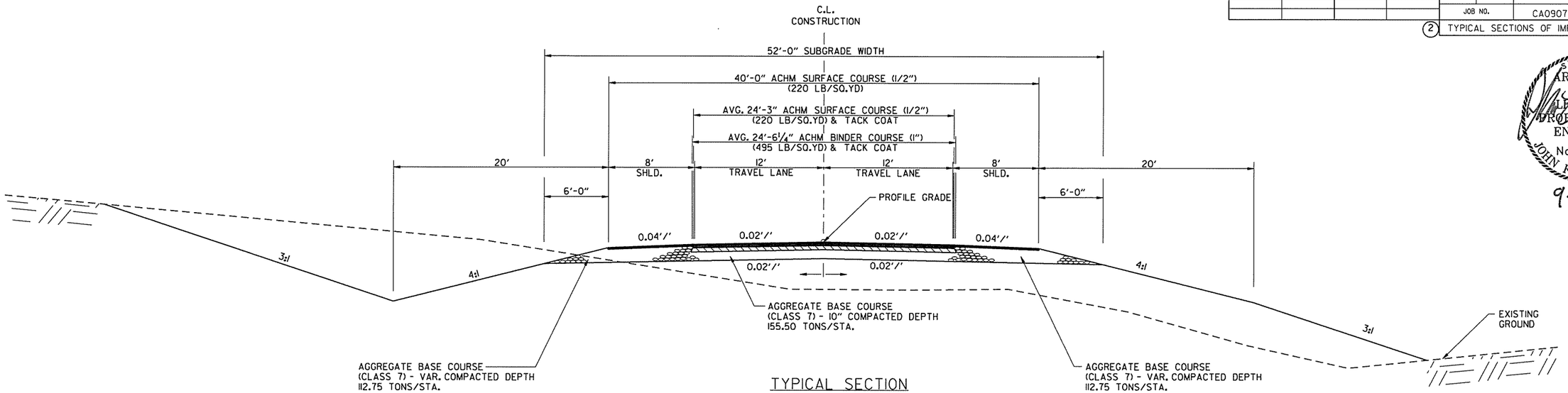
4. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.



sadonoldson 9/4/2014 3:19:53 PM
WORKSPACE: AHTD
L:\2005\059I1680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

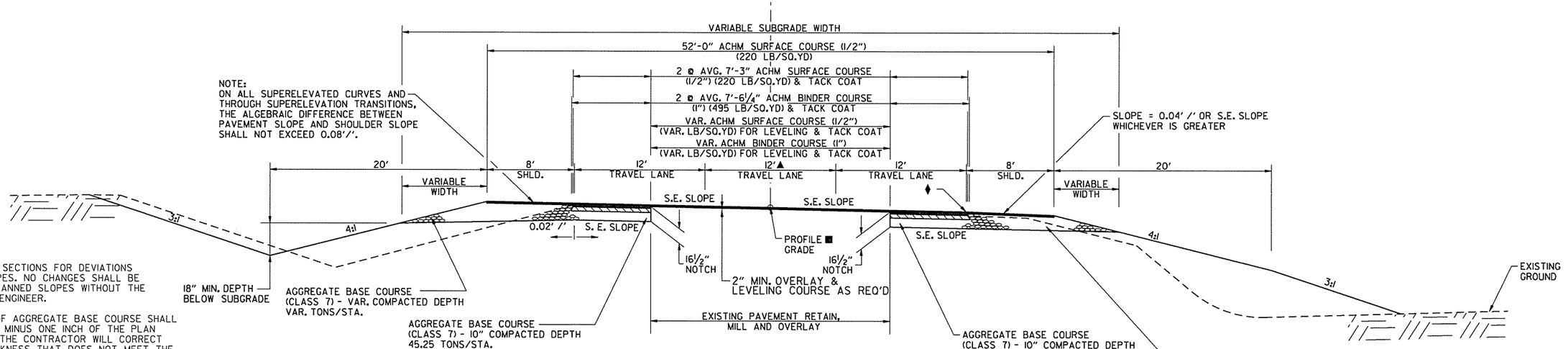
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 21 | 897 |
| | | | | (2) | TYPICAL SECTIONS OF IMPROVEMENT | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## TYPICAL SECTION

HWY. 112
STA. 18+65.00 TO STA. 18+99.90
STA. 21+00.10 TO STA. 21+40.00




## TYPICAL NOTCH AND WIDEN SECTION

HWY. 112 3 LANE
STA. 8+50.00 TO STA. 13+50.00
STA. 28+00.00 TO STA. 31+50.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. ANY DAMAGE TO THE PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

4. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT WILL BE CONSIDERED INCLUDED IN THE VARIOUS PAY ITEMS.

5. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

6. WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

■ PROFILE GRADE WHERE SHOWN ON PLAN & PROFILE SHEETS

▲ TRANSITION FROM 0' AT STA. 8+50 TO 12' AT STA. 11+50
TRANSITION FROM 12' AT STA. 28+50 TO 0' AT STA. 31+50.

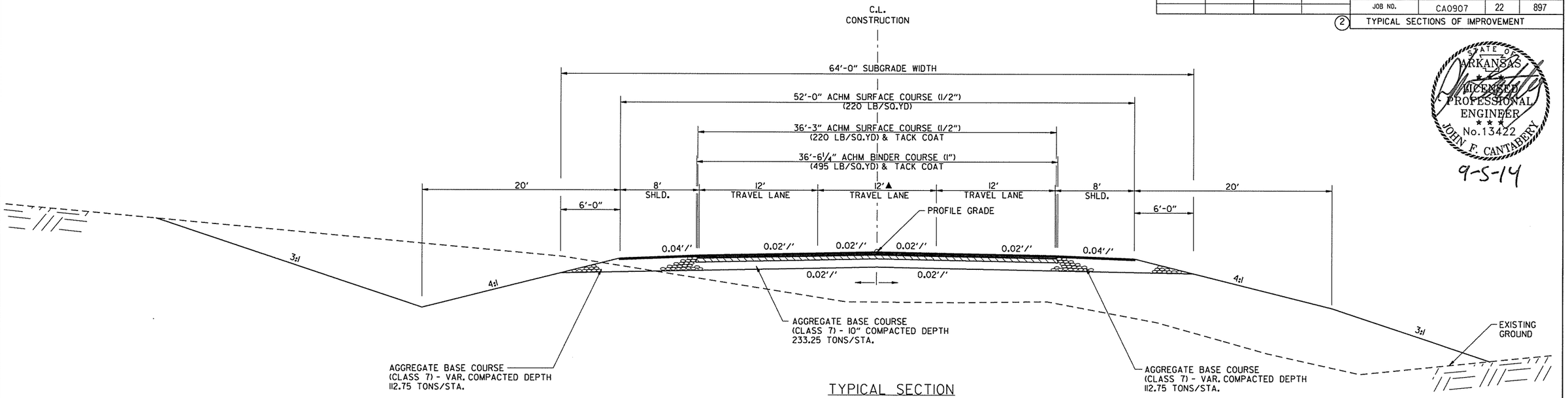
♦ POINT OF SUPERELEVATION ROTATION (0.36' BELOW PROFILE GRADE)

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:19:54 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
L:\2005\0591680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 22 | 897 |
| | | | | (2) | TYPICAL SECTIONS OF IMPROVEMENT | | | |

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

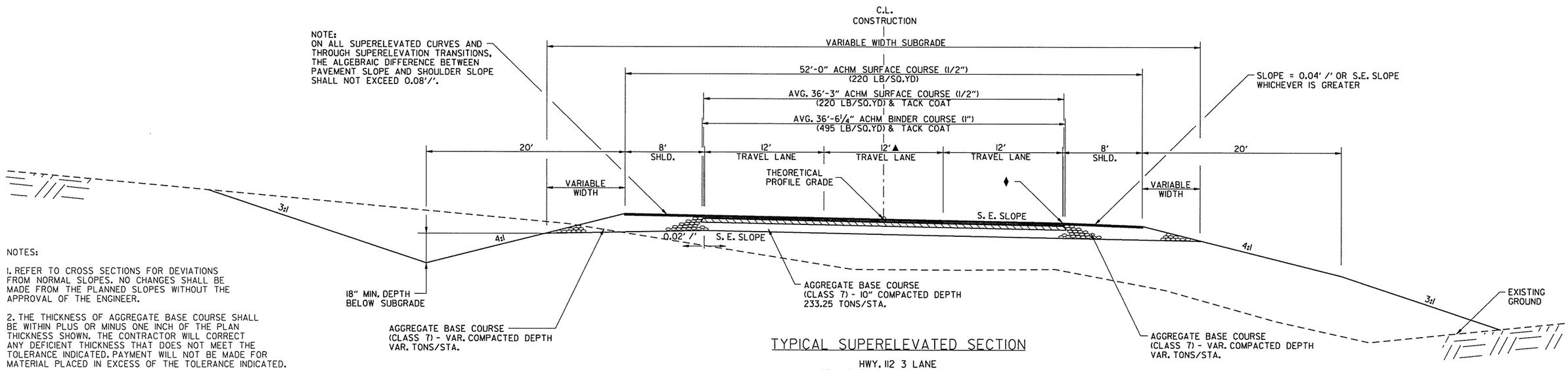



## TYPICAL SECTION

HWY. 112 3 LANE
STA. 17+86.10 TO STA. 18+65.00
STA. 21+40.00 TO STA. 23+43.19

▲ TRANSITIONS FROM 12' AT STA. 15+65 TO 0' AT STA. 18+65. TRANSITIONS FROM 0' AT STA. 21+40 TO 12' AT STA. 24+40.

NOTE:
ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATION TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.




## TYPICAL SUPERELEVATED SECTION

HWY. 112 3 LANE
STA. 13+50.00 TO STA. 17+86.10
STA. 23+43.19 TO STA. 28+00.00

♦ POINT OF SUPERELEVATION ROTATION (0.36' BELOW PROFILE GRADE)

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID, LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

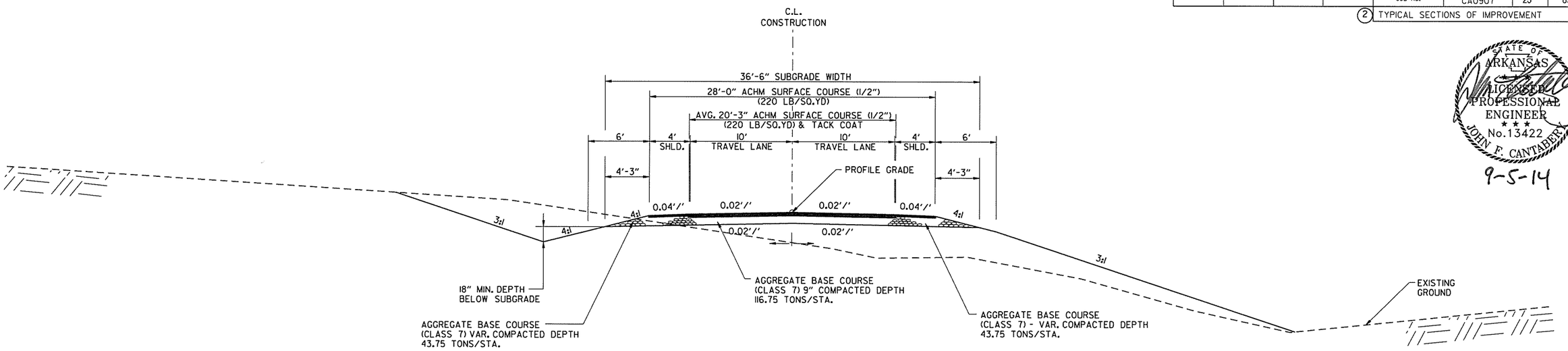
4. WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:19:54 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
L:\2005\05916B0
REVISED DATE:

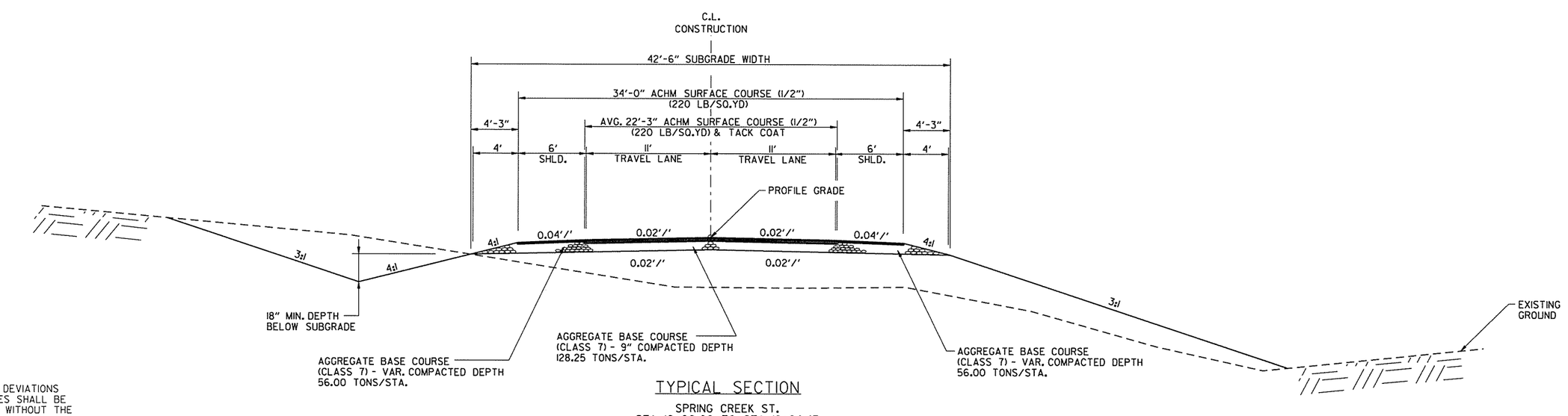
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 23 | 897 |
| | | | | (2) TYPICAL SECTIONS OF IMPROVEMENT | | | | |

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




## TYPICAL SECTION

GRIMSLEY RD.
STA. 14+50.00 TO STA. 19+00.92
STA. 20+99.08 TO STA. 24+50.00




## TYPICAL SECTION

SPRING CREEK ST.
STA. 16+00.00 TO STA. 18+94.43
STA. 21+04.13 TO STA. 25+00.00

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID, LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

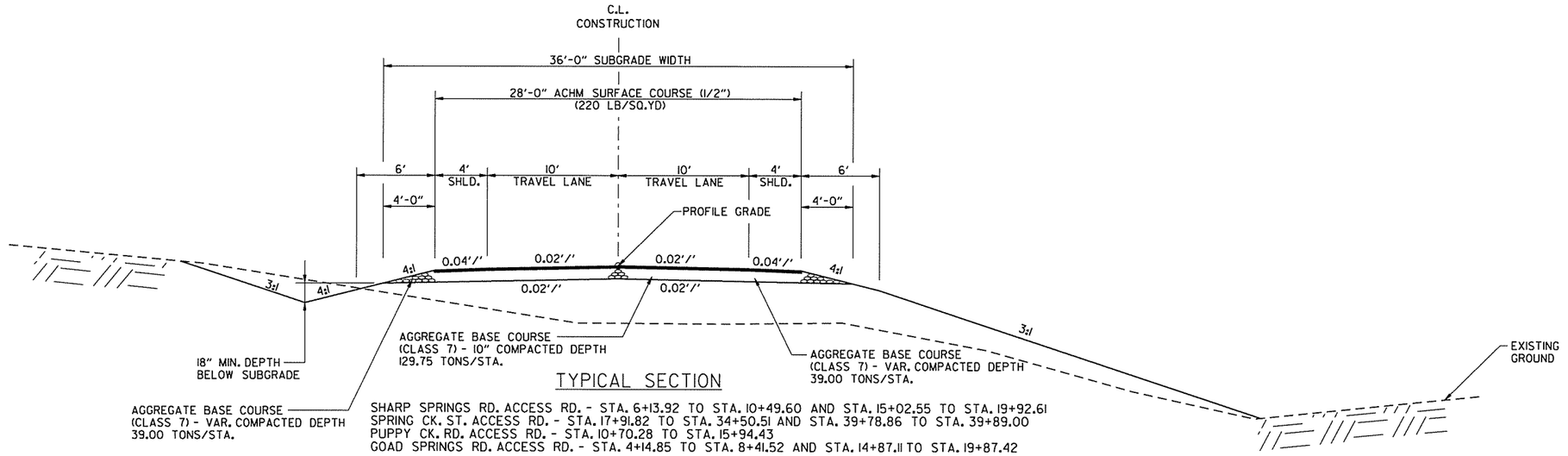
4. WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:49:54 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

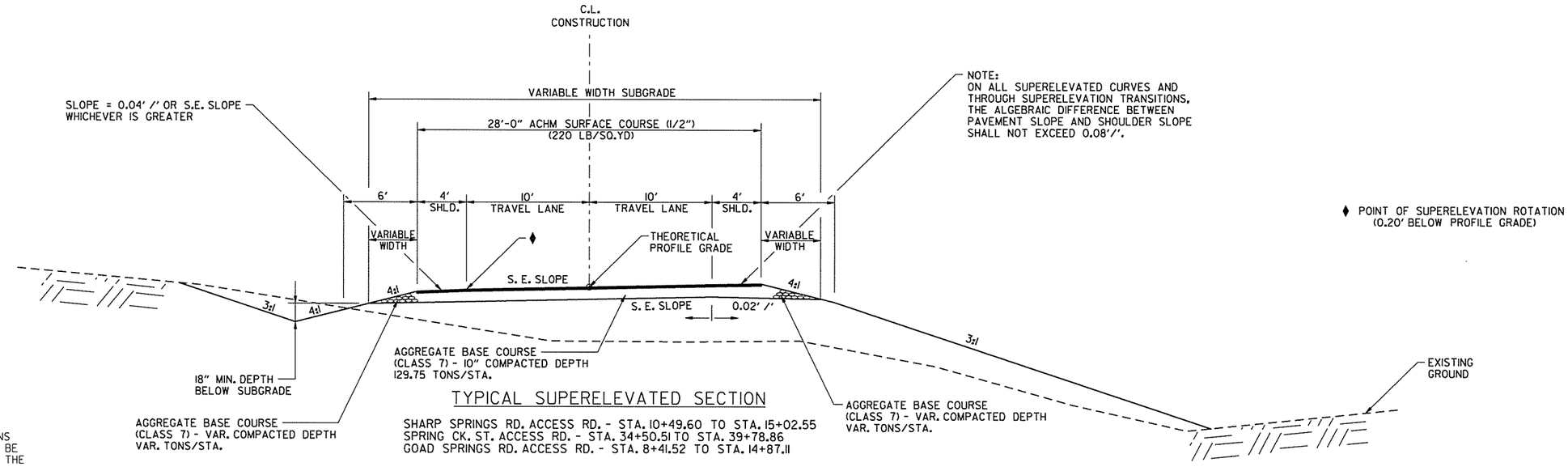
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 24 | 897 |
| | | | | (2) | TYPICAL SECTIONS OF IMPROVEMENT | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




TYPICAL SECTION

SHARP SPRINGS RD. ACCESS RD. - STA. 6+13.92 TO STA. 10+49.60 AND STA. 15+02.55 TO STA. 19+92.61
SPRING CK. ST. ACCESS RD. - STA. 17+91.82 TO STA. 34+50.51 AND STA. 39+78.86 TO STA. 39+89.00
PUPPY CK. RD. ACCESS RD. - STA. 10+70.28 TO STA. 15+94.43
GOAD SPRINGS RD. ACCESS RD. - STA. 4+14.85 TO STA. 8+41.52 AND STA. 14+87.11 TO STA. 19+87.42




TYPICAL SUPERELEVATED SECTION

SHARP SPRINGS RD. ACCESS RD. - STA. 10+49.60 TO STA. 15+02.55
SPRING CK. ST. ACCESS RD. - STA. 34+50.51 TO STA. 39+78.86
GOAD SPRINGS RD. ACCESS RD. - STA. 8+41.52 TO STA. 14+87.11

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

TYPICAL SECTIONS OF IMPROVEMENT

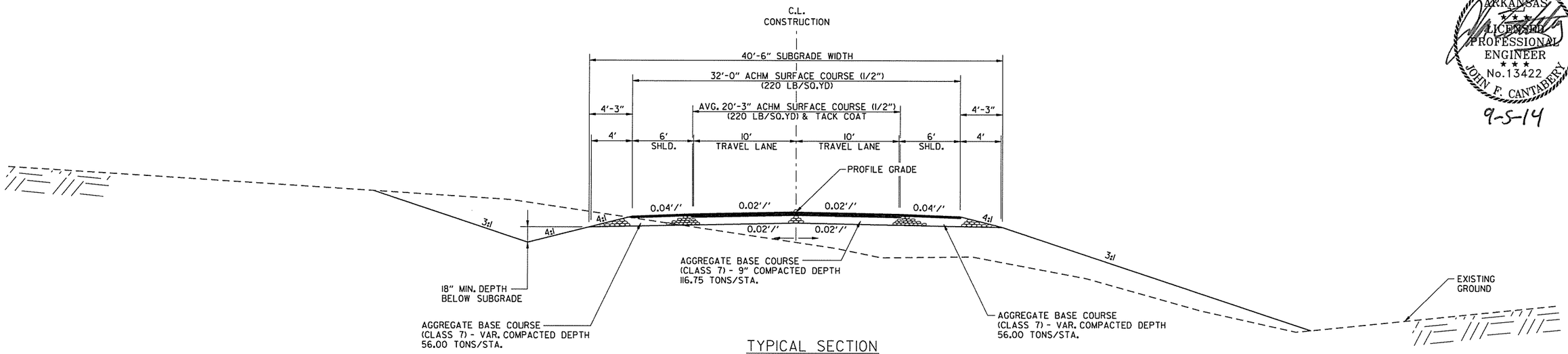
sadonaldson 9/4/2014 3:19:54 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
L:\2005\05911680

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 25 | 897 |

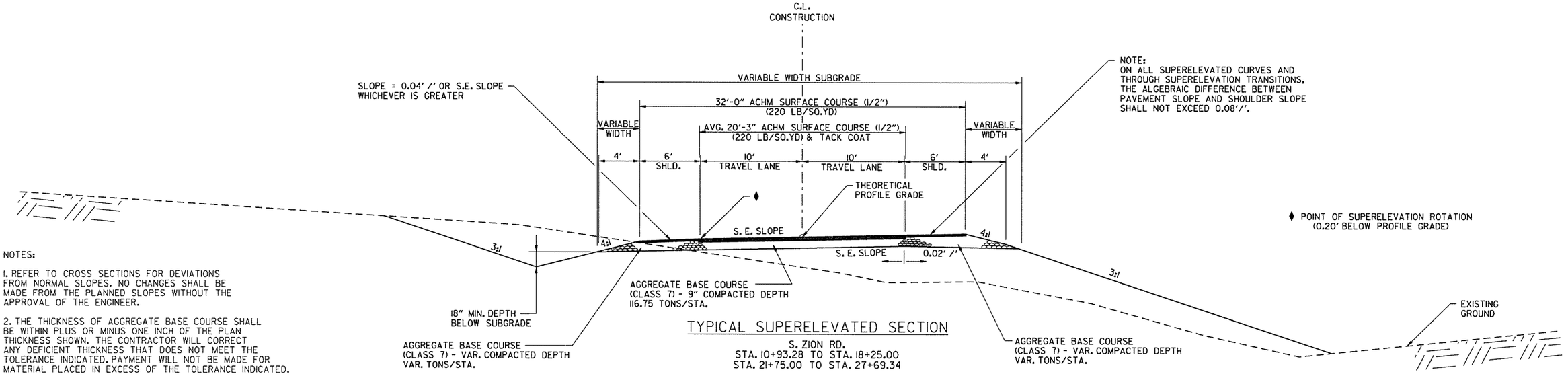
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




## TYPICAL SECTION

S. ZION RD.
STA. 18+25.00 TO STA. 18+79.67
STA. 21+29.33 TO STA. 21+75.00
STA. 27+69.34 TO STA. 29+47.18




## TYPICAL SUPERELEVATED SECTION

S. ZION RD.
STA. 10+93.28 TO STA. 18+25.00
STA. 21+75.00 TO STA. 27+69.34

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID, LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

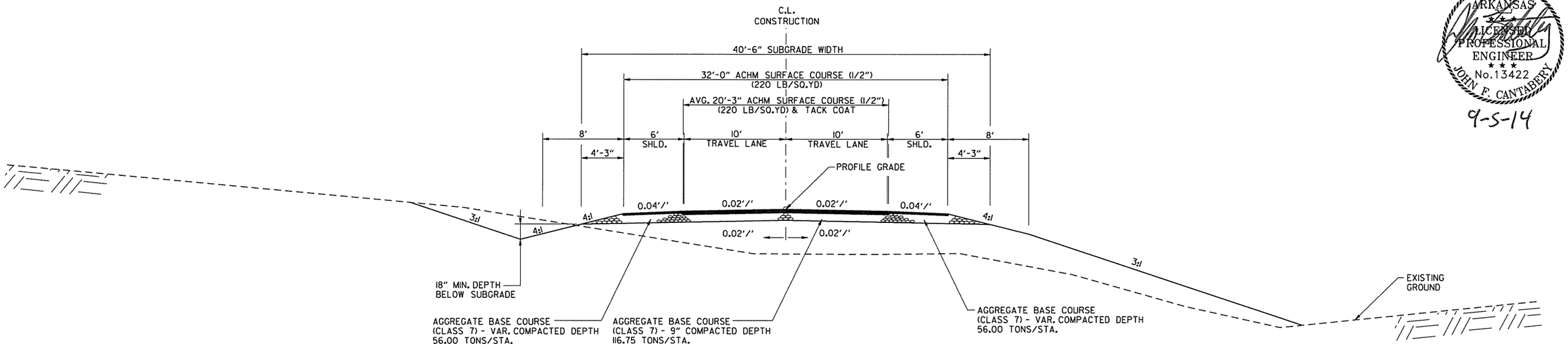
4. WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

TYPICAL SECTIONS OF IMPROVEMENT

sadonaldson 9/4/2014 3:19:54 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL.01.dgn
L:\2005\0591680
REVISED DATE:

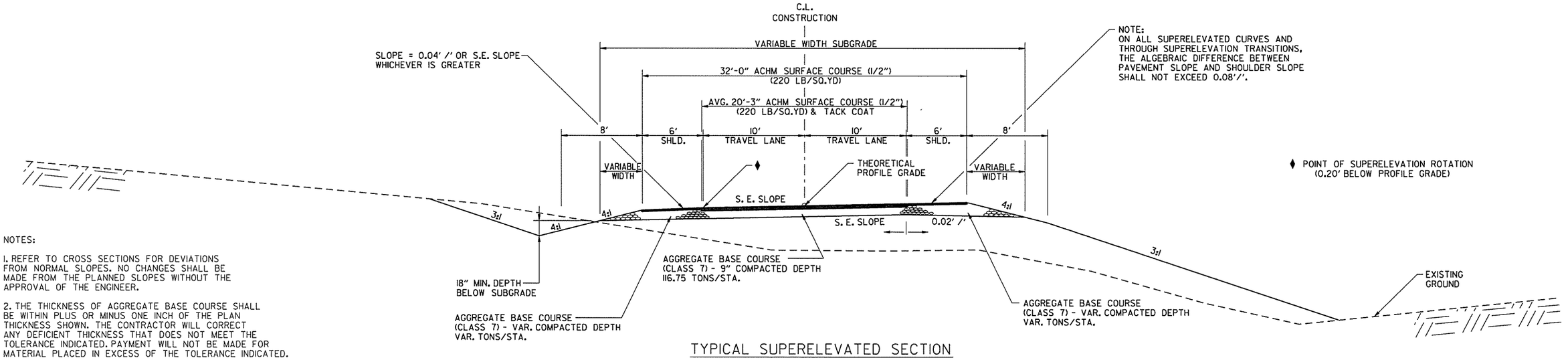
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 26 | 897 |
| | | | | (2) TYPICAL SECTIONS OF IMPROVEMENT | | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## TYPICAL SECTION

PUPPY CREEK RD.
STA. 20+11.04 TO STA. 22+64.48
STA. 29+95.68 TO STA. 35+00.00




## TYPICAL SUPERELEVATED SECTION

PUPPY CREEK RD.
STA. 22+64.48 TO STA. 29+95.68

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID, LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

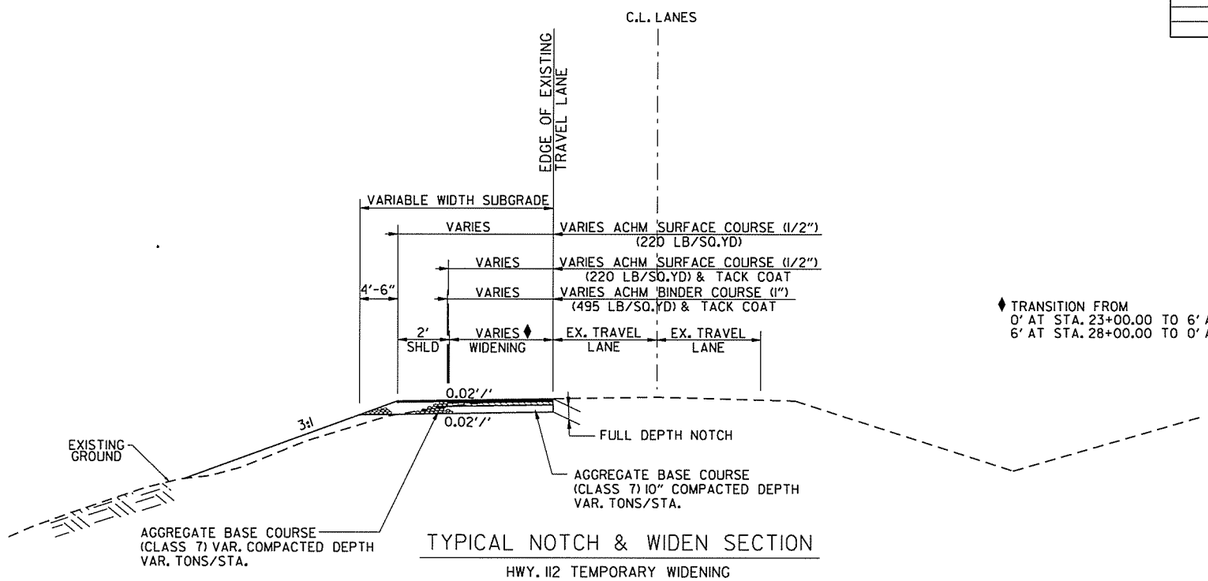
4. WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

TYPICAL SECTIONS OF IMPROVEMENT


sgdonaldson 9/4/2014 3:19:55 PM
WORKSPACE: AHTD
L:\2005\0059\680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 27 | 897 |

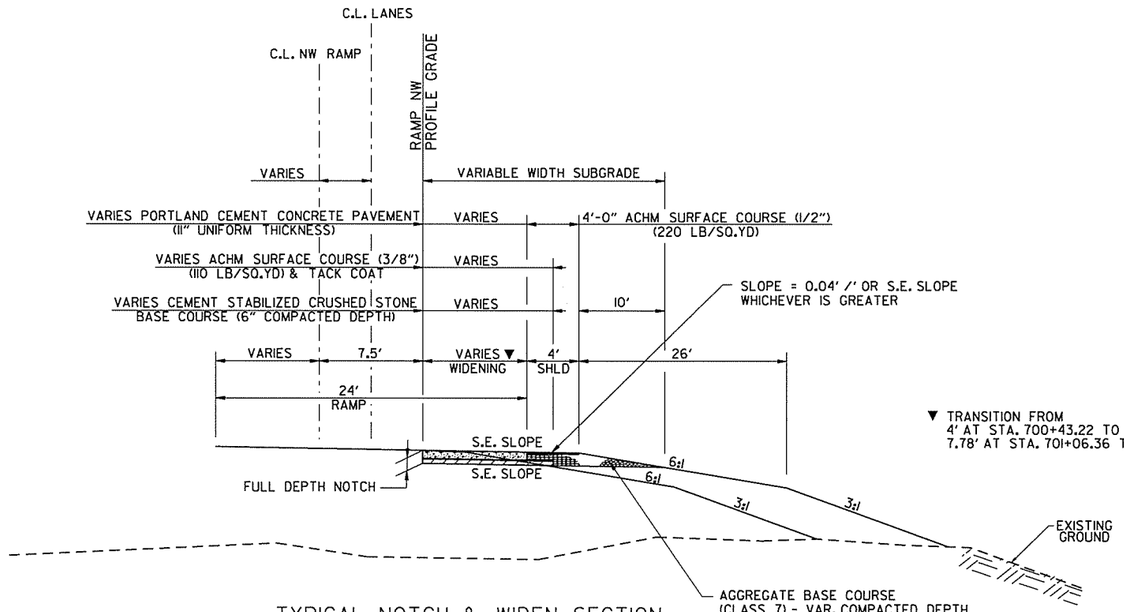
(2) TYPICAL SECTIONS OF IMPROVEMENT




♦ TRANSITION FROM
0' AT STA. 23+00.00 TO 6' AT STA. 26+00.00
6' AT STA. 28+00.00 TO 0' AT STA. 31+00.00

TYPICAL NOTCH & WIDEN SECTION

HWY. 112 TEMPORARY WIDENING




▼ TRANSITION FROM
4' AT STA. 700+43.22 TO 7.78' AT STA. 701+06.36
7.78' AT STA. 701+06.36 TO 0' AT STA. 704+95.13

TYPICAL NOTCH & WIDEN SECTION

RAMP NW WIDENING
(SHOWN IN DIRECTION OF STATIONING)

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

3. PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. ANY DAMAGE TO THE PAVEMENT THAT IS TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

4. THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID, LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

5. WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

TYPICAL SECTIONS OF IMPROVEMENT

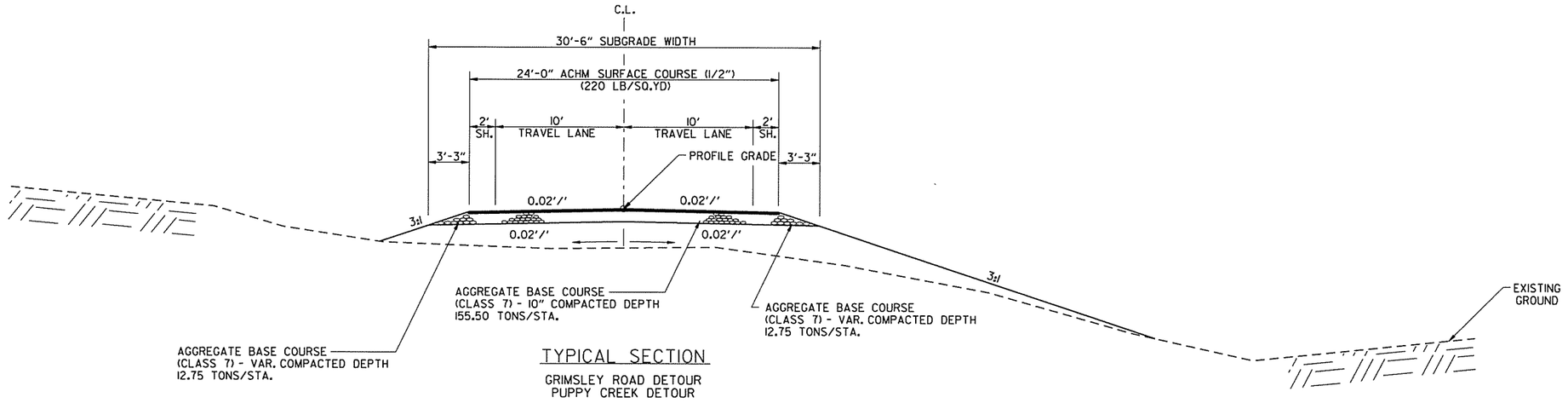
sadonaldson 9/4/2014 3:19:55 PM
WORKSPACE: AHTD
L:\ROADS\OBS\1680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 28 | 897 |

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

9-5-14




TYPICAL SECTION

GRIMSLEY ROAD DETOUR
PUPPY CREEK DETOUR

NOTES:

1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

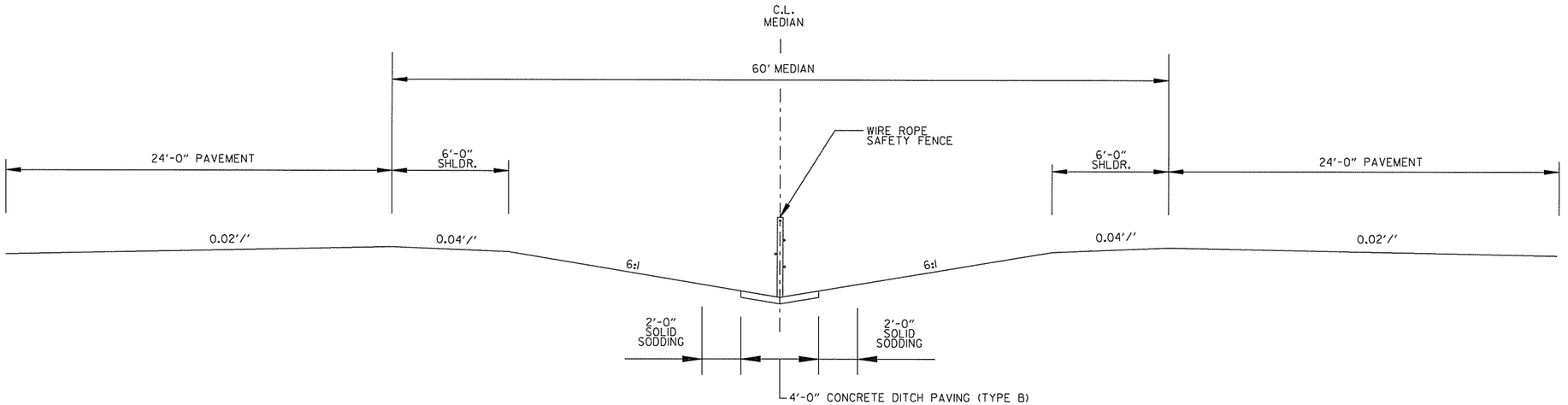
2. THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.



sadonaldson 9/4/2014 3:19:55 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_TS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 29 | 897 |
| | | | | (2) SPECIAL DETAILS | | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14



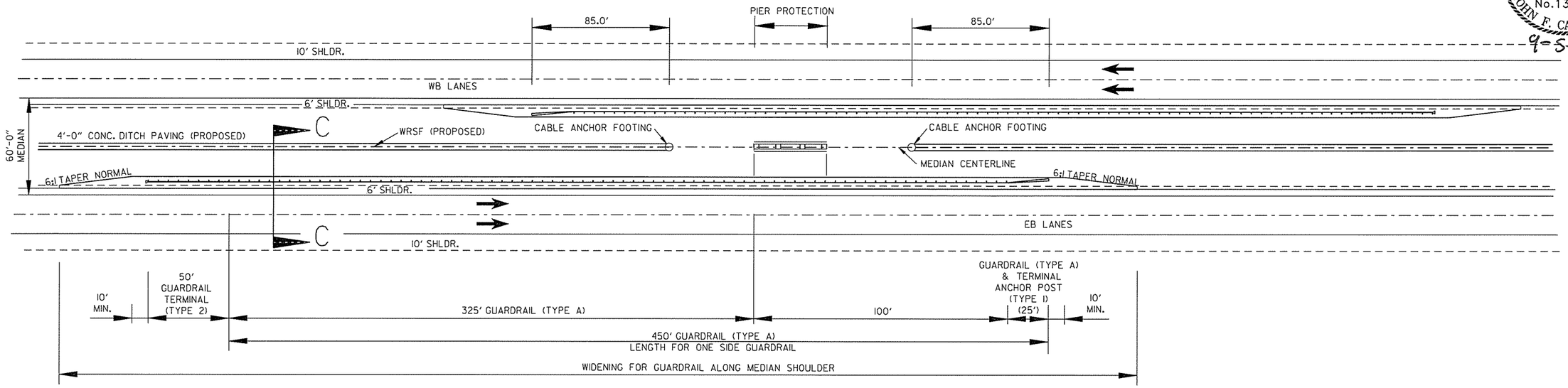

PROPOSED TYPICAL SECTION
WRSF IN BOTTOM OF DITCH

SPECIAL DETAILS

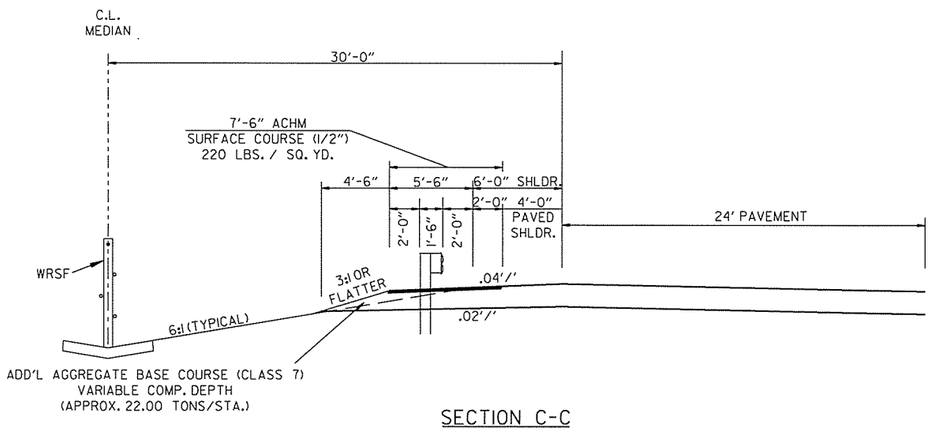
sadonaldson 9/4/2014 3:19:56 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 30 | 897 |
| | | | | (2) SPECIAL DETAILS | | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## DETAIL AT OVERPASSES
### WRSF ON CL MEDIAN
DIMENSIONS ARE TYPICAL BOTH DIRECTIONS




SECTION C-C

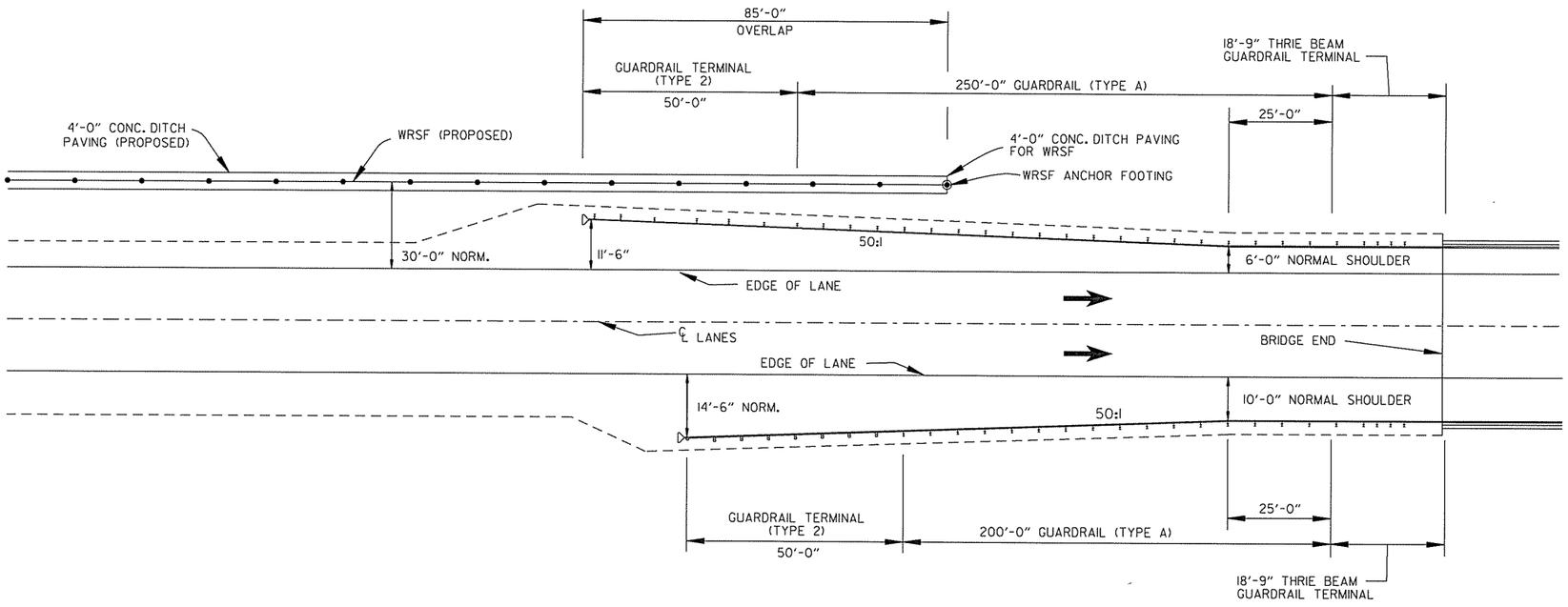


sadonaldson 9/4/2014 3:19:56 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\VRWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 31 | 897 |

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




DETAIL OF WIRE ROPE SAFETY FENCE AT PROPOSED BRIDGE ENDS

sadonaldson 9/4/2014 3:19:56 PM
WORKSPACE: AHTD
L:\2005\D5911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 32 | 897 |

(2) SPECIAL DETAILS

695+00

C.L. MEDIAN

EDGE OF SHOULDER

6'-0"

EDGE OF LANE

CRASH CUSHION

GUARDRAIL TERMINAL (TYPE 2)

C.L. RAMP EN

10'-0"

EDGE OF SHOULDER

SEE BRIDGE DRAWING NO. 55338 FOR DETAILS ON SPECIAL APPROACH GUTTER AND WALL FOR CONNECTION TO CRASH CUSHION.

4'-0"

695+00

EDGE OF LANE

EDGE OF SHOULDER

STANDARD GUARDRAIL INSTALLATION

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

12-11-14

CONCRETE BARRIER WALL AT RAMP EN BRIDGE END

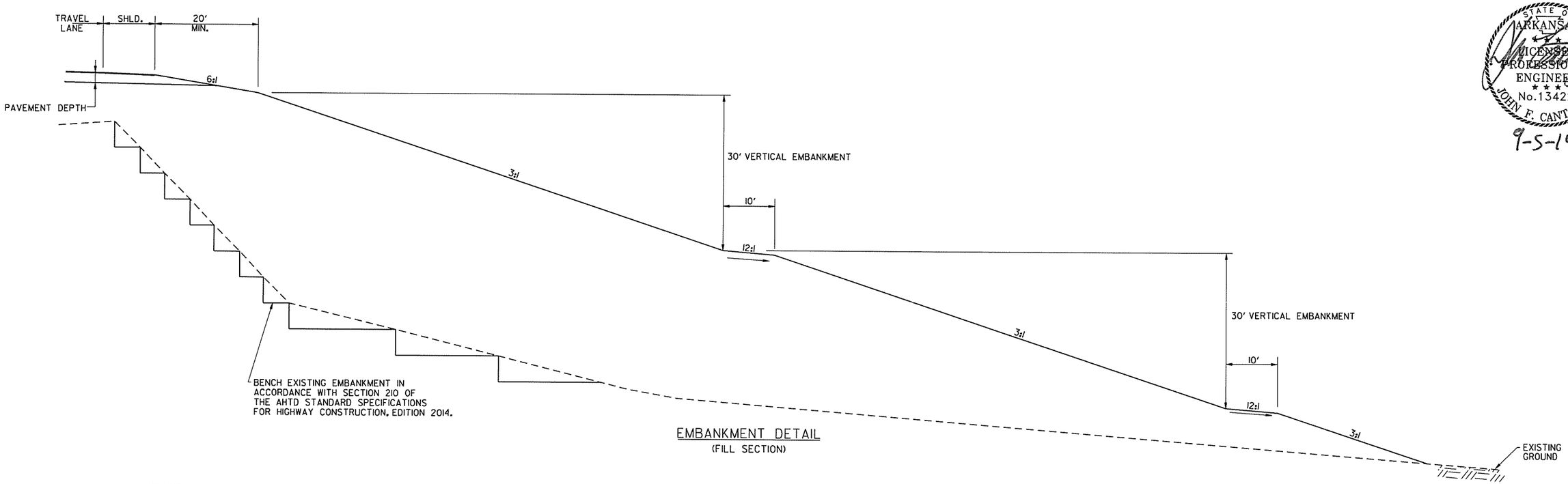
NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-8A, GR-9, GR-9A, GR-10, & GR-10A FOR ADDITIONAL INFORMATION.

SPECIAL DETAILS

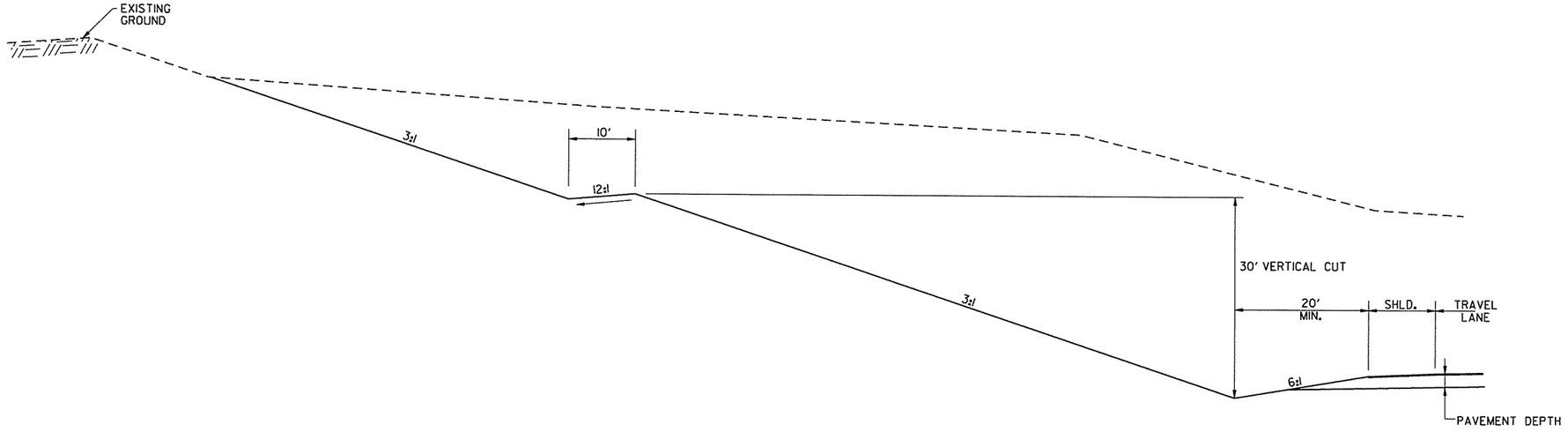
JFCantabery 12/11/2014 2:54:38 PM
WORKSPACE: AHTD
\\gorrefmc\ultprojects\2005\059680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 33 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14



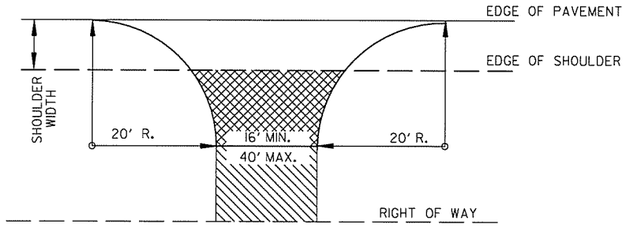

EMBANKMENT DETAIL
(FILL SECTION)



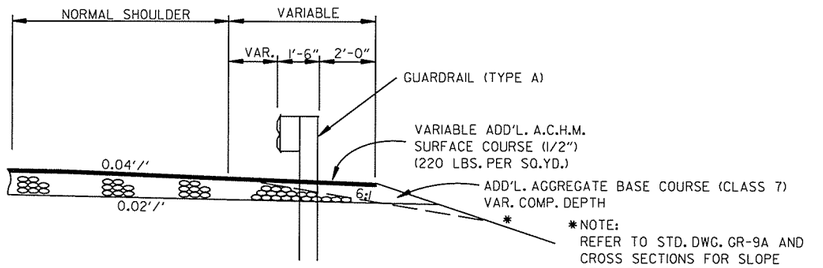

EMBANKMENT DETAIL
(CUT SECTION)

sadonaldson 9/4/2014 3:19:57 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

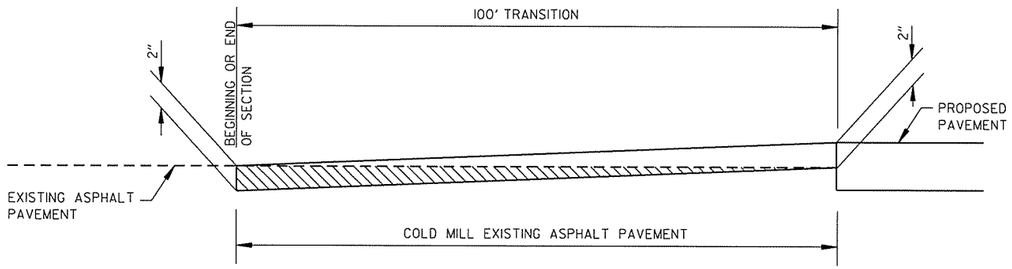
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 34 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |



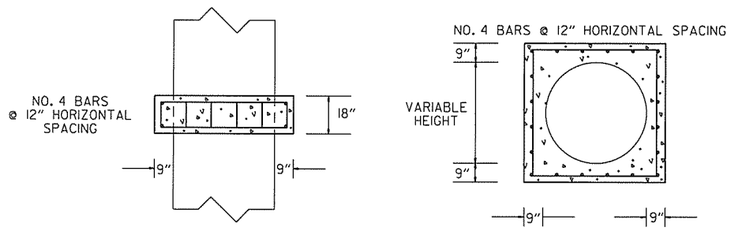

## DETAIL FOR DRIVEWAY TURNOUTS




## WIDENING FOR GUARDRAIL

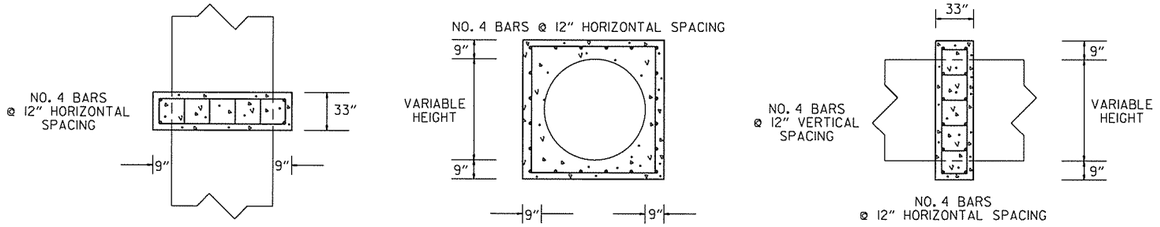



## DETAIL FOR TRANSITIONS



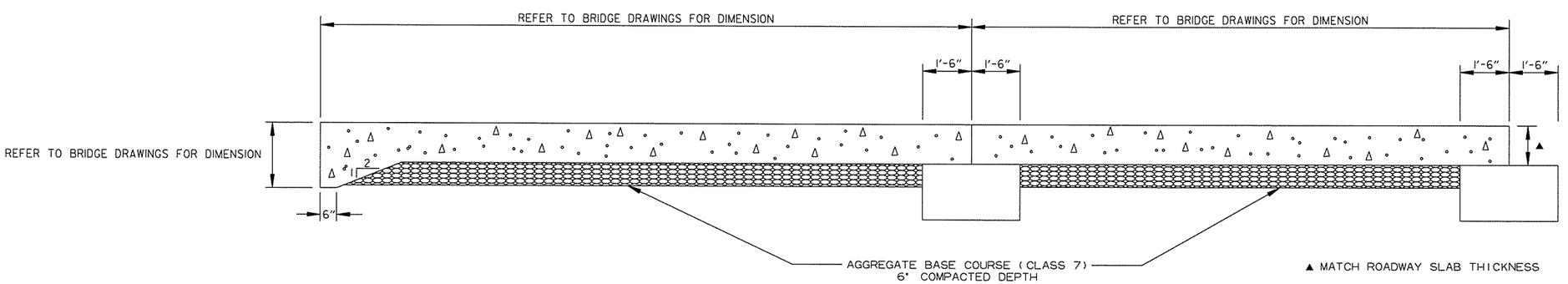

NOTE: PIPE COLLAR TO BE UTILIZED AS APPROVED BY THE ENGINEER.
MIN. 3" COVER

## PIPE EXTENSION
## REINFORCED CONCRETE COLLAR DETAIL




NOTE: PIPE COLLAR TO BE UTILIZED AS APPROVED BY THE ENGINEER.
MIN. 3" COVER

## PIPE EXTENSION
## REINFORCED CONCRETE COLLAR DETAIL
## (TYPE SPECIAL)



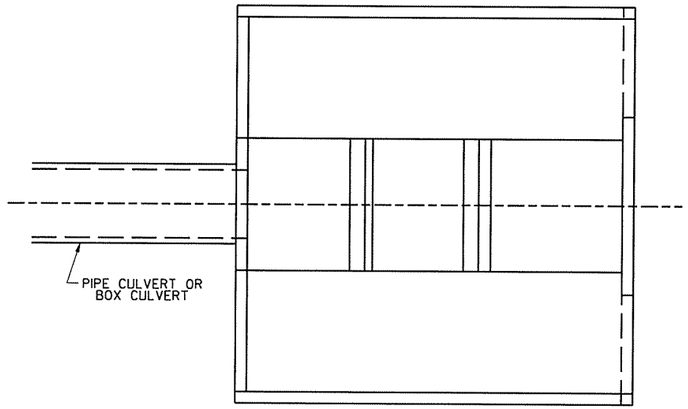

## SECTION OF APPROACH SLAB

SPECIAL DETAILS

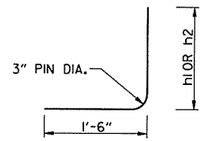
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

cggervosinl 9/5/2014 11:29:45 AM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 35 | 897 |
| | | | | (2) SPECIAL DETAILS | | | | |




PLAN VIEW




DIMENSIONS ARE
OUT TO OUT

DETAIL OF BENT BAR
(SEE NOTE #3)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

9-5-14

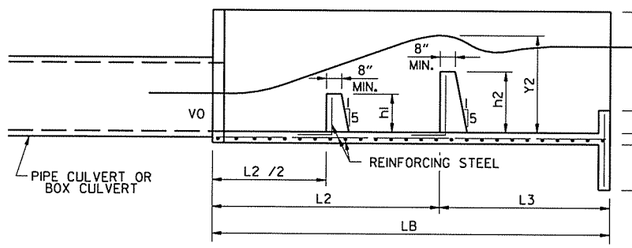
CONSTRUCTION NOTES:

1. ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND APPLICABLE SPECIAL PROVISIONS WILL BE ADHERED TO.

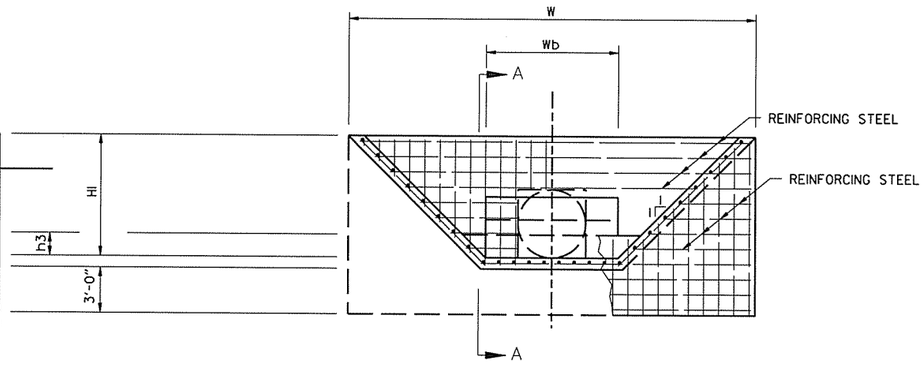
2. CONCRETE THICKNESS IN ALL BASINS SHOULD BE A MINIMUM OF 6" IN ALL FLOOR SLABS, EXTERIOR WALLS, WINGWALLS, TOEWALLS, AND APRONS OTHERWISE SHOWN ON DETAILS.

3. ALL REINFORCING STEEL TO BE #4 BARS SPACED ON 8" CENTERS. THE SPACING SHOULD BEGIN AT 3" FROM EITHER SIDE (OR END) OF THE STRUCTURE. IF CONTINUOUS BARS CANNOT BE USED, A MINIMUM 1'-6" LAP LENGTH MUST BE PROVIDED AT THE BAR ENDS. ALL REINFORCING STEEL TO BE DEFORMED BARS OF INTERMEDIATE OR HARD GRADE. ALL REINFORCING STEEL SHOULD BE IN PLACE BEFORE THE CONCRETE IS PLACED. ALL BAFFEL ELEMENTS AND IMPACT WALLS IN THESE BASINS SHOULD HAVE REINFORCEMENT SINCE THEY WILL BE SUBJECT TO IMPACT WITH LARGE DEBRIS AND A CONCENTRATED JET OF WATER TRAVELING AT A HIGH VELOCITY. (SEE DIAGRAM)

4. ALL CONCRETE TO BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER. A MINIMUM OF 2" CONCRETE COVER SHALL BE PROVIDED FOR ALL REINFORCING STEEL. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO SECTION 802 OF THE STANDARD SPECIFICATIONS.




SECTION A-A




END VIEW (CUTAWAY)

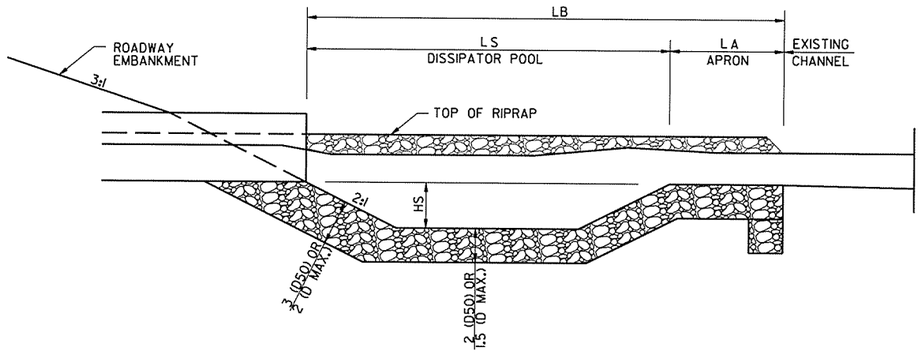
CONTRA-COSTA ENERGY DISSIPATORS

**CONTRA-COSTA ENERGY DISSIPATORS**

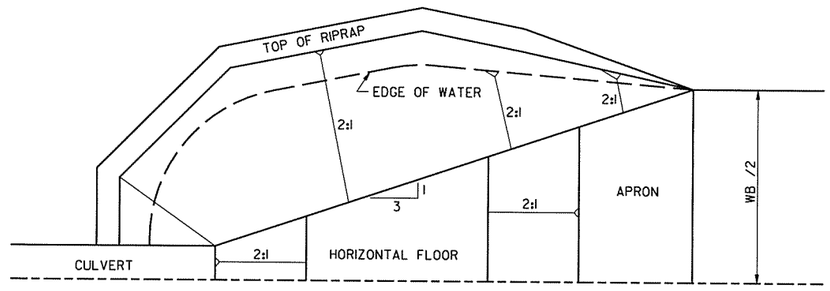
| STATION | CULVERT SIZE | Q (cfs) | D (ft.) | V0 (fps) | Wb | h2 | L2 | h1 | L3 | Y2 | h3 | H1 | LB | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 480+93 | 42" | 82 | 3.5 | 21.99 | 3'-6" | 3'-0" | 10'-6" | 1'-6" | 16'-9" | 6.14' | 6" | 6'-3" | 27'-3" | 16'-0" |
| 616+85 | 36" | 47 | 3 | 18.2 | 3'-0" | 2'-6" | 8'-0" | 1'-3" | 12'-6" | 4.59' | 6" | 4'-9" | 20'-6" | 12'-6" |
| RAMP SE 712+31 | 8' X 4' | 240 | 4 | 21.36 | 8'-0" | 3'-0" | 10'-3" | 1'-6" | 16'-6" | 6.02' | 6" | 6'-3" | 26'-9" | 20'-6" |

sadonaldson 9/4/2014 4:16:52 PM
WORKSPACE: AHTD
L:\2005\059I68D - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 36 | 897 |
| | | | | (2) SPECIAL DETAILS | | | | |



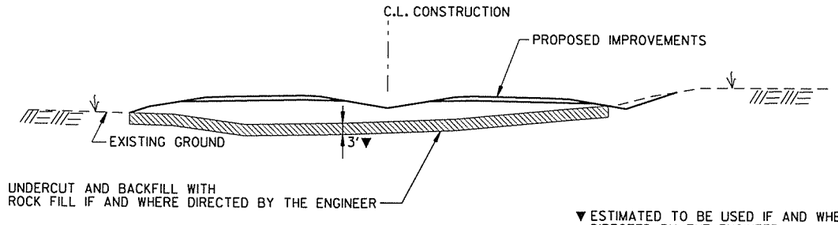

PROFILE OF RIPRAP BASIN




HALF PLAN OF RIPRAP BASIN

| RIPRAP BASIN | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| STATION | ROCK SIZE | | BASIN | | | | | APRON | POOL | |
| | D50 (ft.) | D MAX (ft.) | THICK (ft.) | D FLOW (ft.) | VEL. (f.p.s.) | LB LENGTH (ft.) | WB WIDTH (ft.) | LA LENGTH (ft.) | LS LENGTH (ft.) | HS DEPTH (ft.) |
| 519+47 | 0.8 | 1 | 1.5 | 1.342 | 18.05 | 27 | 22 | 9 | 18 | 1.8 |
| 628+84 | 0.8 | 1 | 1.5 | 1.434 | 17.63 | 28 | 23 | 9 | 19 | 1.9 |
| 665+53 | 0.7 | 1 | 1.4 | 1.915 | 14.97 | 29 | 23 | 10 | 19 | 1.9 |
| 685+00 | 0.4 | 1 | 0.8 | 0.989 | 13.26 | 20 | 18 | 5 | 15 | 0.8 |
| 692+23 | 1.1 | 1.5 | 2.2 | 2.001 | 20.52 | 38 | 31 | 13 | 25 | 2.5 |
| 112 RAMP 3 507+70 | 1.2 | 1.5 | 2.25 | 2.007 | 23.32 | 43 | 34 | 14 | 29 | 2.9 |
| 112 RAMP 4 496+65 | 1 | 1 | 1.5 | 2.208 | 19.6 | 40 | 32 | 13 | 27 | 2.7 |
| ZION RD. 17+91 | 0.5 | 1 | 1 | 1.05 | 14.16 | 21 | 17 | 7 | 14 | 1.4 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




▼ ESTIMATED TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

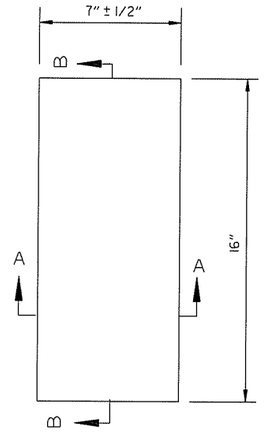
DETAIL OF UNDERCUT

| UNDERCUT | | |
|---|---|---|
| LOCATION | STA. | STA. |
| MAIN LANES | 496+00 | |
| MAIN LANES | 504+50 | 505+50 |
| MAIN LANES | 509+00 | |
| MAIN LANES | 512+00 | |
| MAIN LANES | 519+50 | 520+00 |
| MAIN LANES | 666+00 | |
| HWY. 112 RAMP 1 | 495+00 | |
| HWY. 112 RAMP 1 | 497+00 | 498+50 |
| HWY. 112 RAMP 2 | 508+00 | 510+00 |
| HWY. 112 RAMP 3 | 508+50 | 509+00 |
| RAMP EN | 708+50 | 710+50 |
| RAMP SW | 716+50 | 717+50 |

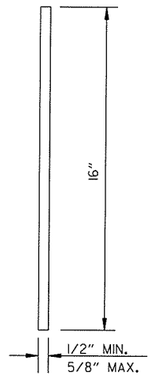


sadonaldson 9/4/2014 4:17:27 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

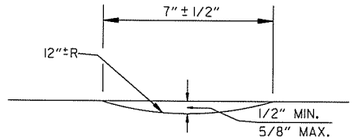
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 37 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |




PLAN

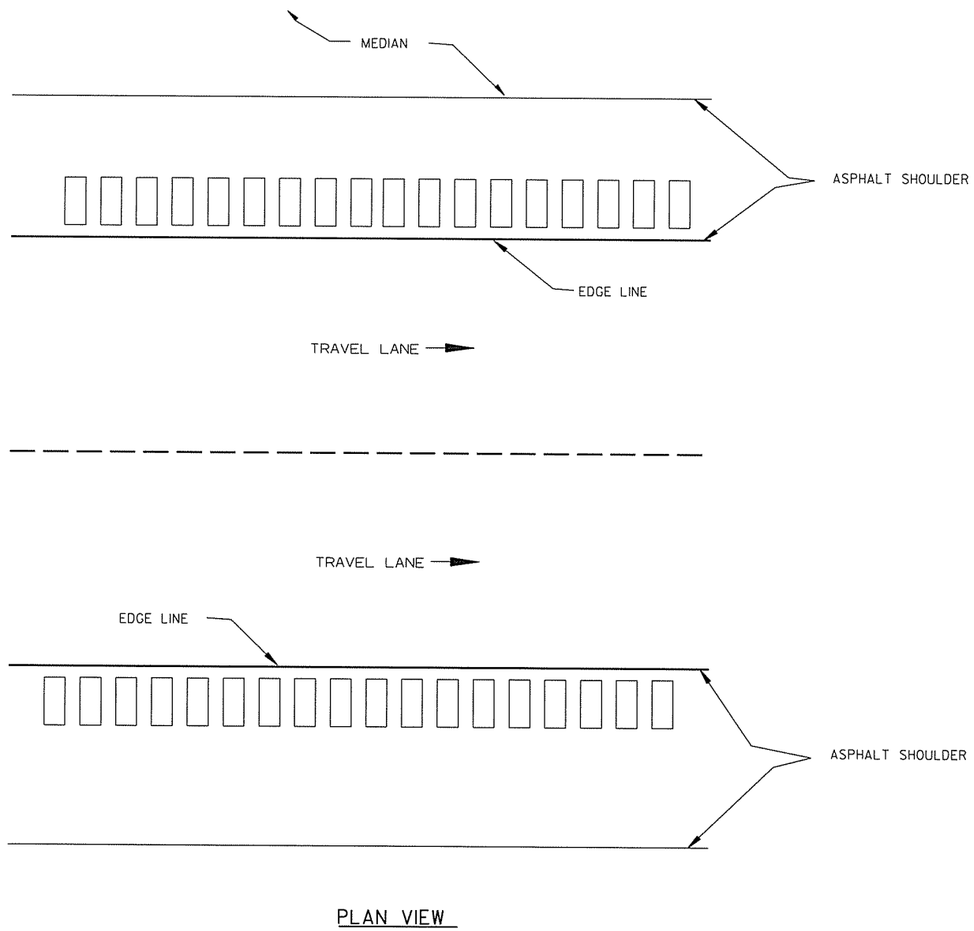



SECTION B-B

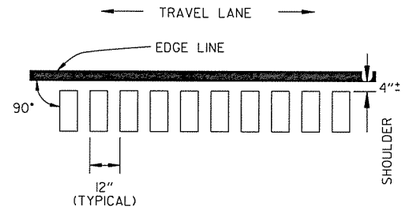



SECTION A-A

DETAILS OF RUMBLE STRIPS




PLAN VIEW




LOCATION PLAN OF RUMBLE STRIPS

LEFT OR RIGHT SHOULDER

NOTES:

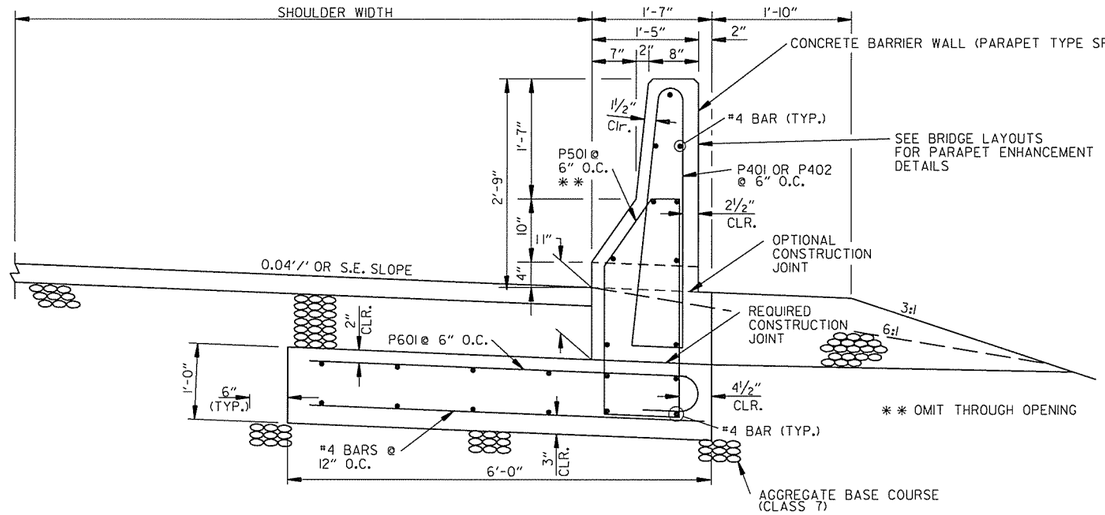
1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE AS WELL AS TO AVOID EXISTING LONGITUDINAL JOINTS.
2. THE 1/2" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

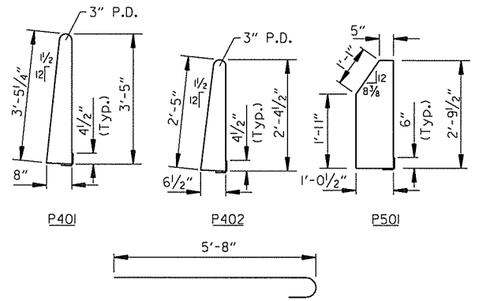
sadonaldson 9/4/2014 3:19:58 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

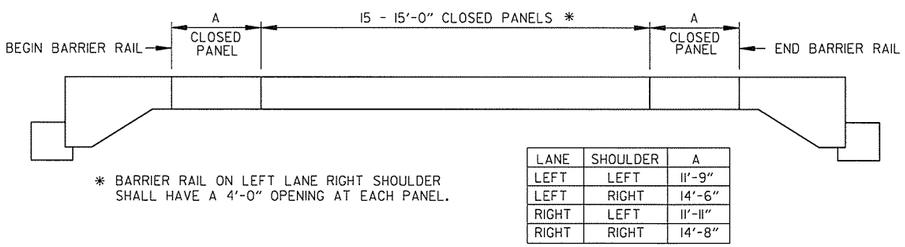
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 38 | 897 |

(2) SPECIAL DETAILS




WIDENING FOR CONCRETE BARRIER WALL
(PARAPET TYPE SPECIAL)

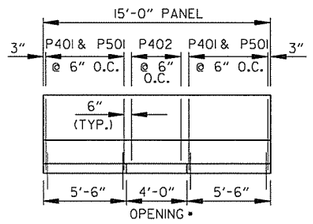


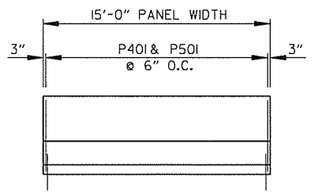

* BARRIER RAIL ON LEFT LANE RIGHT SHOULDER SHALL HAVE A 4'-0" OPENING AT EACH PANEL.

| LANE | SHOULDER | A |
|---|---|---|
| LEFT | LEFT | 11'-9" |
| LEFT | RIGHT | 14'-6" |
| RIGHT | LEFT | 11'-11" |
| RIGHT | RIGHT | 14'-8" |

BARRIER WALL - MAIN LANE ELEVATION VIEW




OPEN BARRIER RAIL
(TYPE SPECIAL)



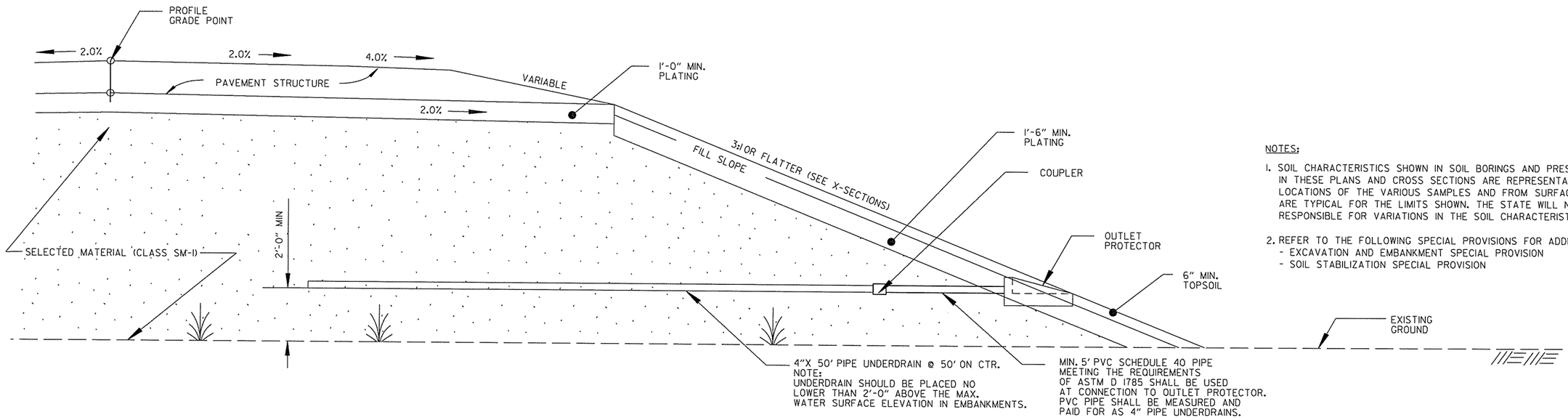

CLOSED BARRIER RAIL
(TYPE SPECIAL)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
12-11-14

JFCantabery
12/11/2014 5:19:39 PM
WORKSPACE: AHTD
\\garverfno\IProjects\2005\059I680 - AHTD Springdale Byposs\Drawings\RWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 39 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




## HALF-SECTION OF BRIDGE END EMBANKMENTS
## (SEE SPECIAL PROVISION - EXCAVATION AND EMBANKMENT)

NOTES:
1. ALL EMBANKMENTS CONSTRUCTED OUT OF GRANULAR MATERIAL SHALL BE PLATED AS SHOWN.
2. THIS DETAIL SHALL BE USED FOR ALL EMBANKMENTS CONSTRUCTED OUT OF GRANULAR MATERIAL, HOWEVER, AT LOCATIONS OTHER THAN THOSE SHOWN ABOVE OR ON THE PLANS AND CONSTRUCTED WITH GRANULAR MATERIAL, INTERNAL DRAINAGE SHALL BE PROVIDED AS SHOWN AT NO COST TO THE DEPARTMENT AS DIRECTED BY THE ENGINEER.

NOTES:

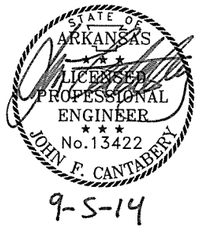
1. SOIL CHARACTERISTICS SHOWN IN SOIL BORINGS AND PRESENTED IN THESE PLANS AND CROSS SECTIONS ARE REPRESENTATIVE AT THE LOCATIONS OF THE VARIOUS SAMPLES AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS.
2. REFER TO THE FOLLOWING SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION
   - EXCAVATION AND EMBANKMENT SPECIAL PROVISION
   - SOIL STABILIZATION SPECIAL PROVISION



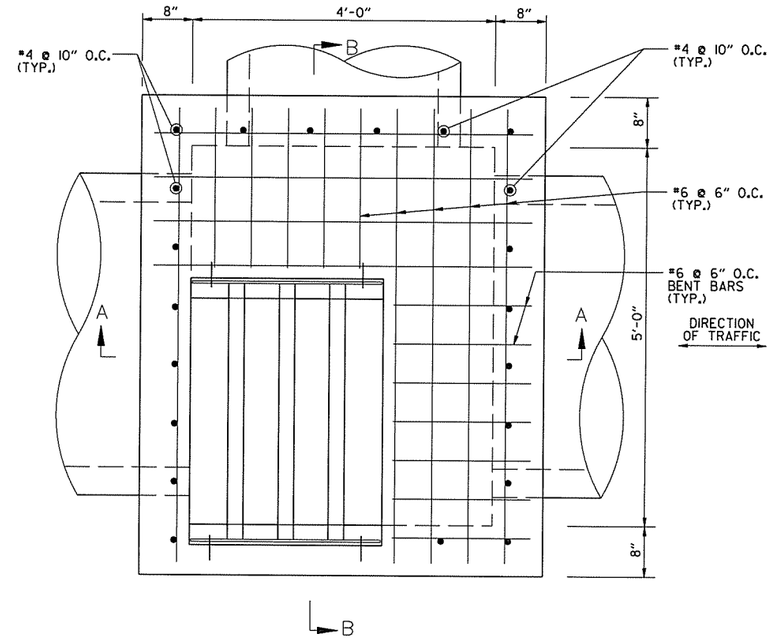
sadonaldson 9/4/2014 3:19:58 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 40 | 897 |

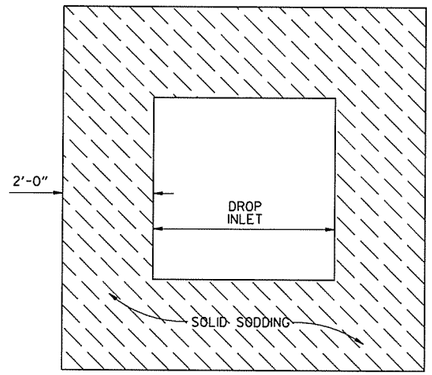
(2) SPECIAL DETAILS




9-5-14

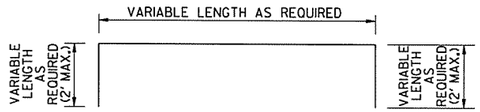



PLAN

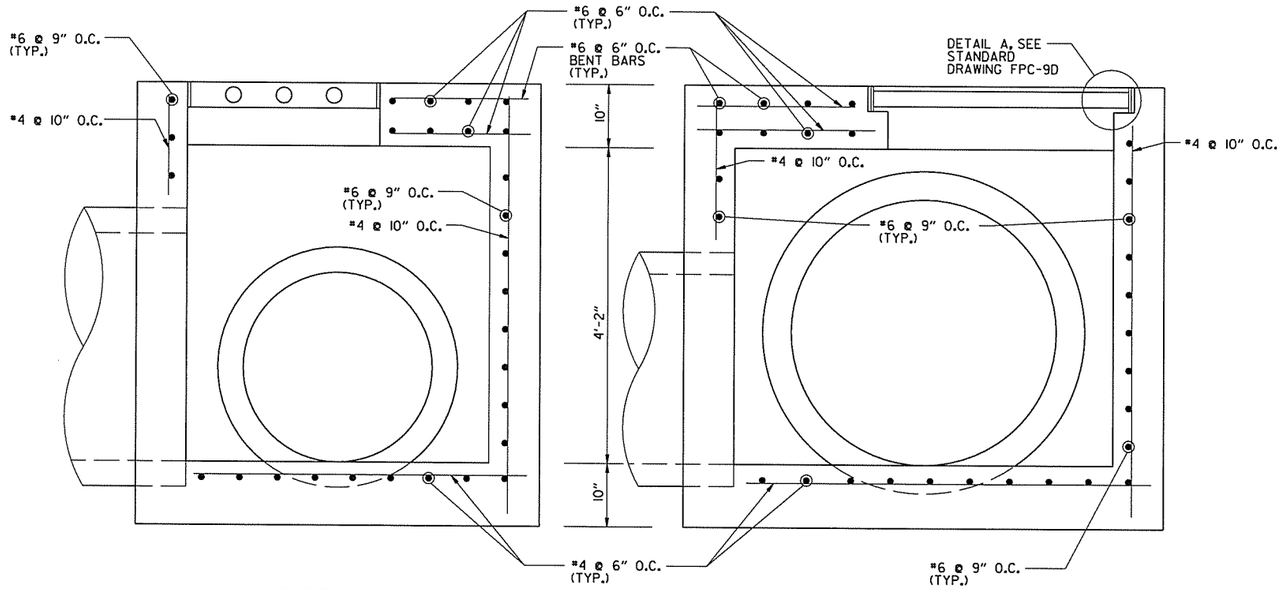



PLAN

DETAIL OF SOLID SODDING
AROUND DROP INLET




#6 BENT BAR
BENDING DIAGRAM



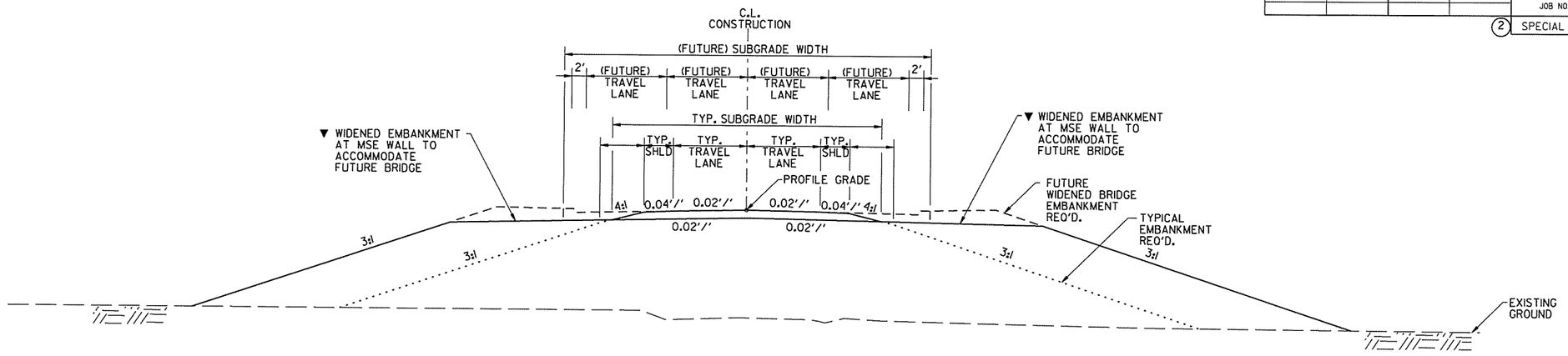

TYPE RM SPECIAL DROP INLET
STA. 718+00
(4' X 5' X H=5'-0")

NOTE:
SEE STANDARD DRAWING FPC-9D FOR GRATE DETAILS AND DIMENSIONS FOR INSTALLATION, DETAIL OF STEP FOR DROP INLET & PLACEMENT OF STEPS, DETAIL A & GENERAL NOTES.



sadonaldson 9/4/2014 3:19:58 PM
WORKSPACE: AHTD
L:\2005\05916BO - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 41 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |



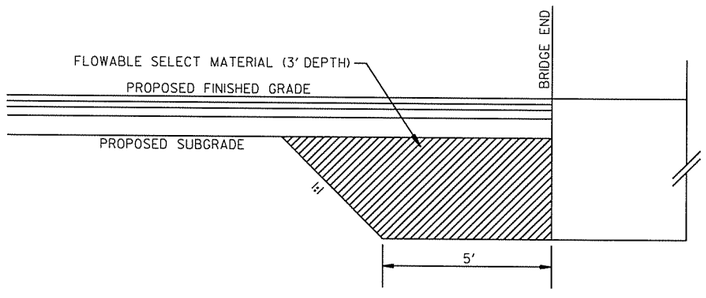

## GRADING DETAIL AT SELECT OVERPASS BRIDGE ENDS

FOR WIDENED MSE WALL TO ACCOMMODATE
FUTURE BRIDGE WIDENING

HWY. 112
GRIMSLEY ROAD
S. ZION ROAD
SPRING CREEK STREET

▼ TRANSITION EMBANKMENT FROM WIDENED SECTION AT THE END OF THE MSE WALL TO NORMAL SECTION OVER 50'.

NOTE:
SEE CROSS SECTIONS FOR SPECIFIC DETAILS OF WIDENED EMBANKMENT.




## FLOWABLE SELECT MATERIAL AT PROPOSED BRIDGE ENDS

HWY. 112
GRIMSLEY ROAD
S. ZION ROAD
SPRING CREEK STREET

NOTE: EXCAVATION FOR PLACING FLOWABLE SELECT MATERIAL WILL NOT BE PAID FOR DIRECTLY BUT PAYMENT SHALL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS BID ITEMS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

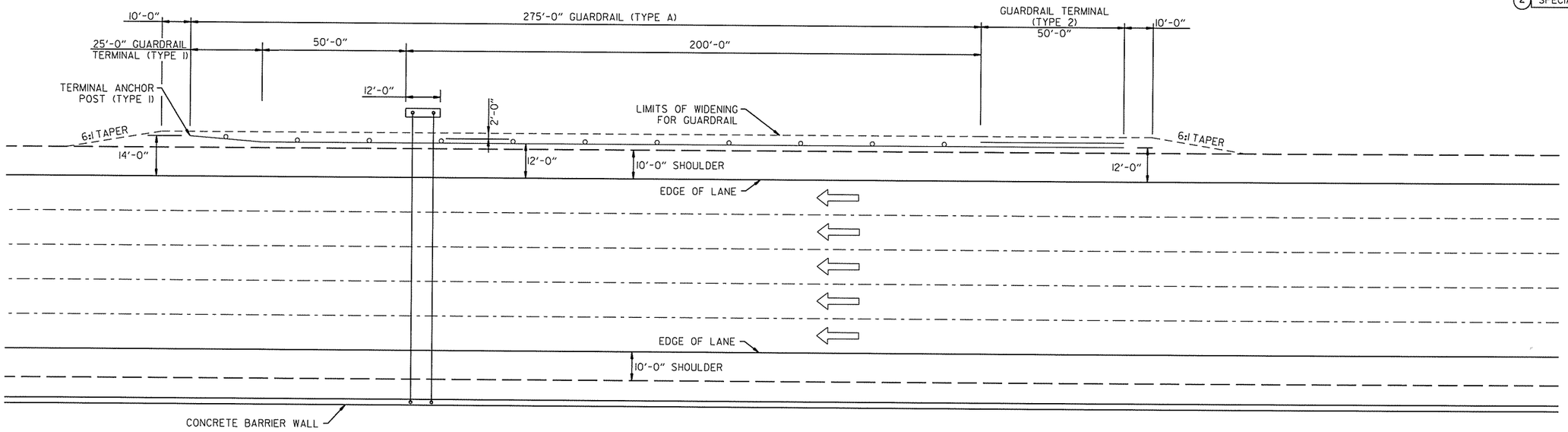


sadonaldson 9/4/2014 3:19:58 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\HWY 112 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

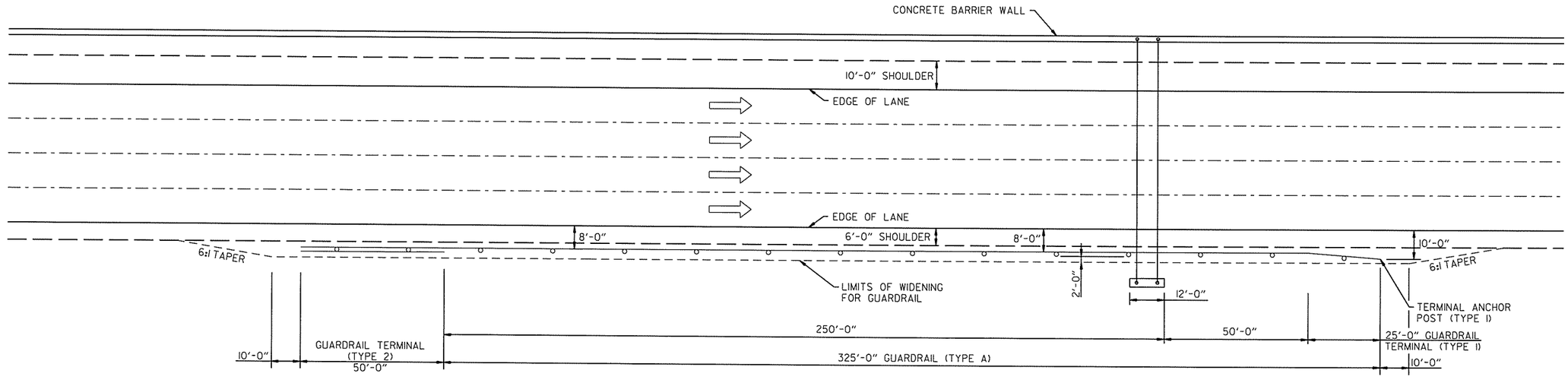
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 42 | 897 |

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




# GUARDRAIL FOR OVERHEAD SIGN STRUCTURES - I-49 SOUTHBOUND



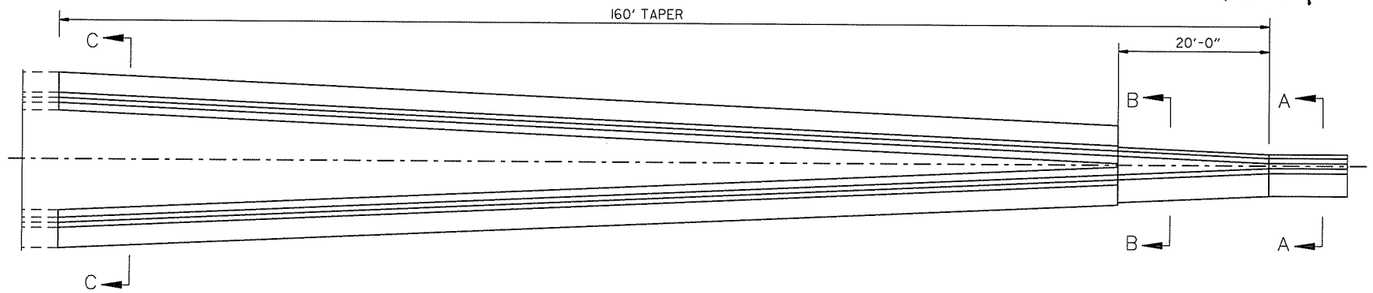

# GUARDRAIL FOR OVERHEAD SIGN STRUCTURES - I-49 NORTHBOUND

SPECIAL DETAILS

sadonaldson 9/4/2014 3:19:58 PM
WORKSPACE: AHTD
L:\2005\059116B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG-SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 43 | 897 |
| | | | | (2) SPECIAL DETAILS | | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

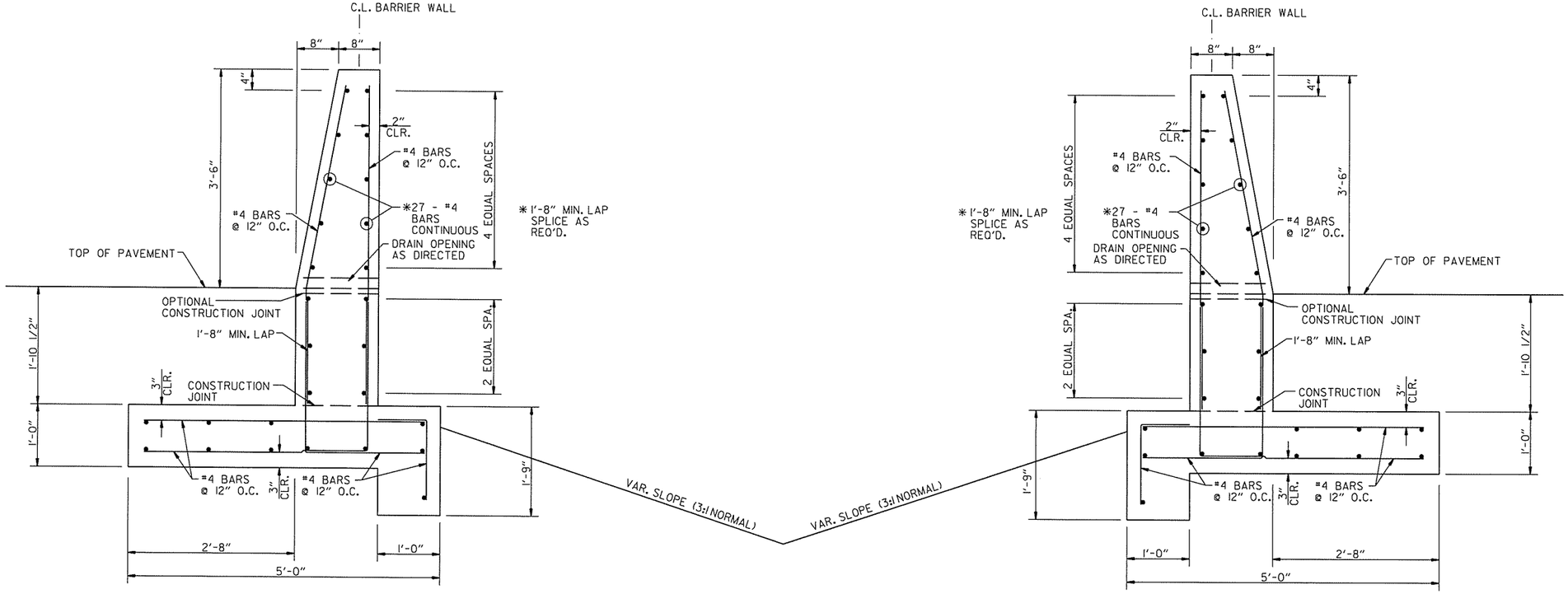



PLAN OF MEDIAN TRANSITION FOR CONCRETE BARRIER WALL (MEDIAN TYPE SPECIAL)

SEE NEXT SHEET FOR SECTIONS A-A & B-B

## GENERAL NOTES FOR CONCRETE BARRIER WALL

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2014 EDITION.
2. CONTRACTION JOINTS REQUIRED @ 30'-0" MAXIMUM SPACING FOR BARRIER SIDE TYPE SPECIAL.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A 3/4" CHAMFER.
5. THE DESIGN OF BARRIER WALL TYPE SPECIAL IS BASED ON A MINIMUM FOUNDATION BEARING CAPACITY OF ONE TON PER SQUARE FOOT. UNSTABLE FOUNDATION MATERIAL SHALL BE REMOVED AND REPLACED TO PROVIDE A FIRM FOUNDATION.
6. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 120 FT. FOR BARRIER SIDE TYPE SPECIAL. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
7. DRAINAGE OPENINGS TO BE CONSTRUCTED EVERY 100' O.C. AND AT SAGS AND ADJACENT TO DROP INLETS. DOWEL BARS SHALL NOT BE PLACED WITHIN 3" OF DRAINAGE OPENING.



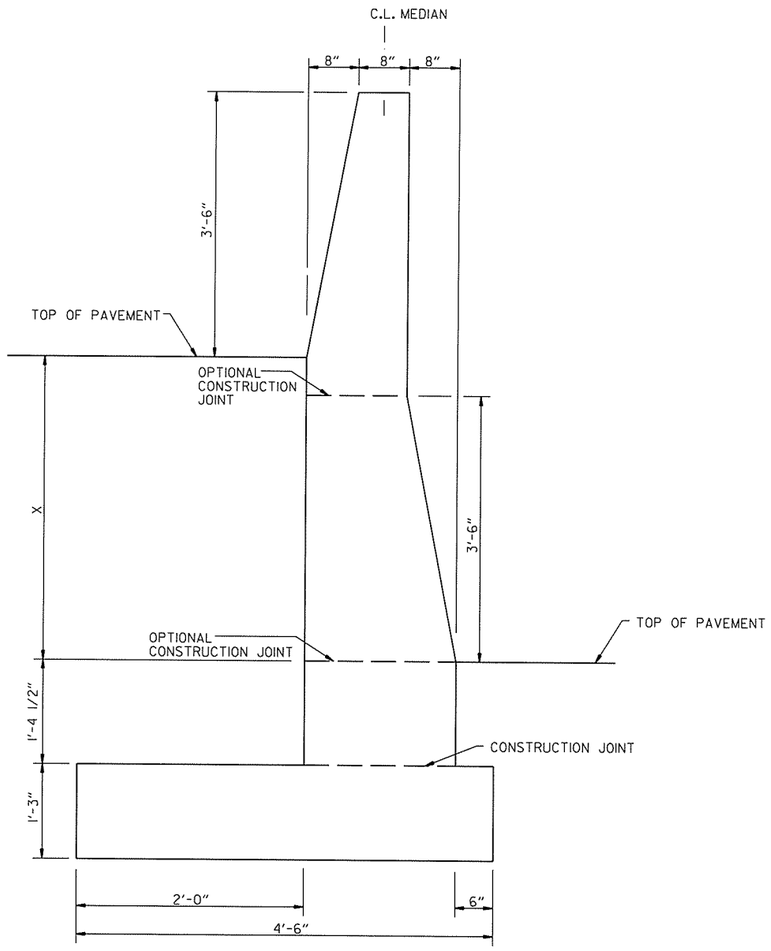

SECTION C-C

SPECIAL DETAILS

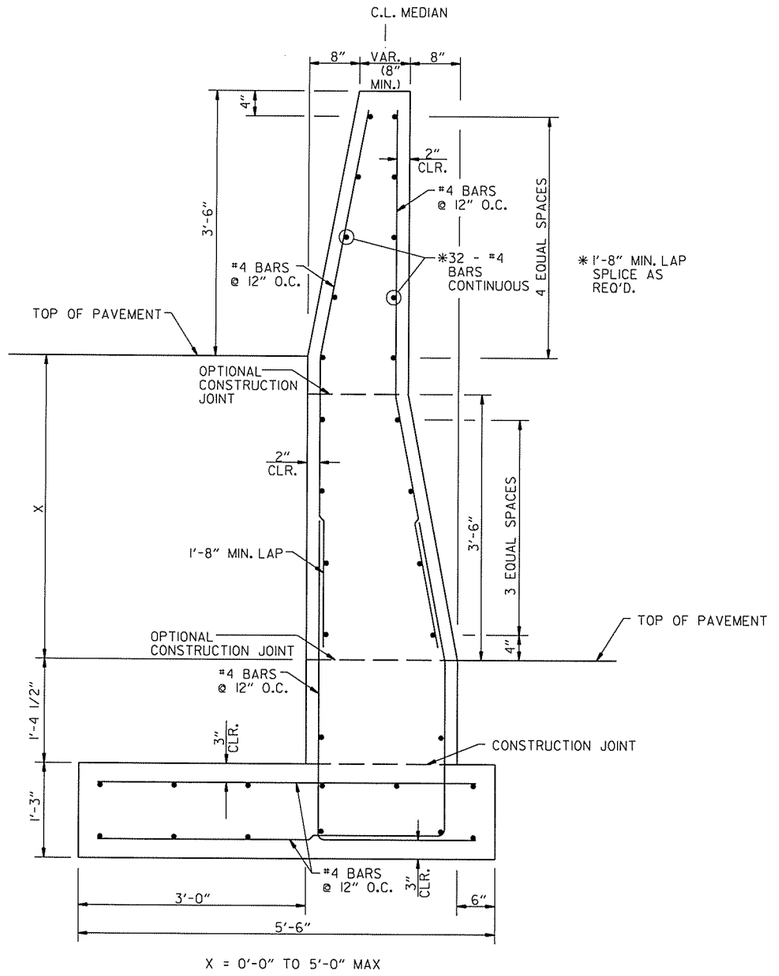
sadonaldson 9/4/2014 3:19:59 PM
WORKSPACE: AHTD
L:\2005\059II680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 44 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

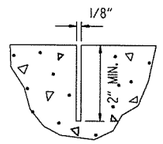



SECTION A-A
(MEDIAN TYPE SPECIAL)




X = 0'-0" TO 5'-0" MAX

SECTION B-B
(MEDIAN TYPE SPECIAL)




CONTRACTION JOINT DETAIL

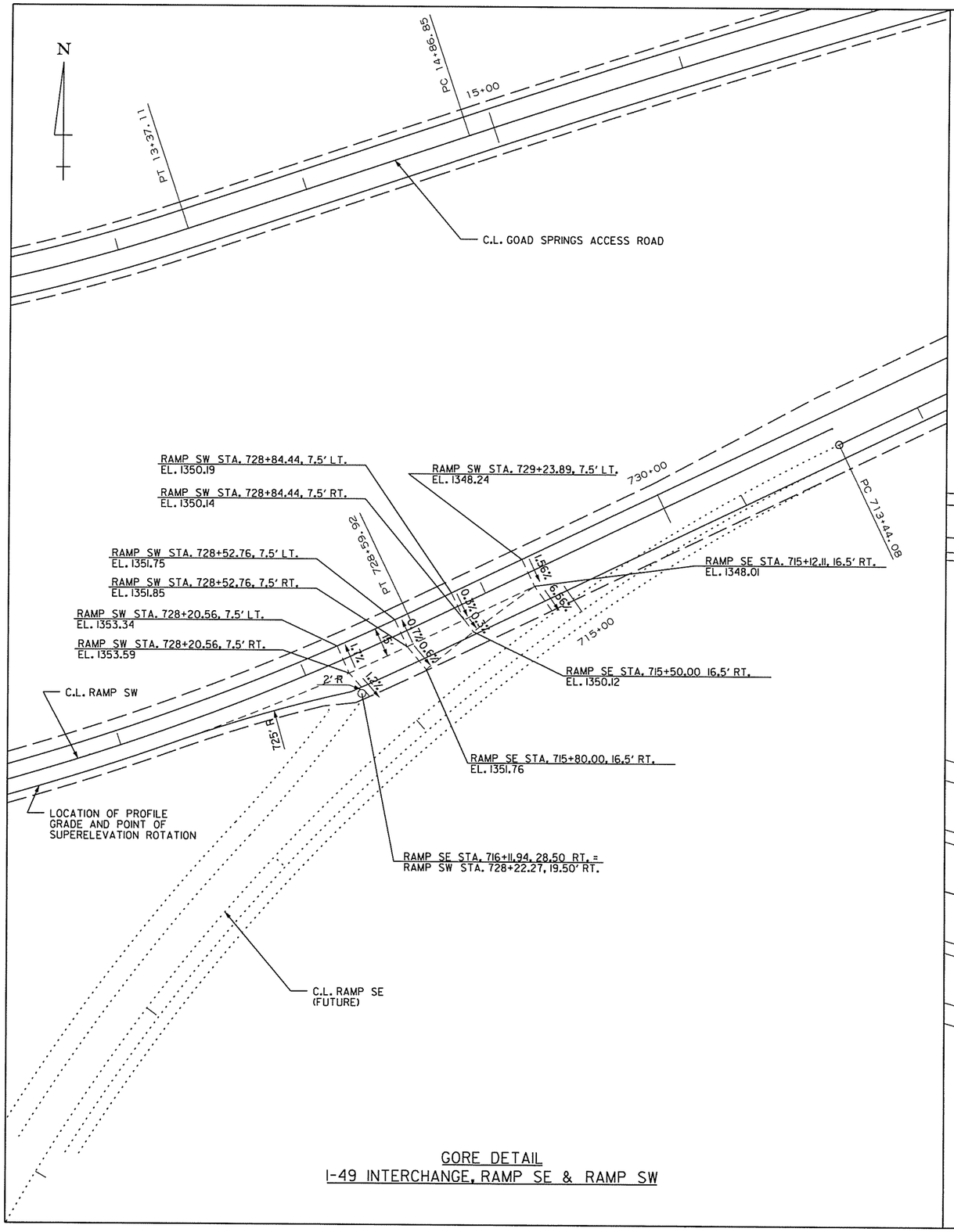
SPECIAL DETAILS

sadonaldson 9/4/2014 3:59:59 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_SD_ALL_01.dgn
REVISED DATE:

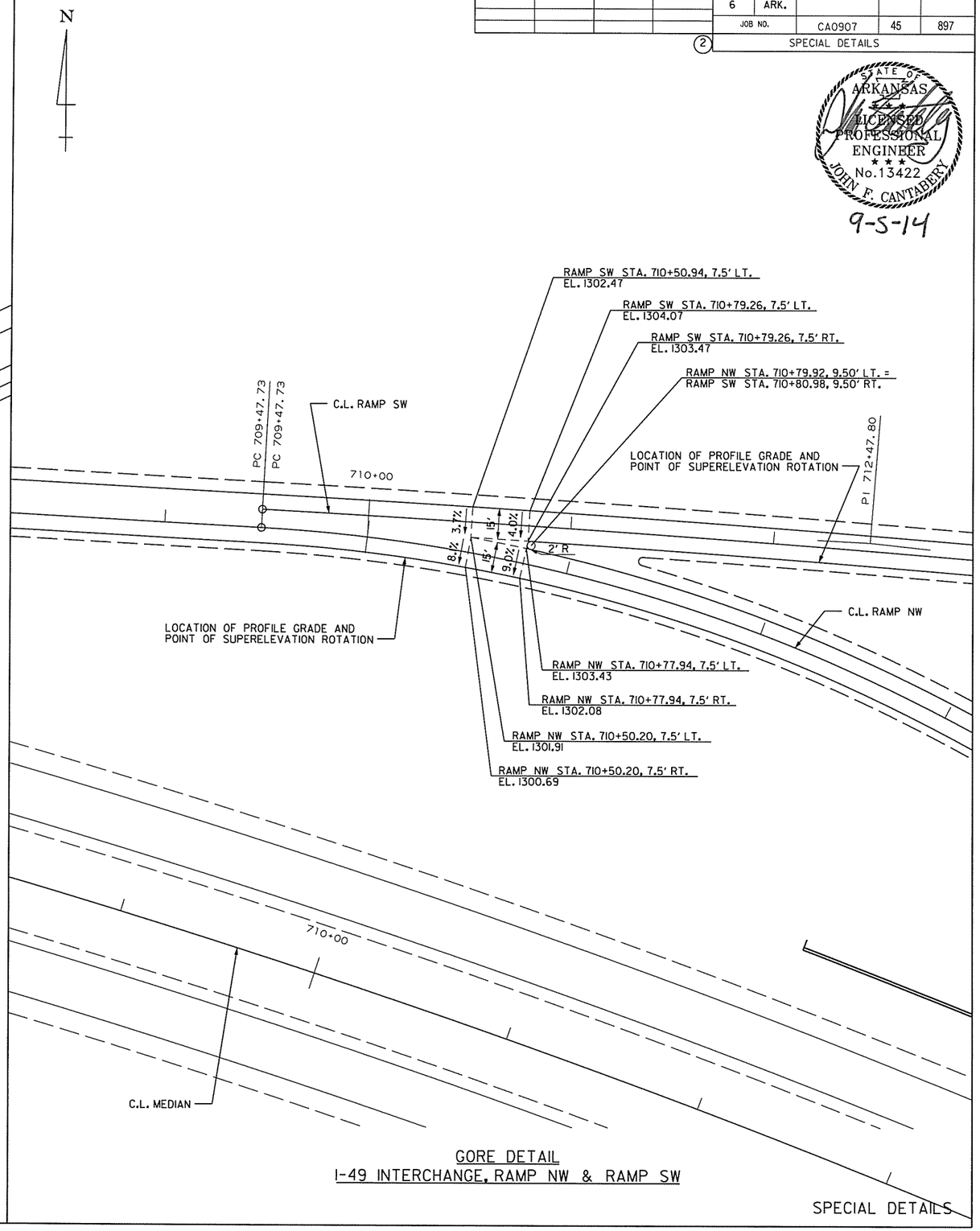
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 45 | 897 |

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




GORE DETAIL
I-49 INTERCHANGE, RAMP SE & RAMP SW



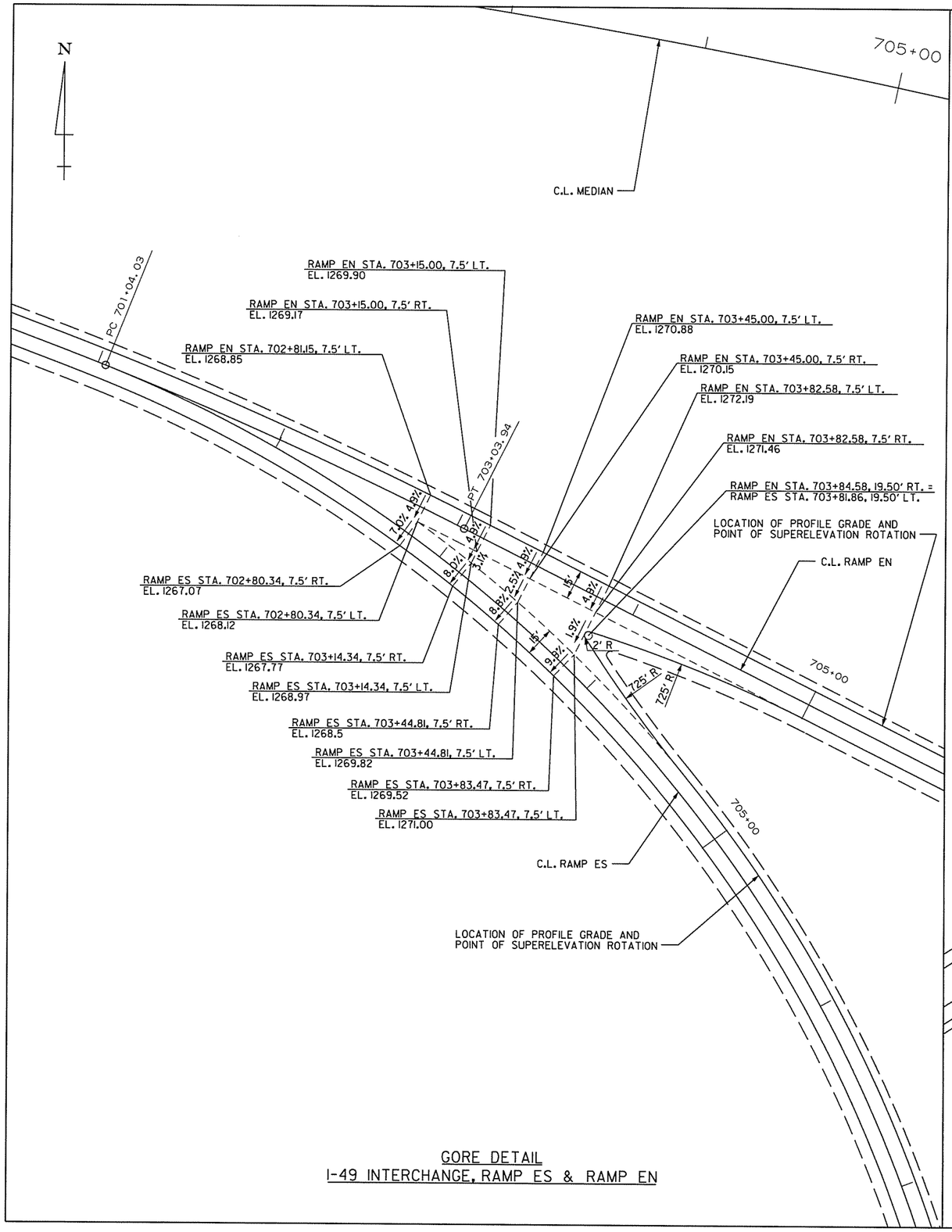

GORE DETAIL
I-49 INTERCHANGE, RAMP NW & RAMP SW



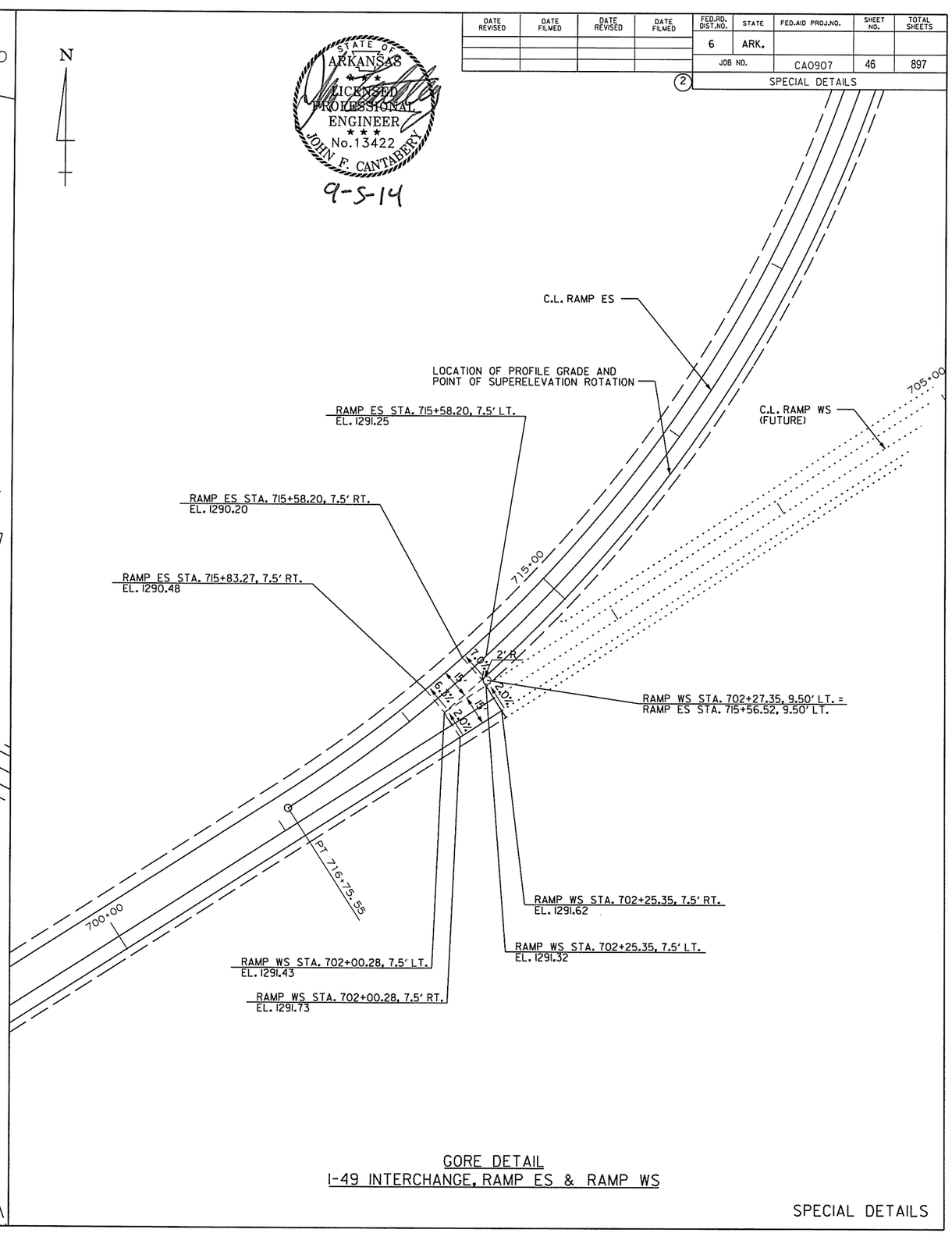
sadonaldson 9/4/2014 3:19:59 PM
WORKSPACE: AHTD
L:\2005\059168D - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_GD_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 46 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




GORE DETAIL
I-49 INTERCHANGE, RAMP ES & RAMP EN




GORE DETAIL
I-49 INTERCHANGE, RAMP ES & RAMP WS

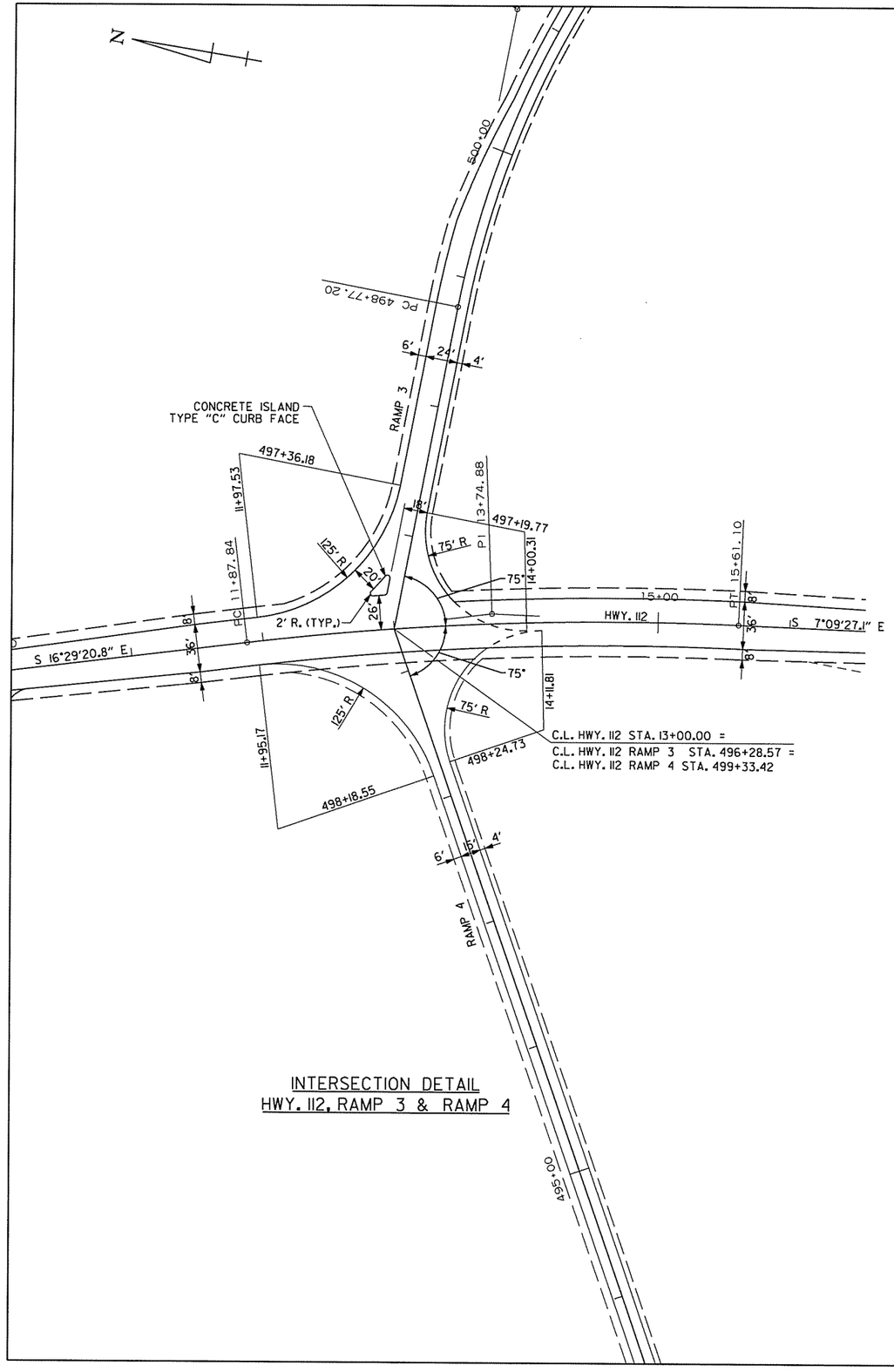


sadonaldson 9/4/2014 3:19:59 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_GD_03.dgn
REVISED DATE:

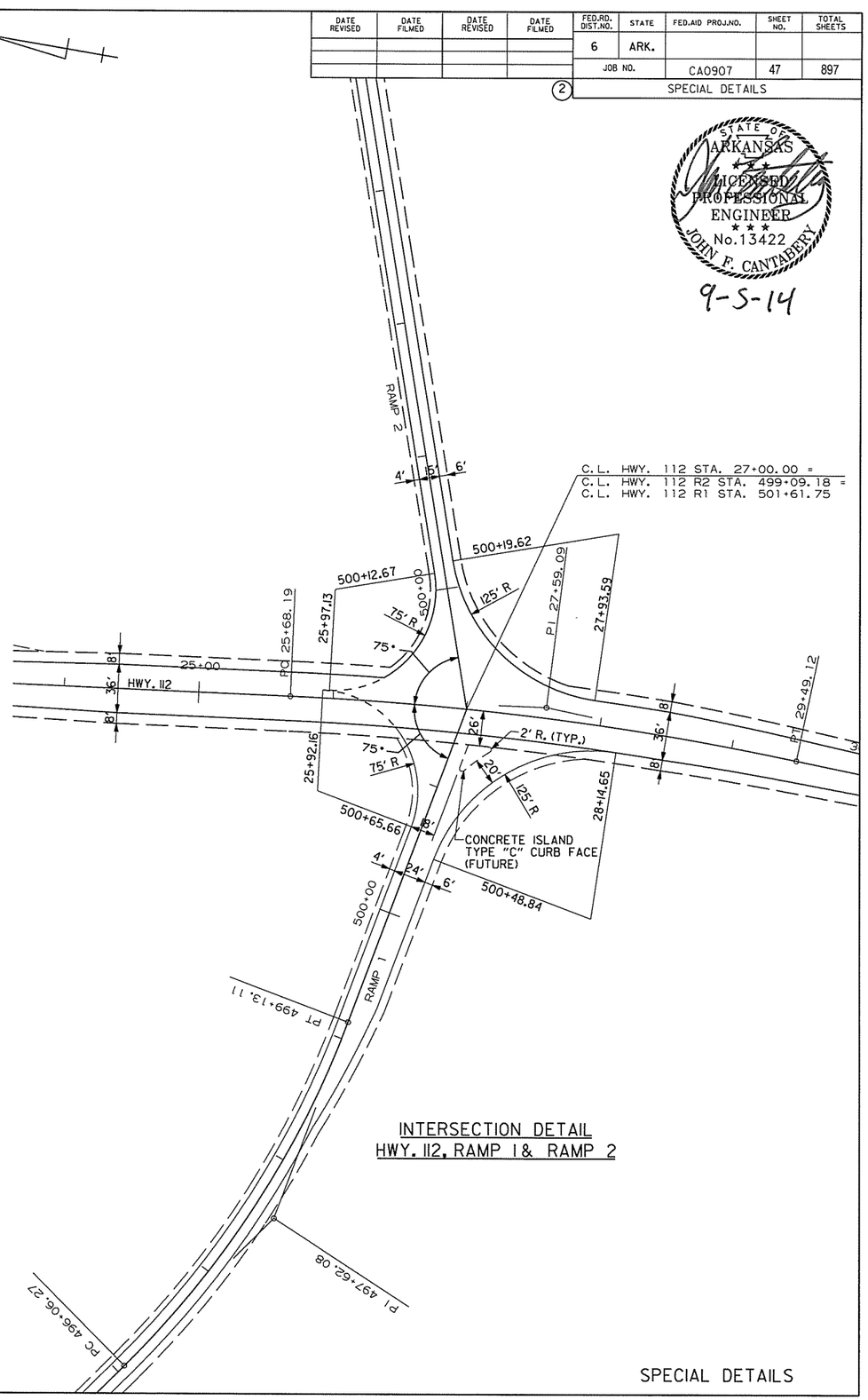
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 47 | 897 |

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




INTERSECTION DETAIL
HWY. 112, RAMP 3 & RAMP 4




INTERSECTION DETAIL
HWY. 112, RAMP 1 & RAMP 2

SPECIAL DETAILS

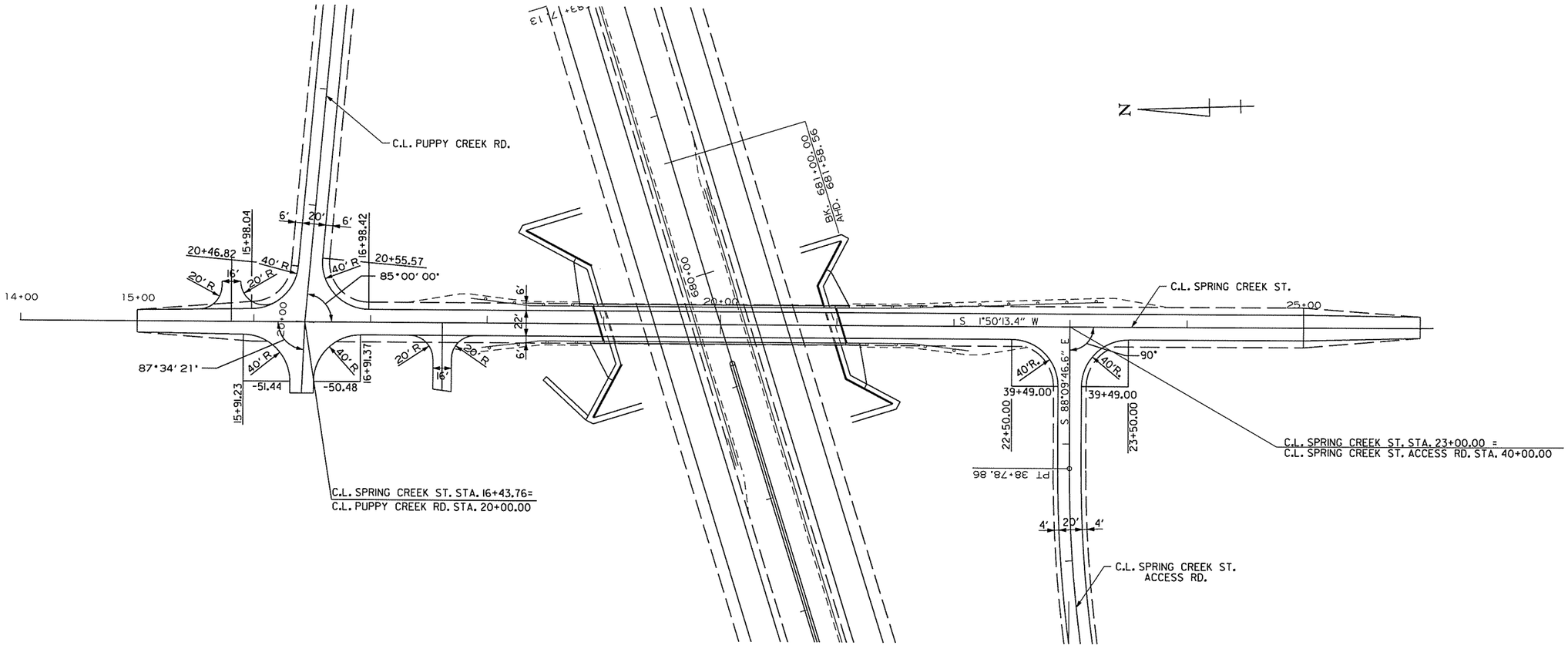
sadonaldson 9/4/2014 3:20:00 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ID_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 48 | 897 |

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14



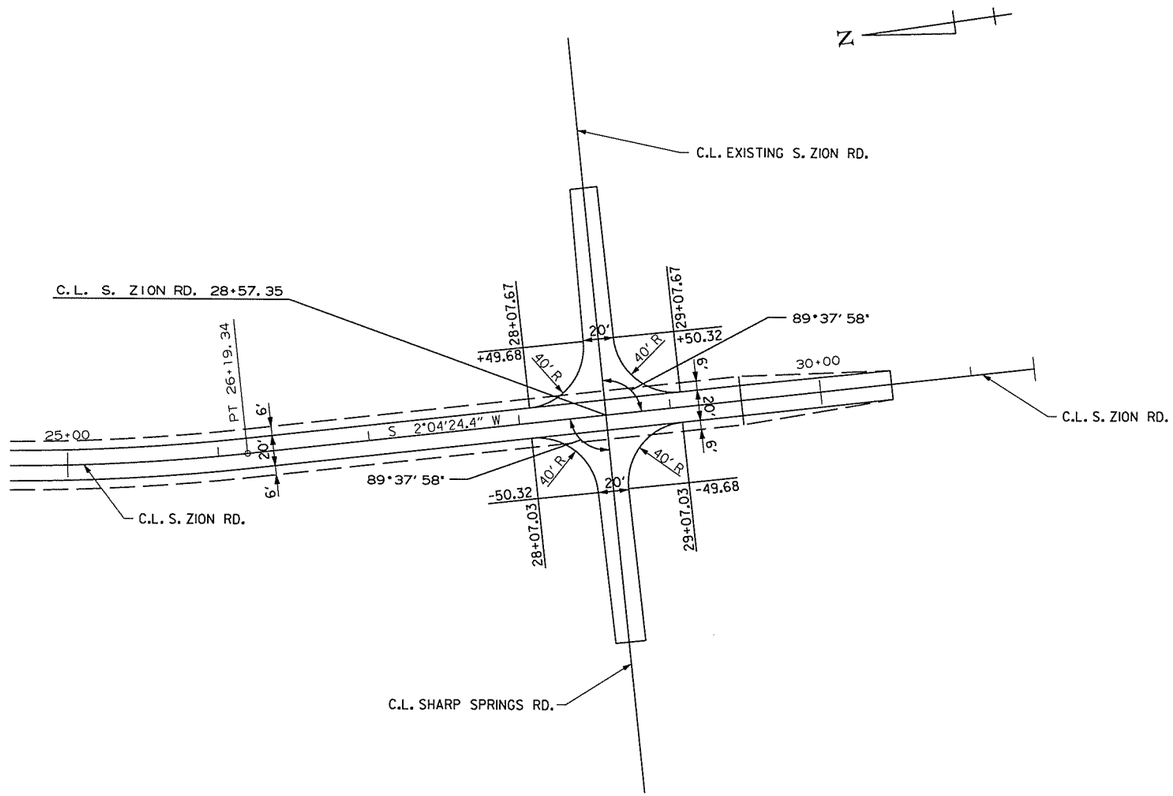

INTERSECTION DETAIL
SPRING CREEK ST., PUPPY CREEK RD.
& SPRING CREEK ST. ACCESS RD.

sadonaldson 9/4/2014 3:20:00 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ID_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 49 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

9-5-14

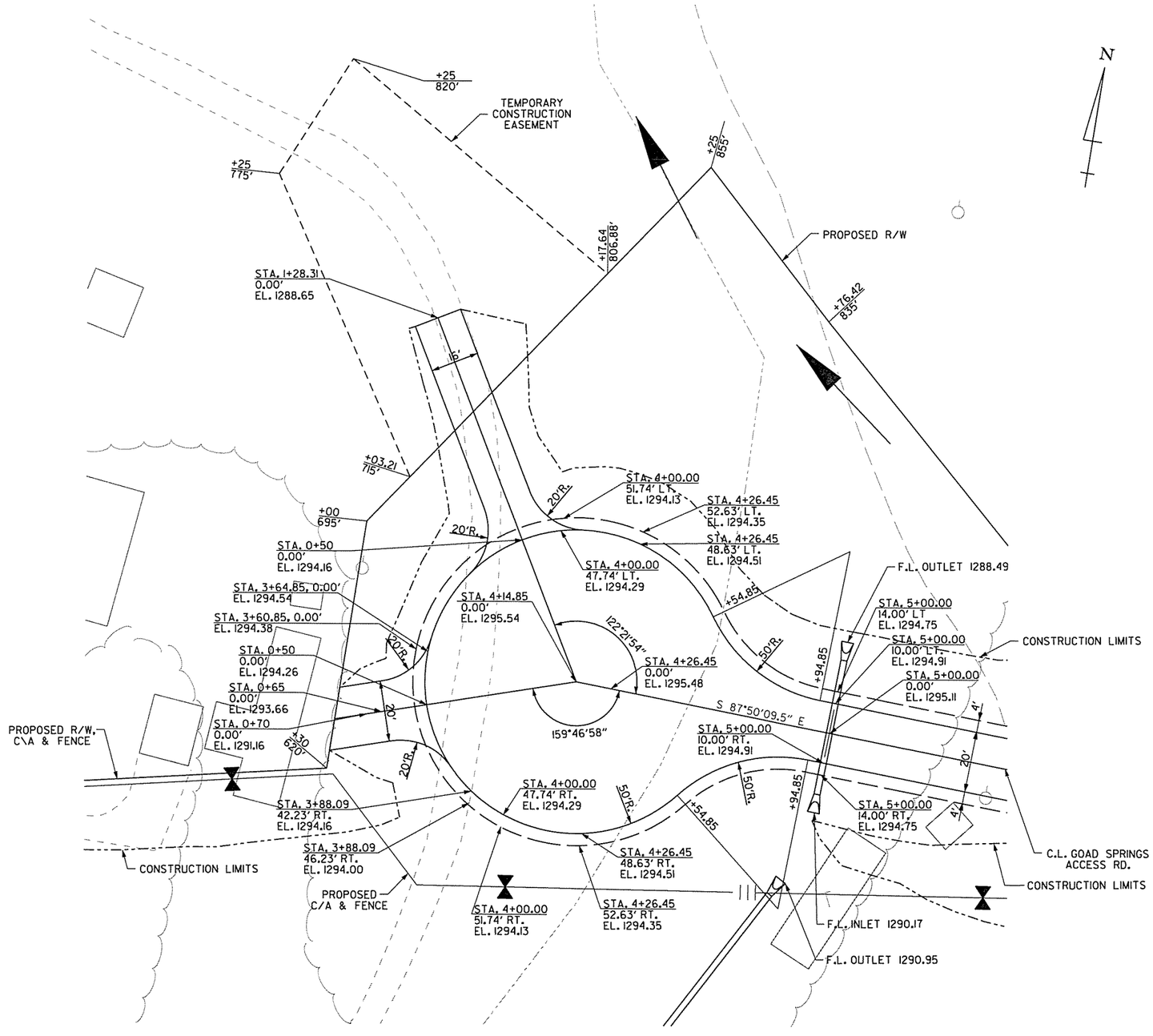



INTERSECTION DETAIL
S. ZION RD., EX. S. ZION RD.
& SHARP SPRINGS RD.

sadonaldson 9/4/2014 3:20:00 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SD_ID_04.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 50 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14




CUL DE SAC
GOAD SPRINGS RD. ACCESS RD.

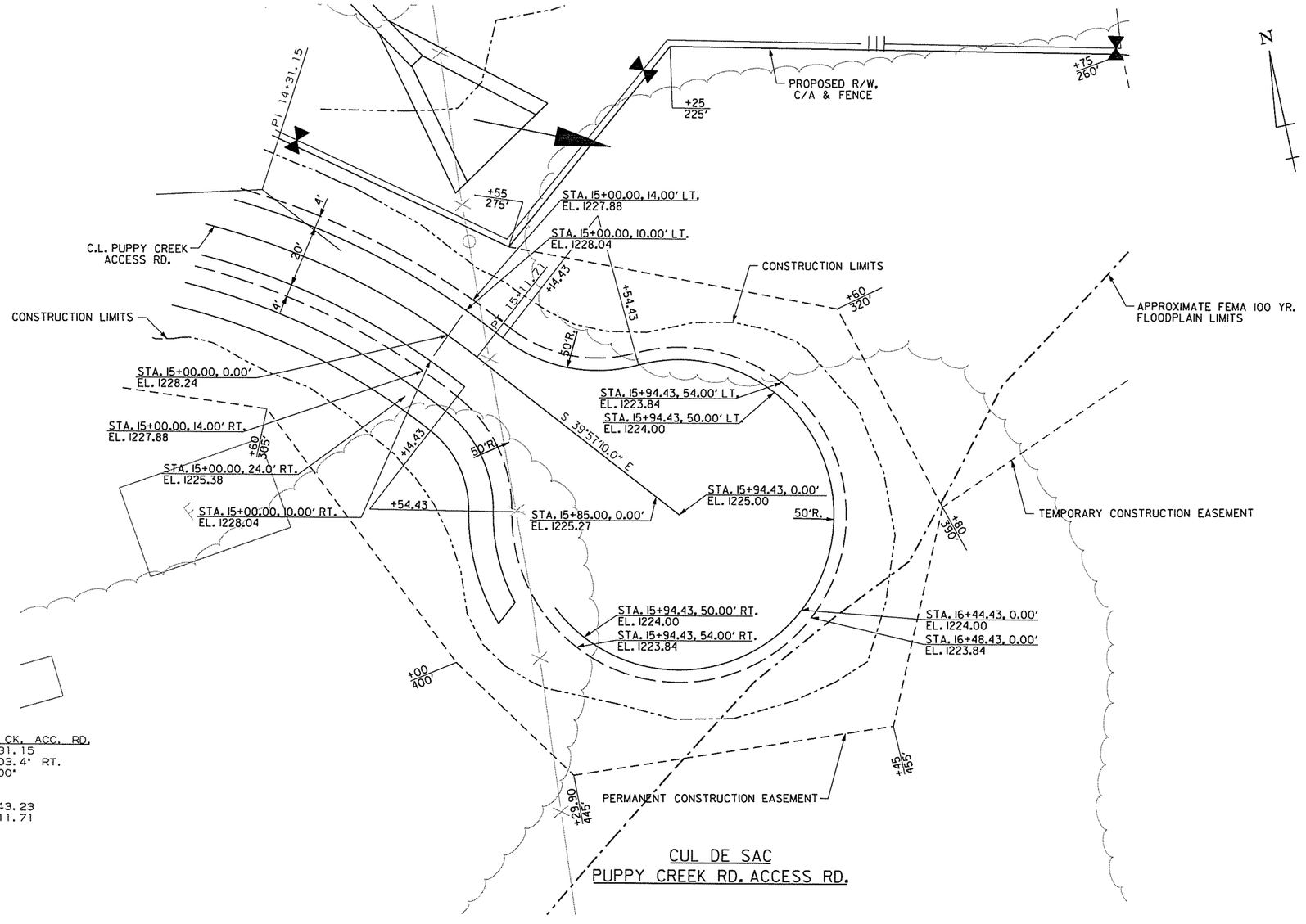


sadonaldson 9/4/2014 3:20:01 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_GSR_CDS.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 51 | 897 |

(2) SPECIAL DETAILS

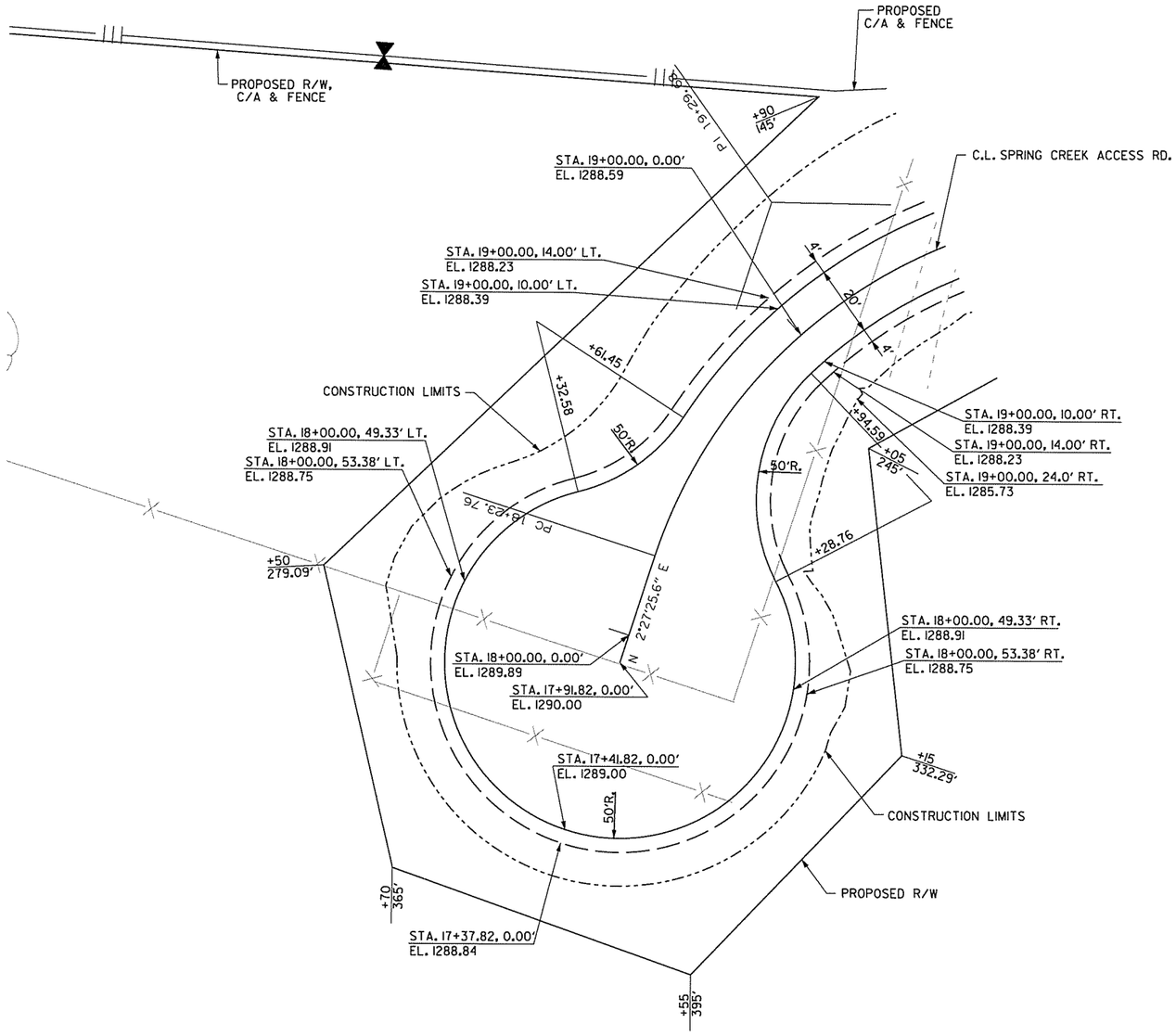
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




C.L. PUPPY CK. ACC. RD.
P.I. = 14+31.15
Δ = 40°26'03.4" RT.
D = 24°00'00"
T = 87.92
L = 168.48
P.C. = 13+43.23
P.T. = 15+11.71
e = N.A.
Ls = N.A.

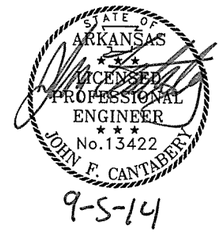
sadonaldson 9/4/2014 3:26:01 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_PCR_CDS.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 52 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |




CUL DE SAC
SPRING CREEK ST. ACCESS RD.

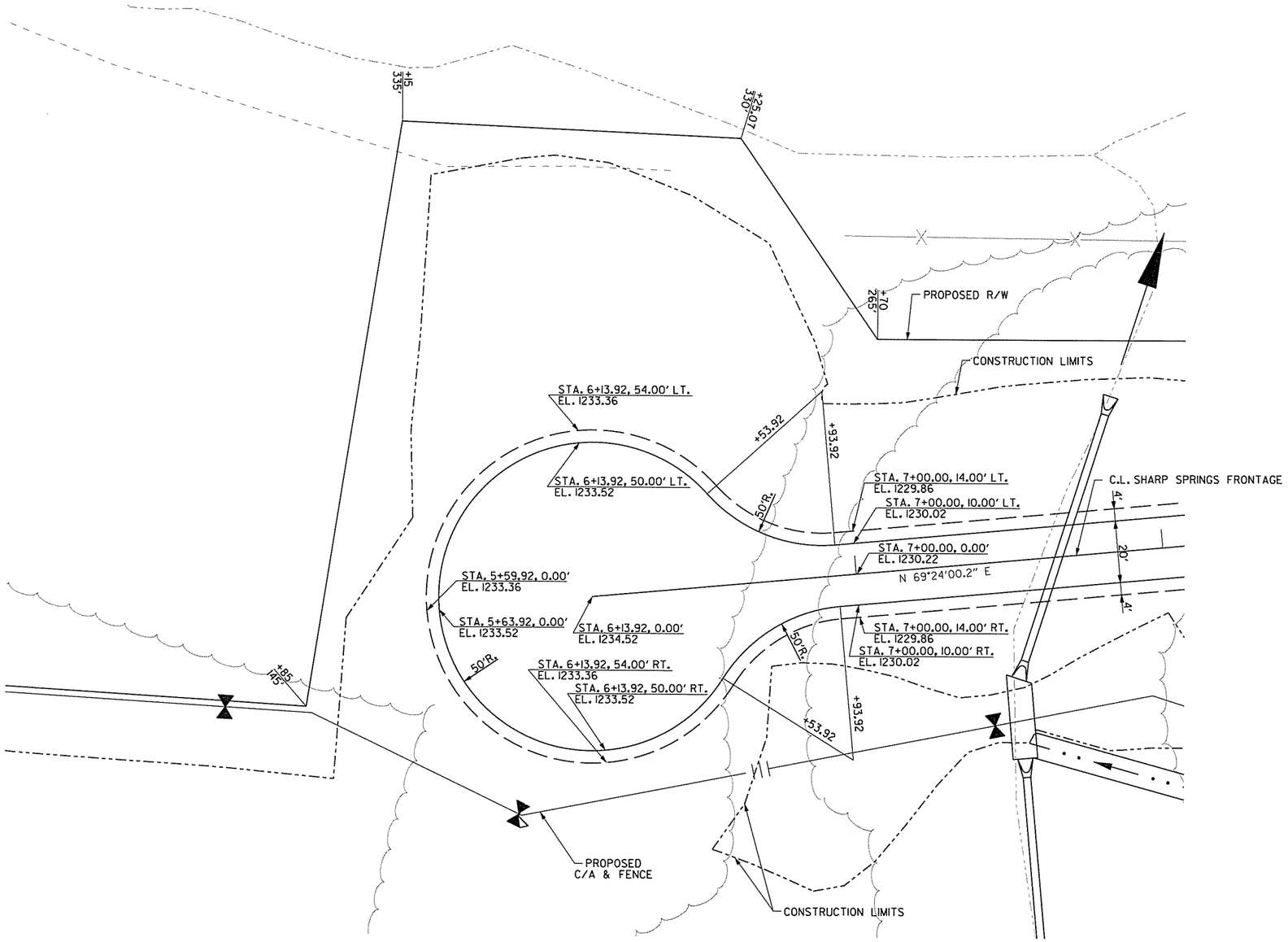
C.L. SPRING CREEK ACCESS RD.
P.I. = 19+29.68
Δ = 72°57'45.5" RT.
D = 40°00'00"
T = 105.92
L = 182.41
P.C. = 18+23.76
P.T. = 20+06.16
e = N.A.
Ls = N.A.




9-5-14

sadonaldson 9/4/2014 3:20:02 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SD_SCR_CDS.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 53 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |




CUL DE SAC
SHARP SPRINGS RD. ACCESS RD.

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

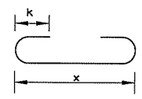
sadonaldson 9/4/2014 3:20:02 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RW? 112 TO I-540\SBG_SD_SSR.CDS.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 54 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

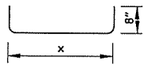
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
9-5-14
No.8017
JOHN H. RUDDELL

## BARREL SECTIONS REINFORCEMENT SCHEDULE

| | SECTION | LENGTH OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "a" BARS BENT: IN BOTTOM OF TOP SLAB AND TOP OF BOTTOM SLAB | | | | | | | "a1" BARS STRAIGHT: IN BOTTOM OF TOP SLAB AND TOP OF BOTTOM SLAB | | | | "b" BARS STRAIGHT: VERTICAL IN INSIDE FACE OF EACH SIDEWALL | | | | "c" BARS BENT: IN TOP OF TOP SLAB AND BOTTOM OF BOTTOM SLAB | | | | | | "d" BARS STRAIGHT: LONGITUDINAL IN TOP AND BOTTOM OF BOTH TOP AND BOTTOM SLABS | | | | "e" BARS STRAIGHT: LONGITUDINAL ON INSIDE FACE OF EACH SIDEWALL (HALF EACH WALL) | | | | "f" BARS STRAIGHT: LONGITUDINAL ON OUTSIDE FACE OF EACH SIDEWALL (HALF EACH WALL) | | | | "g" BARS STRAIGHT: VERTICAL IN OUTSIDE FACE OF EACH SIDEWALL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SIZE | SPACING | NO. REQD. | PIN DIA. | LENGTH | X | K | SIZE | SPACING | NO. REQD. | LENGTH | SIZE | SPACING | NO. REQD. | LENGTH | SIZE | SPACING | NO. REQD. | PIN DIA. | LENGTH | X | SIZE | SPACING | NO. REQD. | LENGTH | SIZE | SPACING | NO. REQD. | LENGTH | SIZE | SPACING | NO. REQD. | LENGTH | SIZE | SPACING | NO. REQD. | LENGTH |
| RAMP SE STA. 712+31 | #1 | 65' | 20' | 8'-0" | 4'-0" | #7 | 12" ALT. WITH "a1" BARS | 131 | 5 1/4" | 10'-8" | 9'-0" | 7" | #7 | 12" ALT. WITH "a" BARS | 131 | 9'-0" | #4 | 6" | 262 | 5'-7" | #4 | 18" | 90 | 3" | 10'-1 1/2" | 9'-0" | #4 | 12" | 44 | 65'-0" | #4 | 12" | 8 | 65'-0" | None | None | None | None | None | None | None | None |
| | #2 | 116' | 40' | 8'-0" | 4'-0" | #8 | 12" ALT. WITH "a1" BARS | 233 | 6" | 11'-6" | 9'-8" | 8" | #8 | 12" ALT. WITH "a" BARS | 233 | 9'-8" | #4 | 6" | 466 | 6'-7" | #4 | 18" | 158 | 3" | 10'-9 1/2" | 9'-8" | #4 | 12" | 44 | 116'-0" | #4 | 12" | 8 | 116'-0" | #4 | 12" | 8 | 116'-0" | #4 | 18" | 158 | 6'-7" |
| | #3 | 331' | 68' | 8'-0" | 4'-0" | #8 | 11" ALT. WITH "a1" BARS | 724 | 6" | 11'-6" | 9'-8" | 8" | #8 | 11" ALT. WITH "a" BARS | 724 | 9'-8" | #5 | 5 1/2" | 1448 | 7'-7" | #4 | 18" | 444 | 3" | 10'-9 1/2" | 9'-8" | #4 | 12" | 44 | 331'-0" | #4 | 12" | 8 | 331'-0" | #4 | 12" | 8 | 331'-0" | #4 | 18" | 444 | 7'-7" |




"a" BARS




"c" BARS

"r" BARS

NOTE:

LAPS OF LONGITUDINAL BARS AT CONSTRUCTION JOINTS SHALL BE 18" LONG

## RAMP SE BOX CULVERT DETAILS



sadonaldson 9/4/2014 3:20:02 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\CULVERT2.dgn
REVISED DATE:

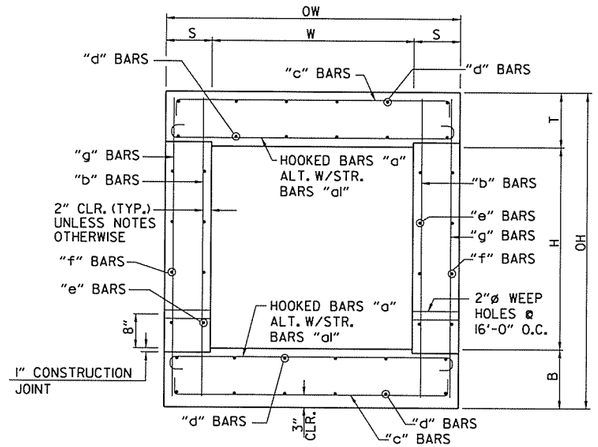
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 55 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

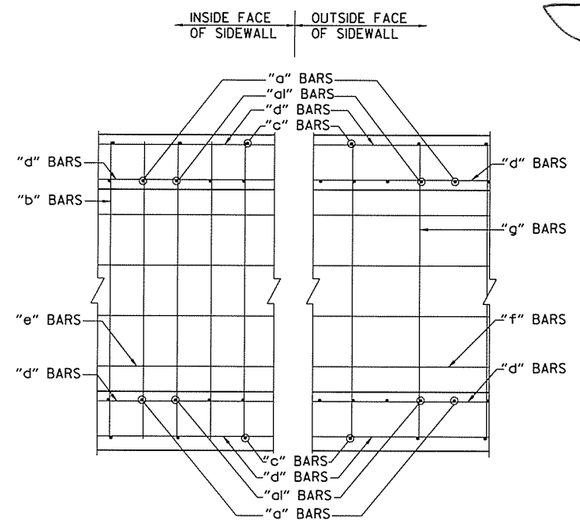
## BOX CULVERT QUANTITIES

| ℄ CONSTRUCTION STA. AND SIZE | SECTION | LENGTH | CLASS S CONCRETE | REINFORCING STEEL (INCLUDES LAPS) |
|---|---|---|---|---|
| | | | CUBIC YARDS | LBS. |
| RAMP SE STA. 712+31 8' X 4' | #1 | 65'-0" (2 LAPS @ 48"/LAP) | 55.91 | 9206 |
| | #2 | 116'-0" (2 LAPS @ 60"/LAP) | 159.68 | 21820 |
| | #3 | 331'-0" (6 LAPS @ 60"/LAP) | 578.23 | 71446 |
| | WINGWALLS, HEADWALLS AND APRONS | | 0.89 | 67 |
| | TOTALS | | 794.71 | 102539 |

| SECTION | MAX. DESIGN DEPTH OF COVER | BARREL DIMENSIONS: CLEAR SPANS | CLEAR HEIGHT | SQ. FT. OPENING | OVERALL WIDTH | THICKNESS OF TOP SLAB | THICKNESS OF SIDEWALLS | THICKNESS OF BOTTOM SLAB | OVERALL HEIGHT |
|---|---|---|---|---|---|---|---|---|---|
| | | W | H | | OW | T | S | B | OH |
| #1 | 20' | 8'-0" | 4'-0" | 32 | 9'-4" | 11" | 8" | 12" | 5'-11" |
| #2 | 40' | 8'-0" | 4'-0" | 32 | 10'-0" | 17" | 12" | 18" | 6'-11" |
| #3 | 68' | 8'-0" | 4'-0" | 32 | 10'-0" | 23" | 12" | 24" | 7'-11" |

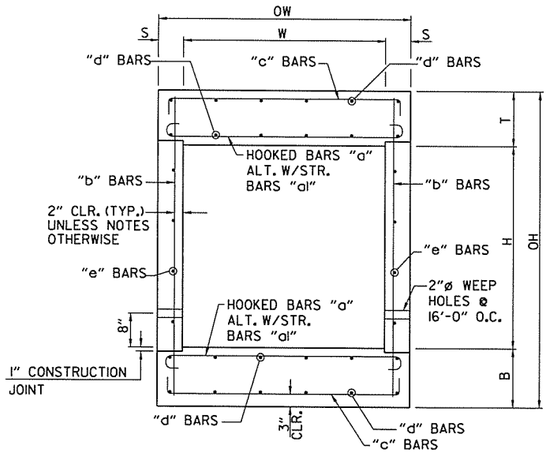



TYPICAL SECTION
SECTION NO.'S 2 & 3

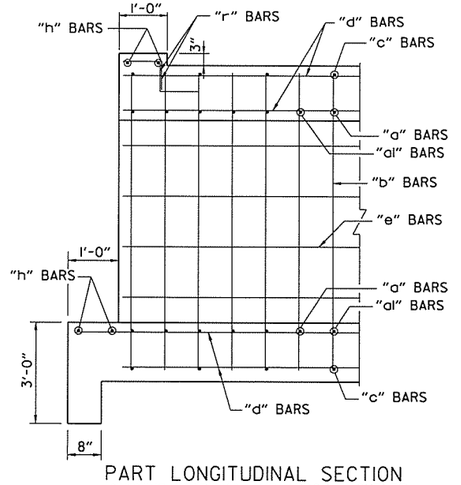



PART LONGITUDINAL SECTION
SECTION NO.'S 2 & 3

| SECTION | | MAX. DESIGN DEPTH OF COVER | HEADWALL REINFORCEMENT SCHEDULE: "h" BARS STRAIGHT IN TOP OF HEADWALL & IN APRON (2 IN EACH) SIZE | SPACING | NO. REQD. | LENGTH | "r" BARS BENT IN HEADWALL SIZE | SPACING | NO. REQD. | PIN. DIA. | LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| STA. 712+31 | AT OUTLET | | #5 | 6" | 4 | 12'-0" | #4 | 12" | 20 | 2" | 1'-3" |




TYPICAL SECTION
SECTION NO. 1




PART LONGITUDINAL SECTION
SHOWING HEADWALL AND APRON @ OUTLET

NOTES:

1. CONSTRUCTION JOINTS IN BARREL SECTIONS SHALL BE PLACED AT ALL SECTION TRANSITION POINTS. NO CONSTRUCTION JOINTS SHALL BE PLACED WITHIN SECTIONS LESS THAN 37 FEET LONG. CONSTRUCTION JOINTS IN SECTIONS LONGER THAN 37 FEET, MAY BE PLACED FROM 22 FEET TO 37 FEET APART.
2. LAPS OF LONGITUDINAL BARS AT CONSTRUCTION JOINTS SHALL BE 18" LONG.
3. FOR MEMBRANE WATERPROOFING NOTES SEE STANDARD DRAWING RCB-1.
4. FOR REINFORCEMENT SCHEDULE & BAR DETAILS, SEE SHEET NO. 54

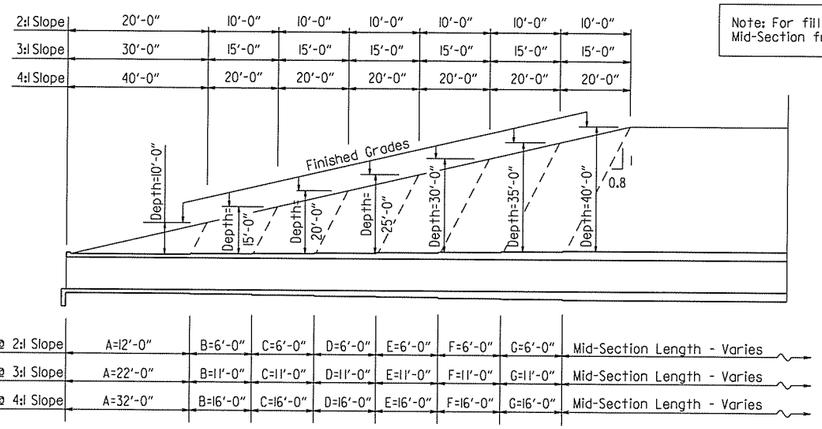
RAMP SE BOX CULVERT DETAILS

SPECIAL DETAILS

sadonaldson 9/4/2014 3:20:02 PM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\CULVERT.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 56 | 897 |

1 SPECIAL DETAILS



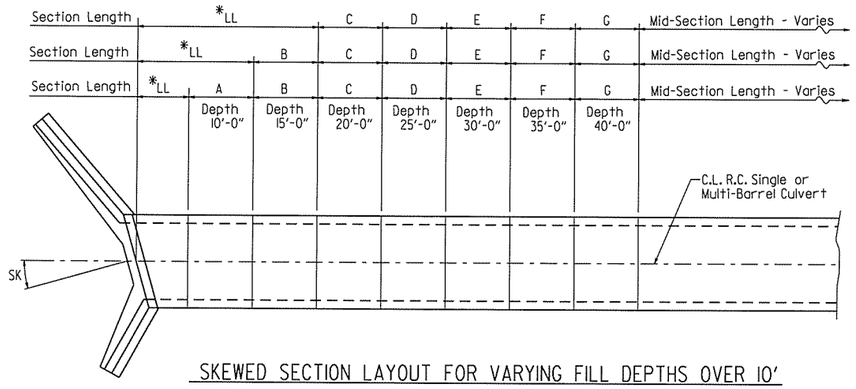

Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Slope Section Length @ 2:1 Slope | A=12'-0" | B=6'-0" | C=6'-0" | D=6'-0" | E=6'-0" | F=6'-0" | G=6'-0" | Mid-Section Length - Varies | |
| Slope Section Length @ 3:1 Slope | A=22'-0" | B=11'-0" | C=11'-0" | D=11'-0" | E=11'-0" | F=11'-0" | G=11'-0" | Mid-Section Length - Varies | |
| Slope Section Length @ 4:1 Slope | A=32'-0" | B=16'-0" | C=16'-0" | D=16'-0" | E=16'-0" | F=16'-0" | G=16'-0" | Mid-Section Length - Varies | |

## LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

Lengths for Non-Skewed Boxes

*LL = Skewed End Section Length - See "Skewed End Section Details" Length LL varies with skew angle, overall box width and fill depth and may eliminate the need for some slope section lengths as shown.




## SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER 9-5-14 No.8017 JOHN H. RUDDELL

**GENERAL NOTES:**

**CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.**

**DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition (2010) with 2010 interim revisions.**

**LIVE LOADING: HL-93**

**All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall be poured in the dry. All exposed corners to have ¾" chamfers.**

**Reinforcing Steel shall be AASHTO M 31 or M 53, Grade 60.**

**Reinforcing Steel Tolerances: the tolerances for reinforcing steel shall meet those listed in 'Manual of Standard Practice' published by Concrete Reinforcing Steel Institute (CRSI) except that the tolerance for truss bars such as Figure 3 on page 7-4 of the CRSI Manual shall be minus zero to plus 1/2 inch.**

**Excavation and backfilling shall be in accordance with the requirements of Section 801.**

**Membrane Waterproofing shall conform to the requirements of Section 815 of the Standard Specifications. Membrane Waterproofing shall be Type C and as directed by the Engineer applied to all construction joints in the top slab and the sidewalls of R.C. Box culverts and to the construction joint between wingwalls and R.C. Box culvert walls.**

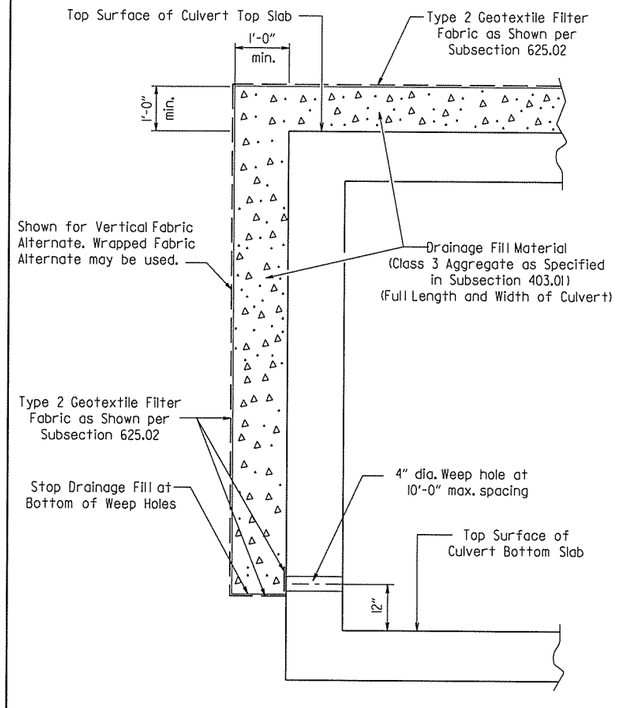
**Weep Holes in box culvert walls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. The drain opening shall be 4" diameter and shall be placed 12" above the top of the bottom slab.**

**Weep Holes in wingwalls shall have a maximum horizontal spacing of 10'-0" and shall be spaced to clear all reinforcing steel. There shall be a minimum of two (2) weep holes in each wingwall. The drain opening shall be 4" diameter and shall be placed 12" above the top of the wingwall footing.**

**The barrel components of the culvert may be constructed using continuous pours. For longer culvert construction, the Contractor may use multiple pours with transverse construction joints spaced a minimum of 50 feet apart unless superseded by stage construction or site constraints as approved by the Engineer. Construction joints between footings and walls shall be made only where shown in the Plans. Joints shall be normal to the centerline of barrel and shall be keyed. Longitudinal reinforcing shall be continuous through joints unless shown otherwise. All longitudinal construction joints shall be submitted to the Engineer for approval.**

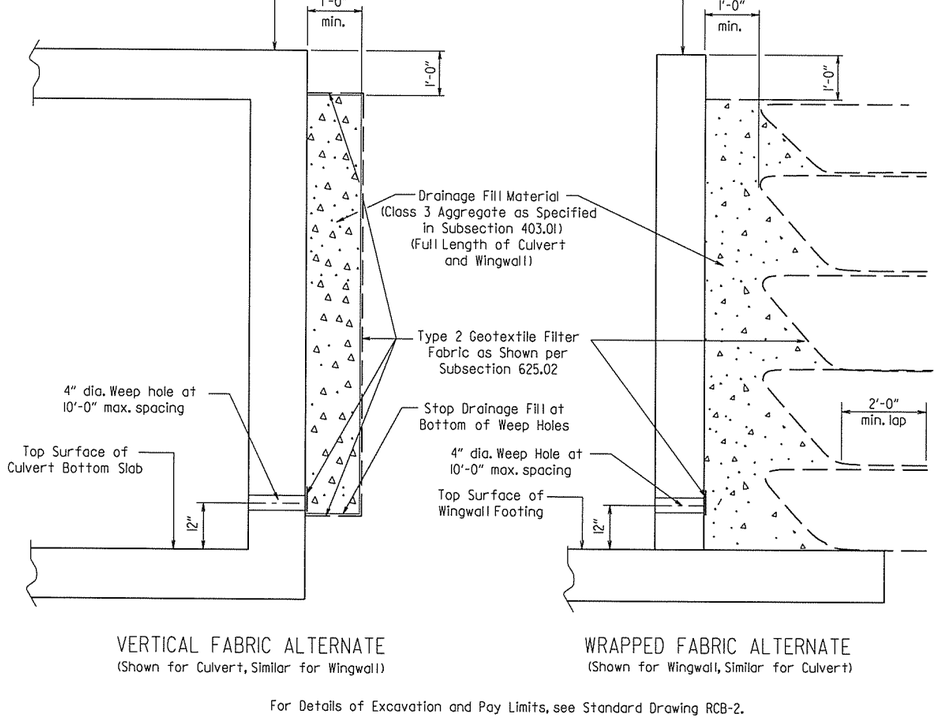
**Membrane Waterproofing, Weep Holes, Geotextile Filter Fabric, and Drainage Fill Material will not be paid for directly but shall be considered subsidiary to Class S Concrete.**

**When precast reinforced concrete box culverts are substituted for cast in place box culverts, they shall be manufactured according to ASTM C 1577 and meet the requirements of Special Provision "LRFD Precast Reinforced Concrete Box Culverts".**




## CULVERT DRAINAGE DETAIL FOR ROCK FILL

This detail shall be used when rock fill is specified for embankment construction.




VERTICAL FABRIC ALTERNATE
(Shown for Culvert, Similar for Wingwall)

WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

## WINGWALL & CULVERT DRAINAGE DETAIL

# SHEET 1 OF 4
# GENERAL DETAILS OF R.C. BOX CULVERT

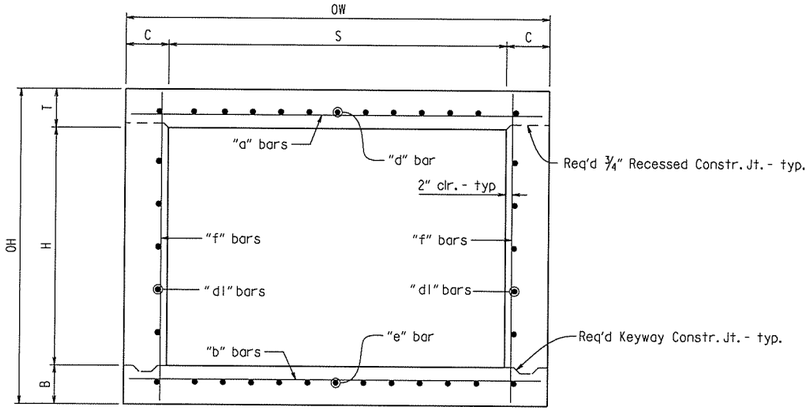
GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

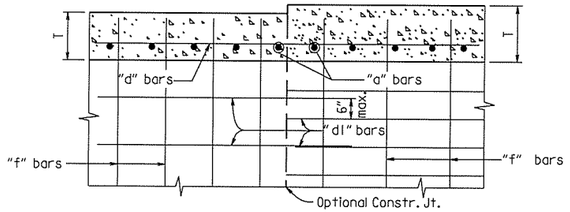
LRFD

sadonaldson 9/4/2014 3:50:28 PM
WORKSPACE: AHTD
L:\C0DS\0591660 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_RCBC_GENERAL.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 57 | 897 |
| | | | | (1) | SPECIAL DETAILS | | | |



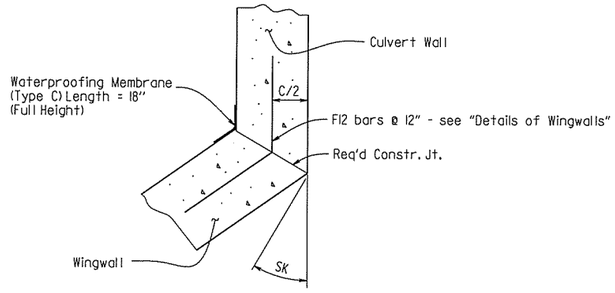

TYPICAL SECTION M-M




Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

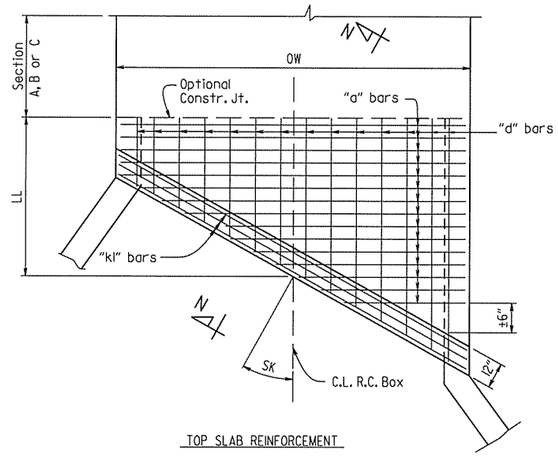
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

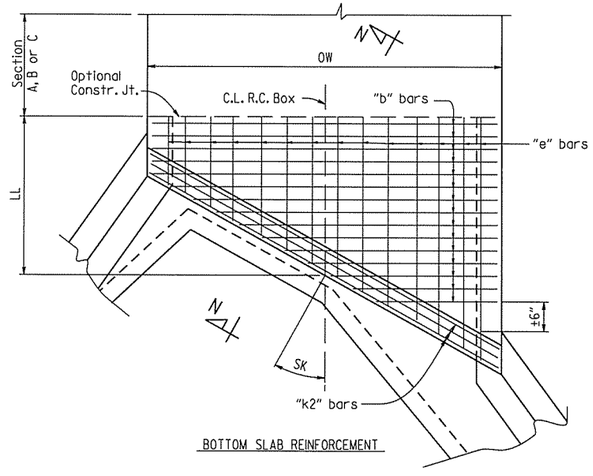



WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.

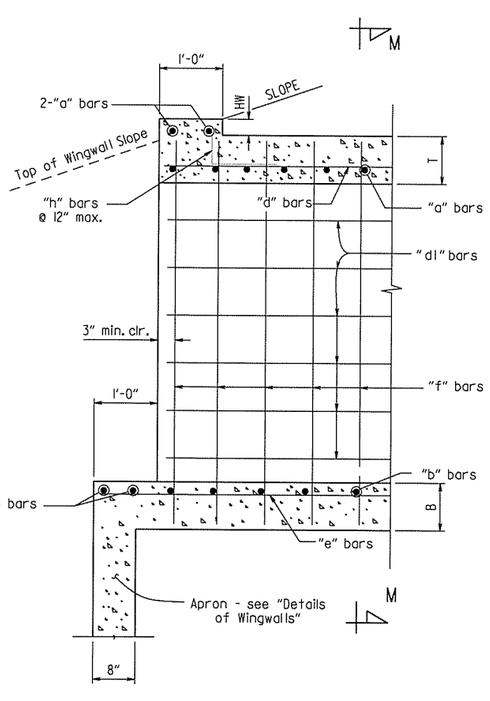



TOP SLAB REINFORCEMENT



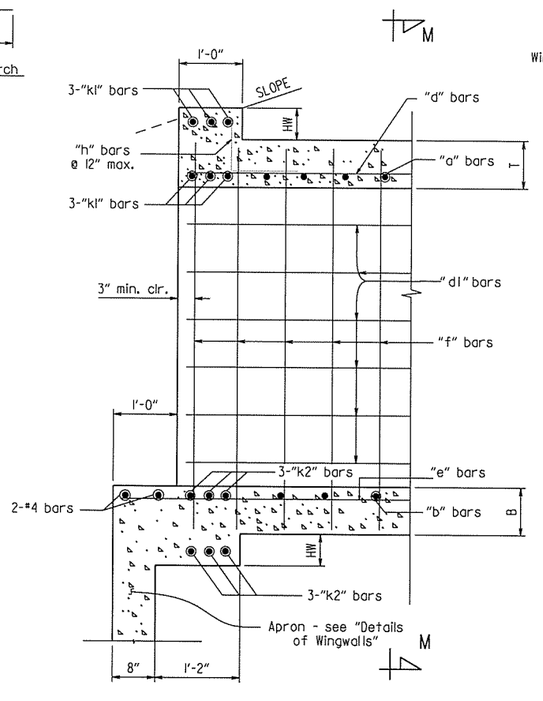

BOTTOM SLAB REINFORCEMENT

"h" bars sketch



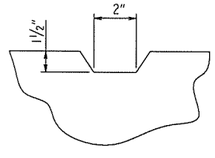

PART LONGITUDINAL SECTION

(Non-Skewed Ends)




PART LONGITUDINAL SECTION N-N

(Skewed Ends)




TYPICAL KEYWAY DETAIL

(All Construction Joints)

SKEWED END SECTION DETAILS

# SHEET 2 OF 4
# GENERAL DETAILS OF R.C. BOX CULVERT

## DETAILS OF SINGLE BARREL R.C. BOX CULVERT

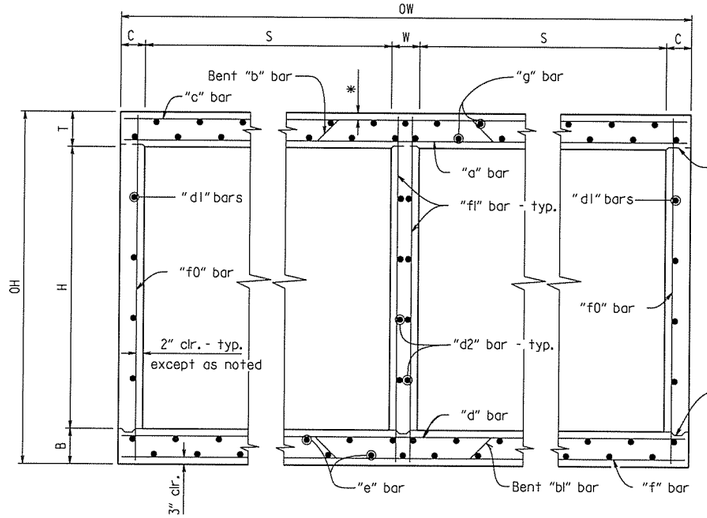
## SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL


sadonaldson 9/4/2014 3:50:29 PM
WORKSPACE: AHTD
L:\2005\05960 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_RCBC_GENERAL.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 58 | 897 |

1 SPECIAL DETAILS

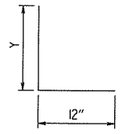



## TYPICAL SECTION M-M

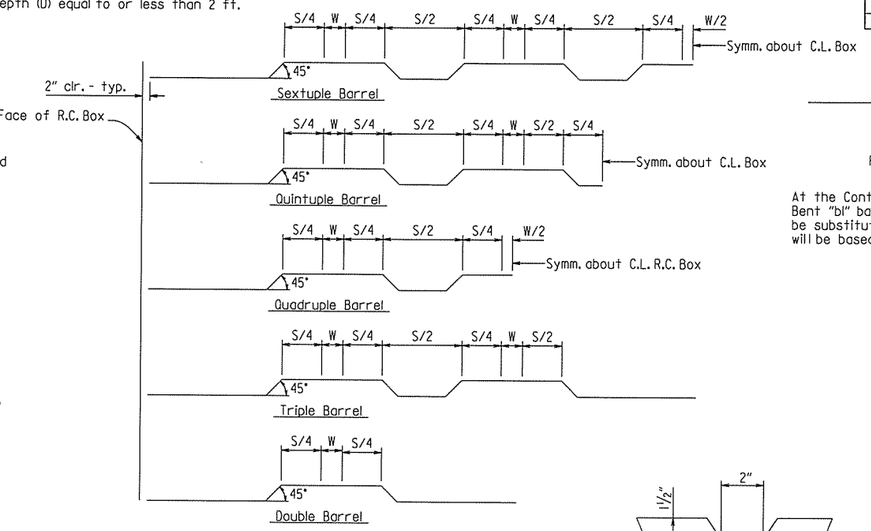
Top Slab
Straight "c" bars shall alternate with Bent "b" bars in top.
Straight "a" bars shall alternate with Bent "b" bars in bottom.

Bottom Slab
Straight "d" bars shall alternate with Bent "b1" bars in top.
Straight "f" bars shall alternate with Bent "b1" bars in bottom.

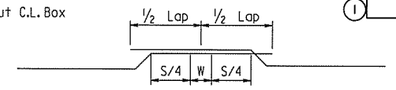
*2" clr. for fill depth (D) greater than 2 ft.
2½" clr. for fill depth (D) equal to or less than 2 ft.




"h" bars sketch

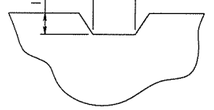



## Bent "b" bars or Bent "b1" bars sketch



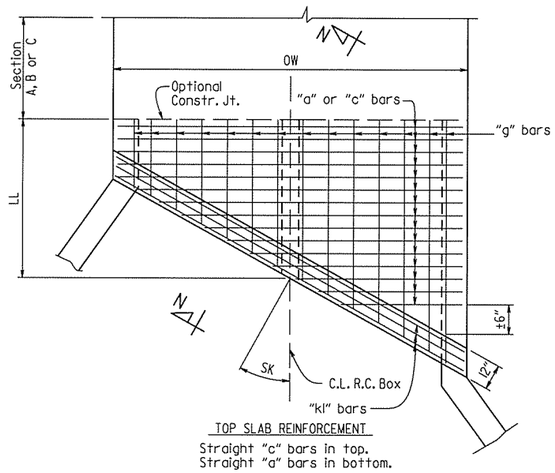

Optional Lap Detail
For Bent "b" bars and Bent "b1" bars

At the Contractor's option in lieu of providing Bent "b" or Bent "b1" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "b1" bar.

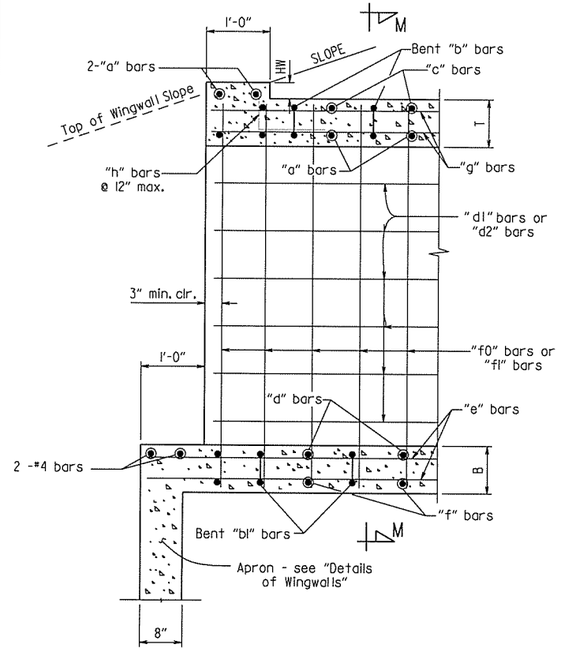



## TYPICAL KEYWAY DETAIL

(All Construction Joints)

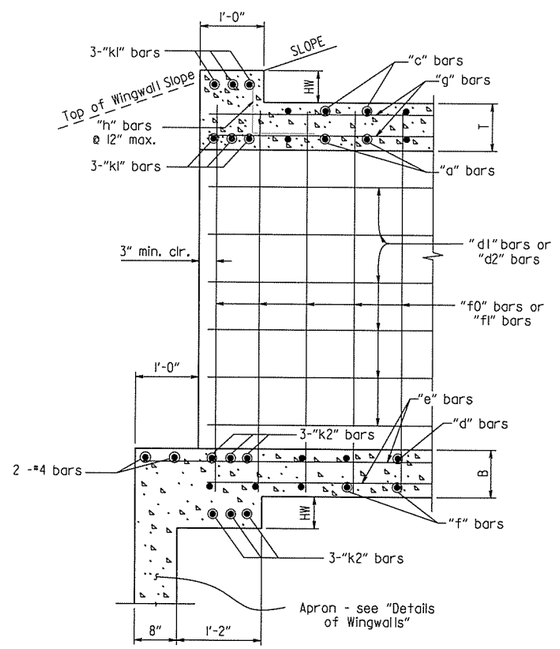



TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



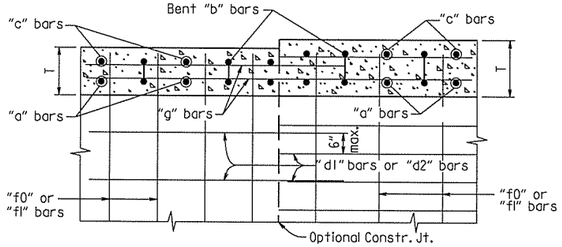

## PART LONGITUDINAL SECTION

(Non-Skewed Ends)




## PART LONGITUDINAL SECTION N-N

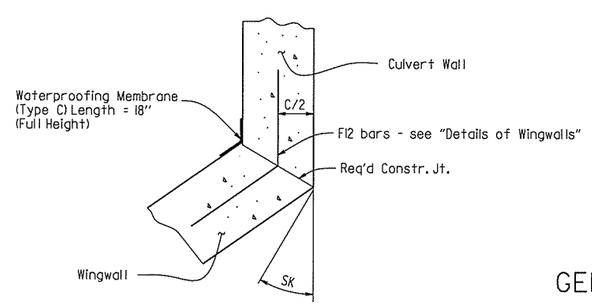
(Skewed Ends)




Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

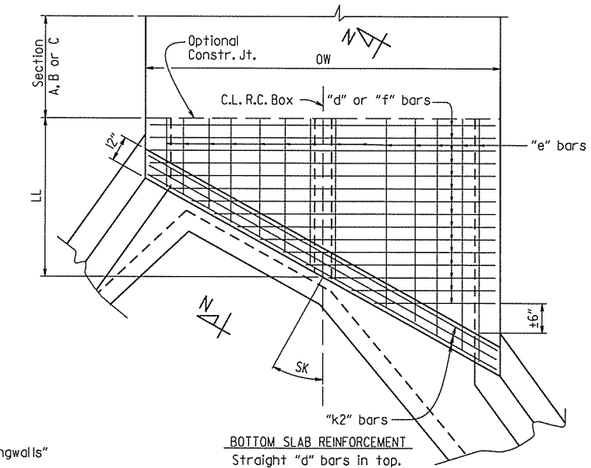
## LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR




## WINGWALL ATTACHMENT

See "Details of Wingwalls" for additional information and wingwall details.




BOTTOM SLAB REINFORCEMENT
Straight "d" bars in top.
Straight "f" bars in bottom.

## SKEWED END SECTION DETAILS

# SHEET 3 OF 4
# GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF MULTI-BARREL
R.C. BOX CULVERT

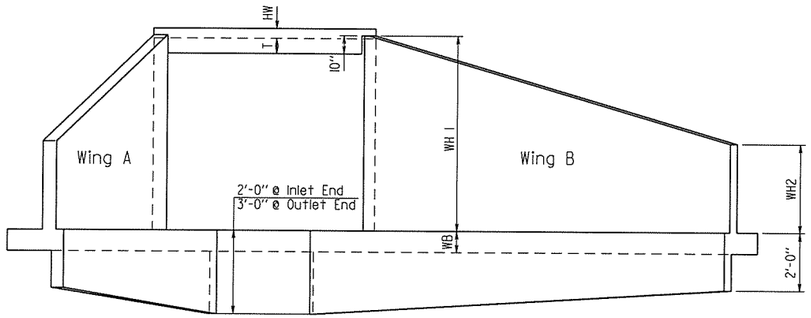
SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

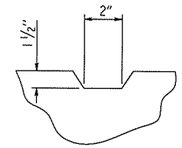
sdonaldson 9/4/2014 3:50:29 PM
WORKSPACE: AHTD
L:\RODS\05960 - AHTD Springdale Bypass\Drawings\NWY 112 TO I-540\SBG_RCBC_GENERAL.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 59 | 897 |

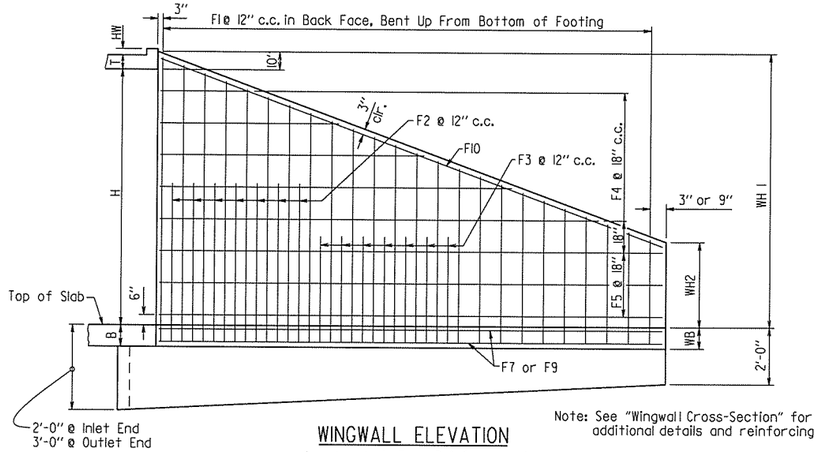
(1) SPECIAL DETAILS




END ELEVATION
Flared Wingwalls Shown

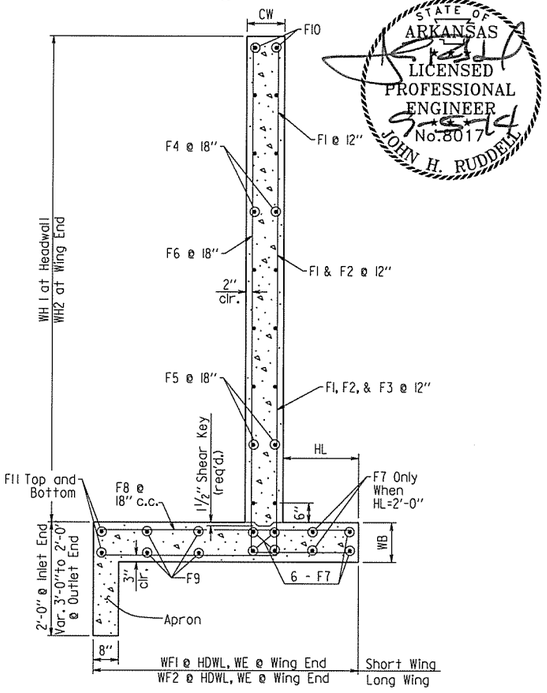



TYPICAL KEYWAY DETAIL
(All Construction Joints)

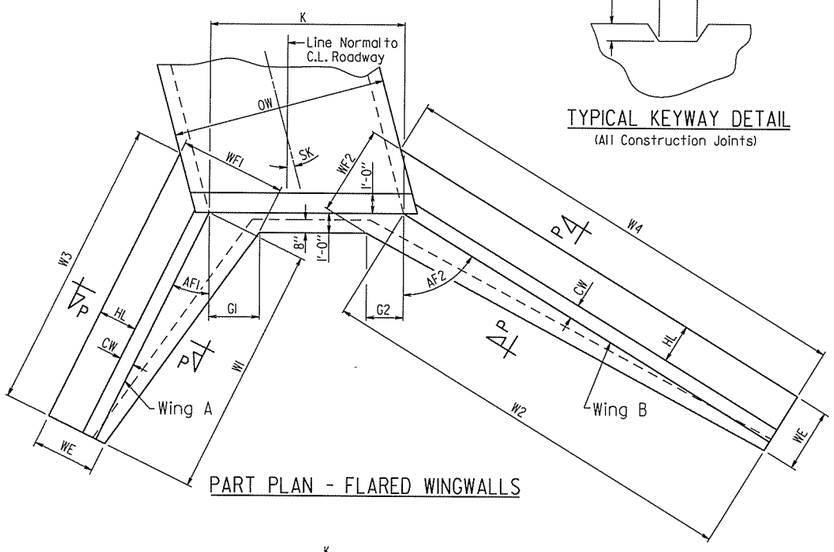



WINGWALL ELEVATION
Showing Back Face Reinforcement

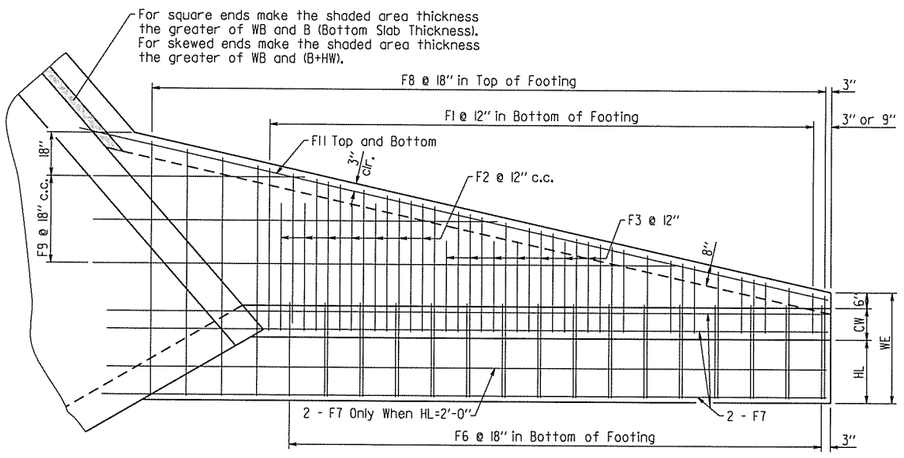
Note: See "Wingwall Cross-Section" for additional details and reinforcing



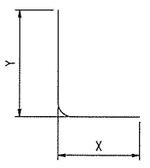

WINGWALL SECTION P-P



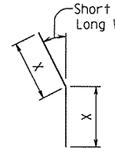

PART PLAN - FLARED WINGWALLS




PLAN - FLARED WINGWALLS
Showing Footing Reinforcement

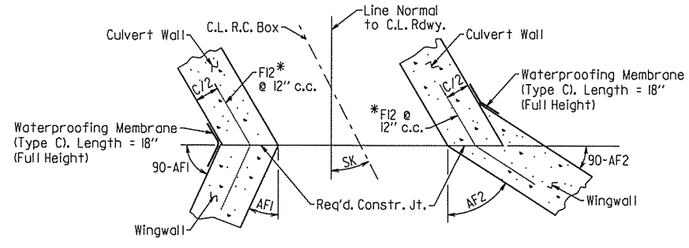



F1, F2, F3, & F6 BARS

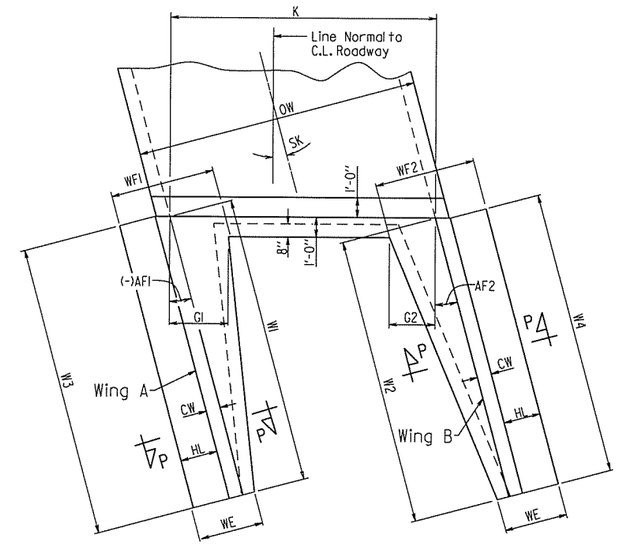



*F12 BAR

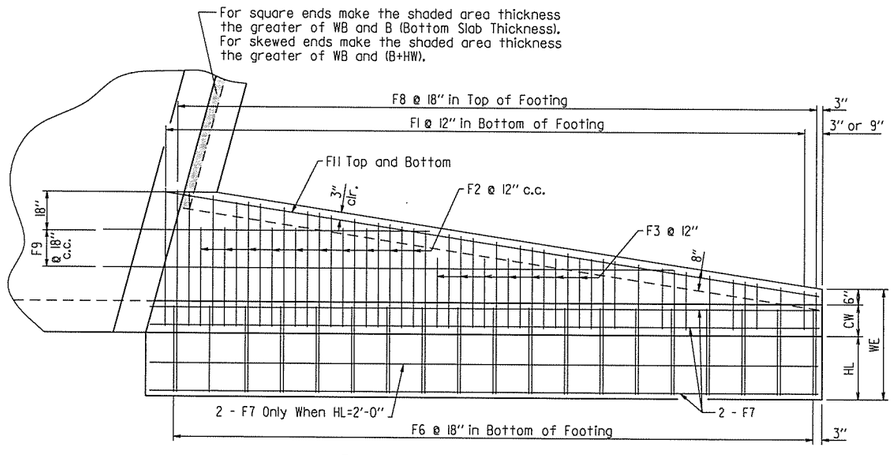
*F12 is a straight bar for parallel wingwalls




CONSTRUCTION JOINTS
Flared Wingwalls Shown




PART PLAN - PARALLEL WINGWALLS




PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement

# SHEET 4 OF 4
# GENERAL DETAILS OF R.C. BOX CULVERT
## DETAILS OF WINGWALLS
## SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL

sadonaldson 9/4/2014 3:20:08 PM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_RCBC_GENERAL.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 60 | 897 |

(1) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
9-5-14
No. 8017
JOHN H. RUDDELL

TABULAR DATA BY: SAD DATE: 09/02/2014
CHECKED BY: JHR DATE: 09/02/2014

This drawing to be used in conjunction with
SHEET 1 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE',
SHEET 2 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF SINGLE-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWING RCB-2.

For additional information and outlet sections, see Sheet 2 of 2.

## INLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 9'-6" | 6'-0" | 0'-9" | 0'-8" | 45 | 3:1 | 11'-6 5/8" | 2'-0" | 6'-10" | 2'-0" | 0 | 60 | 3'-2" | 3'-2" | 3'-9" | 0'-6" | 0'-5 1/8" | 14'-6" | 29'-0" | 16'-2 5/8" | 36'-4 1/2" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| INLET | INLET |
| CU.YD | LBS. |
| 10.98 | 1019 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 15 | L | Min | 3'-0" | - | - | - | L - | - | - | - | L - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 14'-2" |
| | | | | | Max | 7'-8" | | | | | | | | | | | | 4'-10" | | | | |
| | | | | X | Min | 0'-9" | | | | X - | | | | X - | | | | Max | | | | |
| | | | | | Max | 0'-9" | | | | | | | | | | | | 9'-4" | | | | |
| | | | | Y | Min | 2'-4" | | | | Y - | | | | Y - | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 29 | L | Min | 3'-0" | - | - | - | L - | - | - | - | L - | 4 | 18 | 4 | Min | 4 | 18 | 4 | 28'-8" |
| | | | | | Max | 8'-3" | | | | | | | | | | | | 9'-10" | | | | |
| | | | | X | Min | 0'-9" | | | | X - | | | | X - | | | | Max | | | | |
| | | | | | Max | 1'-4" | | | | | | | | | | | | 18'-10" | | | | |
| | | | | Y | Min | 2'-4" | | | | Y - | | | | Y - | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | |

| WING | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 18 | 10 | L | Min | 4'-9" | 4 | 8 | 17'-1" | 4 | 18 | 10 | Min | - | - | - | Min | 4 | 2 | 14'-10" | 4 | 2 | 15'-4" | 6 | 12 | 6 | L | 3'-4" | 345 |
| | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | - | | | | | | | | | | | | |
| | | | | X | Min | 2'-4" | | | | | | | Max | | | | Max | | | | | | | | | | X | 1'-8" | |
| | | | | | Max | 2'-4" | | | | | | | 2'-8" | | | | - | | | | | | | | | | | | |
| | | | | Y | Min | 2'-6" | | | | | | | Min | | | | | | | | | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | - | | | | | | | | | | | | | | | | |
| WING B | 4 | 18 | 20 | L | Min | 4'-7" | 4 | 8 | 37'-2" | 4 | 18 | 20 | Min | - | - | - | Min | 4 | 2 | 28'-11" | 4 | 2 | 31'-9" | 6 | 12 | 6 | L | 3'-4" | 674 |
| | | | | | Max | 9'-3" | | | | | | | 2'-8" | | | | - | | | | | | | | | | | | |
| | | | | X | Min | 2'-4" | | | | | | | Max | | | | Max | | | | | | | | | | X | 1'-8" | |
| | | | | | Max | 2'-4" | | | | | | | 3'-3" | | | | - | | | | | | | | | | | | |
| | | | | Y | Min | 2'-4" | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | |

## SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THICKNESS | BOTTOM SLAB THK. | SIDE WALL THICKNESS | HEADWALL HEIGHT | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINFORCING STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "b" SIZE | "b" SPACING | "b" LENGTHS VARY | "b" NO. REQ'D | SIDE WALL REINFORCING STEEL "f" SIZE | "f" SPACING | "f" NO. REQ'D | "f" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | B | C | HW | OW | OH | | | Max | | | | Max | | | | | |
| | | | | | | | | | | | | | | Min | | | | Min | | | | | |

| SKEW (DEGREE) | TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE | "d" SPACING | "d" NO. REQ'D | "d" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | HDWL "k1", "k2" & "h" BAR | HDWL SIZE | HDWL NO. REQ'D | HDWL LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | REINFORCING STEEL (GR. 60) (1) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | "d" | | | | "e" | | | | "d1" | | | | "k1", "k2" & "h" | | | | | |
| | | | | Max | | | | Max | | | | LONG | k1 | | | | | |
| | | | | Min | | | | Min | | | | | k2 | | | | | |
| | | | | | | | | | | | | SHORT | h | | | Y | | |

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## INLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) D | CLEAR SPAN (FT.) S | CLEAR HEIGHT (FT.) H | TOP SLAB THICKNESS T | BOTTOM SLAB THK. B | SIDE WALL THICKNESS C | OVER ALL WIDTH OW | OVER ALL HEIGHT OH | SECTION LENGTH (FT.) SL | TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE | "a" SPACING | "a" NO. REQ'D | "a" LENGTH | BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE | "b" SPACING | "b" NO. REQ'D | "b" LENGTH | SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE | "f" SPACING | "f" NO. REQ'D | "f" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | 30 | 8 | 6 | 12 | 12.5 | 9 | 9'-6" | 8'-0 1/2" | 71.00 | 8 | 6 | 142 | 9'-2" | 7 | 5 | 170 | 9'-2" | 7 | 8 | 212 | 7'-8" |
| F | 35 | 8 | 6 | 13 | 13.5 | 9.5 | 9'-7" | 8'-2 1/2" | 50.00 | 8 | 6 | 100 | 9'-3" | 7 | 5 | 120 | 9'-3" | 8 | 9 | 132 | 7'-10" |

| R.C. BOX SECTION | TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE | "d" SPACING | "d" NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | "e" SPACING | "e" NO. REQ'D | SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE | "d1" SPACING | "d1" NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|
| E | 4 | 9 | 12 | 4 | 8.5 | 13 | 4 | 12 | 12 |
| F | 4 | 8.5 | 13 | 4 | 8 | 13 | 4 | 11 | 14 |

| CLASS "S" CONCRETE CU. YDS. PER LIN. FT. | REINFORCING STEEL (GR. 50) LBS. PER LIN. FT. | (2) ADTL. REINF. PER LONG. LAP LOCATION LBS. | ADDITIONAL CONCRETE FOR HDWL CU. YDS. | TOTAL ADDITIONAL REINF. FOR HDWL LBS. |
|---|---|---|---|---|
| 1.05 | 166 | 43 | 0.09 | 63 |
| 1.14 | 177 | 47 | | |

| HDWL THK. | ADDITIONAL REINF. FOR HDWL |
|---|---|
| HW | LBS |
| 3" | 49 |

| "h" bars SIZE | Y | LENGTH | NO. REQ'D |
|---|---|---|---|
| 4 | 0'-11" | 1'-11" | 11 |

(2) Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

| Design Fill Depth | Range of Actual Fill Depth |
|---|---|
| 2 | 0.0 ft - 2.0 ft |
| 5 | >2.0 ft - 5.0 ft |
| 10 | >5.0 ft - 10.0 ft |
| 15 | >10.0 ft - 15.0 ft |
| 20 | >15.0 ft - 20.0 ft |
| 25 | >20.0 ft - 25.0 ft |
| 30 | >25.0 ft - 30.0 ft |
| 35 | >30.0 ft - 35.0 ft |
| 40 | >35.0 ft - 40.0 ft |

Data shown for Mid-Section, Slope Section(s), and Skewed End Section is based on the design fill depth shown in the table, see PLAN AND PROFILE SHEETS for actual fill depth.

## MID-SECTION

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) D | CLEAR SPAN (FT.) S | CLEAR HEIGHT (FT.) H | TOP SLAB THK. T | BOTTOM SLAB THK. B | SIDE WALL THK. C | OVER ALL WIDTH OW | OVER ALL HEIGHT OH | SECTION LENGTH (FT.) SL | TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE | "a" SPACING | "a" NO. REQ'D | "a" LENGTH | BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE | "b" SPACING | "b" NO. REQ'D | "b" LENGTH | SIDE WALL REINFORCING STEEL "f" LENGTH = OH - 4" SIZE | "f" SPACING | "f" NO. REQ'D | "f" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G | 40 | 8 | 6 | 14.5 | 14.5 | 10.5 | 9'-9" | 8'-5" | 112.00 | 8 | 6 | 224 | 9'-5" | 8 | 6 | 224 | 9'-5" | 6 | 5.5 | 488 | 8'-1" |

| R.C. BOX SECTION | TOP SLAB DISTRIBUTION REINF. STEEL "d" LENGTH = SL SIZE | "d" SPACING | "d" NO. REQ'D | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE | "e" SPACING | "e" NO. REQ'D | SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE | "d1" SPACING | "d1" NO. REQ'D |
|---|---|---|---|---|---|---|---|---|---|
| G | 4 | 7.5 | 14 | 4 | 7.5 | 14 | 4 | 10 | 16 |

| CLASS "S" CONCRETE CU. YDS. PER LIN. FT. | REINFORCING STEEL (Gr. 60) LBS. PER LIN. FT. | (3) ADTL. REINF. PER LONG. LAP LOCATION(S) LBS. |
|---|---|---|
| 1.26 | 183 | 51 |

(3) MID-SECTION BAR LAP TABLE

| # of Long. Laps Req'd. | SL = Section Length |
|---|---|
| 0 | <40.0 ft |
| 1 | >40.0 ft - 78.0 ft |
| 2 | >78.0 ft - 116.0 ft |
| 3 | >116.0 ft - 154.0 ft |
| 4 | >154.0 ft - 192.0 ft |
| 5 | >192.0 ft - 230.0 ft |
| 6 | >230.0 ft - 268.0 ft |
| 7 | >268.0 ft - 306.0 ft |
| 8 | >306.0 ft - 344.0 ft |

SHEET 1 OF 3
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 705+80

SPECIAL DETAILS

LRFD

sadonaldson 9/4/2014 3:20:09 PM
WORKSPACE: AHTD
L:\2200\059\680 - AHTD Springdale Bypass\Drawings\RWY #2 TO I-540\SBG_RCBC_705+80.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 61 | 897 |

(1) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
9-5-14

TABULAR DATA BY: SAD DATE: 11/29/2013
CHECKED BY: JHR DATE: 09/02/2014

## OUTLET WINGWALL TABLE

| OVER ALL WIDTH | CLEAR HEIGHT | FOOTING THK. | WING WALL THK. | BOX SKEW (DEG.) | SLOPE | HDWL LENGTH | HEEL | WALL HEIGHT AT HDWL | WALL HEIGHT AT WING END | WINGWALL ANGLE (DEGREE) WING A | WINGWALL ANGLE (DEGREE) WING B | FOOTING WIDTH AT WALL END | WIDTH OF WING FOOTINGS AT HDWL WING A | WIDTH OF WING FOOTINGS AT HDWL WING B | FOOTING DIMENSION PARALLEL WITH HDWL WING A | FOOTING DIMENSION PARALLEL WITH HDWL WING B | LENGTH OF WINGWALLS WING A | LENGTH OF WINGWALLS WING B | LENGTH OF FOOTING HEEL WING A | LENGTH OF FOOTING HEEL WING B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OW | H | WB | CW | SK | SL | K | HL | WH1 | WH2 | AF1 | AF2 | WE | WF1 | WF2 | G1 | G2 | W1 | W2 | W3 | W4 |
| 9'-1" | 6'-0" | 0'-9" | 0'-8" | 45 | 3:1 | 11'-5 1/8" | 2'-0" | 6'-10" | 2'-0" | 0 | 60 | 3'-2" | 3'-2" | 3'-9" | 0'-6" | 0'-5 1/8" | 14'-6" | 29'-0" | 16'-5 1/2" | 37'-0 1/4" |

| CLASS "S" CONCRETE (Includes apron) | REINFORCING STEEL (Includes apron and laps if required) |
|---|---|
| OUTLET | OUTLET |
| CU.YD | LBS. |
| 11.80 | 1024 |

| WING | F1 BAR SIZE | F1 MAX. SPACING | F1 NO. REQ'D | F1 LENGTHS VARY | | | F2 BAR SIZE | F2 SPACING | F2 NO. REQ'D | F2 LENGTHS | | | F3 BAR SIZE | F3 SPACING | F3 NO. REQ'D | F3 LENGTHS | | | F4 BAR SIZE | F4 SPACING | F4 NO. REQ'D | F4 LENGTHS VARY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 12 | 15 | L | Min | 3'-0" | - | - | - | L | - | | - | - | - | L | - | | 4 | 18 | 4 | Min |
| | | | | | Max | 7'-8" | | | | | | | | | | | | | | | | 4'-10" |
| | | | | X | Min | 0'-9" | | | | X | - | | | | | X | - | | | | | Max |
| | | | | | Max | 0'-9" | | | | | | | | | | | | | | | | 9'-4" |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | | Y | - | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | |
| WING B | 4 | 12 | 29 | L | Min | 3'-0" | - | - | - | L | - | | - | - | - | L | - | | 4 | 18 | 4 | Min |
| | | | | | Max | 8'-3" | | | | | | | | | | | | | | | | 9'-10" |
| | | | | X | Min | 0'-9" | | | | X | - | | | | | X | - | | | | | Max |
| | | | | | Max | 1'-4" | | | | | | | | | | | | | | | | 18'-10" |
| | | | | Y | Min | 2'-4" | | | | Y | - | | | | | Y | - | | | | | |
| | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | |

| WING | F5 BAR SIZE | F5 SPACING | F5 NO. REQ'D | F5 LENGTHS | F6 BAR SIZE | F6 SPACING | F6 NO. REQ'D | F6 LENGTHS VARY | | | F7 BAR SIZE | F7 NO. REQ'D | F7 LENGTHS | F8 BAR SIZE | F8 SPACING | F8 NO. REQ'D | F8 LENGTHS VARY | | F9 BAR SIZE | F9 SPACING | F9 NO. REQ'D | F9 LENGTHS | | F10 BAR SIZE | F10 NO. REQ'D | F10 LENGTHS | F11 BAR SIZE | F11 NO. REQ'D | F11 LENGTHS | F12 BAR SIZE | F12 SPACING | F12 NO. REQ'D | F12 LENGTHS | | REINF. STEEL QTY. PER WING (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WING A | 4 | 18 | 4 | 14'-2" | 4 | 18 | 10 | L | Min | 4'-9" | 4 | 8 | 17'-4" | 4 | 18 | 10 | L | Min | - | - | - | Min | | 4 | 2 | 14'-10" | 4 | 2 | 15'-4" | 6 | 12 | 6 | L | 3'-4" | 346 |
| | | | | | | | | | Max | 9'-3" | | | | | | | | Max | | | | - | | | | | | | | | | | | X | 1'-8" | |
| | | | | | | | | X | Min | 2'-4" | | | | | | | | - | | | | Max | | | | | | | | | | | | |
| | | | | | | | | | Max | 2'-4" | | | | | | | | - | | | | - | | | | | | | | | | | | |
| | | | | | | | | Y | Min | 2'-6" | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | | |
| WING B | 4 | 18 | 4 | 28'-8" | 4 | 18 | 20 | L | Min | 4'-7" | 4 | 8 | 37'-10" | 4 | 18 | 20 | L | Min | - | - | - | Min | | 4 | 2 | 28'-11" | 4 | 2 | 31'-9" | 6 | 12 | 6 | L | 3'-4" | 678 |
| | | | | | | | | | Max | 9'-3" | | | | | | | | Max | | | | - | | | | | | | | | | | | X | 1'-8" | |
| | | | | | | | | X | Min | 2'-4" | | | | | | | | - | | | | Max | | | | | | | | | | | | |
| | | | | | | | | | Max | 2'-4" | | | | | | | | - | | | | - | | | | | | | | | | | | |
| | | | | | | | | Y | Min | 2'-4" | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | Max | 7'-0" | | | | | | | | | | | | | | | | | | | | | | | | |

## OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THICKNESS | BOTTOM SLAB THK. | SIDE WALL THICKNESS | HEADWALL HEIGHT | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINFORCING STEEL "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | BOTTOM SLAB REINFORCING STEEL "b" SIZE | "b" SPACEING | "b" LENGTHS VARY | "b" NO. REQ'D | SIDE WALL REINFORCING STEEL "f" SIZE | "f" SPACING | "f" NO. REQ'D | "f" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SK | SL | D | S | H | LL | T | B | C | HW | OW | OH | | | | | | | | | | | | |
| 45 | 3:1 | 10 | 8 | 6 | 5'-6" | 8 | 9 | 6.5 | 3 | 9'-1" | 7'-5" | 5 | 4.5 | Max 8'-9" / Min 2'-1" / 8'-9" | 18 / 3 | 5 | 5 | Max 8'-9" / Min 2'-1" / 8'-9" | 16 / 3 | 5 | 7 | 20 | 7'-1" |

| TOP SLAB DISTRIBUTION REINFORCING STEEL "d" SIZE | "d" SPACING | "d" NO. REQ'D | "d" LENGTHS VARY | BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | HDWL "k1", "k2" & "h" BAR | HDWL SIZE | HDWL NO. REQ'D | HDWL LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |
| 4 | 12 | 9 | Max 9'-11" / Min 0'-10" | 4 | 12 | 9 | Max 9'-11" / Min 0'-10" | 4 | 12 | 6 | LONG 9'-11" | k1 | 5 | 6 | 12'-6" |
| | | | | | | | | | | | | k2 | 5 | 6 | 12'-6" |
| | | | | | | | | | | 6 | SHORT 0'-10" | h | 4 | 14 | 1'-7" / Y / 0'-7" |

| CLASS "S" CONCRETE (Includes HDWL) | (1) REINFORCING STEEL (GR. 60) (Includes HDWL) |
|---|---|
| CU. YDS. | LBS. |
| 4.23 | 674 |

(1) Any Bar Lap Required for the Skewed End Section shall be considered subsidiary to the item "Reinforcing Steel - Roadway (Gr. 60)."

## OUTLET SLOPE SECTION(S)

| R.C. BOX SECTION | DESIGN FILL DEPTH (FT.) D | CLEAR SPAN (FT.) S | CLEAR HEIGHT (FT.) H | TOP SLAB THICKNESS T | BOTTOM SLAB THK. B | SIDE WALL THICKNESS C | OVER ALL WIDTH OW | OVER ALL HEIGHT OH | SECTION LENGTH (FT.) SL | TOP SLAB REINFORCING STEEL "a" LENGTH = OW - 4" SIZE | "a" SPACING | "a" NO. REQ'D | "a" LENGTH | BOTTOM SLAB REINFORCING STEEL "b" LENGTH = OW - 4" SIZE | "b" SPACING | "b" NO. REQ'D | "b" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 10 | 8 | 6 | 8 | 9 | 6.5 | 9'-1" | 7'-5" | 31.50 | 5 | 4.5 | 84 | 8'-9" | 5 | 5 | 75 | 8'-9" |
| B | 15 | 8 | 6 | 9 | 9.5 | 7 | 9'-2" | 7'-6 1/2" | 14.00 | 6 | 5 | 33 | 8'-10" | 6 | 5.5 | 30 | 8'-10" |
| C | 20 | 8 | 6 | 10 | 10.5 | 8 | 9'-4" | 7'-8 1/2" | 14.00 | 7 | 6 | 28 | 9'-0" | 6 | 4.5 | 37 | 9'-0" |
| D | 25 | 8 | 6 | 11 | 11.5 | 8.5 | 9'-5" | 7'-10 1/2" | 14.00 | 6 | 4 | 42 | 9'-1" | 8 | 7.5 | 22 | 9'-1" |
| E | 30 | 8 | 6 | 12 | 12.5 | 9 | 9'-6" | 8'-0 1/2" | 14.00 | 8 | 6 | 28 | 9'-2" | 7 | 5 | 33 | 9'-2" |
| F | 35 | 8 | 6 | 13 | 13.5 | 9.5 | 9'-7" | 8'-2 1/2" | 24.00 | 8 | 6 | 48 | 9'-3" | 7 | 5 | 57 | 9'-3" |

| SIDE WALL REINFORCING STEEL "f" SIZE | "f" SPACING | "f" NO. REQ'D | "f" LENGTH = OH - 4" | TOP SLAB DISTRIBUTION REINF. STEEL "d" SIZE | "d" SPACING | "d" NO. REQ'D | "d" LENGTH = SL | BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTH = SL | SIDE WALL DISTRIBUTION REINF. STEEL "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH = SL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 7 | 108 | 7'-1" | 4 | 12 | 9 | | 4 | 12 | 9 | | 4 | 12 | 12 | |
| 6 | 8 | 42 | 7'-2" | 4 | 11 | 9 | | 4 | 11 | 9 | | 4 | 12 | 12 | |
| 7 | 7.5 | 44 | 7'-4" | 4 | 11 | 9 | | 4 | 10 | 10 | | 4 | 12 | 12 | |
| 7 | 9 | 36 | 7'-6" | 4 | 10 | 10 | | 4 | 9 | 11 | | 4 | 12 | 12 | |
| 7 | 8 | 42 | 7'-8" | 4 | 9 | 11 | | 4 | 8.5 | 12 | | 4 | 12 | 12 | |
| 8 | 9 | 64 | 7'-10" | 4 | 8.5 | 12 | | 4 | 8 | 13 | | 4 | 11 | 12 | |

| HDWL THK. HW | ADDITIONAL REINF. FOR HDWL LBS | "h" bars SIZE | Y | LENGTH | NO. REQ'D |
|---|---|---|---|---|---|
| | | | | | |

| CLASS "S" CONCRETE CU. YDS. PER LIN. FT. | REINFORCING STEEL (GR. 50) LBS. PER LIN. FT. | (2) ADTL. REINF. PER LONG. LAP LOCATION LBS. | ADDITIONAL CONCRETE FOR HDWL CU. YDS. | TOTAL ADDITIONAL REINF FOR HDWL LBS. |
|---|---|---|---|---|
| 0.72 | 92 | 35 | | |
| 0.78 | 113 | 35 | | |
| 0.89 | 129 | 36 | | |
| 0.97 | 143 | 39 | | |
| 1.05 | 164 | 41 | | |
| 1.14 | 175 | 43 | | |

(2) Bar Lap - Add one long. lap for each Slope Section, and one additional long. lap for Slope Sections greater than 40'-0" in length.

| Min. Bar Lap Length | |
|---|---|
| #4 | 1'-9" |
| #5 | 2'-2" |
| #6 | 2'-7" |
| #7 | 3'-6" |
| #8 | 4'-7" |

| Bar Pin Dia. Table | |
|---|---|
| #4 | 3" |
| #5 | 3 3/4" |
| #6 | 4 1/2" |
| #7 | 5 1/4" |
| #8 | 6" |

The required number of bars and lengths shown are for estimating purpose only. The actual number and length required shall be determined in field.

Unless otherwise noted, all dimensions are in inches.

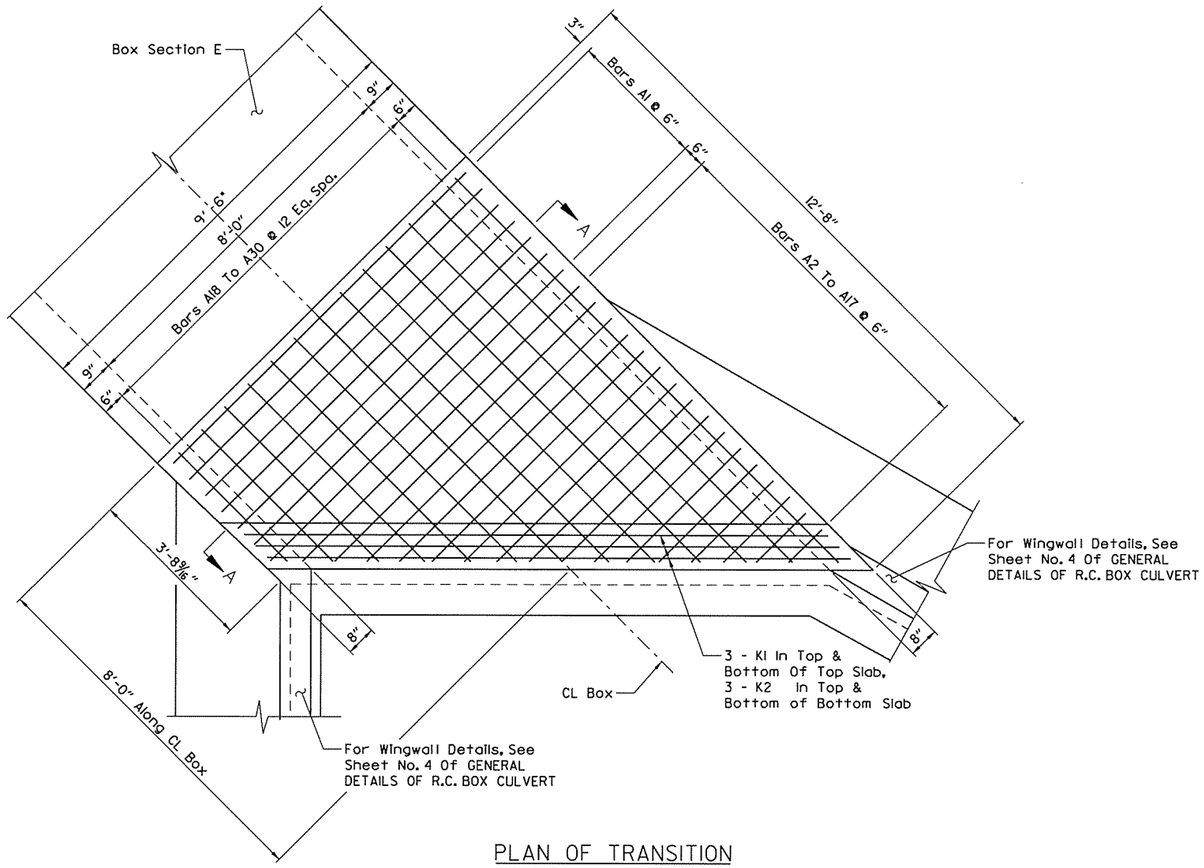
SHEET 2 OF 3
DETAILS OF R.C. BOX CULVERT
SINGLE BARREL BOX CULVERT
STA 705+80

SPECIAL DETAILS

LRFD

sadonaldson 9/4/2014 3:20:10 PM
WORKSPACE: AHTD
L:\2005\05980 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBC.RCBC.705+80.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 62 | 897 |
| | | | | (2) | SPECIAL DETAILS | | | |



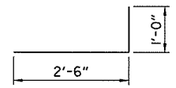

PLAN OF TRANSITION

SHOWING TOP & BOTTOM SLAB REINFORCEMENT

## REINFORCEMENT SCHEDULE

(TRANSITION AREA ONLY)

| MARK | NO. REQ'D. | SIZE | FORM | LENGTH |
|---|---|---|---|---|
| A1 | 14 | #6 | STR. | 9'-0" |
| A2 TO A17 | 2 EA. | #6 | STR. | 8'-6" TO 1'-0" |
| A18 TO A30 | 2 EA. | #6 | STR. | 3'-4" TO 11'-10" |
| D1 | 6 | #4 | STR. | 3'-6" |
| D2 | 6 | #4 | STR. | 11'-9" |
| F | 34 | #5 | STR. | 7'-0" |
| H | 14 | #5 | BENT | 3'-6" |
| K1 | 6 | #5 | STR. | 12'-9" |
| K2 | 6 | #5 | STR. | 12'-9" |
| K3 | 2 | #4 | STR. | 14'-9" |

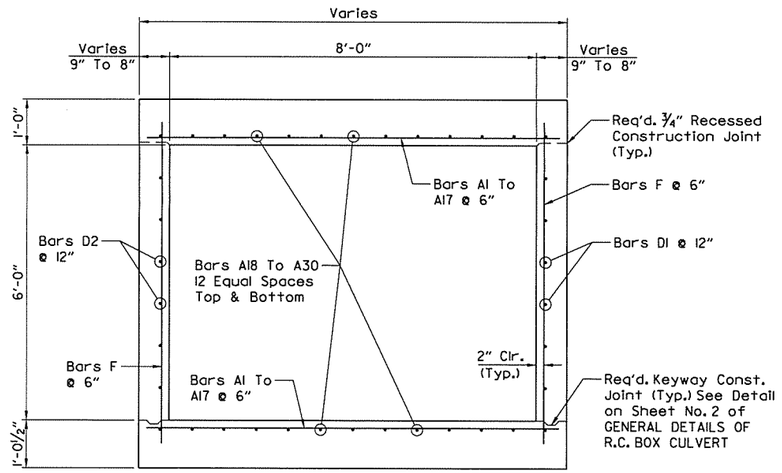



Bars H

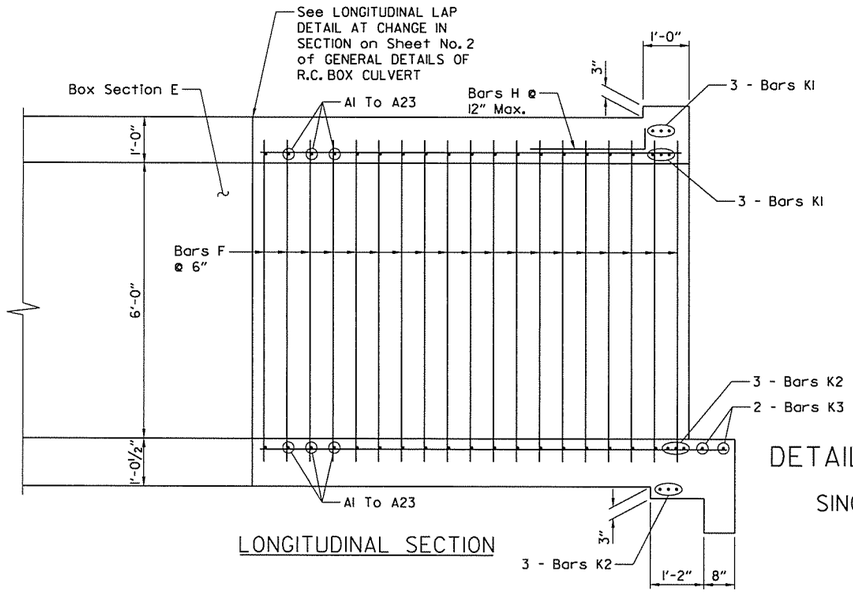
## ESTIMATED QUANTITIES

| ITEM | UNIT | QUANTITY |
|---|---|---|
| CLASS "S" CONCRETE | CU. YD. | 8.22 |
| REINFORCEMENT | LBS. | 1,253 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8658
WILLIAM M. McENTIRE II
9-5-14




SECTION A-A




LONGITUDINAL SECTION

# SHEET 3 OF 3
# DETAILS OF R.C. BOX CULVERT

SINGLE BARREL BOX CULVERT
STA 705+80

SPECIAL DETAILS

LRFD

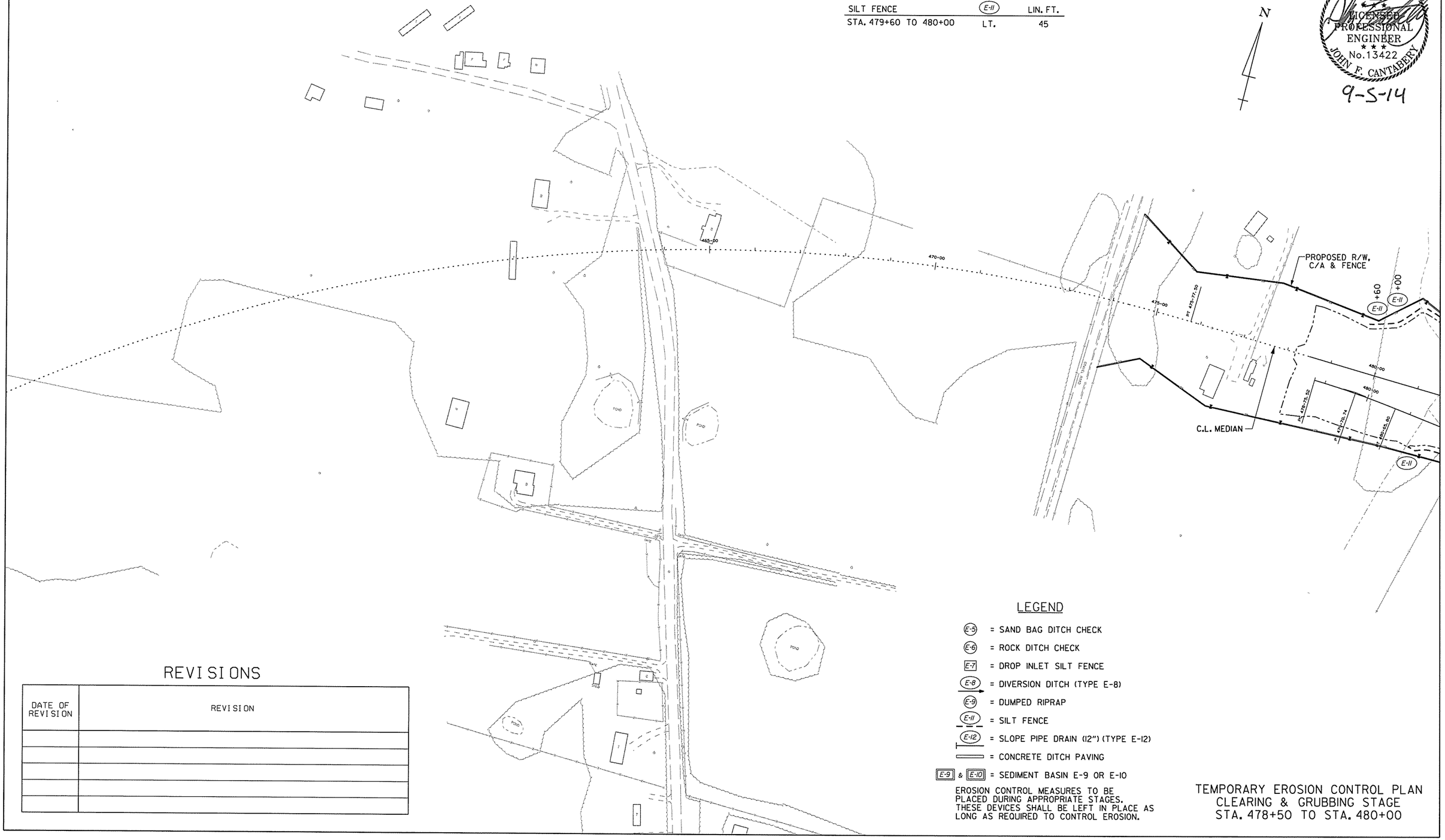

cgarrvasin1 9/5/2014 10:33:06 AM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_RCBC_SPEC_DET.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 63 | 897 |
| | | | | (2) | TEMPORARY EROSION CONTROL PLAN | | | |

| SILT FENCE | (E-11) | LIN. FT. |
|---|---|---|
| STA. 479+60 TO 480+00 | LT. | 45 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N




## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 478+50 TO STA. 480+00

sadonaldson 9/4/2014 3:20:13 PM
WORKSPACE: AHTD
L:\2005\05916BO - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGEC_12.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 64 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 508+40 | LT. | 2533 |

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 495+75 | LT. | 2720 |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 480+00 TO 480+55 | LT. | 75 |
| STA. 480+70 TO 482+10 | LT. | 165 |
| STA. 481+15 TO 482+90 | RT. | 180 |
| STA. 493+20 TO 495+70 | LT. | 270 |
| STA. 493+70 TO 494+95 | RT. | 135 |
| STA. 495+75 TO 497+50 | LT. | 190 |
| STA. 509+05 TO 510+00 | RT. | 110 |

RAMP 4

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 490+40 TO 496+20 | RT. | 600 |
| STA. 496+25 TO 498+35 | RT. | 230 |
| STA. 497+55 TO 498+50 | LT. | 140 |

RAMP 3

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 499+15 TO 499+95 | LT. | 95 |
| STA. 505+00 TO 506+80 | LT. | 205 |
| STA. 507+25 TO 508+65 | LT. | 155 |

RAMP 1

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 494+55 TO 500+00 | LT. | 535 |

RAMP 2

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 501+70 TO 502+90 | LT. | 125 |
| STA. 505+70 TO 509+10 | LT. | 365 |
| STA. 506+10 TO 508+60 | RT. | 265 |
| STA. 509+15 TO 510+00 | LT. | 100 |

C.L. RAMP 4
C.L. MEDIAN
C.L. RAMP 1
C.L. HWY. 112
C.L. RAMP 3
C.L. RAMP 2
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
TEMPORARY CONSTRUCTION EASEMENT
CHICKEN HOUSE
POND
BUILDING FOUNDATION

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 480+00 TO STA. 510+00

sadonaldson 9/4/2014 3:20:13 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STGIEC_13.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 65 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

TEMPORARY CONSTRUCTION EASEMENT

C.L. RAMP 2

C.L. RAMP 3

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

HWY. 112

| SILT FENCE (E-11) | | LIN FT. |
|---|---|---|
| STA. 14+40 TO 18+90 | RT. | 460 |
| STA. 16+90 TO 18+85 | LT. | 195 |
| STA. 21+05 TO 25+80 | RT. | 485 |
| STA. 21+55 TO 26+20 | LT. | 470 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W

C.L. HWY. 112

PROPOSED R/W

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

C.L. RAMP 4

C.L. MEDIAN

C.L. RAMP 1

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
HWY. 112

sadonaldson 9/4/2014 3:20:13 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SB6_STGEC_13a.dgn
REVISED DATE:

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 518+05 | LT. | 2493 |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 510+00 TO 513+60 | RT. | 375 |
| STA. 515+65 TO 518+00 | LT. | 255 |
| STA. 518+50 TO 520+35 | RT. | 205 |
| STA. 520+40 TO 521+60 | RT. | 130 |

N

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 66 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

GRIMSLEY RD. DETOUR

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 15+90 TO 21+60 | RT. | 590 |
| STA. 16+00 TO 21+30 | LT. | 200 |

RAMP 2

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 510+00 TO 511+90 | LT. | 200 |

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 510+00 TO STA. 540+00

sadonaldson 9/4/2014 3:20:14 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STGEC_14.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 67 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 558+00 TO 558+85 | LT. | 110 |

N

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

C.L. MEDIAN

WEST ELEMENTARY SCHOOL
SPRINGDALE SCHOOL DISTRICT
UNDER CONSTRUCTION

WEST MILLER ROAD

BUILDING FOUNDATION

BUILDING FOUNDATION

BOUNDARY OF EARTHWORK

BOUNDARY OF EARTHWORK

PI 558+71.84

PI 559+47.25

340+00 345+00 350+00 555+00 560+00 565+00 570+00

558+00 E-11

558+85 E-11

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 540+00 TO STA. 570+00

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

sadonaldson 9/4/2014 3:20:14 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STGIEC_I5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 68 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 581+70 | LT. | 1667 |
| STA. 581+65 | RT. | 1453 |

| SEDIMENT BASIN | E-14 | CU. YD. |
|---|---|---|
| STA. 590+40 | LT. | 600 |
| STA. 591+70 | LT. | 600 |
| STA. 590+50 | RT. | 547 |
| STA. 591+75 | RT. | 547 |

| SILT FENCE | E-11 | | LIN. FT. |
|---|---|---|---|
| STA. 579+30 | TO 579+50 | RT. TO LT. | 585 |
| STA. 589+75 | TO 589+80 | LT. TO RT. | 435 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

N

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

TEMPORARY CONSTRUCTION EASEMENT

C.L. MEDIAN

TEMPORARY CONSTRUCTION EASEMENT

SPRING CK.

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

C.L. WAGON WHEEL RD.

BUILDING, UTILITY, AND ROAD CONSTRUCTION UNDER WAY AS OF PHOTO DATE OF JAN. 2, 2007

HOMES UNDER CONSTRUCTION AS OF PHOTO DATE OF JAN. 2, 2007

HOMES UNDER CONSTRUCTION AS OF PHOTO DATE OF JAN. 2, 2007

64th STREET

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-14 = SEDIMENT BASIN E-9 OR E-14

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 570+00 TO STA. 600+00

sadonaldson 9/4/2014 3:20:15 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGIEC_16.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 69 | 897 |

2 TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 613+45 | LT. | 3160 |

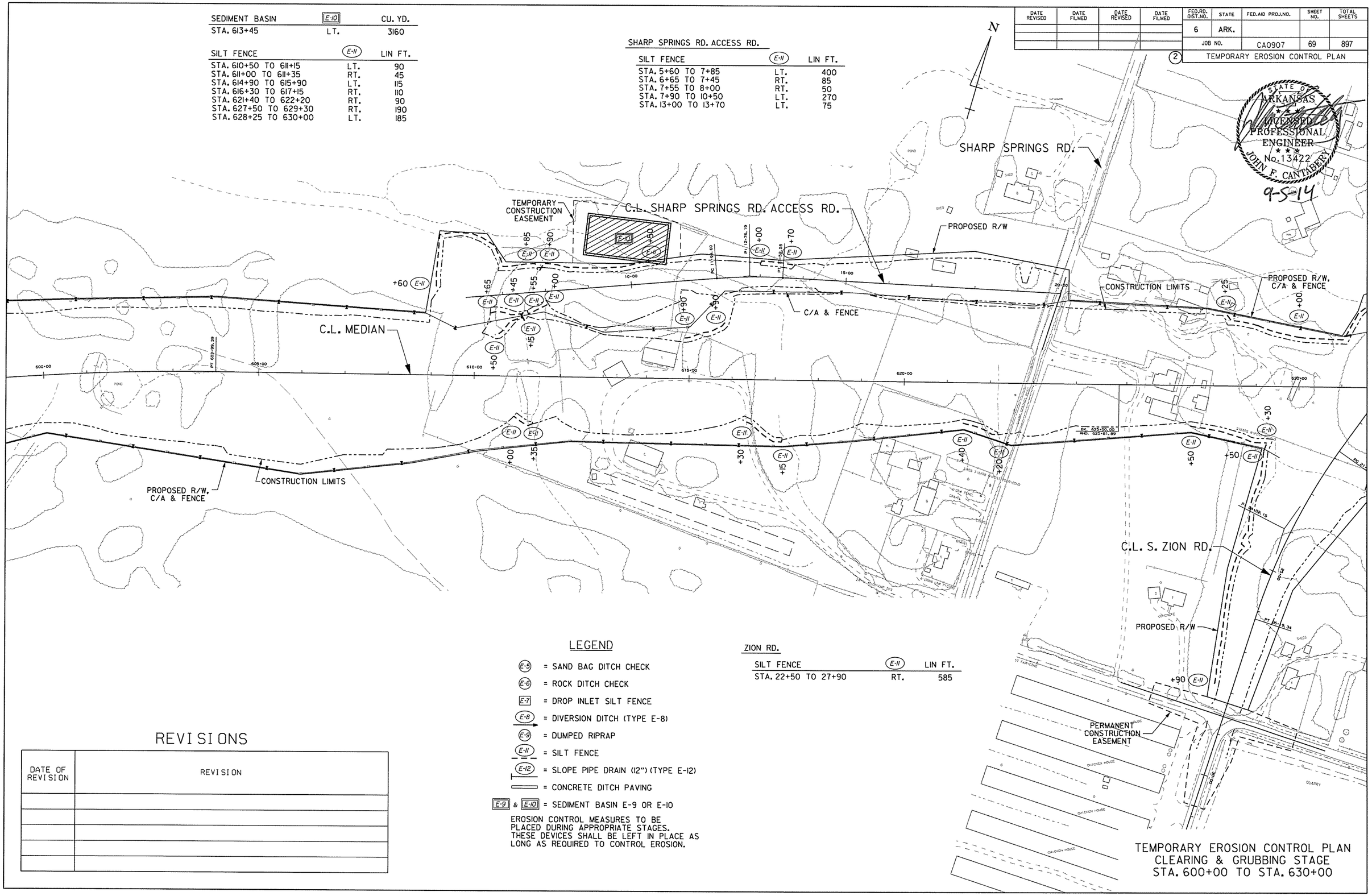
| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 610+50 TO 611+15 | LT. | 90 |
| STA. 611+00 TO 611+35 | RT. | 45 |
| STA. 614+90 TO 615+90 | LT. | 115 |
| STA. 616+30 TO 617+15 | RT. | 110 |
| STA. 621+40 TO 622+20 | RT. | 90 |
| STA. 627+50 TO 629+30 | RT. | 190 |
| STA. 628+25 TO 630+00 | LT. | 185 |

SHARP SPRINGS RD. ACCESS RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 5+60 TO 7+85 | LT. | 400 |
| STA. 6+65 TO 7+45 | RT. | 85 |
| STA. 7+55 TO 8+00 | RT. | 50 |
| STA. 7+90 TO 10+50 | LT. | 270 |
| STA. 13+00 TO 13+70 | LT. | 75 |

ZION RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 22+50 TO 27+90 | RT. | 585 |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 600+00 TO STA. 630+00

sadonaldson 9/4/2014 3:20:5 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGEC_17.dgn
REVISED DATE:

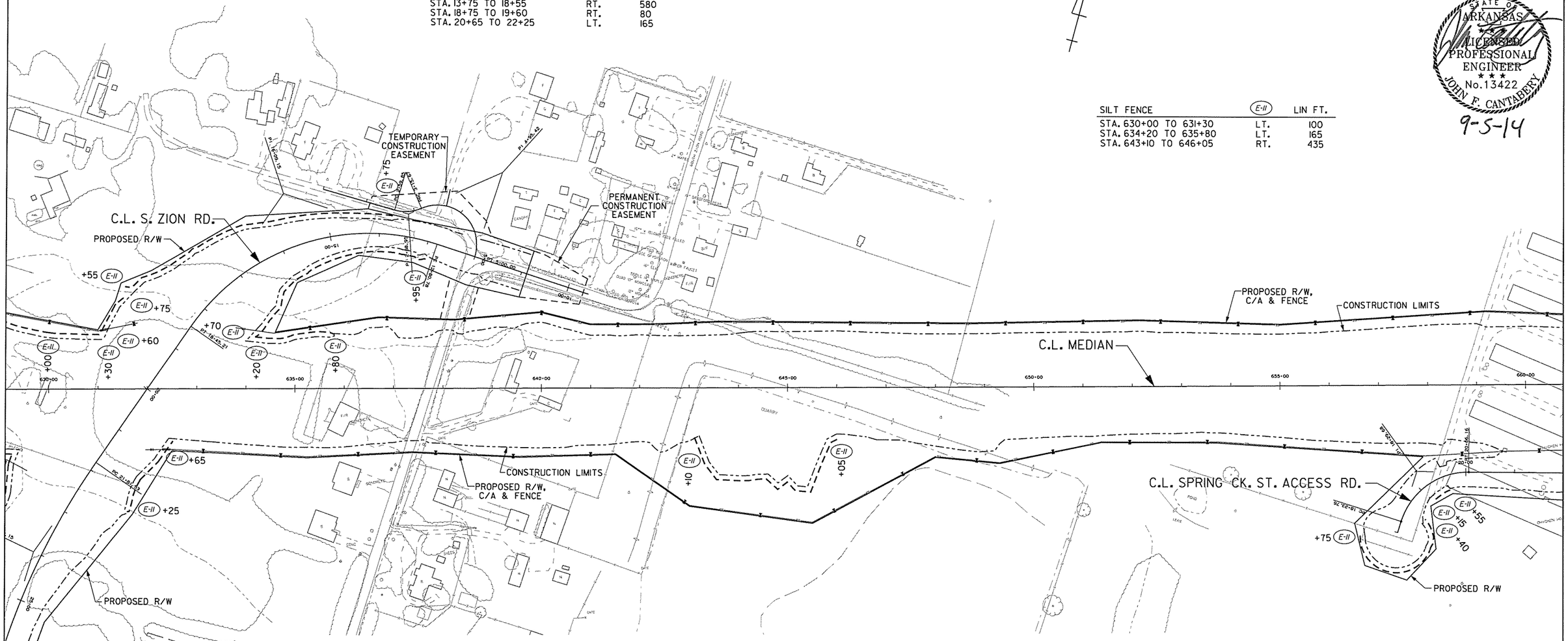
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 70 | 897 |
| | | | | (2) | TEMPORARY EROSION CONTROL PLAN | | | |

ZION RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 12+95 TO 17+70 | LT. | 425 |
| STA. 13+75 TO 18+55 | RT. | 580 |
| STA. 18+75 TO 19+60 | RT. | 80 |
| STA. 20+65 TO 22+25 | LT. | 165 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 630+00 TO 631+30 | LT. | 100 |
| STA. 634+20 TO 635+80 | LT. | 165 |
| STA. 643+10 TO 646+05 | RT. | 435 |




| SPRING CREEK RD. ACCESS RD. | | | |
|---|---|---|---|
| SILT FENCE | (E-11) | | LIN FT. |
| STA. 17+75 TO 18+40 | LT. TO RT. | | 270 |
| STA. 19+15 TO 19+55 | RT. | | 35 |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 630+00 TO STA. 660+00

sadonaldson 9/4/2014 3:20:16 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGIEC_18.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 71 | 897 |

2 TEMPORARY EROSION CONTROL PLAN

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

| SEDIMENT BASIN | [E-9] | CU. YD. |
|---|---|---|
| STA. 663+65 | RT. | 1413 |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 666+25 TO 666+90 | LT. | 100 |

PUPPY CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 21+00 TO 24+60 | RT. | 370 |
| STA. 24+30 TO 27+00 | LT. | 265 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N

PERMANENT CONSTRUCTION EASEMENT
C.L. SPRING CK. ST.
C.L. PUPPY CK. RD.
CONSTRUCTION LIMITS
C/A & FENCE
C.L. PUPPY CK. RD. DETOUR
C.L. MEDIAN
C.L. SPRING CK. ST. ACCESS RD.
PROPOSED R/W
PROPOSED R/W, C/A & FENCE
PERMANENT CONSTRUCTION EASEMENT
C.L. PUPPY CK. RD. ACCESS RD.
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED R/W
PERMANENT CONSTRUCTION EASEMENT

| SPRING CREEK RD. ACCESS RD. | | | |
|---|---|---|---|
| SILT FENCE | (E-11) | | LIN FT. |
| STA. 24+40 TO 24+80 | RT. | | 100 |
| STA. 25+10 TO 27+20 | RT. | | 240 |
| STA. 38+30 TO 38+75 | LT. | | 50 |

| SPRING CREEK RD. | | | |
|---|---|---|---|
| SILT FENCE | (E-11) | | LIN FT. |
| STA. 16+95 TO 18+15 | LT. | | 125 |
| STA. 23+65 TO 24+70 | RT. | | 115 |

| PUPPY CREEK RD. ACCESS RD. | | |
|---|---|---|
| SILT FENCE | (E-11) | LIN FT. |
| STA. 11+25 TO 12+10 | RT. | 80 |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 660+00 TO STA. 690+00

sadonaldson 9/4/2014 3:20:16 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGIEC_19.dgn
REVISED DATE:

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 693+85 | RT. | 2320 |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 693+80 TO 696+00 | RT. TO LT. | 715 |
| STA. 699+25 TO 699+95 | RT. TO LT. | 645 |
| STA. 701+50 TO 702+60 | RT. | 160 |
| STA. 701+50 TO 705+70 | RT. | 430 |
| STA. 706+20 TO 708+20 | RT. TO LT. | 250 |
| STA. 706+40 TO 708+30 | RT. | 235 |

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 701+85 | LT. | 6560 |

RAMP NW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 703+90 TO 709+48 | LT. | 580 |
| STA. 708+35 TO 712+80 | RT. | 425 |
| STA. 716+40 TO 716+60 | LT. | 180 |

RAMP EN

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 707+10 TO 708+00 | RT. | 95 |
| STA. 714+60 TO 717+00 | RT. TO LT. | 820 |

RAMP SW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 709+48 TO 717+35 | LT. | 800 |

PUPPY CREEK RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 30+60 TO 31+00 | LT. | 50 |
| STA. 32+35 TO 35+00 | RT. | 260 |

PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 14+80 TO 16+20 | LT. TO RT. | 365 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 72 | 897 |

TEMPORARY EROSION CONTROL PLAN

TEMPORARY CONSTRUCTION EASEMENT
PERMANENT CONSTRUCTION EASEMENT
PROPOSED R/W, C/A & FENCE CONSTRUCTION LIMITS
C.L. GOAD SPRINGS RD. ACCESS RD.
C.L. PUPPY CK. RD.
CONSTRUCTION LIMITS
C.L. RAMP NW
C.L. RAMP SW
C.L. MEDIAN
C.L. PUPPY CK. RD. DETOUR
PUPPY CK.
TEMPORARY CONSTRUCTION EASEMENT
C.L. RAMP NW
C.L. RAMP EN
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
CONSTRUCTION LIMITS
C.L. PUPPY CK. RD. ACCESS RD.
PERMANENT CONSTRUCTION EASEMENT
PROPOSED R/W, C/A & FENCE
C.L. RAMP ES

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 690+00 TO STA. 720+00

sadonaldson 9/4/2014 3:20:17 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGEC_20.dgn
REVISED DATE:

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 721+10 TO 721+70 | LT. TO RT. | 325 |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 73 | 897 |

2 TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

C.L. RAMP SW
C.L. RAMP EN
C.L. I-49
C.L. MEDIAN
C.L. RAMP NW
PC 738+63.52

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
STA. 720+00 TO STA. 721+00

sadonaldson 9/4/2014 3:20:17 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGEC_21.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 74 | 897 |

2 TEMPORARY EROSION CONTROL PLAN

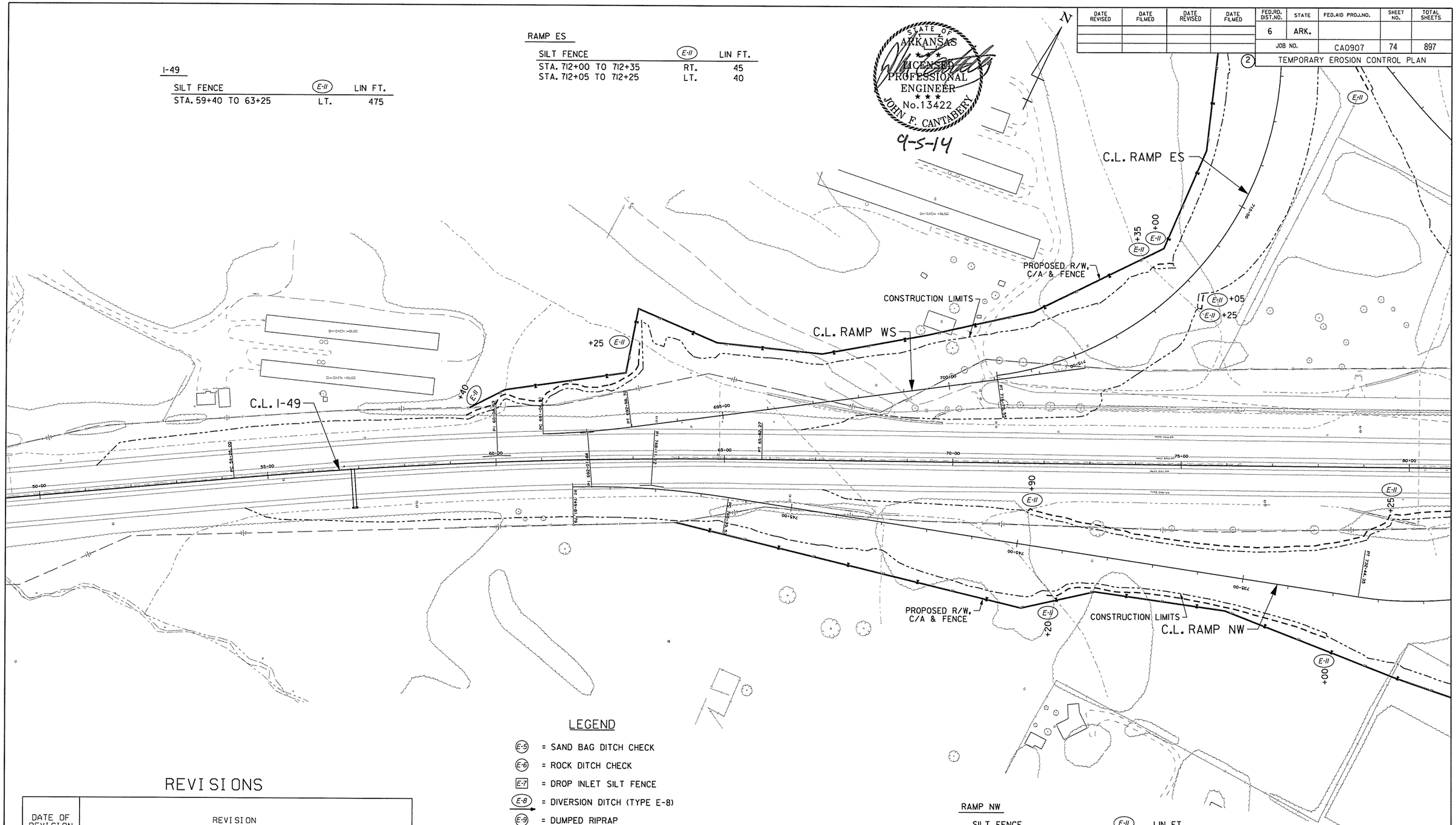
I-49

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 59+40 TO 63+25 | LT. | 475 |

RAMP ES

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 712+00 TO 712+35 | RT. | 45 |
| STA. 712+05 TO 712+25 | LT. | 40 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




RAMP NW

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 732+25 TO 739+90 | RT. | 790 |
| STA. 733+00 TO 739+20 | LT. | 635 |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
I-49 STA. 50+00 TO STA. 80+00

sadonaldson 9/4/2014 3:46:41PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STGEC_21a.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 75 | 897 |

2 TEMPORARY EROSION CONTROL PLAN

C.L. GOAD SPRINGS RD. ACCESS RD.

C.L. RAMP SW

C.L. MEDIAN

C.L. RAMP SE

C.L. I-49

C.L. RAMP EN

SILENT GROVE RD.

C.L. RAMP NW

CONSTRUCTION LIMITS

RAMP EN

| SILT FENCE (E-11) | | LIN FT. |
|---|---|---|
| STA. 727+60 TO 737+70 | RT. | 1220 |
| STA. 729+95 TO 737+60 | LT. TO RT. | 930 |
| STA. 742+90 TO 743+00 | LT. TO RT. | 765 |

RAMP SE

| SILT FENCE (E-11) | | LIN FT. |
|---|---|---|
| STA. 707+70 TO 708+00 | LT. TO RT. | 520 |
| STA. 709+95 TO 713+45 | RT. TO LT. | 480 |

RAMP SW

| SILT FENCE (E-11) | | LIN FT. |
|---|---|---|
| STA. 717+05 TO 722+20 | RT. | 560 |
| STA. 722+25 TO 730+95 | RT. | 1045 |

RAMP NW

| SILT FENCE (E-11) | | LIN FT. |
|---|---|---|
| STA. 729+35 TO 732+25 | LT. TO RT. | 1150 |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.13422 JOHN F. CANTABERY

9-5-14

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
I-49 STA. 80+00 TO STA. 110+00

sadonaldson 9/4/2014 3:20:18 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STGEC_21b.dgn
REVISED DATE:

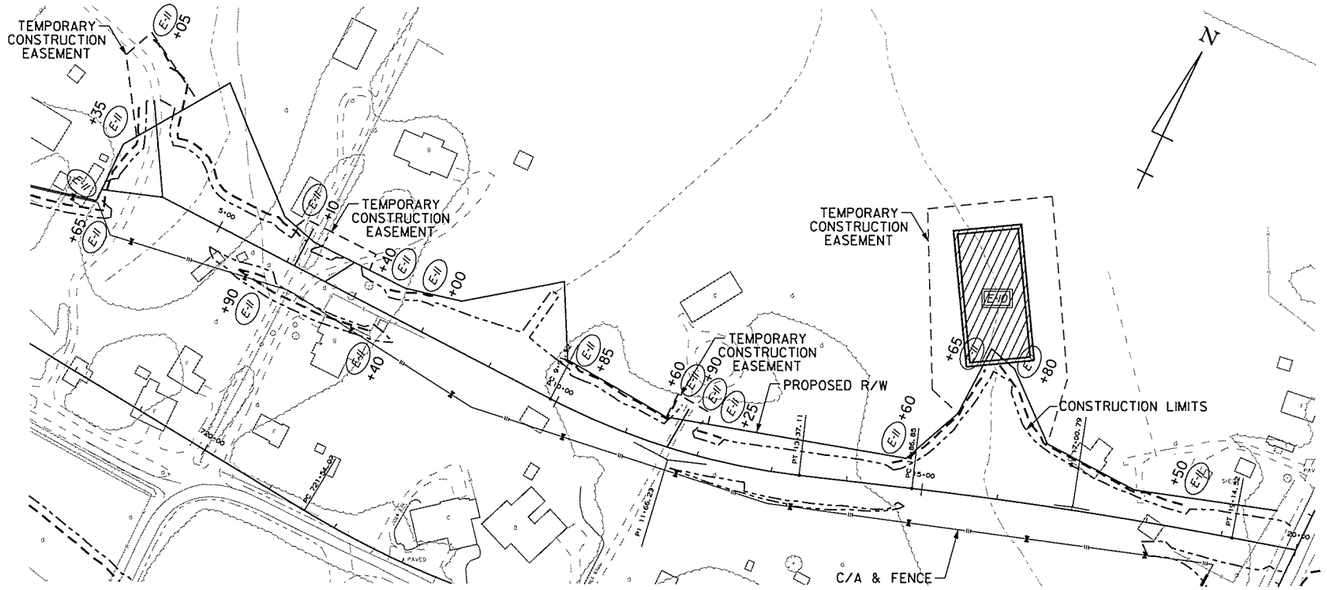
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 76 | 897 |
| | | | | (2) | TEMPORARY EROSION CONTROL PLAN | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

GOAD SPRINGS RD. FRONTAGE RD.

| SEDIMENT BASIN | (E-10) | CU. YD. |
|---|---|---|
| STA. 15+80 | LT. | 2707 |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 3+35 TO 3+65 | LT. TO RT. | 160 |
| STA. 3+05 TO 6+10 | LT. | 378 |
| STA. 5+90 TO 7+40 | RT. | 236 |
| STA. 7+40 TO 8+00 | LT. | 65 |
| STA. 9+85 TO 11+60 | LT. | 195 |
| STA. 11+90 TO 12+25 | LT. | 35 |
| STA. 14+60 TO 15+65 | LT. | 180 |
| STA. 15+80 TO 18+50 | LT. | 325 |




## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
GOAD SPRINGS RD. ACCESS RD.

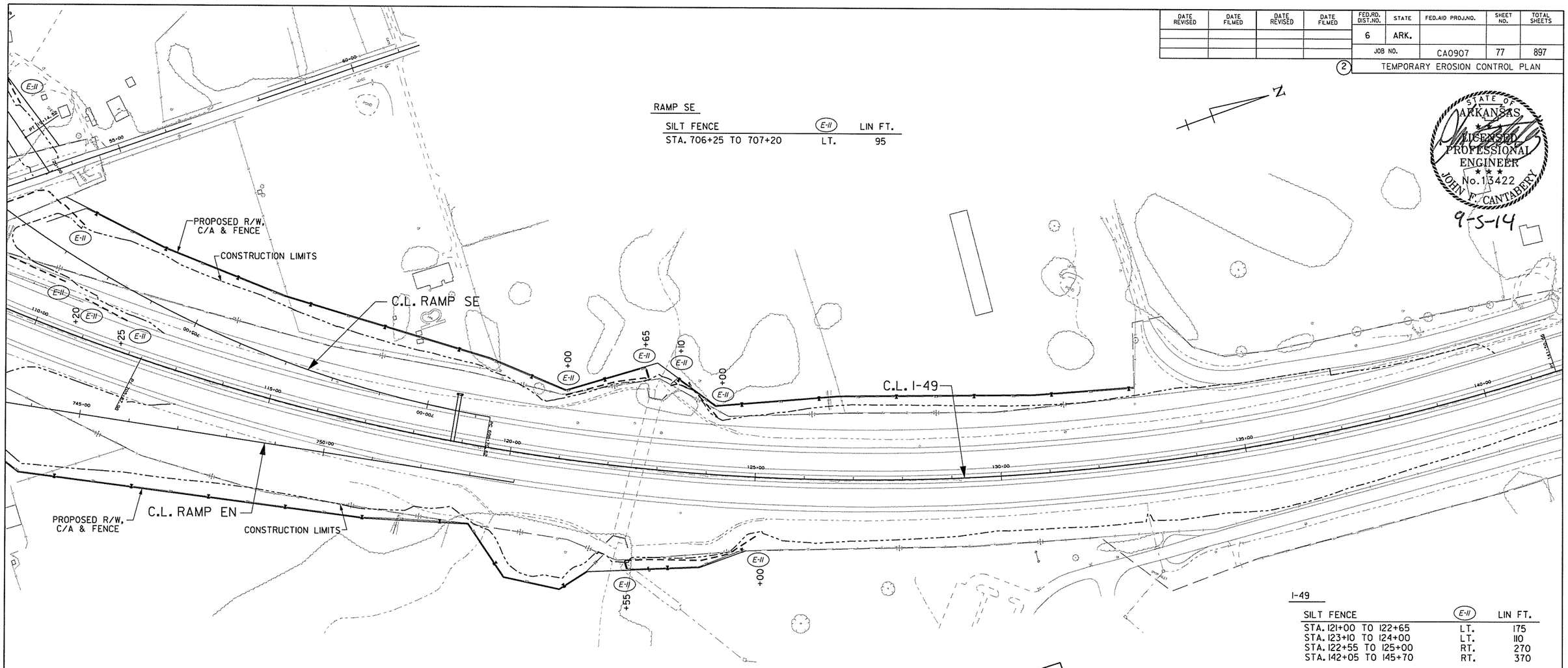
sadonaldson 9/4/2014 3:20:19 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STGIEC_2b.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 77 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

RAMP SE

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 706+25 TO 707+20 | LT. | 95 |




I-49

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 121+00 TO 122+65 | LT. | 175 |
| STA. 123+10 TO 124+00 | LT. | 110 |
| STA. 122+55 TO 125+00 | RT. | 270 |
| STA. 142+05 TO 145+70 | RT. | 370 |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
CLEARING & GRUBBING STAGE
I-49 STA. 110+00 TO STA. 147+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

sadonaldson 9/4/2014 3:20:19 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STGEC_2lc.dgn

REVISED DATE:

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 518+05 | LT. | RETAIN |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 510+00 TO 513+60 | RT. | RETAIN |
| STA. 515+65 TO 518+00 | LT. | RETAIN |
| STA. 518+50 TO 520+35 | RT. | RETAIN |
| STA. 520+40 TO 521+60 | RT. | RETAIN |

GRIMSLEY RD. DETOUR

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 15+90 TO 21+60 | RT. | RETAIN |
| STA. 16+00 TO 21+30 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 13+90 TO 27+30 | RT. | 3 |
| STA. 15+00 TO 25+70 | LT. | 3 |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 78 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

N

TEMPORARY CONSTRUCTION EASEMENT
C.L. RAMP 3
PROPOSED R/W, C/A & FENCE
C.L. MEDIAN CONSTRUCTION LIMITS
C.L. GRIMSLEY RD.
C.L. GRIMSLEY RD. DETOUR
PROPOSED R/W
C.L. RAMP 2
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
TEMPORARY CONSTRUCTION EASEMENT
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED R/W
WEST MILLER ROAD
WEST ELEMENTARY SCHOOL
SPRINGDALE SCHOOL DISTRICT
UNDER CONSTRUCTION
PARKING
POND
CHICKEN HOUSE

RAMP 2

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 510+00 TO 511+90 | LT. | RETAIN |

### LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE I

sadonaldson 9/4/2014 3:20:20 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_14A.dgn
REVISED DATE:

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 613+45 | LT. | RETAIN |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 610+50 TO 611+15 | LT. | RETAIN |
| STA. 611+00 TO 611+35 | RT. | RETAIN |
| STA. 614+90 TO 615+90 | LT. | RETAIN |
| STA. 616+30 TO 617+15 | RT. | RETAIN |
| STA. 621+40 TO 622+20 | RT. | RETAIN |
| STA. 627+50 TO 629+30 | RT. | RETAIN |
| STA. 628+25 TO 630+00 | LT. | RETAIN |

SHARP SPRINGS RD. ACCESS RD.

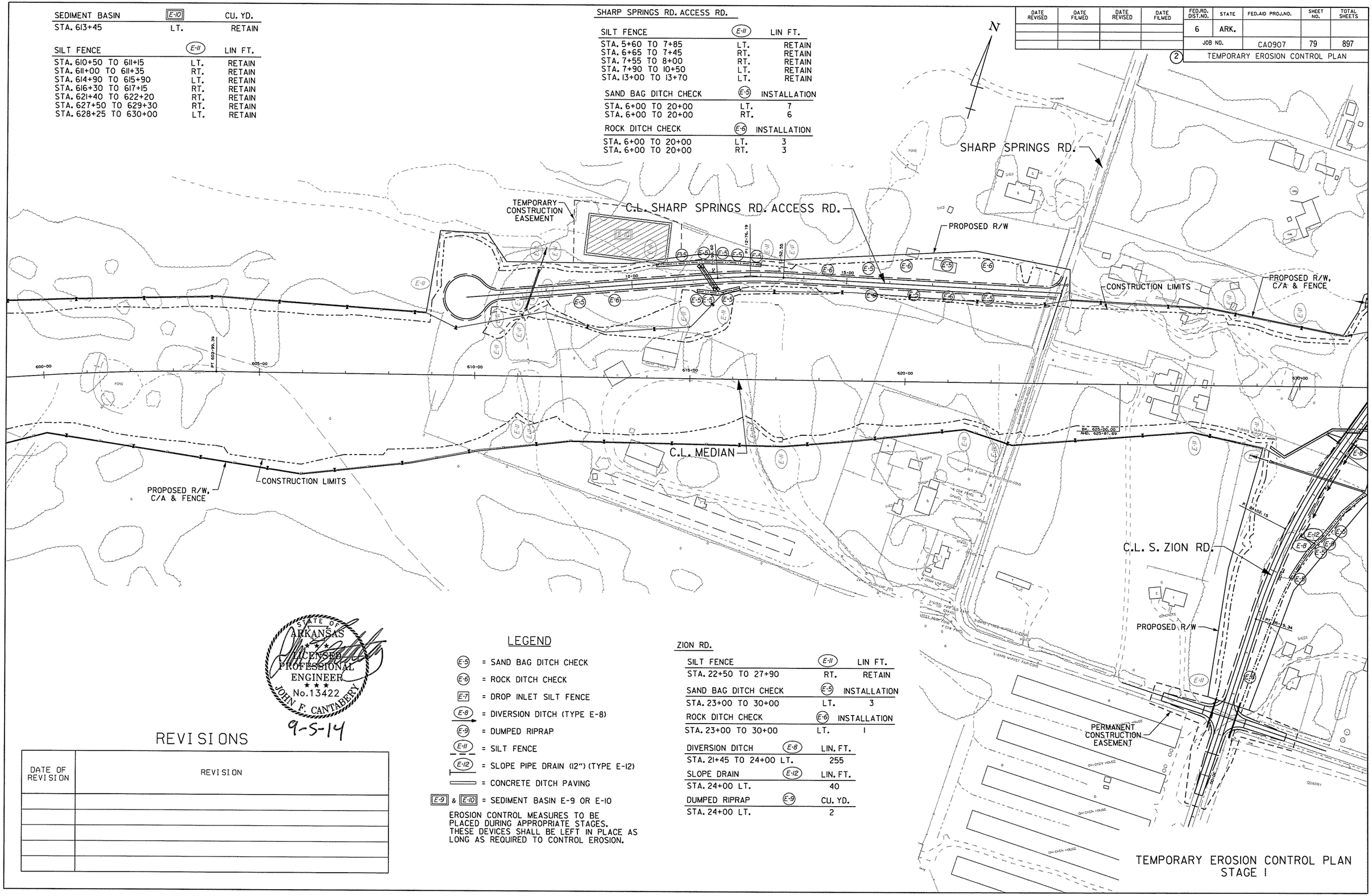
| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 5+60 TO 7+85 | LT. | RETAIN |
| STA. 6+65 TO 7+45 | RT. | RETAIN |
| STA. 7+55 TO 8+00 | RT. | RETAIN |
| STA. 7+90 TO 10+50 | LT. | RETAIN |
| STA. 13+00 TO 13+70 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | 7 |
| STA. 6+00 TO 20+00 | RT. | 6 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | 3 |
| STA. 6+00 TO 20+00 | RT. | 3 |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 79 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN




STATE OF ARKANSAS
JOHN F. CANTABERY
LICENSED PROFESSIONAL ENGINEER
No.13422
9-5-14

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

ZION RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 22+50 TO 27+90 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 23+00 TO 30+00 | LT. | 3 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 23+00 TO 30+00 | LT. | 1 |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 21+45 TO 24+00 | LT. | 255 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 24+00 LT. | | 40 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 24+00 LT. | | 2 |

# TEMPORARY EROSION CONTROL PLAN STAGE I

sadonaldson 9/4/2014 3:20:20 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_ST02EC_ITA.dgn
REVISED DATE:

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 630+00 TO 631+30 | LT. | RETAIN |
| STA. 634+20 TO 635+80 | LT. | RETAIN |
| STA. 643+10 TO 646+05 | RT. | RETAIN |

ZION RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 12+95 TO 17+70 | LT. | RETAIN |
| STA. 13+75 TO 18+55 | RT. | RETAIN |
| STA. 18+75 TO 19+60 | RT. | RETAIN |
| STA. 20+65 TO 22+25 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 10+00 TO 23+00 | LT. | 1 |
| STA. 10+00 TO 23+00 | RT. | 1 |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 17+00 TO 18+60 LT. | | 160 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 17+00 LT. | | 2 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 17+00 LT. | | 80 |

N

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 80 | 897 |
| | | | | (2) | TEMPORARY EROSION CONTROL PLAN | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

TEMPORARY CONSTRUCTION EASEMENT
PERMANENT CONSTRUCTION EASEMENT
C.L. S. ZION RD.
PROPOSED R/W
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
C.L. MEDIAN
C.L. SPRING CK. ST. ACCESS RD.
PROPOSED R/W
BURIED FOUNDATION
QUARRY

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

SPRING CREEK RD. ACCESS RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 17+75 TO 18+40 | LT. TO RT. | RETAIN |
| STA. 19+15 TO 19+55 | RT. | RETAIN |

TEMPORARY EROSION CONTROL PLAN
STAGE I

sadonaldson 9/4/2014 3:20:21 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STG2EC_18A.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 81 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | (E-9) | CU. YD. |
|---|---|---|
| STA. 663+65 | RT. | RETAIN |
| SILT FENCE | (E-11) | LIN FT. |
| STA. 666+25 TO 666+90 | LT. | RETAIN |

SPRING CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 16+95 TO 18+15 | LT. | RETAIN |
| STA. 23+65 TO 24+70 | RT. | RETAIN |

PUPPY CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 21+00 TO 24+60 | RT. | RETAIN |
| STA. 24+30 TO 27+00 | LT. | RETAIN |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 20+00 TO 30+00 | LT. | 11 |
| STA. 20+00 TO 30+00 | RT. | 10 |
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
| STA. 20+00 TO 30+00 | LT. | 3 |

N

C.L. SPRING CK. ST.

C.L. PUPPY CK. RD.

PERMANENT CONSTRUCTION EASEMENT

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

C/A & FENCE

C.L. PUPPY CK. RD. DETOUR

C.L. MEDIAN

C.L. SPRING CK. ST. ACCESS RD.

PROPOSED R/W

PROPOSED R/W, C/A & FENCE

PROPOSED R/W

C.L. PUPPY CK. RD. ACCESS RD.

TEMPORARY CONSTRUCTION EASEMENT

PERMANENT CONSTRUCTION EASEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

SPRING CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 24+40 TO 24+80 | RT. | RETAIN |
| STA. 25+10 TO 27+20 | RT. | RETAIN |
| STA. 38+30 TO 38+75 | LT. | RETAIN |

PUPPY CREEK RD. DETOUR

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 20+50 TO 22+50 | LT. | 6 |
| STA. 20+50 TO 22+50 | RT. | 6 |

PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 11+25 TO 12+10 | RT. | RETAIN |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 10+00 TO 12+00 | LT. | 2 |
| STA. 10+00 TO 12+00 | RT. | 1 |

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 1

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

sadonaldson 9/4/2014 3:20:21 PM
WORKSPACE: AHTD
L:\2005\059116\80 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_ST02EC_19A.dgn
REVISED DATE:

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 693+80 TO 696+00 | RT. TO LT. | RETAIN |
| STA. 699+25 TO 699+95 | RT. TO LT. | RETAIN |
| STA. 701+50 TO 702+60 | RT. | RETAIN |
| STA. 701+50 TO 705+70 | RT. | RETAIN |
| STA. 706+20 TO 708+20 | RT. TO LT. | RETAIN |
| STA. 706+40 TO 708+30 | RT. | RETAIN |

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 693+85 | RT. | RETAIN |

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 701+85 | LT. | RETAIN |

RAMP NW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 703+90 TO 709+48 | LT. | RETAIN |
| STA. 708+35 TO 712+80 | RT. | RETAIN |
| STA. 716+40 TO 716+60 | LT. | RETAIN |

RAMP EN

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 707+10 TO 708+00 | RT. | RETAIN |
| STA. 714+60 TO 717+00 | RT. TO LT. | RETAIN |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 82 | 897 |

TEMPORARY EROSION CONTROL PLAN

TEMPORARY CONSTRUCTION EASEMENT
PERMANENT CONSTRUCTION EASEMENT
C.L. PUPPY CK. RD.
CONSTRUCTION LIMITS
PROPOSED R/W, C/A & FENCE CONSTRUCTION LIMITS
C.L. RAMP NW
C.L. GOAD SPRINGS RD. ACCESS RD.
C.L. RAMP SW
C.L. MEDIAN
C.L. RAMP EN
PUPPY CK.
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
C.L. PUPPY CK. RD. ACCESS RD.
TEMPORARY CONSTRUCTION EASEMENT
PERMANENT CONSTRUCTION EASEMENT
CONSTRUCTION LIMITS
PROPOSED R/W, C/A & FENCE
C.L. RAMP ES

PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 14+80 TO 16+20 | LT. TO RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 12+00 TO 16+00 | LT. | 5 |
| STA. 12+00 TO 16+00 | RT. | 11 |

PUPPY CREEK RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 30+60 TO 31+00 | LT. | RETAIN |
| STA. 32+35 TO 35+00 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 30+00 TO 35+00 | LT. | 9 |

RAMP SW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 709+48 TO 717+35 | LT. | RETAIN |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

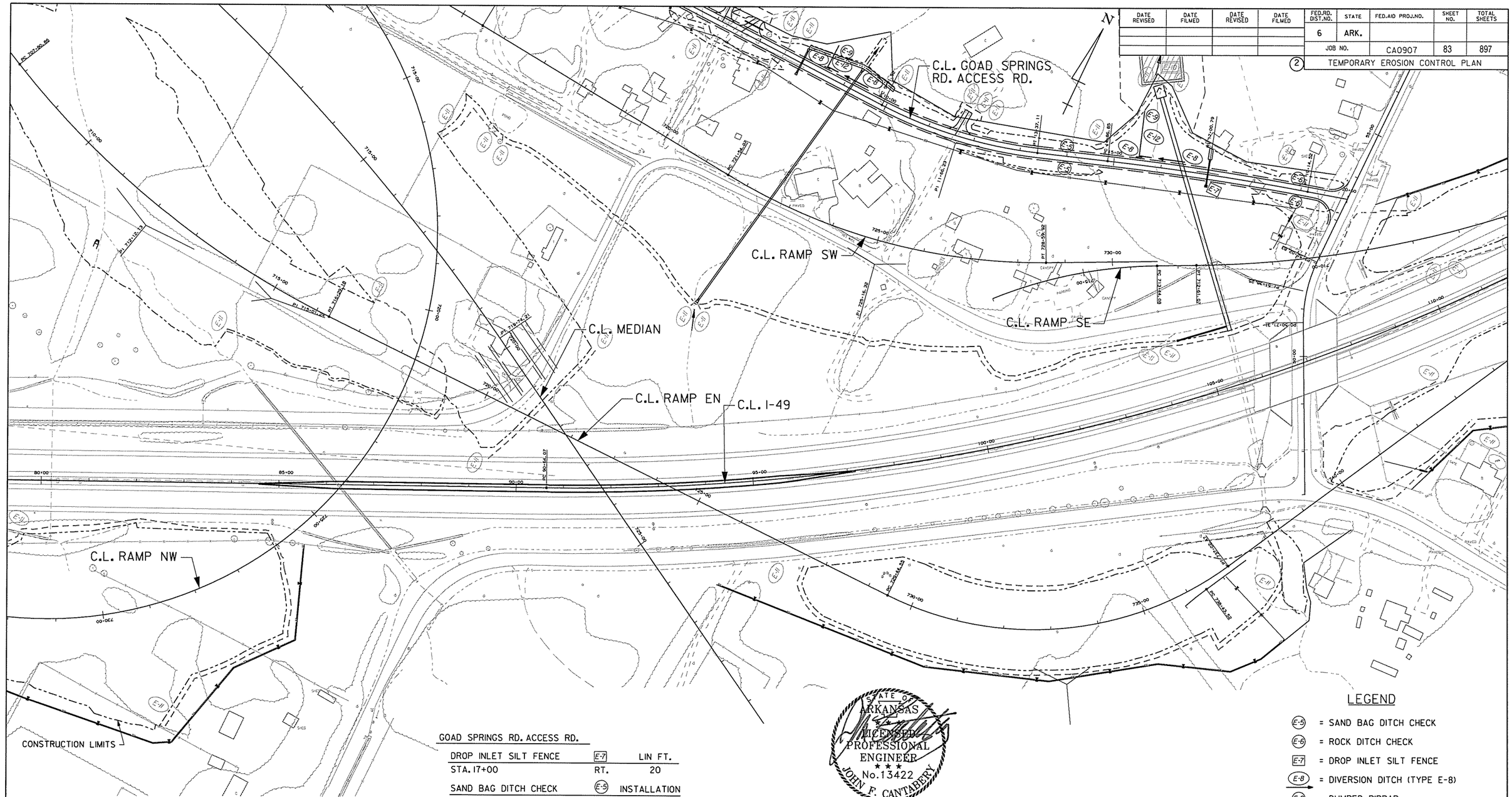
EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE I

sodonaldson 9/4/2014 3:20:22 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC.20A.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 83 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN




## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

GOAD SPRINGS RD. ACCESS RD.

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 17+00 | RT. | 20 |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | 1 |
| STA. 6+00 TO 20+00 | RT. | 1 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | 1 |
| STA. 6+00 TO 20+00 | RT. | 1 |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 8+50 TO 9+50 LT. | | 100 |
| STA. 15+50 TO 16+50 LT. | | 100 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 8+50 LT. | | 55 |
| STA. 15+50 LT. | | 100 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 8+50 LT. | | 2 |
| STA. 15+50 LT. | | 2 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

RAMP NW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 729+35 TO 732+25 | LT. TO RT. | RETAIN |

RAMP SE

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 707+70 TO 708+00 | LT. TO RT. | RETAIN |
| STA. 709+95 TO 713+45 | RT. TO LT. | RETAIN |

RAMP EN

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 727+60 TO 737+70 | RT. | RETAIN |
| STA. 729+95 TO 737+60 | LT. TO RT. | RETAIN |
| STA. 742+90 TO 743+00 | LT. TO RT. | RETAIN |

RAMP SW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 717+05 TO 722+20 | RT. | RETAIN |
| STA. 722+25 TO 730+95 | RT. | RETAIN |

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE I

sadonaldson 9/4/2014 3:20:22 PM
WORKSPACE: AHTD
L:\2005\059W680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC.2ibA.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 84 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

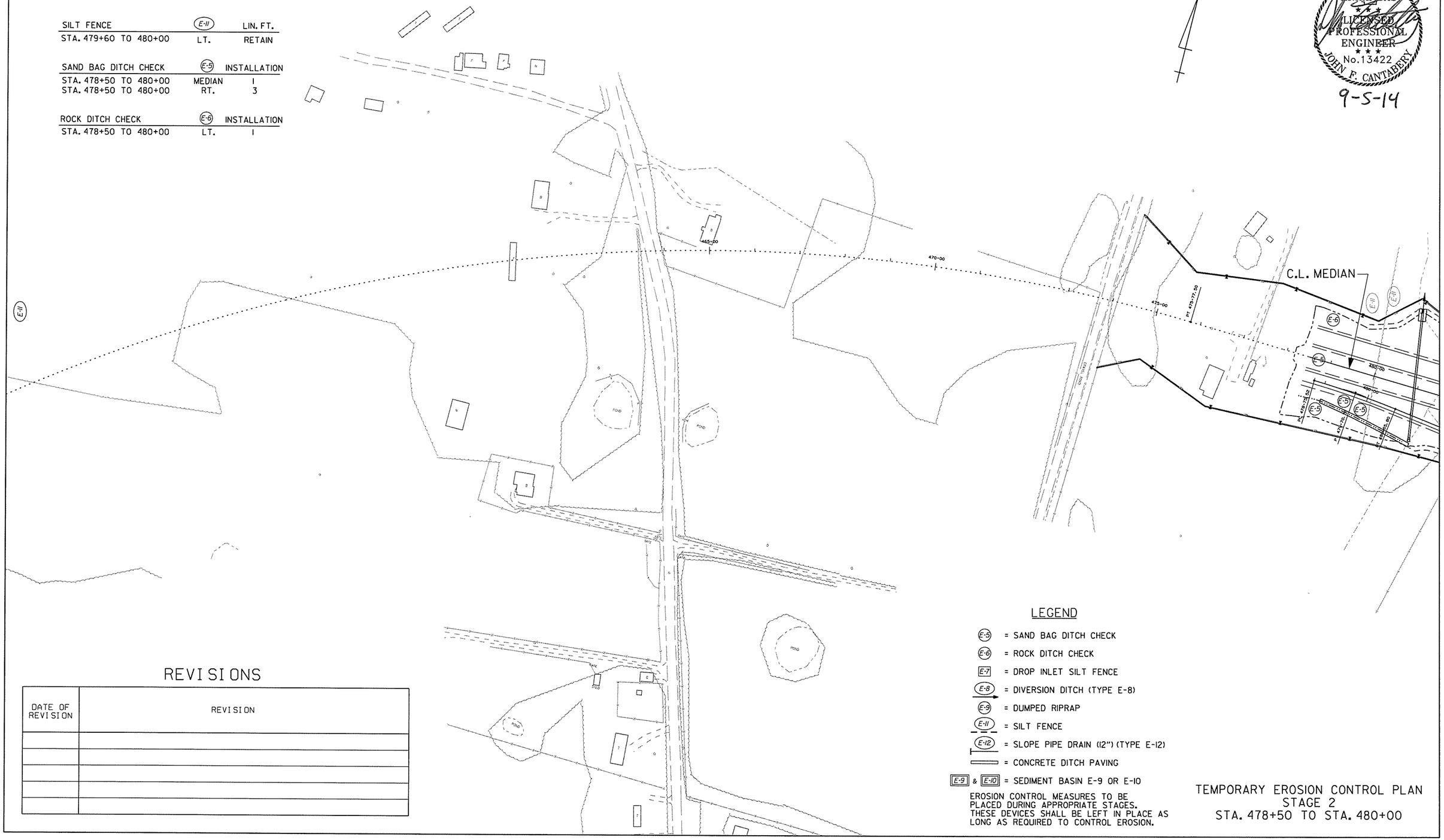
| SILT FENCE | (E-11) | LIN. FT. |
|---|---|---|
| STA. 479+60 TO 480+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 478+50 TO 480+00 | MEDIAN | 1 |
| STA. 478+50 TO 480+00 | RT. | 3 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 478+50 TO 480+00 | LT. | 1 |

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

# TEMPORARY EROSION CONTROL PLAN STAGE 2 STA. 478+50 TO STA. 480+00

sadonaldson 9/4/2014 3:20:23 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SB6_ST02EC_12.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 85 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | (E-10) | CU. YD. |
|---|---|---|
| STA. 495+75 | LT. | RETAIN |
| SEDIMENT BASIN | (E-9) | CU. YD. |
| STA. 508+40 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 480+00 TO 510+00 | LT. | 14 |
| STA. 480+00 TO 510+00 | MEDIAN | 6 |
| STA. 480+00 TO 510+00 | RT. | 23 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 480+00 TO 510+00 | LT. | 3 |
| STA. 480+00 TO 510+00 | MEDIAN | 7 |
| STA. 480+00 TO 510+00 | RT. | 2 |

| DROP INLET SILT FENCE | (E-7) | LIN FT. |
|---|---|---|
| STA. 482+00 | MEDIAN | 20 |
| STA. 490+00 | MEDIAN | 20 |
| STA. 495+00 | MEDIAN | 20 |
| STA. 505+00 | MEDIAN | 20 |

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 507+00 TO 510+00 LT. | | 300 |
| STA. 508+00 TO 510+00 RT. | | 200 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 507+00 LT. | | 85 |
| STA. 508+00 RT. | | 80 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 507+00 LT. | | 2 |
| STA. 508+00 RT. | | 2 |

RAMP 4

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 490+40 TO 496+20 | RT. | RETAIN |
| STA. 496+25 TO 498+35 | RT. | RETAIN |
| STA. 497+55 TO 498+50 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 484+00 TO 499+00 | LT. | 16 |
| STA. 484+00 TO 499+00 | RT. | 1 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 484+00 TO 499+00 | LT. | 3 |

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 495+00 TO 497+00 LT. | | 200 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 497+00 LT. | | 2 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 497+00 LT. | | 110 |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 480+00 TO 480+55 | LT. | RETAIN |
| STA. 480+70 TO 482+10 | LT. | RETAIN |
| STA. 481+15 TO 482+90 | RT. | RETAIN |
| STA. 493+20 TO 495+70 | LT. | RETAIN |
| STA. 493+70 TO 494+95 | RT. | RETAIN |
| STA. 495+75 TO 497+50 | LT. | RETAIN |
| STA. 509+05 TO 510+00 | RT. | RETAIN |

RAMP 3

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 497+00 TO 510+00 | LT. | 10 |
| STA. 497+00 TO 510+00 | RT. | 7 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 497+00 TO 510+00 | LT. | 1 |
| STA. 497+00 TO 510+00 | RT. | 2 |

RAMP 3

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 499+15 TO 499+95 | LT. | RETAIN |
| STA. 505+00 TO 506+80 | LT. | RETAIN |
| STA. 507+25 TO 508+65 | LT. | RETAIN |

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 507+00 TO 510+00 LT. | | 300 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 507+00 LT. | | 95 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 507+00 LT. | | 2 |

RAMP 2

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 508+00 TO 509+00 RT. | | 100 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 509+00 RT. | | 85 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 509+00 RT. | | 2 |

RAMP 1

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 494+55 TO 500+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 483+00 TO 501+00 | LT. | 6 |
| STA. 483+00 TO 501+00 | RT. | 13 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 483+00 TO 501+00 | RT. | 3 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- (E-9) & (E-10) = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

RAMP 1

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 494+00 TO 496+50 LT. | | 250 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 494+00 LT. | | 80 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 494+00 LT. | | 2 |

RAMP 2

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 501+70 TO 502+90 | LT. | RETAIN |
| STA. 505+70 TO 509+10 | LT. | RETAIN |
| STA. 506+10 TO 508+60 | RT. | RETAIN |
| STA. 509+15 TO 510+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 500+00 TO 510+00 | RT. | 5 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 500+00 TO 510+00 | LT. | 1 |
| STA. 500+00 TO 510+00 | RT. | 2 |

C.L. RAMP 4
C.L. MEDIAN
C.L. RAMP 1
C.L. HWY. 112
C.L. RAMP 3
C.L. RAMP 2
CONSTRUCTION LIMITS
PROPOSED R/W, C/A & FENCE
TEMPORARY CONSTRUCTION EASEMENT
N

## TEMPORARY EROSION CONTROL PLAN STAGE 2 STA. 480+00 TO STA. 510+00

sadonaldson 9/4/2014 3:20:24 PM
WORKSPACE: AHTD
L:\2005\05911880 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_ST02EC_13.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 86 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

HWY. 112

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 14+40 TO 18+90 | RT. | RETAIN |
| STA. 16+90 TO 18+85 | LT. | RETAIN |
| STA. 21+05 TO 25+80 | RT. | RETAIN |
| STA. 21+55 TO 26+20 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 8+00 TO 32+00 | LT. | II |
| STA. 8+00 TO 32+00 | RT. | II |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 8+00 TO 32+00 | RT. | I |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

TEMPORARY CONSTRUCTION EASEMENT
C.L. RAMP 2
CONSTRUCTION LIMITS
PROPOSED R/W, C/A & FENCE
C.L. RAMP 3
TEMPORARY CONSTRUCTION EASEMENT
PROPOSED R/W
C.L. HWY. 112
PROPOSED R/W
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
C.L. MEDIAN
C.L. RAMP 4
C.L. RAMP 1

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 2
HWY. 112

REVISED DATE:
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_J3a.dgn
sadonaldson 9/4/2014 3:20:24 PM

# REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 87 | 897 |
| | | | | (2) | TEMPORARY EROSION CONTROL PLAN | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

**RAMP 3**

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 515+00 | LT. | 10 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 515+00 | LT. | 1 |

**RAMP 3**

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 517+00 TO 520+00 | LT. | 300 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 517+00 LT. | | 70 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 517+00 LT. | | 2 |

| SEDIMENT BASIN | [E-9] | CU. YD. |
|---|---|---|
| STA. 518+05 | LT. | RETAIN |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 510+00 TO 513+60 | RT. | RETAIN |
| STA. 515+65 TO 518+00 | LT. | RETAIN |
| STA. 518+50 TO 520+35 | RT. | RETAIN |
| STA. 520+40 TO 521+60 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 540+00 | LT. | 13 |
| STA. 510+00 TO 540+00 | MEDIAN | 2 |
| STA. 510+00 TO 540+00 | RT. | 2 |

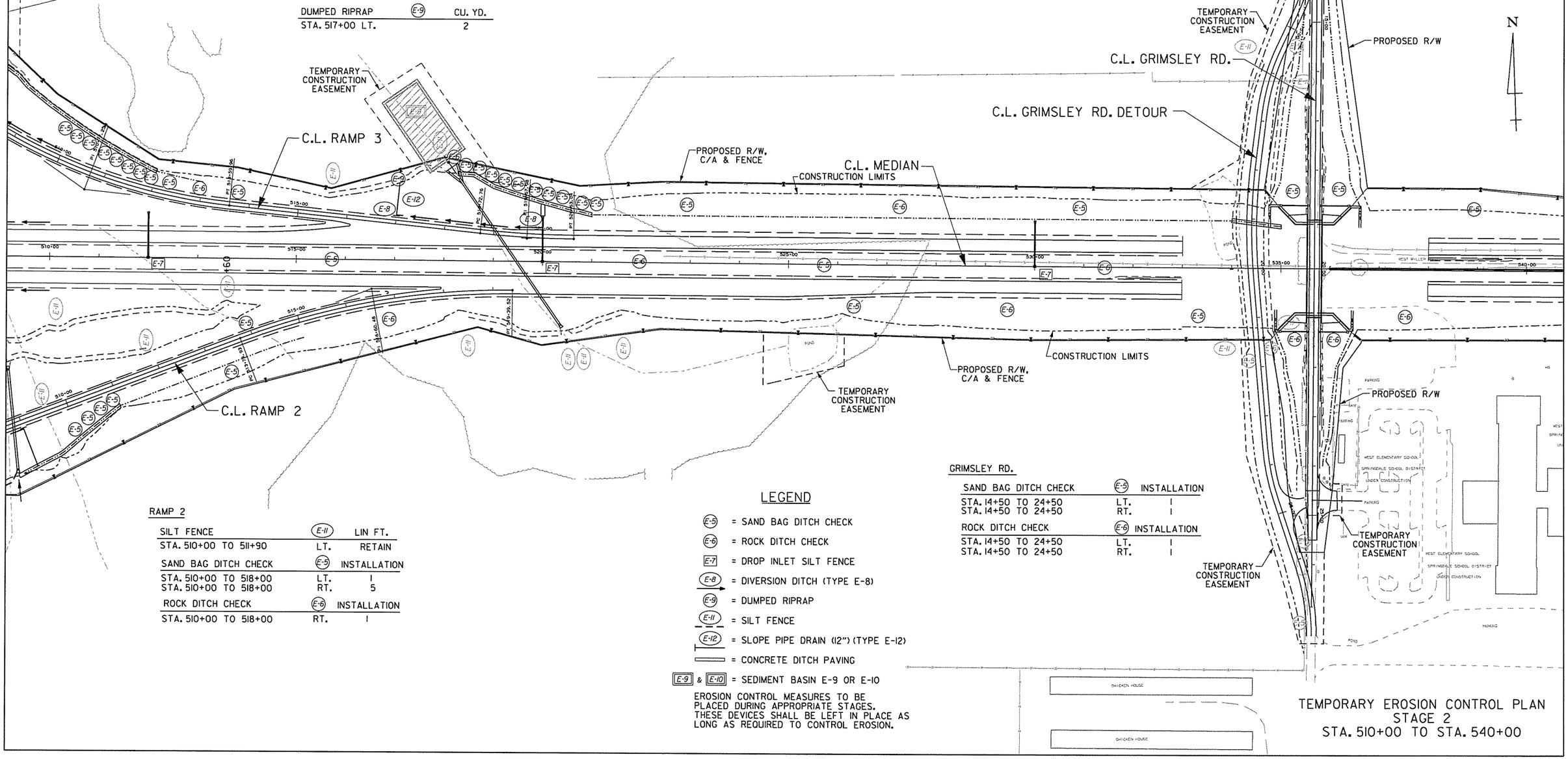
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 540+00 | LT. | 2 |
| STA. 510+00 TO 540+00 | MEDIAN | 2 |
| STA. 510+00 TO 540+00 | RT. | 2 |

| DROP INLET SILT FENCE | [E-7] | LIN FT. |
|---|---|---|
| STA. 512+00 | MEDIAN | 20 |
| STA. 520+00 | MEDIAN | 20 |
| STA. 530+00 | MEDIAN | 20 |

**GRIMSLEY RD. DETOUR**

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 15+90 TO 21+60 | RT. | RETAIN |
| STA. 16+00 TO 21+30 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 13+90 TO 27+30 | RT. | RETAIN |
| STA. 15+00 TO 25+70 | LT. | RETAIN |




**RAMP 2**

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 510+00 TO 511+90 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 518+00 | LT. | 1 |
| STA. 510+00 TO 518+00 | RT. | 5 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 518+00 | RT. | 1 |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

**GRIMSLEY RD.**

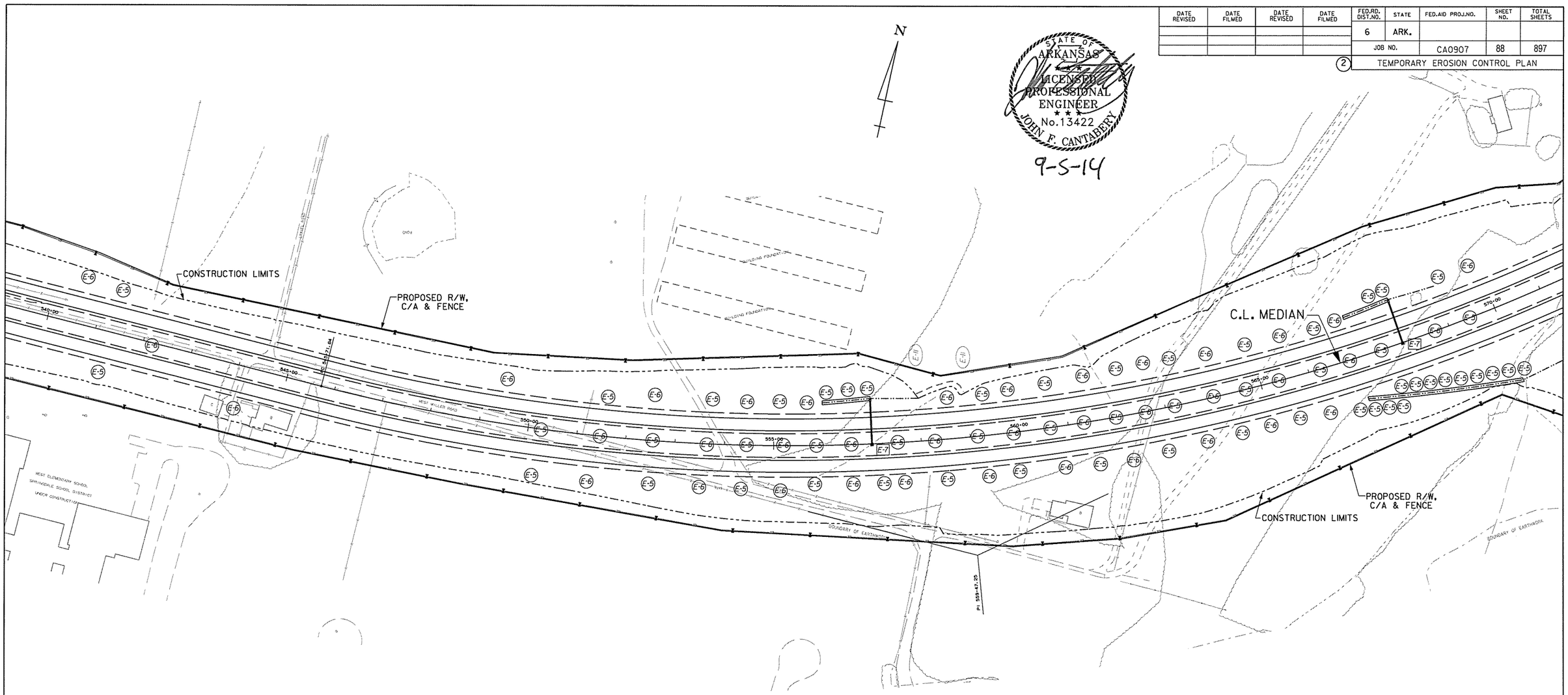
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 14+50 TO 24+50 | LT. | 1 |
| STA. 14+50 TO 24+50 | RT. | 1 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 14+50 TO 24+50 | LT. | 1 |
| STA. 14+50 TO 24+50 | RT. | 1 |

# TEMPORARY EROSION CONTROL PLAN STAGE 2 STA. 510+00 TO STA. 540+00


sadonaldson 9/4/2014 3:20:25 PM
WORKSPACE: AHTD
L:\2005\05916680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_14.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 88 | 897 |
| | | | | (2) | TEMPORARY EROSION CONTROL PLAN | | | |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 558+00 TO 558+85 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 540+00 TO 570+00 | LT. | 16 |
| STA. 540+00 TO 570+00 | MEDIAN | 13 |
| STA. 540+00 TO 570+00 | RT. | 25 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 540+00 TO 570+00 | LT. | 13 |
| STA. 540+00 TO 570+00 | MEDIAN | 13 |
| STA. 540+00 TO 570+00 | RT. | 12 |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 557+00 | MEDIAN | 20 |
| STA. 568+00 | MEDIAN | 20 |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 2
STA. 540+00 TO STA. 570+00

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

cggervasini 9/5/2014 11:30:44 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_ST02EC_15.dgn
REVISED DATE:

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 570+00 TO 600+00 | LT. | 52 |
| STA. 570+00 TO 600+00 | MEDIAN | 9 |
| STA. 570+00 TO 600+00 | RT. | 33 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 570+00 TO 600+00 | LT. | 6 |
| STA. 570+00 TO 600+00 | MEDIAN | 10 |
| STA. 570+00 TO 600+00 | RT. | 5 |

| DROP INLET SILT FENCE | (E-7) | LIN FT. |
|---|---|---|
| STA. 579+00 | MEDIAN | 43 |
| STA. 590+00 | MEDIAN | 20 |
| STA. 595+00 | MEDIAN | 34 |

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 575+00 TO 579+35 LT. | | 435 |
| STA. 577+00 TO 579+35 RT. | | 235 |
| STA. 589+70 TO 592+40 RT. | | 270 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 579+35 LT. | | 170 |
| STA. 579+35 RT. | | 170 |
| STA. 589+70 RT. | | 105 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 579+35 LT. | | 2 |
| STA. 579+35 RT. | | 2 |
| STA. 589+70 RT. | | 2 |

| SEDIMENT BASIN | [E-9] | CU. YD. |
|---|---|---|
| STA. 581+70 | LT. | RETAIN |
| STA. 581+65 | RT. | RETAIN |

| SEDIMENT BASIN | [E-14] | CU. YD. |
|---|---|---|
| STA. 590+40 | LT. | RETAIN |
| STA. 591+70 | LT. | RETAIN |
| STA. 590+50 | RT. | RETAIN |
| STA. 591+75 | RT. | RETAIN |

| SILT FENCE | (E-11) | LIN. FT. |
|---|---|---|
| STA. 579+30 TO 579+50 | RT. TO LT. | RETAIN |
| STA. 589+75 TO 589+80 | LT. TO RT. | RETAIN |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 89 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

9-5-14

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT C.L. MEDIAN

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

SPRING CK.

C.L. WAGON WHEEL RD.

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

N

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-14] = SEDIMENT BASIN E-9 OR E-14

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
STAGE 2
STA. 570+00 TO STA. 600+00

cggervasini 9/5/2014 11:31:32 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_ST02EC_16.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 90 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | (E-10) | CU. YD. |
|---|---|---|
| STA. 613+45 | LT. | RETAIN |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 610+50 TO 611+15 | LT. | RETAIN |
| STA. 611+00 TO 611+35 | RT. | RETAIN |
| STA. 614+90 TO 615+90 | LT. | RETAIN |
| STA. 616+30 TO 617+15 | RT. | RETAIN |
| STA. 621+40 TO 622+20 | RT. | RETAIN |
| STA. 627+50 TO 629+30 | RT. | RETAIN |
| STA. 628+25 TO 630+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 600+00 TO 630+00 | LT. | 23 |
| STA. 600+00 TO 630+00 | MEDIAN | 14 |
| STA. 600+00 TO 630+00 | RT. | 30 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 600+00 TO 630+00 | LT. | 11 |
| STA. 600+00 TO 630+00 | MEDIAN | 14 |
| STA. 600+00 TO 630+00 | RT. | 10 |

| DROP INLET SILT FENCE | (E-7) | LIN FT. |
|---|---|---|
| STA. 606+00 | MEDIAN | 20 |
| STA. 617+00 | MEDIAN | 20 |
| STA. 629+00 | MEDIAN | 20 |

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 616+00 TO 629+00 LT. | | 1300 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 629+00 LT. | | 65 |

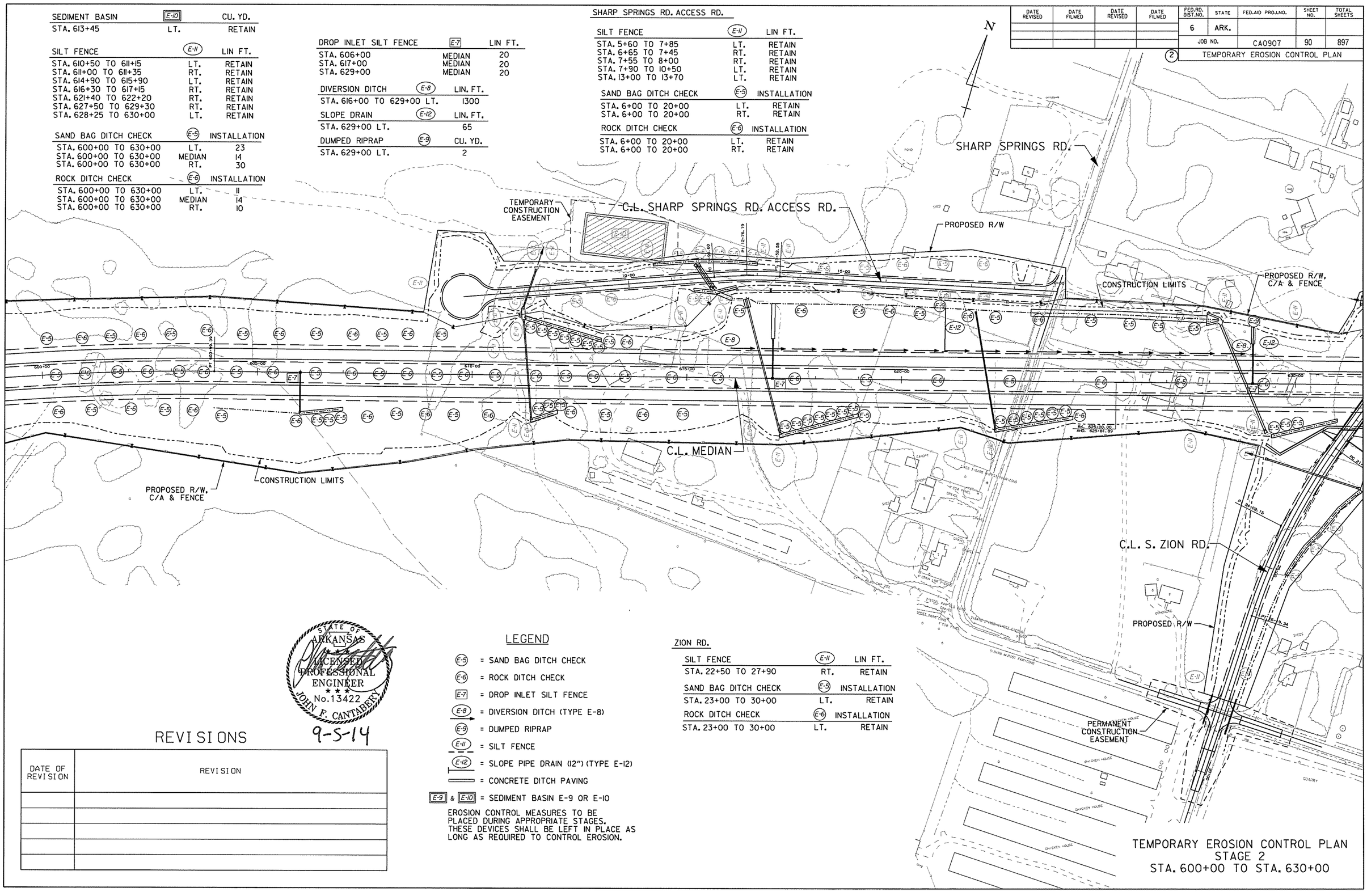
| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 629+00 LT. | | 2 |

SHARP SPRINGS RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 5+60 TO 7+85 | LT. | RETAIN |
| STA. 6+65 TO 7+45 | RT. | RETAIN |
| STA. 7+55 TO 8+00 | RT. | RETAIN |
| STA. 7+90 TO 10+50 | LT. | RETAIN |
| STA. 13+00 TO 13+70 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | RETAIN |
| STA. 6+00 TO 20+00 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | RETAIN |
| STA. 6+00 TO 20+00 | RT. | RETAIN |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- (E-9) & (E-10) = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

ZION RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 22+50 TO 27+90 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 23+00 TO 30+00 | LT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 23+00 TO 30+00 | LT. | RETAIN |

TEMPORARY EROSION CONTROL PLAN
STAGE 2
STA. 600+00 TO STA. 630+00

cggervasini 9/5/2014 11:32:00 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RW7 112 TO I-540\SBG_STG2EC_17.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 91 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 630+00 TO 631+30 | LT. | RETAIN |
| STA. 634+20 TO 635+80 | LT. | RETAIN |
| STA. 643+10 TO 646+05 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 630+00 TO 660+00 | LT. | 8 |
| STA. 630+00 TO 660+00 | MEDIAN | 6 |
| STA. 630+00 TO 660+00 | RT. | 10 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 630+00 TO 660+00 | LT. | 4 |
| STA. 630+00 TO 660+00 | MEDIAN | 5 |
| STA. 630+00 TO 660+00 | RT. | 6 |

| DROP INLET SILT FENCE | [E-7] | LIN FT. |
|---|---|---|
| STA. 640+00 | MEDIAN | 20 |
| STA. 660+00 | MEDIAN | 20 |

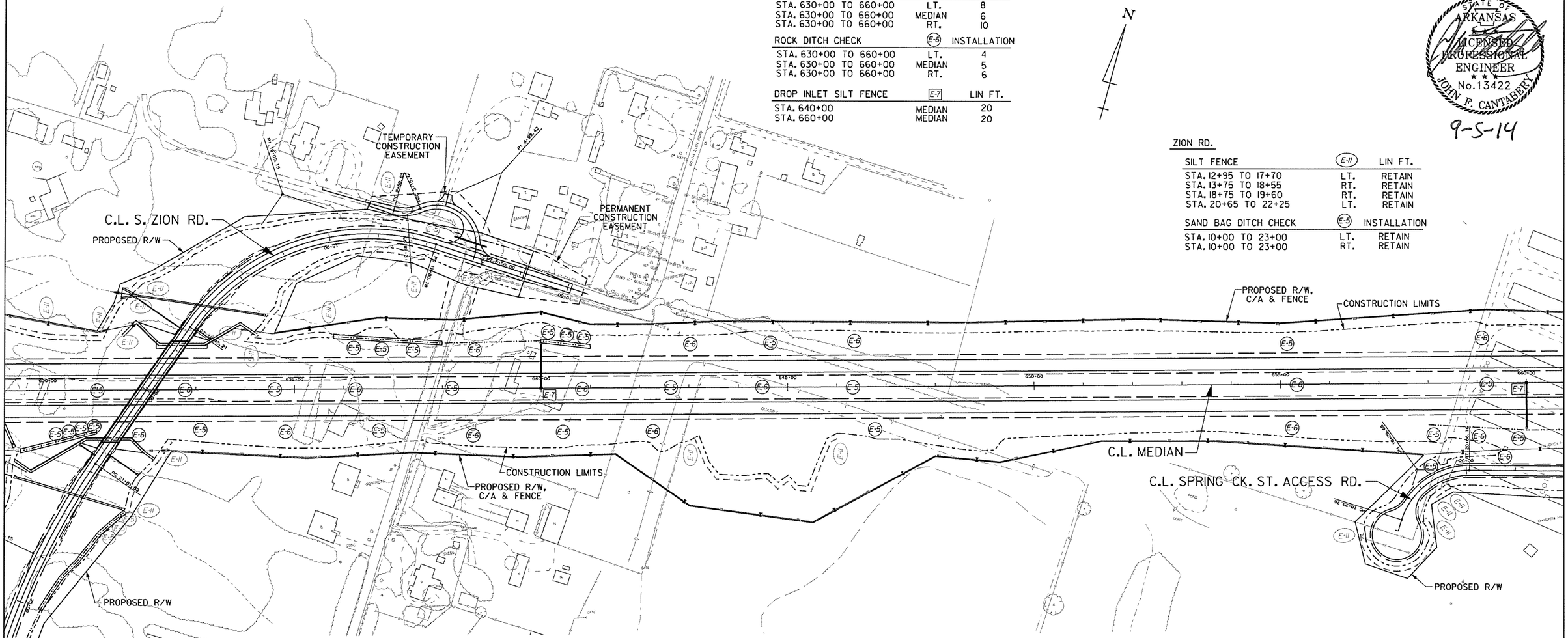
N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

ZION RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 12+95 TO 17+70 | LT. | RETAIN |
| STA. 13+75 TO 18+55 | RT. | RETAIN |
| STA. 18+75 TO 19+60 | RT. | RETAIN |
| STA. 20+65 TO 22+25 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 10+00 TO 23+00 | LT. | RETAIN |
| STA. 10+00 TO 23+00 | RT. | RETAIN |




## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

SPRING CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 17+75 TO 18+40 | LT. TO RT. | RETAIN |
| STA. 19+15 TO 19+55 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 18+00 TO 21+00 | LT. | 1 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 18+00 TO 21+00 | LT. | 1 |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
STAGE 2
STA. 630+00 TO STA. 660+00

cggervasini 9/5/2014 11:32:34 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STG2EC_18.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 92 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | (E-9) | CU. YD. |
|---|---|---|
| STA. 663+65 | RT. | RETAIN |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 666+25 TO 666+90 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 660+00 TO 690+00 | LT. | 9 |
| STA. 660+00 TO 690+00 | MEDIAN | 2 |
| STA. 660+00 TO 690+00 | RT. | 11 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 660+00 TO 690+00 | LT. | 2 |
| STA. 660+00 TO 690+00 | MEDIAN | 3 |
| STA. 660+00 TO 690+00 | RT. | 7 |

| DROP INLET SILT FENCE | (E-7) | LIN FT. |
|---|---|---|
| STA. 664+75 | RT. | 20 |
| STA. 665+00 | MEDIAN | 20 |
| STA. 681+00 | MEDIAN | 40 |
| STA. 685+00 | MEDIAN | 20 |

SPRING CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 16+95 TO 18+15 | LT. | RETAIN |
| STA. 23+65 TO 24+70 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 15+00 TO 25+00 | LT. | 6 |
| STA. 15+00 TO 25+00 | RT. | 3 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 15+00 TO 25+00 | LT. | 3 |
| STA. 15+00 TO 25+00 | RT. | 2 |

PUPPY CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 21+00 TO 24+60 | RT. | RETAIN |
| STA. 24+30 TO 27+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 20+00 TO 30+00 | LT. | RETAIN |
| STA. 20+00 TO 30+00 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 20+00 TO 30+00 | LT. | RETAIN |

N

PERMANENT CONSTRUCTION EASEMENT

C.L. SPRING CK. ST.

C.L. PUPPY CK. RD.

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

C/A & FENCE

C.L. PUPPY CK. RD. DETOUR

C.L. MEDIAN

C/A & FENCE

CONSTRUCTION LIMITS

C.L. SPRING CK. ST. ACCESS RD.

PROPOSED R/W

PROPOSED R/W, C/A & FENCE

PROPOSED R/W C.L. PUPPY CK. RD. ACCESS RD.

PROPOSED R/W

TEMPORARY CONSTRUCTION EASEMENT

PERMANENT CONSTRUCTION EASEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

SPRING CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 24+40 TO 24+80 | RT. | RETAIN |
| STA. 25+10 TO 27+20 | RT. | RETAIN |
| STA. 38+30 TO 38+75 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 21+00 TO 40+00 | LT. | 8 |
| STA. 21+00 TO 40+00 | RT. | 10 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 21+00 TO 40+00 | LT. | 7 |
| STA. 21+00 TO 40+00 | RT. | 8 |

| DIVERSION DITCH | (E-8) | LIN. FT. |
|---|---|---|
| STA. 24+50 TO 25+50 RT. | | 100 |

| DUMPED RIPRAP | (E-9) | CU. YD. |
|---|---|---|
| STA. 25+00 RT. | | 2 |

| SLOPE DRAIN | (E-12) | LIN. FT. |
|---|---|---|
| STA. 25+00 RT. | | 75 |

PUPPY CREEK RD. DETOUR

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 20+50 TO 22+50 | LT. | RETAIN |
| STA. 20+50 TO 22+50 | RT. | RETAIN |

PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 11+25 TO 12+10 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 10+00 TO 12+00 | LT. | RETAIN |
| STA. 10+00 TO 12+00 | RT. | RETAIN |

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 2
STA. 660+00 TO STA. 690+00

cggarvasini 9/5/2014 11:32:54 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_ST02EC_19.dgn
REVISED DATE:

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 693+80 TO 696+00 | RT. TO LT. | RETAIN |
| STA. 699+25 TO 699+95 | RT. TO LT. | RETAIN |
| STA. 701+50 TO 702+60 | RT. | RETAIN |
| STA. 701+50 TO 705+70 | RT. | RETAIN |
| STA. 706+20 TO 708+20 | RT. TO LT. | RETAIN |
| STA. 706+40 TO 708+30 | RT. | RETAIN |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 695+00 | MEDIAN | 20 |
| STA. 710+00 | MEDIAN | 20 |
| STA. 710+00 | LT. | 20 |
| STA. 718+00 | MEDIAN | 20 |
| STA. 718+00 | LT. | 20 |
| STA. 718+00 | RT. | 20 |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 690+00 TO 720+00 | LT. | 6 |
| STA. 690+00 TO 720+00 | MEDIAN | 4 |
| STA. 690+00 TO 720+00 | RT. | 22 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 690+00 TO 720+00 | LT. | 6 |
| STA. 690+00 TO 720+00 | MEDIAN | 5 |
| STA. 690+00 TO 720+00 | RT. | 2 |

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 693+85 | RT. | RETAIN |

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 701+85 | LT. | RETAIN |

RAMP NW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 703+90 TO 709+48 | LT. | RETAIN |
| STA. 708+35 TO 712+80 | RT. | RETAIN |
| STA. 716+40 TO 716+60 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 698+00 TO 730+00 | LT. | 5 |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 703+00 | RT. | 20 |

RAMP EN

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 689+26 TO 720+00 | LT. | 35 |
| STA. 689+26 TO 720+00 | RT. | 28 |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 707+10 TO 708+00 | RT. | RETAIN |
| STA. 714+60 TO 717+00 | RT. TO LT. | RETAIN |

RAMP EN

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 690+00 TO 695+80 RT. | | 580 |
| STA. 699+65 TO 701+50 RT. | | 185 |
| STA. 707+00 TO 712+00 LT. | | 500 |

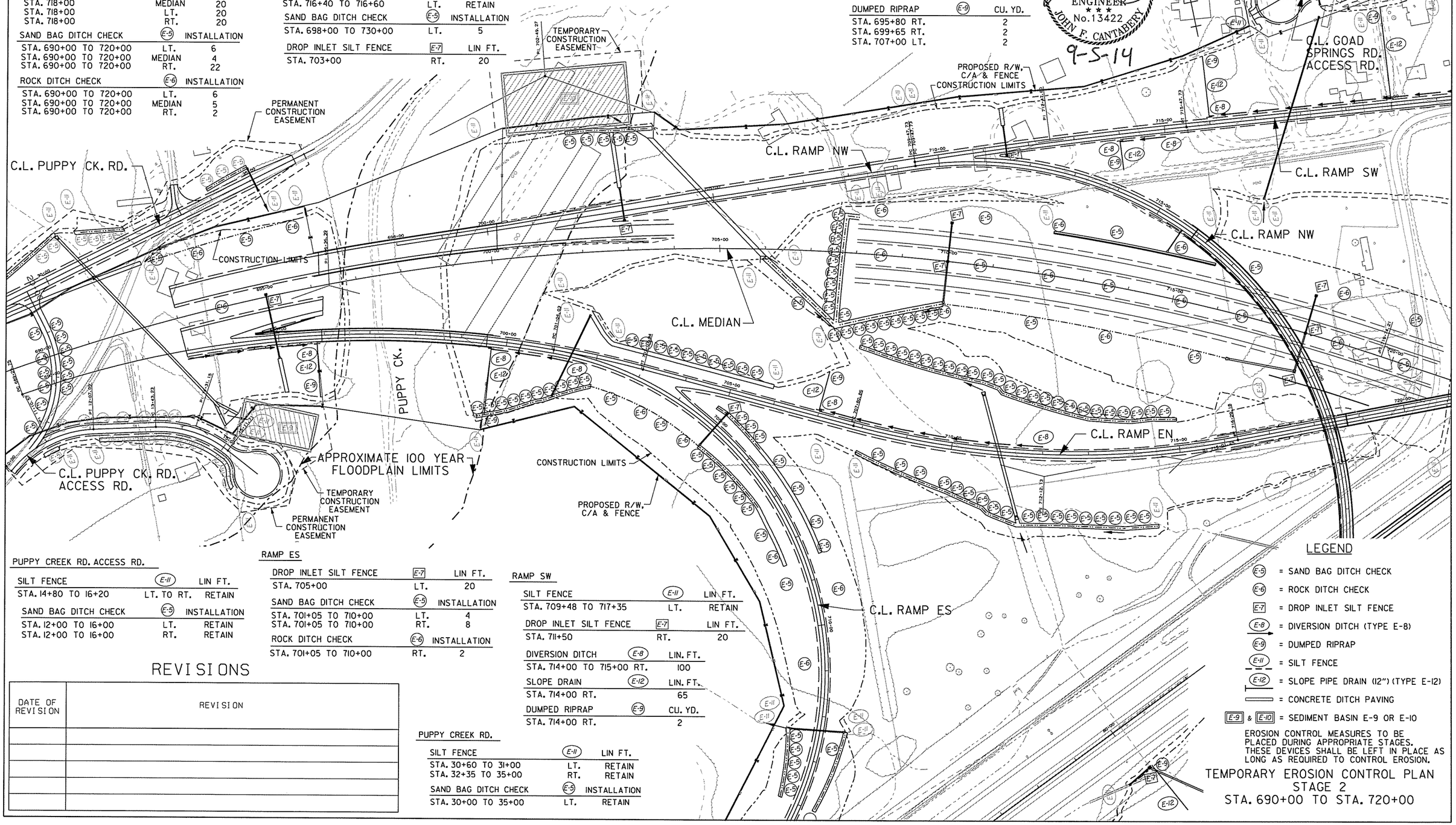
| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 695+80 RT. | | 115 |
| STA. 699+65 RT. | | 145 |
| STA. 707+00 LT. | | 90 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 695+80 RT. | | 2 |
| STA. 699+65 RT. | | 2 |
| STA. 707+00 LT. | | 2 |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 93 | 897 |

TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 14+80 TO 16+20 | LT. TO RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 12+00 TO 16+00 | LT. | RETAIN |
| STA. 12+00 TO 16+00 | RT. | RETAIN |

RAMP ES

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 705+00 | LT. | 20 |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 701+05 TO 710+00 | LT. | 4 |
| STA. 701+05 TO 710+00 | RT. | 8 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 701+05 TO 710+00 | RT. | 2 |

RAMP SW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 709+48 TO 717+35 | LT. | RETAIN |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 711+50 | RT. | 20 |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 714+00 TO 715+00 RT. | | 100 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 714+00 RT. | | 65 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 714+00 RT. | | 2 |

PUPPY CREEK RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 30+60 TO 31+00 | LT. | RETAIN |
| STA. 32+35 TO 35+00 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 30+00 TO 35+00 | LT. | RETAIN |

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

REVISED DATE:

sadonaldson 9/4/2014 3:20:28 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_STG2ECC_20.dgn

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

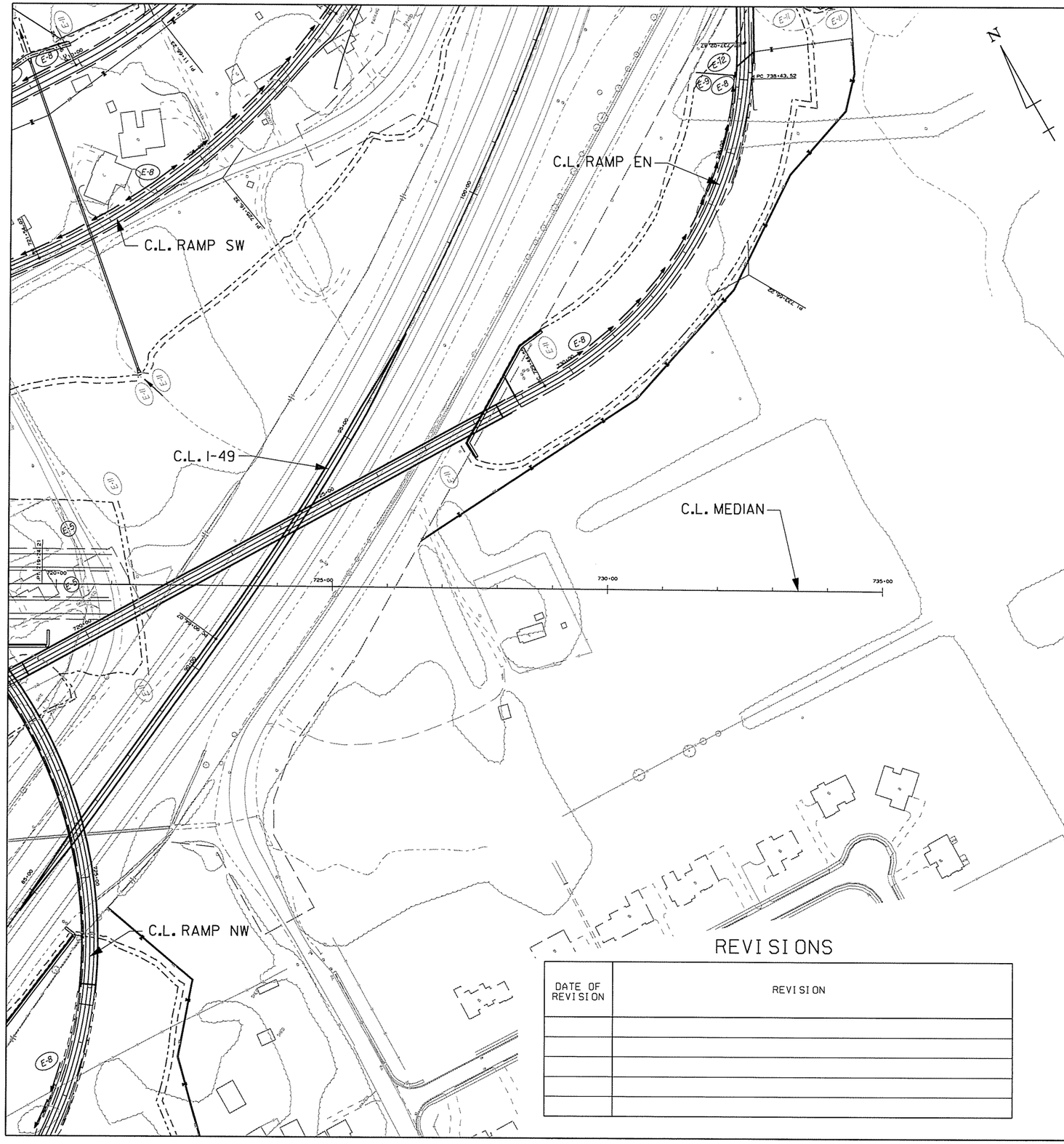
## TEMPORARY EROSION CONTROL PLAN STAGE 2 STA. 690+00 TO STA. 720+00

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 94 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 721+10 TO 721+70 | LT. TO RT. | RETAIN |
| **SAND BAG DITCH CHECK** | **(E-5)** | **INSTALLATION** |
| STA. 720+00 TO 721+00 | LT. | 1 |
| STA. 720+00 TO 721+00 | MEDIAN | 1 |




## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 2
STA. 720+00 TO STA. 721+00

sadonaldson 9/4/2014 3:20:29 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_2i.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 95 | 897 |

2 TEMPORARY EROSION CONTROL PLAN

I-49

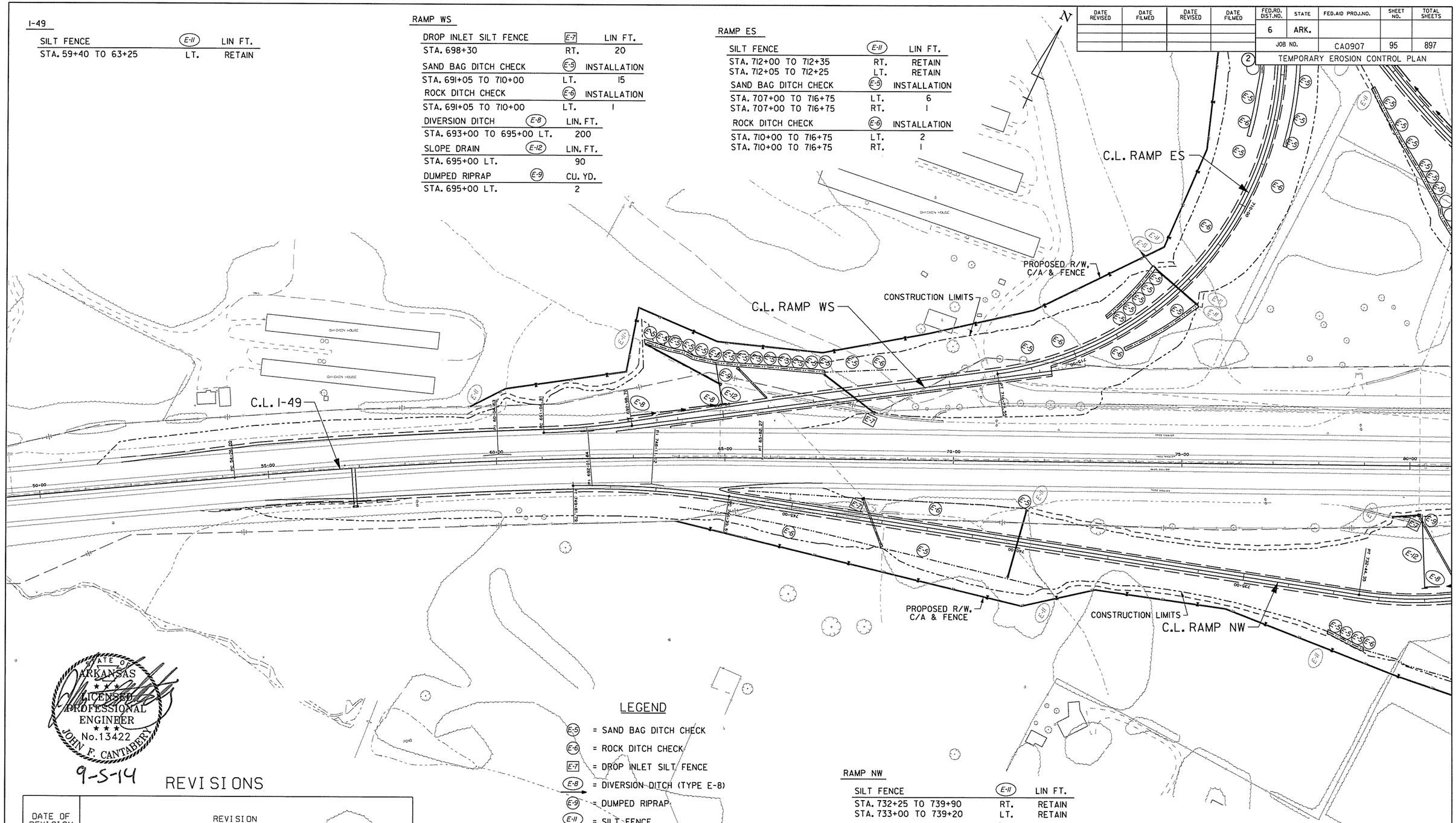
| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 59+40 TO 63+25 | LT. | RETAIN |

RAMP WS

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 698+30 | RT. | 20 |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 691+05 TO 710+00 | LT. | 15 |
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
| STA. 691+05 TO 710+00 | LT. | 1 |
| DIVERSION DITCH (E-8) | | LIN. FT. |
| STA. 693+00 TO 695+00 LT. | | 200 |
| SLOPE DRAIN (E-12) | | LIN. FT. |
| STA. 695+00 LT. | | 90 |
| DUMPED RIPRAP (E-9) | | CU. YD. |
| STA. 695+00 LT. | | 2 |

RAMP ES

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 712+00 TO 712+35 | RT. | RETAIN |
| STA. 712+05 TO 712+25 | LT. | RETAIN |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 707+00 TO 716+75 | LT. | 6 |
| STA. 707+00 TO 716+75 | RT. | 1 |
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
| STA. 710+00 TO 716+75 | LT. | 2 |
| STA. 710+00 TO 716+75 | RT. | 1 |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTARERY
9-5-14

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

RAMP NW

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 732+25 TO 739+90 | RT. | RETAIN |
| STA. 733+00 TO 739+20 | LT. | RETAIN |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 732+00 TO 749+81 | LT. | 4 |
| STA. 732+00 TO 749+81 | RT. | 1 |
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
| STA. 732+00 TO 749+81 | LT. | 2 |
| STA. 732+00 TO 749+81 | RT. | 1 |
| DROP INLET SILT FENCE | E-7 | LIN FT. |
| STA. 743+50 | RT. | 20 |

TEMPORARY EROSION CONTROL PLAN
STAGE 2
I-49 STA. 50+00 TO STA. 80+00

sadonaldson 9/4/2014 3:20:29 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_2la.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 96 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

C.L. GOAD SPRINGS RD. ACCESS RD.

C.L. RAMP SW

C.L. MEDIAN

C.L. RAMP SE

C.L. RAMP EN

C.L. I-49

C.L. RAMP NW

CONSTRUCTION LIMITS

GOAD SPRINGS RD. ACCESS RD.

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 17+00 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | RETAIN |
| STA. 6+00 TO 20+00 | RT. | RETAIN |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 6+00 TO 20+00 | LT. | RETAIN |
| STA. 6+00 TO 20+00 | RT. | RETAIN |

RAMP EN

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 727+60 TO 737+70 | RT. | RETAIN |
| STA. 729+95 TO 737+60 | LT. TO RT. | RETAIN |
| STA. 742+90 TO 743+00 | LT. TO RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 720+00 TO 744+00 | LT. | 5 |
| STA. 720+00 TO 744+00 | RT. | 4 |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 729+80 TO 736+40 LT. | | 660 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 736+40 LT. | | 75 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 736+40 LT. | | 2 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

RAMP NW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 729+35 TO 732+25 | LT. TO RT. | RETAIN |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 728+45 TO 731+00 RT. | | 255 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 731+00 RT. | | 165 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 731+00 RT. | | 2 |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 731+00 | RT. | 20 |

RAMP SE

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 707+70 TO 708+00 | LT. TO RT. | RETAIN |
| STA. 709+95 TO 713+45 | RT. TO LT. | RETAIN |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 710+95 TO 713+44 LT. | | 250 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 710+95 LT. | | 100 |
| STA. 713+00 LT. | | 145 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 710+95 RT. | | 2 |
| STA. 713+00 LT. | | 2 |

RAMP SW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 717+05 TO 722+20 | RT. | RETAIN |
| STA. 722+25 TO 730+95 | RT. | RETAIN |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 716+00 TO 730+94 LT. | | 1495 |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 716+00 LT. | | 135 |
| STA. 720+00 LT. | | 205 |
| STA. 729+00 LT. | | 175 |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 716+00 LT. | | 2 |
| STA. 720+00 LT. | | 2 |
| STA. 729+00 LT. | | 2 |

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 2
I-49 STA. 80+00 TO 110+00

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

sodonaldson 9/4/2014 3:20:30 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_ST02EC_2b.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 97 | 897 |

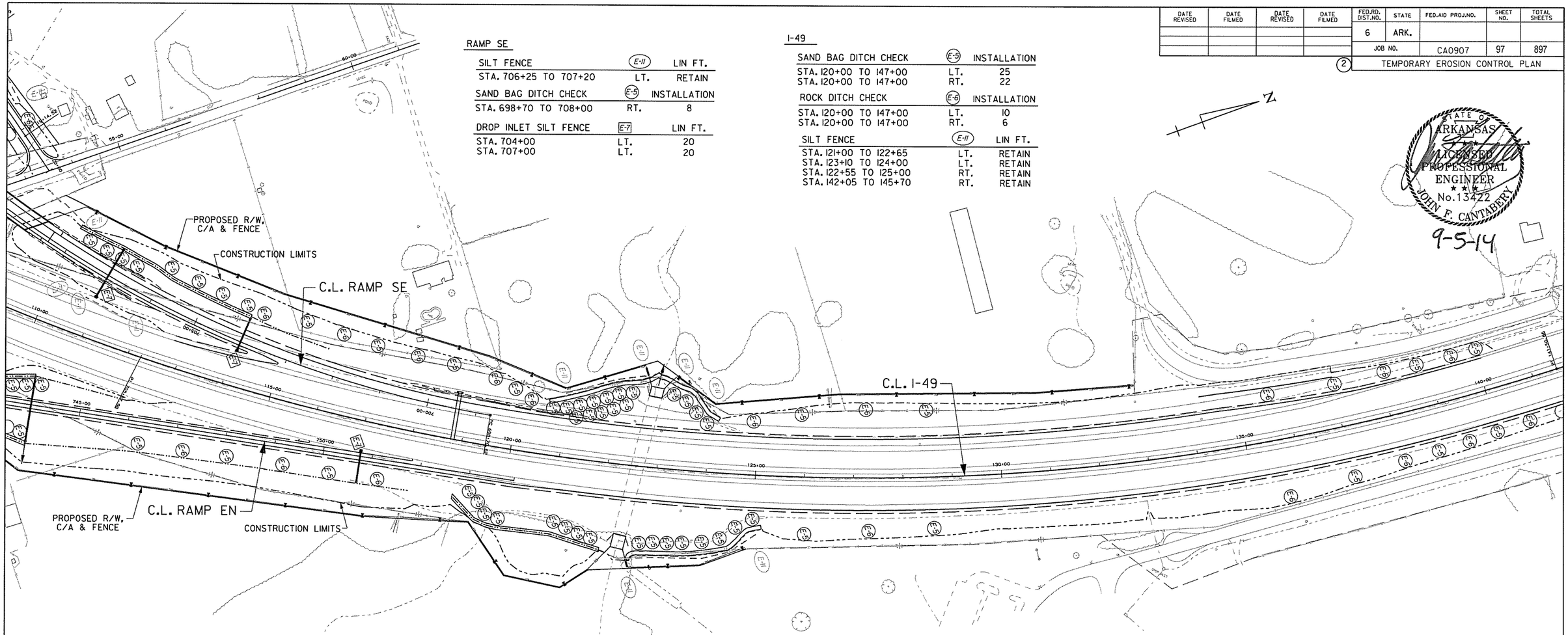
(2) TEMPORARY EROSION CONTROL PLAN

RAMP SE

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 706+25 TO 707+20 | LT. | RETAIN |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 698+70 TO 708+00 | RT. | 8 |
| DROP INLET SILT FENCE | [E-7] | LIN FT. |
| STA. 704+00 | LT. | 20 |
| STA. 707+00 | LT. | 20 |

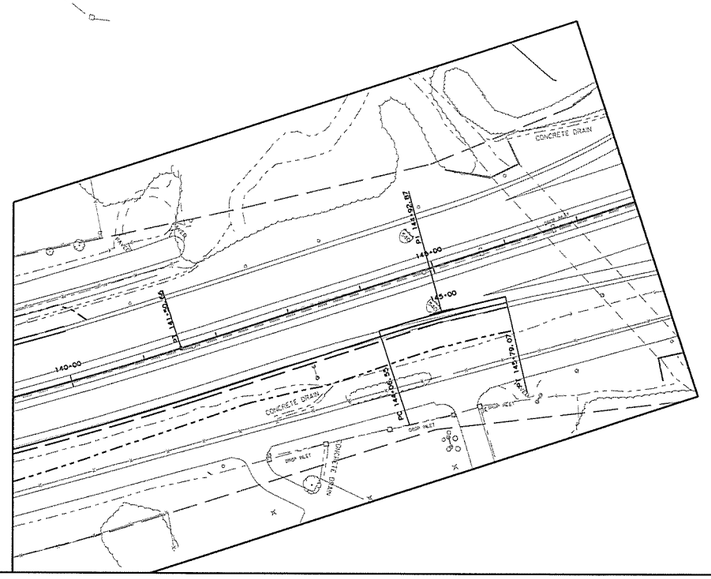
I-49

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 120+00 TO 147+00 | LT. | 25 |
| STA. 120+00 TO 147+00 | RT. | 22 |
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
| STA. 120+00 TO 147+00 | LT. | 10 |
| STA. 120+00 TO 147+00 | RT. | 6 |
| SILT FENCE | (E-11) | LIN FT. |
| STA. 121+00 TO 122+65 | LT. | RETAIN |
| STA. 123+10 TO 124+00 | LT. | RETAIN |
| STA. 122+55 TO 125+00 | RT. | RETAIN |
| STA. 142+05 TO 145+70 | RT. | RETAIN |




RAMP EN

| DROP INLET SILT FENCE | [E-7] | LIN FT. |
|---|---|---|
| STA. 750+75 | LT. | 20 |
| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
| STA. 744+00 TO 754+00 | RT. | 3 |
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
| STA. 744+00 TO 754+00 | RT. | 3 |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 2
I-49 STA. 110+00 TO STA. 147+00

sadonaldson 9/4/2014 3:20:31PM
WORKSPACE: AHTD
L:\2005\059116\80 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_ST02EC_21c.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 98 | 897 |

RAMP 3 (2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 495+75 | LT. | RETAIN |
| SEDIMENT BASIN | E-9 | CU. YD. |
| STA. 508+40 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 480+00 TO 510+00 | LT. | RETAIN |
| STA. 480+00 TO 510+00 | MEDIAN | RETAIN |
| STA. 480+00 TO 510+00 | RT. | RETAIN |
| STA. 498+00 TO 500+50 | LT. | 1 |
| STA. 498+00 TO 500+50 | MEDIAN | 2 |
| STA. 498+00 TO 500+50 | RT. | 2 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 480+00 TO 510+00 | LT. | RETAIN |
| STA. 480+00 TO 510+00 | MEDIAN | RETAIN |
| STA. 480+00 TO 510+00 | RT. | RETAIN |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 482+00 | MEDIAN | RETAIN |
| STA. 490+00 | MEDIAN | RETAIN |
| STA. 495+00 | MEDIAN | RETAIN |
| STA. 505+00 | MEDIAN | RETAIN |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 507+00 TO 510+00 LT. | | RETAIN |
| STA. 508+00 TO 510+00 RT. | | RETAIN |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 507+00 LT. | | RETAIN |
| STA. 508+00 RT. | | RETAIN |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 507+00 LT. | | RETAIN |
| STA. 508+00 RT. | | RETAIN |

RAMP 4

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 490+40 TO 496+20 | RT. | RETAIN |
| STA. 496+25 TO 498+35 | RT. | RETAIN |
| STA. 497+55 TO 498+50 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 484+00 TO 499+00 | LT. | RETAIN |
| STA. 484+00 TO 499+00 | RT. | RETAIN |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 484+00 TO 499+00 | LT. | RETAIN |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 495+00 TO 497+00 LT. | | RETAIN |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 497+00 LT. | | RETAIN |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 497+00 LT. | | RETAIN |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 480+00 TO 480+55 | LT. | RETAIN |
| STA. 480+70 TO 482+10 | LT. | RETAIN |
| STA. 481+15 TO 482+90 | RT. | RETAIN |
| STA. 493+20 TO 495+70 | LT. | RETAIN |
| STA. 493+70 TO 494+95 | RT. | RETAIN |
| STA. 495+75 TO 497+50 | LT. | RETAIN |
| STA. 509+05 TO 510+00 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 497+00 TO 510+00 | LT. | RETAIN |
| STA. 497+00 TO 510+00 | RT. | RETAIN |
| STA. 497+00 TO 497+50 | LT. | 1 |
| STA. 497+00 TO 497+50 | RT. | 1 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 497+00 TO 510+00 | LT. | RETAIN |
| STA. 497+00 TO 510+00 | RT. | RETAIN |

RAMP 3

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 499+15 TO 499+95 | LT. | RETAIN |
| STA. 505+00 TO 506+80 | LT. | RETAIN |
| STA. 507+25 TO 508+65 | LT. | RETAIN |

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 507+00 TO 510+00 LT. | | RETAIN |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 507+00 LT. | | RETAIN |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 507+00 LT. | | RETAIN |

RAMP 1

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 494+55 TO 500+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 483+00 TO 501+00 | LT. | RETAIN |
| STA. 483+00 TO 501+00 | RT. | RETAIN |
| STA. 499+15 TO 501+00 | RT. | 5 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 483+00 TO 501+00 | RT. | RETAIN |

RAMP 2

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 508+00 TO 509+00 RT. | | RETAIN |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 509+00 RT. | | RETAIN |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 509+00 RT. | | RETAIN |

RAMP 2

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 501+70 TO 502+90 | LT. | RETAIN |
| STA. 505+70 TO 509+10 | LT. | RETAIN |
| STA. 506+10 TO 508+60 | RT. | RETAIN |
| STA. 509+15 TO 510+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 500+00 TO 510+00 | RT. | RETAIN |
| STA. 500+00 TO 501+00 | RT. | 1 |
| STA. 500+00 TO 501+00 | LT. | 1 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 500+00 TO 510+00 | LT. | RETAIN |
| STA. 500+00 TO 510+00 | RT. | RETAIN |

RAMP 1

| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 494+00 TO 496+50 LT. | | RETAIN |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 494+00 LT. | | RETAIN |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 494+00 LT. | | RETAIN |

C.L. RAMP 4
C.L. MEDIAN
C.L. RAMP 3
C.L. RAMP 1
C.L. HWY. 112
C.L. RAMP 2
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
TEMPORARY CONSTRUCTION EASEMENT
CHICKEN HOUSE
POND
BUILDING FOUNDATION

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

TEMPORARY EROSION CONTROL PLAN
STAGE 3

sadonaldson 9/4/2014 3:20:31 PM
WORKSPACE: AHTD
L:\2005\05811680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_ST02EC.J3B.dgn
REVISED DATE:

HWY. 112

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 14+40 TO 18+90 | RT. | RETAIN |
| STA. 16+90 TO 18+85 | LT. | RETAIN |
| STA. 21+05 TO 25+80 | RT. | RETAIN |
| STA. 21+55 TO 26+20 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 8+00 TO 32+00 | LT. | RETAIN |
| STA. 8+00 TO 32+00 | RT. | RETAIN |
| STA. 13+75 TO 15+40 | LT. | 4 |
| STA. 13+75 TO 15+40 | RT. | 1 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 8+00 TO 32+00 | RT. | RETAIN |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 99 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

TEMPORARY CONSTRUCTION EASEMENT

C.L. RAMP 2

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

C.L. RAMP 3

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W

C.L. HWY. 112

PROPOSED R/W

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

C.L. RAMP 4

C.L. MEDIAN

C.L. RAMP 1

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 3
HWY. 112

REVISED DATE:
WORKSPACE: AHTD
L:\2005\059I1680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_I3c.dgn
sadonaldson 9/4/2014 3:20:32 PM

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 100 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

**RAMP 3**

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 515+00 | LT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 515+00 | LT. | RETAIN |

| SEDIMENT BASIN | [E-9] | CU. YD. |
|---|---|---|
| STA. 518+05 | LT. | RETAIN |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 510+00 TO 513+60 | RT. | RETAIN |
| STA. 515+65 TO 518+00 | LT. | RETAIN |
| STA. 518+50 TO 520+35 | RT. | RETAIN |
| STA. 520+40 TO 521+60 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 540+00 | LT. | RETAIN |
| STA. 510+00 TO 540+00 | MEDIAN | RETAIN |
| STA. 510+00 TO 540+00 | RT. | RETAIN |
| STA. 534+30 TO 535+30 | LT. | I |
| STA. 534+30 TO 535+30 | MEDIAN | I |

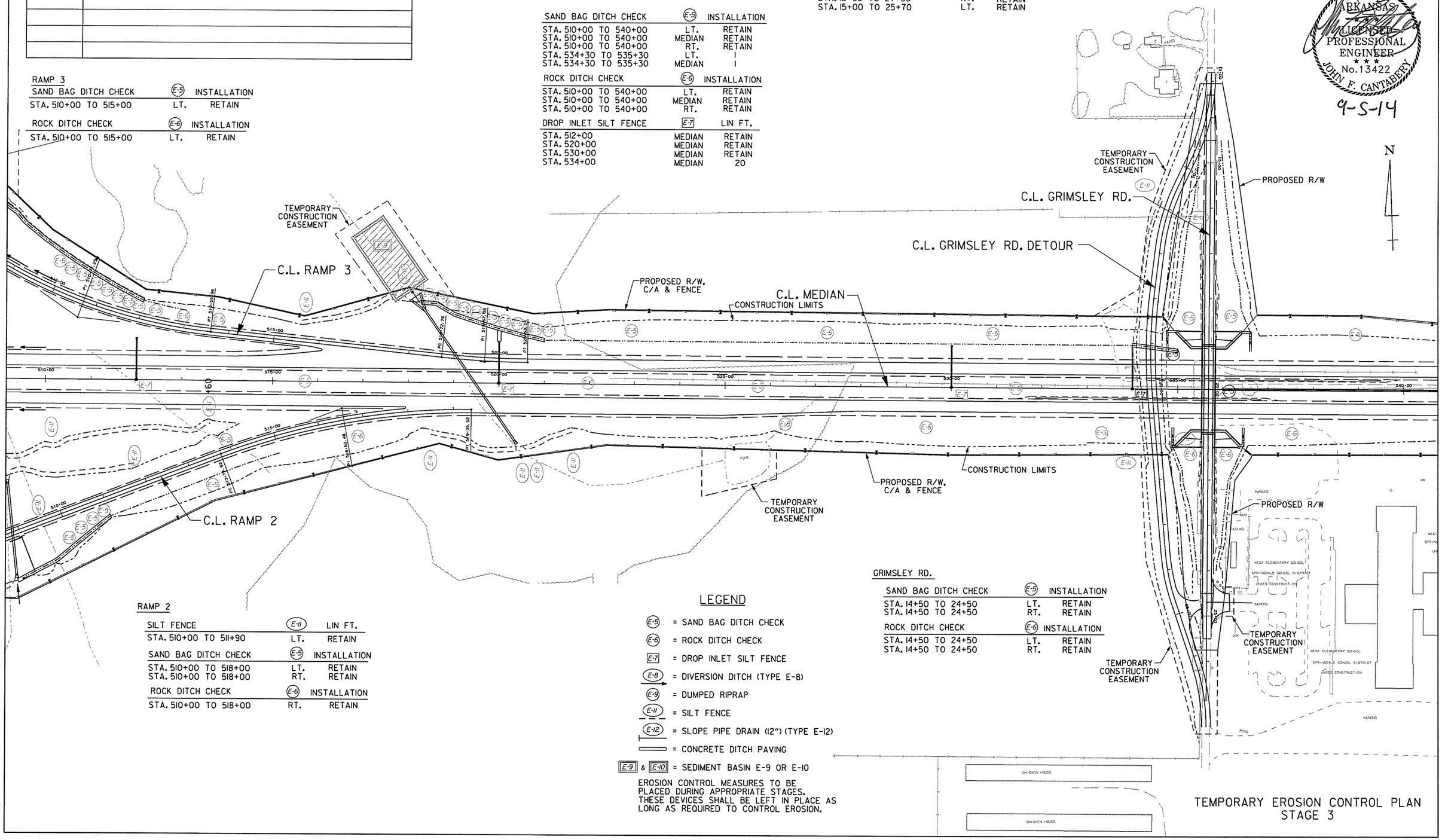
| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 540+00 | LT. | RETAIN |
| STA. 510+00 TO 540+00 | MEDIAN | RETAIN |
| STA. 510+00 TO 540+00 | RT. | RETAIN |

| DROP INLET SILT FENCE | [E-7] | LIN FT. |
|---|---|---|
| STA. 512+00 | MEDIAN | RETAIN |
| STA. 520+00 | MEDIAN | RETAIN |
| STA. 530+00 | MEDIAN | RETAIN |
| STA. 534+00 | MEDIAN | 20 |

**GRIMSLEY RD. DETOUR**

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 15+90 TO 21+60 | RT. | RETAIN |
| STA. 16+00 TO 21+30 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 13+90 TO 27+30 | RT. | RETAIN |
| STA. 15+00 TO 25+70 | LT. | RETAIN |




**RAMP 2**

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 510+00 TO 511+90 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 518+00 | LT. | RETAIN |
| STA. 510+00 TO 518+00 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 510+00 TO 518+00 | RT. | RETAIN |

**GRIMSLEY RD.**

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 14+50 TO 24+50 | LT. | RETAIN |
| STA. 14+50 TO 24+50 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 14+50 TO 24+50 | LT. | RETAIN |
| STA. 14+50 TO 24+50 | RT. | RETAIN |

## LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- [E-7] = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- [E-9] & [E-10] = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

## TEMPORARY EROSION CONTROL PLAN STAGE 3

sadonaldson 9/4/2014 3:20:32 PM
WORKSPACE: AHTD
L:\2005\05916BO - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_14B.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 101 | 897 |

(2) TEMPORARY EROSION CONTROL PLAN

| SEDIMENT BASIN | (E-9) | CU. YD. |
|---|---|---|
| STA. 663+65 | RT. | RETAIN |

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 666+25 TO 666+90 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 660+00 TO 690+00 | LT. | RETAIN |
| STA. 660+00 TO 690+00 | MEDIAN | RETAIN |
| STA. 660+00 TO 690+00 | RT. | RETAIN |
| STA. 688+00 TO 690+00 | MEDIAN | 1 |
| STA. 688+00 TO 690+00 | RT. | 3 |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 660+00 TO 690+00 | LT. | RETAIN |
| STA. 660+00 TO 690+00 | MEDIAN | RETAIN |
| STA. 660+00 TO 690+00 | RT. | RETAIN |

| DROP INLET SILT FENCE | (E-7) | LIN FT. |
|---|---|---|
| STA. 664+75 | RT. | RETAIN |
| STA. 665+00 | MEDIAN | RETAIN |
| STA. 681+00 | MEDIAN | RETAIN |
| STA. 685+00 | MEDIAN | RETAIN |

SPRING CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 16+95 TO 18+15 | LT. | RETAIN |
| STA. 23+65 TO 24+70 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 15+00 TO 25+00 | LT. | RETAIN |
| STA. 15+00 TO 25+00 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 15+00 TO 25+00 | LT. | RETAIN |
| STA. 15+00 TO 25+00 | RT. | RETAIN |

PUPPY CREEK RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 21+00 TO 24+60 | RT. | RETAIN |
| STA. 24+30 TO 27+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 20+00 TO 30+00 | LT. | RETAIN |
| STA. 20+00 TO 30+00 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 20+00 TO 30+00 | LT. | RETAIN |

N

C.L. SPRING CK. ST.

C.L. PUPPY CK. RD.

PERMANENT CONSTRUCTION EASEMENT

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

C/A & FENCE

C.L. MEDIAN

C.L. SPRING CK. ST. ACCESS RD.

PROPOSED R/W

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W

PERMANENT CONSTRUCTION EASEMENT

PROPOSED R/W, C/A & FENCE

PROPOSED R/W

C.L. PUPPY CK. RD. ACCESS RD.

STATE OF ARKANSAS
JOHN F. CANTABERY
LICENSED PROFESSIONAL ENGINEER
No. 13422
9-5-14

REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

SPRING CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 24+40 TO 24+80 | RT. | RETAIN |
| STA. 25+10 TO 27+20 | RT. | RETAIN |
| STA. 38+30 TO 38+75 | LT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 21+00 TO 40+00 | LT. | RETAIN |
| STA. 21+00 TO 40+00 | RT. | RETAIN |

| ROCK DITCH CHECK | (E-6) | INSTALLATION |
|---|---|---|
| STA. 21+00 TO 40+00 | LT. | RETAIN |
| STA. 21+00 TO 40+00 | RT. | RETAIN |

PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | (E-11) | LIN FT. |
|---|---|---|
| STA. 11+25 TO 12+10 | RT. | RETAIN |

| SAND BAG DITCH CHECK | (E-5) | INSTALLATION |
|---|---|---|
| STA. 10+00 TO 12+00 | LT. | RETAIN |
| STA. 10+00 TO 12+00 | RT. | RETAIN |

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH (TYPE E-8)
- (E-9) = DUMPED RIPRAP
- (E-11) = SILT FENCE
- (E-12) = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- (E-9) & (E-10) = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

TEMPORARY EROSION CONTROL PLAN
STAGE 3

sadonaldson 9/4/2014 3:20:38 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_19B.dgn
REVISED DATE:

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 693+80 TO 696+00 | RT. TO LT. | RETAIN |
| STA. 699+25 TO 699+95 | RT. TO LT. | RETAIN |
| STA. 701+50 TO 702+60 | RT. | RETAIN |
| STA. 701+50 TO 705+70 | RT. | RETAIN |
| STA. 706+20 TO 708+20 | RT. TO LT. | RETAIN |
| STA. 706+40 TO 708+30 | RT. | RETAIN |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 695+00 | MEDIAN | RETAIN |
| STA. 710+00 | MEDIAN | RETAIN |
| STA. 710+00 | LT. | RETAIN |
| STA. 718+00 | MEDIAN | RETAIN |
| STA. 718+00 | LT. | RETAIN |
| STA. 718+00 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 690+00 TO 720+00 | LT. | RETAIN |
| STA. 690+00 TO 720+00 | MEDIAN | RETAIN |
| STA. 690+00 TO 720+00 | RT. | RETAIN |
| STA. 690+00 TO 693+00 | RT. | 10 |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 690+00 TO 720+00 | LT. | RETAIN |
| STA. 690+00 TO 720+00 | MEDIAN | RETAIN |
| STA. 690+00 TO 720+00 | RT. | RETAIN |

| SEDIMENT BASIN | E-9 | CU. YD. |
|---|---|---|
| STA. 693+85 | RT. | RETAIN |

| SEDIMENT BASIN | E-10 | CU. YD. |
|---|---|---|
| STA. 701+85 | LT. | RETAIN |

RAMP NW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 703+90 TO 709+48 | LT. | RETAIN |
| STA. 708+35 TO 712+80 | RT. | RETAIN |
| STA. 716+40 TO 716+60 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 698+00 TO 730+00 | LT. | RETAIN |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 703+00 | RT. | RETAIN |

RAMP EN

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 689+26 TO 720+00 | LT. | RETAIN |
| STA. 689+26 TO 720+00 | RT. | RETAIN |

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 707+10 TO 708+00 | RT. | RETAIN |
| STA. 714+60 TO 717+00 | RT. TO LT. | RETAIN |

RAMP EN

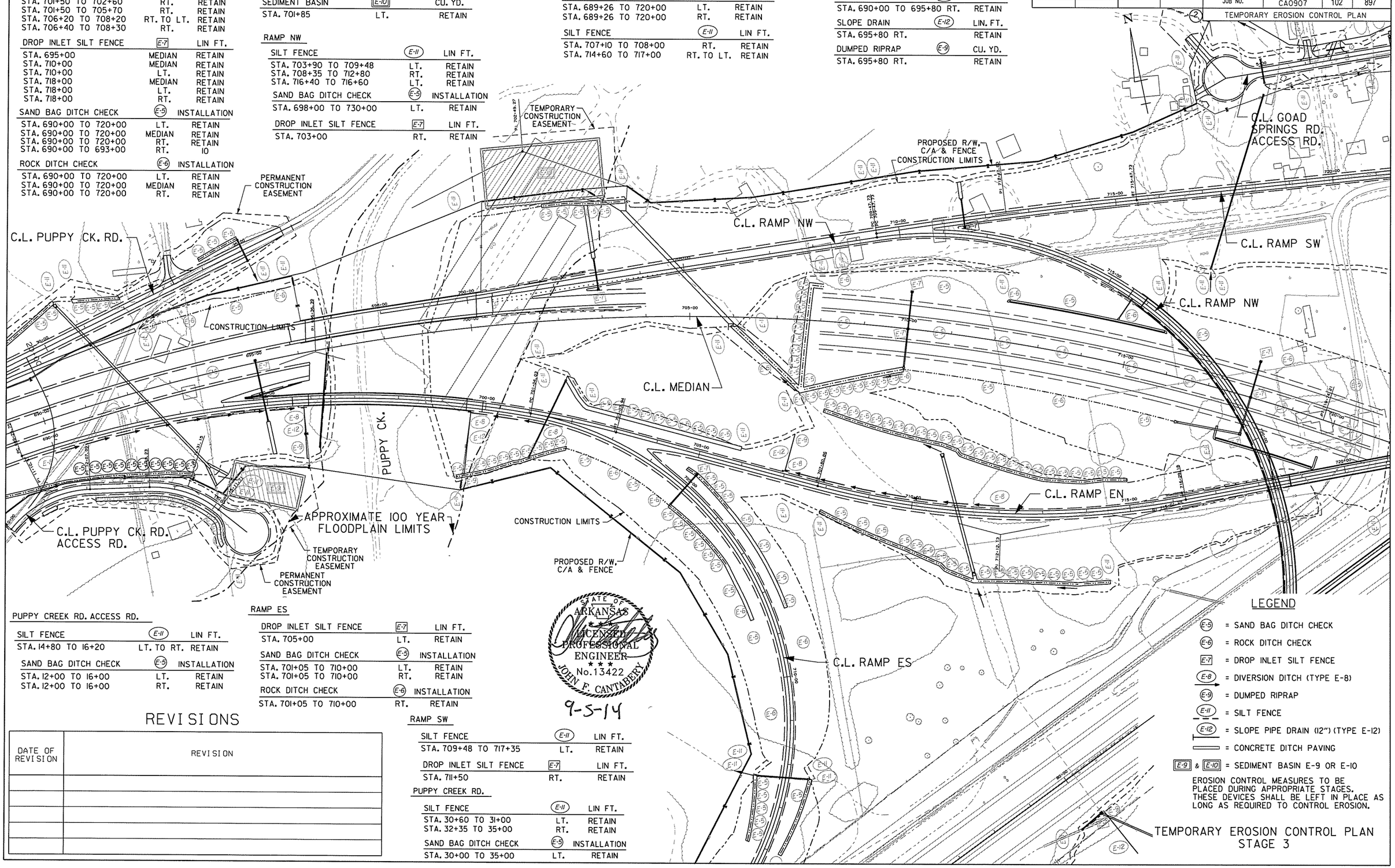
| DIVERSION DITCH | E-8 | LIN. FT. |
|---|---|---|
| STA. 690+00 TO 695+80 RT. | | RETAIN |

| SLOPE DRAIN | E-12 | LIN. FT. |
|---|---|---|
| STA. 695+80 RT. | | RETAIN |

| DUMPED RIPRAP | E-9 | CU. YD. |
|---|---|---|
| STA. 695+80 RT. | | RETAIN |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 102 | 897 |

TEMPORARY EROSION CONTROL PLAN




PUPPY CREEK RD. ACCESS RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 14+80 TO 16+20 | LT. TO RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 12+00 TO 16+00 | LT. | RETAIN |
| STA. 12+00 TO 16+00 | RT. | RETAIN |

RAMP ES

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 705+00 | LT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 701+05 TO 710+00 | LT. | RETAIN |
| STA. 701+05 TO 710+00 | RT. | RETAIN |

| ROCK DITCH CHECK | E-6 | INSTALLATION |
|---|---|---|
| STA. 701+05 TO 710+00 | RT. | RETAIN |

RAMP SW

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 709+48 TO 717+35 | LT. | RETAIN |

| DROP INLET SILT FENCE | E-7 | LIN FT. |
|---|---|---|
| STA. 711+50 | RT. | RETAIN |

PUPPY CREEK RD.

| SILT FENCE | E-11 | LIN FT. |
|---|---|---|
| STA. 30+60 TO 31+00 | LT. | RETAIN |
| STA. 32+35 TO 35+00 | RT. | RETAIN |

| SAND BAG DITCH CHECK | E-5 | INSTALLATION |
|---|---|---|
| STA. 30+00 TO 35+00 | LT. | RETAIN |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No. 13422
9-5-14

## REVISIONS

| DATE OF REVISION | REVISION |
|---|---|
| | |
| | |
| | |
| | |
| | |

## LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH (TYPE E-8)
- E-9 = DUMPED RIPRAP
- E-11 = SILT FENCE
- E-12 = SLOPE PIPE DRAIN (12") (TYPE E-12)
- = CONCRETE DITCH PAVING
- E-9 & E-10 = SEDIMENT BASIN E-9 OR E-10

EROSION CONTROL MEASURES TO BE PLACED DURING APPROPRIATE STAGES. THESE DEVICES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED TO CONTROL EROSION.

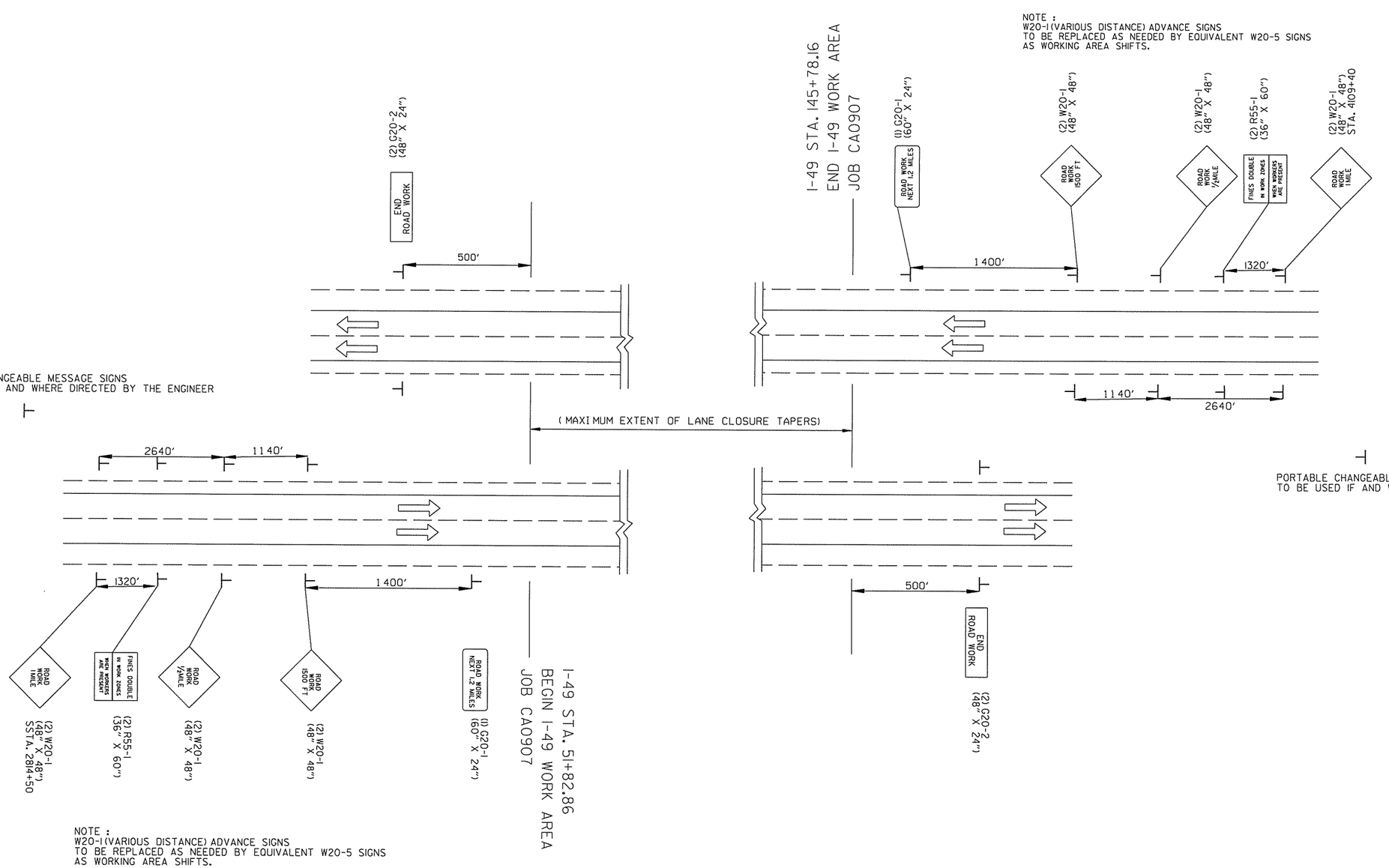
TEMPORARY EROSION CONTROL PLAN
STAGE 3

sadonaldson 9/4/2014 3:20:39 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_STG2EC_20B.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 103 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

NOTE :
W20-1(VARIOUS DISTANCE) ADVANCE SIGNS
TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS
AS WORKING AREA SHIFTS.




NOTE :
W20-1(VARIOUS DISTANCE) ADVANCE SIGNS
TO BE REPLACED AS NEEDED BY EQUIVALENT W20-5 SIGNS
AS WORKING AREA SHIFTS.

# ADVANCE SIGNS AT BEGINNING AND END OF JOB ALL STAGES

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

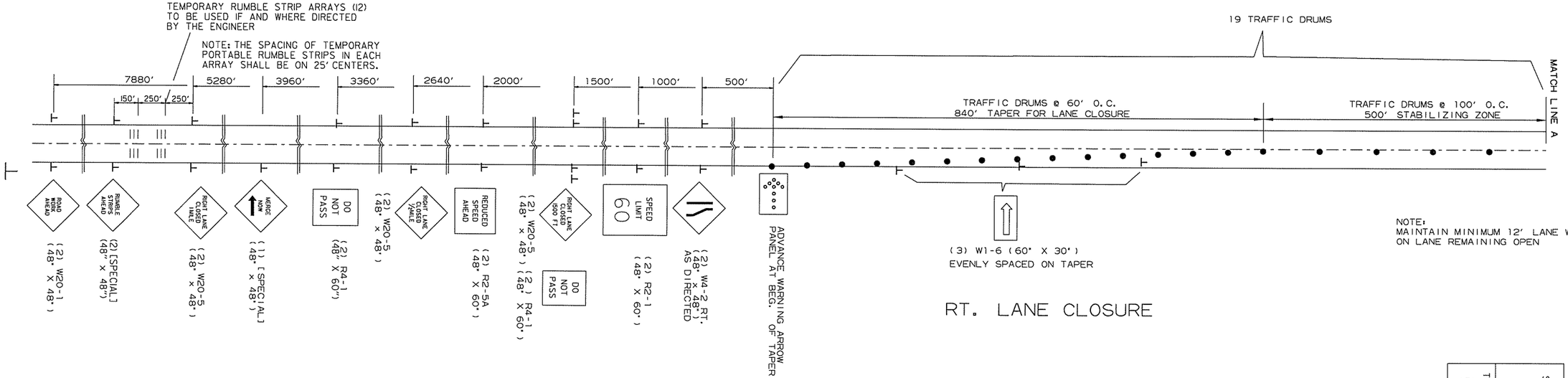
sodonaldson 9/4/2014 3:20:39 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_SD_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 104 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

TEMPORARY RUMBLE STRIP ARRAYS (12) TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTE: THE SPACING OF TEMPORARY PORTABLE RUMBLE STRIPS IN EACH ARRAY SHALL BE ON 25' CENTERS.




NOTE:
MAINTAIN MINIMUM 12' LANE WIDTH ON LANE REMAINING OPEN

## RT. LANE CLOSURE

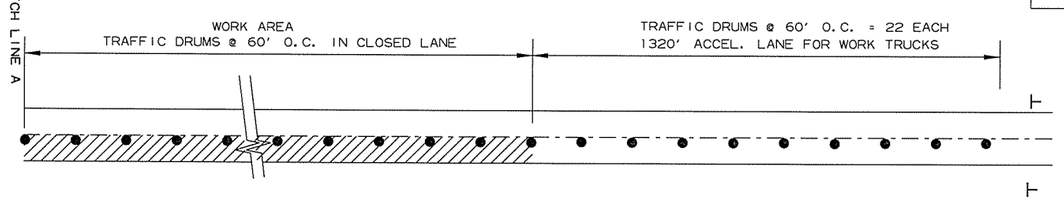
SPEED LIMIT 70 / TRUCKS 65

(2) R2-1 (48" X 60")
(2) R2-2 (48" X 48")

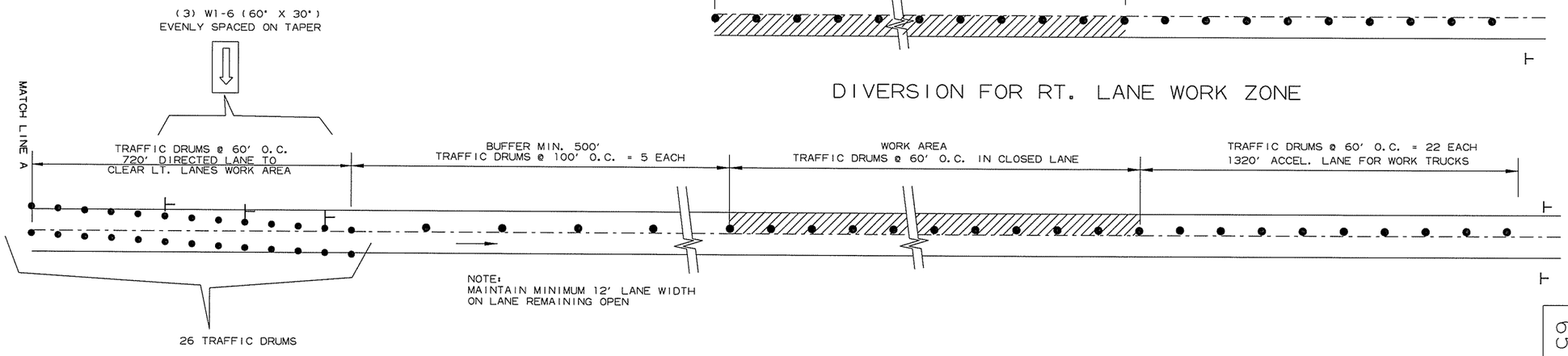
SPEED LIMIT 70 / TRUCKS 65

(2) R2-1 (48" X 60")
(2) R2-2 (48" X 48")

SPEEDS SIGNS ARE ALSO PROVIDED FOR PLACEMENT PAST ENTRANCE RAMPS WITHIN THE WORK ZONE.




## DIVERSION FOR RT. LANE WORK ZONE




## DIVERSION FOR LT. LANE WORK ZONE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
10-10-14

MAINTENANCE OF TRAFFIC DETAILS
LANE CLOSURE

JFCantabery 10/10/2014 1:52:00 PM
WORKSPACE: AHTD
\\Garverinc\ltprojects\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_SD_01.dgn
REVISED DATE:

PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

STAGE 1

CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING HWY. 112
2. CONSTRUCT WIDENING OF EXISTING HWY. 112 FROM STA. 23+00 TO 31+00.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 105 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 1- CONSTRUCTION PAVEMENT MARKINGS

TEMPORARY HWY. 112 WIDENING STA. 23+00 TO STA. 28+00
EDGE LINES AND DOUBLE YELLOW CENTERLINE = 2000 L.F.

STAGE 1- REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

TEMPORARY HWY. 112 WIDENING STA. 28+00 TO STA. 31+00
EDGE LINES AND DOUBLE YELLOW CENTERLINE = 1200 L.F.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

1" = 300'

END ROAD WORK (1) G20-2 (48" X 24")

500'

250'
250'
250'
250'
500'

(1) W20-1 (48" X 48") ROAD WORK 1500 FT.

(1) R2-5A (48" X 60") REDUCED SPEED AHEAD

(1) W20-1 (48" X 48") ROAD WORK 1000 FT.

(1) R2-1 (48" X 60") SPEED LIMIT 45

(1) W20-1 (48" X 48") ROAD WORK 500 FT.

EXISTING HWY. 112

480+00 485+00 490+00 495+00 500+00 505+00 510+00 515+00 520+00

C.L. MEDIAN

HWY. 112 STA. 23+00.00, 89.25' LT.

HWY. 112 STA. 26+00.00, 44.04' LT.

HWY. 112 STA. 28+00.00, 21.61' LT.

HWY. 112 STA. 31+00.00, 10.69' LT.

TEMPORARY HWY. 112 WIDENING

17 TRAFFIC DRUMS @ 50' O.C.
HWY. 112 STA. 23+00 TO STA. 31+00

(1) W20-1 (48" X 48") ROAD WORK 500 FT.

(1) R2-1 (48" X 60") SPEED LIMIT 45

(1) W20-1 (48" X 48") ROAD WORK 1000 FT.

(1) R2-5A (48" X 60") REDUCED SPEED AHEAD

(1) W20-1 (48" X 48") ROAD WORK 1500 FT.

500'
250'
250'
250'
250'
500'

END ROAD WORK (1) G20-2 (48" X 24")

STAGE 1 GRADING AND PAVING
TRAFFIC

# MAINTENANCE OF TRAFFIC DETAILS STAGE 1

sadonaldson 9/4/2014 3:20:40 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_112_STL01.dgn
REVISED DATE:

STAGE 1

CONSTRUCTION SEQUENCE NOTES

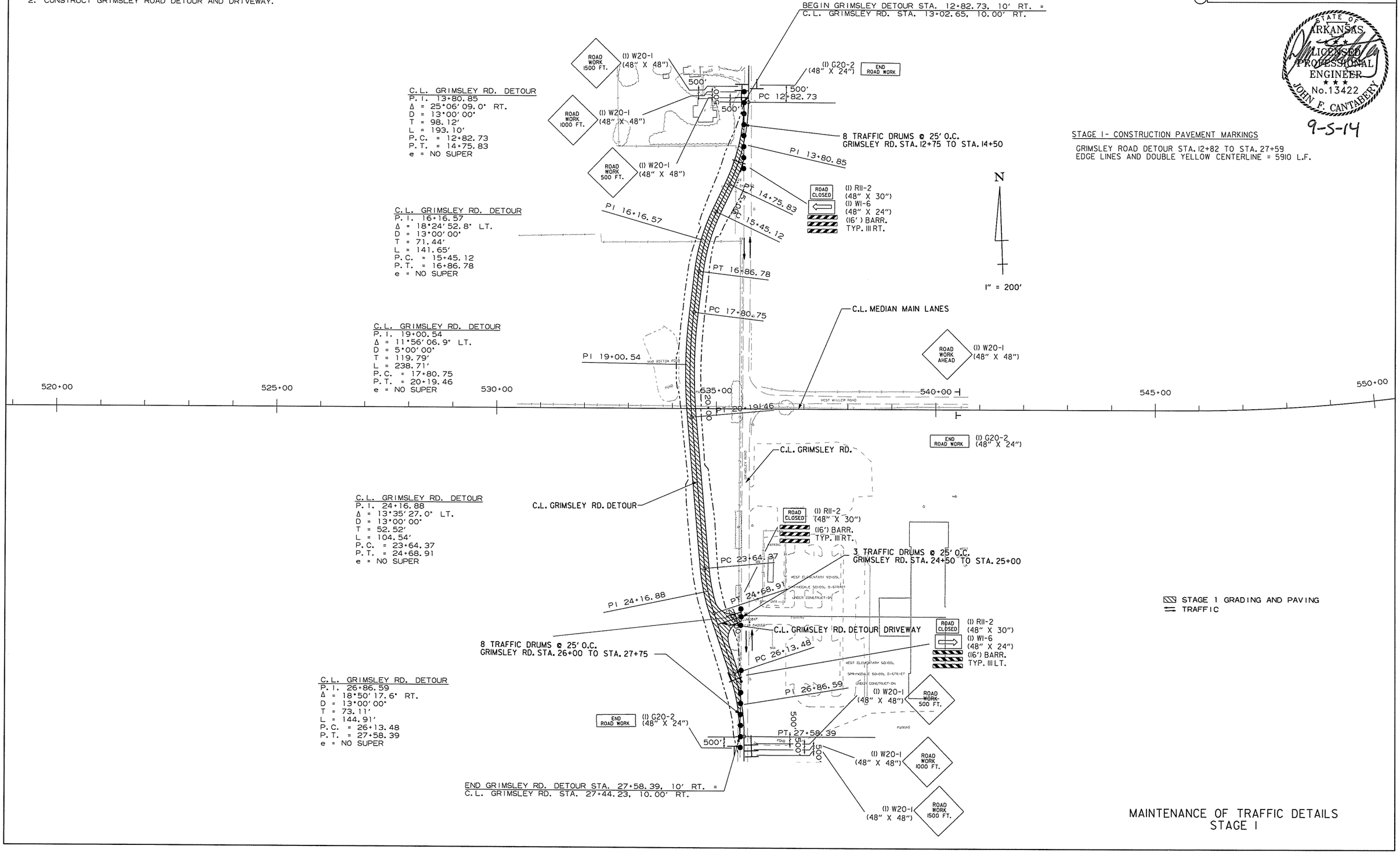
1. MAINTAIN TRAFFIC ON GRIMSLEY ROAD.
2. CONSTRUCT GRIMSLEY ROAD DETOUR AND DRIVEWAY.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 106 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTARERO
9-5-14

STAGE 1- CONSTRUCTION PAVEMENT MARKINGS

GRIMSLEY ROAD DETOUR STA. 12+82 TO STA. 27+59
EDGE LINES AND DOUBLE YELLOW CENTERLINE = 5910 L.F.




MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

sadonaldson 9/4/2014 3:20:41 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_WWG_ST1_01.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 107 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STAGE 1

CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING S. ZION RD.
2. CONSTRUCT PROPOSED SHARP SPRINGS ACCESS RD. CONSTRUCT PROPOSED S. ZION RD. & CONSTRUCT S. ZION RD. DRIVEWAY UNDER TRAFFIC.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

1" = 200'

SHARP SPRINGS ACCESS ROAD

KNIGHT LANE DRIVEWAY

20 TRAFFIC DRUMS @ 25' O.C.

5 TRAFFIC DRUMS @ 25' O.C.

14 TRAFFIC DRUMS @ 25' O.C.

C.L. MEDIAN

C.L. S. ZION RD.

EXISTING S. ZION RD.

MATCH LINE STA 10+07

MATCH LINE STA 30+50

ROAD WORK AHEAD (1) W20-1 (48" X 48")

END ROAD WORK (1) G20-2 (48" X 24")

ROAD CLOSED (1) R11-2 (48" X 30") (1) W1-6 (48" X 24") (16') BARR. TYP. III RT.

ROAD CLOSED (1) R11-2 (48" X 30") (16') BARR. TYP. III LT.

500'

250'

10+00 15+00 20+00 00+15

610+00 615+00 620+00 630+00 635+00 640+00 20+00 30+00

STAGE 1 OVERLAY
STAGE 1 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

sadonaldson 9/4/2014 3:20:41PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_ZIO_ST1_01.dgn
REVISED DATE:

STAGE 1

CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING PUPPY CREEK RD. AND SPRING CREEK ST.
2. CONSTRUCT PROPOSED PUPPY CREEK RD., PUPPY CREEK ACCESS RD. AND PUPPY CREEK DETOUR.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 108 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

N

1" = 200'

STAGE 1- CONSTRUCTION PAVEMENT MARKINGS

PUPPY CREEK DETOUR STA. 20+00 TO STA. 23+67
EDGE LINE AND DOUBLE YELLOW CENTERLINE = 1470 L.F.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERRY
No. 13422
9-5-14

ROAD WORK 1500 FT. (I) W20-1 (48" X 48")
ROAD WORK 1000 FT. (I) W20-1 (48" X 48")
ROAD WORK 500 FT. (I) W20-1 (48" X 48")
500' 500' 500'

END ROAD WORK (I) G20-2 (48" X 24")

BEGIN PUPPY CREEK DETOUR STA. 20+00.00 = C.L. PUPPY CREEK RD. STA. 29+50

ROAD CLOSED (I) R11-2 (48" X 30") (16') BARR. TYP. III RT.

C.L. PUPPY CREEK RD.

7 TRAFFIC DRUMS @ 25' O.C.

ROAD CLOSED (I) R11-2 (48" X 30") (I) W1-6 (48" X 24") (16') BARR. TYP. III RT.

ROAD WORK 1000 FT. (I) W20-1 (48" X 48")
ROAD WORK 1500 FT. (I) W20-1 (48" X 48")
500' 500' 500'

END ROAD WORK (I) G20-2 (48" X 24")

ROAD WORK AHEAD (I) W20-1 (48" X 48")

EXISTING SPRING CREEK ST.

6 TRAFFIC DRUMS @ 25' O.C. SPRING CREEK ST. STA. 15+75 TO STA. 17+00

ROAD CLOSED (I) R11-2 (48" X 30") (16') BARR. TYP. III LT.

7 TRAFFIC DRUMS @ 25' O.C.

END PUPPY CREEK DETOUR STA. 23+71.04, 10' RT. = C.L. MEDIAN STA. 688+93.36, 167.32' RT.

C.L. MEDIAN

BK. AHD. 681+00.00 / 681+58.56

EXISTING PUPPY CREEK RD.

ROAD WORK 500 FT. (I) W20-1 (48" X 48")
(I) G20-2 (48" X 24") END ROAD WORK

ROAD WORK 500 FT. (I) W20-1 (48" X 48")
(I) G20-2 (48" X 24") END ROAD WORK

500' 500' 500'

ROAD WORK 1000 FT. (I) W20-1 (48" X 48")
ROAD WORK 1500 FT. (I) W20-1 (48" X 48")

ROAD WORK 1000 FT. (I)-W20-1 (48" X 48")

C.L. PUPPY CREEK DETOUR
P. I. 22+41.70
Δ = 65°18'46.3" RT.
D = 24°00'00"
T = 153.01'
L = 272.14'
P.C. = 20+88.69
P.T. = 23+60.83
e = NO SUPER

C.L. PUPPY CREEK ACCESS RD.

STAGE 1 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 1

sadonaldson 9/4/2014 3:20:42 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_PCR_ST1.01.dgn
REVISED DATE:

STAGE 1

CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT GOAD SPRINGS ACCESS RD.
   CONSTRUCT PUPPY CREEK RD., PUPPY CREEK DETOUR AND PUPPY CREEK ACCESS RD.

LEGEND
- STAGE 1 GRADING AND PAVING
- TRAFFIC

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 109 | 897 |

2 MAINTENANCE OF TRAFFIC DETAILS

N

1" =400'

EXISTING GOAD SPRINGS RD.

ROAD WORK AHEAD

(I) W20-1 (48" X 48")

END ROAD WORK

(I) G20-2 (48" X 24")

RAMP SE

ROAD CLOSED

(I) R11-2 (48" X 30")

(16') BARR. TYP. III LT.

6 TRAFFIC DRUMS @ 25' O.C.

GOAD SPRINGS ACCESS RD.

PUPPY CREEK RD.

RAMP SW

RAMP NW

C.L. MEDIAN

PUPPY CREEK DETOUR

EX. PUPPY CREEK RD.

PUPPY CREEK ACCESS RD.

SPRING CREEK RD.

RAMP EN

RAMP ES

RAMP WS

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

sadonaldson 9/4/2014 3:20:42 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_540_ST1_01.dgn
REVISED DATE:

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING HWY. 112 AND HWY 112 WIDENING.
2. CONSTRUCT 24' OF HWY. 112 FROM RT. EDGE OF SHOULDER. CONSTRUCT MAIN LANES & RAMPS WITH GAPS TO MAINTAIN TRAFFIC ON HWY. 112.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 110 | 897 |
| | | | | (2) MAINTENANCE OF TRAFFIC DETAILS | | | | |

N

1" = 300'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

STAGE 2 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

HWY. 112 STA. 7+50 TO STA. 19+00
EDGE LINES AND DOUBLE YELLOW CENTERLINE = 4600 L.F.
HWY. 112 STA. 21+00 TO STA. 32+50
EDGE LINES AND DOUBLE YELLOW CENTERLINE = 4600 L.F.

END ROAD WORK
RETAIN FROM PREVIOUS STAGE

250'
250'
250'
250'
500'

ROAD WORK 1500 FT.
RETAIN FROM PREVIOUS STAGE

REDUCED SPEED AHEAD
RETAIN FROM PREVIOUS STAGE

ROAD WORK 1000 FT.
RETAIN FROM PREVIOUS STAGE

SPEED LIMIT 45
RETAIN FROM PREVIOUS STAGE

ROAD WORK 500 FT.
RETAIN FROM PREVIOUS STAGE

STA. 16+00 CONSTRUCT TEMPORARY 24' X 66' CULVERT

18 VERTICAL PANELS @ 50' O.C.
HWY. 112 STA. 7+25 TO STA. 15+75

5 TRAFFIC DRUMS @ 50' O.C.
HWY. 112 STA. 16+25 TO STA. 18+25

EXISTING HWY. 112

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
(24') BARR. TYP. III RT.

C.L. MEDIAN

C.L. HWY. 112

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
(24') BARR. TYP. III LT.

4" CONTINUOUS WHITE

4" DOUBLE YELLOW

15 VERTICAL PANELS @ 50' O.C.
HWY. 112 STA. 25+50 TO STA. 32+50

(1) W24-1L (36"x36")

5 TRAFFIC DRUMS @ 50' O.C.
HWY. 112 STA. 23+00 TO STA. 25+00

(1) W24-1R (36"x36")

EXISTING HWY. 112 WIDENING

RAMP 1
RAMP 2
RAMP 3
RAMP 4

480+00
485+00
490+00
495+00
500+00
505+00
510+00
515+00
520+00
10+00
15+00
20+00
25+00
30+00

STAGE 2 GRADING
STAGE 2 OVERLAY
STAGE 2 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:43 PM
WORKSPACE: AHTD
L:\2005\05116BD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_112_ST2_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 111 | 897 |

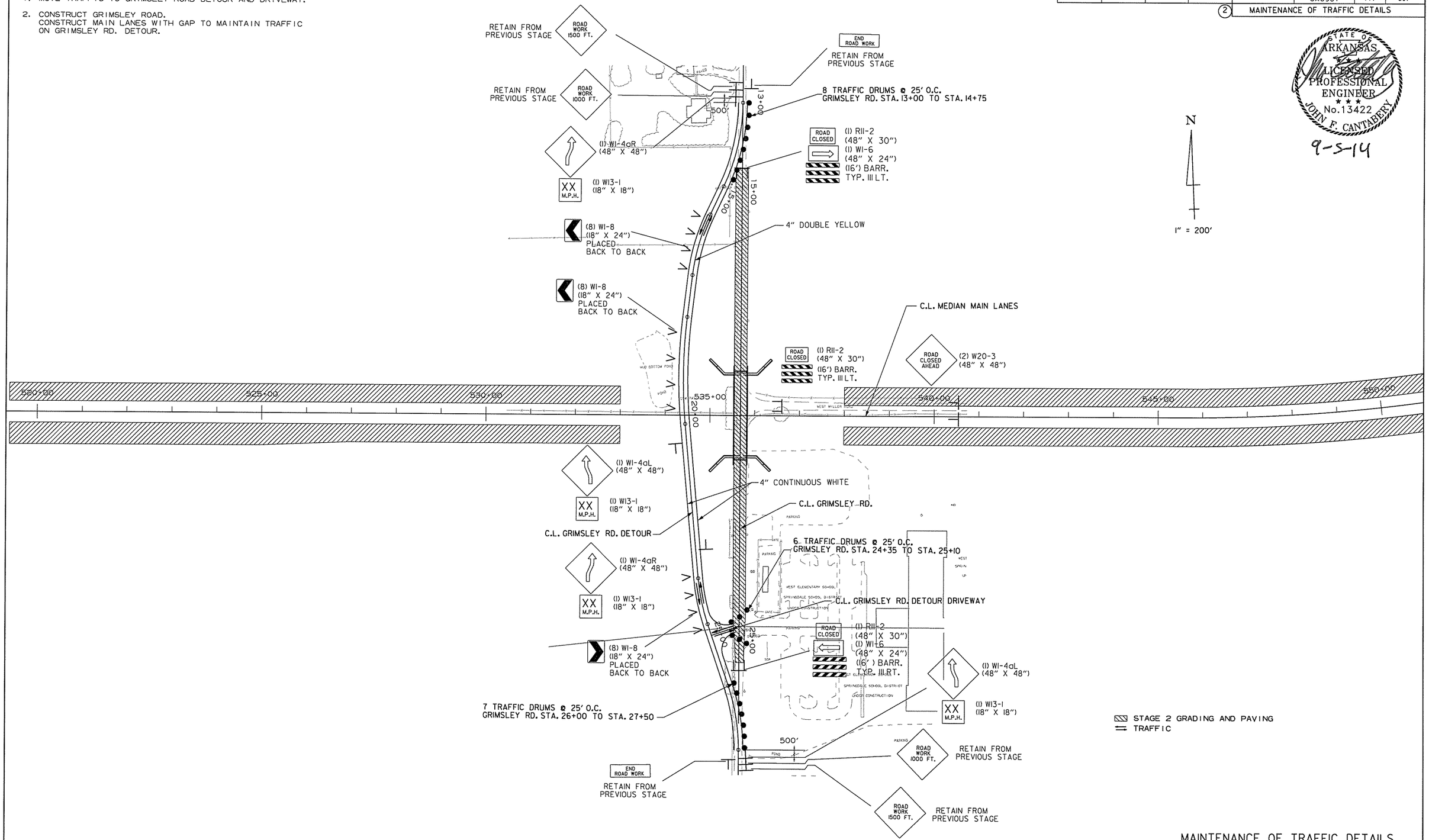
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

## STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO GRIMSLEY ROAD DETOUR AND DRIVEWAY.
2. CONSTRUCT GRIMSLEY ROAD.
   CONSTRUCT MAIN LANES WITH GAP TO MAINTAIN TRAFFIC ON GRIMSLEY RD. DETOUR.




MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:43 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_WMG_ST2_01.dgn
REVISED DATE:

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO RELOCATED S. ZION RD.
2. CONSTRUCT MAIN LANES.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 112 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

1" =200'

SHARP SPRINGS FRONTAGE ROAD

KNIGHT LANE DRIVEWAY

10+00 15+00 20+00

25' GUARDRAIL (TYPE C) AND THREE (3) REFLECTIVE RED DIAMOND OBJECT MARKERS

610+00 615+00 620+00 630+00 635+00 640+00

15+00 00+01

ROAD CLOSED (1) RII-2 (48" X 30")
(1) WI-6 (48" X 24")
(16') BARR. TYP. III LT.

25' GUARDRAIL (TYPE C) AND THREE (3) REFLECTIVE RED DIAMOND OBJECT MARKERS

SHARP SPRINGS ROAD

C.L. MEDIAN MAIN LANES

C.L. S. ZION RD.

SOUTH ZION ROAD

ROAD CLOSED (1) RII-2 (48" X 30") (16') BARR. TYP. III LT.

STAGE 2 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:44 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_ZIO_ST2_01.dgn
REVISED DATE:

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. TRAFFIC TO USE EXISTING PUPPY CREEK RD., PUPPY CREEK RD. DETOUR, PUPPY CREEK RD. ACCESS RD. AND PROPOSED PUPPY CREEK RD.
2. CONSTRUCT MAIN LANES WITH GAP TO MAINTAIN TRAFFIC ON PUPPY CREEK DETOUR. CONSTRUCT RAMPS EN AND SW. CONSTRUCT SPRING CREEK ST. & SPRING CREEK ST. ACCESS RD.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 113 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.13422 JOHN F. CANTARERY 9-5-14

N

1" = 200'

RETAIN FROM PREVIOUS STAGE

ROAD WORK 1500 FT.

ROAD CLOSED 1000 FT.

(1) W20-3 (48" X 48")

ROAD CLOSED 500 FT.

(1) W20-3 (48" X 48")

END ROAD WORK

RETAIN FROM PREVIOUS STAGE

RETAIN FROM PREVIOUS STAGE

END ROAD WORK

ROAD WORK AHEAD

RETAIN FROM PREVIOUS STAGE

ROAD CLOSED

DETOUR

(1) R11-2 (48" X 30")
(1) M4-10 (48" X 18")
(16') BARR. TYP. III RT.

6 TRAFFIC DRUMS @ 25' O.C.

C.L. SPRING CREEK ST.

C.L. SPRING CREEK ST. ACCESS RD.

C.L. PUPPY CREEK RD.

DETOUR (1) M4-10 (48" X 18")

STOP (1) R1-1 (30" X 30")

7 TRAFFIC DRUMS @ 25' O.C.

DETOUR (1) M4-10 (48" X 18")

(8) W1-8 (18" X 24") PLACED BACK TO BACK

4" DOUBLE YELLOW

4" CONTINUOUS WHITE

C.L. MEDIAN

ROAD CLOSED (1) R11-2 (48" X 30") (1) W1-6 (48" X 24") (16') BARR. TYP. III LT.

ROAD CLOSED (1) R11-2 (48" X 30") (1) W1-6 (48" X 24") (16') BARR. TYP. III RT.

ROAD WORK 1000 FT.

ROAD WORK 500 FT.

ROAD WORK 1500 FT.

RETAIN FROM PREVIOUS STAGE

RETAIN FROM PREVIOUS STAGE

RETAIN FROM PREVIOUS STAGE

END ROAD WORK

RETAIN FROM PREVIOUS STAGE

RAMP SW

RAMP EN

C.L. PUPPY CREEK DETOUR

7 TRAFFIC DRUMS @ 25' O.C.

EXISTING PUPPY CREEK RD.

C.L. PUPPY CREEK ACCESS RD.

(1) W1-2 (48" X 48")

ROAD CLOSED DETOUR (1) R11-2 (48" X 30") (1) M4-10 (48" X 18") (16') BARR. TYP. III LT.

(1) G20-2 (48" X 24") END ROAD WORK

ROAD WORK AHEAD (1) W20-1 (48" X 48")

CHICKEN HOUSE

STAGE 2 OVERLAY
STAGE 2 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:44 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_PCR_ST2_01.dgn
REVISED DATE:

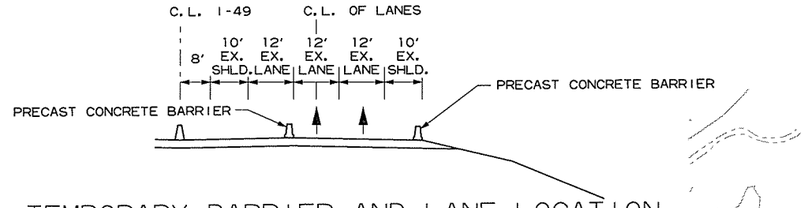
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 114 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. OPEN PUPPY CREEK ROAD, PUPPY CREEK DETOUR, PUPPY CREEK ACCESS ROAD, AND GOAD SPRINGS ACCESS ROAD TO TRAFFIC. CLOSE BURRELL PLACE TO TRAFFIC.
2. CONSTRUCT MAIN LANES, RAMPS EN, ES, SW, WS AND SE. CONSTRUCT SPRING CREEK ROAD AND SPRING CREEK ACCESS ROAD.
3. DURING THE CONSTRUCTION OF THE BRIDGE BENTS IN THE MEDIAN OF I-49, THE INSIDE LANE ON I-49 SHALL BE CLOSED. BARRELS SHALL EXTEND THE LANE CLOSURE TO THE NORTH AND SOUTH TO TIE INTO THE EXISTING 2 LANE ROADWAY SECTION.




## TEMPORARY BARRIER AND LANE LOCATION

STA. 82+50 TO STA. 98+00

N

1" = 400'

PUPPY CREEK RD.
PUPPY CREEK DETOUR
EX. PUPPY CREEK RD.
PUPPY CREEK ACCESS RD.
SPRING CREEK RD.
SPRING CREEK ACCESS RD.
GOAD SPRINGS ACCESS RD.
BURRELL PLACE
RAMP SW
RAMP NW
RAMP SE
RAMP EN
RAMP ES
RAMP WS
C.L. MEDIAN
ROAD WORK AHEAD
END ROAD WORK
RETAIN FROM PREVIOUS STAGE
ROAD CLOSED
(I) R11-2 (48" X 30")
(24') BARR. TYP. III LT.
(I) W20-1 (48" X 48")
(I) G20-2 (48" X 24")
TEMPORARY IMPACT ATTENUATION BARRIER
PRECAST CONCRETE BARRIER (SEE SHEET 120 FOR ADDITIONAL DETAILS)
PRECAST CONCRETE BARRIER I-49 STA. 84+50 TO STA. 95+00
PRECAST CONCRETE BARRIER I-49 STA. 82+60 TO STA. 98+20
PRECAST CONCRETE BARRIER I-49 STA. 84+00 TO STA. 96+00
PRECAST CONCRETE BARRIER I-49 STA. 82+50 TO STA. 97+90
PRECAST CONCRETE BARRIER (SEE SHEET 119 FOR ADDITIONAL DETAILS)
TRAFFIC DRUMS AT 60' O.C.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
12-11-14

LEGEND
- STAGE 2 GRADING
- STAGE 2 GRADING AND PAVING
- TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

JFCantabery 12/11/2014 5:39:13 PM
WORKSPACE: AHTD
\\garverinc\ltprojects\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_540_ST2_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 115 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2

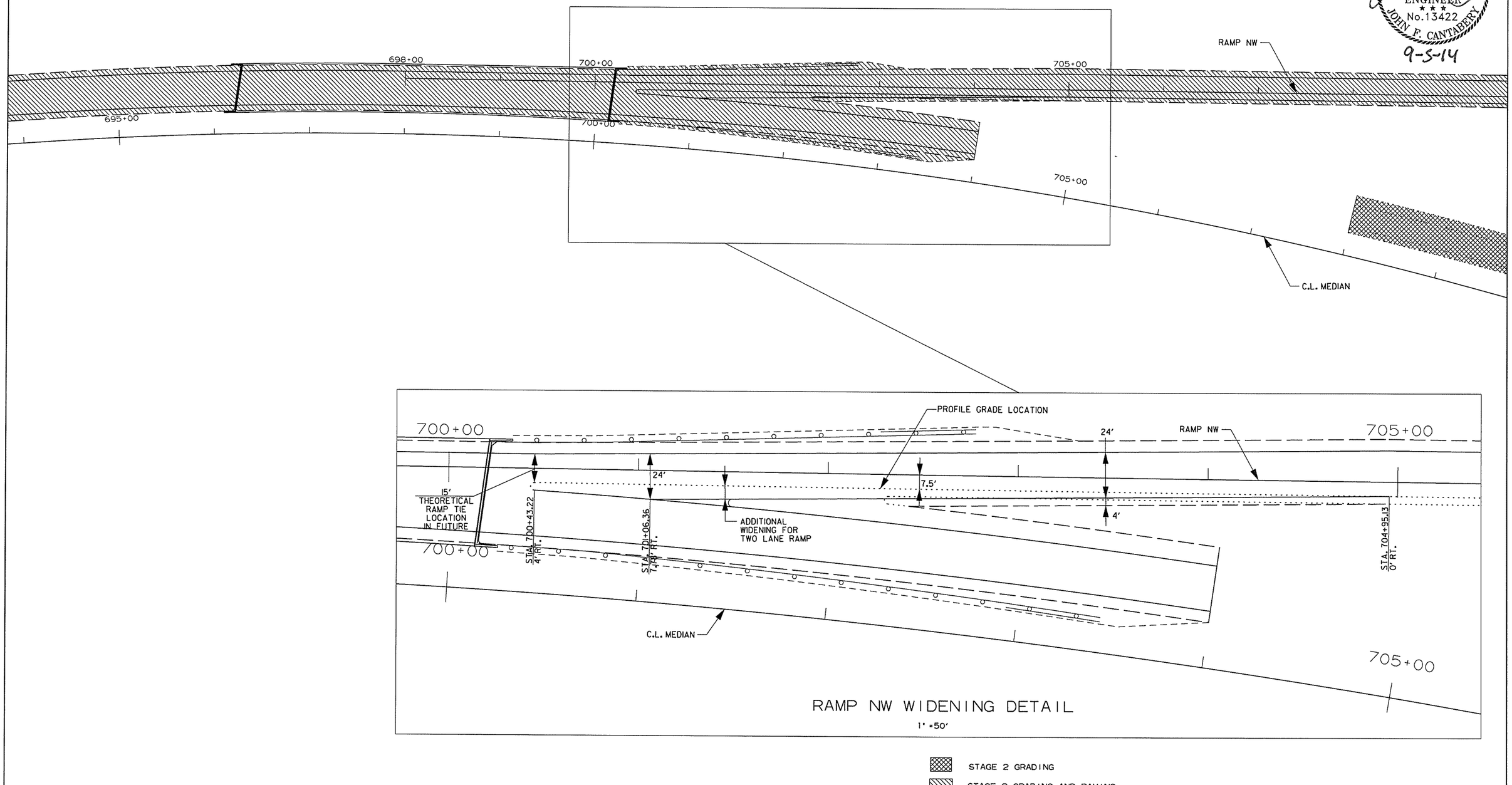
CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT NW RAMP GORE AREA TO FULL DEPTH PAVEMENT.
2. CONSTRUCT WIDENING OF NW RAMP FROM STA. 700+43.22 TO STA. 704+95.13 TO PROVIDE TWO 12' LANES.

N

1" = 100'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14







RAMP NW WIDENING DETAIL

1" = 50'

STAGE 2 GRADING

STAGE 2 GRADING AND PAVING

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:45 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_540_ST2_02.dgn
REVISED DATE:

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT MAIN LANES

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 116 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N

1" = 200'

C.L. MEDIAN MAIN LANES

WEST MILLER ROAD

550+00 555+00 560+00 565+00 570+00 575+00 580+00

BUILDING FOUNDATION

BOUNDARY OF EARTHWORK

STAGE 2 GRADING AND PAVING

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

cggervasini 9/5/2014 11:33:55 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_550-580.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 117 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT MAIN LANES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

1" = 200'

C.L. MEDIAN MAIN LANES

600+00

605+00

610+00

595+00

590+00

585+00

580+00

WAGON WHEEL ROAD

WARREN STREET

CORD AVENUE

STAGE 2 GRADING AND PAVING

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

cggervasini 9/5/2014 11:33:55 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_580-610.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 118 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT MAIN LANES & SPRING CK. FRONTAGE RD.

N

1" = 200'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

SOUTH ZION ROAD

C.L. MEDIAN MAIN LANES

640+00 645+00 650+00 655+00 660+00 665+00 670+00

20.00' 125.00' 30.00'

16.92'

SPRING CREEK FRONTAGE ROAD

STAGE 2 GRADING AND PAVING

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

cggar-vasinl 9/5/2014 11:33:56 AM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_640-670.dgn
REVISED DATE:

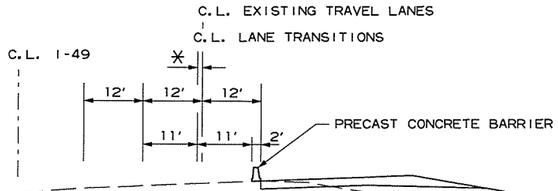
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 119 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT RAMP TIES TO I-49.




## TEMPORARY BARRIER AND LANE LOCATION

* LANE TRANSITIONS:
STA. 50+00 TO 51+00 LT. LANES
STA. 53+00 TO 54+00 RT. LANES
STA. 66+00 TO 67+00 LT. LANES
STA. 67+50 TO 68+50 RT. LANES

STAGE 2 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

I-49 STA. 50+00 TO STA. 68+50
EDGE LINE AND CENTERLINE = 4059 L.F.

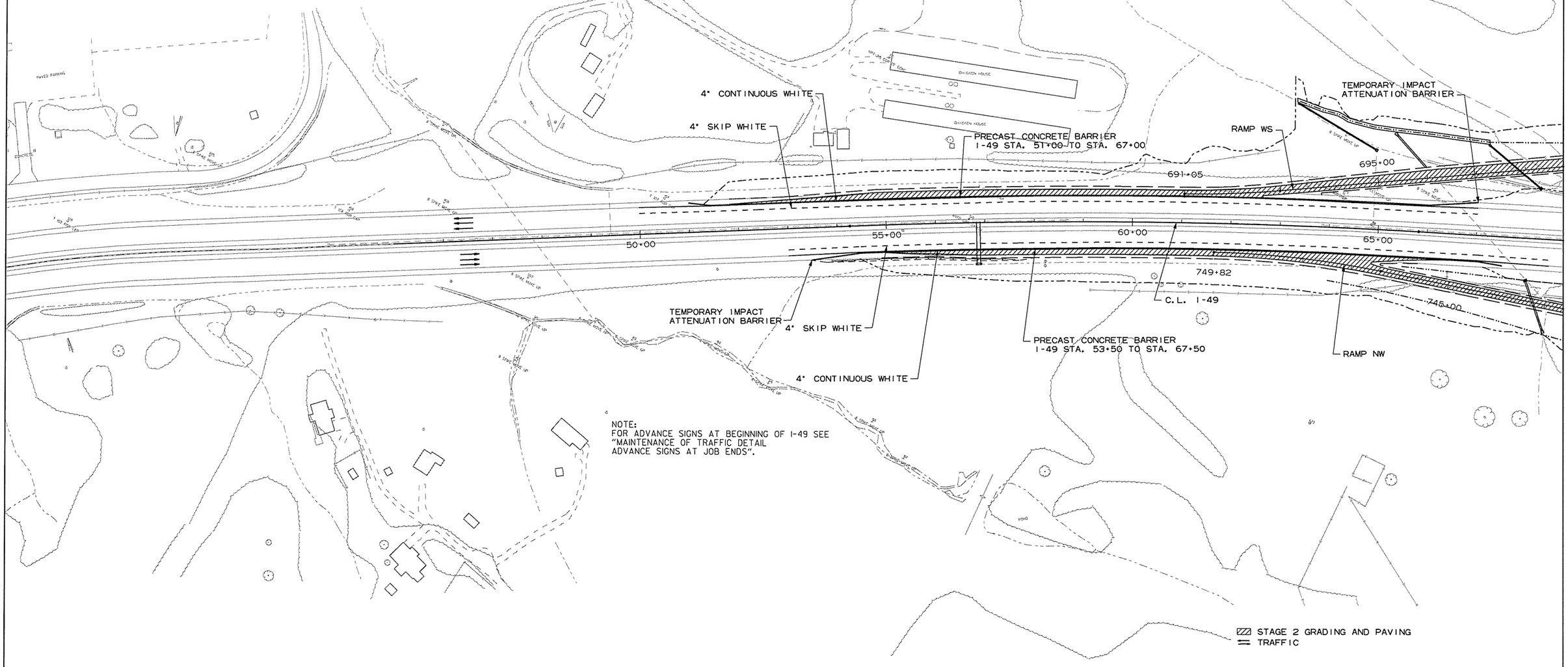
STAGE 2 - REMOVAL OF PERMANENT PAVEMENT MARKINGS

I-49 STA. 50+00 TO STA. 68+50
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 4063 L.F.

N

1" =200'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




NOTE:
FOR ADVANCE SIGNS AT BEGINNING OF I-49 SEE "MAINTENANCE OF TRAFFIC DETAIL ADVANCE SIGNS AT JOB ENDS".

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:47 PM
WORKSPACE: AHTD
L:\2005\05916180 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_540_ST2_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 120 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC DETAILS | | | |

STAGE 2

CONSTRUCTION SEQUENCE NOTES

1. CONSTRUCT RAMP TIES TO I-49.

N

1" =200'

STAGE 2 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS

I-49 STA. 111+00 TO STA. 145+78
EDGELINE AND CENTERLINE = 7489 L.F.

STAGE 2 - REMOVAL OF PERMANENT PAVEMENT MARKINGS

I-49 STA. 111+00 TO STA. 145+78
REMOVAL OF PERMANENT PAVEMENT MARKINGS = 7701L.F.

C.L. EXISTING TRAVEL LANES
C.L. LANE TRANSITIONS
C.L. I-49

12' 12' 12'
11' 11' 2'

PRECAST CONCRETE BARRIER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTAFERRY
9-5-14

## TEMPORARY BARRIER AND LANE LOCATION

* LANE TRANSITIONS:
STA. 112+00 TO 113+00 RT. LANES
STA. 111+00 TO 112+00 LT. LANES
STA. 140+50 TO 141+50 RT. LANES
STA. 137+00 TO 138+00 LT. LANES

RAMP SE
705+00
715+00
750+00
700+00
725+00
RAMP EN
TEMPORARY IMPACT ATTENUATION BARRIER
4" SKIP WHITE
4" CONTINUOUS WHITE
4" SKIP WHITE
4" CONTINUOUS WHITE
C.L. I-49
125+00
130+00
135+00
140+00
PRECAST CONCRETE BARRIER
I-49 STA. 112+00 TO STA. 141+50
PRECAST CONCRETE BARRIER
I-49 STA. 112+00 TO STA. 146+25
TEMPORARY IMPACT ATTENUATION BARRIER
NOTE:
FOR ADVANCE SIGNS AT END OF I-49 SEE "MAINTENANCE OF TRAFFIC DETAIL ADVANCE SIGNS AT JOB ENDS".
POT 141+50 OE
PI 141+92.67
PI 141+54.55
PI 141+70.01
CONCRETE DRAIN
SEE SHEET 3 FOR DETAILS
SEE SHEET 3 FOR DETAILS

STAGE 2 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

sadonaldson 9/4/2014 3:20:48 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_540_ST2_04.dgn
REVISED DATE:

STAGE 3

CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO PROPOSED HWY. 112.
2. CONSTRUCT THE REMAINDER OF HWY. 112. CONSTRUCT GAPS ON MAIN LANES & RAMPS.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 121 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

N

1" = 300'

END ROAD WORK — RETAIN FROM PREVIOUS STAGE

ROAD WORK 1500 FT. — RETAIN FROM PREVIOUS STAGE

REDUCED SPEED AHEAD — RETAIN FROM PREVIOUS STAGE

ROAD WORK 1000 FT. — RETAIN FROM PREVIOUS STAGE

SPEED LIMIT 45 — RETAIN FROM PREVIOUS STAGE

ROAD WORK 500 FT. — RETAIN FROM PREVIOUS STAGE

4" DOUBLE YELLOW

4" CONTINUOUS WHITE

53 TRAFFIC DRUMS @ 50' O.C.
HWY. 112 STA. 7+00 TO STA. 33+00

5 TRAFFIC DRUMS @ 50' O.C.
HWY. 112 STA. 12+00 TO STA. 14+00

ROAD CLOSED — (1) R11-2 (48" X 30") — (16') BARR. TYP. III RT.

ROAD CLOSED — (1) R11-2 (48" X 30") — (16') BARR. TYP. III RT.

ROAD CLOSED — (1) R11-2 (48" X 30") — (1) W1-6 (48" X 24") — (24') BARR. TYP. III LT.

ROAD CLOSED — (1) R11-2 (48" X 30") — (1) W1-6 (48" X 24") — (24') BARR. TYP. III RT.

ROAD CLOSED — (1) R11-2 (48" X 30") — (16') BARR. TYP. III RT.

ROAD CLOSED — (1) R11-2 (48" X 30") — (16') BARR. TYP. III RT.

5 TRAFFIC DRUMS @ 50' O.C.
HWY. 112 STA. 26+00 TO STA. 28+00

RAMP 1 — RAMP 2 — RAMP 3 — RAMP 4

EXISTING HWY. 112

HWY. 112

C.L. MEDIAN

C.L. MEDIAN

PRECAST CONCRETE BARRIER
STA. 515+60 TO 541+00
TO REMAIN IN PLACE AT
END OF JOB

480+00 485+00 490+00 495+00 500+00 505+00 510+00 515+00 520+00

00+00 05+00 10+00 15+00 20+00 25+00 30+00

STAGE 3 GRADING
STAGE 3 OVERLAY
STAGE 3 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

sadonaldson 9/4/2014 3:20:48 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_I12_ST3_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 122 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STAGE 3

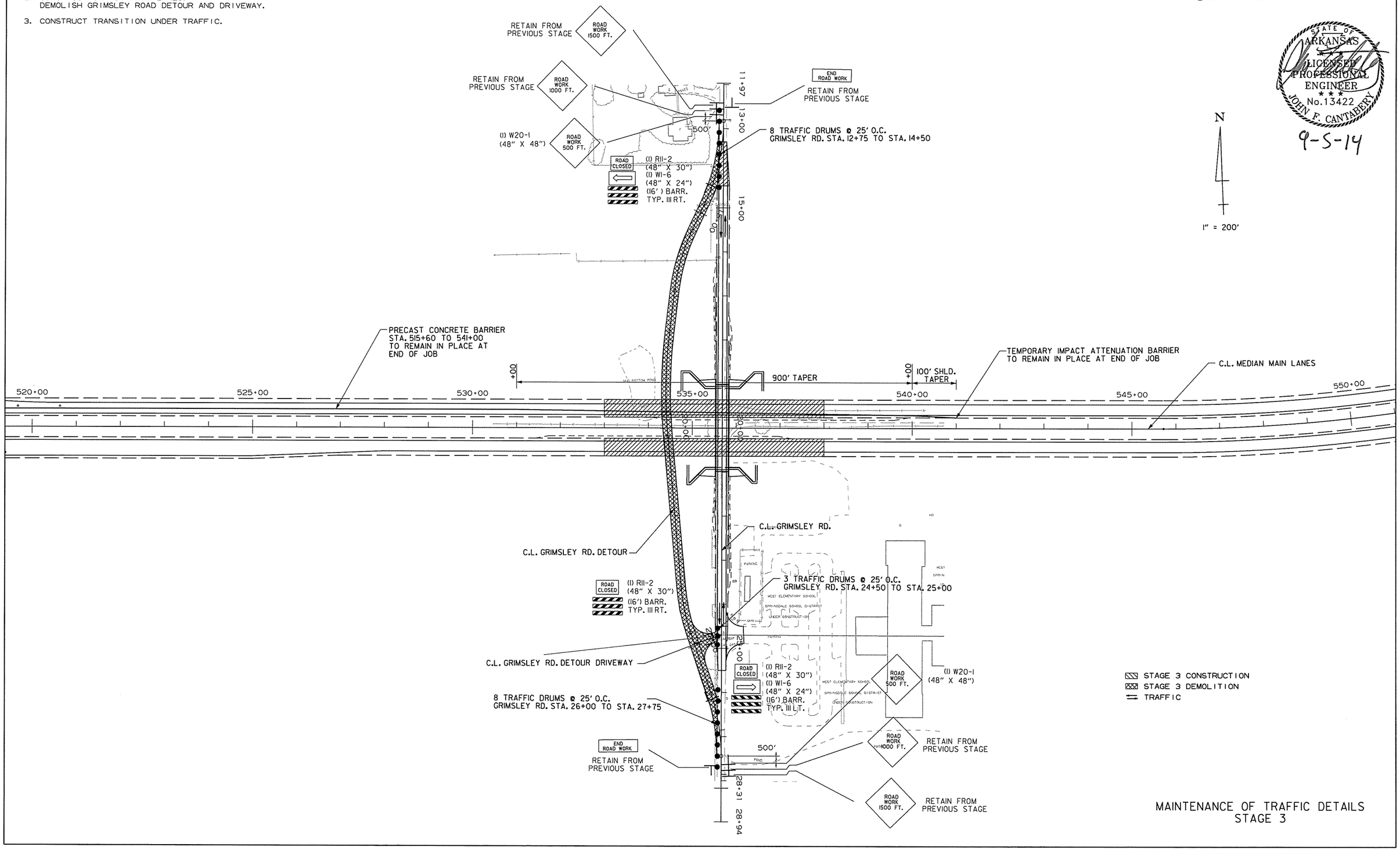
CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO GRIMSLEY ROAD.
2. CONSTRUCT GAP ON MAIN LANES.
   DEMOLISH GRIMSLEY ROAD DETOUR AND DRIVEWAY.
3. CONSTRUCT TRANSITION UNDER TRAFFIC.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N

1" = 200'




MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

cggervasini 9/5/2014 11:43:39 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_MOT_WMG_ST3.0i.dgn
REVISED DATE:

STAGE 3

CONSTRUCTION SEQUENCE NOTES

1. MOVE TRAFFIC TO PROPOSED SPRING CREEK ST.
2. CONSTRUCT GAP ON MAIN LANES. DEMOLISH PUPPY CREEK DETOUR.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 123 | 897 |

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN E. CANTABERRY
9-5-14

N

1" = 200'

ROAD WORK AHEAD (I). W20-1 (48" X 48")
RETAIN FROM PREVIOUS STAGE
END ROAD WORK
6 TRAFFIC DRUMS @ 25' O.C. PUPPY CREEK RD. STA. 28+75 TO STA. 30+00
ROAD CLOSED (I) R11-2 (48" X 30") (16') BARR. TYP. III LT.
C.L. PUPPY CREEK RD.
C.L. SPRING CREEK ST.
C.L. MEDIAN
C.L. PUPPY CREEK DETOUR
900' TAPER FOR PCB
PRECAST CONCRETE BARRIER STA. 668+00 TO STA. 694+60 TO REMAIN IN PLACE AT END OF JOB
7 TRAFFIC DRUMS @ 25' O.C.
C.L. PUPPY CREEK ACCESS RD.
EXISTING PUPPY CREEK RD.
C.L. SPRING CREEK ST. ACCESS RD.
TEMPORARY IMPACT ATTENUATION BARRIER TO REMAIN IN PLACE AT END OF JOB (STA. 668+00)
ROAD WORK 1500 FT.
ROAD WORK 1000 FT.
ROAD WORK 500 FT.
RAMP SW
RAMP EN
DWELLING HOUSE

STAGE 3 DEMOLITION
STAGE 3 GRADING AND PAVING
TRAFFIC

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

sadonaldson 9/4/2014 3:20:49 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_MOT_PCR_ST3_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 124 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

NOTE:
THE CONTRACTOR SHALL NOT PLACE THE 4" DOUBLE YELLOW PAVEMENT MARKING FOR THE CENTERLINE UNTIL THE PASSING/NO PASSING ZONES HAVE BEEN ESTABLISHED BY THE MAINTENANCE DIVISION.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N

1" = 300'

4" WHITE THERMOPLASTIC PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 7+50.00 | 32+50.00 | HWY. 112 | 4890 |

4" YELLOW THERMOPLASTIC PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 7+50.00 | 18+99.92 | HWY. 112 | 4281 |
| 21+00.08 | 32+50.00 | HWY. 112 | 2174 |

4" YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 18+99.92 | 21+00.08 | HWY. 112 | 400 |

THERMOPLASTIC PAVEMENT MARKING WORD (ONLY)

| STA. | LOCATION | EACH |
|---|---|---|
| 25+90.00 | HWY. 112 | 1 |

THERMOPLASTIC PAVEMENT MARKING (ARROW)

| STA. | LOCATION | EACH |
|---|---|---|
| 25+90.00 | HWY. 112 | 1 |

TYPE II YELLOW RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 7+50.00 | 18+99.92 | HWY. 112 | 52 |
| 21+00.08 | 32+50.00 | HWY. 112 | 28 |

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 499+09.18 | 519+39.52 | RAMP 2 | 2172 |
| 496+28.57 | 520+63.04 | RAMP 3 | 2487 |
| 514+00.00 | 522+00.00 | MAIN LANES LT. | 387 |
| 514+00.00 | 522+00.00 | MAIN LANES RT. | 917 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 499+09.18 | 519+39.52 | RAMP 2 | 1881 |
| 496+28.57 | 520+63.04 | RAMP 3 | 2416 |
| 514+00.00 | 522+00.00 | MAIN LANES LT. | 937 |
| 514+00.00 | 522+00.00 | MAIN LANES RT. | 800 |

24" WHITE THERMOPLASTIC PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 496+56.35 | 496+65.46 | RAMP 3 | 37 |

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 517+93.66 | 518+43.99 | RAMP 2 | 102 |

8" WHITE THERMOPLASTIC PAVEMENT MARKING

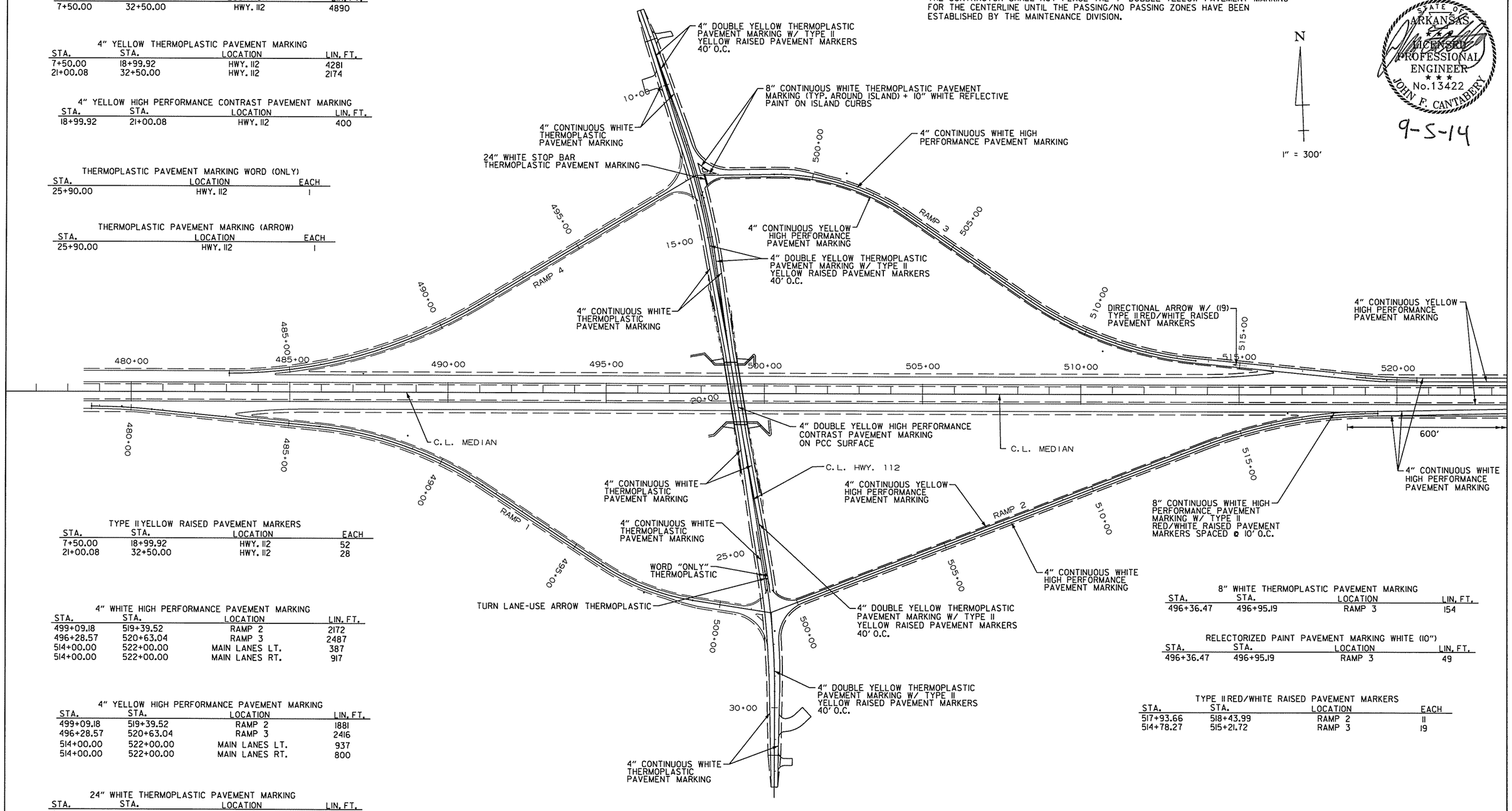
| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 496+36.47 | 496+95.19 | RAMP 3 | 154 |

RELECTORIZED PAINT PAVEMENT MARKING WHITE (10")

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 496+36.47 | 496+95.19 | RAMP 3 | 49 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 517+93.66 | 518+43.99 | RAMP 2 | 11 |
| 514+78.27 | 515+21.72 | RAMP 3 | 19 |




PERMANENT PAVEMENT MARKING DETAILS

cagervasinl 9/5/2014 11:44:00 AM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PM_01.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 125 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 522+00.00 | 550+00.00 | MAIN LANES LT. | 2794 |
| 522+00.00 | 550+00.00 | MAIN LANES RT. | 3050 |

4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 540+00.00 | 550+00.00 | MAIN LANES LT. | 249 |
| 524+43.58 | 550+00.00 | MAIN LANES RT. | 640 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 522+00.00 | 550+00.00 | MAIN LANES LT. | 2800 |
| 522+00.00 | 550+00.00 | MAIN LANES RT. | 2800 |

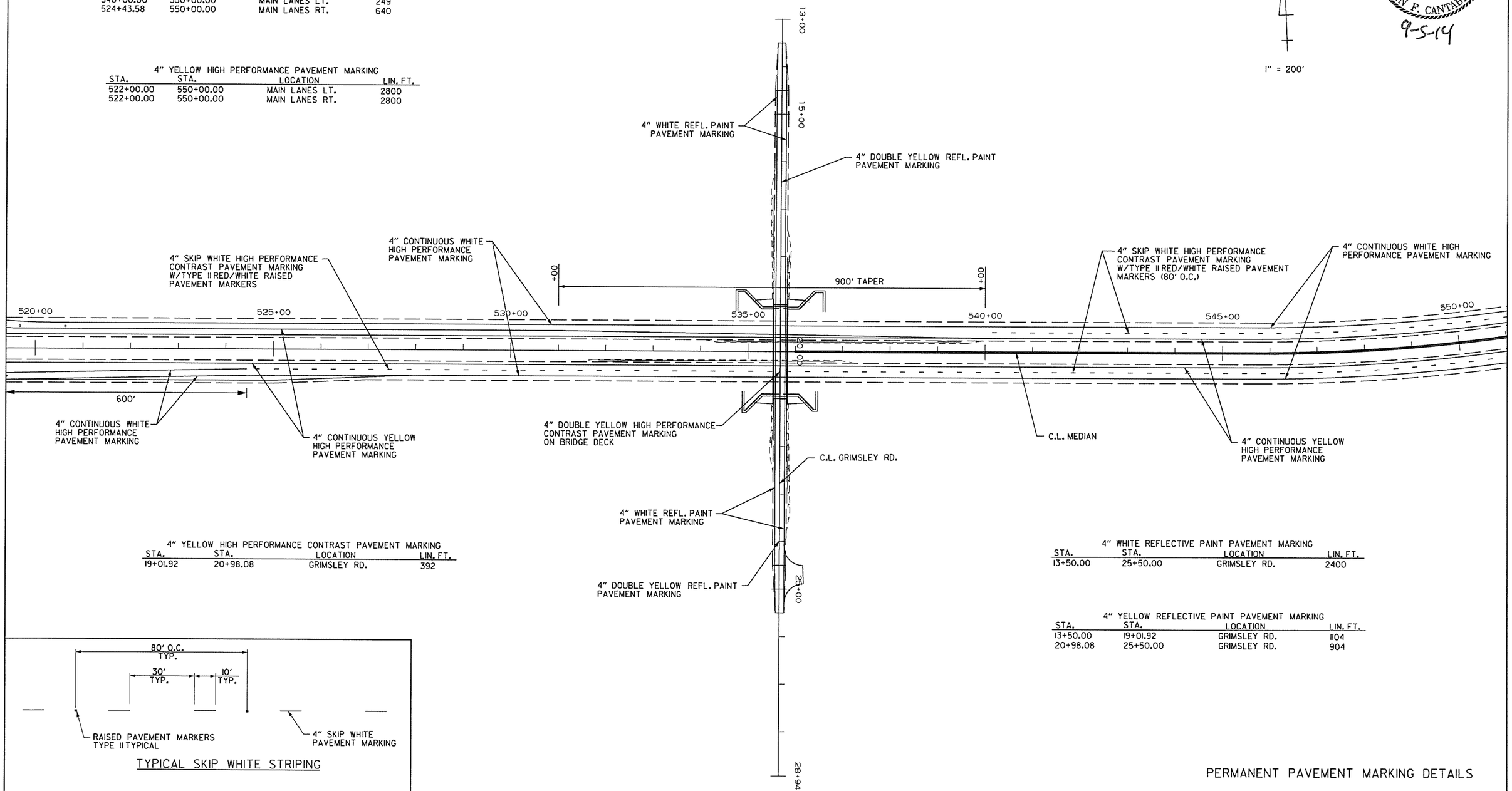
TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 540+00.00 | 550+00.00 | MAIN LANES LT. | 13 |
| 524+43.58 | 550+00.00 | MAIN LANES RT. | 32 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N

1" = 200'




4" YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 19+01.92 | 20+98.08 | GRIMSLEY RD. | 392 |

4" WHITE REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 13+50.00 | 25+50.00 | GRIMSLEY RD. | 2400 |

4" YELLOW REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 13+50.00 | 19+01.92 | GRIMSLEY RD. | 1104 |
| 20+98.08 | 25+50.00 | GRIMSLEY RD. | 904 |

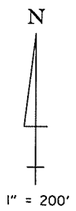



TYPICAL SKIP WHITE STRIPING

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:50 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PM_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 126 | 897 |
| | | | | (2) | PERMANENT PAVEMENT MARKING DETAILS | | | |




4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 550+00.00 | 582+00.00 | MAIN LANES LT. | 3200 |
| 550+00.00 | 582+00.00 | MAIN LANES RT. | 3200 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 550+00.00 | 582+00.00 | MAIN LANES LT. | 3200 |
| 550+00.00 | 582+00.00 | MAIN LANES RT. | 3200 |

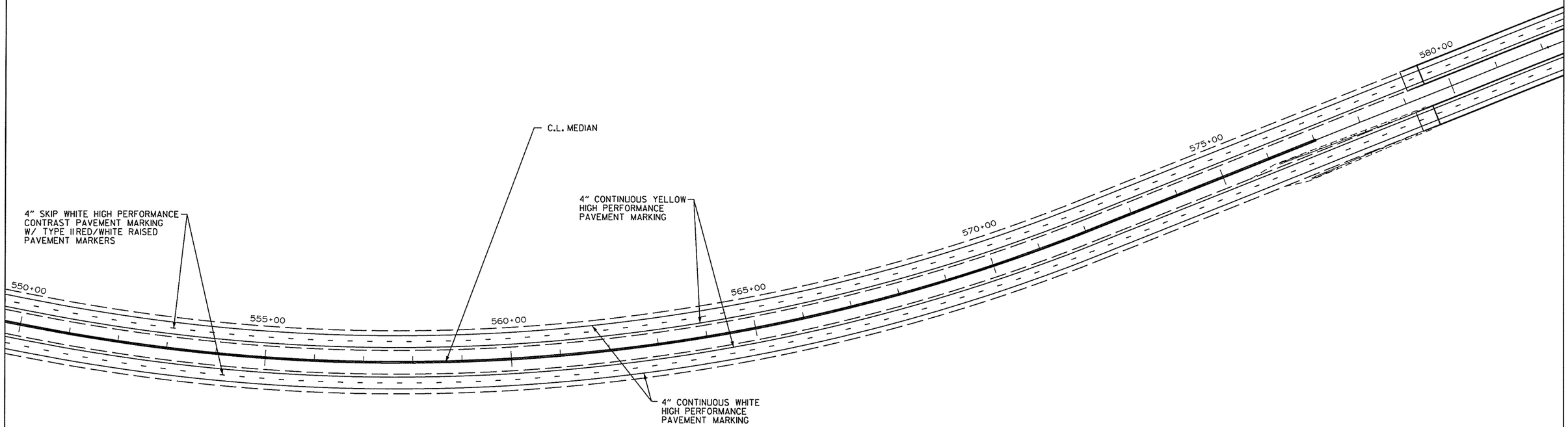
4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 550+00.00 | 582+00.00 | MAIN LANES LT. | 800 |
| 550+00.00 | 582+00.00 | MAIN LANES RT. | 800 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 550+00.00 | 582+00.00 | MAIN LANES LT. | 40 |
| 550+00.00 | 582+00.00 | MAIN LANES RT. | 40 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:51 PM
WORKSPACE: AHTD
L:\2005\059168O - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PM_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 127 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

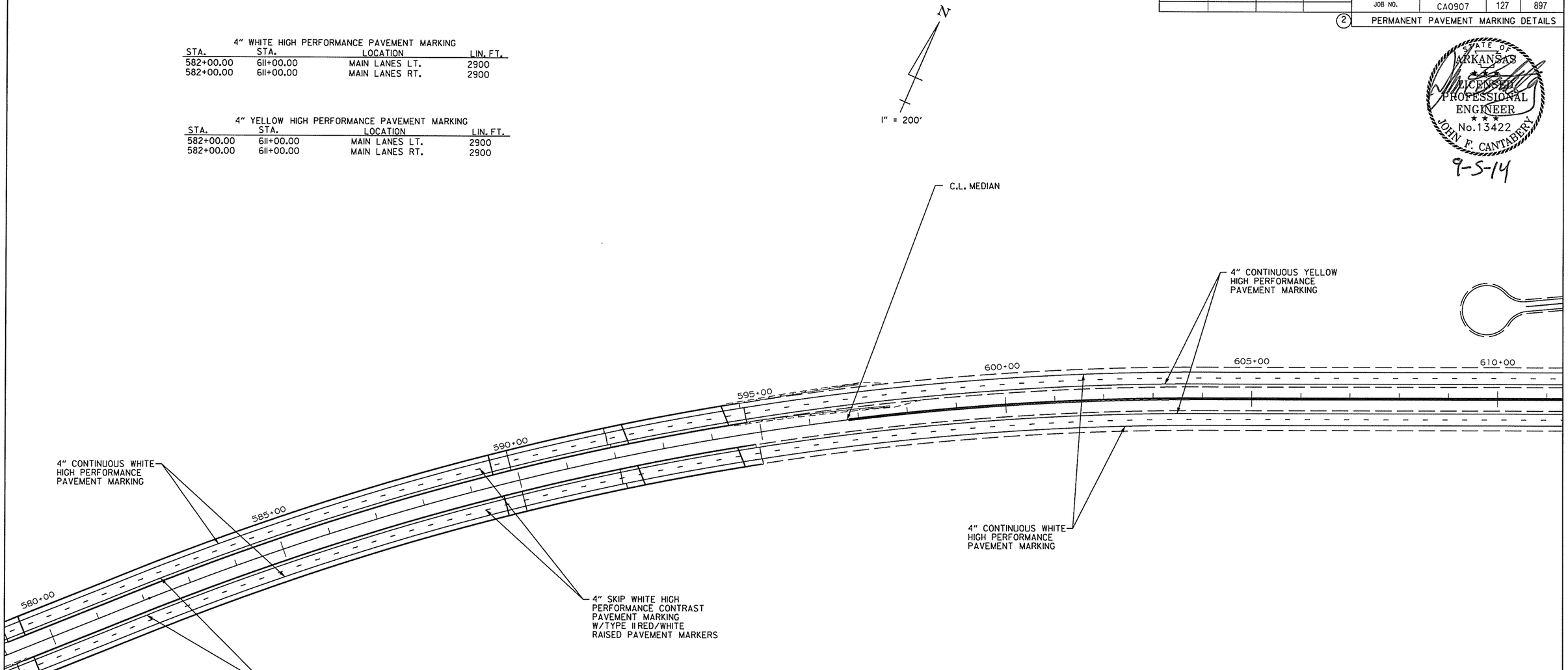
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 582+00.00 | 611+00.00 | MAIN LANES LT. | 2900 |
| 582+00.00 | 611+00.00 | MAIN LANES RT. | 2900 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 582+00.00 | 611+00.00 | MAIN LANES LT. | 2900 |
| 582+00.00 | 611+00.00 | MAIN LANES RT. | 2900 |




4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 582+00.00 | 611+00.00 | MAIN LANES LT. | 725 |
| 582+00.00 | 611+00.00 | MAIN LANES RT. | 725 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 582+00.00 | 611+00.00 | MAIN LANES LT. | 37 |
| 582+00.00 | 611+00.00 | MAIN LANES RT. | 37 |

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:51 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 1\2 TO I-540\SBG_PM_04.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 128 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

N

1" = 200'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

**4" WHITE REFLECTIVE PAINT PAVEMENT MARKING**

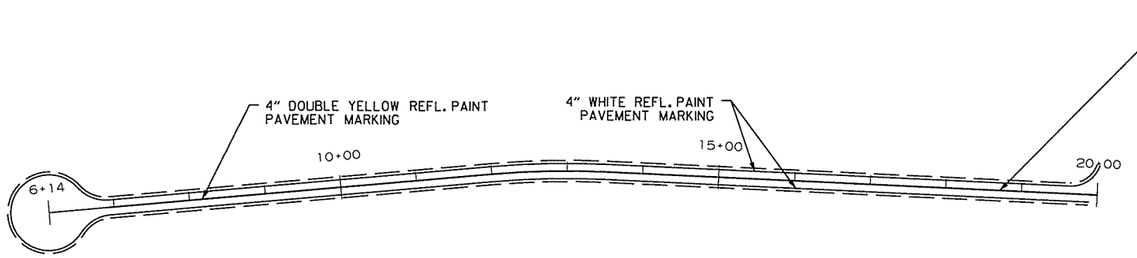
| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 6+93.92 | 20+00.00 | SHARP SPRINGS FRONTAGE RD. | 2617 |
| 9+93.27 | 30+47.18 | S. ZION RD. | 4109 |

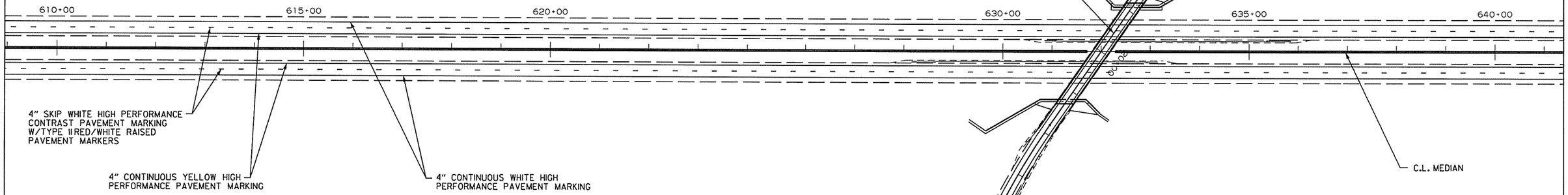
**4" YELLOW REFLECTIVE PAINT PAVEMENT MARKING**

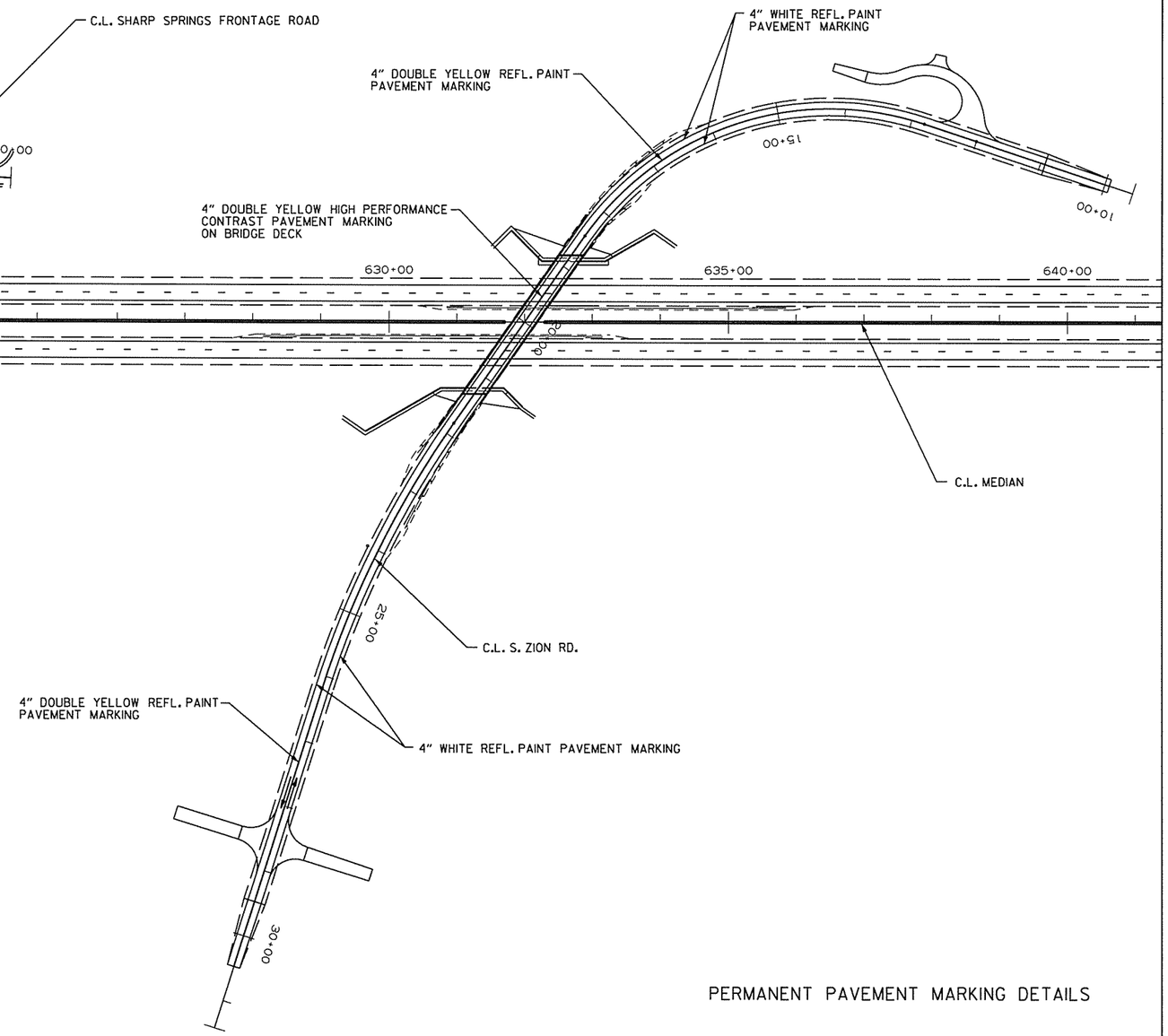
| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 6+93.92 | 20+00.00 | SHARP SPRINGS FRONTAGE RD. | 2612 |
| 9+93.27 | 18+80.89 | S. ZION RD. | 1777 |
| 21+28.11 | 30+47.18 | S. ZION RD. | 1839 |

**4" YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING**

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 18+80.89 | 21+28.11 | S. ZION RD. | 495 |




**4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING**

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 611+00.00 | 641+00.00 | MAIN LANES LT. | 750 |
| 611+00.00 | 641+00.00 | MAIN LANES RT. | 750 |

**4" WHITE HIGH PERFORMANCE PAVEMENT MARKING**

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 611+00.00 | 641+00.00 | MAIN LANES LT. | 3000 |
| 611+00.00 | 641+00.00 | MAIN LANES RT. | 3000 |

**4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING**

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 611+00.00 | 641+00.00 | MAIN LANES LT. | 3000 |
| 611+00.00 | 641+00.00 | MAIN LANES RT. | 3000 |

**TYPE II RED/WHITE RAISED PAVEMENT MARKERS**

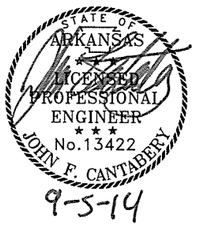
| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 611+00.00 | 641+00.00 | MAIN LANES LT. | 37 |
| 611+00.00 | 641+00.00 | MAIN LANES RT. | 37 |

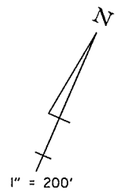
PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:51 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PM_05.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 129 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS



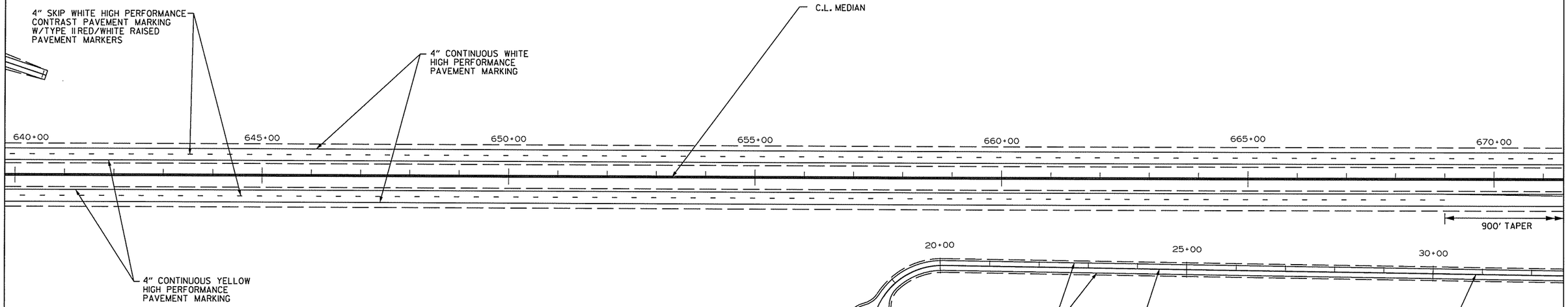



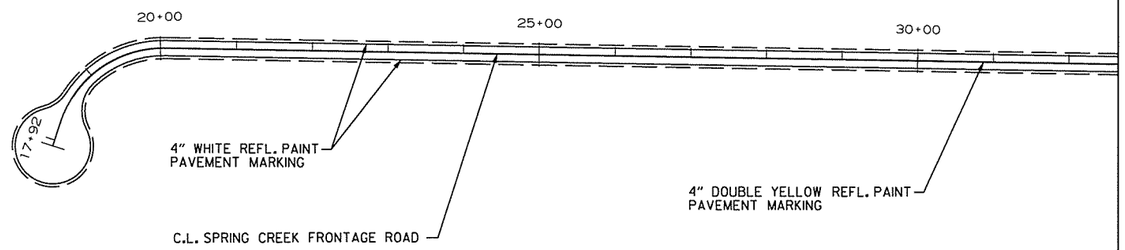

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 641+00.00 | 671+00.00 | MAIN LANES LT. | 3000 |
| 641+00.00 | 671+00.00 | MAIN LANES RT. | 3000 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 641+00.00 | 671+00.00 | MAIN LANES LT. | 3000 |
| 641+00.00 | 671+00.00 | MAIN LANES RT. | 3000 |




4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 641+00.00 | 671+00.00 | MAIN LANES LT. | 750 |
| 641+00.00 | 671+00.00 | MAIN LANES RT. | 750 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 641+00.00 | 671+00.00 | MAIN LANES LT. | 38 |
| 641+00.00 | 671+00.00 | MAIN LANES RT. | 38 |

4" WHITE REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 18+61.45 | 32+00.00 | SPRING CREEK FRONTAGE RD. | 2678 |

4" YELLOW REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 18+61.45 | 32+00.00 | SPRING CREEK FRONTAGE RD. | 2678 |

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:51 PM
WORKSPACE: AHTD
L:\2005\05I1680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PM_06.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 130 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

4" WHITE REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 32+00.00 | 40+00.00 | SPRING CREEK FRONTAGE RD. | 1624 |
| 15+00.00 | 25+00.00 | SPRING CREEK ST. | 1844 |
| 20+00.00 | 35+00.00 | PUPPY CREEK RD. | 3022 |
| 10+00.00 | 15+11.71 | PUPPY CREEK ACCESS RD. | 922 |

4" YELLOW REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 32+00.00 | 40+00.00 | SPRING CREEK FRONTAGE RD. | 1528 |
| 15+00.00 | 18+95.91 | SPRING CREEK ST. | 792 |
| 21+03.09 | 25+00.00 | SPRING CREEK ST. | 794 |
| 20+46.82 | 35+00.00 | PUPPY CREEK RD. | 2906 |
| 10+00.00 | 15+11.71 | PUPPY CREEK RD. | 1022 |

12" WHITE THERMOPLASTIC PAVEMENT MARKING

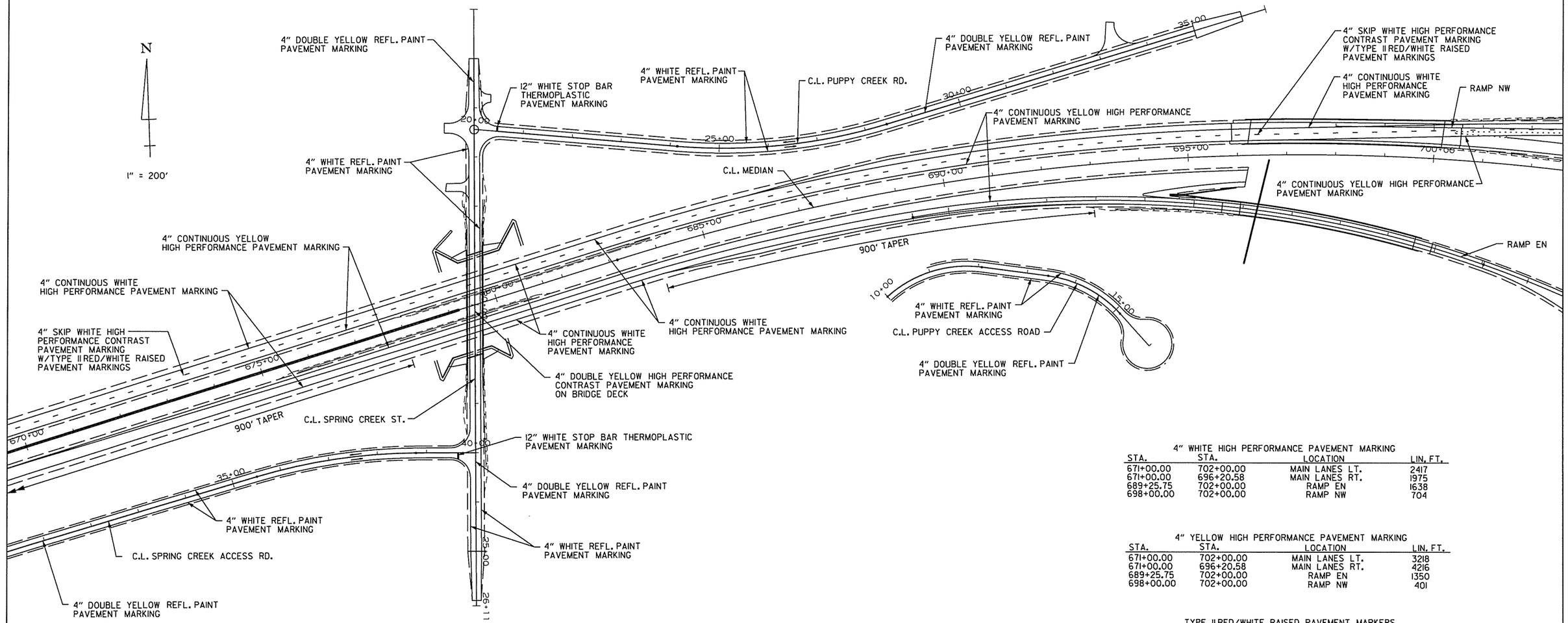
| STA. | LOCATION | LIN. FT. |
|---|---|---|
| 39+64.31 | SPRING CREEK FRONTAGE RD. | 14 |
| 20+46.82 | PUPPY CREEK RD. | 11 |

4" YELLOW HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 18+95.91 | 21+03.09 | SPRING CREEK ST. | 414 |

4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 671+00.00 | 702+00.00 | MAIN LANES LT. | 663 |
| 698+00.00 | 702+00.00 | RAMP NW | 100 |




4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 671+00.00 | 702+00.00 | MAIN LANES LT. | 2417 |
| 671+00.00 | 696+20.58 | MAIN LANES RT. | 1975 |
| 689+25.75 | 702+00.00 | RAMP EN | 1638 |
| 698+00.00 | 702+00.00 | RAMP NW | 704 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 671+00.00 | 702+00.00 | MAIN LANES LT. | 3218 |
| 671+00.00 | 696+20.58 | MAIN LANES RT. | 4216 |
| 689+25.75 | 702+00.00 | RAMP EN | 1350 |
| 698+00.00 | 702+00.00 | RAMP NW | 401 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 671+00.00 | 702+00.00 | MAIN LANES LT. | 34 |
| 698+00.00 | 702+00.00 | RAMP NW | 5 |

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:51 PM
WORKSPACE: AHTD
L:\2005\059II680 - AHTD Springdale Bypass\Drawings\RWY II2 TO I-540\SBG_PM_07.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 131 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 702+00.00 | 704+00.00 | MAIN LANES LT. | 202 |
| 702+00.00 | 726+00.00 | RAMP NW | 2282 |
| 709+47.73 | 725+00.00 | RAMP SW | 1551 |
| 702+00.00 | 710+00.00 | RAMP ES | 792 |
| 703+82.61 | 729+00.00 | RAMP EN | 2520 |

4" WHITE REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 4+94.85 | 13+00.00 | GOAD SPRINGS ACCESS RD. | 1611 |

4" YELLOW REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 4+94.85 | 13+00.00 | GOAD SPRINGS ACCESS RD. | 1610 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 702+00.00 | 704+00.00 | MAIN LANES LT. | 201 |
| 702+00.00 | 726+00.00 | RAMP NW | 2385 |
| 710+78.99 | 725+00.00 | RAMP SW | 1424 |
| 703+79.22 | 710+00.00 | RAMP ES | 630 |
| 702+00.00 | 729+00.00 | RAMP EN | 2697 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

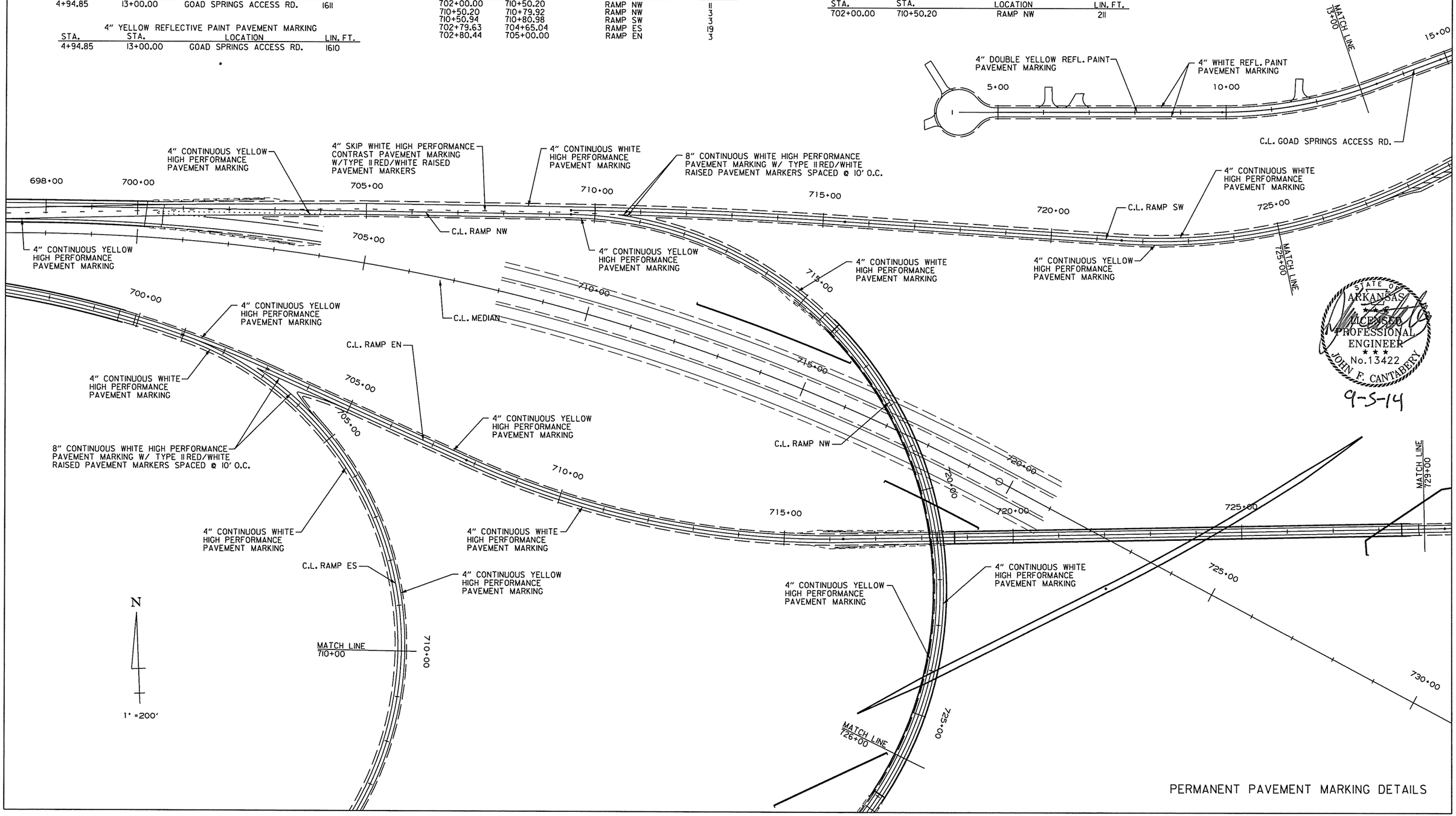
| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 702+00.00 | 710+50.20 | RAMP NW | 11 |
| 710+50.20 | 710+79.92 | RAMP NW | 3 |
| 710+50.94 | 710+80.98 | RAMP SW | 3 |
| 702+79.63 | 704+65.04 | RAMP ES | 19 |
| 702+80.44 | 705+00.00 | RAMP EN | 3 |

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 710+50.20 | 710+79.92 | RAMP NW | 30 |
| 710+50.94 | 710+80.98 | RAMP SW | 30 |
| 702+79.63 | 704+65.04 | RAMP ES | 187 |
| 702+80.44 | 705+00.00 | RAMP EN | 224 |

4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 702+00.00 | 710+50.20 | RAMP NW | 211 |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:52 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PM_08.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 132 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 710+00.00 | 716+76.00 | RAMP ES | 668 |
| 691+05.00 | 710+00.00 | RAMP WS | 1275 |
| 726+00.00 | 749+82.00 | RAMP NW | 2386 |
| 51+83.67 | 61+05.02 | I-49 LT. | 927 |
| 54+88.54 | 66+98.85 | I-49 RT. | 885 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 710+00.00 | 716+76.00 | RAMP ES | 682 |
| 692+63.19 | 702+27.02 | RAMP WS | 1810 |
| 726+00.00 | 746+62.29 | RAMP NW | 2057 |

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 62+62.93 | 66+67.76 | I-49 RT. | 403 |
| 62+17.37 | 62+65.20 | I-49 LT. | 48 |
| 692+17.33 | 692+64.98 | RAMP WS | 48 |
| 746+26.30 | 748+86.14 | RAMP NW | 261 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 62+62.93 | 66+67.76 | I-49 RT. | 40 |
| 62+17.37 | 62+65.20 | I-49 LT. | 5 |
| 692+17.33 | 692+64.98 | RAMP WS | 5 |
| 746+26.30 | 748+86.14 | RAMP NW | 27 |
| 745+66.99 | 746+10.40 | RAMP NW | 19 |
| 56+93.32 | 62+62.93 | I-49 RT. | 16 |
| 57+79.42 | 62+17.37 | I-49 LT. | 13 |

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

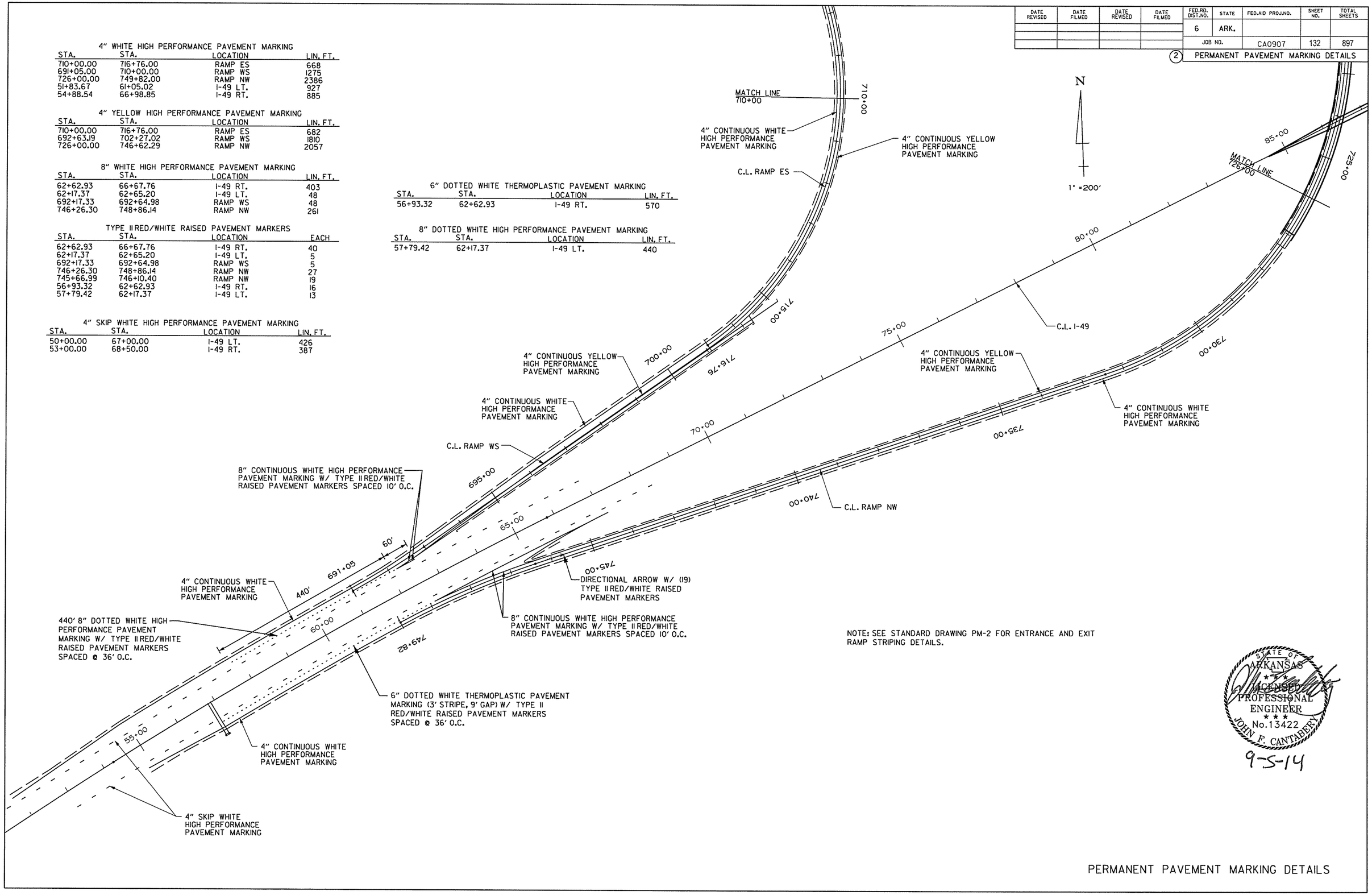
| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 50+00.00 | 67+00.00 | I-49 LT. | 426 |
| 53+00.00 | 68+50.00 | I-49 RT. | 387 |

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 56+93.32 | 62+62.93 | I-49 RT. | 570 |

8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 57+79.42 | 62+17.37 | I-49 LT. | 440 |




NOTE: SEE STANDARD DRAWING PM-2 FOR ENTRANCE AND EXIT RAMP STRIPING DETAILS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

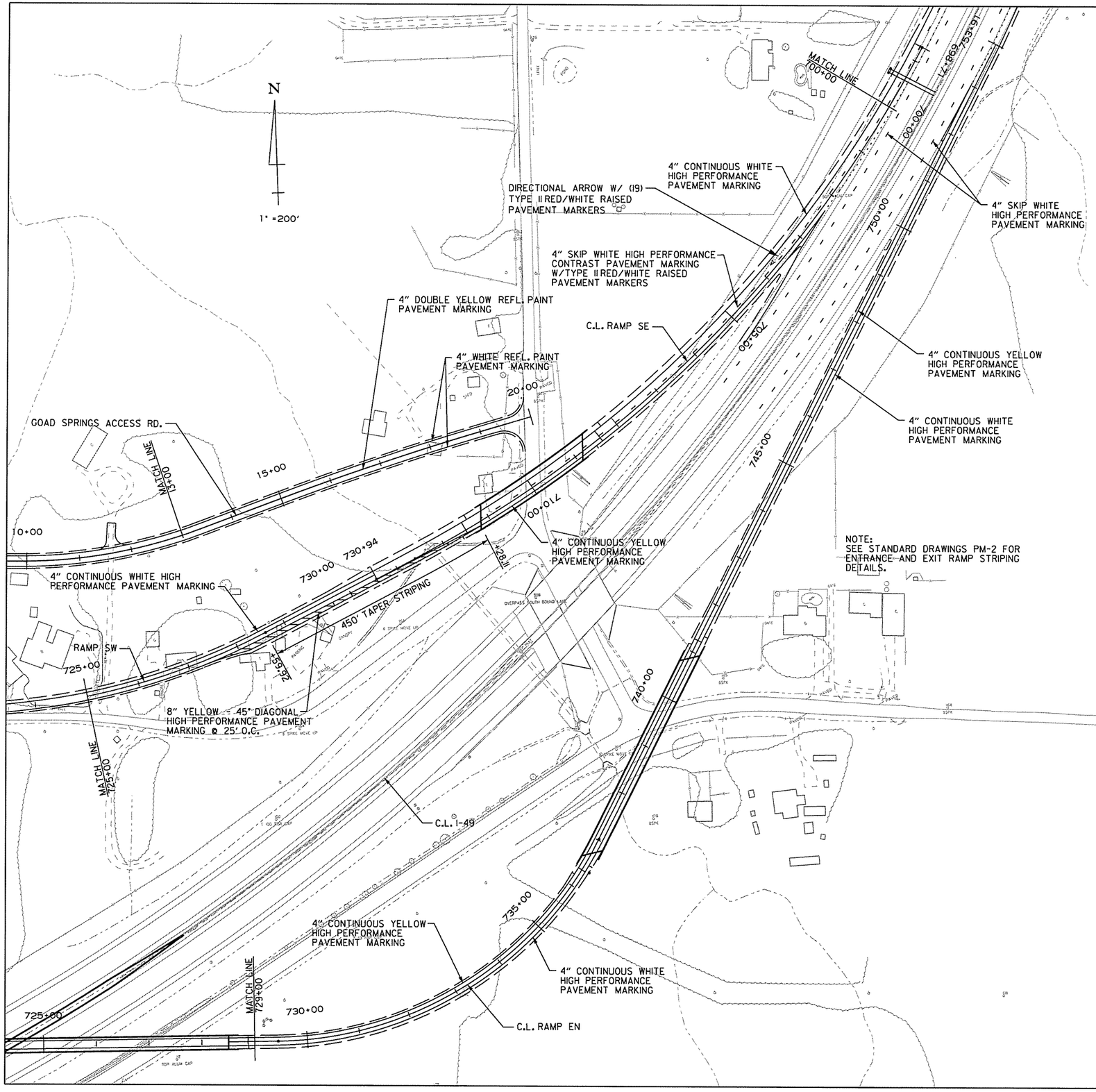
PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:52 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PM_09.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 133 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14




4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 725+00.00 | 730+94.00 | RAMP SW | 592 |
| 698+70.62 | 713+43.94 | RAMP SE | 1463 |
| 729+00.00 | 753+90.69 | RAMP EN | 2499 |

4" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 725+00.00 | 730+94.00 | RAMP SW | 965 |
| 703+13.41 | 713+43.94 | RAMP SE | 1259 |
| 729+00.00 | 751+81.69 | RAMP EN | 2278 |

8" YELLOW HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 727+27.49 | 730+94.00 | RAMP SW | 235 |
| 711+21.61 | 713+43.94 | RAMP SE | 61 |

4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 698+70.62 | 711+14.65 | RAMP SE | 311 |

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 111+98.73 | 120+00.00 | I-49 LT. | 199 |
| 111+99.74 | 120+00.00 | I-49 RT. | 202 |

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 702+34.52 | 703+50.50 | RAMP SE | 116 |
| 751+79.69 | 753+05.04 | RAMP EN | 125 |
| 114+95.99 | 115+78.36 | I-49 LT. | 81 |
| 118+08.02 | 119+31.86 | I-49 RT. | 125 |

4" WHITE REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 13+00.00 | 20+00.00 | GOAD SPRINGS ACCESS RD. | 1417 |

4" YELLOW REFLECTIVE PAINT PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 13+00.00 | 19+58.43 | GOAD SPRINGS ACCESS RD. | 1318 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 703+34.25 | 703+77.90 | RAMP SE | 19 |
| 698+70.62 | 711+14.65 | RAMP SE | 16 |
| 702+34.52 | 703+50.50 | RAMP SE | 12 |
| 751+79.69 | 753+05.04 | RAMP EN | 13 |
| 114+95.99 | 115+78.36 | I-49 LT. | 9 |
| 118+08.02 | 119+31.86 | I-49 RT. | 13 |

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:53 PM
WORKSPACE: AHTD
L:\2005\059II680 - AHTD Springdale Bypass\Drawings\RWY II2 TO I-540\SBG_PM_10.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 134 | 897 |

(2) PERMANENT PAVEMENT MARKING DETAILS

8" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 119+31.86 | 145+50.73 | I-49 RT. | 661 |
| 145+50.73 | 146+10.99 | I-49 RT. | 121 |

TYPE II RED/WHITE RAISED PAVEMENT MARKERS

| STA. | STA. | LOCATION | EACH |
|---|---|---|---|
| 115+78.36 | 146+17.79 | I-49 LT. | 84 |
| 119+47.81 | 134+52.00 | I-49 LT. | 5 |
| 119+31.86 | 145+50.73 | I-49 RT. | 74 |
| 145+50.73 | 146+10.99 | I-49 RT. | 13 |

4" WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 119+47.80 | 140+09.99 | I-49 LT. | 2027 |
| 120+16.50 | 145+78.16 | I-49 RT. | 2592 |

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 120+00.00 | 138+00.00 | I-49 LT. | 446 |
| 120+00.00 | 141+50.45 | I-49 RT. | 543 |

6" WHITE THERMOPLASTIC PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 115+78.36 | 146+17.79 | I-49 LT. | 754 |

4" WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING

| STA. | STA. | LOCATION | LIN. FT. |
|---|---|---|---|
| 119+47.81 | 134+52.00 | I-49 LT. | 371 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTARERRY
9-5-14

1" = 200'

DIRECTIONAL ARROW W/ (19) TYPE II RED/WHITE RAISED PAVEMENT MARKERS

8" CONTINUOUS WHITE HIGH PERFORMANCE PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS SPACED @ 10' O.C.

4" SKIP WHITE HIGH PERFORMANCE PAVEMENT MARKING

4" SKIP WHITE HIGH PERFORMANCE CONTRAST PAVEMENT MARKING W/TYPE II RED/WHITE RAISED PAVEMENT MARKERS

4" CONTINUOUS WHITE HIGH PERFORMANCE PAVEMENT MARKING

C.L. I-49

6" DOTTED WHITE THERMOPLASTIC PAVEMENT MARKING (3' STRIPE, 9' GAP) W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS SPACED @ 36' O.C.

8" CONTINUOUS WHITE HIGH PERFORMANCE PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS SPACED @ 10' O.C.

8" DOTTED WHITE HIGH PERFORMANCE PAVEMENT MARKING W/ TYPE II RED/WHITE RAISED PAVEMENT MARKERS SPACED @ 36' O.C.

4" CONTINUOUS WHITE HIGH PERFORMANCE PAVEMENT MARKING

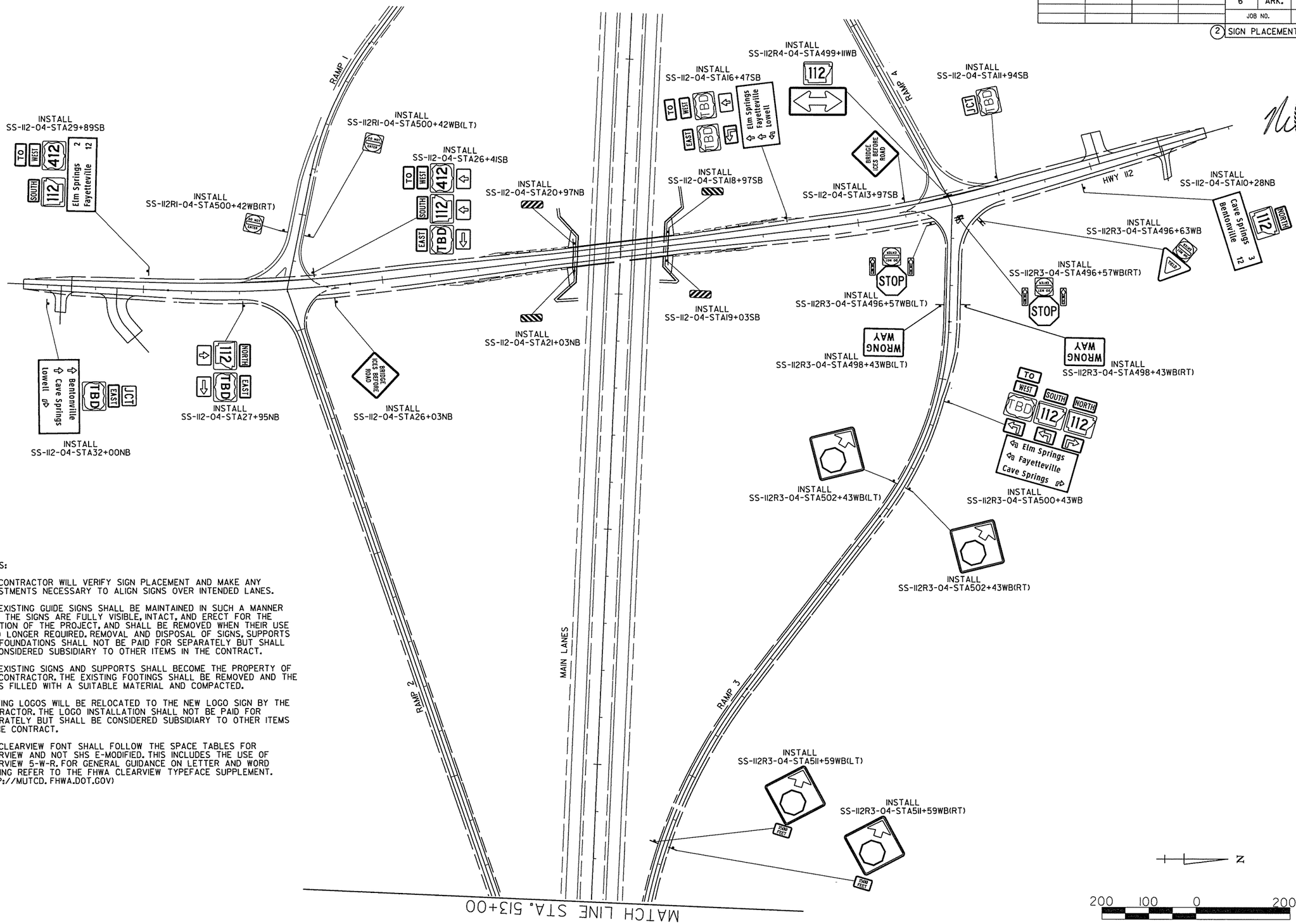
NOTE:
SEE STANDARD DRAWING PM-2 FOR ENTRANCE AND EXIT RAMP STRIPING DETAILS.

PERMANENT PAVEMENT MARKING DETAILS

sadonaldson 9/4/2014 3:20:53 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PM_II.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 135 | 897 |

(2) SIGN PLACEMENT SHEET




NOTES:

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

ALL EXISTING GUIDE SIGNS SHALL BE MAINTAINED IN SUCH A MANNER THAT THE SIGNS ARE FULLY VISIBLE, INTACT, AND ERECT FOR THE DURATION OF THE PROJECT, AND SHALL BE REMOVED WHEN THEIR USE IS NO LONGER REQUIRED. REMOVAL AND DISPOSAL OF SIGNS, SUPPORTS AND FOUNDATIONS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE EXISTING SIGNS AND SUPPORTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING FOOTINGS SHALL BE REMOVED AND THE HOLES FILLED WITH A SUITABLE MATERIAL AND COMPACTED.

EXISTING LOGOS WILL BE RELOCATED TO THE NEW LOGO SIGN BY THE CONTRACTOR. THE LOGO INSTALLATION SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

THE CLEARVIEW FONT SHALL FOLLOW THE SPACE TABLES FOR CLEARVIEW AND NOT SHS E-MODIFIED. THIS INCLUDES THE USE OF CLEARVIEW 5-W-R. FOR GENERAL GUIDANCE ON LETTER AND WORD SPACING REFER TO THE FHWA CLEARVIEW TYPEFACE SUPPLEMENT. (HTTP://MUTCD.FHWA.DOT.GOV)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14

sadonaldson 9/4/2014 7:26:27 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SB6_SP_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 136 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14

MATCH LINE STA. 513+00

INSTALL EX-112R3-04-STA515+74WB
EXIT 9

INSTALL SS-112R3-04-STA516+08WB
EXIT XX MPH

INSTALL GM-TBD-04-STA520+63WB
EXIT 9
112
Elm Springs
Cave Springs

515+00
RAMP 3
520+00
525+00
530+00
MAIN LANES
515+00
RAMP 2

INSTALL SS-TBD-04-STA517+02WB
INSTALL SS-TBD-04-STA518+62WB
INSTALL SS-TBD-04-STA520+22WB
INSTALL SS-TBD-04-STA521+82WB

INSTALL SS-231-04-STA15+00SB
BRIDGE ICES BEFORE ROAD

INSTALL SS-TBD-04-STA535+37WB
INSTALL SS-TBD-04-STA531+37WB
INSTALL SS-TBD-04-STA533+37WB

INSTALL SS-231-04-STA19+00SB(RT)
INSTALL SS-231-04-STA19+00SB(LT)
TO BE INSTALLED BY OTHERS
535+00
540+00
INSTALL SS-TBD-04-STA537+37WB
INSTALL SS-TBD-04-STA539+37WB
TO BE INSTALLED BY OTHERS
SPEED LIMIT 65
INSTALL SS-412-04-STA537+97EB

INSTALL SS-231-04-STA20+96NB(LT)
INSTALL SS-231-04-STA20+96NB(RT)

MATCH LINE STA. 543+00

HWY. 231/GRIMSLEY RD.
INSTALL SS-231-04-STA24+00NB
BRIDGE ICES BEFORE ROAD
570+00

MATCH LINE STA. 573+00

565+00
INSTALL SS-TBD-04-STA560+00WB(RT)
SPEED LIMIT 55
560+00
INSTALL SS-TBD-04-STA560+00WB(LT)
LEFT LANE ENDS
1/4 MILE
INSTALL SS-TBD-04-STA566+40WB(LT)
INSTALL SS-TBD-04-STA566+40WB(RT)

INSTALL SS-TBD-04-STA550+00WB(LT)
INSTALL SS-TBD-04-STA550+00WB(RT)
INSTALL SS-TBD-04-STA555+00WB(RT)
LANE END MERGE RIGHT
545+00
550+00
555+00
MAIN LANES
INSTALL SS-TBD-04-STA555+00WB(LT)
LANE END MERGE RIGHT

N
200 100 0 200

sadonaldson 9/4/2014 7:26:28 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 137 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

EXIT 9
112
Elm Springs
Cave Springs
1 MILE

INSTALL
GM-TBD-04-STA573+43WB

MATCH LINE STA. 573+00

MAIN LANES

575+00
580+00
585+00
590+00
595+00
600+00
605+00
610+00
615+00
620+00

INSTALL
SS-TBD-04-STA574+51EB
BRIDGE ICES BEFORE ROAD

INSTALL
SS-TBD-04-STA579+00WB(RT)
SPEED LIMIT 55

INSTALL
SS-TBD-04-STA579+00WB(LT)
SPEED LIMIT 55

INSTALL
SS-TBD-04-STA579+51EB(LT)

INSTALL
SS-TBD-04-STA579+51EB(RT)

INSTALL
SS-TBD-04-STA589+50WB(RT)

INSTALL
SS-TBD-04-STA589+50WB(LT)

INSTALL
SS-TBD-04-STA592+00WB(RT)
LEFT LANE ENDS
1 MILE

TO BE INSTALLED BY OTHERS
I-540

INSTALL
SS-TBD-04-STA592+39EB

INSTALL
SS-TBD-04-STA594+29WB

INSTALL
SS-TBD-04-STA599+29WB
BRIDGE ICES BEFORE ROAD

INSTALL
SS-TBD-04-STA590+41EB(LT)
FREEWAY ENDS
1/2 MILES

TO BE INSTALLED BY OTHERS
I-540

INSTALL
SS-TBD-04-STA592+48EB

INSTALL
SS-TBD-04-STA594+39WB

INSTALL
SS-TBD-04-STA592+00WB(LT)
LEFT LANE ENDS
1 MILE

INSTALL
SS-TBD-04-STA590+41EB(RT)
FREEWAY ENDS
1/2 MILES

MATCH LINE STA. 603+00

MAIN LANES

INSTALL
SS-TBD-04-STA612+20EB(LT)
1 MILE
LEFT LANE ENDS

INSTALL
SS-TBD-04-STA612+20EB(RT)
1 MILE
LEFT LANE ENDS

INSTALL
SS-TBD-04-STA619+20WB(RT)
FREEWAY ENDS
1/2 MILES

INSTALL
SS-TBD-04-STA619+20WB(LT)
FREEWAY ENDS
1/2 MILES

MATCH LINE STA. 627+00

BK. 625+00.00
AHD. 625+81.89

N

200 100 0 200

sadonaldson 9/4/2014 7:26:28 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 138 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

MATCH LINE STA. 627+00

MAIN LANES

630+00 635+00 640+00 645+00 650+00 655+00

INSTALL SS-TBD-04-STA629+00EB(LT)
SPEED LIMIT 55

INSTALL SS-236-04-STAI8+91SB

INSTALL SS-236-04-STAI8+67SB

INSTALL SS-TBD-04-STA64I+60EB(LT)
½ MILE LEFT LANE ENDS

TO BE INSTALLED BY OTHERS
1 1 MILE

INSTALL SS-TBD-04-STA649+00EB(LT)
SPEED LIMIT 55

INSTALL SS-TBD-04-STA654+00EB(LT)
LANE ENDS MERGE RIGHT

INSTALL BD-04-STA629+00EB(RT)
SPEED LIMIT 55

INSTALL SS-236-04-STA2I+40NB

INSTALL SS-236-04-STA2I+19NB

INSTALL SS-TBD-04-STA64I+60EB(RT)
½ MILE LEFT LANE ENDS

TO BE INSTALLED BY OTHERS
1 1 MILE

INSTALL SS-TBD-04-STA649+00EB(RT)
SPEED LIMIT 55

INSTALL SS-TBD-04-STA654+00EB(RT)
LANE ENDS MERGE RIGHT

INSTALL SS-6I-04-STAI5+00SB
BRIDGE ICES BEFORE ROAD

INSTALL SS-PUPPY-04-STA20+49WB
STOP

PUPPY CREEK RD.

INSTALL SS-6I-04-STAI8+99SB

INSTALL SS-6I-04-STAI8+90SB

INSTALL SS-4I2-04-STA680+92WB
SPEED LIMIT 65

INSTALL SS-236-04-STA26+19NB
BRIDGE ICES BEFORE ROAD

INSTALL SS-TBD-04-STA664+00EB(RT)

INSTALL SS-TBD-04-STA664+00EB(LT)

INSTALL SS-TBD-04-STA669+00EB

INSTALL SS-TBD-04-STA67I+00EB

INSTALL SS-TBD-04-STA673+00EB

INSTALL SS-TBD-04-STA675+00EB

INSTALL SS-TBD-04-STA677+00EB

MATCH LINE STA. 656+00

MAIN LANES

660+00 665+00 670+00 675+00 680+00 685+00

BK. 681+00.00
AHD. 681+58.56

INSTALL SS-6I-04-STA2I+09NB

INSTALL SS-6I-04-STA20+99NB

20+00 25+00 30+00 35+00

SPRING CREEK FRONTAGE RD.

INSTALL SS-SPRING-04-STA39+64EB
STOP

HWY. 6I

INSTALL SS-6I-04-STA25+00NB
BRIDGE ICES BEFORE ROAD

MATCH LINE STA. 686+00

N

200 100 0 200

sadonaldson 9/4/2014 7:26:28 AM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_04.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 139 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

MATCH LINE STA. 686+00

INSTALL SS-TBD-04-STA687+00EB
INSTALL SS-TBD-04-STA688+60EB
INSTALL SS-TBD-04-STA690+20EB
INSTALL SS-TBD-04-STA691+80EB
INSTALL SS-TBD-04-STA693+40EB
MAIN LANES
ICES BEFORE BRIDGE ROAD
INSTALL SS-TBD-04-STA690+93EB
INSTALL SS-TBD-04-STA700+24WB
INSTALL SS-TBD-04-STA705+24WB
INSTALL SS-RAMP EN-04-STA695+93EB(LT)
INSTALL SS-RAMP EN-04-STA695+93EB(RT)
INSTALL SS-TBD-04-STA700+16WB
BRIDGE ICES BEFORE ROAD
SOUTH 71 49 Springdale Fayetteville
NORTH 71 49 Lowell
INSTALL GM-RAMP EN-04-STA699+89EB(LT)
INSTALL GM-RAMP EN-04-STA699+89EB(RT)
INSTALL SS-RAMP ES-04-STA702+00EB
INSTALL SS-RAMP ES-04-STA705+62EB
SOUTH 71 49
INSTALL GM-RAMP ES-04-STA703+75EB
INSTALL SS-RAMP ES-04-STA707+22EB
INSTALL SS-RAMP ES-04-STA708+82EB
INSTALL SS-RAMP ES-04-STA710+42EB
INSTALL SS-RAMP ES-04-STA712+02EB
RAMP ES
MATCH LINE STA. 713+00
INSTALL SS-RAMP NW-04-STA712+80NB
RAMP SW
RAMP NW
MATCH LINE STA. 716+00
INSTALL SS-RAMP NW-04-STA714+40NB
INSTALL SS-RAMP NW-04-STA716+00NB
INSTALL SS-RAMP NW-04-STA717+60NB
INSTALL SS-RAMP EN-04-STA713+73EB
ICES BEFORE BRIDGE ROAD
INSTALL SS-RAMP NW-04-STA718+46NB
RAMP EN
INSTALL SS-RAMP NW-04-STA719+20NB
INSTALL SS-RAMP NW-04-STA720+80NB
INSTALL SS-RAMP EN-04-STA718+73EB(LT)
INSTALL SS-RAMP EN-04-STA718+73(RT)
INSTALL SS-RAMP NW-04-STA722+40NB
MATCH LINE STA. 720+00
MATCH LINE STA. 723+00

N
200 100 0 200

sadonaldson 9/4/2014 7:26:29 AM
WORKSPACE: AHTD
L:\2005\059180 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_05.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 140 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

INSTALL OH-49-04-STAII8+79SB-A (A)
INSTALL OH-49-04-STAII8+79SB-B (B)
STA. III8+79 INSTALL OH-49-04-0I

EXIT 77 — TBD — Elm Springs Cave Springs
EXIT 76 — Wagon Wheel Road 1 MILE

8'-0" | 10' SHOULDER | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 12' TRAFFIC LANE | 10' SHOULDER | 8'-0"

MATCH LINE STA. 716+00

INSTALL SS-RAMP SW-04-STA718+33SB

INSTALL EX-RAMP SE-04-STA703+58SB
EXIT 77
INSTALL SS-RAMP SE-04-STA703+64SB
BRIDGE ICES BEFORE ROAD
INSTALL SS-RAMP SE-04-STA703+18SB
EXIT XX
INSTALL SS-RAMP SE-04-STA704+00SB
INSTALL SS-RAMP SE-04-STA708+64SB
INSTALL SS-RAMP SE-04-STA708+9ISB

MATCH LINE STA. 121+00

RAMP SW
720+00 725+00 730+00 715+00 710+00 705+00 700+00 745+00

INSTALL LF-49-04-STA90+9INB
FOOD-EXIT 78
MCDONALD'S | SONIC | LONG JOHN SILVERS | SUBWAY | TACO BELL | DAIRY QUEEN

Springdale NEXT 5 EXITS
INSTALL GM-49-04-STA99+I3SB

INSTALL SS-49-04-STAII0+58NB
Northwest Ar Reg Airport EXIT 78
INSTALL GM-49-04-STAIII+8INB

MATCH LINE STA. 720+00

I-49
90+00 95+00 100+00 105+00 110+00 115+00 120+00 125+00 130+00 135+00 140+00

INSTALL SS-RAMP EN-04-STA728+76EB
BRIDGE ICES BEFORE ROAD
INSTALL SS-RAMP EN-04-STA736+55EB
INSTALL SS-RAMP EN-04-STA737+56EB
INSTALL SS-RAMP EN-04-STA736+89EB
INSTALL SS-RAMP EN-04-STA735+96EB
INSTALL SS-RAMP EN-04-STA734+36EB
INSTALL SS-RAMP EN-04-STA732+76EB
INSTALL SS-RAMP EN-04-STA731+I6EB
INSTALL SS-RAMP EN-04-STA729+56EB

GAS-EXIT 78
KUM & GO
INSTALL LG-49-04-STAI06+65NB

RAMP EN
725+00 730+00 735+00 740+00

N

200 100 0 200

sadamsdson 9/4/2014 1:26:29 AM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY II2 TO I-540\SBG_SP_06.dgn
L:\C2005\05I9I60
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 141 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14

MATCH LINE STA. 713+00

INSTALL
SS-RAMP ES-04-STA713+62EB

INSTALL
SS-RAMP ES-04-STA716+82EB

INSTALL
SS-RAMP ES-04-STA715+22EB

INSTALL
SS-49-04-STA70+06SB

RAMP ES

695+00

700+00

715+00

INSTALL
LGF-49-04-STA80+54SB

GAS-EXIT 76

FOOD-EXIT 76

MATCH LINE STA. 723+00

725+00

730+00

735+00

740+00

745+00

RAMP NW

MATCH LINE STA. 59+44

I-49

65+00

70+00

75+00

80+00

85+00

INSTALL
SS-RAMP NW-04-STA724+00NB

INSTALL
SS-RAMP NW-04-STA725+60NB

INSTALL
SS-RAMP NW-04-STA726+93NB(LT)

INSTALL
SS-RAMP NW-04-STA726+93NB(RT)

INSTALL
SS-RAMP NW-04-STA727+20NB

INSTALL
SS-RAMP NW-04-STA728+80NB

INSTALL
SS-RAMP NW-04-STA730+40NB

INSTALL
SS-RAMP NW-04-STA732+00NB

INSTALL
SS-RAMP NW-04-STA732+80NB

BRIDGE ICES BEFORE ROAD

INSTALL
SS-RAMP NW-04-STA733+60NB

INSTALL
SS-RAMP NW-04-STA735+20NB

INSTALL
SS-RAMP NW-04-STA746+62NB

EXIT 77

INSTALL
EX-RAMP NW-04-STA746+27NB

RAMADA INN

LODGING-EXIT 78

INSTALL
LL-49-04-STA74+27NB

N

200 100 0 200

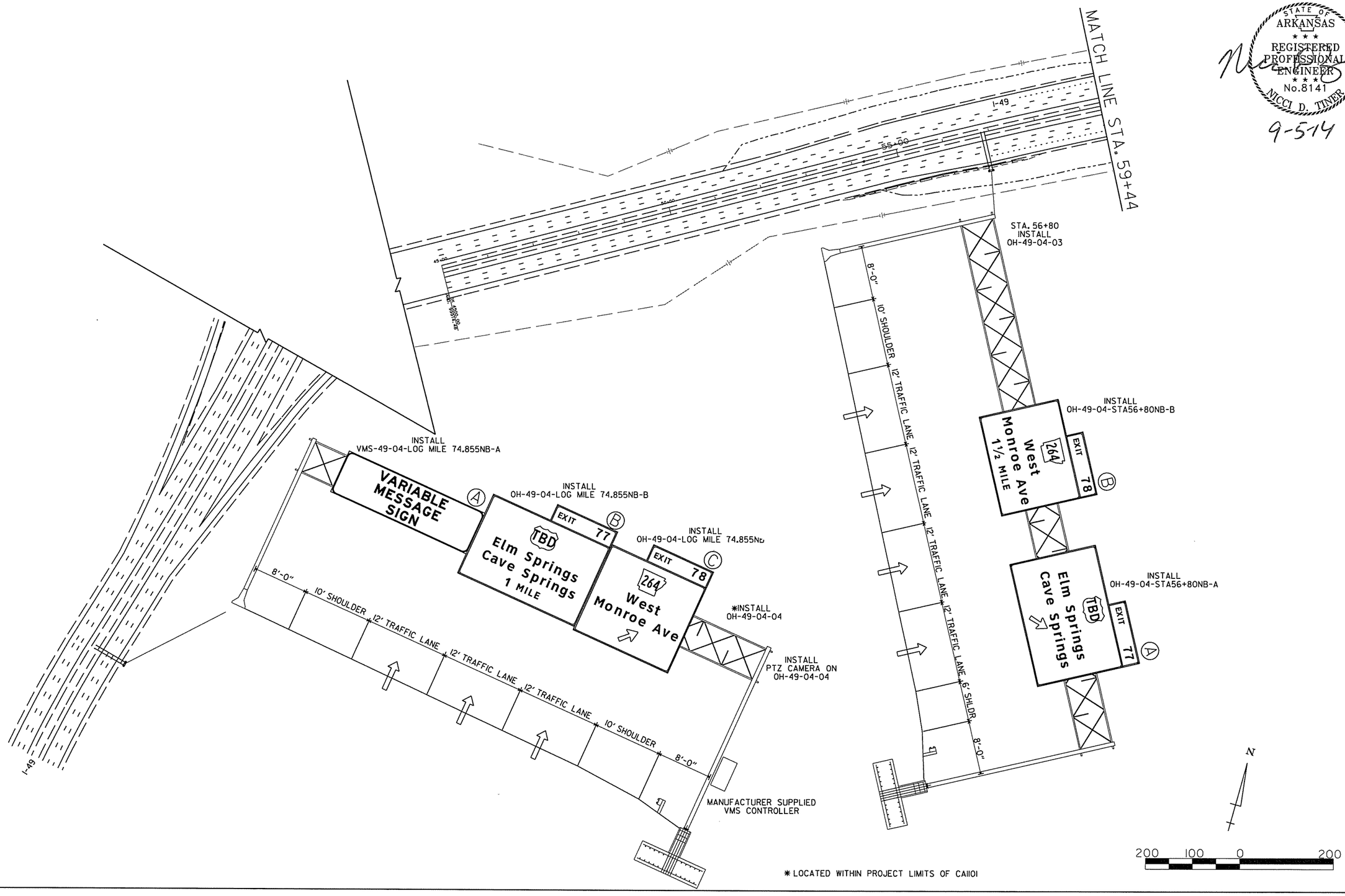
sadonaldson 9/4/2014 7:26:30 AM
WORKSPACE: AHTD
L:\2005\05916180 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SP_07.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 142 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14



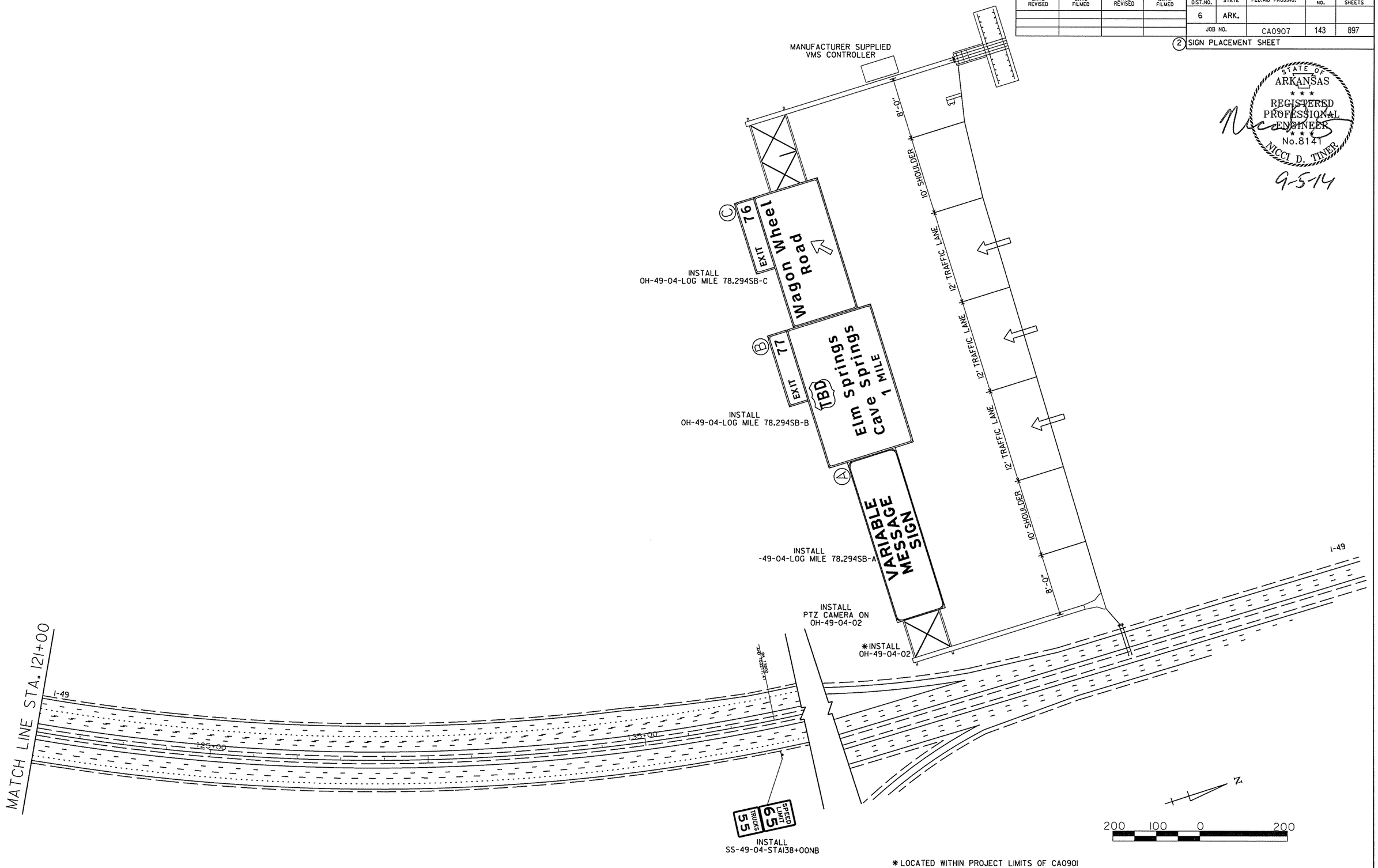

* LOCATED WITHIN PROJECT LIMITS OF CA1101

sadonaldson 9/4/2014 7:26:30 AM
WORKSPACE: AHTD
L:\2005\059186D - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_08.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 143 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14




*LOCATED WITHIN PROJECT LIMITS OF CA0901

sdonaldson 9/4/2014 7:26:30 AM
WORKSPACE: AHTD
L:\2005\05916\80 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_09.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 144 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

OM-3L (12"X36")
SS-112-04-STA20+97NB
SS-112-04-STA19+03SB
SS-231-04-STA19+00SB(LT)
SS-231-04-STA20+96NB(LT)
SS-TBD-04-STA579+51EB(LT)
SS-TBD-04-STA589+50WB(LT)
SS-TBD-04-STA592+39EB
SS-TBD-04-STA594+39WB
SS-236-04-STA18+67SB
SS-236-04-STA21+40NB
SS-61-04-STA18+90SB
SS-61-04-STA21+09NB
SS-RAMP EN-04-STA695+93EB(LT)
SS-TBD-04-STA700+16WB
SS-RAMP EN-04-STA718+73EB(LT)
SS-RAMP SE-04-STA708+91SB
SS-RAMP EN-04-736+55EB
SS-RAMP NW-04-STA726+93NB(LT)

OM-3R (12"X36")
SS-112-04-STA21+03NB
SS-112-04-STA18+97SB
SS-231-04-STA19+00SB(RT)
SS-231-04-STA20+96NB(RT)
SS-TBD-04-STA579+51EB(RT)
SS-TBD-04-STA589+50WB(RT)
SS-TBD-04-STA592+49EB
SS-TBD-04-STA594+29WB
SS-236-04-STA18+91SB
SS-236-04-STA21+19NB
SS-61-04-STA18+99SB
SS-61-04-STA20+99NB
SS-RAMP EN-04-STA695+93EB(RT)
SS-412-04-STA700+24WB
SS-RAMP EN-04-STA718+73EB(RT)
SS-RAMP SE-04-STA708+64SB
SS-RAMP EN-04-STA736+89EB
SS-RAMP NW-04-STA726+93NB(RT)

R1-1 (36"X36")
SS-SPRING-04-STA39+64EB
SS-PUPPY-04-STA20+49WB

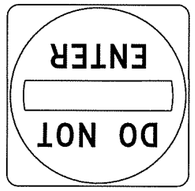
R2-1 (36"X48")
SS-TBD-04-STA560+00WB(RT)
SS-TBD-04-STA560+00WB(LT)
SS-TBD-04-STA649+00EB(RT)
SS-TBD-04-STA649+00EB(LT)

R2-1 (36"X48")
SS-TBD-04-STA537+97EB
SS-TBD-04-STA680+92WB

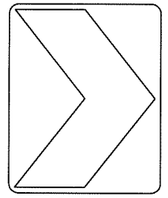
R2-1 (48"X60")

R5-1 (36"X36")
SS-112RI-04-STA500+42WB(RT)
SS-112RI-04-STA500+42WB(LT)

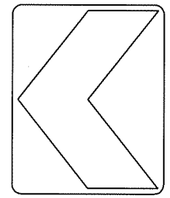
R5-1 (36"X36")




WI-8R (30"X36")
SS-TBD-04-STA517+02WB
SS-TBD-04-STA518+62WB
SS-TBD-04-STA520+22WB
SS-TBD-04-STA521+82WB
SS-TBD-04-STA531+37WB
SS-TBD-04-STA533+37WB
SS-TBD-04-STA535+37WB
SS-TBD-04-STA537+37WB
SS-TBD-04-STA539+37WB
SS-TBD-04-STA669+00EB
SS-TBD-04-STA671+00EB
SS-TBD-04-STA673+00EB
SS-TBD-04-STA675+00EB
SS-TBD-04-STA677+00EB
SS-TBD-04-STA687+00EB
SS-TBD-04-STA688+60EB
SS-TBD-04-STA690+20EB
SS-TBD-04-STA691+80EB
SS-TBD-04-STA693+40EB
SS-RAMP ES-04-STA705+62EB
SS-RAMP ES-04-STA707+22EB
SS-RAMP ES-04-STA708+82EB
SS-RAMP ES-04-STA710+42EB
SS-RAMP ES-04-STA712+02EB
SS-RAMP ES-04-STA713+62EB
SS-RAMP ES-04-STA715+22EB
SS-RAMP ES-04-STA716+82EB

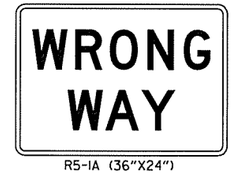


WI-8L (30"X36")
SS-RAMP NW-04-STA712+80NB
SS-RAMP NW-04-STA714+40NB
SS-RAMP NW-04-STA716+00NB
SS-RAMP NW-04-STA717+60NB
SS-RAMP NW-04-STA719+20NB
SS-RAMP NW-04-STA720+80NB
SS-RAMP NW-04-STA722+40NB
SS-RAMP EN-04-STA729+56EB
SS-RAMP EN-04-STA731+16EB
SS-RAMP EN-04-STA732+76EB
SS-RAMP EN-04-STA734+36EB
SS-RAMP EN-04-STA735+96EB
SS-RAMP EN-04-STA737+56EB
SS-RAMP NW-04-STA724+00NB
SS-RAMP NW-04-STA725+60NB
SS-RAMP NW-04-STA727+20NB
SS-RAMP NW-04-STA728+80NB
SS-RAMP NW-04-STA730+40NB
SS-RAMP NW-04-STA732+00NB
SS-RAMP NW-04-STA733+60NB
SS-RAMP NW-04-STA735+20NB

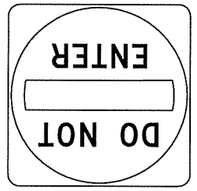


R2-2 (48"X48")
SS-49-04-STA138+00NB

R5-1A (36"X24")
SS-112R3-04-STA498+43WB(RT)
SS-112R3-04-STA498+43WB(LT)

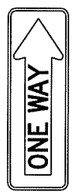



R5-1 (36"X36")



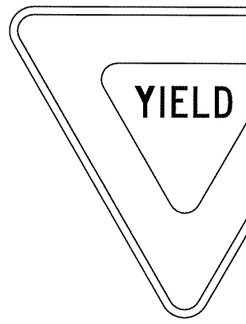

R6-1L (36"X12")

R6-1R (36"X12")

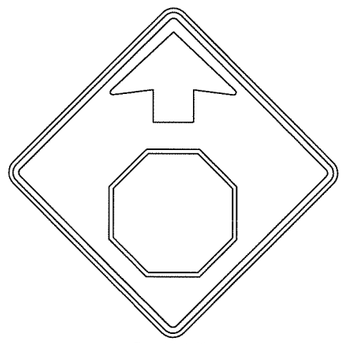



R1-1 (60"X60")
SS-112R3-04-STA496+57WB(RT)
SS-112R3-04-STA496+57WB(LT)

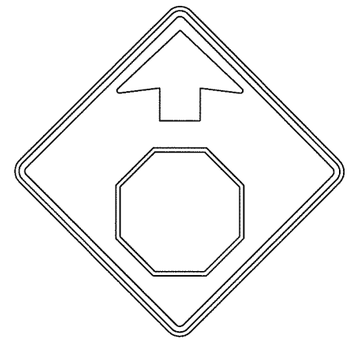
R1-2 (60"X60"X60")
SS-112R3-04-STA496+63WB




W3-1 (48"X48")
SS-112R3-04-STA502+43WB(RT)
SS-112R3-04-STA502+43WB(LT)



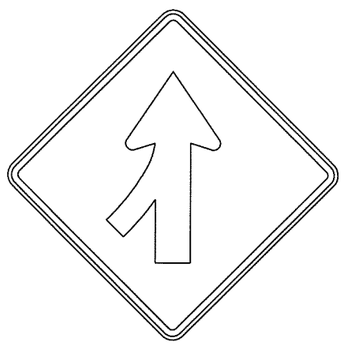
W3-1 (48"X48")



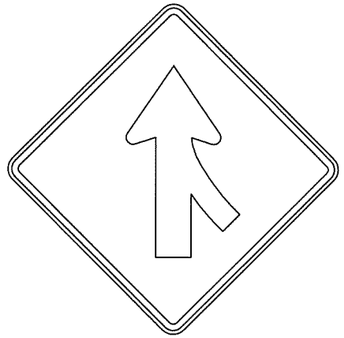
W16-2P (24"X18")
1500 FEET
SS-112R3-04-STA511+59WB(RT)
SS-112R3-04-STA511+59WB(LT)

W3-5 (48"X48")
SS-TBD-04-STA579+00WB(RT)
SS-TBD-04-STA579+00WB(LT)
SS-TBD-04-STA629+00EB(RT)
SS-TBD-04-STA629+00EB(LT)

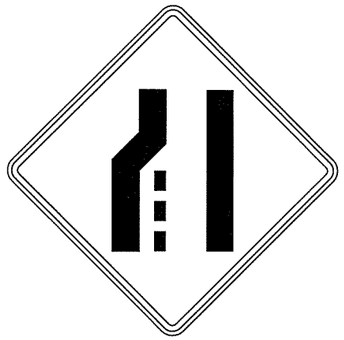
W4-1L (48"X48")
SS-RAMP SW-04-STA718+33SB



W4-1R (48"X48")
SS-RAMP NW-04-STA718+46NB
SS-49-04-STA110+58NB
SS-49-04-STA70+06SB



W4-2L (48"X48")
SS-TBD-04-STA550+00WB(RT)
SS-TBD-04-STA550+00WB(LT)
SS-TBD-04-STA664+00EB(RT)
SS-TBD-04-STA664+00EB(LT)
SS-RAMP SE-04-STA704+00SB(RT)
SS-RAMP SE-04-STA704+00SB(LT)



sadonaldson 9/4/2014 7:26:31 AM
WORKSPACE: AHTD
L:\2005\059680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SP_I10-21.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 145 | 897 |
| | | | | (2) | SIGN PLACEMENT SHEET | | | |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
MICCI D. TINER
9-5-14

W8-13 (36"X36")
SS-112-04-STA26+03NB
SS-112-04-STA13+97SB
SS-231-04-STA15+00SB
SS-231-04-STA24+00NB
SS-236-04-STA13+91SB
SS-236-04-STA26+19NB
SS-61-04-STA15+00SB
SS-61-04-STA25+00NB

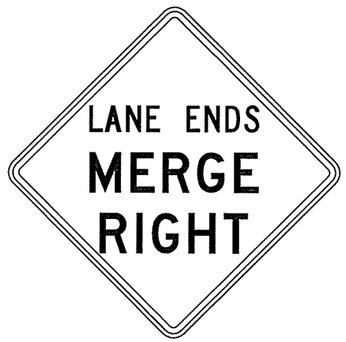
W8-13 (48"X48")
SS-TBD-04-STA574+51EB
SS-TBD-04-STA599+29WB
SS-TBD-04-STA690+93EB
SS-TBD-04-STA705+24WB
SS-RAMP EN-04-STA713+73EB
SS-RAMP SE-04-STA703+64SB
SS-RAMP EN-04-STA728+76EB
SS-RAMP NW-04-STA732+80NB

W9-1L (48"X48")

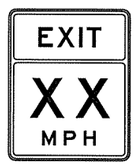
W16-3aP (30"X12")
SS-TBD-04-STA566+40WB(LT)
SS-TBD-04-STA566+40WB(RT)
SS-TBD-04-STA641+60EB(RT)
SS-TBD-04-STA641+60EB(LT)

W9-1L (48"X48")

W16-3aP (30"X12")
SS-TBD-04-STA592+00WB(RT)
SS-TBD-04-STA592+00WB(LT)
SS-TBD-04-STA612+20EB(RT)
SS-TBD-04-STA612+20EB(LT)




W9-2TR (48"X48")
SS-TBD-04-STA555+00WB(RT)
SS-TBD-04-STA555+00WB(LT)
SS-TBD-04-STA654+00EB(RT)
SS-TBD-04-STA654+00EB(LT)

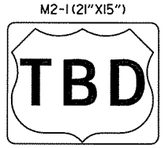



W13-2 (24"X30")
SS-112R3-04-STA516+08WB
SS-RAMP ES-04-STA702+00EB
SS-RAMP SE-04-STA703+18SB
SS-RAMP NW-04-STA746+62NB

W19-3 (48"X48")

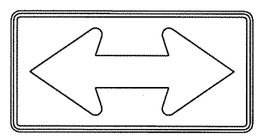
W16-3aP (30"X12")
SS-TBD-04-STA590+41EB(RT)
SS-TBD-04-STA590+41EB(LT)
SS-TBD-04-STA619+20WB(RT)
SS-TBD-04-STA619+20WB(LT)

M2-1 (21"X15")




MI-4 (30"x24")
SS-112-04-STA11+94SB

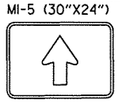
MI-5 (30"X24")



WI-7 (48"X24")
SS-112R4-04-STA499+11WB

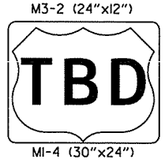
M3-1 (24"x12")

MI-5 (30"X24")

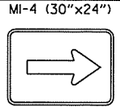


M6-3 (21"X15")

M3-2 (24"x12")




MI-4 (30"x24")



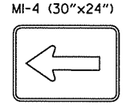
M6-1R (21"X15")

SS-112-04-STA27+95NB

M4-5 (24"X12")

M3-2 (24"x12")

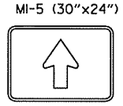
MI-4 (30"x24")



M6-1L (21"X15")

M3-3 (24"x12")

MI-5 (30"x24")



M6-3 (21"X15")

M3-4 (24"x12")

MI-4 (30"x24")

M6-3 (21"X15")

SS-112-04-STA26+41SB

sadonaldson 9/4/2014 7:26:31 AM
WORKSPACE: AHTD
L:\2005\059116B0 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SP_10-21.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 146 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

JCT
M2-1 (21"x15")

EAST
M3-2 (24"x12")

TBD
MI-4 (30"x24")

Bentonville
Cave Springs
Lowell

SS-112-04-STA32+00NB
DI-3
2.25" Radius, 0.75" Border, White on Green;
Standard Arrow Custom 9.00" X 6.00" 90°;
[Bentonville] ClearviewHwy-2-W;
Standard Arrow Custom 9.00" X 6.00" 90°;
[Cave Springs] ClearviewHwy-2-W;
[Lowell] ClearviewHwy-2-W;
90 Deg Advanced Turn Arrow 8.00" X 6.50";

NORTH
M3-1 (24"x12")

112
MI-5 (30"X24")

Cave Springs 3
Bentonville 12

SS-112-04-STA10+28NB
D2-2
2.25" Radius, 0.75" Border, White on Green;
[Cave Springs] ClearviewHwy-2-W;
[3] ClearviewHwy-2-W;
[Bentonville] ClearviewHwy-2-W;
[XX] ClearviewHwy-2-W;

TO
M4-5 (24"X12")

SOUTH
M3-3 (24"x12")

WEST
M3-4 (24"x12")

112
MI-5 (30"X24")

412
MI-4 (30"x24")

Elm Springs 2
Fayetteville 12

SS-112-04-STA29+89SB
D2-2
2.25" Radius, 0.75" Border, White on Green;
[Elm Springs] ClearviewHwy-2-W;
[2] ClearviewHwy-2-W;
[Fayetteville] ClearviewHwy-2-W;
[XX] ClearviewHwy-2-W;

EAST
M3-2 (24"x12")

WEST
M3-4 (24"x12")

TBD
MI-4 (30"x24")

M5-IL (21"x15")

M6-3 (21"X15")

Elm Springs
Fayetteville
Lowell

SS-112-04-STA16+47SB
DI-3
2.25" Radius, 0.75" Border, White on Green;
Standard Arrow Custom 9.00" X 6.00" 90°;
Standard Arrow Custom 9.00" X 6.00" 90°;
90 Deg Advanced Turn Arrow 8.00" X 6.50";
[Elm Springs] ClearviewHwy-2-W;
[Fayetteville] ClearviewHwy-2-W;
[Lowell] ClearviewHwy-2-W;

TO
M4-5 (24"X12")

WEST
M3-4 (24"x12")

SOUTH
M3-3 (24"x12")

NORTH
M3-1 (24"x12")

TBD
MI-4 (30"x24")

112
MI-5 (30"X24")

M5-IL (21"x15")

M5-IR (21"x15")

Elm Springs
Fayetteville
Cave Springs

SS-112R3-04-STA500+43WB
DI-3
2.25" Radius, 0.75" Border, White on Green;
90 Deg Advanced Turn Arrow 8.00" X 6.50";
[Elm Springs] ClearviewHwy-2-W;
90 Deg Advanced Turn Arrow 8.00" X 6.50";
[Fayetteville] ClearviewHwy-2-W;
[Cave Springs] ClearviewHwy-2-W;
90 Deg Advanced Turn Arrow 8.00" X 6.50";

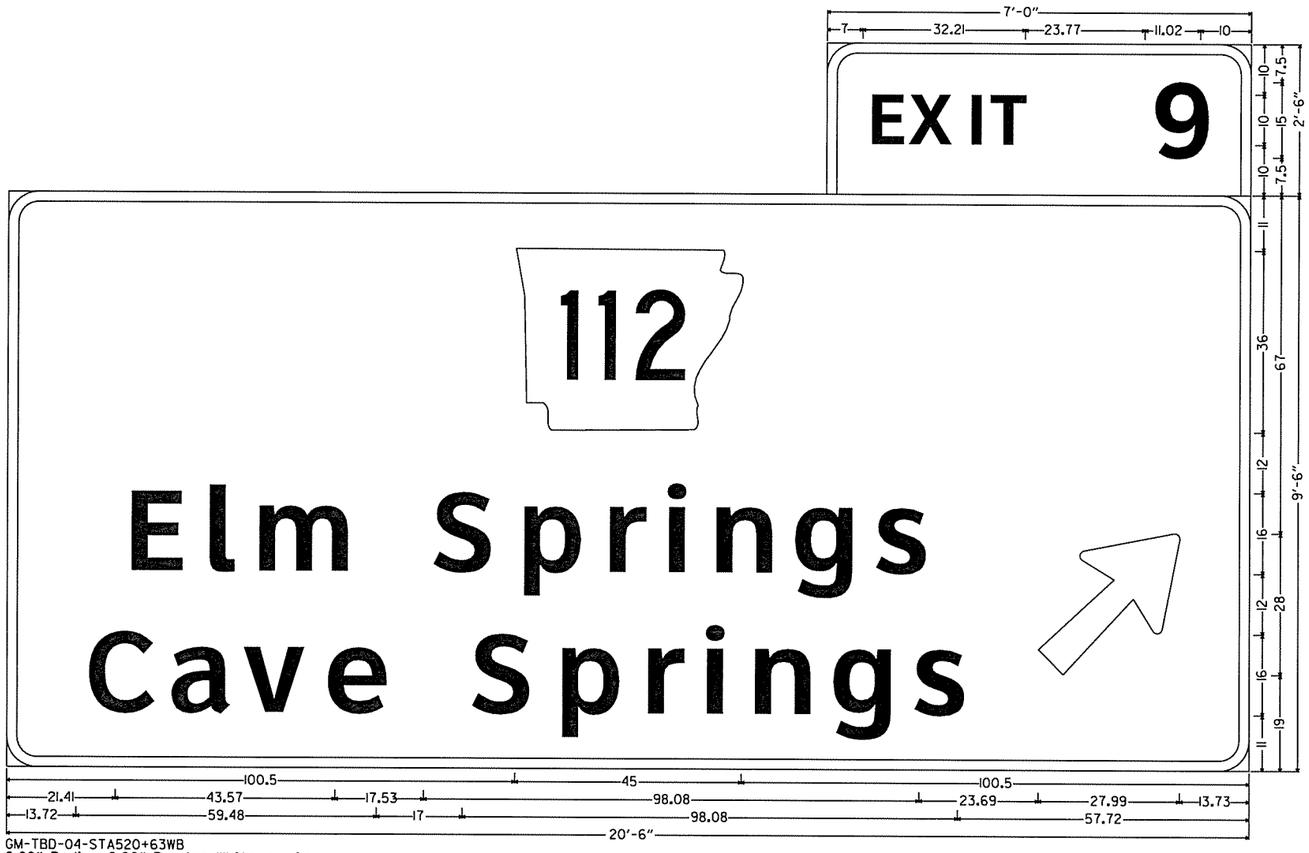
sadonaldson 9/4/2014 7:26:31 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-21.dgn

REVISED DATE:

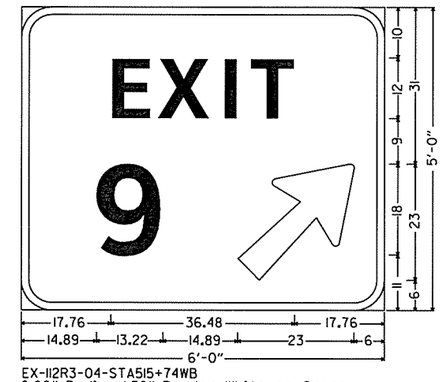
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 147 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14




GM-TBD-04-STA520+63WB
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W specified length; [9] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Elm Springs] ClearviewHwy-5-W;
[Cave Springs] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;




EX-112R3-04-STA515+74WB
6.00" Radius, 1.50" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[9] ClearviewHwy-5-W-R;
Arrow Custom - 29.24" 45°;

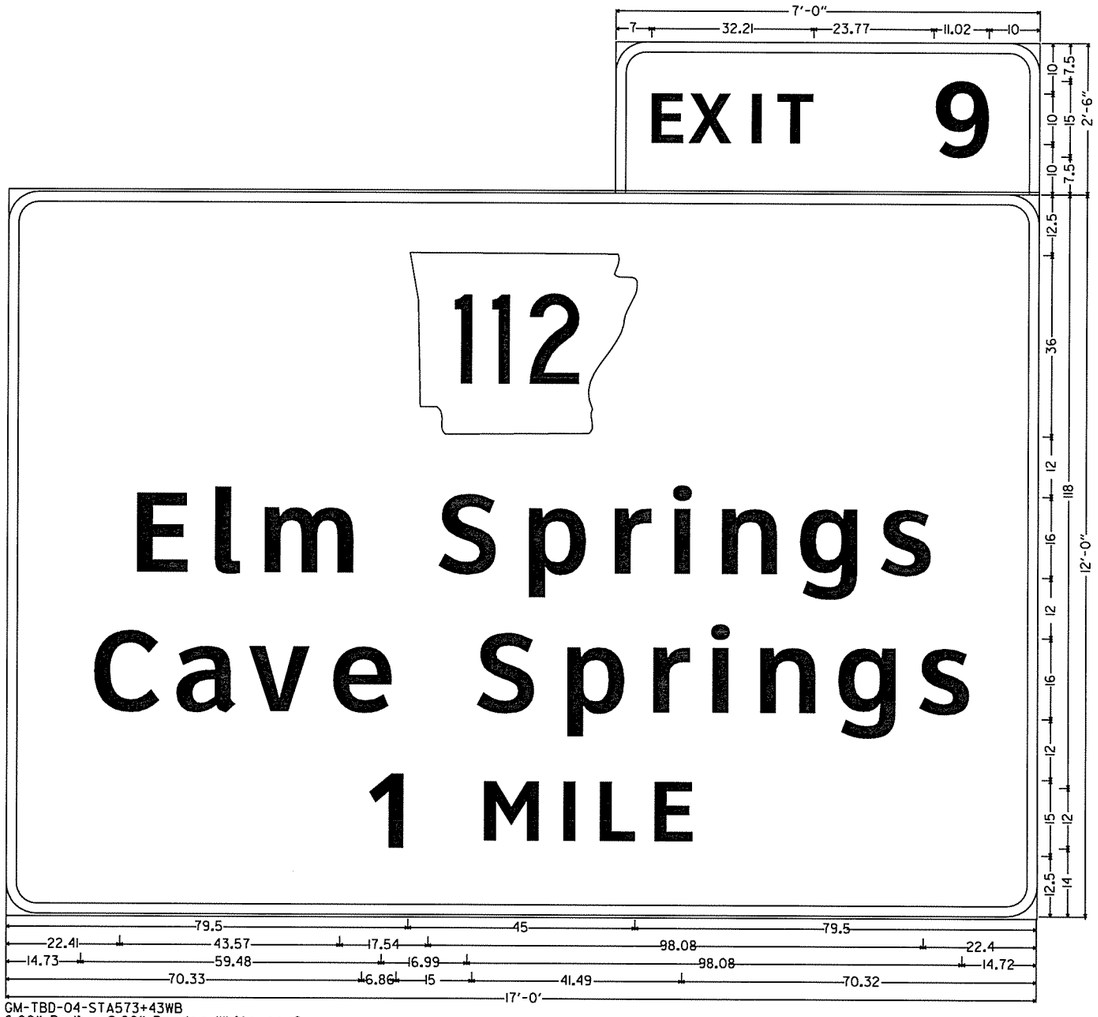
sadonaldson 9/4/2014 7:26:32 AM
WORKSPACE: AHTD
L:\2005\D5911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SP_10-21.dgn

REVISED DATE:

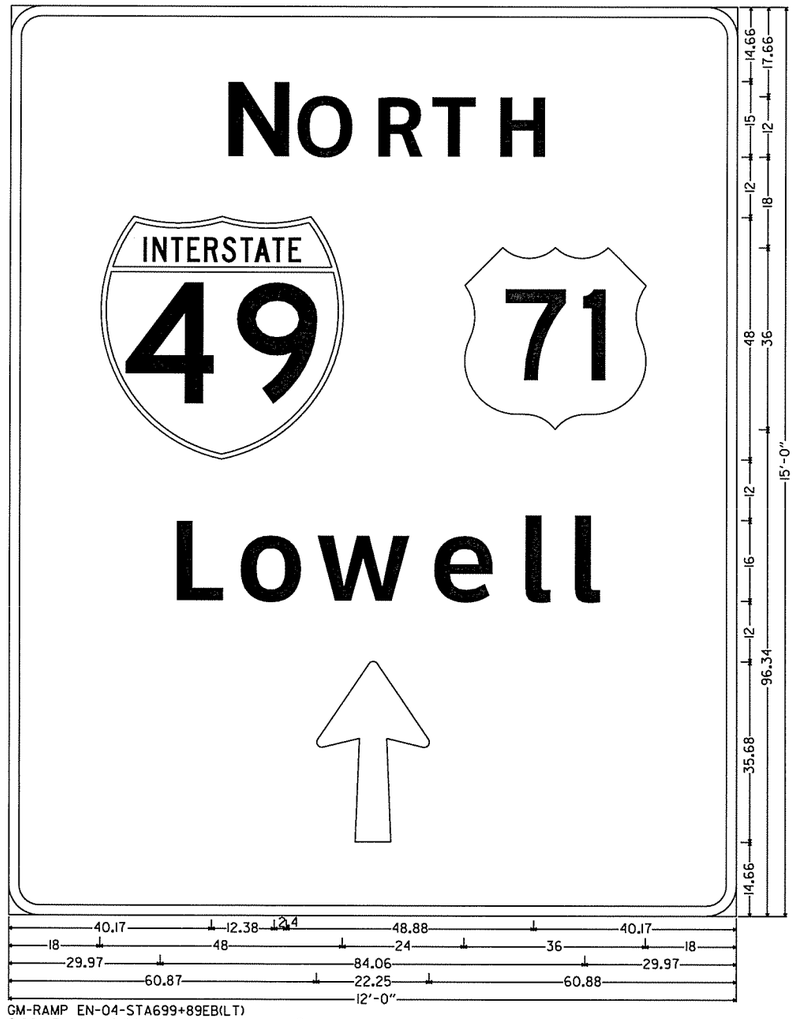
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 148 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14




GM-TBD-04-STA573+43WB
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W specified length; [9] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Elm Springs] ClearviewHwy-5-W;
[Cave Springs] ClearviewHwy-5-W;
[I] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;



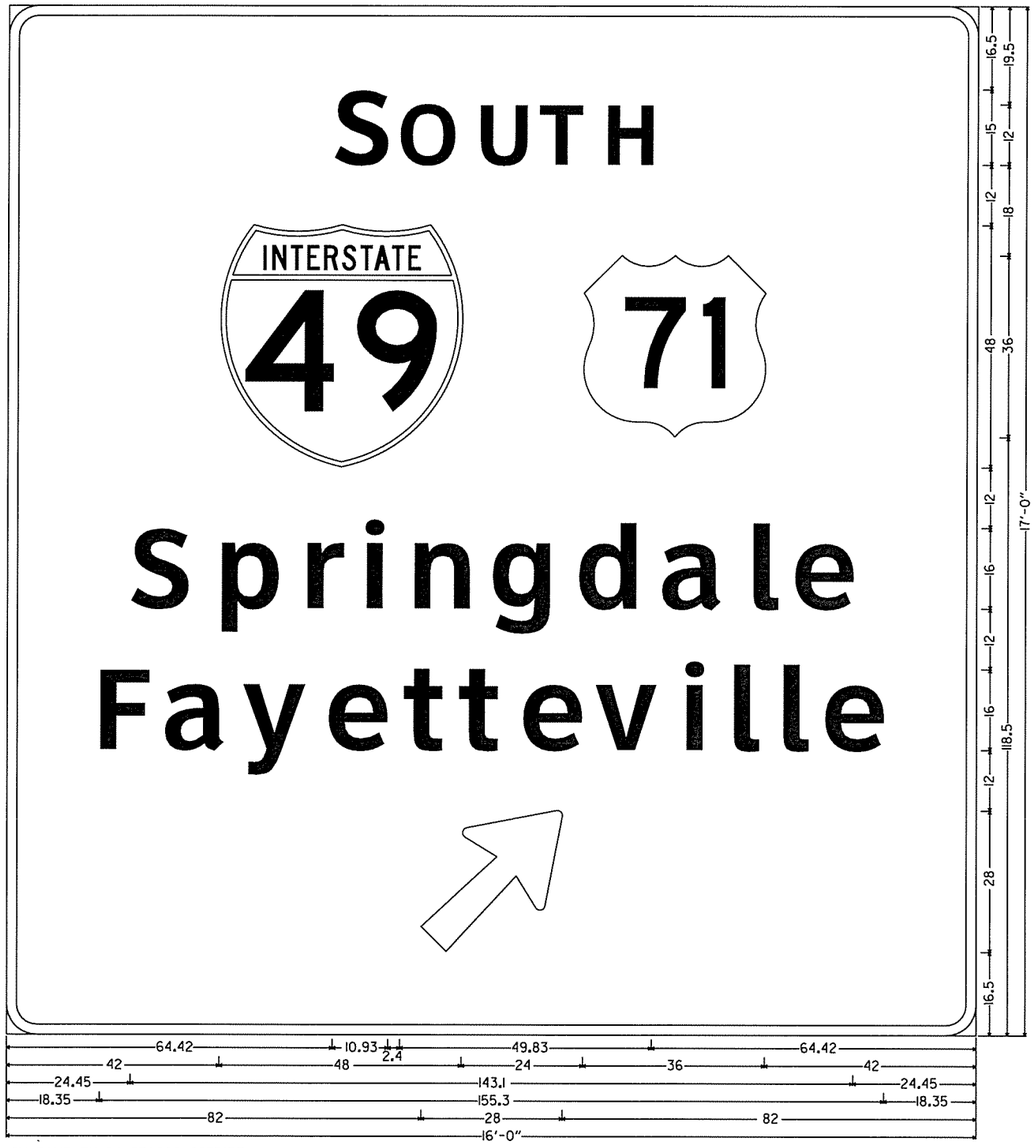

GM-RAMP EN-04-STA699+89EB(LT)
6.00" Radius, 2.00" Border, White on Green;
[N] ClearviewHwy-5-W; [ORTH]
[Lowell] ClearviewHwy-5-W;
Arrow Custom - 35.68" 90°;

sadonaldson 9/4/2014 7:26:32 AM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SP_10-21.dgn
REVISED DATE:

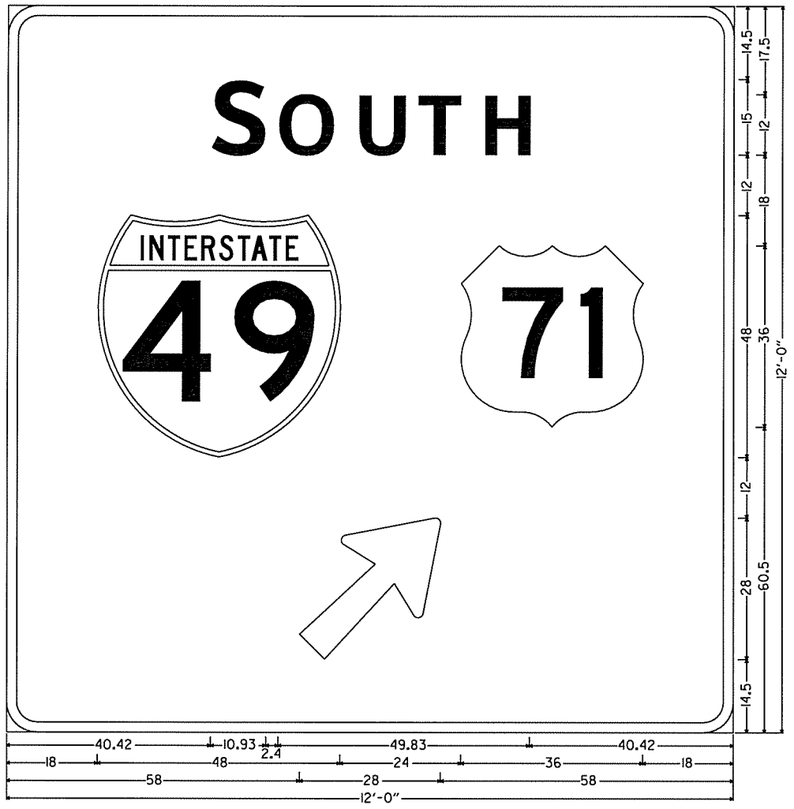
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 149 | 897 |

(2) SIGN PLACEMENT SHEET

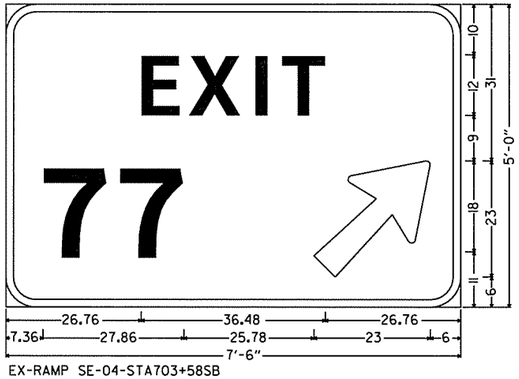
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14




GM-RAMP EN-04-STA699+89EB(RT)
6.00" Radius, 2.00" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
[Springdale] ClearviewHwy-5-W;
[Fayetteville] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;




GM-RAMP ES-04-STA703+75EB
6.00" Radius, 2.00" Border, White on Green;
[S] ClearviewHwy-5-W; [OUTH] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;

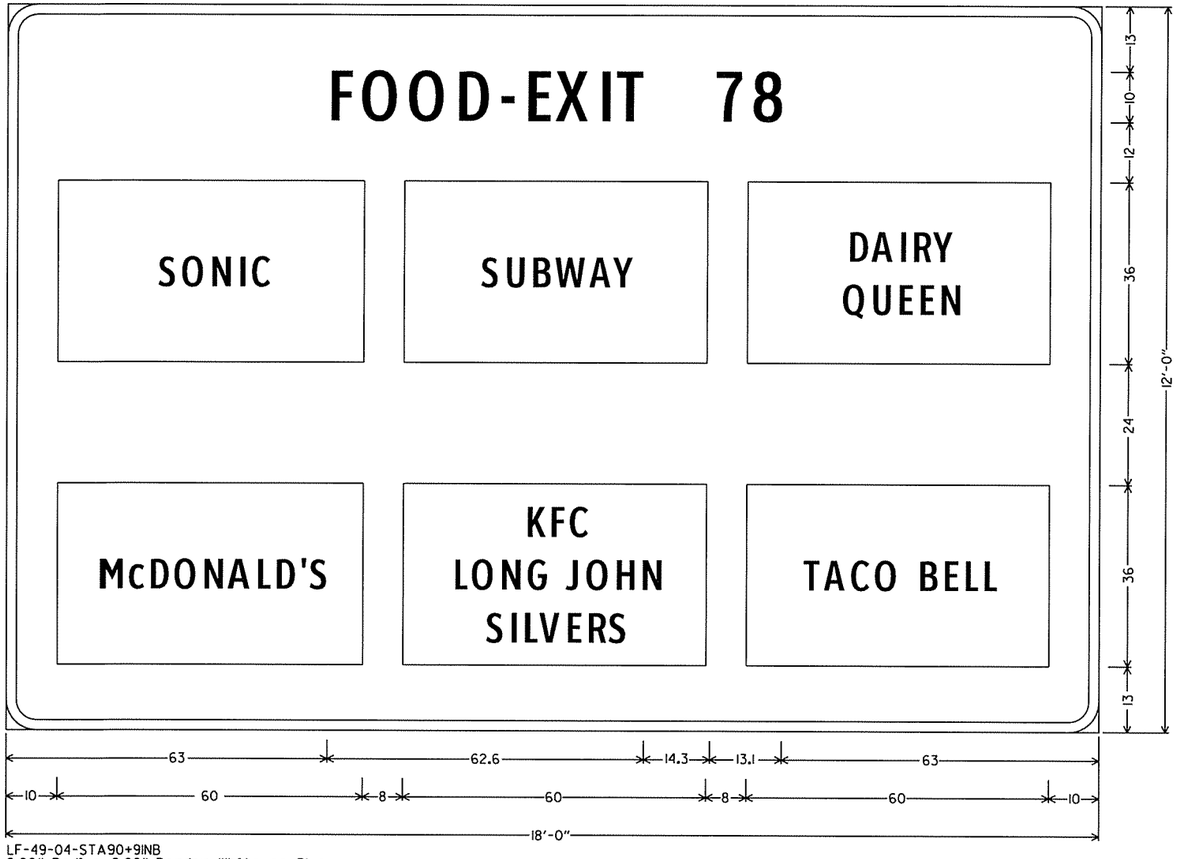



EX-RAMP SE-04-STA703+58SB
6.00" Radius, 1.50" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[77] ClearviewHwy-5-W-R;
Arrow Custom - 29.24" 45°;

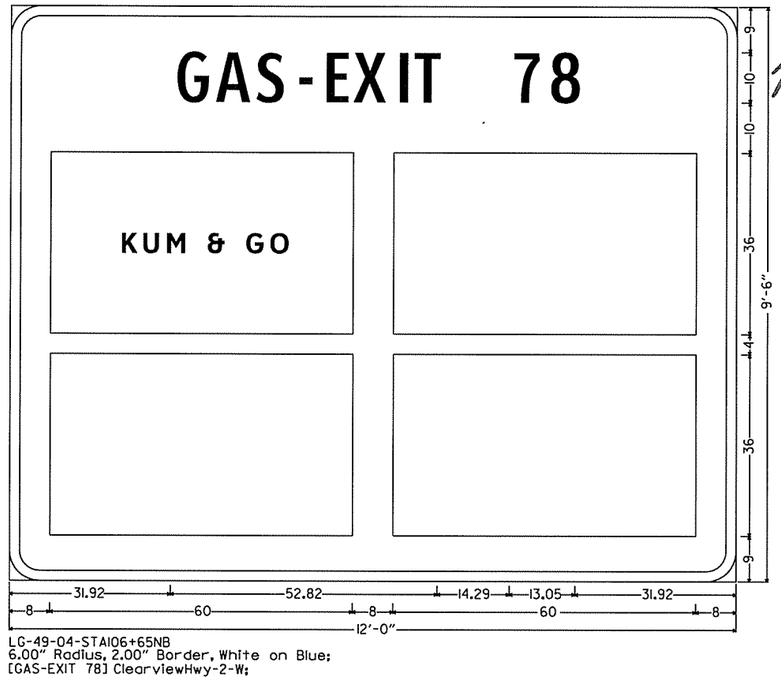
sadonaldson 9/4/2014 7:26:32 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-21.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 150 | 897 |

(2) SIGN PLACEMENT SHEET

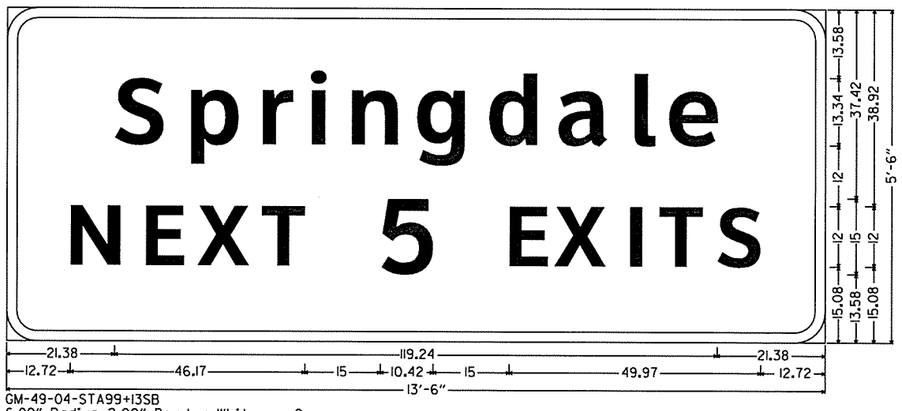



LF-49-04-STA90+91NB
6.00" Radius, 2.00" Border, White on Blue;
[FOOD-EXIT 78] ClearviewHwy-2-W;




LG-49-04-STA106+65NB
6.00" Radius, 2.00" Border, White on Blue;
[GAS-EXIT 78] ClearviewHwy-2-W;

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14




GM-49-04-STA99+13SB
6.00" Radius, 2.00" Border, White on Green;
[Springdale] ClearviewHwy-5-W; [NEXT] ClearviewHwy-5-W; [5] ClearviewHwy-5-W; [EXITS] ClearviewHwy-5-W;

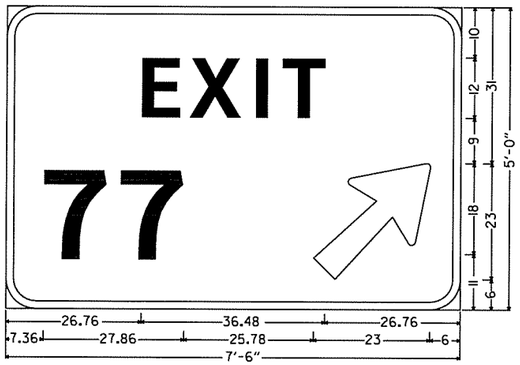
GM-49-04-STA111+81NB
6.00" Radius, 2.00" Border, White on Green;
[Northwest Ar] ClearviewHwy-5-W; [Reg Airport] ClearviewHwy-5-W; [EXIT] ClearviewHwy-5-W; [78] ClearviewHwy-5-W;

sadonaldson 9/4/2014 7:26:32 AM
WORKSPACE: AHTD
L:\2005\059l680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-21.dgn
REVISED DATE:

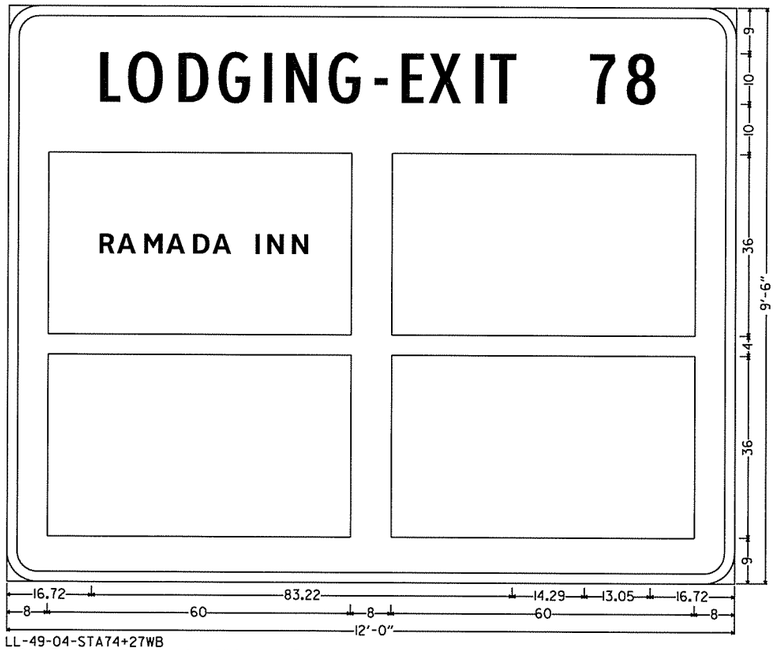
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 151 | 897 |

(2) SIGN PLACEMENT SHEET

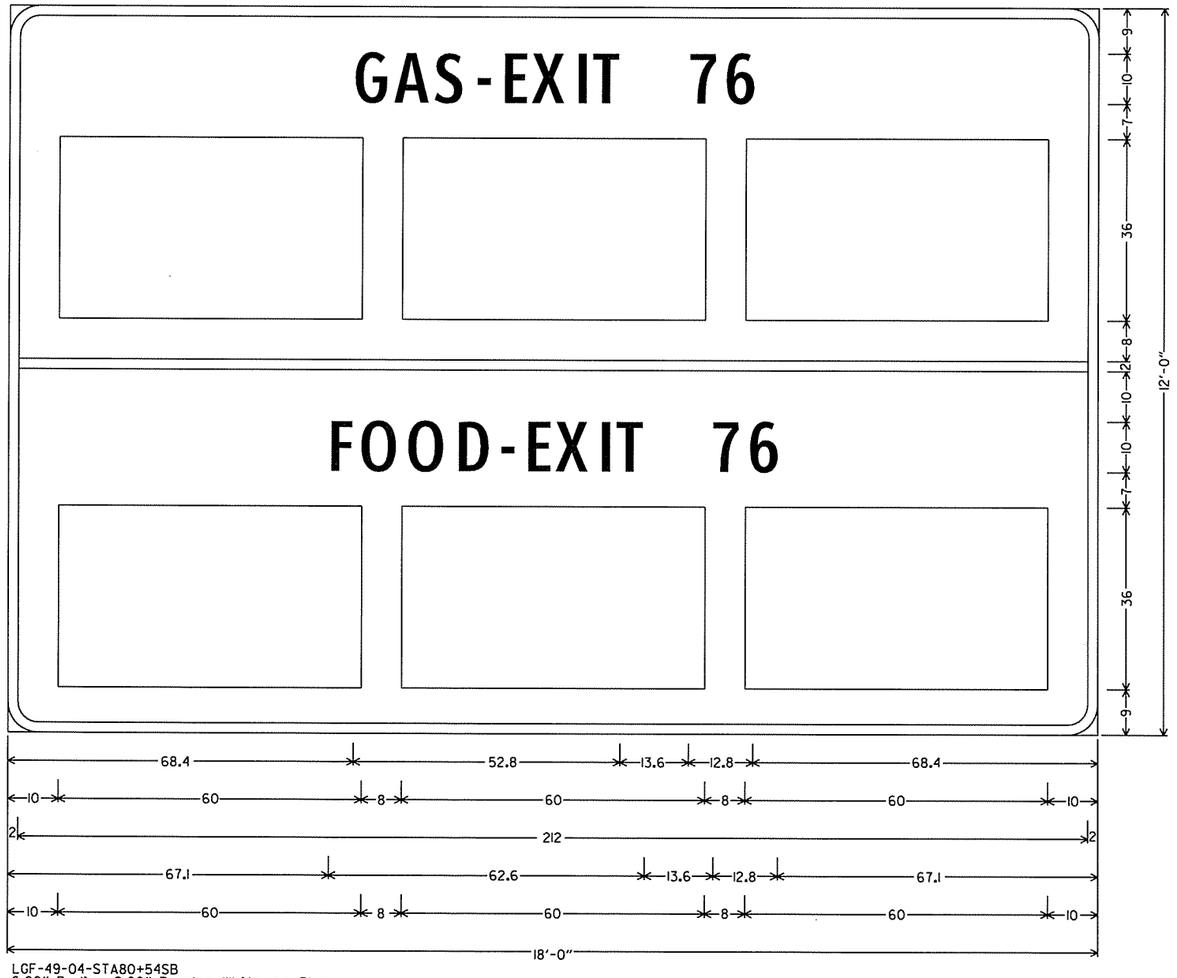
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TIVER
9-5-14




EX-RAMP NW-04-STA746+27NB
6.00" Radius, 1.50" Border, White on Green;
[EXIT] ClearviewHwy-5-W-R;
[77] ClearviewHwy-5-W-R;
Arrow Custom - 29.24" 45°;




LL-49-04-STA74+27WB
6.00" Radius, 2.00" Border, White on Blue;
[LODGING-EXIT 264] ClearviewHwy-2-W;

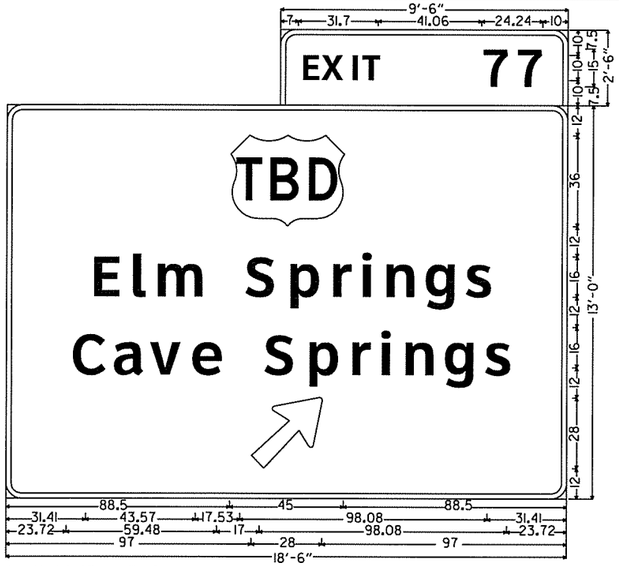



LGF-49-04-STA80+54SB
6.00" Radius, 2.00" Border, White on Blue;
[GAS-EXIT 76] ClearviewHwy-2-W; [FOOD-EXIT 76] ClearviewHwy-2-W;

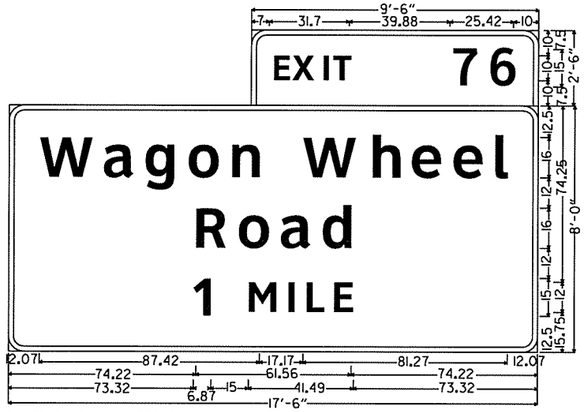
sadonaldson 9/4/2014 7:26:32 AM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-21.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 152 | 897 |

(2) SIGN PLACEMENT SHEET




OH-49-04-STAII8+79SB-A
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [77] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Elm Springs] ClearviewHwy-5-W;
[Siloam Springs] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;




OH-49-04-STAII8+79SB-B
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [76] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Wagon Wheel] ClearviewHwy-5-W;
[Road] ClearviewHwy-5-W;
[1] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;

NOTES:

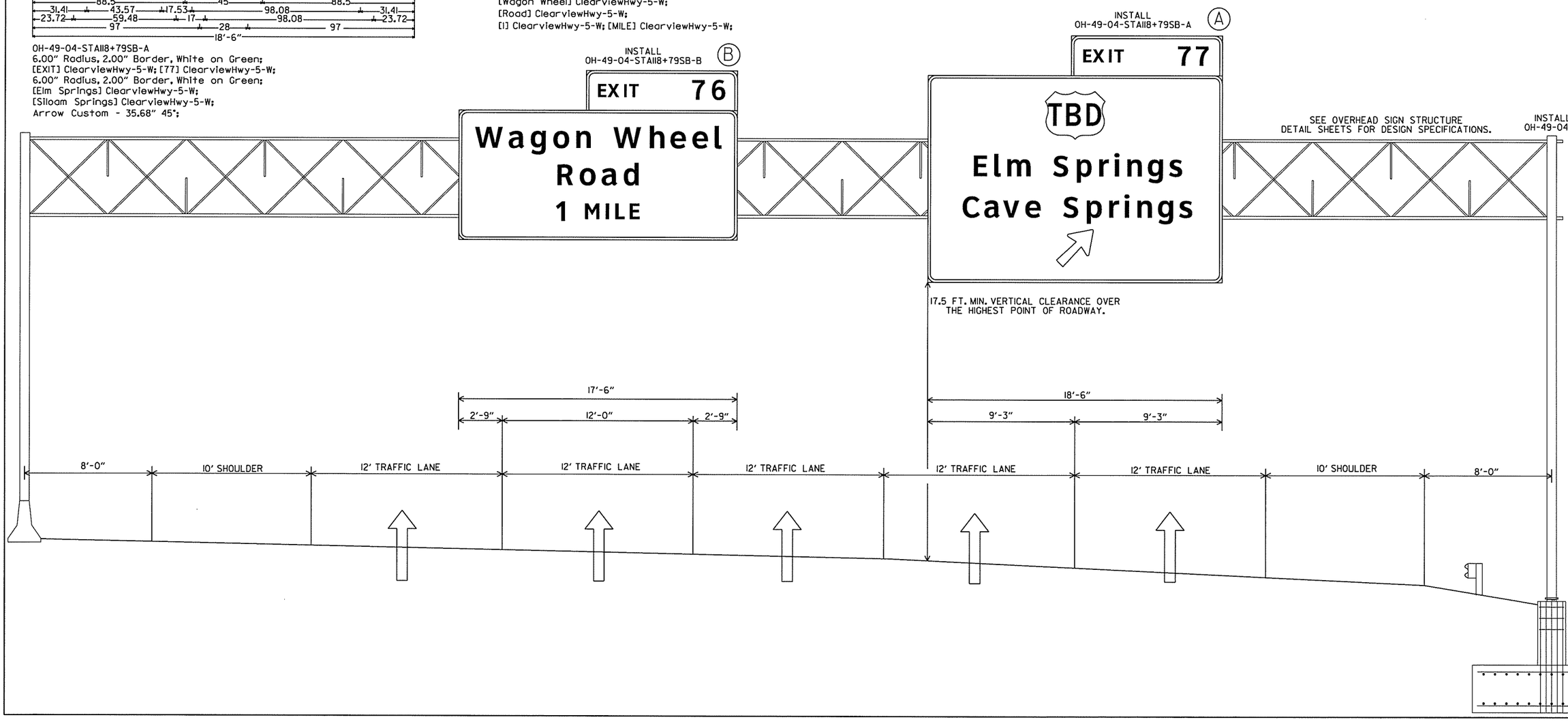
THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

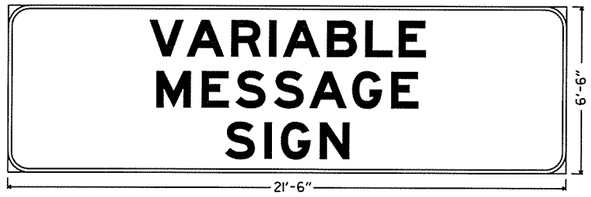
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
MICCI D. TINER
9-5-14

INSTALL OH-49-04-STAII8+79SB-B (B)

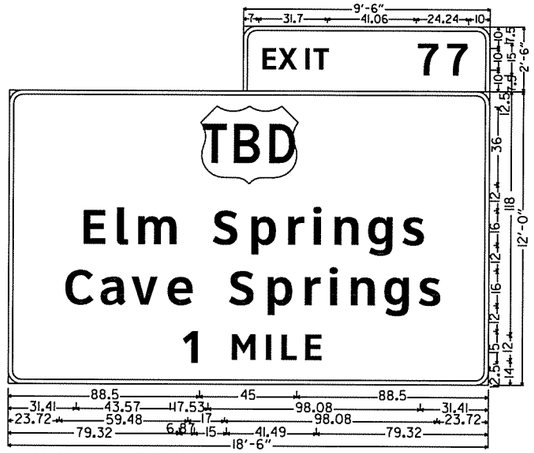
INSTALL OH-49-04-STAII8+79SB-A (A)



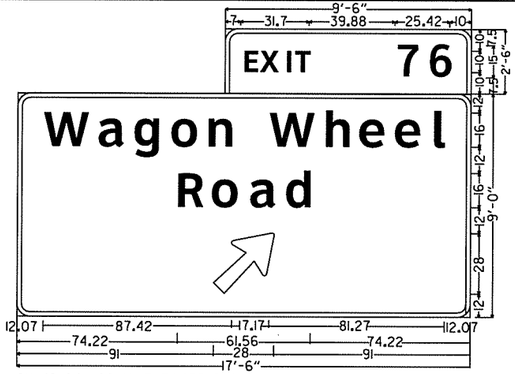

sadonaldson 9/4/2014 7:26:32 AM
WORKSPACE: AHTD
L:\2005\05H680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-2i.dgn
REVISED DATE:




VMS-49-04-LOG MILE 74.855NB-A




OH-49-04-LOG MILE 74.855NB-B
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [77] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Elm Springs] ClearviewHwy-5-W;
[Sloam Springs] ClearviewHwy-5-W;
[I] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;




OH-49-04-LOG MILE 74.855NB-C
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [76] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Wagon Wheel] ClearviewHwy-5-W;
[Road] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 153 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

NOTES:

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

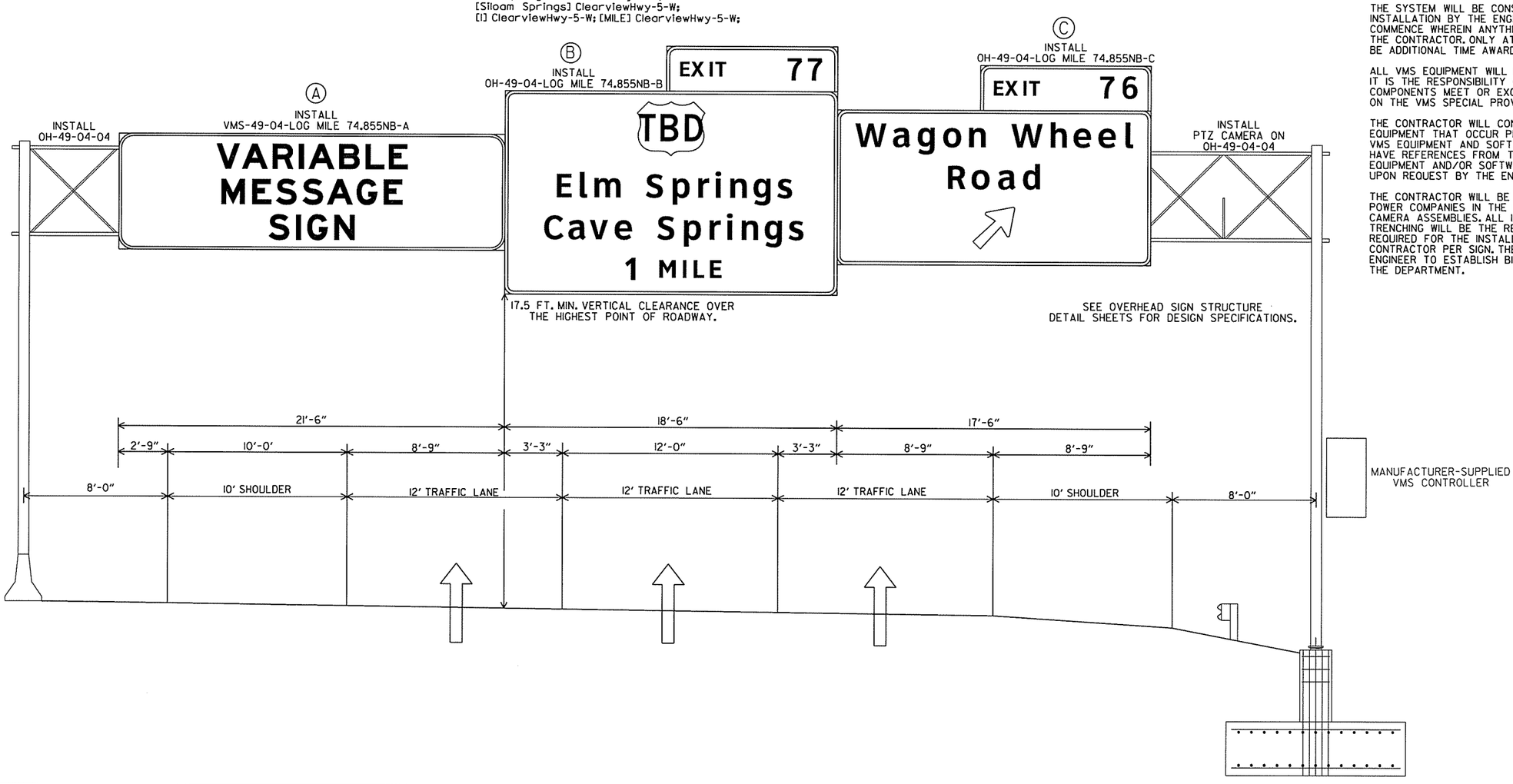
SYSTEM INTER-OPERATION REQUIREMENT: THE CONTRACTOR IS TO GUARANTEE SYSTEM COMPATIBILITY FOR ALL PROJECT COMPONENTS.

THE SYSTEM WILL BE CONSIDERED INSTALLED UPON REVIEW OF THE FINAL INSTALLATION BY THE ENGINEER. AT THIS TIME A ONE MONTH TEST WILL COMMENCE WHEREIN ANYTHING THAT FAILS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ONLY AT THE DISCRETION OF THE ENGINEER WILL THERE BE ADDITIONAL TIME AWARDED FOR REPAIR WORK FOR UNFORESEEN ACCIDENTS.

ALL VMS EQUIPMENT WILL BE TESTED AND VERIFIED PRIOR TO INSTALLATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL COMPONENTS MEET OR EXCEED EXISTING NTCIP REQUIREMENTS AS STATED ON THE VMS SPECIAL PROVISIONS OF THIS JOB.

THE CONTRACTOR WILL CONDUCT ALL FIRMWARE UPGRADES TO ANY NTCIP EQUIPMENT THAT OCCUR PRIOR TO THE COMPLETION OF THIS PROJECT. ALL VMS EQUIPMENT AND SOFTWARE SHALL BE FROM MANUFACTURERS THAT HAVE REFERENCES FROM THREE DOT'S FROM PRIOR JOBS WITH THEIR EQUIPMENT AND/OR SOFTWARE. THIS DOCUMENTATION WILL BE AVAILABLE UPON REQUEST BY THE ENGINEER.

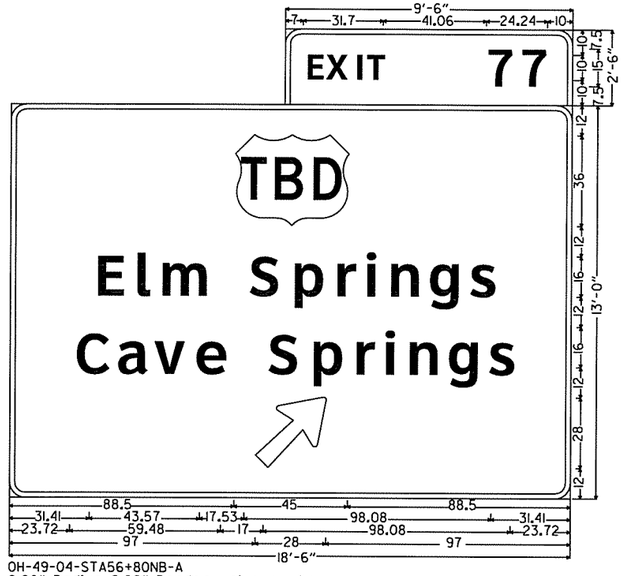
THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION WITH LOCAL POWER COMPANIES IN THE INSTALLATION OF POWER TO ALL VMS AND CAMERA ASSEMBLIES. ALL INSTALLATION NEEDS, CONDUIT, BORING, OR TRENCHING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL COSTS REQUIRED FOR THE INSTALLATION OF POWER WILL BE ABSORBED BY THE CONTRACTOR PER SIGN. THE CONTRACTOR WILL COORDINATE WITH THE ENGINEER TO ESTABLISH BILLING FOR THE MONTHLY ENERGY COST TO THE DEPARTMENT.



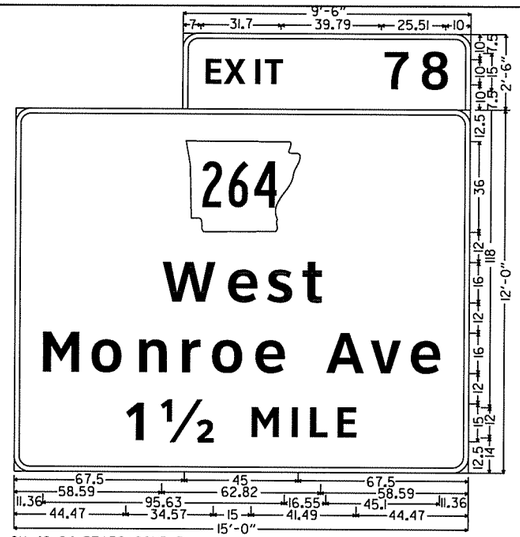

sgdonaldson 9/4/2014 7:26:33 AM
WORKSPACE: AHTD
L:\2005\05916980 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 154 | 897 |

(2) SIGN PLACEMENT SHEET




OH-49-04-STA56+80NB-A
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [77] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Elm Springs] ClearviewHwy-5-W;
[Cave Springs] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;



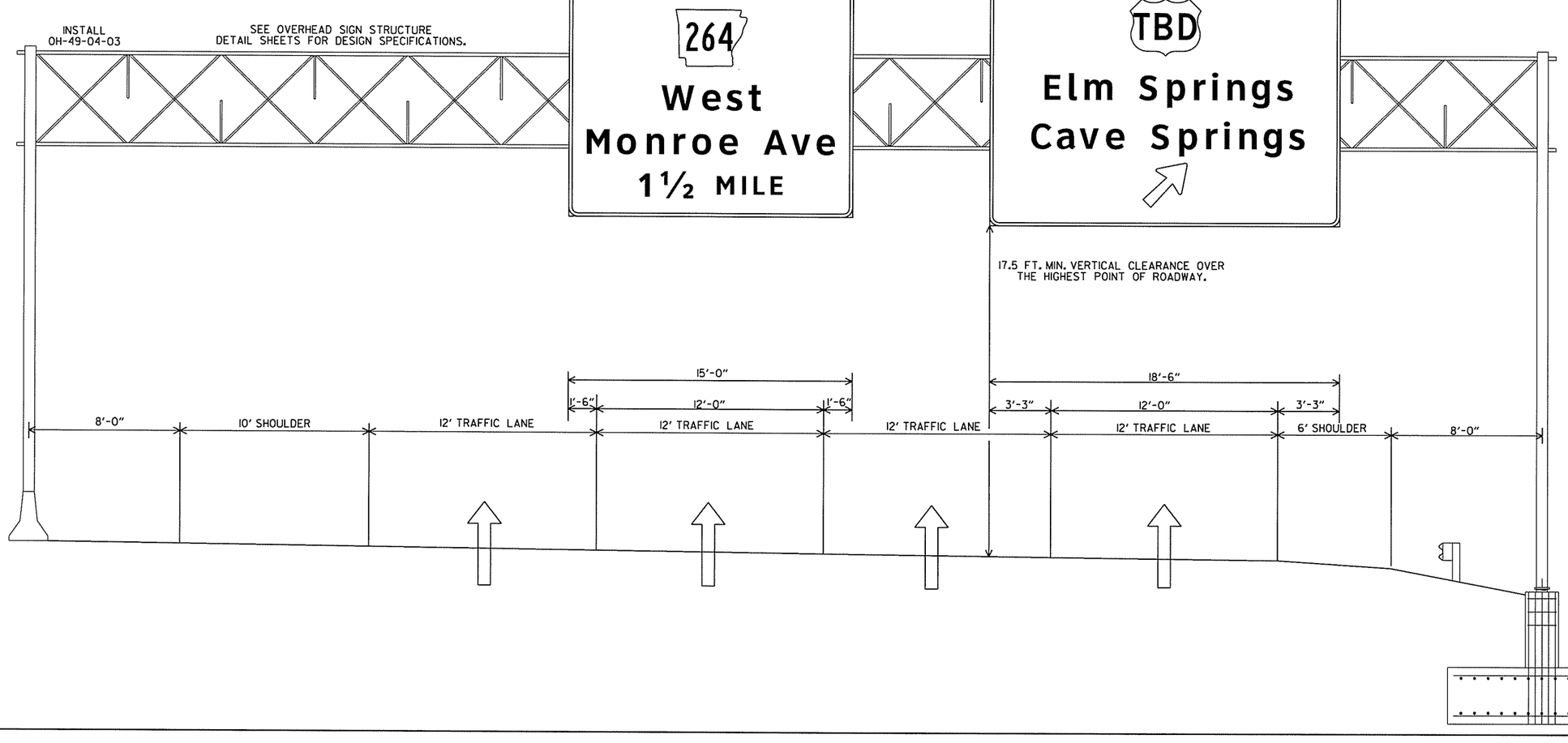

OH-49-04-STA56+80NB-B
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [78] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Monroe Ave] ClearviewHwy-5-W;
[1½] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;
[West] ClearviewHwy-5-W;

NOTES:

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

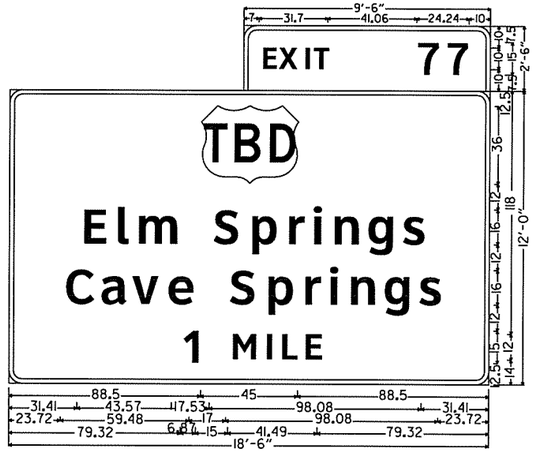
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14



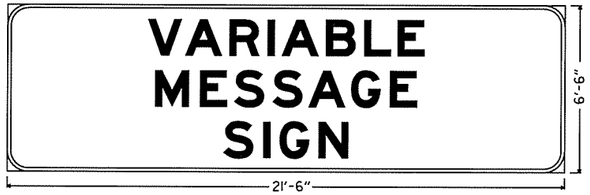

sdonaldson 9/4/2014 7:26:33 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_10-21.dgn

REVISED DATE:

OH-49-04-LOG MILE 78.294SB-C
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [78] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[West] ClearviewHwy-5-W;
[Monroe Ave] ClearviewHwy-5-W;
Arrow Custom - 35.68" 45°;




OH-49-04-LOG MILE 78.294SB-B
6.00" Radius, 2.00" Border, White on Green;
[EXIT] ClearviewHwy-5-W; [77] ClearviewHwy-5-W;
6.00" Radius, 2.00" Border, White on Green;
[Elm Springs] ClearviewHwy-5-W;
[Siloam Springs] ClearviewHwy-5-W;
[I] ClearviewHwy-5-W; [MILE] ClearviewHwy-5-W;

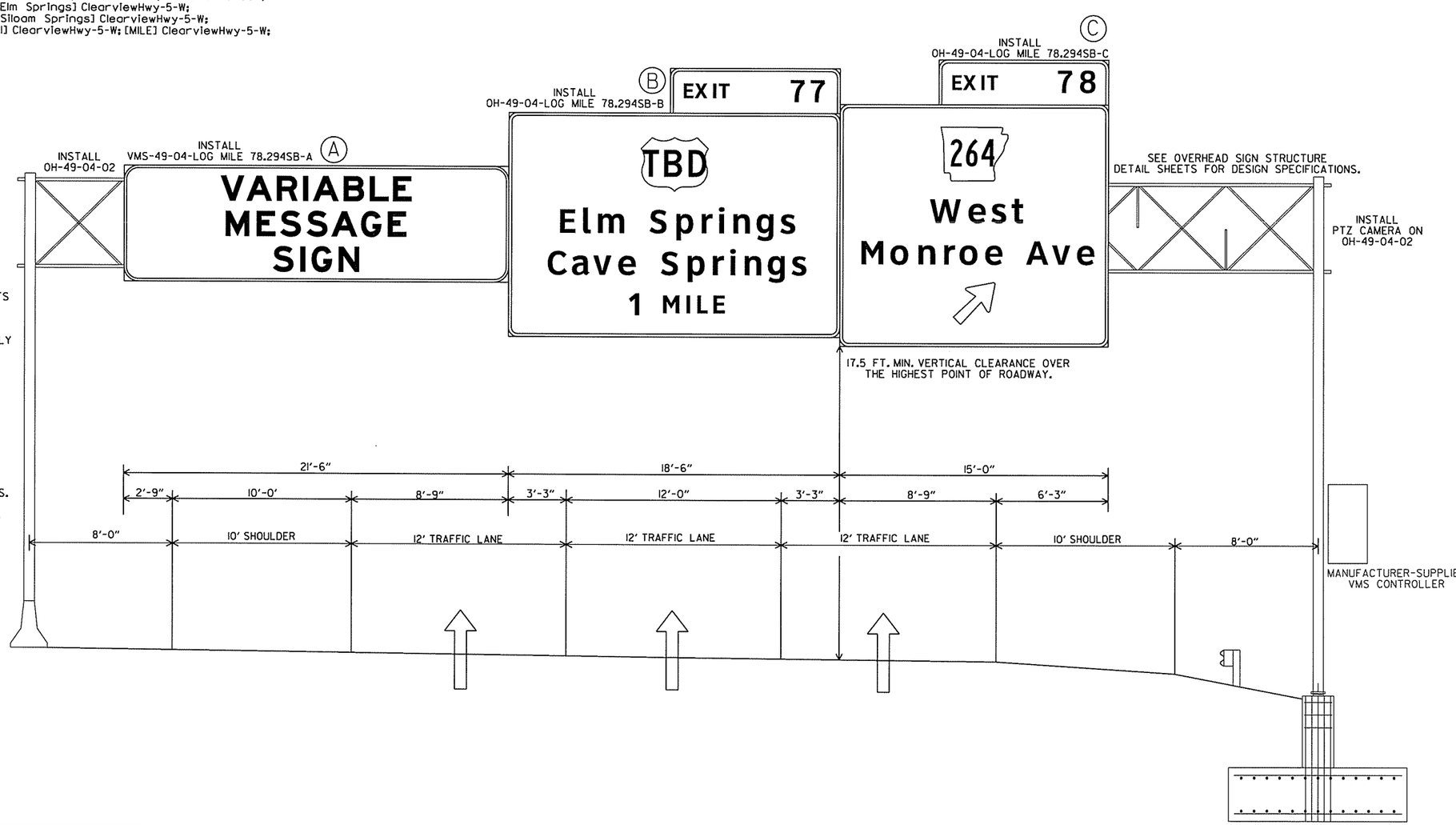



VMS-49-04-LOG MILE 78.294SB-A

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 155 | 897 |

(2) SIGN PLACEMENT SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8141
NICCI D. TINER
9-5-14




NOTES:

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

SINCE THE CONTRACTOR WILL BE REQUIRED TO INSTALL OVERHEAD SIGNS ON STRUCTURES WHICH ARE LOCATED OVER THE ROADWAYS WHICH ARE CURRENTLY OPEN TO TRAFFIC, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE LANE CLOSURES AS A PART OF TRAFFIC CONTROL. PAYMENT FOR PROVIDING LANE CLOSURES WILL BE PAID SUBSIDIARY TO THE PAY ITEM "MAINTENANCE OF TRAFFIC". ALL MAINTENANCE OF TRAFFIC WORK MUST CONFORM WITH THE MUTCD.

SYSTEM INTER-OPERATION REQUIREMENT: THE CONTRACTOR IS TO GUARANTEE SYSTEM COMPATIBILITY FOR ALL PROJECT COMPONENTS.

THE SYSTEM WILL BE CONSIDERED INSTALLED UPON REVIEW OF THE FINAL INSTALLATION BY THE ENGINEER. AT THIS TIME A ONE MONTH TEST WILL COMMENCE WHEREIN ANYTHING THAT FAILS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ONLY AT THE DISCRETION OF THE ENGINEER WILL THERE BE ADDITIONAL TIME AWARDED FOR REPAIR WORK FOR UNFORESEEN ACCIDENTS.

ALL VMS EQUIPMENT WILL BE TESTED AND VERIFIED PRIOR TO INSTALLATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL COMPONENTS MEET OR EXCEED EXISTING NTCIP REQUIREMENTS AS STATED ON THE VMS SPECIAL PROVISIONS OF THIS JOB.

THE CONTRACTOR WILL CONDUCT ALL FIRMWARE UPGRADES TO ANY NTCIP EQUIPMENT THAT OCCUR PRIOR TO THE COMPLETION OF THIS PROJECT. ALL VMS EQUIPMENT AND SOFTWARE SHALL BE FROM MANUFACTURERS THAT HAVE REFERENCES FROM THREE DOT'S FROM PRIOR JOBS WITH THEIR EQUIPMENT AND/OR SOFTWARE. THIS DOCUMENTATION WILL BE AVAILABLE UPON REQUEST BY THE ENGINEER.

THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION WITH LOCAL POWER COMPANIES IN THE INSTALLATION OF POWER TO ALL VMS AND CAMERA ASSEMBLIES. ALL INSTALLATION NEEDS, CONDUIT, BORING, OR TRENCHING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL COSTS REQUIRED FOR THE INSTALLATION OF POWER WILL BE ABSORBED BY THE CONTRACTOR PER SIGN. THE CONTRACTOR WILL COORDINATE WITH THE ENGINEER TO ESTABLISH BILLING FOR THE MONTHLY ENERGY COST TO THE DEPARTMENT.

sadonaldson 9/4/2014 7:26:33 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\VRWY I2 TO I-540\SBG_SP_10-2i.dgn
REVISED DATE:

# MAIN LANES SIGNING QUANTITIES
## SQUARE TUBE POSTS

| SIGN NO./LOCATION | STANDARD ROADSIDE SIGNS TO BE MOUNTED | SQUARE TUBE POST ASSEMBLIES | | | |
|---|---|---|---|---|---|
| | | G-1 | G2-1 | G2-2 | G2-3 |
| | | EACH | EACH | EACH | EACH |
| SS-112R3-04-STA496+57WB(LT) | R5-1, R6-1L, R6-1R, R1-1 | | | | 1 |
| SS-112R3-04-STA496+57WB(RT) | R5-1, R6-1L, R6-1R, R1-1 | | | | 1 |
| SS-112R3-04-STA496+63WB | R5-1, R1-2 | | | | 1 |
| SS-112R3-04-STA498+43WB(LT) | R5-1A | | 1 | | |
| SS-112R3-04-STA498+43WB(RT) | R5-1A | | 1 | | |
| SS-112R3-04-STA502+43WB(RT) | W3-1 | | 1 | | |
| SS-112R3-04-STA502+43WB(LT) | W3-1 | | 1 | | |
| SS-112R3-04-STA511+59WB(RT) | W3-1, W16-2P | | | 1 | |
| SS-112R3-04-STA511+59WB(LT) | W3-1, W16-2P | | | 1 | |
| SS-112R3-04-STA516+08WB | W13-2 | 1 | | | |
| SS-412-04-STA517+02WB | W1-8R | 1 | | | |
| SS-412-04-STA518+62WB | W1-8R | 1 | | | |
| SS-412-04-STA520+22WB | W1-8R | 1 | | | |
| SS-412-04-STA521+82WB | W1-8R | 1 | | | |
| SS-412-04-STA531+37WB | W1-8R | 1 | | | |
| SS-412-04-STA533+37WB | W1-8R | 1 | | | |
| SS-412-04-STA535+37WB | W1-8R | 1 | | | |
| SS-412-04-STA537+37WB | W1-8R | 1 | | | |
| SS-412-04-STA537+97EB | R2-1 | 1 | | | |
| SS-412-04-STA539+37WB | W1-8R | 1 | | | |
| SS-412-04-STA550+00WB(RT) | W4-2L | | 1 | | |
| SS-412-04-STA550+00WB(LT) | W4-2L | | 1 | | |
| SS-412-04-STA555+00WB(RT) | W9-2TR | | 1 | | |
| SS-412-04-STA555+00WB(LT) | W9-2TR | | 1 | | |
| SS-412-04-STA560+00WB(RT) | R2-1 | 1 | | | |
| SS-412-04-STA560+00WB(LT) | R2-1 | 1 | | | |
| SS-412-04-STA566+40WB(LT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA566+40WB(RT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA574+51EB | W8-13 | | 1 | | |
| SS-412-04-STA579+00WB(RT) | W3-5 | | 1 | | |
| SS-412-04-STA579+00WB(LT) | W3-5 | | 1 | | |
| SS-412-04-STA590+41EB(RT) | W19-3, W16-3aP | | | 1 | |
| SS-412-04-STA590+41EB(LT) | W19-3, W16-3aP | | | 1 | |
| SS-412-04-STA592+00WB(RT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA592+00WB(LT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA599+29WB | W8-13 | | 1 | | |
| SS-412-04-STA612+20EB(RT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA612+20EB(LT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA619+20WB(RT) | W19-3, W16-3aP | | | 1 | |
| SS-412-04-STA619+20WB(LT) | W19-3, W16-3aP | | | 1 | |
| SS-412-04-STA629+00EB(RT) | W3-5 | | 1 | | |
| SS-412-04-STA629+00EB(LT) | W3-5 | | 1 | | |
| SS-412-04-STA641+60EB(RT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA641+60EB(LT) | W9-1L, W16-3aP | | | 1 | |
| SS-412-04-STA649+00EB(RT) | R2-1 | 1 | | | |
| SS-412-04-STA649+00EB(LT) | R2-1 | 1 | | | |
| SS-412-04-STA654+00EB(RT) | W9-2TR | | 1 | | |
| SS-412-04-STA654+00EB(LT) | W9-2TR | | 1 | | |
| SS-412-04-STA664+00EB(RT) | W4-2L | | 1 | | |
| SS-412-04-STA664+00EB(LT) | W4-2L | | 1 | | |
| SS-412-04-STA669+00EB | W1-8R | 1 | | | |
| SS-412-04-STA671+00EB | W1-8R | 1 | | | |
| SS-412-04-STA673+00EB | W1-8R | 1 | | | |
| SS-412-04-STA675+00EB | W1-8R | 1 | | | |
| SS-412-04-STA677+00EB | W1-8R | 1 | | | |
| SS-412-04-STA680+92WB | R2-1 | 1 | | | |
| SS-412-04-STA687+00EB | W1-8R | 1 | | | |
| SS-412-04-STA688+60EB | W1-8R | 1 | | | |
| SS-412-04-STA690+20EB | W1-8R | 1 | | | |
| SS-412-04-STA690+93EB | W8-13 | | 1 | | |
| SS-412-04-STA691+80EB | W1-8R | 1 | | | |
| SS-412-04-STA693+40EB | W1-8R | 1 | | | |
| SS-RAMP ES-04-STA702+00EB | W13-2 | 1 | | | |
| SS-412-04-STA705+24WB | W8-13 | | 1 | | |
| SS-RAMP ES-04-STA705+62EB | W1-8R | 1 | | | |
| SS-RAMP ES-04-STA707+22EB | W1-8R | 1 | | | |
| SS-RAMP ES-04-STA708+82EB | W1-8R | 1 | | | |
| SS-RAMP ES-04-STA710+42EB | W1-8R | 1 | | | |

| SIGN NO./LOCATION | STANDARD ROADSIDE SIGNS TO BE MOUNTED | SQUARE TUBE POST ASSEMBLIES | | | |
|---|---|---|---|---|---|
| | | G-1 | G2-1 | G2-2 | G2-3 |
| | | EACH | EACH | EACH | EACH |
| SS-RAMP ES-04-STA712+02EB | W1-8R | 1 | | | |
| SS-RAMP EN-04-STA713+73EB | W8-13 | | 1 | | |
| SS-RAMP NW-04-STA712+80NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA714+40NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA716+00NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA717+60NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA718+46NB | W4-1R | | 1 | | |
| SS-RAMP NW-04-STA719+20NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA720+80NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA722+40NB | W1-8L | 1 | | | |
| SS-RAMP SW-04-STA718+33SB | W4-1L | | 1 | | |
| SS-RAMP EN-04-STA728+76EB | W8-13 | | 1 | | |
| SS-RAMP EN-04-STA729+56EB | W1-8L | 1 | | | |
| SS-RAMP EN-04-STA731+16EB | W1-8L | 1 | | | |
| SS-RAMP EN-04-STA732+76EB | W1-8L | 1 | | | |
| SS-RAMP EN-04-STA734+36EB | W1-8L | 1 | | | |
| SS-RAMP EN-04-STA735+96EB | W1-8L | 1 | | | |
| SS-RAMP EN-04-STA737+56EB | W1-8L | 1 | | | |
| SS-49-04-STA110+58NB | W4-1R | | 1 | | |
| SS-RAMP SE-04-STA703+18SB | W13-2 | 1 | | | |
| SS-RAMP SE-04-STA703+64SB | W8-13 | | 1 | | |
| SS-RAMP SE-04-STA704+00SB(RT) | W4-2L | | 1 | | |
| SS-RAMP SE-04-STA704+00SB(LT) | W4-2L | | 1 | | |
| SS-49-04-STA138+00NB | R2-1, R2-2 | 1 | | | |
| SS-49-04-STA70+06SB | W4-1R | | 1 | | |
| SS-RAMP NW-04-STA724+00NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA725+60NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA727+20NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA728+80NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA730+40NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA731+93NB | W8-13 | | 1 | | |
| SS-RAMP NW-04-STA732+00NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA733+60NB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA735+20NB | W1-8L | 1 | | | |
| SS-RAMP ES-04-STA713+62EB | W1-8L | 1 | | | |
| SS-RAMP ES-04-STA715+22EB | W1-8L | 1 | | | |
| SS-RAMP ES-04-STA716+82EB | W1-8L | 1 | | | |
| SS-RAMP NW-04-STA746+62NB | W13-2 | 1 | | | |
| | | | | | |
| TOTALS: | | 59 | 30 | 14 | 3 |

## STANDARD ROADSIDE SIGNS
## SHEET ALUMINUM 0.100" THICKNESS
## (5 SQ. FT. OR LESS)

| SIGN NO. | SIZE OF SIGN | UNIT AREA (SQ. FT.) | QUANTITY REQUIRED | TOTAL SIGN AREA (SQ. FT.) | LEGEND/BACKGROUND |
|---|---|---|---|---|---|
| M1-4 | 30" x 24" | 5.00 | 9 | 45.00 | BLACK/WHITE |
| M1-5 | 30" x 24" | 5.00 | 7 | 35.00 | BLACK/WHITE |
| M2-1 | 21" x 15" | 2.19 | 2 | 4.38 | BLACK/WHITE |
| M3-1 | 24" x 12" | 2.00 | 3 | 6.00 | BLACK/WHITE |
| M3-2 | 24" x 12" | 2.00 | 4 | 8.00 | BLACK/WHITE |
| M3-3 | 24" x 12" | 2.00 | 3 | 6.00 | BLACK/WHITE |
| M3-4 | 24" x 12" | 2.00 | 4 | 8.00 | BLACK/WHITE |
| M4-5 | 24" x 12" | 2.00 | 4 | 8.00 | BLACK/WHITE |
| M5-1L | 21" x 15" | 2.19 | 3 | 6.56 | BLACK/WHITE |
| M5-1R | 21" x 15" | 2.19 | 1 | 2.19 | BLACK/WHITE |
| M6-1L | 21" x 15" | 2.19 | 1 | 2.19 | BLACK/WHITE |
| M6-1R | 21" x 15" | 2.19 | 1 | 2.19 | BLACK/WHITE |
| M6-3 | 21" x 15" | 2.19 | 4 | 8.75 | BLACK/WHITE |
| OM-3L | 12" x 36" | 3.00 | 18 | 54.00 | BLACK/YELLOW |
| OM-3R | 12" x 36" | 3.00 | 18 | 54.00 | BLACK/YELLOW |
| TOTAL 0.100" THICKNESS: | | | | 250.26 | |

## STANDARD ROADSIDE SIGNS
## SHEET ALUMINUM 0.125" THICKNESS
## (GREATER THAN 5 SQ. FT.)

| SIGN NO. | SIZE OF SIGN | UNIT AREA (SQ. FT.) | QUANTITY REQUIRED | TOTAL SIGN AREA (SQ. FT.) | LEGEND/BACKGROUND |
|---|---|---|---|---|---|
| R1-1 | 36" x 36" | 9.00 | 2 | 18.00 | WHITE/RED |
| R1-1 | 60" x 60" | 25.00 | 2 | 50.00 | WHITE/RED |
| R1-2 | 60" x 60" x 60" | 10.83 | 1 | 10.83 | RED/WHITE |
| R2-1 | 36" x 48" | 12.00 | 6 | 72.00 | BLACK/WHITE |
| R2-1 | 48" x 60" | 20.00 | 1 | 20.00 | BLACK/WHITE |
| R2-2 | 48" x 48" | 16.00 | 1 | 16.00 | BLACK/WHITE |
| R5-1 | 36" x 36" | 9.00 | 5 | 45.00 | WHITE/RED |
| R5-1A | 36" x 24" | 6.00 | 2 | 12.00 | WHITE/RED |
| R6-1L | 36" x 12" | 3.00 | 2 | 6.00 | BLACK/WHITE |
| R6-1R | 36" x 12" | 3.00 | 2 | 6.00 | BLACK/WHITE |
| W1-7 | 48" x 24" | 8.00 | 1 | 8.00 | BLACK/YELLOW |
| W1-8R | 30" x 36" | 7.50 | 27 | 202.50 | BLACK/YELLOW |
| W1-8L | 30" x 36" | 7.50 | 21 | 157.50 | BLACK/YELLOW |
| W3-1 | 48" x 48" | 16.00 | 4 | 64.00 | BLACK/YELLOW |
| W3-5 | 48" x 48" | 16.00 | 4 | 64.00 | BLACK/YELLOW |
| W4-1L | 48" x 48" | 16.00 | 1 | 16.00 | BLACK/YELLOW |
| W4-1R | 48" x 48" | 16.00 | 3 | 48.00 | BLACK/YELLOW |
| W4-2L | 48" x 48" | 16.00 | 6 | 96.00 | BLACK/YELLOW |
| W8-13 | 36" x 36" | 9.00 | 8 | 72.00 | BLACK/YELLOW |
| W8-13 | 48" x 48" | 16.00 | 8 | 128.00 | BLACK/YELLOW |
| W9-1L | 48" x 48" | 16.00 | 8 | 128.00 | BLACK/YELLOW |
| W9-2TR | 48" x 48" | 16.00 | 4 | 64.00 | BLACK/YELLOW |
| W19-3 | 48" x 48" | 16.00 | 4 | 64.00 | BLACK/YELLOW |
| W13-2 | 24" x 30" | 5.00 | 4 | 20.00 | BLACK/YELLOW |
| W16-2P | 24" x 18" | 3.00 | 2 | 6.00 | BLACK/YELLOW |
| W16-3aP | 30" x 12" | 2.50 | 12 | 30.00 | BLACK/YELLOW |
| TOTAL 0.125" THICKNESS: | | | | 1423.83 | |

SIGN QUANTITIES

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 156 | 897 |

(2) SIGN QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

sadonaldson 9/4/2014 7:21:56 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\VRWY I12 TO I-540\SBG_SP_22.DGN
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 157 | 897 |

(2) SIGN QUANTITIES

# STANDARD SIGN QUANTITIES
# U-CHANNEL POSTS

| SIGN NO./ LOCATION | STANDARD ROADSIDE SIGNS TO BE MOUNTED | U-CHANNEL POST ASSEMBLIES | | | | |
|---|---|---|---|---|---|---|
| | | U-1 | U-2 | U-2(1) | U-2(2) | U-2(6) |
| | | EACH | EACH | EACH | EACH | EACH |
| SS-112-04-STA26+41SB | M3-2, M1-4, M6-1L, M3-3, M1-5, M6-3, M4-5, M3-4, M1-4, M6-3 | | | | 1 | |
| SS-112-04-STA27+95NB | M3-1, M1-5, M6-3, M3-2, M1-4, M6-1R | | | 1 | | |
| SS-112-04-STA26+03NB | W8-13 | 1 | | | | |
| SS-112-04-STA20+97NB | OM-3L | 1 | | | | |
| SS-112-04-STA21+03NB | OM-3R | 1 | | | | |
| SS-112-04-STA18+97SB | OM-3R | 1 | | | | |
| SS-112-04-STA19+03SB | OM-3L | 1 | | | | |
| SS-112-04-STA13+97SB | W8-13 | 1 | | | | |
| SS-112-04-STA11+94SB | M4-5, M1-4 | 1 | | | | |
| SS-112R4-04-STA499+11WB | M1-5, W1-7 | | | | | 1 |
| SS-112R1-04-STA500+42WB(RT) | R5-1 | 1 | | | | |
| SS-112R1-04-STA500+42WB(LT) | R5-1 | 1 | | | | |
| SS-231-04-STA15+00SB | W8-13 | 1 | | | | |
| SS-231-04-STA19+00SB(RT) | OM-3R | 1 | | | | |
| SS-231-04-STA19+00SB(LT) | OM-3L | 1 | | | | |
| SS-231-04-STA20+96NB(LT) | OM-3L | 1 | | | | |
| SS-231-04-STA20+96NB(RT) | OM-3R | 1 | | | | |
| SS-231-04-STA24+00NB | W8-13 | 1 | | | | |
| SS-412-04-STA579+51EB(LT) | OM-3L | 1 | | | | |
| SS-412-04-STA579+51EB(RT) | OM-3R | 1 | | | | |
| SS-412-04-STA589+50WB(LT) | OM-3L | 1 | | | | |
| SS-412-04-STA589+50WB(RT) | OM-3R | 1 | | | | |
| SS-412-04-STA592+48EB | OM-3R | 1 | | | | |
| SS-412-04-STA592+39EB | OM-3L | 1 | | | | |
| SS-412-04-STA594+39WB | OM-3L | 1 | | | | |
| SS-412-04-STA594+29WB | OM-3R | 1 | | | | |
| SS-SPRING-04-STA39+64EB | R1-1 | | 1 | | | |
| SS-PUPPY-04-STA20+49WB | R1-1 | | 1 | | | |
| SS-236-04-STA13+91SB | W8-13 | 1 | | | | |
| SS-236-04-STA18+67SB | OM-3L | 1 | | | | |
| SS-236-04-STA18+91SB | OM-3R | 1 | | | | |
| SS-236-04-STA21+19NB | OM-3R | 1 | | | | |
| SS-236-04-STA21+40NB | OM-3L | 1 | | | | |
| SS-236-04-STA26+19NB | W8-13 | 1 | | | | |
| SS-61-04-STA15+00SB | W8-13 | 1 | | | | |
| SS-61-04-STA18+90SB | OM-3L | 1 | | | | |
| SS-61-04-STA18+99SB | OM-3R | 1 | | | | |
| SS-61-04-STA20+99NB | OM-3R | 1 | | | | |
| SS-61-04-STA21+09NB | OM-3L | 1 | | | | |
| SS-61-04-STA25+00NB | W8-13 | 1 | | | | |
| SS-RAMP EN-04-STA695+93EB(RT) | OM-3R | 1 | | | | |
| SS-RAMP EN-04-STA695+93EB(LT) | OM-3L | 1 | | | | |
| SS-412-04-STA700+16WB | OM-3L | 1 | | | | |
| SS-412-04-STA700+24WB | OM-3R | 1 | | | | |
| SS-RAMP EN-04-STA718+73EB(RT) | OM-3R | 1 | | | | |
| SS-RAMP EN-04-STA718+73EB(LT) | OM-3L | 1 | | | | |
| SS-RAMP SE-04-STA708+64SB | OM-3R | 1 | | | | |
| SS-RAMP SE-04-STA708+91SB | OM-3L | 1 | | | | |
| SS-RAMP EN-04-STA736+55EB | OM-3L | 1 | | | | |
| SS-RAMP EN-04-STA736+89EB | OM-3R | 1 | | | | |
| SS-RAMP NW-04-STA726+93NB(RT) | OM-3R | 1 | | | | |
| SS-RAMP NW-04-STA726+93NB(LT) | OM-3L | 1 | | | | |
| | | | | | | |
| TOTALS: | | 47 | 2 | 1 | 1 | 1 |

# SIGNING SUMMARY OF QUANTITIES

| ITEM NUMBER | ITEM | TOTAL | UNIT |
|---|---|---|---|
| SP | ANTENNA SUPPORT (10' HT.) WITH CAMERA | 2 | EACH |
| SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G-1) | 59 | EACH |
| SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-1) | 30 | EACH |
| SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-2) | 14 | EACH |
| SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-3) | 3 | EACH |
| SP | OVERHEAD VMS ASSEMBLY | 2 | EACH |
| SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-01) | 1 | EACH |
| SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-02) | 1 | EACH |
| SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-03) | 1 | EACH |
| SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-04) | 1 | EACH |
| SP & 725 | GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND) | 2049 | SQ. FT. |
| SP & 725 | GUIDE SIGN-OVERHEAD MOUNTED (DEMOUNTABLE LEGEND) | 1605 | SQ. FT. |
| SP & 726 | STANDARD SIGN | 1674 | SQ. FT. |
| SP & 727 | EXIT NUMBER PANEL (TYPE A) | 225 | SQ. FT. |
| SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-1) | 47 | EACH |
| SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2) | 2 | EACH |
| SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2(1)) | 1 | EACH |
| SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2(2)) | 1 | EACH |
| SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2(6)) | 1 | EACH |
| 730 | BREAKAWAY SIGN SUPPORT (TYPE G-2) | 10572 | POUND |
| 730 | BREAKAWAY SIGN SUPPORT (TYPE G2-4) | 783 | POUND |
| 730 | BREAKAWAY SIGN SUPPORT (TYPE G2-5) | 911 | POUND |
| 730 | BREAKAWAY SIGN SUPPORT (TYPE G2-6) | 282 | POUND |
| 730 | BREAKAWAY SIGN SUPPORT (TYPE G-3) | 2183 | POUND |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8141
NICCI D. TINER
9-5-14

# MAIN LANES SIGNING QUANTITIES
# OVERHEAD MOUNTED

| SIGN NO./ LOCATION | STRUCTURE TYPE | | | GUIDE SIGN | | | EXIT NUMBER PANEL | | | | GUARDRAIL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | LENGTH | HEIGHT | | | TYPE | | | | TERM. ANCHOR | GUARDRAIL TERM. | AGG. BASE CR | ACHM SURF. CR. |
| | OH | BM | CL | LIN. FT. | | SQ. FT. | LEGEND | A | B | C | TYPE A | TYPE 1 | TYPE 2 | (CL. 7) | 220 |
| | | | | | | | | SQ. FT. | | | LIN. FT. | EACH | EACH | TON | TON |
| **OH-49-04-01** | 1 | | | | | | | | | | SEE ROADWAY PLANS FOR GUARDRAIL DETAILS | | | | |
| OH-49-04-STA118+79SB-A | | | | 18.50 | 13.00 | 240.50 | 77 | 23.75 | | | | | | | |
| OH-49-04-STA118+79SB-B | | | | 17.50 | 8.00 | 140.00 | 76 | 23.75 | | | | | | | |
| **OH-49-04-04** | 1 | | | | | | | | | | SEE ROADWAY PLANS FOR GUARDRAIL DETAILS | | | | |
| VMS-49-04-LOG MILE 74.855NB-A | | | | 21.50 | 6.50 | | | 0.00 | | | | | | | |
| OH-49-04-LOG MILE 74.855NB-B | | | | 18.50 | 12.00 | 222.00 | 77 | 23.75 | | | | | | | |
| OH-49-04-LOG MILE 74.855NB-C | | | | 17.50 | 9.00 | 157.50 | 76 | 23.75 | | | | | | | |
| **OH-49-04-03** | 1 | | | | | | | | | | SEE ROADWAY PLANS FOR GUARDRAIL DETAILS | | | | |
| OH-49-04-STA56+80NB-A | | | | 18.50 | 13.00 | 240.50 | 77 | 23.75 | | | | | | | |
| OH-49-04-STA56+80NB-B | | | | 15.00 | 12.50 | 187.50 | 78 | 23.75 | | | | | | | |
| **OH-49-04-02** | 1 | | | | | | | | | | SEE ROADWAY PLANS FOR GUARDRAIL DETAILS | | | | |
| VMS-49-04-LOG MILE 78.294SB-A | | | | 21.50 | 6.50 | | | | | | | | | | |
| OH-49-04-LOG MILE 78.294SB-B | | | | 18.50 | 12.00 | 222.00 | 77 | 23.75 | | | | | | | |
| OH-49-04-LOG MILE 78.294SB-C | | | | 15.00 | 13.00 | 195.00 | 78 | 23.75 | | | | | | | |
| TOTALS: | 4 | | | | | 1605.00 | | 190.00 | | | | | | | |

# MAIN LANES SIGNING QUANTITIES
# ROADSIDE MOUNTED I-BEAM SIGN SUPPORTS

| STRUCTURE TYPE | | | | | SIGN | | | | BREAKAWAY SIGN SUPPORT | | | | | | | | | | | | EXIT NUMBER PANEL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TYPE | | | | | STANDARD SIGN | GUIDE SIGN | | | STEEL SECT. A-572 | | SIGN POST LENGTH | | | STUB POST | | | FOOTINGS | | | SIGN POST AND STUB | LEGEND | TYPE | | |
| | | | | | | LENGTH | HEIGHT | | | | H-1 | H-2 | H-3 | H-1 | H-2 | H-3 | DIA. | DEPTH | EMBED. | | | A | B | C |
| G-2 | G2-4 | G2-5 | G2-6 | G-3 | SQ. FT. | FT. | FT. | SQ. FT. | BEAM | LBS | LIN FT | | | LIN FT | | | LIN FT | | | POUND | | SQ. FT. | | |
| | 1 | | | | 7.00 | 6.50 | 2.50 | 16.25 | W6 | 15 | 12.5 | 13.5 | | 3.66 | 3.66 | | 1.5 | 5 | 3.33 | 499.91 | | | | |
| | | 1 | | | 20.38 | 6.00 | 3.50 | 21.00 | W6 | 9 | 12.75 | 13.5 | | 3.66 | 3.66 | | 1.5 | 5 | 3.33 | 302.19 | | | | |
| | | 1 | | | 16.00 | 6.50 | 2.50 | 16.25 | W8 | 18 | 12.75 | 13.75 | | 3.66 | 3.66 | | 1.5 | 5 | 3.33 | 608.89 | | | | |
| | 1 | | | | 9.19 | 6.50 | 3.50 | 22.75 | W6 | 9 | 12.25 | 12.5 | | 3.33 | 3.33 | | 1.5 | 4.5 | 3.00 | 282.69 | | | | |
| | | | 1 | | 29.56 | 6.50 | 3.50 | 22.75 | W6 | 9 | 11.75 | 12.25 | | 3.66 | 3.66 | | 1.5 | 5 | 3.33 | 281.94 | | | | |
| 1 | | | | | | 6.00 | 5.00 | 30.00 | W6 | 9 | 12 | 12 | | 3.33 | 3.33 | | 1.5 | 4.5 | 3.00 | 275.94 | | | | |
| 1 | | | | | | 20.50 | 9.50 | 194.75 | W10 | 22 | 19.25 | 21.75 | | 7.00 | 7.00 | | 3 | 10 | 6.67 | 1209.87 | 9 | 17.50 | | |
| 1 | | | | | | 17.00 | 12.00 | 204.00 | W10 | 22 | 21.75 | 24 | | 7.00 | 7.00 | | 3 | 10 | 6.67 | 1314.37 | 9 | 17.50 | | |
| | | | | 1 | | 16.00 | 17.00 | 272.00 | W10 | 22 | 25.5 | 26.5 | 27.25 | 6.66 | 6.66 | 6.66 | 3 | 9.5 | 6.33 | 2183.30 | | | | |
| 1 | | | | | | 12.00 | 15.00 | 180.00 | W8 | 21 | 23 | 24.25 | | 6.66 | 6.66 | | 3 | 9.5 | 6.33 | 1272.12 | | | | |
| 1 | | | | | | 12.00 | 12.00 | 144.00 | W8 | 18 | 18.5 | 18 | | 6.00 | 6.00 | | 3 | 8.5 | 5.67 | 872.89 | | | | |
| 1 | | | | | | 7.50 | 5.00 | 37.50 | W6 | 9 | 11.75 | 11.5 | | 3.33 | 3.33 | | 1.5 | 4.5 | 3.00 | 269.19 | | | | |
| 1 | | | | | | 13.50 | 5.50 | 74.25 | W8 | 18 | 15.25 | 15.5 | | 5.00 | 5.00 | | 2.5 | 7 | 4.67 | 733.39 | | | | |
| 1 | | | | | | 14.50 | 8.00 | 116.00 | W8 | 18 | 17.25 | 17.5 | | 6.00 | 6.00 | | 3 | 8.5 | 5.67 | 841.39 | | | | |
| 1 | | | | | | 18.00 | 12.00 | 216.00 | W8 | 21 | 20.5 | 21.5 | | 7.00 | 7.00 | | 3 | 10 | 6.67 | 1175.87 | | | | |
| 1 | | | | | | 12.00 | 9.50 | 114.00 | W6 | 12 | 16.75 | 16.75 | | 5.66 | 5.66 | | 3 | 8 | 5.33 | 537.93 | | | | |
| 1 | | | | | | 7.50 | 5.00 | 37.50 | W6 | 9 | 13 | 12.25 | | 3.66 | 3.66 | | 1.5 | 5 | 3.33 | 293.19 | | | | |
| 1 | | | | | | 18.00 | 12.00 | 216.00 | W10 | 22 | 21.25 | 23.5 | | 7.00 | 7.00 | | 3 | 10 | 6.67 | 1292.37 | | | | |
| 1 | | | | | | 12.00 | 9.50 | 114.00 | W6 | 12 | 13 | 16 | | 5.66 | 5.66 | | 3 | 8 | 5.33 | 483.93 | | | | |
| 13 | 2 | 2 | 1 | 1 | 82.13 | | | 2049.00 | | | | | | | | | | | | 14731.37 | | 35.00 | | |

NOTE:
BREAKAWAY SIGN SUPPORT TOTAL IS CALCULATED BY TAKING THE LENGTH OF H-1, H-2, AND EACH STUB POST AND MULTIPLYING BY THE BEAM WEIGHT (LBS).

SIGN QUANTITIES

sodonaldson 9/4/2014 7:28:17 AM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SP_23.DGN
L:\2005\05911680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 158 | 897 |
| | | | | (2) | SOIL BORING LOG | | | |

## SOIL BORING LOG

| BORING No. | APPROX. ROAD STATION | SAMPLE DEPTH (ft) | WATER CONTENT (%) | ATTERBERG LIMITS LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | PERCENT PASSING #200 | UNIFIED CLASS. | AASHTO CLASS. |
|---|---|---|---|---|---|---|---|---|---|
| 58 | 660+46,133' R | 0.4-4.7 | 26 | 43 | 20 | 23 | 72 | CL | A-7-6 |
| 61 | 674+43,43' R | 0.3-14.0 | 19 | 34 | 19 | 15 | 43 | GC | A-6 |
| 64 | 687+00,CL | 0.4-11.0 | 24 | 37 | 20 | 17 | 67 | CL | A-6 |
| 64 | 687+00,CL | 11.0-18.0 | 12 | 37 | 20 | 17 | 51 | CL | A-6 |
| 66 | 697+50,CL | 0.5-13.3 | 14 | 31 | 18 | 13 | 47 | SC | A-6 |
| 70 | 717+00,CL | 0.7-21.0 | 21 | 30 | 18 | 12 | 56 | CL | A-6 |
| 70 | 717+00,CL | 21.0-25.8 | 42 | 50 | 24 | 26 | 68 | CH | A-7-6 |
| 73 | 729+00,CL | 0.8-12.4 | 18 | 35 | 17 | 18 | 47 | SC | A-6 |
| 74 | 733+00,CL | 0.8-8.5 | 19 | 51 | 21 | 30 | 71 | CH | A-7-6 |
| 105 | 552+91,69' R | 0.3-13.0 | 15 | 35 | 16 | 19 | 55 | CL | A-6 |
| 105 | 552+91,69' R | 13.0-19.0 | 34 | 65 | 22 | 43 | 71 | CH | A-7-6 |
| 101 | 537+00,CL | 0.3-5.3 | 16 | 37 | 17 | 20 | 86 | CL | A-6 |
| 99 | 529+00,CL | 0.3-6.4 | 17 | 36 | 18 | 18 | 74 | CL | A-6 |
| 97 | 519+00,CL | 0.3-25.0 | 26 | 52 | 21 | 31 | 73 | CH | A-7-6 |
| 93 | 497+00,CL | 0.3-5.0 | 25 | 27 | 20 | 7 | 63 | CL-ML | A-4 |
| 89 | 473+00,CL | 0.3-15.0 | 24 | 51 | 23 | 28 | 66 | CH | A-7-6 |
| 95 | 507+00,CL | 0.3-10.2 | 35 | 56 | 24 | 32 | 67 | CH | A-7-6 |
| 280 | 26+01 PUPPY CR.RD.,31' R | 0.3-14.0 | 17 | 47 | 21 | 26 | 70 | CL | A-7-6 |
| 289 | 15+00 GRIM./MILLER RD,27' L | 0.6-7.0 | 18 | 37 | 20 | 17 | 72 | CL | A-6 |
| 288 | 25+11 SPRING CR. ST.,27' L | 0.3-12.0 | 8 | 31 | 20 | 11 | 42 | GC | A-6 |
| 299 | 659+00,CL | 0.6-9.2 | 23 | 43 | 22 | 21 | 68 | CL | A-7-6 |
| 296 | 647+00,CL | 0.6-6.6 | 19 | 36 | 18 | 18 | 50 | SC | A-6 |
| 293 | 636+00,CL | 0.6-15.0 | 36 | 59 | 23 | 36 | 69 | CH | A-7-6 |
| 303 | 624+00,CL | 0.6-5.5 | 16 | 50 | 23 | 27 | 67 | CH | A-7-6 |
| 304 | 18+00 HWY. 112, CL | 0.6-5.0 | 34 | 32 | 20 | 12 | 62 | CL | A-6 |
| 316 | 502+00 HWY. 112 RAMP 2,CL | 0.6-5.0 | 28 | 47 | 19 | 28 | 45 | SC | A-7-6 |
| 320 | 498+00 HWY. 112 RAMP 3,38' R | 1.0-8.8 | 31 | 55 | 24 | 31 | 68 | CH | A-7-6 |
| 324 | 509+00 HWY. 112 RAMP 3,CL | 0.6-15.0 | 16 | 41 | 18 | 23 | 35 | GC | A-7-6 |

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

## SOIL BORING LOG

| BORING NO. | APPROX. ROAD STATION | SAMPLE DEPTH (ft) | WATER CONTENT (%) | ATTERBERG LIMITS LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | PERCENT PASSING #200 | UNIFIED CLASS. | AASHTO CLASS. |
|---|---|---|---|---|---|---|---|---|---|
| 313 | 493+00 HWY. 112 RAMP 1,75' R | 0.6-20.0 | 30 | 37 | 15 | 22 | 53 | CL | A-6 |
| 315 | 496+00 HWY. 112 RAMP 1,CL | 0.6-15.0 | 32 | 52 | 23 | 29 | 62 | CH | A-7-6 |
| 309 | 484+00 HWY. 112 RAMP 1,38' L | 0.6-20.0 | 27 | 42 | 19 | 23 | 60 | CL | A-7-6 |
| 333 | 694+00 RAMP EN,CL | 0.6-11.6 | 20 | 34 | 17 | 17 | 50 | CL | A-6 |
| 350 | 703+31 RAMP ES,48' R | 0.6-28.0 | 36 | 67 | 28 | 39 | 60 | CH | A-7-6 |
| 337 | 704+00 RAMP EN,38' R | 0.6-20.0 | 20 | 55 | 25 | 30 | 54 | CH | A-7-6 |
| 326 | 485+00 HWY. 112 RAMP 4,40' L | 0.6-30.0 | 25 | 45 | 19 | 26 | 50 | SC | A-7-6 |
| 330 | 494+00 HWY.112 RAMP 4,CL | 0.6-5.0 | 27 | 41 | 19 | 22 | 66 | CL | A-7-6 |
| 369 | 725+11 RAMP SW,36' L | 0.6-8.4 | 13 | 45 | 22 | 23 | 39 | SC | A-7-6 |
| 374 | 23+00 S. ZION RD.,CL | 0.6-15.0 | 32 | 43 | 23 | 20 | 70 | CL | A-7-6 |
| 366 | 713+00 RAMP SW,5' L | 0.6-6.7 | 9.5 | 31 | 18 | 13 | 34 | SC | A-2-6 |
| 357 | 710+00 RAMP NW,CL | 0.6-10.3 | 39 | 45 | 27 | 18 | 64 | ML | A-7-6 |
| 354 | 714+30 RAMP ES,41' R | 0.6-25.0 | 35 | 48 | 28 | 20 | 71 | ML | A-7-6 |
| 326 | 485+00 HWY. 112 RAMP 4,40' L | 0.6-30.0 | 25 | 45 | 19 | 26 | 50 | SC | A-7-6 |
| 359 | 722+00 RAMP NW,CL | 0.6-15.0 | 20 | 39 | 19 | 20 | 55 | CL | A-6 |
| 358 | 716+00 RAMP NW,CL | 0.6-15.0 | 23 | 43 | 20 | 23 | 63 | CL | A-7-6 |
| 367 | 719+99 RAMP SW,39' L | 0.6-15.0 | 16 | 33 | 18 | 15 | 47 | SC | A-6 |
| 361 | 728+00 RAMP NW,CL | 0.6-15.0 | 19 | 38 | 19 | 19 | 33 | SC | A-2-6 |
| 364 | 740+00 RAMP NW,CL | 0.6-15.0 | 23 | 26 | 20 | 6 | 58 | CL-ML | A-4 |
| 343 | 727+00 RAMP EN,CL | 0.6-15.0 | 15 | 31 | 17 | 14 | 57 | CL | A-6 |
| 349 | 749+00 RAMP EN,48' R | 0.6-15.0 | 18 | 34 | 16 | 18 | 78 | CL | A-6 |
| 378 | 564+00,CL | 0.6-50.0 | 35 | 60 | 23 | 37 | 72 | CH | A-7-6 |
| 381 | 572+00,CL | 0.6-15.0 | 32 | 37 | 21 | 16 | 61 | CL | A-6 |
| 382 | 578+00,CL | 0.5-15.0 | 33 | 51 | 18 | 33 | 79 | CH | A-7-6 |
| 387 | 596+00,CL | 0.3-10.6 | 24 | 57 | 18 | 39 | 58 | CH | A-7-6 |
| 393 | 613+00,CL | 0.5-6.9 | 30 | 44 | 18 | 26 | 60 | CL | A-7-6 |
| 220 | 683+00,88' R | 5.0-11.5 | 38 | 60 | 27 | 33 | 64 | CH | A-7-6 |
| 217 | 672+38,28' L | 10.0-26.5 | 41 | 67 | 24 | 43 | 71 | CH | A-7-6 |
| 219 | 683+00,89' L | 20.0-31.5 | 33 | 38 | 26 | 12 | 39 | SM | A-6 |
| 194 | 487+00,84' L | 5.0-16.5 | 27 | 32 | 19 | 13 | 45 | SC | A-6 |
| 195 | 487+00,84' R | 20.0-31.5 | 25 | 35 | 23 | 12 | 32 | GC | A-2-6 |
| 200 | 509+00,166' R | 30.0-46.5 | 26 | 32 | 29 | 3 | 23 | GM | A-2-4 |
| 191 | 474+00,180' L | 5.0-21.5 | 39 | 41 | 34 | 7 | 41 | SM | A-5 |

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14



sdonaldson 9/4/2014 4:23:42 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SBL_01_AND_02 .dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 159 | 897 |
| | | | | (2) | SOIL BORING LOG | | | |

## SOIL BORING LOG

| BORING No. | APPROX. I-69 STATION | SAMPLE DEPTH (ft) | WATER CONTENT (%) | ATTERBERG LIMITS | | | PERCENT PASSING #200 | UNIFIED CLASS. | AASHTO CLASS. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | | | |
| 228 | 713+00,88' R | 5.0-16.5 | 34 | 45 | 22 | 23 | 39 | SC | A-7-6 |
| 227 | 713+00,89' L | 15.0-30.3 | 36 | 37 | 34 | 3 | 41 | SM | A-4 |
| 281 | 31+01 PUPPY CR. RD.,80' L | 0.5-11.5 | 11 | NA | NA | NA | 27 | GM | A-2-4 |
| 281 | 31+01 PUPPY CR. RD.,80' L | 15.0-21.5 | 39 | 47 | 28 | 19 | 44 | SM | A-7-6 |
| 285 | 21+11 SPRING CR. ST.,59' L | 0.5-26.5 | 13 | 35 | 21 | 14 | 49 | GC | A-6 |
| 286 | 21+25 SPRING CR. ST.,CL | 15.0-26.5 | 22 | 38 | 20 | 18 | 33 | GC | A-2-6 |
| 290 | 22+00 GRIM/MILLER RD., 14' R | 5.0-6.5 | 19 | 40 | 21 | 19 | 38 | GC | A-6 |
| 291 | 623+14,154' L | 10.0-26.5 | 29 | 34 | 31 | 3 | 23 | GM | A-2-4 |
| 307 | 21+00 HWY. 112, 82' R | 5.0-6.5 | 18 | 35 | 32 | 3 | 52 | ML | A-4 |
| 307 | 21+00 HWY. 112, 82' R | 10.0-26.5 | 38 | 29 | 26 | 3 | 31 | GM | A-2-4 |
| 305 | 19+00 HWY. 112,90' R | 5.0-5.5 | 8 | NA | NA | NA | 4 | GP | A-1-a |
| 311 | 487+00 HWY.112 RAMP 1,168' R | 5.0-16.5 | 19 | 36 | 18 | 18 | 34 | GC | A-2-6 |
| 311 | 487+00 HWY.112 RAMP 1,168' R | 20.0-21.5 | 37 | 46 | 28 | 18 | 45 | SM | A-7-6 |
| 311 | 487+00 HWY.112 RAMP 1,168' R | 40.0-46.5 | 73 | 61 | 30 | 31 | 24 | SC | A-2-7 |
| 314 | 495+00 HWY. 112 RAMP 1,105' L | 10.0-11.4 | 20 | 25 | 21 | 4 | 40 | GM | A-4 |
| 314 | 495+00 HWY. 112 RAMP 1,105' L | 15.0-26.5 | 35 | 44 | 38 | 6 | 38 | GM | A-5 |
| 314 | 495+00 HWY. 112 RAMP 1,105' L | 30.0-41.2 | 30 | 36 | 31 | 5 | 27 | GM | A-2-4 |
| 318 | 508+00 HWY. 112 RAMP 2,100' R | 5.0-11.5 | 27 | 23 | 21 | 2 | 47 | SM | A-4 |
| 318 | 508+00 HWY. 112 RAMP 2,100' R | 5.0-31.5 | 36 | 40 | 23 | 17 | 30 | GC | A-2-6 |
| 318 | 508+00 HWY. 112 RAMP 2,100' R | 35.0-36.5 | 43 | NA | NA | NA | 16 | GM | A-1-b |
| 325 | 509+00 HWY. 112 RAMP 3,118' R | 5.0-11.5 | 27 | 39 | 28 | 11 | 31 | GM | A-2-6 |
| 325 | 509+00 HWY. 112 RAMP 3,118' R | 15.0-21.5 | 37 | 37 | 35 | 2 | 26 | GM | A-2-4 |
| 327 | 485+00 HWY. 112 RAMP 4,115' L | 5.0-16.5 | 30 | 41 | 30 | 11 | 29 | GM | A-2-7 |
| 327 | 485+00 HWY. 112 RAMP 4,115' L | 20.0-26.5 | 31 | 37 | 32 | 5 | 30 | SM | A-2-4 |
| 327 | 485+00 HWY. 112 RAMP 4,115' L | 30.0-36.5 | 24 | 46 | 22 | 24 | 26 | GC | A-2-7 |
| 332 | 497+00 HWY. 112 RAMP 4,122' L | 10.0-20.3 | 15 | 32 | 21 | 11 | 18 | GC | A-2-6 |
| 332 | 497+00 HWY. 112 RAMP 4,122' L | 30.0-36.5 | 22 | 28 | 21 | 7 | 12 | GP-GC | A-2-4 |
| 351 | 703+31 RAMP ES,115' R | 5.0-6.5 | 42 | 55 | 33 | 22 | 74 | MH | A-7-5 |
| 351 | 703+31 RAMP ES,115' R | 10.0-11.5 | 20 | NA | NA | NA | 28 | GM | A-2-4 |
| 351 | 703+31 RAMP ES,115' R | 15.0-26.5 | 30 | 45 | 20 | 25 | 48 | GC | A-7-6 |
| 362 | 728+00 RAMP NW,168' R | 5.0-16.5 | 37 | 41 | 39 | 2 | 43 | SM | A-5 |
| 362 | 728+00 RAMP NW,168' R | 20.0-25.2 | 26 | 33 | 33 | NP | 24 | GM | A-1-b |
| 368 | 723+18 RAMP SW,287' L | 5.0-6.5 | 8 | NA | NA | NA | 16 | GM | A-1-b |
| 370 | 728+37 RAMP SW,202' L | 10.0-16.5 | 29 | 48 | 37 | 11 | 42 | SM | A-7-5 |
| 338 | 704+00 RAMP EN,95' R | 5.0-16.5 | 34 | 39 | 25 | 14 | 44 | SC | A-6 |
| 338 | 704+00 RAMP EN,95' R | 25.0-26.5 | 35 | 58 | 19 | 39 | 30 | GC | A-2-7 |

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

## SOIL BORING LOG

| BORING NO. | APPROX. PLANTERSVILLE RD. STATION | SAMPLE DEPTH (ft) | WATER CONTENT (%) | ATTERBERG LIMITS | | | PERCENT PASSING #200 | UNIFIED CLASS. | AASHTO CLASS. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | | | |
| 342 | 719+00 RAMP EN,85' R | 5.0-21.5 | 36 | 36 | 25 | 11 | 36 | GM | A-6 |
| 375 | 23+00 S. ZION RD.,118' R | 5.0-16.5 | 22 | 35 | 20 | 15 | 19 | GC | A-2-6 |
| 375 | 23+00 S. ZION RD.,118' R | 20.0-31.5 | 26 | 29 | 23 | 6 | 16 | GM | A-1-b |
| 375 | 23+00 S. ZION RD.,118' R | 35.0-40.1 | 43 | NP | NP | NP | 26 | GM | A-2-4 |
| 385 | 588+00,228' L | 5.0-6.5 | 14 | 28 | 15 | 13 | 23 | GC | A-2-6 |
| 380 | 570+00,212' L | 5.0-11.5 | 30 | NP | NP | NP | 41 | GM | A-4 |
| 380 | 570+00,212' L | 15.0-21.5 | 27 | NP | NP | NP | 31 | GM | A-2-4 |
| 380 | 570+00,212' L | 40.0-51.5 | 24 | NP | NP | NP | 17 | GM | A-1-b |
| 377 | 563+00,226' R | 10.0-16.5 | 10 | NP | NP | NP | 20 | GM | A-1-b |
| 377 | 563+00,226' R | 20.0-26.5 | 22 | 37 | 30 | 7 | 24 | GM | A-2-4 |

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 4:23:57 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SBL_01_AND_02 .dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 160 | 897 |

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No.13422
12-11-14

## CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

| DESCRIPTION | ENTIRE JOB | REMOVAL OF PERMANENT PAVEMENT MARKINGS | REMOVABLE CONSTRUCTION PAVEMENT MARKINGS | CONSTRUCTION PAVEMENT MARKINGS | RAISED PAVEMENT MARKERS | | REFLECTORIZED PAINT PAVEMENT MARKING | | | THERMOPLASTIC PAVEMENT MARKING | | | | | | THERMOPLASTIC PAVEMENT MARKING (WORD) | THERMOPLASTIC PAVEMENT MARKING (ARROW) | HIGH PERFORMANCE PAVEMENT MARKING | | | | HIGH PERFORMANCE PAVEMENT MARKING (SKIP LINE) | | HIGH PERFORMANCE CONTRAST PAVEMENT MARKING | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | TYPE II | | 4" | | 10" | 4" | | 6" | 8" | 12" | 24" | | | 4" | 8" | 4" | 8" | 4" | 8" | 4" | |
| | | | | | (RED/WHITE) | (YELLOW) | WHITE | YELLOW | WHITE | YELLOW | WHITE | WHITE | | | | | | WHITE | | YELLOW | | WHITE | | WHITE | YELLOW |
| | LIN. FT. - EACH | LIN. FT. | LIN. FT. | LIN. FT. | EACH | | LIN. FT. | | | LIN. FT. | | | | | | EACH | EACH | LIN. FT. | | LIN. FT. | | LIN. FT. | | LIN. FT. | |
| REMOVAL OF PERMANENT PAVEMENT MARKINGS | 14964 | 14964 | | | | | | | | | | | | | | | | | | | | | | | | |
| REMOVABLE CONSTRUCTION PAVEMENT MARKINGS | 21927 | | 21927 | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION PAVEMENT MARKINGS | 9380 | | | 9380 | | | | | | | | | | | | | | | | | | | | | | |
| RAISED PAVEMENT MARKERS (RED/WHITE) (TYPE II) | 840 | | | | 840 | | | | | | | | | | | | | | | | | | | | | |
| RAISED PAVEMENT MARKERS (YELLOW) (TYPE II) | 80 | | | | | 80 | | | | | | | | | | | | | | | | | | | | |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4") | 22244 | | | | | | 22244 | | | | | | | | | | | | | | | | | | | |
| REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4") | 20884 | | | | | | | 20884 | | | | | | | | | | | | | | | | | | |
| REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | 49 | | | | | | | | 49 | | | | | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (4") | 4890 | | | | | | | | | | 4890 | | | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (6") | 1324 | | | | | | | | | | | 1324 | | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (8") | 154 | | | | | | | | | | | | 154 | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (12") | 25 | | | | | | | | | | | | | 25 | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING WHITE (24") | 37 | | | | | | | | | | | | | | 37 | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | 6455 | | | | | | | | | 6455 | | | | | | | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING (WORDS) | 1 | | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| THERMOPLASTIC PAVEMENT MARKING (ARROWS) | 1 | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| HIGH PERFORMANCE PAVEMENT MARKING WHITE (4") | 65402 | | | | | | | | | | | | | | | | | 65402 | | | | | | | | |
| HIGH PERFORMANCE PAVEMENT MARKING WHITE (8") | 2562 | | | | | | | | | | | | | | | | | | 2562 | | | | | | | |
| HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4") | 61407 | | | | | | | | | | | | | | | | | | | 61407 | | | | | | |
| HIGH PERFORMANCE PAVEMENT MARKING YELLOW (8") | 296 | | | | | | | | | | | | | | | | | | | | 296 | | | | | |
| HIGH PERFORMANCE PAVEMENT MARKING (SKIP LINE) WHITE (4") | 2203 | | | | | | | | | | | | | | | | | | | | | 2203 | | | | |
| HIGH PERFORMANCE PAVEMENT MARKING (SKIP LINE) WHITE (8") | 440 | | | | | | | | | | | | | | | | | | | | | | 440 | | | |
| HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4") | 8595 | | | | | | | | | | | | | | | | | | | | | | | 8595 | | |
| HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4") | 1701 | | | | | | | | | | | | | | | | | | | | | | | | 1701 | |
| TOTALS: | | 14964 | 21927 | 9380 | 840 | 80 | 22244 | 20884 | 49 | 6455 | 4890 | 1324 | 154 | 25 | 37 | 1 | 1 | 65402 | 2562 | 61407 | 296 | 2203 | 440 | 8595 | 1701 |

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.
THE CONTRACTOR SHALL NOT PLACE THE 4" DOUBLE YELLOW PAVEMENT MARKING FOR THE CENTERLINE UNTIL THE PASSING / NO PASSING ZONES HAVE BEEN ESTABLISHED BY THE MAINTENANCE DIVISION.

## ADVANCE WARNING SIGNS AND DEVICES

| | SIGN NUMBER | DESCRIPTION | SIGN SIZE | STAGE 1 | STAGE 2 | STAGE 3 | MAX. NUMBER | TOTAL SIGNS REQUIRED | ADVANCE WARNING ARROW PANEL | MOBILE SPEED NOTIFICATON SYSTEM | PORTABLE CHANGEABLE MESSAGE SIGN | BARRICADES (TYPE III) | | VERTCAL PANEL | TRAFFIC DRUMS | TEMP. IMP. ATT. BAR. | TEMP. IMP. ATT. BARRIER (RELOCATION) | TEMP. IMP. ATT. BAR. (REPAIR) | TEMP. PORT. RUMBLE STRIPS | FURNISH AND INSTALL PRECAST CONC. BAR. | PRECAST CONC. BARRIER LEFT IN PLACE | RELOCATING PRECAST CONC. BARRIER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | LEFT | RIGHT | | | | | | | | | |
| | | | IN. | EACH | EACH | EACH | REQ'D. | SQ. FT. | DAY | EACH | WEEK | L.F. | | EACH | EACH | EACH | EACH | EACH | EACH | L.F. | L.F. | L.F. |
| | G20-2 | END ROAD WORK | 48 X 24 | 17 | 17 | 8 | 17 | 136.00 | | | | | | | | | | | | | | |
| | M4-10 | DETOUR ARROW | 48 X 18 | | 4 | | 4 | 24.00 | | | | | | | | | | | | | | |
| | R1-1 | STOP | 30 X 30 | | 1 | | 1 | 6.25 | | | | | | | | | | | | | | |
| | R2-1 | SPEED LIMIT | 48 X 60 | 2 | 10 | 2 | 10 | 200.00 | | | | | | | | | | | | | | |
| | R2-2 | TRUCKS 65 MPH | 48 X 48 | | 4 | | 4 | 64.00 | | | | | | | | | | | | | | |
| | R2-5A | REDUCED SPEED AHEAD | 48 X 60 | 2 | 6 | 2 | 6 | 120.00 | | | | | | | | | | | | | | |
| | R4-1 | DO NOT PASS | 48 X 60 | | 8 | | 8 | 160.00 | | | | | | | | | | | | | | |
| | R11-2 | ROAD CLOSED | 48 X 30 | 10 | 12 | 12 | 12 | 120.00 | | | | | | | | | | | | | | |
| | R55-1 | FINES DOUBLE IN WORK ZONE | 36 X 60 | | 4 | | 4 | 60.00 | | | | | | | | | | | | | | |
| | SPECIAL | MERGE NOW | 48 X 48 | | 2 | | 2 | 32.00 | | | | | | | | | | | | | | |
| | SPECIAL | RUMBLE STRIPS AHEAD | 48 X 48 | | 4 | | 4 | 64.00 | | | | | | | | | | | | | | |
| | W1-4aR | REVERSE CURVE RIGHT | 48 X 48 | | 2 | | 2 | 32.00 | | | | | | | | | | | | | | |
| | W1-4aL | REVERSE CURVE LEFT | 48 X 48 | | 2 | | 2 | 32.00 | | | | | | | | | | | | | | |
| | W1-6 | DIRECTIONAL ARROW | 60 X 30 | 4 | 19 | 5 | 19 | 237.50 | | | | | | | | | | | | | | |
| | W1-8 | CHEVRON | 18 X 24 | | 32 | | 32 | 96.00 | | | | | | | | | | | | | | |
| | W4-2 | LANE ENDS (SYMBOL) | 48 X 48 | | 4 | | 4 | 64.00 | | | | | | | | | | | | | | |
| | W13-1 | ADVISORY SPEED | 18 X 18 | | 4 | | 4 | 9.00 | | | | | | | | | | | | | | |
| | W20-1 | ROAD WORK xxxx FT | 48 X 48 | 36 | 37 | 18 | 37 | 592.00 | | | | | | | | | | | | | | |
| | W20-3 | ROAD CLOSED AHEAD | 48 X 48 | | 1 | | 1 | 16.00 | | | | | | | | | | | | | | |
| | W20-5 | RIGHT LANE CLOSED xxxx FT. | 48 X 48 | | 12 | | 12 | 192.00 | | | | | | | | | | | | | | |
| | W24-1R | DOUBLE REVERSE CURVE RIGHT | 36 X 36 | | 1 | | 1 | 9.00 | | | | | | | | | | | | | | |
| | W24-1L | DOUBLE REVERSE CURVE LEFT | 36 X 36 | | 1 | | 1 | 9.00 | | | | | | | | | | | | | | |
| | | TYPE III BARRICADE-LT. (16') | | 4 | 6 | 5 | 6 | | | | | 96 | | | | | | | | | | |
| | | TYPE III BARRICADE-RT. (16') | | 6 | 3 | 5 | 6 | | | | | | 96 | | | | | | | | | |
| | | TYPE III BARRICADE-LT. (24') | | | 2 | 1 | 2 | | | | | 48 | | | | | | | | | | |
| | | TYPE III BARRICADE-RT. (24') | | | 1 | 1 | 1 | | | | | | 24 | | | | | | | | | |
| | | VERTICAL PANEL | | | 33 | | 33 | | | | | | | 33 | | | | | | | | |
| | | TRAFFIC DRUMS | | 102 | 631 | 87 | 631 | | | | | | | | 631 | | | | | | | |
| * | | TEMPORARY IMPACT ATTENUATION BARRIER | | | 8 | | 8 | | | | | | | | | 8 | | | | | | |
| * | | TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) | | | | 2 | 2 | | | | | | | | | | 2 | | | | | |
| | | TEMPORARY IMPACT ATTENUATION (REPAIR) | | | 8 | 2 | 8 | | | | | | | | | | | 8 | | | | |
| * | | TEMPORARY PORTABLE RUMBLE STRIPS | | | 12 | | 12 | | | | | | | | | | | | 12 | | | |
| | | FURN. AND INST. PRECAST CONC. BARRIER | | | 14725 | | 14725 | | | | | | | | | | | | | 14725 | | |
| | | PRECAST CONC. BARRIER LEFT IN PLACE | | | | 5140 | 5140 | | | | | | | | | | | | | | 5140 | |
| | | RELOCATING PRECAST CONC. BARRIER | | | 3100 | | 3100 | | | | | | | | | | | | | | | 3100 |
| | | ADVANCE WARNING ARROW PANEL | | 2 | 2 | 2 | 2 | | 100 | | | | | | | | | | | | | |
| | | MOBILE SPEED NOTIFICATION SYSTEM | | | 2 | | 2 | | | 2 | | | | | | | | | | | | |
| * | | PORTABLE CHANGEABLE MESSAGE SIGN | | 2 | 2 | 2 | 2 | | | | 300 | | | | | | | | | | | |
| | | TOTALS: | | | | | | 2274.75 | 100 | 2 | 300 | 144 | 120 | 33 | 631 | 8 | 2 | 8 | 12 | 14725 | 5140 | 3100 |

NOTE: THIS IS A HIGH VOLUME ROAD AS DEFINED IN SECTION 604.03 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014.
* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

QUANTITIES

JFCantabery 12/11/2014 4:35:57 PM
WORKSPACE: AHTD
\\gorverinc\ltprojects\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

## REMOVAL AND DISPOSAL OF STRUCTURES BOX (1 OF 2)

| STATION | STATION | LOCATION | PIPE CULVERTS | FLARED END SECTIONS | DROP INLETS | BOX CULVERTS | CATTLE GUARD | CURB AND GUTTER | FENCE | GATES | CONCRETE DITCH PAVING | SIGN POSTS | SIGNS | DECORATIVE LIGHT POLE | HEADWALLS | CONCRETE WALKS | CONCRETE DRIVEWAYS | * HOUSE FOUNDATION | CONCRETE SLABS | PRECAST CONCRETE BARRIER | CONCRETE FOUNDATIONS | BILLBOARDS | BUILDINGS | SEPTIC SYSTEM | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | EACH | EACH | EACH | EACH | EACH | L.F. | L.F. | EACH | SQ. YD. | EACH | EACH | EACH | EACH | SQ. YD. | SQ. YD. | L.F. | SQ. YD. | L.F. | EACH | EACH | EACH | EACH | EACH |
| 450+23 | 461+00 | MAIN LANES | | | | | | | 2000 | | | | | | | | | | | | | | | | |
| 463+95 | 473+68 | MAIN LANES | | | | | | | 1280 | | | | | | | | | | | | | | | | |
| 474+10 | | MAIN LANES | | | | | | | 355 | | | | | | | | | | | | | | | | |
| 482+20 | 485+00 | MAIN LANES | | | | | | | 390 | | | | | | | | | | | | | | | | |
| 482+22 | 492+40 | MAIN LANES | | | | | | | 1574 | | | | | | | | | | | | | | | | |
| 498+10 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | 1 | | |
| 499+00 | | MAIN LANES | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 499+10 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 7+30 | 32+82 | HWY. 112 | | | | | | | 5949 | | | | | | | | | | | | | | | | |
| 8+46 | | HWY. 112 | | | | | | | | | | | | | | | 45 | | | | | | | | |
| 8+45 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 9+01 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 9+80 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 15+35 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 15+44 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 19+44 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 20+14 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 20+53 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 25+82 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 30+83 | | HWY. 112 | | | | | | | | | | | | | 2 | | | | | | | | | | |
| 31+71 | | HWY. 112 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 499+40 | | MAIN LANES | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 522+44 | 535+53 | MAIN LANES | | | | | | | 1308 | | | | | | | | | | | | | | | | |
| 14+00 | 25+75 | GRIMSLEY ROAD | | | | | | | 1443 | | | | | | | | | | | | | | | | |
| 544+25 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 535+80 | 559+32 | MAIN LANES | | | | | | | 4673 | | | | | | | | | | | | | | | | |
| 560+25 | | MAIN LANES | | | | | | | | | | | | | | | 79 | | | | | | | | |
| 560+80 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 561+67 | 565+02 | MAIN LANES | | | | | | | 581 | | | | | | | | | | | | | | | | |
| 574+59 | 579+16 | MAIN LANES | | | | | | | 734 | | | | | | | | | | | | | | | | |
| 585+59 | 587+73 | MAIN LANES | | | | | | | 317 | | | | | | | | | | | | | | | | |
| 578+05 | | MAIN LANES | | | | | 1 | | | | | | | | | | | | | | | | | | |
| 588+84 | | MAIN LANES | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 589+02 | | MAIN LANES | | | 1 | | | | | | | | | | | | | | | | | | | | |
| 589+20 | | MAIN LANES | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 589+35 | | MAIN LANES | | | 1 | | | | | | | | | | | | | | | | | | | | |
| 589+05 | | MAIN LANES | | | | | | | | | | | | | | 43 | | | | | | | | | |
| 589+05 | 592+25 | MAIN LANES | | | | | | 1550 | | | | 2 | 2 | | | | | | | | | | | | |
| 590+40 | 591+92 | MAIN LANES | | | | | | | | | | | | | | 192 | | | | | | | | | |
| 590+64 | 591+93 | MAIN LANES | | | | | | | | | | | | | | | 189 | | | | | | | | |
| 589+39 | | MAIN LANES | | | | | | | | | | | | 1 | | | | | | | | | | | |
| 590+67 | 591+20 | MAIN LANES | | | | | | | | | | | | | | | | 190 | 247 | | | | | | |
| 590+85 | 591+32 | MAIN LANES | | | | | | | | | | | | | | | | 190 | 247 | | | | | | |
| 591+00 | 591+39 | MAIN LANES | | | | | | | | | | | | | | | | 190 | 225 | | | | | | |
| 591+39 | | MAIN LANES | | | | | | | | | | | | 1 | | | | | | | | | | | |
| 595+68 | 599+48 | MAIN LANES | | | | | | | 425 | | | | | | | | | | | | | | | | |
| 608+85 | 610+05 | MAIN LANES | | | | | | | 231 | | | | | | | | | | | | | | | | |
| 611+80 | 616+57 | MAIN LANES | | | | | | | 1132 | | | | | | | | | | | | | | | | |
| 613+00 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | 1 | |
| 613+00 | 613+65 | MAIN LANES | | | | | | | | | | | | | | | | 180 | 222 | | | | | | |
| 613+90 | 614+82 | MAIN LANES | | | | | | | | | | | | | | | | 35 | 74 | | | | | | |
| 617+33 | 625+00 | MAIN LANES | | | | | | | 2615 | | | | | | | | | | | | | | | | |
| 625+00 | 627+99 | MAIN LANES | | | | | | | 620 | | | | | | | | | | | | | | | | |
| 629+70 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 629+02 | 631+82 | MAIN LANES | | | | | | | 294 | | | | | | | | | | | | | | | | |
| 28+75 | 30+75 | ZION ROAD | | | | | | | 436 | | | | | | | | | | | | | | | | |
| 12+08 | | ZION ROAD | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 28+42 | | ZION ROAD | 2 | | | | | | | | | | | | | | | | | | | | | | |
| 28+93 | | ZION ROAD | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 635+17 | 640+17 | MAIN LANES | | | | | | | 1351 | | | | | | | | | | | | | | | | |
| 9+68 | 14+35 | ZION ROAD | | | | | | | 580 | | | | | | | | | | | | | | | | |
| 638+00 | | MAIN LANES | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 642+26 | | MAIN LANES | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 641+47 | 649+05 | MAIN LANES | | | | | | | 1188 | | | | | | | | | | | | | | | | |
| 651+20 | | MAIN LANES | | | | | | | | | | | | | | | | | 17 | | | | 1 | | |
| 650+30 | | MAIN LANES | | | | | | | | | | | | | | | | 200 | | | | | 1 | | |
| 651+85 | | MAIN LANES | | | | | | | | 1 | | | | | | | | 62 | | | | | 1 | | |
| 652+40 | | MAIN LANES | | | | | | | | 2 | | | | | | | | | | | | | | | |
| 656+50 | 678+32 | MAIN LANES | | | | | | | 2198 | | | | | | | | | | | | | | | | |
| 659+00 | | MAIN LANES | | | | | | | | | | | | | | | | 470 | 950 | | | | | 1 | |
| 659+10 | | MAIN LANES | | | | | | | | | | | | | | | | | 18 | | | | | | |
| 659+20 | | MAIN LANES | | | | | | | | | | | | | | | | | 18 | | | | | | |
| 659+68 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 660+00 | | MAIN LANES | | | | | | | | | | | | | | | | | 3111 | | | | | | |
| 660+90 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | |
| 661+00 | | MAIN LANES | | | | | | | | | | | | | | | | 770 | 1361 | | | | 1 | | |
| 661+80 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 665+46 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 676+60 | | MAIN LANES | | | | | | | | | | | | | | | | | 3 | | | | | | 1 |
| 677+00 | | MAIN LANES | | | | | | | | | | | | | | | | 263 | 200 | | | | | 1 | |
| 678+38 | 678+85 | MAIN LANES | | | | | | | | | | | | | | | | | 36 | | | | | | |
| 678+86 | 679+38 | MAIN LANES | | | | | | | | | | | | | | | | | 133 | | | | | | |
| 680+88 | 682+69 | MAIN LANES | | | | | | | | | | | | | | | | 260 | | | | | | | |
| 682+60 | 684+80 | MAIN LANES | | | | | | | 405 | | | | | | | | | | | | | | | | |
| 682+69 | | MAIN LANES | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 683+20 | | MAIN LANES | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 683+70 | | MAIN LANES | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 693+40 | | MAIN LANES | | | | | | | | | | | | | | | | | 100 | | | | | | |
| 693+45 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 698+80 | 702+34 | MAIN LANES | | | | | | | | | | | | | | | | 1090 | | | | | | | |
| 699+20 | 702+62 | MAIN LANES | | | | | | | | | | | | | | | | 1090 | | | | | | | |
| 700+60 | | MAIN LANES | | | | | | | | | | | | | | | | | 11 | | | | | | |
| 700+77 | | MAIN LANES | | | | | | | | | | | | | | | | | 11 | | | | | | |
| 707+00 | 720+45 | MAIN LANES | | | | | | | 1410 | | | | | | | | | | | | | | | | |
| 708+20 | 716+65 | MAIN LANES | | | | | | | 2100 | | | | | | | | | | | | | | | | |
| 728+20 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | 1 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTALS BOX 1: | | | 17 | 0 | 2 | 0 | 1 | 1550 | 35589 | 9 | 0 | 2 | 2 | 2 | 2 | 235 | 313 | 4990 | 6984 | 0 | 0 | 0 | 6 | 3 | 9 |

* REMOVAL AND DISPOSAL OF HOUSE FOUNDATION INCLUDES FOUNDATIONS FOR RESIDENTIAL OR COMMERCIAL BUILDING STRUCTURES.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 11-24-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 161 | 897 |

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
11-24-14

## FENCING

| STATION | STATION | LOCATION | TYPE A L.F. | 16' GATE EACH |
|---|---|---|---|---|
| 473+99.01 | 483+00.38 | MAIN LANES RT. | 916 | |
| 474+01.20 | 485+20.73 | MAIN LANES LT. | 1216 | |
| 483+07.77 | 501+02.74 | 112 RAMP 1 | 1781 | |
| 485+43.05 | 498+70.85 | 112 RAMP 4 | 1319 | |
| 09+99.97 | 12+31.79 | HWY. 112 RT. | 231 | |
| 10+00.09 | 12+29.93 | HWY. 112 LT. | 232 | |
| 27+78.12 | 30+00.06 | HWY. 112 LT. | 232 | |
| 27+97.30 | 29+99.96 | HWY. 112 RT. | 197 | |
| 499+88.72 | 518+66.51 | 112 RAMP 2 | 1863 | |
| 496+99.07 | 517+85.01 | 112 RAMP 3 | 2141 | |
| 518+70.00 | 534+97.59 | MAIN LANES RT. | 1619 | |
| 518+00.08 | 534+97.59 | MAIN LANES LT. | 1672 | 1 |
| 536+36.32 | 579+50.00 | MAIN LANES RT. | 4758 | 1 |
| 536+39.17 | 579+50.00 | MAIN LANES LT. | 4451 | 1 |
| 589+57.17 | 592+72.60 | MAIN LANES RT. | 547 | 1 |
| 589+57.09 | 592+24.82 | MAIN LANES LT. | 499 | 1 |
| 594+56.71 | 625+00.00 | MAIN LANES RT. | 3144 | 1 |
| 625+81.89 | 629+56.50 | MAIN LANES RT. | 375 | |
| 593+99.81 | 625+00.00 | MAIN LANES LT. | 3317 | 1 |
| 625+81.89 | 631+80.87 | MAIN LANES LT. | 599 | |
| 631+96.49 | 678+43.59 | MAIN LANES RT. | 4652 | 1 |
| 633+79.76 | 679+44.99 | MAIN LANES LT. | 4626 | 1 |
| 679+83.69 | 681+00.00 | MAIN LANES RT. | 175 | 1 |
| 681+58.56 | 695+89.31 | MAIN LANES RT. | 1540 | |
| 680+77.55 | 681+00.00 | MAIN LANES LT. | 40 | |
| 681+58.56 | 696+18.87 | MAIN LANES LT. | 1597 | 1 |
| 700+33.39 | 709+47.73 | RAMP NW | 1098 | 1 |
| 709+47.73 | 730+94.09 | RAMP SW | 2067 | |
| 710+38.47 | 713+44.08 | RAMP SE | 379 | 1 |
| 703+13.41 | 708+65.93 | RAMP SE | 553 | |
| 115+03.38 | 132+89.87 | I-49 LT. | 1721 | 1 |
| 699+67.41 | 701+04.03 | RAMP EN | 304 | 1 |
| 701+04.03 | 716+75.55 | RAMP ES | 1318 | |
| 693+02.57 | 701+07.30 | RAMP WS | 935 | |
| 59+47.64 | 62+87.46 | I-49 LT. | 354 | |
| 725+57.22 | 747+46.97 | RAMP NW | 2497 | |
| 726+11.59 | 739+54.73 | RAMP EN | 1559 | |
| 741+18.33 | 753.12.38 | RAMP EN | 1220 | 1 |
| 119+40.81 | 124+85.77 | I-49 RT. | 605 | 1 |
| | | | | |
| TOTALS: | | | 58349 | 17 |

QUANTITIES

JFCantabery 11/24/2014 2:34:31 PM
WORKSPACE: AHTD
\\garverinc\ltprojects\2005\059\680 - AHTD Springdale Byposs\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 11-24-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 161A | 897 |
| | | | | (2) | | QUANTITIES | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY

11-24-14

## REMOVAL AND DISPOSAL OF STRUCTURES BOX (2 OF 2)

| STATION | STATION | LOCATION | PIPE CULVERTS | FLARED END SECTIONS | DROP INLETS | BOX CULVERTS | CATTLE GUARD | CURB AND GUTTER | FENCE | GATES | CONCRETE DITCH PAVING | SIGN POSTS | SIGNS | DECORATIVE LIGHT POLE | HEADWALLS | CONCRETE WALKS | CONCRETE DRIVEWAYS | *HOUSE FOUNDATION | CONCRETE SLABS | PRECAST CONCRETE BARRIER | CONCRETE FOUNDATIONS | BILLBOARDS | BUILDINGS | SEPTIC SYSTEM | WELL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | EACH | EACH | EACH | EACH | EACH | L.F. | L.F. | EACH | SQ. YD. | EACH | EACH | EACH | EACH | SQ. YD. | SQ. YD. | L.F. | SQ. YD. | L.F. | EACH | EACH | EACH | EACH | EACH |
| 728+74 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | | 1 |
| 728+50 | | MAIN LANES | | | | | | | | | | | | | | | | | | | | | | 1 | |
| 14+45 | 19+88 | SPRING CREEK ST. | | | | | | | 1609 | | | | | | | | | | | | | | | | |
| 17+80 | | SPRING CREEK ST. | | | | | | | | | | | | | | | | | 533 | | | | | | |
| 28+73 | 36+26 | PUPPY CREEK RD. | | | | | | | 1548 | | | | | | | | | | | | | | | | |
| 707+87 | 720+57 | RAMP EN | | | | | | | 3059 | | | | | | | | | | | | | | | | |
| 707+50 | 718+84 | RAMP NW | | | | | | | 2538 | | | | | | | | | | | | | | | | |
| 743+25 | | RAMP NW | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 719+86 | 723+60 | RAMP SW | | | | | | | 687 | | | | | | | | | | | | | | | | |
| 722+77 | 726+68 | RAMP SW | | | | | | | | | | | | | | | | | 2052 | | | | | | |
| 724+00 | | RAMP SW | | | 1 | | | | | | | | | | | | | | | | | | | | |
| 710+96 | 712+16 | RAMP SE | | | | | | | | | 60 | | | | | | | | | | | | | | |
| 712+31 | | RAMP SE | | | | 1 | | | | | | | | | | | | | | | | | | | |
| 712+33 | 714+44 | RAMP SE | | | | | | | | | 100 | | | | | | | | | | | | | | |
| 714+81 | | RAMP SE | | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| 715+34 | | RAMP SE | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 716+65 | | RAMP SE | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 694+93 | | RAMP WS | | 1 | | | | | | | | | | | | | | | | | | | | | |
| 696+16 | | RAMP WS | | 1 | | | | | | | | | | | | | | | | | | | | | |
| 59+44 | 62+95 | I-49 LT. | | | | | | | 355 | | | | | | | | | | | | | | | | |
| 64+14 | 85+56 | I-49 RT. | | | | | | | 2953 | | | | | | | | | | | | | | | | |
| 66+14 | 106+39 | I-49 LT. | | | | | | | 6315 | | | | | | | | | | | | | | | | |
| 65+88 | 69+83 | I-49 LT. & RT. | | | | | | | | | 275 | | | | | | | | | | | | | | |
| 70+78 | | I-49 LT. | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 80+10 | | I-49 RT. | 1 | 1 | | | | | | | 25 | | | | | | | | | | | | | | |
| 81+10 | 84+75 | I-49 RT. | | | | | | | 400 | | | | | | | | | | | | | | | | |
| 84+57 | 97+17 | I-49 LT. & RT. | | | | | | | | | | | | | | | | | | 2520 | | | | | |
| 87+88 | | I-49 LT. | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 89+92 | | I-49 LT. | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 92+23 | 106+68 | I-49 RT. | | | | | | | 1839 | | | | | | | | | | | | | | | | |
| 107+44 | 119+04 | I-49 RT. | | | | | | | 1822 | | | | | | | | | | | | | | | | |
| 108+25 | | I-49 RT. | | | | | | | | | | | | | | | | | | | 1 | 1 | | | |
| 108+30 | | I-49 RT. | | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| 108+84 | | I-49 LT. | | | | | | | | | | | | | | | | | | | 1 | 1 | | | |
| 117+60 | | I-49 LT. | | | | | | | | | | | | | | | | | | | | | 1 | | |
| 117+75 | | I-49 LT. | | | | | | | | | | | | | | | | | | | | | 1 | | |
| 118+10 | | I-49 RT. | | | | | | | | | | | | | | | | | | | 1 | 1 | | | |
| 122+50 | | I-49 LT. | | | | | | | | | | | | | 1 | | | | | | | | | | |
| 122+70 | | I-49 RT. | | | | | | | | | | | | | 1 | | | | | | | | | | |
| 122+67 | 124+84 | I-49 RT. | | | | | | | 225 | | | | | | | | | | | | | | | | |
| 123+70 | 125+25 | I-49 RT. | | | | | | | | | 75 | | | | | | | | | | | | | | |
| 126+53 | | I-49 LT. | | | | | | | | | | | | | | | | | | | 1 | 1 | | | |
| 108+16 | | I-49 LT. | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 108+80 | | I-49 LT. | | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| 106+97 | 137+00 | I-49 LT. | | | | | | | 3891 | | | | | | | | | | | | | | | | |
| 120+61 | 122+42 | I-49 LT. | | | | | | | | | 84 | | | | | | | | | | | | | | |
| 123+30 | 124+62 | I-49 LT. | | | | | | | | | 64 | | | | | | | | | | | | | | |
| 126+50 | | I-49 LT. | | | | | | | | | | 1 | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTALS BOX 2: | | | 8 | 4 | 1 | 1 | 0 | 0 | 27241 | 0 | 683 | 4 | 4 | 0 | 2 | 0 | 0 | 0 | 2585 | 2520 | 4 | 4 | 2 | 1 | 1 |
| SUBTOTALS BOX 1: | | | 17 | 0 | 2 | 0 | 1 | 1550 | 35589 | 9 | 0 | 2 | 2 | 2 | 2 | 235 | 313 | 4990 | 6984 | 0 | 0 | 0 | 6 | 3 | 9 |
| TOTALS: | | | 25 | 4 | 3 | 1 | 1 | 1550 | 62830 | 9 | 683 | 6 | 6 | 2 | 4 | 235 | 313 | 4990 | 9569 | 2520 | 4 | 4 | 8 | 4 | 10 |

* REMOVAL AND DISPOSAL OF HOUSE FOUNDATION INCLUDES FOUNDATIONS FOR RESIDENTIAL OR COMMERCIAL BUILDING STRUCTURES.

| 4" PIPE UNDERDRAINS | | |
|---|---|---|
| LOCATION | 4" PIPE UNDERDRAINS | UNDERDRAIN OUTLET PROTECTORS |
| | LIN. FT. | EACH |
| ENTIRE PROJECT | 2000 | 16 |

QUANTITIES ESTIMATED, TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER, SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

| SELECTED PIPE BEDDING | |
|---|---|
| LOCATION | SELECTED BEDDING |
| | CU. YD. |
| ENTIRE PROJECT | 625 |

QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.



JFCantabery 11/24/2014 2:34:59 PM
WORKSPACE: AHTD
\\garverinc\11projects\2005\059ll680 - AHTD Springdale Bypass\Drawings\RWY 11-2 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 162 | 897 |

(2) QUANTITIES

## TEMPORARY EROSION CONTROL

| STATION | STATION | SAND BAG DITCH CHECK (E-5) | ROCK DITCH CHECK (E-6) | DROP INLET SILT FENCE (E-7) | DIVERSION DITCH (E-8) | SEDIMENT BASIN (E-9) | SEDIMENT BASIN (E-10) | SEDIMENT BASIN (E-14) | SILT FENCE (E-11) | DUMPED RIPRAP (E-9) | FILTER BLANKET | PIPE FOR SLOPE DRAIN (E-12) | OBLITERATION OF SEDIMENT BASIN | SEDIMENT REMOVAL AND DISPOSAL | TEMPORARY SEEDING | MULCH COVER | WATER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BAG | CU. YD. | L.F. | L.F. | CU. YD. | CU. YD. | CU. YD. | L.F. | CU. YD. | SQ. YD. | L.F. | CU. YD. | CU. YD. | ACRE | ACRE | M.G. |
| MAIN LANES | | | | | | | | | | | | | | | | | |
| 478+50 | 721+00 | 7600 | 2295 | 617 | 2740 | 11879 | 12440 | 2294 | 7650 | 12 | 24 | 675 | 26613 | | | | |
| HWY. 112 | | | | | | | | | | | | | | | | | |
| 08+00 | 32+00 | 540 | 15 | | | | | | 1610 | | | | | | | | |
| RAMP 1 | | | | | | | | | | | | | | | | | |
| 478+76 | 501+61 | 480 | 45 | | 250 | | | | 535 | 2 | 4 | 80 | | | | | |
| RAMP 2 | | | | | | | | | | | | | | | | | |
| 500+00 | 519+39 | 260 | 60 | | 100 | | | | 1055 | 2 | 4 | 85 | | | | | |
| RAMP 3 | | | | | | | | | | | | | | | | | |
| 496+29 | 520+63 | 580 | 60 | | 600 | | | | 455 | 4 | 8 | 165 | | | | | |
| RAMP 4 | | | | | | | | | | | | | | | | | |
| 483+10 | 499+33 | 340 | 45 | | 200 | | | | 970 | 2 | 4 | 110 | | | | | |
| GRIMSLEY RD. | | | | | | | | | | | | | | | | | |
| 14+50 | 24+50 | 40 | 30 | | | | | | | | | | | | | | |
| (DETOUR) | | | | | | | | | | | | | | | | | |
| 15+90 | 21+30 | 120 | | | | | | | 1110 | | | | | | | | |
| SHARP SPRINGS RD. ACCESS RD. | | | | | | | | | | | | | | | | | |
| 05+60 | 20+00 | 260 | 90 | | | | | | 880 | | | | | | | | |
| ZION RD. | | | | | | | | | | | | | | | | | |
| 10+00 | 27+90 | 100 | 15 | | 670 | | | | 1835 | 6 | 12 | 160 | | | | | |
| SPRINGS CREEK RD. ACCESS RD. | | | | | | | | | | | | | | | | | |
| 17+15 | 40+00 | 380 | 240 | | 100 | | | | 695 | 2 | 4 | 75 | | | | | |
| SPRING CREEK RD. | | | | | | | | | | | | | | | | | |
| 15+00 | 25+00 | 180 | 75 | | | | | | 240 | | | | | | | | |
| PUPPY CREEK RD. | | | | | | | | | | | | | | | | | |
| 20+00 | 35+00 | 600 | 45 | | | | | | 945 | | | | | | | | |
| (DETOUR) | | | | | | | | | | | | | | | | | |
| 20+50 | 22+50 | 240 | | | | | | | | | | | | | | | |
| PUPPY CREEK RD. ACCESS RD. | | | | | | | | | | | | | | | | | |
| 10+00 | 16+20 | 380 | | | | | | | 445 | | | | | | | | |
| GOAD SPRINGS RD. ACCESS RD. | | | | | | | | | | | | | | | | | |
| 03+05 | 20+00 | 40 | 30 | 20 | 200 | | 2707 | | 1574 | 4 | 8 | 155 | 2707 | | | | |
| I-49 | | | | | | | | | | | | | | | | | |
| 60+00 | 145+70 | 940 | 240 | | | | | | 1400 | | | | | | | | |
| RAMP EN | | | | | | | | | | | | | | | | | |
| 689+26 | 753+90 | 1500 | 45 | 20 | 1925 | | | | 3770 | 8 | 16 | 425 | | | | | |
| RAMP ES | | | | | | | | | | | | | | | | | |
| 701+05 | 716+75 | 380 | 75 | 20 | | | | | 85 | | | | | | | | |
| RAMP NW | | | | | | | | | | | | | | | | | |
| 698+00 | 749+81 | 200 | 45 | 60 | 255 | | | | 3760 | 2 | 4 | 165 | | | | | |
| RAMP SE | | | | | | | | | | | | | | | | | |
| 698+71 | 748+23 | 160 | | 40 | 250 | | | | 1095 | 4 | 8 | 245 | | | | | |
| RAMP SW | | | | | | | | | | | | | | | | | |
| 709+48 | 730+94 | | | 20 | 1595 | | | | 2405 | 8 | 16 | 580 | | | | | |
| RAMP WS | | | | | | | | | | | | | | | | | |
| 691+05 | 701+07 | 300 | 15 | 20 | 200 | | | | | 2 | 4 | 90 | | | | | |
| * ENTIRE PROJECT IF AND WHERE DIRECTED BY THE ENGINEER | | | | | | 100 | 100 | 100 | | | | | 300 | 5000 | 508.94 | 508.94 | 10382.4 |
| TOTALS: | | 15620 | 3465 | 817 | 9085 | 11979 | 15247 | 2394 | 32514 | 58 | 116 | 3010 | 29620 | 5000 | 508.94 | 508.94 | 10382.4 |

* QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.
BASIS OF ESTIMATE:
SAND BAG DITCH CHECKS = 20 BAGS / LOCATION
ROCK DITCH CHECKS = 15 CU. YD. / LOCATION
WATER = 20.4 M.G. PER ACRE TEMPORARY SEEDING

TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION OF U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

## CLEARING AND GRUBBING

| STATION | STATION | LOCATION | CLEARING | GRUBBING |
|---|---|---|---|---|
| | | | STA. | |
| 479+00 | 625+00 | MAIN LANES | 146 | 146 |
| 626+00 | 681+00 | MAIN LANES | 55 | 55 |
| 682+00 | 721+00 | MAIN LANES | 39 | 39 |
| 8+00 | 10+00 | HWY. 112 | 2 | 2 |
| 30+00 | 32+00 | HWY. 112 | 2 | 2 |
| 14+00 | 19+00 | GRIMSLEY ROAD | 5 | 5 |
| 22+00 | 26+00 | GRIMSLEY ROAD | 4 | 4 |
| 6+00 | 20+00 | SHARP SPRINGS ACCESS ROAD | 14 | 14 |
| 10+00 | 19+00 | S. ZION ROAD | 9 | 9 |
| 22+00 | 31+00 | S. ZION ROAD | 9 | 9 |
| 18+00 | 40+00 | SPRING CREEK ACCESS ROAD | 22 | 22 |
| 15+00 | 18+00 | SPRING CREEK STREET | 3 | 3 |
| 22+00 | 26+00 | SPRING CREEK STREET | 4 | 4 |
| 20+00 | 36+00 | PUPPY CREEK ROAD | 16 | 16 |
| 10+00 | 17+00 | PUPPY CREEK ACCESS ROAD | 7 | 7 |
| 4+00 | 20+00 | GOAD SPRINGS ACCESS ROAD | 16 | 16 |
| 52+00 | 146+00 | I-49 | 94 | 94 |
| TOTALS: | | | 447 | 447 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

## PRESPLITTING

| LOCATION | PRESPLITTING |
|---|---|
| | SQ. YD. |
| ENTIRE PROJECT | 8300 |

QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

## EARTHWORK

| LOCATION | UNCLASSIFIED EXCAVATION | | | COMPACTED EMBANKMENT | | | ROCK FILL |
|---|---|---|---|---|---|---|---|
| | UNDERCUT | TYPICAL | TOTAL | TYPICAL | SM-1 | TOTAL | |
| | CU. YD. | | | | | | |
| HWY. 112 | | 7047 | 7047 | 27761 | 4019 | 31780 | |
| HWY. 112 RAMP 1 | | 120903 | 120903 | 37680 | | 37680 | |
| HWY. 112 RAMP 2 | | 11995 | 11995 | 43856 | | 43856 | |
| HWY. 112 RAMP 3 | | 26125 | 26125 | 52267 | | 52267 | |
| HWY. 112 RAMP 4 | | 44370 | 44370 | 48006 | | 48006 | |
| GOAD SPRINGS ACCESS ROAD | | 1332 | 1332 | 29155 | | 29155 | |
| PUPPY CREEK ROAD | | 7012 | 7012 | 9345 | | 9345 | 2976 |
| PUPPY CREEK ACCESS ROAD | | 1516 | 1516 | 709 | | 709 | |
| PUPPY CREEK DETOUR | | 4531 | 4531 | 0 | | 0 | |
| SPRING CREEK ROAD | | 1453 | 1453 | 9538 | 3722 | 13260 | |
| SPRING CREEK ACCESS ROAD | | 14324 | 14324 | 12710 | | 12710 | |
| SHARP SPRINGS ACCESS ROAD | | 6965 | 6965 | 8520 | | 8520 | |
| GRIMSLEY ROAD DETOUR | | 1806 | 1806 | 1652 | | 1652 | |
| GRIMSLEY MILLER ROAD | | 4579 | 4579 | 11104 | 3560 | 14664 | |
| ZION ROAD | | 1193 | 1193 | 71629 | 7533 | 79162 | |
| RAMP EN | | 55684 | 55684 | 254986 | | 254986 | 34275 |
| RAMP ES | | 92019 | 92019 | 2048 | | 2048 | |
| RAMP NW | | 6667 | 6667 | 396720 | | 396720 | |
| RAMP SE | | 13401 | 13401 | 192432 | | 192432 | |
| RAMP SW | | 0 | 0 | 516704 | | 516704 | 167506 |
| RAMP WS | | 28029 | 28029 | 18464 | | 18464 | |
| I-49 STA 54+00 TO 67+00 | | 7509 | 7509 | 1389 | | 1389 | |
| I-49 STA 112+00 TO 145+00 | | 38707 | 38707 | 17569 | | 17569 | |
| MAIN LANES | | 1985419 | 1985419 | 671729 | | 671729 | 267592 |
| DRIVEWAYS | | 342 | 342 | 579 | | 579 | |
| ADDITIONAL BRIDGE EXCAVATION | | 1400 | 1400 | 0 | | 0 | |
| RAMP EN RELOCATED CHANNEL | | 987 | 987 | 0 | | 0 | |
| *ENTIRE PROJECT | 31881 | | 31881 | | | | 31881 |
| TOTALS: | 31881 | 2485315 | 2517196 | 2436552 | 18834 | 2455386 | 504230 |

*QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

## EROSION CONTROL

| LOCATION | LIME | SEEDING | MULCH COVER | SECOND SEEDING | WATER |
|---|---|---|---|---|---|
| | TON | ACRE | | | M.G. |
| ENTIRE PROJECT | 508.94 | 254.47 | 254.47 | 254.47 | 25955.9 |
| TOTALS: | 508.94 | 254.47 | 254.47 | 254.47 | 25955.9 |

BASIS OF ESTIMATE:
LIME = 2 TONS PER ACRE SEEDING
WATER = 102.0 M.G.PER ACRE SEEDING

QUANTITIES

cggervosini 9/5/2014 3:24:44 PM
WORKSPACE: AHTD
L:\2005\059180 - AHTD Springdale Bypass\Drawings\HWY 112 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 163 | 897 |

(2) QUANTITIES

## STRUCTURES

| STATION | LOCATION | DESCRIPTION | REINFORCED CONCRETE PIPE CULVERTS: SIDE DRAIN 18 IN. (L.F.) | SIDE DRAIN 24 IN. (L.F.) | TEMPORARY 24 IN. (L.F.) | CLASS III 24 IN. (L.F.) | CLASS III 30 IN. (L.F.) | CLASS III 36 IN. (L.F.) | CLASS III 42 IN. (L.F.) | CLASS IV 24 IN. (L.F.) | CLASS IV 30 IN. (L.F.) | CLASS IV 36 IN. (L.F.) | CLASS IV 42 IN. (L.F.) | CLASS IV 48 IN. (L.F.) | CLASS IV 54 IN. (L.F.) | CLASS V 24 IN. (L.F.) | CLASS V 30 IN. (L.F.) | CLASS V 36 IN. (L.F.) | CLASS V 42 IN. (L.F.) | CLASS V 48 IN. (L.F.) | CLASS V 54 IN. (L.F.) | CLASS V 60 IN. (L.F.) | CLASS V 72 IN. (L.F.) | CLASS SPL 24 IN. (L.F.) | CLASS SPL 36 IN. (L.F.) | FLARED END SECTIONS 24 IN. (EACH) | 30 IN. (EACH) | 36 IN. (EACH) | 42 IN. (EACH) | 48 IN. (EACH) | 54 IN. (EACH) | 60 IN. (EACH) | 72 IN. (EACH) | ZINC COATED (GALV. C.S.P. 16 GAUGE) 12 IN. (L.F.) | DROP INLETS (TYPE N-1) (EACH) | (TYPE N-2) (EACH) | (TYPE RM) (EACH) | JUNCTION BOXES (TYPE ST) (EACH) | CONCRETE SPILLWAY (TYPE A) (EACH) | CONTRA-COSTA ENERGY DISSIPATOR (EACH) | RIPRAP BASIN (EACH) | CLASS S CONCRETE - ROADWAY (CU. YD.) | REINF. STEEL - ROADWAY (GRADE 60) (POUND) | UNCL. EXC. FOR STR. - ROADWAY (CU. YD.) | SOLID SODDING (SQ. YD.) | WATER (M.G.) | STANDARD DRAWINGS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 480+93.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES RT. & CONTRA-COSTA ENERGY DISSIPATOR LT. | | | | | | | | | | | | 256 | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | 23 | 0.3 | PCC-1, FES-1, FES-2 |
| 482+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 94 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 490+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 84 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 495+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 495+32.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ LT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | 242 | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | 70 | 0.9 | PCC-1, FES-1, FES-2 |
| 505+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 508+55.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | | | | | | | | 330 | | | | | | | | | 2 | | | | | | | | | | | 70 | 0.9 | PCC-1, FES-1, FES-2 |
| 512+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 519+47.00 | MAIN LANES | CONTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES & RIPRAP BASIN ON LT. | | | | | | | | | | | | | | | | | 358 | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | 23 | 0.3 | PCC-1, FES-1, FES-2 |
| 520+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 530+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 534+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 85 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 557+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 84 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 568+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 84 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 579+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 84 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 590+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 82 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 595+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 606+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 611+30.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | 222 | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 26 | 0.3 | PCC-1, FES-1, FES-2 |
| 616+85.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES RT. & CONTRA-COSTA ENERGY DISSIPATOR LT. | | | | | | | | | | | | | | | | 298 | | | | | | | | | | 1 | | | | | | | | | | | | | | | 17 | 0.2 | PCC-1, FES-1, FES-2 |
| 617+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 622+00.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | | | 266 | | | | | | | | | | | 2 | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 628+84.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES RT. & RIPRAP BASIN ON LT. | | | | | | | | | | | | | 270 | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | 35 | 0.4 | PCC-1, FES-1, FES-2 |
| 629+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 640+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 660+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | 85 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 665+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | 86 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 665+53.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT LT. FWD SKEW W/ DROP INLET RT. & FES LT. & RIPRAP BASIN RT. | | | | | | | | | | | | | | | | | | | | 444 | | | | | | | | | | | 1 | | | | | | | | 1 | | | 35 | 0.4 | FPC-9D, PCC-1, FES-1, FES-2 |
| 681+00.00 | MAIN LANES | CONSTRUCT DROP INLETS IN MEDIAN W/ R.C. PIPE CULVERTS ON RT. W/ FES | | | | 172 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 9 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 685+00.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT W/ DROP INLET IN MEDIAN & FES LT. & RIPRAP BASIN RT. | | | | | 186 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | 1 | | | 13 | 0.2 | FPC-9D, PCC-1, FES-1, FES-2 |
| 692+23.00 | MAIN LANES | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RIPRAP BASIN RT. | | | | | | | | | | | | | | | | | | | | | 506 | | | | | | | | | | 1 | | | | | | | | 1 | | | 45 | 0.6 | PCC-1, FES-1, FES-2 |
| 695+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | 135 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 705+80.00 | MAIN LANES | CONSTRUCT 8' X 6' X 358' R.C. BOX CULVERT RT. FWD SKEW W/ WINGS LT. & RT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 410.05 | 60506 | 282 | 24 | 0.3 | RCB-1, RCB-2, RCB-3 |
| 710+00.00 | MAIN LANES | CONSTRUCT DROP INLET LT. W/ R.C. PIPE CULVERT ON RT. | | | | 82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | FPC-9D, PCC-1 |
| 710+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | | 84 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 13 | 0.2 | FPC-9D, PCC-1, FES-1, FES-2 |
| 718+00.00 | MAIN LANES | CONSTRUCT DROP INLET LT. W/ R.C. PIPE CULVERT ON RT. | | | | 82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | FPC-9D, PCC-1 |
| 718+00.00 | MAIN LANES | CONSTRUCT DROP INLET IN MEDIAN W/ R.C. PIPE CULVERT ON RT. | | | | | 84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | FPC-9D, PCC-1, FES-1, FES-2 |
| 718+00.00 | MAIN LANES | CONSTRUCT DROP INLET RT. W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | | | 144 | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 23 | 0.3 | FPC-9D, PCC-1, FES-1, FES-2 |
| 122+60.00 | I-49 | EXTEND 8' X 7' BOX CULVERT 20' LT. & 28' RT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 137.48 | 17562 | 64 | | | RCB-1, RCB-2, RCB-3, R-300X-X2, W-X003-1 |
| 8+46.00 | HWY. 112 | INSTALL LT. SIDE DRAIN | 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 9+80.00 | HWY. 112 | INSTALL RT. SIDE DRAIN | 58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 18+68.00 | HWY. 112 | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 45 | | 1 | | 1 | | | | | | FPC-9N |
| 18+75.00 | HWY. 112 | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 39 | | 1 | | 1 | | | | | | FPC-9N |
| 494+70.00 | RAMP 1 | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES RT. & LT. | | | | | | | | | | | | | | | | | | | | 174 | | | | | | | | | | 2 | | | | | | | | | | | | | PCC-1, FES-1, FES-2 |
| 508+85.00 | RAMP 2 | CONSTRUCT R.C. PIPE CULVERT LT. FWD SKEW W/ FES RT. & LT. | | | | | | | | | | | | | | | | | | 202 | | | | | | | | | | | 2 | | | | | | | | | | | | | PCC-1, FES-1, FES-2 |
| 507+70.00 | RAMP 3 | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES RT. & RIPRAP BASIN LT. | | | | | | | | | | | | | | | | | | | | | 216 | | | | | | | | | | 1 | | | | | | | | 1 | | | 45 | 0.6 | PCC-1, FES-1, FES-2 |
| 496+65.00 | RAMP 4 | CONSTRUCT R.C. PIPE CULVERT LT. FWD SKEW W/ FES RT. & RIPRAP BASIN LT. | | | | | | | | | | | | | | | | | | | | | 224 | | | | | | | | | | 1 | | | | | | | | 1 | | | 45 | 0.6 | PCC-1, FES-1, FES-2 |
| 30+00.00 | HWY. 112 | CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT. | | | | 82 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 30+55.00 | HWY. 112 | INSTALL LT. SIDE DRAIN | | 74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 31+71.00 | HWY. 112 | INSTALL LT. SIDE DRAIN | | 43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 18+72.00 | GRIMSLEY | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 53 | | 1 | | 1 | | | | | | FPC-9N |
| 18+72.00 | GRIMSLEY | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 53 | | 1 | | 1 | | | | | | FPC-9N |
| 21+28.00 | GRIMSLEY | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 52 | | 1 | | 1 | | | | | | FPC-9N |
| 21+28.00 | GRIMSLEY | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 52 | | 1 | | 1 | | | | | | FPC-9N |
| 701+45.00 | RAMP EN | CONSTRUCT R.C. PIPE CULVERT W/ LT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | | | | | 185 | | | | | | | | | 2 | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 711+04.00 | RAMP EN | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | | | | | | | | | | 271 | | | | | | | | | 2 | | | | | | | | | | 128 | 1.6 | PCC-1, FES-1, FES-2 |
| 718+34.00 | RAMP EN | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 53 | 1 | | | 1 | | | | | | FPC-9N |
| 728+88.00 | RAMP EN | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | | 1 | | 1 | | | | | | FPC-9N |
| 744+00.00 | RAMP EN | CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT. | | | | 120 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 750+75.00 | RAMP ES | CONSTRUCT DROP INLET W/ R.C. PIPE OUTLET ON RT. W/ FES | | | | 58 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 705+00.00 | RAMP ES | CONSTRUCT DROP INLET ON LT. W/ R.C. PIPE OUTLET ON RT. W/ FES | | | | 84 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | 8 | 0.1 | FPC-9D, PCC-1 |
| 712+31.00 | RAMP ES | CONSTRUCT R.C. PIPE CULVERT W/ RT. FWD SKEW W/ FES LT. & RT. | | | | 108 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 703+00.00 | RAMP NW | CONSTRUCT DROP INLET ON RT. W/ R.C. PIPE OUTLET ON LT. W/ FES | | | | 65 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | 1 | | | | | | | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 715+65.00 | RAMP NW | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 50 | | 1 | | 1 | | | | | | FPC-9N |
| 731+10.00 | RAMP NW | CONSTRUCT R.C. PIPE CULVERT W/ FES RT. | | | | 52 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 8 | 0.1 | PCC-1, FES-1, FES-2 |
| 730+14.00 | RAMP NW | CONSTRUCT DROP INLET ON RT. W/ R.C. PIPE OUTLET ON LT. W/ FES | | | | | | | | | | | | | | | | | | | | | | | | | 456 | | | 1 | | | | | | | | 1 | | | | | | | 17 | 0.2 | FPC-9D, PCC-1, FES-1, FES-2 |
| 740+00.00 | RAMP NW | CONSTRUCT R.C. PIPE CULVERT LT. FWD SKEW/ FES LT. & RT. | | | | | | | | | 142 | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 743+25.00 | RAMP NW | CONSTRUCT DROP INLET RT. W/ R.C. PIPE CULVERT ON LT. W/ FES | | | | | | | | | | 103 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 17 | 0.2 | FPC-9D, PCC-1, FES-1, FES-2 |
| 704+00.00 | RAMP SE | CONSTRUCT DROP INLET LT. W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | 63 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 707+00.00 | RAMP SE | CONSTRUCT DROP INLET LT. W/ R.C. PIPE CULVERT ON RT. W/ FES | | | | 104 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 712+31.00 | RAMP SE | EXTEND 6' X 4' BOX CULVERT 512' RT. W/ RT. FWD SKEW & CONTRA-COSTA ENERGY DISSIPATOR ON RT. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 794.71 | 102539 | 433 | | | RCB-1, RCB-2, RCB-3 |
| 713+00.00 | RAMP SE | CONSTRUCT R.C. PIPE CULVERT LT. W/ FES | | | | | | | | | | | | | | | 104 | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | 8 | 0.1 | PCC-1, FES-1, FES-2 |
| 694+93.00 | RAMP WS | CONSTRUCT JUNCTION BOX W/ R.C. PIPE CULVERT RT. FWD SKEW W/ FES ON LT. | | | | | | | | | | | | | | | 180 | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | 8 | 0.1 | FPC-9S, PCC-1, FES-1, FES-2 |
| 696+18.00 | RAMP WS | EXTEND R.C. PIPE CULVERT RT. FWD SKEW W/ FES ON LT. | | | | | | | | | | 84 | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 17 | 0.2 | PCC-1, FES-1, FES-2 |
| 697+88.00 | RAMP WS | CONSTRUCT DROP INLET RT. W/ R.C. PIPE OUTLET ON LT. W/ FES | | | | 130 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 711+50.00 | RAMP SW | CONSTRUCT DROP INLET RT. W/ R.C. PIPE OUTLET ON LT. W/ FES | | | | 50 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 717+75.00 | RAMP SW | CONSTRUCT R.C. PIPE CULVERT LT. FWD SKEW WITH FES LT. & RT. | | | | | | | | | | | | | | | | | | | | | | | | 404 | | 2 | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 722+57.00 | RAMP SW | CONSTRUCT R.C. PIPE CULVERT LT. FWD SKEW WITH FES LT. & RT. | | | | | | | | | | | | | | | | | | | | | | | | | 588 | | | 2 | | | | | | | | | | | | | 34 | 0.4 | PCC-1, FES-1, FES-2 |
| 12+00.00 | S. ZION RD. | INSTALL RT. SIDE DRAIN | | 68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 17+91.00 | S. ZION RD. | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RIPRAP BASIN RT. | | | | | | | | | | | | | | | | 266 | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | | 13 | 0.2 | PCC-1, FES-1, FES-2 |
| 18+41.00 | S. ZION RD | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 1 | | 1 | | | | | | FPC-9N |
| 18+58.00 | S. ZION RD | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 110 | | 1 | | 1 | | | | | | FPC-9N |
| 21+51.00 | S. ZION RD | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 66 | | 1 | | 1 | | | | | | FPC-9N |
| 21+68.00 | S. ZION RD | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 1 | | 1 | | | | | | FPC-9N |
| 22+57.00 | S. ZION RD. | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | | | | | | | | 216 | | | | | | | | | | 2 | | | | | | | | | | | 34 | 0.4 | PCC-1, FES-1, FES-2 |
| 28+57.00 | S. ZION RD. | INSTALL RT. SIDE DRAIN | | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 28+57.00 | S. ZION RD. | INSTALL LT. SIDE DRAIN | | 86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 17+62.00 | SPRING CREEK ST. | INSTALL RT. SIDE DRAIN | | 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 21+28.00 | SPRING CREEK ST. | CONSTRUCT DROP INLET LT. W/ CMP OUTLET ON LT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 46 | | 1 | | 1 | | | | | | FPC-9N |
| 21+37.00 | SPRING CREEK ST. | CONSTRUCT DROP INLET RT. W/ CMP OUTLET ON RT. W/ CONCRETE SPILLWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | | 1 | | 1 | | | | | | FPC-9N |
| 39+36.00 | SPRING CREEK ACCESS ROAD | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RT. | | | | 108 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 35+00.00 | PUPPY CREEK ROAD | CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT. | | | | 44 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 7+66.00 | SHARP SPRINGS ACCESS ROAD | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RT. | | | | | 84 | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | 26 | 0.3 | PCC-1, FES-1, FES-2 |
| 11+80.00 | SHARP SPRINGS ACCESS ROAD | CONSTRUCT DOUBLE R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RT. | | | | | | | | | | | | | 108 | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | 62 | 0.8 | PCC-1, FES-1, FES-2 |
| 39+36.00 | SPRING CREEK ACCESS ROAD | CONSTRUCT R.C. PIPE CULVERT RT. FWD SKEW W/ FES LT. & RT. | | | | 108 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 5+00.00 | GOAD SPRINGS ACCESS ROAD | CONSTRUCT R. C. PIPE CULVERT W/ FES LT. & RT. | | | | 45 | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | 16 | 0.2 | PCC-1, FES-1, FES-2 |
| 6+56.39 | GOAD SPRINGS ACCESS ROAD | INSTALL LT. SIDE DRAIN | 42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| 8+00.00 | GOAD SPRINGS ACCESS ROAD | CONSTRUCT R. C. PIPE CULVERT W/ FES LT. & RT. | | | | | 48 | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | 26 | 0.3 | PCC-1, FES-1, FES-2 |
| 17+00.00 | GOAD SPRINGS ACCESS ROAD | CONSTRUCT DROP INLET RT. W/ R.C. PIPE OUTLET ON LT. W/ FES | | | | 50 | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | 1 | 8 | 0.1 | FPC-9D, PCC-1, FES-1, FES-2 |
| 11+55.00 | WAGON WHEEL ROAD | CONSTRUCT R.C. PIPE CULVERT W/ FES LT. & RT. | | | | | 48 | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | 26 | 0.3 | PCC-1, FES-1, FES-2 |
| 14+80.00 | WAGON WHEEL ROAD | CONSTRUCT DOUBLE R.C. PIPE CULVERT W/ FES LT. & RT. | | | | | | 84 | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | | 36 | 0.5 | PCC-1, FES-1, FES-2 |
| 16+00.00 | HWY. 112 (TEMPORARY) | CONSTRUCT TEMPORARY CULVERT | | | 66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | PCC-1, PCM-1, PCP-1, PCP-2 |
| | | TOTALS: | 135 | 375 | 66 | 3370 | 534 | 84 | 144 | 142 | 222 | 187 | 256 | 108 | 512 | 735 | 266 | 514 | 358 | 202 | 948 | 946 | 271 | 404 | 1044 | 55 | 11 | 12 | 3 | 6 | 8 | 3 | 2 | 751 | 1 | 14 | 39 | 1 | 15 | 3 | 8 | 1342.24 | 180607 | 779 | 1392 | 17.5 | |

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

FOR R.C. PIPE CULVERT INSTALLATIONS, USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

QUANTITIES

cgerwasinl 9/5/2014 3:25:25 PM
WORKSPACE: AHTD
L:\2005\059\680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 164 | 897 |

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-11-14

## CONCRETE DITCH PAVING

| STATION | STATION | DESCRIPTION | LENGTH | CONCRETE DITCH PAVING (TYPE B) | | SOLID SODDING | WATER |
|---|---|---|---|---|---|---|---|
| | | | FEET | "W" | SQ. YD. | SQ. YD. | M.G. |
| 479+00 | 480+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 480+00 | 481+15 | MAIN LANES RT. | 115 | 6.00 | 76.67 | 51.1 | 0.6 |
| 493+00 | 494+56 | RAMP 1 LT. | 156 | 6.00 | 104.00 | 69.3 | 0.9 |
| 495+50 | 501+00 | RAMP 1 RT. | 550 | 6.00 | 366.67 | 244.4 | 3.1 |
| 508+59 | 511+00 | RAMP 2 RT. | 241 | 6.00 | 160.67 | 107.1 | 1.3 |
| 506+00 | 508+12 | RAMP 3 RT. | 212 | 6.00 | 141.33 | 94.2 | 1.2 |
| 507+19 | 512+00 | RAMP 3 LT. | 481 | 6.00 | 320.67 | 213.8 | 2.7 |
| 493+00 | 496+00 | RAMP 4 LT. | 300 | 6.00 | 200.00 | 133.3 | 1.7 |
| 8+50 | 9+51 | HWY. 112 RT. | 101 | 6.00 | 67.33 | 44.9 | 0.6 |
| 10+09 | 12+00 | HWY. 112 RT. | 191 | 6.00 | 127.33 | 84.9 | 1.1 |
| 8+60 | 12+00 | HWY. 112 LT. | 340 | 6.00 | 226.67 | 151.1 | 1.9 |
| 495+00 | | MAIN LANES LT. | 33 | 6.00 | 22.00 | 14.7 | 0.2 |
| 495+00 | 498+00 | MAIN LANES RT. | 300 | 6.00 | 200.00 | 133.3 | 1.7 |
| 497+66 | 499+71 | MAIN LANES LT. | 260 | 4.00 | 115.56 | 115.6 | 1.5 |
| 498+23 | 500+22 | MAIN LANES RT. | 269 | 4.00 | 119.56 | 119.6 | 1.5 |
| 505+00 | 509+03 | MAIN LANES RT. | 403 | 6.00 | 268.67 | 179.1 | 2.3 |
| 505+00 | 508+02 | MAIN LANES LT. | 302 | 6.00 | 201.33 | 134.2 | 1.7 |
| 518+27 | 521+00 | MAIN LANES LT. | 273 | 6.00 | 182.00 | 121.3 | 1.5 |
| 520+00 | | MAIN LANES LT. | 25 | 6.00 | 16.67 | 11.1 | 0.1 |
| 534+00 | 535+00 | MAIN LANES LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 534+74 | 536+62 | MAIN LANES LT. | 290 | 4.00 | 128.89 | 128.9 | 1.6 |
| 534+88 | 536+48 | MAIN LANES RT. | 258 | 4.00 | 114.67 | 114.7 | 1.4 |
| 556+00 | 557+00 | MAIN LANES LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 567+00 | 568+00 | MAIN LANES LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 567+00 | 570+00 | MAIN LANES RT. | 300 | 6.00 | 200.00 | 133.3 | 1.7 |
| 572+00 | 580+00 | MAIN LANES LT. | 800 | 6.00 | 533.33 | 355.6 | 4.5 |
| 575+59 | 578+00 | MAIN LANES RT. | 250 | 6.00 | 166.67 | 111.1 | 1.4 |
| 579+00 | | MAIN LANES LT. | 142 | 6.00 | 94.67 | 63.1 | 0.8 |
| 587+70 | 589+00 | MAIN LANES LT. | 130 | 6.00 | 86.67 | 57.8 | 0.7 |
| 588+00 | 593+41 | MAIN LANES RT. | 541 | 6.00 | 360.67 | 240.4 | 3.0 |
| 594+00 | 596+00 | MAIN LANES RT. | 200 | 6.00 | 133.33 | 88.9 | 1.1 |
| 593+39 | 596+00 | MAIN LANES LT. | 261 | 6.00 | 174.00 | 116.0 | 1.5 |
| 590+00 | | MAIN LANES LT. | 93 | 6.00 | 62.00 | 41.3 | 0.5 |
| 595+00 | | MAIN LANES LT. | 22 | 6.00 | 14.67 | 9.8 | 0.1 |
| 606+00 | 607+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 611+15 | | MAIN LANES LT. | 25 | 6.00 | 16.67 | 11.1 | 0.1 |
| 611+38 | 612+00 | MAIN LANES RT. | 62 | 6.00 | 41.33 | 27.6 | 0.3 |
| 611+19 | 613+00 | MAIN LANES LT. | 181 | 6.00 | 120.67 | 80.4 | 1.0 |
| 617+18 | 619+00 | MAIN LANES RT. | 182 | 6.00 | 121.33 | 80.9 | 1.0 |
| 617+00 | | MAIN LANES LT. | 82 | 6.00 | 54.67 | 36.4 | 0.5 |
| 622+19 | 624+00 | MAIN LANES RT. | 181 | 6.00 | 120.67 | 80.4 | 1.0 |
| 623+00 | 625+00 | MAIN LANES LT. | 200 | 16.00 | 355.56 | 88.9 | 1.1 |
| 625+82 | 627+91 | MAIN LANES LT. | 209 | 16.00 | 371.56 | 92.9 | 1.2 |
| 629+00 | | MAIN LANES LT. | 40 | 6.00 | 26.67 | 17.8 | 0.2 |
| 629+45 | 630+00 | MAIN LANES RT. | 55 | 6.00 | 36.67 | 24.4 | 0.3 |
| 629+32 | 632+16 | MAIN LANES RT. | 323 | 4.00 | 143.56 | 143.6 | 1.8 |
| 631+51 | 634+24 | MAIN LANES LT. | 315 | 4.00 | 140.00 | 140.0 | 1.8 |
| 630+00 | 631+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 635+80 | 638+00 | MAIN LANES LT. | 220 | 6.00 | 146.67 | 97.8 | 1.2 |
| 640+00 | 641+00 | MAIN LANES LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 663+00 | 664+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 665+00 | | MAIN LANES RT. | 32 | 6.00 | 21.33 | 14.2 | 0.2 |
| 665+00 | 666+28 | MAIN LANES LT. | 128 | 6.00 | 85.33 | 56.9 | 0.7 |
| 678+42 | 679+98 | MAIN LANES RT. | 245 | 4.00 | 108.89 | 108.9 | 1.4 |
| 679+05 | 680+85 | MAIN LANES LT. | 346 | 4.00 | 153.78 | 153.8 | 1.9 |
| 680+00 | 681+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 684+00 | 685+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 688+00 | 690+00 | MAIN LANES RT. | 200 | 6.00 | 133.33 | 88.9 | 1.1 |
| 690+00 | 692+00 | MAIN LANES RT. | 200 | 7.00 | 155.56 | 88.9 | 1.1 |
| 692+00 | 693+00 | MAIN LANES RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 695+00 | | MAIN LANES RT. | 75 | 6.00 | 50.00 | 33.3 | 0.4 |
| 706+00 | 710+00 | MAIN LANES RT. | 455 | 11.00 | 556.11 | 202.2 | 2.5 |
| 707+64 | 708+00 | MAIN LANES LT. TO RT. | 265 | 11.00 | 323.89 | 117.8 | 1.5 |
| 712+21 | 715+73 | MAIN LANES LT. | 367 | 4.00 | 163.11 | 163.1 | 2.1 |
| 717+48 | 719+82 | MAIN LANES RT. | 289 | 4.00 | 128.44 | 128.4 | 1.6 |
| 10+60 | 13+00 | SHARPS SPRINGS ACCESS LT. | 240 | 6.00 | 160.00 | 106.7 | 1.3 |
| 11+50 | 12+50 | SHARPS SPRINGS ACCESS RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 12+20 | | SHARPS SPRINGS ACCESS RT. | 38 | 6.00 | 25.33 | 16.9 | 0.2 |
| 22+31 | 25+00 | ZION LT. | 269 | 6.00 | 179.33 | 119.6 | 1.5 |
| 37+00 | 39+60 | SPRING CREEK ACCESS RT. | 260 | 6.00 | 173.33 | 115.6 | 1.5 |
| 21+50 | 22+43 | SPRING CREEK STREET RT. | 93 | 6.00 | 62.00 | 41.3 | 0.5 |
| 21+50 | 23+50 | SPRING CREEK STREET LT. | 200 | 6.00 | 133.33 | 88.9 | 1.1 |
| 25+00 | 30+00 | PUPPY CREEK ROAD RT. | 500 | 7.00 | 388.89 | 222.2 | 2.8 |
| 30+00 | 32+00 | PUPPY CREEK ROAD RT. | 200 | 6.00 | 133.33 | 88.9 | 1.1 |
| 27+00 | 30+00 | PUPPY CREEK ROAD LT. | 300 | 6.00 | 200.00 | 133.3 | 1.7 |
| 30+00 | 30+60 | PUPPY CREEK ROAD LT. | 60 | 6.00 | 40.00 | 26.7 | 0.3 |
| 31+00 | 32+00 | PUPPY CREEK ROAD LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 34+00 | 35+00 | PUPPY CREEK ROAD LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 10+80 | 11+20 | PUPPY CREEK ACCESS RT. | 40 | 7.00 | 31.11 | 17.8 | 0.2 |
| 12+20 | 15+70 | PUPPY CREEK ACCESS RT. | 350 | 7.00 | 272.22 | 155.6 | 2.0 |
| 695+00 | | MAIN LANES RT. | 75 | 6.00 | 50.00 | 33.3 | 0.4 |
| 699+50 | 702+00 | RAMP EN RT. | 250 | 6.00 | 166.67 | 111.1 | 1.4 |
| 701+67 | 705+90 | RAMP EN LT. | 445 | 9.00 | 445.00 | 197.8 | 2.5 |
| 707+50 | 715+00 | RAMP EN LT. | 750 | 6.00 | 500.00 | 333.3 | 4.2 |
| 708+00 | 711+55 | RAMP EN RT. | 385 | 6.00 | 256.67 | 171.1 | 2.2 |
| 711+55 | 714+40 | RAMP EN RT. | 320 | 6.00 | 213.33 | 142.2 | 1.8 |
| 727+72 | 729+93 | RAMP EN RT. TO LT. | 279 | 4.00 | 124.00 | 124.0 | 1.6 |
| 743+00 | 744+00 | RAMP EN RT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 743+00 | 744+00 | RAMP EN LT. | 100 | 6.00 | 66.67 | 44.4 | 0.6 |
| 704+76 | 708+50 | RAMP ES LT. | 374 | 6.00 | 249.33 | 166.2 | 2.1 |
| 705+00 | 708+50 | RAMP ES RT. | 350 | 6.00 | 233.33 | 155.6 | 2.0 |
| 712+26 | 714+00 | RAMP ES LT. | 174 | 6.00 | 116.00 | 77.3 | 1.0 |
| 712+38 | 714+00 | RAMP ES RT. | 162 | 6.00 | 108.00 | 72.0 | 0.9 |
| 702+00 | 703+90 | RAMP NW LT. | 190 | 6.00 | 126.67 | 84.4 | 1.1 |
| 703+00 | | RAMP NW LT. | 122 | 6.00 | 81.33 | 54.2 | 0.7 |
| 732+20 | 733+00 | RAMP NW LT. | 80 | 6.00 | 53.33 | 35.6 | 0.4 |
| 704+00 | 708+00 | RAMP SE RT. | 400 | 6.00 | 266.67 | 177.8 | 2.2 |
| 711+50 | | RAMP SW RT. | 38 | 6.00 | 25.33 | 16.9 | 0.2 |
| 693+50 | 697+33 | RAMP WS LT. | 383 | 6.00 | 255.33 | 170.2 | 2.1 |
| 8+00 | 10+00 | GOAD SPRINGS ACCESS LT. | 200 | 6.00 | 133.33 | 88.9 | 1.1 |
| 17+00 | | GOAD SPRINGS ACCESS LT. | 25 | 6.00 | 16.67 | 11.1 | 0.1 |
| 82+04 | 84+76 | I-49 RT. | 310 | 4.00 | 137.78 | 137.8 | 1.7 |
| 119+00 | 122+00 | I-49 RT. | 300 | 6.00 | 200.00 | 133.3 | 1.7 |
| 120+65 | 124+20 | I-49 LT. | 355 | 6.00 | 236.67 | 157.8 | 2.0 |
| 122+55 | 125+15 | I-49 RT. | 260 | 6.00 | 173.33 | 115.6 | 1.5 |
| * ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER | | | | | | 500.00 | 500.0 | 6.3 |
| TOTALS: | | | | | | 16096.86 | 10673.9 | 134.9 |

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

## PERMANENT ROAD BARRICADE

| STATION | DESCRIPTION | GUARDRAIL (TYPE C) |
|---|---|---|
| | | LF |
| 557+90 | RT. OF C.L. MEDIAN | 25 |
| 622+55 | RT. OF C.L. MEDIAN | 25 |
| 623+55 | LT. OF C.L. MEDIAN | 25 |
| 637+25 | RT. OF C.L. MEDIAN | 25 |
| | | |
| TOTAL: | | 100 |

NOTE: PRICE BID FOR GUARDRAIL (TYPE C) INCLUDES RED DIAMOND REFLECTORS AND SUPPORTS.

## WIRE ROPE SAFETY FENCE GUARDRAIL

| STATION | STATION | LOCATION | GUARDRAIL TYPE "A" | TERMINAL ANCHOR POSTS (TYPE 1) | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|---|---|
| | | | L.F. | EACH | EACH |
| 534+50.00 | 539+50.00 | RT. OF LT. M.L. | 450 | 1 | 1 |
| 531+85.00 | 536+85.00 | LT. OF RT. M.L. | 450 | 1 | 1 |
| 628+15.00 | 633+15.00 | LT. OF RT. M.L. | 450 | 1 | 1 |
| 630+85.00 | 635+85.00 | RT. OF LT. M.L. | 450 | 1 | 1 |
| 675+70.00 | 680+70.00 | LT. OF RT. M.L. | 450 | 1 | 1 |
| 678+35.00 | 683+93.56 | RT. OF LT. M.L. | 450 | 1 | 1 |
| | | | | | |
| TOTALS: | | | 2700 | 6 | 6 |

## WIRE ROPE SAFETY FENCE

| STATION | STATION | LOCATION | WIRE ROPE SAFETY FENCE | WRSF ANCHOR * | WRSF MAINTENANCE MATERIALS |
|---|---|---|---|---|---|
| | | | L.F. | EACH | LUMP SUM |
| 536+00 | 577+02 | MEDIAN | 4102 | 2 | |
| 596+81 | 625+00 | MEDIAN | 2819 | 1 | |
| 625+82 | 631+70 | MEDIAN | 588 | 1 | |
| 632+30 | 679+20 | MEDIAN | 4690 | 2 | |
| | | | | | |
| ENTIRE | PROJECT | | | | 1.00 |
| TOTALS: | | | 12199 | 6 | 1.00 |

* THIS ITEM SHOWN FOR INFORMATION ONLY

## WIRE ROPE SAFETY FENCE CONCRETE DITCH PAVING

| STATION | STATION | LOCATION | LENGTH | CONCRETE DITCH PAVING (TYPE B) | | SOLID SODDING | WATER |
|---|---|---|---|---|---|---|---|
| | | | FEET | "W" FT. | SQ. YD. | SQ. YD. | M.G. |
| 536+00 | 577+02 | MEDIAN | 4102 | 4 | 1823.11 | 1823.1 | 23.0 |
| 596+81 | 625+00 | MEDIAN | 2819 | 4 | 1252.89 | 1252.9 | 15.8 |
| 625+82 | 631+70 | MEDIAN | 588 | 4 | 261.33 | 261.3 | 3.3 |
| 632+30 | 679+20 | MEDIAN | 4690 | 4 | 2084.44 | 2084.4 | 26.3 |
| | | | | | | | |
| TOTALS: | | | | | 5421.77 | 5421.7 | 68.4 |

BASIS OF ESTIMATE:
WATER = 12.6 GALS. PER SQ. YD. SOLID SODDING

## BASE & SURFACING - MAIN LANES WRSF WIDENING FOR GUARDRAIL

| STATION | STATION | LOCATION | LENGTH | ACHM SURFACE COURSE (1/2") | | | | AGGREGATE BASE COURSE (CLASS 7) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | FEET | AVG. WIDTH FEET | SQUARE YARDS | LBS. PER SQ. YD. | TON | TONS PER STATION | TON |
| 531+42.00 | 537+28.00 | WIDENING LT. OF RT. M.L. | 586.00 | VAR | 337.94 | 220 | 37.17 | VAR | 121.66 |
| 533+92.00 | 540+08.00 | WIDENING RT. OF LT. M.L. | 616.00 | VAR | 403.50 | 220 | 44.39 | VAR | 164.04 |
| 627+57.00 | 633+73.00 | WIDENING LT. OF RT. M.L. | 616.00 | VAR | 403.50 | 220 | 44.39 | VAR | 164.04 |
| 630+42.00 | 636+28.00 | WIDENING RT. OF LT. M.L. | 586.00 | VAR | 337.94 | 220 | 37.17 | VAR | 121.66 |
| 675+12.00 | 681+86.56 | WIDENING LT. OF RT. M.L. | 674.56 | VAR | 403.50 | 220 | 44.39 | VAR | 164.04 |
| 677+92.00 | 684+36.56 | WIDENING RT. OF LT. M.L. | 644.56 | VAR | 338.32 | 220 | 37.22 | VAR | 121.66 |
| | | | | | | | | | |
| TOTALS: | | | | | 2224.70 | | 244.73 | | 857.10 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 205

## GUARDRAIL

| STATION | STATION | LOCATION | GUARDRAIL TYPE "A" | TERMINAL ANCHOR POSTS (TYPE 1) | GUARDRAIL TERMINAL (TYPE 2) | THRIE BEAM GUARDRAIL TERMINAL |
|---|---|---|---|---|---|---|
| | | | L.F. | EACH | EACH | EACH |
| 16+67.42 | 18+86.17 | HWY. 112 | 150 | | 1 | 1 |
| 17+49.10 | 18+92.85 | HWY. 112 | 75 | | 1 | 1 |
| 21+07.15 | 22+50.90 | HWY. 112 | 75 | | 1 | 1 |
| 21+13.83 | 23+32.58 | HWY. 112 | 150 | | 1 | 1 |
| 576+16.76 | 579+35.51 | MAIN LANES | 250 | | 1 | 1 |
| 576+66.76 | 579+35.51 | MAIN LANES | 200 | | 1 | 1 |
| 594+39.06 | 597+07.81 | MAIN LANES | 200 | | 1 | 1 |
| 594+47.98 | 597+66.73 | MAIN LANES | 250 | | 1 | 1 |
| 700+24.84 | 703+43.59 | MAIN LANES | 250 | | 1 | 1 |
| 693+39.89 | 695+83.64 | RAMP EN | 175 | | 1 | 1 |
| 715+85.09 | 718+53.84 | RAMP EN | 200 | | 1 | 1 |
| 716+10.09 | 718+53.84 | RAMP EN | 175 | | 1 | 1 |
| 733+96.86 | 736+40.61 | RAMP EN | 175 | | 1 | 1 |
| 734+48.96 | 736+67.71 | RAMP EN | 150 | | 1 | 1 |
| 700+32.53 | 702+76.28 | RAMP NW | 175 | | 1 | 1 |
| 714+84.20 | 715+77.95 | RAMP NW | 75 | 1 | | 1 |
| 727+07.95 | 729+51.70 | RAMP NW | 175 | | 1 | 1 |
| 727+07.95 | 729+51.70 | RAMP NW | 175 | | 1 | 1 |
| 706+36.52 | 708+80.27 | RAMP SE | 175 | | 1 | 1 |
| 706+32.54 | 708+51.29 | RAMP SE | 150 | | 1 | 1 |
| 17+86.11 | 18+79.86 | SPRING CREEK STREET | 75 | 1 | | 1 |
| 17+95.43 | 18+89.18 | SPRING CREEK STREET | 75 | 1 | | 1 |
| 21+09.82 | 23+28.57 | SPRING CREEK STREET | 200 | 1 | | 1 |
| 21+19.14 | 22+12.89 | SPRING CREEK STREET | 75 | 1 | | 1 |
| 16+71.77 | 18+90.52 | GRIMSLEY RD. | 200 | 1 | | 1 |
| 17+96.77 | 18+90.52 | GRIMSLEY RD. | 75 | 1 | | 1 |
| 21+09.48 | 22+03.23 | GRIMSLEY RD. | 75 | 1 | | 1 |
| 21+09.48 | 23+28.23 | GRIMSLEY RD. | 200 | 1 | | 1 |
| 16+56.54 | 18+75.29 | S. ZION RD. | 200 | 1 | | 1 |
| 17+61.94 | 18+55.69 | S. ZION RD. | 75 | 1 | | 1 |
| 21+33.71 | 23+52.46 | S. ZION RD. | 200 | 1 | | 1 |
| 21+53.31 | 22+47.06 | S. ZION RD. | 75 | 1 | | 1 |
| 53+86.00 | 57+61.00 | I-49 | 325 | 1 | 1 | |
| 117+98.00 | 121+23.00 | I-49 | 275 | 1 | 1 | |
| | | | | | | |
| TOTALS: | | | 5525 | 15 | 21 | 32 |

## FLOWABLE SELECT MATERIAL

| STATION | STATION | LOCATION | CU. YD. |
|---|---|---|---|
| 18+94.90 | 18+99.90 | HWY. 112 | 29.3 |
| 21+00.10 | 21+05.10 | HWY. 112 | 29.3 |
| 18+95.92 | 19+00.92 | GRIMSLEY RD | 20.2 |
| 20+99.08 | 21+04.08 | GRIMSLEY RD | 20.2 |
| 18+74.67 | 18+79.67 | S. ZION RD. | 24.7 |
| 21+29.33 | 21+34.33 | S. ZION RD. | 24.7 |
| 18+89.87 | 18+94.87 | SPRING CREEK ST | 22.7 |
| 21+04.13 | 21+09.13 | SPRING CREEK ST | 22.7 |
| | | | |
| TOTAL: | | | 193.8 |



JFCantabery 9/10/2014 7:29:09 PM
WORKSPACE: AHTD
\\gov\enc\lf\projects\2005\059180 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 165 | 897 |
| | | | | (2) | QUANTITIES | | | |

## APPROACH GUTTERS

| STATION | STATION | LOCATION | APPROACH GUTTERS TYPE A | TYPE C | TYPE 1 SPECIAL | TYPE 2 SPECIAL | TYPE 3 SPECIAL | TYPE 4 SPECIAL | REINFORCING STEEL ROADWAY (GR 60) |
|---|---|---|---|---|---|---|---|---|---|
| | | | CU. YD. | | | | | | LB. |
| 579+12.41 | 579+48.91 | 412 OVER SPRING CK. - BEG. BR. A - LT. | | 18.10 | | | | | 995 |
| 579+12.41 | 579+48.91 | 412 OVER SPRING CK. - BEG. BR. A - RT. | | 11.55 | | | | | 630 |
| 589+50.41 | 589+86.91 | 412 OVER SPRING CK. - END BR. A - LT. | | | 19.87 | | | | 2789 |
| 589+50.41 | 589+86.91 | 412 OVER SPRING CK. - END. BR. A - RT. | | | 13.33 | | | | 2012 |
| 579+12.41 | 579+48.91 | 412 OVER SPRING CK. - BEG. BR. B - LT. | | 11.55 | | | | | 630 |
| 579+12.41 | 579+48.91 | 412 OVER SPRING CK. - BEG. BR. B - RT. | | 18.10 | | | | | 995 |
| 589+61.84 | 589+98.34 | 412 OVER SPRING CK. - END BR. B - LT. | | | 13.33 | | | | 2012 |
| 589+61.84 | 589+98.34 | 412 OVER SPRING CK. - END. BR. B - RT. | | | 19.87 | | | | 2789 |
| 591+87.33 | 592+23.83 | 412 OVER WAGON WHEEL - BEG. BR. A - LT. | | | | 20.82 | | | 3040 |
| 591+94.70 | 592+31.20 | 412 OVER WAGON WHEEL - BEG. BR. A - RT. | | | | 13.73 | | | 2168 |
| 594+28.73 | 594+65.23 | 412 OVER WAGON WHEEL - END BR. A - LT. | | 18.10 | | | | | 995 |
| 594+37.58 | 594+74.08 | 412 OVER WAGON WHEEL - END. BR. A - RT. | | 11.55 | | | | | 630 |
| 592+03.77 | 592+40.27 | 412 OVER WAGON WHEEL - BEG. BR. B - LT. | | | | 14.03 | | | 2205 |
| 592+11.37 | 592+47.87 | 412 OVER WAGON WHEEL - BEG. BR. B - RT. | | | | 19.99 | | | 2953 |
| 594+48.28 | 594+84.78 | 412 OVER WAGON WHEEL - END BR. B - LT. | | 11.55 | | | | | 630 |
| 594+57.42 | 594+93.92 | 412 OVER WAGON WHEEL - END. BR. B - RT. | | 18.10 | | | | | 995 |
| 695+93.54 | 696+29.47 | 412 OVER PUPPY CK. - BEG. BR. - LT. | | 11.55 | | | | | 630 |
| 695+85.46 | 696+21.76 | 412 OVER PUPPY CK. - BEG. BR. - RT. | | 11.55 | | | | | 630 |
| 700+18.47 | 700+54.29 | 412 OVER PUPPY CK. - END BR. - LT. | | 11.55 | | | | | 630 |
| 700+14.44 | 700+50.76 | 412 OVER PUPPY CK. - END. BR. - RT. | | 11.55 | | | | | 630 |
| 18+73.26 | 19+03.26 | HWY. 112 OVER 412 - BEG. BR. - LT. | 7.55 | | | | | | 665 |
| 18+66.59 | 18+96.59 | HWY. 112 OVER 412 - BEG. BR. - RT. | 7.55 | | | | | | 665 |
| 21+03.41 | 21+33.41 | HWY. 112 OVER 412 - END BR. - LT. | 7.55 | | | | | | 665 |
| 20+96.74 | 21+26.74 | HWY. 112 OVER 412 - END. BR. - RT. | 7.55 | | | | | | 665 |
| 18+70.92 | 19+00.92 | GRIMSLEY RD. OVER 412 - BEG. BR. - LT. | 4.25 | | | | | | 360 |
| 18+70.92 | 19+00.92 | GRIMSLEY RD. OVER 412 - BEG. BR. - RT. | 4.25 | | | | | | 360 |
| 20+99.08 | 21+29.08 | GRIMSLEY RD. OVER 412 - END BR. - LT. | 4.25 | | | | | | 360 |
| 20+99.08 | 21+29.08 | GRIMSLEY RD. OVER 412 - END. BR. - RT. | 4.25 | | | | | | 360 |
| 18+33.37 | 18+69.87 | ZION RD. OVER 412 - BEG. BR. - LT. | | 8.30 | | | | | 445 |
| 18+52.97 | 18+89.47 | ZION RD. OVER 412 - BEG. BR. - RT. | | 8.30 | | | | | 445 |
| 21+19.53 | 21+56.03 | ZION RD. OVER 412 - END BR. - LT. | | 8.30 | | | | | 445 |
| 21+39.13 | 21+75.63 | ZION RD. OVER 412 - END. BR. - RT. | | 8.30 | | | | | 445 |
| 18+60.21 | 18+90.21 | SPRING CK. RD. OVER 412 - BEG. BR. - LT. | 4.25 | | | | | | 360 |
| 18+69.52 | 18+99.52 | SPRING CK. RD. OVER 412 - BEG. BR. - RT. | 4.25 | | | | | | 360 |
| 20+99.47 | 21+29.47 | SPRING CK. RD. OVER 412 - END BR. - LT. | 4.25 | | | | | | 360 |
| 21+08.79 | 21+38.79 | SPRING CK. RD. OVER 412 - END. BR. - RT. | 4.25 | | | | | | 360 |
| 694+69.59 | 695+94.05 | RAMP EN OVER PUPPY CK. - BEG. BR. - LT. | | | | | 57.39 | | 6751 |
| 695+57.32 | 695+94.05 | RAMP EN OVER PUPPY CK. - BEG. BR. - RT. | | 11.55 | | | | | 630 |
| 699+56.25 | 699+92.57 | RAMP EN OVER PUPPY CK. - END BR. - LT. | | 8.30 | | | | | 445 |
| 699+56.25 | 699+92.98 | RAMP EN OVER PUPPY CK. - END. BR. - RT. | | 11.55 | | | | | 630 |
| 718+34.74 | 718+71.24 | RAMP EN OVER 412 - BEG. BR. - LT. | | 8.30 | | | | | 445 |
| 718+35.74 | 718+72.24 | RAMP EN OVER 412 - BEG. BR. - RT. | | 11.55 | | | | | 630 |
| 728+51.09 | 728+87.59 | RAMP EN OVER 412 - END BR. - LT. | | 8.30 | | | | | 445 |
| 728+52.09 | 728+88.59 | RAMP EN OVER 412 - END. BR. - RT. | | 11.55 | | | | | 630 |
| 736+20.96 | 736+58.19 | RAMP EN OVER SILENT GROVE - BEG. BR. - LT. | | 11.55 | | | | | 630 |
| 736+49.03 | 736+84.74 | RAMP EN OVER SILENT GROVE - BEG. BR. - RT. | | 14.80 | | | | | 810 |
| 740+75.48 | 741+11.98 | RAMP EN OVER SILENT GROVE - END BR. - LT. | | 11.55 | | | | | 630 |
| 740+99.82 | 741+36.32 | RAMP EN OVER SILENT GROVE - END. BR. - RT. | | 14.80 | | | | | 810 |
| 715+55.85 | 715+92.35 | RAMP NW OVER I-49 & 412 - BEG. BR. - LT. | | 11.55 | | | | | 630 |
| 715+55.85 | 715+92.35 | RAMP NW OVER I-49 & 412 - BEG. BR. - RT. | | | | | | 13.28 | 716 |
| 726+94.55 | 727+31.05 | RAMP NW OVER I-49 & 412 - END BR. - LT. | | 11.55 | | | | | 630 |
| 726+94.55 | 727+31.05 | RAMP NW OVER I-49 & 412 - END. BR. - RT. | | | | | | 13.28 | 716 |
| 708+55.15 | 708+91.44 | RAMP SE OVER GOAD SPRINGS RD. - BEG. BR. - LT. | | 11.55 | | | | | 630 |
| 708+25.16 | 708+62.09 | RAMP SE OVER GOAD SPRINGS RD. - BEG. BR. - RT. | | 18.10 | | | | | 995 |
| 711+25.01 | 711+61.30 | RAMP SE OVER GOAD SPRINGS RD. - END BR. - LT. | | 11.55 | | | | | 630 |
| 711+01.70 | 711+38.63 | RAMP SE OVER GOAD SPRINGS RD. - END. BR. - RT. | | 18.10 | | | | | 995 |
| | | | | | | | | | |
| TOTALS: | | | 64.20 | 404.20 | 66.40 | 68.57 | 57.39 | 26.56 | 55736 |

## APPROACH SLABS

| STATION | STATION | LOCATION | APPROACH SLABS TYPE C1 | TYPE 1 SPECIAL | TYPE 2 SPECIAL | TYPE 3 SPECIAL | TYPE 4 SPECIAL | TYPE 5 SPECIAL | REINFORCING STEEL ROADWAY (GR 60) |
|---|---|---|---|---|---|---|---|---|---|
| | | | CU. YD. | | | | | | LB. |
| 579+12.41 | 579+42.91 | 412 OVER SPRING CK. - BEG. BR. A | 49.15 | | | | | | 5775 |
| 589+50.41 | 589+86.91 | 412 OVER SPRING CK. - END BR. A | 49.15 | | | | | | 5775 |
| 579+45.41 | 579+48.91 | 412 OVER SPRING CK. - BEG. BR. B | 49.15 | | | | | | 5775 |
| 589+61.84 | 589+98.34 | 412 OVER SPRING CK. - END BR. B | 49.15 | | | | | | 5775 |
| 591+89.27 | 592+27.50 | 412 OVER WAGON WHEEL - BEG. BR. A | | 55.46 | | | | | 6003 |
| 594+33.14 | 594+72.19 | 412 OVER WAGON WHEEL - END BR. A | | 56.24 | | | | | 6096 |
| 592+03.73 | 592+44.03 | 412 OVER WAGON WHEEL - BEG. BR. B | | | 55.50 | | | | 6005 |
| 594+52.85 | 594+92.67 | 412 OVER WAGON WHEEL - END BR. B | | | 56.29 | | | | 6104 |
| 695+89.52 | 696+25.64 | 412 OVER PUPPY CK. - BEG. BR. | | | | 82.10 | | | 9161 |
| 700+16.47 | 700+52.55 | 412 OVER PUPPY CK. - END BR. | | | | 97.45 | | | 9712 |
| 695+57.56 | 695+94.05 | RAMP EN OVER PUPPY CK. - BEG BR. | 30.75 | | | | | | 3640 |
| 699+56.25 | 699+92.75 | RAMP EN OVER PUPPY CK. - END BR. | 30.75 | | | | | | 3640 |
| 718+34.74 | 718+71.24 | RAMP EN OVER 412 - BEG. BR. | 30.75 | | | | | | 3640 |
| 728+51.09 | 728+87.59 | RAMP EN OVER 412 - END BR. | 30.75 | | | | | | 3640 |
| 736+35.40 | 736+71.85 | RAMP EN OVER SILENT GROVE RD. - BEG. BR. | | | | | 38.48 | | 4300 |
| 740+87.65 | 741+24.15 | RAMP EN OVER SILENT GROVE RD. - END BR. | | | | | 37.75 | | 4180 |
| 715+55.85 | 715+92.35 | RAMP NW OVER 412 - BEG. BR. | 30.75 | | | | | | 3640 |
| 726+94.55 | 727+31.05 | RAMP NW OVER 412 - END BR. | 30.75 | | | | | | 3640 |
| 708+40.33 | 708+76.93 | RAMP SE OVER GOAD SPRING RD. - BEG. BR. | | | | | | 63.29 | 7036 |
| 711+13.48 | 711+50.08 | RAMP SE OVER GOAD SPRING RD. - END BR. | | | | | | 61.27 | 6759 |
| | | | | | | | | | |
| TOTALS: | | | 381.10 | 111.70 | 111.79 | 179.55 | 76.23 | 124.56 | 110296 |

## RETAINING WALL

| STATION | LOCATION | RETAINING WALL | CONCRETE RETAINING WALL | GRAVITY BLOCK RETAINING WALL | SELECT GRANULAR BACKFILL |
|---|---|---|---|---|---|
| | | SQ. FT. | SQ. FT. | SQ. FT. | CU. YD. |
| 498+94.64 | RETAINING WALL 4 - HWY. 112 | 3388 | | | 1149 |
| 499+24.32 | RETAINING WALL 5 - HWY. 112 | 4369 | | | 1619 |
| 535+68.30 | RETAINING WALL 6 - GRIMSLEY RD. | 3234 | | | 1268 |
| 535+67.97 | RETAINING WALL 7 - GRIMSLEY RD. | 3071 | | | 1018 |
| 631+32.47 | RETAINING WALL 8 - ZION RD. | 5137 | | | 2212 |
| 632+62.32 | RETAINING WALL 9 - ZION RD. | 5648 | | | 2586 |
| 679+27.09 | RETAINING WALL 10 - SPRING CK. ST. | 2990 | | | 1334 |
| 679+82.87 | RETAINING WALL 11 - SPRING CK. ST. | 3953 | | | 1899 |
| 696+16.35 | GRAVITY WALL - RAMP EN | | | 2036 | - |
| 712+20.55 | RETAINING WALL 12 | 8211 | | | 3056 |
| 717+47.84 | RETAINING WALL 13 | 3838 | | | 1077 |
| 726+05.71 | RETAINING WALL 14 - RAMP NW | 5134 | | | 1674 |
| 727+71.64 | RETAINING WALL 15 - RAMP EN | 5732 | | | 2050 |
| 134+20 | RETAINING WALL - I-49 | | 2086 | | 1007 |
| | | | | | |
| TOTALS: | | 54705 | 2086 | 2036 | 21949 |

## RUMBLE STRIPS IN ASPHALT SHOULDERS

| STATION | STATION | LOCATION | RUMBLE STRIPS IN ASPHALT SHOULDERS |
|---|---|---|---|
| | | | L.F. |
| 514+00.00 | 579+48.91 | LT. SIDE LT. MAIN LANES | 6549 |
| 514+00.00 | 579+48.91 | RT. SIDE LT. MAIN LANES | 6549 |
| 514+00.00 | 579+48.91 | LT. SIDE RT. MAIN LANES | 6549 |
| 514+00.00 | 579+48.91 | RT. SIDE RT. MAIN LANES | 6549 |
| 589+50.40 | 592+25.68 | LT. SIDE LT. MAIN LANES | 275 |
| 589+50.40 | 592+30.10 | RT. SIDE LT. MAIN LANES | 280 |
| 589+61.83 | 592+41.39 | LT. SIDE RT. MAIN LANES | 280 |
| 589+61.83 | 592+45.95 | RT. SIDE RT. MAIN LANES | 284 |
| 594+30.90 | 625+00.00 | LT. SIDE LT. MAIN LANES | 3069 |
| 625+81.89 | 681+00.00 | LT. SIDE LT. MAIN LANES | 5518 |
| 681+58.56 | 696+28.52 | LT. SIDE LT. MAIN LANES | 1470 |
| 594+36.22 | 625+00.00 | RT. SIDE LT. MAIN LANES | 3064 |
| 625+81.89 | 681+00.00 | RT. SIDE LT. MAIN LANES | 5518 |
| 681+58.56 | 696+22.74 | RT. SIDE LT. MAIN LANES | 1464 |
| 594+49.71 | 625+00.00 | LT. SIDE RT. MAIN LANES | 3050 |
| 625+81.89 | 681+00.00 | LT. SIDE RT. MAIN LANES | 5518 |
| 681+58.56 | 696+20.58 | LT. SIDE RT. MAIN LANES | 1462 |
| 594+55.18 | 625+00.00 | RT. SIDE RT. MAIN LANES | 3045 |
| 625+81.89 | 681+00.00 | RT. SIDE RT. MAIN LANES | 5518 |
| 681+58.56 | 696+01.63 | RT. SIDE RT. MAIN LANES | 1443 |
| 694+60.13 | 696+15.41 | RT. SIDE RT. MAIN LANES | 155 |
| 700+14.90 | 704+00.00 | RT. SIDE LT. MAIN LANES | 385 |
| 702+68.95 | 704+00.00 | LT. SIDE LT. MAIN LANES | 131 |
| 694+50.36 | 695+94.04 | LT. SIDE RAMP EN | 144 |
| 699+56.25 | 718+71.23 | LT. SIDE RAMP EN | 1915 |
| 699+56.25 | 703+88.49 | RT. SIDE RAMP EN | 432 |
| 703+97.11 | 718+71.23 | RT. SIDE RAMP EN | 1474 |
| 728+51.10 | 736+63.92 | LT. SIDE RAMP EN | 813 |
| 728+51.10 | 736+77.72 | RT. SIDE RAMP EN | 827 |
| 740+80.52 | 749+68.85 | LT. SIDE RAMP EN | 888 |
| 740+93.10 | 751+81.69 | RT. SIDE RAMP EN | 1089 |
| 703+94.49 | 715+56.52 | LT. SIDE RAMP ES | 1162 |
| 703+94.49 | 716+75.55 | RT. SIDE RAMP ES | 1281 |
| 692+63.19 | 701+07.30 | LT. SIDE RAMP WS | 844 |
| 693+82.48 | 702+25.35 | RT. SIDE RAMP WS | 843 |
| 726+94.52 | 746+43.53 | LT. SIDE RAMP NW | 1949 |
| 726+94.52 | 746+42.77 | RT. SIDE RAMP NW | 1948 |
| 51+82.86 | 62+62.22 | LT. SIDE LT. I-49 | 1079 |
| 54+88.54 | 66+98.85 | RT. SIDE RT. I-49 | 1210 |
| 702+73.47 | 715+92.34 | RT. SIDE RAMP NW | 1319 |
| 711+32.25 | 715+92.34 | LT. SIDE RAMP NW | 460 |
| 700+21.38 | 709+47.73 | LT. SIDE RAMP NW | 926 |
| 709+47.73 | 730+94.09 | LT. SIDE RAMP SW | 2146 |
| 711+34.34 | 730+94.09 | RT. SIDE RAMP SW | 1960 |
| 711+07.63 | 713+44.08 | RT. SIDE RAMP SE | 236 |
| 711+21.59 | 713+44.08 | LT. SIDE RAMP SE | 222 |
| 703+79.80 | 708+69.57 | RT. SIDE RAMP SE | 490 |
| 703+79.80 | 708+87.07 | LT. SIDE RAMP SE | 507 |
| 112+79.85 | 140+09.99 | LT. SIDE I-49 | 2730 |
| 118+09.98 | 145+78.16 | RT. SIDE I-49 | 2768 |
| | | | |
| TOTAL: | | | 99787 |

## MAILBOXES

| STATION | LOCATION | MAILBOXES | MAILBOX SUPPORTS (SINGLE) |
|---|---|---|---|
| | | EACH | EACH |
| 9+10 | HWY. 112 | 1 | 1 |
| 8+45 | HWY. 112 | 1 | 1 |
| 19+92 | HWY. 112 | 1 | 1 |
| 28+45 | SHARP SPRINGS ROAD | 1 | 1 |
| 28+47 | SHARP SPRINGS ROAD | 1 | 1 |
| 10+80 | S. ZION ROAD | 1 | 1 |
| 11+75 | S. ZION ROAD | 6 | 6 |
| 12+16 | S. ZION ROAD | 1 | 1 |
| 637+35 | MAIN LANES | 1 | 1 |
| 15+65 | SPRING CREEK ROAD | 1 | 1 |
| 17+24 | SPRING CREEK ROAD | 1 | 1 |
| 18+60 | SPRING CREEK ROAD | 2 | 2 |
| 21+49 | SPRING CREEK ROAD | 1 | 1 |
| 691+60 | MAIN LANES | 1 | 1 |
| 33+40 | PUPPY CREEK ROAD | 5 | 5 |
| 700+92 | RAMP WS | 1 | 1 |
| 719+90 | MAIN LANES | 1 | 1 |
| 720+61 | MAIN LANES | 1 | 1 |
| 720+05 | RAMP SW | 3 | 3 |
| 725+32 | RAMP SW | 3 | 3 |
| 726+40 | RAMP SW | 1 | 1 |
| | | | |
| TOTALS: | | 35 | 35 |

## PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

| LOCATION | ASPHALT |
|---|---|
| | TON |
| HWY. 112 STA. 30+00 | 7.8 |
| WAGON WHEEL ROAD STA. 11+55 | 8.8 |
| WAGON WHEEL ROAD STA. 14+80 | 18.1 |
| S. ZION ROAD STA. 28+57 LT. | 9.9 |
| PUPPY CREEK ROAD STA. 35+00 | 7.3 |
| | |
| TOTAL: | 51.9 |

BASIS OF ESTIMATE:
1.5' OUTSIDE TRENCH EXCAVATION
12" ESTIMATED PAVEMENT DEPTH

## BENCH MARK CAPS

| STATION | LOCATION | EACH |
|---|---|---|
| 705+80.00 | MAIN LANES - HEADWALL OF R.C. BOX CULVERT ON LT. | 1 |
| 122+60.29 | I-49 - HEADWALL OF R.C. BOX CULVERT ON LT. | 1 |
| 712+31.00 | RAMP SE - HEADWALL OF R.C. BOX CULVERT ON LT. | 1 |
| 579+48.91 | MAIN LANES - BRIDGE END | 1 |
| 592+44.03 | MAIN LANES - BRIDGE END | 1 |
| 696+22.74 | MAIN LANES - BRIDGE END | 1 |
| 18+99.90 | HWY. 112 - BRIDGE END | 1 |
| 19+00.92 | GRIMSLEY RD. - BRIDGE END | 1 |
| 18+79.67 | COUNTY RD. 236 - BRIDGE END | 1 |
| 18+94.87 | SPRING CREEK ST. - BRIDGE END | 1 |
| 695+94.05 | RAMP EN - BRIDGE END | 1 |
| 718+71.24 | RAMP EN - BRIDGE END | 1 |
| 736+70.93 | RAMP EN - BRIDGE END | 1 |
| 715+92.35 | RAMP NW - BRIDGE END | 1 |
| 708+81.66 | RAMP SE - BRIDGE END | 1 |
| | | |
| TOTAL: | | 15 |

SHOWN FOR INFORMATIONAL PURPOSES ONLY. BENCH MARK CAPS TO BE PLACED AND RECORDED BY STATE FORCES.

## CRASH CUSHION

| STATION | LOCATION | CRASH CUSHION |
|---|---|---|
| | | EACH |
| 694+60 | LT. OF RAMP EN EXIT | 1 |
| TOTAL: | | 1 |

NOTE: THE CRASH CUSHION SHALL BE NON-GATING AND REDIRECTIVE AND COMPATIBLE WITH THE SITE GEOMETRY SHOWN IN THE PLANS.

## CONCRETE ISLAND TYPE "C" CURB FACE

| STATION | LOCATION | SIDE | AREA |
|---|---|---|---|
| | | | SQ. YDS. |
| 12+93 | HWY 112 | LT. | 14.8 |
| | | | |
| | | TOTAL: | 14.8 |

## CONCRETE BARRIER WALL

| STATION | STATION | LOCATION | PARAPET TYPE SPECIAL | MEDIAN TYPE SPECIAL |
|---|---|---|---|---|
| | | | L.F. | L.F. |
| 589+64.24 | 592+10.00 | LT. OF L.M.L. | 249 | |
| 589+64.29 | 592+17.27 | RT. OF L.M.L. | 254 | |
| 589+76.37 | 592+26.22 | LT. OF R.M.L. | 249 | |
| 589+76.51 | 592+33.73 | RT. OF R.M.L. | 254 | |
| 84+57.00 | 97+17.00 | I-49 | | 1260 |
| | | | | |
| TOTALS: | | | 1006 | 1260 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
12-11-14

QUANTITIES

JFCantabery 12/11/2014 3:43:10 PM
WORKSPACE: AHTD
\\garverinc\ltprojects\2005\059l680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 166 | 897 |

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
12-11-14

## BASE & SURFACING - I-49

| STATION | STATION | LOCATION / DESCRIPTION | LENGTH | ACHM SURFACE COURSE (1/2") (PG 76-22) | | | | ACHM BINDER COURSE (1") (PG 76-22) | | | | ACHM BASE COURSE (1 1/2") (PG 76-22) | | | | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | TONS PER STATION | TON | AVG. WIDTH | SQUARE YARDS | .03 GAL./SY |
| | | | FEET | FEET | | | | FEET | | | | FEET | | | | | | FEET | | GAL. |
| 51+82.86 | 54+82.86 | I-49 LT. AUXILIARY LANE - TAPER | 300.00 | VAR | 427.00 | 220 | 46.97 | 6.18 | 206.00 | 495 | 50.99 | 6.38 | 212.67 | 550 | 58.48 | VAR | 571.72 | 12.56 | 418.67 | 12.56 |
| 54+82.86 | 61+05.02 | I-49 LT. AUXILIARY LANE | 622.16 | 18.00 | 1244.32 | 220 | 136.88 | 12.18 | 841.99 | 495 | 208.39 | 12.38 | 855.82 | 550 | 235.35 | VAR | 1314.80 | 24.56 | 1697.81 | 50.93 |
| 61+05.02 | 62+63.21 | I-49 LT. AUXILIARY LANE - GORE | 158.19 | VAR | 389.11 | 220 | 42.80 | VAR | 286.45 | 495 | 70.90 | VAR | 289.96 | 550 | 79.74 | VAR | 373.94 | VAR | 576.41 | 17.29 |
| 54+88.53 | 56+88.53 | I-49 RT. AUXILIARY LANE - TAPER | 200.00 | VAR | 292.72 | 220 | 32.20 | 6.18 | 137.33 | 495 | 33.99 | 6.38 | 141.78 | 550 | 38.99 | VAR | 367.91 | 12.56 | 279.11 | 8.37 |
| 56+88.53 | 61+66.50 | I-49 RT. AUXILIARY LANE | 477.97 | 18.00 | 955.94 | 220 | 105.15 | 12.18 | 646.85 | 495 | 160.10 | 12.38 | 657.47 | 550 | 180.80 | VAR | 954.07 | 24.56 | 1304.32 | 39.13 |
| 61+66.50 | 67+14.59 | I-49 RT. AUXILIARY LANE - GORE | 548.09 | VAR | 1322.56 | 220 | 145.48 | VAR | 892.44 | 495 | 220.88 | VAR | 892.44 | 550 | 245.42 | VAR | 1248.09 | VAR | 1784.88 | 53.55 |
| 112+80.45 | 119+47.81 | I-49 LT. AUXILIARY LANE - GORE | 667.36 | VAR | 2511.36 | 220 | 276.25 | VAR | 1767.78 | 495 | 437.53 | VAR | 1767.78 | 550 | 486.14 | VAR | 2162.99 | VAR | 3535.56 | 106.07 |
| 119+47.81 | 134+52.00 | I-49 LT. AUXILIARY LANE | 1504.19 | 30.00 | 5013.97 | 220 | 551.54 | 24.18 | 4041.26 | 495 | 1000.21 | 24.38 | 4074.68 | 550 | 1120.54 | VAR | 4166.39 | 48.56 | 8115.94 | 243.48 |
| 134+52.00 | 140+09.99 | I-49 LT. AUXILIARY LANE - TAPER & TRANSITION | 557.99 | VAR | 1300.37 | 220 | 143.04 | VAR | 934.11 | 495 | 231.19 | VAR | 934.11 | 550 | 256.88 | VAR | 1294.18 | VAR | 1868.22 | 56.05 |
| 118+09.99 | 120+16.50 | I-49 RT. AUXILIARY LANE - GORE | 206.51 | VAR | 502.39 | 220 | 55.26 | VAR | 362.47 | 495 | 89.71 | VAR | 362.47 | 550 | 99.68 | VAR | 515.96 | VAR | 724.94 | 21.75 |
| 120+16.50 | 121+66.50 | I-49 RT. AUXILIARY LANE - TAPER | 150.00 | VAR | 312.13 | 220 | 34.33 | VAR | 210.58 | 495 | 52.12 | VAR | 210.58 | 550 | 57.91 | VAR | 350.46 | VAR | 421.16 | 12.63 |
| 121+66.50 | 145+78.16 | I-49 RT. AUXILIARY LANE | 2411.66 | VAR | 4500.41 | 220 | 495.05 | VAR | 2878.02 | 495 | 712.31 | VAR | 2878.02 | 550 | 791.46 | VAR | 5387.47 | VAR | 5756.04 | 172.68 |
| 84+57.00 | 97+17.00 | I-49 INSIDE SHLDR. (BARRIER WALL) | 1260.00 | VAR | 840.00 | 220 | 92.40 | | | | | | | | | | | | | |
| 86+35.00 | 93+25.00 | I-49 PAVEMENT RECONST. FOR BENTS | VAR | VAR | 340.00 | 220 | 37.40 | VAR | 120.00 | 440 | 26.40 | VAR | 120.00 | 880 | 52.80 | VAR | 157.55 | VAR | 240.00 | 7.20 |
| 53+43.00 | 58+04.00 | GUARDRAIL WIDENING RT. | 461.00 | VAR | 260.48 | 220 | 28.65 | | | | | | | | | VAR | 378.59 | | | |
| 117+55.00 | 121+66.00 | GUARDRAIL WIDENING LT. | 411.00 | VAR | 226.77 | 220 | 24.94 | | | | | | | | | VAR | 226.67 | | | |
| TOTALS: | | | | | 20439.53 | | 2248.34 | | 13325.28 | | 3294.72 | | 13397.78 | | 3704.19 | | 19470.79 | | 26723.06 | 801.69 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 76-22), $N_{MAX}$ = 205
ACHM BINDER COURSE (1"): 4.8% ASPHALT BINDER, 95.2% MINERAL AGGREGATE (PG 76-22), $N_{MAX}$ = 205
ACHM BASE COURSE (1 1/2"): 4.4% ASPHALT BINDER, 95.6% MINERAL AGGREGATE (PG 76-22), $N_{MAX}$ = 205

## BASE & SURFACING - RAMPS

| STATION | STATION | LOCATION / DESCRIPTION | LENGTH | PORTLAND CEMENT CONCRETE PAVT. (11") | | ACHM SURFACE COURSE (1/2") (PG 64-22) | | | | ACHM SURFACE COURSE (3/8") (PG 64-22) | | | | CEMENT STABILIZED CRUSHED STONE BASE COURSE (6") | | | | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AVG. WIDTH | SQUARE YARDS | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH | PROCESSING SQUARE YARDS | CEMENT TON | AGGREGATE TON | TONS PER STATION | TON | AVG. WIDTH | SQUARE YARDS | .03 G/SY |
| | | | FEET | FEET | | FEET | | | | FEET | | | | FEET | | | | | | FEET | | GAL. |
| 499+29.79 | 500+19.62 | RAMP 2 (INT) | 89.83 | VAR | 473.75 | VAR | 118.85 | 220 | 13.07 | VAR | 530.35 | 110 | 29.17 | VAR | 530.35 | 11.14 | 174.49 | VAR | 190.00 | VAR | 530.35 | 15.91 |
| 500+19.62 | 511+49.93 | RAMP 2 | 1130.31 | 15.00 | 1883.85 | 10.00 | 1255.90 | 220 | 138.15 | 19.00 | 2386.21 | 110 | 131.24 | 19.00 | 2386.21 | 50.11 | 785.06 | 186.25 | 2105.20 | 19.00 | 2386.21 | 71.59 |
| 511+49.93 | 517+95.47 | RAMP 2 - SUPERELEVATION | 645.54 | 15.00 | 1075.90 | 10.00 | 717.27 | 220 | 78.90 | 19.00 | 1362.81 | 110 | 74.95 | 19.00 | 1362.81 | 28.62 | 448.36 | 253.74 | 1637.99 | 19.00 | 1362.81 | 40.88 |
| 496+49.18 | 497+36.18 | RAMP 3 (INT) - SUPERELEVATION | 87.00 | VAR | 503.82 | VAR | 115.60 | 220 | 12.72 | VAR | 558.38 | 110 | 30.71 | VAR | 558.38 | 11.73 | 183.71 | VAR | 176.89 | VAR | 558.38 | 16.75 |
| 497+36.18 | 500+40.00 | RAMP 3 - SUPERELEVATION | 303.82 | VAR | 761.97 | VAR | 339.42 | 220 | 37.34 | VAR | 897.41 | 110 | 49.36 | VAR | 897.41 | 18.85 | 295.25 | VAR | 568.00 | VAR | 897.41 | 26.92 |
| 500+40.00 | 505+09.74 | RAMP 3 - SUPERELEVATION | 469.74 | 15.00 | 782.90 | 10.00 | 521.93 | 220 | 57.41 | 19.00 | 991.67 | 110 | 54.54 | 19.00 | 991.67 | 20.83 | 326.26 | VAR | 1235.62 | 19.00 | 991.67 | 29.75 |
| 505+09.74 | 505+56.96 | RAMP 3 | 47.22 | 15.00 | 78.70 | 10.00 | 52.47 | 220 | 5.77 | 19.00 | 99.69 | 110 | 5.48 | 19.00 | 99.69 | 2.09 | 32.80 | 186.25 | 87.95 | 19.00 | 99.69 | 2.99 |
| 505+56.96 | 515+62.46 | RAMP 3 - SUPERELEVATION | 1005.50 | 15.00 | 1675.83 | 10.00 | 1117.22 | 220 | 122.89 | 19.00 | 2122.72 | 110 | 116.75 | 19.00 | 2122.72 | 44.58 | 698.37 | VAR | 2644.91 | 19.00 | 2122.72 | 63.68 |
| 515+62.46 | 516+08.17 | RAMP 3 | 45.71 | 15.00 | 76.18 | 10.00 | 50.79 | 220 | 5.59 | 19.00 | 96.50 | 110 | 5.31 | 19.00 | 96.50 | 2.03 | 31.75 | 186.25 | 85.13 | 19.00 | 96.50 | 2.90 |
| 692+84.89 | 695+83.64 | RAMP EN GUARDRAIL WIDENING RT. | 298.75 | | | VAR | 165.31 | 220 | 18.18 | | | | | | | | | VAR | 154.29 | | | |
| 693+95.95 | 695+57.55 | RAMP EN - SUPERELEVATION | 161.60 | VAR | 281.89 | VAR | 168.58 | 220 | 18.54 | VAR | 353.87 | 110 | 19.46 | VAR | 353.87 | 7.43 | 116.42 | VAR | 325.86 | VAR | 353.87 | 10.62 |
| 699+92.75 | 705+82.58 | RAMP EN - SUPERELEVATION | 589.83 | VAR | 1644.36 | VAR | 651.16 | 220 | 71.63 | VAR | 1906.15 | 110 | 104.84 | VAR | 1906.15 | 40.03 | 627.12 | VAR | 1720.34 | VAR | 1906.15 | 57.18 |
| 705+82.58 | 706+30.86 | RAMP EN | 48.28 | 15.00 | 80.47 | 10.00 | 53.64 | 220 | 5.90 | 19.00 | 101.92 | 110 | 5.61 | 19.00 | 101.92 | 2.14 | 33.53 | 186.25 | 89.92 | 19.00 | 101.92 | 3.06 |
| 706+30.86 | 718+34.74 | RAMP EN - R.C & SUPERELEVATION | 1203.88 | 15.00 | 2006.47 | 10.00 | 1337.64 | 220 | 147.14 | 19.00 | 2541.52 | 110 | 139.78 | 19.00 | 2541.52 | 53.37 | 836.16 | VAR | 3511.32 | 19.00 | 2541.52 | 76.25 |
| 715+27.09 | 718+53.84 | RAMP EN GUARDRAIL WIDENING LT. | 326.75 | | | VAR | 190.77 | 220 | 20.98 | | | | | | | | | VAR | 178.05 | | | |
| 715+55.09 | 718+53.84 | RAMP EN GUARDRAIL WIDENING RT. | 298.75 | | | VAR | 166.00 | 220 | 18.26 | | | | | | | | | VAR | 154.93 | | | |
| 728+87.59 | 736+34.43 | RAMP EN - SUPERELEVATION | 746.84 | 15.00 | 1244.73 | 10.00 | 829.82 | 220 | 91.28 | 19.00 | 1576.66 | 110 | 86.72 | 19.00 | 1576.66 | 33.11 | 518.72 | 352.64 | 2633.66 | 19.00 | 1576.66 | 47.30 |
| 733+29.86 | 736+40.61 | RAMP EN GUARDRAIL WIDENING LT. | 310.75 | | | VAR | 223.94 | 220 | 24.63 | | | | | | | | | VAR | 209.01 | | | |
| 733+90.96 | 736+67.71 | RAMP EN GUARDRAIL WIDENING RT. | 276.75 | | | VAR | 168.00 | 220 | 18.48 | | | | | | | | | VAR | 156.80 | | | |
| 741+23.31 | 742+00.00 | RAMP EN | 76.69 | 15.00 | 127.82 | 10.00 | 85.21 | 220 | 9.37 | 19.00 | 161.90 | 110 | 8.90 | 19.00 | 161.90 | 3.40 | 53.27 | 186.25 | 142.84 | 19.00 | 161.90 | 4.86 |
| 742+00.00 | 748+81.60 | RAMP EN | 681.60 | 15.00 | 1136.00 | 10.00 | 757.33 | 220 | 83.31 | 19.00 | 1438.93 | 110 | 79.14 | 19.00 | 1438.93 | 30.22 | 473.41 | 186.25 | 1269.48 | 19.00 | 1438.93 | 43.17 |
| 748+81.60 | 751+81.60 | RAMP EN - SUPERELEVATION | 300.00 | 15.00 | 500.00 | VAR | 480.75 | 220 | 52.88 | 19.00 | 633.33 | 110 | 34.83 | 19.00 | 633.33 | 13.30 | 208.37 | 186.25 | 558.75 | 19.00 | 633.33 | 19.00 |
| 703+83.47 | 715+58.20 | RAMP ES - SUPERELEVATION | 1174.73 | VAR | 1988.58 | VAR | 1301.74 | 220 | 143.19 | VAR | 2511.52 | 110 | 138.13 | VAR | 2511.52 | 52.74 | 826.29 | VAR | 3787.20 | VAR | 2511.52 | 75.35 |
| 700+32.53 | 703+31.28 | RAMP NW GUARDRAIL WIDENING LT. | 298.75 | | | VAR | 166.47 | 220 | 18.31 | | | | | | | | | VAR | 155.37 | | | |
| 701+47.58 | 710+77.94 | RAMP NW - R.C. & SUPERELEVATION | 930.36 | VAR | 2530.31 | VAR | 1033.54 | 220 | 113.69 | VAR | 2947.50 | 110 | 162.11 | VAR | 2947.50 | 61.90 | 969.73 | VAR | 2232.31 | VAR | 2947.50 | 88.43 |
| 710+77.94 | 715+55.85 | RAMP NW - SUPERELEVATION | 477.91 | 15.00 | 796.52 | 10.00 | 531.01 | 220 | 58.41 | 19.00 | 1008.92 | 110 | 55.49 | 19.00 | 1008.92 | 21.19 | 331.93 | VAR | 1686.92 | 19.00 | 1008.92 | 30.27 |
| 714+28.20 | 715+77.95 | RAMP NW GUARDRAIL WIDENING RT. | 149.75 | | | VAR | 94.02 | 220 | 10.34 | | | | | | | | | VAR | 87.75 | | | |
| 727+07.95 | 730+06.70 | RAMP NW GUARDRAIL WIDENING LT. | 298.75 | | | VAR | 168.28 | 220 | 18.51 | | | | | | | | | VAR | 157.06 | | | |
| 727+07.95 | 730+19.72 | RAMP NW GUARDRAIL WIDENING RT. | 311.77 | | | VAR | 237.34 | 220 | 26.11 | | | | | | | | | VAR | 221.52 | | | |
| 727+31.05 | 732+08.89 | RAMP NW - SUPERELEVATION | 477.84 | 15.00 | 796.40 | 10.00 | 530.93 | 220 | 58.40 | 19.00 | 1008.77 | 110 | 55.48 | 19.00 | 1008.77 | 21.18 | 331.89 | VAR | 952.19 | 19.00 | 1008.77 | 30.26 |
| 732+08.89 | 746+25.61 | RAMP NW | 1416.72 | 15.00 | 2361.20 | 10.00 | 1574.13 | 220 | 173.15 | 19.00 | 2990.85 | 110 | 164.50 | 19.00 | 2990.85 | 62.81 | 983.99 | 186.25 | 2638.64 | 19.00 | 2990.85 | 89.73 |
| 703+49.80 | 708+45.16 | RAMP SE - SUPERELEVATION | 495.36 | 24.00 | 1320.96 | VAR | 867.89 | 220 | 95.47 | VAR | 1527.54 | 110 | 84.01 | VAR | 1527.54 | 32.08 | 502.56 | VAR | 1692.15 | VAR | 1527.54 | 45.83 |
| 705+80.54 | 708+51.29 | RAMP SE GUARDRAIL WIDENING RT. | 270.75 | | | VAR | 141.48 | 220 | 15.56 | | | | | | | | | VAR | 132.05 | | | |
| 705+81.52 | 708+80.27 | RAMP SE GUARDRAIL WIDENING LT. | 298.75 | | | VAR | 166.89 | 220 | 18.36 | | | | | | | | | VAR | 155.76 | | | |
| 711+53.75 | 716+09.99 | RAMP SE - SUPERELEVATION | 456.24 | VAR | 1240.84 | VAR | 729.59 | 220 | 80.25 | VAR | 1447.17 | 110 | 79.59 | VAR | 1447.17 | 30.39 | 476.12 | VAR | 1333.64 | VAR | 1447.17 | 43.42 |
| 710+79.26 | 716+47.73 | RAMP SW - SUPERELEVATION | 568.47 | 15.00 | 947.45 | 10.00 | 631.63 | 220 | 69.48 | 19.00 | 1200.10 | 110 | 66.01 | 19.00 | 1200.10 | 25.20 | 394.83 | VAR | 1228.01 | 19.00 | 1200.10 | 36.00 |
| 716+47.73 | 719+29.07 | RAMP SW | 281.34 | 15.00 | 468.90 | 10.00 | 312.60 | 220 | 34.39 | 19.00 | 593.94 | 110 | 32.67 | 19.00 | 593.94 | 12.47 | 195.41 | 186.25 | 524.00 | 19.00 | 593.94 | 17.82 |
| 719+29.07 | 727+27.49 | RAMP SW - SUPERELEVATION | 798.42 | 15.00 | 1330.70 | 10.00 | 887.13 | 220 | 97.58 | 19.00 | 1685.55 | 110 | 92.71 | 19.00 | 1685.55 | 35.40 | 554.55 | VAR | 2188.11 | 19.00 | 1685.55 | 50.57 |
| 727+27.49 | 728+17.66 | RAMP SW - SUPERELEVATION | 90.17 | VAR | 189.62 | VAR | 108.47 | 220 | 11.93 | VAR | 231.87 | 110 | 12.75 | VAR | 231.87 | 4.87 | 76.29 | VAR | 249.93 | VAR | 231.87 | 6.96 |
| 692+63.37 | 693+63.37 | RAMP WS - SUPERELEVATION | 100.00 | VAR | 196.58 | VAR | 172.82 | 220 | 19.01 | VAR | 241.06 | 110 | 13.26 | VAR | 241.10 | 5.06 | 79.32 | VAR | 166.00 | VAR | 241.06 | 7.23 |
| 693+63.37 | 702+25.35 | RAMP WS | 861.98 | VAR | 2263.07 | VAR | 961.51 | 220 | 105.77 | VAR | 2645.74 | 110 | 145.52 | VAR | 2645.74 | 55.56 | 870.45 | 186.25 | 1605.44 | VAR | 2645.74 | 79.37 |
| | | RAMP APPROACH SLABS | | | | | | | | | | | | | | | | | 239.01 | | | |
| TOTALS: | | | | | 30765.77 | | 20185.07 | | 2220.33 | | 37800.55 | | 2079.02 | | 37800.59 | 793.83 | 12436.41 | | 41270.00 | | 37800.55 | 1134.05 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 115
ACHM SURFACE COURSE (3/8"): 6.0% ASPHALT BINDER, 94.0% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 115
CEMENT STABILIZED CRUSHED STONE BASE COURSE: 6.0% CEMENT, 94.0% AGGREGATE



JFCantabery 12/11/2014 4:32:48 PM
WORKSPACE: AHTD
\\gorverinc\ltprojects\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 167 | 897 |

(2) QUANTITIES

## BASE & SURFACING - MAIN LANES

| STATION | STATION | LOCATION / DESCRIPTION | LENGTH | PORTLAND CEMENT CONCRETE PAVT. (11") | | ACHM SURFACE COURSE (1/2") (PG 64-22) | | | | ACHM SURFACE COURSE (3/8") (PG 64-22) | | | | CEMENT STABILIZED CRUSHED STONE BASE COURSE (6") | | | | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AVG. WIDTH | SQUARE YARDS | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH | PROCESSING SQUARE YARDS | CEMENT TON | AGGREGATE TON | TONS PER STATION | TON | AVG. WIDTH | SQUARE YARDS | .03 G/SY |
| | | | FEET | FEET | | FEET | | | | FEET | | | | FEET | | | | | | FEET | | GAL. |
| 514+00.00 | 520+63.04 | LT. MAIN LANES (RAMP 3 EXIT) | 663.04 | VAR | 2630.91 | VAR | 839.07 | 220 | 92.30 | VAR | 2929.82 | 110 | 161.14 | VAR | 2929.8 | 61.53 | 963.90 | VAR | 1436.00 | VAR | 2929.82 | 87.89 |
| 520+63.04 | 543+09.34 | LT. MAIN LANES | 2246.30 | 26.00 | 6489.31 | 12.00 | 2995.07 | 220 | 329.46 | 30.00 | 7487.67 | 110 | 411.82 | 30.00 | 7487.67 | 157.24 | 2463.44 | 221.00 | 4964.32 | 30.00 | 7487.67 | 224.63 |
| 543+09.34 | 574+74.74 | LT. MAIN LANES - SUPERELEVATION | 3165.40 | 26.00 | 9144.49 | 12.00 | 4220.53 | 220 | 464.26 | 30.00 | 10551.33 | 110 | 580.32 | 30.00 | 10551.33 | 221.58 | 3471.39 | VAR | 9604.00 | 30.00 | 10551.33 | 316.54 |
| 574+74.74 | 579+12.41 | LT. MAIN LANES | 437.67 | 26.00 | 1264.38 | 12.00 | 583.56 | 220 | 64.19 | 30.00 | 1458.90 | 110 | 80.24 | 30.00 | 1458.90 | 30.64 | 479.98 | 221.00 | 967.25 | 30.00 | 1458.90 | 43.77 |
| 589+86.91 | 591+91.00 | LT. MAIN LANES - SUPERELEVATION | 204.09 | 26.00 | 589.59 | 12.00 | 272.12 | 220 | 29.93 | 30.00 | 680.30 | 110 | 37.42 | 30.00 | 680.30 | 14.29 | 223.82 | VAR | 515.00 | 30.00 | 680.30 | 20.41 |
| 594+69.64 | 606+61.89 | LT. MAIN LANES - SUPERELEVATION | 1192.25 | 26.00 | 3444.28 | 12.00 | 1589.67 | 220 | 174.86 | 30.00 | 3974.17 | 110 | 218.58 | 30.00 | 3974.17 | 83.46 | 1307.50 | VAR | 3392.00 | 30.00 | 3974.17 | 119.23 |
| 606+61.89 | 625+00.00 | LT. MAIN LANES | 1838.11 | 26.00 | 5310.10 | 12.00 | 2450.81 | 220 | 269.59 | 30.00 | 6127.03 | 110 | 336.99 | 30.00 | 6127.03 | 128.67 | 2015.79 | 221.00 | 4062.22 | 30.00 | 6127.03 | 183.81 |
| 625+81.89 | 679+96.07 | LT. MAIN LANES | 5414.18 | 26.00 | 15640.96 | 12.00 | 7218.91 | 220 | 794.08 | 30.00 | 18047.27 | 110 | 992.60 | 30.00 | 18047.27 | 378.99 | 5937.55 | 221.00 | 11965.34 | 30.00 | 18047.27 | 541.42 |
| 679+96.07 | 681+00.00 | LT. MAIN LANES - SUPERELEVATION | 103.93 | 26.00 | 300.24 | 12.00 | 138.57 | 220 | 15.24 | 30.00 | 346.43 | 110 | 19.05 | 30.00 | 346.43 | 7.28 | 113.98 | VAR | 234.62 | 30.00 | 346.43 | 10.39 |
| 681+58.56 | 686+00.00 | LT. MAIN LANES - SUPERELEVATION | 441.44 | 26.00 | 1275.27 | 12.00 | 588.59 | 220 | 64.74 | 30.00 | 1471.47 | 110 | 80.93 | 30.00 | 1471.47 | 30.90 | 484.11 | VAR | 1059.71 | 30.00 | 1471.47 | 44.14 |
| 686+00.00 | 689+00.00 | LT. MAIN LANES (TAPER) - SUPERELEVATION | 300.00 | VAR | 1012.32 | VAR | 357.07 | 220 | 39.28 | VAR | 1150.17 | 110 | 63.26 | VAR | 1150.2 | 24.15 | 378.42 | VAR | 854.00 | VAR | 1150.17 | 34.51 |
| 689+00.00 | 695+86.24 | LT. MAIN LANES - SUPERELEVATION | 686.24 | 36.00 | 2744.96 | 10.00 | 762.49 | 220 | 83.87 | 40.00 | 3049.96 | 110 | 167.75 | 40.00 | 3049.96 | 64.05 | 1003.44 | VAR | 1898.00 | 40.00 | 3049.96 | 91.50 |
| 700+51.40 | 704+00.00 | LT. MAIN LANES - SUPERELEVATION | 348.60 | VAR | 1233.77 | VAR | 401.94 | 220 | 44.21 | VAR | 1389.30 | 110 | 76.41 | VAR | 1389.3 | 29.18 | 457.08 | VAR | 673.00 | VAR | 1389.30 | 41.68 |
| | | | | | | | | | | | | | | | | | | | | | | |
| 514+00.00 | 527+94.97 | RT. MAIN LANES (RAMP 2 TRANSITION) | 1394.97 | VAR | 4978.80 | VAR | 1636.61 | 220 | 180.03 | VAR | 5601.54 | 110 | 308.08 | VAR | 5601.5 | 117.63 | 1842.89 | VAR | 3154.00 | VAR | 5601.54 | 168.05 |
| 527+94.97 | 543+09.34 | RT. MAIN LANES | 1514.37 | 26.00 | 4374.85 | 12.00 | 2019.16 | 220 | 222.11 | 30.00 | 5047.90 | 110 | 277.63 | 30.00 | 5047.90 | 106.01 | 1660.76 | 221.00 | 3346.76 | 30.00 | 5047.90 | 151.44 |
| 543+09.34 | 574+74.74 | RT. MAIN LANES - SUPERELEVATION | 3165.40 | 26.00 | 9144.49 | 12.00 | 4220.53 | 220 | 464.26 | 30.00 | 10551.33 | 110 | 580.32 | 30.00 | 10551.33 | 221.58 | 3471.39 | VAR | 9910.00 | 30.00 | 10551.33 | 316.54 |
| 574+74.74 | 579+12.41 | RT. MAIN LANES | 437.67 | 26.00 | 1264.38 | 12.00 | 583.56 | 220 | 64.19 | 30.00 | 1458.90 | 110 | 80.24 | 30.00 | 1458.90 | 30.64 | 479.98 | 221.00 | 967.25 | 30.00 | 1458.90 | 43.77 |
| 589+98.34 | 592+07.53 | RT. MAIN LANES - SUPERELEVATION | 209.19 | 26.00 | 604.33 | 12.00 | 278.92 | 220 | 30.68 | 30.00 | 697.30 | 110 | 38.35 | 30.00 | 697.30 | 14.64 | 229.41 | VAR | 561.00 | 30.00 | 697.30 | 20.92 |
| 594+89.35 | 606+61.89 | RT. MAIN LANES - SUPERELEVATION | 1172.54 | 26.00 | 3387.34 | 12.00 | 1563.39 | 220 | 171.97 | 30.00 | 3908.47 | 110 | 214.97 | 30.00 | 3908.47 | 82.08 | 1285.89 | VAR | 3296.00 | 30.00 | 3908.47 | 117.25 |
| 606+61.89 | 625+00.00 | RT. MAIN LANES | 1838.11 | 26.00 | 5310.10 | 12.00 | 2450.81 | 220 | 269.59 | 30.00 | 6127.03 | 110 | 336.99 | 30.00 | 6127.03 | 128.67 | 2015.79 | 221.00 | 4062.22 | 30.00 | 6127.03 | 183.81 |
| 625+81.89 | 679+96.07 | RT. MAIN LANES | 5414.18 | 26.00 | 15640.96 | 12.00 | 7218.91 | 220 | 794.08 | 30.00 | 18047.27 | 110 | 992.60 | 30.00 | 18047.27 | 378.99 | 5937.55 | 221.00 | 11965.34 | 30.00 | 18047.27 | 541.42 |
| 679+96.07 | 681+00.00 | RT. MAIN LANES - SUPERELEVATION | 103.93 | 26.00 | 300.24 | 12.00 | 138.57 | 220 | 15.24 | 30.00 | 346.43 | 110 | 19.05 | 30.00 | 346.43 | 7.28 | 113.98 | VAR | 238.26 | 30.00 | 346.43 | 10.39 |
| 681+58.56 | 684+00.00 | RT. MAIN LANES - SUPERELEVATION | 241.44 | 26.00 | 697.49 | 12.00 | 321.92 | 220 | 35.41 | 30.00 | 804.80 | 110 | 44.26 | 30.00 | 804.80 | 16.90 | 264.78 | VAR | 580.66 | 30.00 | 804.80 | 24.14 |
| 684+00.00 | 686+00.00 | RT. MAIN LANES (TAPER) - SUPERELEVATION | 200.00 | VAR | 661.75 | VAR | 233.01 | 220 | 25.63 | VAR | 751.89 | 110 | 41.35 | VAR | 751.9 | 15.79 | 247.38 | VAR | 565.00 | VAR | 751.89 | 22.56 |
| 686+00.00 | 696+17.53 | RT. MAIN LANES - SUPERELEVATION | 1017.53 | VAR | 4328.77 | VAR | 976.60 | 220 | 107.43 | VAR | 4729.50 | 110 | 260.12 | VAR | 4729.5 | 99.32 | 1556.01 | VAR | 2715.00 | VAR | 4729.50 | 141.89 |
| | | | | | | | | | | | | | | | | | | | | | | |
| 575+52.76 | 579+35.51 | GUARDRAIL WIDENING LT. OF RT. M.L. | 382.75 | | | VAR | 244.77 | 220 | 26.92 | | | | | | | | | VAR | 78.00 | | | |
| 576+08.76 | 579+35.51 | GUARDRAIL WIDENING RT. OF RT. M.L. | 326.75 | | | VAR | 190.77 | 220 | 20.98 | | | | | | | | | VAR | 66.00 | | | |
| 594+39.06 | 597+65.81 | GUARDRAIL WIDENING LT. OF LT. M.L. | 326.75 | | | VAR | 192.80 | 220 | 21.21 | | | | | | | | | VAR | 67.00 | | | |
| 594+47.98 | 598+30.73 | GUARDRAIL WIDENING RT. OF LT. M.L. | 382.75 | | | VAR | 245.93 | 220 | 27.05 | | | | | | | | | VAR | 78.00 | | | |
| 700+24.84 | 704+00.00 | GUARDRAIL WIDENING RT. OF LT. M.L. | 375.16 | | | VAR | 246.22 | 220 | 27.08 | | | | | | | | | VAR | 78.00 | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | MAIN LANES APPROACH SLABS | | | | | | | | | | | | | | | | | 402.23 | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | TOTALS: | | | 101774.08 | | 45180.88 | | 4969.87 | | 116736.18 | | 6420.47 | | 116736.16 | 2451.49 | 38406.21 | | 83756.18 | | 116736.18 | 3502.10 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 115
ACHM SURFACE COURSE (3/8"): 6.0% ASPHALT BINDER, 94.0% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 115
CEMENT STABILIZED CRUSHED STONE BASE COURSE: 6.0% CEMENT, 94.0% AGGREGATE

## BASE & SURFACING - DRIVEWAYS

| STATION | LOCATION | WIDTH | TURNOUT AREA | EXTENSION AREA | | | TOTAL DRIVEWAY AREA | PORTLAND CEMENT CONCRETE DRIVEWAY | AGGREGATE BASE COURSE (CLASS 7) | ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ.YD.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AGGREGATE (CLASS 7) (9" COMP. DEPTH) | ASPHALT | CONCRETE | | | | |
| | | LIN. FT. | SQ. YD. | SQ. YD. | | | SQ. YD. | SQ. YD. | TON | TON |
| 08+46 | HWY. 112 LT. | 16 | 35.82 | | | 59.36 | 95.18 | 95.18 | | |
| 09+80 | HWY. 112 RT. | 40 | 59.57 | 145.90 | | | 205.47 | | 100.92 | 6.55 |
| 30+55 | HWY. 112 LT. | 40 | 95.29 | 327.03 | | | 422.32 | | 210.60 | 10.48 |
| 31+71 | HWY. 112 LT. | 22 | 40.80 | 58.16 | | | 98.96 | | 47.19 | 4.49 |
| 24+70 | GRIMSLEY ROAD LT. | 38 | 219.55 | | | | 219.55 | | 89.65 | 24.15 |
| 28+57 | S. ZION ROAD RT. | 20 | 118.05 | | 220.62 | | 338.67 | | 48.20 | 37.25 |
| 28+57 | S. ZION ROAD LT. | 20 | 118.58 | | 209.67 | | 328.25 | | 48.42 | 36.11 |
| 12+00 | S. ZION ROAD RT. | 16 | 100.22 | | 476.98 | | 577.20 | | 40.92 | 63.49 |
| 03+67 | KNIGHT LANE DRIVEWAY LT. | 16 | 40.70 | | | | 40.70 | | 16.62 | 4.48 |
| 15+81 | SPRING CREEK STREET LT. | 16 | 42.42 | | | | 42.42 | | 17.32 | 4.67 |
| 16+44 | SPRING CREEK STREET RT. | 20 | 117.86 | | 22.57 | | 140.43 | | 48.13 | 15.45 |
| 17+62 | SPRING CREEK STREET RT. | 16 | 30.43 | 47.82 | | | 78.25 | | 37.53 | 3.35 |
| 33+26 | PUPPY CREEK ROAD LT. | 16 | 157.32 | | | | 157.32 | | 64.24 | 17.31 |
| 04+15 | GOAD SPRINGS ACCESS RD RT. | 20 | 23.48 | 38.77 | | | 62.25 | | 29.94 | 2.58 |
| 04+15 | GOAD SPRINGS ACCESS RD LT. | 16 | 21.03 | 114.05 | | | 135.08 | | 68.46 | 2.31 |
| 06+11 | GOAD SPRINGS ACCESS RD LT. | 16 | 37.01 | 44.44 | | | 81.45 | | 38.44 | 4.07 |
| 06+56 | GOAD SPRINGS ACCESS RD LT. | 16 | 74.36 | | | | 74.36 | | 30.36 | 8.18 |
| 11+58 | GOAD SPRINGS ACCESS RD LT. | 16 | 53.22 | 35.60 | | | 88.82 | | 40.42 | 5.85 |
| | | | | | | | | | | |
| * TEMPORARY DRIVEWAYS | | | | | | | | | 250.00 | |
| | | | | | | | | | | |
| | TOTALS: | | | | | | | 95.18 | 1227.36 | 250.77 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 115

* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

## COLD MILLING ASPHALT PAVEMENT

| STATION | STATION | LOCATION | AVG. WIDTH FEET | SQ. YD. |
|---|---|---|---|---|
| 07+50.00 | 08+50.00 | HWY. 112 100' TRANSITION | 21.97 | 244 |
| 08+50.00 | 13+50.00 | HWY. 112 OVERLAY, NOTCH & WIDEN | 22.08 | 1227 |
| 28+00.00 | 31+50.00 | HWY. 112 OVERLAY, NOTCH & WIDEN | 21.24 | 826 |
| 31+50.00 | 32+50.00 | HWY. 112 100' TRANSITION | 21.42 | 238 |
| 13+50.00 | 14+50.00 | GRIMSLEY RD. 100' TRANSITION | 16.97 | 189 |
| 24+50.00 | 25+50.00 | GRIMSLEY RD. 100' TRANSITION | 17.72 | 197 |
| 09+93.28 | 10+93.28 | S. ZION RD. 100' TRANSITION | 19.69 | 219 |
| 10+93.28 | 11+43.28 | ZION RD. OVERLAY, NOTCH & WIDEN | 19.56 | 109 |
| 29+00.00 | 29+47.18 | ZION RD. OVERLAY, NOTCH & WIDEN | 19.46 | 102 |
| 29+47.18 | 30+47.18 | S. ZION RD. 100' TRANSITION | 18.93 | 210 |
| 15+00.00 | 16+00.00 | SPRING CREEK ST. 100' TRANSITION | 20.4 | 227 |
| 25+00.00 | 26+00.00 | SPRING CREEK ST. 100' TRANSITION | 18.86 | 210 |
| 35+00.00 | 36+00.00 | PUPPY CREEK RD. 100' TRANSITION | 19.74 | 219 |
| | | | | |
| | | TOTAL: | | 4217 |

## ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

| LOCATION | ASPHALT CONCRETE | TACK COAT |
|---|---|---|
| | TON | GAL. |
| ENTIRE PROJECT | 67 | 135 |

QUANTITIES ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

BASIS OF ESTIMATE:
ASPHALT CONCRETE= 25 TONS PER MILE
TACK COAT = 50 GAL. PER MILE

## SOIL STABILIZATION

| LOCATION | TON |
|---|---|
| ENTIRE PROJECT | 1000 |

QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14



cggervasini 9/5/2014 3:28:03 PM
WORKSPACE: AHTD
L:\2005\059680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 168 | 897 |
| | | | | (2) | QUANTITIES | | | |

## BASE & SURFACING SIDE ROADS

| STATION | STATION | LOCATION / DESCRIPTION | LENGTH | ACHM SURFACE COURSE (1/2") (PG 64-22) | | | | ACHM SURFACE COURSE (1/2") (PG 70-22) | | | | ACHM BINDER COURSE (1") (PG 70-22) | | | | AGGREGATE BASE COURSE (CLASS 7) | | TACK COAT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FEET | AVG. WIDTH FEET | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH FEET | SQUARE YARDS | LBS. PER SQ. YD. | TON | AVG. WIDTH FEET | SQUARE YARDS | LBS. PER SQ. YD. | TON | TONS PER STATION | TON | AVG. WIDTH FEET | SQUARE YARDS | 0.03 G/SY GAL. | AVG. WIDTH FEET | SQUARE YARDS | 0.1 G/SY GAL. |
| 7+50.00 | 8+50.00 | HWY. 112 (TRANSITION) | 100.00 | | | | | VAR | 357.78 | 220 | 39.36 | VAR | 16.80 | 495 | 4.16 | VAR | 163.93 | VAR | 30.60 | 0.92 | VAR | 244.06 | 24.41 |
| 8+50.00 | 13+50.00 | HWY. 112 (LEVELING) | 500.00 | | | | | VAR | VAR | VAR | 91.08 | VAR | VAR | VAR | 150.48 | | | | | | VAR | 1226.51 | 122.65 |
| 8+50.00 | 13+50.00 | HWY. 112 (WIDENING) | 500.00 | | | | | VAR | 3062.02 | 220 | 336.82 | VAR | 573.49 | 495 | 141.94 | VAR | 1127.50 | VAR | 2387.38 | 71.62 | | | |
| 13+50.00 | 15+65.00 | HWY. 112 - SUPERELEVATION | 215.00 | | | | | 88.25 | 2108.19 | 220 | 231.90 | 36.52 | 872.42 | 495 | 215.92 | VAR | 759.68 | 72.77 | 1738.39 | 52.15 | | | |
| 15+65.00 | 17+86.10 | HWY. 112 - SUPERELEVATION | 221.10 | | | | | VAR | 1944.67 | 220 | 213.91 | VAR | 788.44 | 495 | 195.14 | VAR | 718.05 | VAR | 1564.11 | 46.92 | | | |
| 17+86.10 | 18+65.00 | HWY. 112 | 78.90 | | | | | VAR | 590.95 | 220 | 65.00 | VAR | 228.80 | 495 | 56.63 | VAR | 343.25 | VAR | 455.23 | 13.66 | | | |
| 18+65.00 | 18+99.90 | HWY. 112 | 34.90 | | | | | 64.25 | 249.15 | 220 | 27.41 | 24.52 | 95.08 | 495 | 23.53 | 381.00 | 132.97 | 48.77 | 189.12 | 5.67 | | | |
| 16+15.44 | 18+85.59 | HWY. 112 GUARDRAIL WIDENING RT. | 270.15 | | | | | VAR | 143.13 | 220 | 15.74 | | | | | VAR | 137.67 | | | | | | |
| 17+06.11 | 18+92.27 | HWY. 112 GUARDRAIL WIDENING LT. | 186.16 | | | | | VAR | 82.93 | 220 | 9.12 | | | | | VAR | 79.91 | | | | | | |
| 21+07.74 | 22+93.89 | HWY. 112 GUARDRAIL WIDENING RT. | 186.15 | | | | | VAR | 84.04 | 220 | 9.24 | | | | | VAR | 79.89 | | | | | | |
| 21+14.41 | 23+84.56 | HWY. 112 GUARDRAIL WIDENING LT. | 270.15 | | | | | VAR | 144.15 | 220 | 15.86 | | | | | VAR | 137.68 | | | | | | |
| 21+00.10 | 21+40.00 | HWY. 112 | 39.90 | | | | | 64.25 | 284.84 | 220 | 31.33 | 24.52 | 108.71 | 495 | 26.91 | 381.00 | 152.02 | 48.77 | 216.21 | 6.49 | | | |
| 21+40.00 | 23+43.19 | HWY. 112 | 203.19 | | | | | VAR | 1634.12 | 220 | 179.75 | VAR | 645.35 | 495 | 159.72 | VAR | 882.34 | VAR | 1284.58 | 38.54 | | | |
| 23+43.19 | 24+40.00 | HWY. 112 - SUPERELEVATION | 96.81 | | | | | VAR | 904.96 | 220 | 99.55 | VAR | 372.00 | 495 | 92.07 | VAR | 330.00 | VAR | 738.33 | 22.15 | | | |
| 24+40.00 | 28+00.00 | HWY. 112 - SUPERELEVATION | 360.00 | | | | | 88.25 | 3530.00 | 220 | 388.30 | 36.52 | 1460.80 | 495 | 361.55 | VAR | 1272.02 | 72.77 | 2910.80 | 87.32 | | | |
| 28+00.00 | 31+50.00 | HWY. 112 (LEVELING) - SUPERELEVATION | 350.00 | | | | | VAR | VAR | VAR | 108.98 | VAR | VAR | VAR | 102.52 | | | | | | VAR | 826.14 | 82.61 |
| 28+00.00 | 31+50.00 | HWY. 12 (WIDENING) - SUPERELEVATION | 350.00 | | | | | VAR | 2205.90 | 220 | 242.65 | VAR | 383.58 | 495 | 94.94 | VAR | 1000.79 | VAR | 1593.31 | 47.80 | | | |
| 31+50.00 | 32+50.00 | HWY. 112 (TRANSITION) | 100.00 | | | | | VAR | 349.52 | 220 | 38.45 | VAR | 15.52 | 495 | 3.84 | VAR | 163.76 | VAR | 28.44 | 0.85 | VAR | 237.98 | 23.80 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 13+50.00 | 14+50.00 | GRIMSLEY RD. (TRANSITION) | 100.00 | VAR | 263.35 | 220 | 28.97 | | | | | | | | | VAR | 72.00 | VAR | 16.54 | 0.50 | VAR | 188.61 | 18.86 |
| 14+50.00 | 19+00.92 | GRIMSLEY RD. | 450.92 | 48.25 | 2417.43 | 220 | 265.92 | | | | | | | | | 204.25 | 921.00 | 20.25 | 1014.57 | 30.44 | | | |
| 16+16.48 | 18+89.63 | GRIMSLEY RD. GUARDRAIL WIDENING RT. | 273.15 | VAR | 150.82 | 220 | 16.59 | | | | | | | | | VAR | 97.00 | | | | | | |
| 17+41.48 | 18+89.63 | GRIMSLEY RD. GUARDRAIL WIDENING LT. | 148.15 | VAR | 74.48 | 220 | 8.19 | | | | | | | | | VAR | 48.00 | | | | | | |
| 21+10.09 | 22+58.24 | GRIMSLEY RD. GUARDRAIN WIDENING RT. | 148.15 | VAR | 74.63 | 220 | 8.21 | | | | | | | | | VAR | 48.00 | | | | | | |
| 21+10.09 | 23+83.24 | GRIMSLEY RD. GUARDRAIL WIDENING LT. | 273.15 | VAR | 150.83 | 220 | 16.59 | | | | | | | | | VAR | 97.00 | | | | | | |
| 20+99.08 | 24+50.00 | GRIMSLEY RD. | 350.92 | 48.25 | 1881.32 | 220 | 206.95 | | | | | | | | | 204.25 | 716.75 | 20.25 | 789.57 | 23.69 | | | |
| 24+50.00 | 25+50.00 | GRIMSLEY RD. (TRANSITION) | 100.00 | VAR | 266.89 | 220 | 29.36 | | | | | | | | | VAR | 70.66 | VAR | 13.46 | 0.40 | VAR | 196.92 | 19.69 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 6+13.92 | 10+49.60 | SHARP SPRINGS ACCESS RD. & CUL-DE-SAC | 435.68 | VAR | 2231.27 | 220 | 245.44 | | | | | | | | | VAR | 1443.03 | | | | | | |
| 10+49.60 | 15+02.55 | SHARP SPRINGS ACCESS RD. - SUPERELEVATION | 452.95 | 28.00 | 1409.18 | 220 | 155.01 | | | | | | | | | VAR | 1119.26 | | | | | | |
| 15+02.55 | 19+92.61 | SHARP SPRINGS ACCESS RD. & TURNOUT | 490.06 | VAR | 1550.70 | 220 | 170.58 | | | | | | | | | VAR | 1042.00 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 9+93.28 | 10+93.28 | S. ZION RD. (TRANSITION) | 100.00 | VAR | 289.68 | 220 | 31.86 | | | | | | | | | VAR | 77.00 | | 4.01 | 0.12 | VAR | 219.01 | 21.90 |
| 10+93.28 | 11+43.28 | S. ZION RD. (OVERLAY WITH NOTCH & WIDEN) - SUPERELEVATION | 50.00 | VAR | 180.91 | 220 | 19.90 | | | | | | | | | VAR | 58.00 | VAR | 3.10 | 0.09 | VAR | 113.77 | 11.38 |
| 11+43.28 | 18+25.00 | S. ZION RD. - SUPERELEVATION | 681.72 | 52.25 | 3957.76 | 220 | 435.35 | | | | | | | | | VAR | 1956.90 | 20.25 | 1533.87 | 46.02 | | | |
| 18+25.00 | 18+79.67 | S. ZION RD. | 54.67 | 52.25 | 317.39 | 220 | 34.91 | | | | | | | | | 228.75 | 125.06 | 20.25 | 123.01 | 3.69 | | | |
| 16+01.54 | 18+74.69 | S. ZION RD. GUARDRAIL WIDENING RT. | 273.15 | VAR | 124.56 | 220 | 13.70 | | | | | | | | | VAR | 79.93 | | | | | | |
| 17+06.94 | 18+55.09 | S. ZION RD. GUARDRAIL WIDENING LT. | 148.15 | VAR | 58.85 | 220 | 6.47 | | | | | | | | | VAR | 37.76 | | | | | | |
| 21+53.91 | 23+02.06 | S. ZION RD. GUARDRAIL WIDENING RT. | 148.15 | VAR | 59.49 | 220 | 6.54 | | | | | | | | | VAR | 38.17 | | | | | | |
| 21+34.31 | 24+07.46 | S. ZION RD. GUARDRAIL WIDENING LT. | 273.15 | VAR | 120.94 | 220 | 13.30 | | | | | | | | | VAR | 77.60 | | | | | | |
| 21+29.33 | 21+75.00 | S. ZION RD. | 45.67 | 52.25 | 265.14 | 220 | 29.17 | | | | | | | | | 228.75 | 104.47 | 20.25 | 102.76 | 3.08 | | | |
| 21+75.00 | 27+69.34 | S. ZION RD. - SUPERELEVATION | 594.34 | 52.25 | 3450.47 | 220 | 379.55 | | | | | | | | | VAR | 1602.83 | 20.25 | 1337.27 | 40.12 | | | |
| 27+69.34 | 29+00.00 | S. ZION RD. | 130.66 | 52.25 | 758.55 | 220 | 83.44 | | | | | | | | | 228.75 | 298.88 | 20.25 | 293.99 | 8.82 | | | |
| 29+00.00 | 29+47.18 | S. ZION RD. (OVERLAY WITH NOTCH & WIDEN) | 47.18 | VAR | 171.05 | 220 | 18.82 | | | | | | | | | VAR | 36.00 | VAR | 3.30 | 0.10 | VAR | 109.71 | 10.97 |
| 29+47.18 | 30+47.18 | S. ZION RD. (TRANSITION) | 100.00 | VAR | 292.18 | 220 | 32.14 | | | | | | | | | VAR | 77.00 | | 8.29 | 0.25 | VAR | 220.22 | 22.02 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 17+91.82 | 34+50.51 | SPRING CREEK ACCESS RD. & CUL-DE-SAC | 1658.69 | VAR | 6045.03 | 220 | 664.95 | | | | | | | | | VAR | 3989.00 | | | | | | |
| 34+50.51 | 39+78.86 | SPRING CREEK ACCESS RD. - SUPERELEVATION | 528.35 | 28.00 | 1643.76 | 220 | 180.81 | | | | | | | | | VAR | 1218.00 | | | | | | |
| 39+78.86 | 39+89.00 | SPRING CREEK ACCESS RD. & TURNOUTS | 10.14 | VAR | 78.53 | 220 | 8.64 | | | | | | | | | VAR | 49.00 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 15+00.00 | 16+00.00 | SPRING CREEK ST. (TRANSITION) | 100.00 | VAR | 301.41 | 220 | 33.16 | | | | | | | | | VAR | 80.37 | VAR | 4.67 | 0.14 | VAR | 229.35 | 22.94 |
| 16+00.00 | 18+94.87 | SPRING CREEK ST. | 294.87 | 56.25 | 1842.94 | 220 | 202.72 | | | | | | | | | 240.25 | 708.43 | 22.25 | 728.98 | 21.87 | | | |
| 17+71.64 | 18+88.57 | SPRING CREEK ST. GUARDRAIL WIDENING RT. | 116.93 | VAR | 49.45 | 220 | 5.44 | | | | | | | | | VAR | 31.73 | | | | | | |
| 17+31.10 | 18+79.25 | SPRING CREEK ST. GUARDRAIL WIDENING LT. | 148.15 | VAR | 60.41 | 220 | 6.65 | | | | | | | | | VAR | 38.12 | | | | | | |
| 21+19.75 | 22+63.69 | SPRING CREEK ST. GUARDRAIL WIDENING RT. | 143.94 | VAR | 59.18 | 220 | 6.51 | | | | | | | | | VAR | 37.98 | | | | | | |
| 21+10.43 | 23+83.58 | SPRING CREEK ST. GUARDRAIL WIDENING LT. | 273.15 | VAR | 121.84 | 220 | 13.40 | | | | | | | | | VAR | 85.29 | | | | | | |
| 21+04.13 | 25+00.00 | SPRING CREEK ST. | 395.87 | 56.25 | 2474.19 | 220 | 272.16 | | | | | | | | | 240.25 | 951.08 | 22.25 | 978.68 | 29.36 | | | |
| 25+00.00 | 26+00.00 | SPRING CREEK ST. (TRANSITION) | 100.00 | VAR | 305.09 | 220 | 33.56 | | | | | | | | | VAR | 86.00 | VAR | 15.13 | 0.45 | VAR | 214.84 | 21.48 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 20+11.04 | 22+64.48 | PUPPY CREEK RD. & TURNOUTS | 253.44 | VAR | 1636.71 | 220 | 180.04 | | | | | | | | | VAR | 635.00 | VAR | 648.52 | 19.46 | | | |
| 22+64.48 | 29+95.68 | PUPPY CREEK RD. - SUPERELEVATION | 731.20 | 52.25 | 4245.02 | 220 | 466.95 | | | | | | | | | VAR | 1951.00 | 20.25 | 1645.20 | 49.36 | | | |
| 29+95.68 | 35+00.00 | PUPPY CREEK RD. | 504.32 | 52.25 | 2927.86 | 220 | 322.06 | | | | | | | | | 228.75 | 1153.63 | 20.25 | 1134.72 | 34.04 | | | |
| 35+00.00 | 36+00.00 | PUPPY CREEK RD. (TRANSITION) | 100.00 | VAR | 292.79 | 220 | 32.21 | | | | | | | | | VAR | 80.00 | VAR | 4.32 | 0.13 | VAR | 221.21 | 22.12 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 10+70.28 | 15+94.43 | PUPPY CREEK ACCESS RD. & CUL-DE-SAC | 524.15 | VAR | 2536.40 | 220 | 279.00 | | | | | | | | | VAR | 1651.00 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 4+14.85 | 8+41.52 | GOAD SPRINGS ACCESS RD. & CUL-DE-SAC | 426.67 | VAR | 2203.22 | 220 | 242.35 | | | | | | | | | VAR | 1585.64 | | | | | | |
| 8+41.52 | 14+87.11 | GOAD SPRINGS ACCESS RD. - SUPERELEVATION | 645.59 | 28.00 | 2008.50 | 220 | 220.94 | | | | | | | | | VAR | 1495.33 | | | | | | |
| 14+87.11 | 19+87.42 | GOAD SPRINGS ACCESS RD. & TURNOUTS | 500.31 | VAR | 1659.05 | 220 | 182.50 | | | | | | | | | VAR | 1100.00 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 12+82.73 | 27+58.39 | GRIMSLEY RD. DETOUR | 1475.66 | VAR | 3686.90 | 220 | 405.56 | | | | | | | | | VAR | 2370.00 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 20+00.00 | 23+71.04 | PUPPY CREEK DETOUR | 371.04 | VAR | 809.64 | 220 | 89.06 | | | | | | | | | VAR | 555.00 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| 23+00.00 | 31+00.00 | HWY. 112 TEMPORARY WIDENING | 800.00 | | | | | VAR | 836.76 | 220 | 92.04 | VAR | 345.89 | 495 | 85.61 | VAR | 921.80 | VAR | 679.60 | 20.39 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | TOTALS: | | | 55505.79 | | 6105.63 | | 18513.11 | | 2236.49 | | 5906.88 | | 1714.96 | | 38499.16 | | 24220.06 | 726.61 | | 4248.33 | 424.83 |

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2"): 5.5% ASPHALT BINDER, 94.5% MINERAL AGGREGATE (PG 64-22), $N_{MAX}$ = 115
ACHM SURFACE COURSE (1/2"): 5.4% ASPHALT BINDER, 94.6% MINERAL AGGREGATE (PG 70-22), $N_{MAX}$ = 160
ACHM BINDER COURSE (1"): 4.5% ASPHALT BINDER, 95.5% MINERAL AGGREGATE (PG 70-22), $N_{MAX}$ = 160

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14



cgervosini 9/5/2014 3:28:27 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_QTY_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 169 | 897 |
| | | | | (1) A&B7304-07315 | | QUANTITIES | | 55105 |

# SCHEDULE OF BRIDGE QUANTITIES FOR JOB CA0907

| BRIDGE NO. / CODE NO. | NAME PLATE TITLE | UNIT OF STRUCTURE | ITEM NO. | 801 | 802 | 802 | 802 | 802 | SP & 802 | 803 | 804 | 804 | 805 | 805 | 807 | 807 | 807 | 808 | 809 | 809 | 812 | 816 | 816 | 816 | SP JOB CA0907 | SP JOB CA0907 | SP JOB CA0907 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ITEM | (1) UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE | CLASS S CONCRETE - BRIDGE | CLASS S(AE) CONCRETE - BRIDGE | PRESTRESSED CONCRETE GIRDERS (TYPE III) | PRESTRESSED CONCRETE GIRDERS (TYPE IV) | PRESTRESSED CONCRETE GIRDERS (TYPE BT-72) | CLASS 2 PROTECTIVE SURFACE TREATMENT | REINFORCING STEEL-BRIDGE (GRADE 60) | EPOXY COATED REINFORCING STEEL (GRADE 60) | STEEL PILING (HP12X53) (3) | PREBORING (2) | STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50) | STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50) | PAINTING STRUCTURAL STEEL (4) | ELASTOMERIC BEARINGS | SILICONE JOINT SEALANT | ARMORED JOINT WITH NEOPRENE STRIP SEAL | BRIDGE NAME PLATE (TYPE D) | FILTER BLANKET | DUMPED RIPRAP | CONCRETE RIPRAP | SHORING (SITE NO. _) | EXPLORATORY HOLES (2) | TEXTURED COATING FINISH |
| | | | UNIT | CUBIC YARD | CUBIC YARD | CUBIC YARD | LINEAR FOOT | LINEAR FOOT | LINEAR FOOT | SQ. YARD | POUND | POUND | LINEAR FOOT | LINEAR FOOT | POUND | POUND | TON | CUBIC INCH | LINEAR FOOT | LINEAR FOOT | EACH | SQUARE YARD | CUBIC YARD | CUBIC YARD | LUMP SUM | LINEAR FOOT | SQUARE YARD |
| A7304 X081 | U.S. HWY. 412 OVER SPRING CREEK | BENT NO. 1 | | | 62.57 | | | | | 19.5 | 8,673 | | 712 | | 755 | | | 2,803.1 | | | | 1,235 | 617 | | | | |
| | | BENT NO. 2 | | 494 | 289.64 | | | | | | 45,649 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 3 | | 354 | 282.71 | | | | | | 44,263 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 4 | | 284 | 277.35 | | | | | | 43,022 | | | | | | | 6,167.0 | | | | | | | | | |
| | | BENT NO. 5 | | 336 | 283.43 | | | | | | 43,999 | | | | | | | 6,167.0 | | | | | | | | | |
| | | BENT NO. 6 | | 426 | 284.46 | | | | | | 44,143 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 7 | | 528 | 284.46 | | | | | | 44,707 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 8 | | 546 | 284.46 | | | | | | 44,659 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 9 | | 447 | 276.67 | | | | | | 43,357 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 10 | | | 63.05 | | | | | 19.6 | 8,638 | | 439 | | 755 | | | 2,803.1 | | | | 297 | 149 | | | | |
| | | 330'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 562.25 | | | 1,633.7 | 1,731.5 | | 142,306 | | | 5,166 | | | | | 84 | | | | | | | |
| | | 125'-0" COMP. PRESTR. CONC. SIMPLE SPAN | | | | 210.64 | | | 741.5 | 655.8 | | 41,353 | | | 4,409 | | | | | 42 | | | | | | | |
| | | 220'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 374.08 | | | 1,084.2 | 1,154.2 | | 93,823 | | | 4,714 | | | | | 42 | | | | | | | |
| | | 220'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 374.08 | | | 1,084.2 | 1,154.2 | | 93,823 | | | 4,714 | | | | | 42 | | | | | | | |
| | | 110'-0" COMP. PRESTR. CONC. SIMPLE SPAN | | | | 185.95 | | | 542.1 | 577.1 | | 36,995 | | | 4,277 | | | | | 42 | 1 | | | | | | |
| | | TOTALS FOR BRIDGE NO. A7304 | | 3,415 | 2,388.80 | 1,707.00 | | | 5,085.7 | 5,311.9 | 371,110 | 408,300 | 1,151 | | 24,790 | | | 51,578.0 | | 252 | 1 | 1,532 | 766 | | | | |
| B7304 X081 | U.S. HWY. 412 OVER SPRING CREEK | BENT NO. 1 | | | 62.61 | | | | | 19.5 | 8,673 | | 751 | 400 | 755 | | | 2,803.1 | | | | 1,088 | 544 | | | | |
| | | BENT NO. 2 | | 431 | 286.93 | | | | | | 44,920 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 3 | | 201 | 282.24 | | | | | | 43,089 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 4 | | 412 | 285.42 | | | | | | 44,324 | | | | | | | 6,167.0 | | | | | | | | | |
| | | BENT NO. 5 | | 390 | 281.32 | | | | | | 43,673 | | | | | | | 6,167.0 | | | | | | | | | |
| | | BENT NO. 6 | | 469 | 289.21 | | | | | | 44,468 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 7 | | 469 | 285.25 | | | | | | 44,334 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 8 | | 557 | 285.25 | | | | | | 44,334 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 9 | | 774 | 279.41 | | | | | | 43,357 | | | | | | | 5,606.3 | | | | | | | | | |
| | | BENT NO. 10 | | | 63.06 | | | | | 19.6 | 8,638 | | 426 | | 755 | | | 2,803.1 | | | | 276 | 138 | | | | |
| | | 330'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 562.30 | | | 1,633.8 | 1,731.5 | | 142,306 | | | 5,166 | | | | | 84 | 1 | | | | | | |
| | | 125'-0" COMP. PRESTR. CONC. SIMPLE SPAN | | | | 210.64 | | | 741.5 | 655.8 | | 41,353 | | | 4,409 | | | | | 42 | | | | | | | |
| | | 220'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 374.14 | | | 1,085.8 | 1,154.2 | | 93,823 | | | 4,714 | | | | | 42 | | | | | | | |
| | | 220'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 374.14 | | | 1,085.8 | 1,154.2 | | 93,823 | | | 4,714 | | | | | 42 | | | | | | | |
| | | 110'-0" COMP. PRESTR. CONC. SIMPLE SPAN | | | | 185.98 | | | 542.9 | 577.1 | | 36,995 | | | 4,277 | | | | | 42 | | | | | | | |
| | | TOTALS FOR BRIDGE NO. B7304 | | 3,703 | 2,400.70 | 1,707.20 | | | 5,089.8 | 5,311.9 | 369,810 | 408,300 | 1,177 | 400 | 24,790 | | | 51,578.0 | | 252 | 1 | 1,364 | 682 | | | | |
| A7305 X281 | U.S. HWY. 412 OVER WAGON WHEEL ROAD | BENT NO. 1 | | | 55.71 | | | | | 17.1 | 6,780 | | 461 | | 847 | | | 2,803.2 | | | | | | 97 | | | |
| | | BENT NO. 2 | | 160 | 151.98 | | | | | | 22,515 | | 240 | 264 | | | | 5,606.3 | | | | | | | | 20 | |
| | | BENT NO. 3 | | 207 | 148.68 | | | | | | 21,917 | | 312 | 264 | | | | 5,606.3 | | | | | | | | 20 | |
| | | BENT NO. 4 | | | 55.33 | | | | | 17.1 | 6,988 | | 398 | 143 | 853 | | | 2,803.2 | | | | | | 68 | | 20 | |
| | | 205'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 315.60 | | 1,010.0 | | 1,075.6 | | 80,210 | | | 4,900 | | | | 88 | | 1 | | | | | | |
| | | TOTALS FOR BRIDGE NO. A7305 | | 367 | 411.70 | 315.60 | | 1,010.0 | | 1,109.8 | 58,200 | 80,210 | 1,411 | 671 | 6,600 | | | 16,819.0 | 88 | | 1 | | | 165 | | 60 | |
| B7305 X281 | U.S. HWY. 412 OVER WAGON WHEEL ROAD | BENT NO. 1 | | | 55.91 | | | | | 17.1 | 6,780 | | 461 | | 847 | | | 2,803.2 | | | | | | 77 | | | |
| | | BENT NO. 2 | | 178 | 150.40 | | | | | | 22,222 | | 240 | 264 | | | | 5,606.3 | | | | | | | | 20 | |
| | | BENT NO. 3 | | 136 | 143.31 | | | | | | 20,930 | | 312 | 264 | | | | 5,606.3 | | | | | | | | 20 | |
| | | BENT NO. 4 | | 59 | 55.28 | | | | | 17.1 | 6,988 | | 177 | 143 | 853 | | | 2,803.2 | | | | | | 63 | | 20 | |
| | | 205'-0" CONT. PRESTR. CONC. GIRDER UNIT | | | | 315.60 | | 1,010.0 | | 1,075.6 | | 80,200 | | | 4,900 | | | | 88 | | 1 | | | | | | |
| | | TOTALS FOR BRIDGE NO. B7305 | | 373 | 404.90 | 315.60 | | 1,010.0 | | 1,109.8 | 56,920 | 80,200 | 1,190 | 671 | 6,600 | | | 16,819.0 | 88 | | 1 | | | 140 | | 60 | |

(1) U.S. Hwy. 412 Over Spring Creek Bridge No. A7304 includes approximately 964 cu. yds. of rock excavation.
U.S. Hwy. 412 Over Spring Creek Bridge No. B7304 includes approximately 834 cu. yds. of rock excavation.

(2) The quantities shown for Preboring and Exploratory Holes are for estimating and bidding purposes only. Actual quantities will be determined in the field.

(3) These steel piles shall be Grade 50 and are required to have driving points which will not be paid for directly but will be considered subsidiary to the item "STEEL PILING (HP12x53)".

(4) Paint shall conform to Federal Standard 595B, Color Chip No. 20108 Dark Brown, unless noted otherwise.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8911 JOHN H. RUDDELL 10-31-14
BRIDGE ENGINEER

SHEET 1 OF 3
SCHEDULE OF BRIDGE QUANTITIES
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JAN. 2014 FILENAME: BCA0907_01.DGN
CHECKED BY: ABH DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JAN. 2014
BRIDGE NO. A&B7304-07315 DRAWING NO. 55105

drgood 10/7/2014 3:30:03 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\BCA0907_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 170 | 897 |
| | | | | (1) A&B7304-07315 | | QUANTITIES | | 55106 |

# SCHEDULE OF BRIDGE QUANTITIES FOR JOB CA0907

| BRIDGE NO. / CODE NO. | NAME PLATE TITLE | UNIT OF STRUCTURE | ITEM NO. | 801 | 802 | 802 | 802 | 802 | SP & 802 | 803 | 804 | 804 | 805 | 805 | 807 | 807 | 807 | 808 | 809 | 809 | 812 | 816 | 816 | 816 | SP JOB CA0907 | SP JOB CA0907 | SP JOB CA0907 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ITEM | (1) UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE | CLASS S CONCRETE - BRIDGE | CLASS S(AE) CONCRETE - BRIDGE | PRESTRESSED CONCRETE GIRDERS (TYPE III) | PRESTRESSED CONCRETE GIRDERS (TYPE IV) | PRESTRESSED CONCRETE GIRDERS (TYPE BT-72) | CLASS 2 PROTECTIVE SURFACE TREATMENT | REINFORCING STEEL-BRIDGE (GRADE 60) | EPOXY COATED REINFORCING STEEL (GRADE 60) | STEEL PILING (HP12X53) (3) | PREBORING (2) | STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50) | STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50) | PAINTING STRUCTURAL STEEL (4) | ELASTOMERIC BEARINGS | SILICONE JOINT SEALANT | ARMORED JOINT WITH NEOPRENE STRIP SEAL | BRIDGE NAME PLATE (TYPE D) | FILTER BLANKET | DUMPED RIPRAP | CONCRETE RIPRAP | SHORING (SITE NO. _) | EXPLORATORY HOLES (2) | TEXTURED COATING FINISH |
| | | | UNIT | CUBIC YARD | CUBIC YARD | CUBIC YARD | LINEAR FOOT | LINEAR FOOT | LINEAR FOOT | SQ. YARD | POUND | POUND | LINEAR FOOT | LINEAR FOOT | POUND | POUND | TON | CUBIC INCH | LINEAR FOOT | LINEAR FOOT | EACH | SQUARE YARD | CUBIC YARD | CUBIC YARD | LUMP SUM | LINEAR FOOT | SQUARE YARD |
| A7306 X081 | U.S. HWY. 412 OVER PUPPY CREEK | BENT NO. 1 | | | 42.22 | | | | | 16.4 | 4,205 | | 238 | | 1,081 | | | 5,611.9 | | | | 946 | 473 | | | | 60 |
| | | BENT NO. 2 | | 307 | 178.77 | | | | | | 29,632 | | | | | | | 12,101.6 | | | | | | | | | 215 |
| | | BENT NO. 3 | | 378 | 205.16 | | | | | | 33,517 | | | | | | | 12,101.6 | | | | | | | | | 252 |
| | | BENT NO. 4 | | 359 | 211.46 | | | | | | 34,342 | | | | | | | 8,464.4 | | | | | | | | | 257 |
| | | BENT NO. 5 | | 462 | 214.20 | | | | | | 34,457 | | | | | | | 8,464.4 | | | | | | | | | 219 |
| | | BENT NO. 6 | | | 45.79 | | | | | 17.0 | 4,467 | | 385 | | 1,189 | | | 5,612.1 | | | | 2,050 | 1,025 | | | | 65 |
| | | 392'-6" CONT. PRESTR. CONC. BEAM UNIT | | | | 682.00 | 2,714.1 | | | 2,662.4 | | 174,050 | | | 4,260 | | | | 109 | | 1 | | | | | | 951 |
| | | TOTALS FOR BRIDGE NO. A7306 | | 1,506 | 897.60 | 682.00 | 2,714.1 | | | 2,695.8 | 140,620 | 174,050 | 623 | | 6,530 | | | 52,356.0 | 109 | | 1 | 2,996 | 1,498 | | | | 2,019 |
| 07307 X771 | HWY. 112 OVER U.S. HWY. 412 | BENT NO. 1 | | | 46.40 | | | | | 13.5 | 6,105 | | 612 | | 844 | | 0.4 | 3,262.5 | | | | | | 18 | | | |
| | | BENT NO. 2 | | 106 | 150.56 | | | | | | 25,235 | | 740 | | | | | 4,350.0 | | | | | | | | | |
| | | BENT NO. 3 | | | 46.34 | | | | | 13.5 | 6,090 | | 630 | | 844 | | 0.4 | 3,262.5 | | | | | | 18 | | | |
| | | 198'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 258.10 | | | | 1,037.9 | | 65,620 | | | 228,702 | | 114.0 | | 88 | | 1 | | | | | | |
| | | SITE NO. 4 | | | | | | | | | | | | | | | | | | | | | | | 1 | | |
| | | TOTALS FOR BRIDGE NO. 07307 | | 106 | 243.30 | 258.10 | | | | 1,064.9 | 37,430 | 65,620 | 1,982 | | 230,390 | | 114.8 | 10,875.0 | 88 | | 1 | | | 36 | 1 | | |
| 07308 X771 | GRIMSLEY ROAD OVER U.S. HWY. 412 | BENT NO. 1 | | | 35.05 | | | | | 13.1 | 4,496 | | 455 | 35 | 582 | | 0.3 | 1,920.0 | | | | | | 19 | | 20 | |
| | | BENT NO. 2 | | 164 | 121.90 | | | | | | 18,478 | | 420 | | | | | 2,592.0 | | | | | | | | | |
| | | BENT NO. 3 | | | 35.05 | | | | | 13.1 | 4,496 | | 231 | 35 | 582 | | 0.3 | 1,920.0 | | | | | | 19 | | 20 | |
| | | 196'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 198.40 | | | | 766.4 | | 51,050 | | | 166,036 | | 82.7 | | 62 | | 1 | | | | | | |
| | | TOTALS FOR BRIDGE NO. 07308 | | 164 | 192.00 | 198.40 | | | | 792.6 | 27,470 | 51,050 | 1,106 | 70 | 167,200 | | 83.3 | 6,432.0 | 62 | | 1 | | | 38 | | 40 | |
| 07309 X771 | ZION ROAD OVER U.S. HWY. 412 | BENT NO. 1 | | | 52.72 | | | | | 17.2 | 6,280 | | 636 | | 657 | | 0.3 | 2,610.0 | | | | | | 34 | | | |
| | | BENT NO. 2 | | 178 | 163.86 | | | | | | 24,490 | | 900 | | | | | 4,620.0 | | | | | | | | | |
| | | BENT NO. 3 | | | 52.42 | | | | | 17.2 | 6,280 | | 609 | | 657 | | 0.3 | 2,610.0 | | | | | | 25 | | | |
| | | 247'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 249.70 | | | | 965.9 | | 67,450 | | | 297,966 | | 148.7 | | | 72 | 1 | | | | | | |
| | | TOTALS FOR BRIDGE NO. 07309 | | 178 | 269.00 | 249.70 | | | | 1,000.3 | 37,050 | 67,450 | 2,145 | | 299,280 | | 149.3 | 9,840.0 | | 72 | 1 | | | 59 | | | |
| 07310 X771 | SPRING CREEK STREET OVER U.S. HWY. 412 | BENT NO. 1 | | | 37.71 | | | | | 13.5 | 4,847 | | 245 | 35 | 655 | | 0.3 | 2,610.0 | | | | | | 16 | | | |
| | | BENT NO. 2 | | 134 | 131.83 | | | | | | 21,604 | | | | | | | 3,480.0 | | | | | | | | | |
| | | BENT NO. 3 | | | 39.66 | | | | | 13.5 | 4,859 | | 322 | | 655 | | 0.3 | 2,610.0 | | | | | | 16 | | | |
| | | 207'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 219.90 | | | | 855.4 | | 57,470 | | | 191,900 | | 95.7 | | 70 | | 1 | | | | | | |
| | | TOTALS FOR BRIDGE NO. 07310 | | 134 | 209.20 | 219.90 | | | | 882.4 | 31,310 | 57,470 | 567 | 35 | 193,210 | | 96.3 | 8,700.0 | 70 | | 1 | | | 32 | | | |

(1) Spring Creek Street Over U.S. Hwy. 412 includes approximately 51 cu. yds. of rock excavation.
U.S. Hwy. 412 Over Puppy Creek includes approximately 367 cu. yds. of rock excavation.

(2) The quantities shown for Preboring and Exploratory Holes are for estimating and bidding purposes only. Actual quantities will be determined in the field.

(3) These steel piles shall be Grade 50 and are required to have driving points which will not be paid for directly but will be considered subsidiary to the item "STEEL PILING (HP12x53)".

(4) Paint shall conform to Federal Standard 595B, Color Chip No. 20108 Dark Brown, unless noted otherwise.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 3
SCHEDULE OF BRIDGE QUANTITIES
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JAN. 2014 FILENAME: BCA0907_02.DGN
CHECKED BY: ABH DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JAN. 2014

BRIDGE NO. A&B7304-07315 DRAWING NO. 55106

drgood 10/7/2014 3:30:04 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\BCA0907_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 11-24-14 | | | | 6 | ARK. | | | |
| 12-11-14 | | | | JOB NO. | | CA0907 | 171 | 897 |
| | | | | (1) | | A&B7304-07315 QUANTITIES | | 55107 |

## SCHEDULE OF BRIDGE QUANTITIES FOR JOB CA0907

| BRIDGE NO. / CODE NO. | NAME PLATE TITLE | STRUCTURE | ITEM NO. | 801 | 802 | 802 | 802 | 802 | SP & 802 | 803 | 804 | 804 | 805 | 805 | 807 | 807 | 807 | 808 | 809 | 809 | 812 | 816 | 816 | 816 | SP JOB CA0907 | SP JOB CA0907 | SP JOB CA0907 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ITEM | (1) UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE | CLASS S CONCRETE - BRIDGE | CLASS S(AE) CONCRETE - BRIDGE | PRESTRESSED CONCRETE GIRDERS (TYPE III) | PRESTRESSED CONCRETE GIRDERS (TYPE IV) | PRESTRESSED CONCRETE GIRDERS (TYPE BT-72) | CLASS 2 PROTECTIVE SURFACE TREATMENT | REINFORCING STEEL-BRIDGE (GRADE 60) | EPOXY COATED REINFORCING STEEL (GRADE 60) | STEEL PILING (HPI2X53) (3) | PREBORING (2) | STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50) | STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50) | PAINTING STRUCTURAL STEEL (4) | ELASTOMERIC BEARINGS | SILICONE JOINT SEALANT | ARMORED JOINT WITH NEOPRENE STRIP SEAL | BRIDGE NAME PLATE (TYPE D) | FILTER BLANKET | DUMPED RIPRAP | CONCRETE RIPRAP | SHORING (SITE NO. _) | EXPLORATORY HOLES (2) | TEXTURED COATING FINISH |
| | | | UNIT | CUBIC YARD | CUBIC YARD | CUBIC YARD | LINEAR FOOT | LINEAR FOOT | LINEAR FOOT | SQ. YARD | POUND | POUND | LINEAR FOOT | LINEAR FOOT | POUND | POUND | TON | CUBIC INCH | LINEAR FOOT | LINEAR FOOT | EACH | SQUARE YARD | CUBIC YARD | CUBIC YARD | LUMP SUM | LINEAR FOOT | SQUARE YARD |
| 07311 X081 | RAMP EN OVER PUPPY CREEK | BENT NO. 1 | | | 26.99 | | | | | 5.8 | 2,936 | | 170 | | 585 | | | 4,527.2 | | | | 265 | 132 | | | | 30 |
| | | BENT NO. 2 | | 257 | 104.34 | | | | | | 15,722 | | | | | | | 5,550.4 | | | | | | | | | 94 |
| | | BENT NO. 3 | | 276 | 125.58 | | | | | | 18,393 | | | | | | | ~~5,550.4~~ 3,569.6 ⚠1 | | | | | | | | | 121 |
| | | BENT NO. 4 | | 203 | ~~235.75~~ 117.92 ⚠1 | | | | | | ~~37,069~~ 18,596 ⚠1 | | | | | | | 3,569.6 | | | | | | | | | 124 |
| | | BENT NO. 5 | | 279 | ~~235.75~~ 117.88 ⚠1 | | | | | | ~~37,069~~ 18,472 ⚠1 | | | | | | | ~~3,569.6~~ 5,550.4 ⚠1 | | | | | | | | | 103 |
| | | BENT NO. 6 | | | 26.29 | | | | | 5.8 | 2,981 | | 230 | | 585 | | | 4,526.8 | | | | 691 | 346 | | | | 30 |
| | | 360'-0" CONT. PRESTR. CONC. BEAM UNIT | | | | 374.00 | 1,419.3 | | | 1,358.3 | | 94,630 | | | 2,250 | | | | 56 | | 1 | | | | | | 872 |
| | | TOTALS FOR BRIDGE NO. 07311 | | 1,015 | ⚠~~754.76~~ 519.00 | 374.00 | 1,419.3 | | | 1,369.9 | ⚠~~114,179~~ 77,100 | 94,630 | 400 | | 3,420 | | | 27,294.0 | 56 | | 1 | 956 | 478 | | | | 1,374 |
| 07312 X771 | RAMP EN OVER U.S. HWY. 412 | BENT NO. 1 | | | 40.43 | | | | | 18.6 | 5,320 | | 307 | | 511 | | 0.3 | 3,117.5 | | | | | | 47 | | | 62 |
| | | BENT NO. 2 | | 281 | 191.69 | | | | | | 24,648 | | | | | | | 7,308.0 | | | | | | | | | 134 |
| | | BENT NO. 3 | | 677 | 210.16 | | | | | | 28,457 | | | | | | | 4,901.0 | | | | | | | | | 89 |
| | | BENT NO. 4 | | 567 | 208.90 | | | | | | 43,279 | 204 | | | 1,940 | | 1.0 | 6,327.0 | | | | | | | | | 100 |
| | | BENT NO. 5 | | 106 | 135.13 | | | | | | 18,972 | | 380 | 140 | | | | 3,822.0 | | | | | | | | | 98 |
| | | BENT NO. 6 | | | 40.49 | | | | | 18.6 | 5,324 | | 272 | 208 | 511 | | 0.3 | 3,534.5 | | | | | | 79 | | | 62 |
| | | 556'-5⅝" CONT. COMP. PLATE GIRDER UNIT | | | | 554.40 | | | | 2,096.9 | | 153,258 | | | 835,862 | | 417.8 | | | 54 | 1 | | | | | | 746 |
| | | 417'-5⅛" CONT. COMP. PLATE GIRDER UNIT | | | | 417.40 | | | | 1,573.2 | | 107,588 | | | 630,536 | | 315.3 | | | 54 | | | | | | | 562 |
| | | ~~SITE NO. 12~~ ⚠2 | | | | | | | | | | | | | | | | | | | | | | | + ⚠2 | | |
| | | TOTALS FOR BRIDGE NO. 07312 | | 1,631 | 826.80 | 971.80 | | | | 3,707.3 | 126,000 | 261,050 | 959 | 348 | 1,469,360 | | 734.7 | 29,010.0 | | 108 | 1 | | | 126 | + ⚠2 | | 1,853 |
| 07313 X471 | RAMP EN OVER SILENT GROVE ROAD | BENT NO. 1 | | | 46.30 | | | | | 23.1 | 6,271 | | 255 | | 736 | | | 3,901.5 | | | | 418 | 209 | 77 | | | 67 |
| | | BENT NO. 2 | | 227 | 162.74 | | | | | | 25,553 | | | | | | | 8,319.4 | | | | | | | | | 93 |
| | | BENT NO. 3 | | 222 | 152.56 | | | | | | 29,503 | | | | | | | 8,319.4 | | | | | | | | | 83 |
| | | BENT NO. 4 | | 326 | 148.20 | | | | | | 28,627 | | | | | | | 7,802.8 | | | | | | | | | 74 |
| | | BENT NO. 5 | | | 46.50 | | | | | 26.1 | 6,226 | | 261 | | 705 | | | 3,556.9 | | | | | | 238 | | | 71 |
| | | 413'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 443.10 | | | | 1,741.9 | | 131,270 | | | 385,609 | | 192.8 | | | 82 | 1 | | | | | | 625 |
| | | TOTALS FOR BRIDGE NO. 07313 | | 775 | 556.30 | 443.10 | | | | 1,791.1 | 96,180 | 131,270 | 516 | | 387,050 | | 192.8 | 31,900.0 | | 82 | 1 | 418 | 209 | 315 | | | 1,013 |
| 07314 X771 | RAMP NW OVER I-49 AND U.S. HWY. 412 | BENT NO. 1 | | | 33.68 | | | | | 15.0 | 4,575 | | 184 | | 449 | | 0.2 | 3,001.5 | | | | | | 91 | | | 52 |
| | | BENT NO. 2 | | 321 | 253.67 | | | | | | 33,875 | | | | | | | 7,765.9 | | | | | | | | | 144 |
| | | BENT NO. 3 | | 180 | 268.56 | | | | | | 37,237 | | | | | | | 7,387.2 | | | | | | | | | 181 |
| | | BENT NO. 4 | | 383 | 310.98 | | | | | | 44,238 | | | | | | | 7,387.2 | | | | | | | | | 183 |
| | | BENT NO. 5 | | 190 | 205.47 | | | | | | 31,714 | | 580 | | | | | 8,892.0 | | | | | | | | | 96 |
| | | BENT NO. 6 | | 236 | 220.36 | | | | | | 33,905 | | 278 | | | | | 7,612.4 | | | | | | | | | 155 |
| | | BENT NO. 7 | | 272 | 246.59 | | | | | | 35,805 | | 740 | 488 | | | | 7,612.4 | | | | | | | | 200 | 150 |
| | | BENT NO. 8 | | 401 | 264.84 | | | | | | 35,401 | | | | | | | 7,612.4 | | | | | | | | | 155 |
| | | BENT NO. 9 | | | 32.55 | | | | | 15.0 | 4,480 | | 322 | | 449 | | 0.2 | 3,978.0 | | | | | | 173 | | | 50 |
| | | 542'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 547.15 | | | | 2,179.6 | | 170,562 | | | 707,251 | | 353.6 | | | 30 | | | | | | | 820 |
| | | 558'-0" CONT. COMP. PLATE GIRDER UNIT | | | | 563.35 | | | | 2,244.1 | | 179,578 | | | 678,761 | | 339.4 | | | 30 | 1 | | | | | | 845 |
| | | ~~SITE NO. 14~~ ⚠2 | | | | | | | | | | | | | | | | | | | | | | | + ⚠2 | | |
| | | TOTALS FOR BRIDGE NO. 07314 | | 1,983 | 1,836.70 | 1,110.50 | | | | 4,453.7 | 261,230 | 350,140 | 2,104 | 488 | 1,386,910 | | 693.4 | 61,249.0 | | 60 | 1 | | | 264 | + ⚠2 | 200 | 2,831 |
| 07315 X271 | RAMP SE OVER GOAD SPRINGS ROAD | BENT NO. 1 | | | 40.21 | | | | | 15.4 | 4,463 | | 176 | | | 1,016 | | 2,484.0 | | | | | | 20 | | | 50 |
| | | BENT NO. 2 | | 262 | 151.31 | | | | | | 20,172 | | 336 | | | | | 6,312.0 | | | | | | | | | 104 |
| | | BENT NO. 3 | | 249 | 163.22 | | | | | | 21,759 | | 288 | 240 | | | | 6,312.0 | | | | | | | | | 142 |
| | | BENT NO. 4 | | | 40.86 | | | | | 18.1 | 4,586 | | 258 | | | 946 | | 2,484.0 | | | | | | 126 | | | 52 |
| | | 233'-0" CONT. COMP. W-BEAM UNIT | | | | 299.80 | | | | 1,267.5 | | 91,090 | | | | 299,828 | 147.6 | | 102 | | 1 | | | | | | 334 |
| | | TOTALS FOR BRIDGE NO. 07315 | | 511 | 395.60 | 299.80 | | | | 1,301.0 | 50,980 | 91,090 | 1,058 | 240 | | 301,790 | 147.6 | 17,592.0 | 102 | | 1 | | | 146 | | | 682 |
| | | TOTALS FOR JOB CA0907 | | 15,861 | ~~11,787.30~~ ⚠11,551.60 | 8,852.70 | 4,133.4 | 2,020.0 | 10,175.5 | 31,902.4 | ~~1,778,480~~ ⚠1,741,410 | 2,320,830 | 16,389 | 2,923 | 4,206,130 | 301,790 | 2,212.2 | 392,042.0 | 663 | 826 | 14 | 7,266 | 3,633 | 1,321 | | 360 | 9,772 |

(1) Ramp EN Over Puppy Creek includes approximately 374 cu. yds. of rock excavation.
Ramp EN Over U.S. Hwy. 412 includes approximately 223 cu. yds. of rock excavation.
Ramp EN Over Silent Grove Road includes approximately 116 cu. yds. of rock excavation.
Ramp NW Over I-49 and U.S. Hwy. 412 includes approximately 238 cu. yds. of rock excavation.

(2) The quantities shown for Preboring and Exploratory Holes are for estimating and bidding purposes only. Actual quantities will be determined in the field.

(3) These steel piles shall be Grade 50 and are required to have driving points which will not be paid for directly but will be considered subsidiary to the item "STEEL PILING (HPI2x53)".

(4) Paint shall conform to Federal Standard 595B, Color Chip No. 20108 Dark Brown, unless noted otherwise.

⚠1 Quantities for "CLASS S CONCRETE - BRIDGE", "REINFORCING STEEL - BRIDGE (GRADE 60)" and "ELASTOMERIC BEARINGS" were adjusted, DRG 11-24-14.
Checked by: JLH 11-24-14

⚠2 Quantities for "SHORING" were adjusted, DRG 12-11-14.
Checked by: JHR 12-11-14

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
12/11/14
BRIDGE ENGINEER

SHEET 3 OF 3
SCHEDULE OF BRIDGE QUANTITIES
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: JAN. 2014 FILENAME: BCA0907_03.DGN
CHECKED BY: ABH DATE: JULY 2014 SCALE: AS SHOWN
DESIGNED BY: DRG DATE: JAN. 2014

BRIDGE NO. A&B7304-07315 DRAWING NO. 55107

drgood 12/12/2014 9:29:04 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05916B0 - AHTD Springdale Bypass\Drawings\BRG\BCA0907_03.dgn
REVISED DATE:

## SUMMARY OF QUANTITIES (BOX 1 OF 3)

| ITEM NUMBER | ITEM | HSIP-9399(17) QUANTITY | 9991-9399(17) QUANTITY | TOTAL QUANTITY | UNIT |
|---|---|---|---|---|---|
| 201 | CLEARING | | 447 | 447 | STA. |
| 201 | GRUBBING | | 447 | 447 | STA. |
| 202 | REMOVAL AND DISPOSAL OF PIPE CULVERTS | | 25 | 25 | EACH |
| 202 | REMOVAL AND DISPOSAL OF FLARED END SECTIONS | | 4 | 4 | EACH |
| 202 | REMOVAL AND DISPOSAL OF DROP INLETS | | 3 | 3 | EACH |
| 202 | REMOVAL AND DISPOSAL OF BOX CULVERTS | | 1 | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF CATTLE GUARD | | 1 | 1 | EACH |
| 202 | REMOVAL AND DISPOSAL OF CURB AND GUTTER | | 1550 | 1550 | L.F. |
| 202 | REMOVAL AND DISPOSAL OF FENCE | | 62830 | 62830 | L.F. |
| 202 | REMOVAL AND DISPOSAL OF GATES | | 9 | 9 | EACH |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING | | 683 | 683 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF SIGN POSTS | | 6 | 6 | EACH |
| 202 | REMOVAL AND DISPOSAL OF SIGNS | | 6 | 6 | EACH |
| 202 | REMOVAL AND DISPOSAL OF DECORATIVE LIGHT POLE | | 2 | 2 | EACH |
| 202 | REMOVAL AND DISPOSAL OF HEADWALLS | | 4 | 4 | EACH |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE WALKS | | 235 | 235 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS | | 313 | 313 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF HOUSE FOUNDATION | | 4990 | 4990 | L.F. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE SLABS | | 9569 | 9569 | SQ. YD. |
| 202 | REMOVAL AND DISPOSAL OF CONCRETE FOUNDATIONS | | 4 | 4 | EACH |
| 202 | REMOVAL AND DISPOSAL OF BILLBOARDS | | 4 | 4 | EACH |
| 202 | REMOVAL AND DISPOSAL OF BUILDINGS | | 8 | 8 | EACH |
| 202 | REMOVAL AND DISPOSAL OF SEPTIC SYSTEM | | 4 | 4 | EACH |
| 202 | REMOVAL AND DISPOSAL OF WELL | | 10 | 10 | EACH |
| SP | REMOVAL AND DISPOSAL OF PRECAST CONCRETE BARRIER | | 2520 | 2520 | L.F. |
| 206 | FLOWABLE SELECT MATERIAL | | 194 | 194 | CU.YD. |
| SP | ROCK FILL | | 504230 | 504230 | CU.YD. |
| 210 | UNCLASSIFIED EXCAVATION | | 2517196 | 2517196 | CU.YD. |
| SP & 210 | COMPACTED EMBANKMENT | | 2455386 | 2455386 | CU.YD. |
| SP & 210 | SOIL STABILIZATION | | 1000 | 1000 | TON |
| 210 | PRESPLITTING | | 8300 | 8300 | SQ. YD. |
| 303 | AGGREGATE BASE COURSE (CLASS 7) | 857 | 184223 | 185080 | TON |
| 308 | PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE | | 154537 | 154537 | SQ. YD. |
| 308 | CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE | | 3245 | 3245 | TON |
| 308 | AGGREGATE IN CEMENT STABILIZED CRUSHED STONE BASE COURSE | | 50843 | 50843 | TON |
| 401 | TACK COAT | | 6724 | 6724 | GAL. |
| SP & 405 | MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2") | | 3541 | 3541 | TON |
| SP & 405 | ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2") | | 163 | 163 | TON |
| SP, SS & 406 | MINERAL AGGREGATE IN ACHM BINDER COURSE (1") | | 4774 | 4774 | TON |
| SP, SS & 406 | ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1") | | 77 | 77 | TON |
| SP, SS & 406 | ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1") | | 158 | 158 | TON |
| SP, SS & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") | 232 | 17041 | 17273 | TON |
| SP, SS & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") | 13 | 745 | 758 | TON |
| SP, SS & 407 | ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2") | | 121 | 121 | TON |
| SP, SS & 407 | ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2") | | 124 | 124 | TON |
| SP, SS & 407 | MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8") | | 7989 | 7989 | TON |
| SP, SS & 407 | ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8") | | 510 | 510 | TON |
| 412 | COLD MILLING ASPHALT PAVEMENT | | 4217 | 4217 | SQ. YD. |
| SP & 414 | ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC | | 67 | 67 | TON |
| 501 | PORTLAND CEMENT CONCRETE PAVEMENT (11" UNIFORM THICKNESS) | | 132540 | 132540 | SQ. YD. |
| 504 | APPROACH GUTTERS | | 687.32 | 687.32 | CU.YD. |
| 504 | APPROACH SLABS | | 984.93 | 984.93 | CU.YD. |
| 505 | PORTLAND CEMENT CONCRETE DRIVEWAY | | 95.18 | 95.18 | SQ.YD. |
| 601 | MOBILIZATION | | 1.00 | 1.00 | L.S. |
| SP & 602 | FURNISHING FIELD OFFICE | | 1 | 1 | EACH |
| SP & 603 | MAINTENANCE OF TRAFFIC | | 1.00 | 1.00 | L.S. |
| 603 | TRAFFIC CONTROL SUPERVISOR | | 1.00 | 1.00 | L.S. |
| 603 | 24" TEMPORARY CULVERT | | 66 | 66 | L.F. |
| 604 | SIGNS | | 2275 | 2275 | SQ. FT. |
| 604 | VERTICAL PANELS | | 33 | 33 | EACH |
| 604 | TRAFFIC DRUMS | | 631 | 631 | EACH |
| 604 | BARRICADES | | 264 | 264 | L.F. |
| 604 | FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER | | 14725 | 14725 | L.F. |
| 604 | RELOCATING PRECAST CONCRETE BARRIER | | 3100 | 3100 | L.F. |
| SP | PRECAST CONCRETE BARRIER LEFT IN PLACE | | 5140 | 5140 | L.F. |
| SP & 604 | PORTABLE CHANGEABLE MESSAGE SIGN | | 300 | 300 | WEEK |
| 604 | ADVANCE WARNING ARROW PANEL | | 100 | 100 | DAY |
| SP | MOBILE SPEED NOTIFICATION SYSTEM | | 2 | 2 | EACH |
| SP | TEMPORARY PORTABLE RUMBLE STRIPS | | 12 | 12 | EACH |
| 604 | CONSTRUCTION PAVEMENT MARKINGS | | 9380 | 9380 | L.F. |
| 604 | REMOVABLE CONSTRUCTION PAVEMENT MARKINGS | | 21927 | 21927 | L.F. |
| 604 | REMOVAL OF PERMANENT PAVEMENT MARKINGS | | 14964 | 14964 | L.F. |
| SP & 605 | CONCRETE DITCH PAVING (TYPE B) | 5422 | 16097 | 21519 | SQ. YD. |
| SP & 606 | 18" SIDE DRAIN | | 135 | 135 | L.F. |
| SP & 606 | 24" SIDE DRAIN | | 375 | 375 | L.F. |
| 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 3370 | 3370 | L.F. |
| 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 534 | 534 | L.F. |
| 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 84 | 84 | L.F. |
| 606 | 42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) | | 144 | 144 | L.F. |
| 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 142 | 142 | L.F. |
| 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 222 | 222 | L.F. |
| 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 187 | 187 | L.F. |
| 606 | 42" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 256 | 256 | L.F. |
| 606 | 48" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 108 | 108 | L.F. |
| 606 | 54" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV) | | 512 | 512 | L.F. |
| 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 735 | 735 | L.F. |
| 606 | 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 266 | 266 | L.F. |
| 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 514 | 514 | L.F. |
| 606 | 42" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 358 | 358 | L.F. |
| 606 | 48" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 202 | 202 | L.F. |
| 606 | 54" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 948 | 948 | L.F. |
| 606 | 60" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 946 | 946 | L.F. |
| 606 | 72" REINFORCED CONCRETE PIPE CULVERTS (CLASS V) | | 271 | 271 | L.F. |
| 606 | 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS SPECIAL) | | 404 | 404 | L.F. |
| 606 | 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS SPECIAL) | | 1044 | 1044 | L.F. |
| 606 | 12" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE) | | 751 | 751 | L.F. |
| 606 | 24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 55 | 55 | EACH |
| 606 | 30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 11 | 11 | EACH |
| 606 | 36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 12 | 12 | EACH |
| 606 | 42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 3 | 3 | EACH |
| 606 | 48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 6 | 6 | EACH |
| 606 | 54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 8 | 8 | EACH |
| 606 | 60" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 3 | 3 | EACH |
| 606 | 72" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS | | 2 | 2 | EACH |
| 606 | SELECTED PIPE BEDDING | | 625 | 625 | CU.YD. |
| 609 | DROP INLETS (TYPE RM) | | 39 | 39 | EACH |
| 609 | DROP INLET (TYPE N1) | | 1 | 1 | EACH |

STATE OF ARKANSAS
JOSEPH F. CANTABERY
LICENSED PROFESSIONAL ENGINEER
No. 13422
12-11-14

SUMMARY OF QUANTITIES

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| 12-11-14 | | | |
| 12-24-14 | | | |

(2)

SUMMARY OF QUANTITIES

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | 172 | 697 |

JOB NO. CA0907

## SUMMARY OF QUANTITIES (BOX 2 OF 3)

| | ITEM NUMBER | ITEM | | HSIP-9399(17) QUANTITY | 9991-9399(17) QUANTITY | TOTAL QUANTITY | UNIT |
|---|---|---|---|---|---|---|---|
| | 609 | DROP INLET (TYPE N2) | | | 14 | 14 | EACH |
| | 609 | JUNCTION BOXES (TYPE ST) | | | 1 | 1 | EACH |
| | SP | CONTRA-COSTA ENERGY DISSIPATOR | | | 3 | 3 | EACH |
| | SP | RIPRAP BASIN | | | 8 | 8 | EACH |
| | 611 | 4" PIPE UNDERDRAINS | | | 2000 | 2000 | L.F. |
| | 611 | UNDERDRAIN OUTLET PROTECTORS | | | 16 | 16 | EACH |
| | 614 | CONCRETE SPILLWAY (TYPE A) | | | 15 | 15 | EACH |
| | 615 | PAVEMENT REPAIR OVER CULVERTS (ASPHALT) | | | 52 | 52 | TON |
| | 617 | GUARDRAIL (TYPE A) | | 2700 | 5525 | 8225 | L.F. |
| | 617 | GUARDRAIL (TYPE C) | | | 100 | 100 | L.F. |
| | 617 | THRIE BEAM GUARDRAIL TERMINAL | | | 32 | 32 | EACH |
| | 617 | TERMINAL ANCHOR POSTS (TYPE 1) | | 6 | 15 | 21 | EACH |
| | 617 | GUARDRAIIL TERMINAL (TYPE 2) | | 6 | 21 | 27 | EACH |
| | SP | WIRE ROPE SAFETY FENCE | | 12199 | | 12199 | L.F. |
| | SP | WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS | | 1.00 | | 1.00 | L.S. |
| | 619 | WIRE FENCE (TYPE A) | | | 58349 | 58349 | L.F. |
| * | 619 | 16' STEEL GATE | (ALTERNATE NO. 1) | | 17 | 17 | EACH |
| * | 619 | 16' ALUMINUM GATES | (ALTERNATE NO. 2) | | 17 | 17 | EACH |
| | 620 | LIME | | | 509 | 509 | TON |
| | 620 | SEEDING | | | 254.47 | 254.47 | ACRE |
| | SS & 620 | MULCH COVER | | | 763.41 | 763.41 | ACRE |
| | 620 | WATER | | 68.4 | 36490.7 | 36559.1 | M.G. |
| | 621 | TEMPORARY SEEDING | | | 508.94 | 508.94 | ACRE |
| | 621 | SILT FENCE | | | 32514 | 32514 | L.F. |
| | 621 | DROP INLET SILT FENCE | | | 817 | 817 | L.F. |
| | 621 | SAND BAG DITCH CHECKS | | | 15620 | 15620 | BAG |
| | 621 | DIVERSION DITCH | | | 9085 | 9085 | L.F. |
| | 621 | ROCK DITCH CHECKS | | | 3465 | 3465 | CU.YD. |
| | 621 | SEDIMENT BASIN | | | 29620 | 29620 | CU.YD. |
| | 621 | OBLITERATION OF SEDIMENT BASIN | | | 29620 | 29620 | CU.YD. |
| | 621 | SEDIMENT REMOVAL AND DISPOSAL | | | 5000 | 5000 | CU.YD. |
| | 621 | PIPE FOR SLOPE DRAINS | | | 3010 | 3010 | L.F. |
| | 623 | SECOND SEEDING APPLICATION | | | 254.47 | 254.47 | ACRE |
| | 624 | SOLID SODDING | | 5422 | 12066 | 17488 | SQ.YD. |
| | 631 | CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL) | | | 1006 | 1006 | L.F. |
| | 631 | CONCRETE BARRIER WALL (MEDIAN TYPE SPECIAL) | | | 1260 | 1260 | L.F. |
| | 632 | CONCRETE ISLAND | | | 15 | 15 | SQ.YD. |
| | 635 | ROADWAY CONSTRUCTION CONTROL | | | 1.00 | 1.00 | L.S. |
| | 637 | MAILBOXES | | | 35 | 35 | EACH |
| | 637 | MAILBOX SUPPORTS (SINGLE) | | | 35 | 35 | EACH |
| | 642 | RUMBLE STRIPS IN ASPHALT SHOULDERS | | | 99787 | 99787 | L.F. |
| | 718 | REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4") | | | 22244 | 22244 | L.F. |
| | 718 | REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10") | | | 49 | 49 | L.F. |
| | 718 | REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4") | | | 20884 | 20884 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (4") | | | 4890 | 4890 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (6") | | | 1324 | 1324 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (8") | | | 154 | 154 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (12") | | | 25 | 25 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING WHITE (24") | | | 37 | 37 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | | | 6455 | 6455 | L.F. |
| | 719 | THERMOPLASTIC PAVEMENT MARKING (ARROWS) | | | 1 | 1 | EACH |
| | 719 | THERMOPLASTIC PAVEMENT MARKING (WORDS) | | | 1 | 1 | EACH |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4") | (ALTERNATE NO. 1) | | 65402 | 65402 | L.F. |
| * | SP | HIGH PERFORMANCE MARKING TAPE WHITE (4") | (ALTERNATE NO. 2) | | 65402 | 65402 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (8") | (ALTERNATE NO. 1) | | 2562 | 2562 | L.F. |
| * | SP | HIGH PERFORMANCE MARKING TAPE WHITE (8") | (ALTERNATE NO. 2) | | 2562 | 2562 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING (SKIP LINE) WHITE (4") | (ALTERNATE NO. 1) | | 2203 | 2203 | L.F. |
| * | SP | HIGH PERFORMANCE MARKING TAPE (SKIP LINE) WHITE (4") | (ALTERNATE NO. 2) | | 2203 | 2203 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING (SKIP LINE) WHITE (8") | (ALTERNATE NO. 1) | | 440 | 440 | L.F. |
| * | SP | HIGH PERFORMANCE MARKING TAPE (SKIP LINE) WHITE (8") | (ALTERNATE NO. 2) | | 440 | 440 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4") | (ALTERNATE NO. 1) | | 61407 | 61407 | L.F. |
| * | SP | HIGH PERFORMANCE MARKING TAPE YELLOW (4") | (ALTERNATE NO. 2) | | 61407 | 61407 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (8") | (ALTERNATE NO. 1) | | 296 | 296 | L.F. |
| * | SP | HIGH PERFORMANCE MARKING TAPE YELLOW (8") | (ALTERNATE NO. 2) | | 296 | 296 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4") | (ALTERNATE NO. 1) | | 8595 | 8595 | L.F. |
| * | SP | HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4") | (ALTERNATE NO. 2) | | 8595 | 8595 | L.F. |
| * | SP & 719 | INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4") | (ALTERNATE NO. 1) | | 1701 | 1701 | L.F. |
| * | SP | HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4") | (ALTERNATE NO. 2) | | 1701 | 1701 | L.F. |
| | 721 | RAISED PAVEMENT MARKERS (TYPE II) | | | 920 | 920 | EACH |
| | SP | ANTENNA SUPPORT (10' HT.) WITH CAMERA | | | 2 | 2 | EACH |
| | SP | OVERHEAD VMS ASSEMBLY | | | 2 | 2 | EACH |
| | SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-01) | | | 1 | 1 | EACH |
| | SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-02) | | | 1 | 1 | EACH |
| | SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-03) | | | 1 | 1 | EACH |
| | SP | STEEL OVERHEAD SIGN STRUCTURE (OH-49-04-04) | | | 1 | 1 | EACH |
| | SP & 725 | GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND) | | | 2049 | 2049 | SQ. FT. |
| | SP & 725 | GUIDE SIGN-OVERHEAD MOUNTED (DEMOUNTABLE LEGEND) | | | 1605 | 1605 | SQ. FT. |
| | SP & 726 | STANDARD SIGN | | | 1674 | 1674 | SQ. FT. |
| | SP & 727 | EXIT NUMBER PANEL (TYPE A) | | | 225 | 225 | SQ. FT. |
| | SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-1) | | | 47 | 47 | EACH |
| | SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2) | | | 2 | 2 | EACH |
| | SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2(1)) | | | 1 | 1 | EACH |
| | SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2(2)) | | | 1 | 1 | EACH |
| | SP & 729 | CHANNEL POST SIGN SUPPORT (TYPE U-2(6)) | | | 1 | 1 | EACH |
| | SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G-1) | | | 59 | 59 | EACH |
| | SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-1) | | | 30 | 30 | EACH |
| | SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-2) | | | 14 | 14 | EACH |
| | SP | OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT (TYPE G2-3) | | | 3 | 3 | EACH |
| | 730 | BREAKAWAY SIGN SUPPORT (TYPE G-2) | | | 10572 | 10572 | POUND |
| | 730 | BREAKAWAY SIGN SUPPORT (TYPE G2-4) | | | 783 | 783 | POUND |
| | 730 | BREAKAWAY SIGN SUPPORT (TYPE G2-5) | | | 911 | 911 | POUND |
| | 730 | BREAKAWAY SIGN SUPPORT (TYPE G2-6) | | | 282 | 282 | POUND |
| | 730 | BREAKAWAY SIGN SUPPORT (TYPE G-3) | | | 2183 | 2183 | POUND |
| | 731 | TEMPORARY IMPACT ATTENUATION BARRIER | | | 8 | 8 | EACH |
| | 731 | TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION) | | | 2 | 2 | EACH |
| | 731 | TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR) | | | 8 | 8 | EACH |
| | 732 | CRASH CUSHION | | | 1 | 1 | EACH |
| | 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY | | | 779 | 779 | CU.YD. |
| | 802 | CLASS S CONCRETE - ROADWAY | | | 1342.24 | 1342.24 | CU.YD. |
| | 804 | REINFORCING STEEL - ROADWAY (GRADE 60) | | | 346639 | 346639 | LB. |
| | 816 | DUMPED RIPRAP | | | 58 | 58 | CU.YD. |
| | 816 | FILTER BLANKET | | | 116 | 116 | SQ. YD. |
| | SP | RETAINING WALL | | | 54705 | 54705 | SQ. FT. |
| | SP | CONCRETE RETAINING WALL | | | 2086 | 2086 | SQ.FT. |
| | SP | GRAVITY BLOCK RETAINING WALL | | | 2036 | 2036 | SQ.FT. |
| | SP | SELECT GRANULAR BACKFILL | | | 21949 | 21949 | CU.YD. |

* DENOTES ALTERNATE BID ITEMS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No. 13422
12-11-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| 12-11-14 | | | |
| 11-24-14 | | | |

(2) SUMMARY OF QUANTITIES

| FED.AID PROJ. NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | 173 | 897 |
| JOB NO. | CA0907 | | | |

SUMMARY OF QUANTITIES

| SUMMARY OF QUANTITIES (BOX 3 OF 3) | | | | | |
|---|---|---|---|---|---|
| STRUCTURES OVER 20' SPAN | | | | | |
| ITEM NUMBER | ITEM | HSIP-9399(17) QUANTITY | 9991-9399(17) QUANTITY | TOTAL QUANTITY | UNIT |
| 636 | BRIDGE CONSTRUCTION CONTROL | | 1.00 | 1.00 | L.S. |
| 801 | UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE | | 15861 | 15861 | CU.YD. |
| 802 | CLASS S CONCRETE - BRIDGE | | 11551.60 | 11551.60 | CU.YD. |
| 802 | CLASS S(AE) CONCRETE - BRIDGE | | 8852.70 | 8852.70 | CU.YD. |
| 802 | PRESTRESSED CONCRETE GIRDERS (TYPE III) | | 4133.4 | 4133.4 | L.F. |
| 802 | PRESTRESSED CONCRETE GIRDERS (TYPE IV) | | 2020.0 | 2020.0 | L.F. |
| SP & 802 | PRESTRESSED CONCRETE GIRDERS (TYPE BT-72) | | 10175.5 | 10175.5 | L.F. |
| 803 | CLASS 2 PROTECTIVE SURFACE TREATMENT | | 31902.4 | 31902.4 | SQ. YD. |
| 804 | REINFORCING STEEL - BRIDGE (GRADE 60) | | 1741410 | 1741410 | LB. |
| 804 | EPOXY COATED REINFORCING STEEL (GRADE 60) | | 2320830 | 2320830 | LB. |
| 805 | STEEL PILING (HP12X53) | | 16389 | 16389 | L.F. |
| 805 | PREBORING | | 2923 | 2923 | L.F. |
| 807 | STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR 50) | | 4206130 | 4206130 | LB. |
| 807 | STRUCTURAL STEEL IN BEAM SPANS (M270-GR 50) | | 301790 | 301790 | LB. |
| 807 | PAINTING STRUCTURAL STEEL | | 2212.2 | 2212.2 | TON |
| 808 | ELASTOMERIC BEARINGS | | 392042.0 | 392042.0 | CU.IN. |
| 809 | SILICONE JOINT SEALANT | | 663 | 663 | L.F. |
| 809 | ARMORED JOINT WITH NEOPRENE STRIP SEAL | | 826 | 826 | L.F. |
| 812 | BRIDGE NAME PLATE (TYPE D) | | 14 | 14 | EACH |
| 816 | FILTER BLANKET | | 7266 | 7266 | SQ. YD. |
| 816 | DUMPED RIPRAP | | 3633 | 3633 | CU. YD. |
| 816 | CONCRETE RIPRAP | | 1321 | 1321 | CU.YD. |
| SP | SHORING (SITE NO. 4) | | 1.00 | 1.00 | L.S. |
| SP | EXPLORATORY HOLES | | 360 | 360 | L.F. |
| SP | TEXTURED COATING FINISH | | 9772 | 9772 | S.Y. |

| REVISIONS | | |
|---|---|---|
| DATE | REVISION | SHEET NUMBER |
| 11-24-14 | ADDED ADDITIONAL REMOVAL AND DISPOSAL PAY ITEMS, REVISED BRIDGE QUANTITIES, REVISED "UTILITY ADJUSTMENTS SPECIAL PROVISION", AND REVISED "PROSECUTION AND PROGRESS - CONNECTING ARKANSAS PROGRAM SPECIAL PROVISION". | 161, 161A, 171, 172, 173, 174 |
| 12-2-14 | REVISED "CONSTRUCTION DELAY DUE TO ARCHEOLOGICAL MITIGATION SPECIAL PROVISION". | 174 |
| 12-11-14 | REVISED INCENTIVE DAYS IN THE "SITE USE (A+C METHOD)" SPECIAL PROVISION, ADDED SPECIAL PROVISION "ASSESSMENT OF WORKING DAYS - SATURDAYS" TO THE GOVERNING SPECIFICATIONS LIST, REVISED "CONSTRUCTION DELAY DUE TO ARCHEOLOGICAL MITIGATION" SPECIAL PROVISION, REVISED "MAINTENANCE OF TRAFFIC" SPECIAL PROVISION, REVISED "ROCK FILL" SPECIAL PROVISION, REVISED TRAFFIC DRUMS QUANTITY, REVISED FURNISH AND INSTALL PRECAST CONCRETE BARRIER QUANTITY, REVISED PAVEMENT QUANTITIES, REVISED CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL) QUANTITY, ELIMINATED SHORING PAY ITEMS FOR SITE NO. 12 & 14, ADDED RELOCATING PRECAST CONCRETE BARRIER QUANTITY, MODIFIED DETAILS FOR CONCRETE BARRIER WALL (PARAPET TYPE SPECIAL). | 7, 32, 38, 114, 160, 165, 166, 171, 172, 173, 174, 208, 212 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN P. CANTABERY
No. 13422
12-11-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| 11-24-14 | | | |
| 12-2-14 | | | |
| 12-11-14 | | | |

(2) SUMMARY OF QUANTITIES AND REVISIONS

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 174 | 897 |

SUMMARY OF QUANTITIES AND REVISIONS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 175 | 897 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.13422 JOHN F. CANTABERRY

9-5-14

COORDINATES
ARKANSAS STATE PLANE, BASED ON GPS CONTROL, PROJECTED TO GROUND

| NAME | NORTHING | EASTING | ELEVATION | PREFERENCE | DESCRIPTION |
|---|---|---|---|---|---|
| 55 | 696436.1249 | 652236.684 | 1282.17 | SU | RBR ALUM CAP |
| 56 | 696325.2948 | 653147.9958 | 1276.99 | SU | RBR ALUM CAP |
| 57 | 696236.4131 | 654625.6109 | 1273.42 | SU | RBR ALUM CAP |
| 58 | 695094.4337 | 654509.8035 | 1279.54 | SU | RBR ALUM CAP |
| 59 | 697108.2839 | 654505.5956 | 1252.28 | SU | RBR ALUM CAP |
| 60 | 696238.633 | 655222.0309 | 1261.29 | SU | RBR ALUM CAP |
| 61 | 696185.5394 | 655953.5076 | 1267.92 | SU | RBR ALUM CAP |
| 62 | 696090.2883 | 656770.461 | 1274.54 | SU | RBR ALUM CAP |
| 63 | 696187.8051 | 658109.395 | 1280.63 | SU | RBR ALUM CAP |
| 64 | 696137.2527 | 659266.7368 | 1282.21 | SU | RBR ALUM CAP |
| 65 | 695878.2273 | 660557.8108 | 1285.90 | SU | RBR ALUM CAP |
| 66 | 696284.8889 | 661468.2655 | 1278.19 | SU | RBR ALUM CAP |
| 67 | 696650.2128 | 661835.1698 | 1271.89 | SU | RBR ALUM CAP |
| 68 | 697007.8371 | 662125.8975 | 1256.95 | SU | RBR ALUM CAP |
| 69 | 697556.7054 | 662826.6148 | 1145.05 | SU | T-69 RBR/CAP |
| 70 | 697119.9644 | 663156.1671 | 1148.75 | SU | T-70 RBR/CAP |
| 71 | 698027.2646 | 663616.099 | 1175.19 | SU | T-71 RBR/CAP |
| 72 | 697320.3725 | 664263.14 | 1178.05 | SU | T-72 RBR/CAP |
| 73 | 697559.1382 | 664720.9039 | 1224.23 | SU | RBR ALUM CAP |
| 74 | 697640.0105 | 665044.0804 | 1225.30 | SU | RBR ALUM CAP |
| 75 | 698158.3974 | 665752.4995 | 1267.50 | SU | T-75 RBR/CAP |
| 76 | 698174.4081 | 666767.2901 | 1277.86 | SU | RBR ALUM CAP |
| 77 | 697567.183 | 666774.3224 | 1276.30 | SU | RBR ALUM CAP |
| 78 | 698775.8453 | 666764.8584 | 1279.17 | SU | RBR ALUM CAP |
| 79 | 698843.2258 | 667483.6778 | 1287.82 | SU | RBR ALUM CAP |
| 80 | 699334.2538 | 668003.0304 | 1297.26 | SU | RBR ALUM CAP |
| 81 | 700020.1601 | 668275.68 | 1286.80 | SU | RBR ALUM CAP |
| 82 | 699887.5288 | 668848.6014 | 1284.20 | SU | RBR ALUM CAP |
| 83 | 699960.0626 | 669631.8535 | 1283.33 | SU | RBR ALUM CAP |
| 84 | 700675.3989 | 670639.1755 | 1290.47 | SU | RBR ALUM CAP |
| 85 | 701200.7318 | 671233.6488 | 1296.56 | SU | RBR ALUM CAP |
| 86 | 701338.8896 | 671576.8702 | 1298.29 | SU | RBR ALUM CAP |
| 87 | 701084.4103 | 671899.6348 | 1291.70 | SU | T-87 RBR/CAP |
| 88 | 700318.7273 | 671848.8238 | 1231.17 | SU | RBR CAP |
| 89 | 700980.5995 | 672670.1857 | 1239.58 | SU | RBR CAP |
| 90 | 700997.5192 | 672998.6789 | 1231.67 | SU | RBR CAP |
| 91 | 708188.9316 | 678352.3369 | 1310.75 | SU | RBR ALUM CAP |
| 92 | 707160.6438 | 678314.6864 | 1304.34 | SU | RBR ALUM CAP |
| 93 | 705873.8972 | 678268.2609 | 1282.84 | SU | RBR ALUM CAP |
| 94 | 705077.5535 | 678235.7066 | 1267.48 | SU | RBR ALUM CAP |
| 95 | 704299.1318 | 678203.3794 | 1271.48 | SU | RBR ALUM CAP |
| 96 | 703629.4554 | 678131.5351 | 1285.55 | SU | RBR ALUM CAP |
| 97 | 703074.5172 | 677985.6666 | 1284.55 | SU | RBR ALUM CAP |
| 98 | 702004.9825 | 677464.3042 | 1291.64 | SU | RBR ALUM CAP |
| 99 | 701370.7345 | 676955.1799 | 1308.79 | SU | T 99 RBR CAP |
| 100 | 700851.5602 | 676354.0909 | 1310.26 | SU | T 100 RBR CAP |
| 101 | 700465.5549 | 675714.1856 | 1311.70 | SU | T 101 RBR CAP |
| 102 | 700195.6915 | 675140.4283 | 1312.33 | SU | T 102 RBR CAP |
| 103 | 699876.8548 | 674433.747 | 1310.04 | SU | T 103 RBR CAP |
| 104 | 699633.3729 | 673897.7233 | 1304.81 | SU | T 104 RBR CAP |
| 105 | 699300.6563 | 673165.6804 | 1293.52 | SU | T 105 RBR CAP |
| 106 | 698974.0278 | 672530.38 | 1292.35 | SU | T 106 RBR CAP |
| 107 | 698645.1214 | 671950.2715 | 1273.24 | SU | T 107 RBR CAP |
| 108 | 698323.5724 | 671395.5823 | 1258.77 | SU | T 108 RBR CAP |
| 109 | 698036.754 | 670902.7747 | 1253.22 | SU | T 109 RBR CAP |
| 110 | 697624.0839 | 670411.2557 | 1253.83 | SU | T 110 RBR CAP |
| 111 | 697072.6646 | 669984.2869 | 1257.33 | SU | T 111 RBR CAP |
| 112 | 700403.4065 | 676149.9076 | 1315.70 | SU | RBR ALUM CAP |
| 113 | 700629.7808 | 676518.7832 | 1314.69 | SU | T 113 RBR CAP |
| 114 | 700176.7232 | 675752.3604 | 1318.24 | SU | RBR ALUM CAP |
| 115 | 699676.1979 | 676450.7697 | 1336.14 | SU | RBR ALUM CAP |
| 506 | 704848.496 | 653540.8221 | 1137.81 | GPS | AHTD GPS |
| 507 | 703714.0414 | 652466.9652 | 1124.72 | GPS | AHTD GPS |
| 508 | 701538.965 | 665704.7521 | 1270.33 | GPS | AHTD GPS |
| 509 | 700807.1661 | 666210.0411 | 1285.33 | GPS | AHTD GPS |
| 510 | 698898.7791 | 672516.3079 | 1289.53 | GPS | AHTD GPS |
| 511 | 697703.5968 | 670588.4147 | 1251.04 | GPS | 040051A |
| 512 | 705599.8001 | 678469.4071 | 1273.40 | GPS | RBR ALUM CAP 0 |
| 513 | 703836.602 | 678245.3223 | 1282.04 | GPS | RBR ALUM CAP 0 |
| 528 | 696173.5222 | 658119.7322 | 1280.06 | GPS | AHTD CAP 04006 |
| 529 | 697173.0336 | 658127.692 | 1279.16 | GPS | AHTD CAP 04006 |
| 530 | 695205.2857 | 665625.7058 | ********** | GPS | AHTD GPS |
| 531 | 694218.0913 | 665401.1583 | ********** | GPS | AHTD GPS |
| 615 | 696568.892 | 668035.895 | 1199.32 | VPT | |

COORDINATES
ARKANSAS STATE PLANE, BASED ON GPS CONTROL, PROJECTED TO GROUND

| NAME | NORTHING | EASTING | ELEVATION | PREFERENCE | DESCRIPTION |
|---|---|---|---|---|---|
| 617 | 696460.1503 | 670883.6731 | 1270.42 | VPT | |
| 619 | 697750.5099 | 669240.674 | 1223.51 | VPT | |
| 621 | 699632.0302 | 671208.8392 | 1215.71 | VPT | |
| 623 | 698855.6725 | 673320.2065 | 1302.22 | VPT | |
| 624 | 701358.6469 | 672906.8871 | 1252.98 | VPT | |
| 625 | 700764.6314 | 675463.2721 | 1305.43 | VPT | |
| 627 | 702815.571 | 675229.1512 | 1279.89 | VPT | |
| 632 | 699412.9871 | 676355.0415 | 1337.07 | VPT | |
| 633 | 697512.5359 | 674638.7948 | 1302.21 | VPT | |
| 634 | 695921.7706 | 672683.4048 | 1241.65 | VPT | |
| 635 | 696842.5526 | 666096.4138 | 1232.49 | VPT | |
| 636 | 699730.3465 | 667497.6944 | 1277.66 | VPT | |
| 637 | 697561.9319 | 666784.2127 | 1274.73 | VPT | |
| 638 | 702523.2101 | 673008.1294 | 1308.57 | VPT | |
| 639 | 697553.8048 | 665019.9414 | 1216.50 | VPT | |
| 640 | 695472.0792 | 661403.4725 | 1275.66 | VPT | |
| 641 | 697248.419 | 661011.0514 | 1267.41 | VPT | |
| 642 | 695366.3254 | 658088.2961 | 1277.21 | VPT | 8-SPK BASE COM |
| 643 | 697039.222 | 658130.9222 | 1279.19 | VPT | |
| 644 | 697152.0001 | 654507.1019 | 1254.39 | VPT | 8-SPK |
| 645 | 696047.4609 | 654598.2085 | 1276.28 | VPT | 8-SPK |
| 713 | 694878.5015 | 668852.2525 | 1244.88 | HPT | JOINT IN CONC |
| 714 | 697989.1734 | 670444.1221 | 1220.82 | HPT | HPT-714 CL OF |
| 715 | 699111.5803 | 672219.9165 | 1283.81 | HPT | HPT-715 COR OF |
| 716 | 701514.7751 | 674193.7142 | 1245.29 | HPT | HPT-716 LEG OF |
| 721 | 699357.3919 | 675473.8022 | 1333.22 | HPT | CENTER OF CATC |
| 722 | 698559.2873 | 674769.3446 | 1320.04 | HPT | COR CONC SIDEW |
| 723 | 695774.7412 | 670564.1003 | 1265.40 | HPT | X IN CONC AT D |
| 724 | 694600.4218 | 661884.839 | 1276.53 | HPT | 8-SPK COR ASPH |
| 725 | 696677.8419 | 660594.5859 | 1283.49 | HPT | 8-SPK COR CONC |
| 726 | 698181.2393 | 663670.5498 | 1181.46 | HPT | HPT-726 CPS EN |
| 727 | 696744.0069 | 664800.1418 | 1181.30 | HPT | 8-SPK COR CONC |
| 728 | 698556.9246 | 666722.361 | 1281.24 | HPT | HPT 8 SPK COR |
| 729 | 700440.1948 | 669571.9633 | 1289.87 | HPT | HPT 8SPK |
| 730 | 701372.8412 | 670280.3096 | 1290.61 | HPT | HPT PK NAIL |
| 731 | 695204.7791 | 665550.2713 | 1160.92 | HPT | HPT-731 END OF |
| 732 | 696350.5045 | 658936.5222 | 1282.67 | HPT | RBR ALUM CAP C |
| 733 | 695376.4501 | 654710.6309 | 1278.27 | HPT | COR CONC DRIVE |
| 734 | 696041.6834 | 652203.4831 | 1293.89 | HPT | HPT RBR ALUM C |
| 910 | 700434.1495 | 675535.8992 | 1312.53 | BM | CPS PP |
| 911 | 699270.2079 | 673244.6677 | 1290.31 | BM | DROP INLET |
| 912 | 697858.7129 | 670783.3865 | 1249.26 | BM | CH SQ DI CEN O |
| 913 | 695571.9114 | 669214.368 | 1261.45 | BM | CPS PP |
| 914 | 695015.2461 | 667495.5684 | 1172.98 | BM | 24 RCP |
| 915 | 695389.2059 | 665781.0277 | 1158.24 | BM | CHSLD SQ NO. E |
| 916 | 693472.9386 | 665887.5358 | 1223.95 | BM | PP |
| 917 | 691300.547 | 665868.6828 | 1283.55 | BM | PP |
| 918 | 691141.267 | 663214.0844 | 1292.51 | BM | PP |
| 919 | 692679.7136 | 662269.7467 | 1288.59 | BM | PP |
| 920 | 693879.1589 | 660747.4203 | 1281.60 | BM | CPS BOTTOM FEN |
| 921 | 693993.0985 | 658379.4915 | 1269.79 | BM | CPS BASE POWER |
| 922 | 694131.5787 | 655471.1425 | 1278.70 | BM | PP |
| 923 | 694195.9774 | 654503.7498 | 1285.48 | BM | CPS BASE POWER |
| 924 | 696797.4311 | 654606.9451 | 1264.41 | BM | CPS |
| 925 | 699209.7781 | 653948.6023 | 1168.39 | BM | PP |
| 926 | 699863.8819 | 653742.1681 | 1155.25 | BM | 8'X4' BOX CULV |
| 927 | 703110.1685 | 652178.6092 | 1115.22 | BM | SPRING CREEK B |
| 928 | 704568.282 | 653450.674 | 1134.63 | BM | 3'X5' BOX CULV |
| 960 | 697431.7959 | 666088.7734 | 1269.75 | BM | CPS IN CP |
| 961 | 699433.4904 | 666143.1621 | 1250.37 | BM | PP |
| 1000 | 700798.1556 | 666218.4376 | 1284.29 | TV | PROJECT METADA |
| 1102 | 697610.8207 | 669899.2443 | 1205.44 | TV | NBC MOVE UP |
| 1103 | 697279.4867 | 669702.656 | 1200.77 | TV | 8 SPIKE MOVE U |
| 1104 | 697894.6627 | 670560.9338 | 1241.86 | TV | 8 SPIKE MOVE U |
| 1105 | 698287.8884 | 671094.2949 | 1255.81 | TV | 8 SPIKE MOVE U |
| 1106 | 698084.9863 | 670529.7628 | 1214.21 | TV | 8 SPIKE MOVE U |

COORDINATES
ARKANSAS STATE PLANE, BASED ON GPS CONTROL, PROJECTED TO GROUND

| NAME | NORTHING | EASTING | ELEVATION | PREFERENCE | DESCRIPTION |
|---|---|---|---|---|---|
| 1107 | 698373.4727 | 671780.3294 | 1264.54 | TV | 8 SPIKE MOVE U |
| 1108 | 698427.6494 | 671559.45 | 1260.62 | TV | 8 SPIKE MOVE U |
| 1109 | 698565.1551 | 671484.041 | 1214.18 | TV | 8 SPIKE MOVE U |
| 1110 | 698304.1481 | 671830.5369 | 1234.10 | TV | 8 SPIKE MOVE U |
| 1111 | 698357.8889 | 671943.6523 | 1230.92 | TV | 8 SPIKE MOVE U |
| 1112 | 698213.6072 | 671835.9662 | 1237.28 | TV | 8 SPIKE MOVE U |
| 1113 | 698361.102 | 672026.504 | 1235.27 | TV | 8 SPIKE MOVE U |
| 1114 | 698434.1404 | 672181.4782 | 1238.68 | TV | 8 SPIKE MOVE U |
| 1115 | 698413.3497 | 672311.3588 | 1242.24 | TV | 8 SPIKE MOVE U |
| 1116 | 698443.0546 | 672533.9831 | 1251.84 | TV | 8 SPIKE MOVE U |
| 1117 | 698406.9814 | 672625.0415 | 1252.56 | TV | 8 SPIKE MOVE U |
| 1118 | 699820.6353 | 674644.0653 | 1310.80 | TV | 8 SPIKE MOVE U |
| 1119 | 699300.7802 | 673143.434 | 1292.45 | TV | 8 SPIKE MOVE U |
| 1120 | 699339.8007 | 673222.6703 | 1291.97 | TV | 8 SPIKE MOVE U |
| 1121 | 699387.9328 | 673325.6699 | 1292.13 | TV | 8 SPIKE MOVE U |
| 1122 | 699406.2432 | 673114.6376 | 1254.36 | TV | 8 SPIKE MOVE U |
| 1123 | 699709.4088 | 673853.6325 | 1305.85 | TV | 8 SPIKE MOVE U |
| 1124 | 700191.0898 | 674917.9181 | 1297.17 | TV | 8 SPIKE MOVE U |
| 1125 | 700016.3962 | 674534.5073 | 1300.72 | TV | 8 SPIKE MOVE U |
| 1126 | 700459.917 | 675484.568 | 1309.67 | TV | 8 SPIKE MOVE U |
| 1128 | 700117.5794 | 675309.763 | 1312.19 | TV | 8 SPIKE MOVE U |
| 1129 | 701054.7515 | 675478.3825 | 1299.95 | TV | 8 SPIKE MOVE U |
| 1163 | 701214.6019 | 676603.9026 | 1300.92 | SU | 8 SPIKE MOVE U |
| 1164 | 701021.9181 | 676405.5241 | 1305.45 | SU | 8 SPIKE MOVE U |
| 1171 | 700513.7623 | 676699.1743 | 1314.16 | SU | 8SPK |
| 1172 | 700332.5608 | 676637.0919 | 1319.03 | SU | 8SPK |
| 1173 | 700234.7364 | 676639.3102 | 1320.93 | SU | 8SPK |
| 1174 | 700105.6922 | 675497.6679 | 1304.32 | SU | 8SPK |
| 1175 | 699609.5617 | 675443.3798 | 1327.74 | SU | 8SPK |
| 1300 | 700316.7287 | 672143.1214 | 1219.70 | TV | 1300\NBC |
| 1301 | 700278.9894 | 672295.6462 | 1206.50 | TV | 1301\NBC |
| 1302 | 700452.2374 | 672571.2492 | 1208.44 | TV | 1302\NBC |
| 1303 | 700504.4915 | 672858.1822 | 1210.20 | TV | 1303\NBC |
| 1304 | 700630.2863 | 673253.8084 | 1212.28 | TV | 1304\NBC |
| 1305 | 701004.2769 | 673345.8248 | 1213.66 | TV | 1305\NBC |
| 1306 | 701349.6964 | 673361.8339 | 1215.53 | TV | 1306\NBC |
| 1403 | 696925.7492 | 663186.3315 | 1147.42 | TV | 8 SPIKE |
| 1404 | 696455.5338 | 663179.3596 | 1149.34 | TV | 8 SPIKE |
| 1405 | 696628.0156 | 663069.7521 | 1148.92 | TV | 8 SPIKE |
| 1406 | 696750.8564 | 662854.3889 | 1148.31 | TV | 8 SPIKE |
| 1407 | 696862.6989 | 662681.6482 | 1147.11 | TV | 8 SPIKE |
| 1408 | 695998.6334 | 660761.1428 | 1281.03 | TV | 8 SPIKE |
| 1409 | 696719.1389 | 662084.0996 | 1249.49 | TV | 8 SPIKE |
| 1410 | 696559.0849 | 662084.4906 | 1257.09 | TV | 8 SPIKE |
| 1411 | 696134.255 | 662044.786 | 1245.65 | TV | 8 SPIKE |
| 1412 | 696285.5578 | 662080.3225 | 1229.39 | TV | 8 SPIKE |
| 1413 | 696682.2369 | 662264.5351 | 1228.42 | TV | 8 SPIKE |
| 1414 | 695950.8667 | 662022.5604 | 1244.25 | TV | 8 SPIKE |
| 1415 | 697247.1611 | 664760.348 | 1195.83 | TV | 8 SPIKE |
| 1416 | 700510.3154 | 671526.8594 | 1267.65 | TV | 8 SPIKE |
| 9002 | 695872.892 | 660723.9251 | 1285.79 | BM | CH SQ BASE CON |
| 9003 | 697262.2951 | 664774.0028 | 1197.02 | BM | CPS CP N. SIDE |

USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
TO CONVERT TO GRID USE CAF = 0.9999386648.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME 001966GI.CTL
HORIZONTAL DATUM: NAD 83
VERTICAL DATUM: NAVD 88
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL.
BASIS OF BEARINGS
GRID NORTH, BASED ON GPS CONTROL AT POINT NUMBER 513, (GPS 040052A)
ARKANSAS STATE PLANE GRID COORDINATES NORTH ZONE,
NORTHING 703793.4320, EASTING 678203.7220.
CONVERGENCE ANGLE 1°15'05.2" RIGHT.
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.
ALL BEARINGS AND DISTANCES DISPLAYED ARE GRID PROJECTED
TO GROUND FOR DESIGN.



sadonaldson 9/4/2014 4:24:39 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\NWY 112 TO I-540\SBG_SC_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 176 | 897 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

**ALIGNMENT NAME: MAIN C.L.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8015 | 475+77.50 | PT | 696898.5938 | 652143.4544 |
| 8016 | 545+71.84 | PC | 696616.7136 | 659132.1079 |
| 8017 | 559+47.25 | PI | 696561.2830 | 660506.3978 |
| 8018 | 572+12.24 | PT | 697394.6920 | 661600.5526 |
| 8019 | 582+11.17 | PC | 697999.9818 | 662395.2174 |
| 8020 | 593+18.77 | PI | 698671.1196 | 663276.3317 |
| 8021 | 603+99.39 | PT | 698965.5127 | 664344.0963 |
| 8022 | 683+17.13 | PC | 701032.6615 | 671841.6494 |
| 8023 | 702+49.27 | PI | 701546.2093 | 673704.2886 |
| 8024 | 719+74.21 | PT | 700571.4092 | 675372.4974 |

**ALIGNMENT NAME: HWY. 112**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8280 | 6+90.00 | POB | 698082.3950 | 654201.1562 |
| 8281 | 11+87.84 | PC | 697605.0305 | 654342.4592 |
| 8282 | 13+74.88 | PI | 697425.6779 | 654395.5488 |
| 8283 | 15+61.10 | PT | 697240.0903 | 654418.8542 |
| 8284 | 25+68.19 | PC | 696240.8495 | 654544.3352 |
| 8285 | 27+59.09 | PI | 696051.4329 | 654568.1215 |
| 8286 | 29+49.12 | PT | 695860.6913 | 654560.2414 |
| 8287 | 32+83.72 | POE | 695526.3753 | 654546.4299 |

**ALIGNMENT NAME: RAMP 1, HWY. 112**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8290 | 478+75.52 | PC | 696840.1210 | 652439.3586 |
| 8291 | 479+70.74 | PI | 696836.2836 | 652534.4990 |
| 8292 | 480+65.80 | PT | 696823.0022 | 652628.7858 |
| 8293 | 485+96.30 | PC | 696749.0052 | 653154.1012 |
| 8294 | 488+78.47 | PI | 696709.6465 | 653433.5138 |
| 8295 | 491+49.64 | PT | 696545.0491 | 653662.7041 |
| 8296 | 496+06.27 | PC | 696278.6812 | 654033.6029 |
| 8297 | 497+62.08 | PI | 696187.7937 | 654160.1574 |
| 8298 | 499+13.11 | PT | 696157.6963 | 654313.0322 |
| 8299 | 501+61.75 | POE | 696109.6670 | 654556.9895 |

**ALIGNMENT NAME: RAMP 2, HWY. 112**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8299 | 499+09.18 | POB | 696109.6670 | 654556.9895 |
| 8310 | 513+74.93 | PC | 696583.5382 | 655944.0324 |
| 8311 | 516+60.48 | PI | 696675.8549 | 656214.2479 |
| 8312 | 519+39.52 | PT | 696664.3469 | 656499.5659 |

**ALIGNMENT NAME: RAMP 3, HWY. 112**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8320 | 496+28.57 | POB | 697496.7461 | 654371.6504 |
| 8321 | 498+77.20 | PC | 697491.0406 | 654620.2147 |
| 8322 | 501+07.17 | PI | 697485.7634 | 654850.1199 |
| 8323 | 503+22.24 | PT | 697347.6301 | 655033.9770 |
| 8324 | 507+81.96 | PC | 697071.4872 | 655401.5264 |
| 8325 | 510+77.25 | PI | 696894.1187 | 655637.6061 |
| 8326 | 513+59.96 | PT | 696852.9309 | 655930.0044 |
| 8327 | 518+72.76 | PC | 696781.4022 | 656437.7970 |
| 8328 | 519+67.98 | PI | 696768.1207 | 656532.0839 |
| 8329 | 520+63.04 | PT | 696764.2833 | 656627.2242 |

**ALIGNMENT NAME: RAMP 4, HWY. 112**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8340 | 483+09.15 | PC | 696927.5601 | 652876.8614 |
| 8341 | 487+32.80 | PI | 696910.4867 | 653300.1630 |
| 8342 | 491+35.68 | PT | 697113.8346 | 653671.8153 |
| 8320 | 499+33.42 | POE | 697496.7461 | 654371.6504 |

**ALIGNMENT NAME: GRIMSLEY/MILLER RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8350 | 13+00.00 | POB | 697356.5409 | 658158.7503 |
| 8351 | 28+93.53 | POE | 695764.4338 | 658091.5274 |

**ALIGNMENT NAME: SHARP SPRINGS ACCESS RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8360 | 5+13.92 | POB | 699258.6483 | 664759.9412 |
| 8361 | 11+99.60 | PC | 699499.8981 | 665401.7778 |
| 8362 | 12+76.19 | PI | 699526.8461 | 665473.4721 |
| 8363 | 13+52.55 | PT | 699544.0131 | 665548.1149 |
| 8364 | 20+00.00 | POE | 699689.1306 | 666179.0907 |

**ALIGNMENT NAME: ZION RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8370 | 9+57.25 | POB | 700109.6505 | 667778.0293 |
| 8371 | 12+80.78 | PC | 700126.3671 | 667454.9276 |
| 8372 | 16+09.15 | PI | 700143.3336 | 667126.9961 |
| 8373 | 18+45.21 | PT | 699833.9630 | 667016.9197 |
| 8374 | 21+81.53 | PC | 699517.1055 | 666904.1794 |
| 8375 | 24+02.15 | PI | 699309.2443 | 666830.2208 |
| 8376 | 26+19.34 | PT | 699088.7621 | 666822.2384 |
| 8377 | 31+41.74 | POE | 698566.7029 | 666803.3378 |

**ALIGNMENT NAME: SPRING CREEK ACCESS RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8380 | 16+91.82 | POB | 699966.5571 | 669485.5158 |
| 8381 | 18+23.76 | PC | 700098.3717 | 669491.1721 |
| 8382 | 19+29.68 | PI | 700204.1937 | 669495.7130 |
| 8383 | 20+06.16 | PT | 700230.8574 | 669598.2213 |
| 8384 | 35+50.51 | PC | 700619.6254 | 671092.8360 |
| 8385 | 37+15.82 | PI | 700661.2388 | 671252.8183 |
| 8386 | 38+78.86 | PT | 700655.9395 | 671418.0390 |
| 8387 | 40+00.00 | POE | 700652.0561 | 671539.1166 |

**ALIGNMENT NAME: SPRING CREEK RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8390 | 14+00.00 | POB | 701551.5936 | 671567.9681 |
| 8391 | 26+10.76 | POE | 700341.4569 | 671529.1545 |

**ALIGNMENT NAME: PUPPY CREEK RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8400 | 20+00.00 | POB | 701307.9539 | 671560.1537 |
| 8401 | 24+14.48 | PC | 701258.6124 | 671971.6840 |
| 8402 | 26+32.66 | PI | 701232.6389 | 672188.3151 |
| 8403 | 28+45.68 | PT | 701288.0899 | 672399.3336 |
| 8404 | 36+50.40 | POE | 701492.6091 | 673177.6303 |

**ALIGNMENT NAME: PUPPY CREEK ACCESS RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8410 | 10+00.00 | PC | 700938.0856 | 672388.0007 |
| 8411 | 11+10.57 | PI | 701009.2894 | 672472.5901 |
| 8412 | 12+07.09 | PT | 700990.8255 | 672581.6059 |
| 8413 | 13+43.23 | PC | 700968.0916 | 672715.8322 |
| 8414 | 14+31.15 | PI | 700953.4102 | 672802.5153 |
| 8415 | 15+11.71 | PT | 700886.0149 | 672858.9720 |
| 8416 | 16+94.43 | POE | 700745.9441 | 672976.3089 |

**ALIGNMENT NAME: I-49**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8420 | 45+00.00 | POB | 698306.0313 | 671509.1580 |
| 8421 | 54+26.00 | PC | 698771.9140 | 672309.4292 |
| 8422 | 60+04.63 | PI | 699063.0272 | 672809.4896 |
| 8423 | 65+82.27 | PT | 699302.2875 | 673336.3311 |
| 8424 | 90+64.07 | PC | 700328.5039 | 675596.0187 |
| 8425 | 119+05.09 | PI | 701503.2590 | 678182.7824 |
| 8426 | 141+50.66 | PT | 704342.5609 | 678281.5755 |
| 8427 | 166+14.05 | POE | 706804.4613 | 678367.2370 |

**ALIGNMENT NAME: RAMP EN**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8430 | 689+25.75 | PC | 701097.0989 | 672445.3193 |
| 8431 | 696+36.39 | PI | 701193.6217 | 673149.3715 |
| 8432 | 703+03.94 | PT | 700874.8921 | 673784.5230 |
| 8433 | 707+80.86 | PC | 700660.9836 | 674210.7911 |
| 8434 | 712+12.13 | PI | 700467.5541 | 674596.2496 |
| 8435 | 716+29.18 | PT | 700458.5303 | 675027.4244 |
| 8436 | 729+44.55 | PC | 700431.0074 | 676342.5129 |
| 8437 | 733+66.22 | PI | 700422.1845 | 676764.0866 |
| 8438 | 737+02.47 | PT | 700792.1518 | 676966.3896 |
| 8439 | 753+90.69 | POE | 702273.3810 | 677776.3451 |

**ALIGNMENT NAME: RAMP ES**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8450 | 701+04.03 | PC | 700956.6508 | 673602.1715 |
| 8451 | 715+01.24 | PI | 700441.1543 | 674900.8121 |
| 8452 | 716+75.55 | PT | 699687.8059 | 673724.0920 |

**ALIGNMENT NAME: RAMP NW**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8460 | 698+00.00 | POB | 701249.1460 | 673312.7549 |
| 8461 | 709+47.73 | PC | 701189.0680 | 674458.9115 |
| 8462 | 757+77.76 | PI | 700936.2395 | 679282.3181 |
| 8469 | 732+44.35 | PT | 699585.8105 | 674644.9141 |
| 8463 | 746+39.53 | PC | 699195.7336 | 673305.3809 |
| 8464 | 748+11.12 | PI | 699147.7586 | 673140.6338 |
| 8465 | 749+81.79 | PT | 699071.1858 | 672987.0766 |

**ALIGNMENT NAME: RAMP SW**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8480 | 709+47.73 | PC | 701198.0556 | 674459.3826 |
| 8481 | 712+47.80 | PI | 701182.3485 | 674759.0398 |
| 8482 | 715+47.73 | PT | 701150.9800 | 675057.4642 |
| 8483 | 721+54.07 | PC | 701087.5951 | 675660.478 |
| 8484 | 725+16.32 | PI | 701049.7264 | 676020.7431 |
| 8485 | 728+59.92 | PT | 701207.1763 | 676346.9861 |
| 8486 | 730+94.09 | POE | 701308.9584 | 676557.8828 |

**ALIGNMENT NAME: RAMP SE**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8490 | 698+70.62 | PC | 702273.1788 | 677635.4709 |
| 8491 | 705+87.98 | PI | 701648.6689 | 677282.4841 |
| 8492 | 712+61.07 | PT | 701336.8702 | 676636.4239 |
| 8493 | 713+44.08 | PC | 701300.7906 | 676561.6655 |
| 8494 | 735+72.18 | PI | 700332.3588 | 674555.0335 |

**ALIGNMENT NAME: RAMP WS**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8510 | 691+04.81 | PC | 699148.1655 | 672879.6387 |
| 8511 | 692+01.84 | PI | 699191.9305 | 672966.2370 |
| 8512 | 692+98.70 | PT | 699244.2467 | 673047.9541 |
| 8513 | 710+85.10 | PC | 700207.4381 | 674552.4432 |

**ALIGNMENT NAME: RAMP WN**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8530 | 737+40.00 | POB | 700819.3199 | 676994.9223 |
| 8531 | 738+43.52 | PC | 700728.4906 | 676945.2557 |
| 8532 | 744+51.62 | PI | 700194.9521 | 676653.5098 |

**ALIGNMENT NAME: HWY 264 RAMP 1**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8610 | 144+06.55 | PC | 704596.2586 | 678348.9383 |
| 8611 | 144+92.87 | PI | 704682.5239 | 678351.9399 |
| 8612 | 145+79.07 | PT | 704768.1667 | 678362.7110 |

**ALIGNMENT NAME: GOAD SPRINGS ACCESS RD.**

| POINT | STATION | TYPE | NORTHING | EASTING |
|---|---|---|---|---|
| 8540 | 3+14.85 | POB | 701384.8985 | 675215.0373 |
| 8541 | 9+91.52 | PC | 701359.3471 | 675891.2269 |
| 8542 | 11+66.23 | PI | 701352.7501 | 676065.8073 |
| 8543 | 13+37.11 | PT | 701408.3908 | 676231.4151 |
| 8544 | 14+86.85 | PC | 701456.0810 | 676373.3592 |
| 8545 | 17+00.79 | PI | 701524.2149 | 676576.1516 |
| 8546 | 19+14.52 | PT | 701577.0364 | 676783.4603 |
| 8547 | 20+00.00 | POE | 701598.1423 | 676866.2949 |

sadonoldson 9/4/2014 4:25:00 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SC_02.dgn
REVISED DATE:

SURVEY CONTROL DETAILS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 177 | 897 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

400 200 0 400
SCALE: 1" = 400'

STA. 478+50.00
BEGIN JOB CA0907

POB 8280
S 15°29'21" E 491.84'
10+00
S 88°41'06" E 248.63'
HWY. 112-1
PC 11+87.84 RC 8281
POE 8320
S 88°41'06" E 248.63'
PC 8321
PI 8282 PI 13+74.88
500+00
PI 501+07.17
PI 8322
PT 8323
PT 503+22.24
3-1
S 505+00
S 53°04'56" E 459.73'
RAMP 3
PC 8324
PC 507+81.96
3-2
510+00
PI 8325
PT 513+59.96
PT 8326
PI 516+60.48
515+00
S 81°58'55" E 512.81'
3-3
PC 518+72.76
PC 8328
PI 8327
520+00
PT 520+63.04
PT 8329
S 87°41'25" E
525+00
530+00
S 87°41'25" E 6994.34'
N 87°41'25" W
PT 475+77.50
PT 8015
PI 479+70.74
PC 483+09.15
485+00
PI 487+32.80
490+00
PT 491+35.68
PT 8342
RAMP 4
N 61°18'54" E 797.74'
15+00
PT 15+61.10 PT 8283
RBR ALUM CAP 59
S 7°09'27" E 1007.09'
4-1
PC 8340
PI 8341
S 87°41'25" E
475+00
480+00
485+00
490+00
495+00
500+00
505+00
C.L. MEDIAN STA. 499+09.48 =
C.L. HWY. 112 STA. 20+000.00
20+00
HWY. 112
80°31'58"
C. L. MEDIAN
PC 8290
PI 8291
PT 8292
S 81°58'55" E 530.50'
PC 478+75.52
1-1
PT 480+65.80
RBR ALUM CAP 65
PC 8293
PC 485+96.30
PI 8294
PI 488+78.47
490+00
PT 8295
PT 491+49.64
RAMP 1
S 54°18'55" E 456.64'
1-2
485+00
RBR ALUM CAP 56
S86°33'28"E 1480.29'
PC 496+06.27
1-3
PT 499+13.11
PC 8296
PI 8297
PT 497+62.08
S 78°51'44" E 248.64'
POE 8299
PI 27+59.09
PT 8298
500+00
PI 8285
HWY. 112-2
PT 29+49.12 PT 8286
30+00
S 2°21'57" W 334.60'
POE 8287
RBR ALUM CAP 58
PI 510+77.25
PC 8310
PC 513+74.93
2-1
PI 8311
PT 8312
PT 519+67.98
PI 519+39.52
N 71°08'16" E 1465.76'
RAMP 2
510+00
515+00
RBR ALUM CAP 60
S85°50'55"E 733.40'
RBR ALUM CAP 61
S83°20'59"E 822.49'
RBR ALUM CAP 62
N85°50'04"E 1342.48'
SURVEY BASELINE
RBR ALUM CAP CENTER GR RD 54
S80°32'45"E 298.47'
RBR ALUM CAP 734
N73°17'11"E 986.17'

| CURVE DATA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CURVE | PC | PI | PT | Δ | D | TANGENT FEET | LENGTH FEET | e FT./FT. | Ls FEET | DESIGN SPEED |
| 1-1 | 478+75.52 | 479+70.74 | 480+65.80 | 5°42'30" RT. | 3°00'00" | 95.22 | 190.28 | NC | NA | 70 MPH |
| 1-2 | 485+96.30 | 488+78.47 | 491+49.64 | 27°40'00" RT. | 5°00'00" | 282.17 | 553.33 | 0.083 | 300 | 50 MPH |
| 1-3 | 496+06.27 | 497+62.08 | 499+13.11 | 24°32'49" LT. | 8°00'00" | 155.81 | 306.84 | 0.058 | 300 | 30 MPH |
| | | | | | | | | | | |
| 2-1 | 513+74.93 | 516+60.48 | 519+39.52 | 21°10'19" RT. | 3°45'00" | 285.55 | 564.59 | 0.069 | 300 | 50 MPH |
| | | | | | | | | | | |
| 3-1 | 498+77.20 | 501+07.17 | 503+22.24 | 35°36'10" RT. | 8°00'00" | 229.97 | 445.04 | 0.058 | 250 | 30 MPH |
| 3-2 | 507+81.96 | 510+77.25 | 513+59.96 | 28°53'59" LT. | 5°00'00" | 295.28 | 578.00 | 0.083 | 300 | 50 MPH |
| 3-3 | 518+72.76 | 519+67.98 | 520+63.04 | 5°42'30" LT. | 3°00'00" | 95.22 | 190.28 | NC | NA | 70 MPH |
| | | | | | | | | | | |
| 4-1 | 483+09.15 | 487+32.80 | 491+35.68 | 30°59'41" LT. | 3°45'00" | 423.65 | 826.53 | 0.069 | 300 | 50 MPH |
| | | | | | | | | | | |
| HWY. 112-1 | 11+87.84 | 13+74.88 | 15+61.10 | 9°19'54" RT. | 2°30'00" | 187.05 | 373.26 | 0.049 | 300 | 50 MPH |
| HWY. 112-2 | 25+68.19 | 27+59.09 | 29+49.12 | 9°31'24" RT. | 2°30'00" | 190.90 | 380.93 | 0.049 | 300 | 50 MPH |

SURVEY CONTROL DETAILS

sadonaldson 9/4/2014 3:21:23 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SC_ALL_13.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 178 | 897 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

N

200 100 0 200

SCALE: 1" = 200'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

POB 13+00.00 POB 8350

AHTD CAP 040060A 529

C.L. GRIMSLEY RD.

510+00 PI 510+77.25

PI 8325

PT 513+59.96 PT 8326

515+00

C.L. RAMP 3

S 81°58'55" E 512.81'

PC 518+72.76 PC 8327

PI 519+67.98 PI 8328

PT 520+63.04 PT 8329

520+00

510+00 S87°41'25"E 6994.34'

515+00

525+00

530+00

90°06'29"

535+00

540+00

20+00

PI 8311

PT 8312

515+00

C.L. RAMP 2

PC 8310

N 71°08'16" E 1465.76'

510+00

PC 513+74.93

PI 516+60.48

PT 519+39.52

C.L. MEDIAN

C.L. MEDIAN STA. 535+68.14 = C.L. GRIMSLEY RD. STA. 20+00.00

S 2°25'04" W 1593.53'

SURVEY BASELINE

RBR ALUM CAP 63

AHTD CAP 040060 528

S85°50'55"E 733.40'

RBR ALUM CAP

S83°20'59"E 822.49'

RBR ALUM CAP 62

N85°50'04"E 1342.48'

POE 28+93.53 POE 8351

SURVEY CONTROL DETAILS
STA. 510+00 TO 540+00

sadonaldson 9/4/2014 3:21:23 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SC_ALL_14.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 179 | 897 |

(2) SURVEY CONTROL DETAILS

N

200 100 0 200

SCALE: 1" = 200'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

C.L. MEDIAN
P.I. = 559+47.25
Δ = 39°36'21" LT.
D = 01°30'00"
T = 1375.41
L = 2640.40
P.C. = 545+71.84
P.T. = 572+12.24
e = 0.054'/'
Ls = 350'

540+00

S 87°41'25" E
6994.34'

545+00

PC 545+71.84
PC
8016

550+00

555+00

560+00

565+00

C.L. MEDIAN

570+00

S87°29'56"E
1158.45'

RBR ALUM CAP
64

PI
8017

PI 559+47.25

S78°39'20"E
1316.80'

SURVEY BASELINE

RBR ALUM CAP
65

N65°55'54"E
997.15'

RBR ALUM CAP
66

N66°00'46"E
674.48'

SURVEY CONTROL DETAILS
STA. 540+00 TO 570+00

sadonaldson 9/4/2014 3:21:24 PM
WORKSPACE: AHTD
L:\2005\D559680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SC_ALL_15.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 180 | 897 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

200 100 0 200
SCALE: 1" = 200'

570+00 575+00 580+00 585+00 590+00 595+00 600+00

PT 572+12.24
PI 8018

N52°42'14"E
998.93'

PC 582+11.17
PI 8019

PI 593+18.77
PI 8020

C.L. MEDIAN

C.L. MEDIAN
P. I. = 559+47.25
Δ = 39°36'21" LT.
D = 01°30'00"
T = 1375.41
L = 2640.40
P.C. = 545+71.84
P.T. = 572+12.24
e = 0.054'/'
Ls = 350'

C.L. MEDIAN
P. I. = 593+18.77
Δ = 21°52'56" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
P.C. = 582+11.17
P.T. = 603+99.39
e = 0.037'/'
Ls = 350'

T-69 RBR/CAP
69

RBR ALUM CAP
68

T-71 RBR/CAP
71

RBR ALUM CAP
67

8 SPIKE
1410

SURVEY BASELINE

N76°00'47"E
793.42'

T-70 RBR/CAP
70

8 SPIKE
1406

N62°12'59"E
375.20'

8 SPIKE
1403

N69°52'24"E
1146.84'

T-72 RBR/CAP
72

N62°27'14"E
516.29'

RBR ALUM CAP
73

N7

SURVEY CONTROL DETAILS
570+00 TO 600+00

sadonaldson 9/4/2014 3:21:24 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_SC_ALL_16.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 181 | 897 |

(2) SURVEY CONTROL DETAILS

200 100 0 200

SCALE: 1" = 200'

C.L. SHARP SPRINGS ROAD
P.I. = 12+76.19
Δ = 7°38'52" RT.
D = 05°00'00"
T = 76.59
L = 152.96
P.C. = 11+99.60
P.T. = 13+52.55
e = 0.061'/'
Ls = 200'

C.L. SHARP SPRINGS ACCESS RD.

POB 5+13.92
POB 8360
N, 69°24'00" E
685.68'
10+00
PC 11+99.60
PC 8361
PI 12+76.19
PI 8362
PT 13+52.55
PT 8363
15+00
N, 77°02'52" E
647.45'
POE 20+00.00
POE 8364

N

600+00
PT 603+99.39
PT 8021
605+00
610+00
615+00
620+00
630+00
N 74°35'09" E
7777.30'

C.L. MEDIAN

C.L. MEDIAN
P.I. = 593+18.77
Δ = 21°52'56" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
P.C. = 582+11.17
P.T. = 603+99.39
e = 0.037'/'
Ls = 350'

BK. 625+00.00
AHD. 625+81.89

C.L. S. ZION ROAD
P.I. = 24+02.15
Δ = 17°30'45" LT.
D = 04°00'00"
T = 220.63
L = 437.81
P.C. = 21+81.53
P.T. = 26+19.34
e = 0.051'/'
Ls = 200'

PC 21+81.53
PC 8374
PI 24+02.15
PI 8375
25+00
PT 26+19.34
PT 8376
C.L. S. ZION RD.
S 2°04'24" W
522.40'
30+00
RBR ALUM CAP
78
HPT & SPK COR POE
7284
POE 8377
POE 31+41.74
N69°23'27"E
813.37'

SURVEY BASELINE
N67°39'42"E
1048.55'
T-75 RBR/CAP
75
N53°48'18"E
877.85'
RBR ALUM CAP
74
N75°57'03"E
333.14'
RBR ALUM CAP
73
N62°27'14"E
516.29'
RBR ALUM CAP
76

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

SURVEY CONTROL DETAILS
STA. 600+00 TO 630+00

sadonaldson 9/4/2014 3:21:24 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_SC_ALL_17.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 182 | 897 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

200 100 0 200

SCALE: 1" = 200'

C.L. S. ZION RD.
PI = 16+09.15
Δ = 73°22'33"LT.
D = 13°00'00"
T = 328.37
L = 564.43
PC= 12+80.78
PT= 18+45.21
e = 0.100 '/'
Ls = 250'

PI 16+09.15
PI 8372
PC 12+80.78
PC 8371
POB 9+57.25
POB 8370
N87°02'18"W 323.53'
PT 18+45.21
PT 8373
C.L. S. ZION RD.
15+00
C.L. MEDIAN STA. 632+00.00 =
C.L. S. ZION RD. STA. 20+00.00
630+00
635+00
640+00
N74°35'09"E 7777.30'
645+00
650+00
655+00
660+00
RBR ALUM CAP 81
20+00
125°00'00"
S19°35'09"W 336.32'
PC 21+81.53
PC 8374
PI 24+02.15
PI 8375
25+00
C.L. MEDIAN
PI 19+29.68
PI 8382
PT 8383
PT 20+06.16
PC 18+23.76
PC 8381
C.L. SPRING CK. ST. ACCESS RD.
N02°27'26"E 131.94'
POB 16+91.82
POB 8380
N84°42'33"E 786.60'
SURVEY BASELINE
RBR ALUM CAP 82
RBR ALUM CAP 83
N56°48'09"E 1010.50'
RBR ALUM CAP 80
N46°36'21"E 714.73'
RBR ALUM CAP 79
N69°23'27"E 813.37'

SURVEY CONTROL DETAILS
STA. 630+00 TO 660+00

sdonaldson 9/4/2014 3:21:24 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SC_ALL_18.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 183 | 897 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTARERY
9-5-14

N

200 100 0 200
SCALE: 1" = 200'

C.L. PUPPY CREEK RD.
PI = 26+32.66
Δ = 21°33'37"LT.
D = 5°00'00"
T = 218.18'
L = 431.20'
PC= 24+14.48
PT= 28+45.68
e = 0.061'/'
Ls = 200'

SURVEY BASELINE
N48°31'59"E 795.33'
RBR ALUM CAP 85
RBR ALUM CAP 88
N68°04'25"E 369.98'
POB 14+00.00 POB 8399
15+00
POB 8400
POB 20+00.00
S 83°09'47" E 414.48'
S25°44'47"E 411.02'
PC 24+14.48
PC 8401
25+00
PI 26+32.66
PI 8402
PT 28+45.68
PT 8403
30+00
N 75°16'36" E 804.72'
C.L. PUPPY CREEK. RD.
C.L. SPRING CREEK. ST.
107°15'04"
660+00
665+00
670+00
675+00
680+00
685+00
690+00
N74°35'09"E 7777.30'
RBR ALUM CAP 84
RBR/CAP 87
PC 683+17.13
PC 8022
BK. 681+00.00 AHD. 681+58.56
00+02
S 01°50'13" W 1210.76'
C.L. MEDIAN
C.L. MAIN LANES STA. 679+54.73
C.L. SPRING CREEK ST. STA. 20+00.00 =
PC 689+25.75
PC 8430
690+00
S82°19'38"E 777.51'
C.L. PUPPY CREEK. RD. ACCESS RD.
PI 8411
PC 8410
PT 8412
RBR CAP 88
PC 00+00.00
PI 11+10.57
PT 12+02.09
25+00
30+00
N 75°25'11" E 1544.35'
35+00
PC 8384
PI 8385
PT 8386
POE 8387
N54°37'12"E 1235.48'
C.L. SPRING CREEK ST. ACCESS RD.
PC 35+50.51
PI 37+15.82
PT 38+78.86
S 88°09'47" E 121.14'
POE 40+00.00
25+00
POE 26+10.76 POE 8391
RBR CAP 88

C.L. MEDIAN
P.I. = 702+49.27
Δ = 45°42'49" RT.
D = 01°15'00"
T = 1932.14
L = 3657.08
P.C. = 683+17.13
P.T. = 719+74.21
e = 0.046'/'
Ls = 350'

SURVEY CONTROL DETAILS
STA. 660+00 TO 690+00

sadonaldson 9/4/2014 3:21:25 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SC_ALL_19.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 184 | 897 |

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

200 100 0 200
SCALE: 1" = 200'

N

C.L. MEDIAN
P.I. = 702+49.27
Δ = 45°42'49" RT.
D = 01°15'00"
T = 1932.14
L = 3657.08
P.C. = 683+17.13
P.T. = 719+74.21
e = 0.046'/'
Ls = 350'

C.L. PUPPY CK. ACC. RD.
P.I. = 11+10.57
Δ = 49°42'08" RT.
D = 24°00'00"
T = 110.57
L = 207.09
P.C. = 10+00.00
P.T. = 12+07.09
e = N.A.
Ls = N.A.

C.L. PUPPY CK. ACC. RD.
P.I. = 14+31.15
Δ = 40°26'03" RT.
D = 24°00'00"
T = 87.92
L = 168.48
P.C. = 13+43.23
P.T. = 15+11.71
e = N.A.
Ls = N.A.

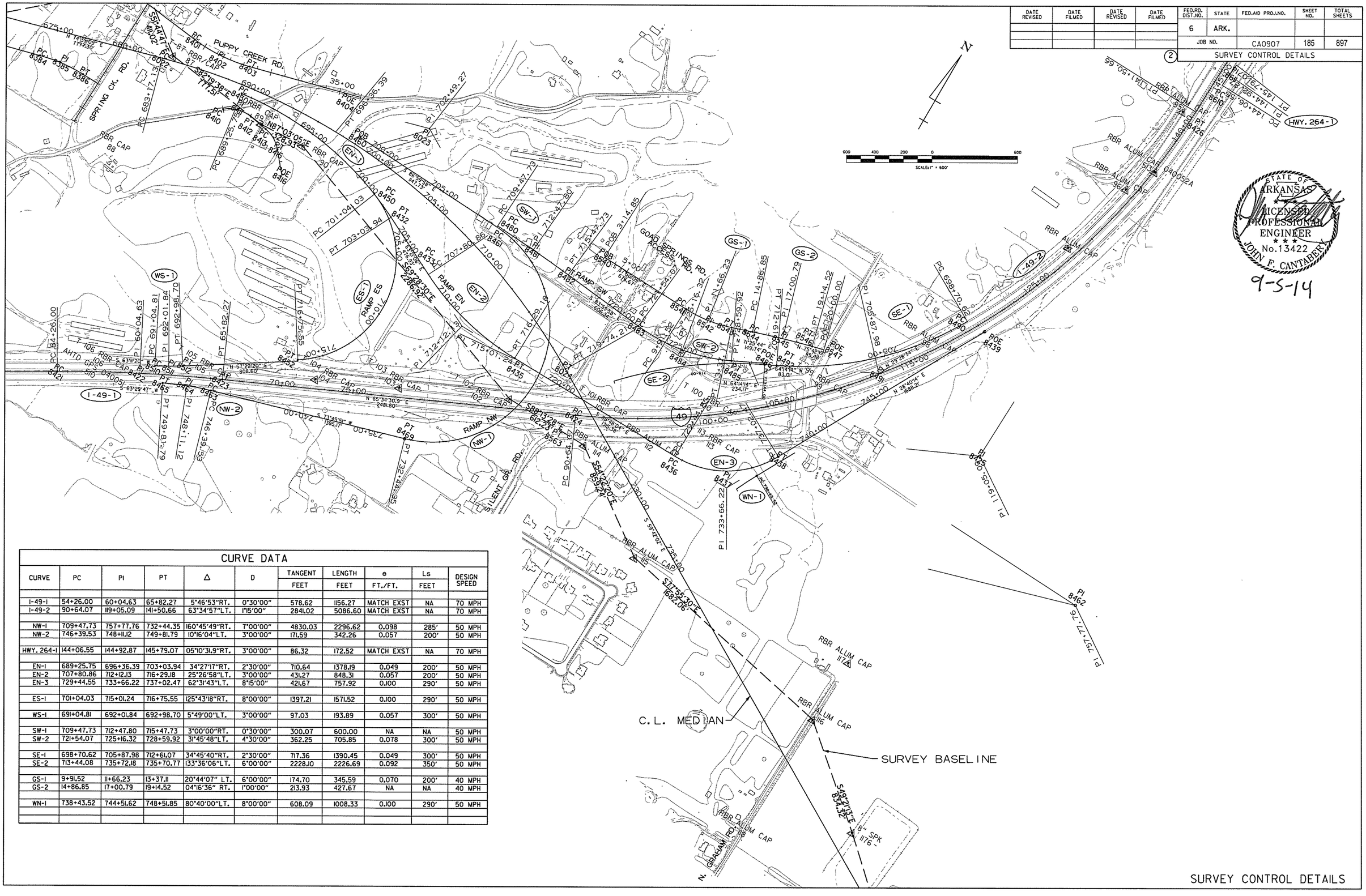
C.L. PUPPY CK. RD.
C.L. RAMP SW
C.L. RAMP NW
C.L. MEDIAN
C.L. RAMP EN
C.L. RAMP ES
SURVEY BASELINE
C.L. GOAD SPRINGS RD. ACCESS RD.
C.L. PUPPY CK. RD. ACCESS RD.

C.L. RAMP NW STA. 718+73.42 =
C.L. MEDIAN STA. 717+47.37

SURVEY CONTROL DETAILS
STA. 690+00 TO 720+00

sadonaldson 9/4/2014 3:26:25 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_SC_ALL_20.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 185 | 897 |
| | | | | 2 | SURVEY CONTROL DETAILS | | | |




## CURVE DATA

| CURVE | PC | PI | PT | Δ | D | TANGENT FEET | LENGTH FEET | e FT./FT. | Ls FEET | DESIGN SPEED |
|---|---|---|---|---|---|---|---|---|---|---|
| I-49-1 | 54+26.00 | 60+04.63 | 65+82.27 | 5°46'53"RT. | 0°30'00" | 578.62 | 1156.27 | MATCH EXST | NA | 70 MPH |
| I-49-2 | 90+64.07 | 119+05.09 | 141+50.66 | 63°34'57"LT. | 1°15'00" | 2841.02 | 5086.60 | MATCH EXST | NA | 70 MPH |
| NW-1 | 709+47.73 | 757+77.76 | 732+44.35 | 160°45'49"RT. | 7°00'00" | 4830.03 | 2296.62 | 0.098 | 285' | 50 MPH |
| NW-2 | 746+39.53 | 748+11.12 | 749+81.79 | 10°16'04"LT. | 3°00'00" | 171.59 | 342.26 | 0.057 | 200' | 50 MPH |
| HWY. 264-1 | 144+06.55 | 144+92.87 | 145+79.07 | 05°10'31.9"RT. | 3°00'00" | 86.32 | 172.52 | MATCH EXST | NA | 70 MPH |
| EN-1 | 689+25.75 | 696+36.39 | 703+03.94 | 34°27'17"RT. | 2°30'00" | 710.64 | 1378.19 | 0.049 | 200' | 50 MPH |
| EN-2 | 707+80.86 | 712+12.13 | 716+29.18 | 25°26'58"LT. | 3°00'00" | 431.27 | 848.31 | 0.057 | 200' | 50 MPH |
| EN-3 | 729+44.55 | 733+66.22 | 737+02.47 | 62°31'43"LT. | 8°15'00" | 421.67 | 757.92 | 0.100 | 290' | 50 MPH |
| ES-1 | 701+04.03 | 701+01.24 | 716+75.55 | 125°43'18"RT. | 8°00'00" | 1397.21 | 1571.52 | 0.100 | 290' | 50 MPH |
| WS-1 | 691+04.81 | 692+01.84 | 692+98.70 | 5°49'00"LT. | 3°00'00" | 97.03 | 193.89 | 0.057 | 300' | 50 MPH |
| SW-1 | 709+47.73 | 712+47.80 | 715+47.73 | 3°00'00"RT. | 0°30'00" | 300.07 | 600.00 | NA | NA | 50 MPH |
| SW-2 | 721+54.07 | 725+16.32 | 728+59.92 | 31°45'48"LT. | 4°30'00" | 362.25 | 705.85 | 0.078 | 300' | 50 MPH |
| SE-1 | 698+70.62 | 705+87.98 | 712+61.07 | 34°45'40"RT. | 2°30'00" | 717.36 | 1390.45 | 0.049 | 300' | 50 MPH |
| SE-2 | 713+44.08 | 735+72.18 | 735+70.77 | 133°36'06"LT. | 6°00'00" | 2228.10 | 2226.69 | 0.092 | 350' | 50 MPH |
| GS-1 | 9+91.52 | 11+66.23 | 13+37.11 | 20°44'07" LT. | 6°00'00" | 174.70 | 345.59 | 0.070 | 200' | 40 MPH |
| GS-2 | 14+86.85 | 17+00.79 | 19+14.52 | 04°16'36" RT. | 1°00'00" | 213.93 | 427.67 | NA | NA | 40 MPH |
| WN-1 | 738+43.52 | 744+51.62 | 748+51.85 | 80°40'00"LT. | 8°00'00" | 608.09 | 1008.33 | 0.100 | 290' | 50 MPH |


sadonaldson 9/4/2014 3:21:27 PM
WORKSPACE: AHTD
L:\Y2005\05916180 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_SC_ALL_20a.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 186 | 897 |
| | | | | (2) | SURVEY CONTROL DETAILS | | | |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

200 100 0 200
SCALE: 1" = 200'

POB 737+40.00
PT 8530
PT 737+02.47
PT 8458
PC 738+43.52
C.L. RAMP WN
PT 8531
735+00
PI 8542
PT 728+59.92
100.00
PC 8541
PI 11+66.23
PC 9+91.52
725+00
PI 8484
PI 725+16.32
T 100 RBR CAP
100
100.00
PC 8483
C.L. RAMP SW
PC 721+54.07
STA. 721+00.00
END JOB CA0907
POE 8564
POE 57+73.67
113 RBR CAP
113
PI 8487
PI 733+66.22
C.L. RAMP EN
55.00
C.L. MEDIAN STA. 722+21.10 =
C.L. RAMP EN STA. 721+87.54
PC 730+00
8486
PC 729+44.55
95.00
725+00
S 88°48'04" E
1315.36'
RBR ALUM CAP
112
C.L. MEDIAN
T 101 RBR CAP
101
29°06'02"
PT 719+74.21
PT 8024
720+00
725+00
730+00
735+00
740+00
S59°42'02"E
S77°55'30"E
1682.06'
745+00
50.00
720+00
90.00
PC 8484
PT 48+09.07
PC 90+64.07
RBR ALUM CAP
114
8563
S54°22'20"E
859.24'
RBR ALUM CAP
115
SURVEY BASELINE
S88°13'28"E
612.23'
RBR CAP
102
PI 8562
PI 45+64.75
45.00
85.00
725.00
C.L. RAMP NW
PC 8561
PC 42+68.26
40.00

sadonaldson 9/4/2014 3:21:28 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SDG_SC_ALL_21.dgn
REVISED DATE:

SURVEY CONTROL DETAILS
STA. 720+00 TO 750+00

## CURVE DATA

| CURVE | PC | PI | PT | Δ | D | TANGENT FEET | LENGTH FEET | e FT./FT. | Ls FEET | DESIGN SPEED |
|---|---|---|---|---|---|---|---|---|---|---|
| 1-1 | 478+75.52 | 479+70.74 | 480+65.80 | 5°42'30" | 3°00'00" | 95.22 | 190.28 | NC | NA | 70 MPH |
| 1-2 | 485+96.30 | 488+78.47 | 491+49.64 | 27°40'00" | 5°00'00" | 282.17 | 553.33 | 0.083 | 300 | 50 MPH |
| 1-3 | 496+06.27 | 497+62.08 | 499+13.11 | 24°32'49" | 8°00'00" | 155.81 | 306.84 | 0.058 | 250 | 30 MPH |
| 2-1 | 513+74.93 | 516+60.48 | 519+39.52 | 21°10'19" | 3°45'00" | 285.55 | 564.59 | 0.069 | 300 | 50 MPH |
| 3-1 | 498+77.20 | 501+07.17 | 503+22.24 | 35°36'10" | 8°00'00" | 229.97 | 445.04 | 0.058 | 250 | 30 MPH |
| 3-2 | 507+81.96 | 510+77.25 | 513+59.96 | 28°53'59" | 5°00'00" | 295.28 | 578.00 | 0.083 | 300/270 | 50 MPH |
| 3-3 | 518+72.76 | 519+67.98 | 520+63.04 | 5°42'30" | 3°00'00" | 95.22 | 190.28 | NC | NA | 70 MPH |
| 4-1 | 483+09.15 | 487+32.80 | 491+35.68 | 30°59'41" | 3°45'00" | 423.65 | 826.53 | 0.069 | 300 | 50 MPH |
| HWY. 112-1 | 11+87.84 | 13+74.88 | 15+61.10 | 9°19'54" | 2°30'00" | 187.05 | 373.26 | 0.049 | 300 | 50 MPH |
| HWY. 112-2 | 25+68.19 | 27+59.09 | 29+49.12 | 9°31'24" | 2°30'00" | 190.90 | 380.93 | 0.049 | 300 | 50 MPH |

## CONCRETE DITCH PAVING (TYPE B)

| | STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|---|
| RAMP 1 | 493+00 | 494+56 | LT. = 156 LIN. FT. | 6'-0" | 104.0 |
| RAMP 1 | 495+50 | 501+00 | RT. = 550 LIN. FT. | 6'-0" | 366.7 |
| RAMP 2 | 508+59 | 511+00 | RT. = 241 LIN. FT. | 6'-0" | 160.6 |
| RAMP 3 | 506+00 | 508+12 | RT. = 212 LIN. FT. | 6'-0" | 141.3 |
| RAMP 3 | 507+19 | 512+00 | LT. = 481 LIN. FT. | 6'-0" | 320.6 |
| RAMP 4 | 493+00 | 496+00 | LT. = 300 LIN. FT. | 6'-0" | 200.0 |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 187 | 897 |

(2) INTCHG. LAYOUT - HWY. 412 BYPASS @ HWY. 112

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

RAMP 4 STA. 496+65 CONSTRUCT
60" X 224' R.C. PIPE CULVERT
24° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & RIPRAP BASIN LT.
Q50 = 197 CFS DA = 76.5 ACRES

C.L. HWY. 112 STA. 13+00.00 =
C.L. RAMP 3 STA. 496+28.57 =
C.L. RAMP 4 STA. 499+33.42

RAMP 3 STA. 507+70 CONSTRUCT
60" X 216' R.C. PIPE CULVERT
26° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & RIPRAP BASIN LT.
Q50 = 193 CFS DA = 68.9 ACRES

C.L. MEDIAN STA. 484+53.69

STA. 478+50.00
BEGIN JOB CA0907

C.L. MEDIAN STA. 499+09.48 =
C.L. HWY. 112 STA. 20+00.00

C.L. HWY. 112 STA. 27+00.00 =
C.L. RAMP 1 STA. 501+61.75 =
C.L. RAMP 2 STA. 499+09.18

C.L. MEDIAN STA. 517+94.97

STA. 490+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 84' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 495+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 495+32 CONSTRUCT
54" X 242' R.C. PIPE CULVERT
18° LT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 154 CFS DA = 64.6 ACRES

RAMP 1 STA. 494+70 CONSTRUCT
54" X 174' R.C. PIPE CULVERT
8° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 121 CFS DA = 52.3 ACRES

STA. 505+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

HWY. 112 STA. 30+00 CONSTRUCT
24" X 82' R.C. PIPE CULVERT
(CLASS III) (TYPE IV BEDDING)
WITH FES LT. & RT.
Q50 = 8 CFS D.A. = 3.9 ACRES

RAMP 2 STA. 508+85 CONSTRUCT
48" X 202' R.C. PIPE CULVERT
15° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 86 CFS DA = 38.0 ACRES

STA. 508+55 CONSTRUCT
54" X 330' R.C. PIPE CULVERT
17° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 146 CFS DA = 55.5 ACRES

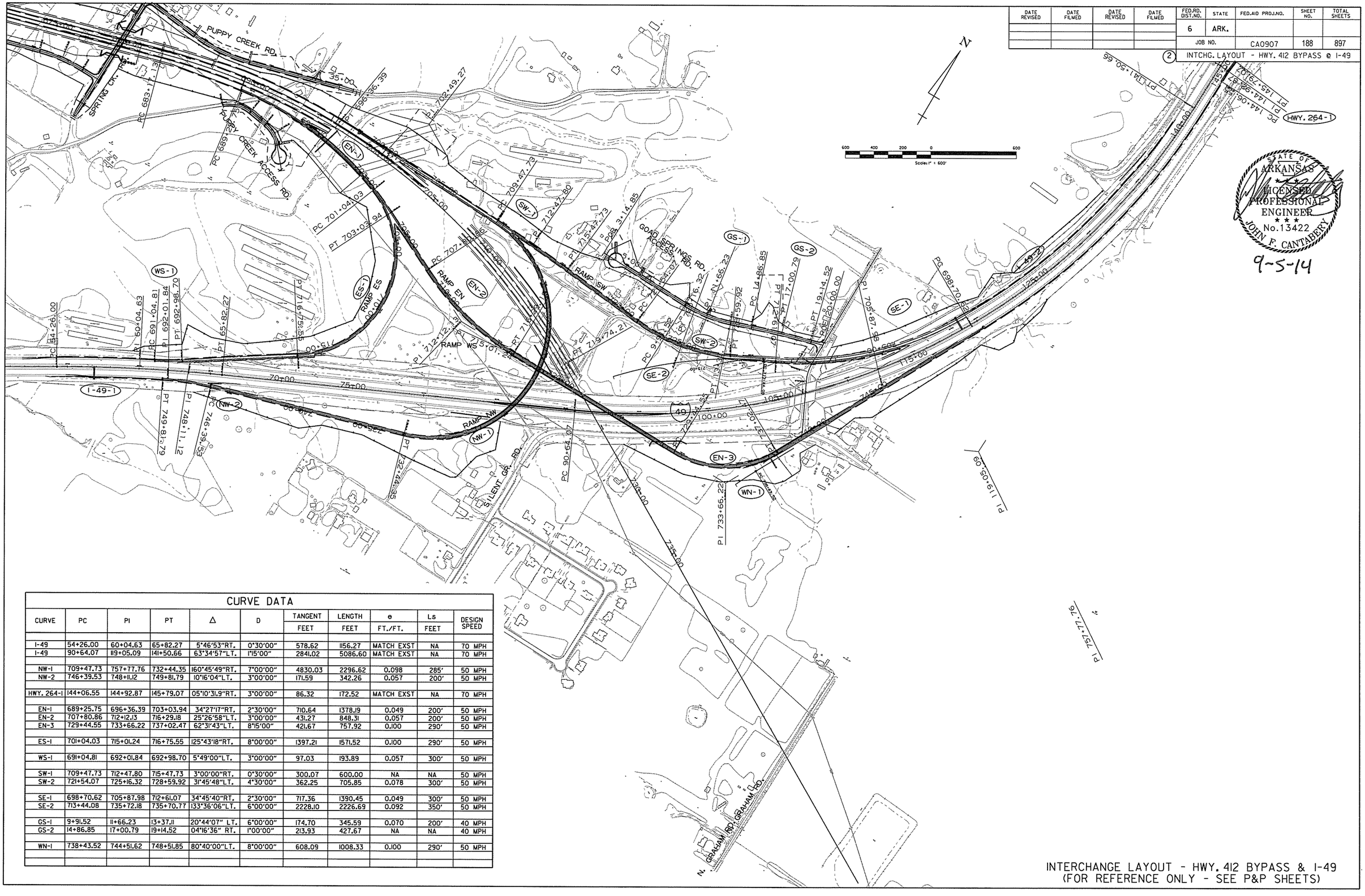
STA. 512+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 508+55 | EPHERMAL | 1225 FT. MSL |

# INTERCHANGE LAYOUT - HWY. 412 BYPASS @ HWY. 112

sadonaldson 9/4/2014 3:21:29 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_IP_112_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 188 | 897 |
| | | | | 2 | INTCHG. LAYOUT - HWY. 412 BYPASS @ I-49 | | | |


PUPPY CREEK RD.
SPRING CK.
PUPPY CREEK ACCESS RD.
GOAD SPRINGS RD.
GILLENT GR. RD.
N. GRAHAM RD.
GRAHAM RD.
I-49-1
HWY. 264-1
RAMP EN
RAMP ES
RAMP WS
RAMP NW
RAMP SW
EN-1
EN-2
EN-3
ES-1
WS-1
NW-1
NW-2
WN-1
SW-1
SW-2
SE-1
SE-2
GS-1
GS-2
PC 683+17.13
PC 659+28.39
PC 701+04.03
PT 703+03.94
PC 707+80.86
PT 716+75.55
PC 691+04.81
PT 692+98.70
PC 712+12.13
PT 715+01.24
PC 709+47.73
PT 712+47.80
PC 715+47.73
PT 718+16.32
PC 721+54.07
PT 728+59.92
PC 729+44.55
PT 737+02.47
PC 698+70.62
PT 705+87.98
PC 746+39.53
PT 749+81.79
PC 733+66.22
PT 738+43.52
PC 144+06.55
PT 145+92.87
PT 141+50.66
PI 596+96.39
PI 702+49.27
PI 692+01.84
PI 749+11.12
PI 757+77.76
PI 119+05.09
PI 705+87.98
PI 733+66.22
35+00
95+00
105+00
115+00
125+00
145+00
165+00
70+00
75+00
80+00
85+00
90+00
100+00
110+00
120+00
130+00
140+00
150+00
160+00
170+00
180+00
190+00
200+00
205+00
215+00
225+00
235+00
245+00
255+00
265+00
275+00
285+00
295+00
305+00
315+00
325+00
335+00
345+00
355+00
365+00
375+00
385+00
395+00
405+00
415+00
425+00
435+00
445+00
455+00
465+00
475+00
485+00
495+00
505+00
515+00
525+00
535+00
545+00
555+00
565+00
575+00
585+00
595+00

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 189 | 897 |
| | | | | (2) | INTCHG. ROW - HWY. 412 BYPASS @ HWY. 112 | | | |

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

BEGIN RAMP 4 STA. 483+09.15 =
C.L. MEDIAN STA. 483+09.15, 58.50' LT.

C.L. HWY. 112 STA. 13+00.00 =
C.L. RAMP 3 STA. 496+28.57 =
C.L. RAMP 4 STA. 499+33.42

END RAMP 3 STA. 520+63.04 =
C.L. MEDIAN STA. 520+63.04, 46.50' LT.

BEGIN RAMP 1STA. 478+75.52 =
C.L. MEDIAN STA. 478+75.52, 46.50' RT.

C.L. MEDIAN STA. 499+09.48 =
C.L. HWY. 112 STA. 20+00.00

C.L. HWY. 112 STA. 27+00.00 =
C.L. RAMP 1 STA. 501+61.75 =
C.L. RAMP 2 STA. 499+09.18

END RAMP 2 STA. 519+39.52 =
C.L. MEDIAN STA. 519+39.52, 58.50' RT.

INTERCHANGE ROW - HWY. 412 BYPASS @ HWY. 112

sadonaldson 9/4/2014 3:21:31 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_IP_112_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 190 | 897 |

(2) PLAN & PROFILE STA. 465+00 TO STA. 480+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

N

C.L. MEDIAN (FUTURE)

470+00 475+00 465+00

PT 475+77.50

S 87°41'25" E

KELLEY RD.

+93.62 213.16'

+25 200' +25 200'

+60 110'

+50 140'

+75 120'

603.69' ACCEL. LANE (700' IN FUTURE)

36' 18' 16' C.L. MEDIAN 60' 480+00 480+00 18' 24' 10'

STA. 478+50.00
BEGIN JOB CA0907
BEGIN GRADING

PC 478+75.52

479+70.74

+96 110'

+70.09 165'

GRAVEL ROAD

+60 170'

C.L. MEDIAN
P.I. = 454+00.41
Δ = 92°18'35.0" RT.
D = 01°30'00"
T = 3976.89
L = 6153.98
P.C. = 414+23.52
P.T. = 475+77.50
e = 0.054'/'
Ls = 350'

C.L. 112 RAMP 1
P.I. = 479+70.74
Δ = 05°42'30.0" RT.
D = 03°00'00"
T = 95.22
L = 190.28
P.C. = 478+75.52
P.T. = 480+65.80
NO SUPER

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 479+00 | 480+00 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |

BEGIN RAMP 1 STA. 478+75.52 =
C.L. MEDIAN STA. 478+75.52, 46.50' RT.

STA. 478+50.00
BEGIN JOB CA0907
BEGIN GRADING

ELEV. 1266.65

PVC 475+80.00 ELEV. 1260.75

PVT 478+30.00 ELEV. 1260.00 P.G. 1259.74

PVT 479+80.00 ELEV. 1258.20

ELEV. 1257.96

EXISTING GROUND

PROFILE GRADE

-0.50% -1.20%

PROFILE GRADE (FUTURE)

VC=300.00' K=428.57

-0.59% RIGHT DITCH GRADE

-5.00% RIGHT DITCH GRADE

+50.00 RT. 1254.08

+00.00 RT. 1253.78

5" ROCK FILL DRAINAGE/STABILIZING LAYER

1310 1300 1290 1280 1270 1260 1250 1240 1230 1220 1210

465+00 466+00 467+00 468+00 469+00 470+00 471+00 472+00 473+00 474+00 475+00 476+00 477+00 478+00 479+00 480+00

sadonaldson 9/4/2014 3:21:32 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_23.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 191 | 897 |

(2) PLAN & PROFILE STA. 480+00 TO STA. 495+00

N

PROPOSED R/W, C/A & FENCE

BEGIN RAMP 4 STA. 483+09.15 = C.L. MEDIAN STA. 483+09.15, 58.50' LT.

+54.84 195'

+75 120'

+25 125'

+20 220'

CONSTRUCTION LIMITS

603.69' ACCEL. LANE (700' IN FUTURE)

PC 483+09.15

+53.69

NOSE +53.69 57.82'

C.L. 112 RAMP 4
P. I. = 487+32.80
Δ = 30°59' 41.2" LT.
D = 03°45' 00"
T = 423.65
L = 826.53
P. C. = 483+09.15
P. T. = 491+35.68
e = 0.069'/'
Ls = 300'

PI 487+32.80

RAMP 4

STA. 490+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 84' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

STA. 495+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 86' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

CONSTRUCTION LIMITS

C.L. MEDIAN

S 87°41'25" E

480+00 485+00 490+00 495+00

6' 36' 6' 60' 6' 24' 10'

NOSE +29.51 74.83'

RAMP 1

PC 485+96.30

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

+00 140'

+57.37 145'

480+65.80

C.L. 112 RAMP 1
P. I. = 479+70.74
Δ = 05°42' 30" RT.
D = 03°00' 00"
T = 95.22
L = 190.28
P. C. = 478+75.52
P. T. = 480+65.80
NO SUPER

STA. 480+93 CONSTRUCT 42" X 256' R.C. PIPE CULVERT 10° RT. FWD. SKEW (CLASS IV) TYPE 3 BEDDING WITH FES RT. & CONTRA-COSTA ENERGY DISSIPATOR LT.
Q50 = 82 CFS DA = 13.2 ACRES

STA. 482+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 94' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

C.L. 112 RAMP 1
P. I. 488+78.47
Δ = 27°40' 00.1" RT
D = 05°00' 00"
T = 282.17
L = 553.33
P. C. = 485+96.30
P. T. = 491+49.64
e = 0.083'/'
Ls = 300'

PI 488+78.47

STA. 495+32 CONSTRUCT 54" X 242' R.C. PIPE CULVERT 18° LT. FWD. SKEW (CLASS IV) TYPE 3 BEDDING WITH FES LT. & RT.
Q50 = 154 CFS DA = 64.6 ACRES

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 495+00 | | LT. = 33 LIN. FT. | 6'-0" | 22.0 |
| 480+00 | 481+15 | RT. = 115 LIN. FT. | 6'-0" | 76.6 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

ELEV. 1257.96

5' ROCK FILL DRAINAGE/STABILIZING LAYER

5.00% RIGHT DITCH GRADE

TOP 1251.32
INV 1248.32
F.L. 1247.58 LT.

F.L. = 1229.02 LT.
F.L. = 1243.03 RT.

+15.00 RT. 1243.03

-1.20%

EXISTING GROUND

PROFILE GRADE

TOP 1241.72
INV 1238.72
F.L. 1238.52 LT.

PVC (492+50.00 ELEV. 1242.96

VC=500.00' K 208.33

P.G. 1241.46

-1.20%

TOP 1237.22
INV 1234.22
F.L. 1233.31 LT.

3.00% RIGHT DITCH GRADE

+95.00 RT. 1225.29

PVI 495+00.00 ELEV. 1239.96

T.B.M. 56 RBR ALUM CAP
532.35' RT OF STA. 486+04.33
ELEVATION = 1276.99

T.B.M. 925 PP.
2382.06' LT OF STA. 492+88.04
ELEVATION = 1168.39

1290 1280 1270 1260 1250 1240 1230 1220 1210 1200

480+00 481+00 482+00 483+00 484+00 485+00 486+00 487+00 488+00 489+00 490+00 491+00 492+00 493+00 494+00 495+00

sadonaldson 9/4/2014 3:21:32 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_MNL_24.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 192 | 897 |

(2) PLAN & PROFILE STA. 495+00 TO STA. 510+00

STA. 495+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

HWY. 112
STA. 18+99.90 TO STA. 21+00.10
CONSTRUCT 200'-2⅜" X 40' BRIDGE
198' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (99'-99')

STA. 505+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

N

EXISTING RWY. 112 ASPHALT

OBLITERATE EXISTING ROADWAY

C.L. HWY. 112

CONSTRUCTION LIMITS

CHICKEN HOUSE

C.L. MEDIAN STA. 499+09.48 =
C.L. HWY. 112 STA. 20+00.00

POND

C.L. MEDIAN

CHICKEN HOUSE

CONSTRUCTION LIMITS

10' 24' 6' 60' 6' 24' 10'

495+00

500+00

505+00

510+00

S 87°41'25" E

80°31'58"

CONSTRUCTION LIMITS

8' 24' 8'

S 7°09'27" E

OBLITERATE EXISTING ROADWAY

CONSTRUCTION LIMITS

STA. 495+32 CONSTRUCT
54" X 242' R.C. PIPE CULVERT
18° LT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 154 CFS DA = 64.6 ACRES

STA. 508+55 CONSTRUCT
54" X 330' R.C. PIPE CULVERT
17° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 138 CFS DA = 51.6 ACRES

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 495+00 | | LT. - 33 LIN. FT. | 6'-0" | 22.0 |
| 495+00 | 498+00 | RT. - 300 LIN. FT. | 6'-0" | 200.0 |
| 497+66 | 499+71 | LT. - 260 LIN. FT. | 4'-0" | 115.6 |
| 498+23 | 500+22 | RT. - 269 LIN. FT. | 4'-0" | 119.6 |
| 505+00 | 508+02 | LT. - 302 LIN. FT. | 6'-0" | 201.3 |
| 505+00 | 509+03 | RT. - 403 LIN. FT. | 6'-0" | 268.6 |

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 508+55 | EPHEMERAL | 1225 FT. MSL |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

P.G. 1241.46

VC=500.00'
K 208.33

PVI 495+00.00
ELEV. 1239.96

PVT 497+50.00
ELEV. 1242.96

-1.20%

1.20%

TOP 1237.22
INV 1234.22
F.L. 1233.31 LT.

3.00% RIGHT DITCH GRADE

5.52% RIGHT DITCH GRADE

F.L. = 1218.05 LT.
F.L. = 1225.20 RT.

+00.00 RT. 1228.35

+00.00 RT. 1239.39

PROFILE GRADE

EXISTING GROUND

1.20%

2.71% LEFT DITCH GRADE

+00.00 LT. 1246.59

+00.00 LT. 1243.88

+00.00 RT. 1247.79

TOP 1247.72
INV 1244.72
F.L. 1243.88 LT.

5.61% RIGHT DITCH GRADE

8.20% LEFT DITCH GRADE

F.L. = 1219.13 LT.
F.L. = 1225.18 RT.

+02.00 LT. 1219.13

+03.00 RT. 1225.18

ELEV. 1257.96

T.B.M. 924 CPS.
1.80' RT OF STA. 500+43.07
ELEVATION = 1264.41

T.B.M. 57 RBR ALUM CAP
561.61' RT OF STA. 500+84.33
ELEVATION = 1273.42

T.B.M. 60 RBR ALUM CAP
535.35' RT OF STA. 506+80.18
ELEVATION = 1261.29

1290 1280 1270 1260 1250 1240 1230 1220 1210 1200

495+00 496+00 497+00 498+00 499+00 500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00

sadonaldson 9/4/2014 3:21:33 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_MNL_25.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 193 | 897 |

(2) PLAN & PROFILE STA. 510+00 TO STA. 525+00

C.L. 112 RAMP 3
P.I. = 510+77.25
Δ = 28°53'59.2" LT.
D = 05°00'00"
T = 295.28
L = 578.00
P.C. = 507+81.96
P.T. = 513+59.96
e = 0.083'/'
Ls = 300'

C.L. 112 RAMP 3
P.I. = 519+67.98
Δ = 5°42'30.0" LT.
D = 3°00'00"
T = 95.22
L = 190.28
P.C. = 518+72.76
P.T. = 520+63.04
e = NO SUPER

C.L. 112 RAMP 2
P.I. = 516+60.48
Δ = 21°10'19.2" RT.
D = 03°45'00"
T = 285.55
L = 564.59
P.C. = 513+74.93
P.T. = 519+39.52
e = 0.069'/'
Ls = 300'

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

END RAMP 3 STA. 520+63.04 =
C.L. MEDIAN STA. 520+63.04, 46.50' LT.

C.L. MEDIAN

S 87°41'25" E

BEGIN GRADING AND PAVING
STA. 514+00.00

STA. 512+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

700' ACCELERATION LANE

300' TAPER

END RAMP 2 STA. 519+39.52 =
C.L. MEDIAN STA. 519+39.52, 58.50' RT.

STA. 519+47 CONSTRUCT
42" X 358' R.C. PIPE CULVERT
35° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & RIPRAP BASIN LT.
Q50 = 69 CFS DA = 34.4 ACRES

STA. 520+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

TEMPORARY CONSTRUCTION EASEMENT

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 520+00 | | LT. = 25 LIN. FT. | 6'-0" | 16.7 |
| 518+27 | 521+00 | LT. = 273 LIN. FT. | 6'-0" | 182.0 |

5' FLAT BOTTOM DITCH RT.

EXISTING GROUND

PROFILE GRADE

0.50% LEFT DITCH GRADE

8.91% LEFT DITCH GRADE

PVC 510+20.00
ELEV. 1258.20

PVI 511+70.00
ELEV. 1260.00
P.G. 1259.74

PVT 513+20.00
ELEV. 1260.76

VC = 300.00'
K 428.59

TOP 1255.74
INV 1252.74
F.L. 1252.01 LT.

TOP 1259.91
INV 1256.91
F.L. 1256.01 LT.

F.L. = 1232.24 LT.
F.L. = 1244.84 RT.

T.B.M. 61 RBR ALUM CAP
558.92' RT OF STA. 514+13.20
ELEVATION = 1267.92

T.B.M. 62 RBR ALUM CAP
621.17' RT OF STA. 522+33.33
ELEVATION = 1274.54

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:21:33 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_26.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 194 | 897 |

(2) PLAN & PROFILE STA. 525+00 TO STA. 540+00

STA. 530+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 534+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 85' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 18+72 CONSTRUCT
TYPE N2 DI. RT.
12" x 53' Z.C.C.S.P.
OUTLET ON RT.
WITH TYPE A
CONCRETE SPILLWAY

STA. 18+72 CONSTRUCT
TYPE N2 DI. LT.
12" x 53' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

TEMPORARY CONSTRUCTION EASEMENT

+12.66 220'

+15 160.61'

+65 160'

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

16' GATE

S 2°25'04" W

N

+75 165'

+02.76 165'

C.L. MEDIAN STA. 535+68.14 = C.L. GRIMSLEY RD. STA. 20+00.00

MUD BOTTOM POND

C.L. MEDIAN

+50.00

90°06'29"

STA. 536+00.00
BEGIN WRSF

WRSF

+50.00

10'

24'

525+00

530+00

535+00

540+00

S 87°41'25" E

20.00

6'

60'

6'

36'

6'

24'

10'

300' TAPER

+94.97

+94.97

STA. 21+28 CONSTRUCT
TYPE N2 DI. RT.
12" x 52' Z.C.C.S.P.
OUTLET ON RT.
WITH TYPE A
CONCRETE SPILLWAY

+85.00

C.L. GRIMSLEY RD.

+85.00

16' GATE

CONSTRUCTION LIMITS

POND

+15 142.59'

PROPOSED R/W, C/A & FENCE

+00 150'

+20 145.63'

+80 145'

+65 145'

+19.42 95.95'

TEMPORARY CONSTRUCTION EASEMENT

GRAVEL

+00 60'

4' 20' 4'

PARKING

GRIMSLEY ROAD
STA. 19+00.92 TO STA. 20+99.08
CONSTRUCT 198'-2" X 28'-BRIDGE
196' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (98'-98')

STA. 21+28 CONSTRUCT
TYPE N2 DI. LT.
12" x 52' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

+15 205'

| C.L. MEDIAN STATIONING | GUARDRAIL (TYPE A) | TERMINAL ANCHOR POST (TYPE I) | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 534+50 TO STA. 539+50 RT. OF L.M.L. | = 450 LIN. FT. | 1 EACH | 1 EACH |
| STA. 531+85 TO STA. 536+85 LT. OF R.M.L. | = 450 LIN. FT. | 1 EACH | 1 EACH |

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 534+00 | 535+00 | LT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 534+74 | 536+62 | LT. = 290 LIN. FT. | 4'-0" | 128.9 |
| 534+88 | 536+48 | RT. = 258 LIN. FT. | 4'-0" | 14.7 |

1310 / 1300 / 1290 / 1280 / 1270 / 1260 / 1250 / 1240 / 1230 / 1220

+00.00 RT.

5' FLAT BOTTOM DITCH RT.

+00.00 RT.

EXISTING GROUND

PROFILE GRADE

ELEV. 1266.65

ELEV. 1274.15

0.50%

0.50% LEFT DITCH GRADE

4.41% LEFT DITCH GRADE

+00.00 LT. 1267.48

+00.00 LT. 1263.07

TOP 1264.91
INV 1261.91
F.L. 1261.07 LT.

TOP 1266.91
INV 1263.91
F.L. 1263.07 LT.

525+00 526+00 527+00 528+00 529+00 530+00 531+00 532+00 533+00 534+00 535+00 536+00 537+00 538+00 539+00 540+00

T.B.M. 63 RBR ALUM CAP
469.78' RT OF STA. 535+67.24
ELEVATION = 1280.63

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

cggervasini 9/5/2014 11:45:03 AM
WORKSPACE: AHTD
L:\2005\059I68D - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_JNN_27.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 195 | 897 |

(2) PLAN & PROFILE STA. 540+00 TO STA. 555+00

C. L. MEDIAN
P. I. = 559+47.25
Δ = 39°36'21.4" LT.
D = 01°30'00"
T = 1375.41
L = 2640.40
P. C. = 545+71.84
P. T. = 572+12.24
e = 0.054'/'
Ls = 350'

N

+70 150.36'
+30 125'
(GRAVEL)
PROPOSED R/W, C/A & FENCE
+07.61 140'
+00 160'
(GRAVEL)
CONSTRUCTION LIMITS
C.L. MEDIAN
PC 545+71.84
WRSF
10' 24' 6' 60' 6' 24' 10'
540+00
S 87°41'25" E
545+00
WEST MILLER ROAD (GRAVEL)
550+00
555+00
CONSTRUCTION LIMITS
+50 140'
PROPOSED R/W, C/A & FENCE
+83.99 150'
+00 175'

STA. 543+09.34 BEGIN SUPERELEVATION
STA. 546+59.34 MAX. SUPERELEVATION (0.054'/')
STA. 571+24.74 MAX. SUPERELEVATION (0.054'/')
STA. 574+74.74 END SUPERELEVATION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

ELEV. 1274.15
PVC 545+00.00
ELEV. 1276.65
PVI 550+00.00
ELEV. 1279.15
P.G. 1275.07
0.50%
2.77%
EXISTING GROUND
PROFILE GRADE
VC=1000.00'
K 305.81
PVT 555+00.00
ELEV. 1265.30

1310 1300 1290 1280 1270 1260 1250 1240 1230 1220

540+00 541+00 542+00 543+00 544+00 545+00 546+00 547+00 548+00 549+00 550+00 551+00 552+00 553+00 554+00 555+00

T.B.M. 64 RBR ALUM CAP
476.40' RT OF STA. 547+08.65
ELEVATION = 1282.21

cggervasini 9/5/2014 11:45:04 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_28.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 196 | 897 |

(2) PLAN STA. 555+00 TO STA. 570+00

## CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 556+00 | 557+00 | LT. = 100 LIN. FT. | 6'-0" | 66.6 |
| 567+00 | 568+00 | LT. = 100 LIN. FT. | 6'-0" | 66.6 |
| 567+00 | 570+00 | RT. = 300 LIN. FT. | 6'-0" | 200.0 |

N

STA. 557+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 84' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

BUILDING FOUNDATION

BUILDING FOUNDATION

C.L. MEDIAN
P.I. = 559+47.25
Δ = 39°36'21.4" LT.
D = 01°30'00"
T = 1375.41
L = 2640.40
P.C. = 545+71.84
P.T. = 572+12.24
e = 0.054'/'
Ls = 350'

STA. 568+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 84' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

+80 155'

+50 130'

+07.79 139.95'

+76.76 200'

+00 250'

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

WRSF

C.L. MEDIAN

555+00

560+00

565+00

570+00

10' 24' 6' 60' 6' 24' 10'

STA. 557+90 RT. OF MEDIAN ON S. MILLER RD. - CONSTRUCT 25' GUARDRAIL (TYPE C) AND THREE (3) REFLECTIVE RED DIAMOND OBJECT MARKERS MOUNTED ON U-CHANNEL POSTS DIRECTLY BEHIND THE GUARDRAIL AT A HEIGHT OF 4'.

BOUNDARY OF EARTHWORK

8-SPK I.C.P. CONC. DRIVE

125'

B

+60.33 230'

+68.36 245'

+10 250'

+50 170'

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

S. MILLER RD. (GRAVEL)

PI 559+47.25

BOUNDARY OF EARTHWORK

BOUNDARY OF EARTHWORK

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

cggervosini 9/5/2014 11:45:04 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_29.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 197 | 897 |
| | | | | (2) | PROFILE STA. 555+00 TO STA. 570+00 | | | |

STA. 543+09.34 BEGIN SUPERELEVATION
STA. 546+59.34 MAX. SUPERELEVATION (0.054 ')
STA. 571+24.74 MAX. SUPERELEVATION (0.054 ')
STA. 574+74.74 END SUPERELEVATION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

EXISTING GROUND

PROFILE GRADE

-2.77%

ELEV. 1265.30

-5.12% LEFT DITCH GRADE

-1.03% LEFT DITCH GRADE

+00.00 LT. 1256.98 ℄

+00.00 LT. 1251.86 ℄

+00.00 LT. 1250.83 ℄

TOP 1255.76
INV 1252.76
F.L. 1251.86 LT.

PVT 555+00.00

ELEV. 1223.75

+00.00 LT. 1226.51 ℄
+00.00 RT. 1230.02 ℄

-5.12% LEFT DITCH GRADE

-0.42% LEFT DITCH GRADE

+00.00 LT. 1221.39 ℄

-10.69% RIGHT DITCH GRADE

+00.00 LT. 1220.97 ℄

TOP 1225.29
INV 1222.29
F.L. 1221.39 LT.

+00.00 RT. 1197.94 ℄

T.B.M. 65 RBR ALUM CAP
909.59' RT OF STA. 557+65.79
ELEVATION = 1285.90

T.B.M. 9002 CH SQ BASE CONC PP
962.03' RT OF STA. 558+92.47
ELEVATION = 1285.79

T.B.M. 66 RBR ALUM CAP
867.67' RT OF STA. 565+75.54
ELEVATION = 1278.19

1310 1300 1290 1280 1270 1260 1250 1240 1230 1220

1270 1260 1250 1240 1230 1220 1210 1200 1190 1180

555+00 556+00 557+00 558+00 559+00 560+00 561+00 562+00 563+00 564+00 565+00 566+00 567+00 568+00 569+00 570+00

sadonaldson 9/4/2014 3:21:34 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_MNL_29.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 198 | 897 |

(2) PLAN STA. 570+00 TO STA. 585+00

## CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 579+00 | | LT. = 142 LIN. FT. | 6'-0" | 94.7 |
| 572+00 | 580+00 | LT. = 800 LIN. FT. | 6'-0" | 533.3 |
| 575+50 | 578+00 | RT. = 250 LIN. FT. | 6'-0" | 166.7 |

STA. 579+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 84' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

C.L. MEDIAN
P.I. = 559+47.25
Δ = 39°36'21.4" LT.
D = 01°30'00"
T = 1375.41
L = 2640.40
P.C. = 545+71.84
P.T. = 572+12.24
e = 0.054'/'
Ls = 350'

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W, C/A & FENCE

16' GATE

CONSTRUCTION LIMITS

STA. 579+48.91 TO STA. 589+50.41 LT. LN.
CONSTRUCT 1007'-2⅛" X 40' BRIDGE
1005' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (3 @ 110'-125'-5 @ 110')

TEMPORARY CONSTRUCTION EASEMENT

STA. 577+02.00
END WRSF

WRSF

C.L. MEDIAN

PT 572+12.24

570+00

575+00

N 52°42'14" E

580+00

PC 582+11.17

585+00

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

TEMPORARY CONSTRUCTION EASEMENT

C.L. MEDIAN
P.I. = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
P.C. = 582+11.17
P.T. = 603+99.39
e = 0.037'/'
Ls = 350'

STA. 579+48.91 TO STA. 589+61.84 RT. LN.
CONSTRUCT 1007'-2⅛" X 40' BRIDGE
1005' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (3 @ 110'-125'-5 @ 110')

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

| C.L. MEDIAN STATIONING | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 576+16.76 TO STA. 579+35.51 LT. OF R.M.L. | = 250 LIN. FT. | 1 EACH | 1 EACH |
| STA. 576+66.76 TO STA. 579+35.51 RT. OF R.M.L. | = 200 LIN. FT. | 1 EACH | 1 EACH |

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| SPRING CREEK. | 582+80 - 584+00 | PERENNIAL | 1141 FT. MSL |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

REVISED DATE:
cggervasini 9/5/2014 11:46:12 AM
WORKSPACE: AHTD
L:\2005\059\1680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_30.dgn

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 199 | 897 |

(2) PROFILE STA. 570+00 TO STA. 585+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

STA. 543+09.34 BEGIN SUPERELEVATION
STA. 546+59.34 MAX. SUPERELEVATION (0.054'/')
STA. 571+24.74 MAX. SUPERELEVATION (0.054'/')
STA. 574+74.74 END SUPERELEVATION

STA. 579+48.67 BEGIN SUPERELEVATION
STA. 582+98.67 MAX. SUPERELEVATION (0.037'/')
STA. 603+11.89 MAX. SUPERELEVATION (0.037'/')
STA. 606+61.89 END SUPERELEVATION

NOTE: SEE BRIDGE LAYOUT FOR SUPERELEVATION MODIFICATIONS ON BRIDGE

ELEV. 1223.75
-2.77%
-9.29% LEFT DITCH GRADE
-0.66% RIGHT DITCH GRADE
+00.00 LT. 1213.04
20' TYPICAL ROCK FILL DRAINAGE/STABILIZING LAYER. SEE CROSS SECTIONS FOR VARIATIONS.
PVC 578+00.00 ELEV. 1201.59
PROFILE GRADE
BEGIN BRIDGE LT. & RT. STA. 579+48.91
TOP 1194.95
INV 1191.95
F.L. 1191.05 LT.
+50.00 RT. 1194.31
-29.55% RIGHT DITCH GRADE
+00.00 LT. 1175.89
12.00% LEFT DITCH GRADE
EXISTING GROUND
+00.00 RT. 1149.98
-6.50% RIGHT DITCH GRADE
-6.00% LEFT DITCH GRADE
-0.80% RIGHT DITCH GRADE
050 EL. = 1148.39
+00.00 RT. 1143.48
+00.00 LT. 1151.89
+00.00 LT. 1139.89
0.59% LEFT DITCH GRADE
+00.00 RT. 1139.48
+50.00 LT. 1137.83
ELEV. 1189.35

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| SPRING CREEK. | 582+80 - 584+00 | PERENNIAL | 1141 FT. MSL |

1220 1210 1200 1190 1180 1170 1160 1150 1140 1130

570+00 571+00 572+00 573+00 574+00 575+00 576+00 577+00 578+00 579+00 580+00 581+00 582+00 583+00 584+00 585+00

sadonaldson 9/4/2014 3:21:35 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_30.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 200 | 897 |

(2) PLAN STA. 585+00 TO STA. 600+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

C.L. MEDIAN STATIONING — BARRIER RAIL (TYPE SPECIAL)

STA. 589+64.24 TO STA. 592+10.00 LT. OF L.M.L. = 249 LIN. FT.
STA. 589+64.29 TO STA. 592+17.27 RT. OF L.M.L. = 254 LIN. FT.
STA. 589+76.37 TO STA. 592+26.22 LT. OF R.M.L. = 249 LIN. FT.
STA. 589+76.51 TO STA. 592+33.73 RT. OF R.M.L. = 254 LIN. FT.

STA. 592+27.50 TO STA. 594+33.14 LT. LN.
CONSTRUCT 207'-2⅜" X 40' BRIDGE
205' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (60'-85'-60')

| C.L. MEDIAN STATIONING | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 594+39.06 TO STA. 597+07.81 LT. OF L.M.L. | = 200 LIN. FT. | 1 EACH | 1 EACH |
| STA. 594+47.98 TO STA. 597+66.73 RT. OF L.M.L. | = 250 LIN. FT. | 1 EACH | 1 EACH |

STA. 595+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H= 3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

STA. 579+48.91 TO STA. 589+50.41 LT. LN.
CONSTRUCT 1007'-2⅛" X 40' BRIDGE
1005' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (3 @ 110'-125'-5 @ 110')

+59.48 20.69 | +64.05 20.73 | +01.44 207.46' | +00.51 200 | +13.69 200

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

16' GATE

HOMES UNDER CONSTRUCTION AS OF PHOTO DATE OF JAN. 2, 2007

+00 120

PI 8020

WAGON WHEEL RD. (ASPHALT)

C.L. MEDIAN

10' 24' 6' 60' 6' 24' 10'

585+00 | 590+00 | 595+00 | 600+00

DROP INLET

CONC

(ASPHALT)

S 37°38'59" E

5+00

STA. 596+81.00
BEGIN WRSF

WRSF

+94.99 120 | +55 130 | +90 169.18 | +23.08 200 | +78.39 219.90' | +80.97 204.34' | +84.45 195 | +35.57 187.27' | +42.33 185 | +90 355 | +30 205

16' GATE

CONSTRUCTION LIMITS

C.L. WAGON WHEEL RD.

STA. 590+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H= 3'0")
WITH 24" X 82' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 579+48.91 TO STA. 589+61.84 RT. LN.
CONSTRUCT 1007'-2⅛" X 40' BRIDGE
1005' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (3 @ 110'-125'-5 @ 110')

HOMES UNDER CONSTRUCTION AS OF PHOTO DATE OF JAN. 2, 2007

PROPOSED R/W, C/A & FENCE

CORD AVENUE

CLAY AVENUE

64th. STREET

DROP INLET

STA. 592+44.03 TO STA. 594+52.85 RT. LN.
CONSTRUCT 207'-2⅜" X 40' BRIDGE
205' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (60'-85'-60')

C.L. MEDIAN
P.I. = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
P.C. = 582+11.17
P.T. = 603+99.39
e = 0.037'/'
Ls = 350'

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 590+00 | | LT. = 93 LIN. FT. | 6'-0" | 62.0 |
| 595+00 | | LT. = 22 LIN. FT. | 6'-0" | 14.7 |
| 587+70 | 589+00 | LT. = 130 LIN. FT. | 6'-0" | 86.7 |
| 588+00 | 593+41 | RT. = 541 LIN. FT. | 6'-0" | 360.7 |
| 593+39 | 596+00 | LT. = 261 LIN. FT. | 6'-0" | 174.0 |
| 594+00 | 596+00 | RT. = 200 LIN. FT. | 6'-0" | 133.3 |

cagervosinI 9/5/2014 11:46:40 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_MNL_3i.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 201 | 897 |

(2) PROFILE STA. 585+00 TO STA. 600+00

STATE OF ARKANSAS
LICENSED
PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

STA. 579+48.67 BEGIN SUPERELEVATION
STA. 582+98.67 MAX. SUPERELEVATION -(0.037'/')
STA. 603+11.89 MAX. SUPERELEVATION -(0.037'/')
STA. 606+61.89 END SUPERELEVATION

5' FLAT BOTTOM DITCH RT.
+60.00 RT.
+00.00 RT.
VC=1900.00'
K 342.96
ELEV. 1189.95
END BRIDGE LT. STA. 589+50.41
END BRIDGE RT. STA. 589+61.84
BEGIN BRIDGE LT. STA. 592+27.50
BEGIN BRIDGE RT. STA. 592+44.03
END BRIDGE LT. STA. 594+33.14
END BRIDGE RT. STA. 594+52.85
PVT 597+00.00 ELEV. 1201.59
ELEV. 1209.91
PROFILE GRADE
TOP 1192.86
INV 1189.86
F.L. 1188.96 LT.
TOP 1185.91
INV 1182.91
F.L. 1182.01 LT.
EXISTING GROUND
2.77%
2.77%
PVI 587+50.00
ELEV. 1175.28
P.G. 1188.43
2:1
2:1
2:1
14.09% LEFT DITCH GRADE
13.54% RIGHT DITCH GRADE
3.60% RIGHT DITCH GRADE
2.60% LEFT DITCH GRADE
1.62% LEFT DITCH GRADE
0.84% RIGHT DITCH GRADE
1.00% LEFT DITCH GRADE
0.60% RIGHT DITCH GRADE
050 EL. = 1148.39
20' ROCK FILL DRAINAGE/STABILIZING LAYER
+60.00 RT. 1139.50
+70.00 LT. 1140.19
+00.00 RT. 1141.52
+00.00 RT. 1151.52
+00.00 LT. 1153.19
+00.00 LT. 1158.05
+75.00 LT. 1160.00
+48.00 LT. 1161.00
+30.00 RT. 1167.00
+06.00 RT. 1168.03
+00.00 LT. 1196.51
+00.00 RT. 1194.29

T.B.M. 72 T-72 RBR/CAP
1532.69' RT OF STA. 596+94.11
ELEVATION = 1178.05

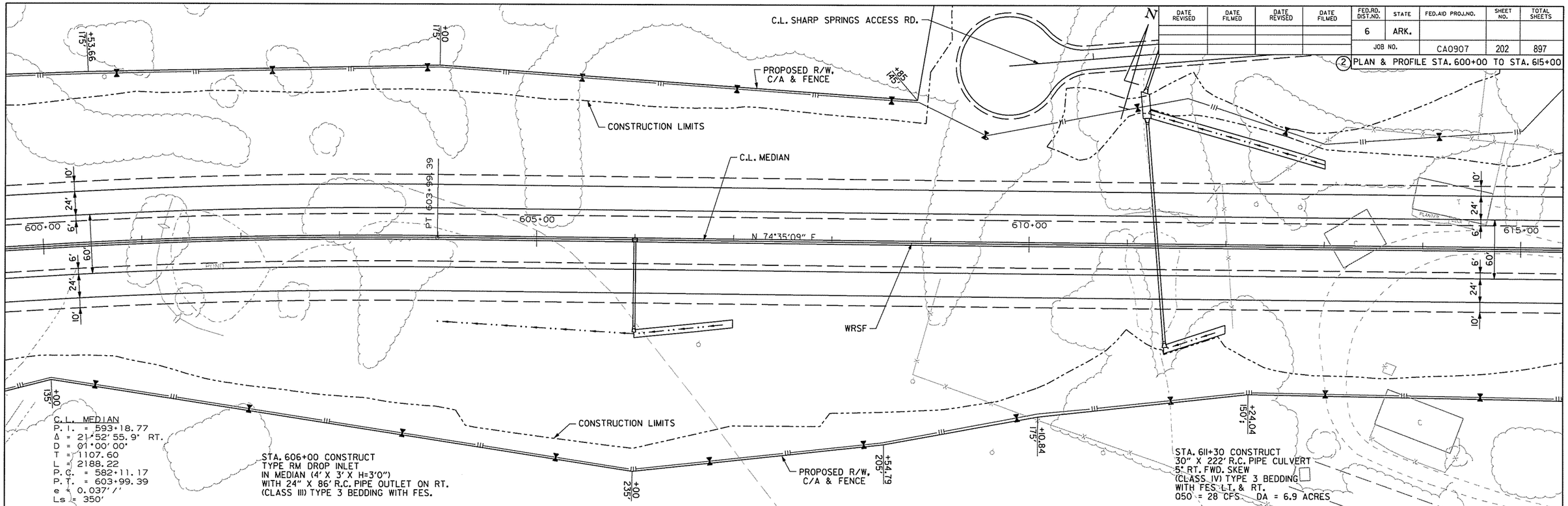
1220 1210 1200 1190 1180 1170 1160 1150 1140 1130

585+00 586+00 587+00 588+00 589+00 590+00 591+00 592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00 600+00

sadonaldson 9/4/2014 3:24:36 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RMY 112 TO I-540\SB6_PP_MNL_3i.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 202 | 897 |

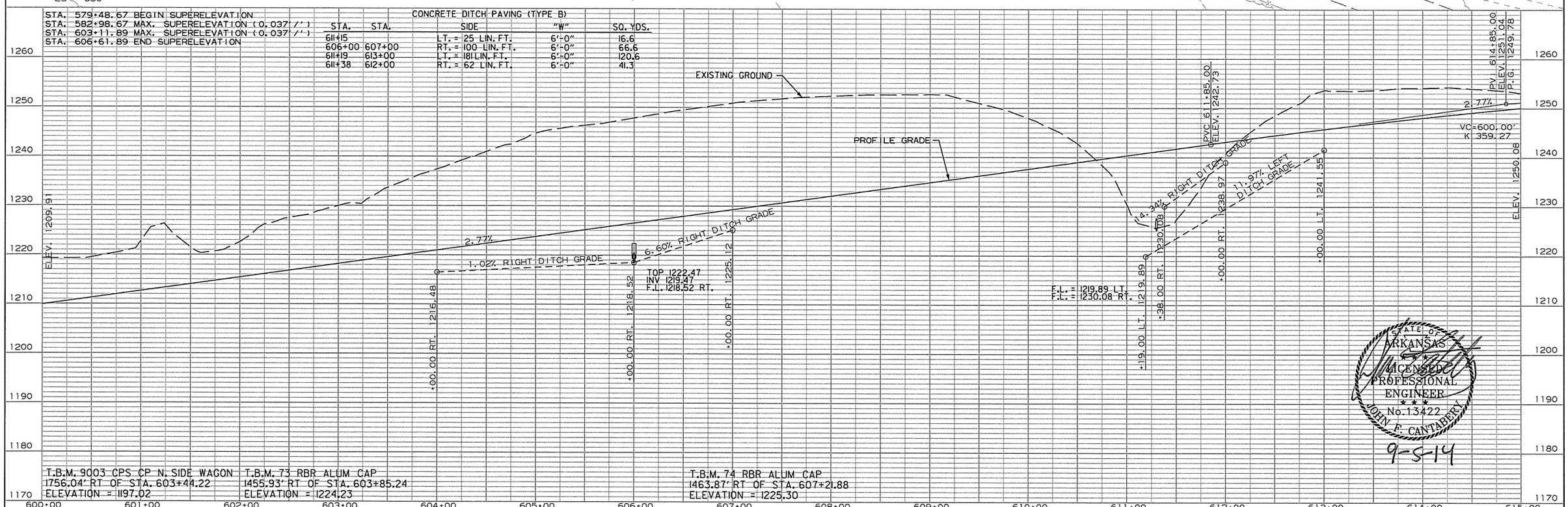
(2) PLAN & PROFILE STA. 600+00 TO STA. 615+00




STA. 579+48.67 BEGIN SUPERELEVATION
STA. 582+98.67 MAX. SUPERELEVATION (0.037'/')
STA. 603+11.89 MAX. SUPERELEVATION (0.037'/')
STA. 606+61.89 END SUPERELEVATION

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 611+15 | | LT. = 25 LIN. FT. | 6'-0" | 16.6 |
| 606+00 | 607+00 | RT. = 100 LIN. FT. | 6'-0" | 66.6 |
| 611+19 | 613+00 | LT. = 181 LIN. FT. | 6'-0" | 120.6 |
| 611+38 | 612+00 | RT. = 62 LIN. FT. | 6'-0" | 41.3 |




T.B.M. 9003 CPS CP N. SIDE WAGON
1756.04' RT OF STA. 603+44.22
ELEVATION = 1197.02

T.B.M. 73 RBR ALUM CAP
1455.93' RT OF STA. 603+85.24
ELEVATION = 1224.23

T.B.M. 74 RBR ALUM CAP
1463.87' RT OF STA. 607+21.88
ELEVATION = 1225.30

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

cggervasini 9/5/2014 11:41:22 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_PP_MNL_32.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 203 | 897 |

(2) PLAN & PROFILE STA. 615+00 TO STA 630+00

STA. 623+55 LT. C.L. MEDIAN CONSTRUCT 25' GUARDRAIL (TYPE C) AND THREE (3) REFLECTIVE RED DIAMOND OBJECT MARKERS MOUNTED ON U-CHANNEL POSTS DIRECTLY BEHIND THE GUARDRAIL AT A HEIGHT OF 4'.

C.L. SHARP SPRINGS ACCESS RD.

PC 8361 | PI 8362 | PT 8363 | N 77°02'52.2" E | 15+00 | 20' | 4'

POE 8364 | 0+00 | +80 | 355'

+85.47 | 180'

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

C.L. MEDIAN

(GRAVEL)

615+00 | 620+00 | 630+00 | N 74°35'09" E

10' | 24' | 6' | 60' | 6' | 24' | 10'

WRSF

CONSTRUCTION LIMITS

BK. 625+00.00 AHD. 625+81.89

+15.00

+40 | 110' | +84 | 140' | +20 | 155' | +50 | 110' | +15 | 145' | +49.98 | 145'

PROPOSED R/W, C/A & FENCE

BOTTOM OF DRAW

STA. 616+85 CONSTRUCT
36" X 298' R.C. PIPE CULVERT
15° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. &
CONTRA-COSTA ENERGY DISSIPATOR LT.
Q50 = 47 CFS DA = 13.8 ACRES

STA. 617+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 622+00 CONSTRUCT
24" X 266' R.C. PIPE CULVERT
10° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 23 CFS DA = 5.9 ACRES

STA. 622+55 RT. C.L. MEDIAN CONSTRUCT
25' GUARDRAIL (TYPE C) AND THREE (3)
REFLECTIVE RED DIAMOND OBJECT
MARKERS MOUNTED ON U-CHANNEL
POSTS DIRECTLY BEHIND THE GUARDRAIL
AT A HEIGHT OF 4'.

STA. 628+84 CONSTRUCT
54" X 270' R.C. PIPE CULVERT
23° RT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES & RT. & RIPRAP BASIN LT.
Q50 = 69 CFS DA = 26.9 ACRES

STA. 629+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

CANOPY | COW PASTURE | COW PASTURE | 3\BARB W\POST | SHARP SPRINGS RD. | POOR COND. | SHARP SPRINGS RD. | 5\BARB W\POST FENCE

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 617+00 | | LT. = 82 LIN. FT. | 6'-0" | 54.6 |
| 629+00 | | LT. = 40 LIN. FT. | 6'-0" | 26.7 |
| 617+18 | 619+00 | RT. = 182 LIN. FT. | 6'-0" | 121.3 |
| 622+19 | 624+00 | RT. = 181 LIN. FT. | 6'-0" | 120.6 |
| 623+00 | 625+00 | LT. = 200 LIN. FT. | 16'-0" | 355.6 |
| 625+81.89 | 627+91 | LT. = 209 LIN. FT. | 16'-0" | 371.6 |
| 629+45 | 630+00 | RT. = 55 LIN. FT. | 6'-0" | 36.7 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

1290 | 1280 | 1270 | 1260 | 1250 | 1240 | 1230 | 1220 | 1210 | 1200 ELEV.

+00.00 LT. ELEV. 1250.08

1.10%

10' FLAT BOTTOM DITCH LT.

PVT 617+85.00 ELEV. 1254.34

TOP 1249.06
INV 1246.06
F.L. 1245.12

10.19% RIGHT DITCH GRADE

EXISTING GROUND

F.L. = 1216.63 LT.
F.L. = 1232.88 RT.

T.B.M. 75 T=75 RBR/CAP
1152.43' RT OF STA. 615+42.60
ELEVATION = 1267.50

+18.00 RT. 1232.88

1.50% LEFT DITCH GRADE

2.51% LEFT DITCH GRADE

+00.00 LT. 1216.10

+00.00 RT. 1251.43

+00.00 LT. 1220.60

T.B.M. 960 CPS IN CP.
1942.27' RT OF STA. 616+73.66
ELEVATION = 1269.75

F.L. = 1227.40 LT.
F.L. = 1244.73 RT.

+19.00 RT. 1244.73

6.74% RIGHT DITCH GRADE

+00.00 RT. 1256.93

PROFILE GRADE

1.43% LEFT DITCH GRADE

+00.00 LT. 1230.64

+00.00 LT. 1233.50

T.B.M. 961PP.
27.03' RT OF STA. 622+58.13
ELEVATION = 1250.37

+00.00 LT.

BK. 625+00.00 AHD. 625+81.89

+81.89 LT.

10' FLAT BOTTOM DITCH LT.

+20.00 LT.

TOP 1261.46
INV 1258.46
F.L. 1257.52

9.34% RIGHT DITCH GRADE

+45.00 RT. 1249.25

2.50% LEFT DITCH GRADE

+81.89 LT. 1233.50

+20.00 LT. 1239.45

F.L. = 1239.45 LT.
F.L. = 1249.08 RT.

ELEV. 1266.80

615+00 | 616+00 | 617+00 | 618+00 | 619+00 | 620+00 | 621+00 | 622+00 | 623+00 | 624+00 | 625+00 | 626+00 | 627+00 | 628+00 | 629+00 | 630+00

cggervasini 9/5/2014 11:47:23 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_33.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 204 | 897 |

(2) PLAN & PROFILE STA. 630+00 TO STA. 645+00

N

STA. 631+70.00
END WRSF

16' GATE

C.L. ZION RD.

PROPOSED R/W

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W, C/A & FENCE

OBLITERATE EXISTING ROADWAY

CONSTRUCTION LIMITS

C.L. MEDIAN

630+00 635+00 640+00 645+00

N 74°35'09" E

WRSF

STA. 632+30.00
BEGIN WRSF

C.L. MEDIAN STA. 632+00.00 =
C.L. S. ZION RD. STA. 20+00.00

ZION ROAD
STA. 18+79.67 TO STA. 21+29.33
CONSTRUCT 249'-7 1/8" X 28' BRIDGE
247' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (119'-128')

STA. 637+25 RT. C.L. MEDIAN CONSTRUCT
25' GUARDRAIL (TYPE C) AND THREE (3)
REFLECTIVE RED DIAMOND OBJECT
MARKERS MOUNTED ON U-CHANNEL
POSTS DIRECTLY BEHIND THE GUARDRAIL
AT A HEIGHT OF 4'.

EXISTING S. ZION RD.

STA. 638+00 IN PLACE
18" X 41' PIPE CULVERT LT.
REMOVE

STA. 640+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

| C.L. MEDIAN STATIONING | GUARDRAIL (TYPE A) | TERMINAL ANCHOR POST (TYPE I) | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 628+15.00 TO STA. 633+15.00 LT. OF R.M.L. | = 450 LIN. FT. | 1 EACH | 1 EACH |
| STA. 630+85.00 TO STA. 635+85.00 RT. OF L.M.L. | = 450 LIN. FT. | 1 EACH | 1 EACH |

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 629+32 | 632+16 | RT. = 323 LIN. FT. | 4'-0" | 143.6 |
| 631+51 | 634+24 | LT. = 315 LIN. FT. | 4'-0" | 140.0 |
| 630+00 | 631+00 | RT. = 100 LIN. FT. | 6'-0" | 66.6 |
| 635+80 | 638+00 | LT. = 220 LIN. FT. | 6'-0" | 146.6 |
| 640+00 | 641+00 | LT. = 100 LIN. FT. | 6'-0" | 66.6 |

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

ELEV. 1266.80

GRT. DITCH GRADE

+00.00 RT. 1263.73

1.10%

EXISTING GROUND

3.28% LEFT DITCH GRADE

+80.00 LT. 1261.50

0.50% LEFT DITCH GRADE

+00.00 LT. 1268.72

TOP 1273.56
INV 1270.56
F.L. 1269.72 LT.

+00.00 LT. 1269.72

5.01% LEFT DITCH GRADE

+00.00 LT. 1274.73

PROFILE GRADE

ELEV. 1283.30

T.B.M. 79 RBR ALUM CAP
952.37' RT OF STA. 634+75.42
ELEVATION = 1287.82

T.B.M. 80 RBR ALUM CAP
617.04' RT OF STA. 641+06.60
ELEVATION = 1297.26

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230

630+00 631+00 632+00 633+00 634+00 635+00 636+00 637+00 638+00 639+00 640+00 641+00 642+00 643+00 644+00 645+00

cggervasini 9/5/2014 11:47:23 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_PP_MNL_34.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 205 | 897 |

(2) PLAN & PROFILE STA. 645+00 TO STA. 660+00

N

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

C.L. MEDIAN

N 74°35'09" E

WRSF

(GRAVEL)

C.L. SPRING CK. ACCESS RD.

STA. 660+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 85' R.C. PIPE OUTLET ON RT. (CLASS III) TYPE 3 BEDDING WITH FES.

POND

ELEV. 1283.30

PVC 645+41.00
ELEV. 1284.85

1.10%

PVI 649+41.00
ELEV. 1288.15
P.G. 1286.94

VC=600.00'
K 370.37

-0.52%

PROFILE GRADE

PVT 652+41.00
ELEV. 1286.59

EXISTING GROUND

-0.52%

2.47% RIGHT DITCH GRADE

ELEV. 1282.64

+00.00 RT. 1279.51

+00.00 RT. 1274.57

TOP 1278.41
INV 1275.41
F.L. 1274.57 RT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

T.B.M. 82 RBR ALUM CAP
308.41' RT OF STA. 650+68.82
ELEVATION = 1284.20

T.B.M. 83 RBR ALUM CAP
446.67' RT OF STA. 658+43.17
ELEVATION = 1283.33

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230

645+00 646+00 647+00 648+00 649+00 650+00 651+00 652+00 653+00 654+00 655+00 656+00 657+00 658+00 659+00 660+00

cggarvosinl 9/5/2014 11:49:25 AM
WORKSPACE: AHTD
L:\2005\05916BO - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_35.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 206 | 897 |

(2) PLAN & PROFILE STA. 660+00 TO STA. 675+00

STA. 660+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 85' R.C. PIPE OUTLET ON RT. (CLASS III) TYPE 3 BEDDING WITH FES.

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 665+00 | | RT. = 32 LIN. FT. | 6'-0" | 21.3 |
| 663+00 | 664+00 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 665+00 | 666+28 | LT. = 128 LIN. FT. | 6'-0" | 85.3 |

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

C.L. MEDIAN

N 74°35'09" E

WRSF

C.L. SPRING CK. ACCESS RD.

PROPOSED C/A & FENCE

N 75°25'11.1" E

PC 35+50.51

STA. 665+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 86' R.C. PIPE OUTLET ON RT. (CLASS III) TYPE 3 BEDDING WITH FES.

STA. 665+53 CONSTRUCT 54" X 444' R.C. PIPE CULVERT 32° LT. FWD. SKEW (CLASS V) TYPE 3 BEDDING WITH TYPE RM INLET 126' RT. (5'6" X 3' X H= 8'6") AND FES LT. & RIPRAP BASIN RT. Q50 = 114 CFS DA = 40 ACRES

CONSTRUCTION LIMITS

PROPOSED R/W

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 665+53 | INTERMITTENT | 1261 FT. MSL |

EXISTING GROUND

PROFILE GRADE

-0.50% RIGHT DITCH GRADE

-71.87% RIGHT DITCH GRADE

-0.52%

-12.02% LEFT DITCH GRADE

TOP 1278.41
INV 1275.41
F.L. 1274.57 RT.

TOP 1275.81
INV 1272.81
F.L. 1271.86 RT.

TOP 1262.10
INV 1255.12

F.L. = 1263.52 LT.
F.L. = 1250.56 RT.

ELEV. 1282.64

ELEV. 1274.84

+00.00 RT. 1274.57

+00.00 RT. 1273.07

+00.00 RT. 1265.20

+00.00 LT. 1275.87

+28.00 LT. 1260.48

T.B.M. 84 RBR ALUM CAP
24.80' RT OF STA. 670+04.39
ELEVATION = 1290.47

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

cggervasini 9/5/2014 11:49:26 AM
WORKSPACE: AHTD
L:\2005\05H680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_MNL_36.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 207 | 897 |

(2) PLAN & PROFILE STA. 675+00 TO STA. 690+00

SPRING CREEK STREET
STA. 18+94.87 TO STA. 21+04.13
CONSTRUCT 209'-3¼" X 30' BRIDGE
207' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (104'-103')

STA. 679+20.00
END WRSF

C.L. MEDIAN STA. 679+54.73 ±
C.L. SPRING CREEK ST. STA. 20+00.00

C.L. SPRING CK. RD.
PROPOSED R/W
PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
16' GATE
SHED
WRSF
CONSTRUCTION LIMITS
C.L. SPRING CK. ACCESS RD.
N 74°35'09" E
72°44'56"
P 37+15.82
PI 38+78.86
PC 35+50.51
S 15°13" W

C.L. PUPPY CK. RD.
P. I. = 25+32.66
Δ = 21°33'35.7" LT.
D = 05°00'00"
T = 218.18
L = 431.20
P.C. = 24+14.48
P.T. = 28+45.68

STA. 681+00 CONSTRUCT (2) TYPE RM DROP INLETS IN MEDIAN (4' X 3' X H=3'0") WITH DBL. 24" X 86 ' R.C. PIPE OUTLET ON RT. (CLASS III) TYPE 3 BEDDING WITH FES. 24" RCP = 172 LIN. FT. 24" FES = 2 EACH.
e = 0.061'/'
Ls = 200'

BK. 681+00.00
AHD. 681+58.56

STA. 685+00 CONSTRUCT 30" X 186' R.C. PIPE CULVERT (CLASS III) TYPE 3 BEDDING WITH TYPE RM DROP INLET IN MEDIAN (4' X 3' X H= 3' 7") AND FES LT. & RIPRAP BASIN RT.
Q50 = 22 CFS DA = 7.8 ACRES

C.L. MEDIAN
PC 683+17.13
PI 686+32.66
PT 689+25.75
PI 711+10.57

P.C.E.
PC 24+14.48
25+00
300' TAPER
1140.33' ACCELERATION LANE
802.82' DECELERATION LANE
200' TAPER
OBLITERATE EXISTING ROADWAY
(GRAVEL)
PUPPY CREEK RD.
PROPOSED R/W, C/A & FENCE

C.L. MEDIAN
P. I. = 702+49.27
Δ = 45°42'48.5" RT.
D = 01°15'00"
T = 1932.14
L = 3657.08
P.C. = 683+17.13
P.T. = 719+74.21
e = 0.046'/'
Ls = 350'

| C.L. MEDIAN STATIONING | GUARDRAIL (TYPE A) | TERMINAL ANCHOR POST (TYPE I) | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 675+70 TO STA. 680+70 LT. OF R.M.L. | = 450 LIN. FT. | 1 EACH | 1 EACH |
| STA. 678+35 TO STA. 683+93.56 RT. OF L.M.L. | = 450 LIN. FT. | 1 EACH | 1 EACH |

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 679+05 | 680+85 | LT. = 346 LIN. FT. | 4'-0" | 153.8 |
| 678+42 | 679+98 | RT. = 245 LIN. FT. | 4'-0" | 108.9 |
| 680+00 | 681+00 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 684+00 | 685+00 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 688+00 | 690+00 | RT. = 200 LIN. FT. | 6'-0" | 133.3 |

STA. 679+96.07 BEGIN SUPERELEVATION
STA. 684+04.63 MAX. SUPERELEVATION (0.046'/')
STA. 718+86.71 MAX. SUPERELEVATION (0.046'/')
STA. 722+36.71 END SUPERELEVATION

BK. 681+00.00
AHD. 681+58.56
ELEV. 1271.72

EXISTING GROUND
PROFILE GRADE
ELEV. 1274.84
-0.52%
-0.55% LEFT DITCH GRADE
-0.50% RIGHT DITCH GRADE
-4.29% RIGHT DITCH GRADE
-1.25% LEFT DITCH GRADE
-2.35% RIGHT DITCH GRADE
1.67% LEFT DITCH GRADE
-2.30% RIGHT DITCH GRADE
-4.72% RIGHT DITCH GRADE
-3.00% RIGHT DITCH GRADE
ELEV. 1267.35

+00.00 LT. 1268.26
+00.00 RT. 1268.06
+00.00 RT. 1263.77
+00.00 LT. 1266.39
+00.00 RT. 1262.56
+00.00 LT. 1265.14
+00.00 RT. 1259.21
+00.00 LT. 1266.81
+00.00 RT. 1252.31
+00.00 RT. 1247.59
+00.00 RT. 1244.59

TOP 1267.69
INV. 1264.69
F.L. 263.77 RT.

TOP 1265.95
INV. 1262.37
F.L. 1265.14 LT.
F.L. 1259.21 RT.

T.B.M. 85 RBR ALUM CAP
323.63' LT OF STA. 677+17.11
ELEVATION = 1296.56

T.B.M. 86 RBR ALUM CAP
365.59' LT OF STA. 680+84.71
ELEVATION = 1298.29

T.B.M. 87 T-87 RBR/CAP
35.00' LT OF STA. 683+86.26
ELEVATION = 1291.70

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

cggervasini 9/5/2014 11:49:26 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_MNL_37.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| 12-11-14 | | | |
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 208 | 897 |

# (2) PLAN & PROFILE STA. 690+00 TO STA. 705+00

PERMANENT CONSTRUCTION EASEMENT
PUPPY CREEK RD.
PROPOSED R/W
PROPOSED R/W. C/A & FENCE
16' GATE
CONSTRUCTION LIMITS
1140.33' ACCELERATION LANE
STA. 696+22.74 TO STA. 700+14.90 LT. LN.
CONSTRUCT 394'-8¾" X 48' BRIDGE
392'-6" CONTINUOUS COMPOSITE PRESTRESSED BEAM UNIT (5 @ 78'-6")
1306
1306 NBC
C.L. MEDIAN STA. 698+00.00, 58.50' LT. =
C.L. RAMP NW STA. 698+00.00
C.L. MEDIAN STA. 700+40.33
450' TAPER
C.L. MEDIAN
C.L. RAMP NW
CHICKEN HOUSE
NOSE +43.60
STA. 696+17.53
END GRADING AND PAVING RT.
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
FUTURE CONSTRUCTION (NOT IN CONTRACT)
STA. 704+00.00
END GRADING AND PAVING LT.
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
C.L. RAMP EN
NOSE +02.82 74.82
PUPPY CREEK RD. (GRAVEL)
802.82' DECELERATION LANE
PUPPY CREEK ACCESS RD.
CONSTRUCTION LIMITS
STA. 692+23 CONSTRUCT 60" X 506' R.C. PIPE CULVERT 28° RT. FWD. SKEW (CLASS V) TYPE 3 BEDDING WITH FES LT. & RIPRAP BASIN RT. Q50 = 175 CFS DA = 74.9 ACRES
RAMP EN
STA. 695+94.04 TO STA. 699+86.25
CONSTRUCT 362'-2½" X 25' BRIDGE
360' CONTINUOUS COMPOSITE PRESTRESSED BEAM UNIT (5 @ 72')
STA. 695+00 CONSTRUCT TYPE RM DROP INLET IN MEDIAN (4' X 3' X H=3'0") WITH 24" X 135' R.C. PIPE OUTLET ON RT. (CLASS III) TYPE 3 BEDDING WITH FES.

C.L. MEDIAN
P. I. = 702+49.27
Δ = 45°42' 48.5" RT.
D = 01°15' 00"
T = 1932.14
L = 3657.08
P. C. = 683+17.13
P. T. = 719+74.21
e = 0.046'/'
Ls = 350'

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 690+00 | 692+00 | RT. = 200 LIN. FT. | 7'-0" | 155.6 |
| 692+00 | 693+00 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 695+00 | | RT. = 75 LIN. FT. | 6'-0" | 50.0 |

STA. 679+96.07 BEGIN SUPERELEVATION
STA. 684+04.63 MAX. SUPERELEVATION (0.046)
STA. 718+86.71 MAX. SUPERELEVATION (0.046)
STA. 722+36.71 END SUPERELEVATION

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| PUPPY CREEK | 697+00 - 697+85 | PERENNIAL | 1215 FT. MSL |

C.L. MEDIAN STATIONING
STA. 700+24.84 TO STA. 703+43.59 RT. OF L.M.L. = 250 LIN. FT.

| GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|
| | 1 EACH | 1 EACH |

END GRADING AND PAVING RT.
STA. 696+17.53
ELEV. 1267.35
PROFILE GRADE
-0.52%
5' ROCK FILL DRAINAGE/STABILIZING LAYER
5.55% RIGHT DITCH GRADE
6.06% RIGHT DITCH GRADE
5.05% RIGHT DITCH GRADE
+00.00 RT. 1244.59
+00.00 RT. 1239.04
+00.00 RT. 1292.08
+00.00 RT. 1227.03
T.B.M. 89 RBR CAP.
199.57' RT OF STA. 691+42.2
ELEVATION = 1239.58
F.L. = 1238.01 LT.
F.L. = 1224.99 RT.
TOP 1261.26
INV 1258.26
F.L. 1254.91 RT.
+00.00 LT. 1256.08
EXISTING GROUND
T.B.M. 90 RBR CAP.
199.59' RT OF STA. 694+86.19
ELEVATION = 1231.67
STA. 696+22.74 BEGIN BRIDGE LT.
PVC 697+03.72
ELEV. 1263.69
F.L. 1264.23
+00.00 LT. 1243.08
050 EL. = 1223.05

END GRADING AND PAVING LT.
STA. 704+00
ELEV. 1267.00
PROFILE GRADE
VC=800.00'
K 425.53
STA. 700+14.90 END BRIDGE LT.
0.52%
1.3587%
PVI 701+03.72
ELEV. 1261.61
P.G. 1263.49
5' ROCK FILL DRAINAGE/STABILIZING LAYER
EXISTING GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
12-11-14

690+00 691+00 692+00 693+00 694+00 695+00 696+00 697+00 698+00 699+00 700+00 701+00 702+00 703+00 704+00 705+00
1310 1300 1290 1280 1270 1260 1250 1240 1230 1220
1290 1280 1270 1260 1250 1240 1230 1220 1210 1200

JFCantabery 12/11/2014 2:59:40 PM
WORKSPACE: AHTD
\\gorverfnc\HTprojects\2005\0598680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_38.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 209 | 897 |

(2) PLAN & PROFILE STA. 705+00 TO STA. 720+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

+35.29
275'
S 86°59'58" E
705+00
710+00
715+00
720+00
725+00
CONSTRUCTION LIMITS
FUTURE CONSTRUCTION (NOT IN CONTRACT)
STA. 708+00.00
BEGIN GRADING
STA. 705+80 CONSTRUCT
8' X 6' X 358' R.C. BOX CULVERT
45° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 467 CFS DA = 105.9 ACRES
STA. 710+00 CONSTRUCT
1 TYPE RM DROP INLET LT.
(4' X 3' X H=3'0")
24" X 82' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING
RAMP NW
STA. 715+92.35 TO STA. 726+94.55
CONSTRUCT 1102'-2½" X 27'-2" BRIDGE
1100'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(110'-170'-132'-130'-124'-155'-155'-124')
C.L. RAMP NW
MSE WALL #12
C.L. MEDIAN
P.I. = 702+49.27
Δ = 45°42' 48.5" RT.
D = 01°15' 00"
T = 1932.14
L = 3657.08
P.C. = 683+17.13
P.T. = 719+74.21
e = 0.046'/'
Ls = 350'
STA. 710+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'6")
30" X 84' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.
C.L. RAMP NW STA. 718+73.42 =
C.L. MEDIAN STA. 717+47.37
STA. 718+00 CONSTRUCT
TYPE RM DROP INLET LT.
(4' X 3' X H=3'0")
24" X 82' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING
STA. 718+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'6")
30" X 84' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING
MSE WALL #13
STA. 718+00 CONSTRUCT
TYPE RM SPECIAL DROP INLET RT.
(4' X 5' X H=5'0")
42" X 144' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.
PT 719+74.21
40°20' 06"
716+29.18
GATE

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 706+00 | 710+00 | RT. = 455 LIN. FT. | 11'-0" | 556.1 |
| 707+64 | 708+00 | LT. TO RT. = 265 LIN. FT. | 11'-0" | 323.9 |
| 712+21 | 715+73 | LT. = 367 LIN. FT. | 4'-0" | 163.1 |
| 717+48 | 719+82 | RT. = 289 LIN. FT. | 4'-0" | 128.4 |

STA. 679+96.07 BEGIN SUPERELEVATION
STA. 684+04.63 MAX. SUPERELEVATION (0.046'/')
STA. 718+86.71 MAX. SUPERELEVATION (0.046'/')
STA. 722+36.71 END SUPERELEVATION

EXISTING GROUND
5' FLAT BOTTOM DITCH RT.
+40.00 RT.
PROFILE GRADE
BEGIN GRADING
STA. 708+00
ELEV. 1267.00
PVT. 705+03.72
ELEV. 1267.05
1.3587%
TOP 1271.55
INV 1268.55
3'
+00.00 LT.
1268.83
10.73% LT. TO RT. DITCH GRADE
+00.00 RT.
1265.79
1.06% RIGHT DITCH GRADE
TOP 1269.79
INV 1266.29
F.L. 1265.79 RT.
10.90% RIGHT DITCH GRADE
+67.00 RT.
1240.39
2.91% RIGHT DITCH GRADE
F.L. = 1227.00 LT.
F.L. = 1233.81 RT.
+00.00 RT.
1233.81
+50.00 RT.
1272.68
+50.00 RT.
TOP 1282.42
INV 1279.42
TOP 1280.66
INV 1277.16
TOP 1279.52
INV 1274.52
F.L. 1272.68 RT.
ELEV. 1287.38

T.B.M. 102 T 102 RBR CAP
441.46' RT OF STA. 719+62.25
ELEVATION = 1312.33

1310 1300 1290 1280 1270 1260 1250 1240 1230 1220
705+00 706+00 707+00 708+00 709+00 710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00

sadonaldson 9/4/2014 3:21:45 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_39.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 210 | 897 |

(2) PLAN & PROFILE STA. 720+00 TO STA. 735+00

C.L. MEDIAN STA. 723+56.48 =
C.L. I-540 STA. 91+81.77

C.L. MEDIAN STA. 722+21.10 =
C.L. RAMP EN STA. 721+87.54

C.L. RAMP EN

C.L. I-540

CONRAD PLACE (ASPHALT)

29°06'02"

25.00

S 88°48'04" E

N 58°16'41.9"

RBR ALUM

MSE WALL #15

RAMP EN
STA. 718+71.24 TO STA. 728+51.09
CONSTRUCT 979'-10 1/4" X 25' BRIDGE
977'-8" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(125'-192'- 240'-8" -215'-205')

C.L. MEDIAN

PI 719+41.21

720+00

725+00

730+00

735+00

S 59°42'02" E

10'
24'
6'
60'
6'
24'
10'

56°11'44"

PC 90+64.02

720+00

S 88°48'03.8" E

STA. 721+00.00
END JOB CA0907
END GRADING

FUTURE CONSTRUCTION
(NOT IN CONTRACT)

CONSTRUCTION LIMITS

INTERSTATE 540 (ASPHALT)

90+00

RBR ALUM CAP

S54°22'20"E
859.24'

RBR ALUM CAP

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

STA. 679+96.07 BEGIN SUPERELEVATION
STA. 684+04.63 MAX. SUPERELEVATION (0.046 /')
STA. 718+86.71 MAX. SUPERELEVATION (0.046 /')
STA. 722+36.71 END SUPERELEVATION

EXISTING GROUND

PROFILE GRADE (FUTURE)

1.3587%

ELEV. 1307.76

ELEV. 1287.38

3:1

PROFILE GRADE

STA. 721+00.00
END JOB CA0907
END GRADING

T.B.M. 114 RBR ALUM CAP
149.12' RT OF STA. 725+01.31
ELEVATION = 1318.24

T.B.M. 115 RBR ALUM CAP
228.92' RT OF STA. 733+56.85
ELEVATION = 1336.14

1330 1320 1310 1300 1290 1280 1270 1260 1250 1240

720+00 721+00 722+00 723+00 724+00 725+00 726+00 727+00 728+00 729+00 730+00 731+00 732+00 733+00 734+00 735+00

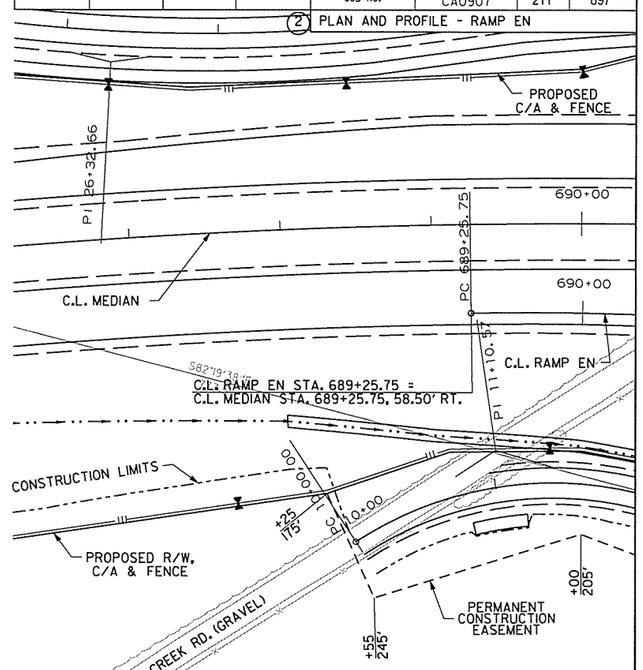
sadonaldson 9/4/2014 3:21:46 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_MNL_40.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 211 | 897 |

(2) PLAN AND PROFILE - RAMP EN

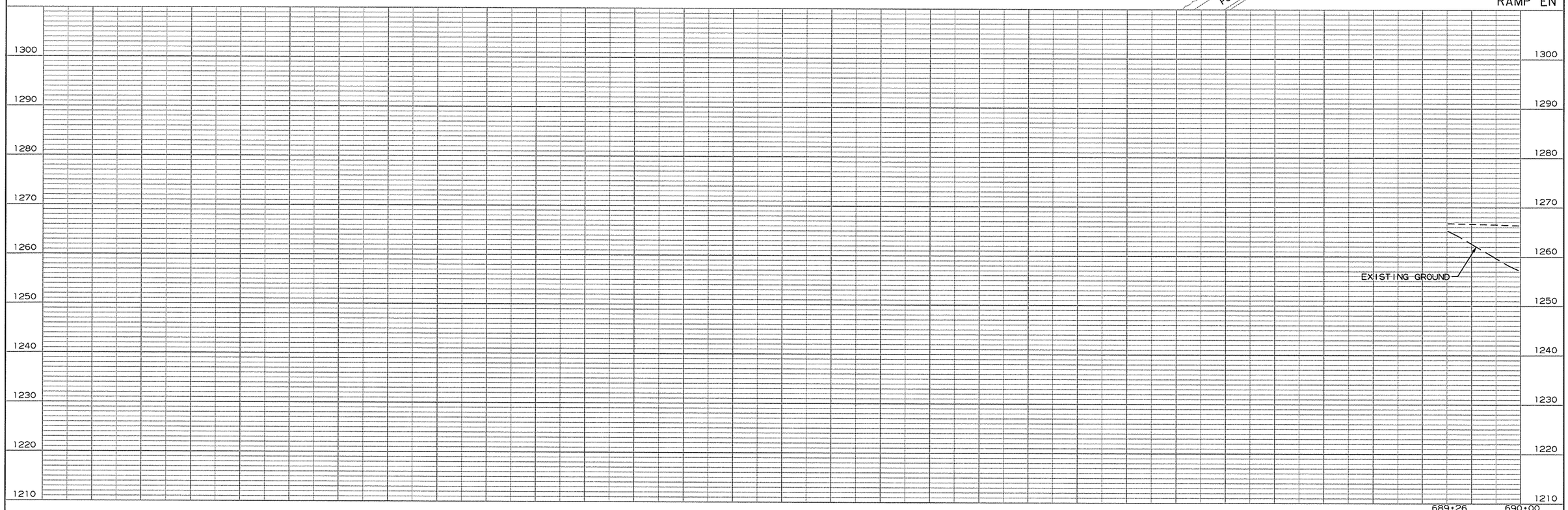
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N




C.L. RAMP EN
PI = 696+36.39
Δ = 34°27'16.7"RT.
D = 2°30'00"
T = 710.64
L = 1378.19
PC= 689+25.75
PT= 703+03.94
e = 0.049 '/'
Ls = 200'

RAMP EN




sadonaldson 9/4/2014 3:21:46 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPEN_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| 12-11-14 | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 212 | 897 |

(2) PLAN AND PROFILE - RAMP EN

MAIN LANE
STA. 696+22.74 TO STA. 700+14.90 LT. LN.
CONSTRUCT 394'-8¾" X 48' BRIDGE
392'-6" CONTINUOUS COMPOSITE PRESTRESSED
BEAM UNIT (5 @ 78'-6")

C.L. PUPPY CREEK RD.
EX. PUPPY CREEK RD. (GRAVEL)
C.L. MEDIAN
FUTURE CONSTRUCTION (NOT IN CONTRACT)
C.L. RAMP EN
CONSTRUCTION LIMITS
GRAVITY BLOCK RETAINING WALL
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
PROPOSED R/W, C/A & FENCE
PROPOSED R/W
PERMANENT CONSTRUCTION EASEMENT
16' GATE
C.L. RAMP ES
PROPOSED R/W, C/A & FENCE

C.L. RAMP EN
PI = 696+36.39
Δ = 34°27'16.7" RT.
D = 2°30'00"
T = 710.64
L = 1378.19
PC= 689+25.75
PT= 703+03.94
e = 0.049 '/'
Ls = 200' *
* SEE PROFILE FOR MODS.

STA. 701+45 CONSTRUCT
24" X 185' R.C. PIPE CULVERT
15° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 13 CFS DA = 3.2 ACRES

STA. 695+94.04 TO STA. 699+56.25
CONSTRUCT 362'-2½" X 25' BRIDGE
360' CONTINUOUS COMPOSITE
PRESTRESSED BEAM UNIT (5 @ 72')

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 699+50 | 702+00 | RT. = 250 LIN. FT. | 6'-0" | 166.7 |
| 701+67 | 705+90 | LT. = 445 LIN. FT. | 9'-0" | 445.0 |

RAMP EN

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| PUPPY CREEK | 697+00 - 697+85 | PERENNIAL | 1215 FT. MSL |

C.L. RAMP EN STATIONING
STA. 693+39.89 TO STA. 695+83.64 RT.

| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| | = 175 LIN. FT. | 1 EACH | 1 EACH |

STA. 693+95.95 BEGIN SUPERELEVATION (MATCH MAIN LANES S.E. = -0.046 FT./FT.)
STA. 694+45.95 MAX SUPERELEVATION (-0.049 FT./FT.)
STA. 703+82.58 MAX SUPERELEVATION (-0.049 FT./FT.)
STA. 705+82.58 END SUPERELEVATION (-0.020 FT./FT.)

STA. 695+94.04 BEGIN BRIDGE PVC 696+00.00 ELEV. 1261.48
STA. 699+56.25 END BRIDGE VC=800.00' K 176.99
PVI 700+00.00 ELEV. 1258.12 P.G. 1262.93
PVT 704+00.00 ELEV. 1272.82
-0.84%
3.68%
PROFILE GRADE
10' ROCK FILL DRAINAGE/STABILIZING LAYER
EXISTING GROUND
Q50 EL. = 1222.26
2:1
2.83% RIGHT DITCH GRADE
9.92% RIGHT DITCH GRADE
20.00% RIGHT DITCH GRADE
+50.00 RT. 1216.30
+00.00 RT. 1221.51
+00.00 RT. 1234.50
+00.00 RT. 1254.50
+84.58 RT. 1259.73
F.L. = 1243.16 LT
F.L. = 1237.69 RT.

C.L. MEDIAN STA. 694+02.82, 74.82' RT. =
C.L. RAMP EN STA. 693+95.95, 7.50' LT.
ELEV. 1263.19

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
12-11-14

JFCantabery 12/11/2014 3:01:24 PM
WORKSPACE: AHTD
\\gov\arfhc\ll\projects\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPEN_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 213 | 897 |

2 PLAN AND PROFILE - RAMP EN

N

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 707+50 | 715+00 | LT. = 750 LIN. FT. | 6'-0" | 500.0 |
| 708+00 | 711+55 | RT. = 385 LIN. FT. | 6'-0" | 256.7 |
| 711+55 | 714+40 | RT. = 320 LIN. FT. | 6'-0" | 213.3 |

CONSTRUCTION LIMITS

C.L. RAMP EN.
PI = 712+12.13
Δ = 25°26'57.6"LT.
D = 3°00'00"
T = 431.27
L = 848.31
PC= 707+80.86
PT= 716+29.18
e = 0.057 '/'
Ls = 200' •
• SEE PROFILE FOR MODS.

CONSTRUCTION LIMITS

STA. 718+71.24 TO STA. 728+51.09
CONSTRUCT 979'-10¼" X 25' BRIDGE
977'-8" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(125'-192'- 240'-8" -215'-205')

C.L. RAMP EN STA. 718+32.9 =
C.L. RAMP NW STA. 721+07.84

MSE WALL #13

C.L. RAMP NW

C.L. MEDIAN

705+00

6' 4'

S 63°21'06" E

PC 707+80.86

710+00

715+00

720+00

RAMP NW
STA. 715+92.35 TO STA. 726+94.55
CONSTRUCT 1102'-2½" X 27'-2" BRIDGE
1100'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(110'-170'-132'-130'-124'-155'-155'-124')

S 26°39'17" E

S 88°48'04" E

PI 715+01.24

83°00'32"

6'

CONSTRUCTION LIMITS

C.L. RAMP EN

S63°21'06"E
2286.3'

C.L. RAMP ES

PI 712+12.13

STA. 711+04 CONSTRUCT
72" X 271' R.C. PIPE CULVERT
20° RT. FWD. SKEW
(CLASS V) TYPE 2 BEDDING
WITH FES LT. & RT.
Q50 = 292 CFS DA = 72.7 ACRES

STA. 718+34.00 CONSTRUCT
TYPE NIDI. LT.
12" X 53' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

EXIST. R/W

EXIST. C/A

C.L. I-540

RAMP EN

STA. 706+30.86 BEGIN SUPERELEVATION (-0.020 FT./FT.)
STA. 708+30.86 MAX SUPERELEVATION (0.057 FT./FT.)
STA. 715+79.18 MAX SUPERELEVATION (0.057 FT./FT.)
STA. 716+79.18 END SUPERELEVATION (0.020 FT./FT. - REVERSE CROWN)

C.L. RAMP EN STATIONING
STA. 715+85.09 TO STA. 718+53.84 LT.
STA. 716+10.09 TO STA. 718+53.84 RT.

| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| = 200 LIN. FT. | 1 EACH | 1 EACH | 1 EACH |
| = 175 LIN. FT. | 1 EACH | 1 EACH | 1 EACH |

STA. 718+71.24
BEGIN BRIDGE

PROFILE GRADE

3.68%

2:1

EXISTING GROUND

7.02% LEFT DITCH GRADE

+00.00 LT. 1287.58

+00.00 LT. 1301.63

3.94% RIGHT DITCH GRADE

11.81% LEFT DITCH GRADE

7.10% RIGHT DITCH GRADE

3.81% RIGHT DITCH GRADE

+00.00 RT. 1278.88

+00.00 RT. 1271.00

+40.00 RT. 1271.62

F.L. = 1258.42 LT.
F.L. = 1260.00 RT.

+55.00 RT. 1260.00

+53.00 LT. 1258.42

+50.00 LT. 1239.40

6.28% LEFT DITCH GRADE

1330 1320 1310 1300 1290 1280 1270 1260 1250 1240

705+00 706+00 707+00 708+00 709+00 710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No. 13422
JOHN P. CANTABERRY

9-5-14

sadonaldson 9/4/2014 3:21:47 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPEN_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 214 | 897 |

(2) PLAN AND PROFILE - RAMP EN

STA. 718+71.24 TO STA. 728+51.09
CONSTRUCT 979'-10 1/4" X 25' BRIDGE
977'-8" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(125'-192'- 240'-8" -215'-205')

C.L. RAMP EN STA. 724+29.80 =
C.L. I-49 STA. 93+22.15

C.L. RAMP EN STA. 721+87.54 =
C.L. MEDIAN STA. 722+21.10

PT 719+74.21

720+00

S 58°42'02.1" E

29°06' 02"

28°50' 59"

EXIST. R/W & C/A

C.L. I-49

95+00

100+00

25+00

720+00

4'

6"

15'

W BARRIER MOUNTED TRF

CPS PP

1126

101

PC 90+69.07

N 65°31'43"W E 90+00

725+00

C.L. MEDIAN

C.L. SILENT GROVE RD.

T 113 RBR CAP

113

EXIST. R/W

EXIST. C/A

N 58°18'41.9" E

CONSTRUCTION LIMITS

C.L. RAMP EN
PI = 733+66.22
Δ = 62°31'42.7"LT.
D = 8°15'00"
T = 421.67
L = 757.92
PC= 729+44.55
PT= 737+02.47
e = 0.100 '/'
Ls = 290' *
* SEE PROFILE FOR MODS.

735+09

45°

MSE WALL #15

PC 729+44.55

730+00

S 88°48'02" E

32

RBR ALUM

C.L. RAMP EN

STA. 728+88.00 CONSTRUCT
TYPE N2 DI. LT.
12" X 36' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

CONSTRUCTION LIMITS

22

RAMP EN

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 727+72 | 729+93 | RT. TO LT. = 279 LIN. FT. | 4'-0" | 124.0 |

STA. 728+52.00 BEGIN SUPERELEVATION (0.020 FT./FT. - REVERSE CROWN)
STA. 730+47.00 MAX SUPERELEVATION (0.100 FT./FT.)
STA. 734+29.30 MAX SUPERELEVATION (0.100 FT./FT.)
STA. 737+19.30 END SUPERELEVATION (-0.020 FT./FT.)

PVI 725+00.00
ELEV. 1350.00
P.G. 1344.31

STA. 728+51.09
END BRIDGE

PROFILE GRADE

3.68%

VC=800.00'
K 140.60

-2.01%

PVC 721+00.00
ELEV. 1335.30

PVT 729+00.00
ELEV. 1341.94

EXISTING GROUND

1360
1350
1340
1330
1320
1310
1300
1290
1280

720+00 721+00 722+00 723+00 724+00 725+00 726+00 727+00 728+00 729+00 730+00 731+00 732+00 733+00 734+00 735+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:21:47 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_RAMPEN_04.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 215 | 897 |

(2) PLAN AND PROFILE - RAMP EN

C.L. RAMP EN
PI = 733+66.22
Δ = 62°31'42.7"LT.
D = 8°15'00"
T = 426.67
L = 757.92
PC= 729+44.55
PT= 737+02.47
e = 0.100 '/'
Ls = 290' •
• SEE PROFILE FOR MODS.

C.L. RAMP WN
PI = 744+51.62
Δ = 80°39'59.5"LT.
D = 8°00'00"
T = 608.09
L = 1008.33
PC= 738+43.52
PT= 748+51.85
e = 0.100 '/'
Ls = 290 •
• SEE PROFILE FOR MODS.

EXIST. C/A
EXIST. R/W
C.L. GOAD SPRING RD.
C.L. I-540
CONSTRUCTION LIMITS
EXIST. R/W & C/A
C.L. RAMP EN
C.L. RAMP WN (FUTURE)
PC 738+43.52
PT 737+02.47
50' SHOULDER TAPER
115' SHOULDER TAPER
90' SHOULDER TAPER
16' GATE
PROPOSED R/W, C/A & FENCE
PLANTER MIX
PLANTER MIX CAP
POND
735+00
740+00
745+00
750+00
110+00
115+00
705+00
I N 28°40'14" E

STA. 736+70.93 TO STA. 740+86.81
CONSTRUCT 415'-10⅝" X 29' BRIDGE
413'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (97'-121'-118'-77')

STA. 744+00 CONSTRUCT
24" X 120' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 3 CFS DA = 0.8 ACRES

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 743+00 | 744+00 | LT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 743+00 | 744+00 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 738+30 (RAMP EN) | INTERMITTENT | 1285 FT. MSL |

STA. 728+52.00 BEGIN SUPERELEVATION (0.020 FT./FT. - REVERSE CROWN)
STA. 730+47.00 MAX SUPERELEVATION (0.100 FT./FT.)
STA. 734+29.30 MAX SUPERELEVATION (0.100 FT./FT.)
STA. 737+19.30 END SUPERELEVATION (-0.020 FT./FT.)

C.L. RAMP EN STATIONING
STA. 733+96.86 TO STA. 736+40.6 LT.
STA. 734+48.96 TO STA. 736+67.7 RT.

| GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|
| = 175 LIN. FT. | 1 EACH | 1 EACH |
| = 150 LIN. FT. | 1 EACH | 1 EACH |

STA. 748+81.60 BEGIN SUPERELEVATION (-0.020 FT/FT)
STA. 751+81.60 END SUPERELEVATION (MATCH I-540 S.E. = 0.042 FT./FT.)

STA. 736+70.93 BEGIN BRIDGE
STA. 740+86.81 END BRIDGE
-2.01%
2.6:1
3.8:1
PROFILE GRADE
EXISTING GROUND
PVC 742+39.43 ELEV. 1314.95
PVI 744+39.43 ELEV. 1310.28
PVT 746+39.43 ELEV. 1305.12
VC=400.00' K 449.44
-1.90% DITCH GRADE
-10.79% DITCH GRADE
1.00% LEFT DITCH GRADE
0.50% RIGHT DITCH GRADE
-2.90%
-2.2% RIGHT DITCH GRADE
+72.86 RT. @ 1284.00
+30.84 LT. @ 1280.00
+00.00 LT. 1307.91
+00.00 RT. 1308.77
+00.00 LT. 1300.01
+00.00 RT. 1297.98
F.L. = 1300.01 LT.
F.L. = 1297.98 RT.
+00.00 LT. 1302.01
+00.00 RT. 1296.98

1340 1330 1320 1310 1300 1290 1280 1270 1260

735+00 736+00 737+00 738+00 739+00 740+00 741+00 742+00 743+00 744+00 745+00 746+00 747+00 748+00 749+00 750+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

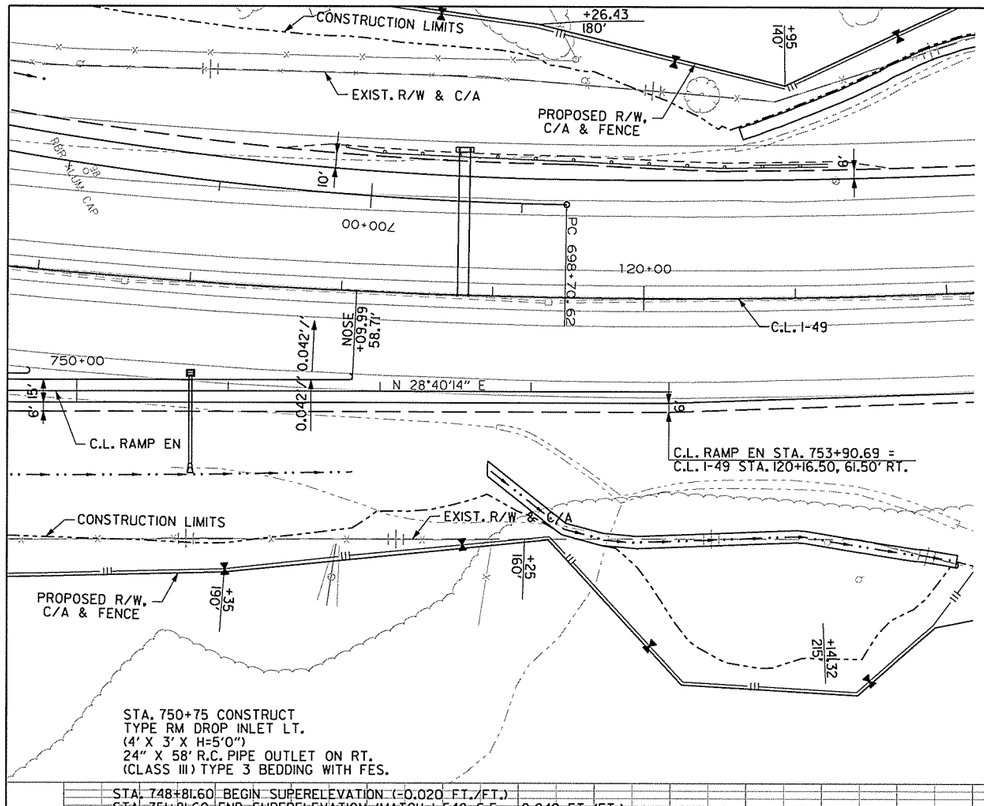
RAMP EN

sadonaldson 9/4/2014 3:21:47 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB0_PP_RAMPEN_05.dgn
REVISED DATE:

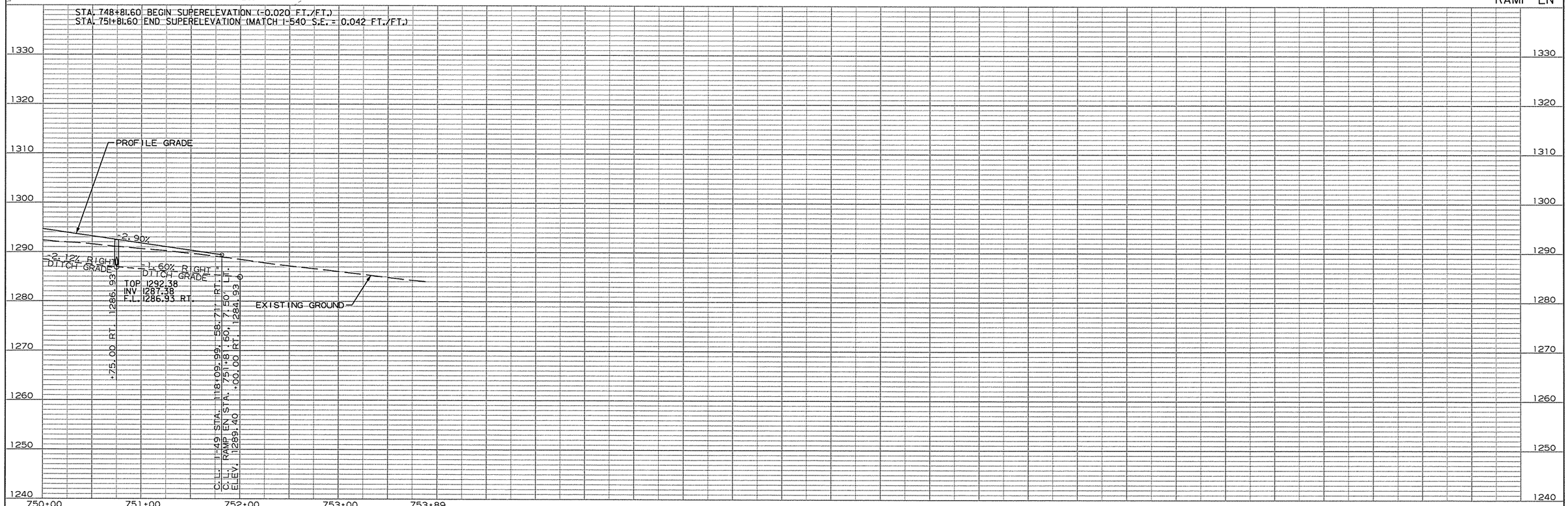
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 216 | 897 |

(2) PLAN AND PROFILE - RAMP EN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14




RAMP EN

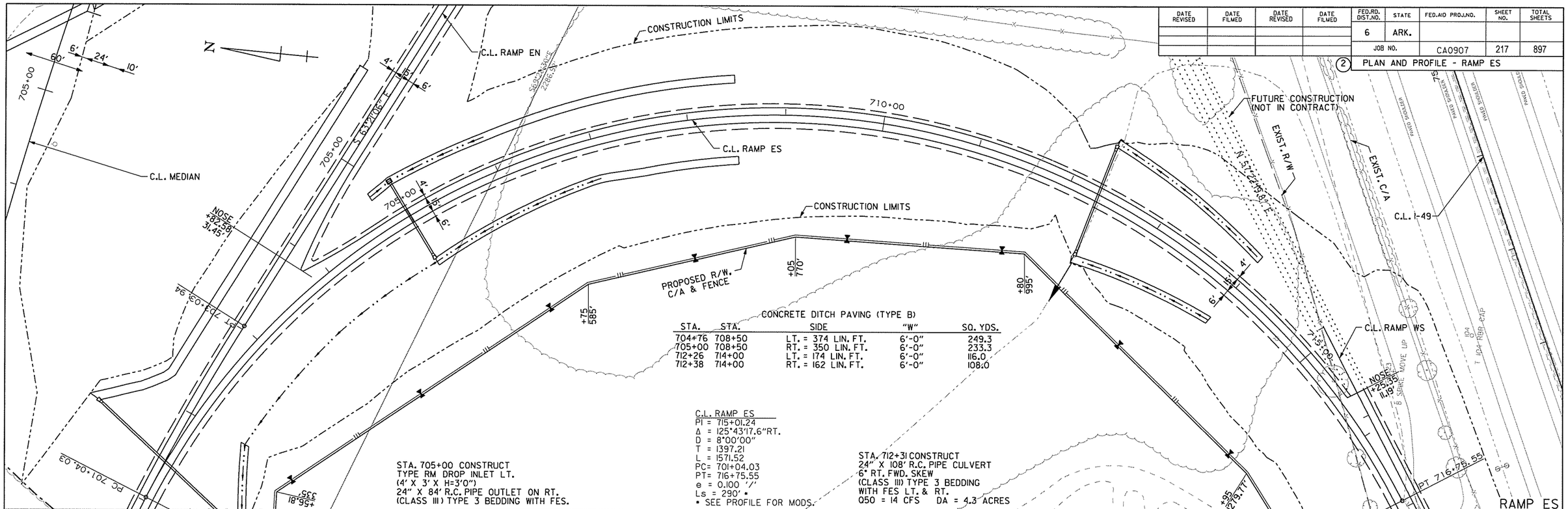



sadonaldson 9/4/2014 3:21:48 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPEN_06.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 217 | 897 |

(2) PLAN AND PROFILE - RAMP ES




CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 704+76 | 708+50 | LT. = 374 LIN. FT. | 6'-0" | 249.3 |
| 705+00 | 708+50 | RT. = 350 LIN. FT. | 6'-0" | 233.3 |
| 712+26 | 714+00 | LT. = 174 LIN. FT. | 6'-0" | 116.0 |
| 712+38 | 714+00 | RT. = 162 LIN. FT. | 6'-0" | 108.0 |

C.L. RAMP ES
PI = 715+01.24
Δ = 125°43'17.6"RT.
D = 8°00'00"
T = 1397.21
L = 1571.52
PC= 701+04.03
PT= 716+75.55
e = 0.100 '/'
Ls = 290' •
• SEE PROFILE FOR MODS.

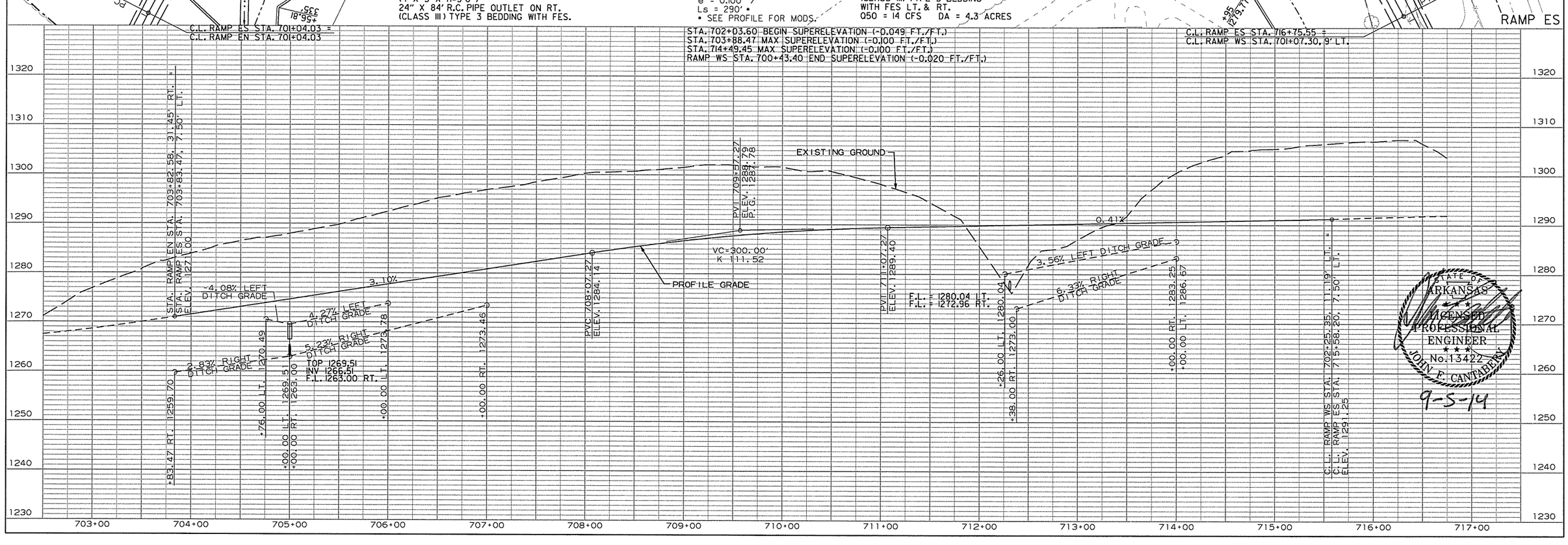
STA. 705+00 CONSTRUCT
TYPE RM DROP INLET LT.
(4' X 3' X H=3'0")
24" X 84' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 712+31 CONSTRUCT
24" X 108' R.C. PIPE CULVERT
6° RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 14 CFS DA = 4.3 ACRES

C.L. RAMP ES STA. 701+04.03 =
C.L. RAMP EN STA. 701+04.03

STA. 702+03.60 BEGIN SUPERELEVATION (-0.049 FT./FT.)
STA. 703+88.47 MAX SUPERELEVATION (-0.100 FT./FT.)
STA. 714+49.45 MAX SUPERELEVATION (-0.100 FT./FT.)
RAMP WS STA. 700+43.40 END SUPERELEVATION (-0.020 FT./FT.)

C.L. RAMP ES STA. 716+75.55 =
C.L. RAMP WS STA. 701+07.30, 9' LT.




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTARERO
9-5-14

sadonaldson 9/4/2014 3:21:48 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPES_01.dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 218 | 897 |

2 PLAN AND PROFILE - RAMP NW

N

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 702+00 | 703+90 | LT. = 190 LIN. FT. | 6'-0" | 126.7 |
| 703+00 | | LT. = 122 LIN. FT. | 6'-0" | 81.3 |

CONSTRUCTION LIMITS

CONSTRUCTION LIMITS

MAIN LANE
STA. 696+22.74 TO STA. 700+14.90 LT. LN.
CONSTRUCT 394'-8¾" X 48' BRIDGE
392'-6" CONTINUOUS COMPOSITE PRESTRESSED
BEAM UNIT (5 @ 78'-6")

C.L. RAMP NW STA. 698+00.00 =
C.L. MEDIAN STA. 698+00.00, 58.50' LT.

450' TAPER

C.L. RAMP NW

S 86°59'58" E

FUTURE NOSE

CHICKEN HOUSE

C.L. MEDIAN

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

FUTURE CONSTRUCTION (NOT IN CONTRACT)

APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS

C.L. RAMP EN

STA. 703+00 CONSTRUCT
TYPE RM DROP INLET RT.
(4' X 3' X H=4'0")
24" X 65' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

C.L. MEDIAN STA. 705+80 CONSTRUCT
8' X 6' X 358' R.C. BOX CULVERT
45° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q50 = 467 CFS DA = 105.9 ACRES

RAMP NW

STA. 700+43.22 BEGIN SUPERELEVATION (MATCH MAIN LANES S.E. = 0.046 FT./FT.)
STA. 700+93.22 END SUPERELEVATION (0.020 FT./FT. - REVERSE CROWN)

C.L. RAMP NW STATIONING
STA. 700+32.53 TO STA. 702+76.28 LT.

| GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|
| = 175 LIN. FT. | 1 EACH | 1 EACH |

C.L. MEDIAN
STA. 700+40.33, 57.89' LT. =
C.L. RAMP NW
STA. 700+43.22, 7.50' RT.
ELEV. 1264.55

PVC 701+07.30
ELEV. 1264.74

VC=475.00'
K 100.85

PROFILE GRADE

0.29%

5.00%

TOP 1266.03
INV 1262.03
F.L. 1261.48 LT.

PVI 703+44.80
ELEV. 1268.72

EXISTING GROUND

+43.00 LT.
1215.70

1.02% LEFT DITCH GRADE

+00.00 LT.
1217.30

3.90% LEFT DITCH GRADE

+00.00 LT.
1221.20

6.44% LEFT DITCH GRADE

+90.00 LT.
1227.00

F.L. = 1227.00 LT.
F.L. = 1233.81 RT.

1300 1290 1280 1270 1260 1250 1240 1230 1220

698+00 699+00 700+00 701+00 702+00 703+00 704+00 705+00

sadonaldson 9/4/2014 3:21:49 PM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPNW_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 219 | 897 |

(2) PLAN AND PROFILE - RAMP NW

C.L. RAMP NW STA. 709+47.73, 9.00' LT. =
C.L. RAMP SW STA. 709+47.73

C.L. MEDIAN STA. 705+80 CONSTRUCT
8' X 6' X 358' R.C. BOX CULVERT
45° RT. FWD. SKEW
WITH 3:1 WINGS FT. & RT.
050 = 467 CFS DA = 105.9 ACRES

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

PC 709+47.73

710+00

NOSE STA. 711+11.22

C.L. RAMP SW

STA. 715+65.00 CONSTRUCT
TYPE N2 DI. RT.
12" X 50' Z.C.C.S.P.
OUTLET ON RT.
WITH TYPE A
CONCRETE SPILLWAY

715+00

C.L. RAMP NW

MSE WALL #12

CONSTRUCTION LIMITS

C.L. RAMP NW STATIONING
STA. 714+84.20 TO STA. 715+77.95 RT.= 75 LIN. FT.

| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE I) |
|---|---|---|---|
| | 1EACH | 1EACH | 1EACH |

PT 719+74.21

720+

715+00

710+00

705+00

FUTURE CONSTRUCTION
(NOT IN CONTRACT)

C.L. MEDIAN

720+00

40°20'06"

MSE WALL #13

C.L. RAMP NW STA. 718+73.42 =
C.L. MEDIAN STA. 717+47.37

C.L. RAMP NW
PI = 757+77.76
Δ = 160°45'49.4"RT.
D = 7°00'00"
T = 4830.03
L = 2296.62
PC = 709+47.73
PT = 732+44.35
e = 0.098 '/'
Ls = 285' •
• SEE PROFILE FOR MODS.

STA. 715+92.35 TO STA. 726+94.55
CONSTRUCT 1102'-2½" X 27'-2" BRIDGE
1100'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(110'-170'-132'-130'-124'-2@155'-124')

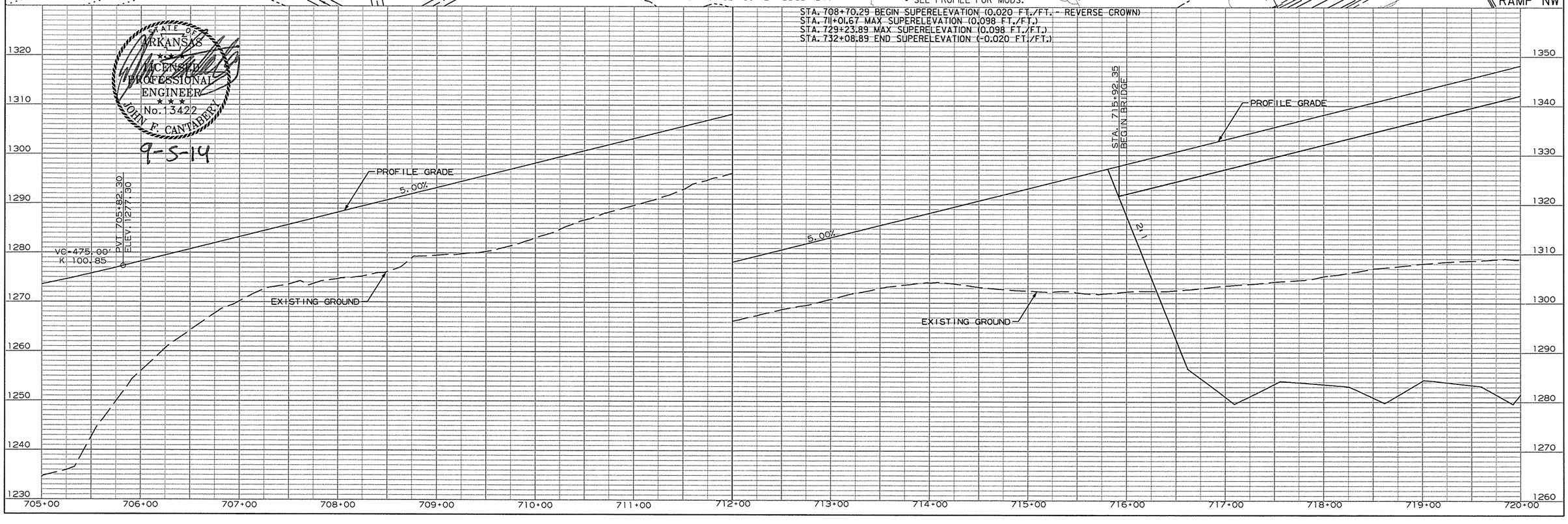
CONSTRUCTION LIMITS

716+28.18

RAMP NW

STA. 708+70.29 BEGIN SUPERELEVATION (0.020 FT./FT. - REVERSE CROWN)
STA. 711+01.67 MAX SUPERELEVATION (0.098 FT./FT.)
STA. 729+23.89 MAX SUPERELEVATION (0.098 FT./FT.)
STA. 732+08.89 END SUPERELEVATION (-0.020 FT./FT.)

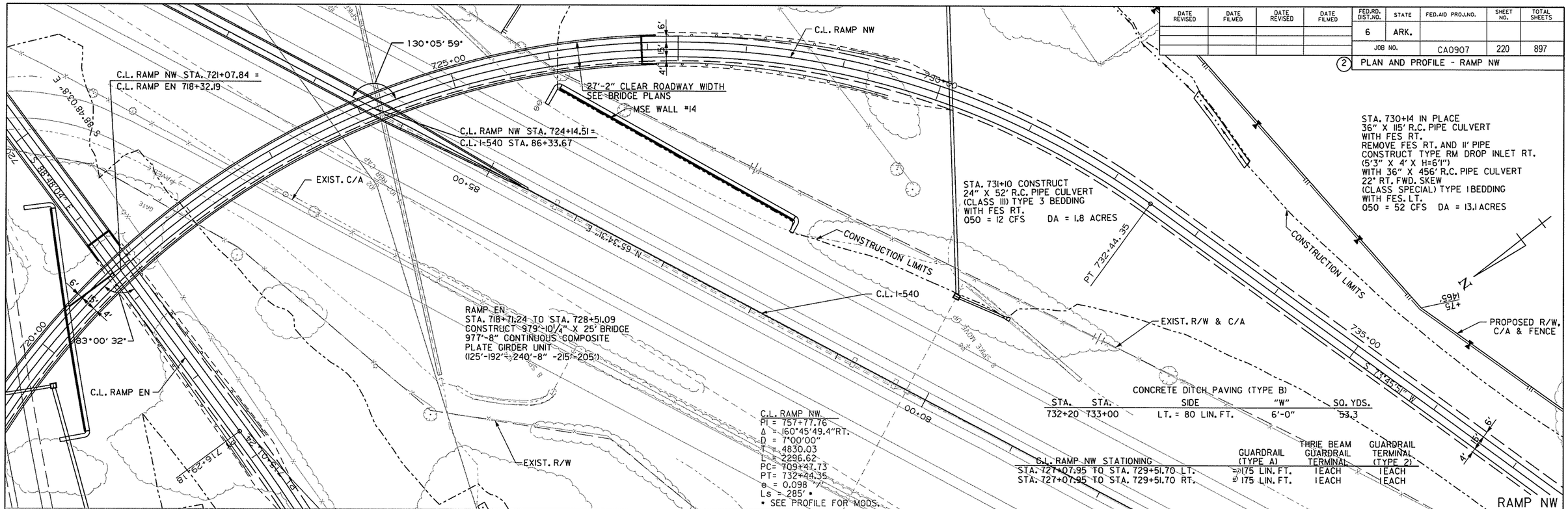
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14




sadonaldson 9/4/2014 3:21:49 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPNW_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 220 | 897 |

(2) PLAN AND PROFILE - RAMP NW




C.L. RAMP NW
PI = 757+77.76
Δ = 160°45'49.4"RT.
D = 7°00'00"
T = 4830.03
L = 2296.62
PC = 709+47.73
PT = 732+44.35
e = 0.098 ft/ft
Ls = 285' *
* SEE PROFILE FOR MODS.

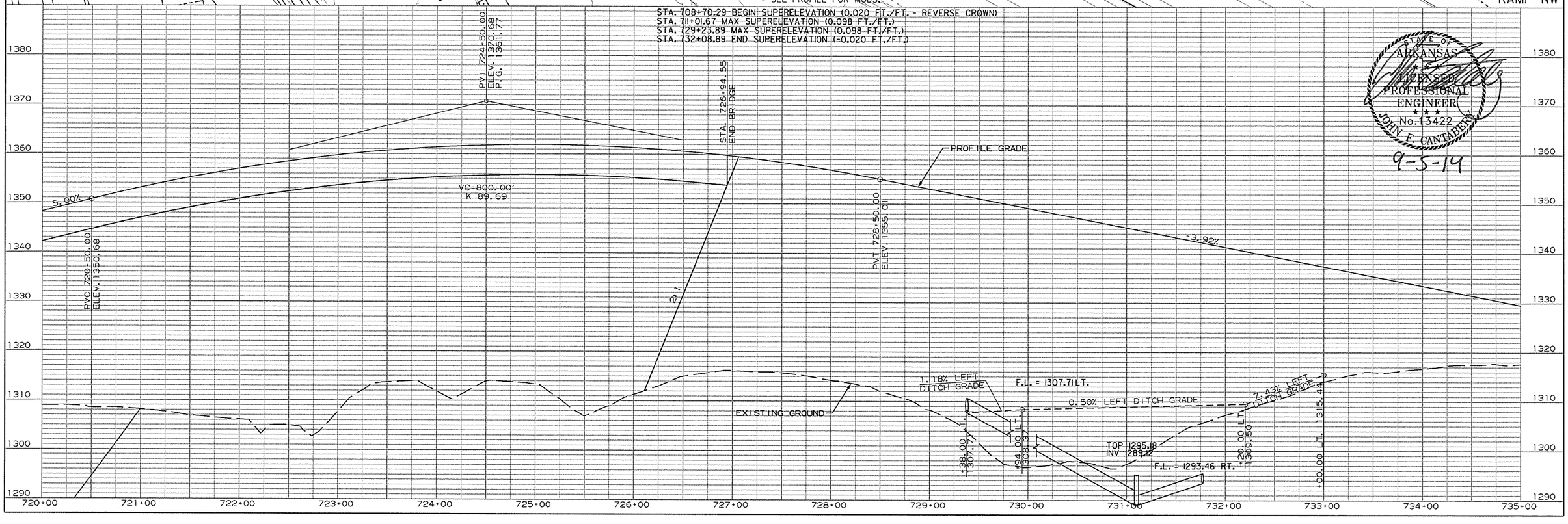
CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 732+20 | 733+00 | LT. = 80 LIN. FT. | 6'-0" | 53.3 |

C.L. RAMP NW STATIONING

| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 727+07.95 TO STA. 729+51.70 LT. | 175 LIN. FT. | 1 EACH | 1 EACH |
| STA. 727+07.95 TO STA. 729+51.70 RT. | 175 LIN. FT. | 1 EACH | 1 EACH |

STA. 708+70.29 BEGIN SUPERELEVATION (0.020 FT./FT. - REVERSE CROWN)
STA. 711+01.67 MAX SUPERELEVATION (0.098 FT./FT.)
STA. 729+23.89 MAX SUPERELEVATION (0.098 FT./FT.)
STA. 732+08.89 END SUPERELEVATION (-0.020 FT./FT.)




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:21:49 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_RAMPNW_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 221 | 897 |

(2) PLAN AND PROFILE - RAMP NW

STA. 740+00 CONSTRUCT
24" X 142' R.C. PIPE CULVERT
7° LT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 10 CFS DA = 2.2 ACRES

STA. 743+25 IN PLACE
36" X 348' R.C. PIPE CULVERT
WITH FES LT.
REMOVE FES LT. AND 39' PIPE
CONSTRUCT TYPE RM DROP INLET RT.
(5'3" X 3' X H=15'3")
WITH 36" X 103' R.C. PIPE CULVERT LT.
30° RT. FWD, SKEW
(CLASS IV) TYPE 3 BEDDING WITH FES

C.L. RAMP NW
PI = 748+11.12
Δ = 10°16'04.2"LT.
D = 3°00'00"
T = 171.59
L = 342.26
PC= 746+39.53
PT= 749+81.79
e = 0.057 '/' •
Ls = 200' •
• SEE PROFILE FOR MODS.

C.L. RAMP NW STA. 749+81.79 =
C.L. I-49 STA. 61+66.50, 58.50' RT.

PROPOSED R/W, C/A & FENCE
CONSTRUCTION LIMITS
EXIST. R/W & C/A
C.L. RAMP NW
C.L. I-49
C.L. RAMP WS
PROPOSED R/W, C/A & FENCE
RAMP NW
S 73°45'51" W
N 65°34'31" E
+75 1465'
+41.24 1650'
+48.41 2096.37' BEGIN PROP. C/A
NOSE +88.53 73.38'
PC 746+39.53
PI 749+81.79
PI 748+11.12
PI 692+01.84
PT 65+82.27
PT 692+98.70
735+00
740+00
745+00
750+00
765+00
769+00
6'
15'
4'
SPIKE MOVE UP
Curb & Gutter
PAVED SHOULDER

STA. 746+45.39 BEGIN SUPERELEVATION (-0.020 FT./FT.)
STA. 746+61.61 END SUPERELEVATION (MATCH I-540 S.E. = -0.023 FT./FT.)

PROFILE GRADE
EXISTING GROUND
-3.92%
-1.12% LEFT DITCH GRADE
25.00% RIGHT DITCH GRADE
-1.11% RIGHT DITCH GRADE
-1.01% LEFT DITCH GRADE
0.29% RIGHT DITCH GRADE
-0.27%
0.53% LEFT DITCH GRADE

+15.00 LT. 1290.75
+92.00 RT. 1293.66
+00.00 RT. 1295.66
+09.00 LT. 1289.70
F.L. = 1289.70 LT.
F.L. = 1293.66 RT.
+93.00 LT. 1286.84
+49.00 RT. 1291.78
TOP 1291.78
INV 1276.57
F.L. 1286.50 LT.
PVC 742+00.00
ELEV. 1302.10
VC=400.00'
K 109.59
PVI 744+00.00
ELEV. 1294.27
1296.09
PVT 746+00.00
ELEV. 1293.73
+00.00 RT. 1292.90
+50.00 LT. 1288.74
C.L. I-49 STA. 64+88.53 73.38' RT. •
RAMP NW STA. 746+61.61, 7.50' RT.
ELEV. 1293.56

1340 1330 1320 1310 1300 1290 1280 1270 1260 1250

735+00 736+00 737+00 738+00 739+00 740+00 741+00 742+00 743+00 744+00 745+00 746+00 747+00 748+00 749+00 749+82

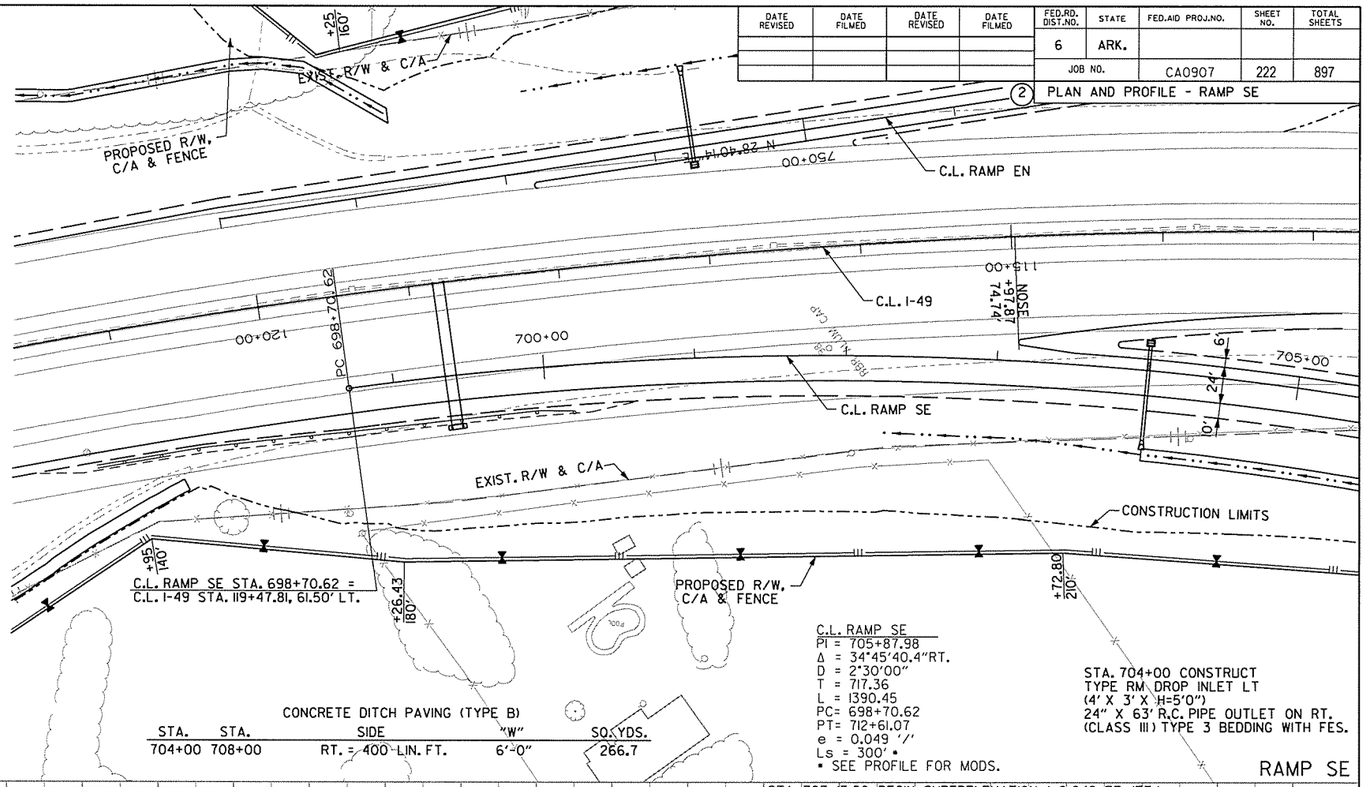
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:21:49 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPNW_04.dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 222 | 897 |

(2) PLAN AND PROFILE - RAMP SE




CONCRETE DITCH PAVING (TYPE B)

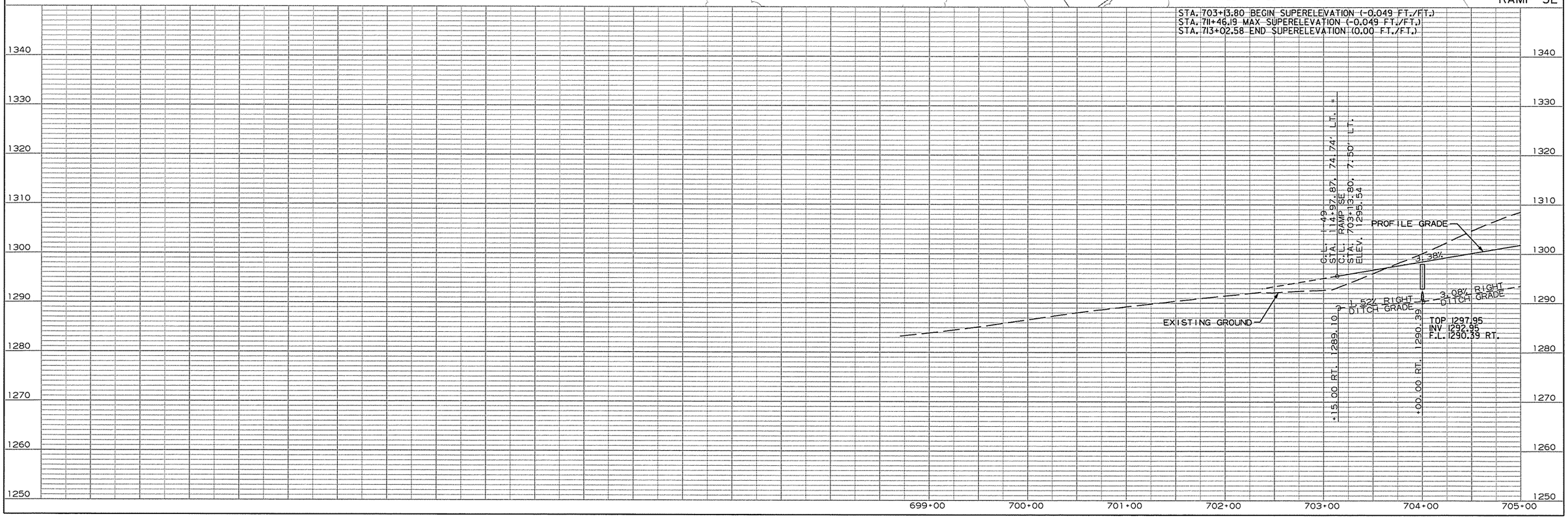
| STA. | STA. | SIDE | "W" | SQ.YDS. |
|---|---|---|---|---|
| 704+00 | 708+00 | RT. = 400 LIN. FT. | 6'-0" | 266.7 |

C.L. RAMP SE
PI = 705+87.98
Δ = 34°45'40.4"RT.
D = 2°30'00"
T = 717.36
L = 1390.45
PC= 698+70.62
PT= 712+61.07
e = 0.049 '/'
Ls = 300' *
* SEE PROFILE FOR MODS.

STA. 704+00 CONSTRUCT TYPE RM DROP INLET LT (4' X 3' X H=5'0")
24" X 63' R.C. PIPE OUTLET ON RT. (CLASS III) TYPE 3 BEDDING WITH FES.

RAMP SE

STA. 703+13.80 BEGIN SUPERELEVATION (-0.049 FT./FT.)
STA. 711+46.19 MAX SUPERELEVATION (-0.049 FT./FT.)
STA. 713+02.58 END SUPERELEVATION (0.00 FT./FT.)




cggervasini 9/5/2014 11:50:24 AM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPSE_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 223 | 897 |

2 PLAN AND PROFILE - RAMP SE

C.L. RAMP SE
PI = 705+87.98
Δ = 34°45'40.4" RT.
D = 2°30'00"
T = 717.36
L = 1390.45 •
PC= 698+70.62
PT= 712+61.07
e = 0.049 '/'
Ls = 300' •
• SEE PROFILE FOR MODS.

C.L. RAMP SE
PI = 735+72.18
Δ = 133°36'05.5" LT.
D = 6°00'00"
T = 2228.10
L = 2226.69
PC= 713+44.08
PT= 735+70.77
e = 0.092 '/'
Ls = 350' •
• SEE PROFILE FOR MODS.

STA. 713+00 CONSTRUCT
24" X 104' R.C. PIPE CULVERT LT.
(CLASS V) TYPE 3 BEDDING
WITH FES

STA. 707+00 CONSTRUCT
TYPE RM DROP INLET LT.
(4' X 3' X H=3'0")
24" X 104' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 704+00 | 708+00 | RT. = 400 LIN. FT. | 6'-0" | 266.7 |

STA. 708+81.66 TO STA. 711+17.25
CONSTRUCT 235'-7 1/16" X 40' BRIDGE
233'-0" CONTINUOUS COMPOSITE
W-BEAM UNIT (66'-101'-66')

STA. 712+31 IN PLACE
8' X 4' X 43' R.C. BOX CULVERT
WITH 31 WINGS LT. AND RT.
REMOVE 142' RT.
RETAIN & EXTEND 512' RT.
WITH 15° RT. FWD. SKEW & CONTRA-COSTA
ENERGY DISSIPATOR RT.
Q50 = 240 CFS DA = 130.3 ACRES

C.L. RAMP SE STA. 709+99.93 =
C.L. GOAD SPRINGS RD. STA. 52+15.36

C.L. RAMP SE STA. 713+43.94, 9.00 RT. =
C.L. RAMP SW STA. 730+94.09

STA. 703+13.80 BEGIN SUPERELEVATION (-0.049 FT./FT.)
STA. 711+46.19 MAX SUPERELEVATION (-0.049 FT./FT.)
STA. 713+02.58 END SUPERELEVATION (0.00 FT./FT.)

STA. 713+02.58 BEGIN SUPERELEVATION (0.00 FT./FT.)
STA. 715+96.19 MAX SUPERELEVATION (0.092 FT./FT.)
STA. 732+64.39 MAX SUPERELEVATION (0.092 FT./FT.)
STA. 736+14.39 END SUPERELEVATION (-0.020 FT./FT.)

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 712+35 (GOAD SPRINGS AC. RD.) | INTERMITTENT | 1258 FT. MSL |

C.L. MEDIAN STATIONING
STA. 706+36.52 TO STA. 708+80.27 LT.
STA. 706+32.54 TO STA. 708+51.29 RT.

| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| = | 175 LIN. FT. | 1 EACH | 1 EACH |
| = | 150 LIN. FT. | 1 EACH | 1 EACH |

PROFILE GRADE
VC=300.00'
K 217.39
PVC 706+08.03
ELEV. 1305.49
3.38%
3.06% RIGHT DITCH GRADE
6.40% RIGHT DITCH GRADE
EXISTING GROUND
STA. 708+81.66 BEGIN BRIDGE
STA. 711+17.25 END BRIDGE
PVT 709+08.03
ELEV. 1317.69
2.4:1
1.4:1
PVI 707+58.03
ELEV. 1310.56
P.G. 1311.07
+00.00 RT. 1306.03
+00.00 RT. 1299.63
TOP 1303.23
INV 1300.23
F.L. 1299.63 RT.
4.76%
STA. 715+09.99
ELEV. 1351.10
F.L. 1294.67 LT.
F.L. 1264.94 LT.
F.L. = 1246.90 RT.

705+00 706+00 707+00 708+00 709+00 710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00

1350 1340 1330 1320 1310 1300 1290 1280 1270 1260

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

RAMP SE

sadonaldson 9/4/2014 3:21:50 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPSE_02.dgn
REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 224 | 897 |

2 PLAN AND PROFILE - RAMP SW

N

STA. 711+50 CONSTRUCT TYPE RM DROP INLET RT. (4' X 3' X H=5'0")
24" X 50' R.C. PIPE OUTLET ON LT. (CLASS III) TYPE 3 BEDDING WITH FES.

C.L. RAMP SW STA. 709+47.73 = C.L. RAMP NW STA. 709+47.73, 9.00' LT.

C.L. RAMP SW
PI = 712+47.80
Δ = 3°00'00.0"RT.
D = 0°30'00"
T = 300.07
L = 600.00
PC= 709+47.73
PT= 715+47.73
e = NA•
Ls = NA•
• SEE PROFILE FOR MODS.

PROPOSED R/W, C/A & FENCE

+80 360'

+33.17 420'

+15 525'

+30 620'

PROPOSED C/A & FENCE

CONSTRUCTION LIMITS

PC 709+47.73

PI 712+47.80

PT 715+47.73

710+00

715+00

720+00

S 86°59'58" E 20.2'

S 83°59'58" E

6' 24' 4'

6' 15' 4'

NOSE 711.94 11.22'

C.L. RAMP SW

CONSTRUCTION LIMITS

LEVEE

8 SPIKE MOVE UP

1129

C.L. MEDIAN

RAMP NW
STA. 715+92.35 TO STA. 726+94.55
CONSTRUCT 1102'-2½" X 27'-2" BRIDGE
1100'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(110'-170'-132'-130'-124'-2@155'-124')

C.L. RAMP NW

715+00

MSE WALL #12

POND

CONSTRUCTION LIMITS

STA. 717+75 CONSTRUCT
24" X 404' R.C. PIPE CULVERT
8° LT. FWD. SKEW
(CLASS SPECIAL) TYPE 1 BEDDING
WITH FES LT. & RT.
Q50 = 15 CFS DA = 4.3 ACRES

RAMP SW

STA. 708+70.29 BEGIN SUPERELEVATION (0.02 FT./FT. - REVERSE CROWN)
STA. 710+79.26 MAX SUPERELEVATION (0.04 FT./FT.)
STA. 714+47.73 MAX SUPERELEVATION (0.04 FT./FT.)
STA. 716+47.73 END SUPERELEVATION (=0.02 FT./FT.)

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 711+50 | | LT. = 38 LIN. FT. | 6'-0" | 25.3 |

STA. 719+29.07 BEGIN SUPERELEVATION (-0.020 FT./FT.)
STA. 722+29.07 MAX SUPERELEVATION (=0.078 FT./FT.)
STA. 726+23.89 MAX SUPERELEVATION (-0.078 FT./FT.)
STA. 729+23.89 END SUPERELEVATION (0.0156 FT./FT.)

VC=960.00'
K 84.88

PROFILE GRADE

6.00%

PVC 718+60.00
ELEV. 1350.31

C.L. RAMP NW
STA. 710+77.94, 11.22' LT. =
C.L. RAMP SW
STA. 710+79.26, 7.50' RT.
ELEV. 1303.47

TOP 1307.00
INV 302.00
F.L. 301.71 LT.

5' ROCK FILL DRAINAGE/STABILIZING LAYER

EXISTING GROUND

F.L. = 1290.95 LT.
F.L. = 1293.08 RT.

1350 1340 1330 1320 1310 1300 1290 1280 1270 1260

710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00

sadonaldson 9/4/2014 3:21:51 PM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_RAMPSW_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 225 | 897 |

(2) PLAN AND PROFILE - RAMP SW

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

CONSTRUCTION LIMITS

STA. 722+57 CONSTRUCT
36" X 588' R.C. PIPE CULVERT
9° LT. FWD. SKEW
(CLASS SPECIAL) TYPE I BEDDING
WITH FES LT. & RT.
Q50 = 52 CFS DA = 8.2 ACRES

PROPOSED C/A & FENCE

C.L. RAMP SW
PI = 725+16.32
Δ = 31°45'47.5"LT.
D = 4°30'00"
T = 362.25
L = 705.85
PC = 721+54.07
PT = 728+59.92
e = 0.078 ft/ft
Ls = 300'
• SEE PROFILE FOR MODS.

PROPOSED R/W

C.L. GOAD SPRINGS RD. ACCESS RD.

C.L. RAMP SW STA. 730+94.09 =
C.L. RAMP SE STA. 713+43.94, 9.00' RT.

CONSTRUCTION LIMITS

C.L. RAMP SW

C.L. RAMP SE

FUTURE CONSTRUCTION
(NOT IN CONTRACT)

EXISTING C/A

EXISTING R/W

CANOPY

PARKING

PAVED

CONCRETE

8 SPIKE MOVE UP

RAMP SW

STA. 719+29.07 BEGIN SUPERELEVATION (-0.020 FT./FT.)
STA. 722+29.07 MAX SUPERELEVATION (-0.078 FT./FT.)
STA. 726+23.89 MAX SUPERELEVATION (-0.078 FT./FT.)
STA. 729+23.89 END SUPERELEVATION (0.056 FT./FT.)

STA. 729+23.89 BEGIN SUPERELEVATION (0.0156 FT./FT.)
STA. 730+78.62 END SUPERELEVATION (0.013 FT./FT.)

6.00%

PROFILE GRADE

PVI 723+40.00
ELEV. 1379.11
P.G.T. 1365.54

VC=960.00'
K 84.88

PVT 728+20.00
ELEV. 1353.62

C.L. RAMP SE STA. 716+09.99, 40.46' RT. = C.L. RAMP SW STA. 728+20.56, 7.50' RT.
ELEV. 1353.59

20' ROCK FILL DRAINAGE/STABILIZING LAYER

5' ROCK FILL DRAINAGE/STABILIZING LAYER

5' ROCK FILL DRAINAGE/STABILIZING LAYER

EXISTING GROUND

F.L. = 1281.66 LT.
F.L. = 1287.16 RT.

1370 1360 1350 1340 1330 1320 1310 1300 1290 1280

720+00 721+00 722+00 723+00 724+00 725+00 726+00 727+00 728+00 729+00 730+00

sadonaldson 9/4/2014 3:21:51 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_PP_RAMPSW_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 226 | 897 |

(2) PLAN AND PROFILE - RAMP WS

CONCRETE DITCH PAVING REMOVAL (TYPE B)

| STA. | STA. | SIDE | SQ. YDS. |
|---|---|---|---|
| 699+50 | 699+85 | RT. | 16.6 |

C.L. RAMP WS
PI = 692+01.84
Δ = 5°49'00.3"LT.
D = 3°00'00"
T = 97.03
L = 193.89
PC= 691+04.81
PT= 692+98.70
e = 0.057 '/' •
Ls = 300' •
• SEE PROFILE FOR MODS.

STA. 694+93 IN PLACE
DROP INLET RT.
WITH 18" X 161' R.C. PIPE OUTLET
8° LT. FWD. SKEW
WITH FES. LT.
REMOVE FES AND
CONSTRUCT TYPE ST
JUNCTION BOX (4' X 3' X 25' 10")
WITH 24" X 180' R.C. PIPE CULVERT
36° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT.

STA. 696+16 IN PLACE
36" X 348' R.C. PIPE CULVERT
37° RT. FWD. SKEW
WITH FES. LT.
REMOVE FES AND
EXTEND 36" X 84' R.C. PIPE CULVERT
37° RT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES LT.
050 = 53 CFS DA = 18.5 ACRES
36" R.C. PIPE = 84 LIN. FT.
36" FES = 1EA.

STA. 697+88 CONSTRUCT
TYPE RM DROP INLET RT.
(4' X 3' X H=3'0")
24" X 130' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

C.L. RAMP WS STA. 691+04.81 =
C.L. I-49 STA. 61+05.02, 58.50' LT.

700' ACCELERATION LANE

440' TAPER

+48.71 2006.54' END PROP. C/A

PC 691+04.81

PI 692+01.84

PT 692+98.70

EXIST. R/W & C/A

8 SPIKE MOVE UP

695+00

60+00

65+00

70+00

75+00

N 57°22'20" E

N 65°34'31" E

S 13°45'51" W

NOSE +632.21 58.70'

NOSE +688.53 73.38'

PT 65+82.27

PI 748+11.12

PT 749+81.79

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

C.L. RAMP WS STA. 701+07.30, 9.00' LT.
C.L. RAMP ES STA. 716+75.55

C.L. RAMP ES

EXIST. R/W

PT 716+75.55

NOSE +525.35 111.19'

FUTURE CONSTRUCTION (NOT IN CONTRACT)

EXIST. C/A

CONSTRUCTION LIMITS

C.L. I-49

C.L. RAMP NW

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 693+50 | 697+33 | LT. = 383 LIN. FT. | 6'-0" | 255.3 |

+48.41 2096.37' BEGIN PROP. C/A

I-49 STA. 59+92.52 (MATCH I-49 S.E. = 0.016 FT./FT.)
STA. 691+42.31 MAX SUPERELEVATION (-0.036 FT./FT.)
STA. 692+63.37 MAX SUPERELEVATION (-0.036 FT./FT.)
STA. 693+63.37 END SUPERELEVATION (-0.020 FT./FT.)

RAMP WS

PROFILE GRADE

EXISTING GROUND

-0.41%

2.54% LEFT DITCH GRADE

7.13% LEFT DITCH GRADE

12.00% LEFT DITCH GRADE

8.00% L. D. GR.

TOP 1282.90
INV 1257.08
F.L. 1246.89 LT.

F.L. = 1270.60 LT.

TOP 1288.20
INV 1285.20
F.L. 1284.00 LT.

+33.00 LT. 1284.00

+100.00 LT. 1288.24

+45.00 LT. 1270.60

+00.00 LT. 1267.00

+00.00 LT. 1255.00

+50.00 LT. 1246.90

C.L. I-49 STA. 62+63.21, 58.70' LT. =
C.L. RAMP WS STA. 692+63.37, 7.50' RT.
ELEV. 1295.57

STA. 702+25.35
ELEV. 1291.63

FUTURE CONSTRUCTION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230

691+05 692+00 693+00 694+00 695+00 696+00 697+00 698+00 699+00 700+00 701+00 702+00 703+00 704+00 705+00

sadonaldson 9/4/2014 3:21:52 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_RAMPWS_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 227 | 897 |

(2) PLAN AND PROFILE - I-49

STA. 46+67 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 296' R.C. PIPE CULVERT
TO DROP INLET AT STA. 43+67 LT.
RETAIN

STA. 49+40 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 86' R.C. PIPE CULVERT LT.
& 18" X 296' R.C. PIPE CULVERT
TO DROP INLET AT STA. 46+67 LT.
RETAIN

STA. 52+67 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 323' R.C. PIPE CULVERT
TO DROP INLET AT STA. 49+40 LT.
RETAIN

STA. 55+67 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 296' R.C. PIPE CULVERT
TO DROP INLET AT STA. 52+67 LT.
RETAIN

STA. 58+67 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 296' R.C. PIPE CULVERT
TO DROP INLET AT STA. 55+67 LT.
RETAIN

EXIST. R/W & C/A

300' TAPER

700' ACCELERATION LANE

CONSTRUCTION LIMITS

PC 54+26.00

C.L. I-49

N 59°47'38" E

EXIST. R/W & C/A

STA. 56+80 INSTALL
OVERHEAD HIGHWAY SIGN
I-49 RT. LANES
SEE SIGNING PLANS

200' TAPER

800' AUXILIARY LANE

| C.L. MEDIAN STATIONING | GUARDRAIL (TYPE A) | GUARDRAIL TERMINAL (TYPE 1) | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 53+86 TO STA. 57+61 RT. | = 325 LIN. FT. | 1 EACH | 1 EACH |

C.L. I-49
PI = 60+04.63
Δ = 5°46'52.8"RT.
D = 0°30'00"
T = 578.62
L = 1156.27
PC= 54+26.00
PT= 65+82.27
e = MATCH EXISTING
Ls = NA

I-49

NOTCH AND WIDEN LT LANES

NOTCH AND WIDEN RT LANES

EXISTING GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:21:54 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_I540_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 228 | 897 |

2 PLAN AND PROFILE - I-49

C.L. I-49 STA. 61+05.02, 58.50' LT. =
C.L. RAMP WS STA. 691+04.81

PROPOSED R/W, C/A & FENCE

CONSTRUCTION LIMITS

EXIST. R/W

C.L. RAMP WS

700' ACCELERATION LANE

440' TAPER

EXIST. R/W & C/A

EXIST. C/A

N 51°22'20" E

N 65°34'31" E

S 73°45'51" W

C.L. I-49

C.L. RAMP NW

800' AUXILIARY LANE

EXIST. R/W & C/A

CONSTRUCTION LIMITS

PROPOSED R/W, C/A & FENCE

EXIST. R/W & C/A

CONSTRUCTION LIMITS

PAVED SHOULDER

8 SPIKE MOVE UP

T 104 RBR CAP

N

I-49

C.L. I-49
PI = 60+04.63
Δ = 5°46'52.8"RT.
D = 0°30'00"
T = 578.62
L = 1156.27
PC= 54+26.00
PT= 65+82.27
e = MATCH EXISTING
Ls = NA

C.L. I-49 STA. 61+66.50, 58.50' RT. =
C.L. RAMP NW STA. 749+81.79

STA. 63+87 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 98' R.C. PIPE CULVERT
TO DROP INLET AT STA. 64+89 LT.
RETAIN

+48.41
2096.37
BEGIN
PROP. C/A

STA. 64+89 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 161' R.C. PIPE CULVERT LT.
RETAIN (PIPE MODIFIED, SEE RAMP WS)

STA. 66+17 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 124' R.C. PIPE CULVERT
TO DROP INLET AT STA. 64+89 LT.
RETAIN

STA. 67+21 IN PLACE
18" X 348' R.C. PIPE CULVERT.
RETAIN & MODIFY
(SEE RAMPS NW & WS)

STA. 69+53 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 332' R.C. PIPE CULVERT
TO DROP INLET AT STA. 66+17 LT.
RETAIN

STA. 72+91 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 334' R.C. PIPE CULVERT
TO DROP INLET AT STA. 69+53 LT.
RETAIN

NOTCH AND WIDEN LT LANES +63.21

NOTCH AND WIDEN RT LANES +14.59

-0.7% RIGHT DITCH GRADE

EXISTING GROUND

+00.00 RT. 1289.39

+91.00 RT. 1288.74

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

sadonaldson 9/4/2014 3:21:54 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_I540_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 229 | 897 |

2 PLAN AND PROFILE - I-49

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN F. CANTABERY
No. 13422
9-5-14

EXIST. R/W

STA. 76+29 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 334' R.C. PIPE CULVERT
TO DROP INLET AT STA. 72+91 LT.
RETAIN

STA. 80+35 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 10' R.C. PIPE CULVERT
TO DROP INLET AT STA. 80+22.
RETAIN

STA. 80+82 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 43' R.C. PIPE CULVERT
TO DROP INLET AT STA. 80+35.
RETAIN

C.L. I-49 STA. 86+33.67 =
C.L. RAMP NW STA. 724+14.51

EXIST. C/A

160' TAPER

STA. 84+57.00

STA. 86+17.00

75+00 80+00 85+00 90+00

N 65°34'31" E

C.L. I-49

STA. 84+57.00 BEGIN
CONCRETE BARRIER WALL

10' 36' 10' 36'

S08°13'26"E
612.23'

130°05'59"

725.00

MSE WALL #14

EXIST. R/W & C/A

EXIST. C/A

STA. 80+82 IN PLACE
TYPE ST DROP INLET 3' RT. OF C.L
WITH 18" X 2' R.C. PIPE CULVERT
TO DROP INLET AT STA. 80+35 LT.
RETAIN

STA. 80+22 IN PLACE
TYPE R DROP INLET IN MEDIAN C.L
WITH 36" X 317' R.C. PIPE CULVERT.
RETAIN & MODIFY (SEE RAMP NE)

PT 732+44.35

STA. 80+35 IN PLACE
TYPE ST DROP INLET 3' RT. OF C.L
WITH 18" X 2' R.C. PIPE CULVERT
TO DROP INLET AT STA. 80+35 LT.
RETAIN

C.L. RAMP NW

EXIST. R/W

RAMP NW
STA. 715+92.35 TO STA. 726+94.55
CONSTRUCT 1102'-2½" X 27'-2" BRIDGE
1100'-0" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(110'-170'-132'-130'-124'-155'-155'-124')

I-49

STA. 84+24 IN PLACE
TYPE ST DROP INLET 3' LT. OF C.L
WITH 18" X 338' R.C. PIPE CULVERT
TO DROP INLET AT STA. 80+82.
RETAIN

STA. 84+58 IN PLACE
TYPE ST DROP INLET 3' RT. OF C.L
WITH 18" X 30' R.C. PIPE CULVERT
TO DROP INLET AT STA. 84+24 LT.
RETAIN

STA. 86+25 IN PLACE
48" X 448' R.C. PIPE CULVERT
RETAIN

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 82+04 | 84+76 | RT. = 310 LIN. FT. | 4'-0" | 137.8 |

EXISTING GROUND

1350 1340 1330 1320 1310 1300 1290 1280 1270 1260

75+00 76+00 77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00

sadonaldson 9/4/2014 3:26:54 PM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_I540_03.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 230 | 897 |

(2) PLAN AND PROFILE - I-49

C.L. I-49
PI = 119+05.09
Δ = 63°34'56.9"LT.
D = 1°15'00"
T = 2841.02
L = 5086.60
PC= 90+64.07
PT= 141+50.66
e = MATCH EXISTING
Ls = NA

C.L. I-49 STA. 91+81.77 =
C.L. MEDIAN STA. 723+56.48

C.L. I-49 STA. 93+22.15 =
C.L. RAMP EN STA. 724+29.80

C.L. MEDIAN

C.L. RAMP EN

S 88°48'03.8" E

PC 90+64.07

36'

10'

36'

90+00

N 65°38'31" E

28°50'59"

56°11'44"

725+00

160' TAPER

STA. 95+57

STA. 97+17

95+00

100+00

105+00

C.L. I-49

STA. 97+17.00 END
CONCRETE BARRIER WALL

EXIST. R/W & C/A

EXIST. R/W

EXIST. C/A

RAMP EN
STA. 718+71.24 TO STA. 728+51.09
CONSTRUCT 979'-10 1/4" X 25' BRIDGE
977'-8" CONTINUOUS COMPOSITE
PLATE GIRDER UNIT
(125'-192'- 240'-8" -215'-205')

EXIST. C/A

SILENT GROVE RD.

S 88°48'03"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

I-49

STA. 97+42 IN PLACE
TYPE ST DROP INLET 3' RT. OF C.L
WITH 18" X 271' R.C. PIPE CULVERT
TO DROP INLET AT STA. 100+17 RT.
RETAIN

STA. 100+17 IN PLACE
TYPE ST DROP INLET 3' RT. OF C.L
WITH 18" X 266' R.C. PIPE CULVERT
TO DROP INLET AT STA. 102+87 RT.
RETAIN

STA. 102+87 IN PLACE
TYPE ST DROP INLET 3' RT. OF C.L
WITH 18" X 265' R.C. PIPE CULVERT
TO DROP INLET AT STA. 105+56 RT.
RETAIN

EXISTING GROUND

1350 1340 1330 1320 1310 1300 1290 1280 1270 1260

90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00

sadonaldson 9/4/2014 3:21:55 PM
WORKSPACE: AHTD
L:\2005\059180 - AHTD Springdale Bypass\Drawings\VRWY 12 TO I-540\SB6_PP_I540_04.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 231 | 897 |

(2) PLAN AND PROFILE - I-49

C.L. I-49
PI = 119+05.09
Δ = 63°34'56.9"LT.
D = 1°15'00"
T = 2841.02
L = 5086.60
PC= 90+64.07
PT= 141+50.66
e = MATCH EXISTING
Ls = NA

C.L. MEDIAN STATIONING
STA. 117+98 TO STA. 121+23 LT.

| GUARDRAIL (TYPE A) | GUARDRAIL TERMINAL (TYPE I) | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|
| = 275 LIN. FT. | 1 EACH | 1 EACH |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

I-49

| STA. 105+56 IN PLACE | STA. 105+56 IN PLACE | STA. 108+67 IN PLACE | STA. 110+87 IN PLACE | STA. 113+77 IN PLACE | STA. 116+57 IN PLACE | STA. 119+37 IN PLACE |
|---|---|---|---|---|---|---|
| TYPE R DROP INLET IN MEDIAN WITH 8' X 4' X 43' R.C. BOX CULVERT RETAIN & MODIFY (SEE RAMP NE) | TYPE ST DROP INLET 7.67' RT OF C.L. WITH 24" X 7' R.C. PIPE CULVERT TO DROP INLET AT STA. 105+56 IN MEDIAN RETAIN | TYPE ST DROP INLET 5' RT OF C.L. WITH 18" X 216' R.C. PIPE CULVERT TO DROP INLET AT STA. 110+87 RT RETAIN | TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 286' R.C. PIPE CULVERT TO DROP INLET AT STA. 113+77 RT RETAIN | TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 276' R.C. PIPE CULVERT TO DROP INLET AT STA. 116+57 RT RETAIN | TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 276' R.C. PIPE CULVERT TO DROP INLET AT STA. 119+37 RT RETAIN | TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 276' R.C. PIPE CULVERT TO DROP INLET AT STA. 122+17 RT RETAIN |

sadonaldson 9/4/2014 3:21:55 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_1540_05.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 232 | 897 |

(2) PLAN AND PROFILE - I-49

C.L. I-49 STA. 119+47.81, 61.50' LT. =
C.L. RAMP SE STA. 698+70.62
C.L. I-49 STA. 119+52.00

STA. 122+58 IN PLACE
TYPE T DROP INLET IN MEDIAN
RETAIN

STA. 122+60 IN PLACE
TRIPLE 8' x 7' x 293' R.C. BOX CULVERT
8° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
RETAIN & EXTEND 20' LT. AND 28' RT.
Q50 = 1637 CFS D.A. = 1037.3 ACRES
SPAN = 27.24'

C.L. I-49
PI = 119+05.09
Δ = 63°34'56.9"LT.
D = 1°15'00"
T = 2841.02
L = 5086.60
PC= 90+64.07
PT= 141+50.66
e = MATCH EXISTING
Ls = NA

16' GATE
100' SHOULDER TAPER
PROPOSED R/W, C/A & FENCE
1500' AUXILIARY LANE
CONSTRUCTION LIMITS
EXIST. R/W & C/A
EXIST. R/W
90.06 155' PROP R/W & C/A
300' TAPER
EXIST. C/A
STA. 134+20 TO STA. 137+00 CONSTRUCT REINFORCED CONCRETE RETAINING WALL SEE STANDARD DRAWING SI-2
C.L. RAMP EN
150' TAPER
C.L. I-49 STA. 120+16.50, 61.50' RT. =
C.L. RAMP EN STA. 753+90.69
C.L. I-49
RCP
ALUM CAP
85SPK
DROP INLET

CONCRETE DITCH PAVING REMOVAL (TYPE B)

| STA. | STA. | SIDE | SQ. YDS. |
|---|---|---|---|
| 119+05 | 122+00 | RT. | 166.6 |
| 123+75 | 125+25 | RT. | 81.1 |

STA. 126+67 IN PLACE
TYPE ST DROP INLET 3' RT OF C.L.
WITH 18" X 261' R.C. PIPE CULVERT
TO DROP INLET AT STA. 124+02 RT
RETAIN

STA. 129+17 IN PLACE
TYPE ST DROP INLET 3' RT OF C.L.
WITH 18" X 246' R.C. PIPE CULVERT
TO DROP INLET AT STA. 126+67 RT
RETAIN

I-49

STA. 122+17 IN PLACE
TYPE ST DROP INLET 3' RT OF C.L.
WITH 18" X 37' R.C. PIPE CULVERT
TO DROP INLET AT STA. 122+58 IN MEDIAN
RETAIN

STA. 123+17 IN PLACE
TYPE ST DROP INLET 3' RT OF C.L.
WITH 18" X 55' R.C. PIPE CULVERT
TO DROP INLET AT STA. 122+58 IN MEDIAN
RETAIN

STA. 124+02 IN PLACE
TYPE ST DROP INLET 3' RT OF C.L.
WITH 18" X 81' R.C. PIPE CULVERT
TO DROP INLET AT STA. 123+17 IN MEDIAN
RETAIN

STA. 134+17 IN PLACE
TYPE ST DROP INLET 3' RT OF C.L.
WITH 18" X 246' R.C. PIPE CULVERT
TO DROP INLET AT STA. 136+67 RT
RETAIN

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 119+00 | 122+00 | RT. = 300 LIN. FT. | 6'-0" | 200.0 |
| 122+55 | 125+15 | RT. = 260 LIN. FT. | 6'-0" | 173.3 |
| 120+65 | 124+20 | LT. = 355 LIN. FT. | 6'-0" | 236.7 |

NOTCH AND WIDEN LT. LANES
NOTCH AND WIDEN RT. LANES
EXISTING GROUND
-0.50% RIGHT DITCH GRADE
-7.46% DITCH RIGHT GRADE
+00.00 RT. 1264.38
+00.00 RT. 1256.92
F.L. = 1247.98 LT.
F.L. = 1251.06 RT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:21:55 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_I540_06.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 233 | 897 |

(2) PLAN AND PROFILE - I-49

C.L. I-49
PI = 119+05.09
Δ = 63°34'56.9"LT.
D = 1°15'00"
T = 2841.02
L = 5086.60
PC= 90+64.07
PT= 141+50.66
e = MATCH EXISTING
Ls = NA

C.L. HWY. 264 RAMP I
PI = 144+92.87
Δ = 05°10'31.9"RT.
D = 3°00'00"
T = 86.32
L = 172.52
PC= 144+06.55
PT= 145+79.07
e = MATCH EXISTING
Ls = NA

STA. 134+20 TO STA. 137+00 CONSTRUCT REINFORCED CONCRETE RETAIING WALL SEE STANDARD DRAWING SI-2

STA. 136+67 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 246' R.C. PIPE CULVERT TO DROP INLET AT STA. 139+17 RT RETAIN

STA. 139+17 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 246' R.C. PIPE CULVERT TO DROP INLET AT STA. 141+67 RT RETAIN

STA. 141+67 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 316' R.C. PIPE CULVERT TO DROP INLET AT STA. 144+87 RT RETAIN

STA. 144+87 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 76' R.C. PIPE CULVERT TO DROP INLET AT STA. 145+67 RT RETAIN

STA. 145+67 IN PLACE TYPE ST DROP INLET 3' LT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 145+67 RT RETAIN

STA. 146+67 IN PLACE TYPE ST DROP INLET 3' LT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 146+67 RT RETAIN

STA. 146+67 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. ON EXISTING R.C. BOX CULVERT RETAIN

STA. 146+73 IN PLACE TRIPLE 12' X 10' X 336' R.C. BOX CULVERT RETAIN

STA. 149+67 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 149+67 LT RETAIN

STA. 149+67 IN PLACE TYPE ST DROP INLET 3' LT OF C.L. WITH 18" X 296' R.C. PIPE CULVERT TO DROP INLET AT STA. 146+67 LT RETAIN

STA. 145+67 IN PLACE TYPE ST DROP INLET 3' LT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 145+67 RT RETAIN

STA. 134+67 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 139+17 RT RETAIN

STA. 144+06.55 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 144+87 RT RETAIN

STA. 145+79.07 IN PLACE TYPE ST DROP INLET 3' RT OF C.L. WITH 18" X 2' R.C. PIPE CULVERT TO DROP INLET AT STA. 145+67 RT RETAIN

300' TAPER
CONSTRUCTION LIMITS
EXIST. R/W
EXIST. C/A
CONCRETE DRAIN
DROP INLET
CENTER CAP CHISELED
RBR ALUM CAP
BSPK
C.L. I-49
C.L. HWY. 264 RAMP I
N 1°59'34" E
NOTCH AND WIDEN LT. LANES
NOTCH AND WIDEN RT. LANES
EXISTING GROUND

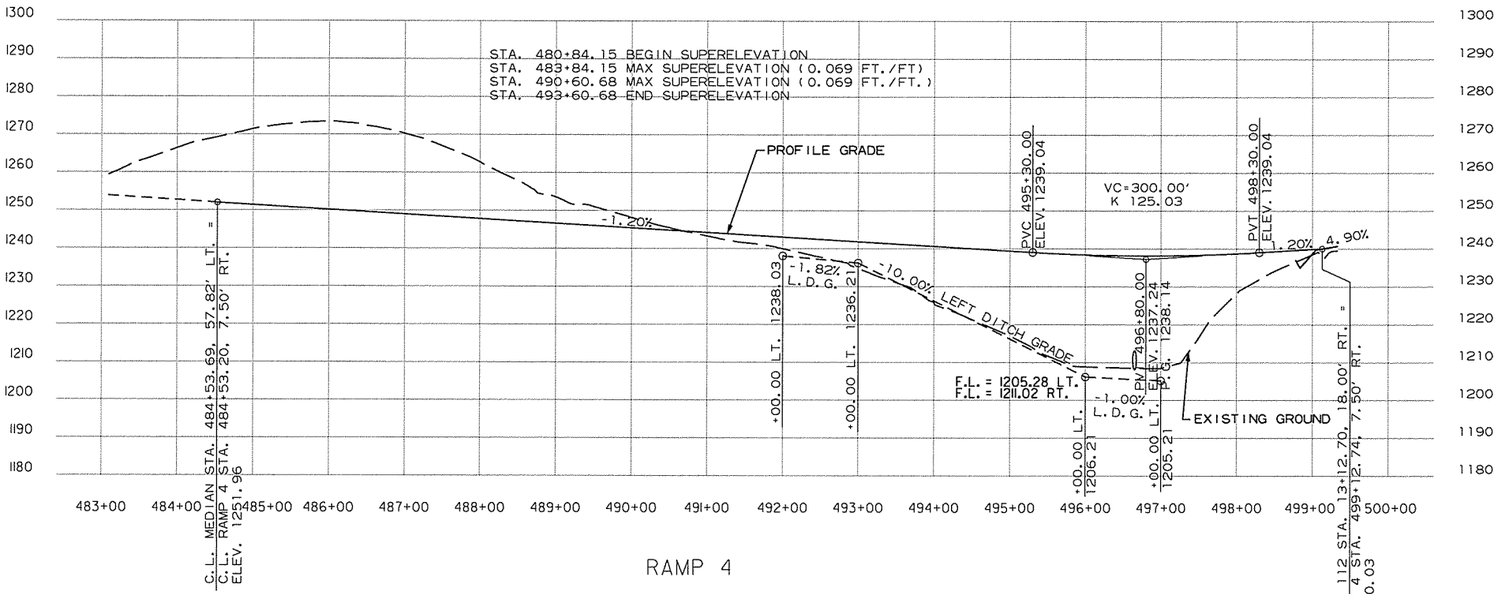
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

I-49

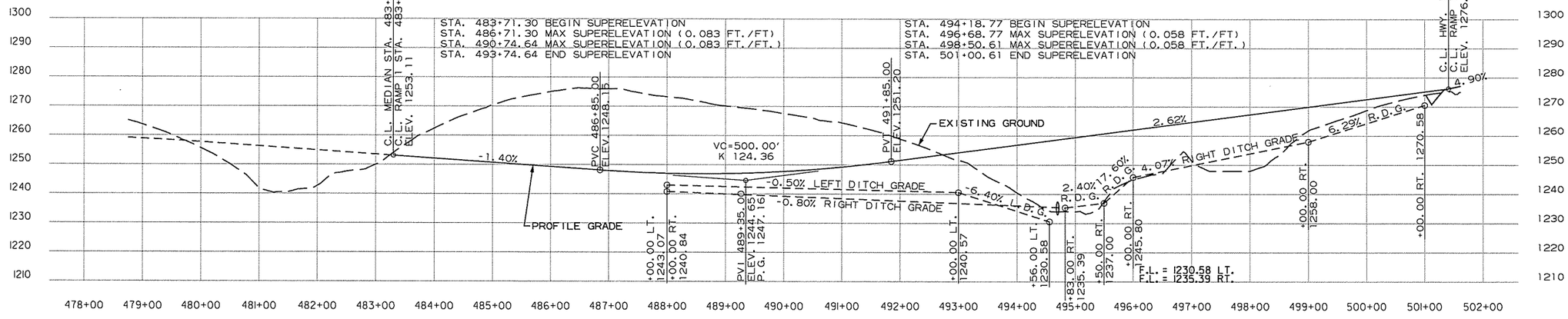
sadonaldson 9/4/2014 3:26:56 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_PP_I540_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 234 | 897 |

(2) PROFILES - RAMP I AND 4 HWY. 112




RAMP 4




RAMP I

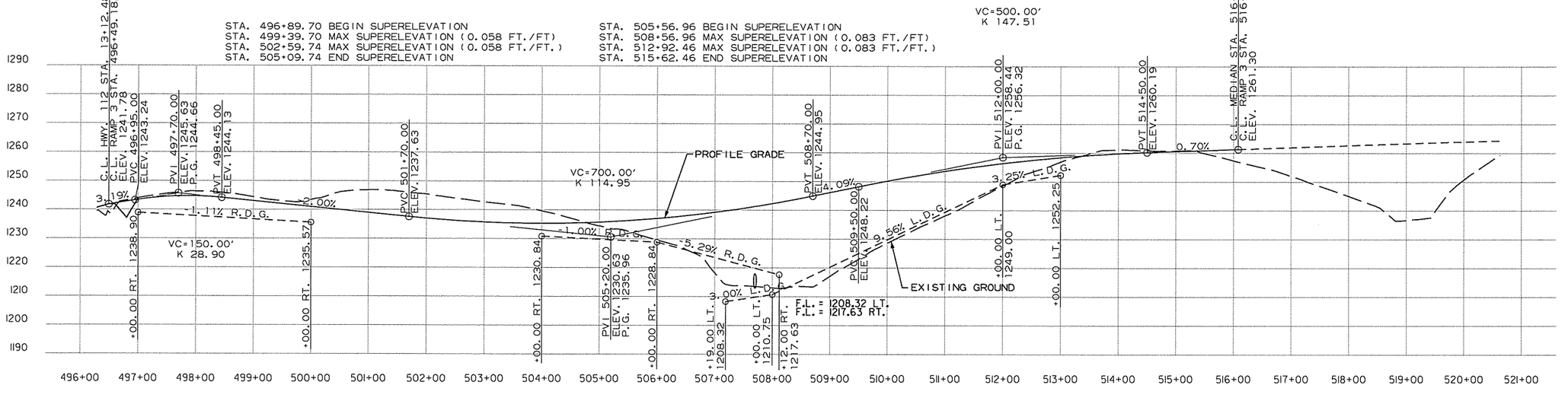
RAMP I AND 4 PROFILES
HWY. 112 INTERCHANGE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

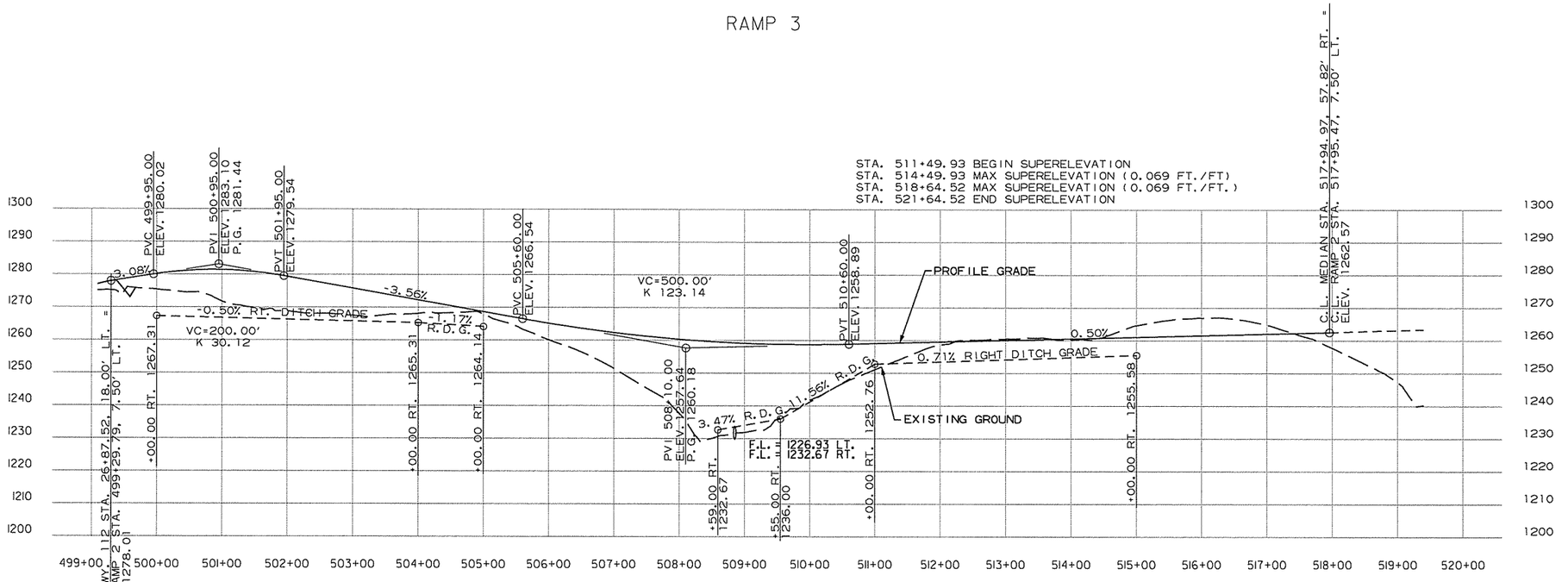
sadonaldson 9/4/2014 3:21:56 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PR_112R14_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 235 | 897 |

(2) PROFILES - RAMPS 2 AND 3 HWY. 112




RAMP 3




RAMP 2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

RAMP 2 AND 3 PROFILES
HWY. 112 INTERCHANGE

sadonaldson 9/4/2014 3:21:56 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PR_H2R23_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 236 | 897 |

(2) PLAN AND PROFILE - HWY. 112

STA. 8+46 IN PLACE
18" X 24' CMP
PIPE CULVERT LT. SIDE DRAIN
REMOVE & INSTALL
18" X 35' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
17 CU. YDS.

STA. 9+80 IN PLACE
18" X 62' CMP
PIPE CULVERT RT. SIDE DRAIN
REMOVE & INSTALL
18" X 58' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
35 CU. YDS.

C.L. HWY. 112
PI = 13+74.88
Δ = 09°19'53.7"RT.
D = 02°30'00"
T = 187.05
L = 373.26
PC= 11+87.84
PT= 15+61.10
e = 0.049'/'
Ls = 300'

STA. 496+65 RAMP 4 CONSTRUCT
60" X 224' R.C. PIPE CULVERT
24° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & RIPRAP BASIN LT.
Q50 = 197 CFS DA = 76.5 ACRES

STA. 507+70 RAMP 3 CONSTRUCT
60" X 216' R.C. PIPE CULVERT
26° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & RIPRAP BASIN LT.
Q50 = XXX CFS DA = XX.X ACRES

STA. 18+75 CONSTRUCT
TYPE N2 DI. LT.
12" X 39' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

STA. 18+68 CONSTRUCT
TYPE N2 DI. RT.
12" X 45' Z.C.C.S.P.
OUTLET ON RT.
WITH TYPE A
CONCRETE SPILLWAY

C.L. HWY. 112 STA. 13+00.00 =
C.L. HWY. 112 RAMP 3 STA. 496+28.57 =
C.L. HWY. 112 RAMP 4 STA. 499+33.42

C.L. HWY. 112 STA. 20+00.00 =
C.L. MEDIAN STA. 499+09.48

| C.L. HWY. 112 STATIONING | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE 2) |
|---|---|---|---|
| STA. 16+67.42 TO STA. 18+86.17 RT. | = 150 LIN. FT. | 1 EACH | 1 EACH |
| STA. 17+49.10 TO STA. 18+92.85 LT. | = 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+07.15 TO STA. 22+50.90 RT. | = 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+13.83 TO STA. 23+32.58 LT. | = 150 LIN. FT. | 1 EACH | 1 EACH |

CONCRETE DITCH PAVING (TYPE B)

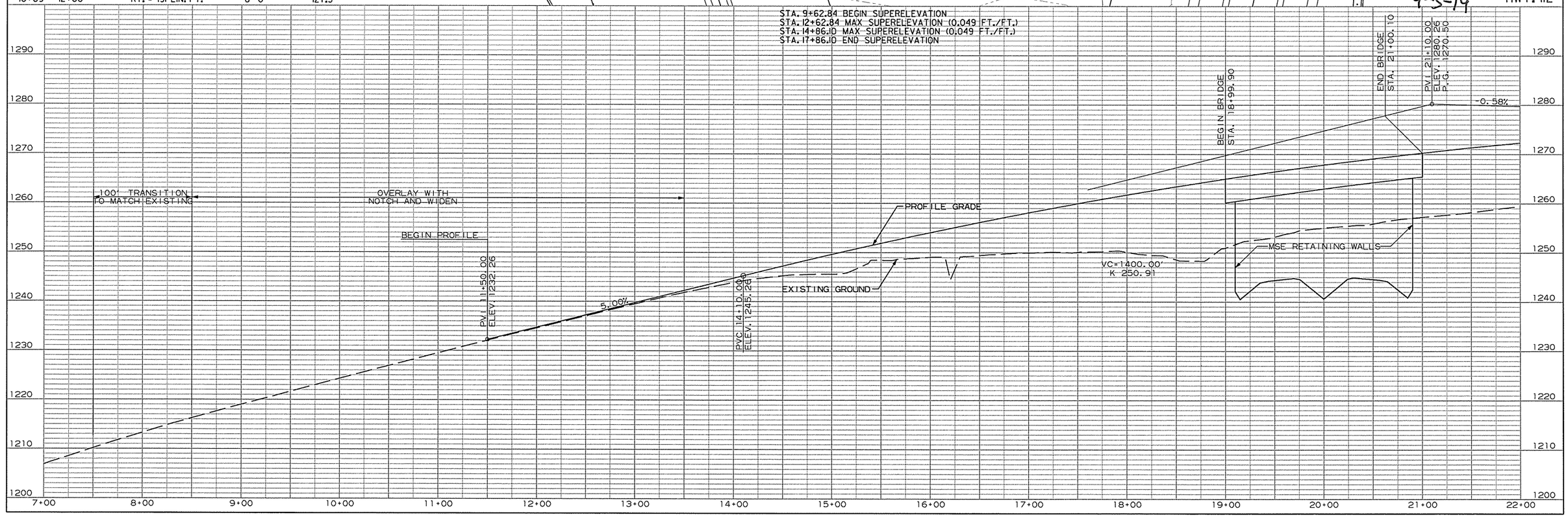
| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 8+60 | 12+00 | LT. = 340 LIN. FT. | 6'-0" | 226.6 |
| 8+50 | 9+51 | RT. = 101 LIN. FT. | 6'-0" | 67.3 |
| 10+09 | 12+00 | RT. = 191 LIN. FT. | 6'-0" | 127.3 |

STA. 18+99.90 TO STA. 21+00.10
CONSTRUCT 200'-2⅜" X 40' BRIDGE
198' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (99'-99')

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

HWY. 112

STA. 9+62.84 BEGIN SUPERELEVATION
STA. 12+62.84 MAX. SUPERELEVATION (0.049 FT./FT.)
STA. 14+86.10 MAX. SUPERELEVATION (0.049 FT./FT.)
STA. 17+86.10 END SUPERELEVATION




sadonaldson 9/4/2014 3:22:03 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\HWY 112 TO I-540\SBG_PP_112_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 237 | 897 |

(2) PLAN AND PROFILE - HWY. 112

STATE OF ARKANSAS
LICENSED
PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

STA. 494+70 RAMP 2 CONSTRUCT
48" X 202' R.C. PIPE CULVERT
15° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & LT.

OBLITERATE EXISTING ROADWAY

300' TAPER

CONSTRUCTION LIMITS

CONSTRUCTION LIMITS

C.L. HWY. 112 STA. 27+00.00 =
C.L. HWY. 112 R2 STA. 499+09.18 =
C.L. HWY. 112 R1 STA. 501+61.75

PROPOSED R/W, C/A & FENCE

STA. 30+00 CONSTRUCT
24" X 82' R.C. PIPE CULVERT
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT. & RT.
Q50 = 8 CFS D.A. = 3.9

STA. 30+55 CONSTRUCT
24" X 74' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
285 CU. YDS.

STA. 30+83 IN PLACE
18" X 28' CMP
W/ HDWLS. LT. & RT.
REMOVE HDWLS. LT & RT.
PLUG & ABANDON

TEMPORARY CONSTRUCTION EASEMENT

100' TRANSITION TO MATCH EXISTING

PROPOSED R/W

STA. 31+71 IN PLACE
24" X 48' RCB
PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 43' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
41 CU. YDS.

HWY. 112

2°21'57" W

2' R. (TYP.) (FUTURE)

PROPOSED R/W, C/A & FENCE

PROPOSED R/W

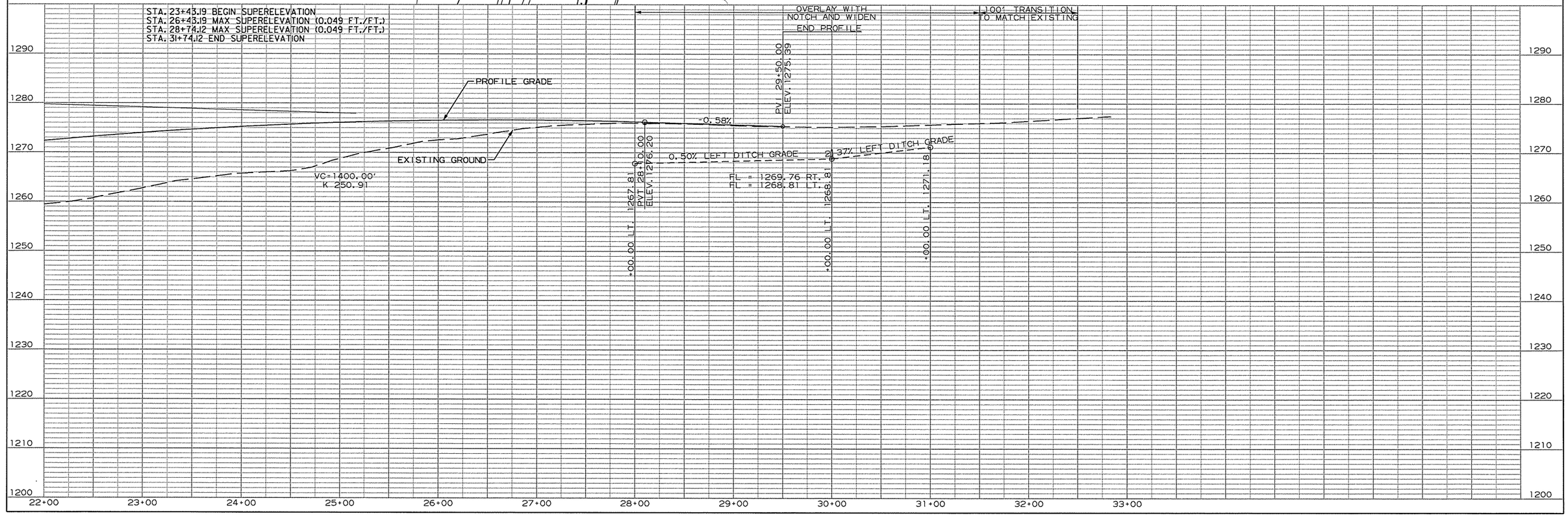
STA. 494+70 RAMP 1 CONSTRUCT
54" X 174' R.C. PIPE CULVERT
8° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. & LT.

C.L. HWY. 112
PI = 27+59.09
Δ = 09°31'23.6"RT.
D = 02°30'00"
T = 190.90
L = 380.93
PC= 25+68.19
PT= 29+49.12
e = 0.049'/'
Ls = 300'

PT 499+13.11

RAMP 1

RAMP 2




HWY. 112

sadonaldson 9/4/2014 3:22:03 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_112_02.dgn
REVISED DATE:

| C.L. GRIMSLEY STATIONING | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE I) |
|---|---|---|---|
| STA. 16+71.77 TO STA. 18+90.52 RT. | = 200 LIN. FT. | 1 EACH | 1 EACH |
| STA. 17+96.77 TO STA. 18+90.52 LT. | = 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+09.48 TO STA. 22+03.23 RT. | = 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+09.48 TO STA. 23+28.23 LT. | = 200 LIN. FT. | 1 EACH | 1 EACH |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 238 | 897 |

(2) PLAN & PROFILE STA. 14+50 TO STA. 24+50

PROPOSED R/W, C/A & FENCE

STA. 18+72 CONSTRUCT TYPE N2 DI. LT. 12" x 53' Z.C.C.S.P. OUTLET ON LT.

CONSTRUCTION LIMITS

PROPOSED R/W

100' TRANSITION TO MATCH EXISTING

C.L. GRIMSLEY RD.

16' GATE

TEMPORARY CONSTRUCTION EASEMENT

STA. 18+72 CONSTRUCT TYPE N2 DI. RT. 12" x 53' Z.C.C.S.P. OUTLET ON RT.

S 87°41'25" E

S 2°25'04" W

90°06'29"

535.68

COW PASTURE

MUD BOTTOM POND

POND

10' 24' 6' 6' 24' 10'

PROPOSED R/W, C/A & FENCE

STA. 21+28 CONSTRUCT TYPE N2 DI. LT. 12" x 52' Z.C.C.S.P. OUTLET ON LT.

PROPOSED R/W

CONSTRUCTION LIMITS

16' GATE

WEST ELEMENTARY SCHOOL

SPRINGDALE SCHOOL DISTRICT

UNDER CONSTRUCTION

PARKING

GATE

STA. 24+70 CONSTRUCT APPROACH 1 CU. YDS.

100' TRANSITION TO MATCH EXISTING

POND

GRAVEL

C.L. GRIMSLEY RD. STA. 20+00
C.L. MEDIAN STA. 535+68.14

C.L. MEDIAN

CONSTRUCTION LIMITS

PROPOSED R/W

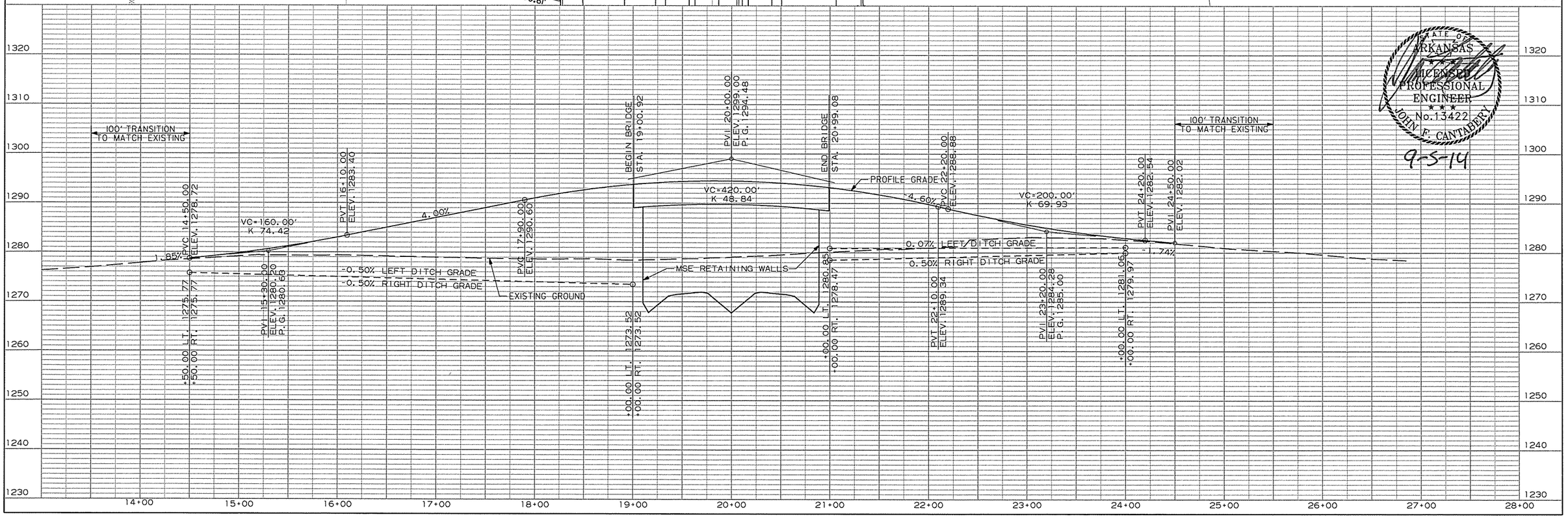
TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W, C/A & FENCE

STA. 19+00.92 TO STA. 20+99.08
CONSTRUCT 198'-2" X 28' BRIDGE
196' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (98'-98')

STA. 21+28 CONSTRUCT TYPE N2 DI. RT. 12" x 52' Z.C.C.S.P. OUTLET ON RT.

GRIMSLEY RD.




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:22:09 PM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_WMG_01.dgn
L:\2005\05911680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 239 | 897 |

(2) PLAN AND PROFILE - WAGON WHEEL ROAD

STA. 595+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H= 3'0")
WITH 24" X 85' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

PROPOSED R/W, C/A & FENCE

STA. 11+55 CONSTRUCT
30" X 48' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 31 CFS DA = 9.3 ACRES

PROPOSED R/W

CONSTRUCTION LIMITS

16' GATE

STA. 14+80 CONSTRUCT
DBL. 36" X 42' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 89 CFS DA = 29.2 ACRES
36" RCP = 84 LIN. FT.
36" F.E.S. = 4 EACH

+30
205'

PROPOSED R/W, C/A & FENCE

N

10+00

15+00

20+00

+00.51
200'

+69

R=8020'

+42.33
185'

C.L. WAGON WHEEL RD.

PROPOSED R/W

DROP INLET

STA. 592+27.50 TO STA. 594+33.14 LT. LN.
CONSTRUCT 207'-2 9/16" X 40' BRIDGE
205' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (60'-85'-60')

STA. 592+44.03 TO STA. 594+52.85 RT. LN.
CONSTRUCT 207'-2 9/16" X 40' BRIDGE
205' CONTINUOUS COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT (60'-85'-60')

+35.57
187.91'

+84.45
195'

PROPOSED R/W, C/A & FENCE

CONC

PROPOSED R/W, C/A & FENCE

WAGON WHEEL ROAD

DRAINAGE STRUCTURES ONLY

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTARERO
9-5-14

EXISTING GROUND

F.L. = 1161.0 LT.
F.L. = 1160.0 RT.

F.L. = 1168.0 LT.
F.L. = 1167.0 RT.

1200
1190
1180
1170
1160
1150
1140
1130
1120

8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

sadonaldson 9/4/2014 3:22:10 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_WWR_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 240 | 897 |

(2) PLAN & PROFILE SHARP SPRINGS ACCESS RD.

STA. 611+30 CONSTRUCT
30" X 222' R.C. PIPE CULVERT
5° RT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 28 CFS DA = 6.9 ACRES

STA. 616+85 CONSTRUCT
36" X 298' R.C. PIPE CULVERT
15° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES RT. &
CONTRA-COSTA ENERGY DISSIPATOR LT.
Q50 = 47 CFS DA = 13.8 ACRES

STA. 7+66 CONSTRUCT
30" X 84' R.C. PIPE CULVERT
23° RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q10 = 25 CFS DA = 8.1 ACRES

TEMPORARY CONSTRUCTION EASEMENT

STA. 11+80 CONSTRUCT
DBL. 48" X 54' R.C. PIPE CULVERT
30° RT. FWD. SKEW
(CLASS IV) TYPE 3 BEDDING
WITH FES LT. & RT.
Q10 = 159 CFS D.A. = 98 ACRES
48" RCP = 108 LIN. FT.
48' FES = 4 EACH

C.L. SHARP SPRINGS ACCESS
P. I. = 12+76.19
Δ = 07°38' 52.0" RT.
D = 05°00' 00"
T = 76.59
L = 152.96
P. C. = 11+99.60
P. T. = 13+52.55
e = 0.061' /'
Ls = 200'

STA. 617+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STA. 622+00 CONSTRUCT
24" X 266' R.C. PIPE CULVERT
10° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
Q50 = 23 CFS DA = 5.9 ACRES

C.L. SHARP SPRINGS ACCESS RD. STA. 20+00.00 =
C.L. MEDIAN STA. 623+60.71, 209.86' LT.

C.L. SHARP SPRINGS ACCESS RD.
PROPOSED R/W
CONSTRUCTION LIMITS
CONSTRUCTION LIMITS
PROPOSED C/A & FENCE
C.L. MEDIAN

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 10+60 | 13+00 | LT. = 240 LIN. FT. | 6'-0" | 160.0 |
| 11+50 | 12+50 | RT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 12+20 | | RT. = 38 LIN. FT. | 6'-0" | 25.3 |

SHARP SPRINGS ACCESS RD.

STA. 10+49.60 BEGIN SUPERELEVATION
STA. 12+49.60 MAX. SUPERELEVATION (0.061'/')
STA. 13+02.55 MAX. SUPERELEVATION (0.061'/')
STA. 15+02.55 END SUPERELEVATION

4.00%
2.00%
-5.00%
PVC 6+90.00
ELEV. 1230.72
PVI 6+13.92
ELEV. 1234.52
CENTER OF CUL-DE-SAC
VC=300.00'
K 66.67
PVI 8+40.00
ELEV. 1223.22
P.G. 1224.90
F.L. = 1212.62 LT.
F.L. = 1219.00 RT.
EXISTING GROUND
PVT 9+90.00
ELEV. 1222.47
+60.00 LT. 1213.43
-0.50%
-6.74% RT
DITCH GRADE
0.50% LT
DITCH GRADE
F.L. = 1213.95 LT.
F.L. = 1214.39 RT.
+50.00 RT. 1217.76
+65.00 LT. 1213.95
+00.00 RT. 1214.39
PVC 12+50.00
ELEV. 1221.17
3.31% LT
DITCH GRADE
5.40% RT
DITCH GRADE
-50.00 RT. 1217.09
+00.00 LT. 1218.42
VC=200.00'
K 71.65
PVI 13+50.00
ELEV. 1220.67
P.C.C. 1221.36
PVT 14+50.00
ELEV. 1222.96
PROFILE GRADE
2.20%
C.L. SHARP SPRINGS ACCESS RD. STA. 99+92.61 = C.L. MEDIAN STA. 623+53.33, 210.18' LT.
ELEV. 1235.39

T.B.M. 75 T-75 RBR/CAP
1152.43' RT OF STA. 615+42.60
ELEVATION = 1267.50

T.B.M. 960 CPS IN CP.
1942.27' RT OF STA. 616+73.66
ELEVATION = 1269.75

T.B.M. 961PP
2710.3' RT OF STA. 622+58.13
ELEVATION = 1250.37

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTARERY
9-5-14

sadonaldson 9/4/2014 3:22:10 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB6_PP_SSR_FR.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 241 | 897 |

(2) PLAN AND PROFILE - S. ZION RD.

PROPOSED R/W, C/A & FENCE

C.L. MEDIAN

100' TRANSITION TO MATCH EXISTING

OBLITERATE EXISTING ROADWAY

TEMPORARY CONSTRUCTION EASEMENT

C.L. S. ZION RD.
PI = 16+09.15
Δ = 73°22'32.8"LT.
D = 13°00'00"
T = 328.37
L = 564.43
PC= 12+80.78
PT= 18+45.21
e = 0.100 '/'
Ls = 250'

C.L. S. ZION RD. STA. 20+00.00 = C.L. MEDIAN STA. 632+00.00

PROPOSED R/W

CONSTRUCTION LIMITS

125°00' 00"

16' GATE

PERMANENT CONSTRUCTION EASEMENT

C.L. KNIGHT LANE DRIVEWAY
PI = 4+95.42
Δ = 132°00'55.3"RT.
D = 71°37'11.0"
T = 179.75
L = 184.33
PRC= 3+15.67
PT= 5+00.00
e = NA
Ls = NA

C.L. KNIGHT LANE DRIVEWAY
PI = 2+88.95
Δ = 39°58'41.7"LT.
D = 71°37'11.3"
T = 29.10
L = 55.82
PC= 2+59.85
PRC= 3+15.67
e = NA
Ls = NA

STA. 12+00 INSTALL 24" X 68' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH 135 CU. YDS.

OBLITERATE EXISTING ROADWAY

C.L. KNIGHT LANE DRIVEWAY

PERMANENT CONSTRUCTION EASEMENT

STA. 3+67.17 CONSTRUCT APPROACH 1CU. YDS.

50' TRANSITION TO MATCH EXISTING

KNIGHT LANE

STA. 18+41.00 CONSTRUCT TYPE N2 DI. LT. 12" X 30' Z.C.C.S.P. OUTLET ON LT. WITH TYPE A CONCRETE SPILLWAY

STA. 18+58.00 CONSTRUCT TYPE N2 DI. RT. 12" X 110' Z.C.C.S.P. OUTLET ON RT. WITH TYPE A CONCRETE SPILLWAY

STA. 17+91 CONSTRUCT 30" X 266' R.C. PIPE CULVERT 33° RT. FWD. SKEW (CLASS V) TYPE 3 BEDDING WITH FES LT. & RIPRAP BASIN RT. Q10 = 32 CFS DA = 14.3 ACRES

STA. 18+79.67 TO STA. 21+29.33 CONSTRUCT 249'-7⅞" X 28' BRIDGE 247' CONTINUOUS COMPOSITE PLATE GIRDER UNIT (119'-128')

C.L. S. ZION RD.

PROPOSED R/W

CONSTRUCTION LIMITS

S. ZION ROAD

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

STA. 10+93.28 BEGIN SUPERELEVATION
STA. 13+43.28 MAX SUPERELEVATION (0.100 FT./FT.)
STA. 15+75.00 MAX SUPERELEVATION (0.100 FT./FT.)
STA. 18+25.00 END SUPERELEVATION

C.L. ZION STATIONING
STA. 16+56.54 TO STA. 18+75.29 RT.
STA. 17+61.94 TO STA. 18+55.69 LT.

| | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE I) |
|---|---|---|---|
| | = 200 LIN. FT. | 1 EACH | 1 EACH |
| | = 75 LIN. FT. | 1 EACH | 1 EACH |

STA. 2+63.75 ELEV. 1280.54
PVC 3+06.86 ELEV. 1281.38
PVI 3+11.86 ELEV. 1282.84
PVT 4+95.86 ELEV. 1282.84
STA. 4+83.90 ELEV. 1282.84
1.95%
0.00%
4.21%
VC=150.00' K 76.92

KNIGHT LANE DRIVEWAY

PVI 10+93.28 ELEV. 1283.04
100' TRANSITION TO MATCH EXISTING
OVERLAY WITH NOTCH AND WIDEN
1.04%

PVC 13+00.00 ELEV. 1280.89
VC=400.00' K 94.34
PROFILE GRADE
PVT 17+00.00 ELEV. 1285.21
3.20%
PVI 15+00.00 ELEV. 1278.81 P.G. 1280.93
EXISTING GROUND
PVC 18+50.00 ELEV. 1290.01
BEGIN BRIDGE STA. 18+79.67
VC=300.00' K 46.15
MSE RETAINING WALL
PVI 20+00.00
F.L. = 1257.67 LT.
F.L. = 1250.38 RT.

1330 1320 1310 1300 1290 1280 1270 1260 1250 1240

3+00 4+00 5+00 9+11 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00

sadonaldson 9/4/2014 3:22:10 PM
WORKSPACE: AHTD
L:\2005\05916BD - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_Z10_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 242 | 897 |

(2) PLAN AND PROFILE - S. ZION ROAD

PROPOSED R/W, C/A & FENCE

C.L. S. ZION RD. STA. 20+00.00 = C.L. MEDIAN STA. 632+00.00

STA. 18+79.67 TO STA. 21+29.33
CONSTRUCT 249'-7⅞" X 28' BRIDGE
247' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (119'-128')

C.L. S. ZION RD.
PI = 24+02.15
Δ = 17°30'45.0"LT.
D = 4°00'00"
T = 220.63
L = 437.81
PC= 21+81.53
PT= 26+19.34
e = 0.05I'/'
Ls = 200.00'

STA. 21+51.00 CONSTRUCT
TYPE N2 DI. LT.
12" X 66' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

| C.L. ZION STATIONING | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE I) |
|---|---|---|---|
| STA. 21+33.71 TO STA. 23+52.46 LT. | = 200 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+53.31 TO STA. 22+47.06 RT. | = 75 LIN. FT. | 1 EACH | 1 EACH |

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 22+31 | 25+00 | LT. = 269 LIN. FT. | 6'-0" | 179.3 |

STA. 28+57 INSTALL
24" X 86' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
86 CU. YDS.

STA. 28+57 INSTALL
24" X 70' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
80 CU. YDS.

STA. 22+57 CONSTRUCT
36" X 216' R.C. PIPE CULVERT
15° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RT.
QIO = 44 CFS DA = 18.0 ACRES

STA. 21+68.00 CONSTRUCT
TYPE N2 DI. RT.
12" X 30' Z.C.C.S.P.
OUTLET ON RT.
WITH TYPE A
CONCRETE SPILLWAY

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

16' GATE
CONSTRUCTION LIMITS
PROPOSED R/W
PERMANENT CONSTRUCTION EASEMENT
100' TRANSITION TO MATCH EXISTING
C.L. MEDIAN
C.L. S. ZION RD.
S. ZION ROAD
125°00'00"
89°37'58"
N 74°35'08.4" E
S 19°35'05" W
S 2°04'24" W
PC 21+81.53
PT 26+19.34
CHICKEN HOUSE

STA. 21+75.00 BEGIN SUPERELEVATION
STA. 23+75.00 MAX SUPERELEVATION (0.05IFT./FT.)
STA. 25+69.34 MAX SUPERELEVATION (0.05IFT./FT.)
STA. 27+69.34 END SUPERELEVATION

PVI 20+00.00
ELEV. 1294.81
P.G. 1292.37
END BRIDGE
STA. 21+29.33
PVT 21+50.00
ELEV. 289.86
VC=300.00'
K 46.15
-3.30%
PVC 23+00.00
ELEV. 1284.91
PROFILE GRADE
VC=400.00'
K 113.96
PVT 27+00.00
ELEV. 1278.73
0.21%
PVI 29+47.18
ELEV. 1279.25
OVERLAY WITH NOTCH AND WIDEN
100' TRANSITION TO MATCH EXISTING
MSE RETAINING WALL
EXISTING GROUND
3.42% LEFT DITCH GRADE
7.80% LEFT DITCH GRADE
1.33% LEFT DITCH GRADE
2.67% RIGHT DITCH GRADE
PVI 25+00.00
ELEV. 1276.31
P.G. 1280.07
+00.00 LT. 1270.85
+00.00 LT. 1264.00
+31.00 1258.62
F.L. = 1258.62 LT.
F.L. = 1250.98 RT.
+00.00 RT. 1273.49
+00.00 RT. 1276.16
+00.00 LT. 1276.16

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230
20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 30+87

sadonaldson 9/4/2014 3:22:11 PM
WORKSPACE: AHTD
L:\2005\0591680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_Z10_02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 243 | 897 |

(2) PLAN & PROFILE STA. 17+92 TO STA. 26+00

C.L. MEDIAN
650+00
655+00
660+00
N 74°35'09" E
CHICKEN HOUSE
CONSTRUCTION LIMITS
+36.48
114.51'
PROPOSED R/W, C/A & FENCE
115'
+70
+90
145'
89.29' 19' 14"
PC 18+23.76
+50
279.09'
50' R.
N 2°27'26" E
+05
245'
+50
230'
20+06.16
PT
20+00
PROPOSED C/A & FENCE
C.L. SPRING CREEK ACCESS RD.
4'
20'
4'
25+00
N 75°25'11" E
N 75°37'12" E
1235.48'
PROPOSED R/W
CONSTRUCTION LIMITS
+40
245'
POND
LEVEE
N
N84°42'33"E
786.60'
+70
365'
+55
395'
+15
332.29'
RBR ALUM CAP
C.L. SPRING CREEK ACCESS RD.
P. I. = 19+29.68
Δ = 72°57' 45.5" RT.
D = 40°00' 00"
T = 105.92
L = 182.41
P. C. = 18+23.76
P. T. = 20+06.16
e = N. A.
Ls = N. A.
STA. 665+53 CONSTRUCT
54" X 444' R.C. PIPE CULVERT
32° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH TYPE RM INLET 126' RT.
(5'6" X 3' X H= 8'6")
AND FES LT. & RIPRAP BASIN RT.
Q50 = 114 CFS DA = 40 ACRES
TEMPORARY CONSTRUCTION EASEMENT
+55
420'
+55
455'
+85
315'
+5
281.27'
+30
299.05'
STA. 665+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.
STA. 660+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.
SPRING CREEK ACCESS RD.

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 665+53 | INTERMITTENT | 1261 FT. MSL |

1310
1300
1290
1280
1270
1260
1250
1240
1230
1220
4'
50'
4.00%
2.00%
PVI 17+91.82
ELEV. 1250.00
CENTER OF CUL-DE-SAC
PROFILE GRADE
EXISTING GROUND
-1.30%
PVC 20+00.00
ELEV. 1287.29
VC=200.00'
K 90.91
PVI 21+00.00
ELEV. 1285.99
P.G. 1285.44
PVI 22+00.00
ELEV. 1282.49
-3.50%
PVC 23+50.00
ELEV. 1280.74
VC=600.00'
K 70.59
-5.00%
PVI 25+50.00
ELEV. 1270.62
TOP 1262.10
INV 1255.12
F.L. = 263.52 LT.
F.L. = 250.56 RT.
17+00
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:22:11 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_SCR_FR01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |

| FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 244 | 897 |

(2) PLAN & PROFILE STA. 26+00 TO STA. 40+00

C.L. MEDIAN
665+00
670+00
675+00
N 74°35'09" E
8" RBR ALUM CAP
CONSTRUCTION LIMITS
C.L. SPRING CREEK ACCESS RD.
PROPOSED C/A & FENCE
30+00
35+00
N 75°25'11" E
PROPOSED R/W
CONSTRUCTION LIMITS
+10.71 235'
+15 230'
+74.57 250'
+45 285'
+50.25 295'
PC 35+50.51
PT 38+78.86
37+15.82
4" 20' 4"
40'R.
S 39°09'47" E
40'R.
90°
S 50°13' W
+85 180'
+85 350'
+90 50'
BK. AHD.
C.L. SPRING CREEK RD.
SPRING CREEK ACCESS RD.
TRAIL

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 37+00 | 39+60 | RT. = 260 LIN. FT. | 6'-0" | 173.3 |

STA. 665+53 CONSTRUCT
54" X 456' R.C. PIPE CULVERT
32° LT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH TYPE RM INLET 126' RT.
(5'6" X 3' X H= 8'6")
AND FES LT. & RIPRAP BASIN RT.
Q50 = 114 CFS DA = 40 ACRES

STA. 665+00 CONSTRUCT
TYPE RM DROP INLET
IN MEDIAN (4' X 3' X H=3'0")
WITH 24" X 86' R.C. PIPE OUTLET ON RT.
(CLASS III) TYPE 3 BEDDING WITH FES.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERRY
9-5-14

STA. 39+36 CONSTRUCT
24" X 108' R.C. PIPE CULVERT
20° RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q10 = 5 CFS DA = 0.75 ACRES

C.L. SPRING CREEK ACCESS RD. STA. 40+00.00 =
C.L. SPRING CREEK RD. STA. 23+00

C.L. SPRING CREEK FRONTAGE
P. I. = 37+15.82
Δ = 16°25' 02.3" RT.
D = 05°00' 00"
T = 165.31
L = 328.35
P. C. = 35+50.51
P. T. = 38+78.86
e = 0.061'/'
Ls = 200'

STA. 34+50.51 BEGIN SUPERELEVATION
STA. 36+50.51 MAX. SUPERELEVATION (0.061 FT./FT.)
STA. 37+78.86 MAX. SUPERELEVATION (0.061 FT./FT.)
STA. 39+78.86 END SUPERELEVATION

PVI 31+50.00
ELEV. 1293.99
P.G. 1290.24
PVT 28+50.00
ELEV. 1285.24
PVC 29+00.00
ELEV. 1287.74
5.00%
5.00%
PROFILE GRADE
EXISTING GROUND
VC=500.00'
K 50.00
PVRC 34+00.00
ELEV. 1287.74
VC=400.00'
K 70.07
PVT 38+00.00
ELEV. 1279.16
0.71%
-0.87% LEFT DITCH GRADE
-4.27% RIGHT DITCH GRADE
PVI 36+00.00
ELEV. 1277.74
P.G. 1280.60
+00.00 LT. 1277.49
+00.00 RT. 1275.90
+00.00 LT. 1275.76
C.L. SPRING CREEK ACCESS RD.
STA. 39+89.00
ELEV. 1280.50
STA. 39+89.00 SPRING CREEK RD. I RT.
STA. 23+00.00 SPRING CREEK RD. I RT.
ELEV. 1280.50
+60.00 RT. 1264.80
T.T. = 1265.66 LT.
1265.00 RT.

T.B.M. 84 RBR ALUM CAP
24.80' RT OF STA. 670+04.39
ELEVATION = 1290.47

1310 1300 1290 1280 1270 1260 1250 1240 1230 1220
26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00

sadonaldson 9/4/2014 3:22:12 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_SCR_FR02.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 245 | 897 |

(2) PLAN & PROFILE STA. 15+50 TO STA. 25+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

STA. 18+94.87 TO STA. 21+04.13
CONSTRUCT 209'-3¼" X 30' BRIDGE
207' CONTINUOUS COMPOSITE
PLATE GIRDER UNIT (104'-103')

STA. 21+28.00 CONSTRUCT
TYPE N2 DI. LT.
12" X 46' Z.C.C.S.P.
OUTLET ON LT.
WITH TYPE A
CONCRETE SPILLWAY

STA. 21+37.00 CONSTRUCT
TYPE N2 DI. RT.
12" X 36' Z.C.C.S.P.
OUTLET ON RT.
WITH TYPE A
CONCRETE SPILLWAY

STA. 39+36 CONSTRUCT
24" X 108' R.C. PIPE CULVERT
20° RT. FWD. SKEW
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
QIO = 5 CFS DA = 0.75 ACRES

STA. 15+81
CONSTRUCT APPROACH
15 CU. YDS.

STA. 16+44
CONSTRUCT APPROACH
47 CU. YDS.

STA. 17+62 INSTALL
24" X 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
19 CU. YDS.

C.L. SPRING CREEK ST. STA. 20+00.00 =
C.L. MAIN LANES STA. 679+54.73

C.L. SPRING CREEK ST. STA. 16+43.76=
C.L. PUPPY CREEK RD. STA. 20+00.00

C.L. SPRING CREEK RD. STA. 23+00.00 =
C.L. SPRING CREEK ACCESS RD. STA. 40+00.00

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 21+50 | 22+43 | RT. = 93 LIN. FT. | 6'-0" | 62.0 |
| 21+50 | 23+50 | LT. = 200 LIN. FT. | 6'-0" | 133.3 |

SPRING CREEK ST.

| C.L. SPRING CREEK STREET STATIONING | GUARDRAIL (TYPE A) | THRIE BEAM GUARDRAIL TERMINAL | GUARDRAIL TERMINAL (TYPE I) |
|---|---|---|---|
| STA. 17+86.11 TO STA. 18+79.86 LT. | = 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 17+95.43 TO STA. 18+89.18 RT. | = 75 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+09.82 TO STA. 23+28.57 LT. | = 200 LIN. FT. | 1 EACH | 1 EACH |
| STA. 21+19.14 TO STA. 22+12.89 RT. | = 75 LIN. FT. | 1 EACH | 1 EACH |



sadonaldson 9/4/2014 3:22:12 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SB0_PP_SCS_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 246 | 897 |

(2) PLAN & PROFILE STA. 20+11 TO STA. 35+00

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 25+00 | 30+00 | RT. = 500 LIN. FT. | 7'-0" | 388.9 |
| 27+00 | 30+00 | LT. = 300 LIN. FT. | 6'-0" | 200.0 |

STA. 692+23 CONSTRUCT
60" X 506' R.C. PIPE CULVERT
28° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RIPRAP BASIN RT.
Q50 = 175 CFS DA = 74.9 ACRES

C.L. PUPPY CREEK RD.
PI = 26+32.66
Δ = 21°33'36.7"LT.
D = 5°00'00"
T = 218.18'
L = 431.20'
PC = 24+14.48
PT = 28+45.68
e = 0.06'/'
Ls = 200'

PERMANENT CONSTRUCTION EASEMENT
C.L. PUPPY CREEK RD. STA. 20+00.00 =
C.L. SPRING CREEK ST. STA. 16+43.76
PERMANENT CONSTRUCTION EASEMENT
PERMANENT CONSTRUCTION EASEMENT
PROPOSED R/W
PROPOSED R/W
CONSTRUCTION LIMITS
CONSTRUCTION LIMITS
PROPOSED C/A & FENCE
PROPOSED R/W, C/A & FENCE
PROPOSED R/W, C/A & FENCE
16' GATE
C.L. PUPPY CREEK RD.
C.L. MEDIAN
PUPPY CREEK RD.
PARKING
PARKING
PARKING
BUILDING FOUNDATION
GRAVEL
CATE
S 83°09'47" E
S 15°01'13" W
N 75°16'36" E
85°00'00"
PC 24+14.48
PT 28+45.68
PI 26+32.66
20+00
25+00
30+00
690+00

STA. 22+64.48 BEGIN SUPERELEVATION
STA. 24+64.48 MAX SUPERELEVATION (0.06 FT./FT.)
STA. 27+95.68 MAX SUPERELEVATION (0.06 FT./FT.)
STA. 29+95.68 END SUPERELEVATION

PVI 20+11.04
ELEV. 1299.00
-2.00%
PVC 21+00.00
ELEV. 1297.22
PVI 22+50.00
ELEV. 1294.22
P.G. 1292.72
PROFILE GRADE
VC=300.00'
K=75.00
EXISTING GROUND
PVI 24+00.00
ELEV. 1285.22
-6.00%
PVC 25+20.00
ELEV. 1278.02
VC=600.00'
K=89.42
5' ROCK FILL DRAINAGE/STABILIZING LAYER. SEE CROSS SECTIONS FOR VARIATIONS.
-3.40% LEFT DITCH GRADE
0.71%
PVT 28+20.00
ELEV. 1260.02
P.G. 1265.05
+00.00 LT. 1261.65
+00.00 LT. 1254.85
-10.04% LEFT DITCH GRADE

1320 1310 1300 1290 1280 1270 1260 1250 1240 1230

20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:22:13 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_PCR_01.dgn
REVISED DATE: 6/14/07
05911680 DWP

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 247 | 897 |

(2) PLAN & PROFILE STA. 20+11 TO STA. 35+00

STA. 692+23 CONSTRUCT
60" X 506' R.C. PIPE CULVERT
28° RT. FWD. SKEW
(CLASS V) TYPE 3 BEDDING
WITH FES LT. & RIPRAP BASIN RT.
Q50 = 175 CFS DA = 74.9 ACRES

STA. 33+25.75
CONSTRUCT APPROACH
2 CU. YDS.

STA. 35+00 CONSTRUCT
24" X 44' R.C. PIPE CULVERT
(CLASS III) TYPE 2 BEDDING
WITH FES LT. & RT.
Q25 = 10 CFS DA = 1.6 ACRES

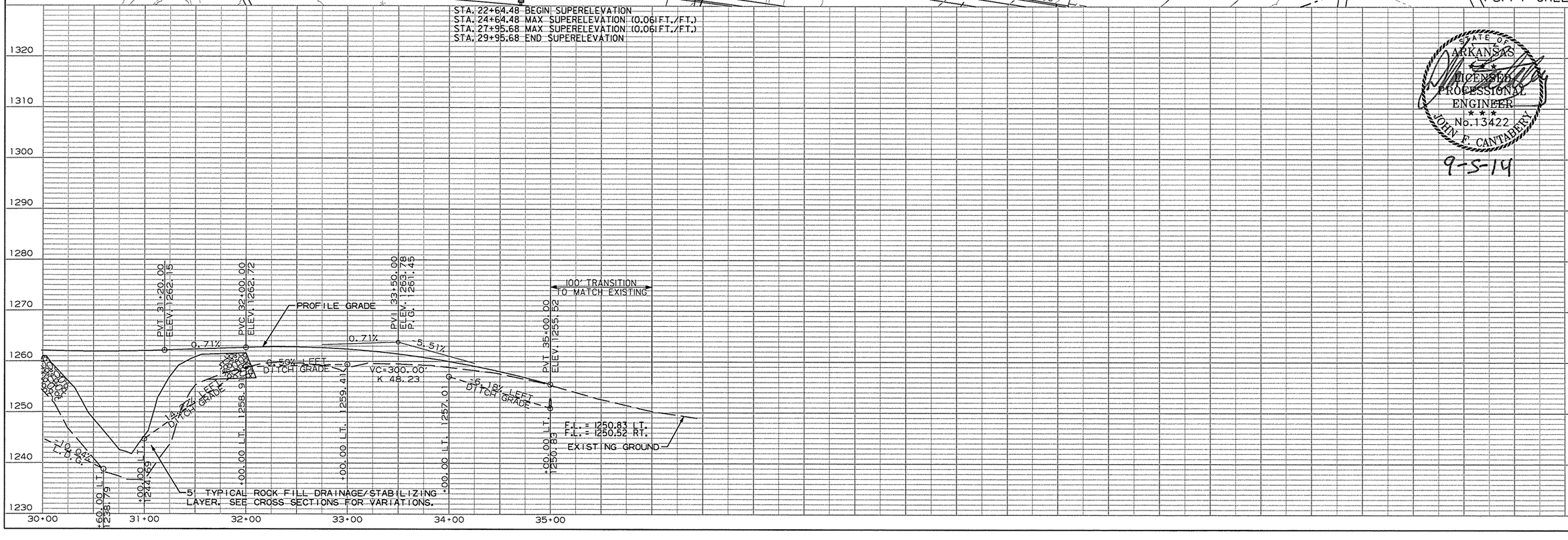
CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 30+00 | 30+60 | LT. = 60 LIN. FT. | 6'-0" | 40.0 |
| 30+00 | 32+00 | RT. = 200 LIN. FT. | 6'-0" | 133.3 |
| 31+00 | 32+00 | LT. = 100 LIN. FT. | 6'-0" | 66.7 |
| 34+00 | 35+00 | LT. = 100 LIN. FT. | 6'-0" | 66.7 |

N

CONSTRUCTION LIMITS
+00 350
100' TRANSITION TO MATCH EXISTING
+31.46 313.57
+86.16 295'
+50 295'
+50 290'
PERMANENT CONSTRUCTION EASEMENT
+45 255'
+40 235'
40' R
46' R
35+00
+44.08 265.46
PERMANENT CONSTRUCTION EASEMENT
CONSTRUCTION LIMITS
+25 175'
+50 180'
16' GATE
PROPOSED R/W
PROPOSED R/W, C/A & FENCE
+00 160'
PROPOSED R/W, C/A & FENCE
C.L. PUPPY CREEK RD.
+00 130'
+00 102'
C.L. MEDIAN
N 75°16'36" E
30+00
6'
20'
6'
GRAVEL
PI 696+36.39
695+00
698+00
700+00
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
PI 702+49.27
APPROXIMATE FEMA 100 YR. FLOODPLAIN LIMITS
PROPOSED R/W, C/A & FENCE
+50 285'
+35 295'
+65 300'
+15 267'
CHICKEN HOUSE
PUPPY CREEK RD.

STA. 22+64.48 BEGIN SUPERELEVATION
STA. 24+64.48 MAX SUPERELEVATION (0.06 FT./FT.)
STA. 27+95.68 MAX SUPERELEVATION (0.06 FT./FT.)
STA. 29+95.68 END SUPERELEVATION

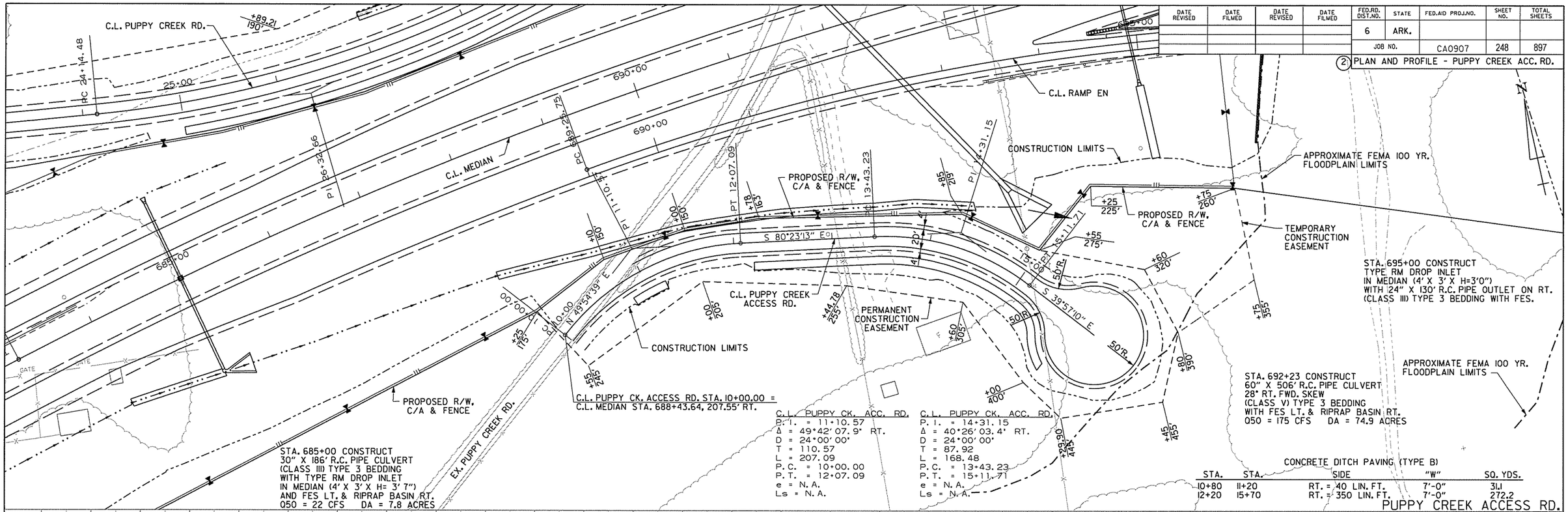



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTARERY
9-5-14

sadonaldson 9/4/2014 3:22:13 PM
WORKSPACE: AHTD
L:\2005\059180 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_PCR_02.dgn
REVISED DATE: 6/14/07
059180 DWP

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 248 | 897 |

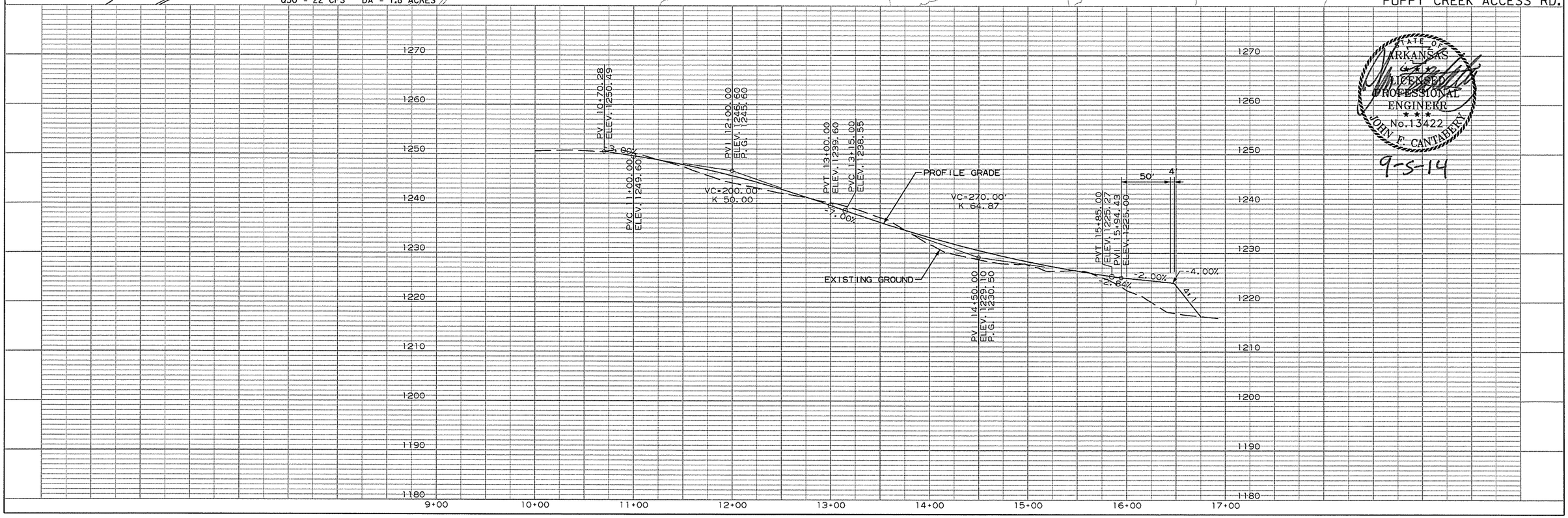
(2) PLAN AND PROFILE - PUPPY CREEK ACC. RD.




CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 10+80 | 11+20 | RT. = 40 LIN. FT. | 7'-0" | 31.1 |
| 12+20 | 15+70 | RT. = 350 LIN. FT. | 7'-0" | 272.2 |

PUPPY CREEK ACCESS RD.




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14

sadonaldson 9/4/2014 3:22:13 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_PP_PCR_FR.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 249 | 897 |

(2) PLAN AND PROFILE - GOAD SPRINGS ACC. RD.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

N

STA. 717+75 RAMP SW CONSTRUCT
24" X 404' R.C. PIPE CULVERT
8° LT. FWD. SKEW
(CLASS SPECIAL) TYPE I BEDDING
WITH FES LT. & RT.
Q50 = 15 CFS DA = 4.3 ACRES

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W, C\A & FENCE

CONSTRUCTION LIMITS

C.L. RAMP SW

C.L. RAMP NW

PC 709+47.73
PC 709+47.73

PI 712+47.80

710+00

715+00

ST 715+47.73

STA. 4+14.85 CONSTRUCT APPROACH ON RT.
52 CU. YDS.

STA. 5+00 CONSTRUCT
24" X 45' R.C. PIPE CULVERT
(CLASS III) TYPE 3 BEDDING
WITH FES LT. & RT.
Q10 = 21 CFS DA = 5.5 ACRES

STA. 4+14.85 CONSTRUCT APPROACH ON LT.
63 CU. YDS.

GOAD SPRINGS ACCESS ROAD DRIVEWAY

CONSTRUCTION LIMITS

159°46'58"

122°21'54"

50'R.

20'R.

5+00

STA. 6+11.07 CONSTRUCT APPROACH ON LT.
7 CU. YDS.

STA. 8+00 CONSTRUCT
30" X 48' R.C. PIPE CULVERT
(CLASS III) TYPE 2 BEDDING
WITH FES LT. & RT.
Q10 = 24 CFS DA = 4.6 ACRES

TEMPORARY CONSTRUCTION EASEMENT

STA. 6+56.39 INSTALL
18" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
10 CU. YDS.

C.L. GOAD SPRINGS ACC. RD.
P.I. = 11+66.23
Δ = 20°44'07.0" LT.
D = 06°00'00"
T = 174.70
L = 345.59
P.C. = 9+91.52
P.T. = 13+37.11
e = 0.070'/'
Ls = 200'

PROPOSED R/W

S 87°50'09" E

PC 10+00

CONSTRUCTION LIMITS

C.L. GOAD SPRINGS ACCESS RD.

PROPOSED C/A & FENCE

STA. 722+57 RAMP SW CONSTRUCT
36" X 588' R.C. PIPE CULVERT
9° LT. FWD. SKEW
(CLASS SPECIAL) TYPE I BEDDING
WITH FES LT. & RT.
Q50 = 52 CFS DA = 8.2 ACRES

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 8+00 | 10+00 | LT. = 200 LIN. FT. | 6'-0" | 133.3 |

GOAD SPRINGS ACCESS RD.

STA. 8+41.52 BEGIN SUPERELEVATION
STA. 10+41.52 MAX. SUPERELEVATION (0.070 FT./FT.)
STA. 12+87.11 MAX. SUPERELEVATION (0.070 FT./FT.)
STA. 14+87.11 END SUPERELEVATION

4' 50'
PVI 4+14.85
ELEV. 1295.54
CENTER OF CUL-DE-SAC
4.00%
2.00%
4:1

PROFILE GRADE
-0.50%

PVC 7+00.00
ELEV. 1294.11

VC=200.00'
K 125.00

PVT 9+00.00
ELEV. 1294.71

PVI 8+00.00
ELEV. 1293.61
P.G. 1294.01

EXISTING GROUND

F.L. = 1288.49 LT.
F.L. = 1290.17 RT.

F.L. = 1286.11 LT.
F.L. = 1288.90 RT.

+00.00 LT. 1286.11

+23.00 LT. 1281.66

3.5% LEFT DITCH GRADE

7.19% LEFT DITCH GRADE

F.L. = 1281.66 LT.
F.L. = 1287.16 RT.

+00.00 LT. 1287.20

PVI 0+50.00
ELEV. 1294.16

PVI 0+80.00
ELEV. 1292.64

PVI 1+10.00
ELEV. 1289.73

PVI 0+65.00
ELEV. 1293.75

PVI 0+95.00
ELEV. 1290.84

PVI 1+28.31
ELEV. 1288.65

2.8%
4.20%
4.01%
4.15%
4.09%

GOAD SPRINGS ACCESS ROAD DRIVEWAY

1310 1300 1290 1280 1270 1260 1250 1240 1230 1220

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00


copervasini 9/5/2014 11:51:04 AM
WORKSPACE: AHTD - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_GSR_FR01.dgn
L:\2005\05911680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 250 | 897 |
| | | | | 2 | GOAD SPRINGS ACCESS RD. | | | |

C.L. GOAD SPRINGS ACC. RD.
P. I. = 11+66.23
Δ = 20°44' 07.0" LT.
D = 06°00' 00"
T = 174.70
L = 345.59
P. C. = 9+91.52
P. T. = 13+37.11
e = 0.070'/'
Ls = 200'

STA. 712+31 RAMP SE IN PLACE
8' X 4' X 431' R.C. BOX CULVERT
WITH 3:1 WINGS LT. AND RT.
REMOVE 142' RT.
RETAIN & EXTEND 512' RT.
WITH 15° RT. FWD. SKEW & CONTRA-COSTA
ENERGY DISSIPATOR RT.
Q50 = 240 CFS DA = 130.3 ACRES

C.L. GOAD SPRINGS ACC. RD.
P. I. = 17+00.79
Δ = 04°16' 36.0" RT.
D = 01°00' 00"
T = 213.93
L = 427.67
P. C. = 14+86.85
P. T. = 19+14.52
e = NA
Ls = NA

TEMPORARY CONSTRUCTION EASEMENT

STA. 17+00 CONSTRUCT
TYPE RM DROP INLET RT.
(4' X 3' X H=3'0")
24" X 50' R.C. PIPE OUTLET ON LT.
(CLASS III) TYPE 3 BEDDING WITH FES.

C.L. GOAD SPRINGS ACC. RD. STA. 20+00.00 =
C.L. GOAD SPRINGS RD. STA. 53+50.00

STA. 11+58.45 CONSTRUCT
APPROACH ON LT.
25 CU. YDS.

TEMPORARY CONSTRUCTION EASEMENT

CONSTRUCTION LIMITS

PROPOSED R/W

PROPOSED C/A & FENCE

CONSTRUCTION LIMITS

C.L. GOAD SPRINGS ACCESS RD.

PI 11+66.23

PC 10+00

PT 13+37.11

PC 15+00

PT 19+14.52

PI 17+00.79

N 71°25'44" E

N 75°42'19" E

N 0°42'19.5" E

16' GATE

EXISTING R/W

PROPOSED R/W. C/A & FENCE

CONSTRUCTION LIMITS

EXIST. R/W & C/A

CONSTRUCTION LIMITS

GOAD SPRINGS RD.

PAVED

GATE

BSPK

CANOPY

C.L. RAMP SW

C.L. RAMP SE

S 64°14'14" W

PI 51+38.25

PT 712+61.07

PC 713+44.08

PI 728+59.76

PI 705+87.98

C.L. I-49

T 99 TBR CAP

CONCRETE DITCH PAVING (TYPE B)

| STA. | STA. | SIDE | "W" | SQ. YDS. |
|---|---|---|---|---|
| 17+00 | | LT. = 25 LIN. FT. | 6'-0" | 16.7 |

GOAD SPRINGS ACCESS RD.

| STREAM | STATION | STREAM TYPE | TOP OF CHANNEL ELEV. |
|---|---|---|---|
| UNNAMED TRIB. | 712+35 (GOAD SPRINGS AC. RD.) | INTERMITTENT | 1258 FT. MSL |

STA. 8+41.52 BEGIN SUPERELEVATION
STA. 10+41.52 MAX SUPERELEVATION (0.070 FT./FT.)
STA. 12+87.11 MAX SUPERELEVATION (0.070 FT./FT.)
STA. 14+87.11 END SUPERELEVATION

PROFILE GRADE

VC=500.00'
K 95.79

VC=200.00'
K 68.97

PVC 12+00.00
ELEV. 1298.01

PVI 13+00.00
ELEV. 1299.11
P.G. 1298.39

PVT 14+00.00
ELEV. 1297.31

PVC 14+50.00
ELEV. 1296.41

PVT 19+50.00
ELEV. 1300.46

1.10%

-1.80%

3.42%

TOP 1291.75
INV 1288.75
F.L. 1288.46 LT.

PVC 17+00.00
ELEV. 1291.97
P.G. 1295.17

EXISTING GROUND

F.L. = 1246.90 LT.

C.L. GOAD SPRINGS ACCESS RD.
STA. 19+87.42
C.L. GOAD SPRINGS RD.
STA. 53+46.74 12.15' LT.
ELEV. 1301.74

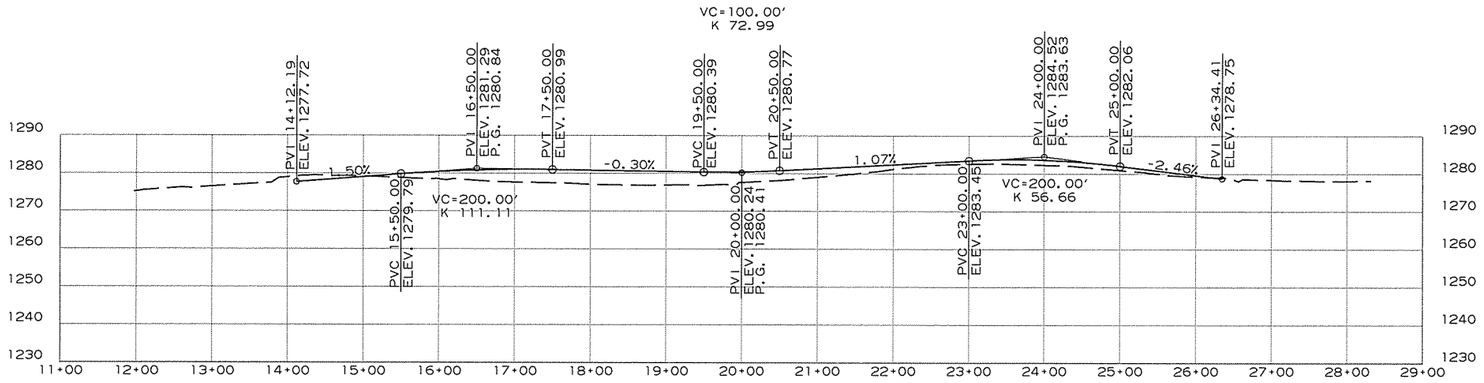
1310 1300 1290 1280 1270 1260 1250 1240 1230 1220

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

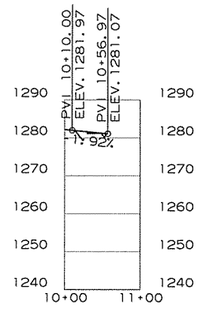
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERRY
9-5-14

sadonaldson 9/4/2014 3:22:20 PM
WORKSPACE: AHTD
L:\2005\05916B0 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_PP_GSR_FR02.dgn
REVISED DATE:

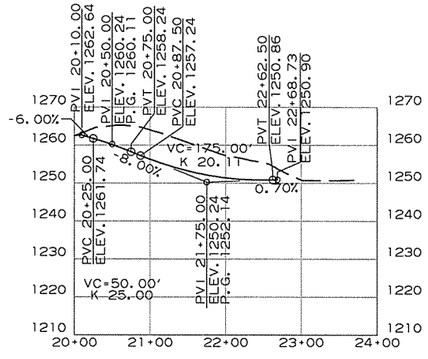
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 251 | 897 |
| | | | | (2) | MAINTENANCE OF TRAFFIC PROFILES | | | |




GRIMSLEY RD. DETOUR




GRIMSLEY RD. DETOUR DRIVEWAY




PUPPY CREEK DETOUR

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY

9-5-14

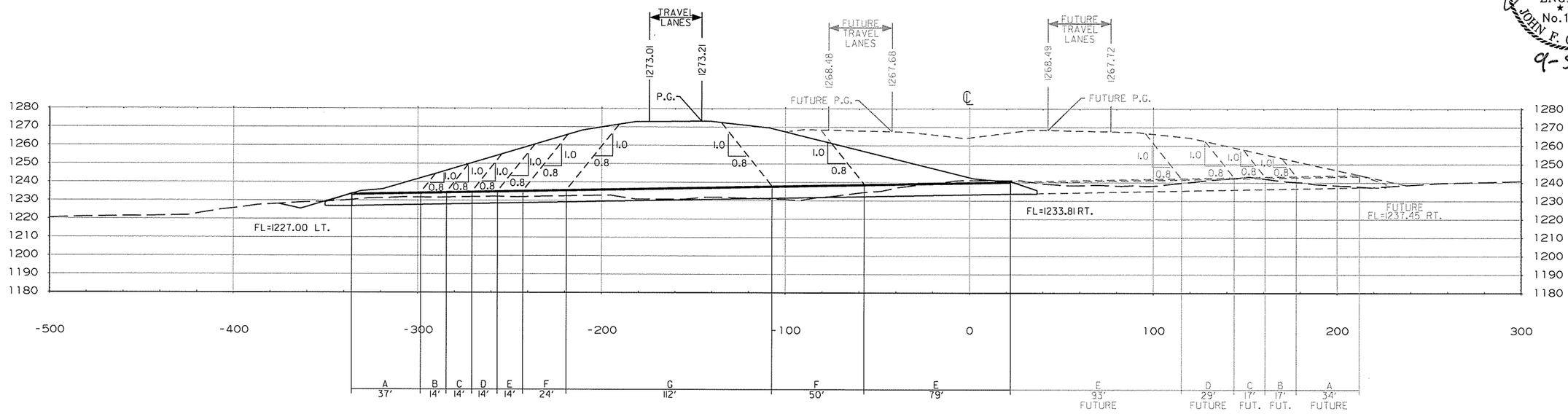
sadonaldson 9/4/2014 3:22:25 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY #2 TO I-540\SBG_PR_MOT_01.dgn

REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 252 | 897 |

(2) CULVERT DIAGRAM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13422
JOHN F. CANTABERY
9-5-14



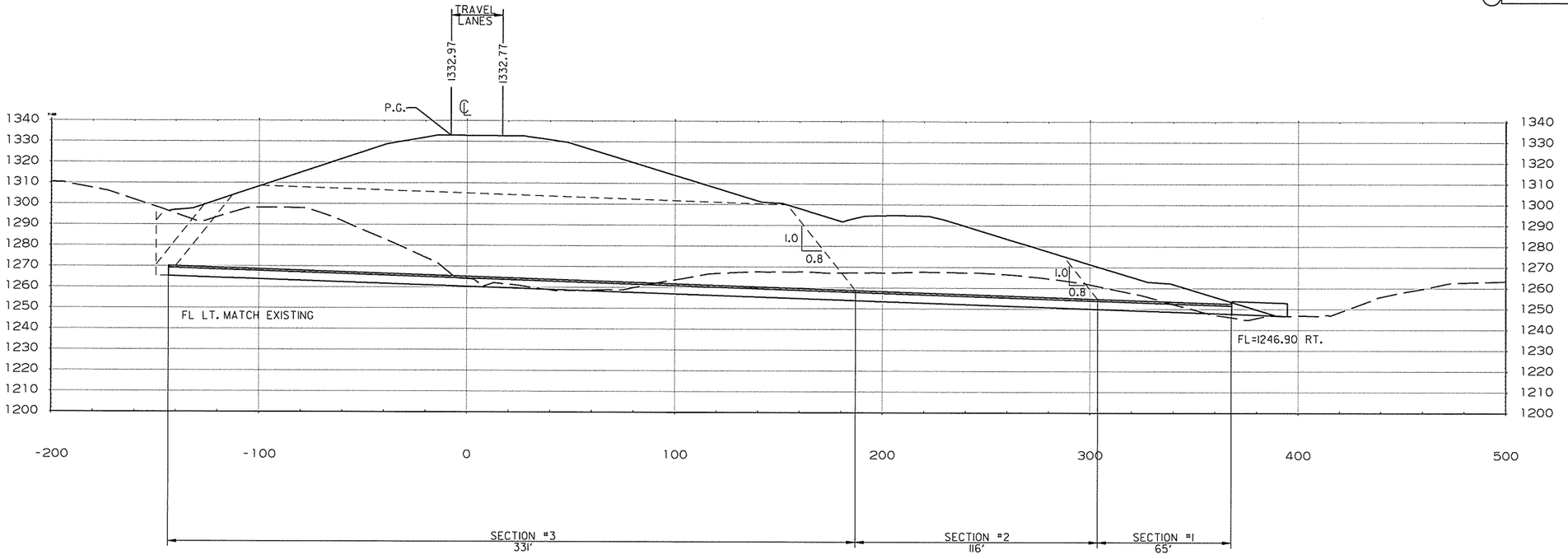

## STATION 705+80 - CULVERT SECTION

8' X 6' X 358' R.C. BOX CULVERT
45° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.

CULVERT DIAGRAM

sadonaldson 9/4/2014 3:22:44 PM
WORKSPACE: AHTD
L:\2005\05911680 - AHTD Springdale Bypass\Drawings\RWY 12 TO I-540\SBG_CS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 253 | 897 |
| | | | | (2) | CULVERT DIAGRAM | | | |




STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13422
JOHN F. CANTABERY
9-5-14

## RAMP SE STATION 712+31 - CULVERT SECTION

8' X 4' X 512' R.C. BOX CULVERT EXTENSION
15° RT. FWD. SKEW
WITH CONTRA-COSTA RT.

sadonaldson 9/4/2014 3:22:44 PM
WORKSPACE: AHTD
L:\2005\059I680 - AHTD Springdale Bypass\Drawings\RWY 112 TO I-540\SBG_CS_ALL_01.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 254 | 897 |
| | | | | (1) A7304 & B7304 | | LAYOUT | | 55108 |

(1) See Drawing No. 55115 for SUPERELEVATION TRANSITION SKETCH.

Dumped Riprap 1'-6" Thick Placed On Filter Blanket

Type C App. Gutter (Typ.)

Aggregate Base Course (Class 7), See DETAIL A On Dwg. No. 55114

Begin S.E. Transition Sta. 579+50

End S.E. Transition Sta. 582+79.47

S.E. = 0% Sta. 580+60

S.E. = 2% Sta. 581+70

10'-0" Shoulder

1V:3H

1V:6H

Tangent Dist. Over 500'

90° (Typ. All Bents)

CL Bridge A

B-2401

B-2403

B-2405

B-2407

Varies

2'-0"

2%

1V:2H

CL Left Lanes

Traffic

40'-0" Clr. Roadway

14'-0"

1'-5" Parapet

43'-2" Out-To-Out

3.7%

40'-0" Finished Crown

24'-0" Pavement

Profile Grade Line

Type CI Approach Slab

1V:6H

6'-0" Shoulder

30'-0"

60'-0" Median

579+00

580+00

581+00

582+00

583+00

PC 582+11.17

N 52°42'13.6" E

CL Construction & CL Median U.S. Hwy. 412 Bypass

Approx. 1.52 Mi. To S.H. 112

Bottom Of Riprap Top Of Drainage/ Stabilizing Layer

Toe Of Fill Slope Bottom Of Drainage/ Stabilizing Layer

For Limits Of Dumped Riprap And Toe Of Fill Slope, See LOCATION SKETCH On Dwg. No. 55114.

BEGIN BRIDGE STA. 579+48.91

PLAN

Total Length Of Bridge = 1007'-2⅛"

330'-0" Continuous Composite Prestressed Girder Unit (110'-110'-110') (Type BT-72 Girders)

125'-0" Composite Prestressed Girder Simple Span (Type BT-72 Girders)

1'-1⅛"

Slope Intercept Sta. 579+32.82 Elev. 1198.17

Elev. 1197.51

CL 2⅝" Strip Seal Joint (4" Movement Rating)

CL Top of Deck @ CL Bridge To Low Chord = Varies, 7'-7⅞" (Max.)

Sta. 580+60.00 Elev. 1195.38

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-3⅛"

Concrete Parapet Railing

Sta. 581+70.00 Elev. 1193.62

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-8⅜"

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅜"

Sta. 582+79.47 Elev. 1192.16

CL 2⅝" Strip Seal Joint (4" Movement Rating)

Proposed Grade Line @ CL Bridge A

Exp.

Dumped Riprap

59' Piles

54' Piles

2:1 Slope

Fix

57'-0"

52'-0"

48'-0"

33.46' Low Chord To Design H.W.

Design H.W. ($O_{50}$NWS) Elev. 1147.97

El. 1147.0

El. 1145.0

El. 1144.0

El. 1144.0

Elev. 1131.06

Elev. 1133.94

Elev. 1136.20

A-
B-
N-
O-

8.3'
11.7'
14.7'
24.1'

B-
O-
R-

7'
11.1'
17'

C-
T-
U-

6'
14.3'
16'

C-
T-

5.7'
15.7'

20' Drainage/Stabilizing Layer

Existing Ground Line @ CL Bridge A

1210
1200
1190
1180
1170
1160
1150
1140
1130
1120

Bent No. 1A

Sta. 579+49
44' Lt. of CL Median
5.5 - 6.5, N = 24
10.5 - 11.5, N = 29
11.7 - 15.8, SCR% = 73, ROD% = 24
15.8 - 20.8, SCR% = 100, ROD% = 63
20.8 - 24.1, SCR% = 100, ROD% = 76

Bent No. 2A

Sta. 580+60
44' Lt. of CL Median
5.5 - 6.5, N = 18
7.0 - 11.0, SCR% = 63, ROD% = 0
11.0 - 16.0, SCR% = 100, ROD% = 72
16.0 - 17.0, SCR% = 100, ROD% = 0

Bent No. 3A

Sta. 581+70
44' Lt. of CL Median
5.0 - 5.3, N = 100+
6.0 - 11.0, SCR% = 100, ROD% = 42
11.0 - 16.0, SCR% = 100, ROD% = 72

Bent No. 4A

Sta. 582+80
44' Lt. of CL Median
5.0 - 5.3, N = 100+
5.7 - 10.7, SCR% = 100, ROD% = 26
10.7 - 15.7, SCR% = 100, ROD% = 34

579+00 580+00 581+00 582+00 583+00

ELEVATION - BRIDGE A

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55116.

FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

Note:
Use Type C approach gutters (w=10'-0" & w=6'-0") & Type CI approach slab at beginning of bridge. See Std. Dwg. No. 55030C for details of Type C approach gutters. For details of Type CI approach slab, see Std. Dwg. No. 55040CI.

For GENERAL NOTES, BORING LEGEND and HYDRAULIC DATA, see Dwg. No. 55115.

CL MEDIAN CURVE DATA

PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39

PVI Sta. 587+50
Elev. 1175.28
VC = 1900'

-2.77% +2.77%

VERTICAL CURVE DATA

U.S. Highway 412 Bypass (Profile Grade Along Inside Edge of Pavement)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
No. 8017
9-8-14
BRIDGE ENGINEER

SHEET 1 OF 9
LAYOUT OF BRIDGE A
U.S. HIGHWAY 412
OVER SPRING CREEK
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907XI_LI.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55108

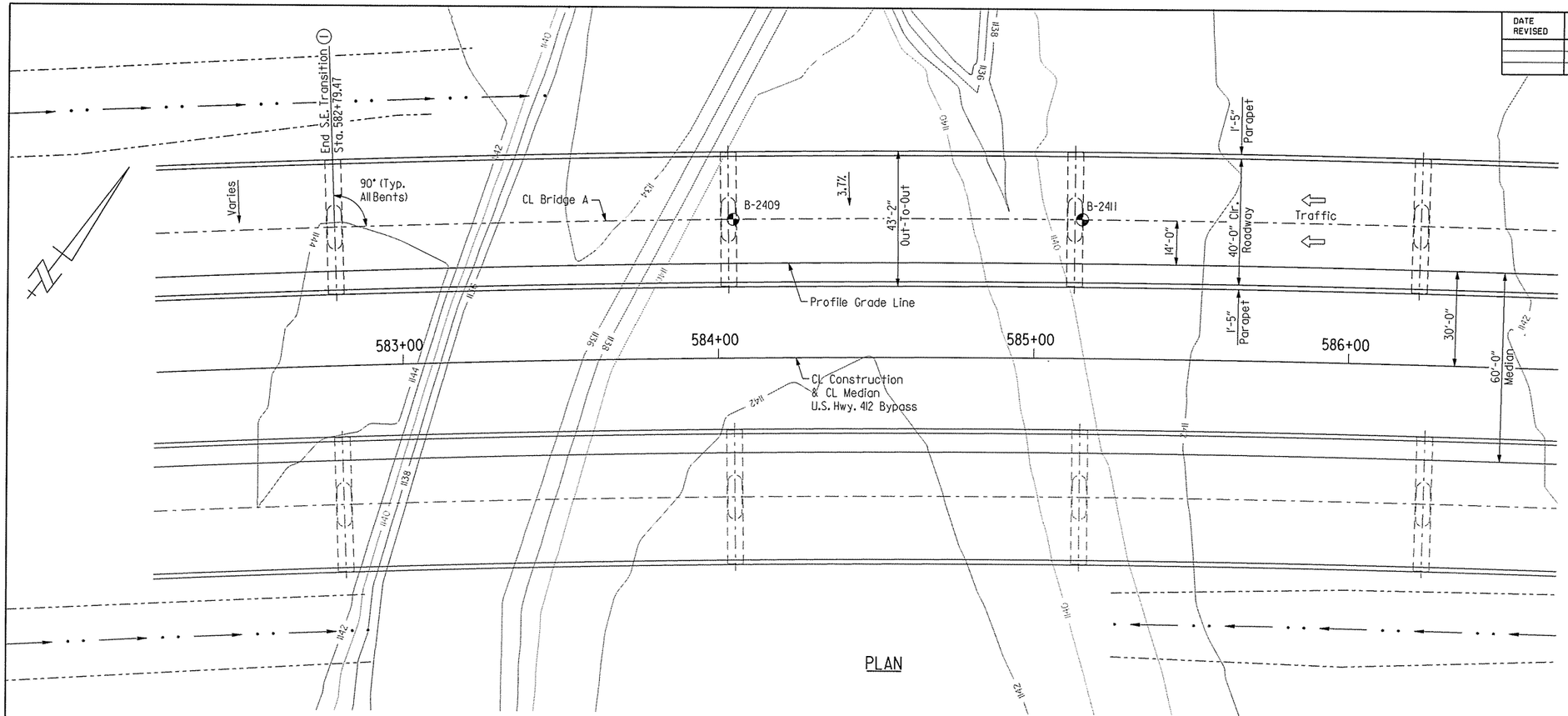
dfogood 9/4/2014
W:\BRIDGE\CE_AHTD_Projects
\\GLITDCONLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xLI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 255 | 897 |
| ① A7304 & B7304 | | LAYOUT | | 55109 |

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

For GENERAL NOTES, BORING LEGEND and HYDRAULIC DATA, see Dwg. No. 55115.

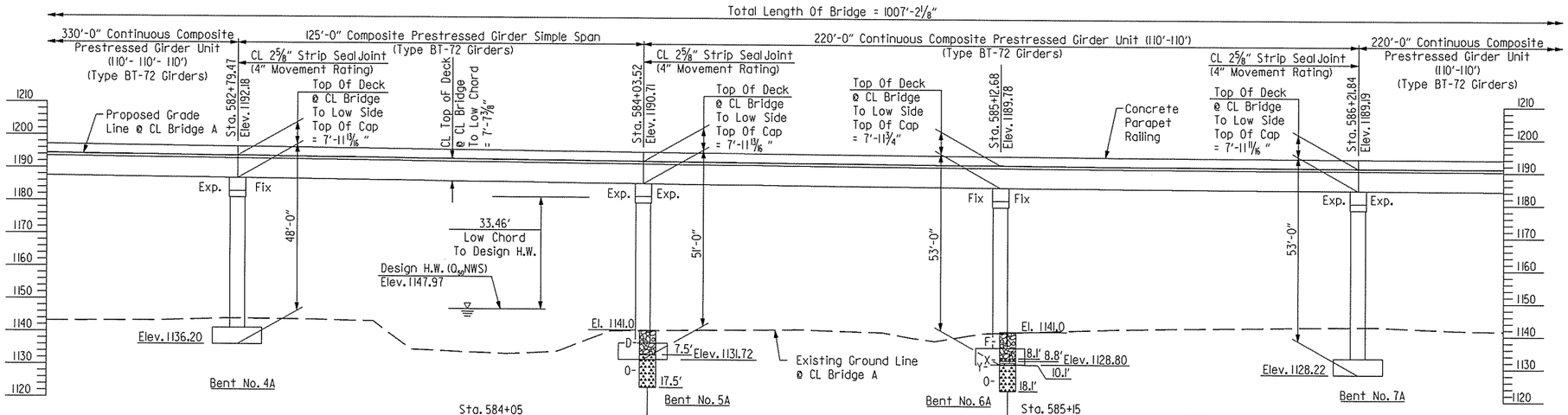



PLAN

**CL MEDIAN CURVE DATA**

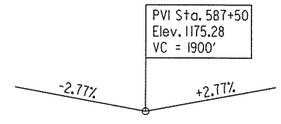
PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39

① See Drawing No. 55115 for SUPERELEVATION TRANSITION SKETCH.




ELEVATION - BRIDGE A

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55116.




**VERTICAL CURVE DATA**

U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge of Pavement)

SHEET 2 OF 9
LAYOUT OF BRIDGE A
U.S. HIGHWAY 412
OVER SPRING CREEK
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907X1_L2.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55109

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

drgood 9/4/2014
WORKSPACE: AHTD Bridge
\\GLITDCONLITP\Projects\2005\05911680 - AHTD Springdale Byposs\Drawings\BRG\SpringCreek\BCA0907x1_L2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 256 | 897 |
| | | | | (1) A7304 & B7304 | | LAYOUT | | 55110 |

NOTE:
The use of explosives at Bent 9 Bridge A will not be allowed. The use of explosives at other locations should be exercised with care to prevent damage to spring. Use of explosives shall be in accordance with Subsection 801.04.

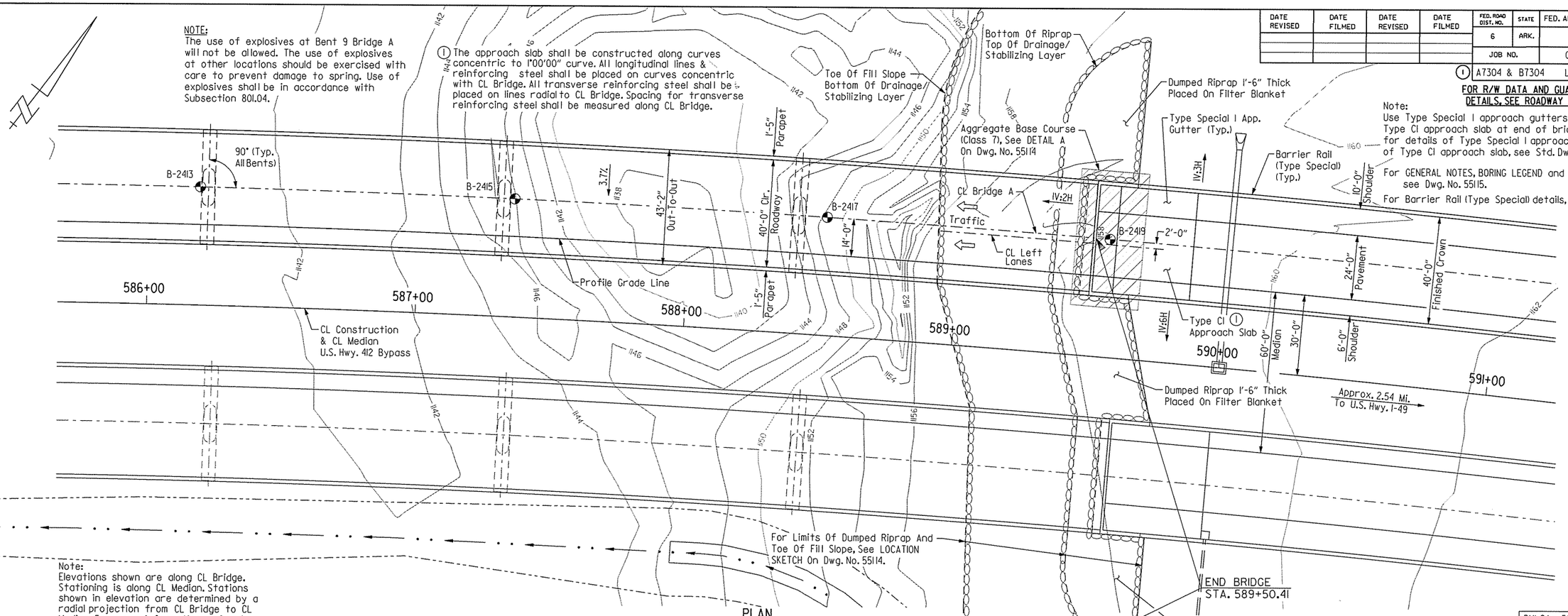
(1) The approach slab shall be constructed along curves concentric to 1°00'00" curve. All longitudinal lines & reinforcing steel shall be placed on curves concentric with CL Bridge. All transverse reinforcing steel shall be placed on lines radial to CL Bridge. Spacing for transverse reinforcing steel shall be measured along CL Bridge.

FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

Note:
Use Type Special I approach gutters (w=10'-0" & w=6'-0") & Type CI approach slab at end of bridge. See Dwg. No. 55168 for details of Type Special I approach gutters. For details of Type CI approach slab, see Std. Dwg. No. 55040CI.

For GENERAL NOTES, BORING LEGEND and HYDRAULIC DATA, see Dwg. No. 55115.

For Barrier Rail (Type Special) details, see Roadway plans.




PLAN

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55116.

Total Length Of Bridge = 1007'-2⅛"

220'-0" Continuous Composite Prestressed Girder Unit (110'-110') (Type BT-72 Girders)

CL 2⅝" Strip Seal Joint (4" Movement Rating)

220'-0" Continuous Composite Prestressed Girder Unit (110'-110') (Type BT-72 Girders)

CL 2⅝" Strip Seal Joint (4" Movement Rating)

110'-0" Composite Prestressed Girder (Type BT-72 Girders)

1'-1⅛"

CL 2⅝" Strip Seal Joint (4" Movement Rating)

Slope Intercept Sta. 589+65.02 Elev. 1189.11

Barrier Rail (Type Special) (Typ.)

Sta. 586+21.84 Elev. 1189.19

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅛"

CL Top of Deck @ CL Bridge To Low Chord = 7'-7⅜"

Sta. 587+31.00 Elev. 1188.96

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅝"

Concrete Parapet Railing

Sta. 588+40.16 Elev. 1189.07

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅝"

Sta. 589+54 Elev. 1189.54

Dumped Riprap

38' Piles

Proposed Grade Line @ CL Bridge A

Exp. Exp. Fix Fix Exp. Fix Exp.

53'-0" 53'-0" 49'-0"

33.46' Low Chord To Design H.W.

Design H.W. ($Q_{50}$NWS) Elev. 1147.97

2:1 Slope

33' Piles

El. 1158.0

20' Drainage/Stabilizing Layer

El. 1143.0

El. 1147.0

El. 1153.0

Existing Ground Line @ CL Bridge A

Elev. 1128.22

Elev. 1127.99

Elev. 1132.10

9.4' 10.2'

19.5'

590+00

Bent No. 7A

Sta. 586+19
44' Lt. of CL Median
5.5 - 6.5, N = 5
10.5 - 11.0, N = 100+
11.0 - 16.0, SCR% = 95, RQD% = 40
16.0 - 21.0, SCR% = 100, RQD% = 72

Bent No. 8A

Sta. 587+35
44' Lt. of CL Median
5.5 - 6.5, N = 4
10.5 - 11.5, N = 14
15.5 - 16.5, N = 3
17.2 - 21.0, SCR% = 100, RQD% = 66
21.0 - 26.0, SCR% = 100, RQD% = 92
26.0 - 27.2, SCR% = 100, RQD% = 100

Bent No. 9A

Sta. 588+51
44' Lt. of CL Median
4.7 - 4.9, N = 100+
5.2 - 5.4, SCR% = 100, RQD% = 0
5.4 - 10.4, SCR% = 60, RQD% = 16
10.4 - 15.4, SCR% = 98, RQD% = 38

Bent No. 10A

Sta. 589+56
44' Lt. of CL Median
5.3 - 6.3, N = 23
9.4 - 10.5, SCR% = 82, RQD% = 50
10.5 - 15.5, SCR% = 88, RQD% = 26
15.5 - 19.5, SCR% = 100, RQD% = 10

ELEVATION - BRIDGE A

PVI Sta. 587+50
Elev. 1175.28
VC = 1900'
-2.77%
+2.77%

VERTICAL CURVE DATA
U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge of Pavement)

CL MEDIAN CURVE DATA
PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39

SHEET 3 OF 9
LAYOUT OF BRIDGE A
U.S. HIGHWAY 412
OVER SPRING CREEK
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907XL3.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55110

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No. 8017

BRIDGE ENGINEER

drgood 9/4/2014
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xL3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 257 | 897 |

(1) A7304 & B7304 LAYOUT 55111

(1) See Drawing No. 55115 For SUPERELEVATION TRANSITION SKETCH.

Dumped Riprap 1'-6" Thick Placed On Filter Blanket

Bottom Of Riprap Top Of Drainage/ Stabilizing Layer

Toe Of Fill Slope Bottom Of Drainage/ Stabilizing Layer

Approx. 1.52 Mi. To S.H. 112

579+00 580+00 581+00 582+00 583+00

PC 582+11.17

N52°42'13.6"E

CL Construction & CL Median U.S. Hwy. 412 Bypass

Begin S.E. Transition (1) Sta. 580+60

End S.E. Transition (1) Sta. 582+80.53

Profile Grade Line

Aggregate Base Course (Class 7), See DETAIL A On Dwg. No. 55114

Type CI Approach Slab

1V:6H

1V:2H

1V:3H

60'-0" Median

30'-0"

6'-0" Shoulder

40'-0" Finished Crown

24'-0" Pavement

10'-0" Shoulder

Tangent Dist. Over 500'

2'

B-2402

B-2404

B-2406

B-2408

CL Right Lanes

CL Bridge B

2%

14'-0"

1'-5" Parapet

40'-0" Clr. Roadway

Traffic

Varies

43'-2" Out-To-Out

3.7%

90° (Typ. All Bents)

Type C App. Gutter (Typ.)

For Limits Of Dumped Riprap And Toe Of Fill Slope, See LOCATION SKETCH On Dwg. No. 55114.

BEGIN BRIDGE STA. 579+48.91

PLAN

Total Length Of Bridge = 1007'-2⅛"

1'-1 1/16"

330'-0" Continuous Composite Prestressed Girder Unit (110'-110'-110') (Type BT-72 Girders)

125'-0" Composite Prestressed Girder Simple Span (Type BT-72 Girders)

Slope Intercept Sta. 579+32.65 Elev. 1198.18

Guardrail (See ROADWAY PLANS)

CL 2⅝" Strip Seal Joint (4" Movement Rating)

Elev. 1197.51

Concrete Parapet Railing

Sta. 580+60.00 Elev. 1195.10

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-8¼"

CL Top of Deck @ CL Bridge To Low Chord = Varies, 7'-7⅜" (Max.)

Sta. 581+70.00 Elev. 1192.94

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-10 1/16"

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅞"

Sta. 582+80.53 Elev. 1191.13

CL 2⅝" Strip Seal Joint (4" Movement Rating)

Note: Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55116.

1210 1200 1190 1180 1170 1160 1150 1140 1130 1120

Proposed Grade Line @ CL Bridge B

Exp. Fix Fix Fix Fix Fix Exp. Fix

62' Piles 57' Piles

Dumped Riprap 2:1 Slope

54'-0" 33.46' Low Chord To Design H.W. 51'-0" 48'-0"

Design H.W. ($Q_{50}$NWS) Elev. 1147.97

El. 1148.0

El. 1145.0 El. 1144.0 El. 1145.0

B-P-O- 13.2' 17.5' 26'

B-S- 8.8' 18.8'

C-T-W-V- 5.4' 13' 14.3' 15.4'

A- 7.2' 17.2'

20' Drainage/Stabilizing Layer

Elev. 1133.41 Elev. 1134.10 Elev. 1131.14

Existing Ground Line @ CL Bridge B

Bent No. 1B Bent No. 2B Bent No. 3B Bent No. 4B

Sta. 579+49
44' Rt. of CL Median
5.5 - 6.5, N = 30
10.5 - 11.5, N = 24
13.2 - 16.0, SCR% = 27, ROD% = 0
16.0 - 21.0, SCR% = 87, ROD% = 38
21.0 - 26.0, SCR% = 100, ROD% = 72

Sta. 580+60
44' Rt. of CL Median
5.5 - 6.5, N = 23
8.8 - 11.0, SCR% = 95, ROD% = 14
11.0 - 16.0, SCR% = 100, ROD% = 36
16.0 - 18.8, SCR% = 100, ROD% = 93

Sta. 581+70
44' Rt. of CL Median
5.0 - 5.4, N = 100+
5.4 - 10.4, SCR% = 100, ROD% = 30
10.4 - 15.4, SCR% = 100, ROD% = 52

Sta. 582+80
44' Rt. of CL Median
5.5 - 6.5, N = 29
7.2 - 11.1, SCR% = 100, ROD% = 44
11.1 - 16.1, SCR% = 100, ROD% = 40
16.1 - 17.2, SCR% = 82, ROD% = 0

579+00 580+00 581+00 582+00 583+00

ELEVATION - BRIDGE B

FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS

Note:
Use Type C approach gutters (w=10'-0" & w=6'-0") & Type CI approach slab at beginning of bridge. See Std. Dwg. No. 55030C for details of Type C approach gutters. For details of Type CI approach slab, see Std. Dwg. No. 55040CI.

For GENERAL NOTES, BORING LEGEND and HYDRAULIC DATA, see Dwg. No. 55115.

CL MEDIAN CURVE DATA
PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39

PVI Sta. 587+50
Elev. 1175.28
VC = 1900'
-2.77% +2.77%

VERTICAL CURVE DATA
U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge of Pavement)

STATE OF ARKANSAS
JOHN H. RUDDELL
No. 8017
LICENSED PROFESSIONAL ENGINEER
9-5-14
BRIDGE ENGINEER

# SHEET 4 OF 9
# LAYOUT OF BRIDGE B
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907XI_L4.DGN
SCALE: 1"=20'

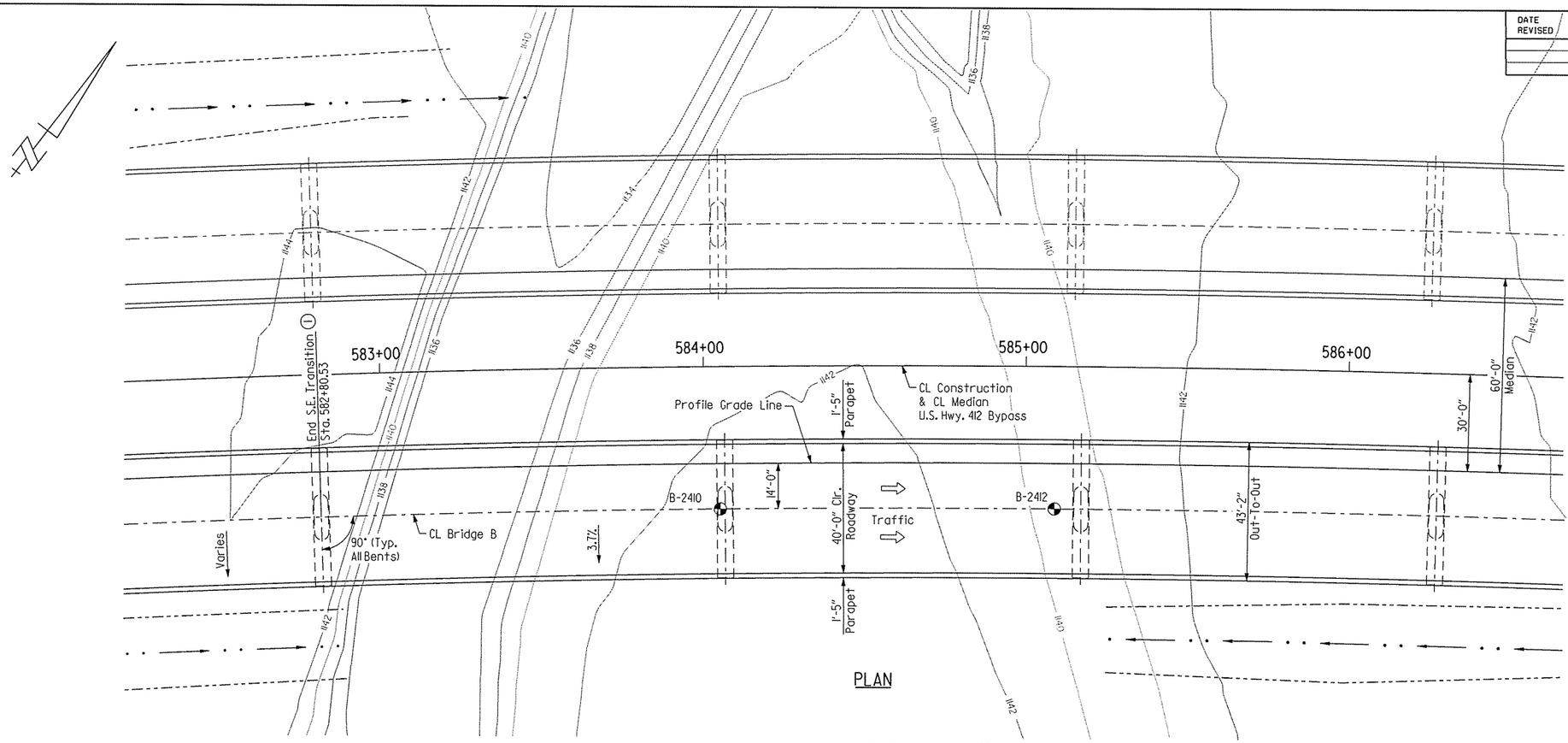
BRIDGE NO. A7304 & B7304 DRAWING NO. 55111

drgood 9/4/2014
WORKSPACE: AHTD Bridge
\\Qal1dot01\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xL4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 258 | 897 |
| | | | | ① A7304 & B7304 | | LAYOUT | | 55112 |

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

For GENERAL NOTES, BORING LEGEND and HYDRAULIC DATA, See Dwg. No. 55115.

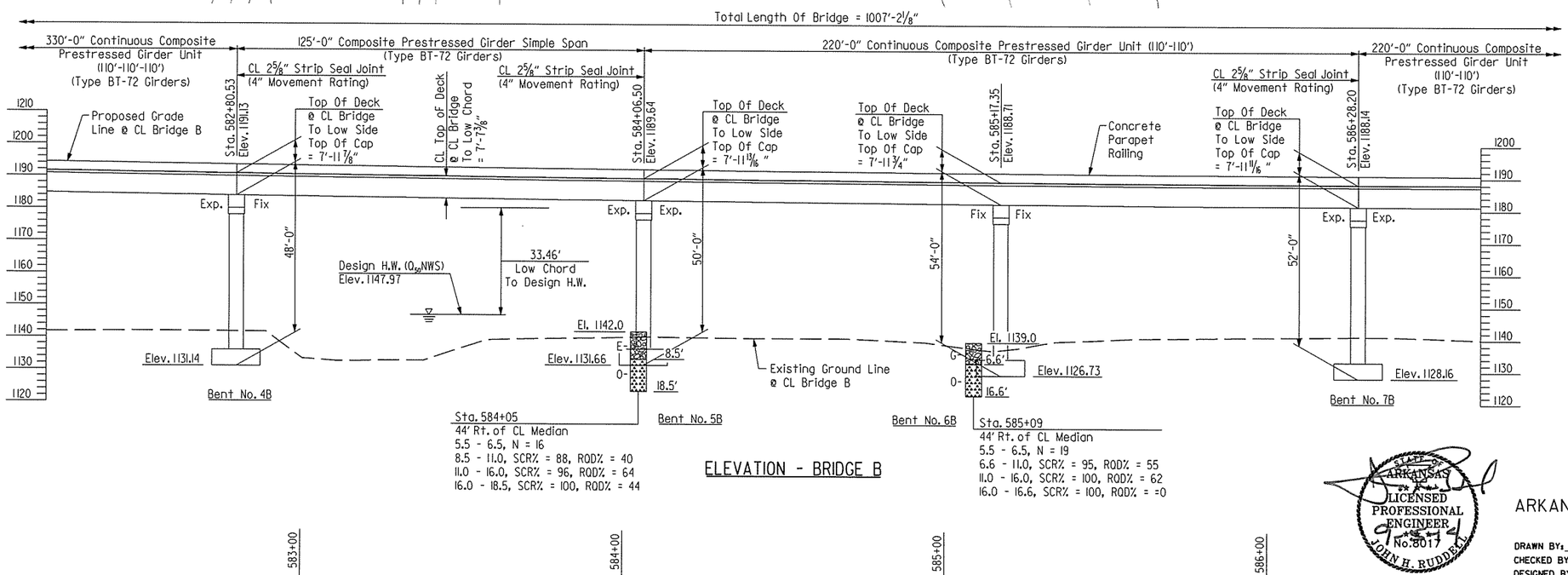



PLAN

**CL MEDIAN CURVE DATA**

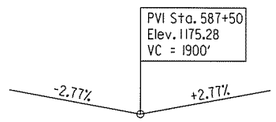
PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39

① See Drawing No. 55115 for SUPERELEVATION TRANSITION SKETCH.




ELEVATION - BRIDGE B

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM On Dwg. No. 55115.




**VERTICAL CURVE DATA**
U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge of Pavement)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 5 OF 9
# LAYOUT OF BRIDGE B
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907XL_L5.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55112

drgood 9/4/2014
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xL_L5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 259 | 897 |
| | | | | (1) A7304 & B7304 | | LAYOUT | | 55113 |

(1) The approach slab shall be constructed along curves concentric to 1°00'00" curve. All longitudinal lines & reinforcing steel shall be placed on curves concentric with CL Bridge. All transverse reinforcing steel shall be placed on lines radial to CL Bridge. Spacing for transverse reinforcing steel shall be measured along CL Bridge.

Toe Of Fill Slope
Bottom Of Drainage/
Stabilizing Layer

For Limits Of Dumped Riprap And Toe Of Fill Slope, See LOCATION SKETCH On Dwg. No. 55114.

Dumped Riprap 1'-6" Thick Placed On Filter Blanket

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

Note:
Use Type Special I approach gutters (w=10'-0" & w=6'-0") & Type CI approach slab at end of bridge. See Dwg. No. 55168 for details of Type Special I approach gutters. For details of Type CI approach slab, see Std. Dwg. No. 55040CI.

For GENERAL NOTES, BORING LEGEND and HYDRAULIC DATA, see Dwg. No. 55115.

Use Type N-2 drop inlet at location shown on this dwg.

For Barrier Rail (Type Special) details, see Roadway Plans.

586+00 587+00 588+00 589+00 590+00 591+00

CL Construction & CL Median U.S. Hwy. 412 Bypass

Approx. 2.54 Mi. To U.S. Hwy. I-49

B-2414 B-2416 B-2418 B-2420

90° (Typ. All Bents)

3.7%

43'-2" Out-To-Out

40'-0" Clr. Roadway

1'-5" Parapet

14'-0"

Traffic

Profile Grade Line

CL Right Lanes

CL Bridge B

IV:2H

IV:6H

IV:3H

2'-0"

Type CI (1) Approach Slab

Type N-2 Inlet

60'-0" Median

30'-0"

6'-0" Shoulder

24'-0" Pavement

40'-0" Finished Crown

10'-0" Shoulder

Aggregate Base Course (Class 7), See DETAIL A On Dwg. No. 55114

Type Special I App. Gutter (Typ.)

END BRIDGE
STA. 589+61.84

Bottom Of Riprap
Top Of Drainage/
Stabilizing Layer

Dumped Riprap 1'-6" Thick Placed On Filter Blanket

Barrier Rail (Type Special) (Typ.)

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55116.

## PLAN

### CL MEDIAN CURVE DATA

PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39

PVI Sta. 587+50
Elev. 1175.28
VC = 1900'

-2.77% +2.77%

### VERTICAL CURVE DATA

U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge of Pavement)

Total Length Of Bridge = 1007'-2⅛"

220'-0" Continuous Composite Prestressed Girder Unit (110'-110') (Type BT-72 Girders)

CL 2⅝" Strip Seal Joint (4" Movement Rating)

220'-0" Continuous Composite Prestressed Girder Unit (110'-110') (Type BT-72 Girders)

CL 2⅝" Strip Seal Joint (4" Movement Rating)

110'-0" Composite Prestressed Girder (Type BT-72 Girders)

CL 2⅝" Strip Seal Joint (4" Movement Rating)

1'-1 1/16"

Sta. 586+28.20 Elev. 1188.14

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11 11/16"

CL Top of Deck @ CL Bridge To Low Chord = 7'-7⅛"

Sta. 587+39.05 Elev. 1187.92

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅝"

Concrete Parapet Railing

Sta. 588+49.90 Elev. 1188.06

Top Of Deck @ CL Bridge To Low Side Top Of Cap = 7'-11⅝"

Sta. 589+78.56 Elev. 1188.57

Slope Intercept Sta. 589+78.56 Elev. 1189.20

Barrier Rail (Type Special) (Typ.)

Dumped Riprap

Exp. Exp. Fix Fix Exp. Fix Exp.

52'-0" 52'-0" 49'-0"

33.46' Low Chord To Design H.W.

Design H.W. ($Q_{50}$NWS) Elev. 1147.97

2:1 Slope

37' Piles

Proposed Grade Line @ CL Bridge B

El. 1158.0

32' Piles

20' Drainage/ Stabilizing Layer

El. 1143.0 El. 1142.0 El. 1151.5

Existing Ground Line @ CL Bridge B

I-0 Elev. 1128.16 11.6' 21.6'

K-AB-AC-AD Elev. 1127.95 11.8' 12.4' 16.1' 20.8' 21.8'

M-0 Elev. 1131.09 18' 28'

A-0 19.4'

Bent No. 7B

Sta. 586+25
44' Rt. of CL Median
5.5 - 6.5, N = 5
10.5 - 11.5, N = 33
11.6 - 16.0, SCR% = 100, RQD% = 57
16.0 - 21.0, SCR% = 100, RQD% = 48
21.0 - 21.6, SCR% = 100, RQD% = 100

Bent No. 8B

Sta. 587+35
44' Rt. of CL Median
5.3 - 6.3, N = 5
10.3 - 11.3, N = 10
11.8 - 15.8, SCR% = 95, RQD% = 30
15.8 - 20.8, SCR% = 100, RQD% = 52
20.8 - 21.8, SCR% = 100, RQD% = 100

Bent No. 9B

Sta. 588+45
44' Rt. of CL Median
5.5 - 6.5, N = 5
10.5 - 11.5, N = 5
15.5 - 16.5, N = 23
18.0 - 21.0, SCR% = 80, RQD% = 23
21.0 - 26.0, SCR% = 96, RQD% = 80
26.0 - 28.0, SCR% = 100, RQD% = 65

Bent No. 10B

Sta. 589+62
44' Rt. of CL Median
5.5 - 6.5, N = 12
9.4 - 10.4, SCR% = 92, RQD% = 33
10.4 - 15.4, SCR% = 100, RQD% = 33
15.4 - 19.4, SCR% = 98, RQD% = 33

586+00 587+00 588+00 589+00 590+00

## ELEVATION - BRIDGE B

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
7-15-14
BRIDGE ENGINEER

# SHEET 6 OF 9
# LAYOUT OF BRIDGE B
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

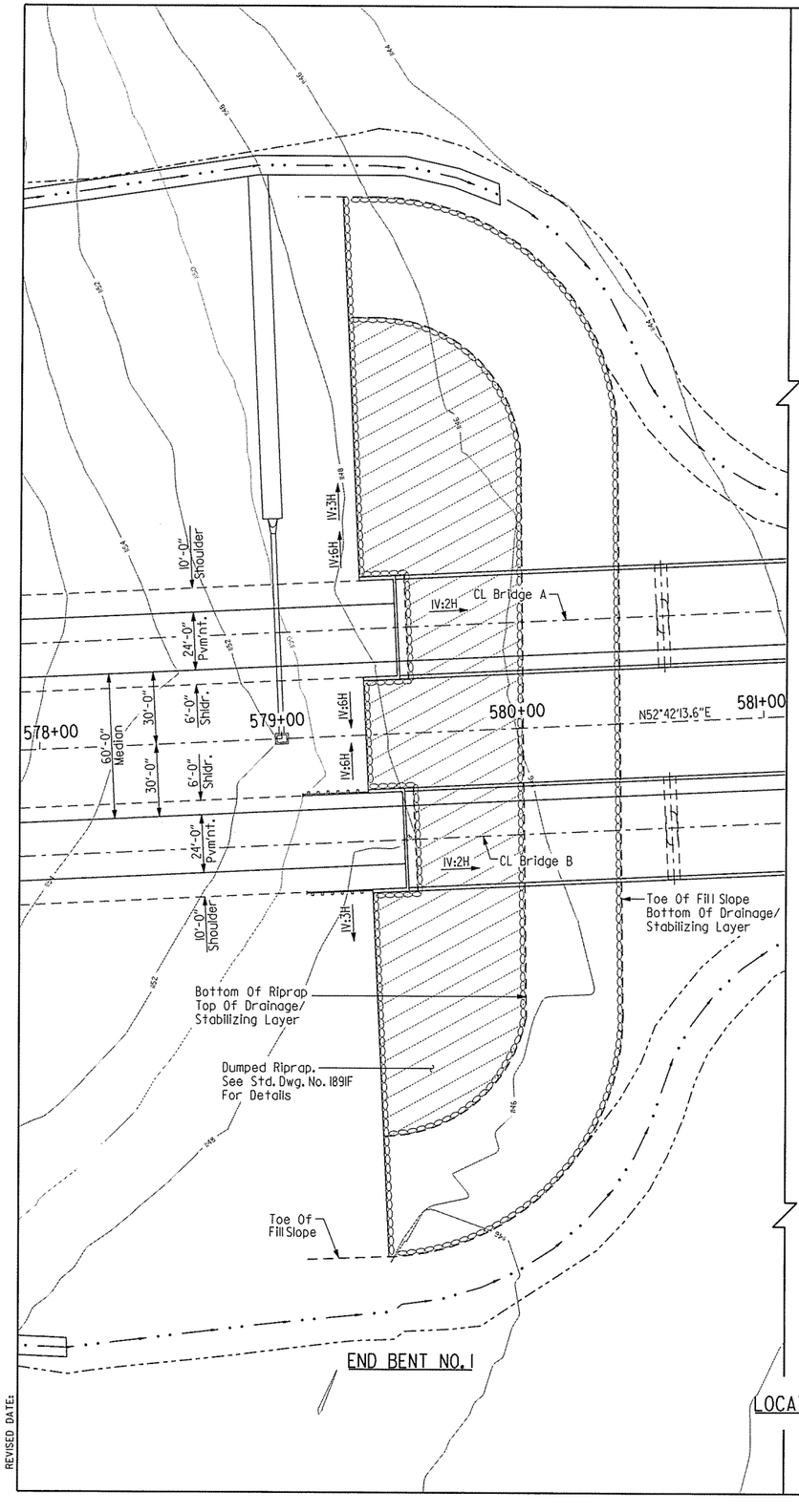
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

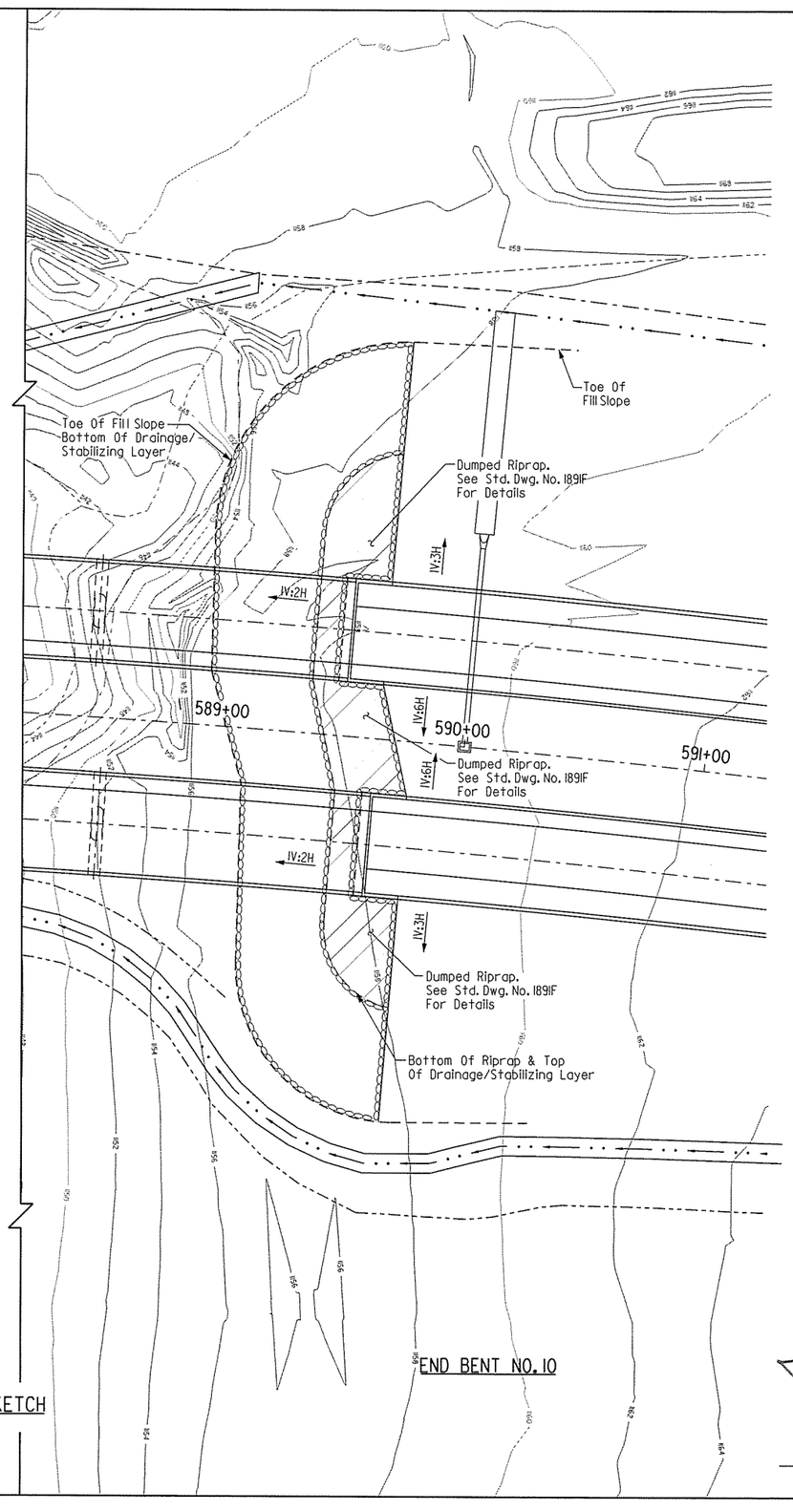
DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907XL6.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55113

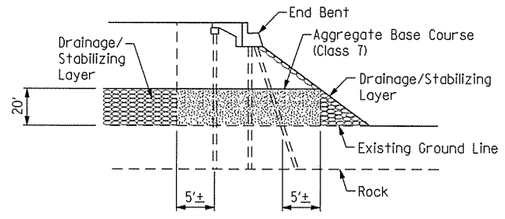
drgood
WORKSPACE: AHTD Bridge
\\ALITDDSNLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xL6.dgn
9/4/2014
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 260 | 897 |
| | | | | (1) A7304 & B7304 | | LAYOUT | | 55114 |




LOCATION SKETCH




Where a drainage/stabilizing layer is required for embankment construction, aggregate base course (Class 7), in accordance with Subsection 303.02, shall be placed as shown in areas where piling will be located. Aggregate base course (Class 7) shall be paid for as "COMPACTED EMBANKMENT".

At the Contractor's option, preboring or other methods as approved by the Engineer may be used to facilitate pile installation through the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles, where rock fill is used for embankment construction, will not be paid for separately but shall be included in item "STEEL PILING".

DETAIL A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 7 OF 9
# LAYOUT OF BRIDGE
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008

FILENAME: BCA0907XL17.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55114

dr:gosd 9/4/2014 9:34:54 AM
WORKSPACE: AHTD Bridge
\\GLITDC01\LITProjects2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XL17.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 261 | 897 |
| | | | | (1) A7304 & B7304 | | LAYOUT | | 55115 |

## GENERAL NOTES

BENCH MARK: TBM 72 T-72 RBR/Cap 1532.69' Rt. of Sta. 596+94.11
Elevation = 1178.05

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 interim revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$ = 0.125 Site Class = D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Slab, Parapets, Diaphragms) | f'c = 4000 psi |
| Class S - Bridge Concrete (Prestressed Girders) | f'c = 7000 psi |
| Class S - Bridge Concrete (Substructure) | f'c = 3500 psi |
| Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, GR. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, GR. 36) | Fy = 36,000 psi |

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons and into material designated as Chert on the boring legend. Piles shall be driven after embankment to bottom of cap is in place and to a minimum penetration of 8' into existing ground. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

PREBORING: Preboring is required for all piling in Bent 1 of Bridge B to obtain the minimum pile penetration requirements. Quantities of preboring shown are for bidding purposes only. The actual size and depth of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled in accordance with Subsection 805.08(a) to completely fill voids. The backfill and any required casings will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

BRIDGE DECK: The concrete bridge deck shallbe given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 protective surface treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

BORING LOGS: Boring logs may be obtained from Programs and Contracts Division.

SPREAD FOOTING: Footings shall be set a minimum of 2'-0" into material designated as Limestone or Chert on the boring legend and shall have a minimum cover above top of footings of 2'. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

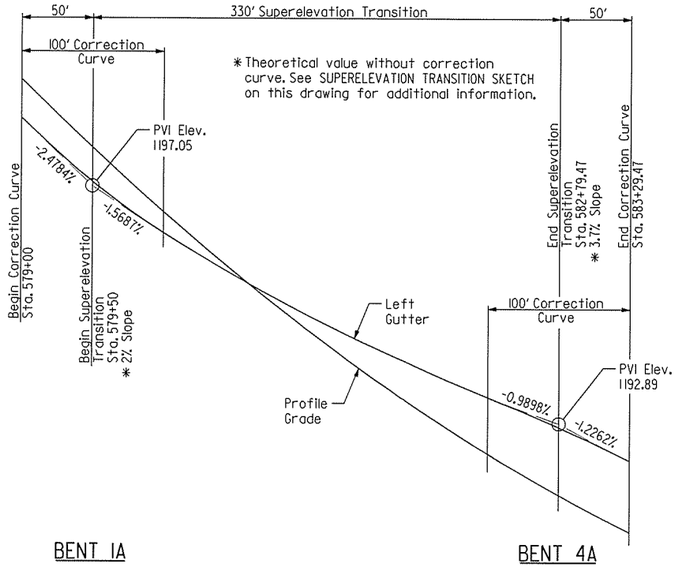
| DETAIL DRAWINGS: | DRAWING NOS: |
|---|---|
| End Bents | 55117-55123 |
| Intermediate Bents | 55124-55130 |
| 330' Cont. Comp. Prestressed Concrete Girder Unit | 55131-55139 |
| 125' Cont. Comp. Prestressed Concrete Girder Unit | 55140-55144 |
| 220' Comp. Prestressed Concrete Girder Simple Span | 55145-55150 |
| 110' Comp. Prestressed Concrete Girder Unit | 55151-55155 |
| Parapet Details | 55156-55164 |
| Joint Details | 55165-55166 |
| Elastomeric Bearings | 55167 |
| Type Special 1 Approach Slab | 55168 |
| Type C Approach Gutters | 55030C |
| Type CI Approach Slab | 55040CI |
| Steel Piling | 55020 |
| Dumped Riprap | 55001 |

### HYDRAULIC DATA

| FLOOD DESCRIPTION | FREQUENCY | DISCHARGE | * NATURAL WATER SURFACE ELEVATION | WATER SURFACE ELEVATION WITH BACKWATER |
|---|---|---|---|---|
| | YEARS | CFS | FEET | FEET |
| Design | 50 | 19,150 | 1147.97 | 1148.39 |
| Base | 100 | 24,400 | 1148.93 | 1149.28 |
| Extreme | 500 | 46,600 | 1151.98 | 1152.32 |
| Overtopping | >500 | N/A | N/A | N/A |

Drainage Area = 27.2 Square Miles
Historical High Water Elev. = N/A

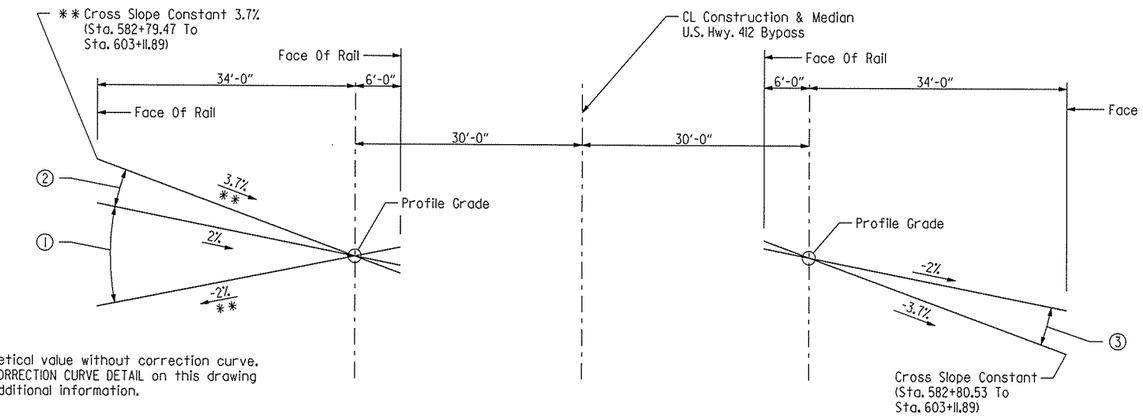
* Unconstricted Water Surface Without Structure Or Roadway Approaches.




### CORRECTION CURVE DETAIL - BRIDGE A ONLY

Sta. 579+50 to Sta. 582+79.47

NOTE:
The left gutterline of Bridge A, at the location shown, has been smoothed with correction curves. The roadway slope at any station within the correction curve is a straight line between the left gutterline and the right gutterline.




** Theoretical value without correction curve. See CORRECTION CURVE DETAIL on this drawing for additional information.

BRIDGE A

BRIDGE B

(1) Cross Slope Varies From -2% (Sta. 579+50) To 2% (Sta. 581+70)
(2) Cross Slope Varies From 2% (Sta. 581+70) To 3.7% (Sta. 582+79.47)
(3) Cross Slope Varies From -2% (Sta. 580+60) To -3.7% (Sta. 582+80.53)

### SUPERELEVATION TRANSITION SKETCH

## BORING LEGEND

A - Brown, medium dense, silty gravel with sand.
B - Brown, medium dense, poorly graded gravel with silt and sand.
C - White, very dense, silty gravel with sand.
D - Dark brown, loose, silty gravel with sand.
E - Gray, medium dense, silty gravel with sand.
F - Dark brown, medium dense, poorly graded gravel with silt and sand.
G - White, medium dense, silty gravel with sand.
H - Brown & dark brown, loose to very dense, poorly graded gravel with clay and sand.
I - Dark brown & brown, loose to dense, poorly graded gravel with clay and sand.
J - Red, dark brown & brown, very loose to medium dense, poorly graded gravel with clay and sand.
K - Brown & beige, loose, poorly graded gravel with clay and sand.
L - Brown, very dense, silty gravel with sand.
M - Brown & dark brown, loose to medium dense, poorly graded gravel with clay and sand.
N - Chert: White, lt. gray, gray, weathered.
O - Chert: White, lt. gray, gray, slightly to moderately weathered.
P - Chert: White, lt. tan, highly broken.
Q - Chert: White, lt. gray, moderately weathered.
R - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
S - Chert: White, lt. gray, gray, fresh to weathered.
T - Chert: White, lt. gray, gray, fresh to moderately weathered.
U - Limestone: White, lt. gray, gray, fine to medium grain, fresh.
V - Limestone: Lt. gray, gray, fine to medium grain, fresh.
W - Chert: White, lt. gray, gray.
X - Chert: Fragmented.
Y - Limestone: Lt. gray, gray, fresh to slightly weathered.
Z - Limestone: Gray to lt. gray, white, fine grain, fresh with slight weathering.
AA - Chert: White, lt. gray, gray, slightly weathered.
AB - Limestone: Lt. gray, gray, fine grain, fresh to moderately weathered.
AC - Chert: White, lt. gray, gray, fresh to slightly weathered.
AD - Limestone: Lt. gray, gray, fine grain, fresh.
AE - Limestone: Lt. gray, gray, fresh with slight weathering.
AF - Limestone: Lt. gray, gray.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 8 OF 9
# LAYOUT OF BRIDGE
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

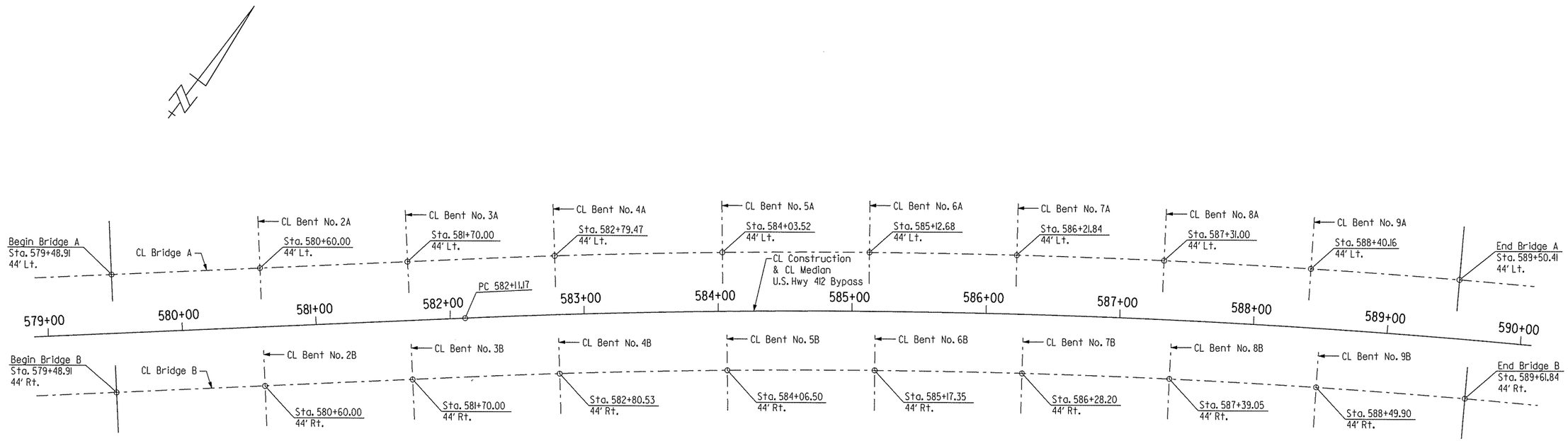
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: WMM DATE: FEB. 2008
FILENAME: BCA0907XL1_L8.DGN
SCALE: 1"=20'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55115

dropad 9/4/2014 9:34:55 AM
WORKSPACE: AHTD Bridge
V:\ALLTCON\LITPro\Projects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XL1_L8.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 262 | 897 |
| | | | | (1) A7304 & B7304 | | LAYOUT | | 55116 |

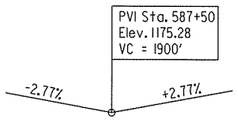



## STAKING DIAGRAM

Note:
Stationing for the project is along CL Median and CL Construction. CL of each Bridge is on a horizontal curve concentric to CL Median. The bent stations shown are determined by projecting a radial line from CL Median to CL Bridge. The offsets shown are measured along radial lines. The total bridge length, span lengths, and CL joint to beginning and end of Bridge dimensions are measured along CL Bridge. Deck elevations are at CL Bridge. All bents are constructed on radial lines.

### CL MEDIAN CURVE DATA

PI = 593+18.77
Δ = 21°52'55.9" RT.
D = 01°00'00"
T = 1107.60
L = 2188.22
R = 5729.578'
PC = 582+11.17
PT = 603+99.39




### VERTICAL CURVE DATA

U.S. Highway 412 Bypass
(Profile Grade Along
Inside Edge of Pavement)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 9 OF 9
LAYOUT OF BRIDGE
U.S. HIGHWAY 412
OVER SPRING CREEK
HWY. 112 - I-49(S)
BENTON COUNTY

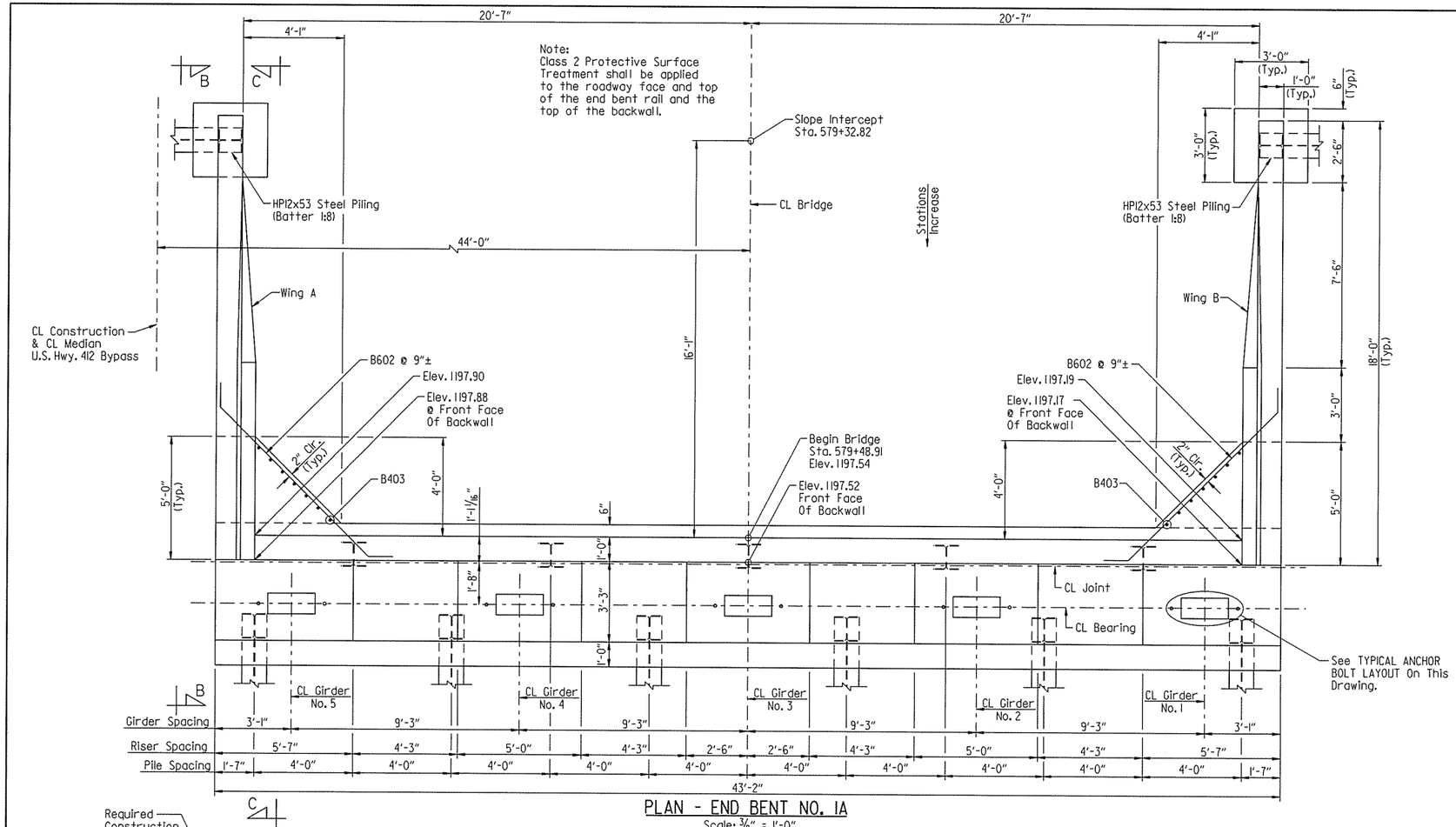
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR 2009
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: MAR 2009
FILENAME: BCA0907XI_L9.DGN
SCALE: 1"=40'

BRIDGE NO. A7304 & B7304 DRAWING NO. 55116

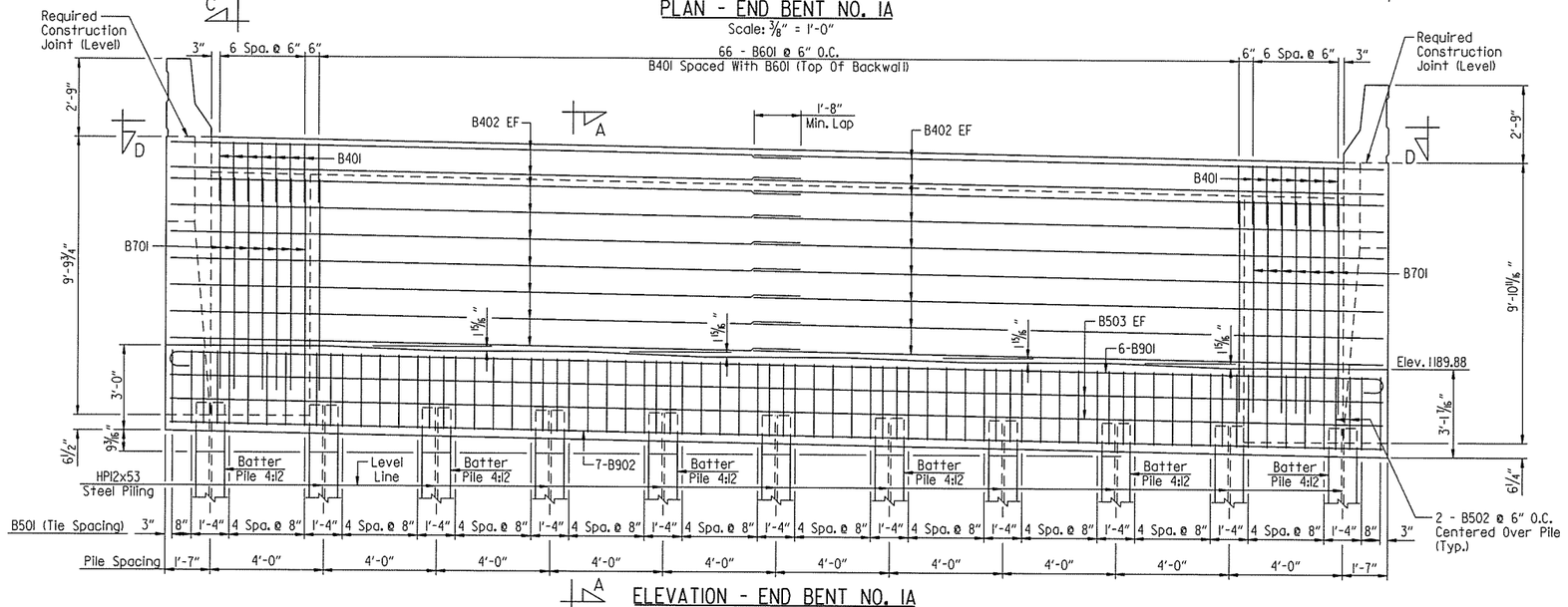
drgood 9/4/2014
WORKSPACE: AHTD Bridge
\\GLITDCON\LITPROJECTS\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xL_L9.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 263 | 897 |
| | | | | (1) A7304 & B7304 | | END BENT DETAILS | | 55117 |



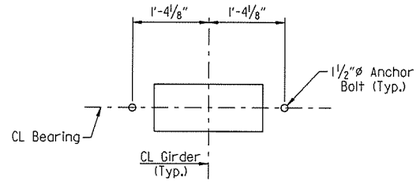

## PLAN - END BENT NO. 1A

Scale: 3/8" = 1'-0"




## ELEVATION - END BENT NO. 1A

(Looking Back)
Scale: 3/8" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT

Scale: 3/4" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 unless noted otherwise and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55119 & 55120.

For details of elastomeric bearing pads, see Dwg. No. 55167.

For BAR LIST (PER BENT) BENT NOS. 1A & 1B & BAR BENDING DIAGRAM, see Dwg. No. 55120.

For SECTION A-A & VIEW D-D, see Dwg. No. 55120.

For VIEWS B-B & C-C, see Dwg. No. 55119.

## LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 7
# DETAILS OF END BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

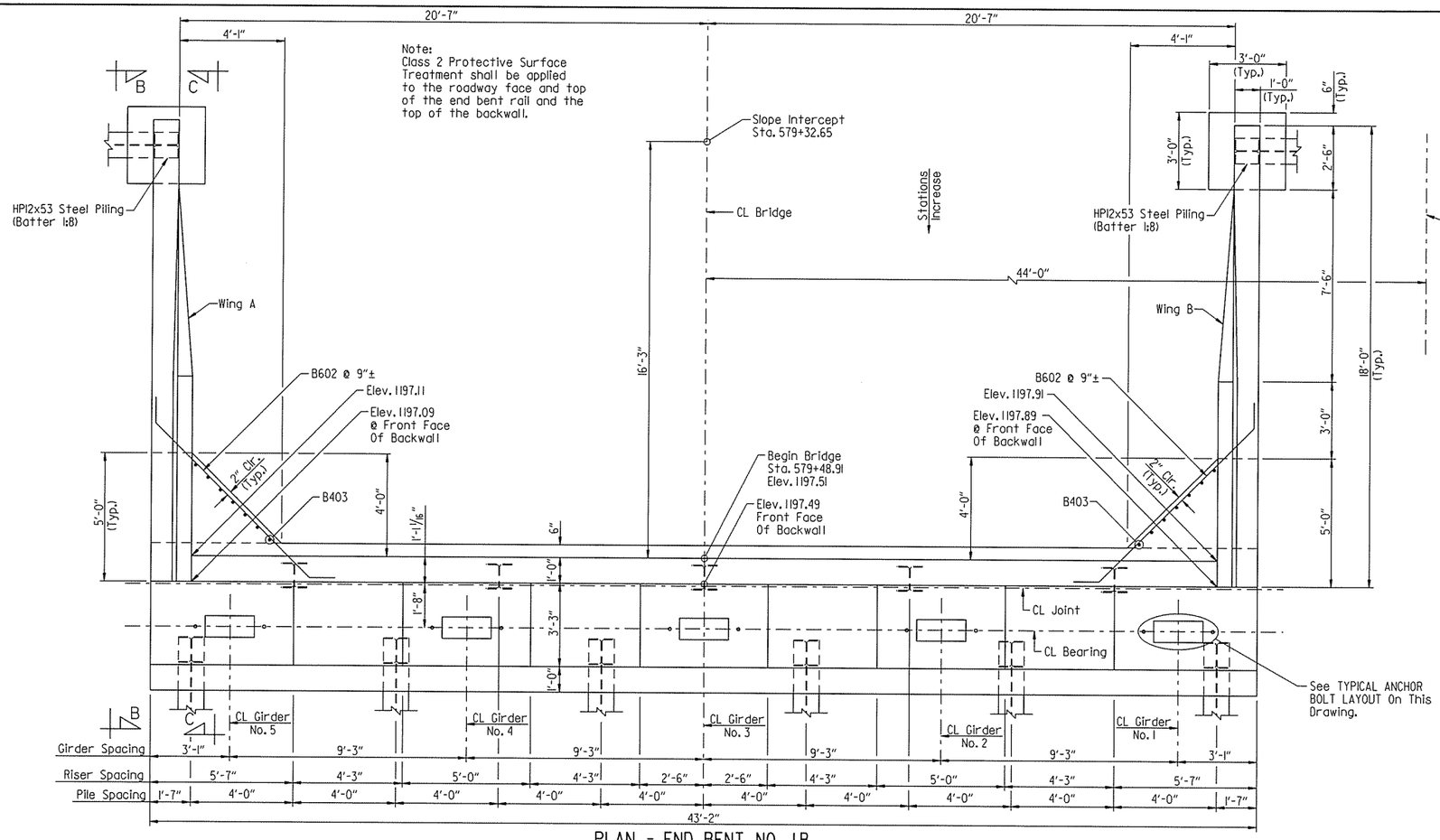
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011 FILENAME: BCA0907XI_A1.DGN
CHECKED BY: AJK DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: OCT. 2011

BRIDGE NO. A7304 & B7304 DRAWING NO. 55117

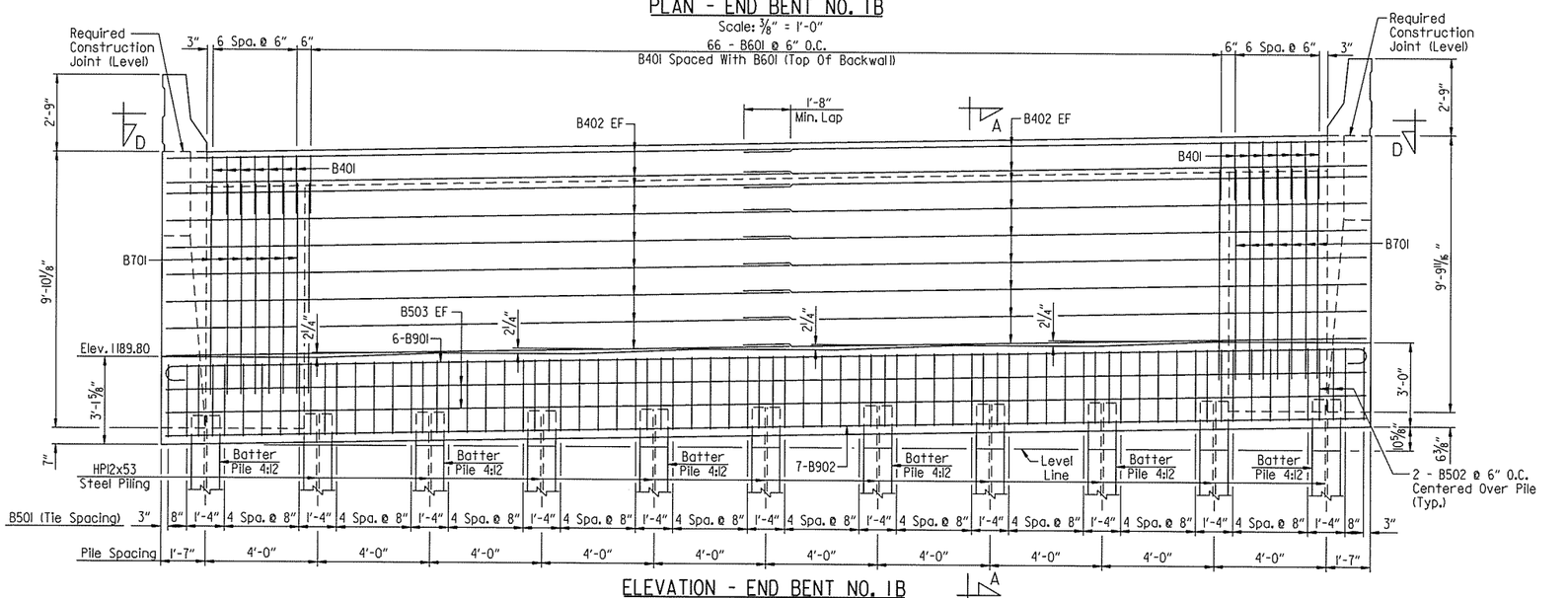
drgood 9/4/2014 9:34:56 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LHTProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_A1.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 264 | 897 |
| | | | | (1) A7304 & B7304 | | END BENT DETAILS | | 55118 |



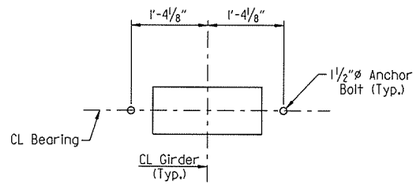

## PLAN - END BENT NO. 1B

Scale: ⅜" = 1'-0"




## ELEVATION - END BENT NO. 1B

(Looking Back)
Scale: ⅜" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT

Scale: ¾" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 unless noted otherwise and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with Section 638..

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55119 & 55120.

For details of elastomeric bearing pads, see Dwg. No. 55167.

For BAR LIST (PER BENT) BENT NOS. 1A & 1B & BAR BENDING DIAGRAM, see Dwg. No. 55120.

For SECTION A-A & VIEW D-D, see Dwg. No. 55120.

For VIEWS B-B & C-C, see Dwg. No. 55119.

## LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
5-5-14

BRIDGE ENGINEER

SHEET 2 OF 7
DETAILS OF END BENTS
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

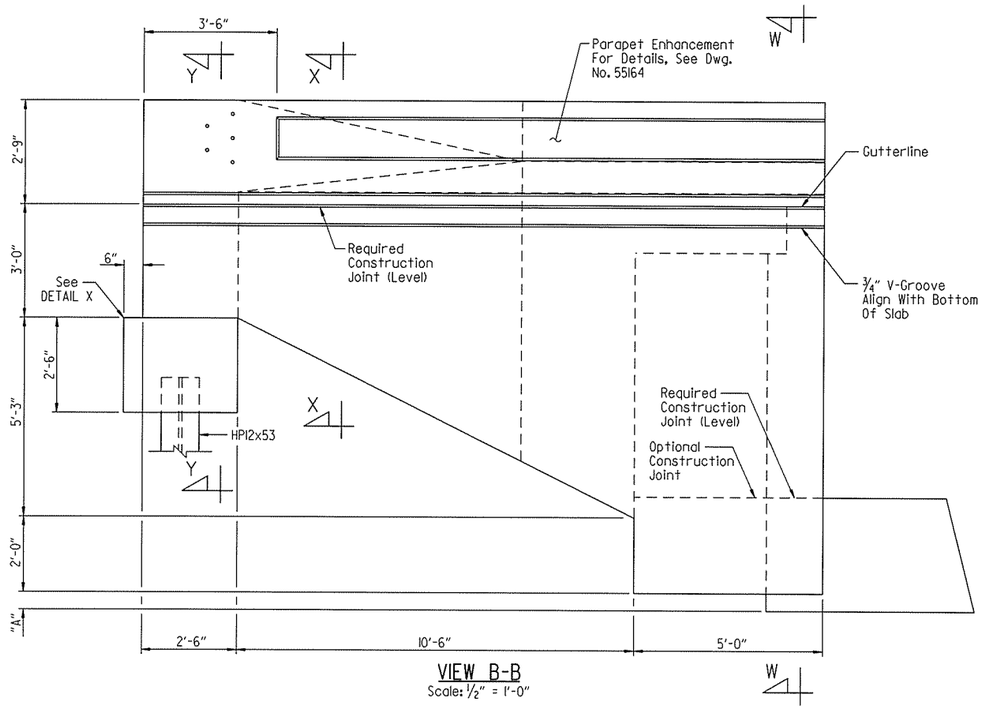
DRAWN BY: HEW DATE: OCT. 2011 FILENAME: BCA0907XI_A2.DGN
CHECKED BY: AJK DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: OCT. 2011

BRIDGE NO. A7304 & B7304 DRAWING NO. 55118

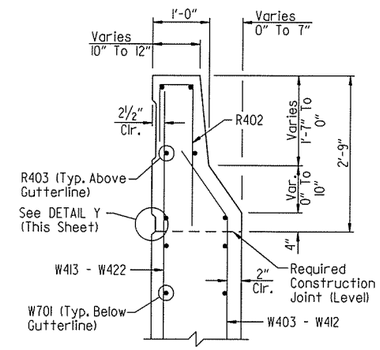
dr.goad 9/4/2014 9:34:57 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LIFProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_A2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 265 | 897 |

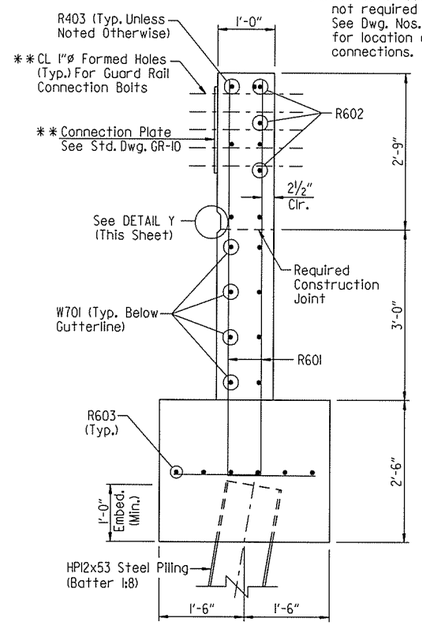
(1) A7304 & B7304 END BENT DETAILS 55119




VIEW B-B
Scale: ½" = 1'-0"

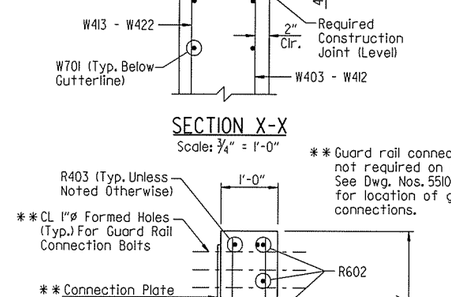



SECTION X-X
Scale: ¾" = 1'-0"



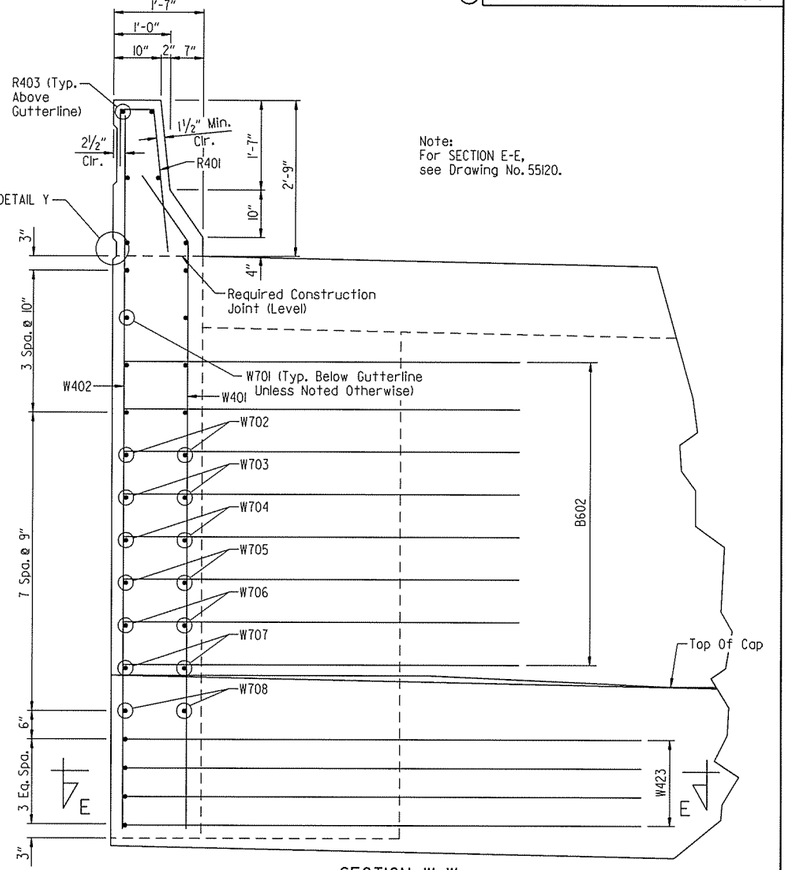

**Guard rail connection is not required on all bents. See Dwg. Nos. 55108 & 55113 for location of guard rail connections.

SECTION Y-Y
Scale: ¾" = 1'-0"



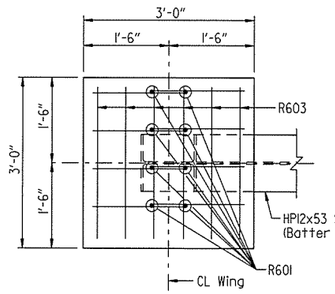

Note:
For details of guard rail connection, see Std. Dwg. GR-10

THREE DIMENSIONAL VIEW OF RAIL
Scale: NTS

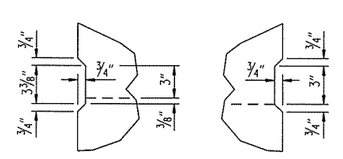



Note:
For SECTION E-E, see Drawing No. 55120.

SECTION W-W
Scale: ¾" = 1'-0"



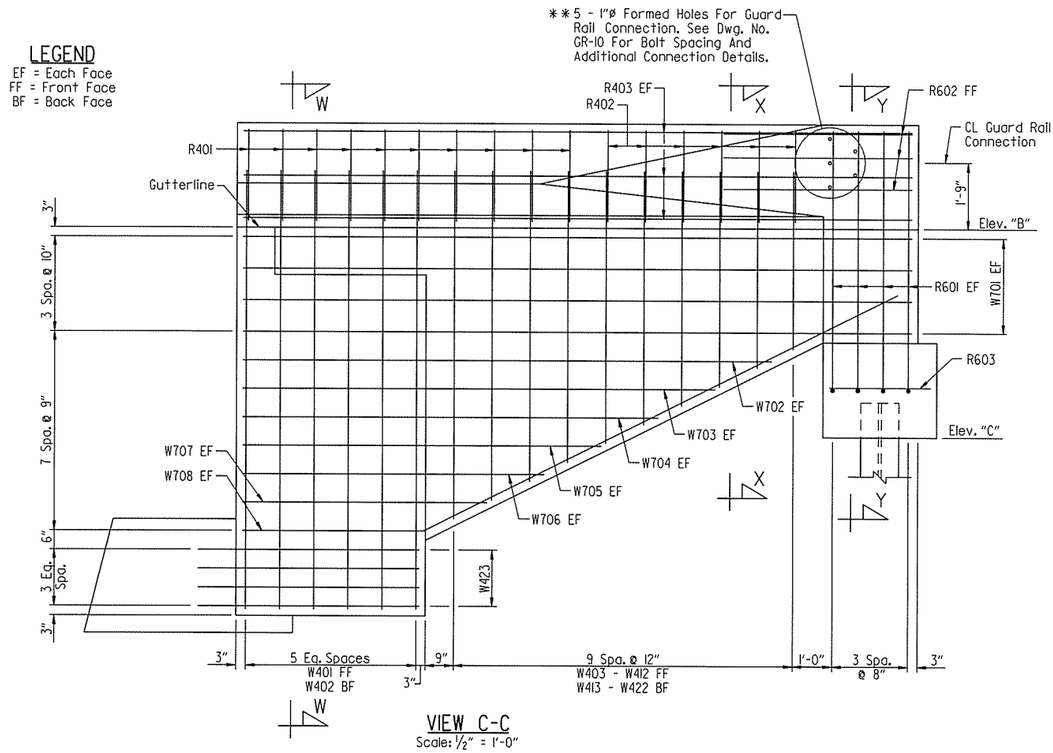

DETAIL X
(Plan Of Wing Pile Footing)
Scale: ⅜" = 1'-0"




LOW SIDE HIGH SIDE

DETAIL Y
Scale: NTS

LEGEND
EF = Each Face
FF = Front Face
BF = Back Face




VIEW C-C
Scale: ½" = 1'-0"

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| Bent No. | Wing | "A" | "B" | "C" |
| 1A | A | 6½" | 1198.32 | 1192.82 |
| 1A | B | 6¼" | 1197.53 | 1192.03 |
| 1B | A | 7" | 1197.50 | 1192.00 |
| 1B | B | 6⅜" | 1198.33 | 1192.83 |

STATE OF ARKANSAS
JOHN H. RUDDELL
No. 8017
LICENSED PROFESSIONAL ENGINEER
9-13-14

BRIDGE ENGINEER

# SHEET 3 OF 7
# DETAILS OF END BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

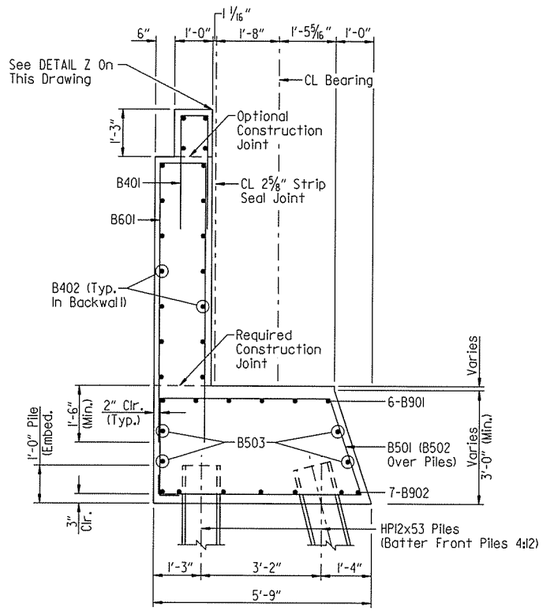
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011 FILENAME: BCA0907X1_A3.DGN
CHECKED BY: AJK DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: OCT. 2011

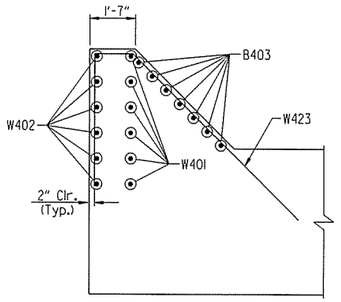
BRIDGE NO. A7304 & B7304 DRAWING NO. 55119

drgood
9/4/2014 9:34:57 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_A3.dgn
REVISED DATE:

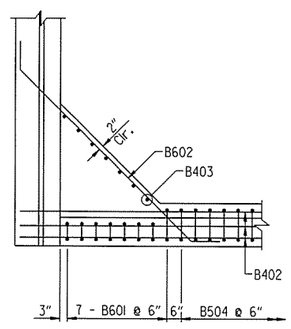
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 266 | 897 |
| | | | | (1) A7304 & B7304 | | END BENT DETAILS | | 55120 |



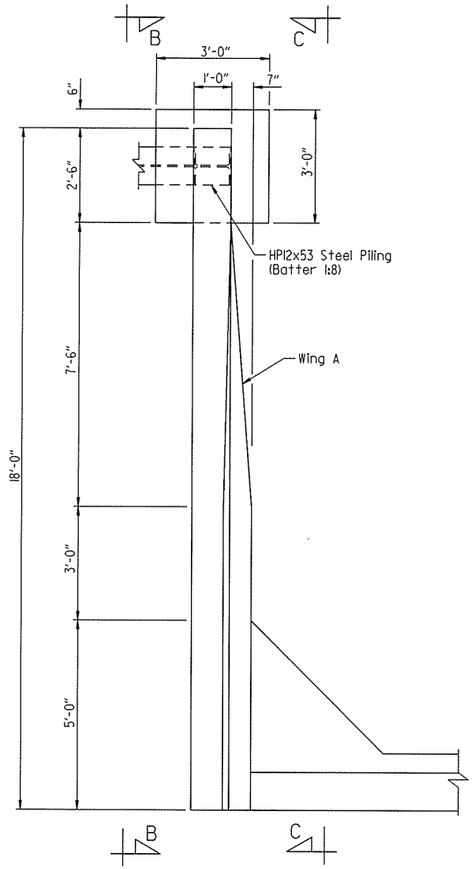

SECTION A-A
Scale: 1/2" = 1'-0"



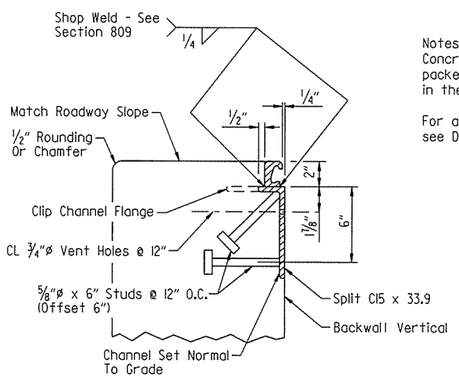

SECTION E-E
Scale: 1/2" = 1'-0"




VIEW D-D
Scale: 1/2" = 1'-0"




PLAN OF RAIL
(Wing A Shown, Wing B Similar)
Scale: 1/2" = 1'-0"




DETAIL Z
Scale: NTS

Notes:
Concrete shall be hand packed under joint armor in the backwall.

For additional joint details, see Dwg. Nos. 55165 & 55166

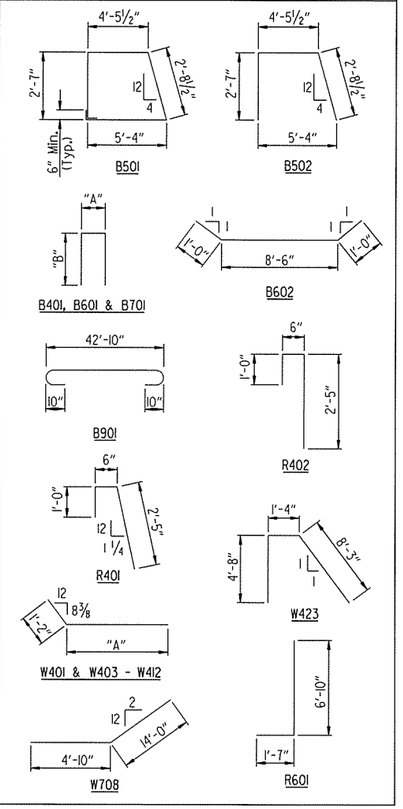
## BAR LIST (PER BENT) - BENT NOS. 1A & 1B

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|
| B401 | 80 | 6'-6" | 8" | 3'-0" | 2" |
| B402 | 36 | 22'-3" | | | Str. |
| B403 | 14 | 8'-8" | | | Str. |
| | | | | | |
| B501 | 54 | 15'-7" | | | 2 1/2" |
| B502 | 22 | 9'-6 1/2" | | | 2 1/2" |
| B503 | 4 | 42'-10" | | | Str. |
| | | | | | |
| B601 | 66 | 15'-10 1/2" | 1'-2" | 7'-6" | 4 1/2" |
| B602 | 16 | 10'-6" | | | 4 1/2" |
| | | | | | |
| B701 | 14 | 15'-10" | 1'-2" | 7'-6" | 5 1/4" |
| | | | | | |
| B901 | 6 | 45'-4" | 42'-10" | 10" | 9" |
| B902 | 7 | 42'-10" | | | Str. |
| | | | | | |
| R401 | 20 | 3'-9" | | | 2" |
| R402 | 12 | 3'-10" | | | 2" |
| R403 | 12 | 17'-8" | | | Str. |
| | | | | | |
| R601 | 16 | 8'-3" | | | 4 1/2" |
| R602 | 6 | 5'-0" | | | Str. |
| R603 | 12 | 2'-8" | | | Str. |
| | | | | | |
| W401 | 12 | 11'-6" | 10'-4" | | 2" |
| W402 | 12 | 12'-8" | | | Str. |
| W403 To W412 | 2 Ea. | 4'-7" To 9'-1" | 3'-5" To 7'-11" | | 2" |
| W413 To W422 | 2 Ea. | 5'-9" To 10'-3" | | | Str. |
| W423 | 8 | 14'-1" | | | 2" |
| | | | | | |
| W701 | 16 | 17'-8" | | | Str. |
| W702 | 4 | 13'-11" | | | Str. |
| W703 | 4 | 12'-5" | | | Str. |
| W704 | 4 | 10'-11" | | | Str. |
| W705 | 4 | 9'-5" | | | Str. |
| W706 | 4 | 7'-11" | | | Str. |
| W707 | 4 | 6'-5" | | | Str. |
| W708 | 4 | 18'-9" | | | 5 1/4" |

Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of bars shown is for one bent only.

## BAR BENDING DIAGRAMS




Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE On Dwg. No. 55166 for additional information.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF END BENTS
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XL_A4.DGN
SCALE: AS SHOWN

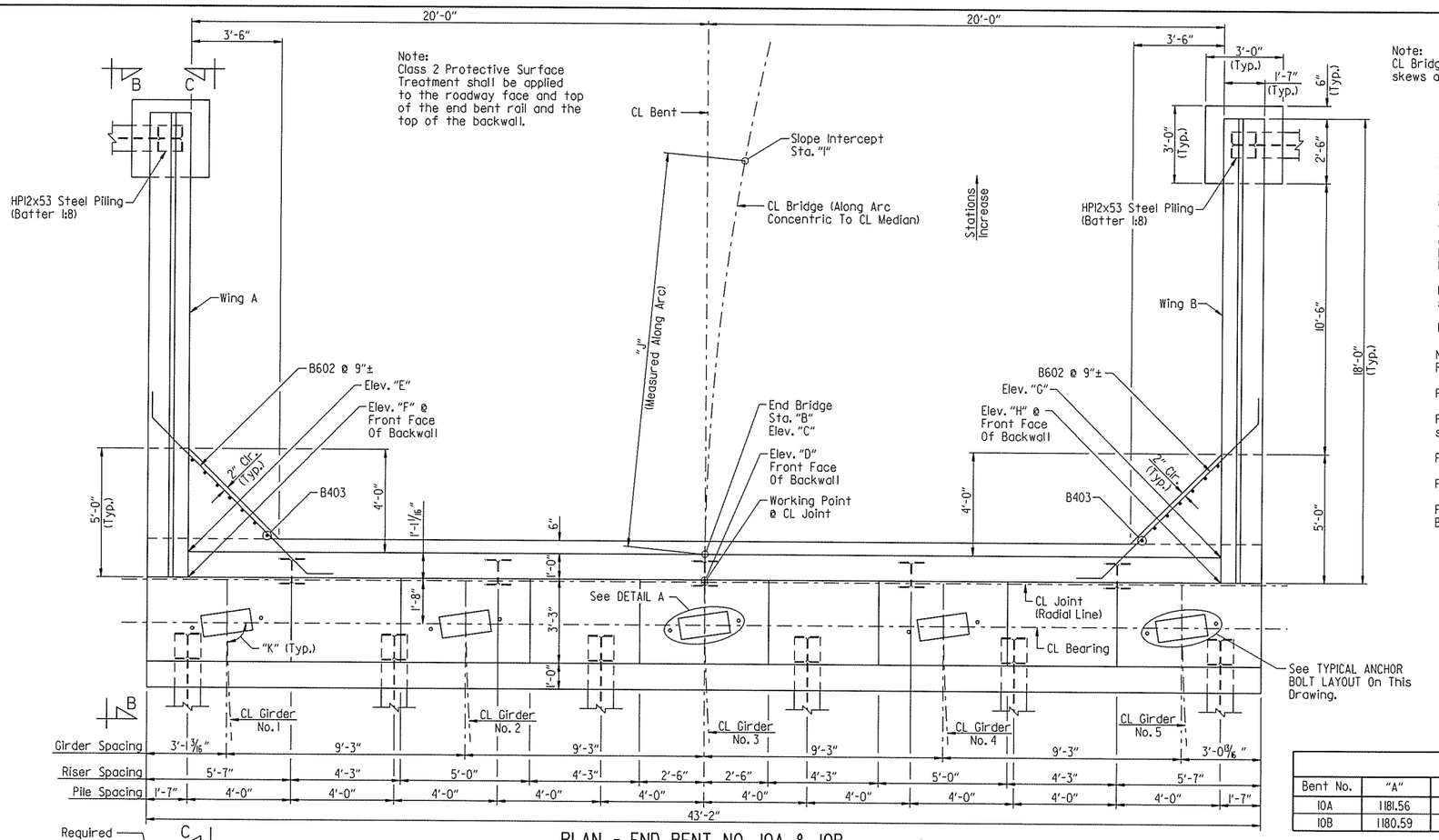
BRIDGE NO. A7304 & B7304 DRAWING NO. 55120

drgood 9/4/2014 9:34:58 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_A4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 267 | 897 |
| | | | | (1) A7304 & B7304 | | END BENT DETAILS | | 55121 |

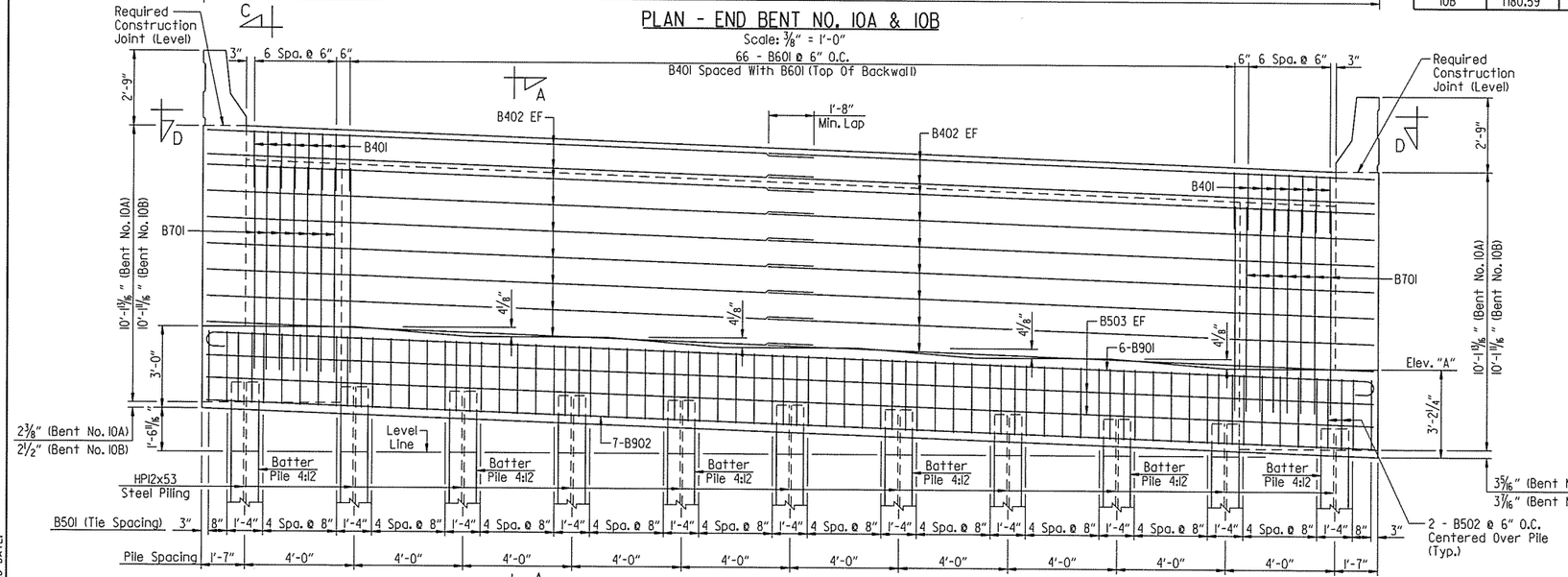
Note:
Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

Note:
CL Bridge arc and girder skews are exaggerated.




## PLAN - END BENT NO. 10A & 10B

Scale: 3/8" = 1'-0"




## ELEVATION - END BENT NOS. 10A & 10B

(Looking Forward)
Scale: 3/8" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55122 & 55123.

For details of elastomeric bearing pads, see Dwg. No. 55167.

For BAR LIST (PER BENT) - BENT NOS. 10A & 10B & BAR BENDING DIAGRAM, see Dwg. No. 55123.

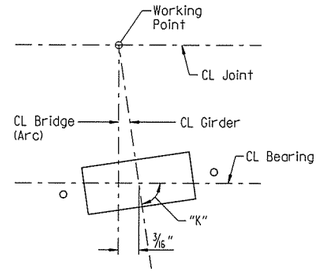
For SECTION A-A & VIEW D-D, see Dwg. No. 55123.

For VIEWS B-B & C-C, see Dwg. No. 55122.

For location of CL Bridge relative to CL Median U.S. Hwy. 412 Bypass (1°00'00" Curve), see STAKING DIAGRAM on Dwg. No. 55116.

## LEGEND

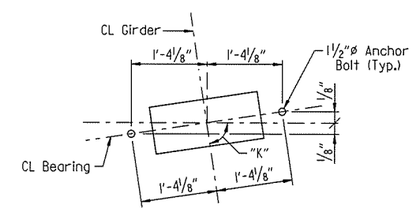
EF = Each Face




## DETAIL A

Scale: N.T.S.

| TABLE OF VARIABLES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bent No. | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "I" | "J" | "K" |
| 10A | 1181.56 | 589+50.41 | 1189.54 | 1189.54 | 1190.28 | 1190.28 | 1188.80 | 1188.80 | 589+65.02 | 14'-7 5/16" | 89°27'15" |
| 10B | 1180.59 | 589+61.84 | 1188.57 | 1188.57 | 1189.31 | 1189.31 | 1187.83 | 1187.83 | 589+78.56 | 16'-8 5/16" | 89°26'45" |




## TYPICAL ANCHOR BOLT LAYOUT

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 5 OF 7
# DETAILS OF END BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

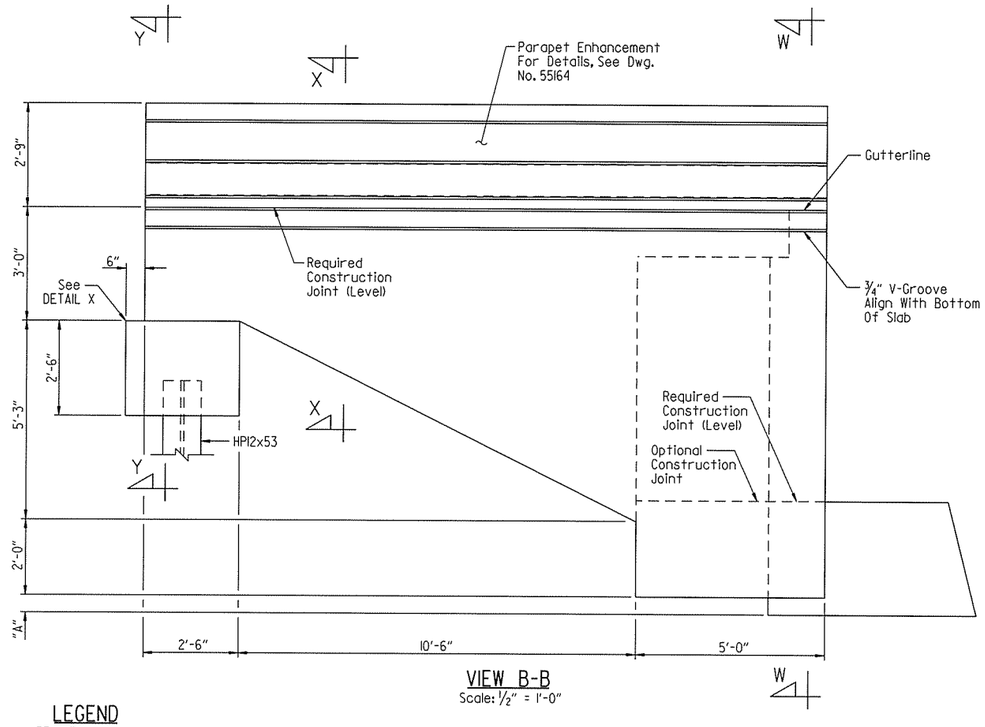
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011

FILENAME: BCA0907XL_A5.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55121

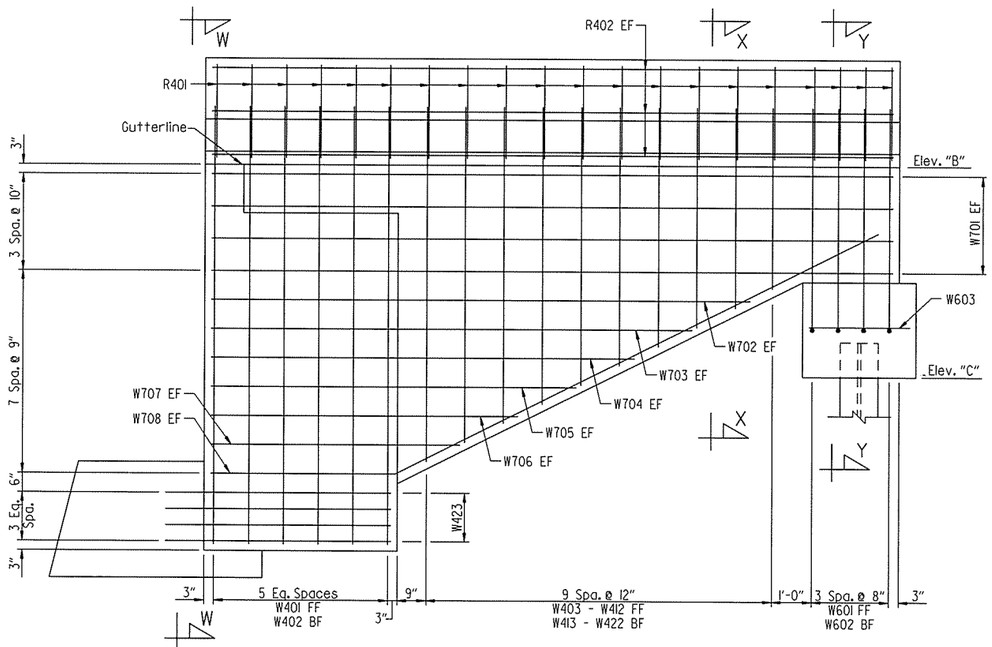
dropod 9/4/2014 9:34:58 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XL_A5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 268 | 897 |
| | | | | (1) A7304 & B7304 | | END BENT DETAILS | | 55122 |

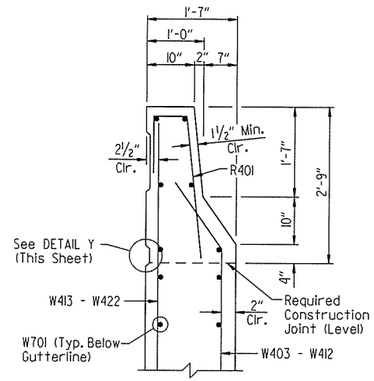



VIEW B-B
Scale: ½" = 1'-0"

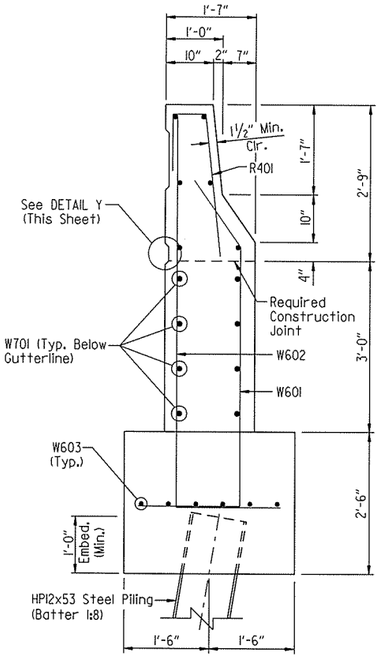
LEGEND
EF = Each Face
FF = Front Face
BF = Back Face




VIEW C-C
Scale: ½" = 1'-0"



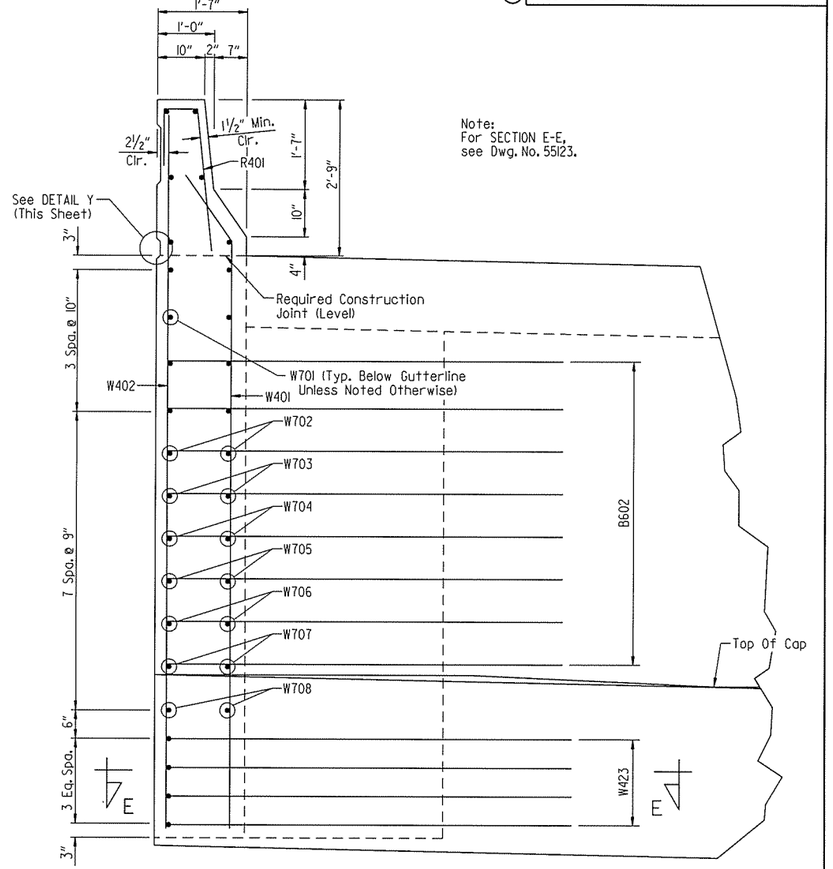

SECTION X-X
Scale: ¾" = 1'-0"



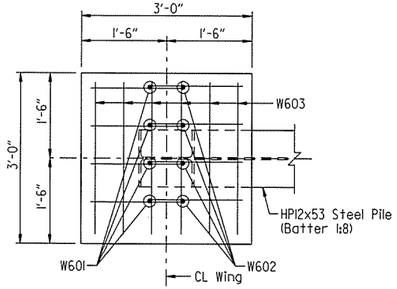

SECTION Y-Y
Scale: ¾" = 1'-0"

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| Bent No. | Wing | "A" | "B" | "C" |
| 10A | A | 2⅜" | 1190.38 | 1184.88 |
| 10A | B | 3⅜" | 1188.90 | 1183.40 |
| 10B | A | 2½" | 1189.42 | 1183.92 |
| 10B | B | 3⅜" | 1187.94 | 1182.44 |

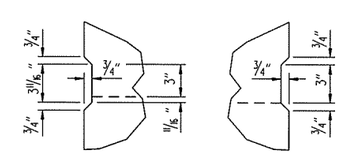
Note:
For SECTION E-E, see Dwg. No. 55123.




SECTION W-W
Scale: ¾" = 1'-0"




DETAIL X
(Plan Of Wing Pile Footing)
Scale: ⅞" = 1'-0"




LOW SIDE HIGH SIDE

DETAIL Y
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF END BENTS
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

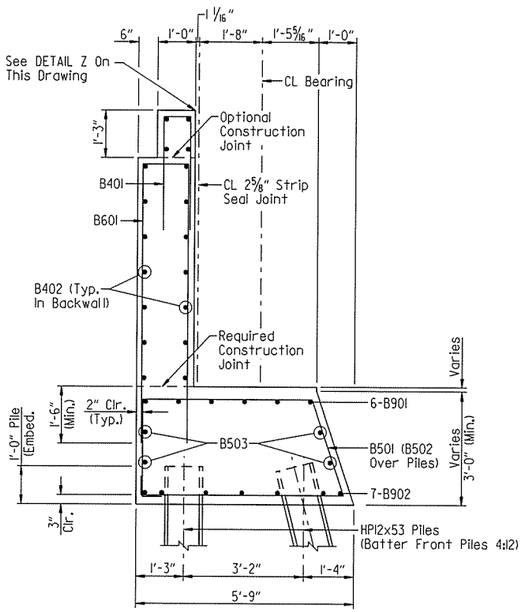
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

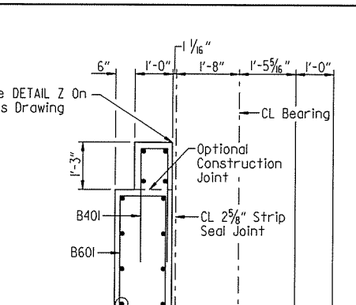
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XL_A6.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55122

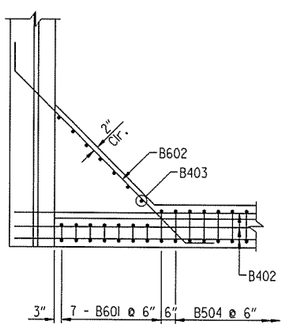
drgood 9/4/2014 9:34:59 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_A6.dgn
REVISED DATE:



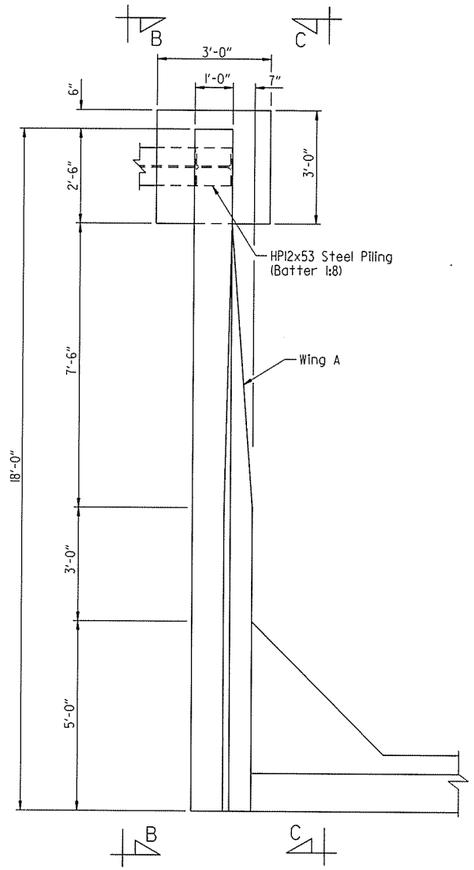

SECTION A-A
Scale: 1/2" = 1'-0"



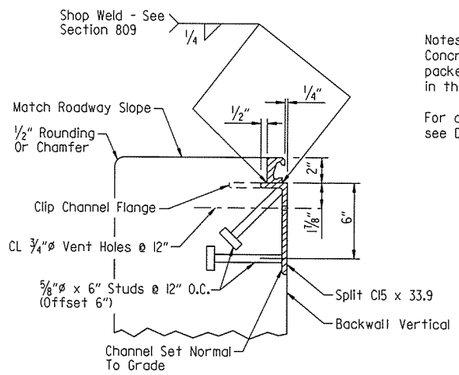

SECTION E-E
Scale: 1/2" = 1'-0"




VIEW D-D
Scale: 1/2" = 1'-0"




PLAN OF RAIL
(Wing A Shown, Wing B Similar)
Scale: 1/2" = 1'-0"




DETAIL "Z"
Scale: NTS

Notes:
Concrete shall be hand packed under joint armor in the backwall.

For additional joint details, see Dwg. Nos. 55165 & 55166.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 269 | 897 |
| | | | | (1) | A7304 & B7304 | END BENT DETAILS | | 55123 |

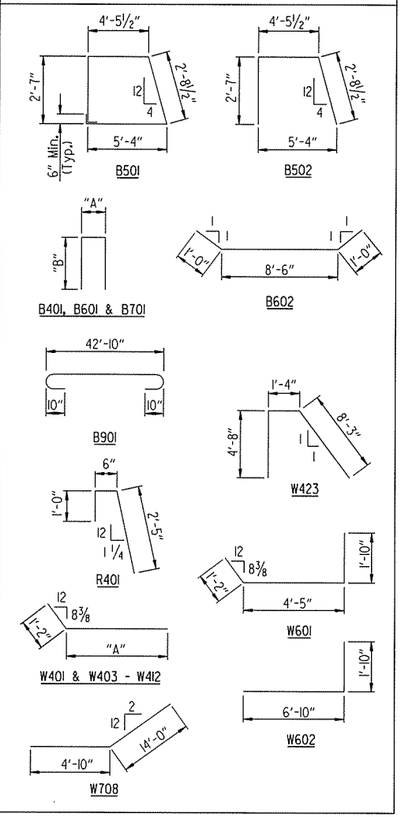
## BAR LIST (PER BENT) - BENT NOS. 10A & 10B

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|
| B401 | 80 | 6'-6" | 8" | 3'-0" | 2" |
| B402 | 36 | 22'-3" | | | Str. |
| B403 | 14 | 8'-8" | | | Str. |
| | | | | | |
| B501 | 54 | 15'-7" | | | 2 1/2" |
| B502 | 22 | 9'-6 1/2" | | | 2 1/2" |
| B503 | 4 | 42'-10" | | | Str. |
| | | | | | |
| B601 | 66 | 15'-10 1/2" | 1'-2" | 7'-6" | 4 1/2" |
| B602 | 16 | 10'-6" | | | 4 1/2" |
| | | | | | |
| B701 | 14 | 15'-10" | 1'-2" | 7'-6" | 5 1/4" |
| | | | | | |
| B901 | 6 | 45'-4" | 42'-10" | 10" | 9" |
| B902 | 7 | 42'-10" | | | Str. |
| | | | | | |
| R401 | 40 | 3'-9" | | | 2" |
| R402 | 12 | 17'-8" | | | Str. |
| | | | | | |
| W401 | 12 | 11'-6" | 10'-4" | | 2" |
| W402 | 12 | 12'-8" | | | Str. |
| W403 To W412 | 2 Ea. | 4'-7" To 9'-1" | 3'-5" To 7'-11" | | 2" |
| W413 To W422 | 2 Ea. | 5'-9" To 10'-3" | | | Str. |
| W423 | 8 | 14'-1" | | | 2" |
| | | | | | |
| W601 | 8 | 7'-3" | | | 4 1/2" |
| W602 | 8 | 8'-6" | | | 4 1/2" |
| W603 | 12 | 2'-8" | | | Str. |
| | | | | | |
| W701 | 16 | 17'-8" | | | Str. |
| W702 | 4 | 13'-11" | | | Str. |
| W703 | 4 | 12'-5" | | | Str. |
| W704 | 4 | 10'-11" | | | Str. |
| W705 | 4 | 9'-5" | | | Str. |
| W706 | 4 | 7'-11" | | | Str. |
| W707 | 4 | 6'-5" | | | Str. |
| W708 | 4 | 18'-9" | | | 5 1/4" |

Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of bars shown is for one bent only.

## BAR BENDING DIAGRAMS




Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE On Dwg. No. 55166 for additional information.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 7 OF 7
# DETAILS OF END BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

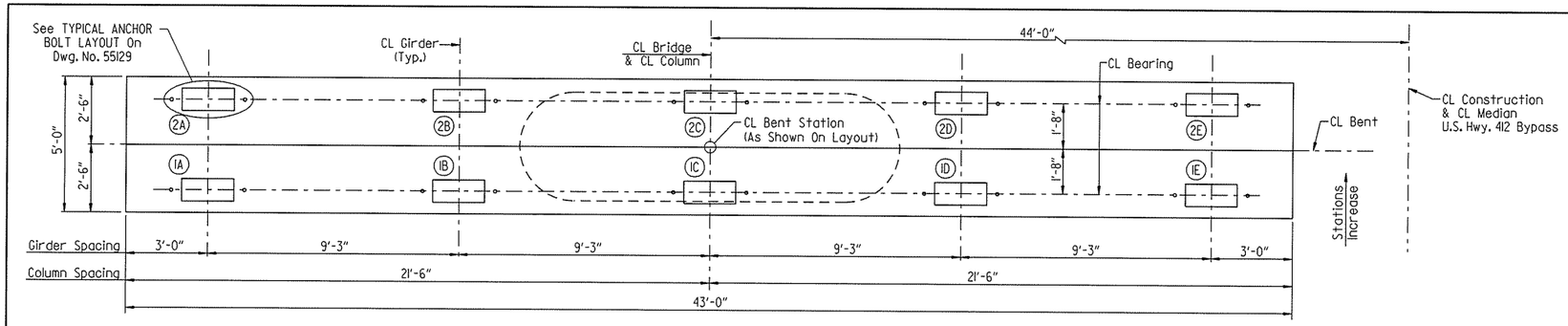
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XI_A7.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55123

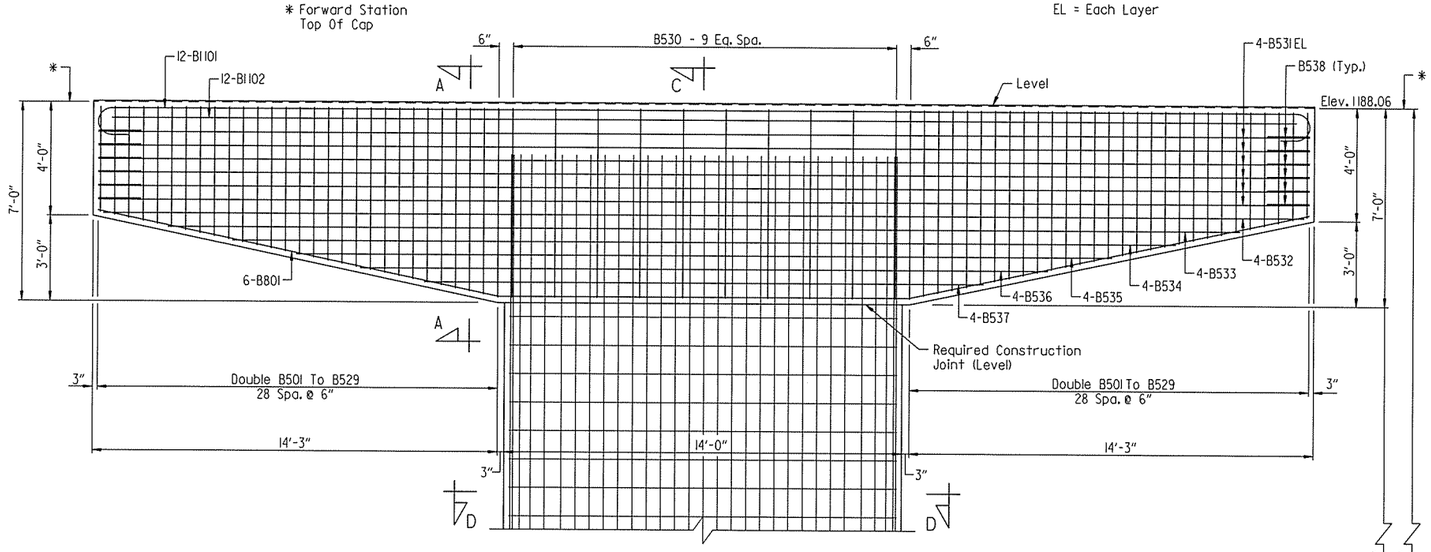
drgood 9/4/2014 9:34:59 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_A7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 270 | 897 |
| | | | | (1) A7304 & B7304 | | INT. BENT DETAILS | | 55124 |

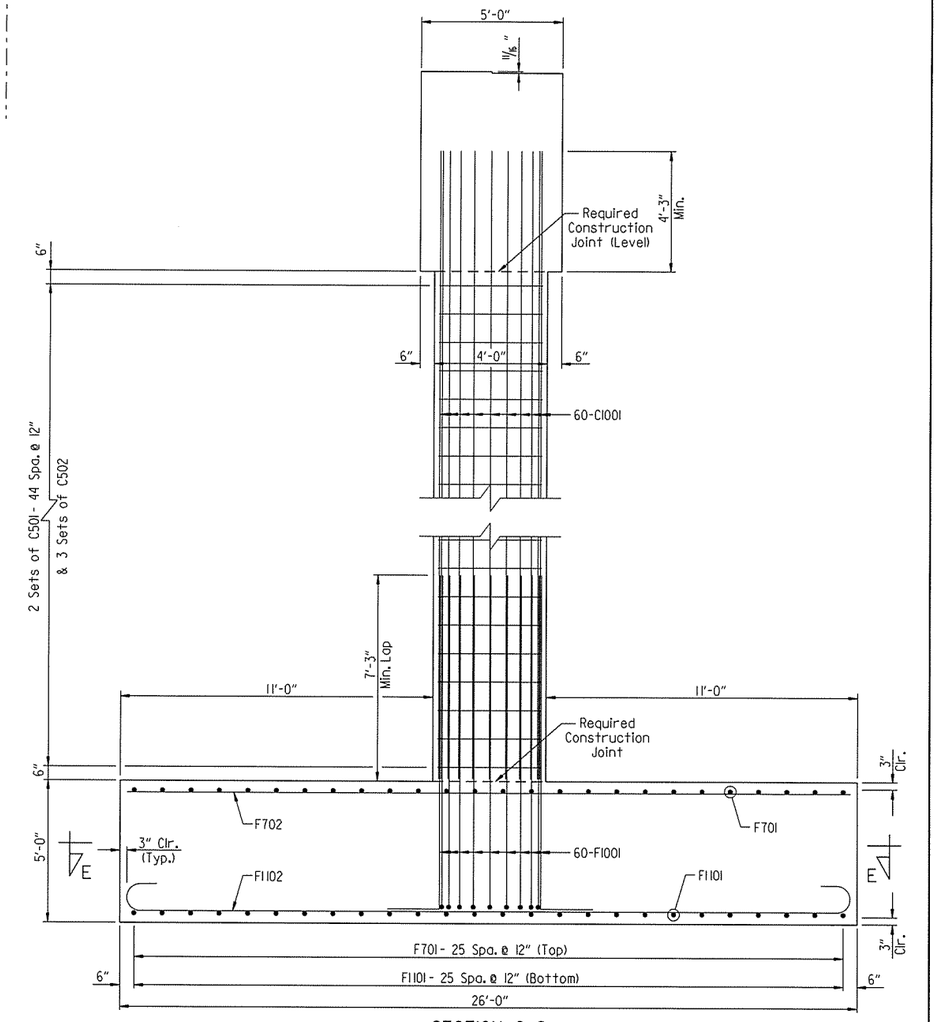



## PLAN
(Bent No. 2A)
Scale: 3/8" = 1'-0"

## LEGEND
EL = Each Layer




## ELEVATION - LOOKING FORWARD
(Bent No. 2A)
Scale: 3/8" = 1'-0"




## SECTION C-C
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55167.

For SECTIONS A-A, D-D & E-E, see Drawing No. 55129.

For BAR LISTS & BAR BENDING DIAGRAMS, see Dwg. No. 55130.

For anchor bolt details, see Dwg. No. 55129.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
9-8-14
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 7
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

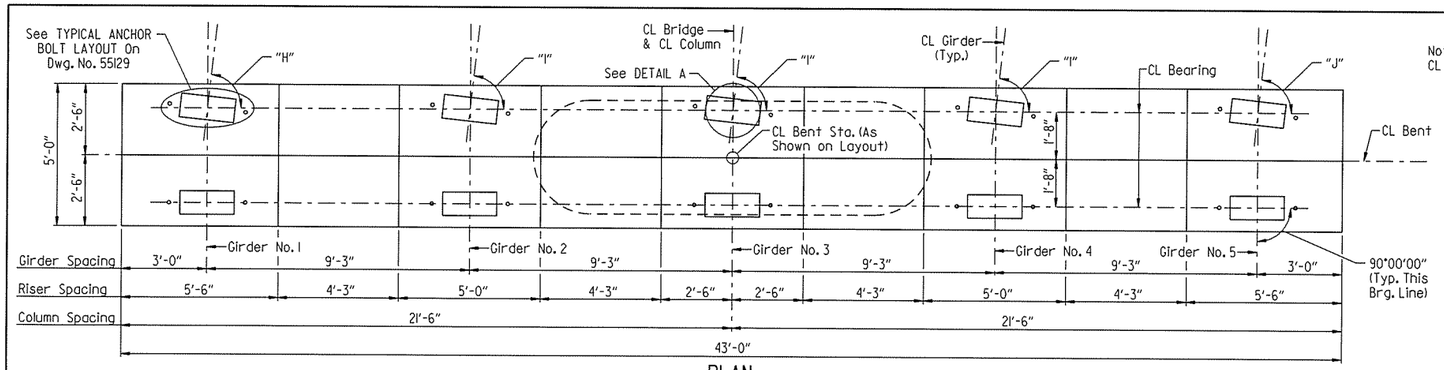
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XI_BI.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55124

drgood 9/4/2014 9:35:00 AM
WORKSPACE: AHTD Bridge
\\SLITDCOLI\Projects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_BI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 271 | 897 |

(1) A7304 & B7304 INT. BENT DETAILS 55125



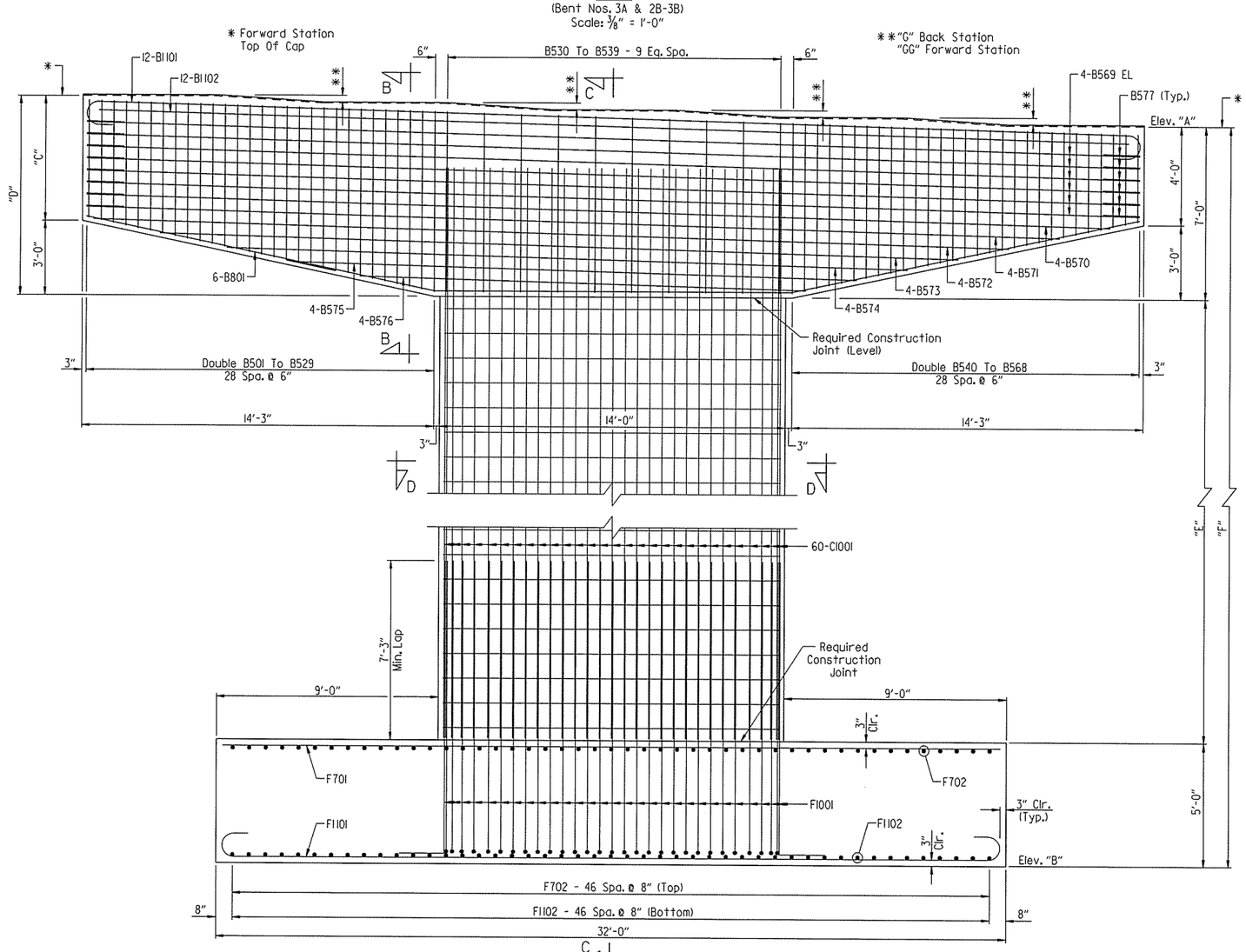

PLAN
(Bent Nos. 3A & 2B-3B)
Scale: 3/8" = 1'-0"

Note:
CL girder skews are exaggerated.

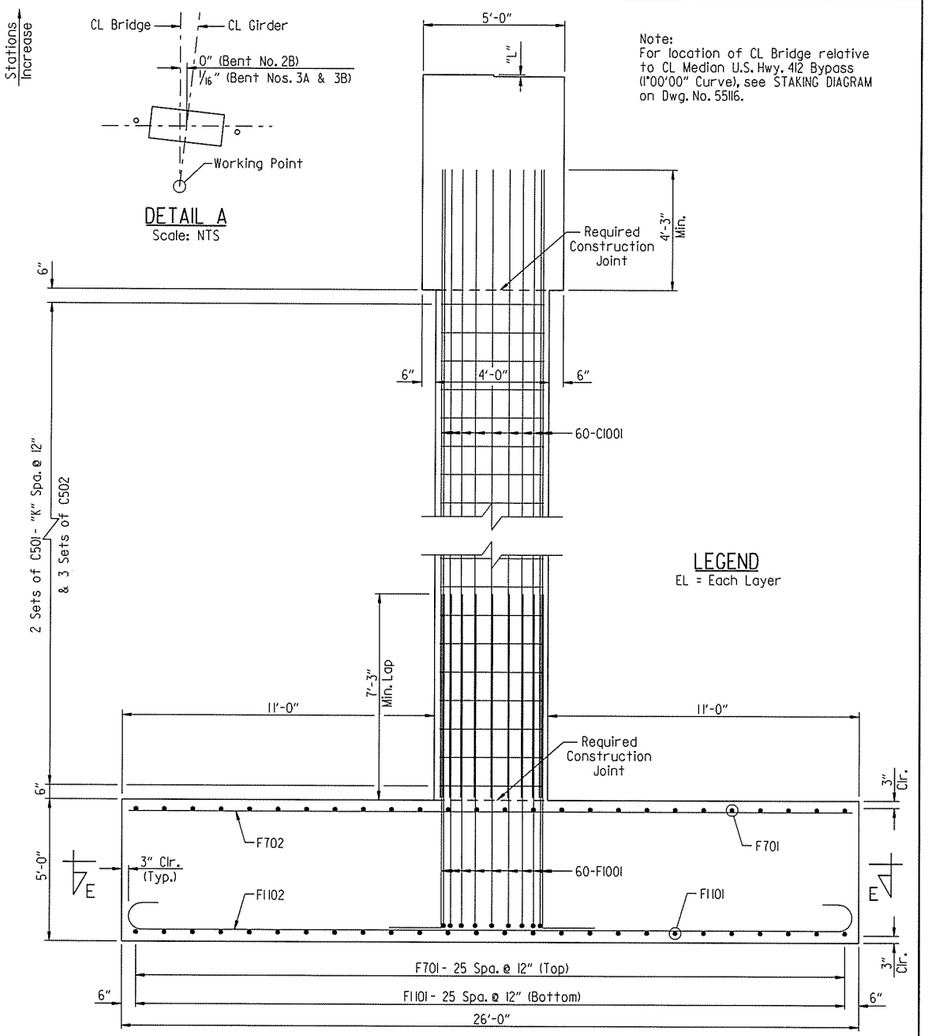



DETAIL A
Scale: NTS

Note:
For location of CL Bridge relative to CL Median U.S. Hwy. 412 Bypass (N00°00" Curve), see STAKING DIAGRAM on Dwg. No. 55116.




ELEVATION - LOOKING FORWARD
(Bent Nos. 3A & 2B-3B)
Scale: 3/8" = 1'-0"




SECTION C-C
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55167.

For SECTIONS B-B, D-D, E-E & TABLE OF VARIBLES, see Drawing No. 55129.

For BAR LISTS & BAR BENDING DIAGRAMS, see Dwg. No. 55130.

For anchor bolt details, see Dwg. No. 55129.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 2 OF 7
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

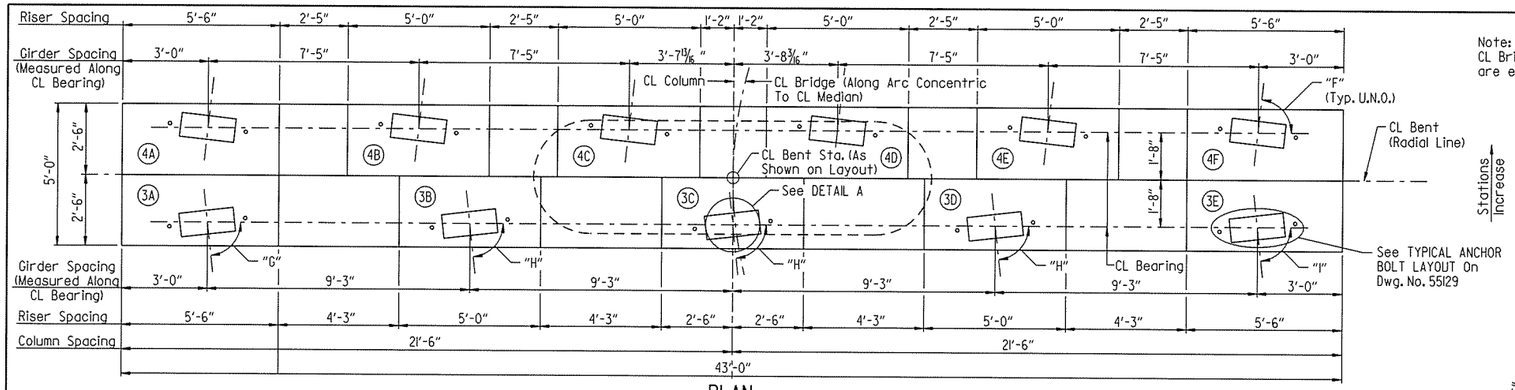
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XL_B2.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55125

drgood 9/4/2014 9:35:00 AM
WORKSPACE: AHTD Bridge
V:\CALTDOT\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_B2.dgn
REVISED DATE:

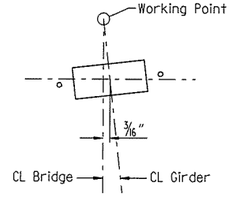
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 272 | 897 |

(1) A7304 & B7304 INT. BENT DETAILS 55126




PLAN
(Bent Nos. 4A & 4B)
Scale: 3/8" = 1'-0"

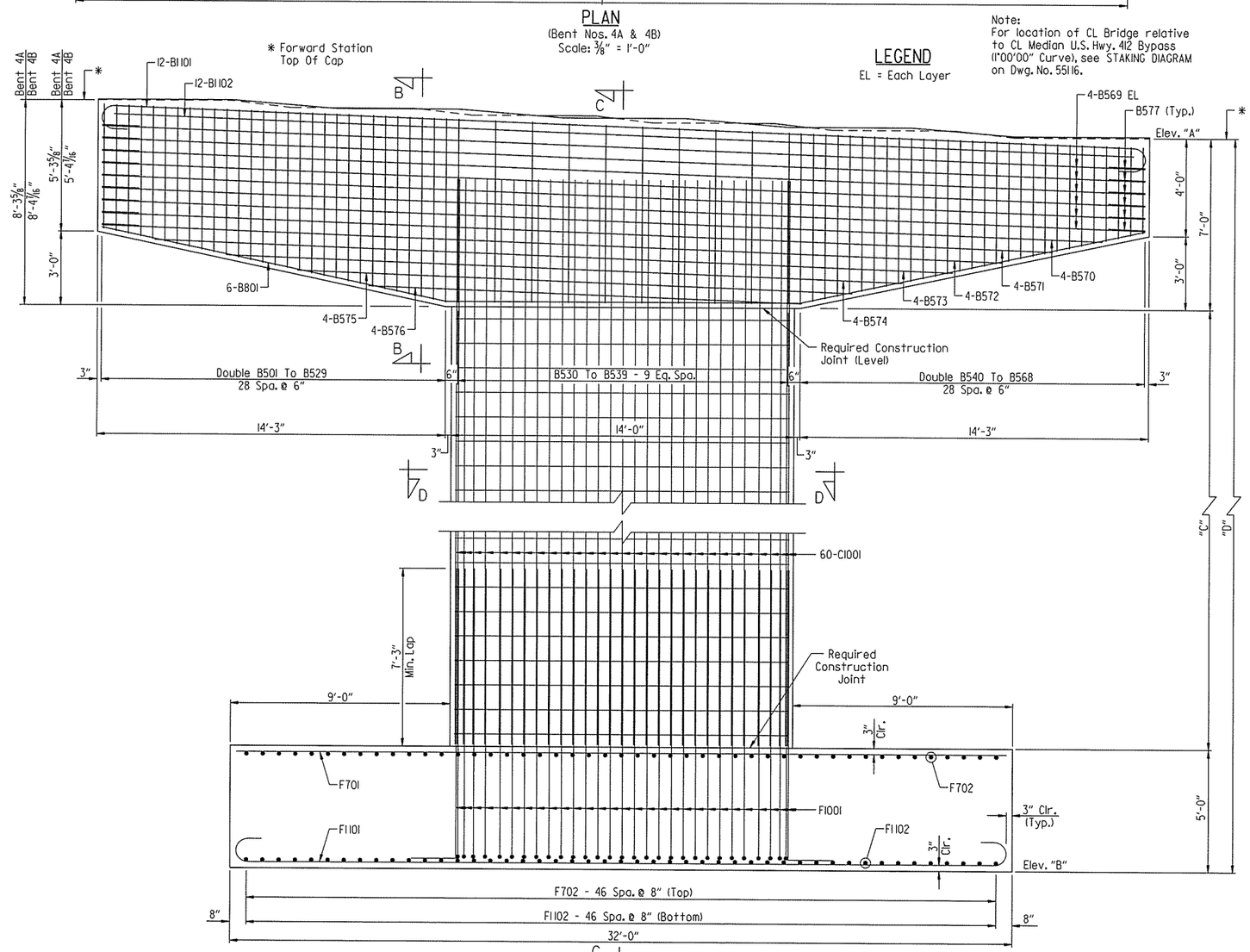
Note:
CL Bridge arc and CL Girder skews are exaggerated.



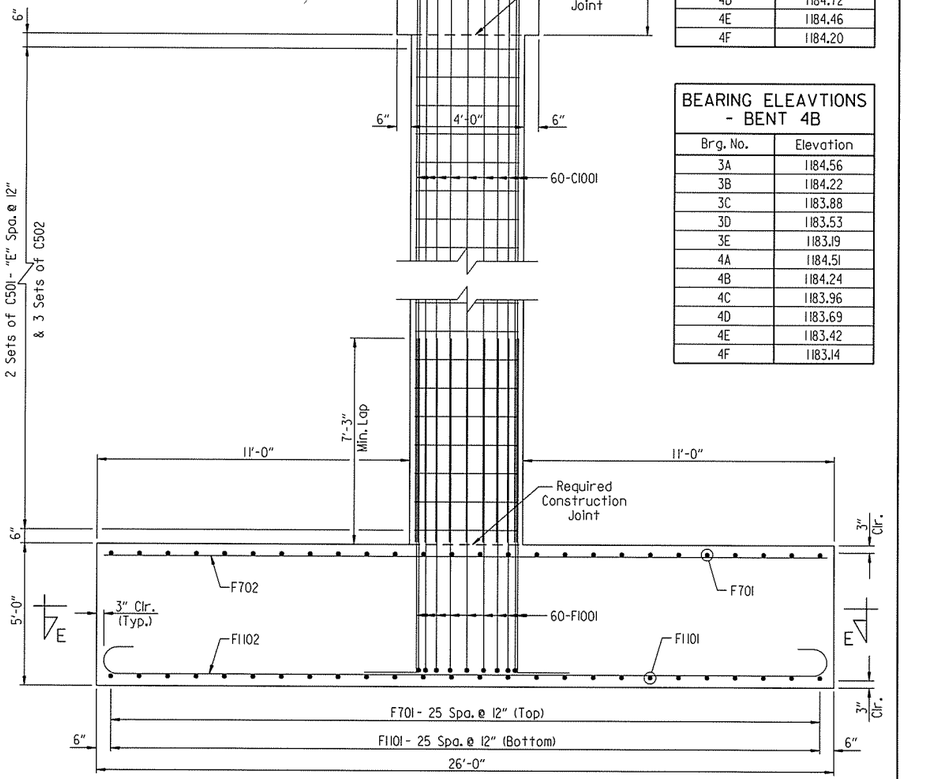

DETAIL A
Scale: NTS

| BEARING ELEAVTIONS - BENT 4A | |
|---|---|
| Brg. No. | Elevation |
| 3A | 1185.54 |
| 3B | 1185.22 |
| 3C | 1184.89 |
| 3D | 1184.59 |
| 3E | 1184.25 |
| 4A | 1185.50 |
| 4B | 1185.24 |
| 4C | 1184.98 |
| 4D | 1184.72 |
| 4E | 1184.46 |
| 4F | 1184.20 |

| BEARING ELEAVTIONS - BENT 4B | |
|---|---|
| Brg. No. | Elevation |
| 3A | 1184.56 |
| 3B | 1184.22 |
| 3C | 1183.88 |
| 3D | 1183.53 |
| 3E | 1183.19 |
| 4A | 1184.51 |
| 4B | 1184.24 |
| 4C | 1183.96 |
| 4D | 1183.69 |
| 4E | 1183.42 |
| 4F | 1183.14 |




ELEVATION - LOOKING FORWARD
(Bent Nos. 4A & 4B)
Scale: 3/8" = 1'-0"




SECTION C-C
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55167.

For SECTIONS B-B, D-D, E-E & TABLE OF VARIBLES, see Drawing No. 55129.

For BAR LIST & BAR BENDING DIAGRAMS, See Dwg. No. 55130.

For anchor bolt details, see Dwg. No. 55129.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 3 OF 7
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

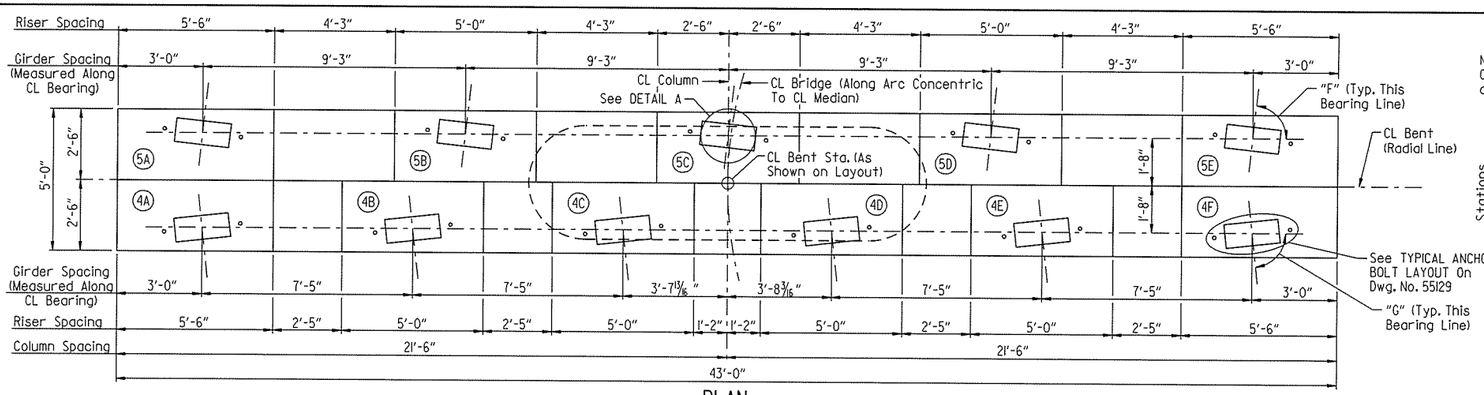
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907X1_B3.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55126

dropod 9/4/2014 9:35:01 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Byposs\Drawings\BRG\SpringCreek\BCA0907X1_B3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 273 | 897 |

(1) A7304 & B7304 INT. BENT DETAILS 55127

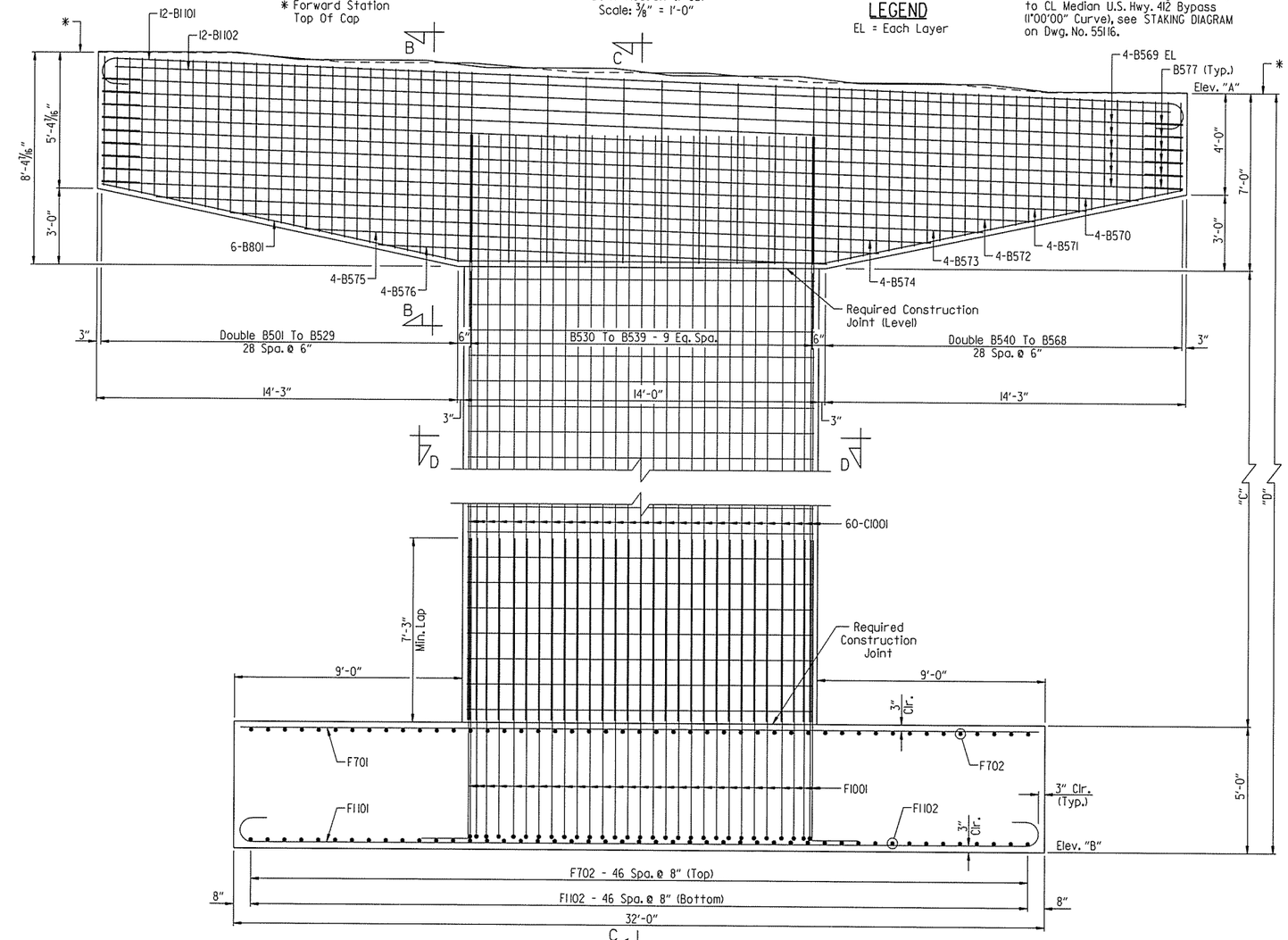



## PLAN
(Bent Nos. 5A & 5B)
Scale: 3/8" = 1'-0"

Note:
CL Bridge arc and CL Girder skews are exaggerated.

## LEGEND
EL = Each Layer

Note:
For location of CL Bridge relative to CL Median U.S. Hwy. 412 Bypass (1°00'00" Curve), see STAKING DIAGRAM on Dwg. No. 55116.



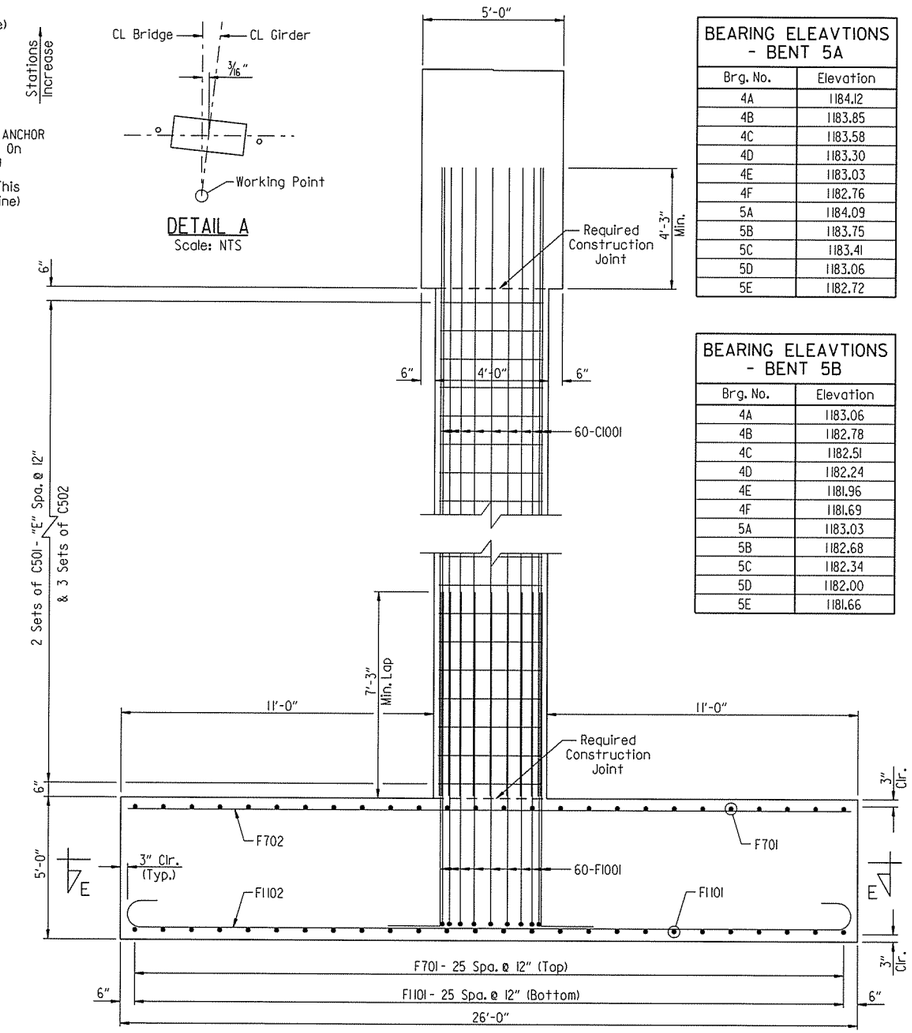

## ELEVATION - LOOKING FORWARD
(Bent Nos. 5A & 5B)
Scale: 3/8" = 1'-0"




## DETAIL A
Scale: NTS

| BEARING ELEAVTIONS - BENT 5A | |
|---|---|
| Brg. No. | Elevation |
| 4A | 1184.12 |
| 4B | 1183.85 |
| 4C | 1183.58 |
| 4D | 1183.30 |
| 4E | 1183.03 |
| 4F | 1182.76 |
| 5A | 1184.09 |
| 5B | 1183.75 |
| 5C | 1183.41 |
| 5D | 1183.06 |
| 5E | 1182.72 |

| BEARING ELEAVTIONS - BENT 5B | |
|---|---|
| Brg. No. | Elevation |
| 4A | 1183.06 |
| 4B | 1182.78 |
| 4C | 1182.51 |
| 4D | 1182.24 |
| 4E | 1181.96 |
| 4F | 1181.69 |
| 5A | 1183.03 |
| 5B | 1182.68 |
| 5C | 1182.34 |
| 5D | 1182.00 |
| 5E | 1181.66 |




## SECTION C-C
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55167.

For SECTIONS B-B, D-D, E-E & TABLE OF VARIABLES, see Drawing No. 55129.

For BAR LISTS & BAR BENDING DIAGRAMS, see Dwg. No. 55130.

For anchor bolt details, see Dwg. No. 55129.

STATE OF ARKANSAS 9-5-14 LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 4 OF 7
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

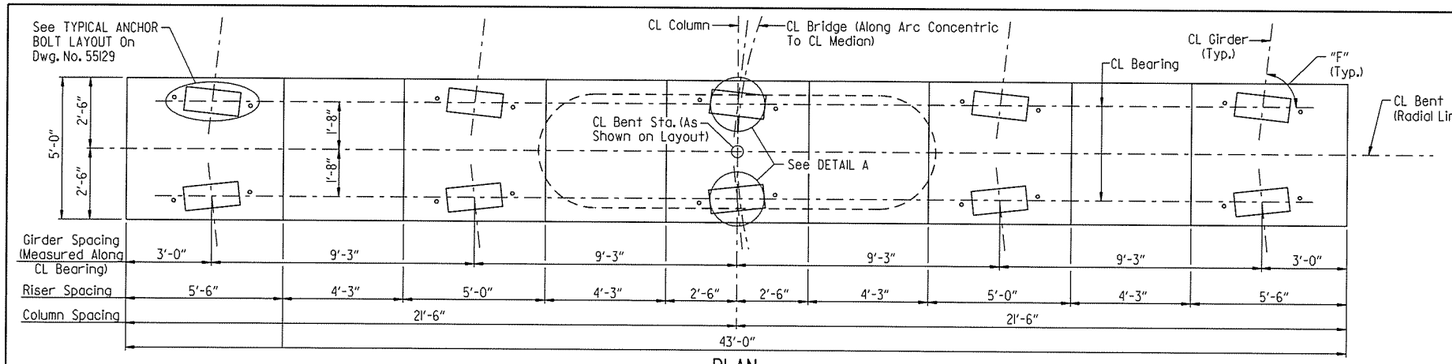
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XI_B4.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55127

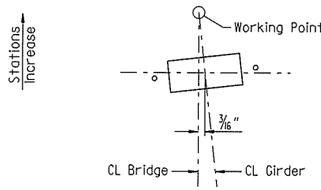
drgood
9/4/2014 9:35:02 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_B4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 274 | 897 |
| | | | | (1) A7304 & B7304 | | INT. BENT DETAILS | | 55128 |



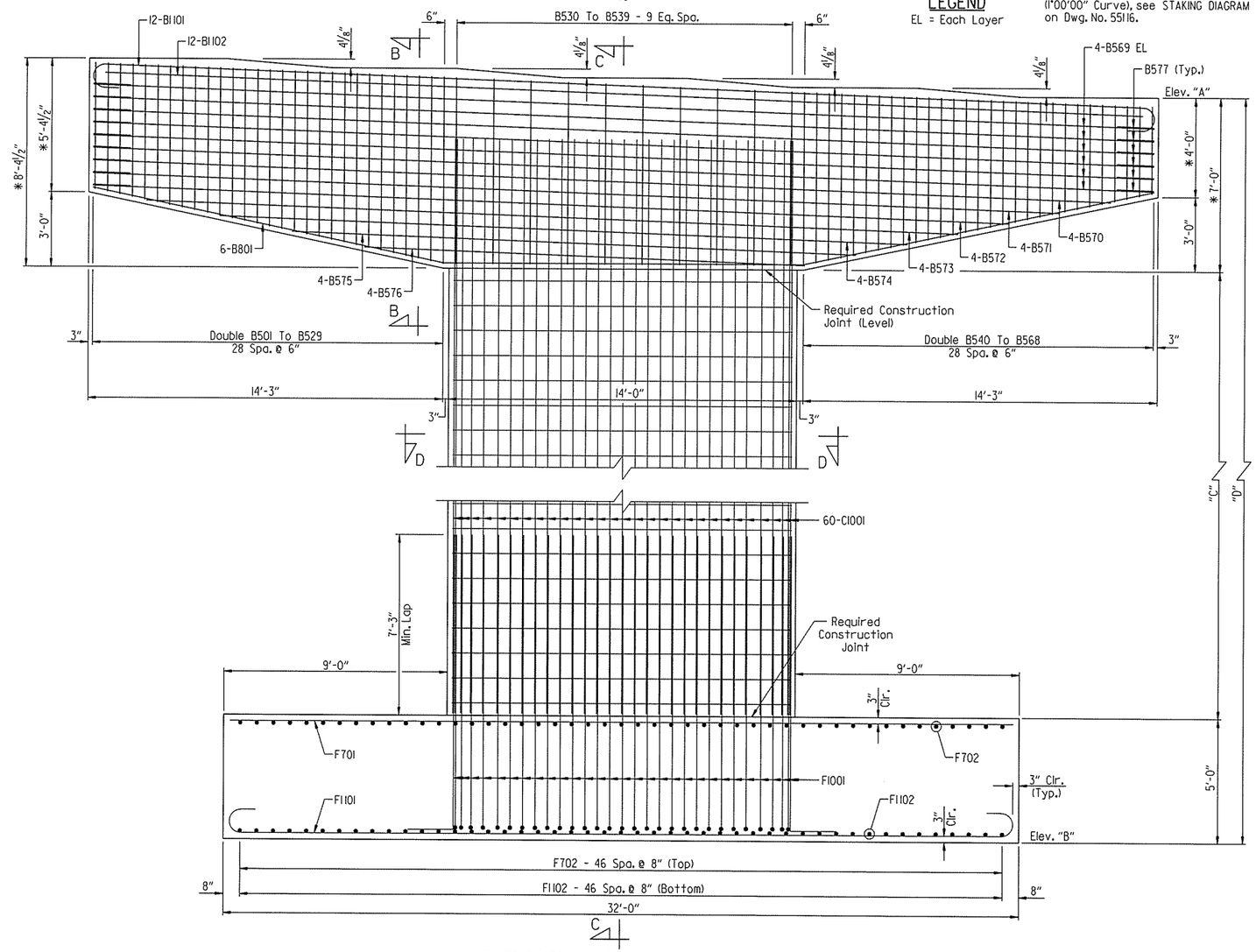

PLAN
(Bent Nos. 6A-9A & 6B-9B)
Scale: 3/8" = 1'-0"

Note:
CL Bridge arc and CL Girder skews are exaggerated.




DETAIL A
(Back Station Shown, Forward Station Similiar)
Scale: NTS

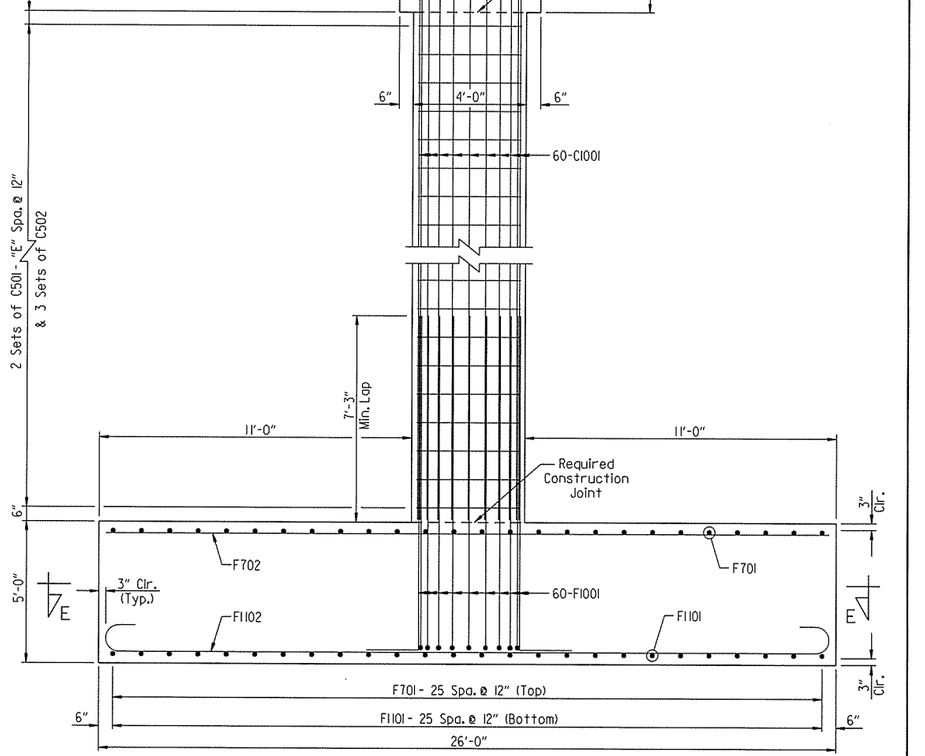
* Measured to lower beam seat




ELEVATION - LOOKING FORWARD
(Bent Nos. 6A-9A & 6B-9B)
Scale: 3/8" = 1'-0"

LEGEND
EL = Each Layer

Note:
For location of CL Bridge relative to CL Median U.S. Hwy. 412 Bypass (1°00'00" Curve), see STAKING DIAGRAM on Dwg. No. 55116.




SECTION C-C
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55167.

For SECTIONS B-B, D-D, E-E & TABLE OF VARIABLES, see Drawing No. 55129.

For BAR LISTS & BAR BENDING DIAGRAMS, see Dwg. No. 55130.

For anchor bolt details, see Dwg. No. 55129.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-25-14
BRIDGE ENGINEER

# SHEET 5 OF 7
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

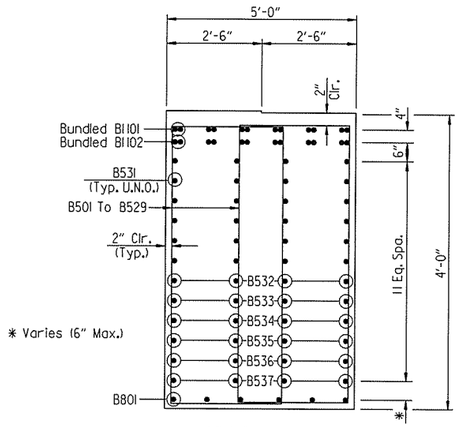
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XI_B5.DGN
SCALE: AS SHOWN

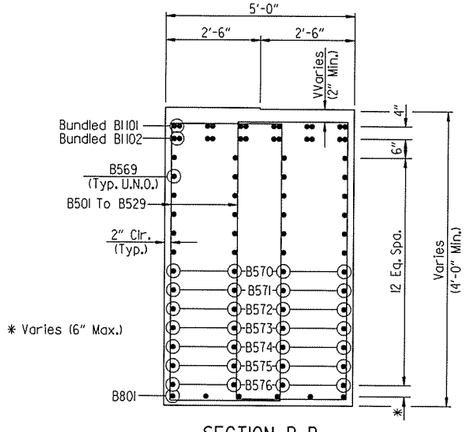
BRIDGE NO. A7304 & B7304 DRAWING NO. 55128

drgood 9/4/2014 9:35:02 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_B5.dgn
REVISED DATE:

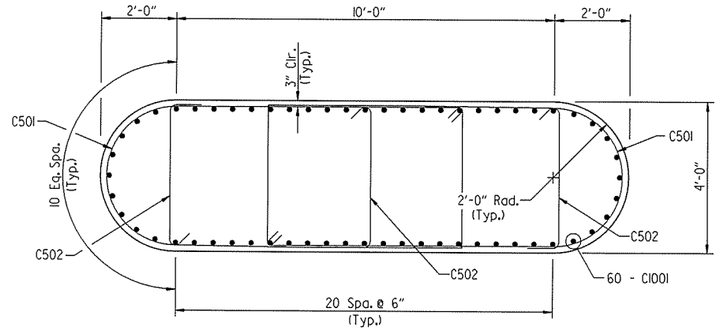
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 275 | 897 |
| | | | | (1) A7304 & B7304 | | INT. BENT DETAILS | | 55129 |



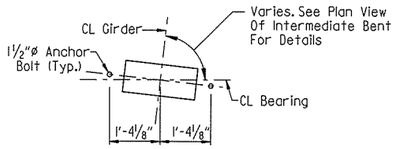

SECTION A-A
Scale: 1/2" = 1'-0"



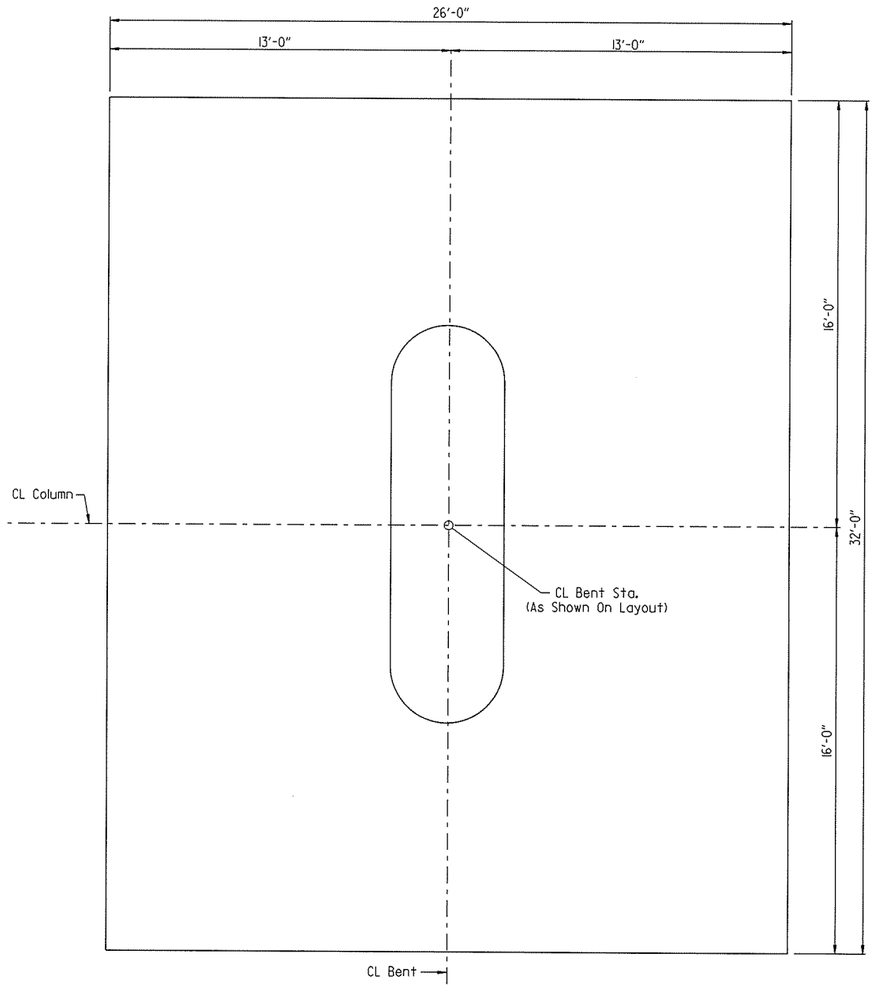

SECTION B-B
Scale: 1/2" = 1'-0"




SECTION D-D
Scale: 1/2" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"




SECTION E-E
Scale: 3/8" = 1'-0"

TABLE OF VARIABLES - BENT NOS. 3A, 2B & 3B

| Bent No. | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "I" | "J" | "K" | "L" | "GG" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3A | 1185.94 | 1133.94 | 4'-9" | 7'-9" | 40'-0" | 52'-0" | 2 3/16" | 89°47'10" | 89°47'11" | 89°47'12" | 39 | "LL" | 2 1/4" |
| 2B | 1187.41 | 1133.41 | 4'-9" | 7'-9" | 42'-0" | 54'-0" | 2 1/4" | 90°00'00" | 90°00'00" | 90°00'00" | 41 | 13/16" | 2 1/4" |
| 3B | 1185.10 | 1134.10 | 5'-0 3/4" | 8'-0 3/4" | 39'-0" | 51'-0" | 3 1/8" | 89°46'58" | 89°46'59" | 89°47'00" | 38 | 11/16" | 3 3/16" |

TABLE OF VARIABLES - BENT NO. 3A

| Girder | "LL" |
|---|---|
| No. 1 | 7/16" |
| No. 2 | 1/2" |
| No. 3 | 9/16" |
| No. 4 | 5/8" |
| No. 5 | 11/16" |

TABLE OF VARIABLES - BENT NOS. 4A & 4B

| Bent No. | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "I" |
|---|---|---|---|---|---|---|---|---|---|
| 4A | 1184.20 | 1136.20 | 36'-0" | 48'-0" | 35 | 89°22'47" | 89°31'50" | 89°31'50" | 89°31'49" |
| 4B | 1183.14 | 1131.14 | 40'-0" | 52'-0" | 39 | 89°22'13" | 89°31'24" | 89°31'24" | 89°31'23" |

TABLE OF VARIABLES - BENT NOS. 5A & 5B

| Bent No. | "A" | "B" | "C" | "D" | "E" | "F" | "G" |
|---|---|---|---|---|---|---|---|
| 5A | 1182.72 | 1131.72 | 39'-0" | 51'-0" | 38 | 89°27'15" | 89°22'47" |
| 5B | 1181.66 | 1131.66 | 38'-0" | 50'-0" | 37 | 89°26'45" | 89°22'13" |

TABLE OF VARIABLES - BENT NOS. 6A-9A & 6B-9B

| Bent No. | "A" Back Station | "A" Forward Station | "B" | "C" | "D" | "E" | "F" |
|---|---|---|---|---|---|---|---|
| 6A | 1181.82 | 1181.80 | 1128.80 | 41'-0" | 53'-0" | 40 | 89°27'15" |
| 7A | 1181.23 | 1181.22 | 1128.22 | 41'-0" | 53'-0" | 40 | 89°27'15" |
| 8A | 1181.00 | 1180.99 | 1127.99 | 41'-0" | 53'-0" | 40 | 89°27'15" |
| 9A | 1181.10 | 1181.11 | 1132.10 | 37'-0" | 49'-0" | 36 | 89°27'15" |
| 6B | 1180.75 | 1180.73 | 1126.73 | 42'-0" | 54'-0" | 41 | 89°26'45" |
| 7B | 1180.18 | 1180.16 | 1128.16 | 40'-0" | 52'-0" | 39 | 89°26'45" |
| 8B | 1179.96 | 1179.95 | 1127.95 | 40'-0" | 52'-0" | 39 | 89°26'45" |
| 9B | 1180.09 | 1180.10 | 1131.09 | 37'-0" | 49'-0" | 36 | 89°26'45" |

## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see LAYOUT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF INTERMEDIATE BENTS
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XI_B6.DGN
SCALE: AS SHOWN

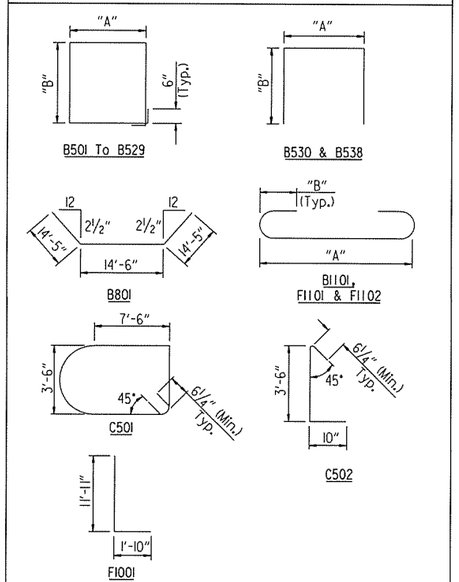
BRIDGE NO. A7304 & B7304 DRAWING NO. 55129

drgood 9/4/2014 9:35:03 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_B6.dgn
REVISED DATE:

## BAR LIST (PER BENT) - BENT NO. 2A

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B529 | 4 Ea. | 13'-11" To 19'-10" | 3'-0" | 3'-8½" To 6'-8" | 2½" |
| B530 | 10 | 17'-9½" | 4'-8" | 6'-8" | 2½" |
| B531 | 24 | 42'-8" | | | Str. |
| B532 | 4 | 42'-3" | | | Str. |
| B533 | 4 | 37'-9" | | | Str. |
| B534 | 4 | 33'-3" | | | Str. |
| B535 | 4 | 28'-9" | | | Str. |
| B536 | 4 | 24'-2" | | | Str. |
| B537 | 4 | 19'-8" | | | Str. |
| B538 | 12 | 7'-4½" | 4'-7" | 1'-6" | 2½" |
| | | | | | |
| B801 | 6 | 43'-4" | | | 6" |
| | | | | | |
| B1101 | 12 | 45'-8" | 42'-8" | 1'-0½" | 11¼" |
| B1102 | 12 | 41'-9" | | | Str. |
| | | | | | |
| C501 | 90 | 25'-3" | | | 3¾" |
| C502 | 135 | 4'-8" | | | 3¾" |
| | | | | | |
| C1001 | 60 | 49'-3" | | | Str. |
| | | | | | |
| F701 | 26 | 31'-6" | | | Str. |
| F702 | 47 | 25'-6" | | | Str. |
| | | | | | |
| F1001 | 60 | 13'-5" | | | 10" |
| | | | | | |
| F1101 | 26 | 34'-6" | 31'-6" | 1'-0½" | 11¼" |
| F1102 | 47 | 28'-6" | 25'-6" | 1'-0½" | 11¼" |

## BAR BENDING DIAGRAMS




NOTE:
Dimensions of bars are out-to-out.

## BAR LIST (PER BENT) - BENT NOS. 3A & 2B

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B529 | 2 Ea. | 15'-5" To 20'-9" | 3'-0" | 4'-5½" To 7'-1½" | 2½" |
| B530 To B539 | 1 Ea. | 18'-6½" To 19'-1½" | 4'-8" | 6'-10" To 7'-1½" | 2½" |
| B540 To B568 | 2 Ea. | 13'-9" To 20'-2" | 3'-0" | 3'-7½" To 6'-10" | 2½" |
| B569 | 24 | 42'-8" | | | Str. |
| B570 | 4 | 42'-0" | | | Str. |
| B571 | 4 | 40'-0" | | | Str. |
| B572 | 4 | 36'-8" | | | Str. |
| B573 | 4 | 32'-2" | | | Str. |
| B574 | 4 | 27'-7" | | | Str. |
| B575 | 4 | 23'-0" | | | Str. |
| B576 | 4 | 18'-6" | | | Str. |
| B577 | 14 | 7'-4½" | 4'-7" | 1'-6" | 2½" |
| | | | | | |
| B801 | 6 | 43'-4" | | | 6" |
| | | | | | |
| B1101 | 12 | 45'-8" | 42'-8" | 1'-0½" | 11¼" |
| B1102 | 12 | 41'-9" | | | Str. |
| | | | | | |
| C501 | "X" | 25'-3" | | | 3¾" |
| C502 | "Y" | 4'-8" | | | 3¾" |
| | | | | | |
| C1001 | 60 | "Z" | | | Str. |
| | | | | | |
| F701 | 26 | 31'-6" | | | Str. |
| F702 | 47 | 25'-6" | | | Str. |
| | | | | | |
| F1001 | 60 | 13'-5" | | | 10" |
| | | | | | |
| F1101 | 26 | 34'-6" | 31'-6" | 1'-0½" | 11¼" |
| F1102 | 47 | 28'-6" | 25'-6" | 1'-0½" | 11¼" |

## BAR LIST (PER BENT) - BENT NOS. 4A-5A & 4B-5B

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B529 | 2 Ea. | 16'-8" To 21'-6" | 3'-0" | 5'-1" To 7'-6" | 2½" |
| B530 To B539 | 1 Ea. | 18'-5½" To 19'-5½" | 4'-8" | 7'-0" To 7'-6" | 2½" |
| B540 To B568 | 2 Ea. | 13'-6" To 20'-6" | 3'-0" | 3'-6" To 7'-0" | 2½" |
| B569 | 24 | 42'-8" | | | Str. |
| B570 | 4 | 40'-11" | | | Str. |
| B571 | 4 | 38'-11" | | | Str. |
| B572 | 4 | 36'-10" | | | Str. |
| B573 | 4 | 32'-8" | | | Str. |
| B574 | 4 | 27'-8" | | | Str. |
| B575 | 4 | 22'-8" | | | Str. |
| B576 | 4 | 17'-9" | | | Str. |
| B577 | 15 | 7'-4½" | 4'-7" | 1'-6" | 2½" |
| | | | | | |
| B801 | 6 | 43'-4" | | | 6" |
| | | | | | |
| B1101 | 12 | 45'-8" | 42'-8" | 1'-0½" | 11¼" |
| B1102 | 12 | 41'-9" | | | Str. |
| | | | | | |
| C501 | "X" | 25'-3" | | | 3¾" |
| C502 | "Y" | 4'-8" | | | 3¾" |
| | | | | | |
| C1001 | 60 | "Z" | | | Str. |
| | | | | | |
| F701 | 26 | 31'-6" | | | Str. |
| F702 | 47 | 25'-6" | | | Str. |
| | | | | | |
| F1001 | 60 | 13'-5" | | | 10" |
| | | | | | |
| F1101 | 26 | 34'-6" | 31'-6" | 1'-0½" | 11¼" |
| F1102 | 47 | 28'-6" | 25'-6" | 1'-0½" | 11¼" |

## BAR LIST (PER BENT) - BENT NO. 3B

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B529 | 2 Ea. | 16'-1" To 21'-2" | 3'-0" | 4'-9½" To 7'-4" | 2½" |
| B530 To B539 | 1 Ea. | 18'-8½" To 19'6½" | 4'-8" | 6'-11" To 7'-4" | 2½" |
| B540 To B568 | 2 Ea. | 13'-8" To 20'-4" | 3'-0" | 3'-7" To 6'-11" | 2½" |
| B569 | 24 | 42'-8" | | | Str. |
| B570 | 4 | 41'-6" | | | Str. |
| B571 | 4 | 39'-5" | | | Str. |
| B572 | 4 | 37'-1" | | | Str. |
| B573 | 4 | 32'-4" | | | Str. |
| B574 | 4 | 27'-7" | | | Str. |
| B575 | 4 | 22'-10" | | | Str. |
| B576 | 4 | 18'-1" | | | Str. |
| B577 | 15 | 7'-4½" | 4'-7" | 1'-6" | 2½" |
| | | | | | |
| B801 | 6 | 43'-4" | | | 6" |
| | | | | | |
| B1101 | 12 | 45'-8" | 42'-8" | 1'-0½" | 11¼" |
| B1102 | 12 | 41'-9" | | | Str. |
| | | | | | |
| C501 | "X" | 25'-3" | | | 3¾" |
| C502 | "Y" | 4'-8" | | | 3¾" |
| | | | | | |
| C1001 | 60 | "Z" | | | Str. |
| | | | | | |
| F701 | 26 | 31'-6" | | | Str. |
| F702 | 47 | 25'-6" | | | Str. |
| | | | | | |
| F1001 | 60 | 13'-5" | | | 10" |
| | | | | | |
| F1101 | 26 | 34'-6" | 31'-6" | 1'-0½" | 11¼" |
| F1102 | 47 | 28'-6" | 25'-6" | 1'-0½" | 11¼" |

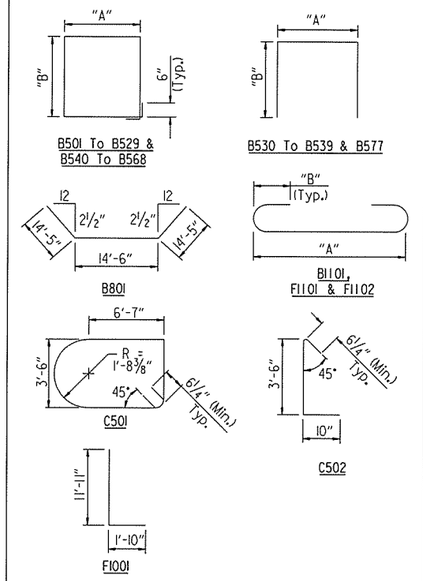
## BAR LIST (PER BENT) - BENT NOS. 6A-9A & 6B-9B

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B529 | 2 Ea. | 16'-8" To 21'-7" | 3'-0" | 5'-1" To 7'-6½" | 2½" |
| B530 To B539 | 1 Ea. | 18'-10½" To 19'-10½" | 4'-8" | 7'-0" To 7'-6" | 2½" |
| B540 To B568 | 2 Ea. | 13'-7" To 20'-6" | 3'-0" | 3'-6½" To 7'-0" | 2½" |
| B569 | 24 | 42'-8" | | | Str. |
| B570 | 4 | 40'-11" | | | Str. |
| B571 | 4 | 38'-11" | | | Str. |
| B572 | 4 | 36'-10" | | | Str. |
| B573 | 4 | 32'-8" | | | Str. |
| B574 | 4 | 27'-8" | | | Str. |
| B575 | 4 | 22'-8" | | | Str. |
| B576 | 4 | 17'-9" | | | Str. |
| B577 | 15 | 7'-4½" | 4'-7" | 1'-6" | 2½" |
| | | | | | |
| B801 | 6 | 43'-4" | | | 6" |
| | | | | | |
| B1101 | 12 | 45'-8" | 42'-8" | 1'-0½" | 11¼" |
| B1102 | 12 | 41'-9" | | | Str. |
| | | | | | |
| C501 | "X" | 25'-3" | | | 3¾" |
| C502 | "Y" | 4'-8" | | | 3¾" |
| | | | | | |
| C1001 | 60 | "Z" | | | Str. |
| | | | | | |
| F701 | 26 | 31'-6" | | | Str. |
| F702 | 47 | 25'-6" | | | Str. |
| | | | | | |
| F1001 | 60 | 13'-5" | | | 10" |
| | | | | | |
| F1101 | 26 | 34'-6" | 31'-6" | 1'-0½" | 11¼" |
| F1102 | 47 | 28'-6" | 25'-6" | 1'-0½" | 11¼" |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 276 | 897 |

(1) A7304 & B7304 INT. BENT DETAILS 55130

## BAR BENDING DIAGRAMS
## BENT NOS. 3A-9A & 2B-9B




## TABLE OF REINFORCING VARIABLES
## BENT NOS. 3A-9A & 2B-9B

| Bent No. | "X" | "Y" | "Z" |
|---|---|---|---|
| 3A | 80 | 120 | 44'-3" |
| 4A | 72 | 108 | 40'-3" |
| 5A | 78 | 117 | 43'-3" |
| 6A | 82 | 123 | 45'-3" |
| 7A | 82 | 123 | 45'-3" |
| 8A | 82 | 123 | 45'-3" |
| 9A | 74 | 111 | 41'-3" |
| 2B | 84 | 126 | 46'-3" |
| 3B | 78 | 117 | 43'-3" |
| 4B | 80 | 120 | 44'-3" |
| 5B | 76 | 114 | 42'-3" |
| 6B | 84 | 126 | 46'-3" |
| 7B | 80 | 120 | 44'-3" |
| 8B | 80 | 120 | 44'-3" |
| 9B | 74 | 111 | 41'-3" |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
5-5-14
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 7 OF 7
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

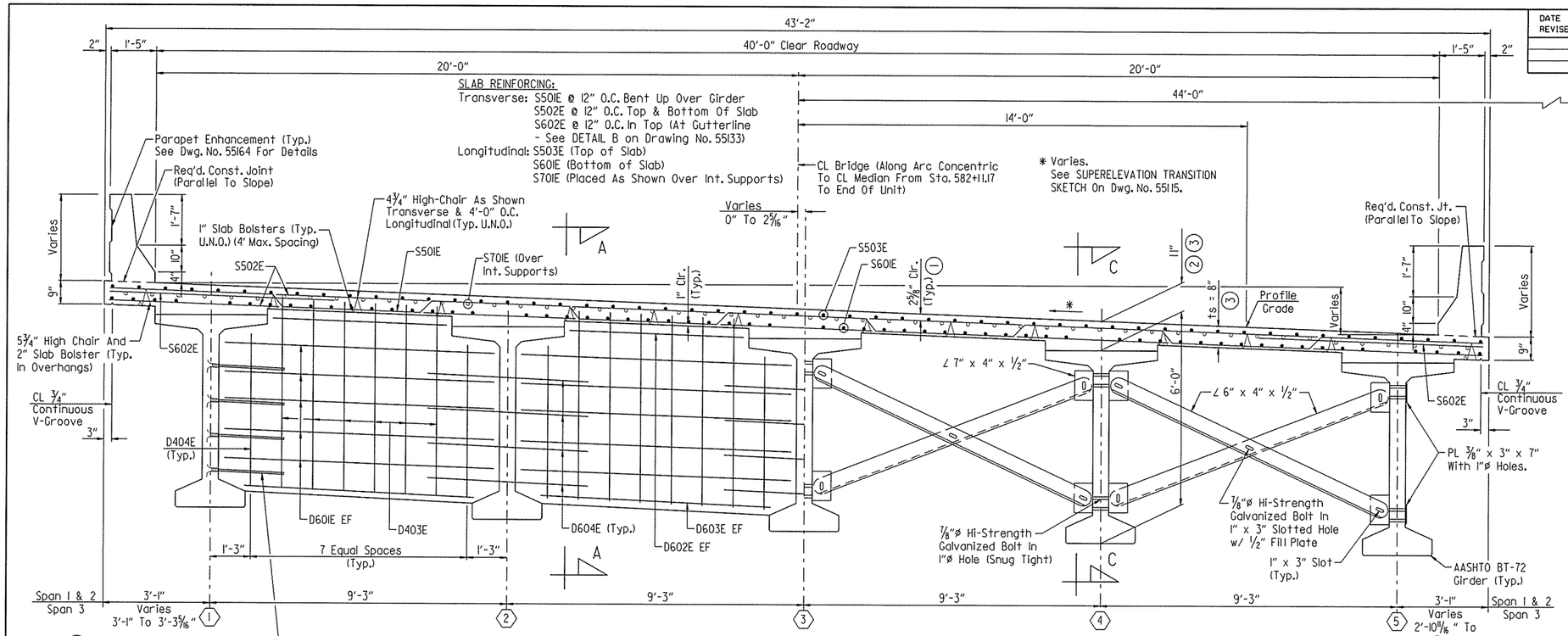
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: PCC DATE: OCT. 2011
FILENAME: BCA0907XL_B7.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55130

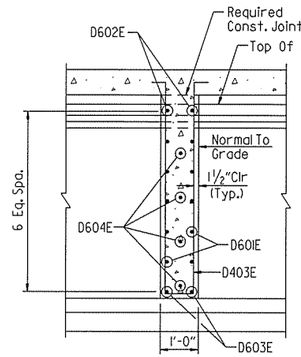
dropod 9/4/2014 9:35:04 AM
WORKSPACE: AHTD Bridge
\\LITDCOR\LITProjects\2005\059680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XL_B7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 277 | 897 |

| | | | |
|---|---|---|---|
| 1 | A7304 & B7304 | SPAN DETAILS | 55131 |




Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) Concrete.

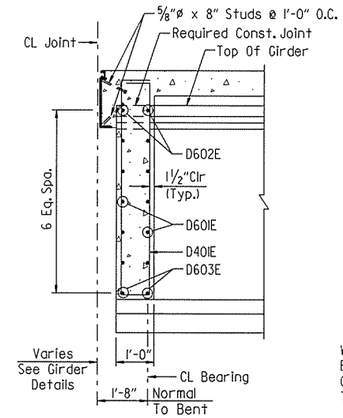


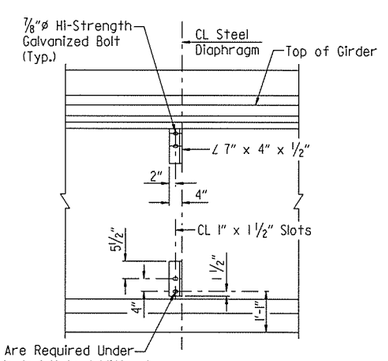

SECTION A-A
(Normal To Grade)
Scale: ½" = 1'-0"

(4) Galvanized Threaded Inserts & ¾"ø x 3'-6" Threaded Rods @ Exterior Girders (See TYPICAL GIRDER ELEVATION For Number And Location On Dwg. Nos. 55137 & 55139.

## INTERMEDIATE CONCRETE DIAPHRAGMS

## (5) ALTERNATE STRUCTURAL STEEL DIAPHRAGMS




SECTION B-B
(Normal To Grade)
Scale: ½" = 1'-0"

Note:
SECTIONS A-A, B-B & C-C are cut normal to diaphragm.

SECTION C-C
(Normal To Grade)
Scale: ½" = 1'-0"

## TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ½" = 1'-0"

(1) TOLERANCE:
Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55132.

(2) This dimension taken at CL Bearing & CL Beam

(3) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55132.

(4) Galvanized threaded inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø threaded rods to be AASHTO M270, Grade 36 or AASHTO M31 or M322 Type A, Gr. 60. These are to be subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)". Galvanizing shall be in accordance with AASHTO M232 Class C or ASTM B695, Class 50.

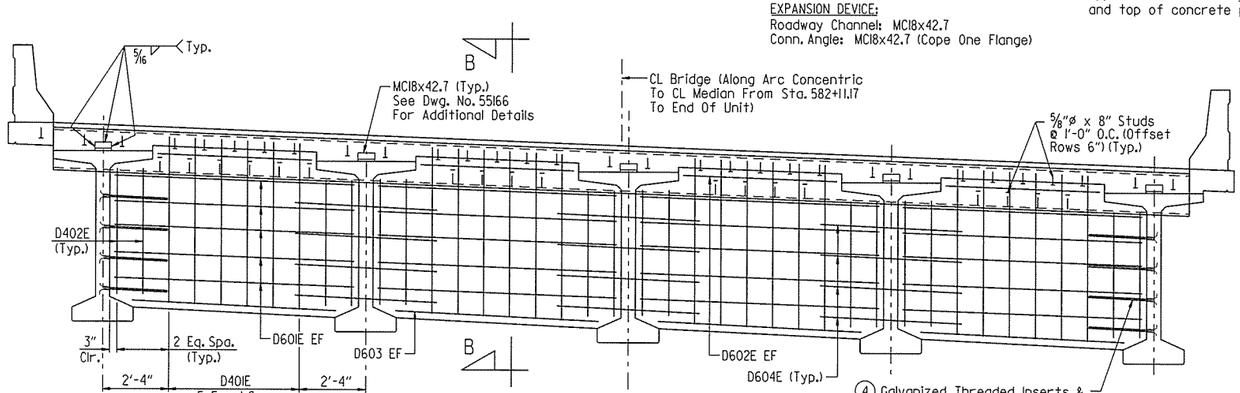
(5) Galvanized steel diaphragms may be used in place of concrete at intermediate diaphragms only. All components of the alternate steel diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.

Note:
All bars designated with an "E" suffix are to be epoxy coated.

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

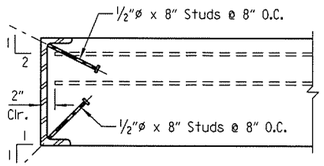
Note:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.

EXPANSION DEVICE:
Roadway Channel: MC18x42.7
Conn. Angle: MC18x42.7 (Cope One Flange)




## TYPICAL SECTION (END OF UNIT AT JOINT)

(Shown Looking Ahead At Bent 1 of Bridge B, Other Locations Similar)
Scale: ⅜" = 1'-0"




## DETAIL OF ALTERNATE ANCHORS

No Scale

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

## LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 9
# DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

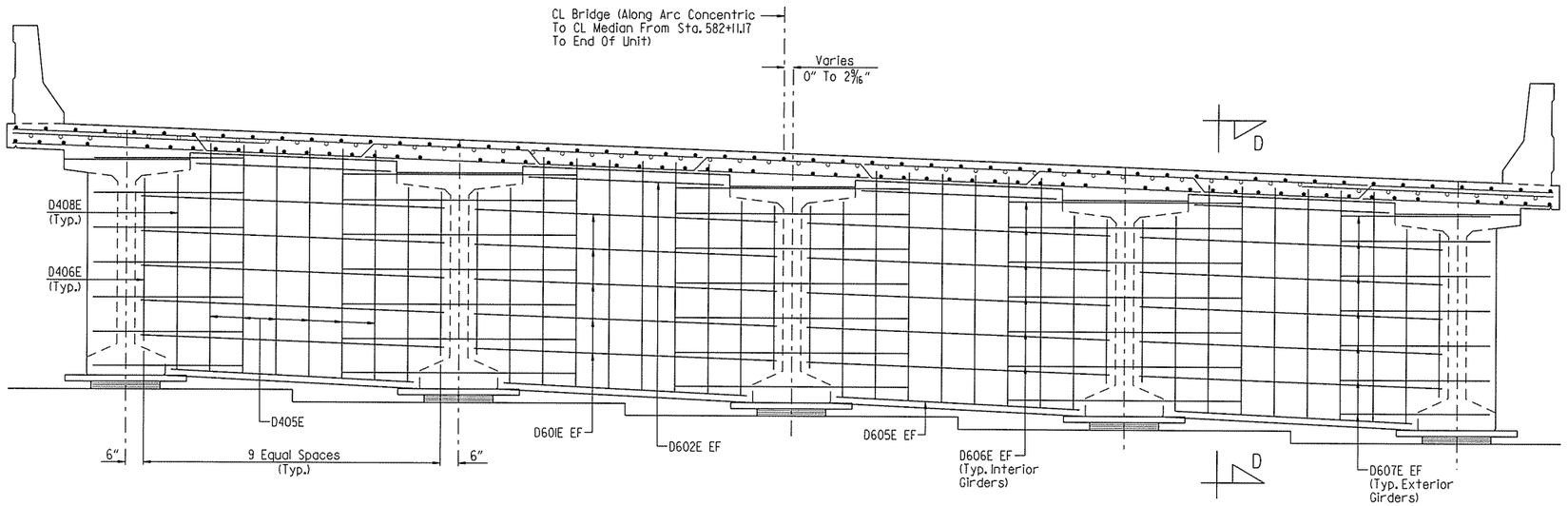
DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XI_S11.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55131

drgood 9/4/2014 9:35:04 AM
WORKSPACE: AHTD Bridge
\\SLITDCOS\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_S11.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 278 | 897 |

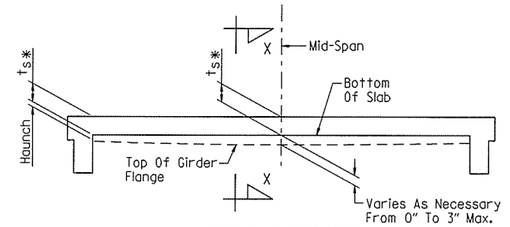
(1) A7304 & B7304 SPAN DETAILS 55132




## TYPICAL SECTION BETWEEN GIRDERS AT INTERIOR BENTS

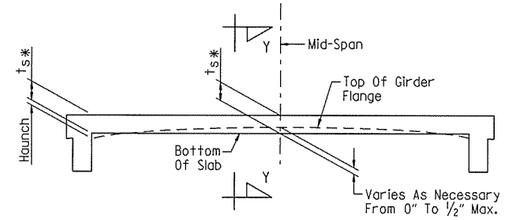
(For Information Not Shown, See TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. No. 55131)
Scale: ½" = 1'-0"

Note:
For additional details of diaphragm reinforcing, see Dwg. No. 55135.



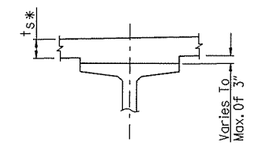

## GIRDER ELEVATION

Scale: NTS



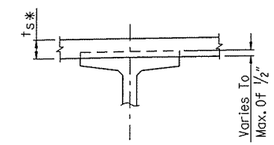

## GIRDER ELEVATION

Scale: NTS




## SECTION X-X

Scale: NTS




## SECTION Y-Y

Scale: NTS

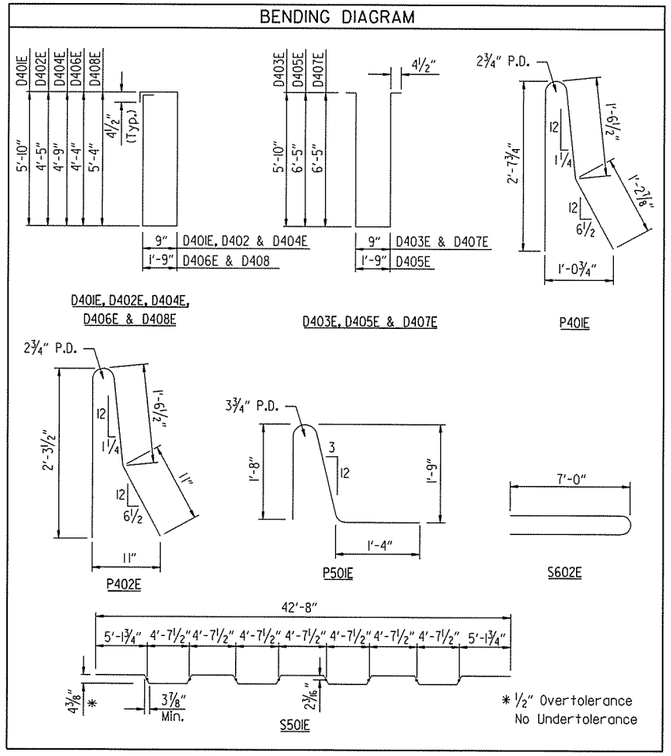
Note: $t_S$ = Slab thickness as shown on superstructure details see TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS.

* Tolerance when removable deck forming is used is +½", -¼". haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

GIRDER ELEVATION sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than a ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the profile grade can be adjusted over suitable increments so the revised grade line with produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

## BENDING DIAGRAM




## BAR LIST (1)

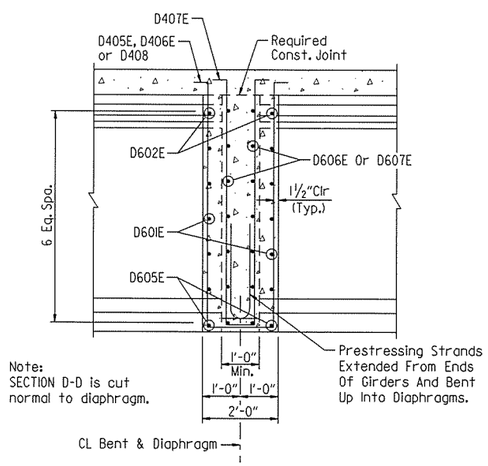
| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| D401E | 48 | 13'-6" | 2" |
| D402E | 32 | 10'-8" | 2" |
| D403E | 144 | 12'-10" | 2" |
| D404E | 48 | 11'-4" | 2" |
| D405E | 48 | 15'-0" | 2" |
| D406E | 16 | 12'-6" | 2" |
| D407E | 46 | 14'-0" | 2" |
| D408E | 16 | 14'-6" | 2" |
| | | | |
| D601E | 400 | 8'-5" | Str. |
| D602E | 80 | 5'-5" | Str. |
| D603E | 64 | 7'-2" | Str. |
| D604E | 96 | 5'-0" | Str. |
| D605E | 16 | 6'-9" | Str. |
| D606E | 84 | 6'-6" | Str. |
| D607E | 56 | 4'-2" | Str. |
| | | | |
| P401E | 1176 | 5'-7½" | 3" |
| P402E | 144 | 4'-11½" | 3" |
| P403E | 36 | 9'-8" | Str. |
| P404E | 108 | 14'-9" | Str. |
| P405E | 72 | 38'-6" | Str. |
| | | | |
| P501E | 1176 | 4'-10" | 3¾" |
| | | | |
| S501E | 329 | 43'-6" | 3" |
| S502E | 660 | 42'-10" | Str. |
| S503E | 318 | 57'-9" | Str. |
| | | | |
| S601E | 360 | 58'-4" | Str. |
| S602E | 658 | 14'-3" | 5¼" (2) |
| | | | |
| S701E | 104 | 34'-0" | Str. |

Note:
Dimension of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

(1) Number of bars shown is for one 330' unit.

(2) Non-typical pin diameter




Note:
SECTION D-D is cut normal to diaphragm.

## SECTION D-D

(Normal To Grade)
Scale: ½" = 1'-0"

## LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 2 OF 9
# DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER SPRING CREEK BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

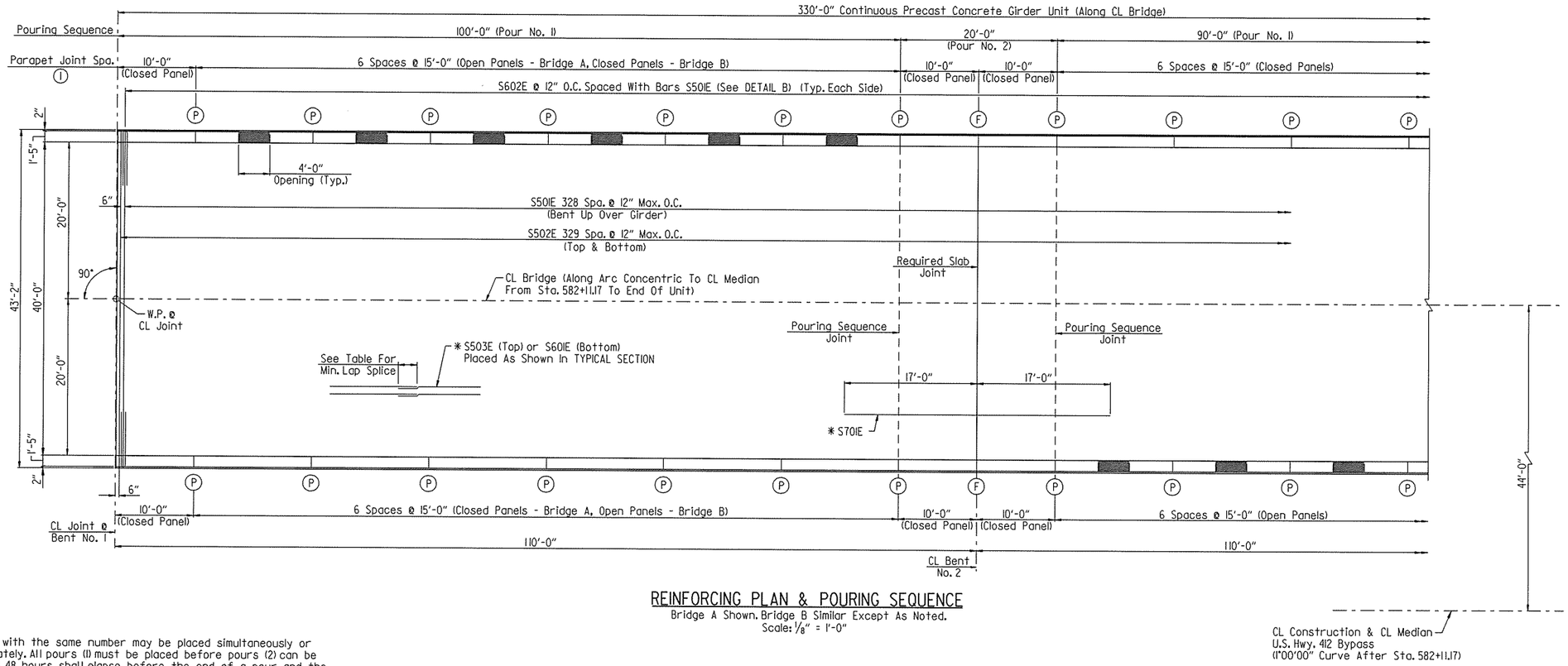
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XI_SI2.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55132

drgood 9/4/2014 9:35:05 AM
WORKSPACE: AHTD Bridge
\\GLITDCN\LITProjects\2005\0596680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_SI2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 279 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55133 |




## MINIMUM LAP SPLICE

#5 Bars = 3'-3"
#6 Bars = 3'-10"

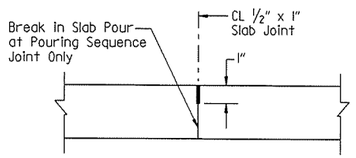
## REINFORCING PLAN & POURING SEQUENCE

Bridge A Shown. Bridge B Similar Except As Noted.
Scale: 1/8" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) and 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

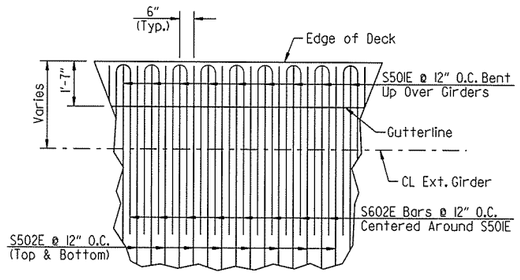
## SLAB JOINT DETAIL

Scale: NTS

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. all other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

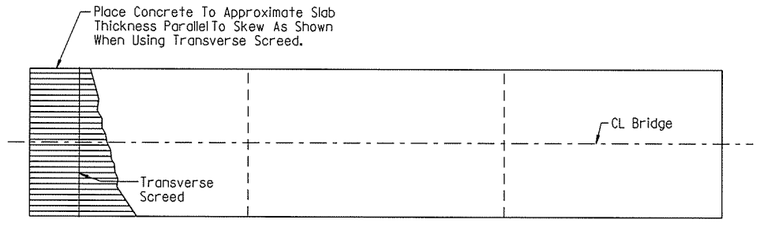
* Refer to TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. 55131 for placement.

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.




## DETAIL B

Scale: NTS




## CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note:
A longitudinal screed will not be allowed.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 3 OF 9
# DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER SPRING CREEK BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X1_SI3.DGN
SCALE: AS SHOWN

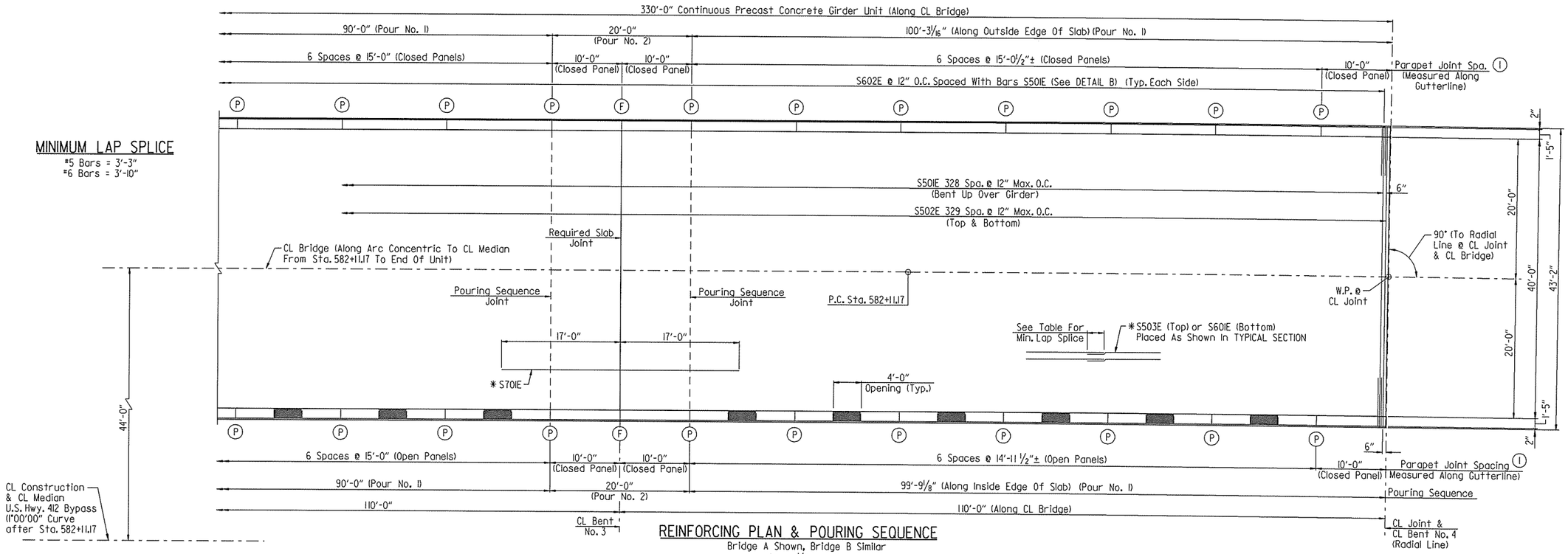
BRIDGE NO. A7304 & B7304 DRAWING NO. 55133


drgood 9/4/2014 9:35:05 AM
WORKSPACE: AHTD Bridge
\\CLITICON\LITPROJECTS\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_SI3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 280 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55134 |

## MINIMUM LAP SPLICE

#5 Bars = 3'-3"
#6 Bars = 3'-10"



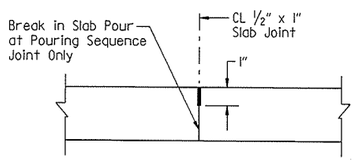

## REINFORCING PLAN & POURING SEQUENCE

Bridge A Shown, Bridge B Similar
Scale: 1/8" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

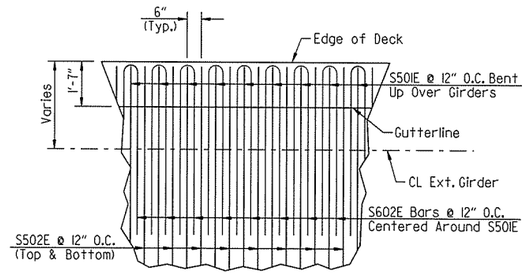
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) And 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

## SLAB JOINT DETAIL

Scale: NTS




## DETAIL B

Scale: NTS

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. all other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. 55131 for placement.

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Notes:
1. Transverse slab reinforcing shall be placed on radial lines and spaced along center of slab.
2. Longitudinal slab reinforcing shall be placed along curves concentric to CL Median after Sta. 582+11.17.
3. Edges of slab are concentric to CL Median (1°00'00" curve) after Sta. 582+11.17.
4. All transverse lines are radial to CL Median after Sta. 582+11.17.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-4-14

BRIDGE ENGINEER

# SHEET 4 OF 9
# DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

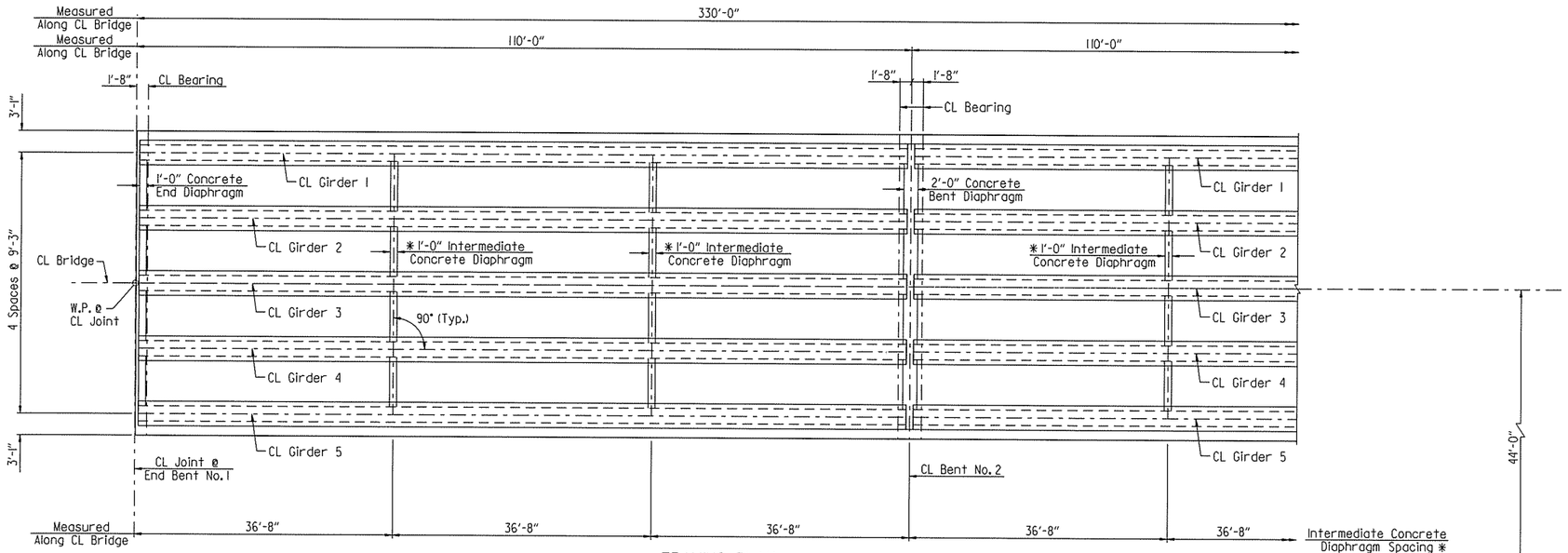
DRAWN BY: HEW DATE: AUG. 2011 FILENAME: BCA0907XI_SI4.DGN
CHECKED BY: AJK DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: AUG. 2011

BRIDGE NO. A7304 & B7304 DRAWING NO. 55134

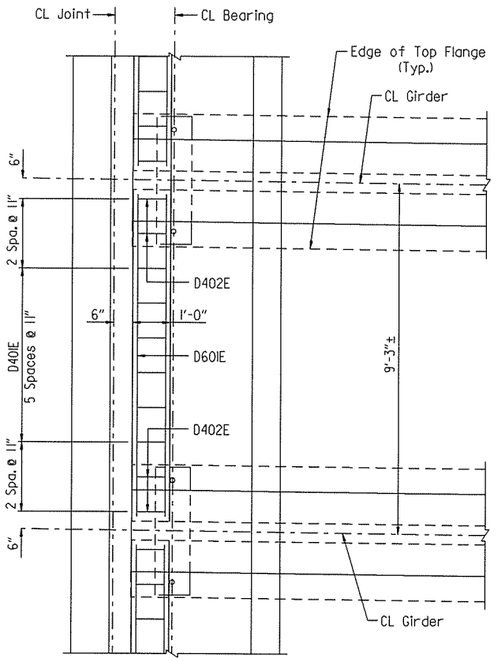
drgood 9/4/2014 9:35:06 AM
WORKSPACE\ AHTD Bridge
\\CLITDOT\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_SI4.dgn
REVISED DATE:

* Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.

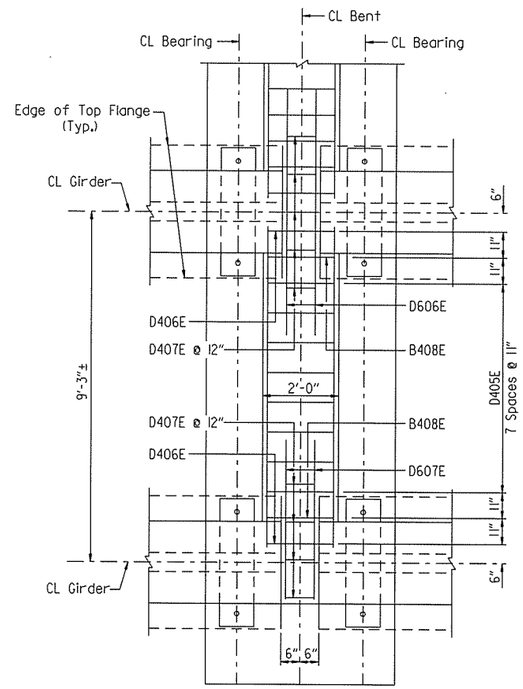
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 281 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55135 |



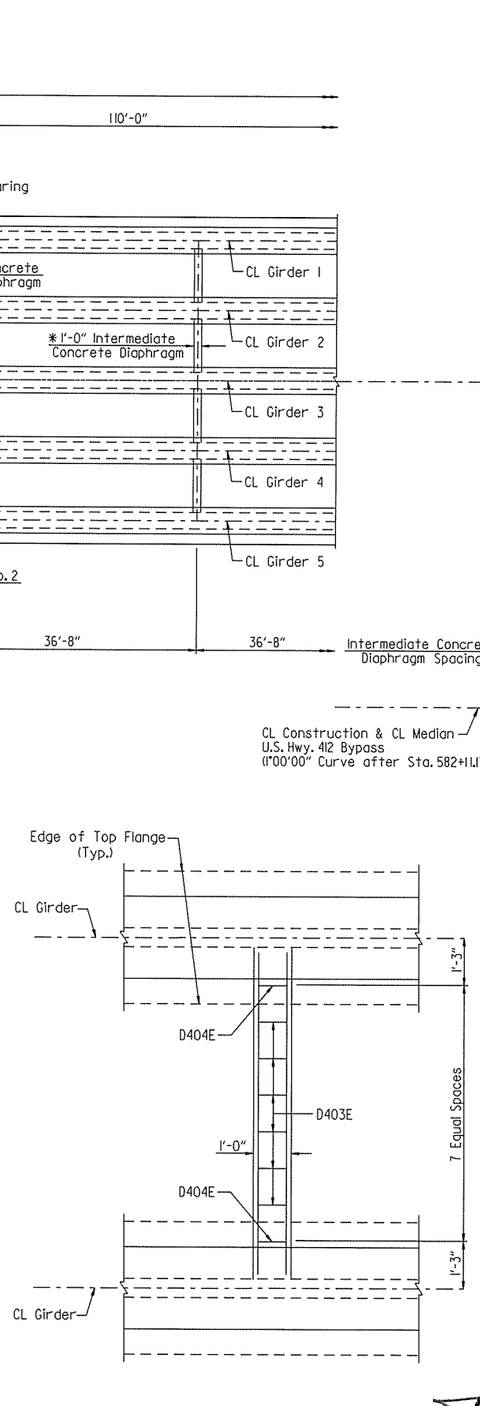

FRAMING PLAN
Bridge A Shown, Bridge B Similar
Scale: 1" = 10'-0"




PLAN
END DIAPHRAGM
Scale: 1/2" = 1'-0"




PLAN
BENT DIAPHRAGM
Scale: 1/2" = 1'-0"




PLAN
INTERMEDIATE DIAPHRAGM
Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 9
DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907XI_SI5.DGN
SCALE: AS SHOWN

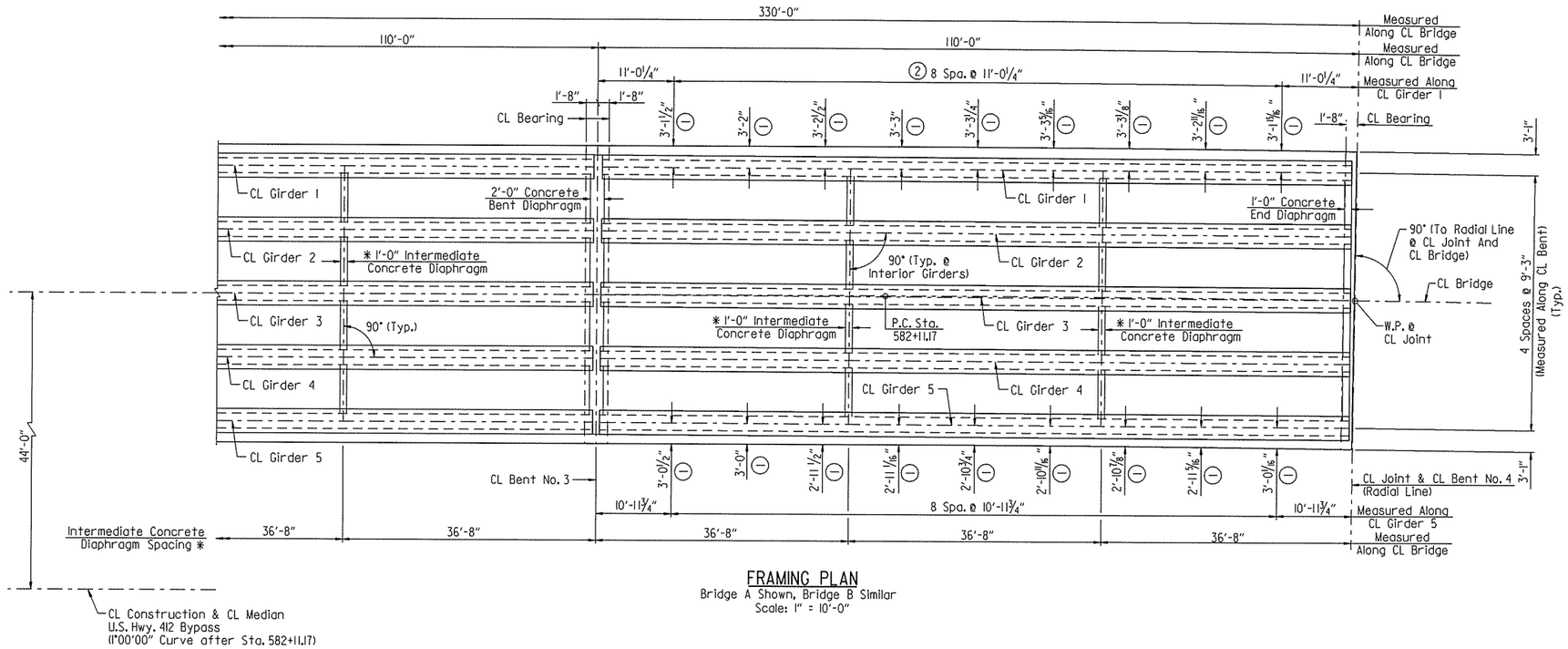
BRIDGE NO. A7304 & B7304 DRAWING NO. 55135

drgood 9/4/2014 9:35:07 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_SI5.dgn
REVISED DATE:

* Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 282 | 897 |

(1) A7304 & B7304 SPAN DETAILS 55136




FRAMING PLAN
Bridge A Shown, Bridge B Similar
Scale: 1" = 10'-0"

(1) All cantilever dimensions are measured at tenth points along CL exterior girders and normal to exterior girders.

(2) Girders in the span are on chords between CL Bent No. 3 and CL Bent No. 4.

Note:
Edges of slab are concentric to CL Median (1°00'00" curve) after Sta. 582+11.17.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 6 OF 9
DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907XI_S16.DGN
SCALE: AS SHOWN

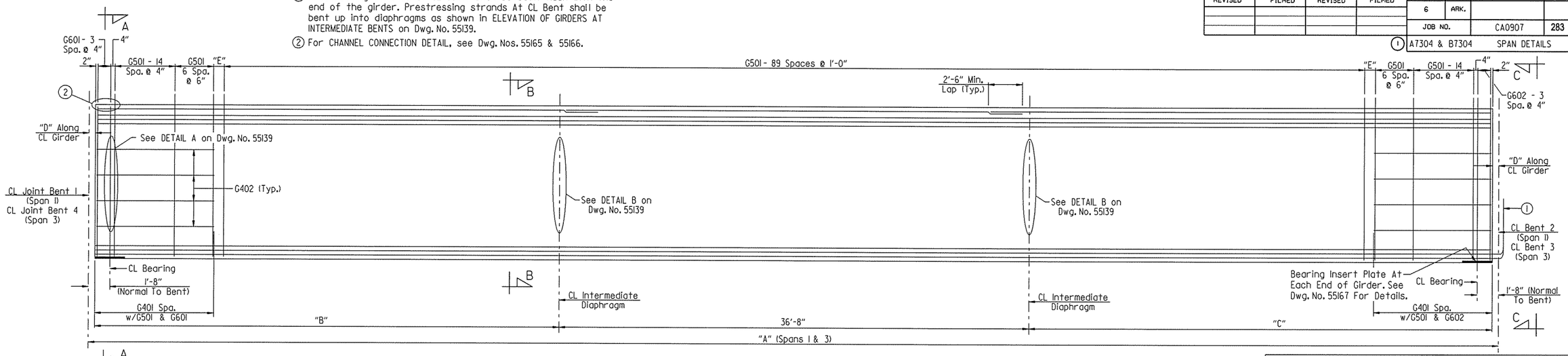
BRIDGE NO. A7304 & B7304 DRAWING NO. 55136

drgood 9/4/2014 9:35:08 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S16.dgn
REVISED DATE:

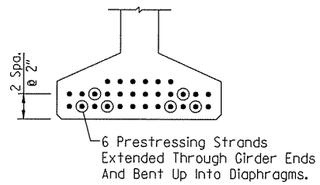
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 283 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55137 |

(1) Prestressing strands at CL Joint shall be sawn flush with the end of the girder. Prestressing strands At CL Bent shall be bent up into diaphragms as shown in ELEVATION OF GIRDERS AT INTERMEDIATE BENTS on Dwg. No. 55139.

(2) For CHANNEL CONNECTION DETAIL, see Dwg. Nos. 55165 & 55166.




## TYPICAL GIRDER ELEVATION (TYPE BT-72)
Scale: NTS




## VIEW C-C
Scale: 1" = 1'-0"

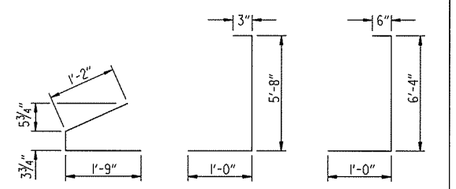
| DEBOND SCHEDULE | |
|---|---|
| Debond Pair | Debond Length From End Of Girder |
| A | 18'-0" |
| B | 9'-0" |

Note:
For GENERAL NOTES & details of girder bevels, see Dwg. No. 55139.

| TABLE OF VARIABLES | | | | | | |
|---|---|---|---|---|---|---|
| | | Girder | "A" | "B" | "C" | "D" | "E" |
| BRIDGE A | SPAN 1 | 1-5 | 110'-0" | 36'-2" | 36'-2" | 6" | 10" |
| | SPAN 3 | 1 | 110'-2 5/8" | 36'-1" | 36'-0" | 8 13/16" | 8 1/2" |
| | | 2 | 110'-1 5/16" | 36'-0 3/4" | 36'-0 1/4" | 8 3/16" | 8 1/2" |
| | | 3 | 110'-0" | 36'-0 1/2" | 36'-0 1/2" | 7 1/2" | 8 1/2" |
| | | 4 | 109'-10 11/16" | 36'-0 1/4" | 36'-0 3/4" | 6 13/16" | 8 1/2" |
| | | 5 | 109'-9 5/16" | 36'-0" | 36'-1" | 6 3/16" | 8 1/2" |
| BRIDGE B | SPAN 1 | 1-5 | 110'-0" | 36'-2" | 36'-2" | 6" | 10" |
| | SPAN 3 | 1 | 110'-2 11/16" | 36'-1" | 36'-0" | 8 13/16" | 8 1/2" |
| | | 2 | 110'-1 5/16" | 36'-0 3/4" | 36'-0 1/4" | 8 3/16" | 8 1/2" |
| | | 3 | 110'-0" | 36'-0 1/2" | 36'-0 1/2" | 7 1/2" | 8 1/2" |
| | | 4 | 109'-10 5/8" | 36'-0 1/4" | 36'-0 3/4" | 6 13/16" | 8 1/2" |
| | | 5 | 109'-9 5/16" | 36'-0" | 36'-1" | 6 1/8" | 8 1/2" |

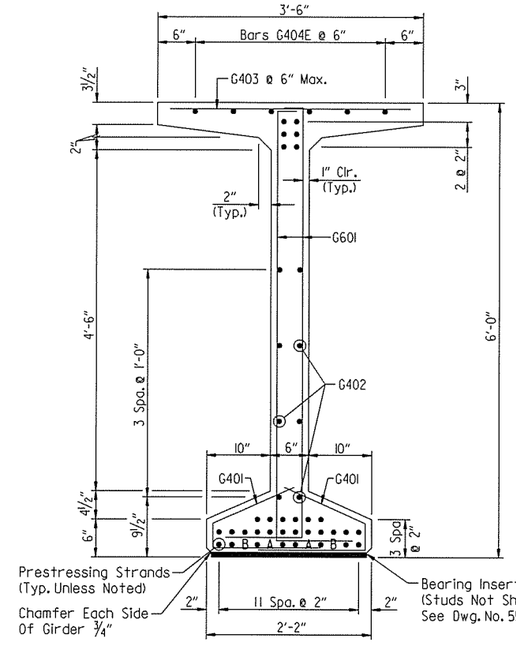
| BAR LIST - PER GIRDER | | | |
|---|---|---|---|
| Mark | No. Req'd. | Length | Pin. Dia. |
| * G301 | 16 | 1'-3" | Str. |
| G401 | 104 | 3'-0 3/4" | 2" |
| G402 | 16 | 9'-2" | Str. |
| G403 | 219 | 3'-2" | Str. |
| G404 | 18 | 38'-0" | Str. |
| G501 | 268 | 7'-7" | 3 3/4" |
| G601 | 8 | 6'-7 1/2" | 4 1/2" |
| G602 | 8 | 7'-6" | 4 1/2" |

### BAR BENDING DIAGRAMS

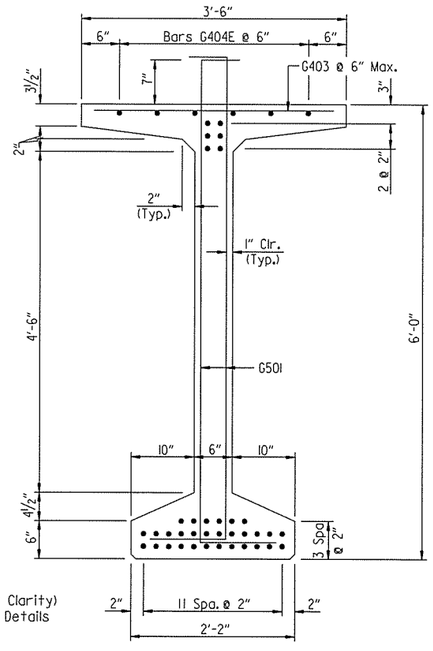



* Exterior Girders Only

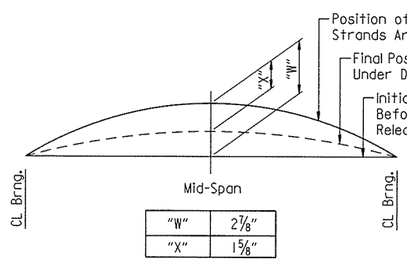
Notes:
Dimensions of bars in bending diaphragm are out-to-out.
Number of bars shown is for one girder only.




## SECTION A-A
Scale: 1" = 1'-0"




## SECTION B-B
Scale: 1" = 1'-0"




| | |
|---|---|
| "W" | 2 7/8" |
| "X" | 1 5/8" |

"W" is expected camber of girder at 90 days after release (prestress + dead load of girder)

"X" is dead load deflection of slab + diaphragms + composite dead load.

## CAMBER & DEFLECTIONS (INCHES)

Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 7000 psi. Greater strenths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES" on Dwg. No. 55139.

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

BRIDGE ENGINEER

# SHEET 7 OF 9
# DETAILS OF 330'-0" CONTINUOUS PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY
ROUTE 412 SEC. 2

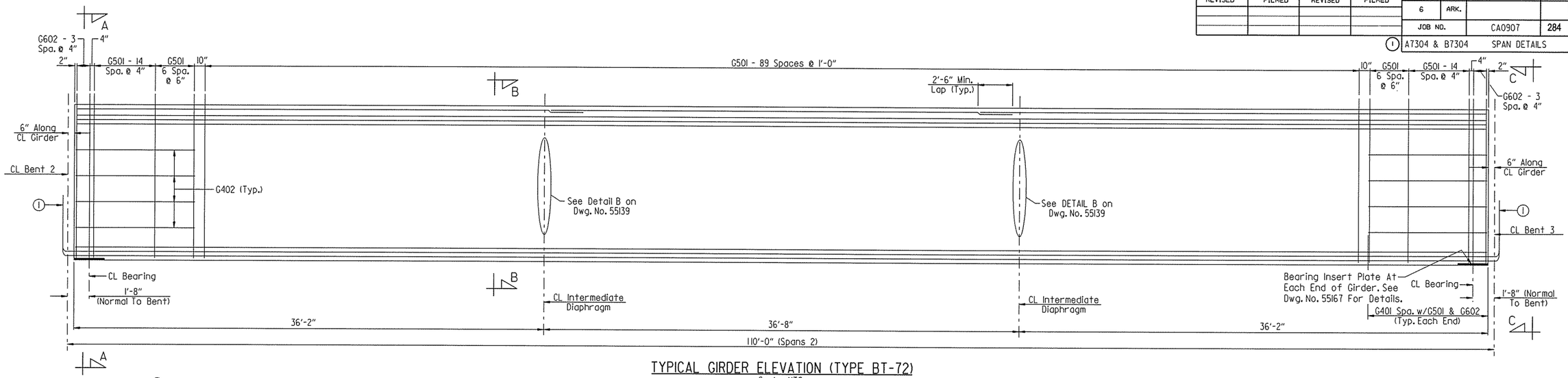
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XI_SI7.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55137

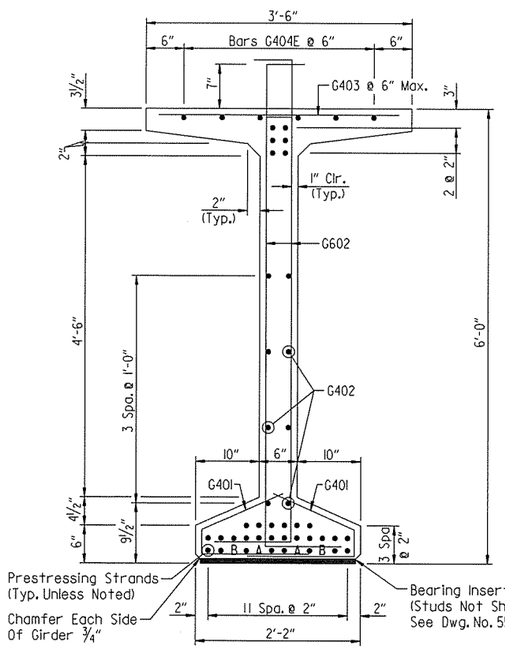
drgood 9/4/2014 9:35:08 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\20005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_SI7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 284 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55138 |

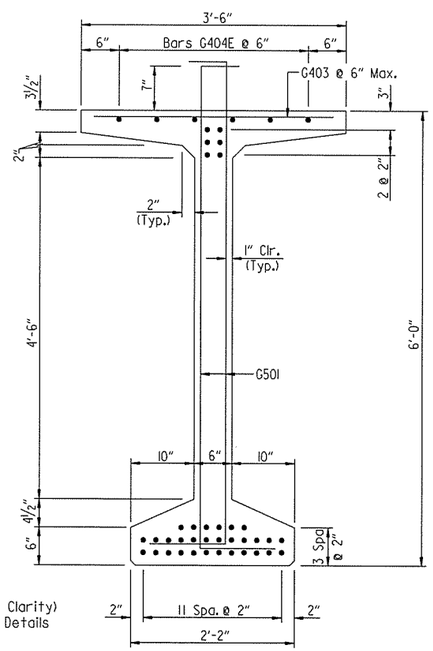



TYPICAL GIRDER ELEVATION (TYPE BT-72)
Scale: NTS

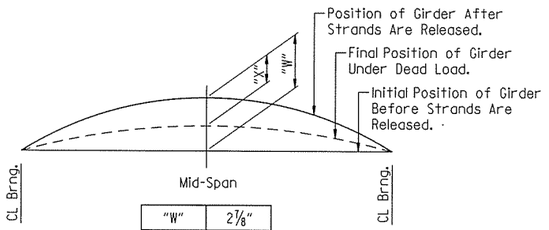
(1) Prestressing strands at CL joint shall be sawn flush with the end of the girder. Prestressing strands At CL bent shall be bent up into diaphragms as shown in ELEVATION OF GIRDERS AT INTERMEDIATE BENTS.




SECTION A-A
Scale: 1" = 1'-0"




SECTION B-B
Scale: 1" = 1'-0"




| | |
|---|---|
| "W" | 2⅞" |
| "X" | 1⅝" |

"W" is expected camber of girder at 90 days after release (prestress + dead load of girder)

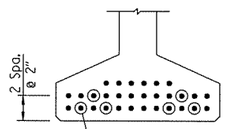
"X" is dead load deflection of slab + diaphragms + composite dead load.

CAMBER & DEFLECTIONS (INCHES)

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

| DEBOND SCHEDULE | |
|---|---|
| Debond Pair | Debond Length From End Of Girder |
| A | 18'-0" |
| B | 9'-0" |

Note:
For GENERAL NOTES & details of girder bevels, see Drawing No. 55139.




6 Prestressing Strands Extended Through Girder Ends And Bent Up Into Diaphragms.

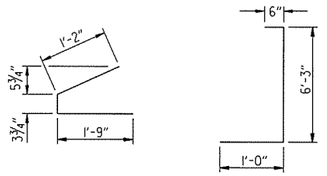
VIEW C-C
Scale: 1" = 1'-0"

Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 7000 psi. Greater strenths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES" on Dwg. No. 55139.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

| BAR LIST - PER GIRDER | | | |
|---|---|---|---|
| Mark | No. Req'd. | Length | Pin. Dia. |
| * G301 | 16 | 1'-3" | Str. |
| G401 | 104 | 3'-0¾" | 2" |
| G402 | 16 | 9'-2" | Str. |
| G403 | 219 | 3'-2" | Str. |
| G404 | 18 | 38'-0" | Str. |
| G501 | 284 | 7'-6" | 3¾" |
| G602 | 16 | 7'-5½" | 4½" |

BAR BENDING DIAGRAMS




G401 G501 & G602

* Exterior Girders Only

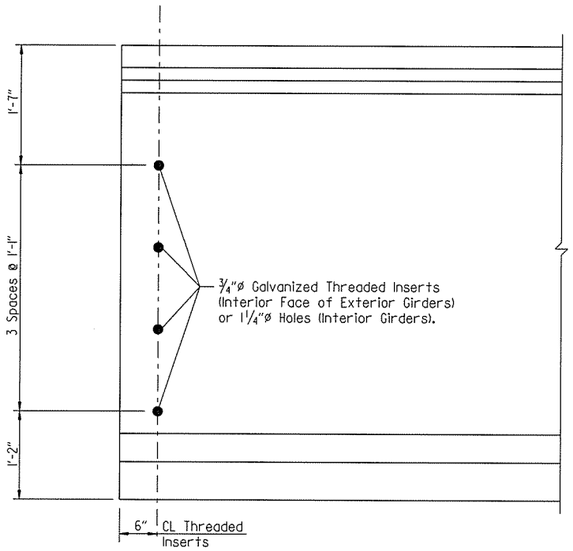
Notes:
Dimensions of bars in bending diaphragm are out-to-out.
Number of bars shown is for one girder only.

SHEET 8 OF 9
DETAILS OF 330'-0" CONTINUOUS PRECAST CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

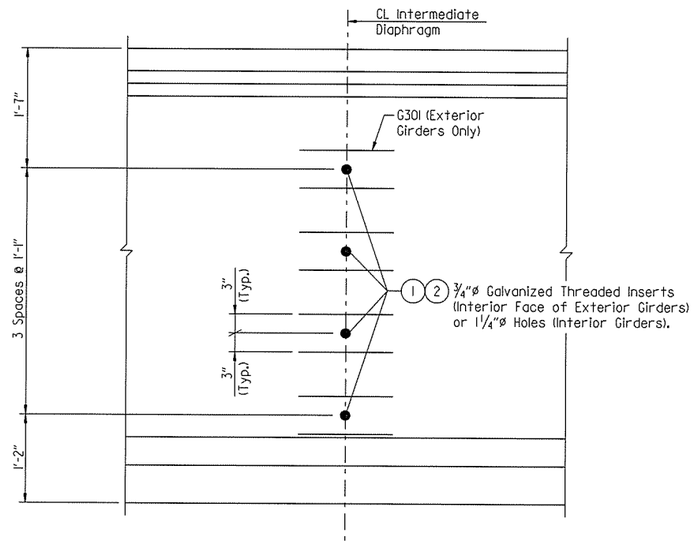
DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XI_SI8.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55138

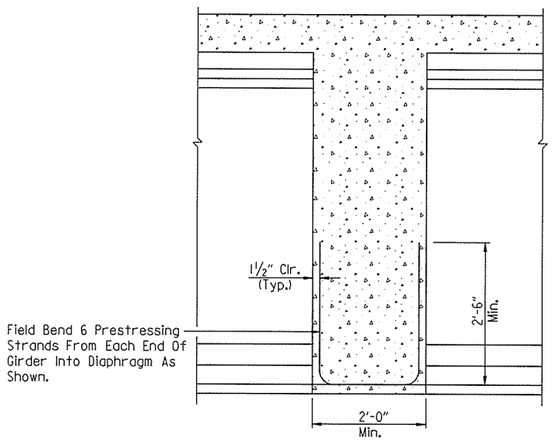
drgood 9/4/2014 9:35:09 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_SI8.dgn
REVISED DATE:



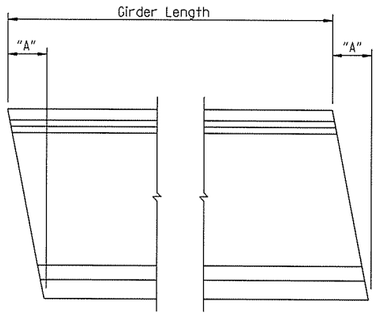

DETAIL A
Scale: 1" = 1'-0"




DETAIL B
Scale: 1" = 1'-0"




ELEVATION OF GIRDERS AT INTERMEDIATE BENTS
Scale: 3/4" = 1'-0"




GIRDER BEVEL
Scale: NTS

| TABLE OF VARIABLES | | | |
|---|---|---|---|
| Bridge | "A" | | |
| | Span 1 | Span 2 | Span 3 |
| A | 1 1/2" | 1" | 1" |
| B | 1 1/2" | 1 1/2" | 1" |

Notes:
(1) Inserts shown are for intermediate diaphragms, see Dwg. No. 55131 for alternate steel diaphragms.

(2) Galvanized 3/4"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal (omit in exterior face of exterior girders). These are to be subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)". See Dwg. No. 55131 for alternate steel diaphragms.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 285 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55139 |

GENERAL NOTES - GIRDERS ONLY

Pretensioning steel shall be 0.6"ø low relaxation strands with minimum uitimate strength of 270 KSI and shall conform to ASHTO M203.

All girders shall be AASHTO TYPE BT-72 I-girders as shown on the details. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 7000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6"ø strand shall be 44,000 pounds. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirment may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approvalin accordance with Subsection 802.22, except that only 0.6"ø strands shall be allowed.

Reinforcing steel shall be AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be shown on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its finalposition.

SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 9 OF 9
# DETAILS OF 330'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

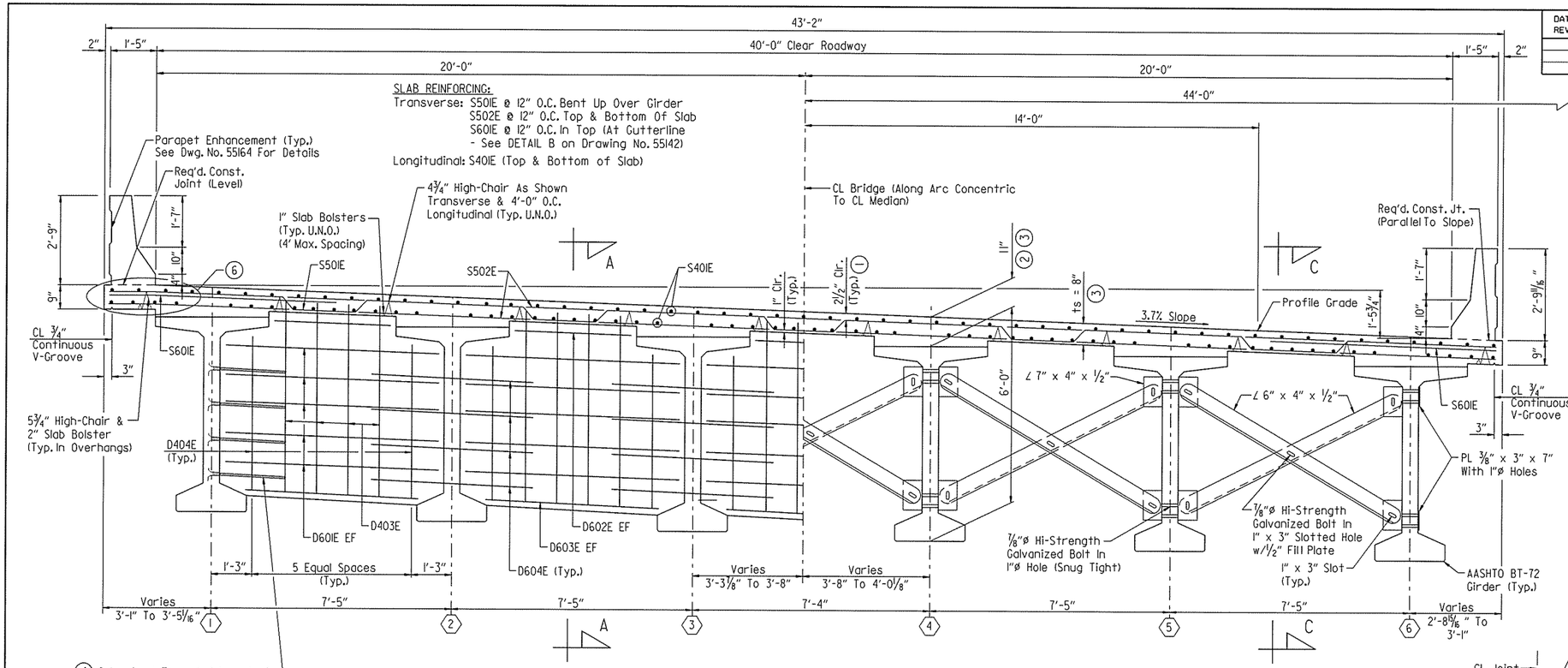
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XI_SI9.DGN
SCALE: AS SHOWN

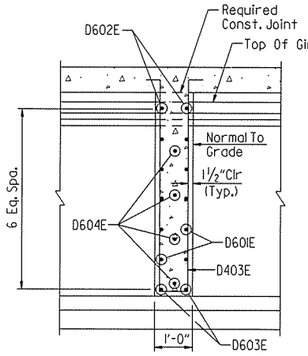
BRIDGE NO. A7304 & B7304 DRAWING NO. 55139

drgood 9/4/2014 9:35:09 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_SI9.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 286 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55140 |




Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of class S(AE) Concrete.




SECTION A-A
(Normal To Grade)
Scale: ½" = 1'-0"

## INTERMEDIATE CONCRETE DIAPHRAGMS

## ⑤ ALTERNATE STRUCTURAL STEEL DIAPHRAGMS

## TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ½" = 1'-0"

④ Galvanized Threaded Inserts & ¾"ø x 3'-6" Threaded Rods @ Exterior Girders (See TYPICAL GIRDER ELEVATION For Number And Location On Dwg. Nos. 55143 & 55144.

① TOLERANCE:
Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55141.

② This dimension taken at CL Bearing & CL Beam

③ See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55141.

④ Galvanized threaded inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø threaded rods to be AASHTO M270, Grade 36 or AASHTO M31 or M322 Type A, Gr. 60. These are to be subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)". Galvanizing shall be in accordance with AASHTO M232 Class C or ASTM B695, Class 50.

⑤ Galvanized steel diaphragms may be used in place of concrete at intermediate diaphragms only. All components of the alternate steel diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.

⑥ Field bend transverse bars in this area to provide minimum clearances.

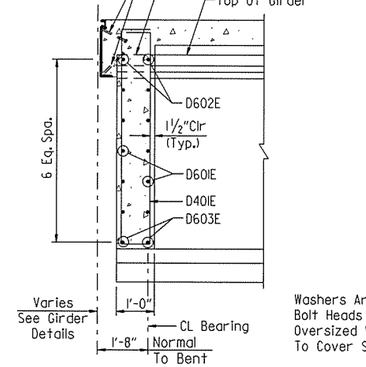
## LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

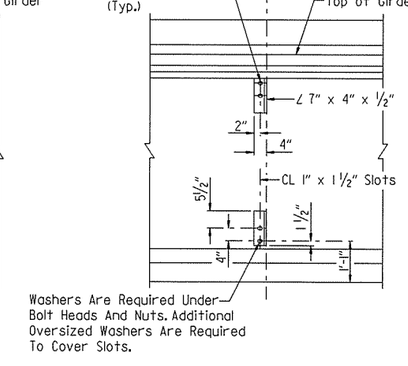
Note:
All bars designated with an E suffix are to be epoxy coated.

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

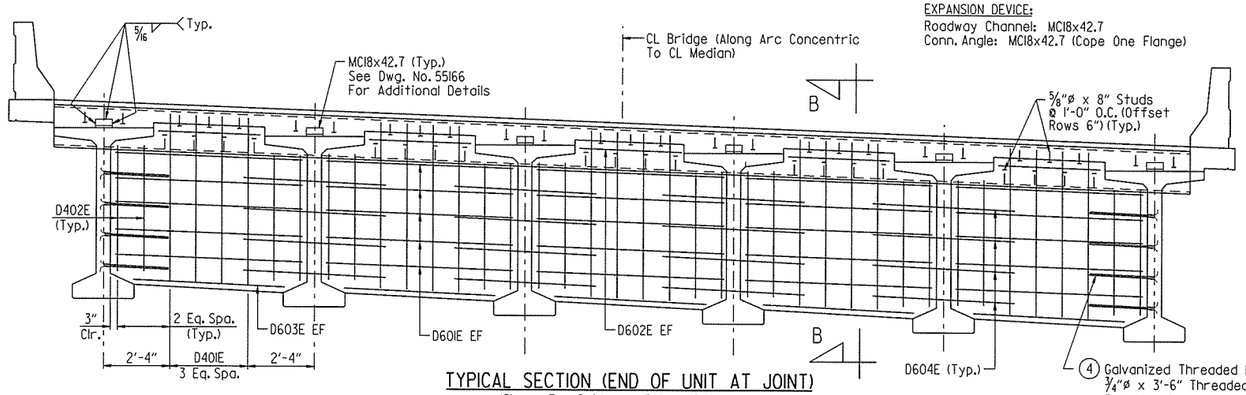
Note:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.




SECTION B-B
(Normal To Grade)
Scale: ½" = 1'-0"



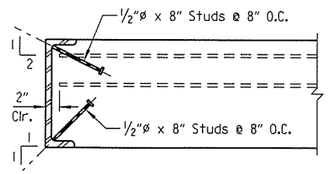

SECTION C-C
(Normal To Grade)
Scale: ½" = 1'-0"




EXPANSION DEVICE:
Roadway Channel: MCI8x42.7
Conn. Angle: MCI8x42.7 (Cope One Flange)

TYPICAL SECTION (END OF UNIT AT JOINT)
(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ⅜" = 1'-0"

④ Galvanized Threaded Inserts & ¾"ø x 3'-6" Threaded Rods @ Exterior Girders (See TYPICAL GIRDER ELEVATION For Number And Location On Dwg. Nos. 55143 & 55144.




## DETAIL OF ALTERNATE ANCHORS

No Scale

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

Note:
SECTIONS A-A, B-B & C-C are cut normal to diaphragm.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 5
# DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

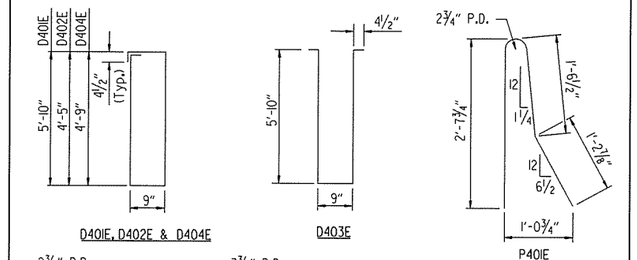
| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | HEW | DATE: | AUG. 2011 | FILENAME: | BCA0907XL_S2I.DGN |
| CHECKED BY: | AJK | DATE: | MAY 2012 | SCALE: | AS SHOWN |
| DESIGNED BY: | MRA | DATE: | AUG. 2011 | | |

BRIDGE NO. A7304 & B7304 DRAWING NO. 55140

dropad 9/4/2014 9:35:10 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S2I.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 287 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55141 |

## BENDING DIAGRAM




## BAR LIST (1)

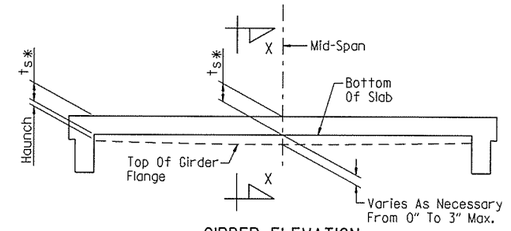
| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| D401E | 40 | 13'-6" | 2" |
| D402E | 40 | 10'-8" | 2" |
| D403E | 32 | 12'-10" | 2" |
| D404E | 20 | 11'-4" | 2" |
| | | | |
| D601E | 200 | 6'-7" | Str. |
| D602E | 40 | 3'-7" | Str. |
| D603E | 40 | 5'-4" | Str. |
| D604E | 64 | 5'-0" | Str. |
| | | | |
| P401E | 444 | 5'-7½" | 3" |
| P402E | 56 | 4'-11½" | 3" |
| P403E | 12 | 9'-8" | Str. |
| P404E | 42 | 14'-9" | Str. |
| P406E | 32 | 33'-4" | Str. |
| | | | |
| P501E | 444 | 4'-10" | 3¾" |
| | | | |
| S401E | 444 | 33'-3" | Str. |
| | | | |
| S501E | 124 | 43'-8½" | 3" |
| S502E | 250 | 42'-10" | Str. |
| | | | |
| S601E | 248 | 14'-3" | 5¼" (2) |

Note:
Dimensions of bars are out-to-out.

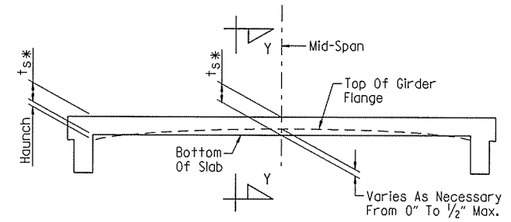
Bar designations ending with "E" indicate epoxy coated bars.

(1) Number of bars shown is for one 125' unit.

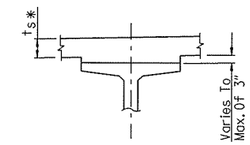
(2) Non-typical pin diameter



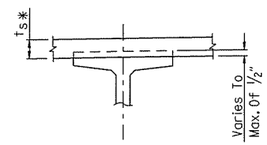

GIRDER ELEVATION
Scale: NTS




GIRDER ELEVATION
Scale: NTS




SECTION X-X
Scale: NTS



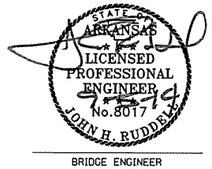

SECTION Y-Y
Scale: NTS

Note: $t_S$ = Slab Thickness As Shown On Superstructure Details See TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS.

* Tolerance when removable deck forming is used is +½", -¼". haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

GIRDER ELEVATION sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than a ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the profile grade can be adjusted over suitable increments so the revised grade line with produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED




BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2

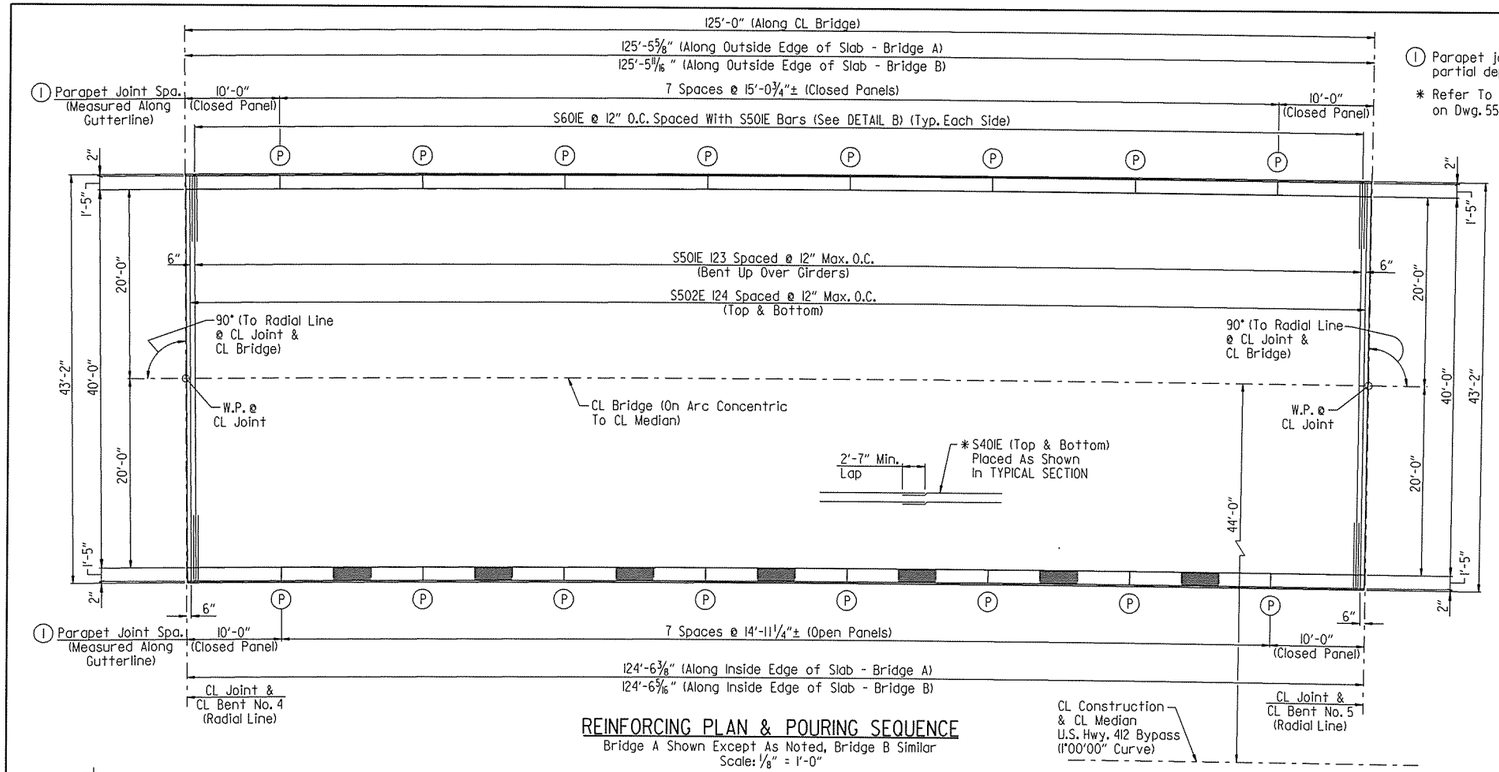
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X1_S22.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55141

drgood 9/4/2014 9:35:10 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\055911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_S22.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 288 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55142 |

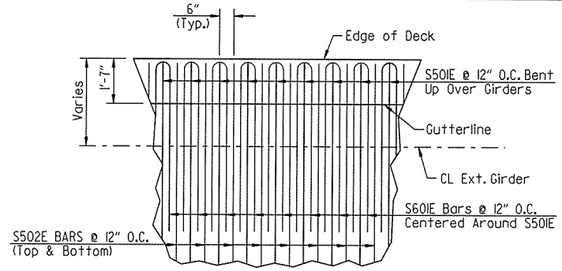



## REINFORCING PLAN & POURING SEQUENCE

Bridge A Shown Except As Noted, Bridge B Similar
Scale: ⅛" = 1'-0"

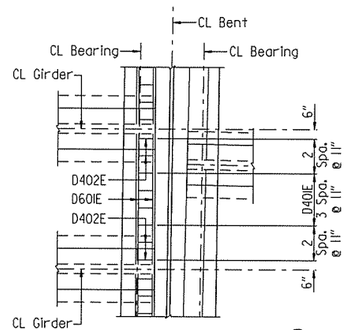
(1) Parapet joints designated with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer To TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. 55140 for placement.




## DETAIL B

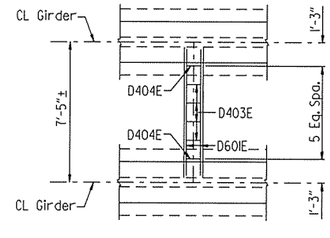
Scale: NTS




(2) Bent No. 5 Shown. Bent No. 4 Similar.

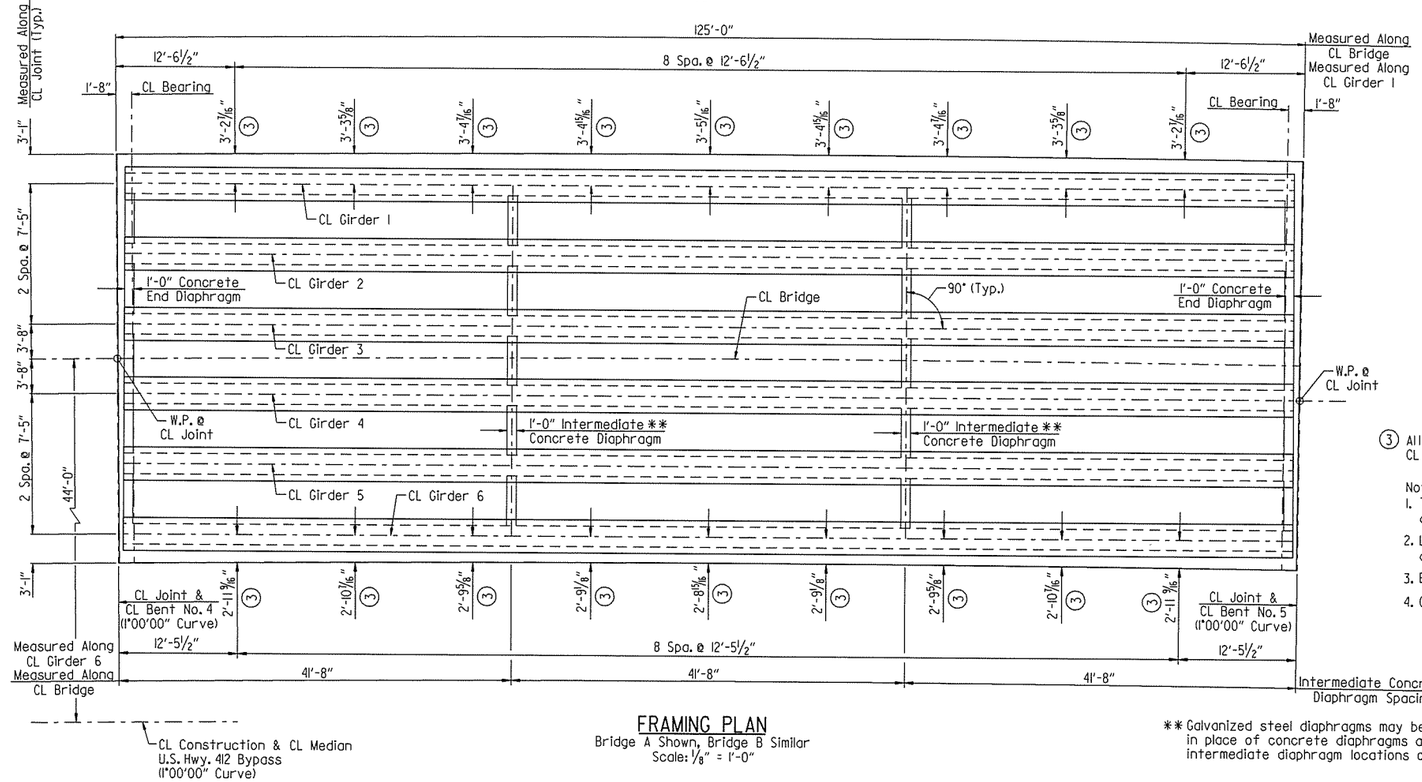
## (2) PLAN INT. BENT DIAPHRAGM

Scale: ¼" = 1'-0"



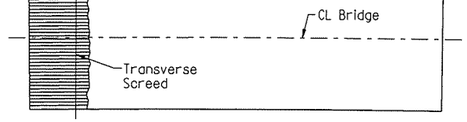

## PLAN INTERMEDIATE DIAPHRAGM

Scale: ¼" = 1'-0"




## FRAMING PLAN

Bridge A Shown, Bridge B Similar
Scale: ⅛" = 1'-0"




## CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note: A longitudinal screed will not be allowed.

** Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.

(3) All cantilever dimensions are measured at tenth points along CL exterior girders and normal to exterior girders.

Notes:
1. Transverse slab reinforcing shall be placed on radial lines and spaced along center of slab.
2. Longitudinal slab reinforcing shall be placed along curves concentric to CL Median.
3. Edges of slab are concentric to CL Median (1°00'00" curve).
4. Girders are on chords between CL Joints.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL 9-14

BRIDGE ENGINEER

# SHEET 3 OF 5
# DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

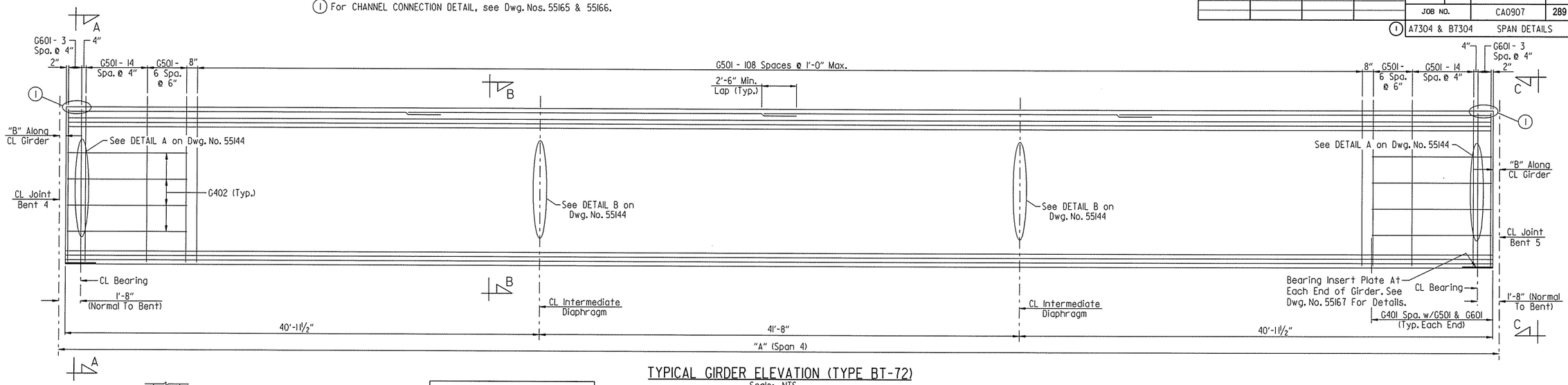
DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XL.S23.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55142

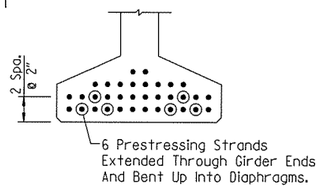
drgood 9/4/2014 9:35:11 AM
WORKSPACE: AHTD Bridge
\\CLITDOCN\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XL.S23.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 289 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55143 |

(1) For CHANNEL CONNECTION DETAIL, see Dwg. Nos. 55165 & 55166.




## TYPICAL GIRDER ELEVATION (TYPE BT-72)
Scale: NTS




## VIEW C-C
Scale: 1" = 1'-0"

| DEBOND SCHEDULE | |
|---|---|
| Debond Pair | Debond Length From End Of Girder |
| A | 12'-0" |
| B | 6'-0" |
| C | 33'-0" |
| D | 18'-0" |

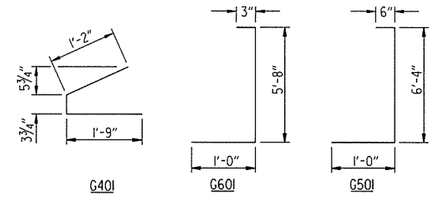
Note:
For GENERAL NOTES & details of girder bevels, see Drawing No. 55144.

| TABLE OF VARIABLES | | | |
|---|---|---|---|
| | Girder | "A" | "B" |
| BRIDGE A | 1 | 125'-4¾" | 10⅞" |
| | 2 | 125'-2⅞" | 9⅝" |
| | 3 | 125'-0⅝" | 8⅜" |
| | 4 | 124'-11" | 8" |
| | 5 | 124'-9 1/16" | 7/16" |
| | 6 | 124'-7⅜" | 6/16" |
| BRIDGE B | 1 | 125'-4⅞" | 10⅝" |
| | 2 | 125'-2⅞" | 9⅝" |
| | 3 | 125'-0⅝" | 9" |
| | 4 | 124'-11" | 8" |
| | 5 | 124'-9 1/16" | 7" |
| | 6 | 124'-7/16" | 6/16" |

Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 7000 psi. Greater strenths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES" On Dwg. No. 55144.

| BAR LIST - PER GIRDER | | | |
|---|---|---|---|
| Mark | No. Req'd. | Length | Pin. Dia. |
| * G301 | 16 | 1'-3" | Str. |
| G401 | 104 | 3'-0¾" | 2" |
| G402 | 16 | 9'-2" | Str. |
| G403 | 250 | 3'-2" | Str. |
| G404 | 24 | 33'-2" | Str. |
| G501 | 306 | 7'-7" | 3¾" |
| G601 | 16 | 6'-7½" | 4½" |

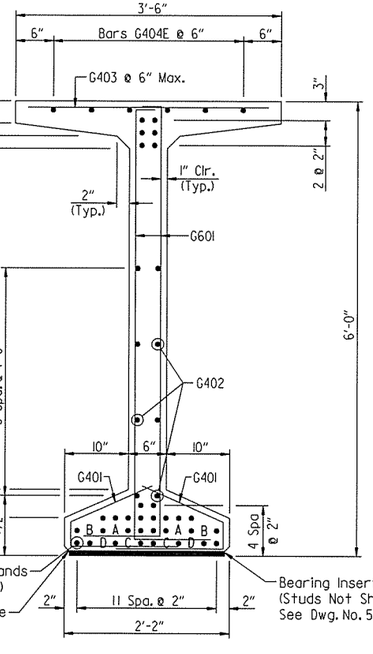
BAR BENDING DIAGRAMS



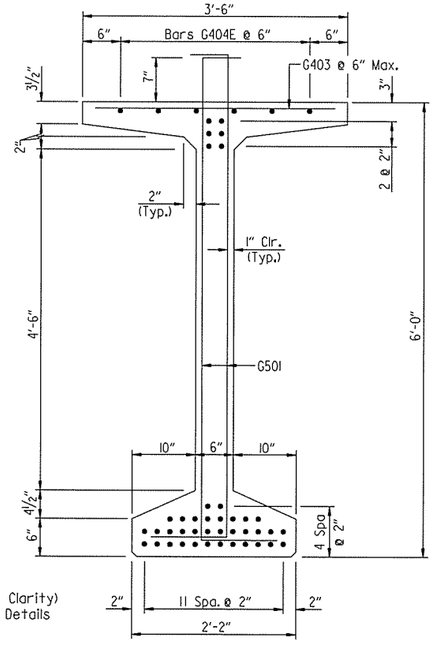

* Exterior Girders Only

Notes:
Dimensions of bars in bending diaphragm are out-to-out.

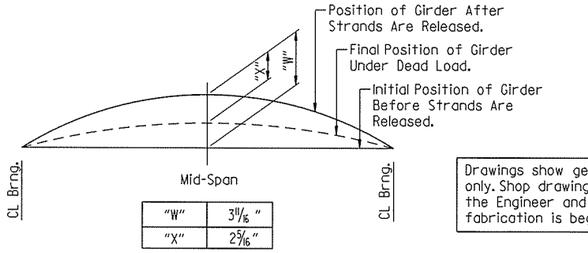
Number of bars shown is for one girder only.




## SECTION A-A
Scale: 1" = 1'-0"




## SECTION B-B
Scale: 1" = 1'-0"




| "W" | 3 11/16 " |
|---|---|
| "X" | 2 5/16 " |

"W" is expected camber of girder at 90 days after release (prestress + dead load of girder)

"X" is dead load deflection of slab + diaphragms + composite dead load.

## CAMBER & DEFLECTIONS (INCHES)

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

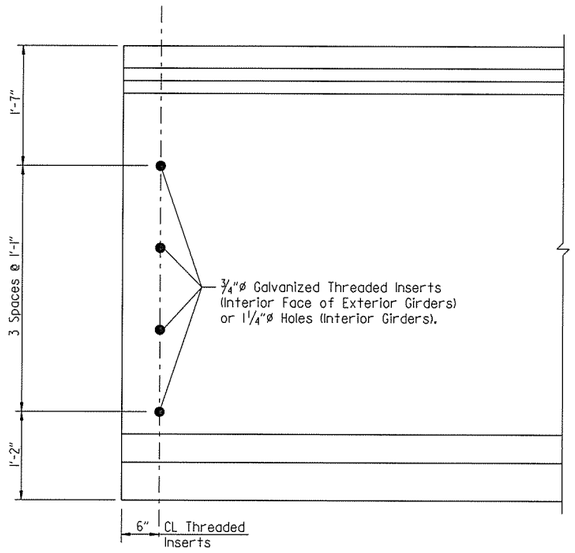
SHEET 4 OF 5
DETAILS OF 125'-0" COMPOSITE PRECAST CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XL_S24.DGN
SCALE: AS SHOWN

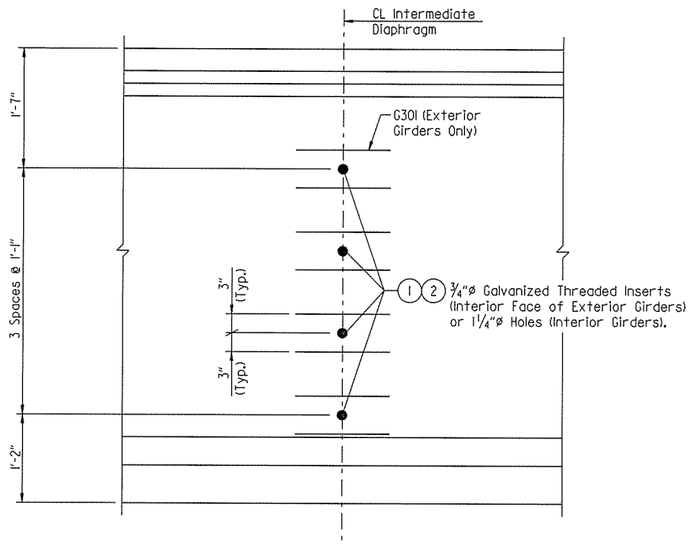
BRIDGE NO. A7304 & B7304 DRAWING NO. 55143


drgood 9/4/2014 9:35:12 AM
WORKSPACE: AHTD Bridge
\\CLIENTDOCS\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S24.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 290 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55144 |



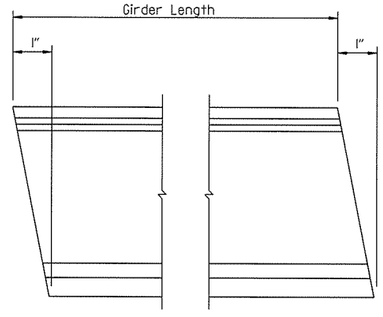

DETAIL A
Scale: 1" = 1'-0"




DETAIL B
Scale: 1" = 1'-0"

Notes:
(1) Inserts shown are for intermediate diaphragms, see Dwg. No. 55140 for alternate steel diaphragms.

(2) Galvanized ¾"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal (omit in exterior face of exterior girders). These are to be subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)". See Dwg. No. 55140 for alternate steel diaphragms.




GIRDER BEVEL
Scale: NTS

GENERAL NOTES - GIRDERS ONLY

Pretensioning steel shall be 0.6"ø low relaxation strands with minimum uiltimate strength of 270 KSI and shall conform to ASHTO M203.

All girders shall be AASHTO TYPE BT-72 I-girders as shown on the details. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 7000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6"ø strand shall be 44,000 pounds. Transfer of this tensioning load to the girder shall not be one until the compressive strength of the concrete is 6000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirment may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22, except that only 0.6"ø strands shall be allowed.

Reinforcing steel shall be AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be shown on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 125'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

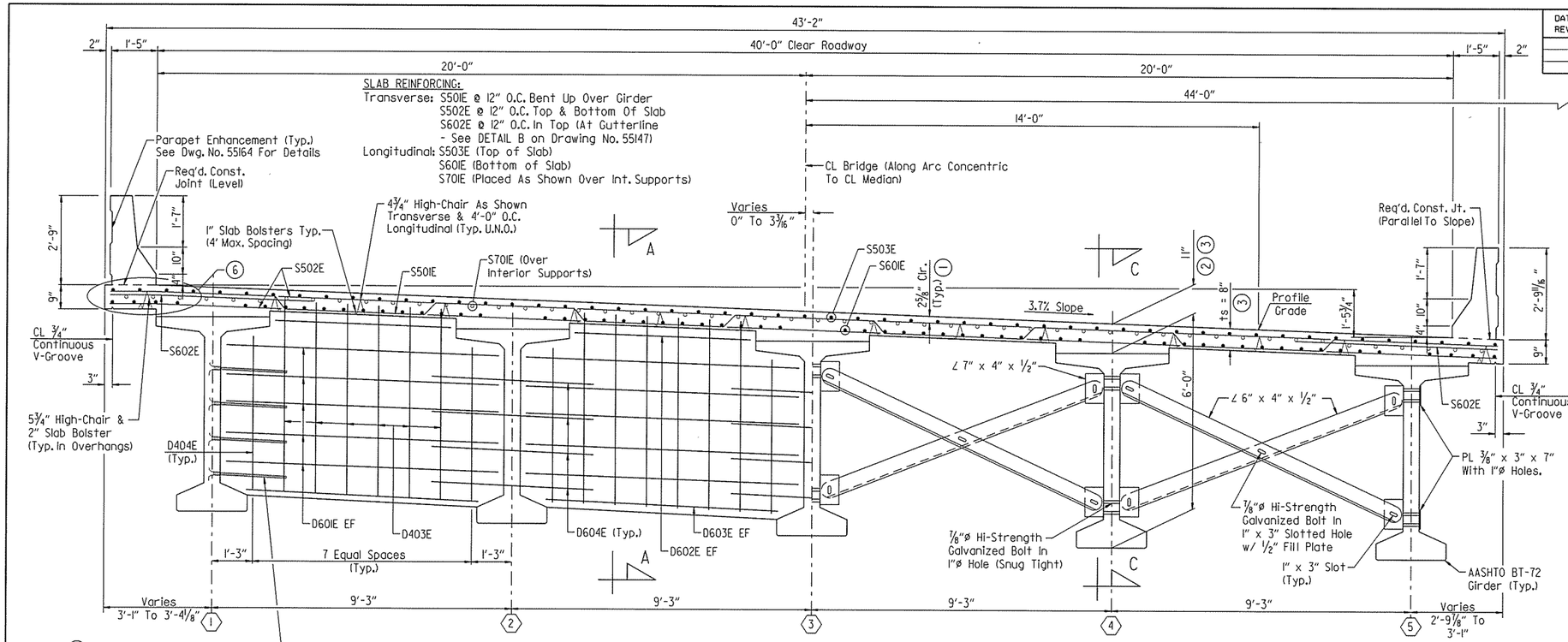
DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X1_S25.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55144

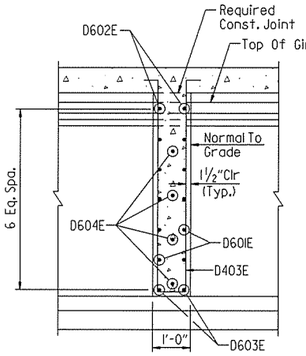
dr'sood 9/4/2014 9:35:12 AM
WORKSPACE: AHTD Branch
\\GLITDC01\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_S25.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 291 | 897 |

(1) A7304 & B7304 SPAN DETAILS 55145




Note:
Superstructure Details Shown Are For Use When Removable Deck Forms Are Used And Are The Basis For Measurement Of Class S(AE) Concrete.




## SECTION A-A
(Normal To Grade)
Scale: ½" = 1'-0"

(4) Galvanized Threaded Inserts & ¾"ø x 3'-6" Threaded Rods @ Exterior Girders (See TYPICAL GIRDER ELEVATION For Number And Location On Dwg. Nos. 55149 & 55150).

## INTERMEDIATE CONCRETE DIAPHRAGMS

## (5) ALTERNATE STRUCTURAL STEEL DIAPHRAGMS

## TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS
(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ½" = 1'-0"

## LEGEND
EF = Each Face
U.N.O. = Unless Noted Otherwise

(1) TOLERANCE:
Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55146.

(2) This dimension taken at CL Bearing & CL Beam

(3) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55146.

(4) Galvanized threaded inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø threaded rods to be AASHTO M270, Grade 36 or AASHTO M31 or M322 Type A, Gr. 60. These are to be subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)". Galvanizing shall be in accordance with AASHTO M232 Class C or ASTM B695, Class 50.

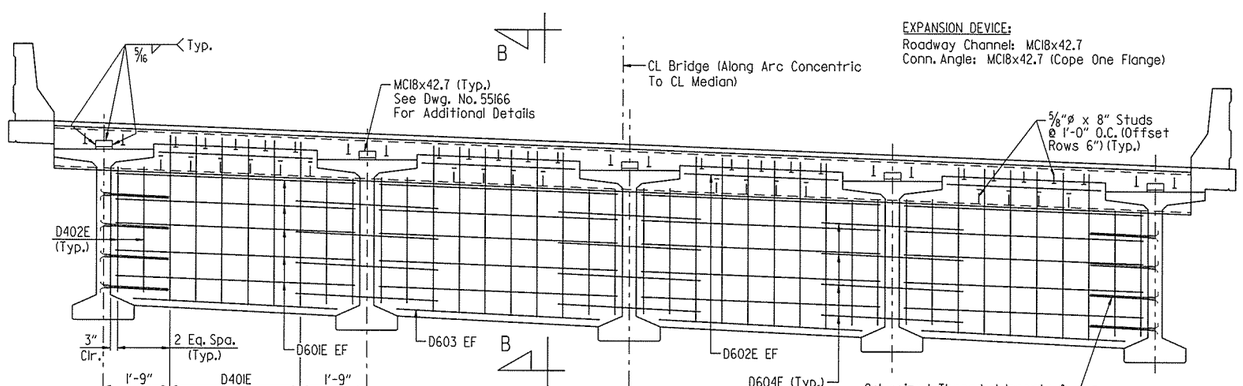
(5) Galvanized steel diaphragms may be used in place of concrete at intermediate diaphragms only. All components of the alternate steel diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.

(6) Field bend transverse bars in this area to provide minimum clearances.

Note:
All bars designated with an E suffix are to be epoxy coated.

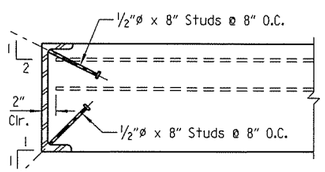
Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

Note:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.




## TYPICAL SECTION (END OF UNIT AT JOINT)
(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ⅜" = 1'-0"

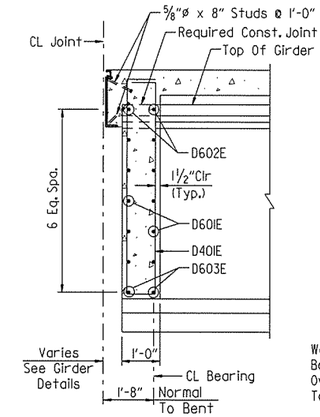
EXPANSION DEVICE:
Roadway Channel: MC18x42.7
Conn. Angle: MC18x42.7 (Cope One Flange)



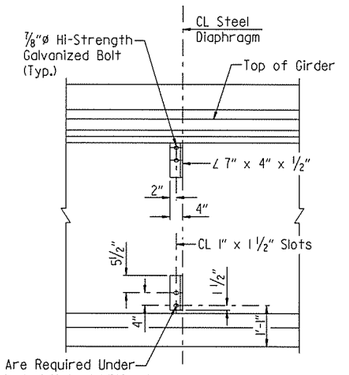

## DETAIL OF ALTERNATE ANCHORS
No Scale

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

Note:
SECTIONS A-A, B-B & C-C are cut normal to diaphragm.




## SECTION B-B
(Normal To Grade)
Scale: ½" = 1'-0"




## SECTION C-C
(Normal To Grade)
Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 6
# DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

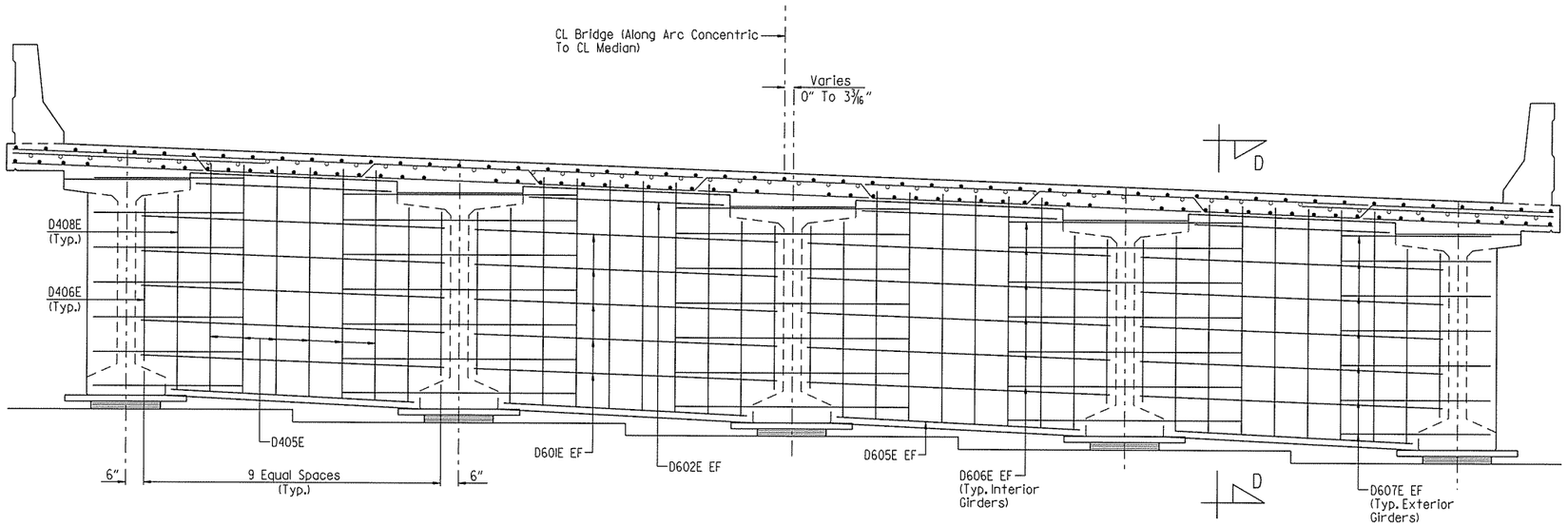
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907X1_S31.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55145

drgood 9/4/2014 9:35:13 AM
W:\DESIGN_AHTD Bridge Vault\Projects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_S31.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 292 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55146 |

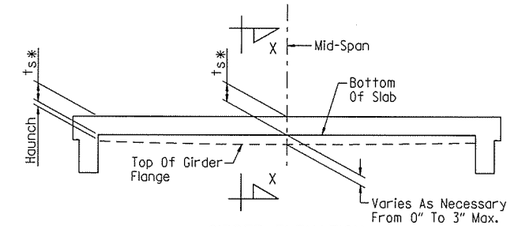



## TYPICAL SECTION BETWEEN GIRDERS AT INTERIOR BENTS

(For Information Not Shown, See TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. No. 55145)
Scale: 1/2" = 1'-0"

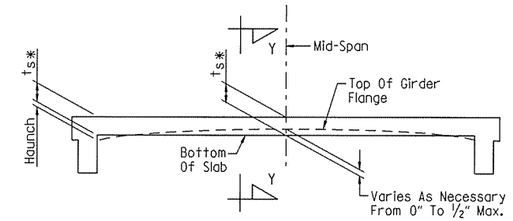
## LEGEND

EF = Each Face



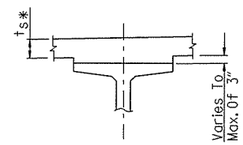

## GIRDER ELEVATION

Scale: NTS



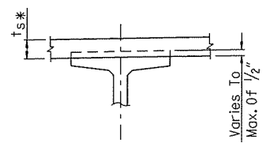

## GIRDER ELEVATION

Scale: NTS




## SECTION X-X

Scale: NTS




## SECTION Y-Y

Scale: NTS

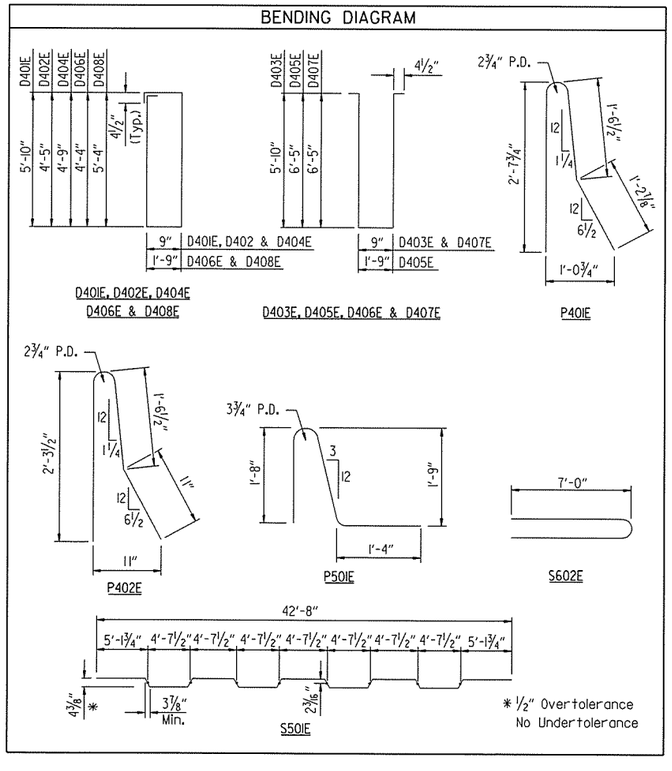
Note: $t_s$ = Slab thickness as shown on superstructure details see TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS.

* Tolerance when removable deck forming is used is +1/2", -1/4". haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

GIRDER ELEVATION sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than a 1/2" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the profile grade can be adjusted over suitable increments so the revised grade line with produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

## BENDING DIAGRAM




## BAR LIST (1)

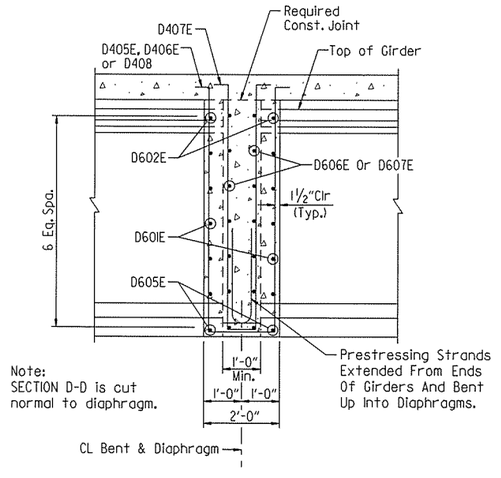
| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| D401E | 48 | 13'-6" | 2" |
| D402E | 32 | 10'-8" | 2" |
| D403E | 96 | 12'-10" | 2" |
| D404E | 32 | 11'-4" | 2" |
| D405E | 24 | 15'-0" | 2" |
| D406E | 8 | 12'-6" | 2" |
| D407E | 23 | 14'-0" | 2" |
| D408E | 8 | 14'-6" | 2" |
| | | | |
| D601E | 320 | 8'-5" | Str. |
| D602E | 64 | 5'-5" | Str. |
| D603E | 48 | 7'-2" | Str. |
| D604E | 64 | 5'-0" | Str. |
| D605E | 16 | 6'-9" | Str. |
| D606E | 42 | 6'-6" | Str. |
| D607E | 28 | 4'-2" | Str. |
| | | | |
| P401E | 824 | 5'-7 1/2" | 3" |
| P402E | 96 | 4'-11 1/2" | 3" |
| P403E | 24 | 9'-8" | Str. |
| P404E | 72 | 14'-9" | Str. |
| P405E | 24 | 37'-9" | Str. |
| | | | |
| P501E | 824 | 4'-10" | 3 3/4" |
| | | | |
| S501E | 219 | 43'-6" | 3" |
| S502E | 440 | 42'-10" | Str. |
| S503E | 212 | 57'-3" | Str. |
| | | | |
| S601E | 240 | 58'-0" | Str. |
| S602E | 438 | 14'-3" | 5 1/4" (2) |
| | | | |
| S701E | 52 | 34'-0" | Str. |

Note:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

(1) Number of bars shown is for one 220' unit.

(2) Non-typical pin diameter




Note:
SECTION D-D is cut normal to diaphragm.

## SECTION D-D

(Normal To Grade)
Scale: 1/2" = 1'-0"

## LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2

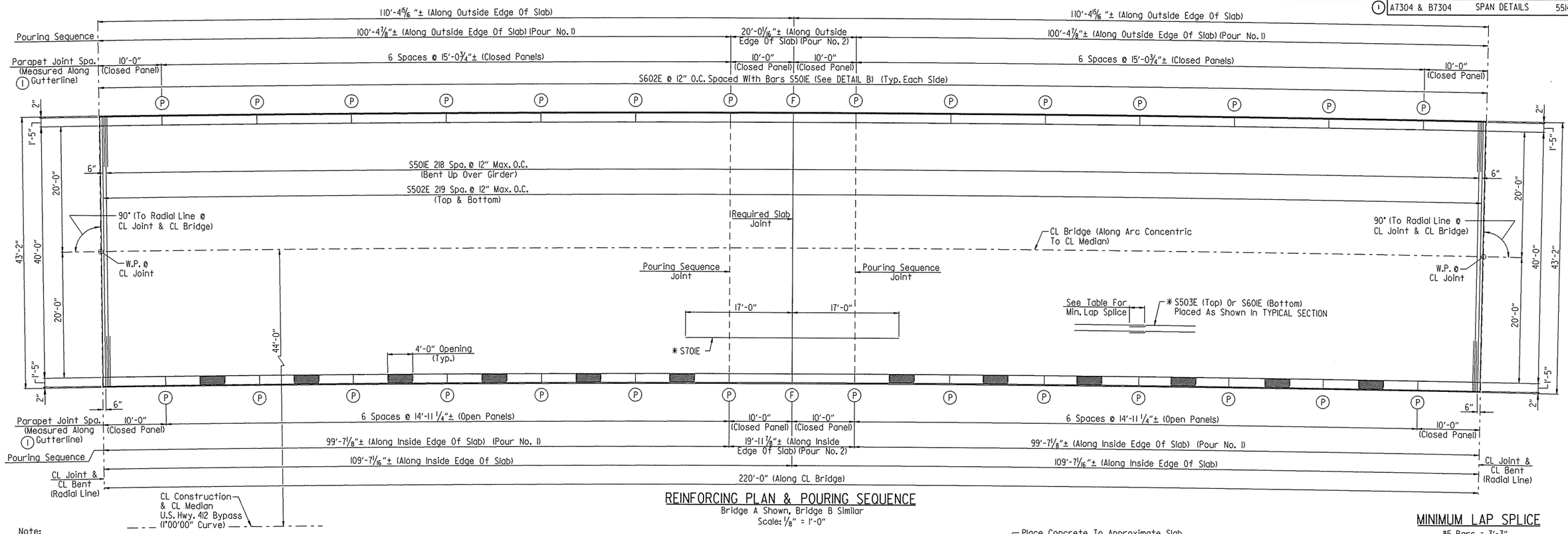
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907XL_S32.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55146

dr.good 9/4/2014 9:35:13 AM
WORKSPACE: AHTD Bridge
\\CLITOOCLIFF\Projects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S32.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 293 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55147 |



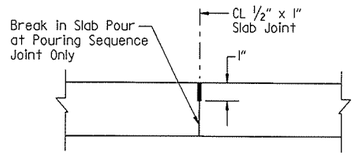

## REINFORCING PLAN & POURING SEQUENCE

Bridge A Shown, Bridge B Similar
Scale: 1/8" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) And 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

### SLAB JOINT DETAIL

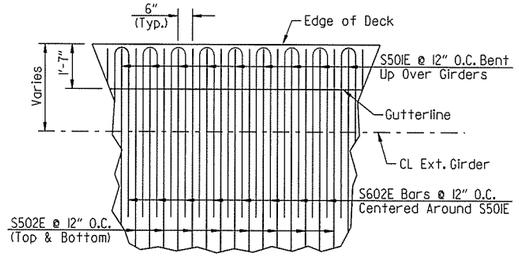
Scale: NTS

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. all other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. 55145 for placement.

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Notes:
1. Transverse slab reinforcing shall be placed on radial lines and spaced along center of slab.
2. Longitudinal slab reinforcing shall be placed along curves concentric to CL Median.
3. Edges of slab are concentric to CL Median (1°00'00" Curve).
4. All transverse lines are radial to CL Median.

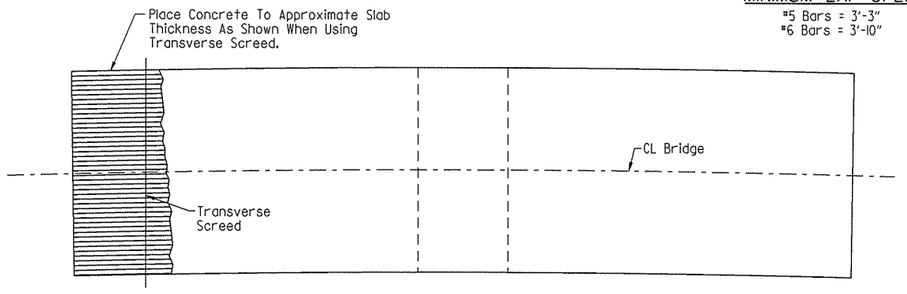



### DETAIL B

Scale: NTS

### MINIMUM LAP SPLICE

#5 Bars = 3'-3"
#6 Bars = 3'-10"




### CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note:
A longitudinal screed will not be allowed.

# SHEET 3 OF 6
# DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS — JOHN H. RUDDELL — LICENSED PROFESSIONAL ENGINEER — No. 8017

BRIDGE ENGINEER

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: SEPT. 2011

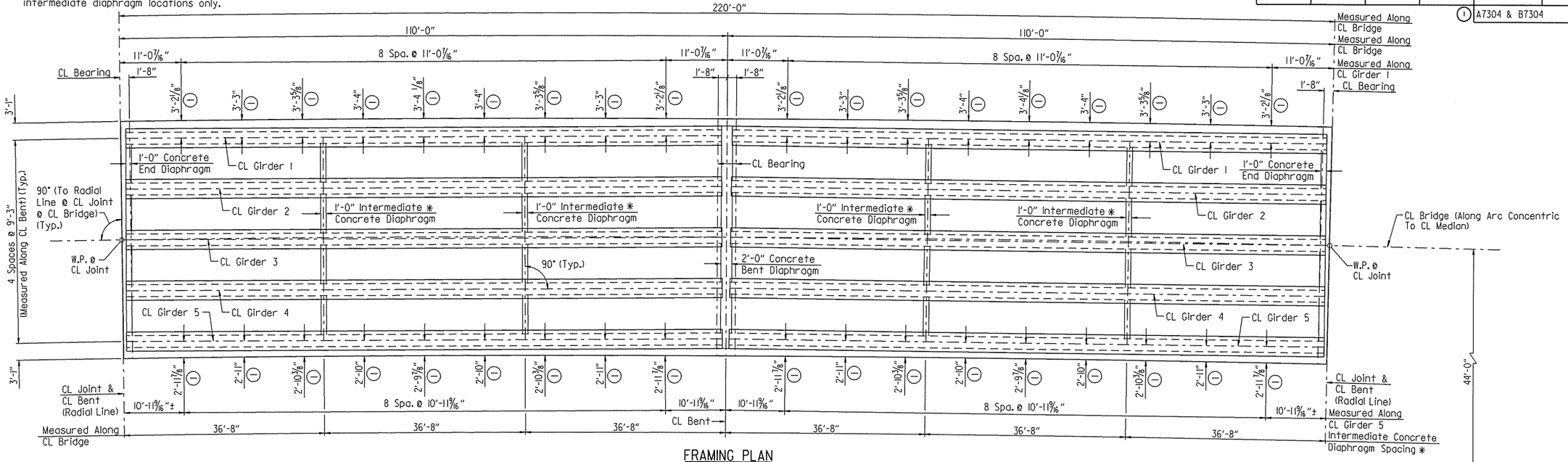
FILENAME: BCA0907XL_S33.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55147

drgood 9/4/2014 9:35:21 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\CO05\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S33.dgn
REVISED DATE:

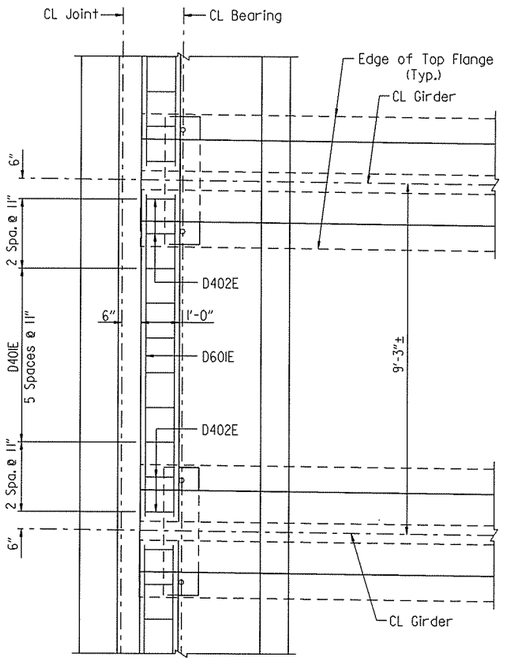
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 294 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55148 |

* Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.

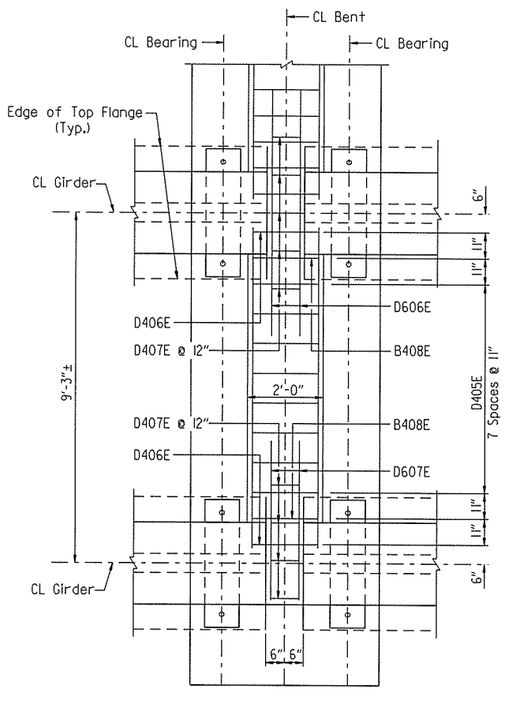



FRAMING PLAN
Scale: 1" = 10'-0"

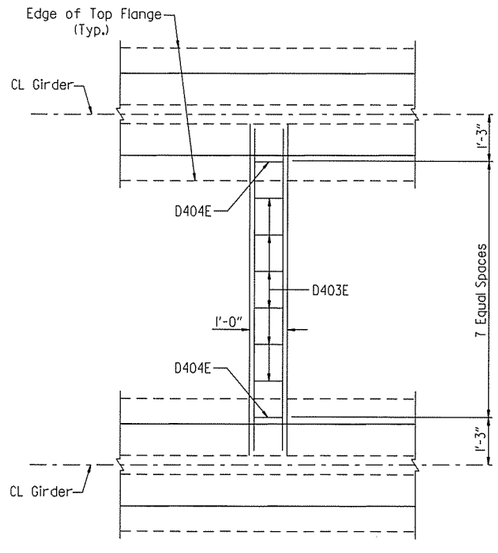
CL Construction & CL Median U.S. Hwy. 412 Bypass (1°00'00" Curve)




PLAN
END DIAPHRAGM
Scale: 1/2" = 1'-0"




PLAN
INTERMEDIATE DIAPHRAGM
Scale: 1/2" = 1'-0"




PLAN
BENT DIAPHRAGM
Scale: 1/2" = 1'-0"

(1) All cantilever dimensions are measured at tenth points along CL exterior girders and normal to exterior girders.

Notes:
Girders are on chords between CL Bents.

Edges of slab are concentric to CL Median (1°00'00" curve).

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 4 OF 6
# DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: BCA0907XL_S34.DGN
CHECKED BY: AJK DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: SEPT. 2011

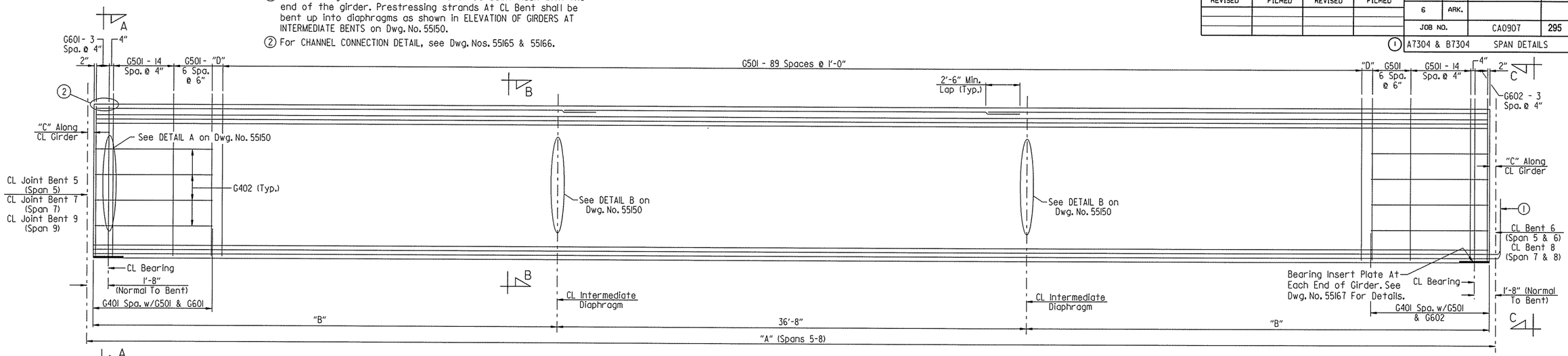
BRIDGE NO. A7304 & B7304 DRAWING NO. 55148

drgood 9/4/2014 9:35:21 AM
WORKSPACE: AHTD Bridge
\\CLITDCN\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S34.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 295 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55149 |

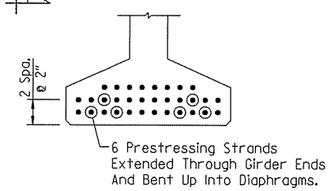
(1) Prestressing strands at CL Joint shall be sawn flush with the end of the girder. Prestressing strands At CL Bent shall be bent up into diaphragms as shown in ELEVATION OF GIRDERS AT INTERMEDIATE BENTS on Dwg. No. 55150.

(2) For CHANNEL CONNECTION DETAIL, see Dwg. Nos. 55165 & 55166.




## TYPICAL GIRDER ELEVATION (TYPE BT-72)

Scale: NTS




## VIEW C-C

Scale: 1" = 1'-0"

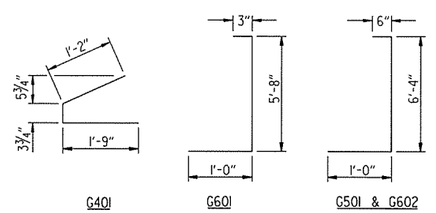
| DEBOND SCHEDULE | |
|---|---|
| Debond Pair | Debond Length From End Of Girder |
| A | 24'-0" |
| B | 15'-0" |

Note:
For GENERAL NOTES & details of girder bevels, see Dwg. No. 55150.

| TABLE OF VARIABLES | | | | | |
|---|---|---|---|---|---|
| | Girder | "A" | "B" | "C" | "D" |
| BRIDGE A | 1 | 110'-4 3/16" | 35'-10 1/2" | 11 5/8" | 6 1/2" |
| | 2 | 110'-2 1/8" | 35'-10 1/2" | 10 1/2" | 6 1/2" |
| | 3 | 110'-0" | 35'-10 1/2" | 9 1/2" | 6 1/2" |
| | 4 | 109'-9 7/8" | 35'-10 1/2" | 8 3/8" | 6 1/2" |
| | 5 | 109'-7 3/4" | 35'-10 1/2" | 7 3/8" | 6 1/2" |
| BRIDGE B | 1 | 110'-4 1/4" | 35'-11 1/2" | 10 5/8" | 7 1/2" |
| | 2 | 110'-2 1/8" | 35'-11 1/2" | 9 5/8" | 7 1/2" |
| | 3 | 110'-0" | 35'-11 1/2" | 8 1/2" | 7 1/2" |
| | 4 | 109'-9 13/16" | 35'-11 1/2" | 7 3/8" | 7 1/2" |
| | 5 | 109'-7 11/16" | 36'-11 1/2" | 6 3/8" | 7 1/2" |

| BAR LIST - PER GIRDER | | | |
|---|---|---|---|
| Mark | No. Req'd. | Length | Pin. Dia. |
| * G301 | 16 | 1'-3" | Str. |
| G401 | 104 | 3'-0 3/4" | 2" |
| G402 | 16 | 9'-2" | Str. |
| G403 | 219 | 3'-2" | Str. |
| G404 | 18 | 38'-0" | Str. |
| G501 | 268 | 7'-7" | 3 3/4" |
| G601 | 8 | 6'-7 1/2" | 4 1/2" |
| G602 | 8 | 7'-6" | 4 1/2" |

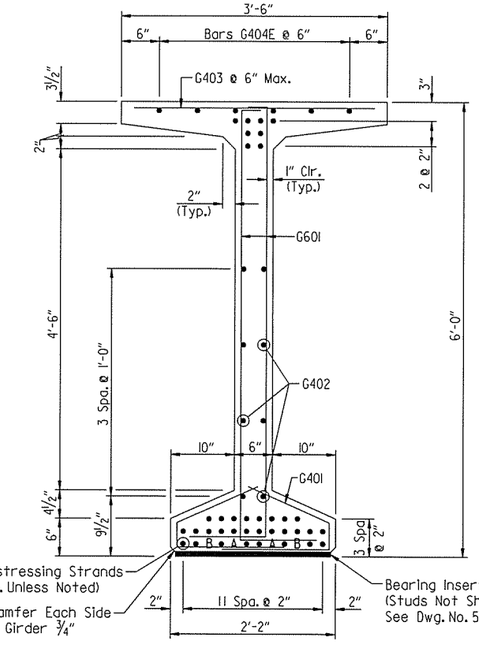
### BAR BENDING DIAGRAMS




* Exterior Girders Only

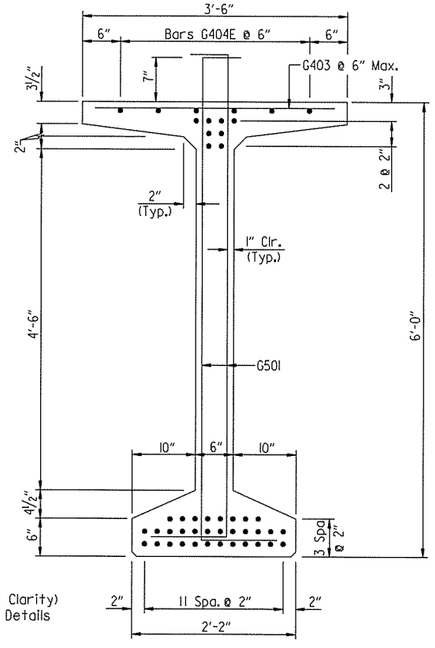
Notes:
Dimensions of bars in bending diaphragm are out-to-out.

Number of bars shown is for one girder only.



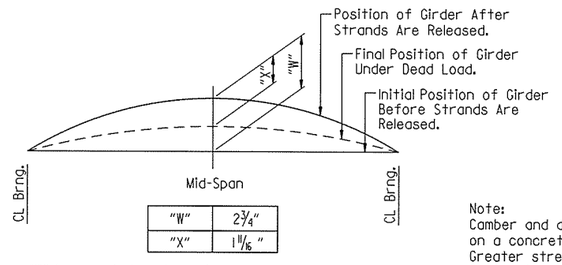

## SECTION A-A

Scale: 1" = 1'-0"




## SECTION B-B

Scale: 1" = 1'-0"




| | |
|---|---|
| "W" | 2 3/4" |
| "X" | 1 11/16" |

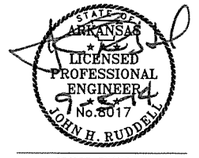
"W" is expected camber of girder at 90 days after release (prestress + dead load of girder)

"X" is dead load deflection of slab + diaphragms + composite dead load.

## CAMBER & DEFLECTIONS (INCHES)

Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 7000 psi. Greater strenths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES" On Dwg. No. 55150.

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.




BRIDGE ENGINEER

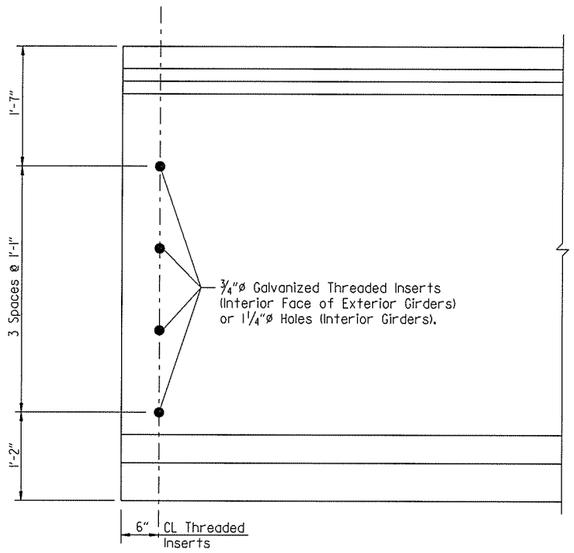
SHEET 5 OF 6
DETAILS OF 220'-0" CONTINUOUS PRECAST CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XL_S35.DGN
SCALE: AS SHOWN

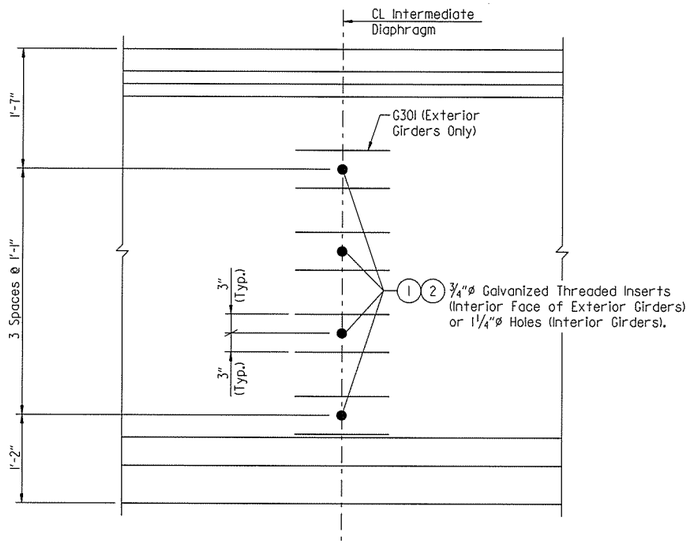
BRIDGE NO. A7304 & B7304 DRAWING NO. 55149

drgood 9/4/2014 9:35:22 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S35.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 296 | 897 |
| | | | | (1) | A7304 & B7304 | SPAN DETAILS | | 55150 |



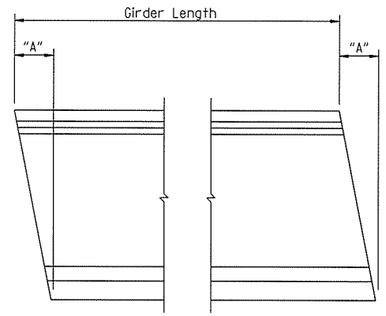

DETAIL A
Scale: 1" = 1'-0"




DETAIL B
Scale: 1" = 1'-0"




ELEVATION OF GIRDERS AT INTERMEDIATE BENTS
Scale: ¾" = 1'-0"




GIRDER BEVEL
Scale: NTS

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| | "A" | | | |
| | Span 5 | Span 6 | Span 7 | Span 8 |
| Bridge A | ½" | ½" | 0 | 0 |
| Bridge B | ½" | ½" | 0 | 0 |

Notes:
(1) Inserts shown are for intermediate diaphragms, see Dwg. No. 55145 for alternate steel diaphragms.

(2) Galvanized ¾"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal (omit in exterior face of exterior girders). These are to be subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)". See Dwg. No. 55145 for alternate steel diaphragms.

GENERAL NOTES - GIRDERS ONLY

Pretensioning steel shall be 0.6"ø low relaxation strands with minimum uitimate strength of 270 KSI and shall conform to ASHTO M203.

All girders shall be AASHTO TYPE BT-72 I-girders as shown on the details. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 7000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6"ø strand shall be 44,000 pounds. Transfer of this tensioning load to the girder shall not be one until the compressive strength of the concrete is 6000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirment may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22, except that only 0.6"ø strands shall be allowed.

Reinforcing steel shall be AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be shown on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 6 OF 6
# DETAILS OF 220'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

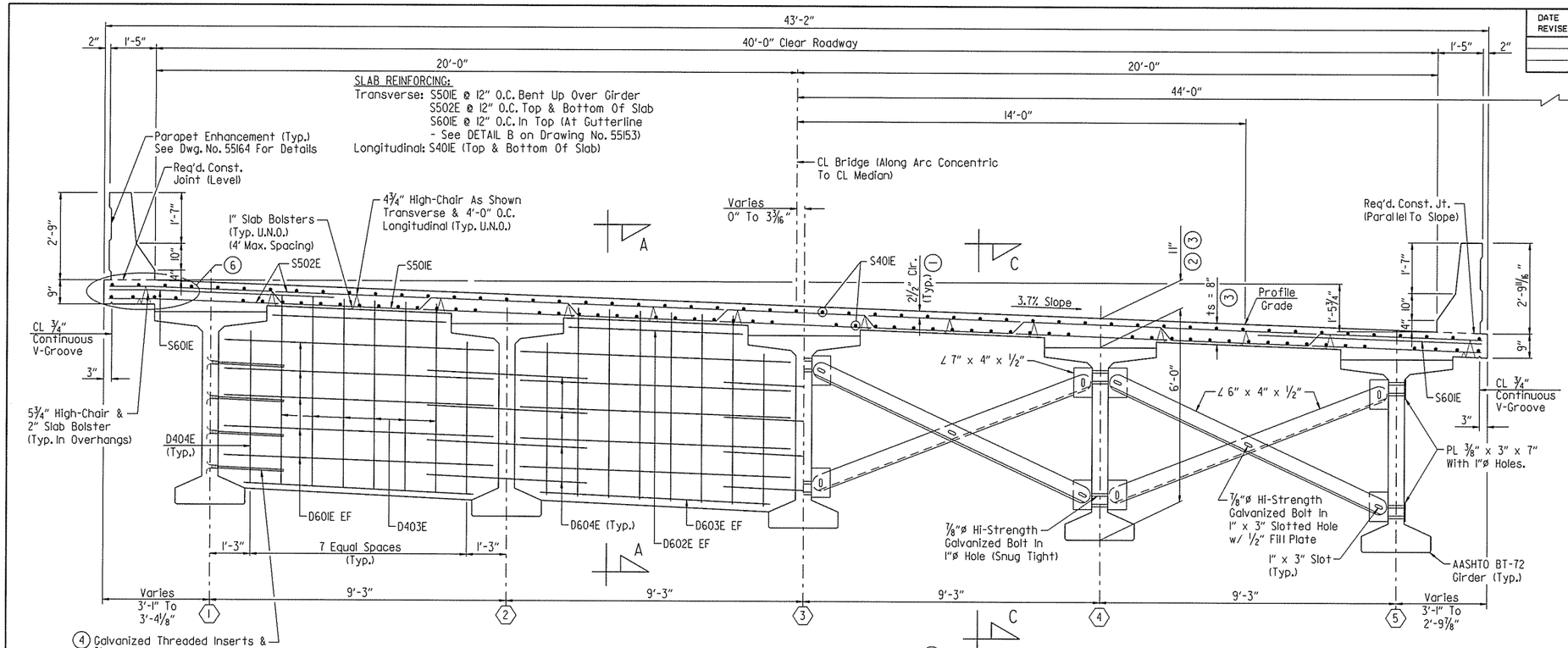
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XL_S36.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55150

dropod 9/4/2014 9:35:22 AM
WORKSPACE: AHTD BT-72GS
\\GLITDCD\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XL_S36.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 297 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55151 |

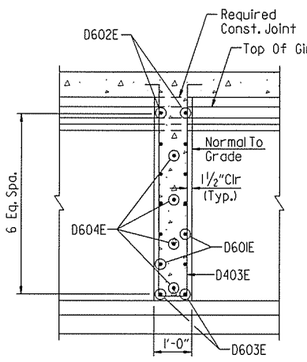



(4) Galvanized Threaded Inserts & ¾"ø x 3'-6" Threaded Rods @ Exterior Girders (See TYPICAL GIRDER ELEVATION For Number And Location On Dwg. Nos. 55154 & 55155).

## INTERMEDIATE CONCRETE DIAPHRAGMS

(5) ALTERNATE STRUCTURAL STEEL DIAPHRAGMS

Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.




## SECTION A-A
(Normal To Grade)
Scale: ½" = 1'-0"

## TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS
(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ½" = 1'-0"

## LEGEND
EF = Each Face
U.N.O. = Unless Noted Otherwise

(1) TOLERANCE:
Minus = ¼"
Plus = Equal to amount af slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55152.

(2) This dimension taken at CL Bearing & CL Beam

(3) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55152.

(4) Galvanized threaded inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø threaded rods to be AASHTO M270, Grade 36 or AASHTO M31 or M322 Type A, Gr. 60. These are to be subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)". Galvanizing shall be in accordance with AASHTO M232 Class C or ASTM B65, Class 50.

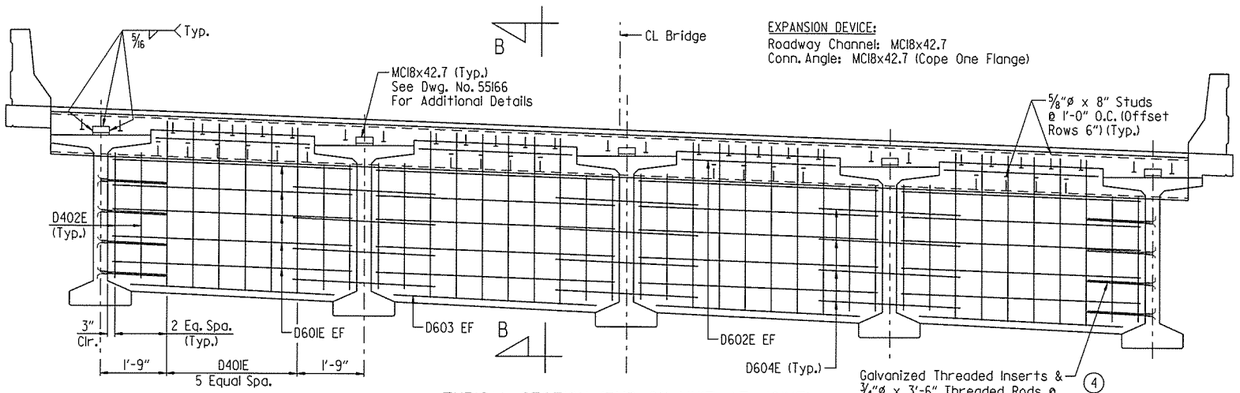
(5) Galvanized steel diaphragms may be used in place of concrete at intermediate diaphragms only. All components of the alternate steel diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.

(6) Field bend transverse bars in this area to provide minimum clearances.

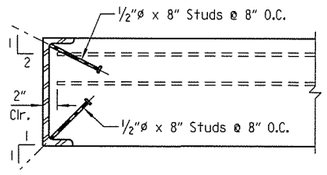
Note:
All bars designated with an E suffix are to be epoxy coated.

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

Note:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.



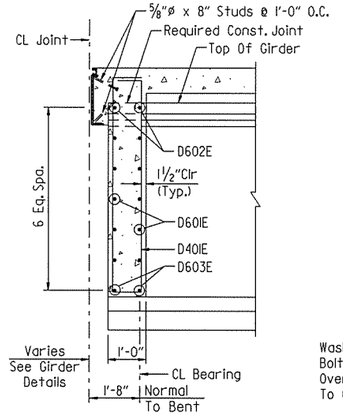

## TYPICAL SECTION (END OF UNIT AT JOINT)
(Shown For Bridge A, Bridge B Similar)
(Looking Ahead)
Scale: ⅜" = 1'-0"



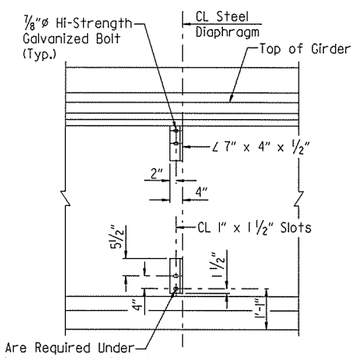

## DETAIL OF ALTERNATE ANCHORS
No Scale

NOTE:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel.

Note:
SECTIONS A-A, B-B & C-C are cut normal to diaphragm.




## SECTION B-B
(Normal To Grade)
Scale: ½" = 1'-0"




## SECTION C-C
(Normal To Grade)
Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
9-25-14
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 5
# DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

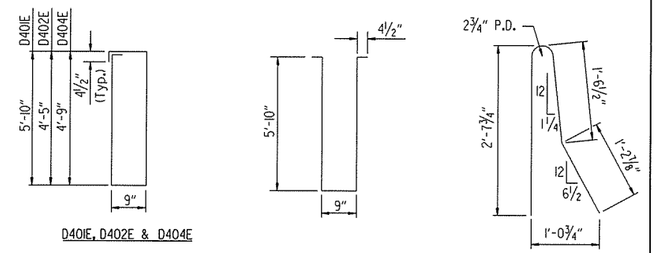
DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907X1_S41.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55151

drgood 9/4/2014 9:35:23 AM
W:\STATE - AHTD Bridge Projects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907X1_S41.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 298 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55152 |

## BENDING DIAGRAM



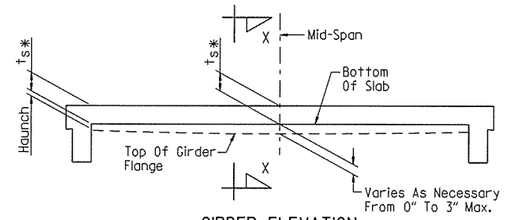

| BAR LIST (1) | | | |
|---|---|---|---|
| Mark | No. Req'd. | Length | Pin. Dia. |
| D401E | 48 | 13'-6" | 2" |
| D402E | 32 | 10'-8" | 2" |
| D403E | 48 | 12'-10" | 2" |
| D404E | 16 | 11'-4" | 2" |
| | | | |
| D601E | 160 | 8'-5" | Str. |
| D602E | 32 | 5'-5" | Str. |
| D603E | 32 | 7'-2" | Str. |
| D604E | 48 | 5'-0" | Str. |
| | | | |
| P401E | 392 | 5'-7½" | 3" |
| P402E | 48 | 4'-11½" | 3" |
| P403E | 12 | 9'-8" | Str. |
| P404E | 36 | 14'-9" | Str. |
| P405E | 24 | 38'-4" | Str. |
| | | | |
| P501E | 392 | 4'-10" | 3¾" |
| | | | |
| S401E | 339 | 38'-6" | Str. |
| | | | |
| S501E | 109 | 43'-6" | 3" |
| S502E | 220 | 42'-10" | Str. |
| | | | |
| S601E | 218 | 14'-3" | 5¼" (2) |

Note:
Dimensions of bars are out-to-out.

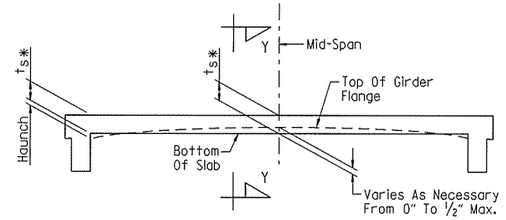
Bar designations ending with "E" indicate epoxy coated bars.

(1) Number of bars shown is for one 110' unit.

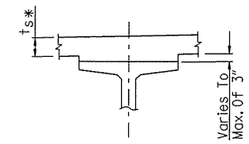
(2) Non-typical pin diameter



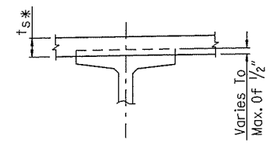

GIRDER ELEVATION
Scale: NTS




GIRDER ELEVATION
Scale: NTS




SECTION X-X
Scale: NTS




SECTION Y-Y
Scale: NTS

Note: $t_s$ = Slab thickness as shown on superstructure details
See TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS.

* Tolerance when removable deck forming is used is +½", -¼". haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

GIRDER ELEVATION sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than a ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the profile grade can be adjusted over suitable increments so the revised grade line with produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
WHEN REMOVABLE DECK FORMING IS USED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS OF 110'-0" COMPOSITE
PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY

ROUTE 412 SEC. 2

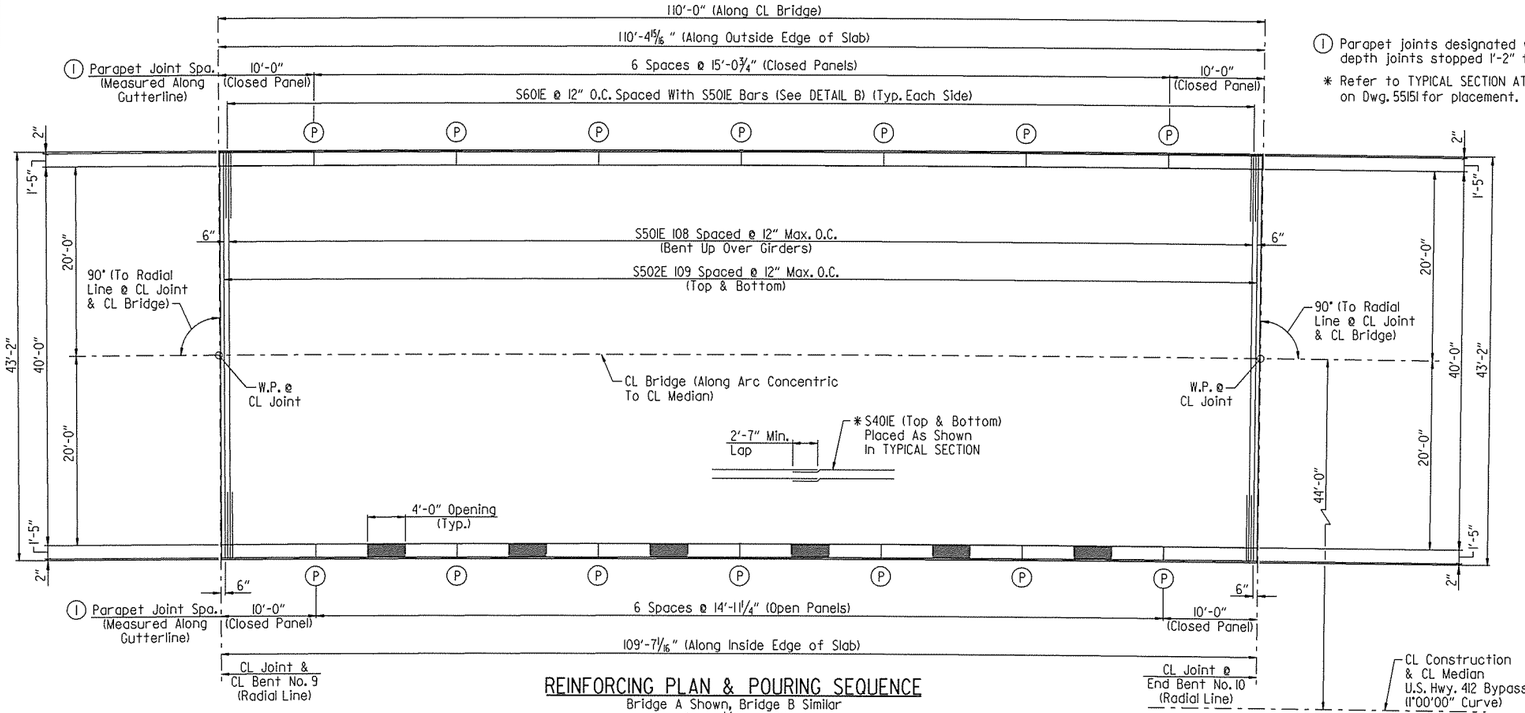
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907X1_S42.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55152

drgood 9/4/2014 9:35:23 AM
WORKSPACE: AHTD Bridge
\\GLITDCH\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_S42.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 299 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55153 |

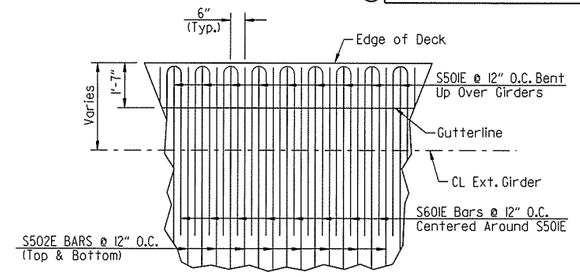



## REINFORCING PLAN & POURING SEQUENCE

Bridge A Shown, Bridge B Similar
Scale: 1/8" = 1'-0"

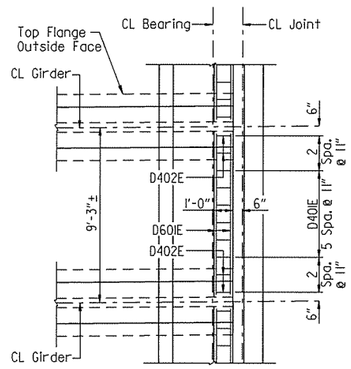
(1) Parapet joints designated with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. 55151 for placement.



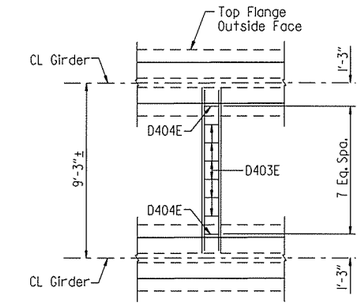

## DETAIL B

Scale: NTS



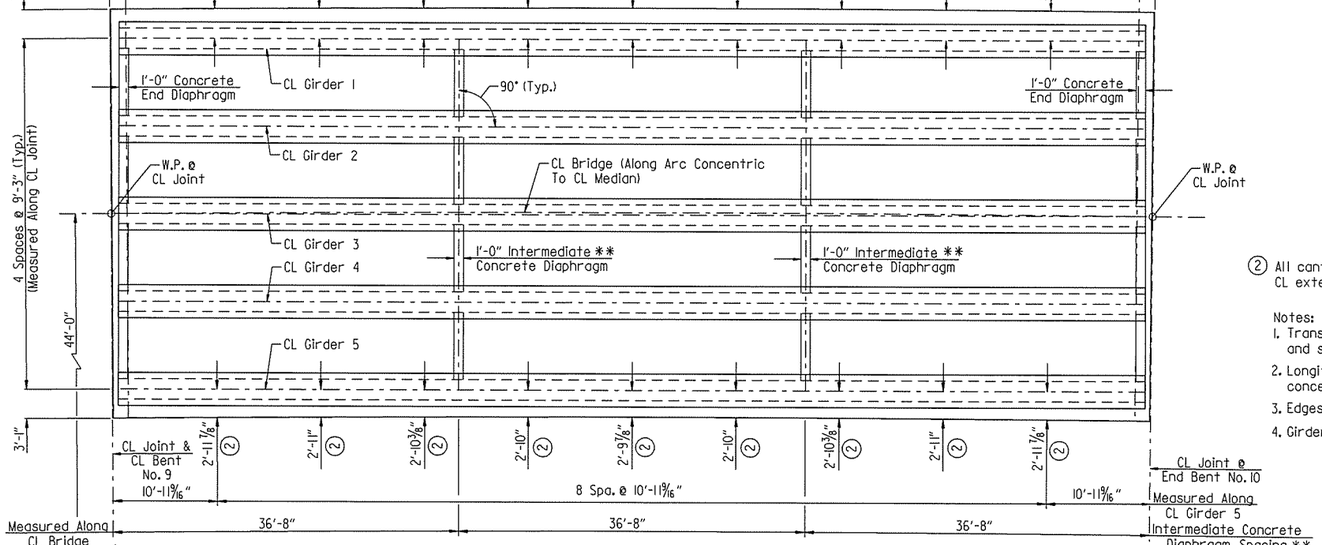

## PLAN
## END DIAPHRAGM

Scale: 1/4" = 1'-0"




## PLAN
## INTERMEDIATE DIAPHRAGM

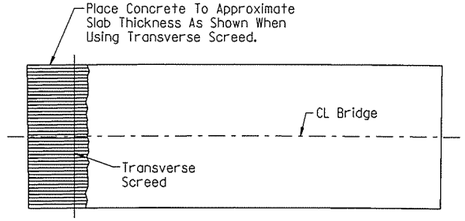
Scale: 1/4" = 1'-0"




## FRAMING PLAN

Bridge A Shown, Bridge B Similar
Scale: 1/8" = 1'-0"

** Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.




## CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note: A longitudinal screed will not be allowed.

(2) All cantilever dimensions are measured at tenth points along CL exterior girders and normal to exterior girders.

Notes:
1. Transverse slab reinforcing shall be placed on radial lines and spaced along center of slab.
2. Longitudinal slab reinforcing shall be placed along curves concentric to CL Median.
3. Edges of slab are concentric to CL Median (1°00'00" Curve).
4. Girders are on chords between CL Joints.

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 8017 — JOHN H. RUDDELL — 9-5-14

BRIDGE ENGINEER

# SHEET 3 OF 5
# DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER SPRING CREEK BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

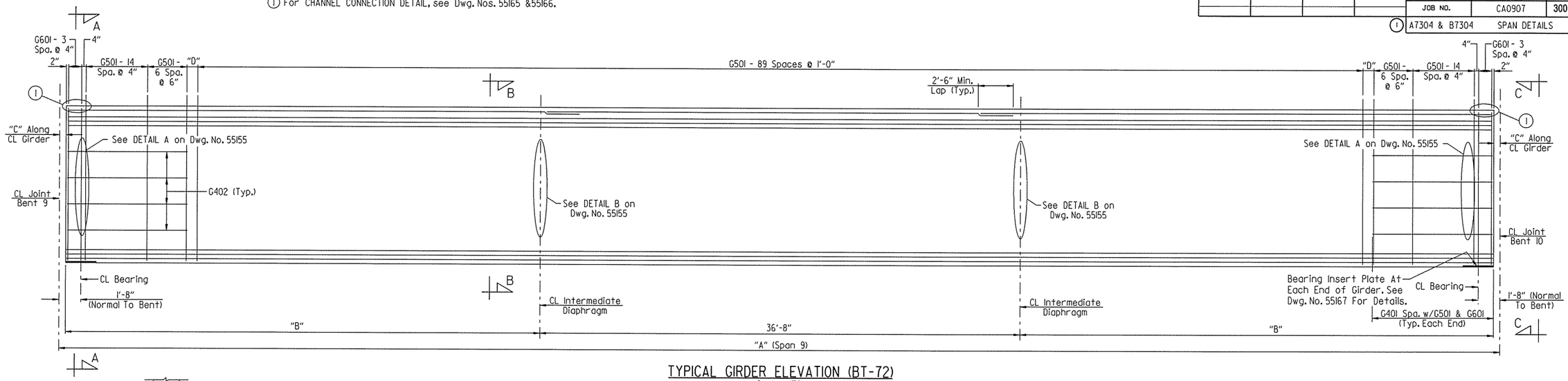
DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: BCA0907X1_S43.DGN
CHECKED BY: AJK DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: AUG. 2011

BRIDGE NO. A7304 & B7304 DRAWING NO. 55153

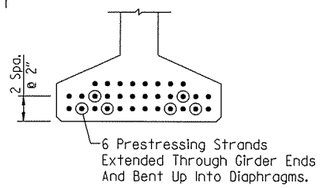
dr.good 9/4/2014 9:35:25 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_S43.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 300 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55154 |

(1) For CHANNEL CONNECTION DETAIL, see Dwg. Nos. 55165 &55166.




## TYPICAL GIRDER ELEVATION (BT-72)
Scale: NTS




## VIEW C-C
Scale: 1" = 1'-0"

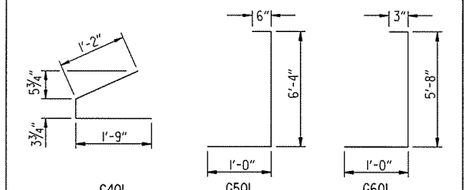
| DEBOND SCHEDULE | |
|---|---|
| Debond Pair | Debond Length From End Of Girder |
| A | 24'-0" |
| B | 15'-0" |

Note:
For GENERAL NOTES & details of girder bevels, see Drawing No. 55155.

| TABLE OF VARIABLES | | | | | |
|---|---|---|---|---|---|
| | Girder | "A" | "B" | "C" | "D" |
| BRIDGE A | 1 | 110'-4 3/16" | 35'-10 1/2" | 11 5/8" | 6 1/2" |
| | 2 | 110'-2 1/8" | 35'-10 1/2" | 10 9/16" | 6 1/2" |
| | 3 | 110'-0" | 35'-10 1/2" | 9 1/2" | 6 1/2" |
| | 4 | 109'-9 7/8" | 35'-10 1/2" | 8 1/16" | 6 1/2" |
| | 5 | 109'-7 3/4" | 35'-10 1/2" | 7 3/8" | 6 1/2" |
| BRIDGE B | 1 | 110'-4 1/4" | 35'-11 1/2" | 10 5/8" | 7 1/2" |
| | 2 | 110'-2 1/8" | 35'-11 1/2" | 9 9/16" | 7 1/2" |
| | 3 | 110'-0" | 35'-11 1/2" | 8 1/2" | 7 1/2" |
| | 4 | 109'-9 9/16" | 35'-11 1/2" | 7 7/16" | 7 1/2" |
| | 5 | 109'-7 11/16" | 35'-11 1/2" | 6 5/16" | 7 1/2" |

| BAR LIST - PER GIRDER | | | |
|---|---|---|---|
| Mark | No. Req'd. | Length | Pin. Dia. |
| * G301 | 16 | 1'-3" | Str. |
| G401 | 104 | 3'-0 3/4" | 2" |
| G402 | 16 | 9'-2" | Str. |
| G403 | 219 | 3'-2" | Str. |
| G404 | 18 | 38'-4" | Str. |
| G501 | 268 | 7'-7" | 3 3/4" |
| G601 | 16 | 6'-7" | 3 3/4" |

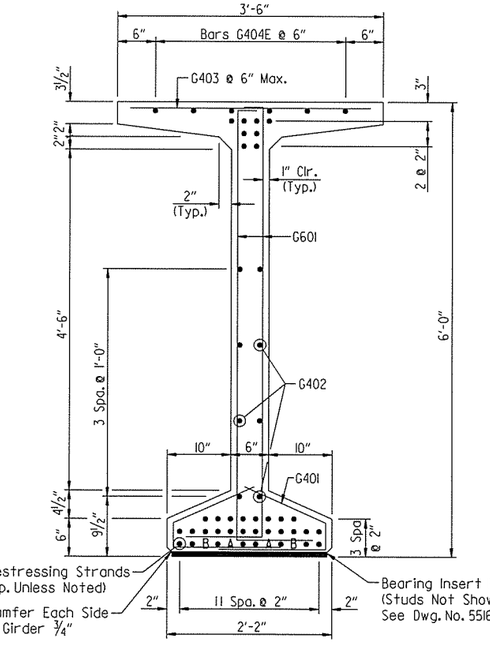
## BAR BENDING DIAGRAMS



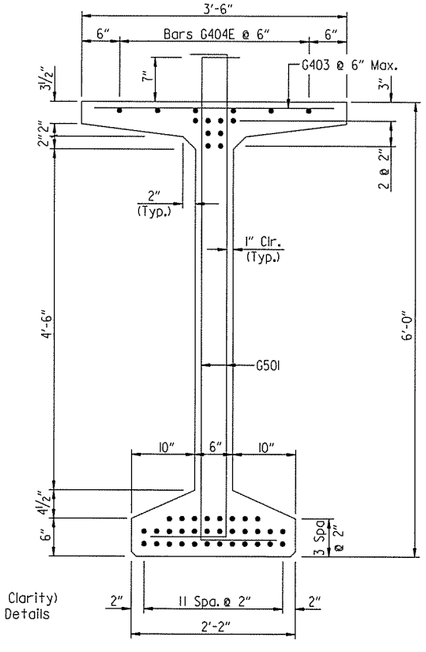

* Exterior Girders Only

Notes:
Dimensions of bars in bending diaphragm are out-to-out.

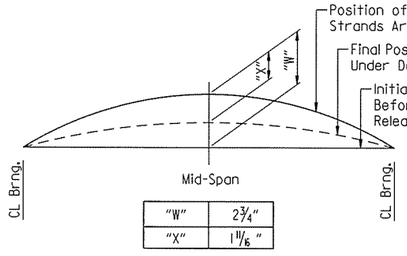
Number of bars shown is for one girder only.




## SECTION A-A
Scale: 1" = 1'-0"




## SECTION B-B
Scale: 1" = 1'-0"




| | |
|---|---|
| "W" | 2 3/4" |
| "X" | 1 11/16" |

"W" is expected camber of girder at 90 days after release (prestress + dead load of girder)

"X" is dead load deflection of slab + diaphragms + composite dead load.

## CAMBER & DEFLECTIONS (INCHES)

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 7000 psi. Greater strenths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES" On Dwg. No. 55155.

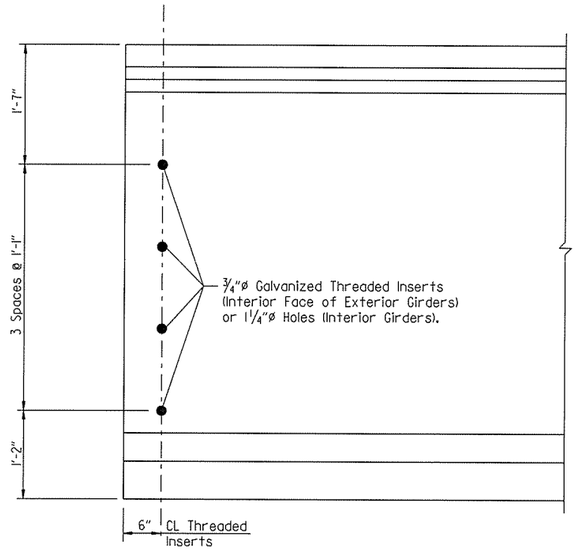
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 110'-0" COMPOSITE PRECAST CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

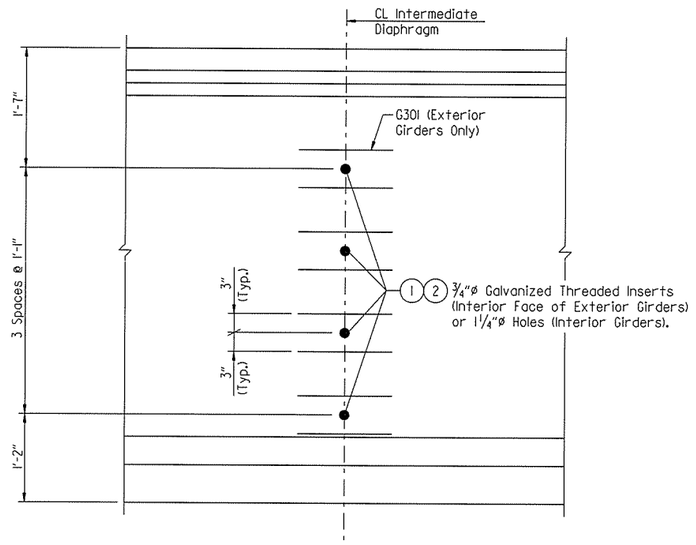
DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907XL_S44.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55154

drgood 9/4/2014 9:35:25 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05916180 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S44.dgn
REVISED DATE:




DETAIL A
Scale: 1" = 1'-0"

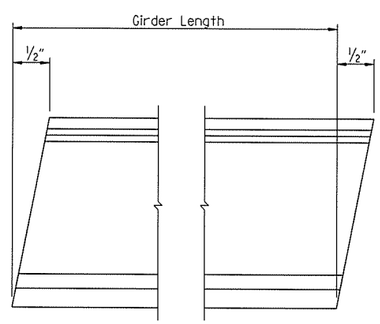



DETAIL B
Scale: 1" = 1'-0"

Notes:

(1) Inserts shown are for intermediate diaphragms, See Dwg. No. 55151 for Alternate Steel Diaphragms.

(2) Galvanized 3/4"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal (omit in exterior face of exterior girders). These are to be subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)". See Dwg. No. 55151 for Alternate Steel Diaphragms.




GIRDER BEVEL
Scale: NTS

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 301 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55155 |

GENERAL NOTES - GIRDERS ONLY

Pretensioning steel shall be 0.6" ø Low Relaxation strands with a minimum ultimate strength of 270 KSI and shall conform to AASHTO M203.

All girders shall be AASHTO TYPE BT-72 I-girders as shown on the details. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 7000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 0.6" ø strand shall be 44,000 pounds. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirment may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22, except that only 0.6" ø strands shall be allowed.

Reinforcing steel shall be AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be shown on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

SPECIAL CAMBER NOTES
The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 110'-0" COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

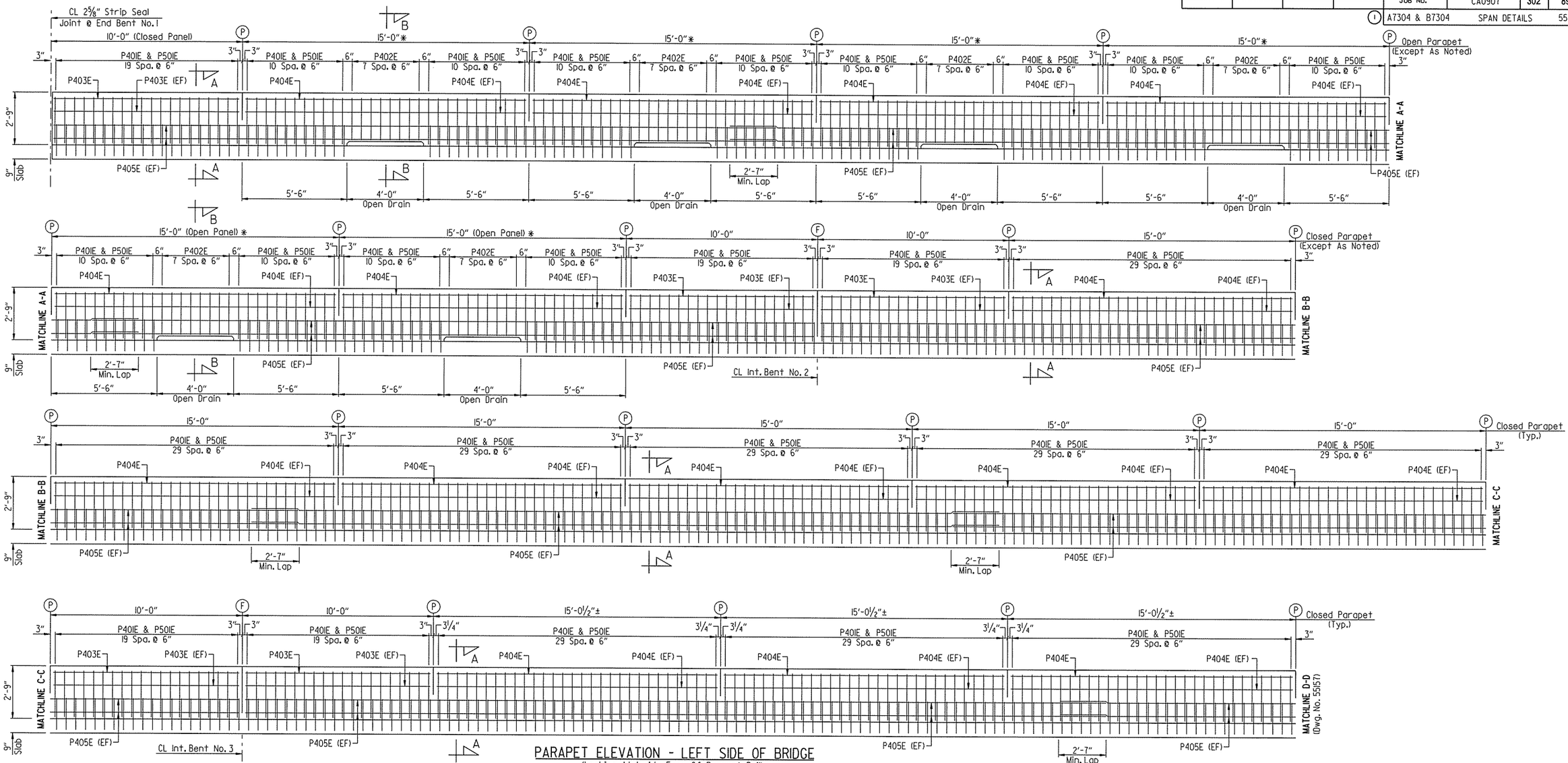
DRAWN BY: HEW DATE: AUG. 2011 FILENAME: BCA0907XI_S45.DGN
CHECKED BY: AJK DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: AUG. 2011

BRIDGE NO. A7304 & B7304 DRAWING NO. 55155

drgood 9/4/2014 9:35:25 AM
WORKSPACE: AHTD Bridge
\\CLITDOOLIT\Projects\2005\059II680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_S45.dgn
REVISED DATE:

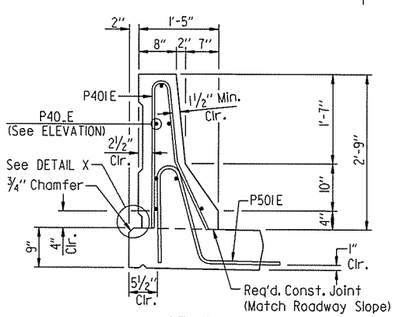
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 302 | 897 |

(1) A7304 & B7304 SPAN DETAILS 55156



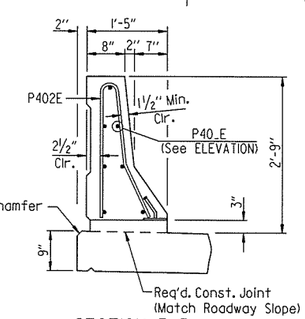

## PARAPET ELEVATION - LEFT SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale: ⅜" = 1'-0"



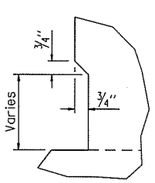

## SECTION A-A

Scale: ¾" = 1'-0"




## SECTION B-B

Scale: ¾" = 1'-0"




## DETAIL X

Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

* Open Panels - Bridge A
Closed Panels - Bridge B

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 1 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X1_P1.DGN
SCALE: AS SHOWN

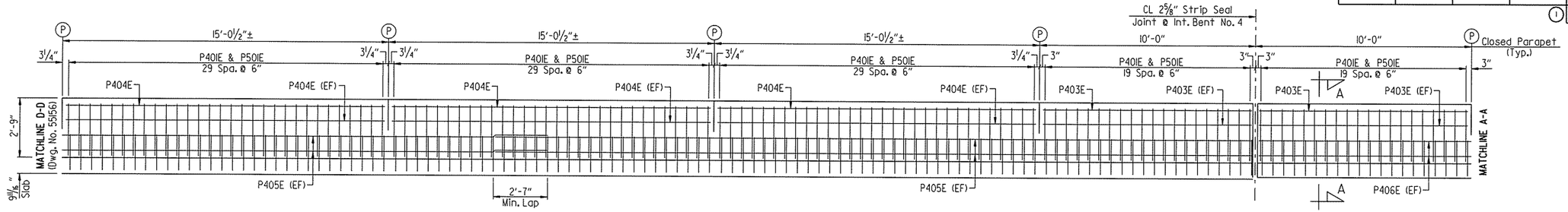
BRIDGE NO. A7304 & B7304 DRAWING NO. 55156

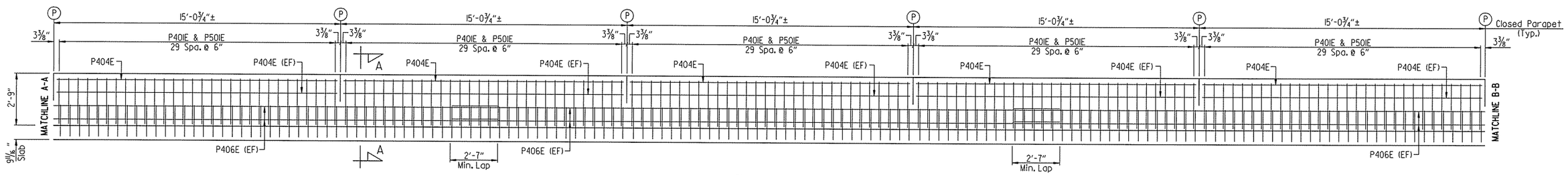
dropod 9/14/2004 9:35:26 AM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907x1_P1.dgn
REVISED DATE:

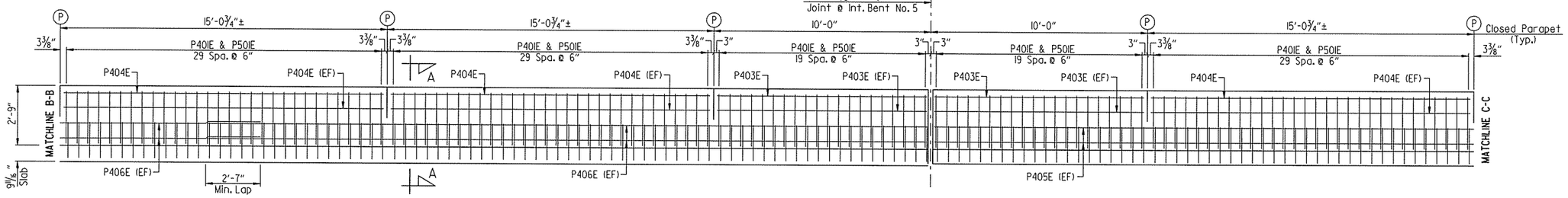
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

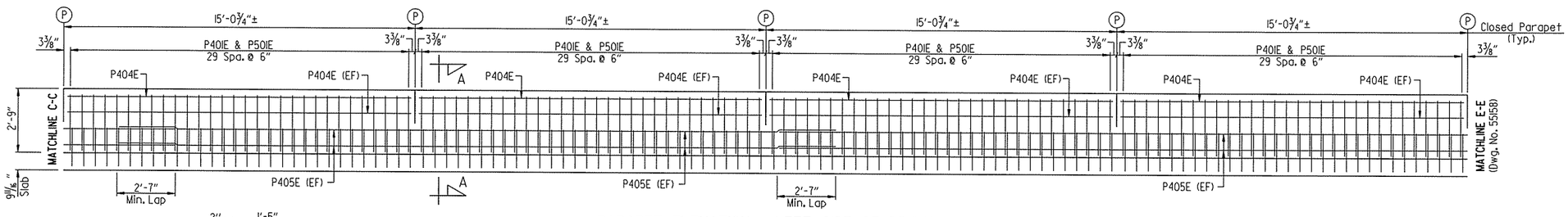
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 303 | 897 |

(1) A7304 & B7304 SPAN DETAILS 55157



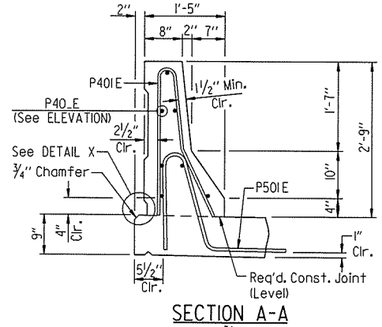



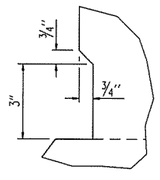

## PARAPET ELEVATION - LEFT SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale: ⅜" = 1'-0"




## SECTION A-A

Scale: ¾" = 1'-0"




## DETAIL X

Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 2 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

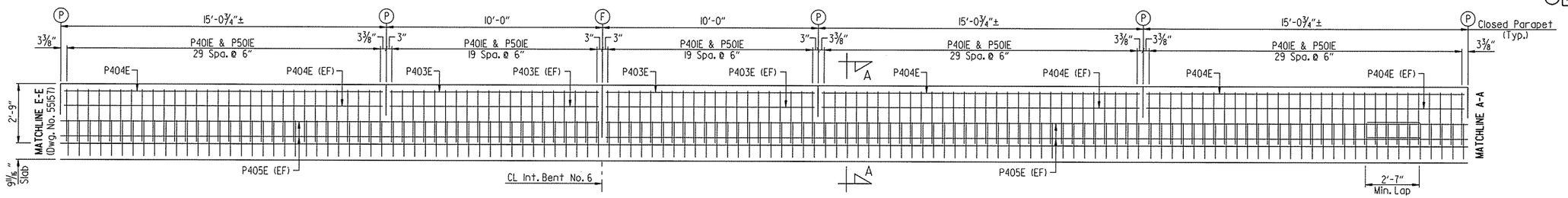
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: JES DATE: OCT. 2011

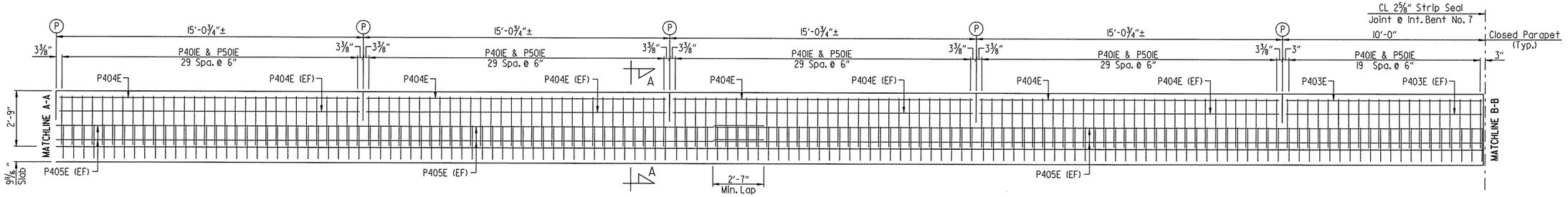
FILENAME: BCA0907XI_P2.DGN
SCALE: AS SHOWN

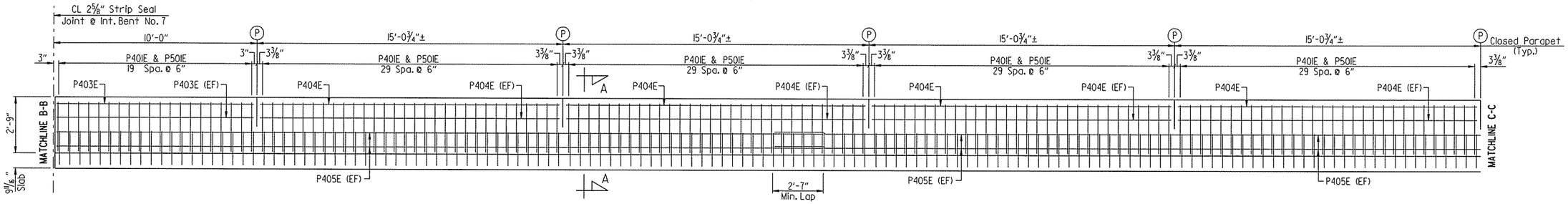
BRIDGE NO. A7304 & B7304 DRAWING NO. 55157

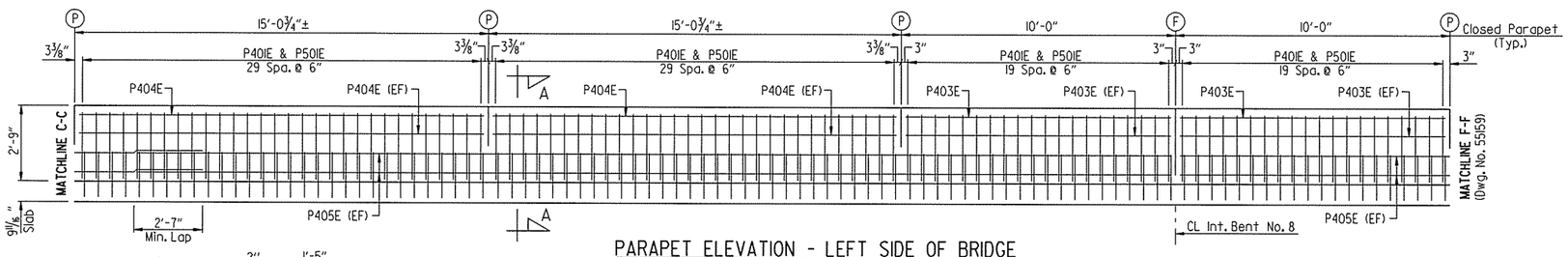

drgood 9:35:27 AM 9/4/2014
WORKSPACE: AHTD Bridge
\\GLITIDCON\LITPFOJECTS\2005\05911680 - AHTD Springdale Byposs\Drawings\BRG\SpringCreek\BCA0907xl_P2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 304 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55158 |



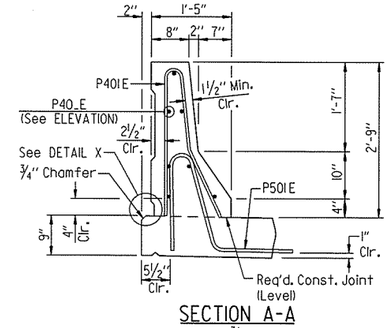



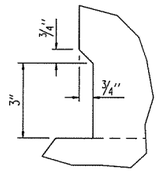

## PARAPET ELEVATION - LEFT SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale: ⅜" = 1'-0"




## SECTION A-A

Scale: ¾" = 1'-0"




## DETAIL X

Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 3 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

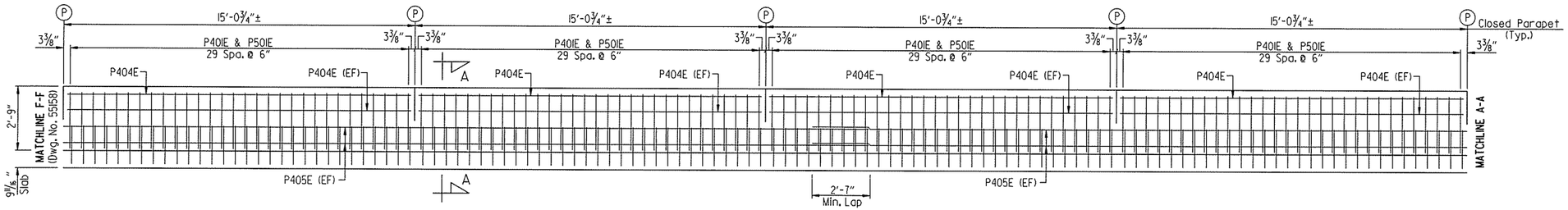
LITTLE ROCK, ARK.

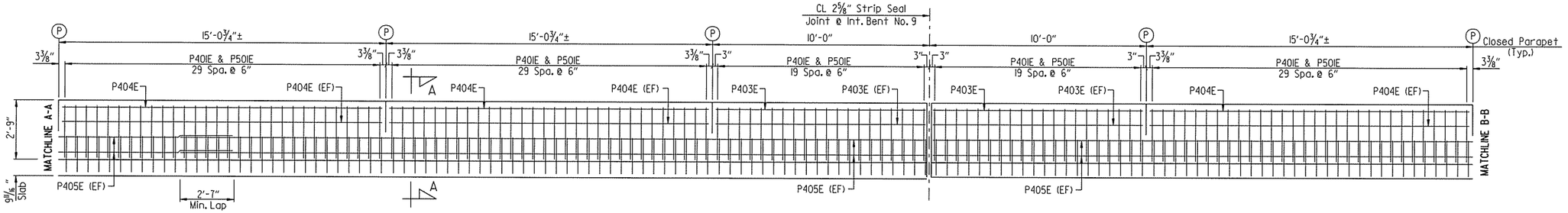
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907XI_P3.DGN
SCALE: AS SHOWN

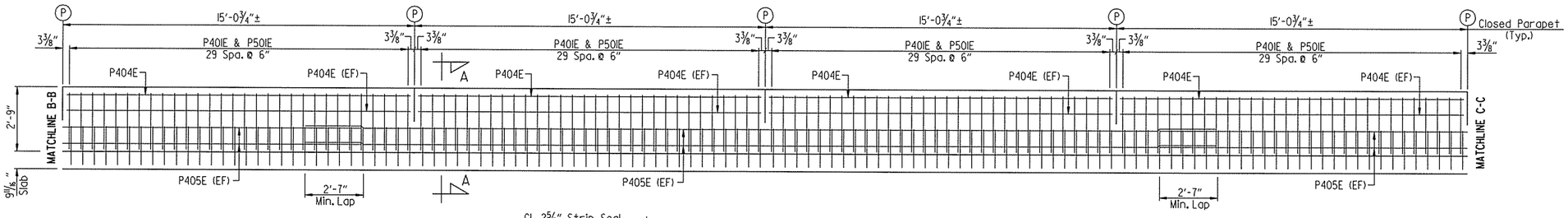
BRIDGE NO. A7304 & B7304 DRAWING NO. 55158

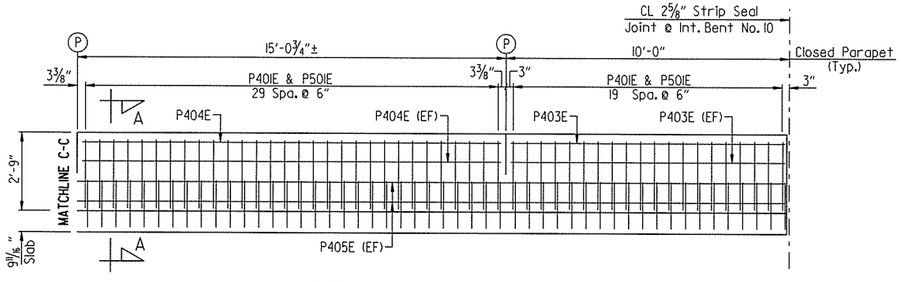
drgood 9/4/2014 9:35:27 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_P3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 305 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55159 |



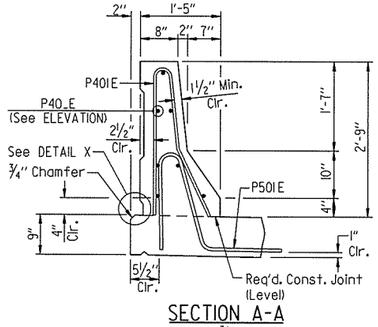



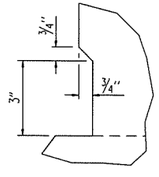

## PARAPET ELEVATION - LEFT SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale : ⅜" = 1'-0"




## SECTION A-A

Scale: ¾" = 1'-0"




## DETAIL X

Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
9-25-14
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 4 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

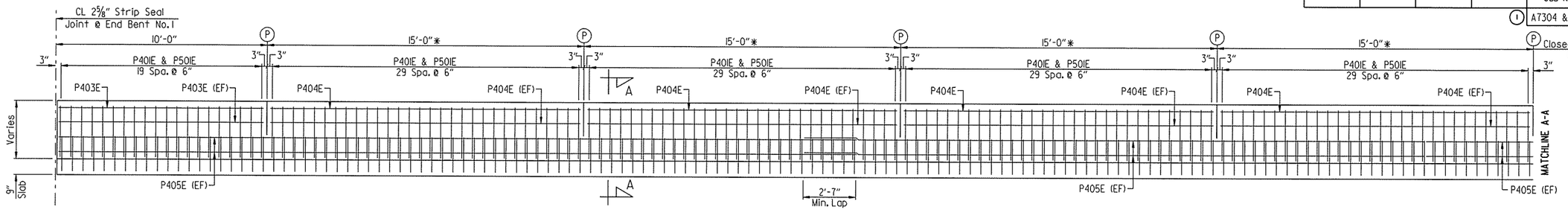
LITTLE ROCK, ARK.

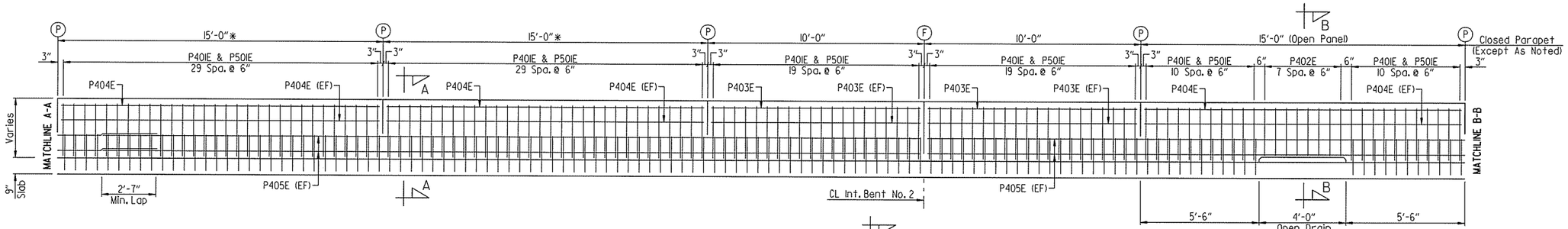
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907XL_P4.DGN
SCALE: AS SHOWN

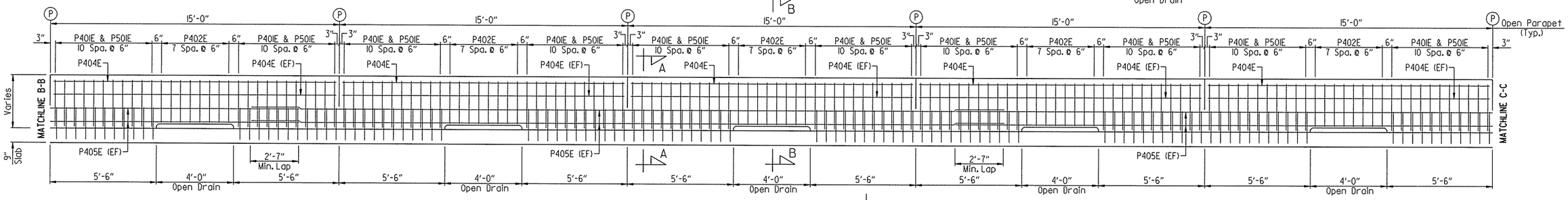
BRIDGE NO. A7304 & B7304 DRAWING NO. 55159

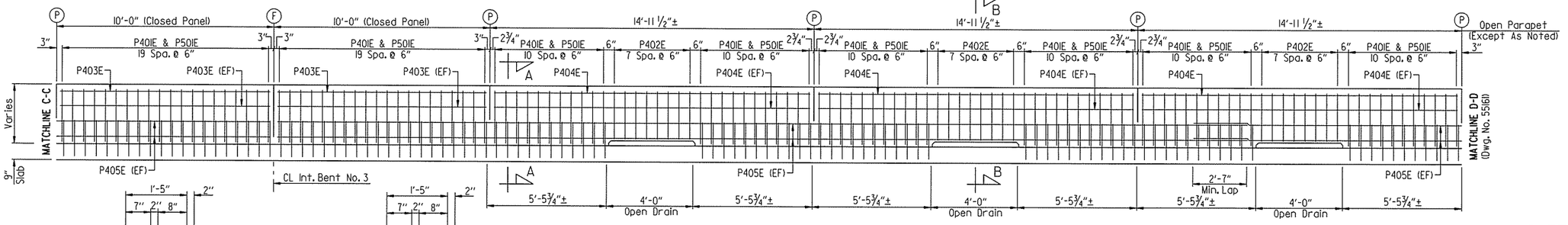
drgood 9/4/2014 9:35:28 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_P4.dgn
REVISED DATE:

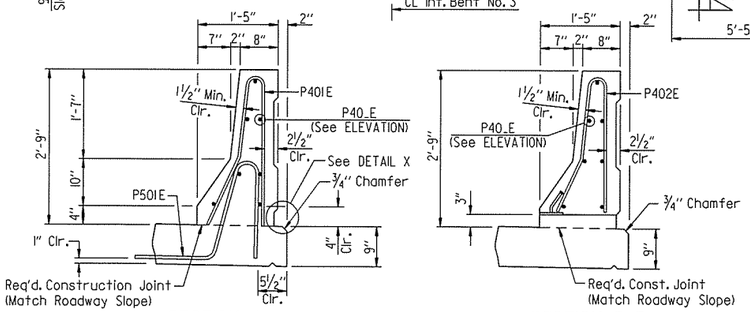
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 306 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55160 |



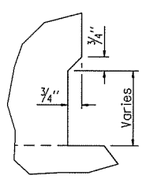




SECTION A-A
Scale: ¾" = 1'-0"




SECTION B-B
Scale: ¾" = 1'-0"




DETAIL X
Scale: NTS

## PARAPET ELEVATION - RIGHT SIDE OF BRIDGE

(Looking At Outside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale: ⅜" = 1'-0"

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (1¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (1¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

* Open Panels - Bridge B
Closed Panels - Bridge A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
No. 8017
9-8-14
BRIDGE ENGINEER

# SHEET 5 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

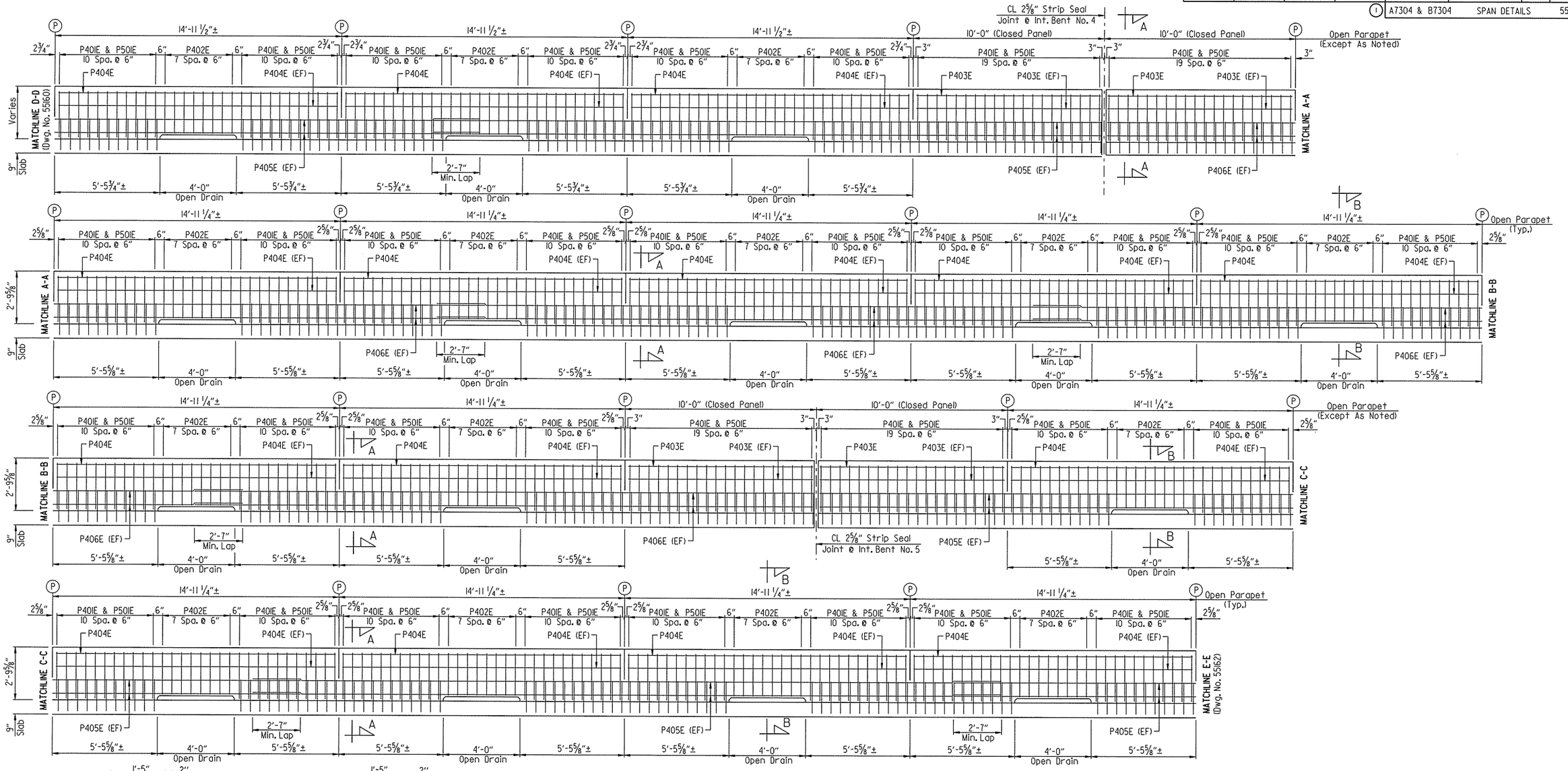
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907XI_P5.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55160

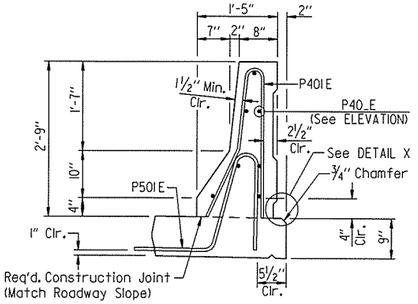
drgood 9/4/2014 9:35:28 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_P5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 307 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55161 |



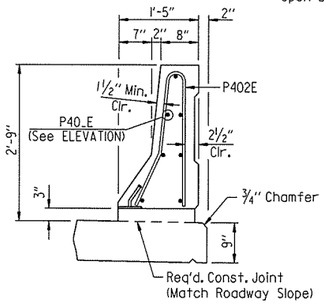

## PARAPET ELEVATION - RIGHT SIDE OF BRIDGE

(Looking At Outside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale : ⅜" = 1'-0"



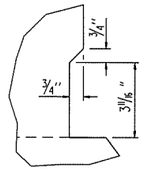

## SECTION A-A

Scale: ¾" = 1'-0"




## SECTION B-B

Scale: ¾" = 1'-0"




## DETAIL X

Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8077
JOHN H. RUDDELL
9-3-14

BRIDGE ENGINEER

# SHEET 6 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

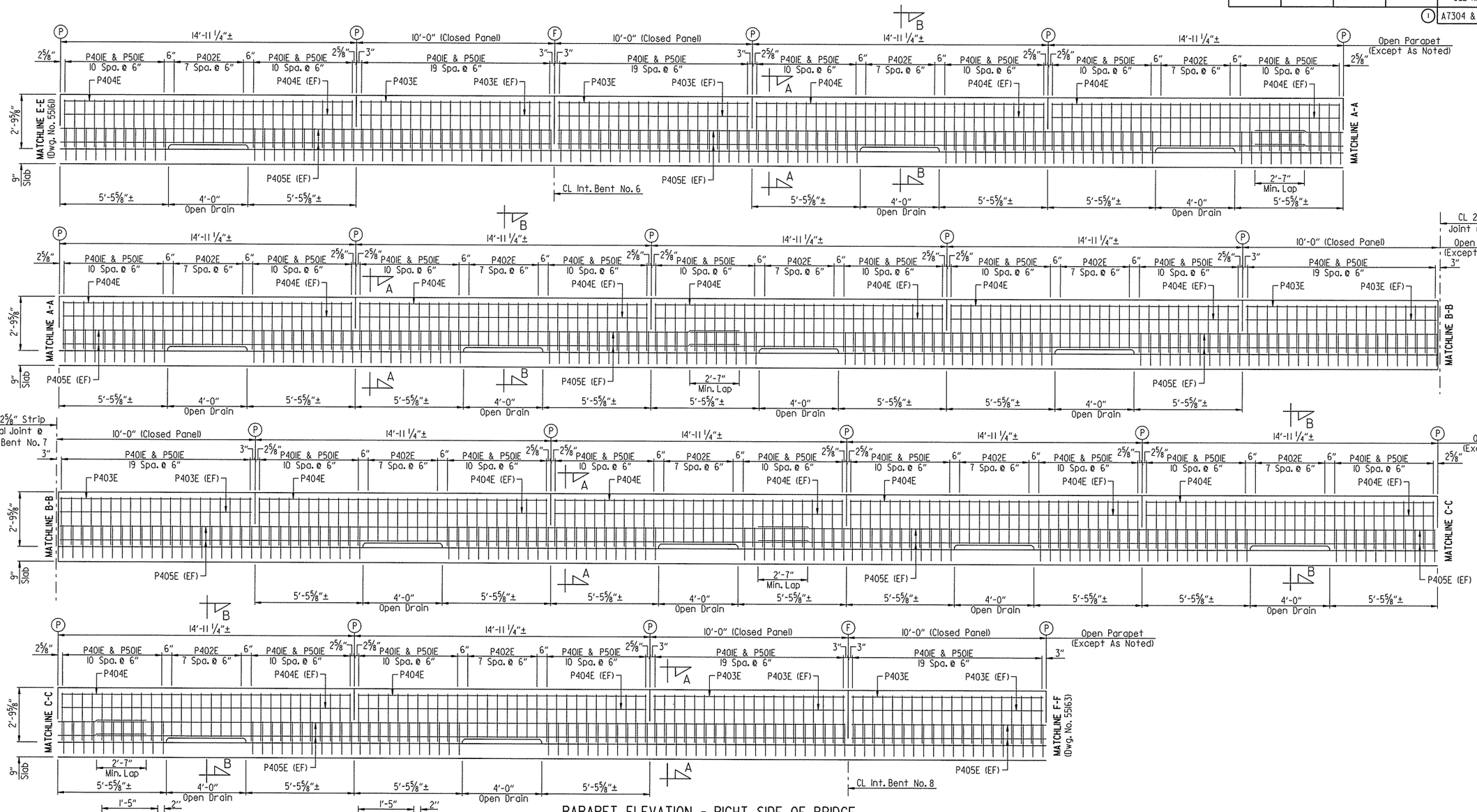
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: MAY 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907XI_P6.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55161

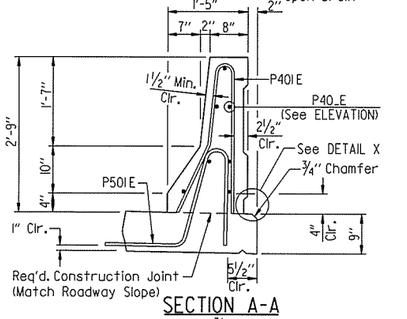
drgood 9/4/2014 9:35:29 AM
WORKSPACE: AHTD Bridge
\\CLITDDOM\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_P6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 308 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55162 |

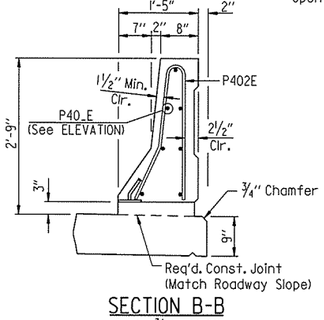



## PARAPET ELEVATION - RIGHT SIDE OF BRIDGE

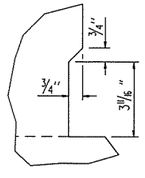
(Looking At Outside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale : ⅜" = 1'-0"




SECTION A-A
Scale: ¾" = 1'-0"




SECTION B-B
Scale: ¾" = 1'-0"




DETAIL X
Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-15-14

BRIDGE ENGINEER

# SHEET 7 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

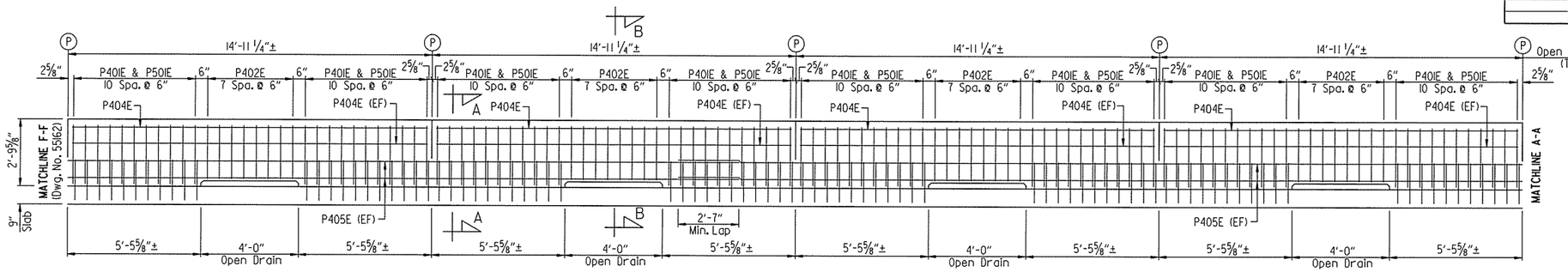
LITTLE ROCK, ARK.

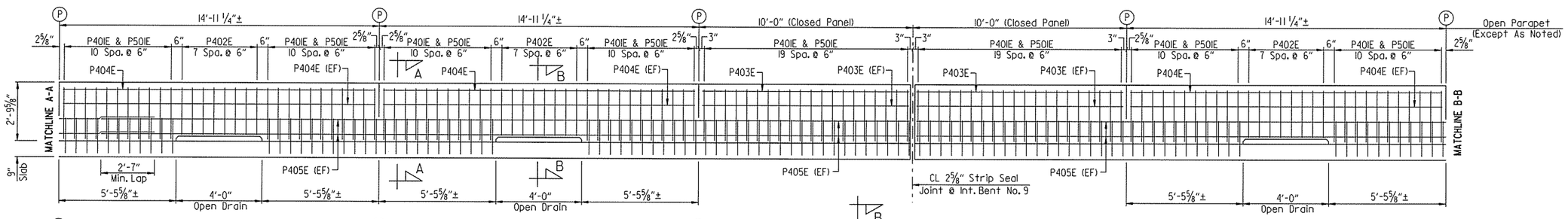
DRAWN BY: HEW DATE: OCT. 2011 FILENAME: BCA0907XI_P7.DGN
CHECKED BY: AJK DATE: MAY 2012 SCALE: AS SHOWN
DESIGNED BY: JES DATE: OCT. 2011

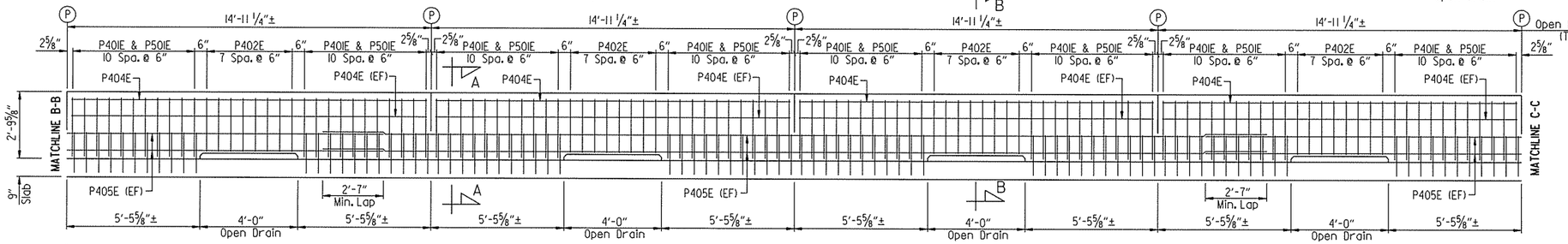
BRIDGE NO. A7304 & B7304 DRAWING NO. 55162

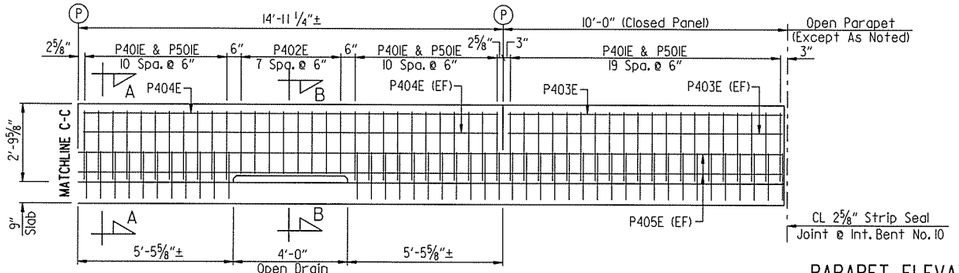
drgood 9/4/2014 9:35:29 AM
WORKSPACE: AHTD Bridge
\\SLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XI_P7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 309 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55163 |



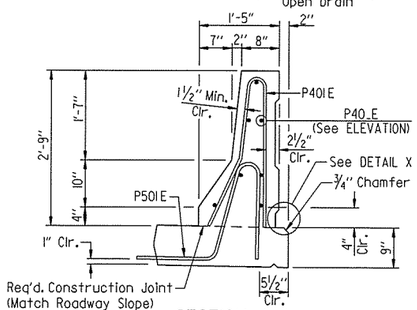



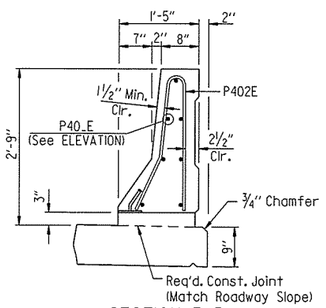




## PARAPET ELEVATION - RIGHT SIDE OF BRIDGE

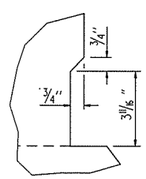
(Looking At Outside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Similar)
Scale : 3/8" = 1'-0"




SECTION A-A
Scale: 3/4" = 1'-0"




SECTION B-B
Scale: 3/4" = 1'-0"




DETAIL X
Scale: NTS

## LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (1/4" To 1/2" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (1/4" To 1/2" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 8 OF 9
# DETAILS OF PARAPET RAIL
# PRECAST CONCRETE GIRDER UNIT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

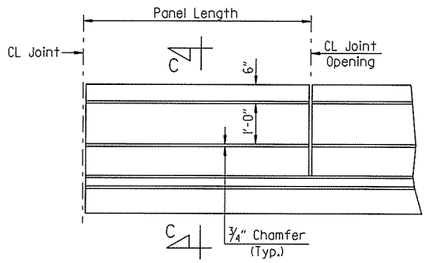
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907XI_P8.DGN
SCALE: AS SHOWN

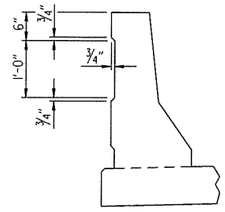
BRIDGE NO. A7304 & B7304 DRAWING NO. 55163

drgood 9/4/2014 9:35:30 AM
WORKSPACE, AHTD Bridge
\\CLIENTDCOLL\ITP\Projects\2005\05916180 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907XI_P8.dgn
REVISED DATE:

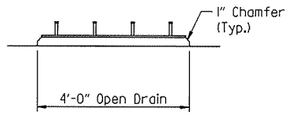
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 310 | 897 |
| | | | | (1) A7304 & B7304 | | SPAN DETAILS | | 55164 |




PARAPET ENHANCEMENT DETAILS
Scale: 1/2" = 1'-0"




SECTION C-C
Scale: 3/4" = 1'-0"




DRAIN DETAIL
Scale: 1/2" = 1'-0"

## GENERAL NOTES

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4000 psi. Concrete deck thickness shall be 8" minimum.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

## SUPERSTRUCTURE GENERAL NOTES:

### CONCRETE:

All concrete in slab, parapets, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted. All end of unit and intermediate diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured, unless otherwise noted. Intermediate bent diaphragms shall be cast monolithically with the slab. The slab and intermediate bent diaphragms for the prestressed concrete girder units shall not be poured until at least 90 days after the release of the prestressing strands.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

### REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

### STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50W unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". All exposed surfaces to be cleaned in accordance with Subsection 807.84(e).

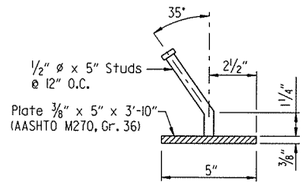
Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

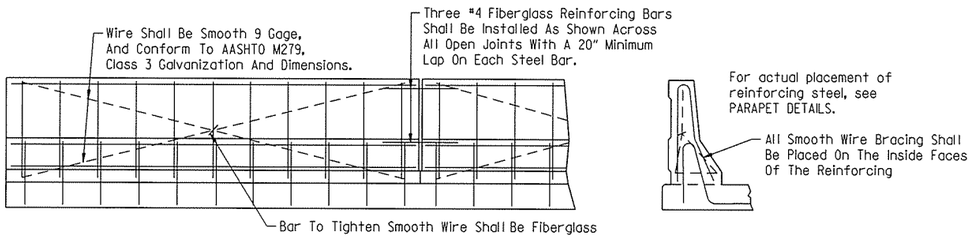
Drawings show general features of design only. Shop drawings shall be made in accordance with specifications, submitted and approval secured before fabrication is begun.

Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

The surfaces of the 3/8" Plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".



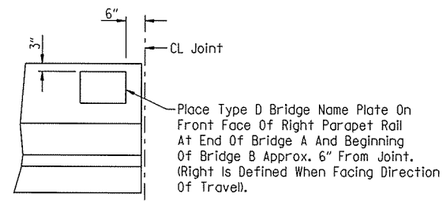

DETAIL Y
Scale: NTS




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: NTS




VIEW SHOWING LOCATION OF NAME PLATE
Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

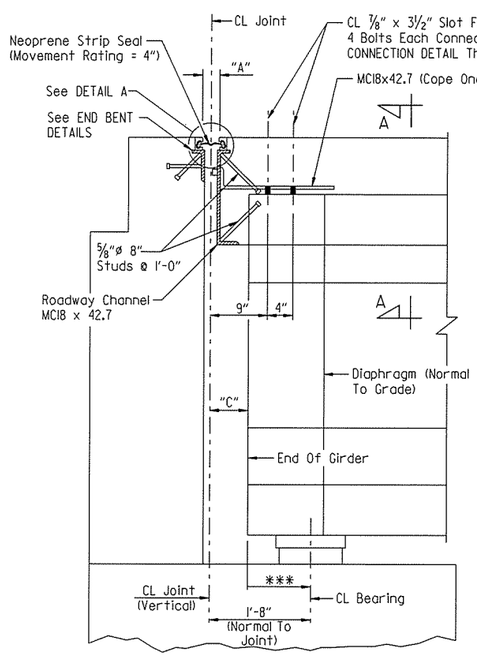
SHEET 9 OF 9
DETAILS OF PARAPET RAIL
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907XI_P9.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55164

drgood 9/4/2014 9:35:31 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_P9.dgn
REVISED DATE:

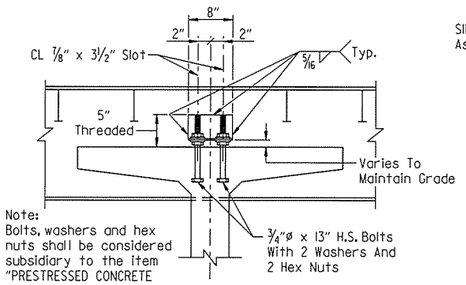
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 311 | 897 |
| | | | | (1) A7304 & B7304 | | STRIP SEAL JOINT | | 55165 |




*** Varies, see GIRDER DETAILS.

## SECTION THRU JOINT AT END BENTS

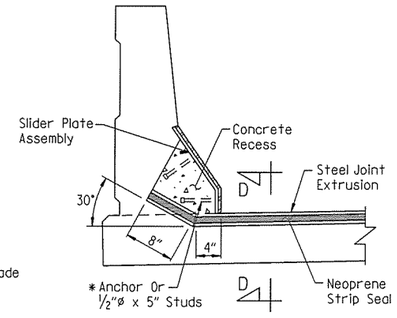
Note: Section Taken Normal To CL Joint
Scale: 1" = 1'-0"




Note:
Bolts, washers and hex nuts shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)".

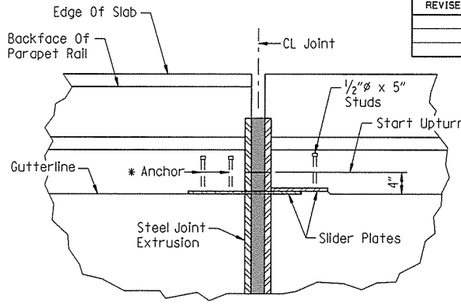
## SECTION A-A

Scale: NTS

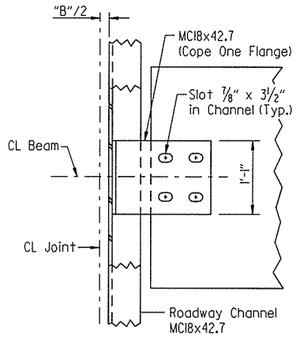



## SECTION B-B

Scale: 1" = 1'-0"

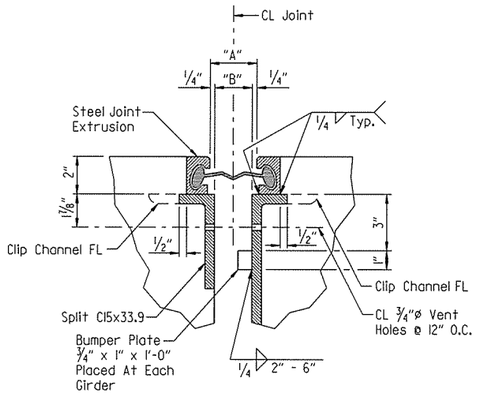



End Bent No. 10 (Stations Increasing)
End Bent No. 1 (Stations Decreasing)




## CHANNEL CONNECTION DETAIL

Scale: NTS

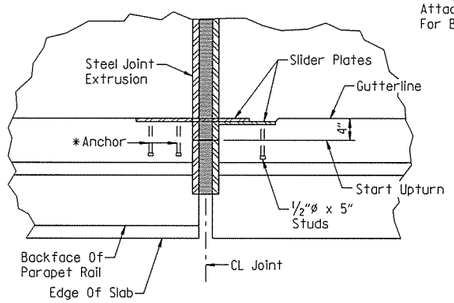



## DETAIL A

Scale: 3" = 1'-0"

Note:
Concrete shall be hand packed under the joint armor.

Note:
For GENERAL NOTES, see Dwg. No. 55166.



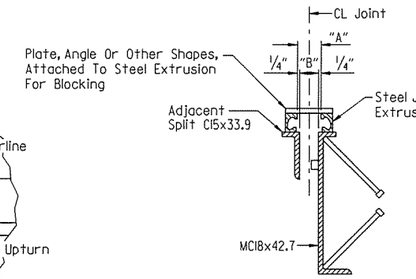

End Bent No. 10 (Stations Increasing)
End Bent No. 1 (Stations Decreasing)

## SECTION C-C

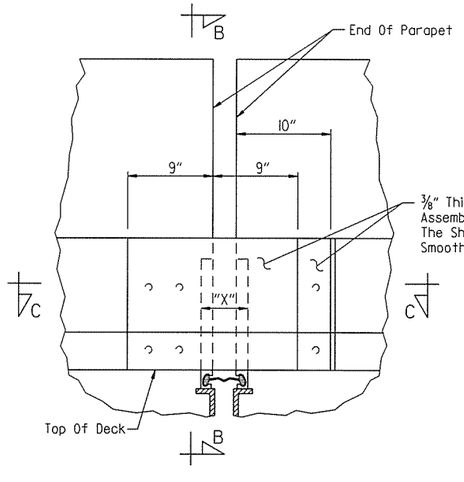
Scale: 1" = 1'-0"

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Grade 50)".



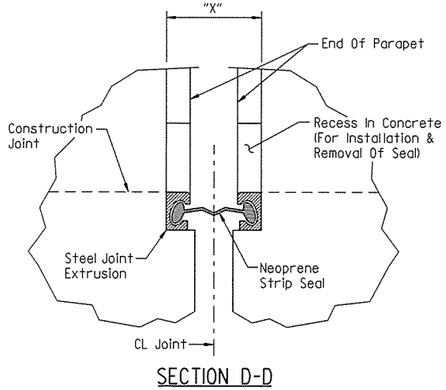

Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F, and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.




## DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"

Note:
Dimension "X" equals the width of the recess in parapet at gutterline to allow for removal or repair of joint.




## SECTION D-D

Scale: 3" = 1'-0"

## STRIP SEAL JOINT DATA

| Bent No. | Movement Rating (inch) | "A" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of: | | | "B" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of: | | | "C" Perpendicular To Joint At 24 Hour Average Temperature Of 60°F |
|---|---|---|---|---|---|---|---|---|
| | | 40°F | 60°F | 80°F | 40°F | 60°F | 80°F | |
| 1 | 4" | 2 7/8" | 2 5/8" | 2 3/8" | 2 3/8" | 2 1/8" | 1 7/8" | 6" |
| 10 | 4" | 2 11/16" | 2 5/8" | 2 9/16" | 2 3/16" | 2 1/8" | 2 1/16" | Varies. See Girder Details |

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Note:
Installation is limited to 40 degrees Fahrenheit min. and 80 degrees Fahrenheit max. Interpolation of the table may be necessary. The temperature limitations of the Lubricant-Adhesive Manufacturer shall be observed.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

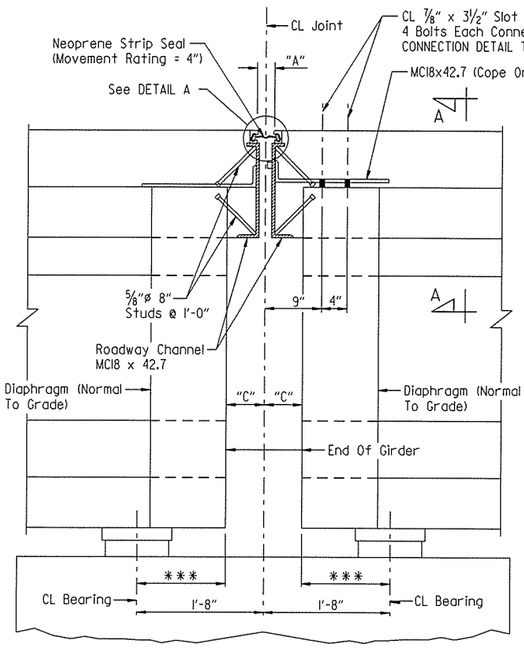
SHEET 1 OF 2
DETAILS OF STRIP SEAL JOINT
U.S. HIGHWAY 412
OVER SPRING CREEK
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907XI_JI.DGN
SCALE: AS NOTED

BRIDGE NO. A7304 & B7304 DRAWING NO. 55165

drgood
9/4/2014 9:44:44 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_JI.dgn
REVISED DATE:

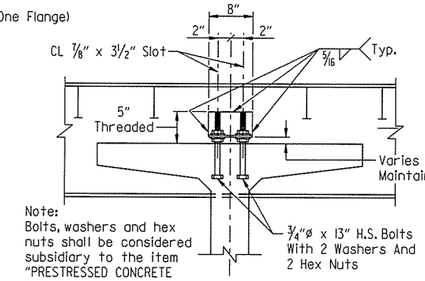
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 312 | 897 |
| | | | | (1) | A7304 & B7304 | STRIP SEAL JOINT | | 55166 |




*** Varies. see GIRDER DETAILS.

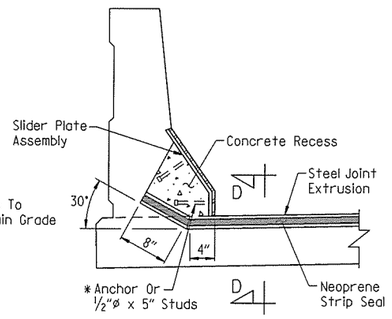
## SECTION THRU JOINT AT END BENTS

Note: Section Taken Normal To CL Joint
Scale: 1" = 1'-0"



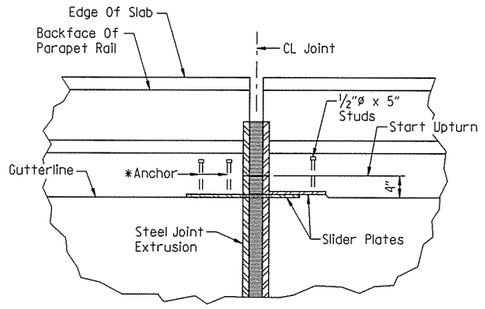

## SECTION A-A

Scale: NTS




## SECTION B-B

Scale: 1" = 1'-0"




Stations Increasing

## GENERAL NOTES

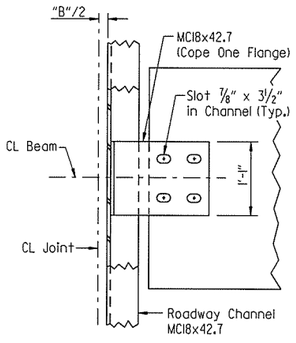
EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 4" as shown in the STRIP SEAL JOINT DATA table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

All structural steel shall be AASHTO M270, grade 50 unless noted otherwise.

All structural steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Section 638.

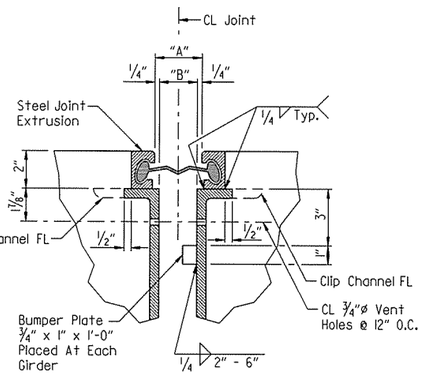
Details of the proposed slider plate assembly shall be submitted to and approved by the Engineer prior to fabrication of the structural steel at the expansion device.

Parapet slider plates shall be AASHTO M270, Gr. 36 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". The surfaces of the plates which will not be in contact with the concrete shall be cleaned and painted in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting shall not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".




## CHANNEL CONNECTION DETAIL

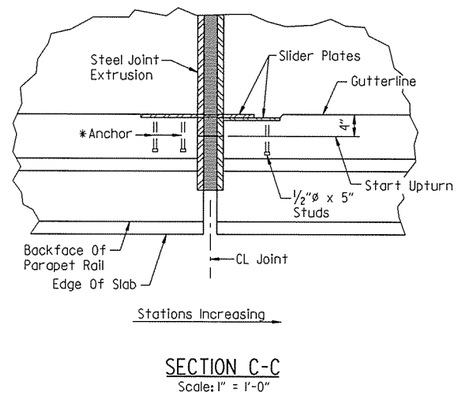
Scale: NTS




## DETAIL A

Scale: 3" = 1'-0"

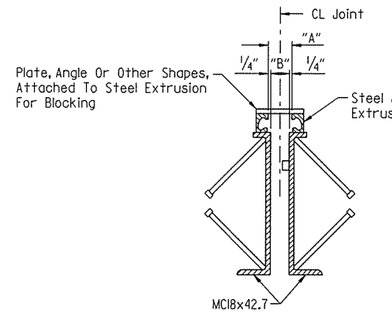
Note:
Concrete shall be hand packed under the joint armor.



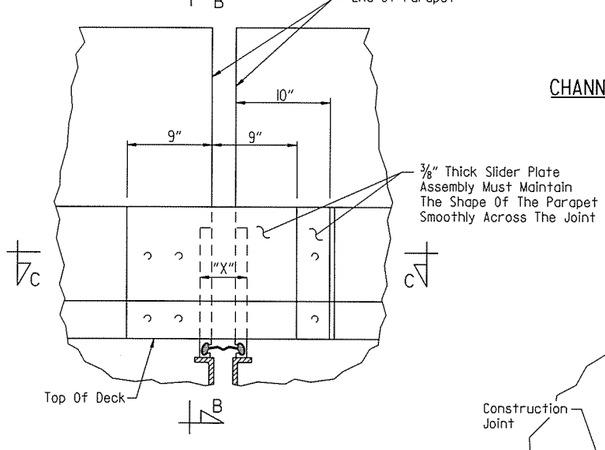

Stations Increasing

## SECTION C-C

Scale: 1" = 1'-0"



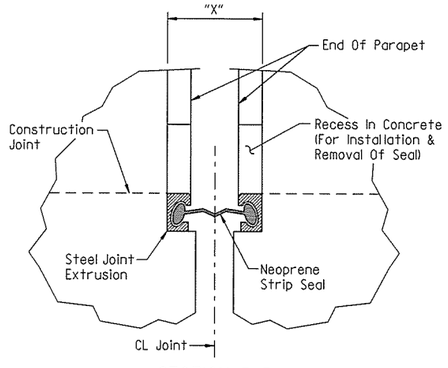

Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F, and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.




## DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"

Note:
Dimension "X" equals the width of the recess in parapet at gutterline to allow for removal or repair of joint.




## SECTION D-D

Scale: 3" = 1'-0"

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50)".

### STRIP SEAL JOINT DATA

| Bent No. | Movement Rating (inch) | "A" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of: | | | "B" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of: | | | "C" Perpendicular To Joint At 24 Hour Average Temperature Of 60°F |
|---|---|---|---|---|---|---|---|---|
| | | 40°F | 60°F | 80°F | 40°F | 60°F | 80°F | |
| 4 & 7 | 4" | 2 5/16" | 2 1/8" | 2 1/16" | 2 7/16" | 2 1/8" | 1 13/16" | Varies. See Girder Details |
| 5 & 9 | 4" | 2 7/8" | 2 1/8" | 2 3/8" | 2 3/8" | 2 1/8" | 1 7/8" | Varies. See Girder Details |

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Note:
Installation is limited to 40 degrees Fahrenheit min. and 80 degrees Fahrenheit max. Interpolation of the table may be necessary. The temperature limitations of the lubricant-adhesive manufacturer shall be observed.

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
9-5-14
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT INTERIOR BENTS:

After all beams on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement On the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, The joint adjacent for temperature and grade, and the connection bolts tightened.

# SHEET 2 OF 2
# DETAILS OF STRIP SEAL JOINT
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

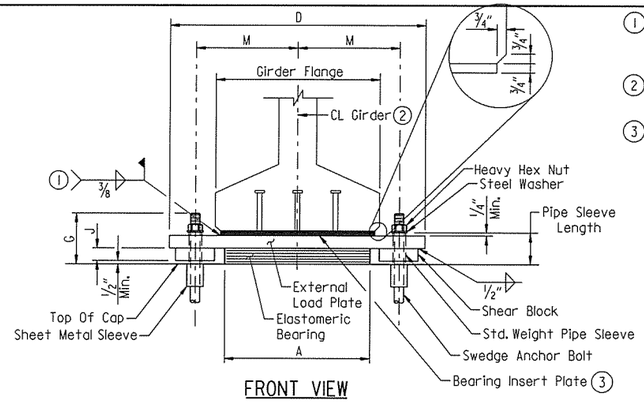
DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: MRA DATE: SEPT. 2011

FILENAME: BCA0907XL_J2.DGN
SCALE: AS NOTED

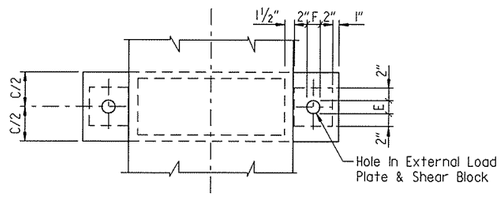
BRIDGE NO. A7304 & B7304 DRAWING NO. 55166

dragood 9/4/2014 9:44:45 AM
WORKSPACE: AHTD Bridge
\\CLITDOCNLITFP\projects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xl_J2.dgn
REVISED DATE:

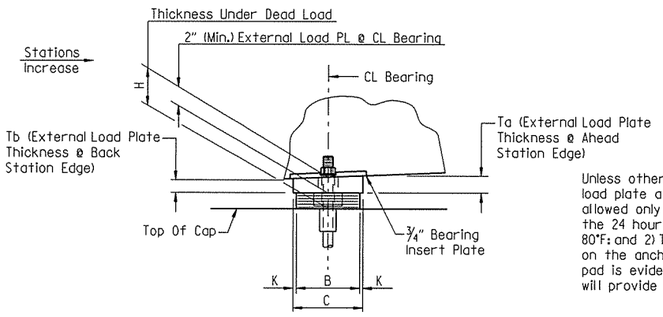
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 313 | 897 |
| | | | | (1) A7304 & B7304 | | ELAST. BEARINGS | | 55167 |




FRONT VIEW




PLAN VIEW - AT BENTS 2, 3, 4 (FWD. STA.), 6, 8 & 9 (FWD. STA.)

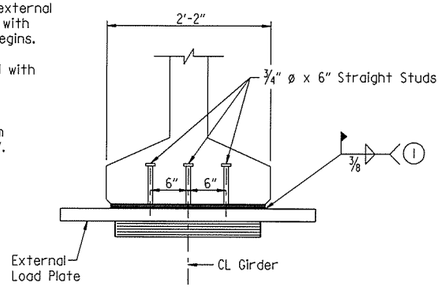



SIDE VIEW - AT BENTS 2, 3, 4 (FWD. STA.), 6, 8 & 9 (FWD. STA.)

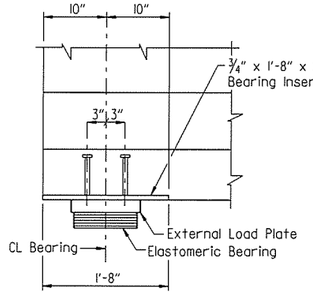
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) Centerline elastomeric pad shall be aligned with centerline girder.

(3) Bearing insert plate (M270, GR. 50) & studs shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)".

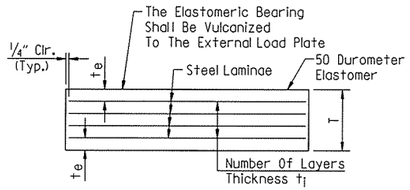



FRONT VIEW




SIDE VIEW

ANCHOR AND EXTERNAL LOAD PLATE DETAILS

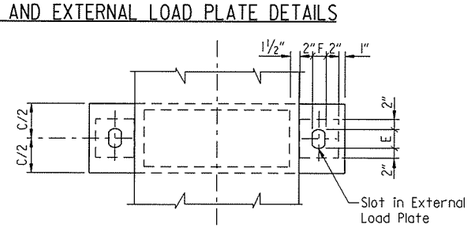



$t_e$ = Thickness Of Elastomer Cover On Top And Bottom Of Pad
$t_i$ = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness $t_i$

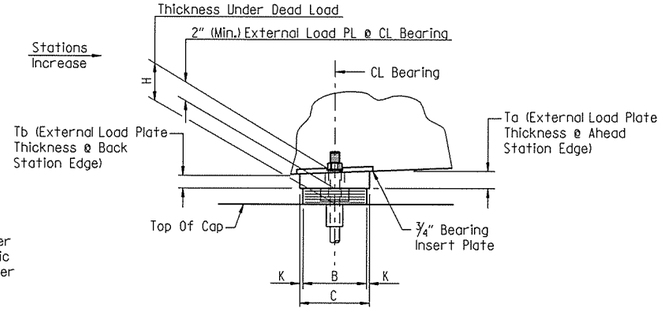
ELASTOMERIC BEARING

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in TABLE OF FABRICATOR VARIABLES.

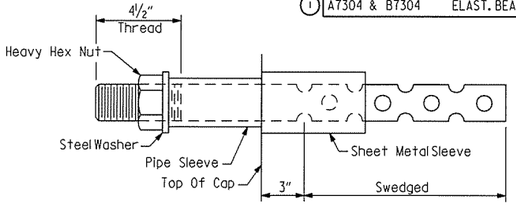
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the bearing insert plate will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.




PLAN VIEW - AT BENTS 1, 4 (BACK STA.), 5, 7, 9 (BACK STA.) & 10




SIDE VIEW - AT BENTS 1, 4 (BACK STA.), 5, 7, 9 (BACK STA.) & 10




ANCHOR BOLT DETAIL

Note:
Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the TABLE OF FABRICATOR VARIABLES. Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service I Limit State

| Bridge Nos. | Location: Bent No.(s) | Location: Beam Or Girder No. | Bearing Type | No. Of Bearings Each Bent | *Maximum Design Load (Kips) | G | H | Elastomeric Pad: A | B | N | $t_i$ | $t_e$ | No. & Thickness Of Steel Laminate | T | External Load Plate: C | D | E | F | J | K | M | $T_a$ | $T_b$ | Anchor Bolt: (Dia. x L) | Anchor Bolt: Grade | Pipe Sleeve Size (Dia. x L) | Sheet Metal Sleeve Size (Dia. x L) | Steel Washer Size (O.D.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AXXXXX & BXXXXX | 1 | All | Exp. | 5 | 214.9 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4 3/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.11" | 1.89" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 2A | All | Fixed | 5 | 255.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | (4) | (4) | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 2B | Back Sta. | Fixed | 5 | 255.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.11" | 1.89" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 2B | Fwd. Sta. | Fixed | 5 | 252.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.09" | 1.91" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 3 | Back Sta. | Fixed | 5 | 252.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.09" | 1.91" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 3 | Fwd. Sta. | Fixed | 5 | 255.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.07" | 1.93" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 4 | Back Sta. | Exp. | 5 | 214.9 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4 3/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.07" | 1.93" | 1 1/2" x 25" | 55 | 1 1/2" x 4 5/8" | 3" x 8" | 3" |
| | 4 | Fwd. Sta. | Fixed | 6 | 214.1 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.06" | 1.94" | 1 1/2" x 25" | 55 | 1 1/2" x 4 5/8" | 3" x 8" | 3" |
| | 5 | Back Sta. | Exp. | 6 | 214.1 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.06" | 1.94" | 1 1/2" x 25" | 55 | 1 1/2" x 4 5/8" | 3" x 8" | 3" |
| | 5 | Fwd. Sta. | Exp. | 5 | 213.7 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.05" | 1.95" | 1 1/2" x 25" | 55 | 1 1/2" x 4 5/8" | 3" x 8" | 3" |
| | 6 | Back Sta. | Fixed | 5 | 262.2 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.05" | 1.95" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 6 | Fwd. Sta. | Fixed | 5 | 262.2 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.03" | 1.97" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 7 | Back Sta. | Exp. | 5 | 213.7 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.03" | 1.97" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 7 | Fwd. Sta. | Exp. | 5 | 213.7 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.01" | 1.99" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 8 | Back Sta. | Fixed | 5 | 262.2 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.01" | 1.99" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 8 | Fwd. Sta. | Fixed | 5 | 262.2 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.01" | 1.99" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 9 | Back Sta. | Exp. | 5 | 213.7 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.01" | 1.99" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 9 | Fwd. Sta. | Fixed | 5 | 223.0 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.02" | 1.98" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 10 | All | Exp. | 5 | 223.0 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.02" | 1.98" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |

(4) For external load plate thicknesses at Bent No. 2A, see TABLE OF VARIABLES

| TABLE OF VARIABLES | | |
|---|---|---|
| Bearing No. | $T_a$ | $T_b$ |
| 1A | 2.14" | 1.92" |
| 1B | 2.18" | 1.96" |
| 1C | 2.21" | 1.99" |
| 1D | 2.24" | 2.02" |
| 1E | 2.28" | 2.06" |
| 2A | 2.24" | 2.06" |
| 2B | 2.21" | 2.03" |
| 2C | 2.18" | 2.00" |
| 2D | 2.14" | 1.96" |
| 2E | 2.11" | 1.93" |

NOTE:
For Bearing No. locations, see Dwg. No. XXXXX.

ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS
# U.S. HIGHWAY 412
# OVER SPRING CREEK
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

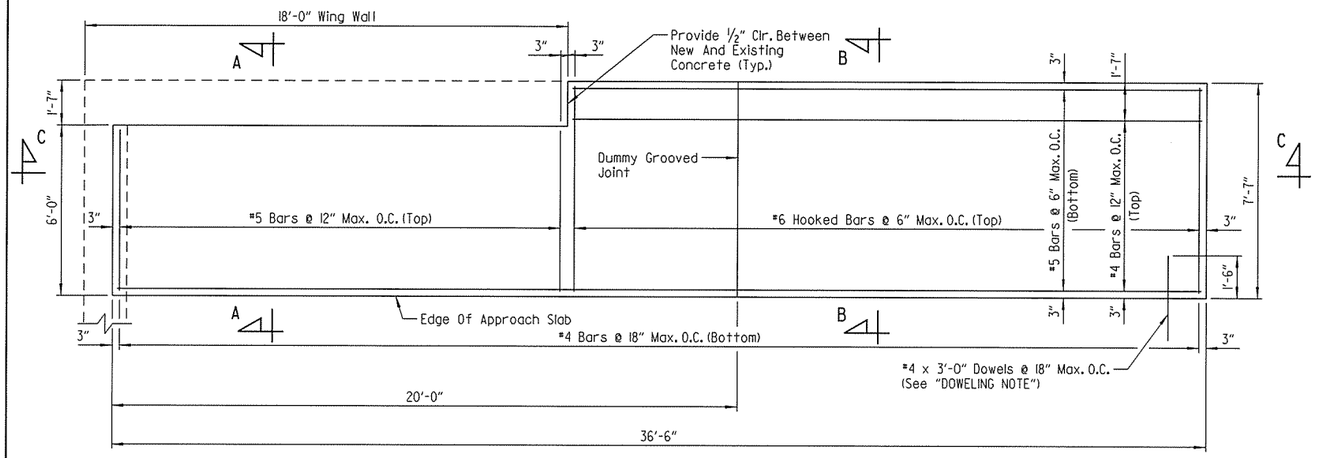
DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: JUNE 2012
DESIGNED BY: MRA DATE: SEPT. 2011
FILENAME: BCA0907XI_EI.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55167

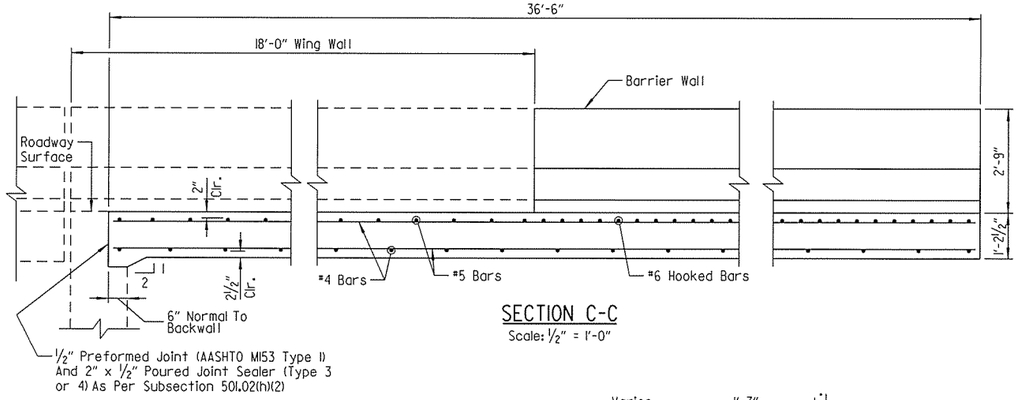

drgood 9/4/2014 9:35:32 AM
WORKSPACE: AHTD Bridge - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_EI.dgn
\\OLITDCONLITP\Projects\2005\050186\80
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 314 | 897 |
| | | | | (1) | A7304 & B7304 | APPROACH GUTTERS | | 55168 |

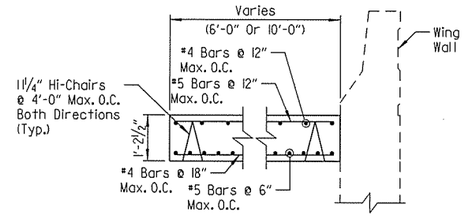
NOTE:
All reinforcing bars shall maintain a minimum of 2" clr. cover unless noted otherwise.



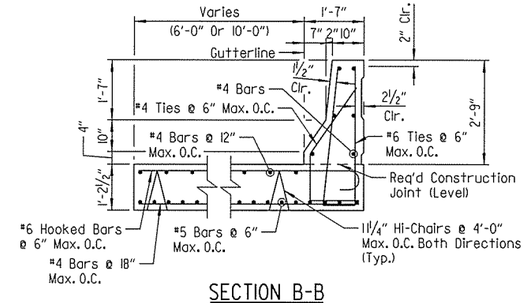

PLAN - APPROACH GUTTER
(6'-0" Shoulder Width)
Scale: ⅜" = 1'-0"



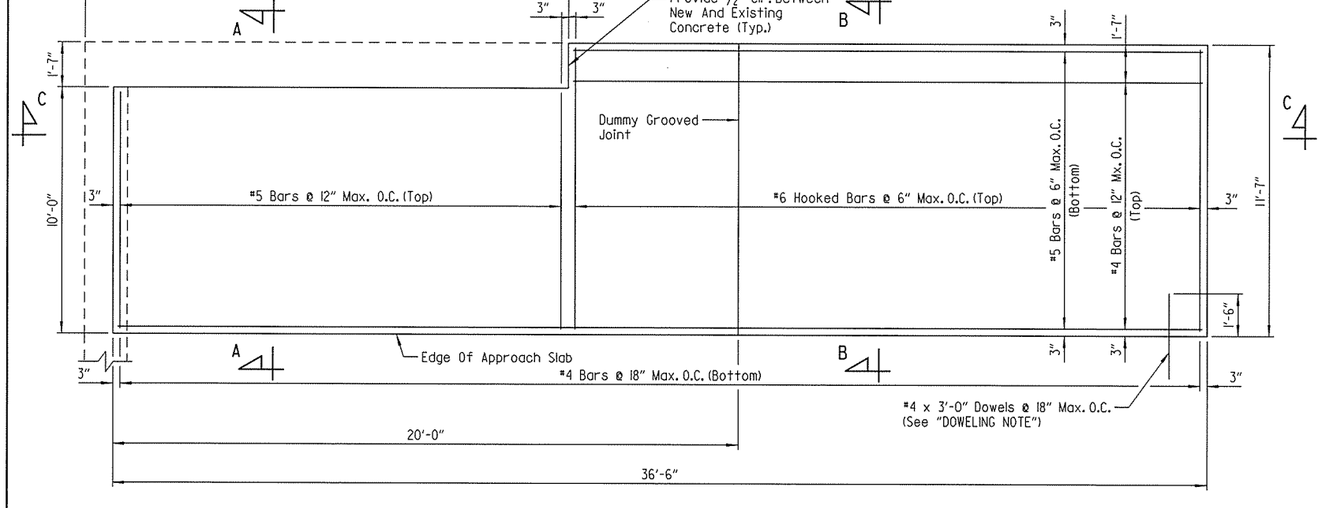

SECTION C-C
Scale: ½" = 1'-0"




SECTION A-A
Scale: ½" = 1'-0"




SECTION B-B
Scale: ½" = 1'-0"



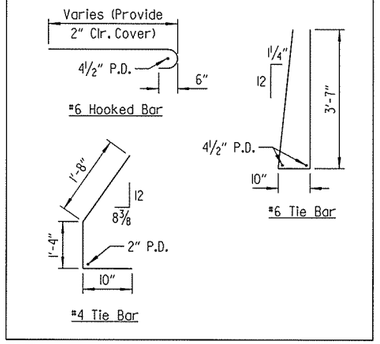

PLAN - APPROACH GUTTER
(10'-0" Shoulder Width)
Scale: ⅜" = 1'-0"

NOTE:
The approach gutters shall be constructed along curves concentric to 1°00'00" curve at CL Median. All longitudinal lines and reinforcing steel shall be placed on curves concentric with CL Bridge. All transverse reinforcing steel shall be placed on lines radial to CL Bridge. Spacing for transverse reinforcing steel shall be measured along CL Bridge.

DOWELING NOTE:
Prior to pouring concrete for approach slab, place dowels into approach slab using 18" embedment.

As an alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting, will not be paid for separately but will be considered subsidiary to "APPROACH GUTTERS".

## BAR BENDING DIAGRAMS




NOTE:
Dimensions of bars are out-to-out.

| QUANTITIES - PER GUTTER | | |
|---|---|---|
| Shoulder Width | Class S(AE) Concrete | Reinforcing Steel (Gr. 60) |
| 6'-0" | 13.33 Cu. Yds. | 2012 Lb. |
| 10'-0" | 19.87 Cu. Yds. | 2789 Lb. |

## GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Approach gutters will be measured and paid for in accordance with Section 504.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
No. 8017

BRIDGE ENGINEER

# DETAILS OF TYPE SPECIAL I APPROACH GUTTERS U.S. HIGHWAY 412 OVER SPRING CREEK BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: DEC. 2013
CHECKED BY: ABH DATE: JAN. 2014
DESIGNED BY: DRG DATE: DEC. 2013
FILENAME: BCA0907XI_GI.DGN
SCALE: AS SHOWN

BRIDGE NO. A7304 & B7304 DRAWING NO. 55168

dr goad 9/4/2014 9:35:33 AM
W:\PROJECTS\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_GI.dgn
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek\BCA0907xI_GI.dgn
REVISED DATE:

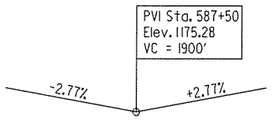
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 315 | 897 |
| | | | | (1) A7305 & B7305 | | LAYOUT | | 55169 |

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

Note:
Use Type C approach gutters (W=10'-0" & W=6'-0"), Type Special approach gutters (W=10'-0" & W=6'-0") & Type Special approach slab.
See Std. Dwg. No. 550300 for details of Type C approach gutter. For details of Type Special approach slabs, see Dwg. Nos. 55199 & 55200. For details of Type Special approach gutters, see Dwg. No. 55203.

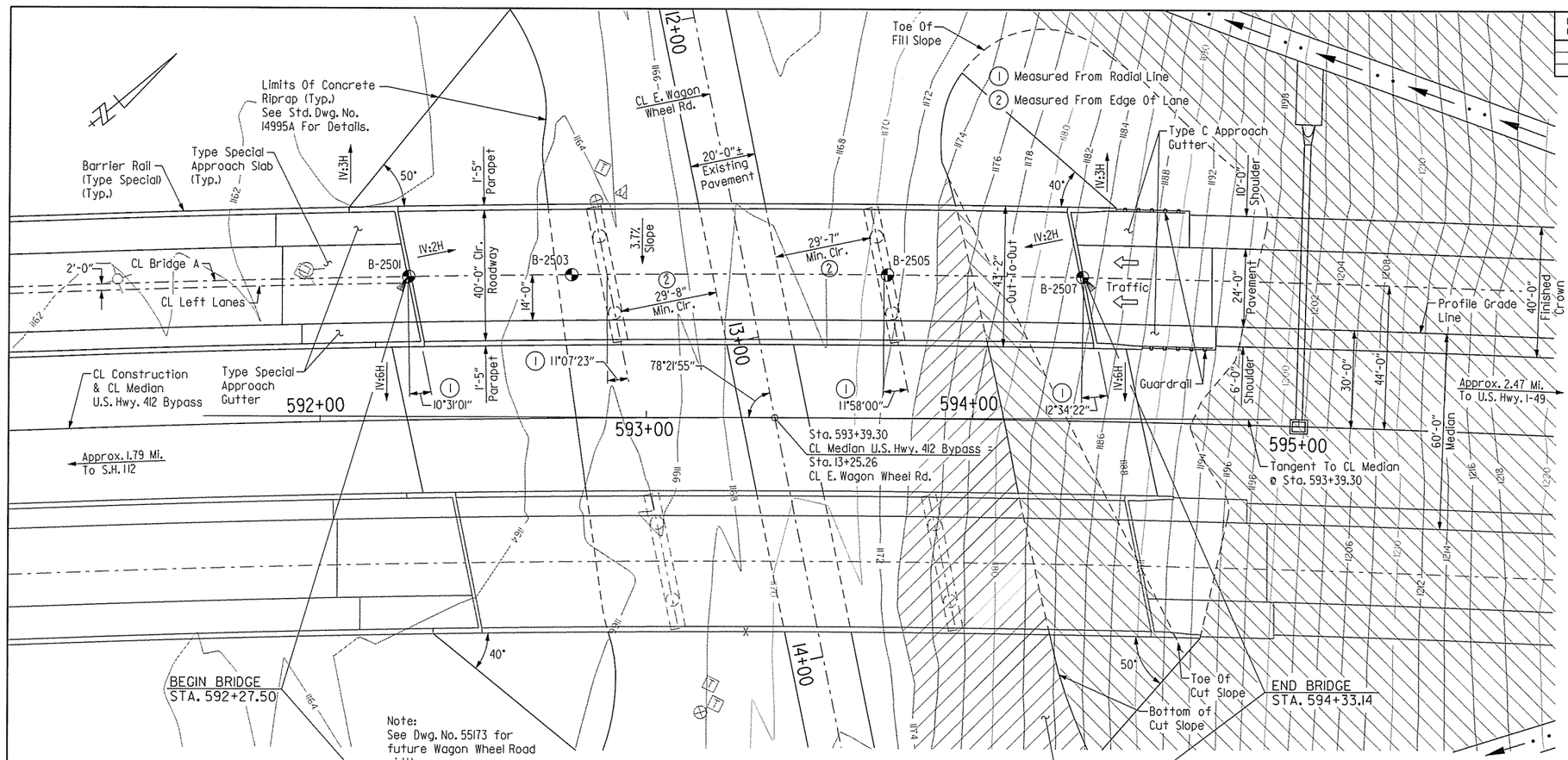
For GENERAL NOTES, see Dwg. No. 55171.

For BORING LEGEND, see Dwg. No. 55170.

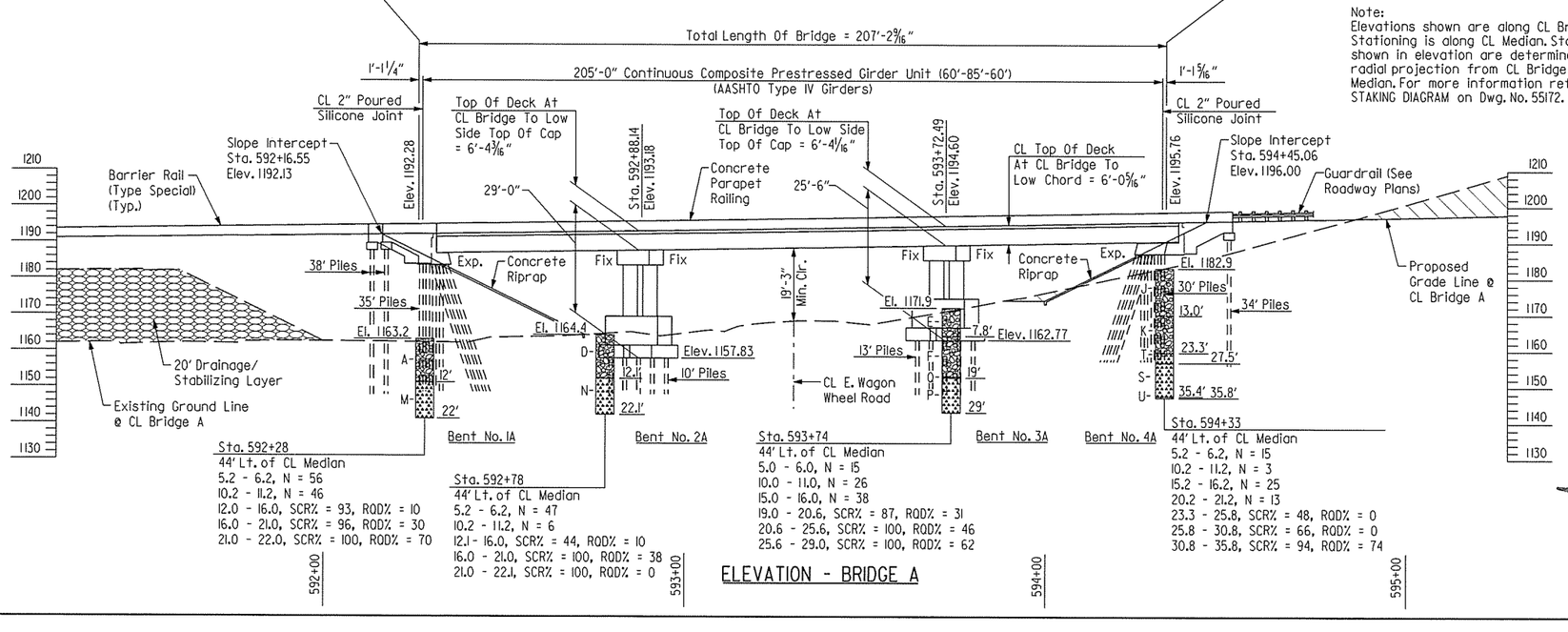



**VERTICAL CURVE DATA**
U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge of Pavement)

**CL MEDIAN CURVE DATA**
PI = 593+18.77
Δ = 21°52'55.9" Rt.
D = 1°00'00"
T = 1107.60'
L = 2188.22'
e = .037 Ft./Ft.
R = 5729.58'




PLAN




ELEVATION - BRIDGE A

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55172.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
No. 8017
BRIDGE ENGINEER

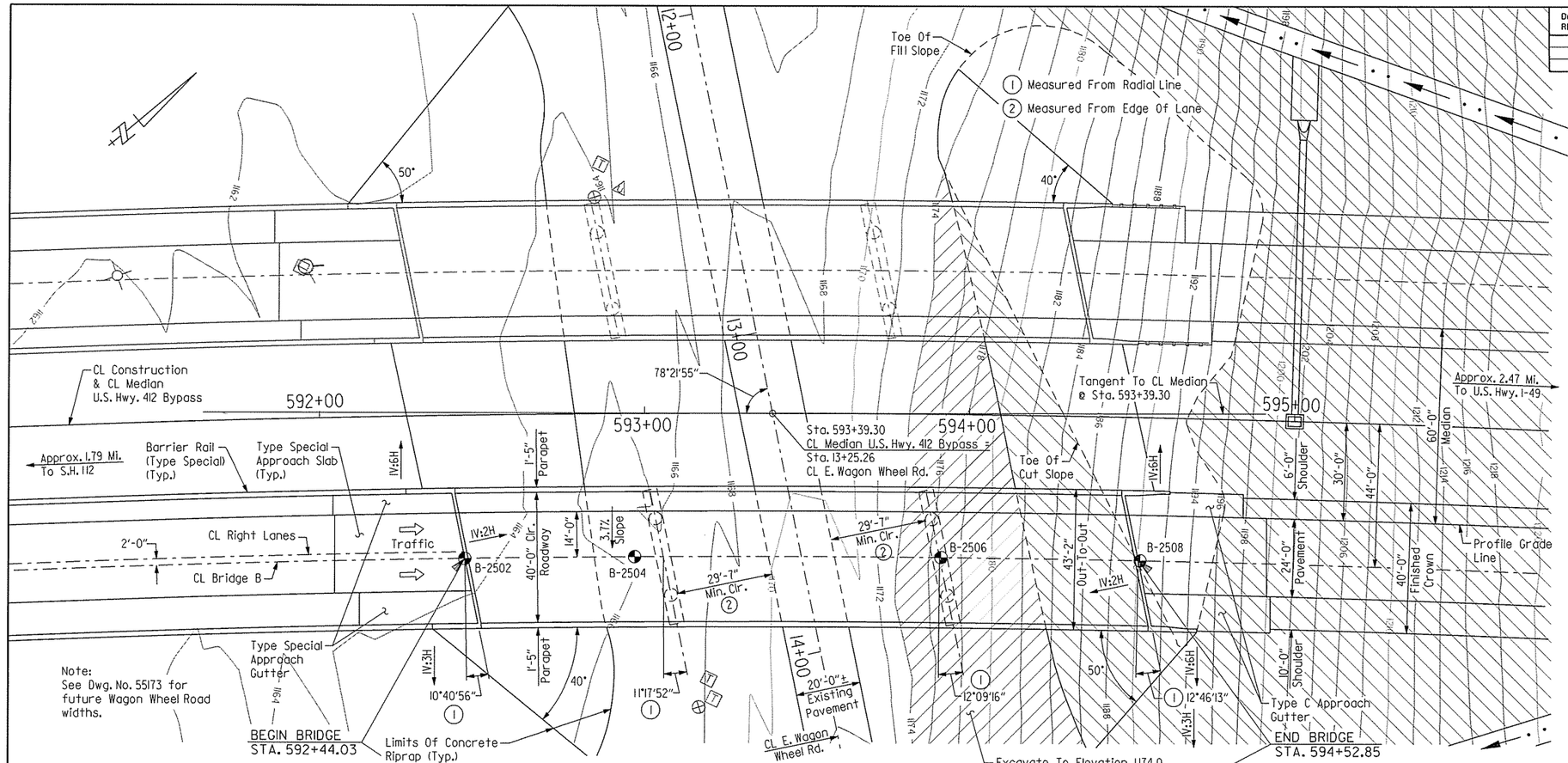
SHEET 1 OF 5
LAYOUT OF BRIDGE A
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: FEB. 2008
FILENAME: BCA0907X2_LI.DGN
SCALE: 1"=20'

BRIDGE NO. A7305 & B7305 DRAWING NO. 55169

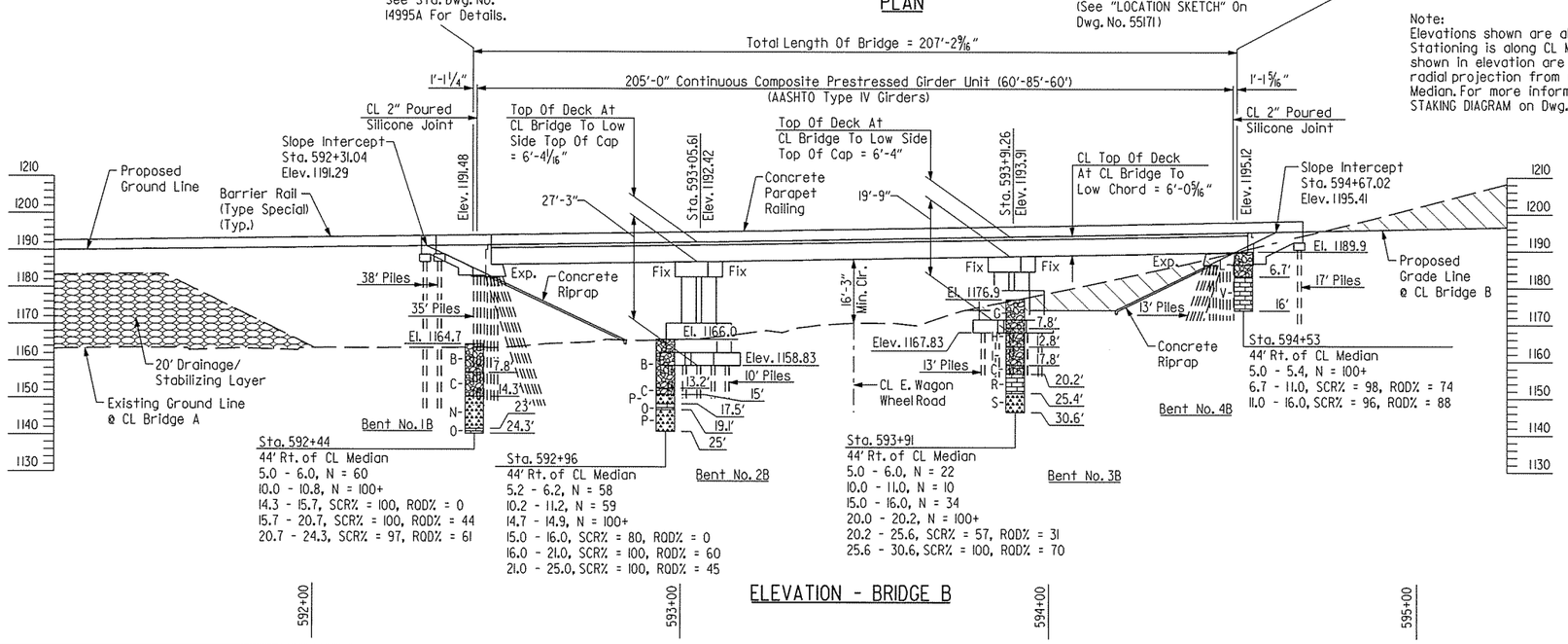
dropad 9/4/2014 9:59:11 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907X2_LI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 316 | 897 |
| | | | | (1) A7305 & B7305 | | LAYOUT | | 55170 |




PLAN

Note:
Elevations shown are along CL Bridge. Stationing is along CL Median. Stations shown in elevation are determined by a radial projection from CL Bridge to CL Median. For more information refer to STAKING DIAGRAM on Dwg. No. 55172.




ELEVATION - BRIDGE B

## BORING LEGEND

A - Brown, dense to very dense, clayey gravel with sand.
B - Red, very dense, clayey gravel with sand.
C - Red, very dense, silty gravel with sand.
D - Red, loose to dense, silty gravel with sand.
E - Red, medium dense, clayey gravel with sand.
F - Red, medium dense to dense, silty gravel with sand.
G - Red, medium loose, clayey gravel with sand.
H - Red, loose, clayey gravel with sand.
I - Red, dense, silty gravel with sand.
J - Red, very loose to medium dense, clayey gravel with sand.
K - Red, medium dense, silty gravel with sand.
L - Light red, very dense, clayey gravel with sand.
M - Chert: White, lt. gray, gray, fresh to moderately weathered.
N - Chert: White, lt. gray, gray, fresh to highly weathered.
O - Limestone: Lt. gray, gray, fine to medium grain.
P - Chert: White, lt. gray, gray, tan, fresh to weathered.
Q - Chert: Fragmented.
R - Limestone: Lt. gray, gray, fresh to moderately weathered.
S - Chert: White, lt. gray, gray, tan, fresh to highly weathered.
T - Chert: Lt. gray, gray, weathered.
U - Limestone: Lt. gray, fresh, fine grain.
V - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.

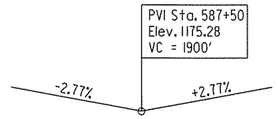
**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

Note:
Use Type C approach gutters (W=10'-0" & W=6'-0"), Type Special approach gutters (W=10'-0" & W=6'-0") & Type Special approach slab.
See Std. Dwg. No. 2016C for details of Type C approach gutter. For details of Type Special approach slabs, see Dwg. Nos. 55201 & 55202. For details of Type Special approach gutters, see Dwg. No. 55203.

For GENERAL NOTES, see Dwg. No. 55171.

**CL MEDIAN CURVE DATA**

PI = 593+18.77
Δ = 21°52'55.9" Rt.
D = 1°00'00"
T = 1107.60'
L = 2188.22'
e = .037 Ft./Ft.
R = 5729.58'




**VERTICAL CURVE DATA**
U.S. Highway 412 Bypass (Profile Grade Along Inside Edge of Pavement)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 5
LAYOUT OF BRIDGE B
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: FEB. 2008
FILENAME: BCA0907X2_L2.DGN
SCALE: 1"=20'

BRIDGE NO. A7305 & B7305 DRAWING NO. 55170

dropod 9/4/2014 9:59:14 AM
WORKSPACE: AHTD Bridge
V:\GL\TDCONL\TPROJECTS\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_L2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 317 | 897 |
| | | | | (1) A7305 & B7305 | | LAYOUT | | 55171 |

## GENERAL NOTES

BENCH MARK: TBM 72 T-72 RBR/Cap 1532.69' Rt. of Sta. 596+94.11
Elevation = 1178.05

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 interim revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$ = 0.125 Site Class = D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Slab, Parapets, Diaphragms) | f'c = 4000 psi |
| Class S - Bridge Concrete (Prestressed Girders) | See Girder Details |
| Class S - Bridge Concrete (Substructure) | f'c = 3500 psi |
| Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, GR. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, GR. 36) | Fy = 36,000 psi |

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons. Drive all piles in Bent 1 to a minimum penetration of 10' below existing ground. Piles in Bents 1 & 4 shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at Bents 2, 3 & 4 in accordance with SP Job CA0907 "EXPLORATORY HOLES". The quantities of exploratory holes shown are for bidding purposes only. The actual locations, number and depths of exploratory holes are to be determined in the field by the Engineer.

PREBORING: Preboring is required for all piling in Bents 2, 3 & 4 if exploratory holes indicate that the depth to rock is less than 8'. Preboring shall be to a 3' depth into material designated as Chert or Limestone on the boring legend. The actual size and depths of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored hole shall be backfilled in accordance with Subsection 805.08(a) to completely fill voids. The backfill and any required casings will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

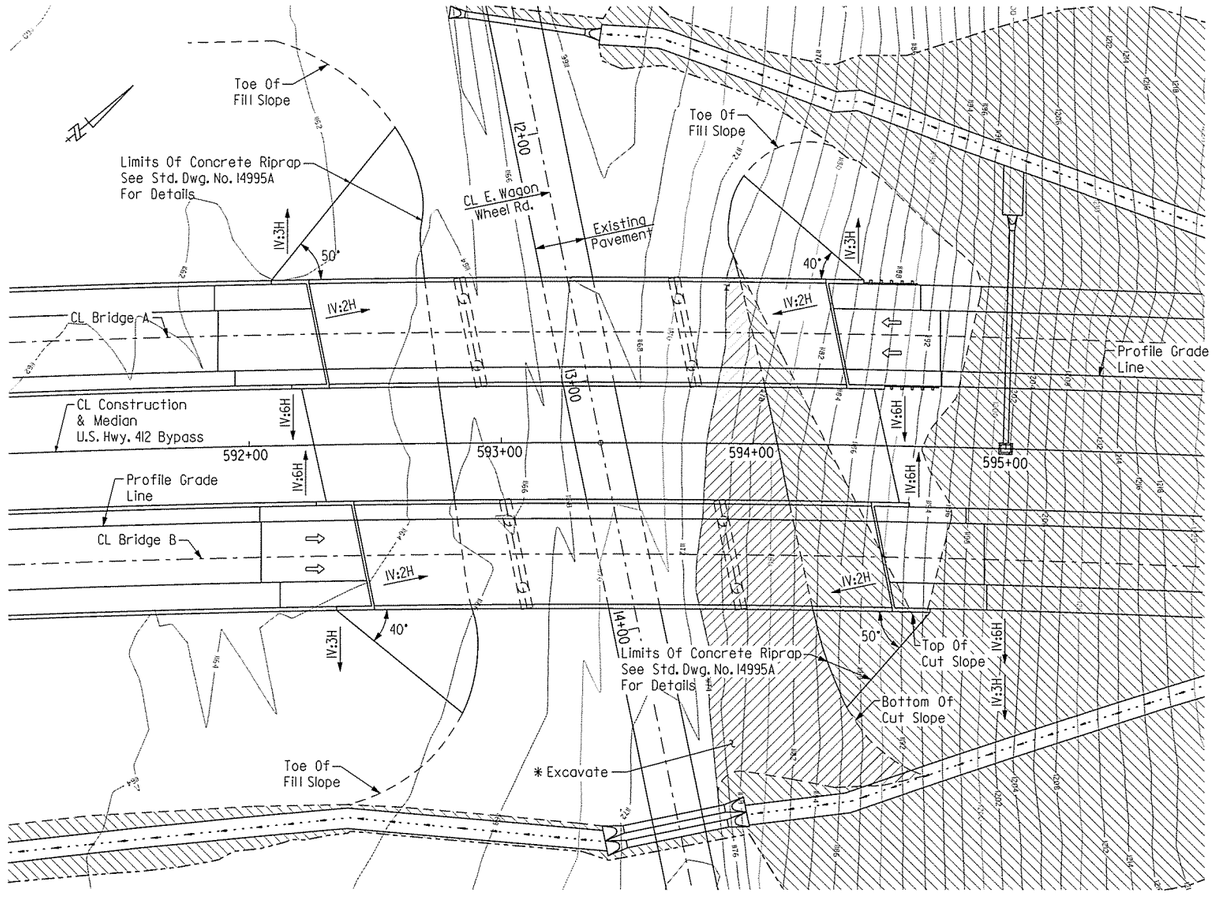
BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

BORING LOGS: Boring logs may be obtained from Programs and Contracts Division.

PILE FOOTING: The top of all bent footings shall be set a minimum of 2'-0" below finished ground. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled in accordance with Subsection 801.08.

| DETAIL DRAWINGS: | DRAWING NOS: |
|---|---|
| End Bents | 55174-55181 |
| Intermediate Bents | 55182-55184 |
| 205' Cont. Comp. Prestressed Concrete Girder Unit | 55185-55197 |
| Elastomeric Bearings | 55198 |
| Type Special 1 Approach Slab | 55199 & 55200 |
| Type Special 2 Approach Slab | 55201 & 55202 |
| Type Special 2 Approach Gutters | 55203 |
| Type C Approach Gutters | 55030C |
| Steel Piling | 55020 |
| Concrete Riprap | 55002 |




* The Contractor shall excavate to Elevation 1174. Approximately 1,400 cubic yards of excavation.

LOCATION SKETCH
Scale: 1" = 30'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

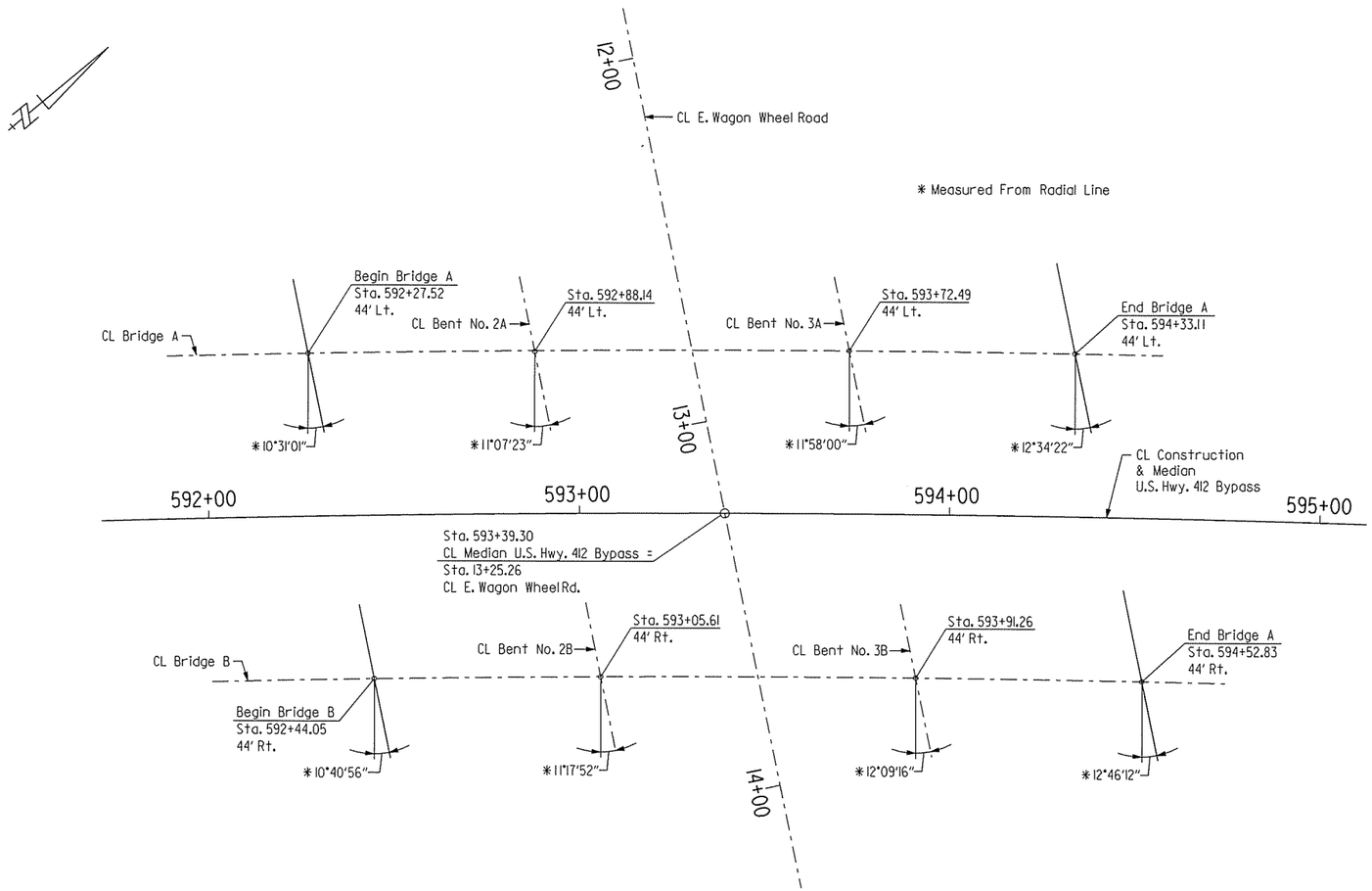
SHEET 3 OF 5
LAYOUT OF BRIDGE
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: FEB. 2008
FILENAME: BCA0907X2_L3.DGN
SCALE: 1"=20'

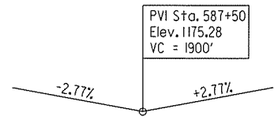
BRIDGE NO. A7305 & B7305 DRAWING NO. 55171

dropod 9/4/2014 9:59:16 AM
WORKSPACE: AHTD Bridge
\\GLITDCSN_LITProject$\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_L3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 318 | 897 |
| | | | | (1) A7305 & B7305 | | LAYOUT | | 55172 |




STAKING DIAGRAM




VERTICAL CURVE DATA
U.S. Highway 412 Bypass
(Profile Grade Along
Inside Edge of Pavement)

CL MEDIAN CURVE DATA
PI = 593+18.77
Δ = 21°52'55.9" Rt.
D = 1°00'00"
T = 1107.60'
L = 2188.22'
e = .037 Ft./Ft.
R = 5729.58'

Note:
Stationing for the project is along CL Median and CL Construction. CL of each bridge is on a horizontal curve concentric to CL Median. The bent stations shown are determined by projecting a radial line from CL Median to CL Bridge. The offsets shown are measured along radial lines. The total bridge length, span lengths, and CL joint to beginning and end of bridge dimensions are measured along CL Bridge. Deck elevations are at CL Bridge. All bents are constructed along lines skewed from radial lines.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 5
LAYOUT OF BRIDGE
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

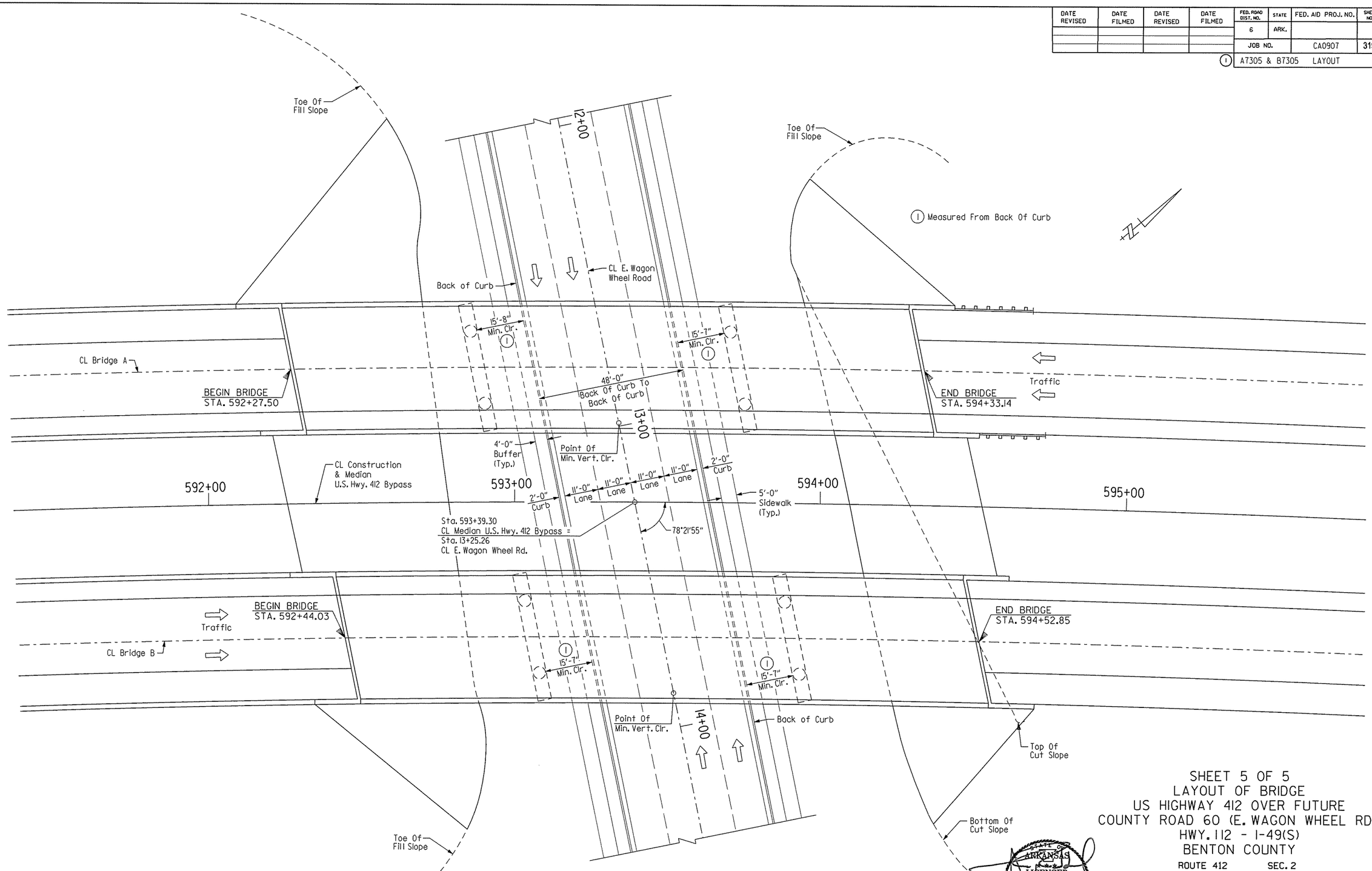
DRAWN BY: HEW DATE: FEB. 2008
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: FEB. 2008
FILENAME: BCA0907X2_L4.DGN
SCALE: 1"=20'

BRIDGE NO. A7305 & B7305 DRAWING NO. 55172

dropod 9/4/2014 9:59:17 AM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_L4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 319 | 897 |
| (1) A7305 & B7305 | | LAYOUT | | 55173 |




PLAN

(Showing Horizontal Clearance With Future Improvements To E. Wagon Wheel Road)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 5 OF 5
# LAYOUT OF BRIDGE
# US HIGHWAY 412 OVER FUTURE COUNTY ROAD 60 (E. WAGON WHEEL RD.)
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

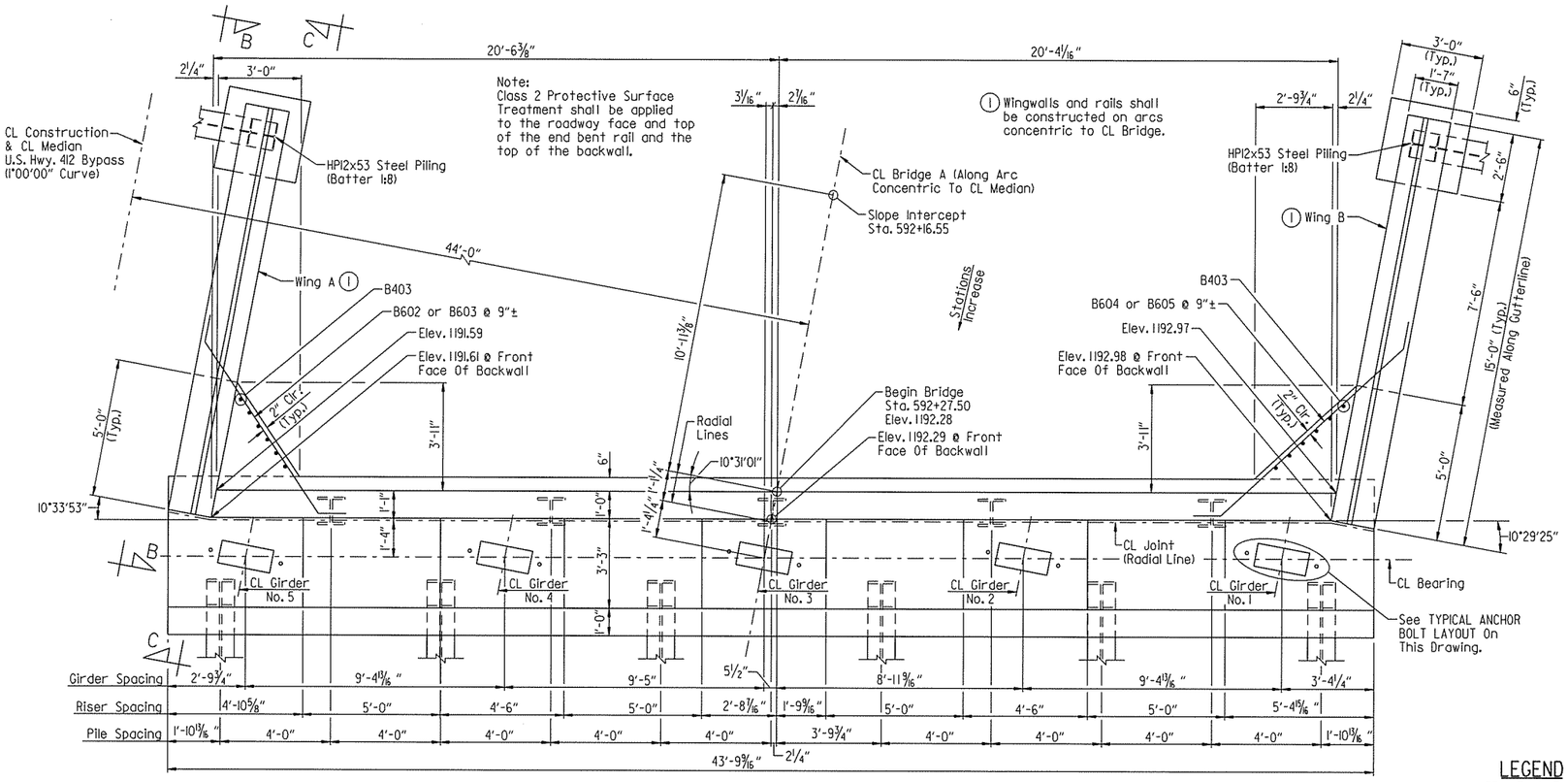
LITTLE ROCK, ARK.

DRAWN BY: SRY DATE: FEB. 2008 FILENAME: BCA0907X2_L5.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: 1"=15'
DESIGNED BY: MRA DATE: FEB. 2008

BRIDGE NO. A7305 & B7305 DRAWING NO. 55173

dropod 9/4/2014 9:59:17 AM
WORKSPACE: AHTD Bridges
\\GLITDCONJLTProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_L5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 320 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55174 |

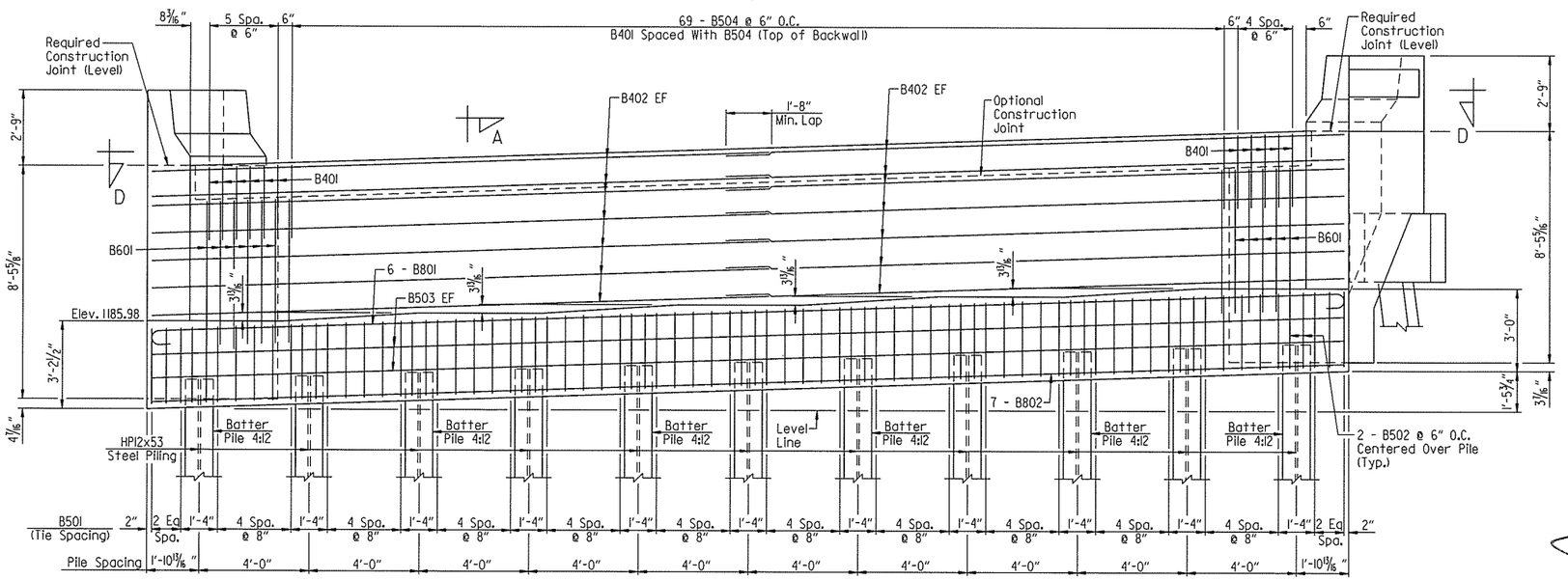



PLAN - END BENT NO. 1A

Scale: 3/8" = 1'-0"

LEGEND

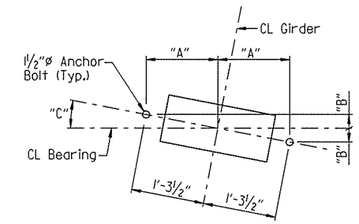
EF = Each Face




ELEVATION - END BENT NO. 1A

(Looking Back)

Scale: 3/8" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT

Scale: 3/4" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "s" and be poured in the dry. all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e).

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55176 & 55177.

For details of elastomeric bearing pads, see Dwg. No. 55198.

For BAR LIST - PER BENT (BENTS 1A & 1B) & BAR BENDING DIAGRAM, see Dwg. No. 55177.

For SECTION A-A & D-D, see Dwg. No. 55177.

For VIEW B-B & C-C, see Dwg. No. 55176.

TABLE OF VARIABLES

| Bent No. | Girder No. | "A" | "B" | "C" |
|---|---|---|---|---|
| 1A | 1 | 1'-3 1/4" | 2 7/8" | 10°47'26" |
| | 2 | 1'-3 1/4" | 2 5/16" | 10°49'32" |
| | 3 | 1'-3 1/4" | 2 5/16" | 10°49'32" |
| | 4 | 1'-3 1/4" | 2 5/16" | 10°49'32" |
| | 5 | 1'-3 1/4" | 2 5/16" | 10°51'38" |

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

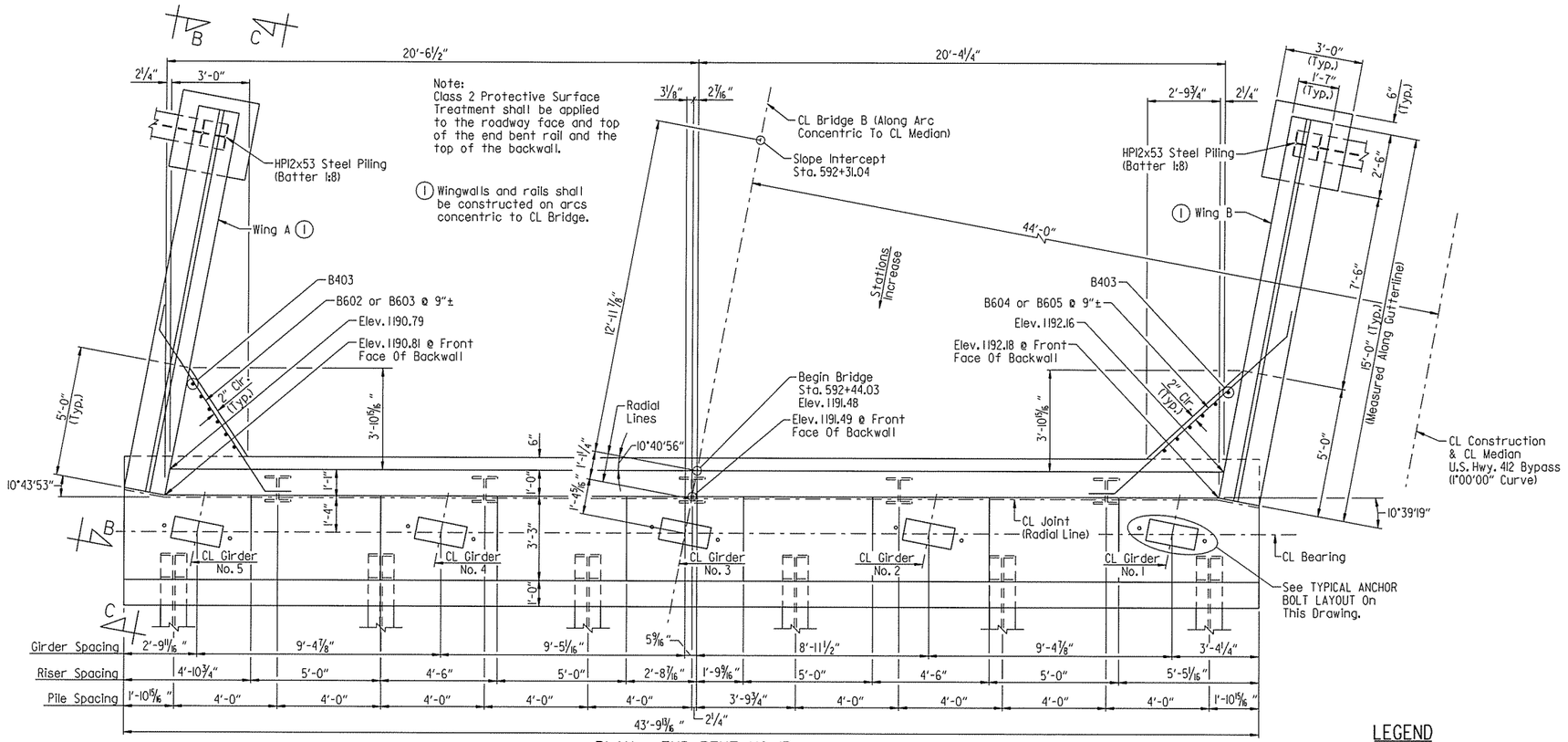
SHEET 1 OF 8
DETAILS OF END BENTS
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A1.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55174

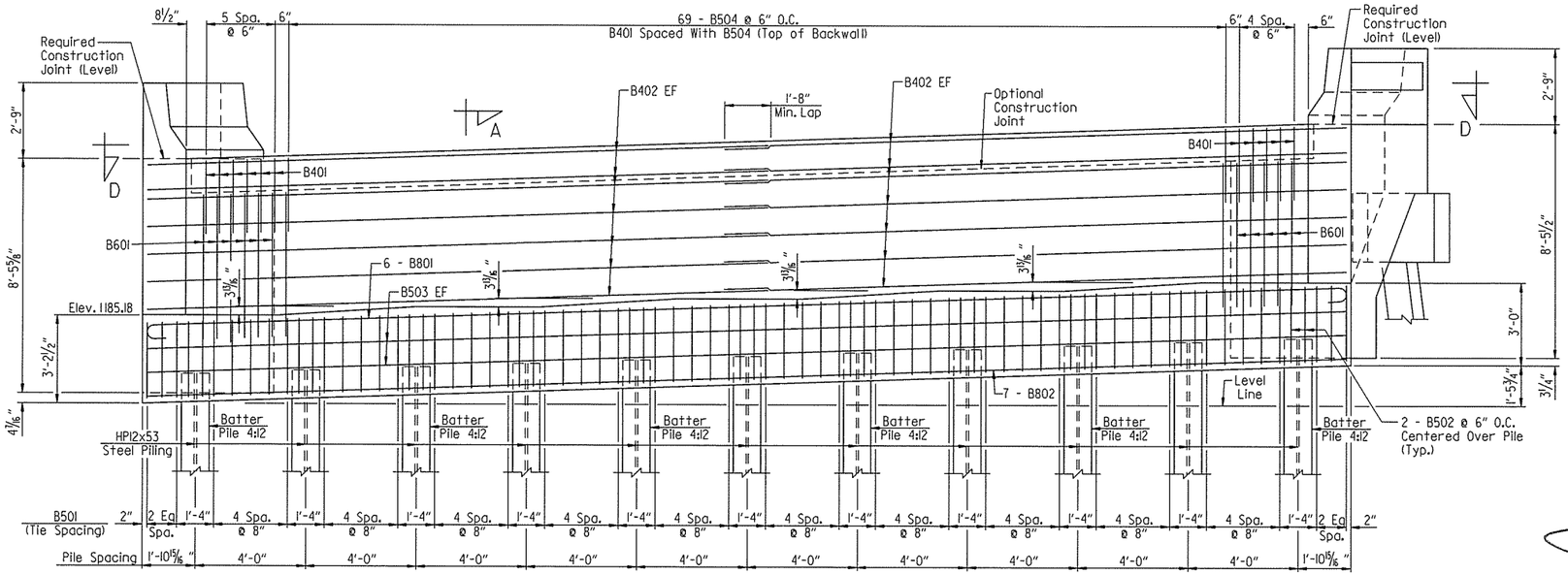
dropod 9/4/2014 9:59:18 AM
WORKSPACE: AHTD Br Std's
\\GLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_A1.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 321 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55175 |




PLAN - END BENT NO. 1B
Scale: ⅜" = 1'-0"

LEGEND
EF = Each Face




ELEVATION - END BENT NO. 1B
(Looking Back)
Scale: ⅜" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e).

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, See LAYOUT.

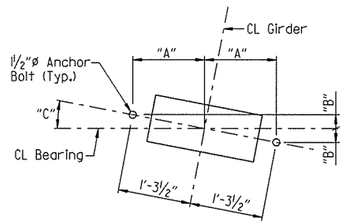
Notes:
For details of wing & rail, see Dwg. Nos. 55176 & 55177.

For details of elastomeric bearing pads, see Dwg. No. 55198.

For BAR LIST - PER BENT (BENTS 1A & 1B) & BENDING DIAGRAM, see Dwg. No. 55177.

For SECTION A-A & D-D, see Dwg. No. 55177.

For VIEW B-B & C-C, see Dwg. No. 55176.




TYPICAL ANCHOR BOLT LAYOUT
Scale: ¾" = 1'-0"

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| Bent No. | Girder No. | "A" | "B" | "C" |
| 1B | 1 | 1'-3⅜₁₆" | 2¹⁵⁄₁₆" | 10°57'34" |
| | 2 | 1'-3⅜₁₆" | 2¹⁵⁄₁₆" | 10°59'44" |
| | 3 | 1'-3⅜₁₆" | 2¹⁵⁄₁₆" | 10°59'44" |
| | 4 | 1'-3⅜₁₆" | 2¹⁵⁄₁₆" | 10°59'44" |
| | 5 | 1'-3⅜₁₆" | 2¹⁵⁄₁₆" | 11°01'55" |

SHEET 2 OF 8
DETAILS OF END BENTS
US HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

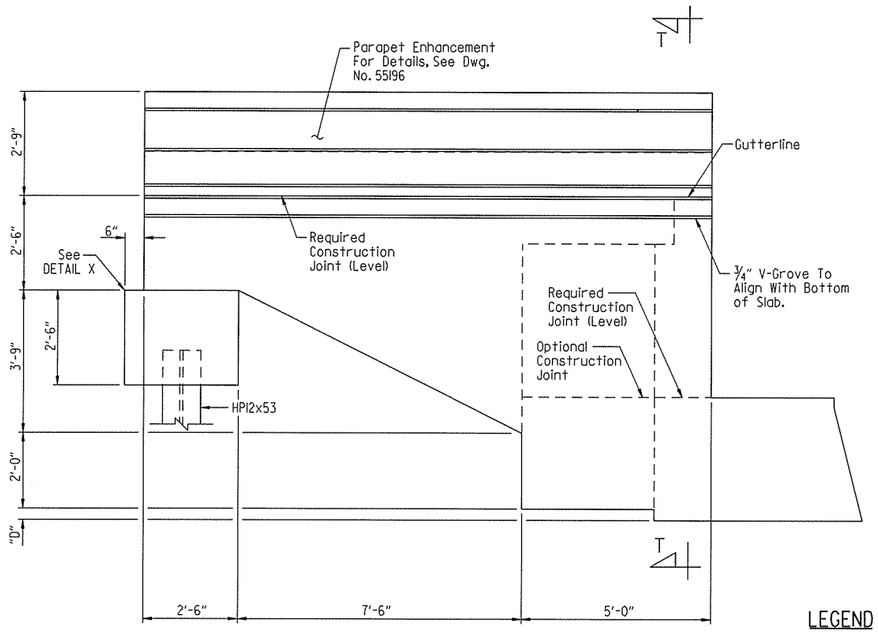
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A2.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55175

ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
BRIDGE ENGINEER

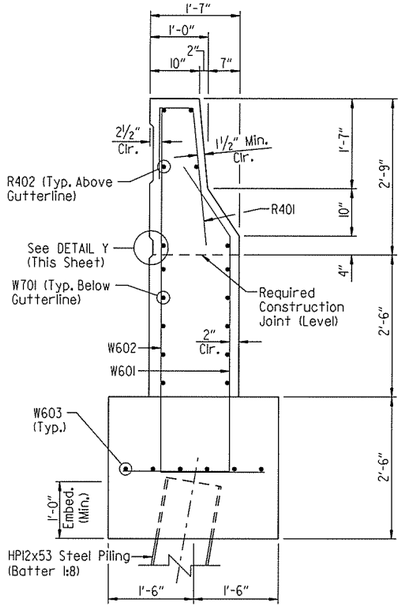
drgood 9/4/2014 9:59:18 AM
WORKSPACE: AHTD Bridge
\\CLITDOT\LITProjects\2005\0598\680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_A2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 322 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55176 |

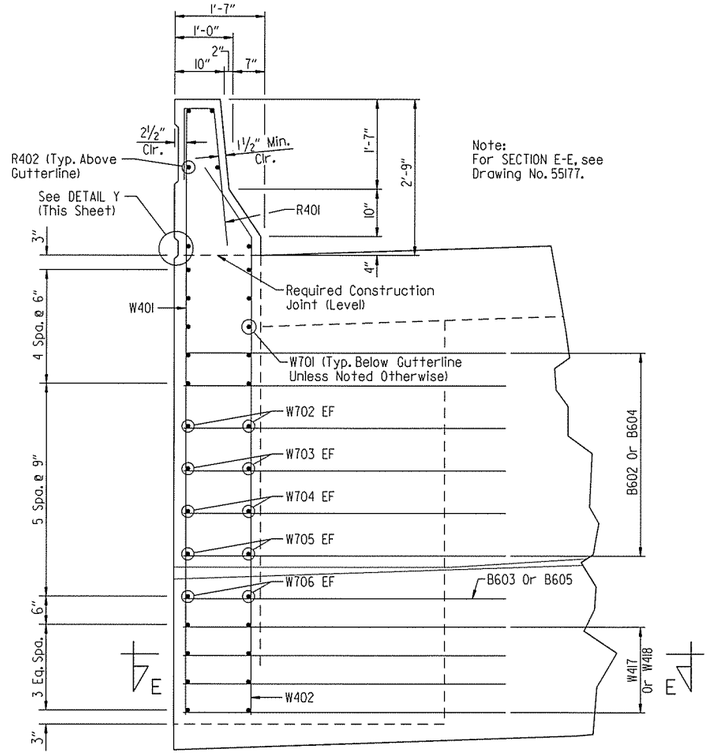



## VIEW B-B
Scale: 1/2" = 1'-0"

LEGEND
FF = Front Face
BF = Back Face
EF = Each Face

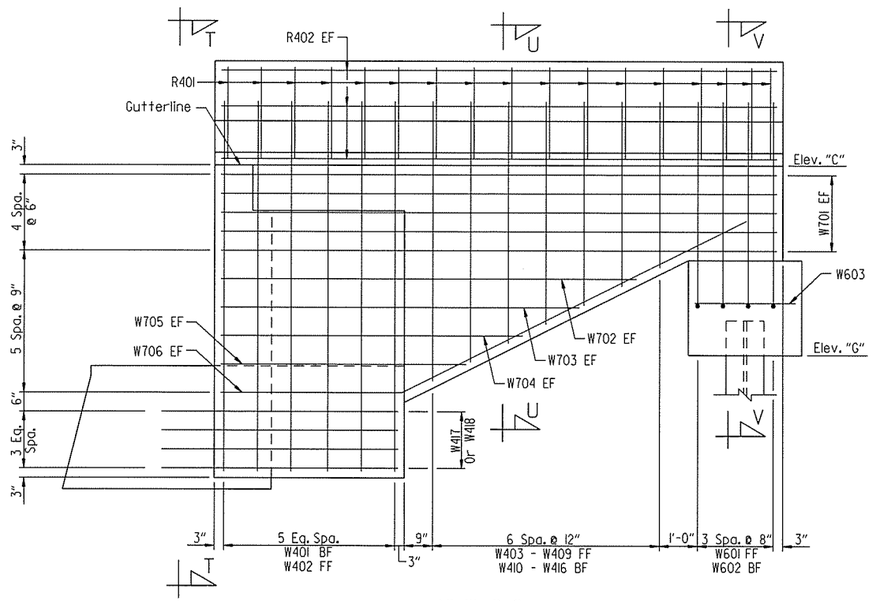



## VIEW V-V
Scale: 3/4" = 1'-0"

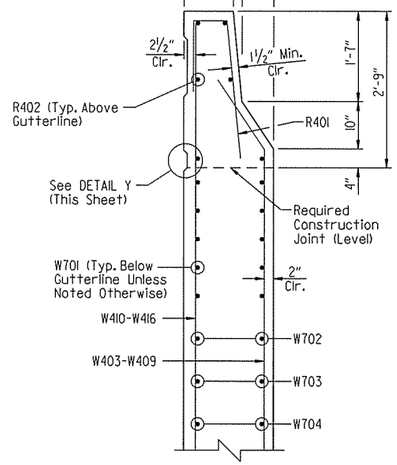



Note:
For SECTION E-E, see Drawing No. 55177.

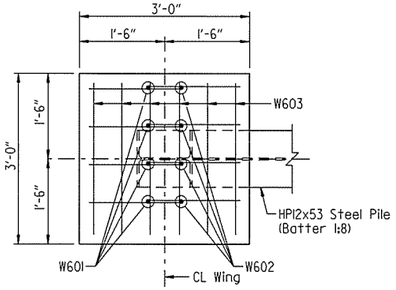
## SECTION T-T
Scale: 3/4" = 1'-0"



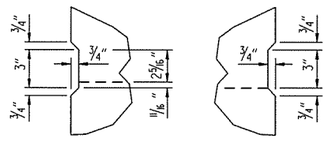

## VIEW C-C
Scale: 1/2" = 1'-0"




## VIEW U-U
Scale: 3/4" = 1'-0"




## DETAIL X
(Plan Of Wing Pile Footing)
Scale: 3/8" = 1'-0"




LOW SIDE HIGH SIDE

## DETAIL Y
Scale: NTS

| TABLE OF VARIABLES | | | | | | |
|---|---|---|---|---|---|---|
| Bent No. | Wing | "C" | "D" | "E" | "F" | "G" |
| IA | A | 1191.39 | 4 1/16" | 8 3/16" | | 1186.39 |
| | B | 1192.79 | 3 1/16" | | 6" | 1187.79 |
| IB | A | 1190.59 | 4 1/16" | 8 1/2" | | 1185.59 |
| | B | 1191.97 | 3 1/4" | | 6" | 1186.97 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-5-14
BRIDGE ENGINEER

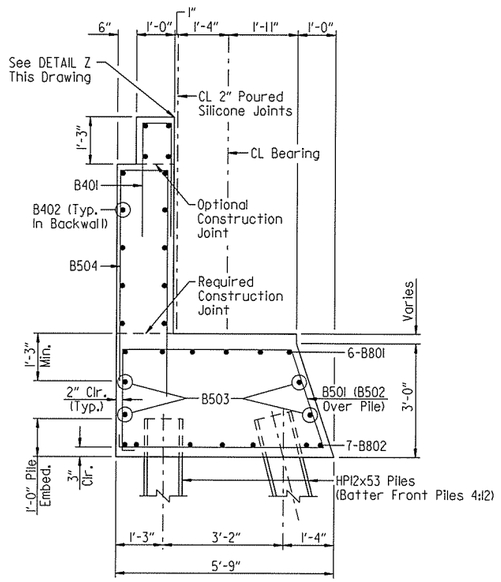
SHEET 3 OF 8
DETAILS OF END BENTS
US HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A3.DGN
SCALE: AS SHOWN

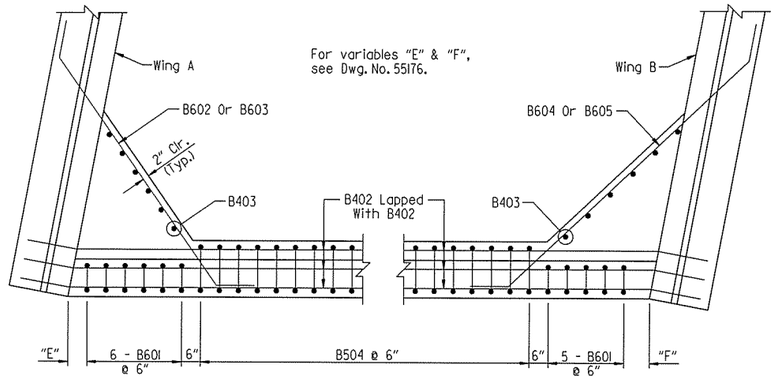
BRIDGE NO. A7305 & B7305 DRAWING NO. 55176

drgood
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_A3.dgn
9/4/2014 9:59:19 AM
REVISED DATE:

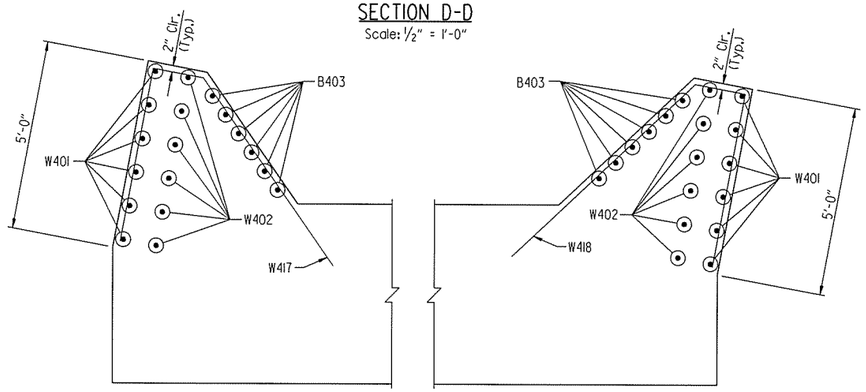
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 323 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55177 |




SECTION A-A
Scale: ½" = 1'-0"

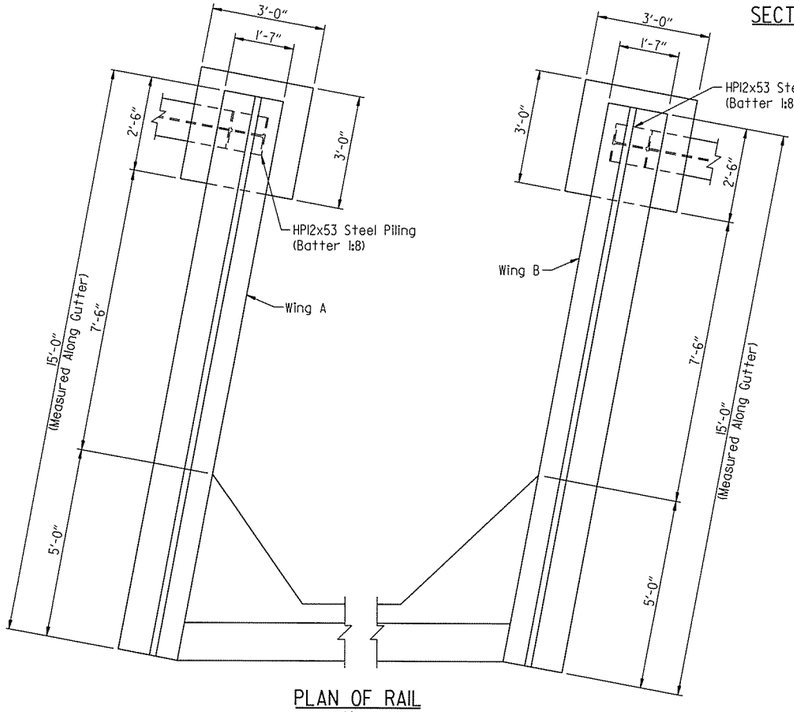



SECTION D-D
Scale: ½" = 1'-0"

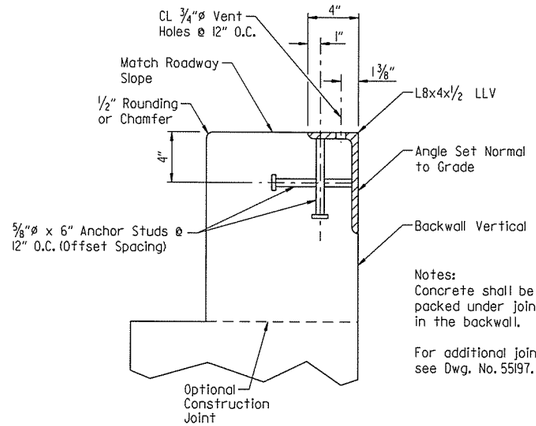



SECTION E-E (WING A)
Scale: ½" = 1'-0"

SECTION E-E (WING B)
Scale: ½" = 1'-0"




PLAN OF RAIL
Scale: ½" = 1'-0"




DETAIL Z
Scale: N.T.S.

Notes:
Concrete shall be hand packed under joint armor in the backwall.

For additional joint details, see Dwg. No. 55197.

NOTE:
Profile of backwall angle shall be established based on the vertical curve in conjunction with the skew.

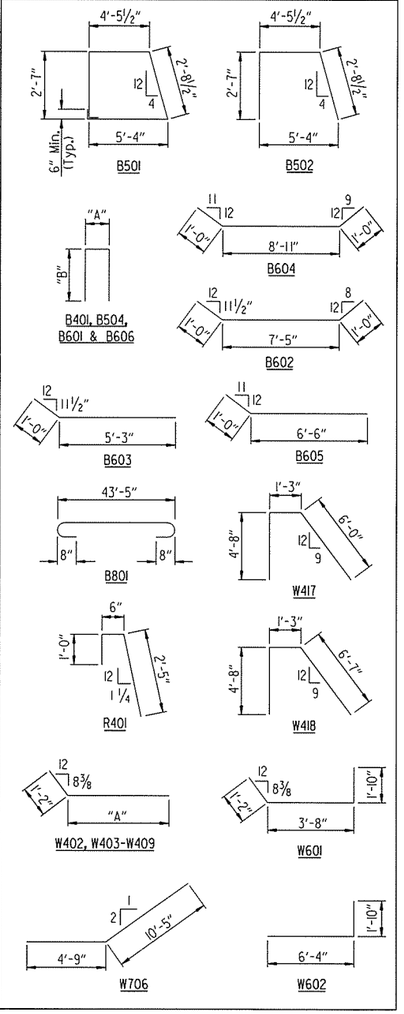
## BAR LIST - PER BENT (BENTS IA & IB)

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|
| B401 | 80 | 6'-6" | 8" | 3'-0" | 2" |
| B402 | 28 | 22'-7" | | | Str. |
| B403 | 12 | 6'-8" | | | Str. |
| | | | | | |
| B501 | 56 | 15'-7" | | | 2½" |
| B502 | 22 | 9'-6½" | | | 2½' |
| B503 | 4 | 43'-6" | | | Str. |
| B504 | 69 | 13'-1½" | 1'-2" | 6'-1" | 2½" |
| | | | | | |
| B601 | 11 | 12'-6" | 8" | 6'-1" | 4½" |
| B602 | 6 | 9'-5" | | | 4½" |
| B603 | 1 | 6'-3" | | | 4½" |
| B604 | 6 | 10'-11" | | | 4½" |
| B605 | 1 | 7'-6" | | | 4½" |
| | | | | | |
| B801 | 6 | 45'-3" | | | 6" |
| B802 | 7 | 43'-5" | | | Str. |
| | | | | | |
| R401 | 34 | 3'-9" | | | 2" |
| R402 | 12 | 14'-8" | | | Str. |
| | | | | | |
| W401 | 12 | 10'-8" | | | Str. |
| W402 | 12 | 9'-7" | 8'-5" | | 2" |
| W403 To W409 | 2 Each | 4'-2" To 7'-2" | 3'-0" To 6'-0" | | 2" |
| W410 To W416 | 2 Each | 5'-3" To 8'-3" | | | Str. |
| W417 | 4 | 11'-11" | | | 2" |
| W418 | 4 | 12'-5" | | | 2" |
| | | | | | |
| W601 | 8 | 5'-10" | 4'-8" | | 4½" |
| W602 | 8 | 6'-11" | | | Str. |
| W603 | 12 | 2'-8" | | | Str. |
| | | | | | |
| W701 | 20 | 14'-8" | | | Str. |
| W702 | 4 | 10'-11" | | | Str. |
| W703 | 4 | 9'-5" | | | Str. |
| W704 | 4 | 7'-11" | | | Str. |
| W705 | 4 | 6'-5" | | | Str. |
| W706 | 4 | 15'-2" | | | 5¼" |

Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of bars shown is for one bent only.

## BAR BENDING DIAGRAMS




Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE On Dwg. No. 55197 for additional information.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

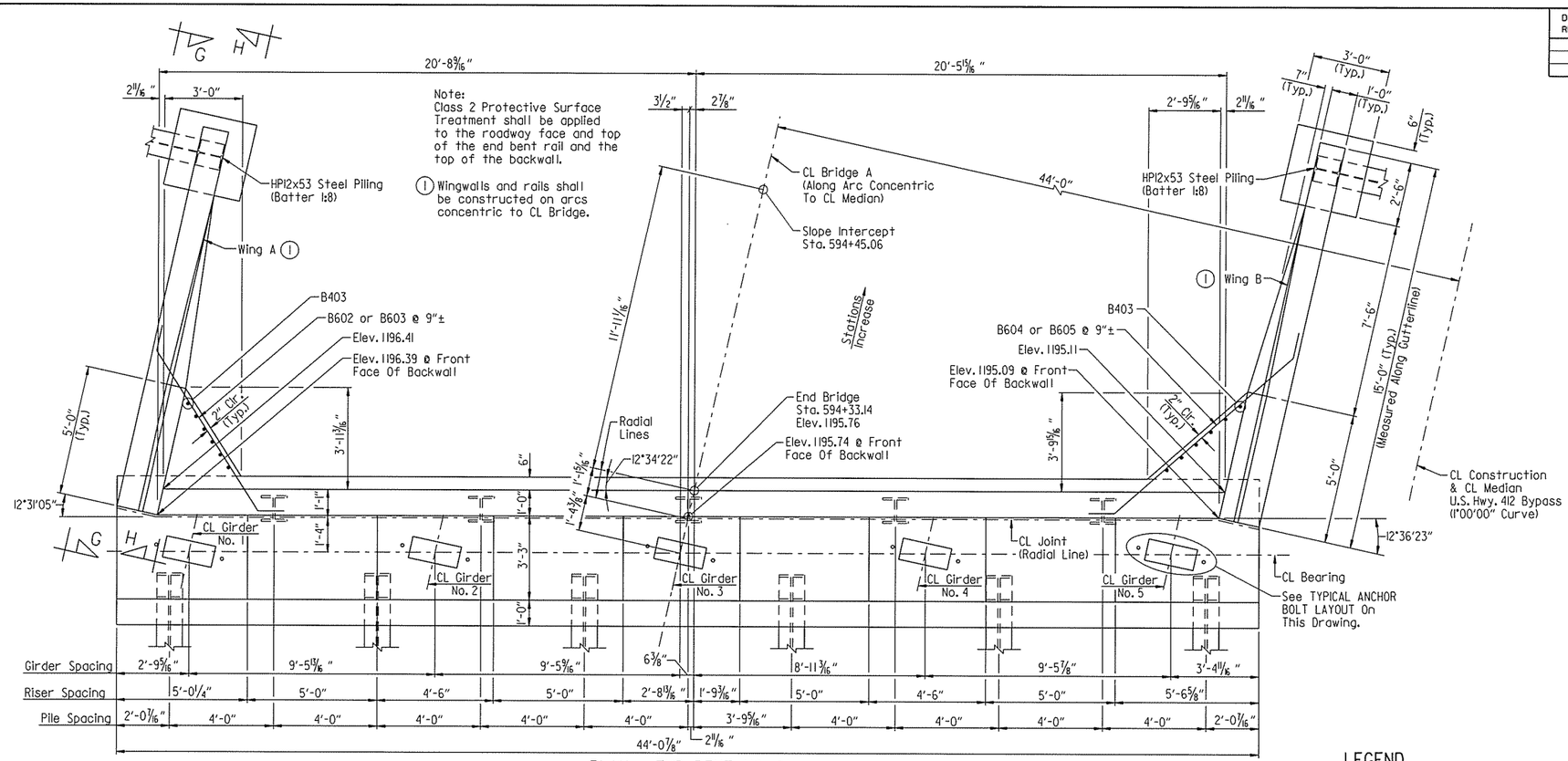
SHEET 4 OF 8
DETAILS OF END BENTS
US HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A4.DGN
SCALE: AS SHOWN

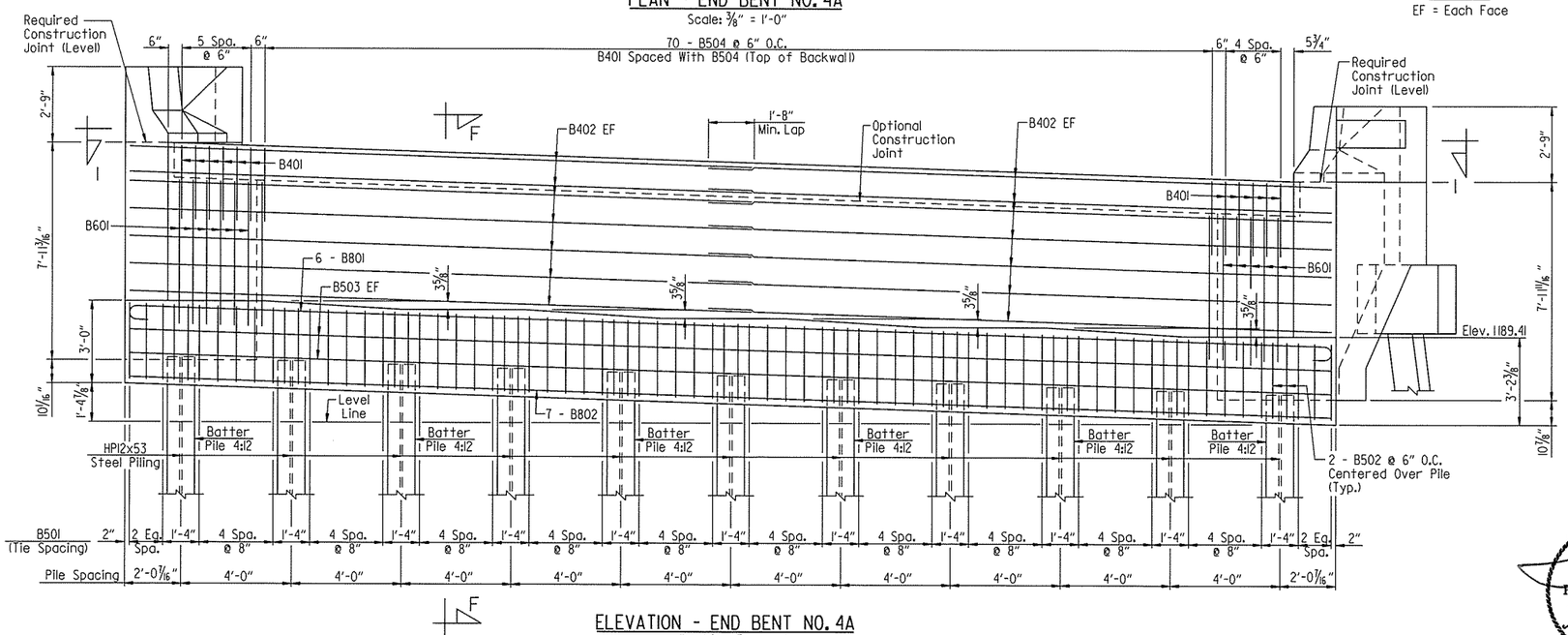
BRIDGE NO. A7305 & B7305 DRAWING NO. 55177

drgood 9/4/2014 9:59:20 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\20005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_A4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 324 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55178 |




PLAN - END BENT NO. 4A
Scale: 3/8" = 1'-0"




ELEVATION - END BENT NO. 4A
(Looking Forward)
Scale: 3/8" = 1'-0"

## LEGEND

EF = Each Face

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e).

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

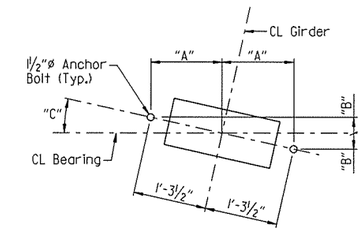
Notes:
For details of wing & rail, see Dwg. Nos. 55180 & 55181.

For details of elastomeric bearing pads, see Dwg. No. 55198.

For BAR LIST - PER BENT (BENTS 4A & 4B) & BENDING DIAGRAM, see Dwg. No. 55181.

For SECTION F-F & I-I, see Dwg. No. 55181.

For VIEW G-G & H-H, see Dwg. No. 55180.




TYPICAL ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| Bent No. | Girder No. | "A" | "B" | "C" |
| 4A | 1 | 1'-3 1/8" | 3 5/16" | 12°13'29" |
| | 2 | 1'-3 1/8" | 3 5/16" | 12°15'52" |
| | 3 | 1'-3 1/8" | 3 5/16" | 12°15'52" |
| | 4 | 1'-3 1/8" | 3 5/16" | 12°15'52" |
| | 5 | 1'-3 1/8" | 3 5/16" | 12°18'16" |

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
BRIDGE ENGINEER

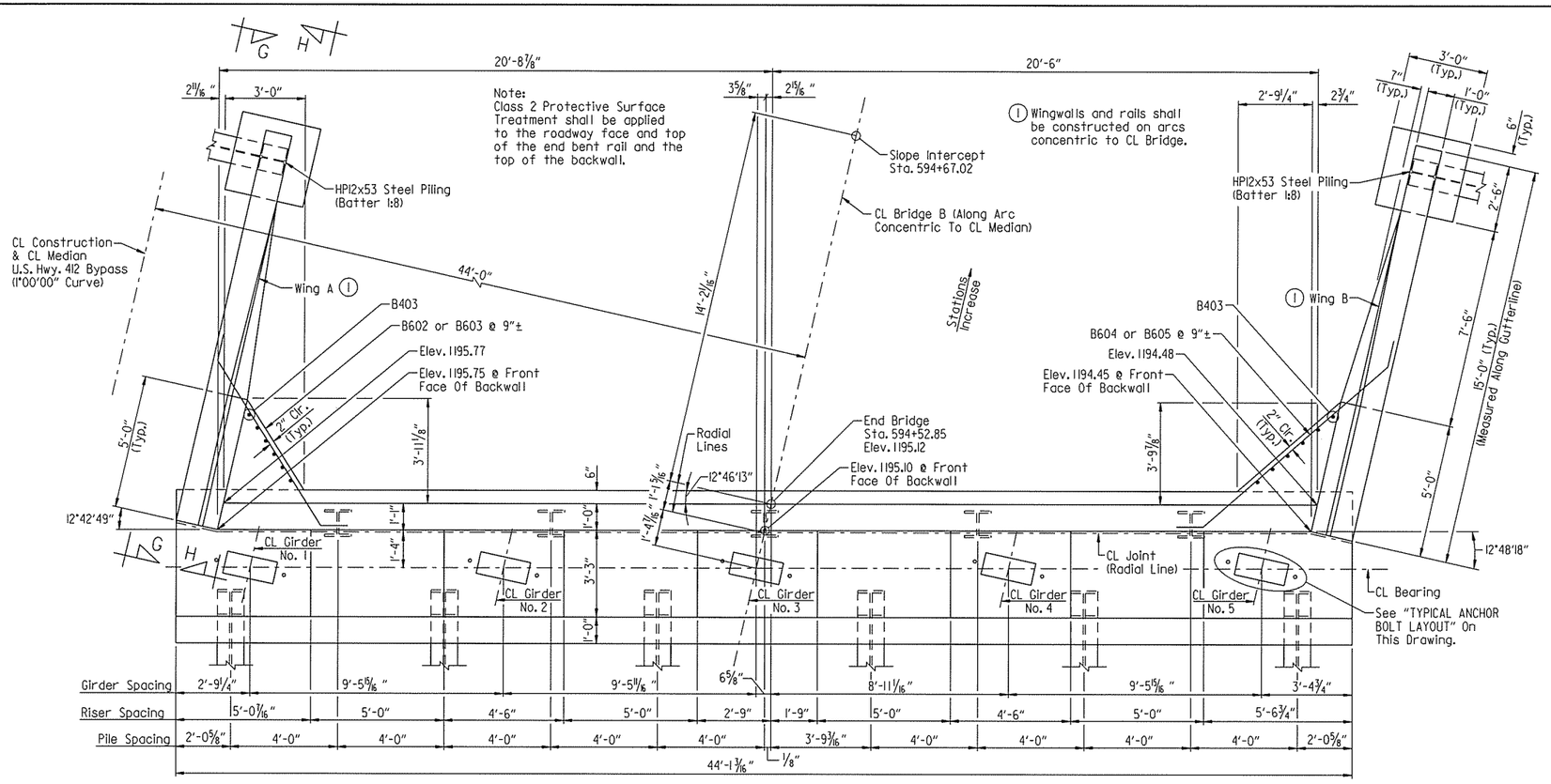
SHEET 5 OF 8
DETAILS OF END BENTS
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011 FILENAME: BCA0907X2_A5.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: JES DATE: OCT. 2011

BRIDGE NO. A7305 & B7305 DRAWING NO. 55178

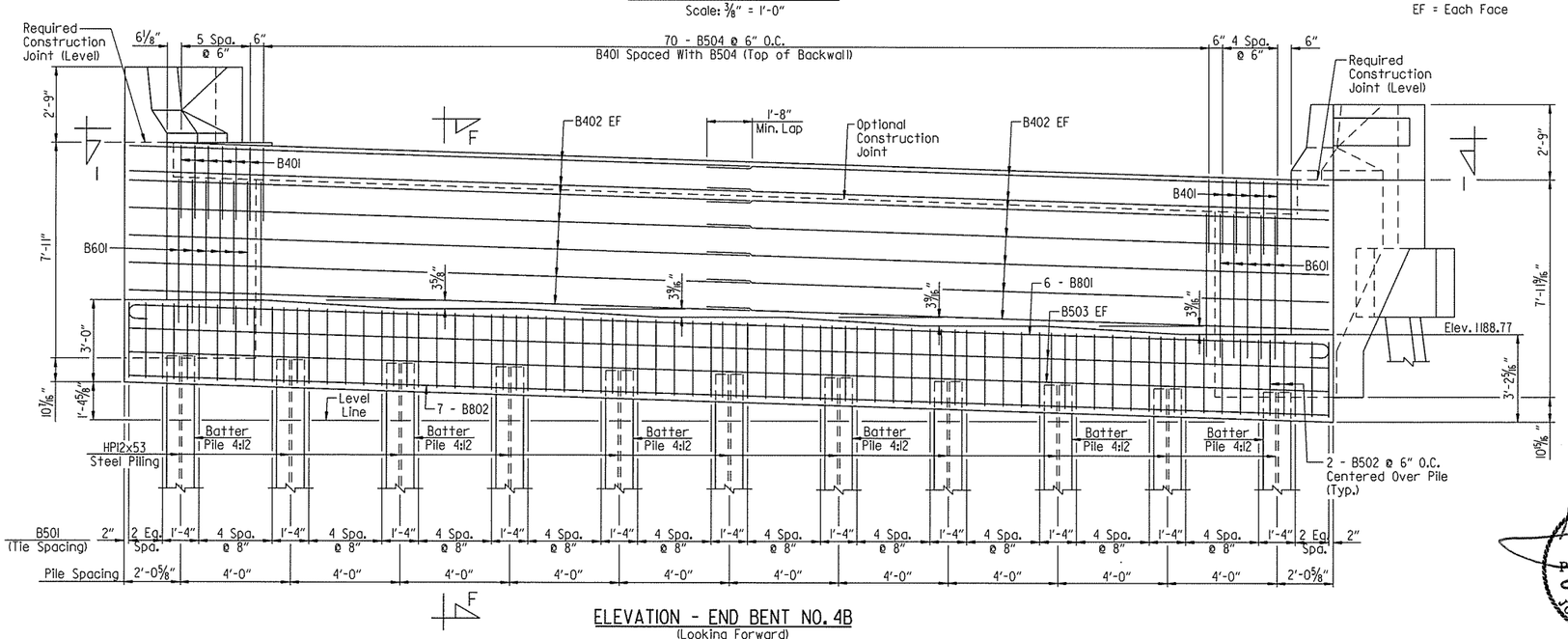
drgood 9/4/2014 9:59:20 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907X2_A5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 325 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55179 |




## PLAN - END BENT NO. 4B

Scale: ⅜" = 1'-0"




## ELEVATION - END BENT NO. 4B

(Looking Forward)
Scale: ⅜" = 1'-0"

## LEGEND

EF = Each Face

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, GR. 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e).

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

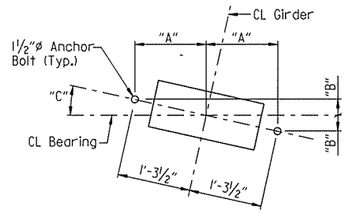
Notes:
For details of wing & rail, see Dwg. Nos. 55180 & 55181.

For details of elastomeric bearing pads, see Dwg. No. 55198.

For BAR LIST - PER BENT (BENTS 4A & 4B) & BENDING DIAGRAM, see Dwg. No. 55181.

For SECTION F-F & H-H, see Dwg. No. 55181.

For VIEW G-G & H-H, see Dwg. No. 55180.




## TYPICAL ANCHOR BOLT LAYOUT

Scale: ¾" = 1'-0"

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| Bent No. | Girder No. | "A" | "B" | "C" |
| 4B | 1 | 1'-3⅛" | 3⅝" | 12°24'56" |
| | 2 | 1'-3⅛" | 3⅝" | 12°27'24" |
| | 3 | 1'-3⅛" | 3⅝" | 12°27'24" |
| | 4 | 1'-3⅛" | 3⅝" | 12°27'24" |
| | 5 | 1'-3⅛" | 3⅜" | 12°29'53" |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

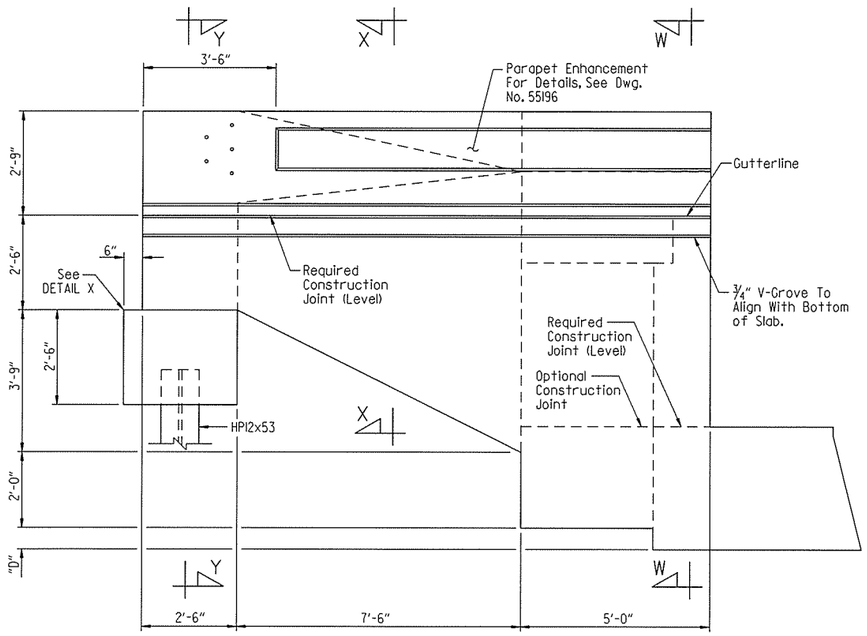
SHEET 6 OF 8
DETAILS OF END BENTS
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A6.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55179

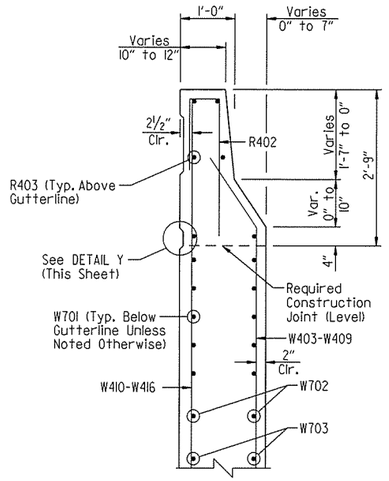
drgood 9/4/2014 9:59:21 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_A6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 326 | 897 |
| | | | | ① | A7305 & B7305 | END BENT DETAILS | | 55180 |

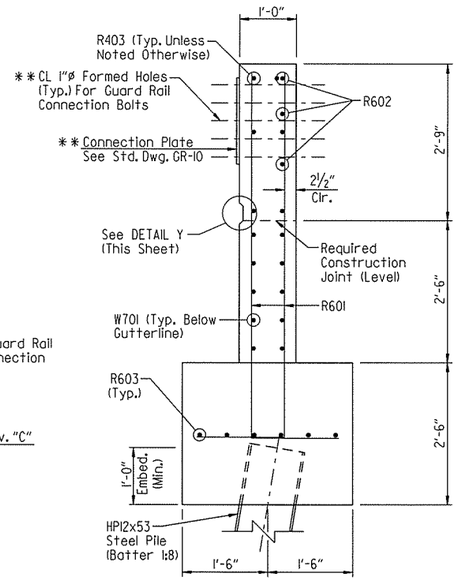



VIEW G-G
Scale: ½" = 1'-0"

LEGEND
FF = Front Face
BF = Back Face
EF = Each Face

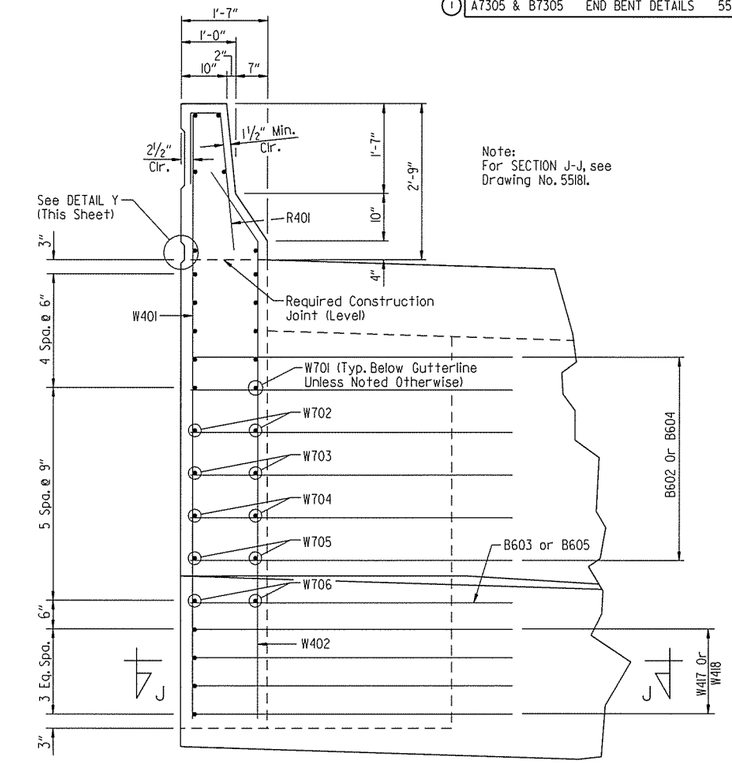



SECTION X-X
Scale: ¾" = 1'-0"



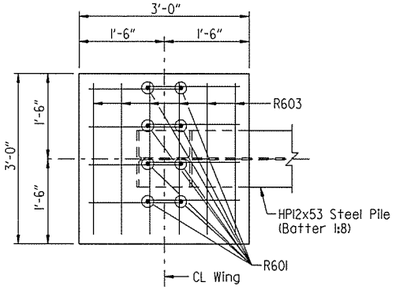

SECTION Y-Y
Scale: ¾" = 1'-0"

**Guard Rail Connection is not required on all bents. See Dwg. Nos. 55169 & 55170 for location of guard rail connections.



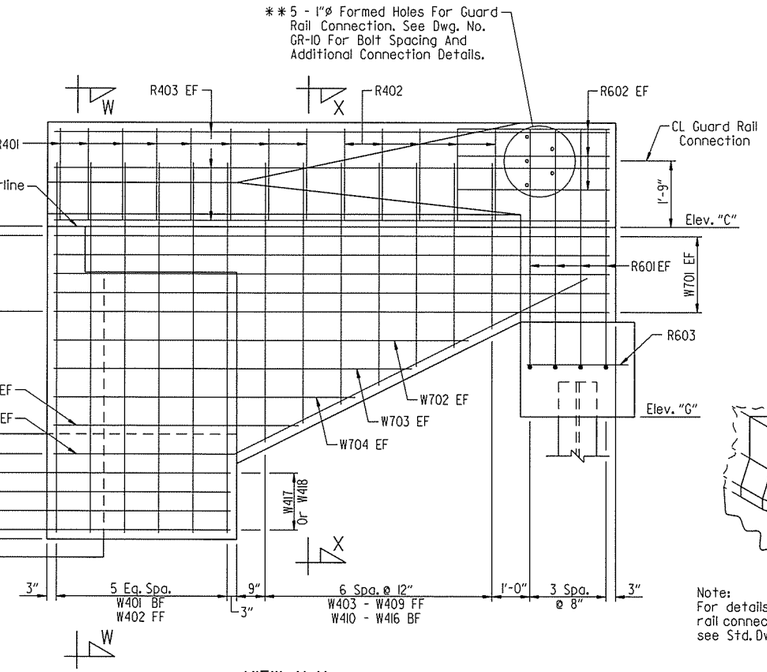

SECTION W-W
Scale: ¾" = 1'-0"

Note:
For SECTION J-J, see Drawing No. 55181.

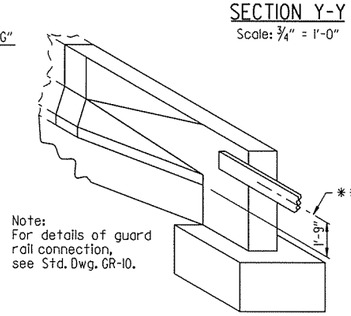



DETAIL X
(Plan Of Wing Pile Footing)
Scale: ⅜" = 1'-0"

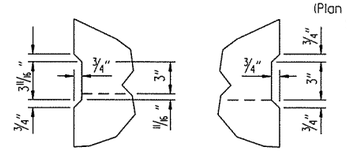
| TABLE OF VARIABLES | | | | | | |
|---|---|---|---|---|---|---|
| Bent No. | Wing | "C" | "D" | "E" | "F" | "G" |
| 4A | A | 1196.71 | 10 1/16" | 6" | | 1191.71 |
| | B | 1195.37 | 10 7/8" | | 5¾" | 1190.37 |
| 4B | A | 1196.08 | 10 1/16" | 6⅛" | | 1191.08 |
| | B | 1194.74 | 10 5/16" | | 6" | 1189.74 |




VIEW H-H
Scale: ½" = 1'-0"




THREE DIMENSIONAL VIEW OF RAIL
Scale: NTS




LOW SIDE HIGH SIDE

DETAIL Y
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

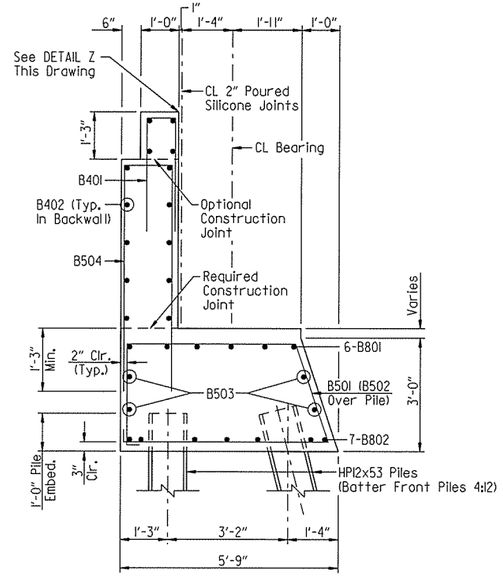
SHEET 7 OF 8
DETAILS OF END BENTS
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A7.DGN
SCALE: AS SHOWN

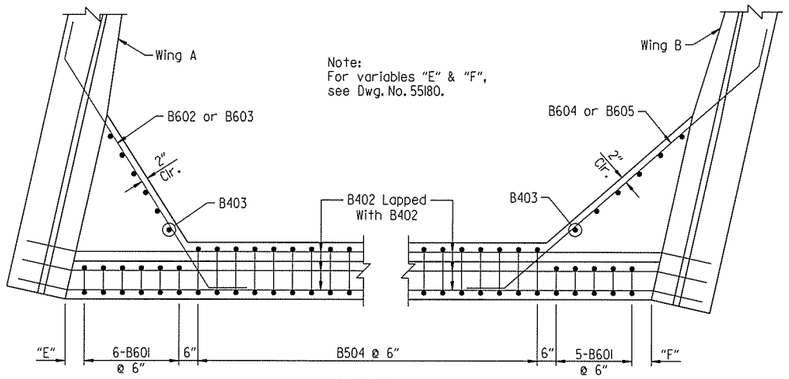
BRIDGE NO. A7305 & B7305 DRAWING NO. 55180

drgood 9/4/2014 9:59:21 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_A7.dgn
REVISED DATE:

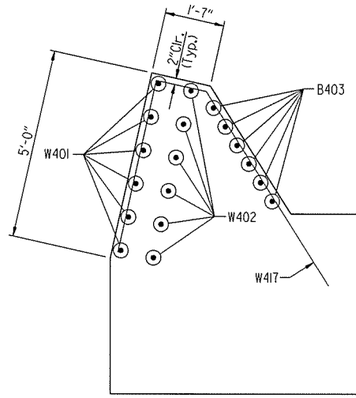
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 327 | 897 |
| | | | | (1) A7305 & B7305 | | END BENT DETAILS | | 55181 |



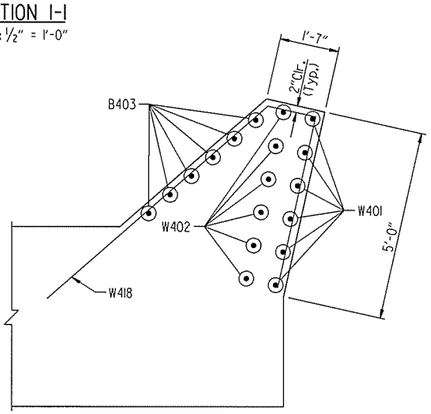

SECTION F-F
Scale: ½" = 1'-0"



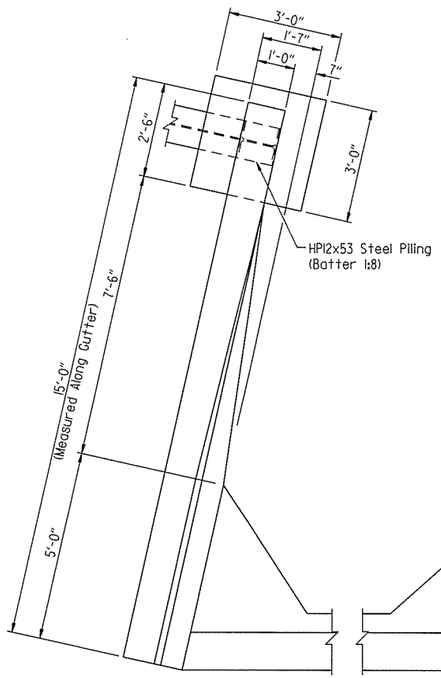

SECTION I-I
Scale: ½" = 1'-0"

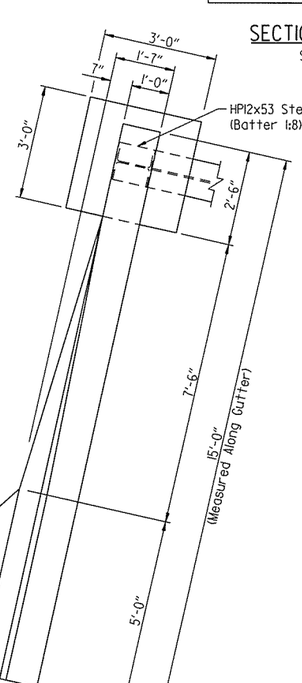



SECTION J-J (WING A)
Scale: ½" = 1'-0"

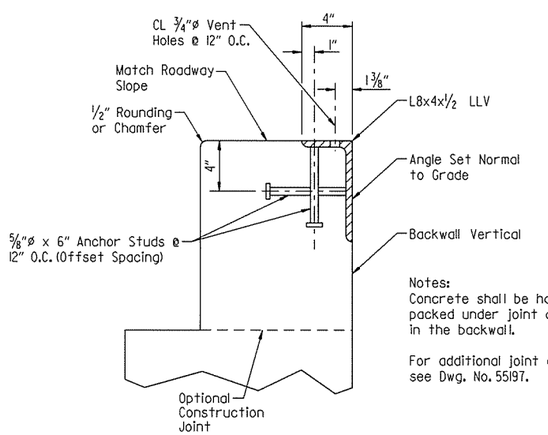



SECTION J-J (WING B)
Scale: ½" = 1'-0"




PLAN OF RAIL
Scale: ½" = 1'-0"




DETAIL "Z"
Scale: NTS

Notes:
Concrete shall be hand packed under joint armor in the backwall.

For additional joint details, see Dwg. No. 55197.

NOTE:
Profile of backwall angle shall be established based on the vertical curve in conjunction with the skew.

## BAR LIST - PER BENT (BENTS 4A & 4B)

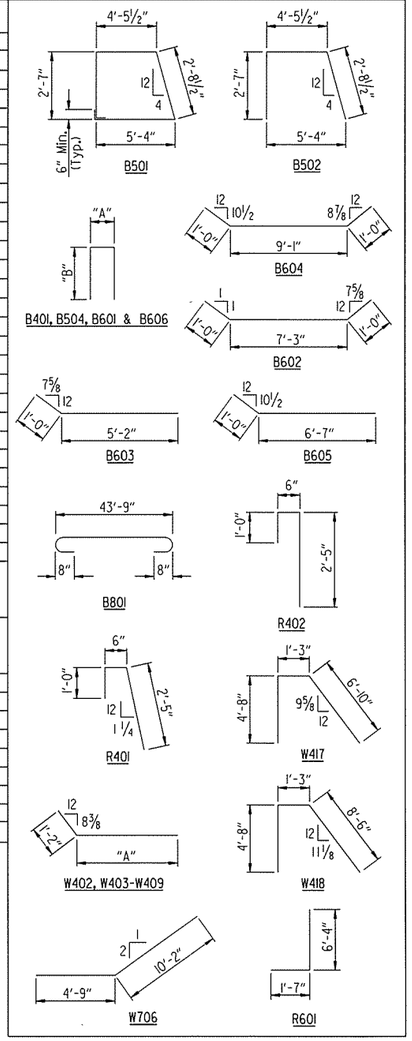
| MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|
| B401 | 81 | 6'-6" | 8" | 3'-0" | 2" |
| B402 | 28 | 22'-9" | | | Str. |
| B403 | 12 | 6'-7" | | | Str. |
| | | | | | |
| B501 | 56 | 15'-7" | | | 2½" |
| B502 | 22 | 9'-6½" | | | 2½" |
| B503 | 4 | 43'-9" | | | Str. |
| B504 | 70 | 13'-1½" | 1'-2" | 6'-1" | 2½" |
| | | | | | |
| B601 | 11 | 12'-6" | 8" | 6'-1" | 4½" |
| B602 | 6 | 9'-3" | | | 4½" |
| B603 | 1 | 6'-3" | | | 4½" |
| B604 | 6 | 11'-1" | | | 4½" |
| B605 | 1 | 7'-7" | | | 4½" |
| | | | | | |
| B801 | 6 | 45'-7" | | | 6" |
| B802 | 7 | 43'-9" | | | Str. |
| | | | | | |
| R401 | 16 | 3'-10" | | | 2" |
| R402 | 10 | 3'-9" | | | 2" |
| R403 | 12 | 14'-8" | | | Str. |
| | | | | | |
| R601 | 16 | 7'-9" | | | 4½" |
| R602 | 6 | 4'-0" | | | Str. |
| R603 | 12 | 2'-8" | | | Str. |
| | | | | | |
| W401 | 12 | 10'-8" | | | Str. |
| W402 | 12 | 9'-6½" | 8'-4½" | | 2" |
| W403 To W409 | 2 Each | 4'-2" To 7'-2½" | 3'-0" To 6'-0½" | | 2" |
| W410 To W416 | 2 Each | 5'-3" To 8'-3" | | | Str. |
| W417 | 4 | 12'-8" | | | 2" |
| W418 | 4 | 14'-4" | | | 2" |
| | | | | | |
| W701 | 20 | 14'-8" | | | Str. |
| W702 | 4 | 10'-11" | | | Str. |
| W703 | 4 | 9'-5" | | | Str. |
| W704 | 4 | 7'-11" | | | Str. |
| W705 | 4 | 6'-5" | | | Str. |
| W706 | 4 | 14'-11" | | | 5¼" |

Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of bars shown is for one bent only.

Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE On Dwg. No. 55197 for additional information.

## BAR BENDING DIAGRAMS



BRIDGE ENGINEER

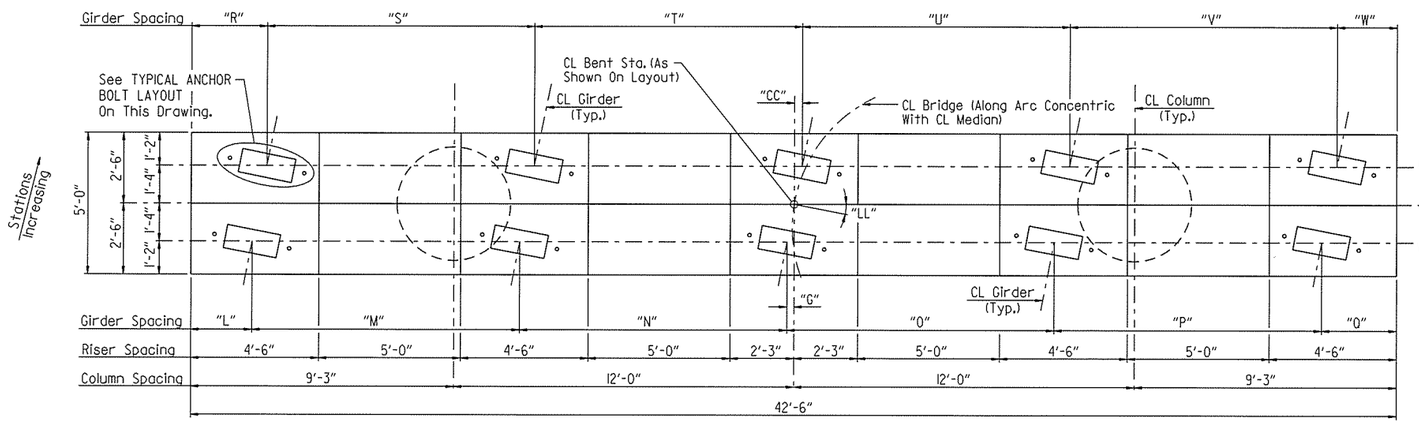
SHEET 8 OF 8
DETAILS OF END BENTS
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_A8.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55181

argood 9/4/2014 9:59:22 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907X2_A8.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 328 | 897 |
| | | | | ① | A7305 & B7305 | INT. BENT DETAILS | | 55182 |




PLAN
Scale: 3/8" = 1'-0"

Note:
CL Bridge arc exaggerated.

| Bent No. | "LL" |
|---|---|
| 2A | 11°07'23" |
| 3A | 11°58'00" |
| 2B | 11°17'52" |
| 3B | 12°09'16" |

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55198.

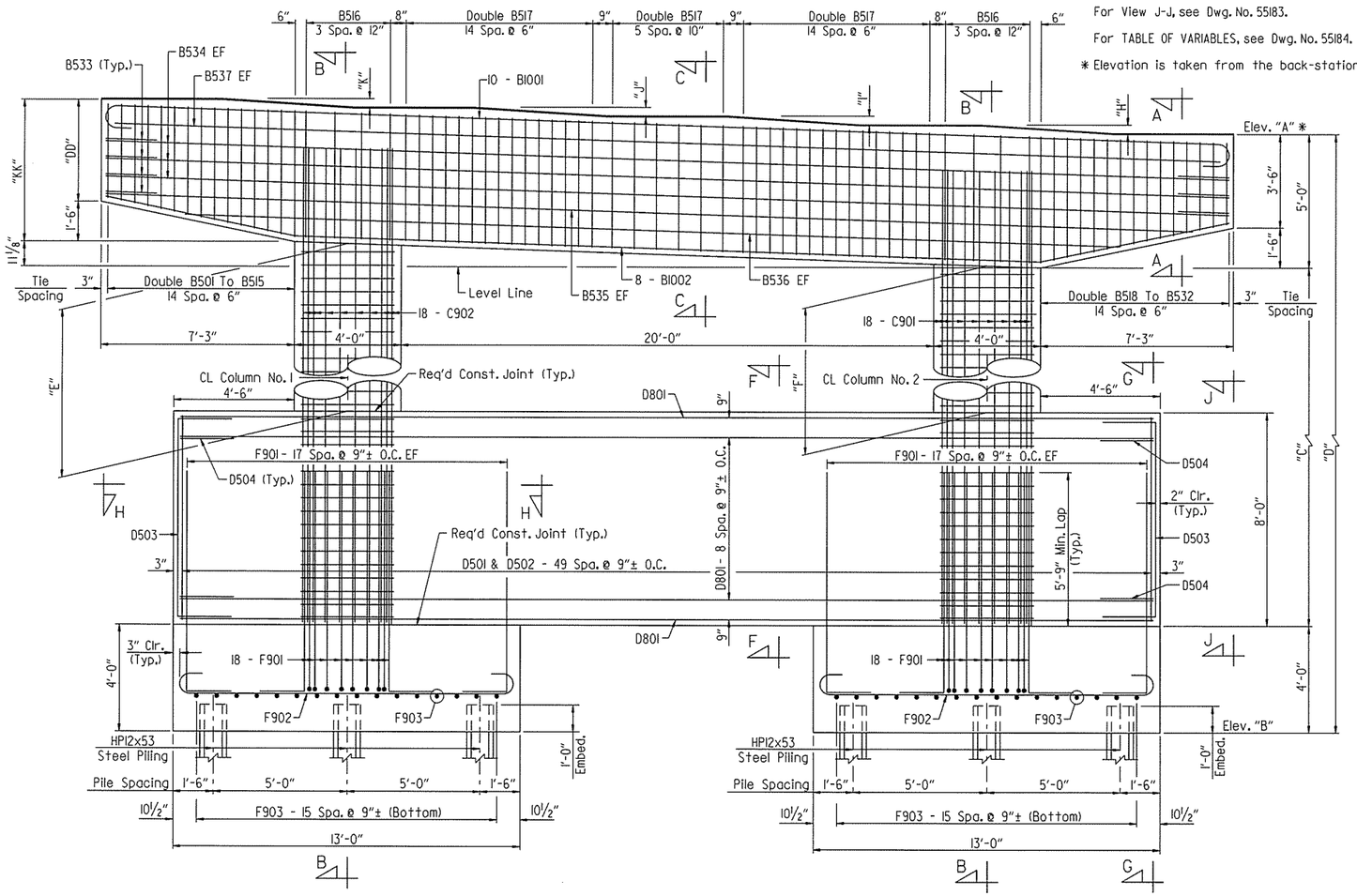
For BAR LIST - PER BENT & BAR BENDING DIAGRAMS, see Dwg. No. 55184.

For SECTION A-A, C-C, D-D, E-E, F-F, G-G & H-H see Dwg. No. 55183.

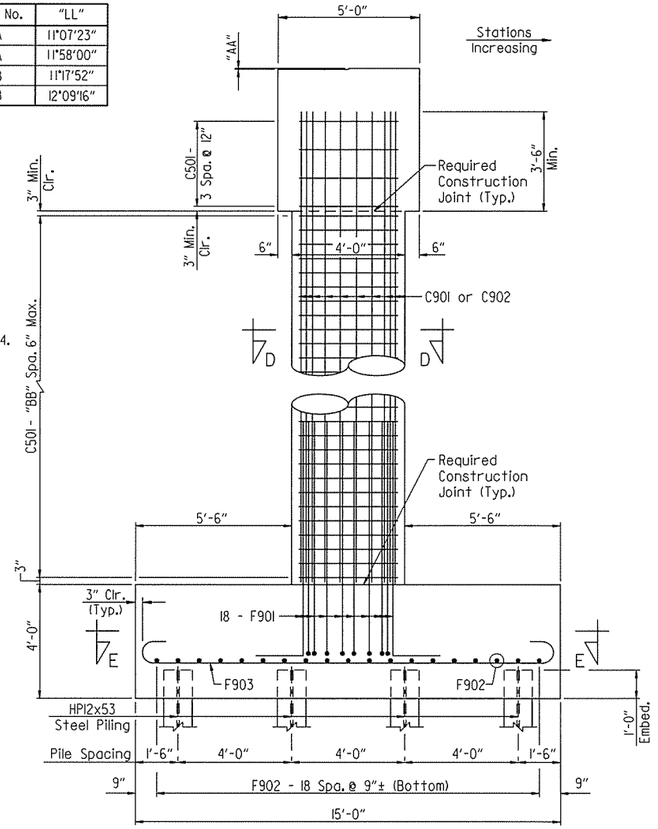
For View J-J, see Dwg. No. 55183.

For TABLE OF VARIABLES, see Dwg. No. 55184.

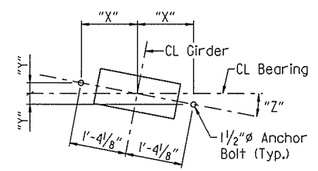
* Elevation is taken from the back-station cap step.




ELEVATION
Scale: 3/8" = 1'-0"




SECTION B-B
(D501, D502 & D801 Are Not Shown For Clarity)
Scale: 3/8" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"

LEGEND
EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 3
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412 OVER
# COUNTY ROAD 60 (E. WAGON WHEEL RD.)
# U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

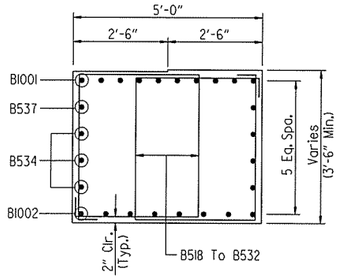
DRAWN BY: HEW DATE: OCT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: OCT. 2011
FILENAME: BCA0907X2_B1.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55182

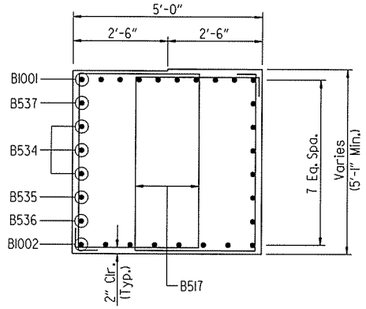
dragood 9/4/2014 9:59:23 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\05916B0 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_B1.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 329 | 897 |

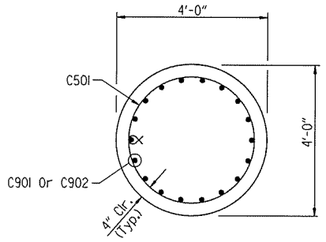
(1) A7305 & B7305 INT. BENT DETAILS 55183



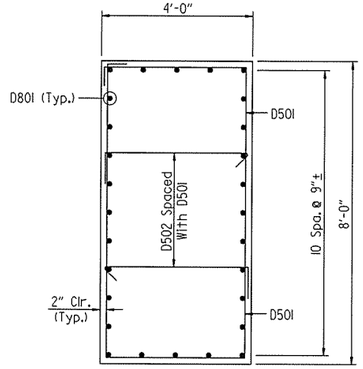

SECTION A-A
Scale: ½" = 1'-0"



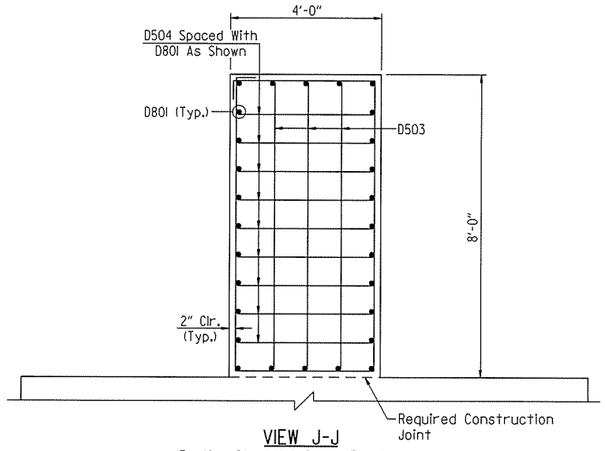

SECTION C-C
Scale: ½" = 1'-0"



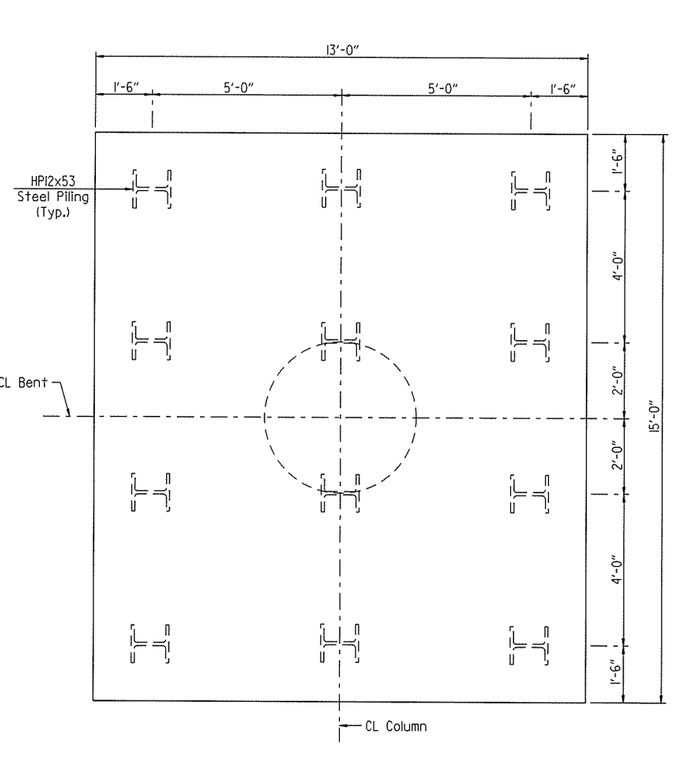

SECTION D-D
Scale: ½" = 1'-0"



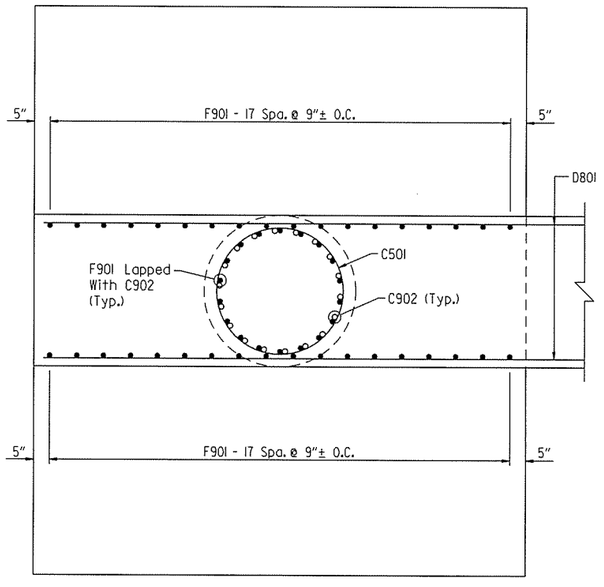

SECTION F-F
Scale: ½" = 1'-0"



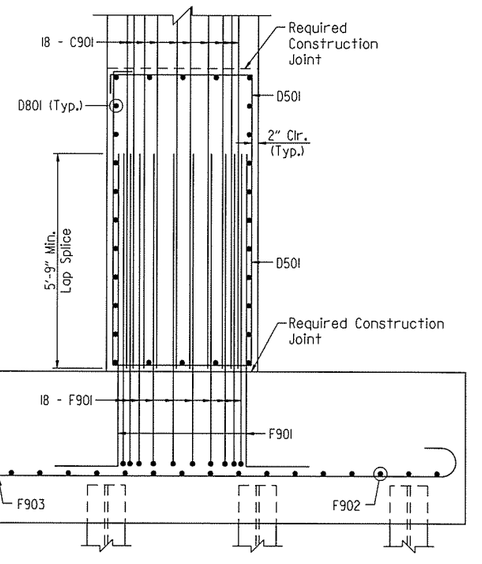

VIEW J-J
(Footing Steel Not Shown For Clarity)
Scale: ½" = 1'-0"




SECTION E-E
Scale: ½" = 1'-0"




SECTION H-H
(D501 & D502 Not Shown for Clarity)
Scale: ½" = 1'-0"




SECTION G-G
(C501 & D502 Not Shown for Clarity)
Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-3-14
BRIDGE ENGINEER

# SHEET 2 OF 3
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412 OVER
# COUNTY ROAD 60 (E. WAGON WHEEL RD.)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JES DATE: APR. 2012
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: APR. 2012

FILENAME: BCA0907X2_B2.DGN
SCALE: ½" = 1'-0"

BRIDGE NO. A7305 & B7305 DRAWING NO. 55183

drgood 9/4/2014 9:59:23 AM
WORKSPACE: AHTD Bridge
\\CLITDCN\LITProjects\2005\05981680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_B2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 330 | 897 |
| | | | | (1) A7305 & B7305 | | INT. BENT DETAILS | | 55184 |

## TABLE OF VARIABLES

| Bent No. | Elev. "A" | Elev. "B" | "C" | "D" | "E" | "F" | "G" | "L" | "M" | "N" | "O" | "P" | "Q" | "R" | "S" | "T" | "U" | "V" | "W" | "CC" | "DD" | "EE" | "FF" | "GG" | "KK" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2A | 1186.83 | 1157.83 | 20'-0" | 29'-0" | 12'-10 5/16" | 12'-0 5/16" | 3/16" | 1'-10 11/16" | 9'-5 7/16" | 9'-5" | 9'-5" | 9'-5 1/4" | 2'-4 13/16" | 2'-5" | 9'-4 15/16" | 9'-5 5/16" | 9'-5 5/16" | 9'-5" | 1'-10 7/16" | 3 1/4" | 3'-9 7/8" | 90 | 23'-8" | 24'-6" | 5'-3 7/8" |
| 3A | 1188.27 | 1162.77 | 16'-6" | 25'-6" | 9'-4 5/16" | 8'-6 11/16" | 3/16" | 1'-9 11/16" | 9'-5 5/8" | 9'-5 5/16" | 9'-5 5/16" | 9'-5 5/8" | 2'-4 5/16" | 2'-4 9/16" | 9'-5 5/16" | 9'-5 3/16" | 9'-5 5/16" | 9'-5 3/8" | 1'-9 7/16" | 3 1/2" | 3'-9 5/8" | 77 | 20'-2" | 21'-0" | 5'-3 5/8" |
| 2B | 1186.08 | 1158.83 | 18'-3" | 27'-3" | 11'-1 5/16" | 10'-3 7/16" | 3/16" | 1'-10 1/2" | 9'-5 5/16" | 9'-5 1/16" | 9'-5 1/16" | 9'-5 5/16" | 2'-4 11/16" | 2'-4 15/16" | 9'-5" | 9'-5 3/8" | 9'-5 3/8" | 9'-5 1/16" | 1'-10 1/4" | 3 5/16" | 3'-9 7/8" | 84 | 21'-11" | 22'-9" | 5'-3 7/8" |
| 3B | 1187.58 | 1167.83 | 10'-9" | 19'-9" | 3'-7 5/16" | 2'-9 11/16" | 3/16" | 1'-9 7/8" | 9'-5 1/16" | 9'-5 3/8" | 9'-5 3/8" | 9'-5 1/4" | 2'-4 1/4" | 2'-4 7/16" | 9'-5 1/16" | 9'-5 1/16" | 9'-5 1/16" | 9'-5 7/16" | 1'-9 7/8" | 3 7/16" | 3'-9 1/2" | 54 | 14'-5" | 15'-3" | 5'-3 1/2" |

## TABLE OF VARIABLES

| Bent No. | Station | Girder No. | "X" | "Y" | "Z" | "AA" |
|---|---|---|---|---|---|---|
| 2A | Back | 1 | 1'-3 13/16" | 3" | 10°47'26" | 1/2" |
| | | 2 | 1'-3 13/16" | 3" | 10°49'32" | 1/2" |
| | | 3 | 1'-3 13/16" | 3" | 10°49'32" | 1/2" |
| | | 4 | 1'-3 13/16" | 3" | 10°49'32" | 1/2" |
| | | 5 | 1'-3 13/16" | 3 1/16" | 10°51'38" | 1/2" |
| | Forward | 1 | 1'-3 13/16" | 3 3/16" | 11°30'27" | |
| | | 2 | 1'-3 13/16" | 3 1/4" | 11°32'42" | |
| | | 3 | 1'-3 13/16" | 3 1/4" | 11°32'42" | |
| | | 4 | 1'-3 13/16" | 3 1/4" | 11°32'42" | |
| | | 5 | 1'-3 13/16" | 3 1/4" | 11°34'57" | |
| 3A | Back | 1 | 1'-3 13/16" | 3 3/16" | 11°30'27" | 9/16" |
| | | 2 | 1'-3 13/16" | 3 1/4" | 11°32'42" | 9/16" |
| | | 3 | 1'-3 13/16" | 3 1/4" | 11°32'42" | 9/16" |
| | | 4 | 1'-3 13/16" | 3 1/4" | 11°32'42" | 9/16" |
| | | 5 | 1'-3 13/16" | 3 1/4" | 11°34'57" | 9/16" |
| | Forward | 1 | 1'-3 3/4" | 3 7/16" | 12°13'29" | |
| | | 2 | 1'-3 3/4" | 3 7/16" | 12°15'52" | |
| | | 3 | 1'-3 3/4" | 3 7/16" | 12°15'52" | |
| | | 4 | 1'-3 3/4" | 3 7/16" | 12°15'52" | |
| | | 5 | 1'-3 3/4" | 3 7/16" | 12°18'16" | |
| 2B | Back | 1 | 1'-3 13/16" | 3 1/16" | 10°57'34" | 9/16" |
| | | 2 | 1'-3 13/16" | 3 1/16" | 10°59'44" | 9/16" |
| | | 3 | 1'-3 13/16" | 3 1/16" | 10°59'44" | 9/16" |
| | | 4 | 1'-3 13/16" | 3 1/16" | 10°59'44" | 9/16" |
| | | 5 | 1'-3 13/16" | 3 1/16" | 11°01'55" | 9/16" |
| | Forward | 1 | 1'-3 13/16" | 3 1/4" | 11°41'14" | |
| | | 2 | 1'-3 13/16" | 3 1/4" | 11°43'34" | |
| | | 3 | 1'-3 13/16" | 3 1/4" | 11°43'34" | |
| | | 4 | 1'-3 13/16" | 3 1/4" | 11°43'34" | |
| | | 5 | 1'-3 13/16" | 3 5/16" | 11°45'54" | |
| 3B | Back | 1 | 1'-3 13/16" | 3 1/4" | 11°41'15" | 5/8" |
| | | 2 | 1'-3 13/16" | 3 1/4" | 11°43'34" | 5/8" |
| | | 3 | 1'-3 13/16" | 3 1/4" | 11°43'34" | 5/8" |
| | | 4 | 1'-3 13/16" | 3 1/4" | 11°43'34" | 5/8" |
| | | 5 | 1'-3 13/16" | 3 5/16" | 11°45'54" | 5/8" |
| | Forward | 1 | 1'-3 3/4" | 3 7/16" | 12°24'56" | |
| | | 2 | 1'-3 3/4" | 3 1/2" | 12°27'24" | |
| | | 3 | 1'-3 3/4" | 3 1/2" | 12°27'24" | |
| | | 4 | 1'-3 3/4" | 3 1/2" | 12°27'24" | |
| | | 5 | 1'-3 3/4" | 3 1/2" | 12°29'53" | |

## TABLE OF VARIABLES

| Bent No. | Station | "H" | "I" | "J" | "K" |
|---|---|---|---|---|---|
| 2A | Back | 3 3/4" | 3 3/4" | 3 3/4" | 3 3/4" |
| | Forward | 3 3/4" | 3 3/4" | 3 3/4" | 3 3/4" |
| 3A | Back | 3 11/16" | 3 11/16" | 3 11/16" | 3 11/16" |
| | Forward | 3 11/16" | 3 11/16" | 3 11/16" | 3 11/16" |
| 2B | Back | 3 3/4' | 3 3/4' | 3 3/4' | 3 3/4' |
| | Forward | 3 3/4" | 3 3/4" | 3 3/4" | 3 3/4" |
| 3B | Back | 3 11/16" | 3 5/8" | 3 5/8" | 3 11/16" |
| | Forward | 3 5/8" | 3 11/16" | 3 11/16" | 3 5/8" |

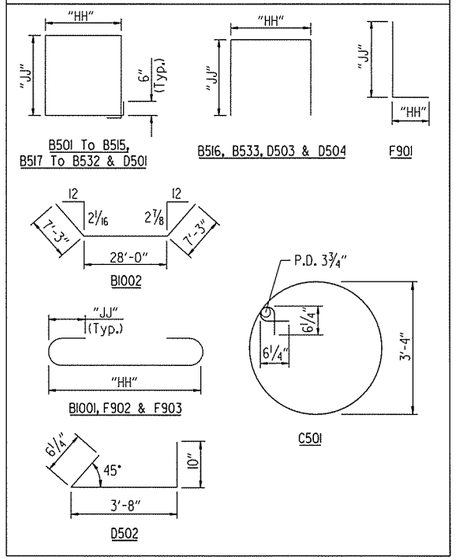
## TABLE OF VARIABLES

| Bent No. | Column | "BB" |
|---|---|---|
| 2A | No. 1 | 41 |
| | No. 2 | 39 |
| 3A | No. 1 | 34 |
| | No. 2 | 33 |
| 2B | No. 1 | 38 |
| | No. 2 | 36 |
| 3B | No. 1 | 23 |
| | No. 2 | 21 |

## BAR LIST - PER BENT

| MARK | NO. REQ'D. | LENGTH | "HH" | "JJ" | P.D. |
|---|---|---|---|---|---|
| B501 To B515 | 2 Ea. | 14'-0" To 16'-6" | 3'-3" | 3'-6" To 4'-9" | 2 1/2" |
| B516 | 8 | 13'-11 1/2" | 4'-8" | 4'-9" | 2 1/2" |
| B517 | 72 | 16'-6" | 3'-3" | 4'-9" | 2 1/2" |
| B518 To B532 | 2 Ea. | 13'-0" To 16'-6" | 3'-3" | 3'-0" To 4'-9" | 2 1/2" |
| B533 | 7 | 8'-4 1/2" | 4'-7" | 2'-0" | 2 1/2" |
| B534 | 6 | 42'-2" | | | Str. |
| B535 | 2 | 40'-10" | | | Str. |
| B536 | 2 | 35'-1" | | | Str. |
| B537 | 2 | 41'-6" | | | Str. |
| | | | | | |
| B1001 | 10 | 45'-0" | 42'-2" | 11 1/2" | 10" |
| B1002 | 8 | 42'-6" | | | 10" |
| | | | | | |
| C501 | "EE" | 11'-10" | | | 3 3/4" |
| | | | | | |
| C901 | 18 | "FF" | | | Str. |
| C902 | 18 | "GG" | | | Str. |
| | | | | | |
| D501 | 50 | 23'-2" | 3'-8" | 7'-8" | 2 1/2" |
| D502 | 100 | 4'-10" | | | 3 3/4" |
| D503 | 6 | 11'-4 1/2" | 2'-0" | 7'-7" | 2 1/2" |
| D504 | 18 | 7'-4 1/2" | 3'-7" | 2'-0" | 2 1/2" |
| | | | | | |
| D801 | 28 | 36'-8" | | | Str. |
| | | | | | |
| F901 | 108 | 10'-2" | 1'-8" | 8'-9" | 9" |
| F902 | 38 | 15'-0" | 12'-6" | 10" | 9" |
| F903 | 32 | 17'-0" | 14'-6" | 10" | 9" |

## BAR BENDING DIAGRAMS




Note:
Dimension of bars are out-to-out.
Number of bars shown is for one bent only.

## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (yield strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see LAYOUT.

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 8017 — JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 3 OF 3
# DETAILS OF INTERMEDIATE BENTS
# U.S. HIGHWAY 412 OVER
# COUNTY ROAD 60 (E. WAGON WHEEL RD.)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

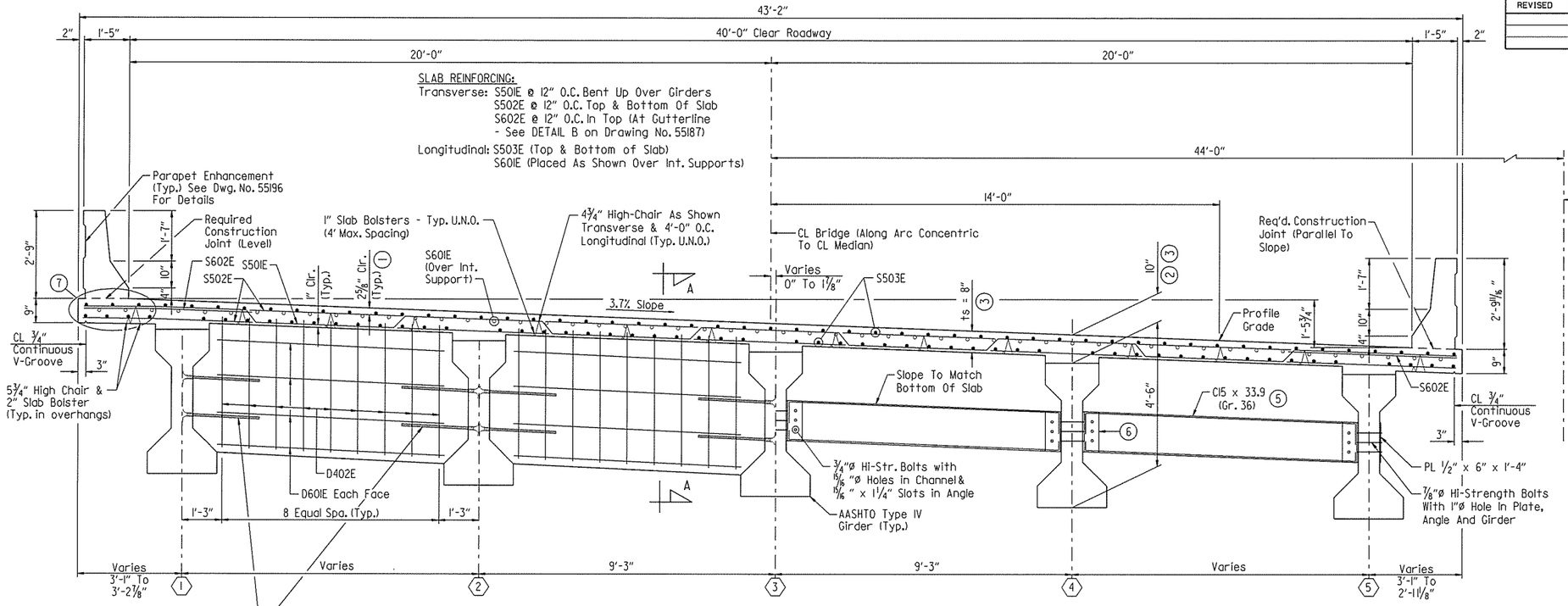
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: OCT. 2011 FILENAME: BCA0907X2_B3.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: JES DATE: OCT. 2011

BRIDGE NO. A7305 & B7305 DRAWING NO. 55184

drgood 9/4/2014 9:59:24 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_B3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 331 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55185 |




Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

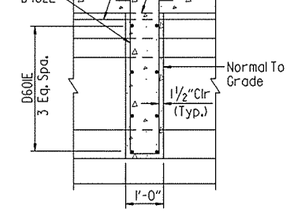
## LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

(4) Galvanized Threaded Inserts & 3/4"ø x 3'-6" Threaded Rods. For Number And Location, See TYPICAL GIRDER ELEVATION (TYPE IV) On Drawing Nos. 55191 & 55192.

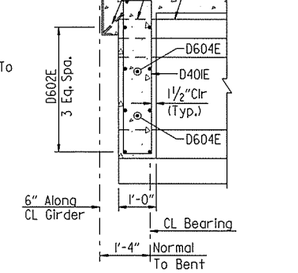
## INTERMEDIATE CONCRETE DIAPHRAGMS

(5) ALTERNATE STRUCTURAL STEEL DIAPHRAGMS




## SECTION A-A

(Normal To Grade)
Scale: 1/2" = 1'-0"




## SECTION B-B

(Normal To Grade)
Scale: 1/2" = 1'-0"

Note:
SECTIONS A-A & B-B are cut normal to diaphragm.

## TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS

(Shown For Bridge A, Bridge B Similar) (Looking Ahead)
Scale: 1/2" = 1'-0"

(1) TOLERANCE:
Minus = 1/4"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55186.

(2) This dimension taken at CL Bearing & CL Beam

(3) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED on Dwg. No. 55186.

(4) Galvanized threaded inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. 3/4"ø threaded rods to be AASHTO M270, Grade 36 or AASHTO M31 or M53, Gr. 60. These are to be subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)". Galvanizing shall be in accordance with AASHTO M232 Class C or ASTM B695, Class 50.

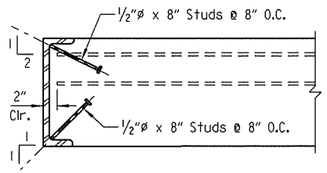
(5) Galvanized steel diaphragms may be used in place of concrete at intermediate diaphragms only. All components of the alternate steel diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.

(6) L6" x 4" x 1/2" x 15" (center angle on web of girder). A standard washer shall be supplied for use under both the nut and the head of the 3/4"ø & 7/8"ø h.s. bolts. An additional 2 1/2" O.D. washer shall cover the angle slots.

(7) Field bend transverse bars in this area to provide minimum clearances.

Note:
All bars designated with an E suffix are to be epoxy coated.

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.



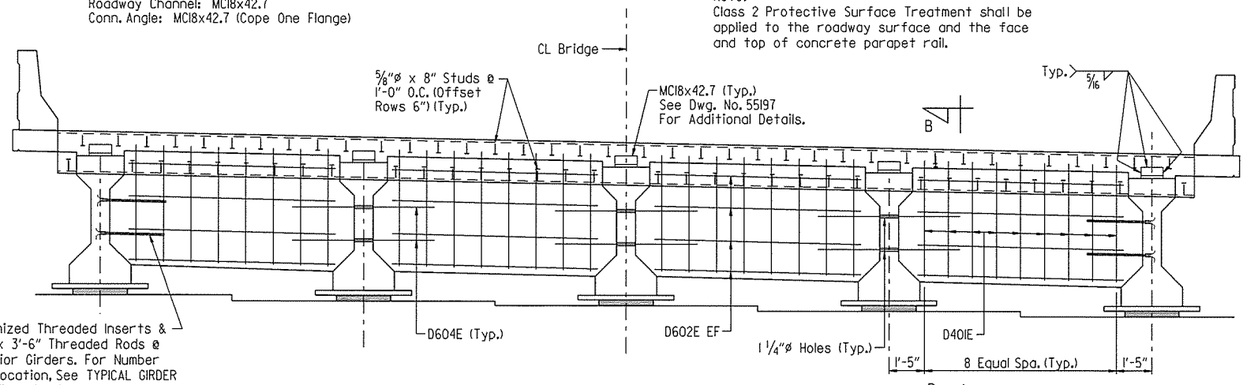

## DETAIL OF ALTERNATE ANCHORS

No Scale

NOTE:
As an alternate to 5/8"ø studs, 1/2"ø x 8" studs spaced as shown may be used. Use weight of 5/8"ø stud as basis of measurement of structural steel.

EXPANSION DEVICE:
Roadway Channel: MC18x42.7
Conn. Angle: MC18x42.7 (Cope One Flange)

Note:
Class 2 Protective Surface Treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.




(4) Galvanized Threaded Inserts & 3/4"ø x 3'-6" Threaded Rods @ Exterior Girders. For Number And Location, See TYPICAL GIRDER ELEVATION (TYPE IV) On Dwg. Nos. 55191 & 55192. Threaded Rods Shall Be Bent As Required To Match Skew Of Diaphragms.

## TYPICAL SECTION (END OF UNIT AT JOINT)

(Shown For Bridge A, Bridge B Similar) (Looking Ahead)
Scale: NTS

STATE OF ARKANSAS
JOHN H. RUDDELL
No. 8017
LICENSED PROFESSIONAL ENGINEER
9-25-14
BRIDGE ENGINEER

# SHEET 1 OF 13
# DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

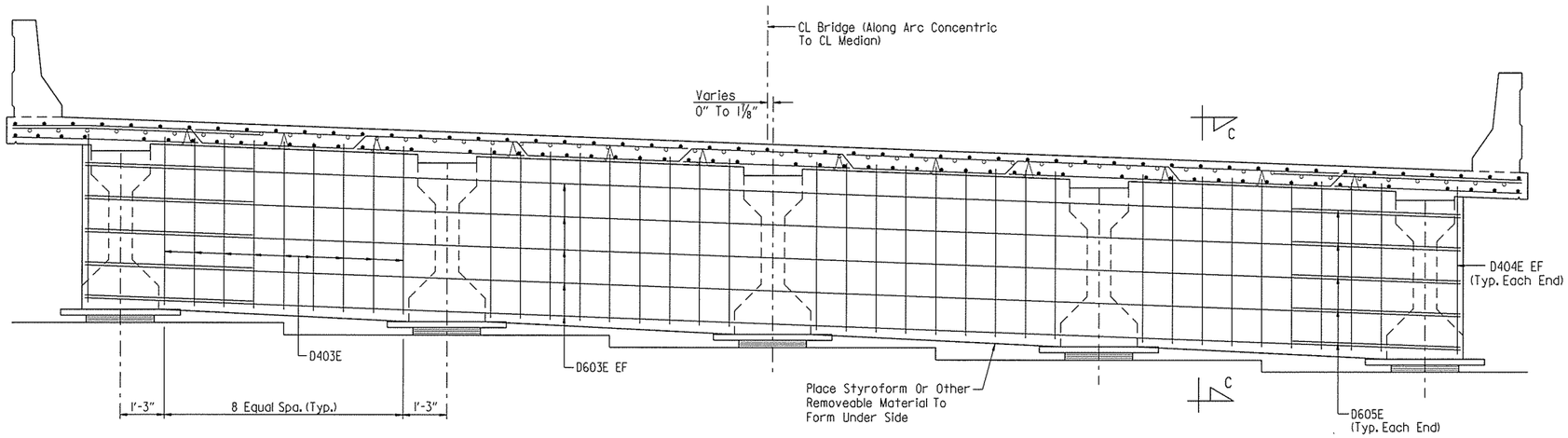
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X2_SI.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55185

dragood 9/4/2014 9:59:24 AM
WORKSPACE: AHTD Bridge
\\OLITOCOL1\TPProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_SI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 332 | 897 |
| | | | | (1) | A7305 & B7305 | SPAN DETAILS | | 55186 |



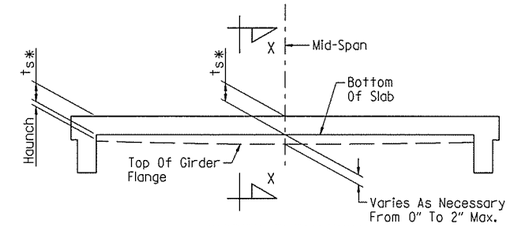

TYPICAL SECTION BETWEEN GIRDERS AT INTERIOR BENTS

Scale: NTS

(For Information not shown, See TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. No. 55185)

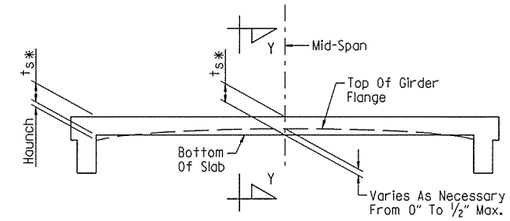
LEGEND

EF = Each Face



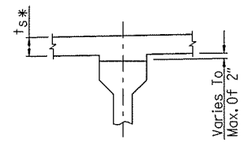

GIRDER ELEVATION

Scale: NTS



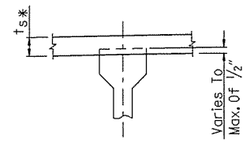

GIRDER ELEVATION

Scale: NTS




SECTION X-X

Scale: NTS




SECTION Y-Y

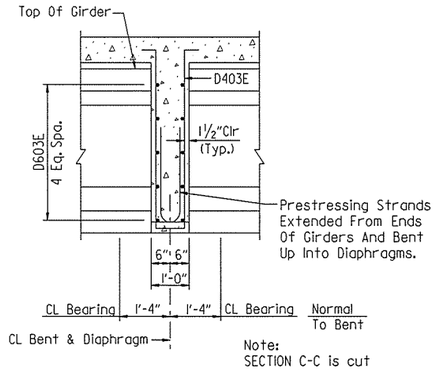
Scale: NTS

Note: $t_s$ = Slab thickness as shown on Superstructure Details See TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS on Dwg. No. 55185.

* Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

GIRDER ELEVATION sketches show the range of acceptability of the top of girder relative to bottom of slab after the placement of the slab. When the top of the girder projects more than a ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the profile grade can be adjusted over suitable increments so the revised grade line with produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED



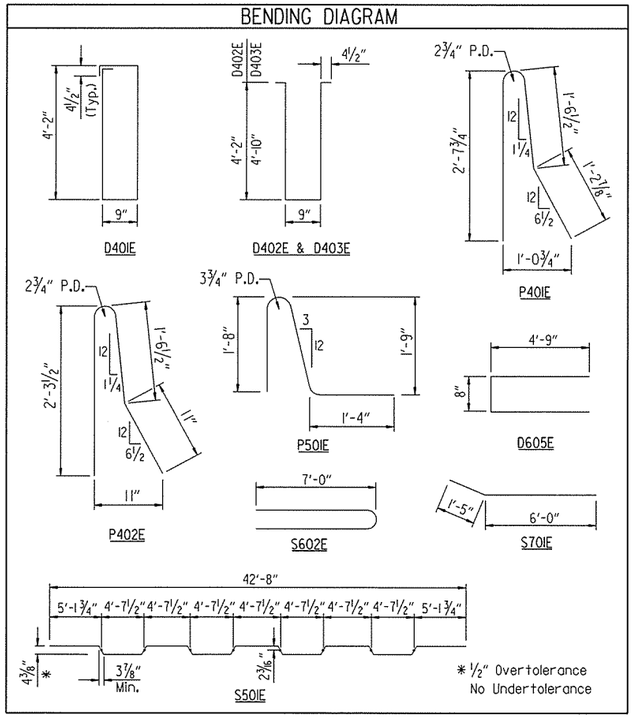

Note: SECTION C-C is cut normal to diaphragm.

SECTION C-C

(Normal To Grade)

Scale: ½" = 1'-0"

BENDING DIAGRAM




BAR LIST - BRIDGE A

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| D401E | 72 | 10'-2" | 2" |
| D402E | 144 | 9'-6" | 2" |
| D403E | 72 | 10'-10" | 2" |
| D404E | 8 | 4'-10" | STR. |
| | | | |
| D601E | 128 | 7'-3" | STR. |
| D602E | 64 | 7'-5" | STR. |
| D603E | 20 | 39'-9" | STR. |
| D604E | 12 | 5'-0" | STR. |
| D605E | 20 | 9'-10" | 4½" |
| | | | |
| S501E | 197 | 43'-6" | 3" |
| S502E | 396 | 42'-10" | STR. |
| S503E | 424 | 53'-9" | STR. |
| S504E TO S515E | 2 SERIES | 9'-6½" TO 38'-11½" | STR. |
| S516E TO S530E | 2 SERIES | 39'-7½" TO 8'-3½" | STR. |
| | | | |
| S601E | 104 | 32'-0" | STR. |
| S602E | 408 | 14'-3" | 5¼" (1) |
| | | | |
| S701E | 16 | 7'-5" | 5¼" |
| | | | |
| P401E | 764 | 5'-7½" | 3" |
| P402E | 48 | 4'-11½" | 3" |
| P403E | 36 | 9'-8" | STR. |
| P404E | 36 | 13'-0" | STR. |
| P405E | 30 | 12'-8" | STR. |
| P406E | 32 | 31'-4" | STR. |
| P407E | 24 | 30'-3" | STR. |
| | | | |
| P501E | 764 | 4'-10" | 3¾" |

BAR LIST - BRIDGE B

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| D401E | 72 | 10'-2" | 2" |
| D402E | 144 | 9'-6" | 2" |
| D403E | 72 | 10'-10" | 2" |
| D404E | 8 | 4'-10" | STR. |
| | | | |
| D601E | 128 | 7'-3" | STR. |
| D602E | 64 | 7'-5" | STR. |
| D603E | 20 | 39'-9" | STR. |
| D604E | 12 | 5'-0" | STR. |
| D605E | 20 | 9'-10" | 4½" |
| | | | |
| S501E | 197 | 43'-6" | 3" |
| S502E | 396 | 42'-10" | STR. |
| S503E | 424 | 53'-9" | STR. |
| S531E TO S542E | 2 SERIES | 9'-8½" TO 38'-8½" | STR. |
| S543E TO S557E | 2 SERIES | 39'-1½" TO 8'-3½" | STR. |
| | | | |
| S601E | 104 | 32'-0" | STR. |
| S602E | 408 | 14'-3" | 5¼" (1) |
| | | | |
| S701E | 16 | 7'-5" | 5¼" |
| | | | |
| P401E | 764 | 5'-7½" | 3" |
| P402E | 48 | 4'-11½" | 3" |
| P403E | 36 | 9'-8" | STR. |
| P404E | 36 | 13'-0" | STR. |
| P405E | 30 | 12'-8" | STR. |
| P406E | 32 | 31'-4" | STR. |
| P407E | 24 | 30'-3" | STR. |
| | | | |
| P501E | 764 | 4'-10" | 3¾" |

Note:
Dimension of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

(1) Non-typical pin diameter

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 13

DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT

U.S. HIGHWAY 412 OVER

COUNTY ROAD 60 (E. WAGON WHEEL RD.)

BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011 FILENAME: BCA0907X2_S2.DGN

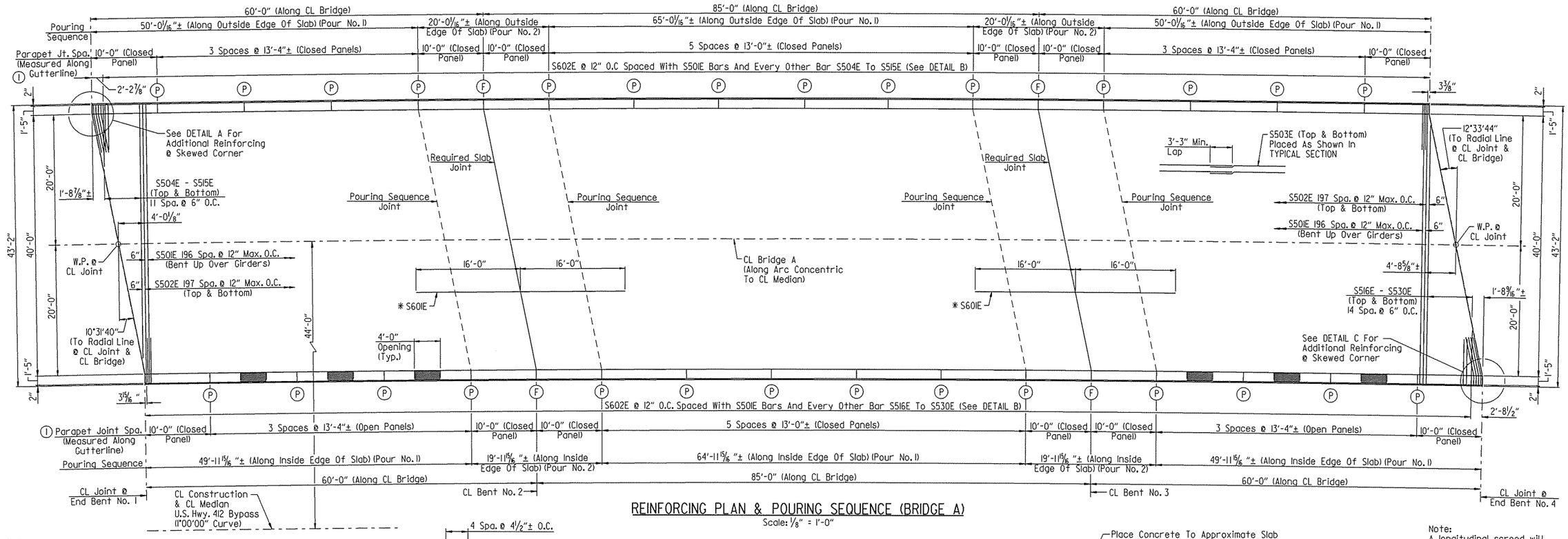
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN

DESIGNED BY: MRA DATE: AUG. 2011

BRIDGE NO. A7305 & B7305 DRAWING NO. 55186

drgood 9/4/2014 9:59:25 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 333 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55187 |




## REINFORCING PLAN & POURING SEQUENCE (BRIDGE A)

Scale: 1/8" = 1'-0"

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to "TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS" on Drawing No. 55185 for placement.

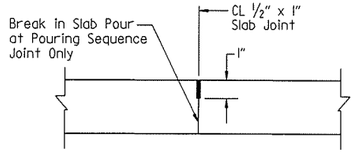
Note:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Notes:
1. Transverse slab reinforcing shall be placed on radial lines and spaced along left edge of slab.
2. Longitudinal slab reinforcing shall be placed along curves concentric to CL Median.
3. Edges of slab are concentric to CL Median (1°00'00" curve).
4. All transverse lines are radial to CL Median.

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

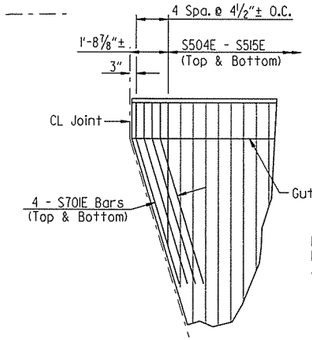
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) and 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE." Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

### SLAB JOINT DETAIL

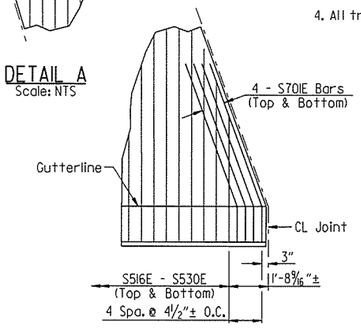
Scale: NTS




### DETAIL A

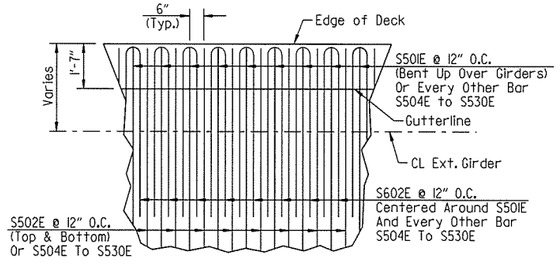
Scale: NTS

Note:
Bars S602E not shown for clarity.



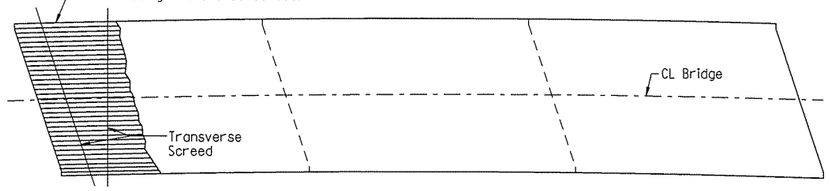

### DETAIL C

Scale: NTS




### DETAIL B

Scale: NTS




Note:
A longitudinal screed will not be allowed.

### CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 3 OF 13
# DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

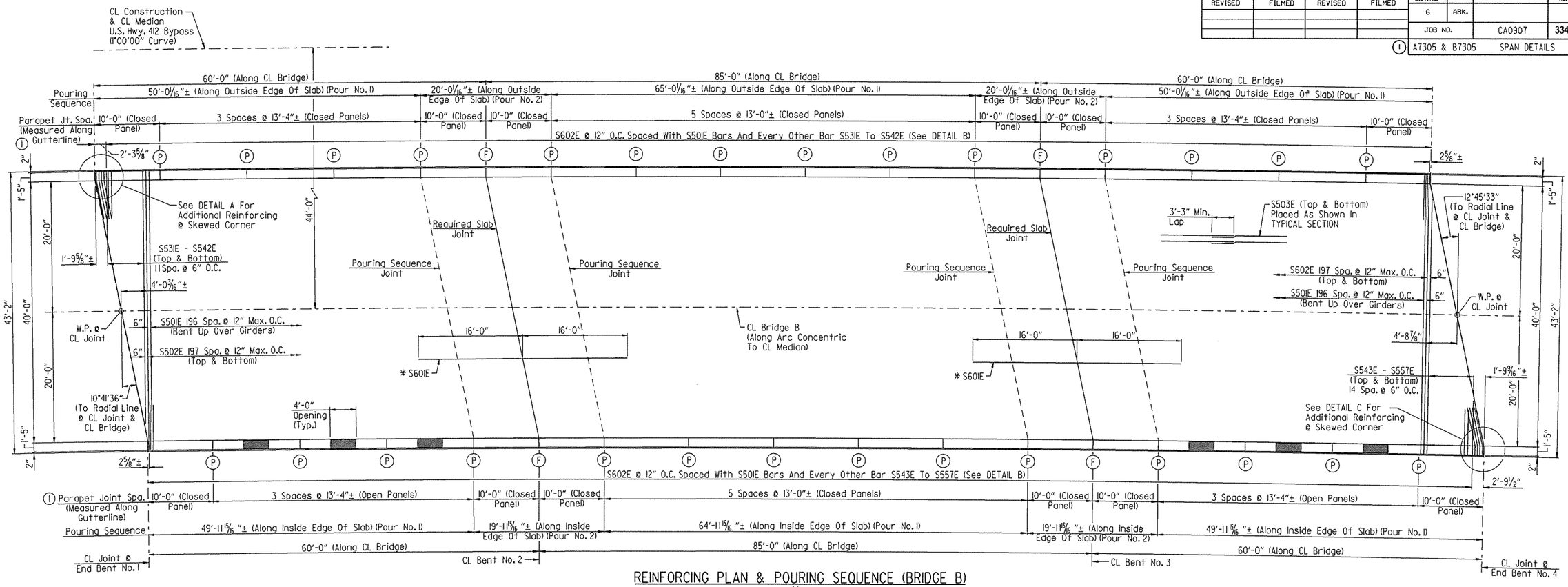
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X2_S3.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55187

drgood 9/4/2014 9:59:25 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 334 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55188 |



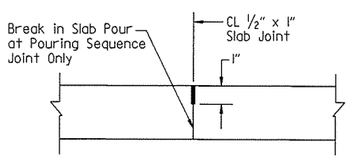

## REINFORCING PLAN & POURING SEQUENCE (BRIDGE B)

Scale: 1/8" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

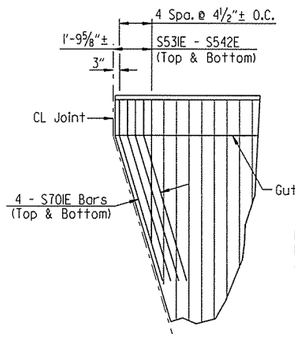
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) And 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE." Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

### SLAB JOINT DETAIL

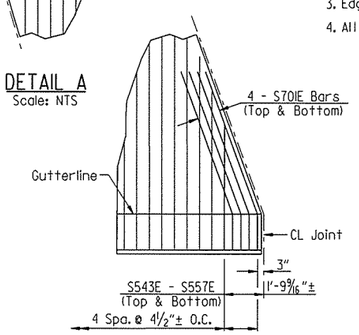
Scale: NTS




Note:
Bars S602E not shown for clarity.

### DETAIL A

Scale: NTS




### DETAIL C

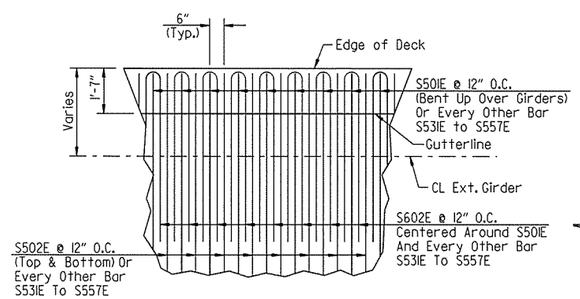
Scale: NTS

(1) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to "TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS" on Drawing 55185 for Placement.

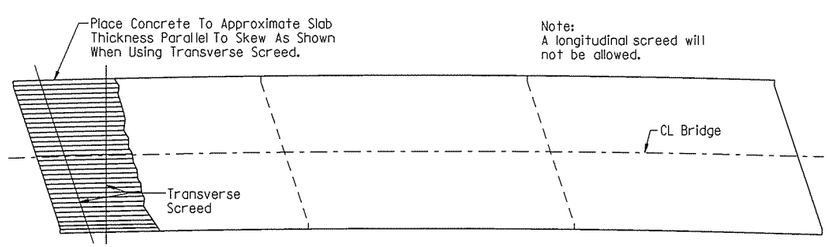
Note:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Notes:
1. Transverse slab reinforcing shall be placed on radial lines and spaced along left edge of slab.
2. Longitudinal slab reinforcing shall be placed along curves concentric to CL Median.
3. Edges of slab are concentric to CL Median (1°00'00" Curve).
4. All transverse lines are radial to CL Median.




### DETAIL B

Scale: NTS




### CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-4-14
BRIDGE ENGINEER

# SHEET 4 OF 13
# DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

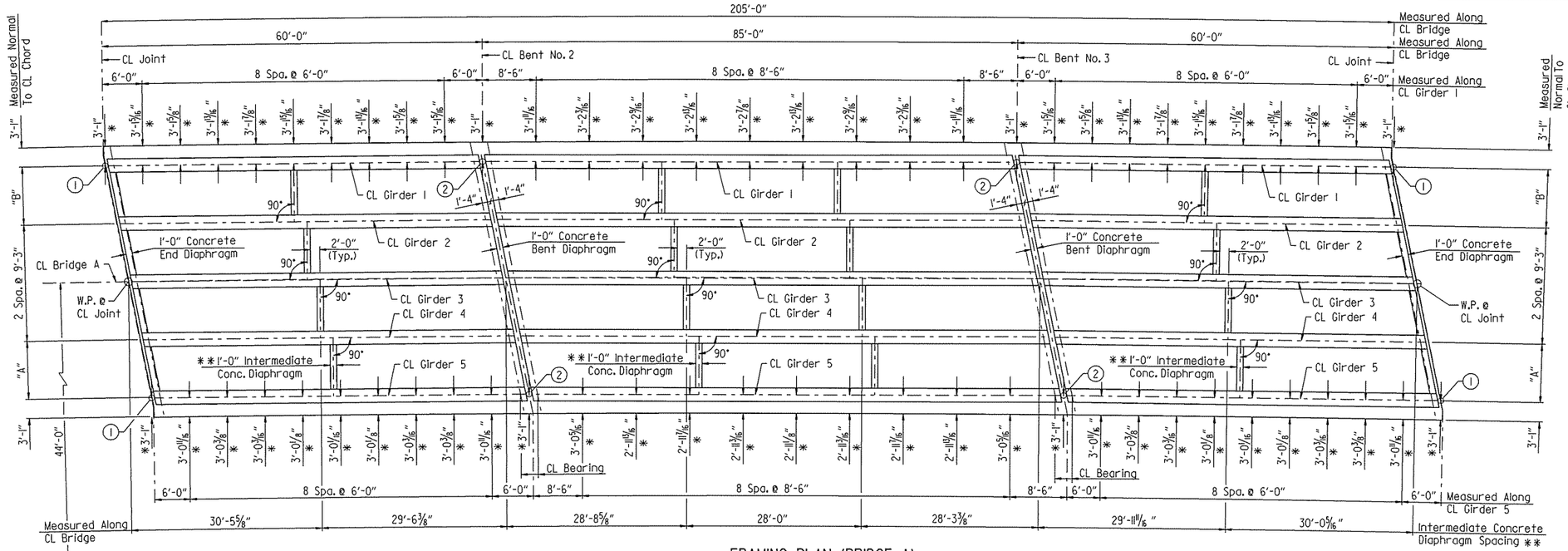
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011 FILENAME: BCA0907X2_S4.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: AUG. 2011

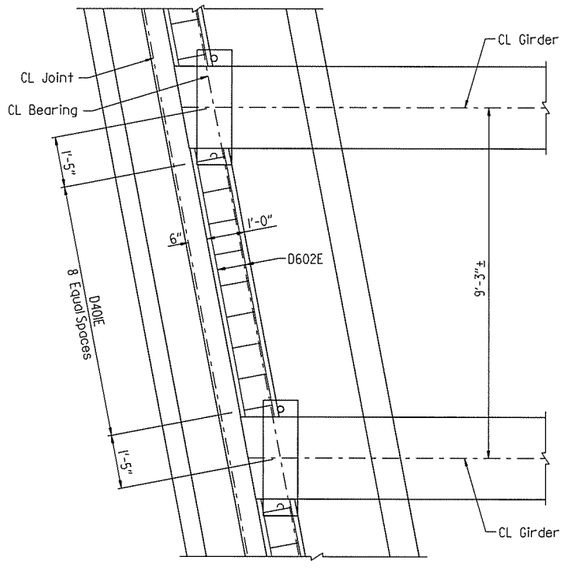
BRIDGE NO. A7305 & B7305 DRAWING NO. 55188

drgood 9/4/2014 9:59:27 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\20005\05916B0 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S4.dgn
REVISED DATE:

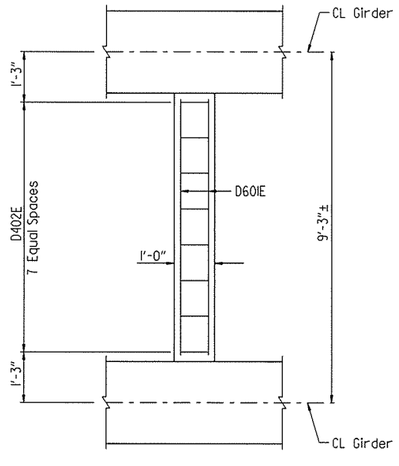
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 335 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55189 |



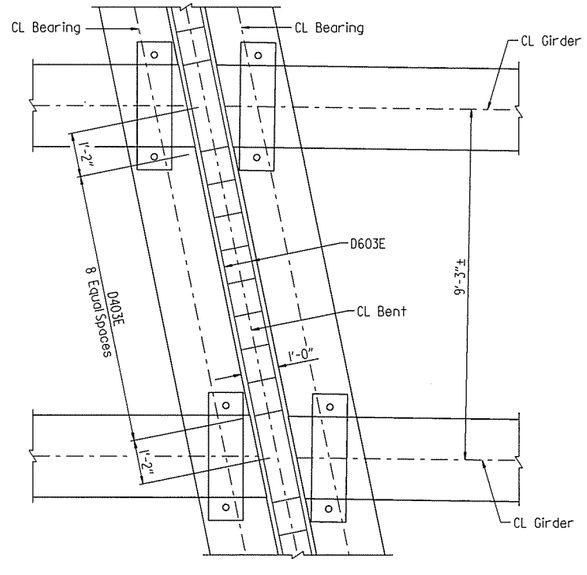

FRAMING PLAN (BRIDGE A)
Scale: 1" = 10'-0"




PLAN
END DIAPHRAGM
Scale: ½" = 1'-0"




PLAN
INTERMEDIATE DIAPHRAGM
Scale: ½" = 1'-0"




PLAN
BENT DIAPHRAGM
Scale: ½" = 1'-0"

** Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.

* All cantilever dimensions are measured at tenth points along CL exterior girders and normal to exterior girders.

Edges of slab are concentric to CL Median (1°00'00" Curve).

(1) Intersection Of CL Girder & CL Joint

(2) Intersection CL Girder & CL Bent

| TABLE OF VARIABLES | | |
|---|---|---|
| Location | "A" | "B" |
| Bent 1 | 9'-2 1/16"± | 9'-2 3/4"± |
| Bent 2 - Back Sta. | 9'-3 1/4"± | 9'-3 3/16"± |
| Bent 2 - Forward Sta. | 9'-2 11/16"± | 9'-2 11/16"± |
| Bent 3 - Back Sta. | 9'-3 5/16"± | 9'-3 5/16"± |
| Bent 3 - Forward Sta. | 9'-2 3/4"± | 9'-2 3/4"± |
| Bent 4 | 9'-3 1/4"± | 9'-3 1/4"± |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY

ROUTE 412 SEC. 2

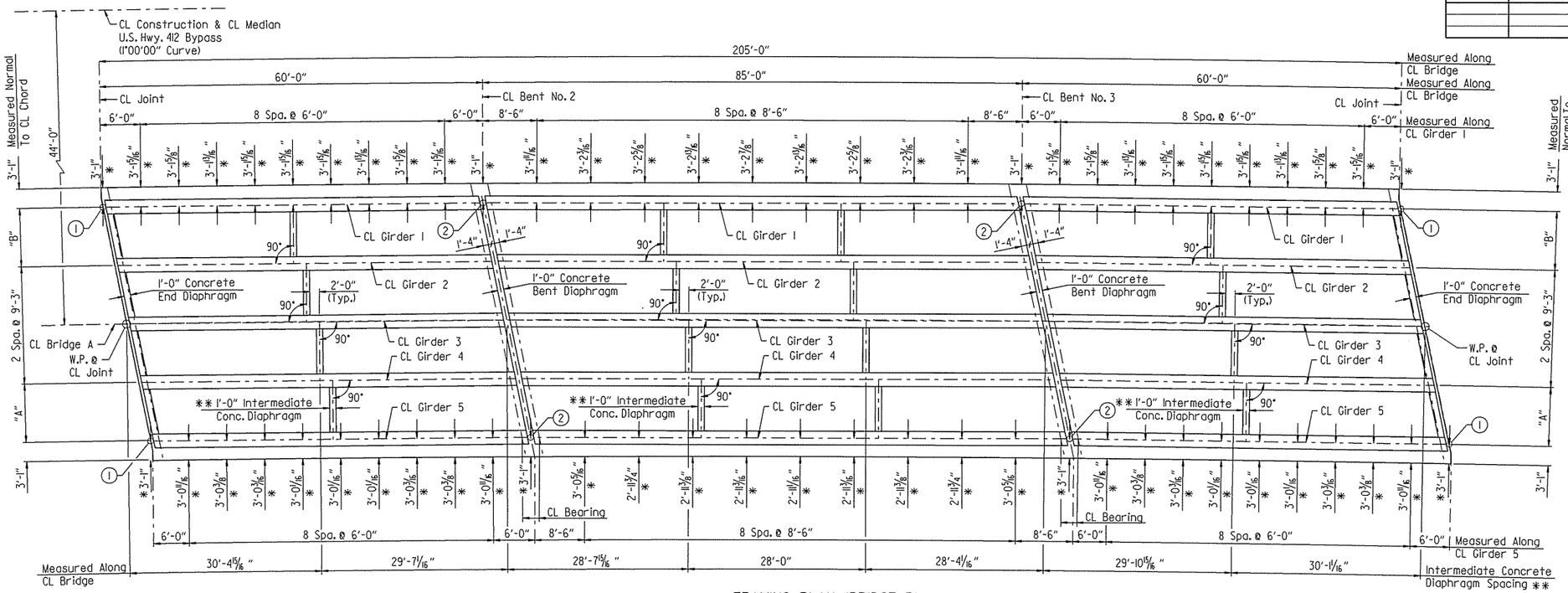
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X2_S5.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55189

drgood 9/4/2014 9:59:27 AM
WORKSPACE: AHTD Bridge
\\GLITOCONLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 336 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55190 |




FRAMING PLAN (BRIDGE B)
Scale: 1" = 10'-0"

** Galvanized steel diaphragms may be used in place of concrete diaphragms at intermediate diaphragm locations only.

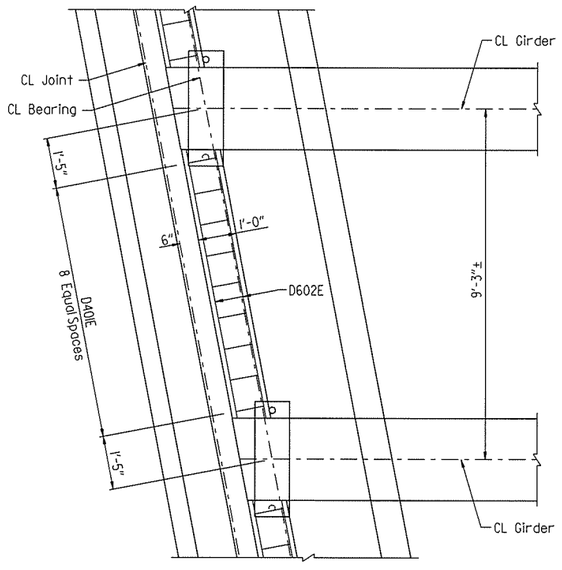
* All cantilever dimensions are measured at tenth points along CL exterior girders and normal to exterior girders.

Edges of slab are concentric to CL Median (1°00'00" Curve).

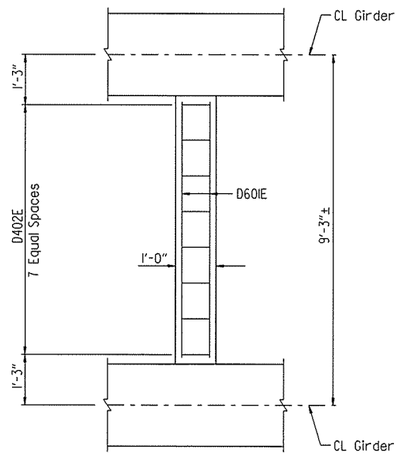
(1) Intersection Of CL Girder & CL Joint

(2) Intersection CL Girder & CL Bent

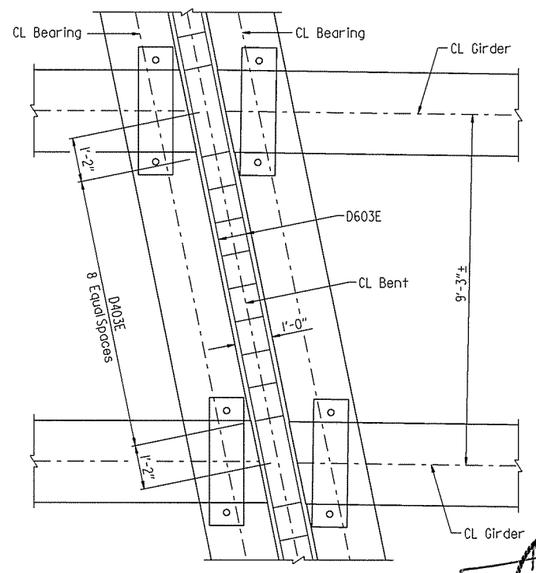
| TABLE OF VARIABLES | | |
|---|---|---|
| Location | "A" | "B" |
| Bent 1 | 9'-2 11/16" ± | 9'-2 3/4" ± |
| Bent 2 - Back Sta. | 9'-3 1/4" ± | 9'-3 3/16" ± |
| Bent 2 - Forward Sta. | 9'-2 11/16" ± | 9'-2 5/8" ± |
| Bent 3 - Back Sta. | 9'-3 3/8" ± | 9'-3 5/16" ± |
| Bent - Forward Sta. | 9'-2 3/4" ± | 9'-2 3/4" ± |
| Bent 4 | 9'-3 1/4" ± | 9'-3 1/4" ± |




PLAN
END DIAPHRAGM
Scale: 1/2" = 1'-0"




PLAN
INTERMEDIATE DIAPHRAGM
Scale: 1/2" = 1'-0"




PLAN
BENT DIAPHRAGM
Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 6 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY

ROUTE 412 SEC. 2

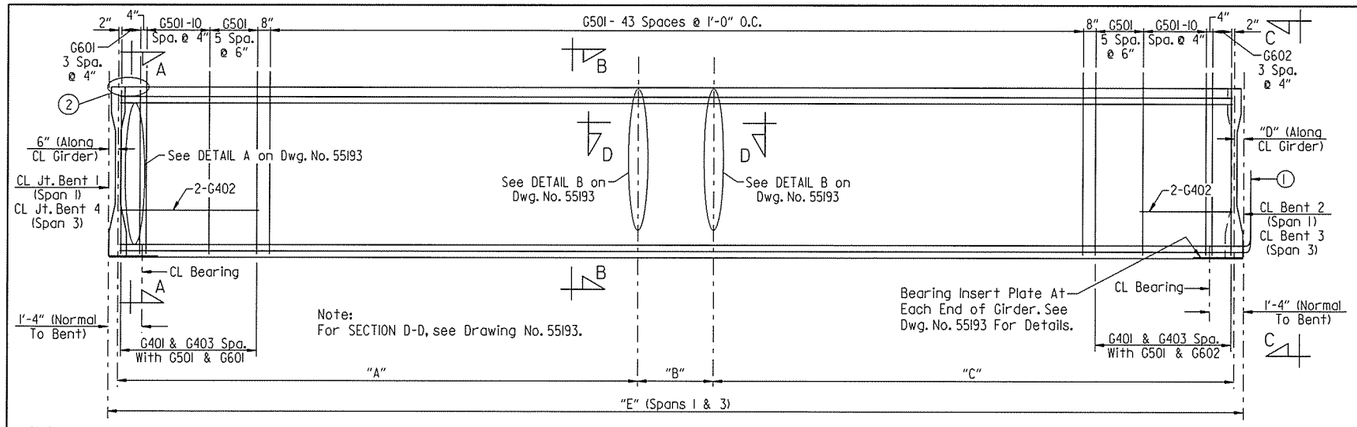
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X2_S6.DGN
SCALE: AS SHOWN

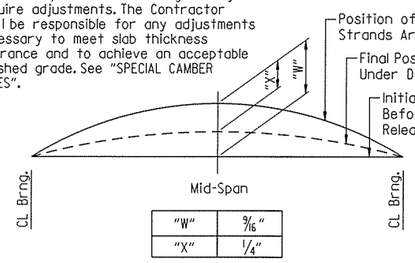
BRIDGE NO. A7305 & B7305 DRAWING NO. 55190

drgood 9/4/2014 9:59:28 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S6.dgn
REVISED DATE:




## TYPICAL GIRDER ELEVATION (TYPE IV)
Scale: NTS

Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 6000 psi. Greater strengths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES".




| | |
|---|---|
| "W" | 9/16" |
| "X" | 1/4" |

"W" is Expected Camber of Girder at 90 Days After Release (Prestress + Dead Load of Girder)

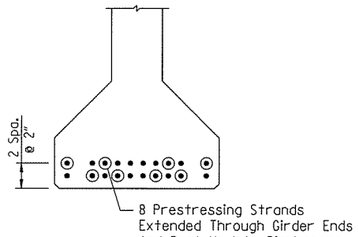
"X" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

## CAMBER & DEFLECTIONS (INCHES)

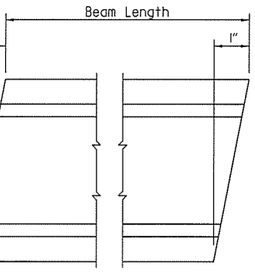
Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

① Prestressing strands at CL Joint shall be sawn flush with the end of the girder. Prestressing strands At CL Bent shall be bent up into diaphragms as shown in ELEVATION OF GIRDERS AT INTERMEDIATE BENTS on Dwg. No. 55193.

② For CHANNEL CONNECTION DETAIL, See Dwg. No. 55197.




## VIEW C-C
Scale: 1" = 1'-0"

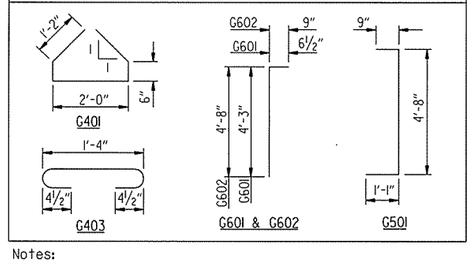



## GIRDER BEVEL
Scale: NTS

## BAR LIST - PER GIRDER

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| G301 | * | 1'-3" | Str. |
| G401 | 40 | 5'-3" | 2" |
| G402 | 4 | 7'-4" | Str. |
| G403 | 40 | 2'-4" | 3" |
| G501 | 156 | 6'-3" | 3 3/4" |
| G601 | 8 | 4'-7 1/2" | 4 1/2" |
| G602 | 8 | 5'-3" | 4 1/2" |

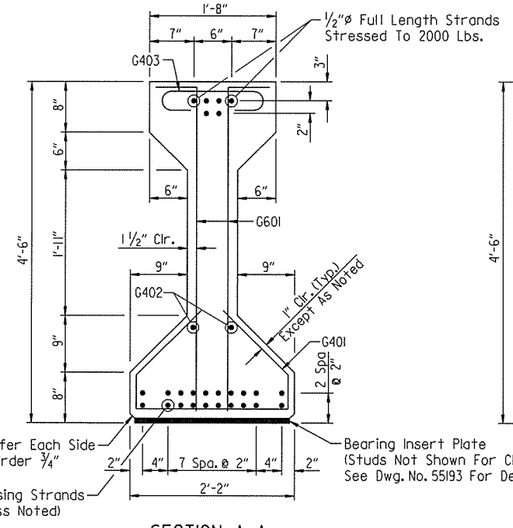
## BAR BENDING DIAGRAMS



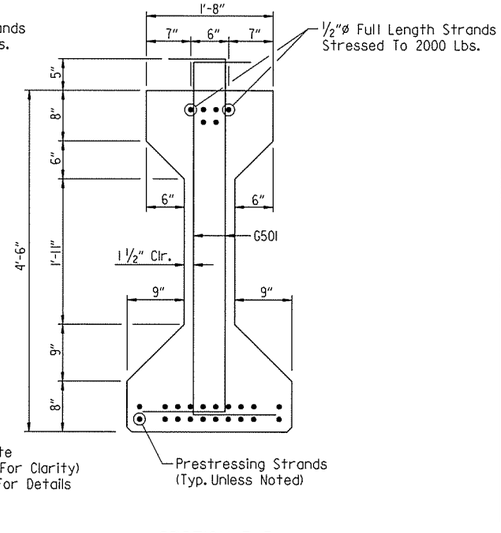

Notes:
Dimensions of bars in bending diaphragm are out-to-out.
Number of bars shown is for one girder only.
*4 required for exterior girder. 8 required for interior girder.

## TABLE OF VARIABLES

| | Girder | "A" | "B" | "C" | "D" | "E" |
|---|---|---|---|---|---|---|
| BRIDGE A SPAN 1 | 1 | 29'-5 15/16" | 0" | 29'-6" | 5 15/16" | 59'-11 5/8" |
| | 2 | 27'-8 13/16" | 2'-0" | 29'-3 3/16" | 6" | 60'-0" |
| | 3 | 27'-11 9/16" | 2'-0" | 29'-0 7/16" | 6" | 60'-0" |
| | 4 | 28'-2 3/8" | 2'-0" | 28'-9 5/8" | 6" | 60'-0" |
| | 5 | 28'-5 3/16" | 0" | 30'-6 1/16" | 6 1/16" | 60'-0 1/16" |
| BRIDGE A SPAN 3 | 1 | 29'-6" | 0" | 29'-6" | 5 7/8" | 59'-11 7/8" |
| | 2 | 29'-6 3/16" | 2'-0" | 27'-5 13/16" | 6" | 60'-0" |
| | 3 | 29'-6 5/16" | 2'-0" | 27'-5 11/16" | 6" | 60'-0" |
| | 4 | 29'-6 7/16" | 2'-0" | 27'-5 9/16" | 6" | 60'-0" |
| | 5 | 31'-6 5/8" | 0" | 27'-5 3/8" | 6 1/8" | 60'-0 1/8" |
| BRIDGE B SPAN 1 | 1 | 29'-6" | 0" | 29'-6" | 5 15/16" | 59'-11 5/8" |
| | 2 | 27'-8 1/2" | 2'-0" | 29'-3 1/2" | 6" | 60'-0" |
| | 3 | 27'-10 15/16" | 2'-0" | 29'-1 1/16" | 6" | 60'-0" |
| | 4 | 28'-1 3/8" | 2'-0" | 28'-10 5/8" | 6" | 60'-0" |
| | 5 | 28'-3 1/16" | 0" | 30'-8 1/16" | 6 1/16" | 60'-0 1/15" |
| BRIDGE B SPAN 3 | 1 | 29'-6" | 0" | 29'-6" | 5 7/8" | 59'-11 7/8" |
| | 2 | 29'-6 9/16" | 2'-0" | 27'-5 7/16" | 6" | 60'-0" |
| | 3 | 29'-7 1/8" | 2'-0" | 27'-4 7/8" | 6" | 60'-0" |
| | 4 | 29'-7 5/8" | 2'-0" | 27'-4 3/8" | 6" | 60'-0" |
| | 5 | 31'-8 3/16" | 0" | 27'-3 1/8" | 6 1/8" | 60'-0 1/8" |




## SECTION A-A
Scale: 1" = 1'-0"




## SECTION B-B
Scale: 1" = 1'-0"

GENERAL NOTES - 60 FT. GIRDERS ONLY

Pretensioning steel shall be 1/2"ø Low Relaxation strands with a minimum ultimate strength of 270 KSI and shall conform to AASHTO M203.

All girders shall be AASHTO TYPE IV I-girders as shown on the details. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 6000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 1/2"ø strand shall be 31000 pounds except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 5000 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirment may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22, except that only 1/2"ø strands shall be allowed.

Reinforcing steel shall be AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be shown on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

SPECIAL CAMBER NOTES
The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 337 | 897 |
| | | | | ① | A7305 & B7305 | SPAN DETAILS | | 55191 |

SHEET 7 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

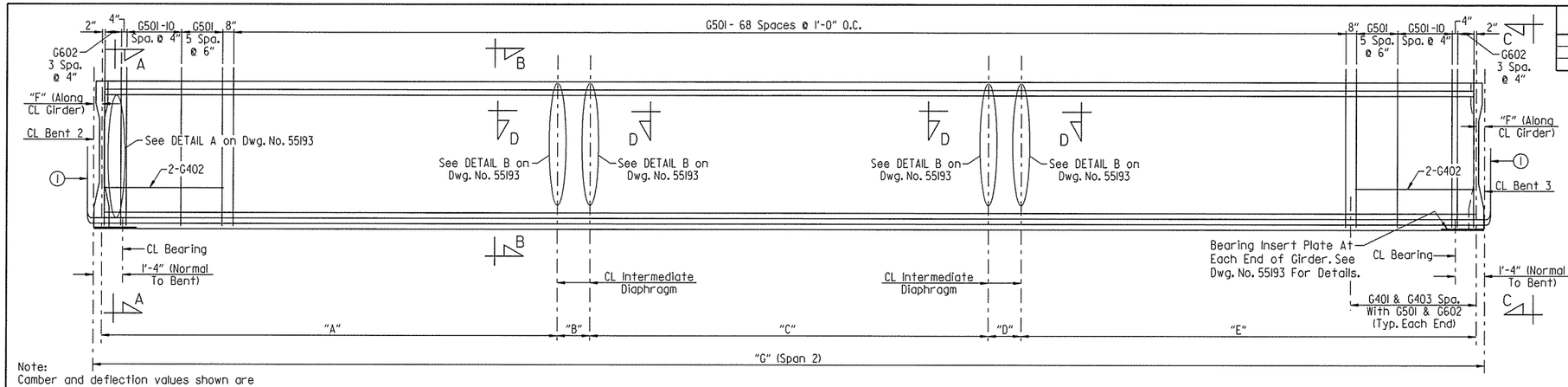
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
BRIDGE ENGINEER

DRAWN BY: CWT DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: JULY 2011
FILENAME: BCA0907X2_S7.DGN
SCALE: AS SHOWN

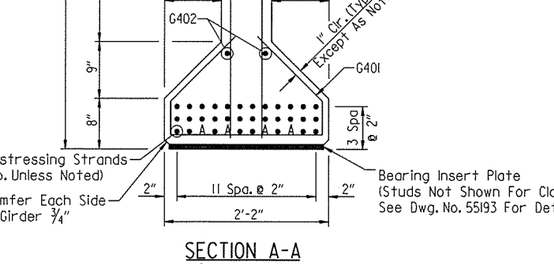
BRIDGE NO. A7305 & B7305 DRAWING NO. 55191

drgood
WORKSPACE: AHTD Bridge
\\CLITDOCS\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S7.dgn
9/4/2014 9:59:28 AM
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 338 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55192 |




Note:
Camber and deflection values shown are based on a concrete girder strength, f'c = 6000 psi. Greater strengths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. See "SPECIAL CAMBER NOTES".




| "W" | 1 11/16 " |
|---|---|
| "X" | 1 1/8" |

"W" is expected camber of girder at 90 days after release (prestress + dead load of girder)

"X" is dead load deflection of slab + diaphragms + composite dead load.

## CAMBER & DEFLECTIONS (INCHES)

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

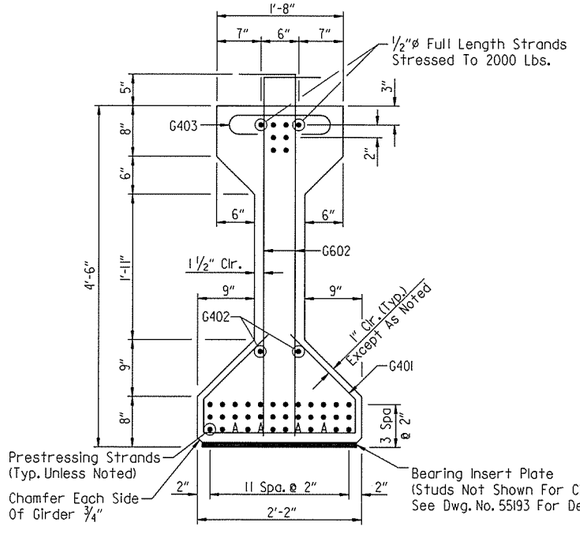
## TYPICAL GIRDER ELEVATION (TYPE IV)
Scale: NTS

Note:
For SECTION D-D, see Drawing No. 55193.

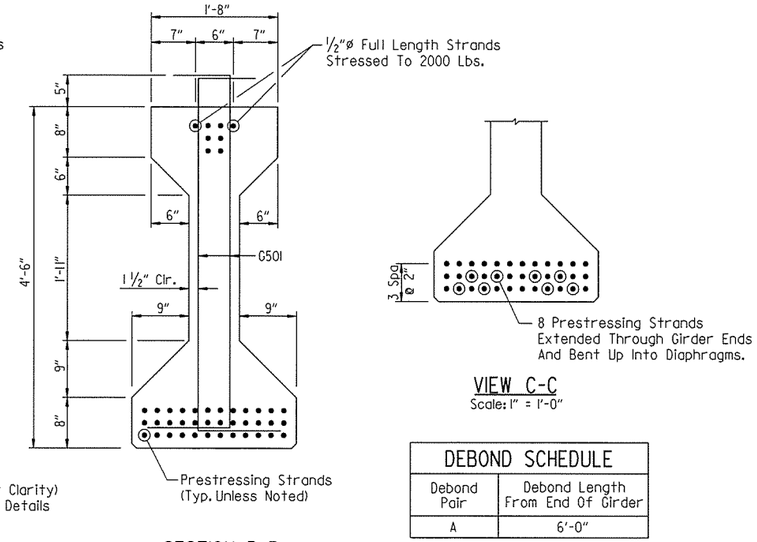
(1) Prestressing strands at CL joint shall be sawn flush with the end of the girder. Prestressing strands At CL bent shall be bent up into diaphragms as shown in ELEVATION OF GIRDERS AT INTERMEDIATE BENTS on Dwg. No. 55193.

## TABLE OF VARIABLES

| | Girder | "A" | "B" | "C" | "D" | "E" | "F" | "G" |
|---|---|---|---|---|---|---|---|---|
| BRIDGE A | 1 | 28'-0" | 0" | 28'-0" | 0" | 28'-0" | 5 5/16 " | 84'-11 7/8" |
| | 2 | 26'-1 5/16 " | 2'-0" | 26'-0" | 2'-0" | 27'-10 11/16 " | 6" | 85'-0" |
| | 3 | 26'-2 5/8" | 2'-0" | 26'-0" | 2'-0" | 27'-9 3/8" | 6" | 85'-0" |
| | 4 | 26'-4" | 2'-0" | 26'-0" | 2'-0" | 27'-8" | 6" | 85'-0" |
| | 5 | 26'-5 5/16" | 0" | 28'-0" | 0" | 29'-6 11/16 " | 6 1/16" | 85'-0 1/8" |
| BRIDGE B | 1 | 28'-0" | 0" | 28'-0" | 0" | 28'-0" | 5 5/16 " | 84'-11 7/8" |
| | 2 | 26'-0 15/16 " | 2'-0" | 26'-0" | 2'-0" | 27'-11 1/16 " | 6" | 85'-0" |
| | 3 | 26'-1 5/16 " | 2'-0" | 26'-0" | 2'-0" | 27'-10 1/16 " | 6" | 85'-0" |
| | 4 | 26'-2 7/8" | 2'-0" | 26'-0" | 2'-0" | 27'-9 1/8" | 6" | 85'-0" |
| | 5 | 26'-3 13/16 " | 0" | 28'-0" | 0" | 29'-8 3/16 " | 6 1/16" | 85'-0 1/8" |




## SECTION A-A
Scale: 1" = 1'-0"

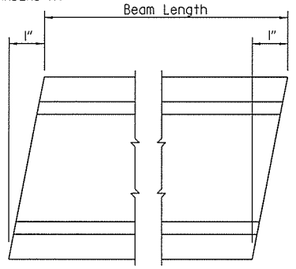



## SECTION B-B
Scale: 1" = 1'-0"




## VIEW C-C
Scale: 1" = 1'-0"

| DEBOND SCHEDULE | |
|---|---|
| Debond Pair | Debond Length From End Of Girder |
| A | 6'-0" |

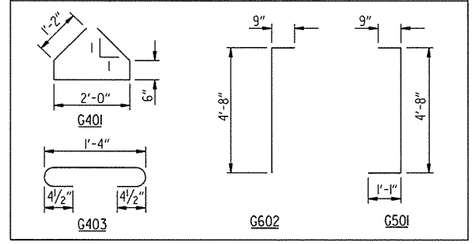



## GIRDER BEVEL
Scale: NTS

## BAR LIST - PER GIRDER

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| G301 | * | 1'-3" | Str. |
| G401 | 40 | 5'-2 1/2" | 2" |
| G402 | 4 | 7'-4" | Str. |
| G403 | 40 | 2'-4" | 3" |
| G501 | 204 | 6'-3" | 3 3/4" |
| G602 | 16 | 5'-3" | 4 1/2" |

## BAR BENDING DIAGRAMS




Notes:
Dimensions of bars in bending diaphragm are out-to-out.
Number of bars shown is for one girder only.
*4 required for exterior girder. 8 required for interior girder.

GENERAL NOTES - 85 FT. GIRDERS ONLY

Pretensioning steel shall be 1/2"ø Low Relaxation strands with a minimum uiltimate strength of 270 KSI and shall conform to AASHTO M203.

All girders shall be AASHTO TYPE IV I-girders as shown on the details. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 6500 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each 1/2"ø strand shall be 31000 pounds except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 5500 psi.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirment may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22, except that only 1/2"ø strands shall be allowed.

Reinforcing steel shall be AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressed Steel shall be maintained by stays, ties, hangers, spacers or other approved supports which shall be shown on the Shop Drawings.

The points of support and direction of reactions with respect to the member shall be approximately the same during transport and storage as when member is in its final position.

SPECIAL CAMBER NOTES
The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 8 OF 13
# DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

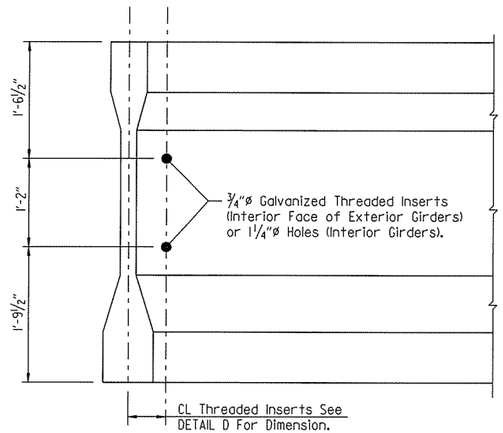
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2011 FILENAME: BCA0907X2_S8.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: JULY 2011

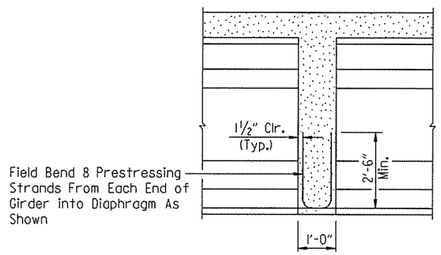
BRIDGE NO. A7305 & B7305 DRAWING NO. 55192

drgood 9/4/2014 9:59:29 AM
WORKSPACE: AHTD Bridge
\\CLITIDOC\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S8.dgn
REVISED DATE:

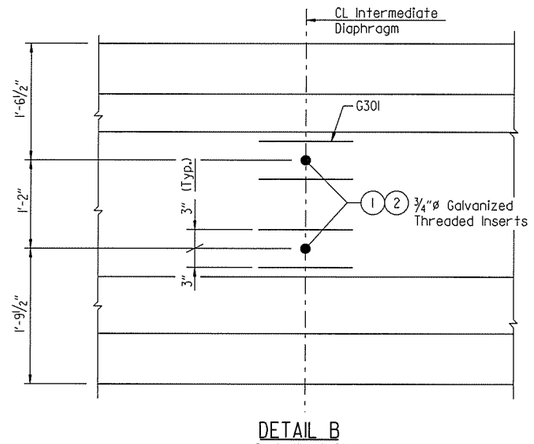
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 339 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55193 |



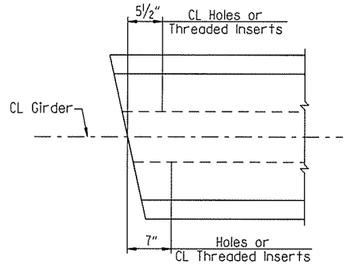

DETAIL A
Scale: 1" = 1'-0"



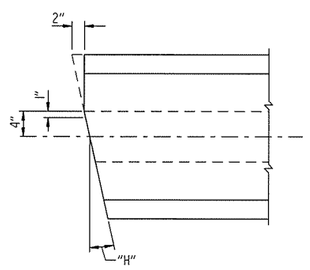

ELEVATION OF GIRDERS AT INTERMEDIATE BENTS
(Normal To Bent)
Scale: NTS




DETAIL B
Scale: 1" = 1'-0"




DETAIL D
Scale: 1" = 1'-0"




FINISH FOR EXT. BEAM ENDS
Scale: NTS

Notes:
(1) Inserts shown are for intermediate diaphragms, See Dwg. No. 55185 for Alternate Steel Diaphragms.

(2) Galvanized ¾"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal (omit in exterior face of exterior girders). These are to be subsidiary to the Item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)". See Dwg. No. 55185 for Alternate Steel Diaphragms.

| TABLE OF VARIABLES | | Span 1 | Span 2 | Span 3 |
|---|---|---|---|---|
| BRIDGE A | "H" | 10°45'00" | 11°45'00" | 12°00'00" |
| BRIDGE B | "H" | 10°45'00" | 11°45'00" | 12°45'00" |

Note:
When acute corner of girder falls on exterior face at joints in bridge, fabricate girder end as shown.

All other girder ends at joints in bridge may be so fabricated at the Contractor's option.

## SUPERSTRUCTURE GENERAL NOTES:

### CONCRETE:

All concrete in slab, parapets, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All end of unit and intermediate diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured, unless otherwise noted. Intermediate bent diaphragms shall be cast monolithically with the slab. The slab and intermediate bent diaphragms for the prestressed concrete girder units shall not be poured until at least 90 days after the release of the prestressing strands.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

### REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

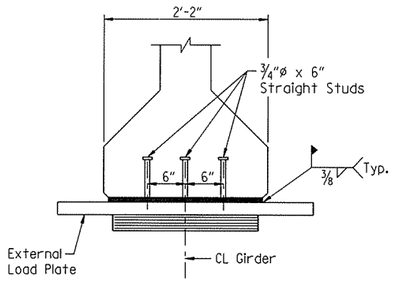
### STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50W unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". Structural Steel completely embedded in concrete may be AASHTO M270, Gr. 36. Galvanized steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). See Dwg. No. 55198 for cleaning requirements of external load plates of elastomeric bearings.

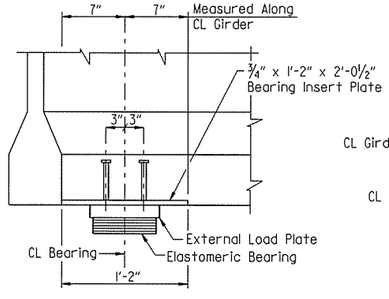
Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

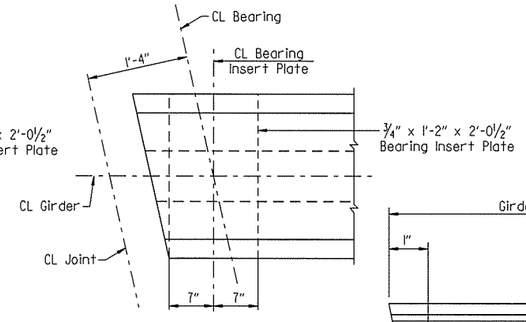
Drawings show general features of design only. Shop drawings shall be made in accordance with specifications, submitted and approval secured before fabrication is begun.



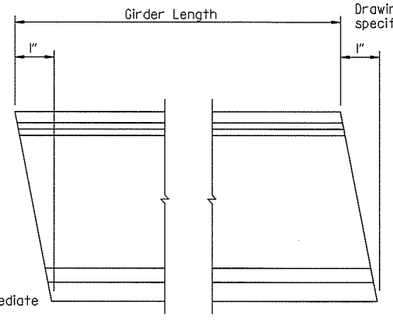

FRONT VIEW
Scale: NTS




SIDE VIEW
Scale: NTS

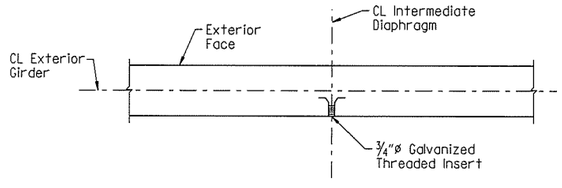



PLAN VIEW
Scale: NTS

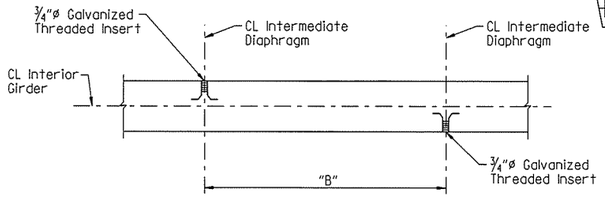



GIRDER BEVEL
Scale: NTS

ANCHOR AND EXTERNAL LOAD PLATE DETAILS




SECTION D-D
At Exterior Girder
Scale: NTS




SECTION D-D
At Interior Girder
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

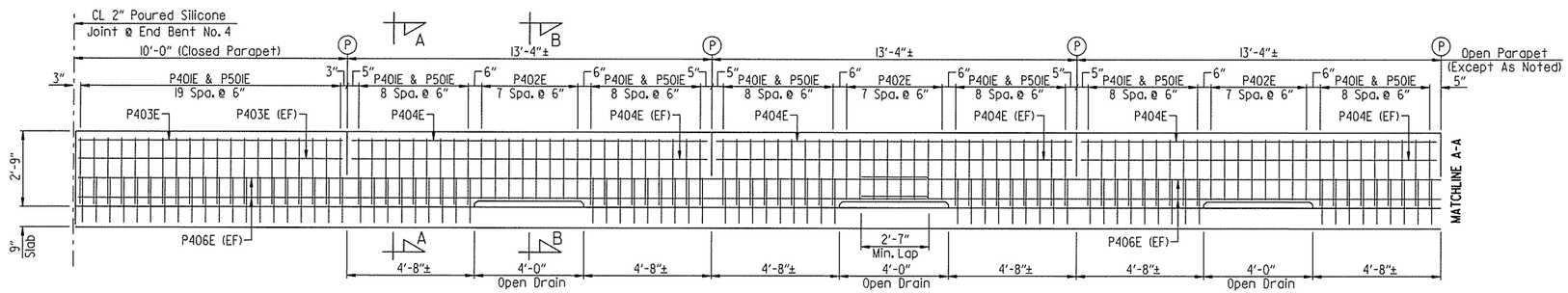
SHEET 9 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

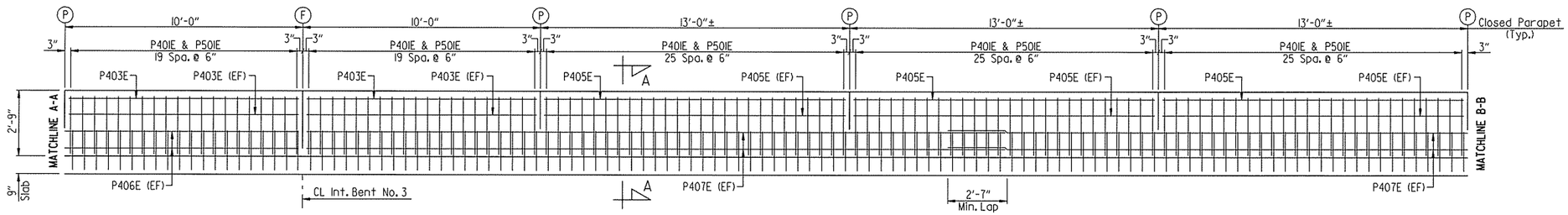
DRAWN BY: HEW DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X2_S9.DGN
SCALE: AS SHOWN

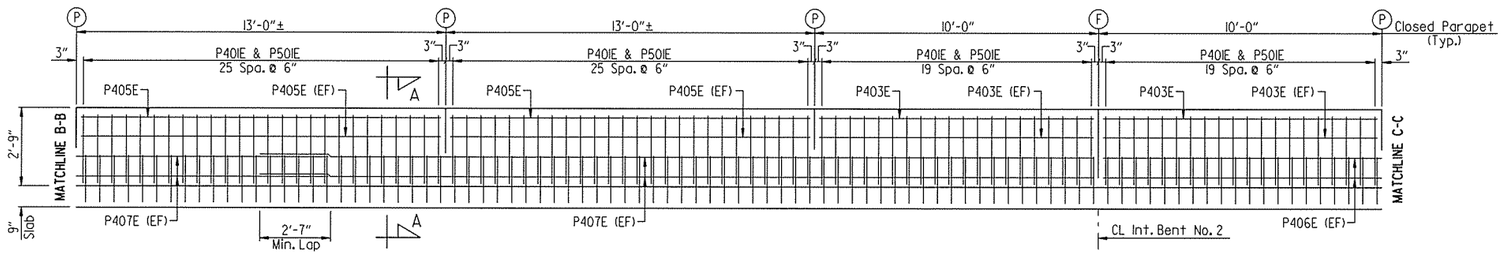
BRIDGE NO. A7305 & B7305 DRAWING NO. 55193

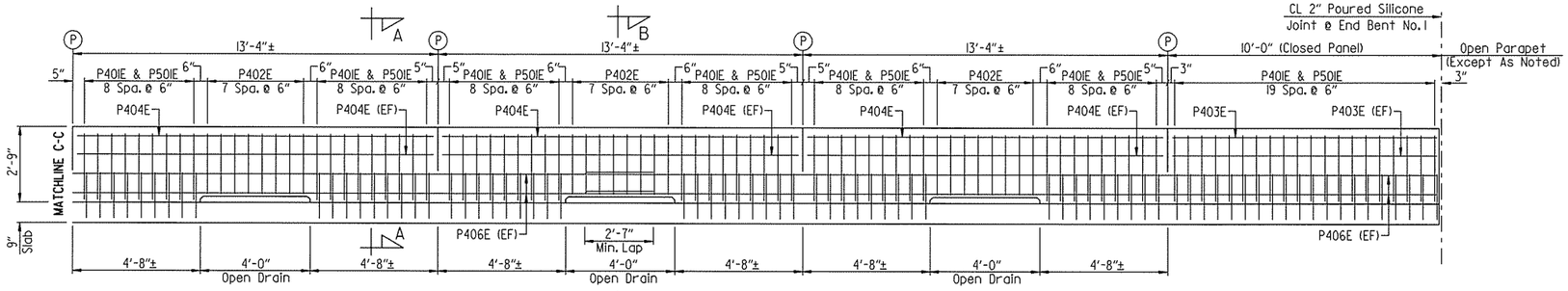
drgood 9/4/2014 9:59:29 AM
WORKSPACE: AHTD Bridge
\\CLIENTDOCS\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S9.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 340 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55194 |



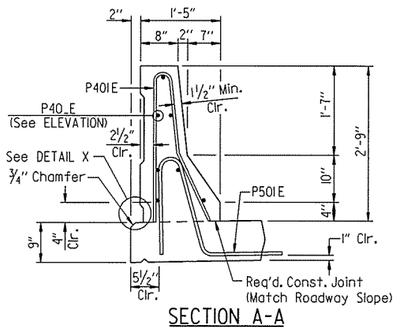



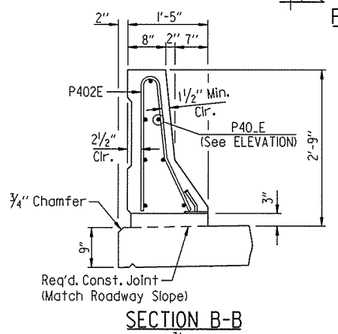




## PARAPET ELEVATION - LOW SIDE OF BRIDGE

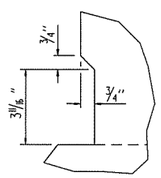
(Looking At Inside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Is Similar)
Scale: 3/8" = 1'-0"




SECTION A-A
Scale: ¾" = 1'-0"




SECTION B-B
Scale: ¾" = 1'-0"




DETAIL X
Scale: NTS

LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (¼" To ½" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-30-14

BRIDGE ENGINEER

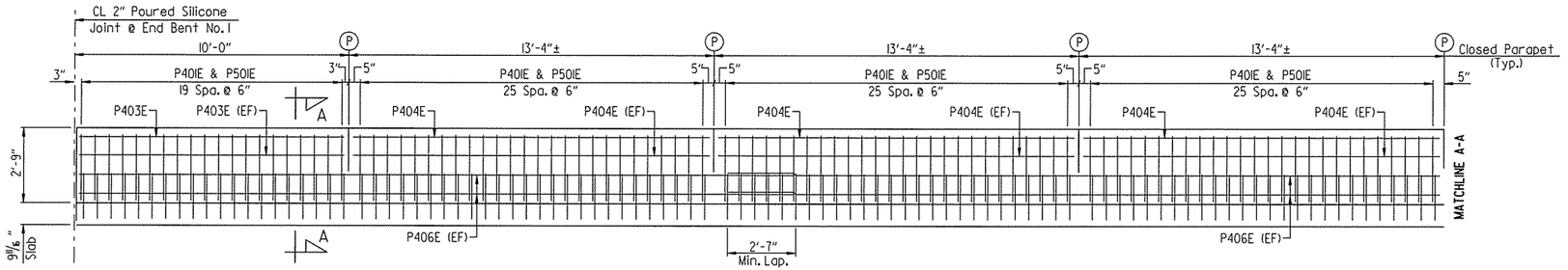
SHEET 10 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

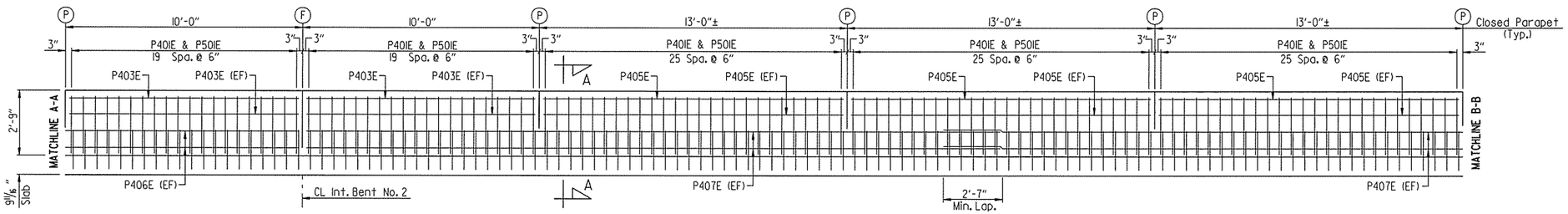
DRAWN BY: HEW DATE: SEPT. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: JES DATE: SEPT. 2011
FILENAME: BCA0907X2_S10.DGN
SCALE: AS SHOWN

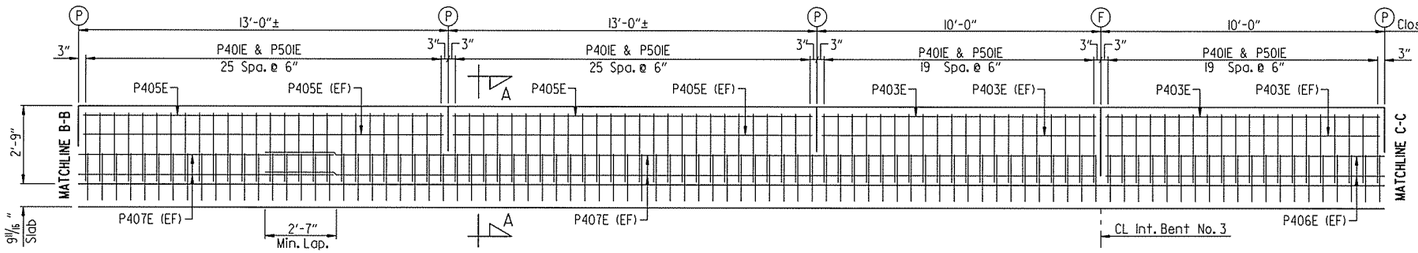
BRIDGE NO. A7305 & B7305 DRAWING NO. 55194

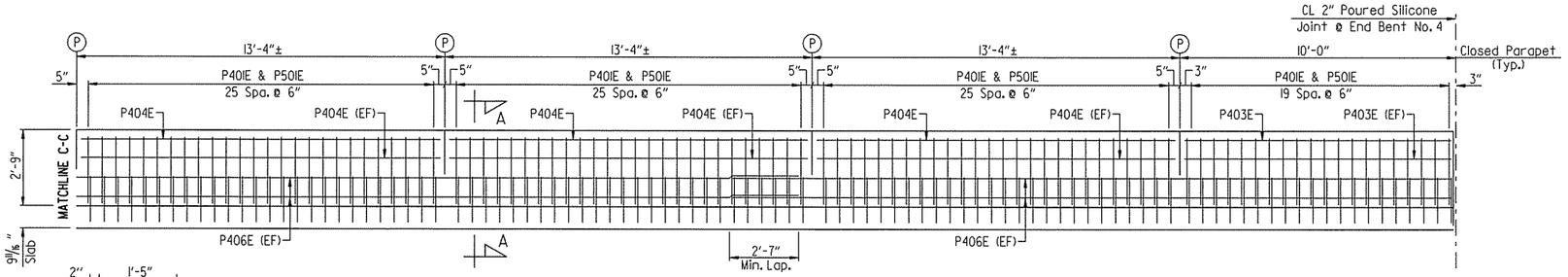
dropod 9/4/2014 9:59:30 AM
WORKSPACE: AHTD Bridge
\\LITDCON\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRGWagonWheel\BCA0907x2_S10.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 341 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55195 |



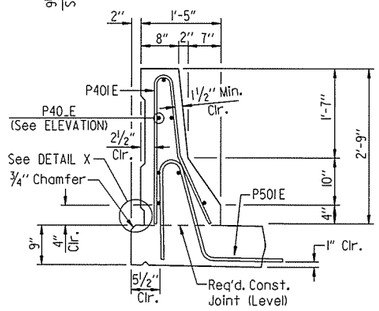



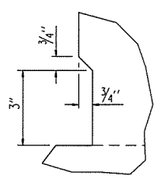




PARAPET ELEVATION - HIGH SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)
(Bridge A Shown, Bridge B Is Similar)
Scale: 3/8" = 1'-0"




SECTION A-A
Scale: 3/4" = 1'-0"




DETAIL X
Scale: NTS

LEGEND

EF = Each Face

(P) Partial Depth Parapet Joints (1/4" To 1/2" Max.) Shall Be Stopped 1'-2" From Top Of Slab.

(F) Full Depth Parapet Joints (1/4" To 1/2" Max.) Shall Be Stopped 4" From Top Of Slab.

STATE OF ARKANSAS 14 LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL 9-5-14

BRIDGE ENGINEER

SHEET 11 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

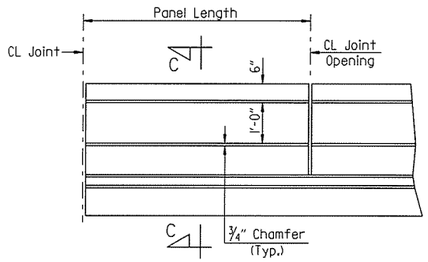
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: BCA0907X2_SI1.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: JES DATE: SEPT. 2011

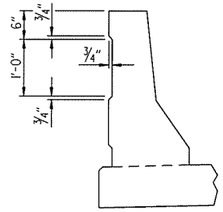
BRIDGE NO. A7305 & B7305 DRAWING NO. 55195

drgood 9/4/2014 9:59:31 AM
WORKSPACE: AHTD Bridge
\\LITDOCN_LITP\Projects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_SI1.dgn
REVISED DATE:

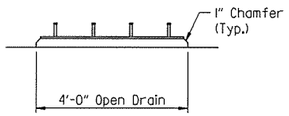
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 342 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55196 |




PARAPET ENHANCEMENT DETAILS
Scale: ½" = 1'-0"



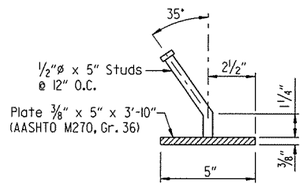

SECTION C-C
Scale: ¾" = 1'-0"



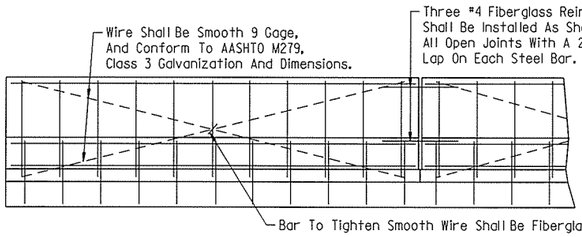

DRAIN DETAIL
Scale: ½" = 1'-0"

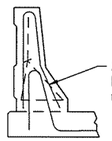
Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

The surfaces of the ⅜" Plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the Fabricator's shop. Painting will not be paid for directly, but willbe considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".




DETAIL Y
Scale: NTS

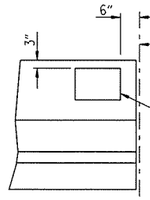



All Panels Shall Be Braced As Shown To Prevent Racking. All Open Joints Shall Be Sawed As Soon As Practical To A Minimum Width Of ¼". To Control Cracking Before Sawing All Joints Must Be Grooved Before The Concrete Is Set. Sawing Of The Joints Must Be Controlled So It Will Follow The Grooved Joint.

The Extruded Parapet Shall Conform To The Horizontal And Vertical Lines Shown On The Plans Or As Directed By The Engineer And Shall Present A Smooth, Uniform Appearance And Texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: NTS




VIEW SHOWING LOCATION OF NAME PLATE
Scale: ½" = 1'-0"

## GENERAL NOTES

CONCRETE: All Concrete Shall Be Class S(AE) With A Minimum 28 Day Compressive Strength f'c = 4000 psi. Concrete Deck Thickness Shall Be 8" Minimum.

REINFORCING STEEL: All Reinforcing Steel Shall Conform To AASHTO M31 Or M322 Type A, Grade 60.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

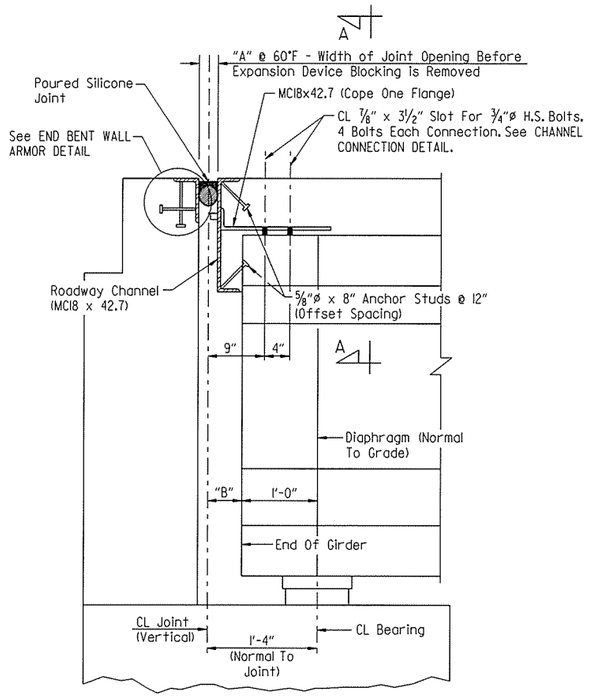
SHEET 12 OF 13
DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL RD.)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: SEPT. 2011 FILENAME: BCA0907X2_S12.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: JES DATE: SEPT. 2011

BRIDGE NO. A7305 & B7305 DRAWING NO. 55196

drgood 9/4/2014 9:59:31 AM
WORKSPACE: AHTD Bridge
\\CLITOCONLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_S12.dgn
REVISED DATE:

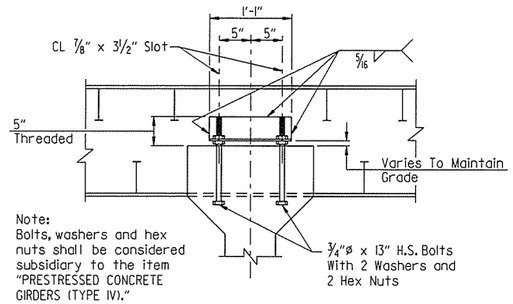
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 343 | 897 |
| | | | | (1) A7305 & B7305 | | SPAN DETAILS | | 55197 |




## SECTION THRU JOINT AT END BENTS

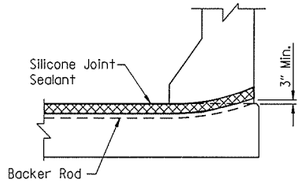
Note: Section Taken Normal To CL Joint
Scale: NTS

Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.



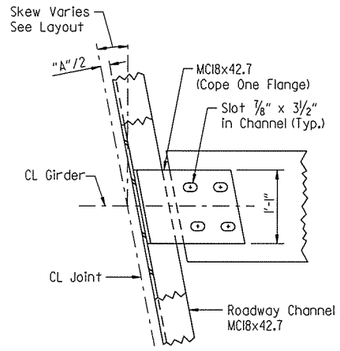

## SECTION A-A

Scale: NTS



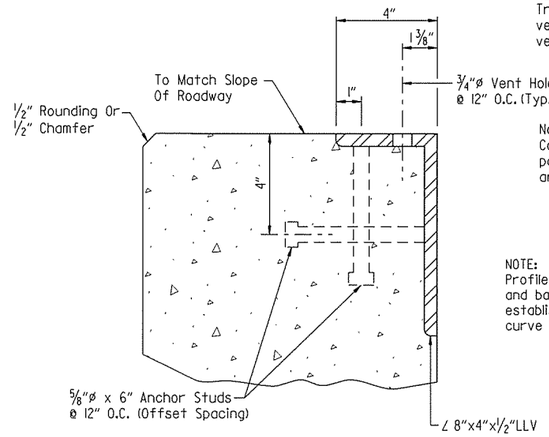

## JOINT SEAL PLACEMENT @ CURB

Scale: NTS




## CHANNEL CONNECTION DETAIL

Scale: NTS



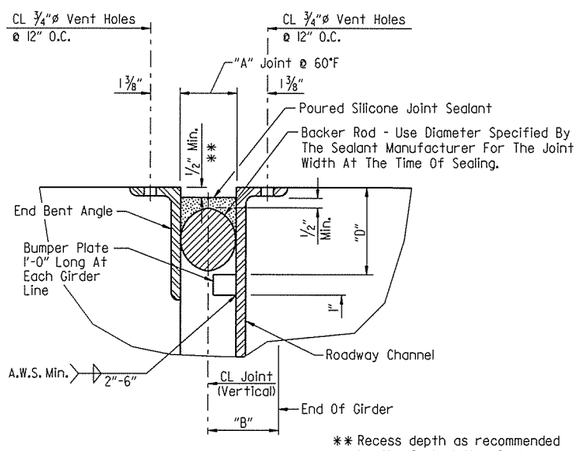

## END BENT WALL ARMOR DETAIL

Scale: NTS

Note:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

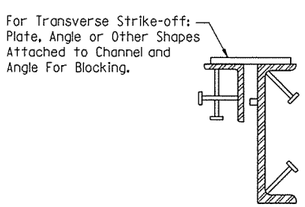
Note:
Concrete shall be hand packed under the joint armor in the backwall.

NOTE:
Profile of the roadway channel and backwall angle shall be established based on the vertical curve in conjunction with the skew.




## DETAIL OF POURED SILICONE JOINT

Scale: NTS




Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F, and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the Expansion Device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Scale: NTS

| SILICONE JOINT DATA | | | | | |
|---|---|---|---|---|---|
| "A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of: | | | "B" Perpendicular To Joint At 60°F | "D" | Bumper Plate Size |
| 40°F | 60°F | 80°F | | | |
| 2 1/8" | 2" | 1 7/8" | 5 7/8" ± | 4 1/2" | 1" x 1" |

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Notes:
The temperature limitations recommended by the Sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40°F and 80°F.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 13 OF 13
# DETAILS OF 205'-0" CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

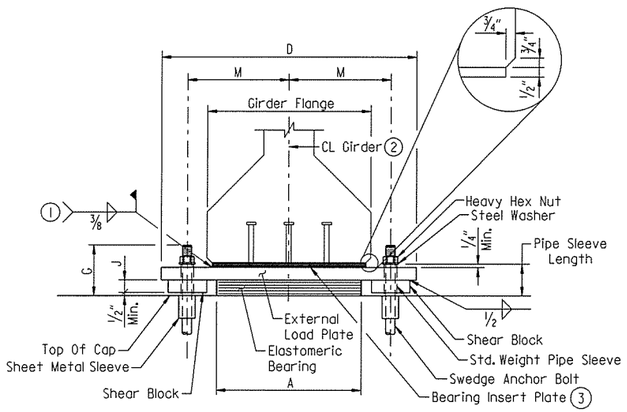
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: AUG. 2011
CHECKED BY: AJK DATE: APR. 2012
DESIGNED BY: MRA DATE: AUG. 2011
FILENAME: BCA0907X2_SI3.DGN
SCALE: AS SHOWN

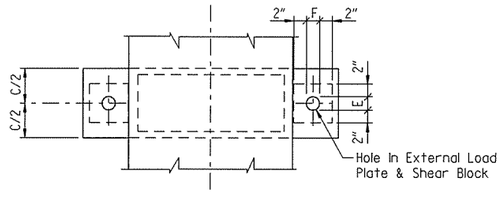
BRIDGE NO. A7305 & B7305 DRAWING NO. 55197

drgood 9/4/2014 9:59:31 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_SI3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 344 | 897 |
| | | | | (1) A7305 & B7305 | | ELAST. BEARINGS | | 55198 |




FRONT VIEW - AT BENTS 2 & 3

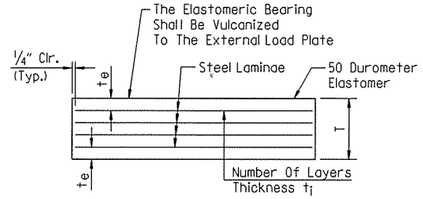



PLAN VIEW - AT BENTS 2 & 3

(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) Centerline elastomeric pad shall be aligned with centerline girder.

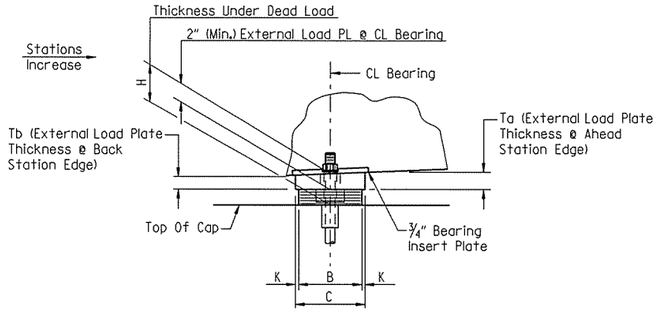
(3) Bearing insert plate (M270, GR. 50) & studs shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE IV)".




$t_e$ = Thickness Of Elastomer Cover On Top And Bottom Of Pad
$t_i$ = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness $t_i$

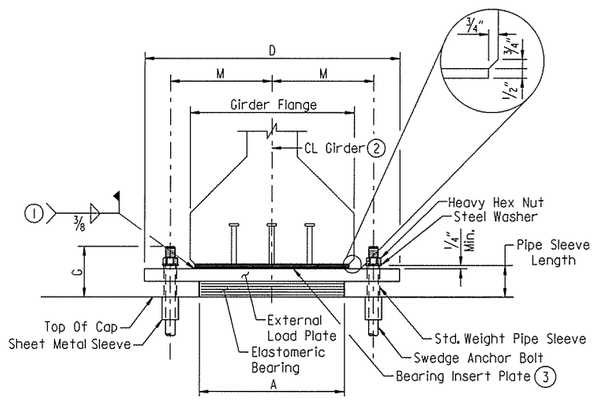
ELASTOMERIC BEARING

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the bearing insert plate will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

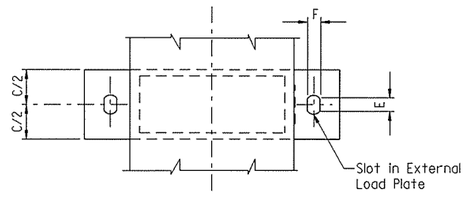



SIDE VIEW - AT BENTS 2 & 3

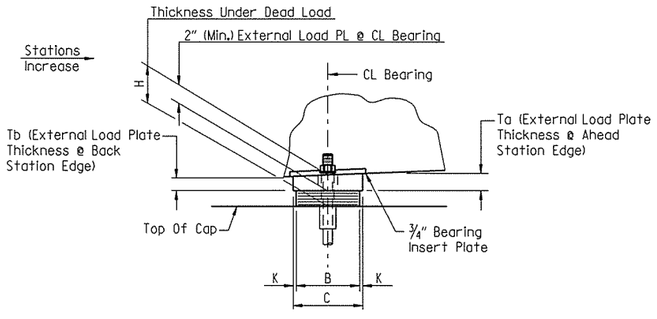
Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in TABLE OF FABRICATOR VARIABLES.



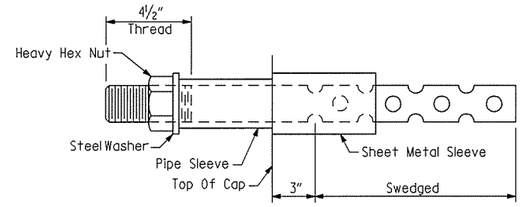

FRONT VIEW - AT BENTS 1 & 4




PLAN VIEW - AT BENTS 1 & 4




SIDE VIEW - AT BENTS 1 & 4




ANCHOR BOLT DETAIL

Note: Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

## GENERAL NOTES

Elastomeric bearings shall conform to Section 808 and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS".

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates and shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to the item "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the TABLE OF FABRICATOR VARIABLES. Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

## TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service I Limit State

| Bridge Nos. | Location: Bent No.(s) | Location: Beam Or Girder No. | Bearing Type | No. Of Bearings Each Bent | *Maximum Design Load (Kips) | G | H | Elastomeric Pad: A | B | N | $t_i$ | $t_e$ | No. & Thickness Of Steel Laminate | T | External Load Plate: C | D | E | F | J | K | M | $T_a$ | $T_b$ | Anchor Bolt: (Dia. x L) | Anchor Bolt: Grade | Pipe Sleeve Size (Dia. x L) | Sheet Metal Sleeve Size (Dia. x L) | Steel Washer Size (O.D.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A7305 & B7305 | 1 | All | Exp. | 5 | 134.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 36 1/2" | 4" | 2 1/4" | - | 1/2" | 15 1/2" | 2.08" | 1.92" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 6" | 3" |
| | 2 | Back Sta. | Fixed | 5 | 168.4 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.08" | 1.92" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 2 | Fwd. Sta. | Fixed | 5 | 200.6 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.09" | 1.91" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 3 | Back Sta. | Fixed | 5 | 200.6 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.09" | 1.91" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 3 | Fwd. Sta. | Fixed | 5 | 168.4 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 40 1/2" | 2 1/4" | 2 1/4" | 1 7/8" | 1/2" | 16 1/8" | 2.10" | 1.90" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 7" | 3" |
| | 4 | All | Exp. | 5 | 134.8 | 7 1/8" | 4 3/8" | 23" | 10" | 3 | 1/2" | 1/4" | 4 @ 12 Ga. | 2 7/16" | 11" | 36 1/2" | 4" | 2 1/4" | - | 1/2" | 15 1/2" | 2.10" | 1.90" | 1 1/2" x 24" | 55 | 1 1/2" x 4 5/8" | 3" x 6" | 3" |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
12-31-14

BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

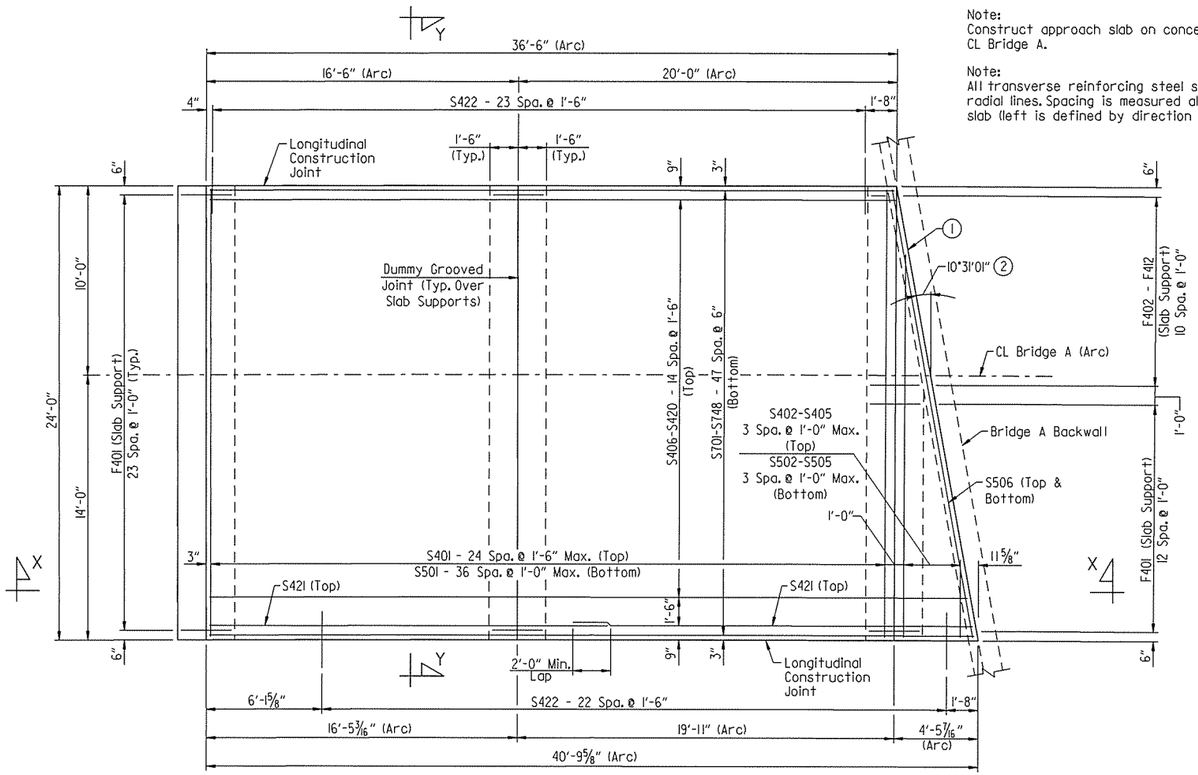
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2011 FILENAME: BCA0907X2_EI.DGN
CHECKED BY: AJK DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: AUG. 2011

BRIDGE NO. A7305 & B7305 DRAWING NO. 55198

drgood 9/4/2014 9:59:32 AM
WORKSPACE: AHTD Bridge
\\QUITDOM\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_EI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 345 | 897 |
| | | | | (1) A7305 & B7305 | | APPROACH SLAB | | 55199 |



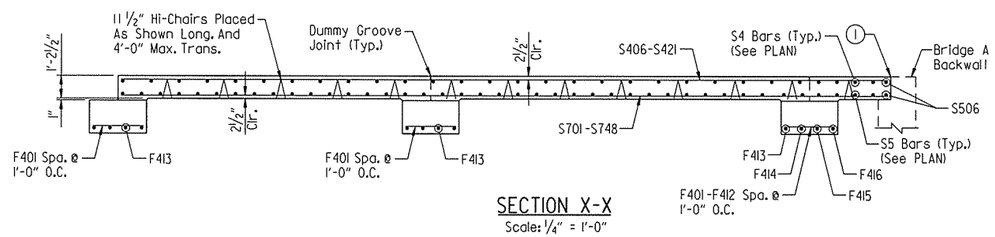

## PLAN
Approach Slab At Begin Bridge
Scale: ¼" = 1'-0"

Note:
Construct approach slab on concentric arcs to CL Bridge A.

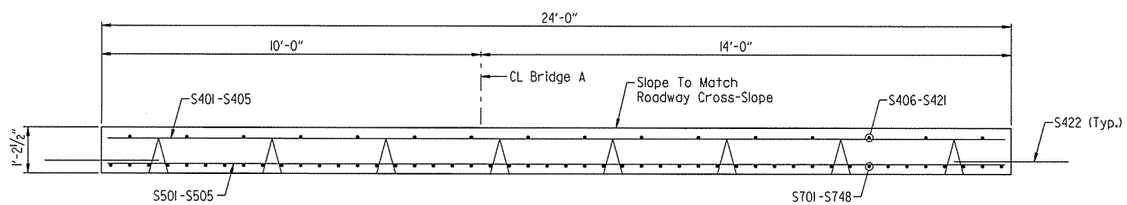
Note:
All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along left edge of slab (left is defined by direction of stationing).

(1) ½" Preformed Joint (AASHTO M153, Type 1) and 2" x ½" Poured Synthetic Polymer Joint Sealer (Type 3 or 4) as per Subsection 501.02(h)(2). Backer rod is required.

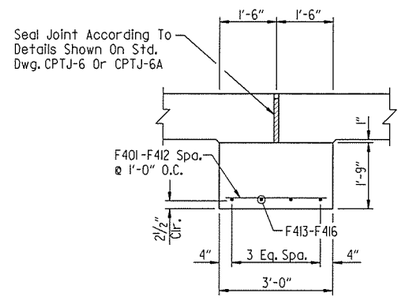
(2) Measured from radial line.



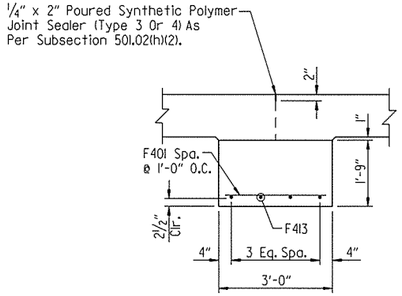

## SECTION X-X
Scale: ¼" = 1'-0"



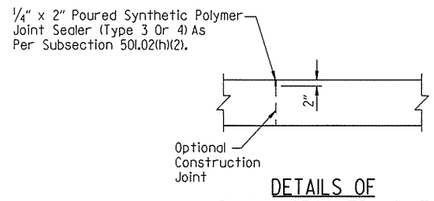

## SECTION Y-Y
Scale: ½" = 1'-0"



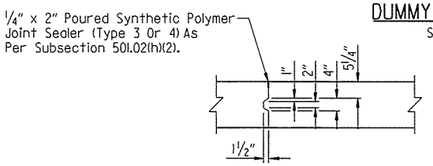

## DETAILS OF SUPPORT AT END OF SLAB
Scale: ½" = 1'-0"




## DETAILS OF INTERIOR SUPPORT OF SLAB
Scale: ½" = 1'-0"




## DETAILS OF DUMMY GROOVED JOINT
Scale: ½" = 1'-0"




## DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
Scale: ½" = 1'-0"

| BAR LIST - APPROACH SLAB | | | |
|---|---|---|---|
| MARK | NO. REQ'D. | LENGTH | P.D. |
| S401 | 25 | 23'-8" | Str. |
| S402 To S405 | 1 Ea. | 20'-3" To 4'-1" | Str. |
| S406 To S420 | 1 Ea. | 36'-3" To 40'-0" | Str. |
| S421 | 2 | 21'-6" | Str. |
| S422 | 47 | 3'-0" | Str. |
| | | | |
| S501 | 37 | 23'-8" | Str. |
| S502 To S505 | 1 Ea. | 20'-3" To 4'-1" | Str. |
| S506 | 2 | 24'-0" | Str. |
| | | | |
| S701 To S748 | 1 Ea. | 36'-2" To 40'-5" | Str. |
| | | | |
| F401 | 61 | 2'-8" | Str. |
| F402 To F412 | 1 Ea. | 2'-7" To 9" | Str. |
| F413 | 9 | 23'-8" | Str. |
| F414 | 1 | 22'-3" | Str. |
| F415 | 1 | 18'-1" | Str. |
| F416 | 1 | 13'-11" | Str. |

## QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

| Class S(AE) Concrete | Reinforcing Steel (GR. 60) |
|---|---|
| 55.46 Cu. Yds. | 6,003 Lb. |

## GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcement Steel shall conform to AASHTO M31 Or M322 Type A, Grade 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 2
# DETAILS OF TYPE SPECIAL 1 APPROACH SLAB U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL ROAD) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

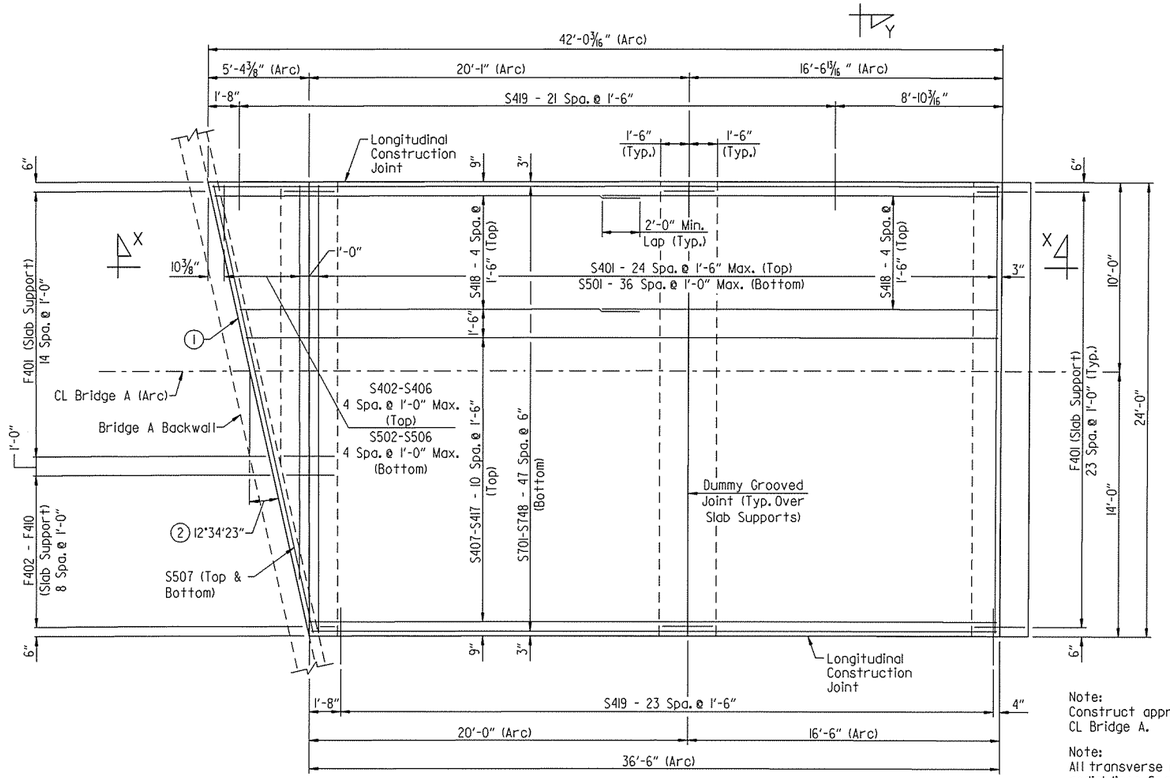
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2012 FILENAME: BCA0907X2_ASI.DGN
CHECKED BY: JES DATE: APR. 2012 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: JAN. 2012

BRIDGE NO. A7305 & B7305 DRAWING NO. 55199

drgood 9/4/2014 9:59:32 AM
WORKGROUP: HNTD Bridge
\\CLITDOR\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_ASI.dgn
REVISED DATE:

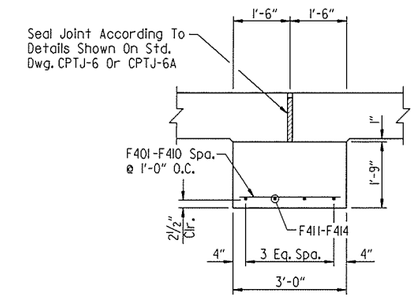
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 346 | 897 |
| | | | | (1) A7305 & B7305 | | APPROACH SLAB | | 55200 |



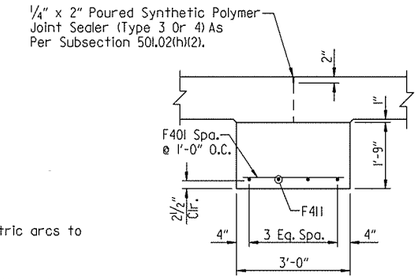

PLAN
Approach Slab At End Bridge
Scale: 1/4" = 1'-0"

(1) 1/2" Preformed Joint (AASHTO M153, Type 1) and 2" x 1/2" Poured Synthetic Polymer Joint Sealer (Type 3 or 4) as per Subsection 501.02(h)(2). Backer rod is required.

(2) Measured from radial line.




DETAILS OF SUPPORT AT END OF SLAB
Scale: 1/2" = 1'-0"

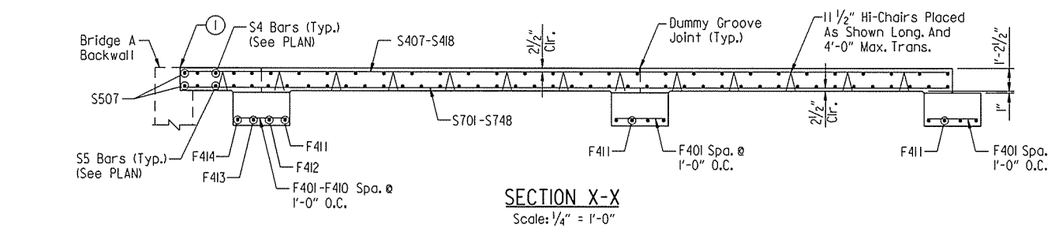



DETAILS OF INTERIOR SUPPORT OF SLAB
Scale: 1/2" = 1'-0"

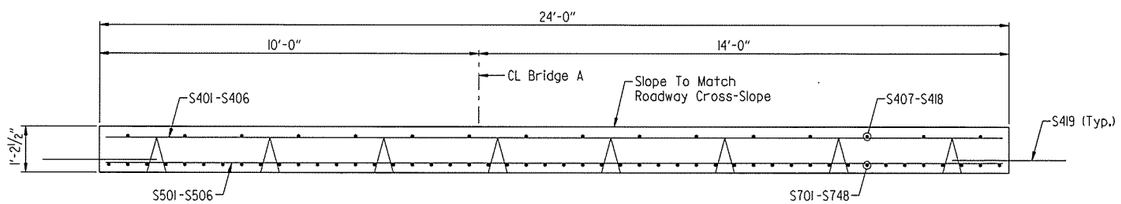
Note:
Construct approach slab on concentric arcs to CL Bridge A.

Note:
All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along left edge of slab (left is defined by direction of stationing).

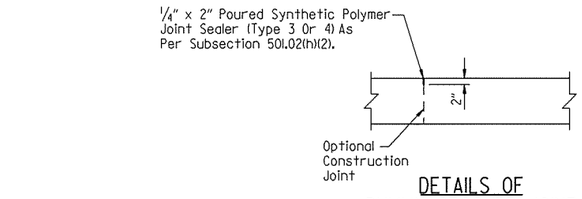
| BAR LIST - APPROACH SLAB | | | |
|---|---|---|---|
| MARK | NO. REQ'D. | LENGTH | P.D. |
| S401 | 25 | 23'-8" | Str. |
| S402 To S406 | 1 Ea. | 20'-10" To 2'-11" | Str. |
| S407 To S417 | 1 Ea. | 36'-4" To 39'-9" | Str. |
| S418 | 10 | 22'-0" | Str. |
| S419 | 46 | 3'-0" | Str. |
| | | | |
| S501 | 37 | 23'-8" | Str. |
| S502 To S506 | 1 Ea. | 20'-10" To 2'-11" | Str. |
| S507 | 2 | 24'-3" | Str. |
| | | | |
| S701 To S748 | 1 Ea. | 36'-2" To 41'-7" | Str. |
| | | | |
| F401 | 63 | 2'-8" | Str. |
| F402 To F410 | 1 Ea. | 2'-7" To 9" | Str. |
| F411 | 9 | 23'-8" | Str. |
| F412 | 1 | 22'-6" | Str. |
| F413 | 1 | 19'-0" | Str. |
| F414 | 1 | 15'-7" | Str. |



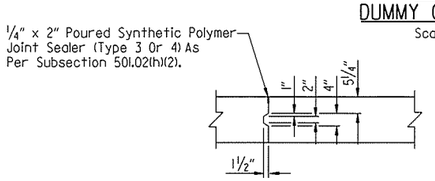

SECTION X-X
Scale: 1/4" = 1'-0"




SECTION Y-Y
Scale: 1/2" = 1'-0"




DETAILS OF DUMMY GROOVED JOINT
Scale: 1/2" = 1'-0"




DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
Scale: 1/2" = 1'-0"

QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

| Class S(AE) Concrete | Reinforcing Steel (GR. 60) |
|---|---|
| 56.24 Cu. Yds. | 6,096 Lb. |

Note:
For GENERAL NOTES, See Dwg. No. 55199.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF
TYPE SPECIAL I APPROACH SLAB
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY

ROUTE 412 SEC. 2

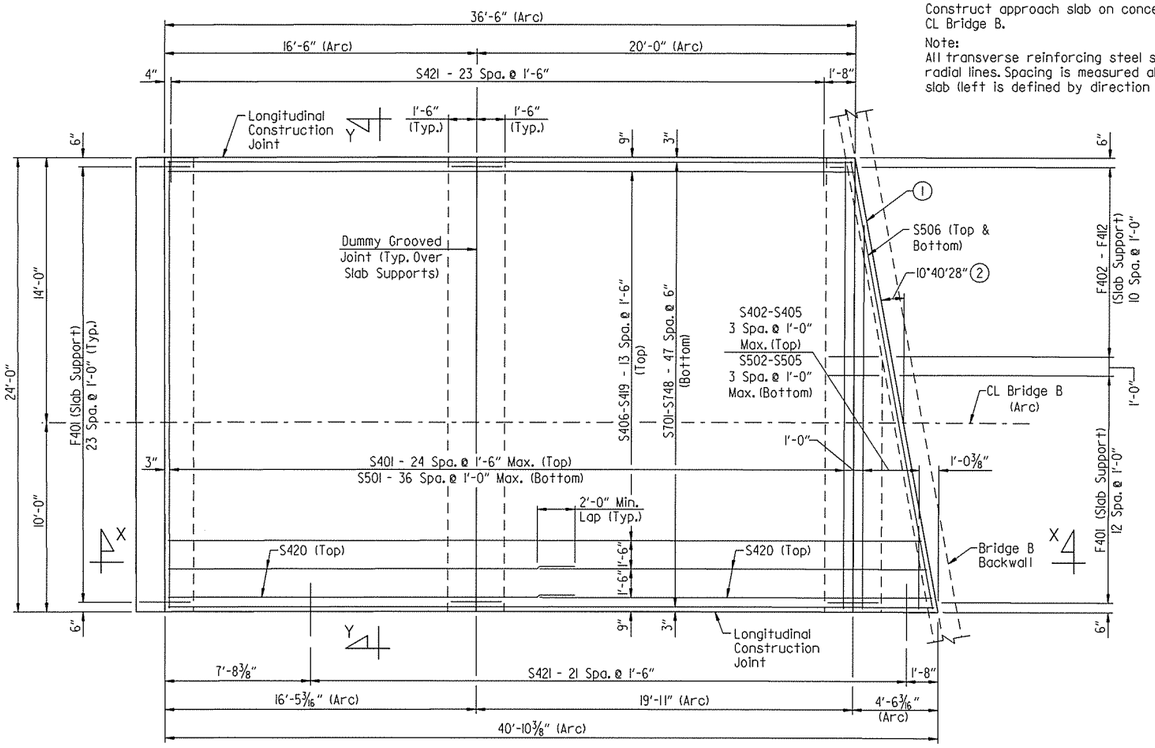
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2012
CHECKED BY: JES DATE: APR. 2012
DESIGNED BY: MRA DATE: JAN. 2012
FILENAME: BCA0907X2_AS2.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55200

drgood 9/4/2014 9:59:33 AM
WORKSPACE: AHTD Bridge
\\GLITDOM\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_AS2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 347 | 897 |
| | | | | (1) A7305 & B7305 | | APPROACH SLAB | | 55201 |



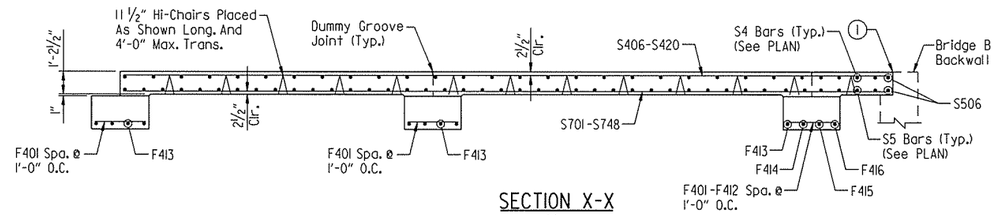

PLAN
Approach Slab At Begin Bridge
Scale: 1/4" = 1'-0"

Note:
Construct approach slab on concentric arcs to CL Bridge B.

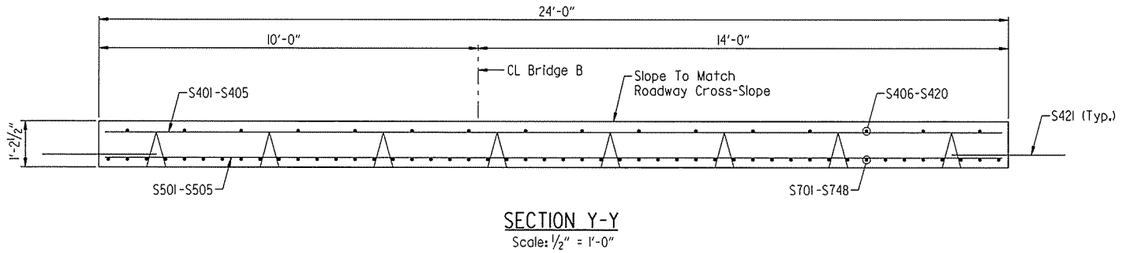
Note:
All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along left edge of slab (left is defined by direction of stationing).

(1) 1/2" Preformed Joint (AASHTO M153, Type 1) and 2" x 1/2" Poured Synthetic Polymer Joint Sealer (Type 3 or 4) as per Subsection 501.02(h)(2). Backer rod is required.

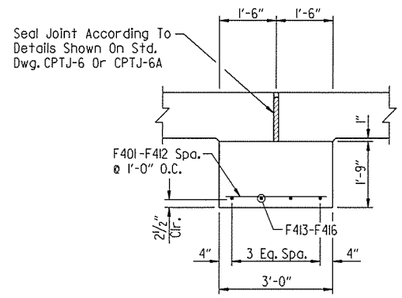
(2) Measured from radial line.



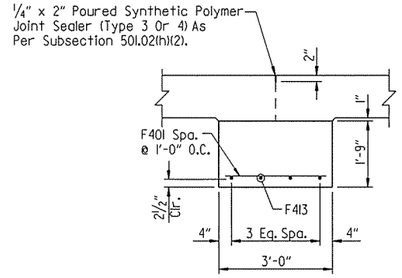

SECTION X-X
Scale: 1/4" = 1'-0"



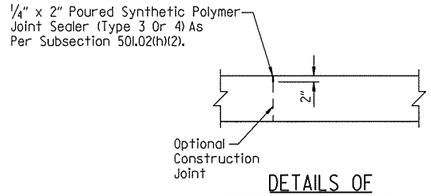

SECTION Y-Y
Scale: 1/2" = 1'-0"



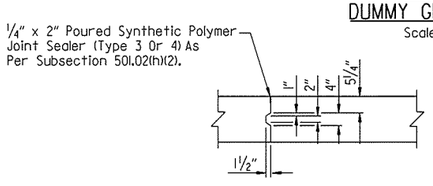

DETAILS OF SUPPORT AT END OF SLAB
Scale: 1/2" = 1'-0"




DETAILS OF INTERIOR SUPPORT OF SLAB
Scale: 1/2" = 1'-0"




DETAILS OF DUMMY GROOVED JOINT
Scale: 1/2" = 1'-0"




DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
Scale: 1/2" = 1'-0"

| BAR LIST - APPROACH SLAB | | | |
|---|---|---|---|
| MARK | NO. REQ'D. | LENGTH | P.D. |
| S401 | 25 | 23'-8" | Str. |
| S402 To S405 | 1 Ea. | 20'-3" To 4'-4" | Str. |
| S406 To S419 | 1 Ea. | 36'-3" To 39'-10" | Str. |
| S420 | 4 | 21'-6" | Str. |
| S421 | 46 | 3'-0" | Str. |
| | | | |
| S501 | 37 | 23'-8" | Str. |
| S502 To S505 | 1 Ea. | 20'-3" To 4'-4" | Str. |
| S506 | 2 | 24'-1" | Str. |
| | | | |
| S701 To S748 | 1 Ea. | 36'-2" To 40'-5" | Str. |
| | | | |
| F401 | 61 | 2'-8" | Str. |
| F402 To F412 | 1 Ea. | 2'-7" To 9" | Str. |
| F413 | 9 | 23'-8" | Str. |
| F414 | 1 | 22'-4" | Str. |
| F415 | 1 | 18'-2" | Str. |
| F416 | 1 | 14'-0" | Str. |

QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

| Class S(AE) Concrete | Reinforcing Steel (GR. 60) |
|---|---|
| 55.50 Cu. Yds. | 6,005 Lb. |

Note:
For GENERAL NOTES, see Drawing No. 55199.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF
TYPE SPECIAL 2 APPROACH SLAB
U.S. HIGHWAY 412 OVER
COUNTY ROAD 60 (E. WAGON WHEEL ROAD)
BENTON COUNTY

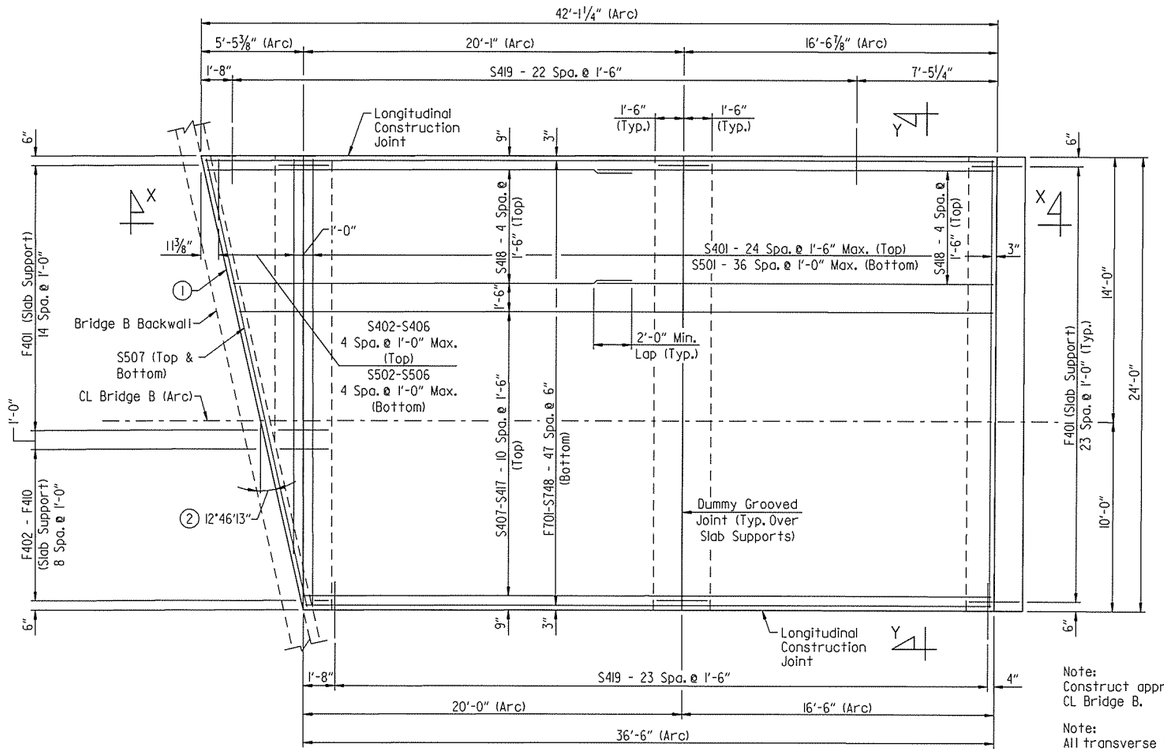
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2012
CHECKED BY: JES DATE: APR. 2012
DESIGNED BY: MRA DATE: JAN. 2012
FILENAME: BCA0907X2_AS3.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55201

dropood 9/4/2014 9:59:33 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_AS3.dgn
REVISED DATE:

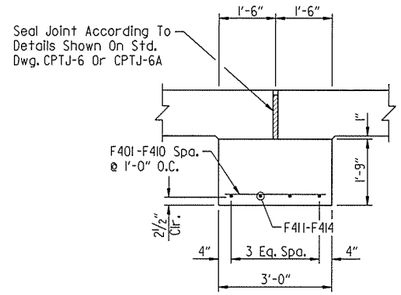
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 348 | 897 |
| | | | | (1) A7305 & B7305 | | APPROACH SLAB | | 55202 |



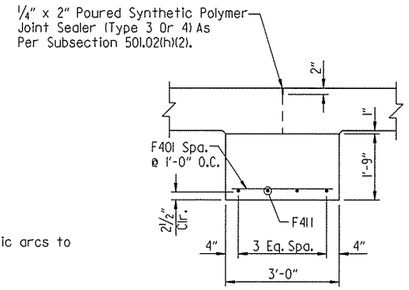

PLAN
Approach Slab At End Bridge
Scale: ¼" = 1'-0"

Note:
Construct approach slab on concentric arcs to CL Bridge B.

Note:
All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along left edge of slab (left is defined by direction of stationing).




DETAILS OF SUPPORT AT END OF SLAB
Scale: ½" = 1'-0"

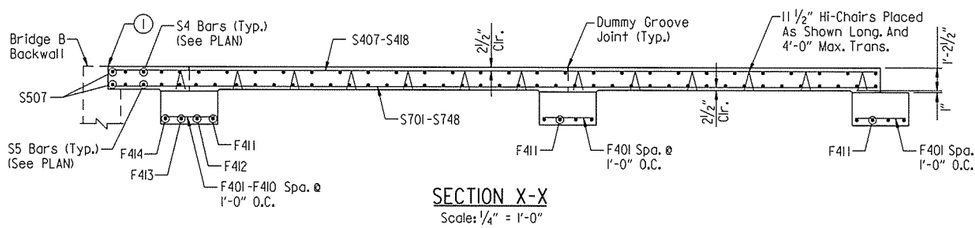



DETAILS OF INTERIOR SUPPORT OF SLAB
Scale: ½" = 1'-0"

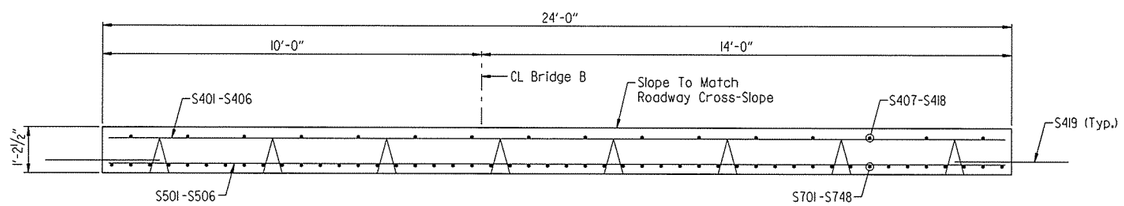
| BAR LIST - APPROACH SLAB | | | |
|---|---|---|---|
| MARK | NO. REQ'D. | LENGTH | P.D. |
| S401 | 25 | 23'-8" | Str. |
| S402 To S406 | 1 Ea. | 20'-10" To 3'-3" | Str. |
| S407 To S417 | 1 Ea. | 36'-4" To 39'-10" | Str. |
| S418 | 10 | 22'-0" | Str. |
| S419 | 47 | 3'-0" | Str. |
| | | | |
| S501 | 37 | 23'-8" | Str. |
| S502 To S506 | 1 Ea. | 20'-10" To 3'-3" | Str. |
| S507 | 2 | 24'-3" | Str. |
| | | | |
| S701 To S748 | 1 Ea. | 36'-2" To 41'-8" | Str. |
| | | | |
| F401 | 63 | 2'-8" | Str. |
| F402 To F410 | 1 Ea. | 2'-7" To 9" | Str. |
| F411 | 9 | 23'-8" | Str. |
| F412 | 1 | 22'-7" | Str. |
| F413 | 1 | 19'-1" | Str. |
| F414 | 1 | 15'-8" | Str. |

(1) ½" Preformed Joint (AASHTO M153, Type 1) and 2" x ½" Poured Synthetic Polymer Joint Sealer (Type 3 or 4) as per Subsection 501.02(h)(2). Backer rod is required.

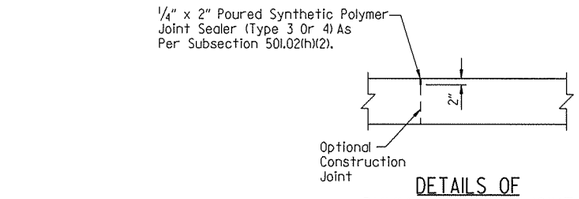
(2) Measured from radial line.



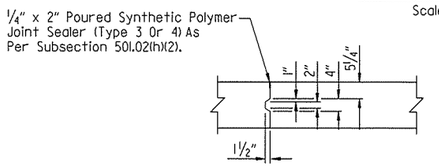

SECTION X-X
Scale: ¼" = 1'-0"




SECTION Y-Y
Scale: ½" = 1'-0"




DETAILS OF DUMMY GROOVED JOINT
Scale: ½" = 1'-0"




DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
Scale: ½" = 1'-0"

QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

| Class S(AE) Concrete | Reinforcing Steel (GR. 60) |
|---|---|
| 56.29 Cu. Yds. | 6,104 Lbs. |

Note:
For GENERAL NOTES, see Dwg. No. 55199.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 2 OF 2
# DETAILS OF TYPE SPECIAL 2 APPROACH SLAB U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL ROAD) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

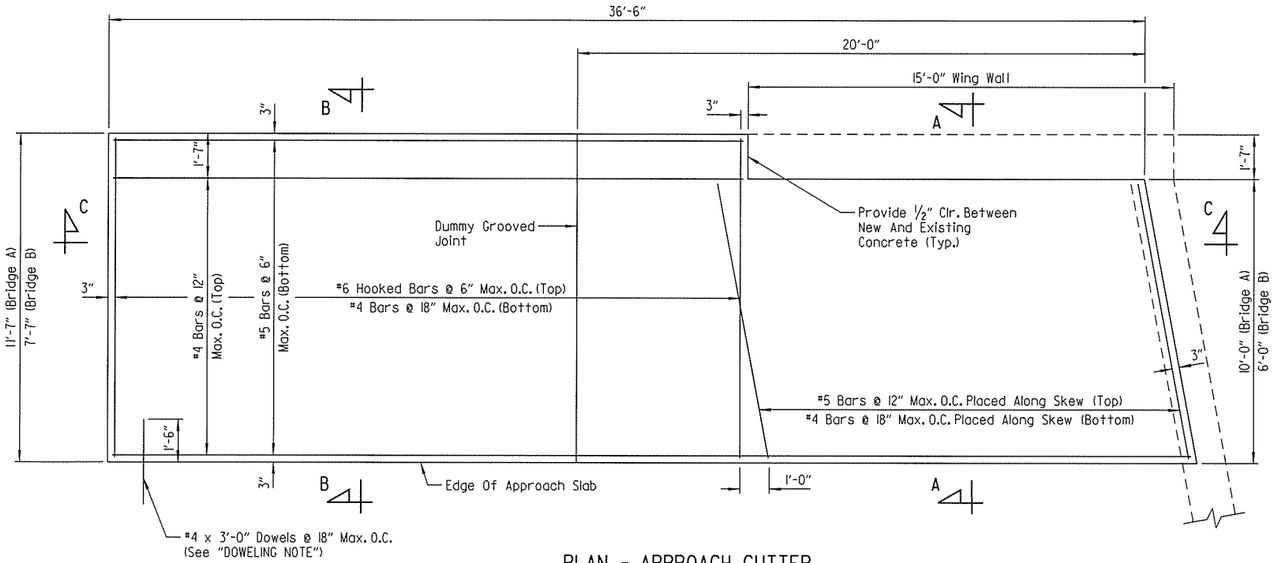
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2012
CHECKED BY: JES DATE: APR. 2012
DESIGNED BY: MRA DATE: JAN. 2012
FILENAME: BCA0907X2_AS4.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55202

drgood 9/4/2014 9:59:34 AM
WORKSPACE: AHTD Bridge
\\ALITDCON_LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_AS4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 349 | 897 |
| | | | | (1) A7305 & B7305 | | APPROACH GUTTERS | | 55203 |

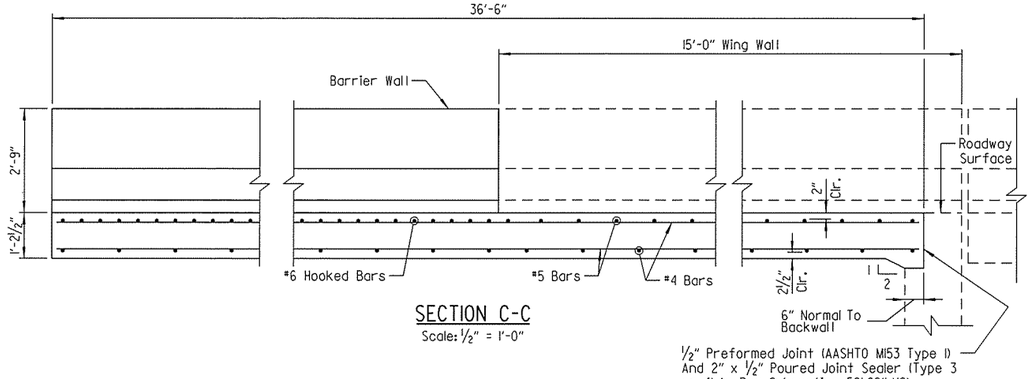



## PLAN - APPROACH GUTTER

10'-0" Shoulder (Bridge A)
6'-0" Shoulder (Bridge B)
Scale: ⅜" = 1'-0"

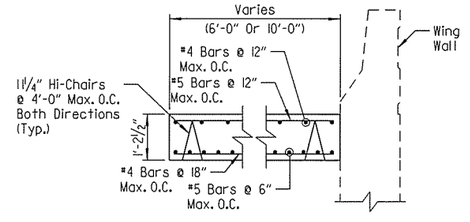
NOTE:
Angle of skew varies at each approach gutter location.

NOTE:
All reinforcing bars shall maintain a minimum of 2" clr. cover unless noted otherwise.



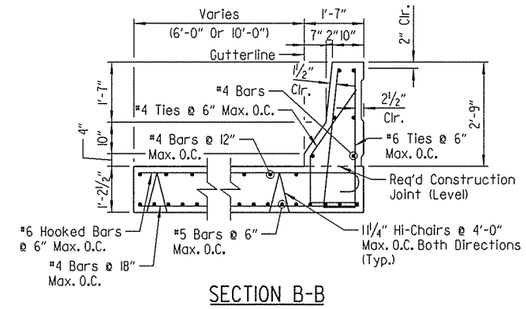

## SECTION C-C

Scale: ½" = 1'-0"



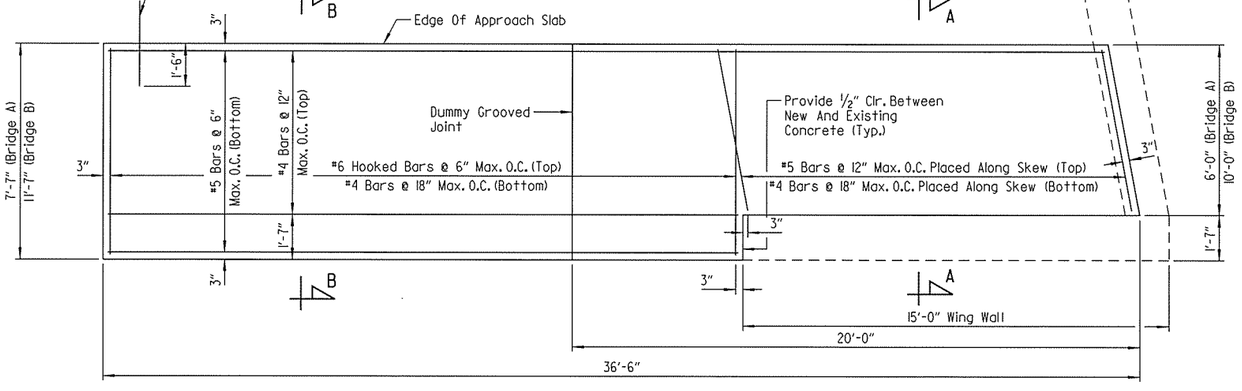

## SECTION A-A

Scale: ½" = 1'-0"




## SECTION B-B

Scale: ½" = 1'-0"

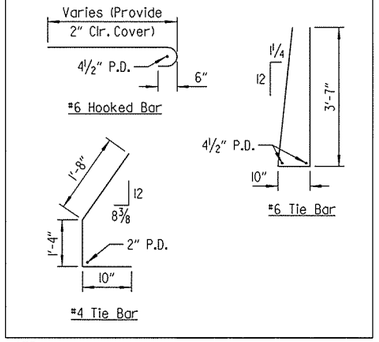



## PLAN - APPROACH GUTTER

6'-0" Shoulder (Bridge A)
10'-0" Shoulder (Bridge B)
Scale: ⅜" = 1'-0"

NOTE:
The approach gutters shall be constructed along curves concentric to 1°00'00" curve at CL Median. All longitudinal lines and reinforcing steel shall be placed on curves concentric with CL Bridge. All transverse reinforcing steel shall be placed on lines radial to CL Bridge. Spacing for transverse reinforcing steel shall be measured along CL Bridge.

## BAR BENDING DIAGRAMS




NOTE:
Dimensions of bars are out-to-out.

DOWELING NOTE:
Prior to pouring concrete for approach slab, place dowels into approach slab using 18" embedment.

As an alternate to using cast-in-place dowels during approach slab construction, dowels may be drilled and grouted 18" into the previously cured approach slab. Work for drilling and grouting will not be paid for separately but will be considered subsidiary to "APPROACH GUTTERS".

## QUANTITIES - PER GUTTER

| Location | Shoulder Width | Class S(AE) Concrete | Reinforcing Steel (Gr. 60) |
|---|---|---|---|
| Begin Bridge A Left | 10'-0" | 20.82 Cu. Yds. | 3040 Lb. |
| Begin Bridge A Right | 6'-0" | 13.73 Cu. Yds. | 2168 Lb. |
| Begin Bridge B Left | 6'-0" | 14.03 Cu. Yds. | 2205 Lb. |
| Begin Bridge B Right | 10'-0" | 19.99 Cu. Yds. | 2953 Lb. |

## GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Approach gutters will be measured and paid for in accordance with Section 504.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# DETAILS OF TYPE SPECIAL 2 APPROACH GUTTERS U.S. HIGHWAY 412 OVER COUNTY ROAD 60 (E. WAGON WHEEL RD.) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: DRG DATE: DEC. 2013
CHECKED BY: ABH DATE: JAN. 2014
DESIGNED BY: DRG DATE: DEC. 2013
FILENAME: BCA0907X2_GI.DGN
SCALE: AS SHOWN

BRIDGE NO. A7305 & B7305 DRAWING NO. 55203

drgood 9/4/2014 9:59:34 AM
WORKSPACE: AHTD Bridge
\\CLITDDSNLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WagonWheel\BCA0907x2_GI.dgn
REVISED DATE:

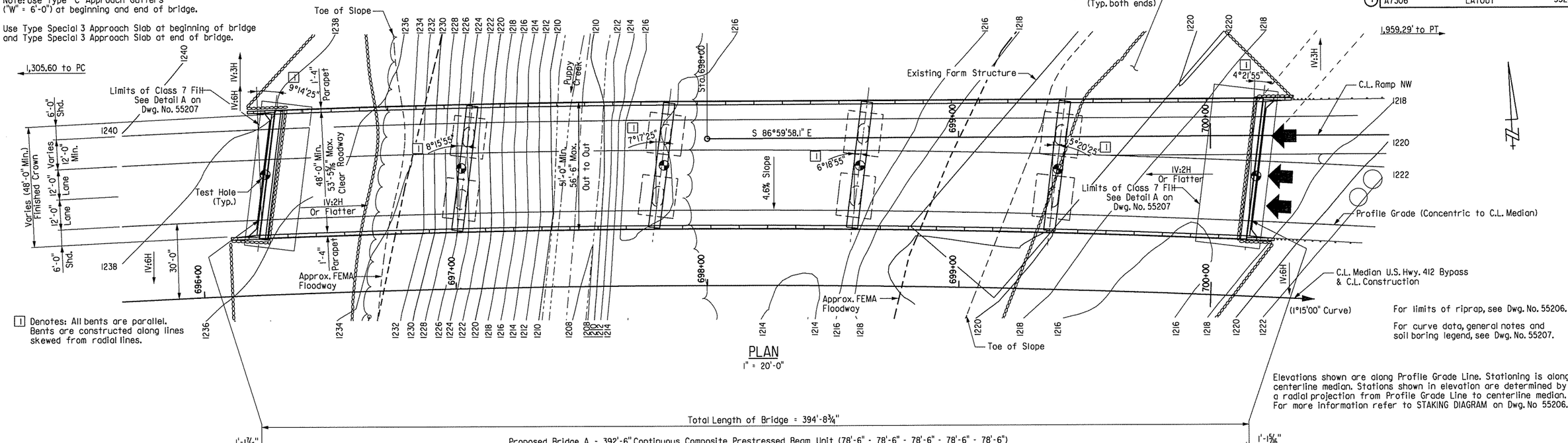
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 350 | 897 |
| (1) A7306 | | LAYOUT | | 55204 |

For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters ("W" = 6'-0") at beginning and end of bridge.

Use Type Special 3 Approach Slab at beginning of bridge and Type Special 3 Approach Slab at end of bridge.



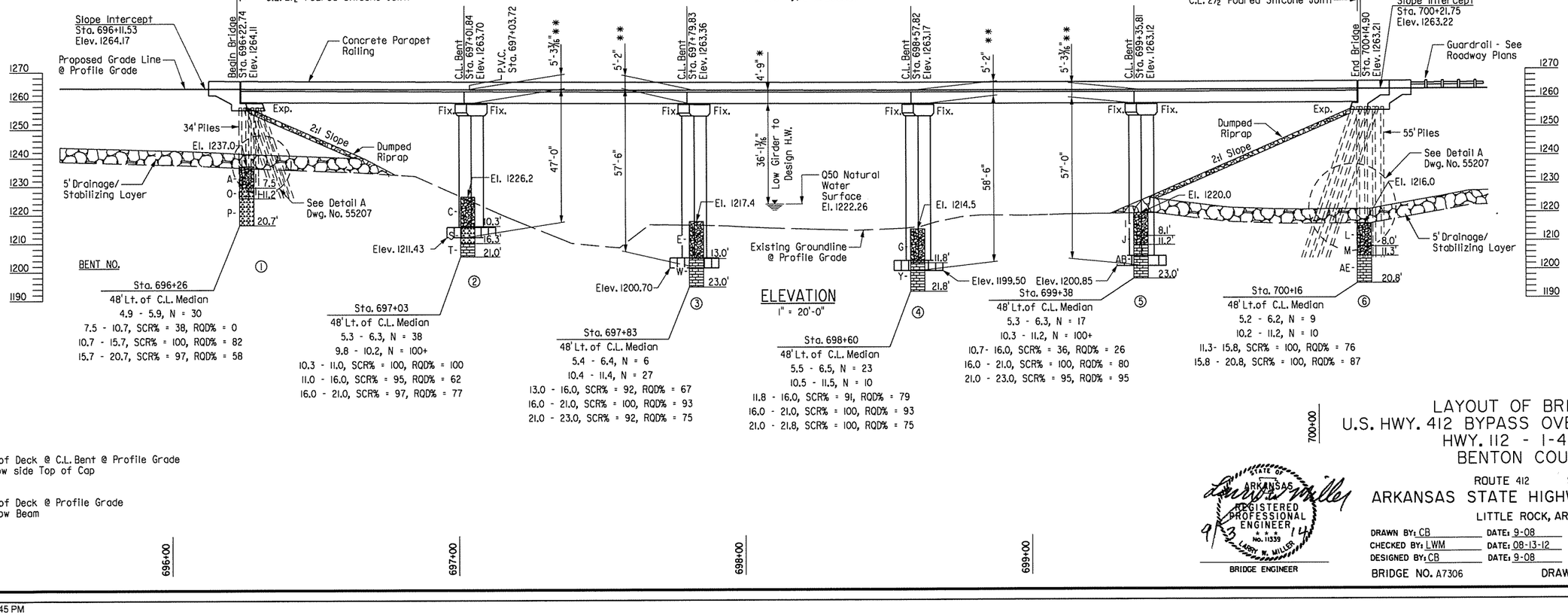

[1] Denotes: All bents are parallel. Bents are constructed along lines skewed from radial lines.

PLAN
1" = 20'-0"

For limits of riprap, see Dwg. No. 55206.

For curve data, general notes and soil boring legend, see Dwg. No. 55207.

Elevations shown are along Profile Grade Line. Stationing is along centerline median. Stations shown in elevation are determined by a radial projection from Profile Grade Line to centerline median. For more information refer to STAKING DIAGRAM on Dwg. No 55206.




** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap

* Top of Deck @ Profile Grade to Low Beam

ELEVATION
1" = 20'-0"

696+00 697+00 698+00 699+00 700+00

# LAYOUT OF BRIDGE A
# U.S. HWY. 412 BYPASS OVER PUPPY CREEK
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11359 LARRY W. MILLER 9 13 14

BRIDGE ENGINEER

DRAWN BY: CB DATE: 9-08 FILENAME: bca0907a3_L1.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

DESIGNED BY: CB DATE: 9-08

BRIDGE NO. A7306 DRAWING NO. 55204

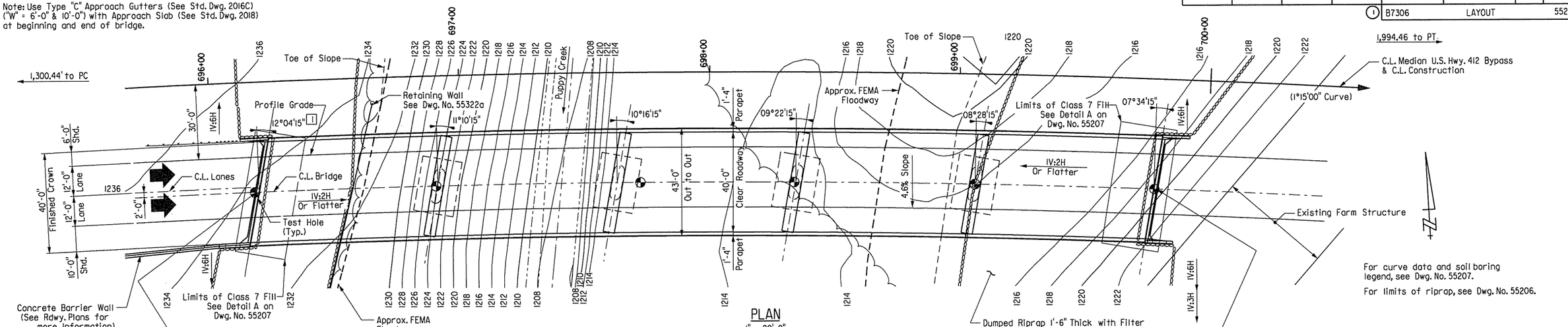
B001966A14_L1.dgn 9/3/2014 3:22:45 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 351 | 897 |
| (1) B7306 | | LAYOUT | | 55205 |

For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters (See Std. Dwg. 2016C) ("W" = 6'-0" & 10'-0") with Approach Slab (See Std. Dwg. 2018) at beginning and end of bridge.



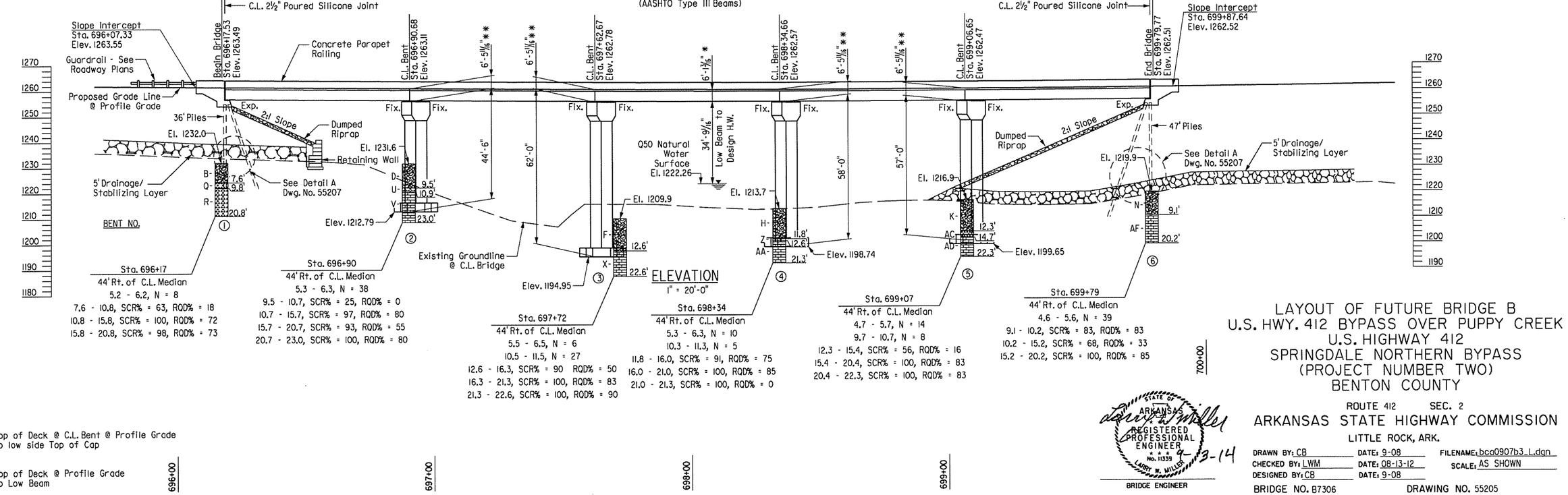

For curve data and soil boring legend, see Dwg. No. 55207.

For limits of riprap, see Dwg. No. 55206.

[1] Denotes: All bents are parallel. Bents are constructed along lines skewed from radial lines.

FUTURE BRIDGE FOR U.S. HIGHWAY 412 BYPASS EASTBOUND OVER PUPPY CREEK TO BE CONSTRUCTED UNDER SEPARATE PROJECT. BRIDGE PRELIMINARY LAYOUT PROVIDED IN THIS PROJECT (JOB 001966) FOR INFORMATION ONLY. SEE ROADWAY PLANS FOR PROJECT TERMINI.

Elevations shown are along centerline bridge. Stationing is along centerline median. Stations shown in elevation are determined by a radial projection from centerline bridge to centerline median. For more information refer to STAKING DIAGRAM on Dwg. No 55206.




** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap

* Top of Deck @ Profile Grade to Low Beam

# LAYOUT OF FUTURE BRIDGE B
# U.S. HWY. 412 BYPASS OVER PUPPY CREEK
# U.S. HIGHWAY 412
# SPRINGDALE NORTHERN BYPASS
# (PROJECT NUMBER TWO)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS LARRY W. MILLER REGISTERED PROFESSIONAL ENGINEER No. 11339 9-3-14

BRIDGE ENGINEER

DRAWN BY: CB DATE: 9-08 FILENAME: bca0907b3_L.dgn

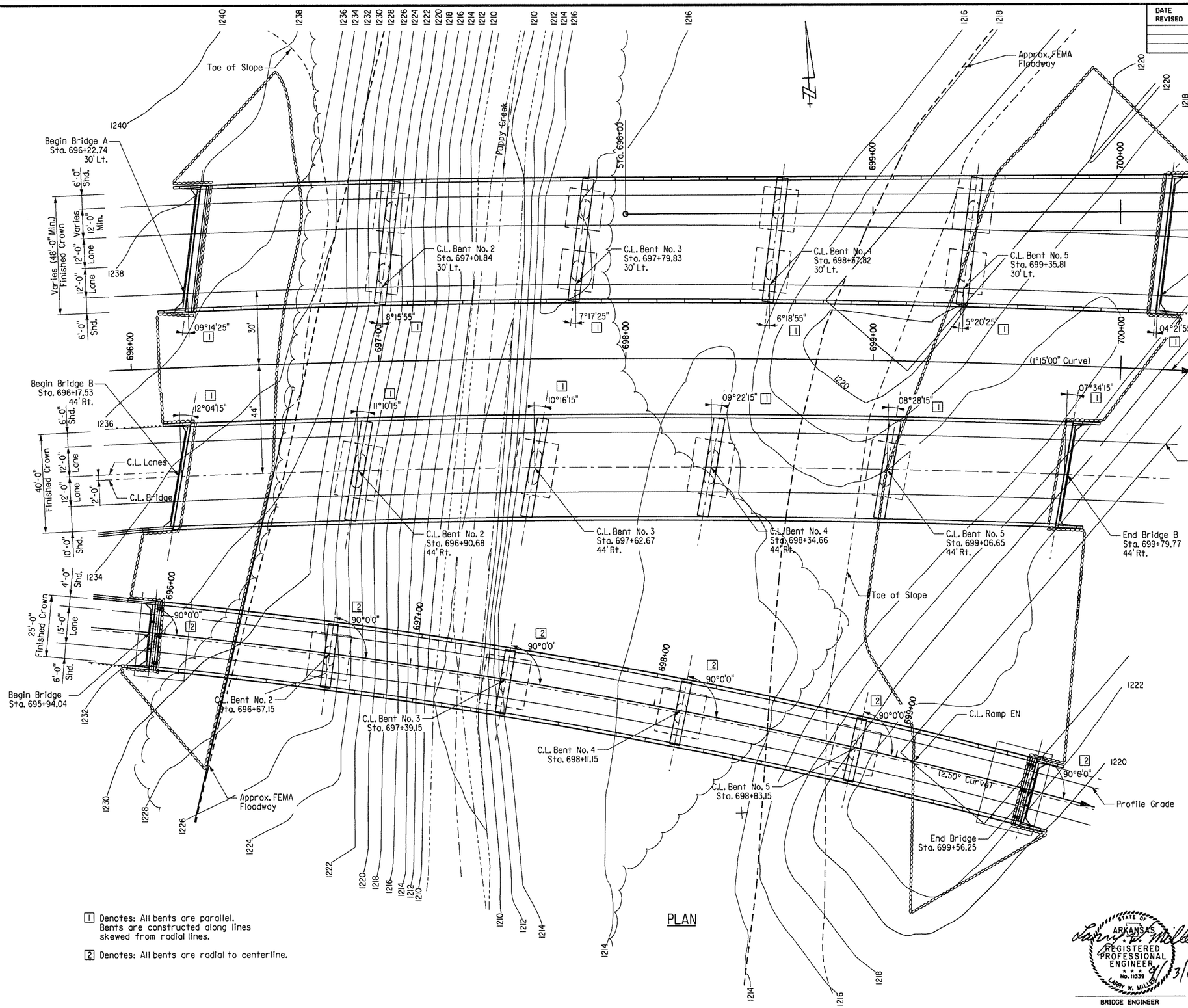
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

DESIGNED BY: CB DATE: 9-08

BRIDGE NO. B7306 DRAWING NO. 55205

B001966B14_L.dgn 9/3/2014 3:22:46 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 352 | 897 |
| | | | | (1) A7306 | | STAKING DIAGRAM | | 55206 |




[1] Denotes: All bents are parallel. Bents are constructed along lines skewed from radial lines.

[2] Denotes: All bents are radial to centerline.

PLAN

## NOTES

Bridge A
Stationing for the project is along C.L. Median and C.L. Construction. Profile Grade Line is on a horizontal curve concentric to C.L. Median. The bent stations are determined by projecting a radial line left from C.L. Median to the Profile Grade Line. The offsets shown are measured along radial lines. The total bridge length, span lengths, and C.L. Joint to Beginning and End of Bridge dimensions are measured along the Profile Grade Line. Deck elevations are at Profile Grade Line. All bents are constructed along lines skewed from radial lines. Skew is measured at C.L. Bent for intermediate bents and at C.L. Joint for end bents.

Bridge B
Stationing for the project is along C.L. Median and C.L. Construction. C.L. Bridge is on a horizontal curve concentric to C.L. Median. The bent stations are determined by projecting a radial line right from C.L. Median to the C.L. Bridge. The offsets shown are measured along radial lines. The total bridge length, span lengths, and C.L. Joint to Beginning and End of Bridge dimensions are measured along the C.L. Bridge. Deck elevations are at C.L. Bridge. All bents are constructed along lines skewed from radial lines. Skew is measured at C.L. Bent for intermediate bents and at C.L. Joint for end bents.

Ramp EN
Unless otherwise noted, stations shown are taken along C.L. Ramp.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
8/13/14
BRIDGE ENGINEER

# STAKING DIAGRAM
# U.S. HWY. 412 BYPASS & RAMP EN
# OVER PUPPY CREEK
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CB DATE: 9-08
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: CB DATE: 9-08
FILENAME: bca0907m3_L.dgn
SCALE: 1"=20'

BRIDGE NO. A7306 DRAWING NO. 55206

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 353 | 897 |
| | | | | (1) A7306 | | LAYOUT | | 55207 |

## GENERAL NOTES

BENCH MARK: Rebar in open field. Survey control point no. 90. N=700997.5192, E=672998.6789, Elev. 1231.6712, Mainlane Sta. 694+86.19, Offset 199.59' Right.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$ =0.125 Site Class=D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) Concrete (Superstructure) | f'c = 4,000 psi |
| Class S Concrete (Prestressed Girders) | See Girder Details |
| Class S Concrete (Substructure) | f'c = 3,500 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy = 36,000 psi |

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface, top of backwall, top and roadway face of the concrete parapet rail and transition rails.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to surfaces as specified in Special Provision Job CA0907 "Textured Coating Finish" and in accordance with Section 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

SPREAD FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as competent Limestone or Chert on the boring legend and shall have a minimum cover of 2'-0" above top of footings. Foundations for footings shall be prepared in accordance with Section 801.04 of the Standard Specifications. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons (factored resistance of 140 tons) per pile and into the material designated as competent Limestone or Chert on the boring legend. Drive all piles in Bents 1 and 6 to a minimum penetration of 10' below existing ground. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Actual lengths to be determined in the field. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

PREBORING: Preboring may be required to obtain the minimum pile penetration requirements. The size and depth of preboring, if required, will be determined by the engineer. The contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. The cost of temporary casings and the preboring, if required, will not be paid for directly but will be considered subsidiary to the item STEEL PILING (HP 12x53).

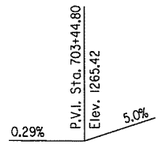
| DETAIL DRAWINGS: | DRAWING NO. |
|---|---|
| End Bents | 55208-55211 |
| Intermediate Bents | 55212-55216 |
| 392'-6" Cont. Comp. Prestressed Beam Unit | 55217-55224 |
| Elastomeric Bearings | 55225 |
| Type Special 3 Approach Slab | 55226 |
| Type Special 3 Approach Slab | 55227 |
| Type "C" Approach Gutters | 55030c |
| Steel Piling | 55020 |

MAINTENANCE OF TRAFFIC: See Roadway Plans

V.C. = 800.00'

### VERTICAL CURVE DATA
### U.S. HWY. 412

(Along Profile Grade)




V.C. = 475.00'

### VERTICAL CURVE DATA
### RAMP NW

(Along Profile Grade)

### HORIZONTAL CURVE DATA
### C.L. MEDIAN

PI Sta = 702+49.27
PC Sta = 683+17.13
PT Sta = 719+74.21
R = 4583.66
△ = 45°42' 48.5" RT.
D = 1°15'00"
L = 3657.08
T = 1932.14

### HORIZONTAL CURVE DATA
### C.L. RAMP NW

PI Sta = 757+77.76
PC Sta = 709+47.73
PT Sta = 732+44.35
R = 818.51
△ = 160°45' 49.4" RT.
D = 7°00'00"
L = 2296.62
T = 4830.03

## HYDRAULIC DATA

Drainage Area = 7.64 Square Miles

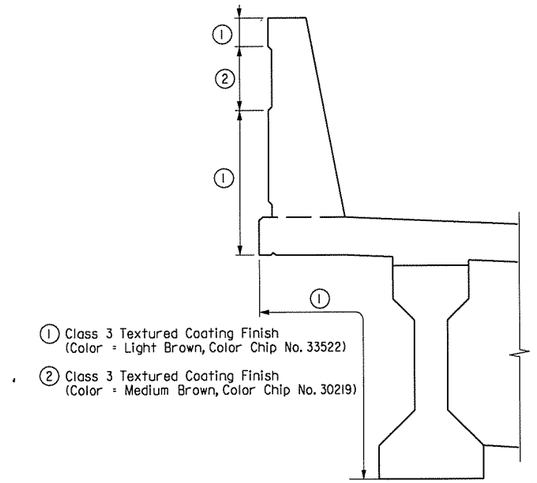
| FLOOD DESCRIPTION | FREQUENCY | DISCHARGE | ▲ NATURAL WATER SURFACE ELEV. | WATER SURFACE ELEVATION W/BACKWATER |
|---|---|---|---|---|
| | YEARS | C.F.S. | FEET | FEET |
| Design Flood | 50 | 11,027 | 1222.26 | 1223.05 |
| Basic Flood | 100 | 12,710 | 1222.86 | 1223.81 |
| Extreme Flood | 500 | 17,951 | 1224.56 | 1225.92 |
| Overtopping | >500 | ---- | ---- | ---- |

Low Bridge Member Elevation = 1258.36 (Bridge No. BA7306)

▲ Water Surface With Existing Structures But Without Proposed Structure or Roadway Approaches.

### Boring Legend

A - Brown, medium dense, clayey gravel with sand.
B - Brown, loose, clayey gravel with sand.
C - Brown, dense to very dense, clayey gravel with sand.
D - Brown, dense, clayey gravel with sand.
E - Brown, loose to medium dense, clayey gravel with sand.
F - Brown, loose to medium dense, clayey gravel with sand.
G - Red, loose to medium dense, clayey gravel with sand.
H - Brown, loose, clayey gravel with sand.
I - Red, medium dense, clayey gravel with sand.
J - Red, very dense, clayey gravel with sand.
K - Brown, loose to medium dense, clayey gravel with sand.
L - Brown, loose, clayey gravel with sand.
M - Brown, loose, clayey gravel with sand.
N - Brown, dense, clayey gravel with sand.
O - Chert: White, lt. tan, red, brown, weathered and highly broken.
P - Chert: White, lt. gray, gray, slightly to moderately weathered.
Q - Chert: White, lt. gray, gray, weathered.
R - Chert: White, lt. gray, gray, slightly to moderately weathered.
S - Chert: White, lt. gray, gray, fresh to moderately weathered.
T - Limestone: Lt. gray, gray, medium grain, fresh with slight weathering.
U - Chert: White, angular fragments.
V - Limestone: White, lt. gray, gray, medium grain, fresh with slight to moderate weathering.
W - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
X - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
Y - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
Z - Chert: White, lt. gray, gray, slightly to moderately weathered.
AA - Limestone: White, lt. gray, gray, medium grain, fresh with slight to moderate weathering.
AB - Limestone: White, lt. gray, gray, medium grain, fresh with slight to moderate weathering.
AC - Chert: White, lt. gray, gray, weathered.
AD - Limestone: White, lt. gray, gray, medium grain, fresh with slight to moderate weathering.
AE - Limestone: White, lt. gray, gray, medium grain, fresh with slight to moderate weathering.
AF - Limestone: White with gray banding, medium grain, fresh with moderate weathering.



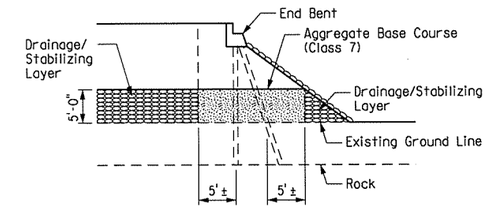

(1) Class 3 Textured Coating Finish (Color = Light Brown, Color Chip No. 33522)

(2) Class 3 Textured Coating Finish (Color = Medium Brown, Color Chip No. 30219)

Section thru parapet is shown. Similar for end bent transition rail.

## TEXTURED COATING FINISH

Scale: 3/4" = 1'-0"




Where a drainage/stabilizing layer is required for embankment construction, aggregate base course (Class 7), in accordance with Section 303.02, shall be placed as shown in areas where piling will be located. Aggregate base course (Class 7) shall be paid for as "COMPACTED EMBANKMENT".

At the Contractor's option, preboring or other methods as approved by the Engineer may be used to facilitate pile installation through the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles, where rock fill is used for embankment construction, will not be paid for separately but shall be included in item "STEEL PILING".

## DETAIL A

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# GENERAL NOTES AND BORING LEGEND
# U.S. HWY. 412 BYPASS OVER PUPPY CREEK
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

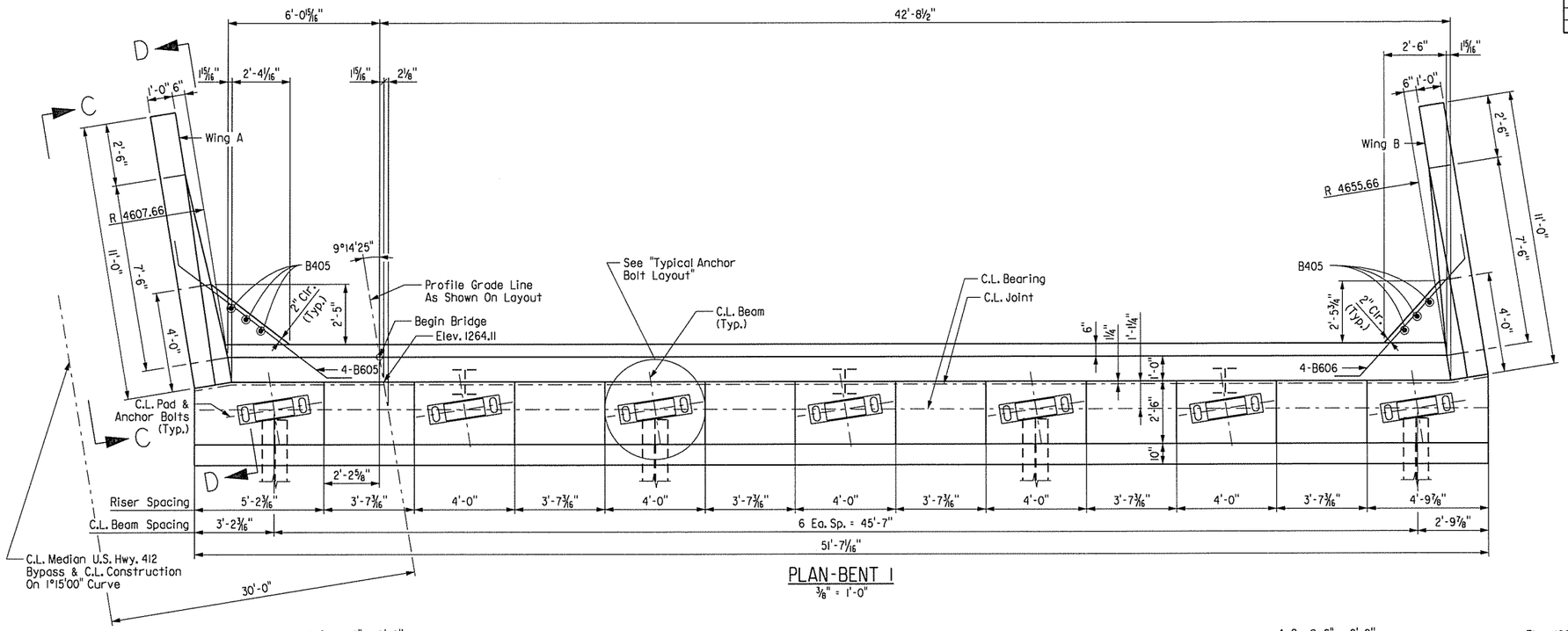
LITTLE ROCK, ARK.

DRAWN BY: CB DATE: 9-08 FILENAME: bca0907a3_L2.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: As Shown
DESIGNED BY: CB DATE: 9-08

BRIDGE NO. A7306 DRAWING NO. 55207

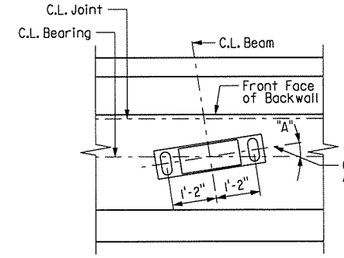
B001966a14 L2.dgn 9/4/2014 1:28:38 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 354 | 897 |
| | | | | (1) A7306 | | END BENT DETAILS | | 55208 |




PLAN-BENT 1

3/8" = 1'-0"

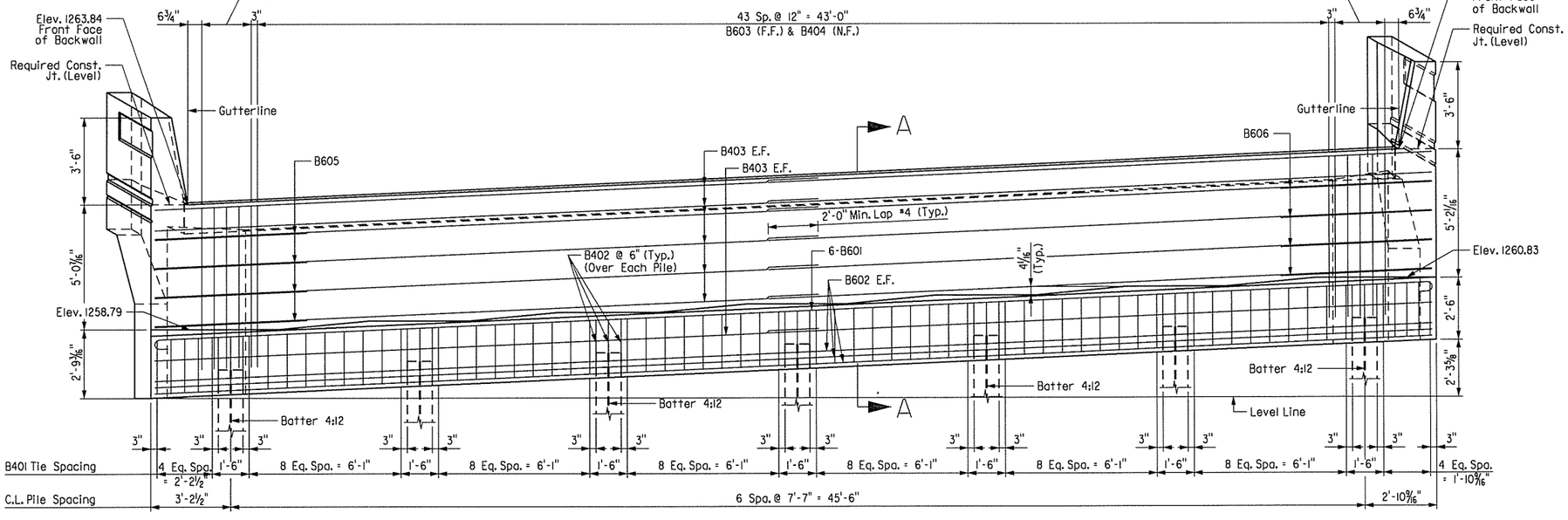



TYPICAL ANCHOR BOLT LAYOUT

1/2" = 1'-0"

| BEAM LINE | BENT 1 "A" |
|---|---|
| 1 | 8°40'34" |
| 2 | 8°41'24" |
| 3 | 8°42'15" |
| 4 | 8°43'7" |
| 5 | 8°43'58" |
| 6 | 8°44'49" |
| 7 | 8°45'41" |

Note: For details of Elastomeric Bearings, See Dwg. No. 55225




ELEVATION-BENT 1

Looking Back

3/8" = 1'-0"

Note: For Details of Wing & Rail, and view C & D, See Dwg. No. 55209.

Note: For Section A and Bar List, See Dwg. No. 55210.

Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9/3/14

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENTS
PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

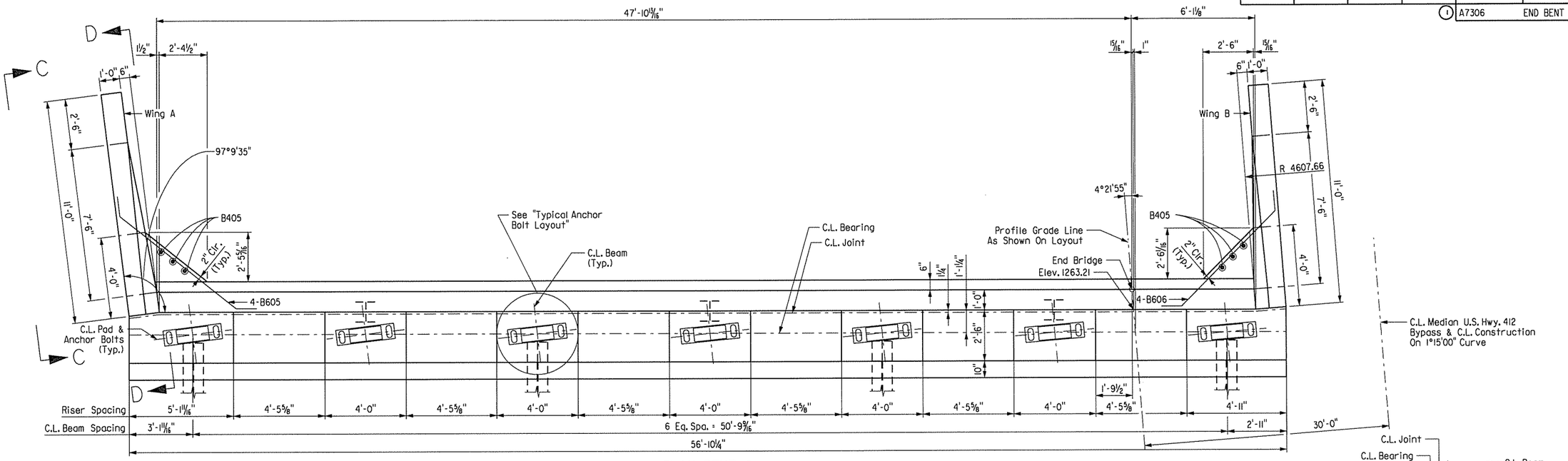
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_bll.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

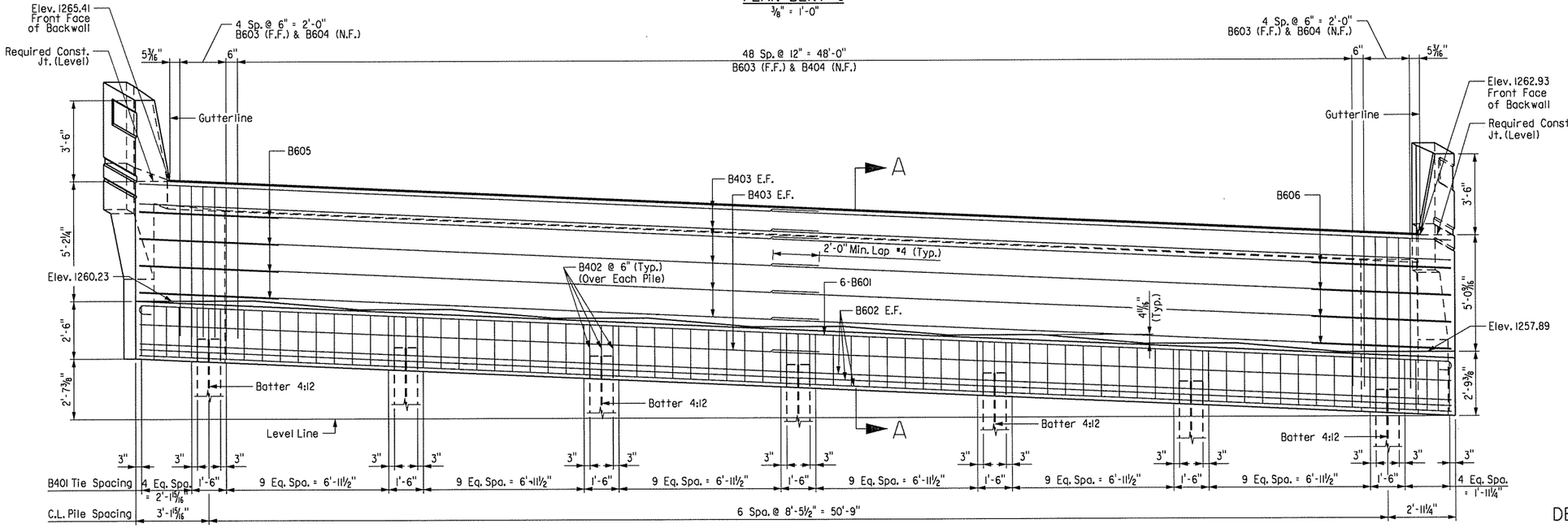
BRIDGE NO. A7306 DRAWING NO. 55208

B001966A14_B11.dgn 9/3/2014 3:22:51 PM

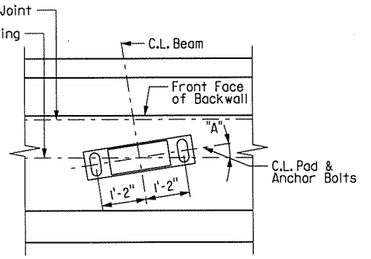
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 355 | 897 |
| | | | | (1) A7306 | | END BENT DETAILS | | 55209 |




PLAN-BENT 6
⅜" = 1'-0"




ELEVATION-BENT 6
Looking Forward
⅜" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
½" = 1'-0"

| BEAM LINE | BENT 6 "A" |
|---|---|
| 1 | 7°9'35" |
| 2 | 6°46'39" |
| 3 | 6°23'41" |
| 4 | 6°0'40" |
| 5 | 5°37'38" |
| 6 | 5°14'34" |
| 7 | 4°51'29" |

Note: For details of Elastomeric Bearings, See Dwg. No. 55225

Note: For Details of Wing & Rail, and view C & D, See Dwg. No. 55209.

Note: For Section A and Bar List, See Dwg. No. 55210.

Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
Larry W. Miller 9/3/14
BRIDGE ENGINEER

# SHEET 2 OF 4
# DETAILS OF END BENTS
# PUPPY CREEK

ROUTE 412 SEC. 2

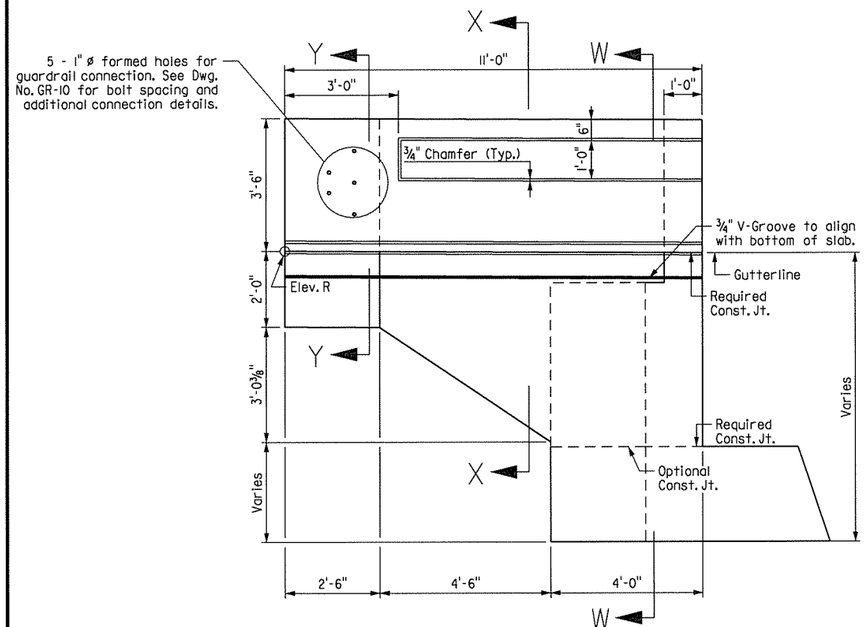
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_bl2.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

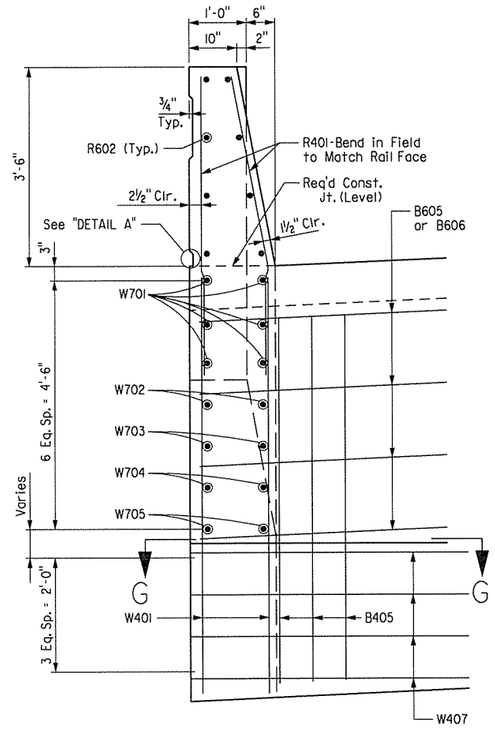
BRIDGE NO. A7306 DRAWING NO. 55209

B001966A14_B12.dgn 9/3/2014 3:22:53 PM

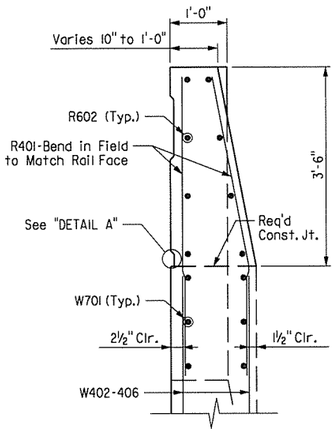
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 356 | 897 |
| | | | | (1) A7306 | | END BENT DETAILS | | 55210 |



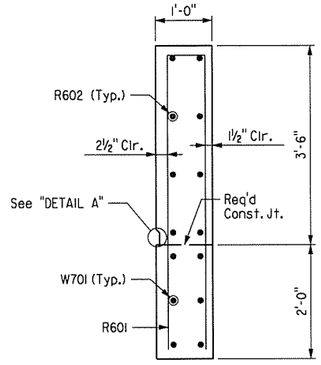

VIEW C-C
½" = 1'-0"
Wing "A" Shown, Wing "B" is Opposite Hand



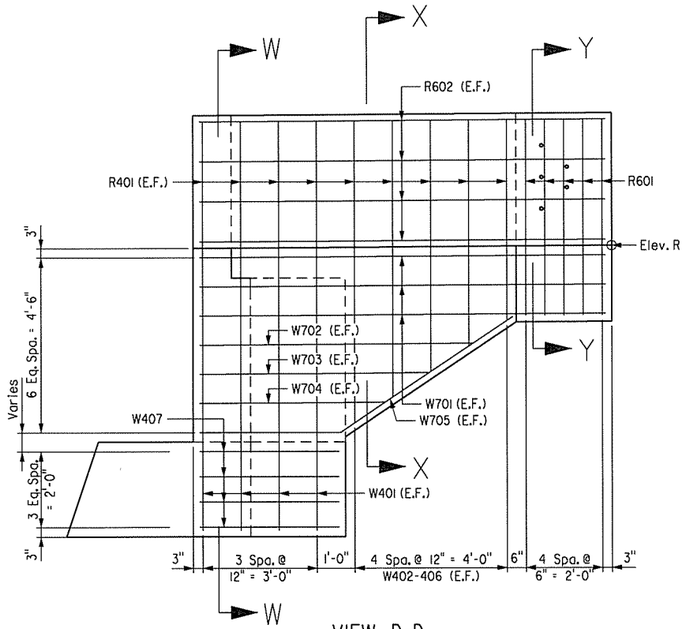

VIEW W-W
¾" = 1'-0"
For View G-G, See Dwg. No. XXX.



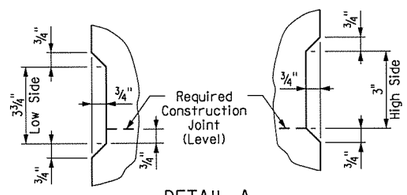

SECTION X-X
¾" = 1'-0"




SECTION Y-Y
¾" = 1'-0"



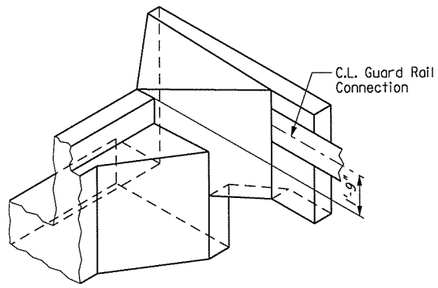

VIEW D-D
½" = 1'-0"
Wing "A" Shown, Wing "B" is Opposite Hand




DETAIL A
Scale: 3" = 1'-0"

TABLE OF VARIABLES (ELEV. "R")

| BENT NO. | WING | ELEV. |
|---|---|---|
| 1 | A | 1263.87 |
| 1 | B | 1266.08 |
| | | |
| 6 | A | 1265.48 |
| 6 | B | 1262.93 |




For details of guard rail connection, see Std. Dwg. No. GR-10.

See Layout drawing for locations of guardrail installation.

THREE DIMENSIONAL VIEW OF WING & RAIL

No Scale
Wing "A" Shown, Wing "B" is Opposite Hand

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9/3/14

BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENTS
PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12

FILENAME: bca0907a3_bl3.dgn
SCALE: AS SHOWN

BRIDGE NO. A7306 DRAWING NO. 55210

GENERAL NOTES FOR SUBSTRUCTURE

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (yield strength = 60,000 psi).

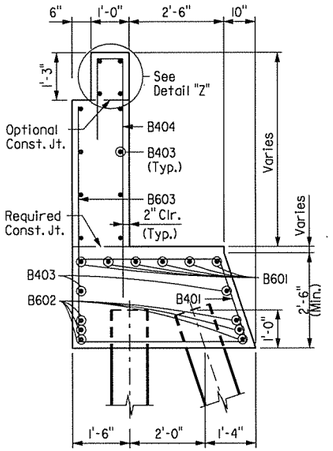
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 55224 for additional information.

For structural steel in end bents, see Dwg. No. 55224.

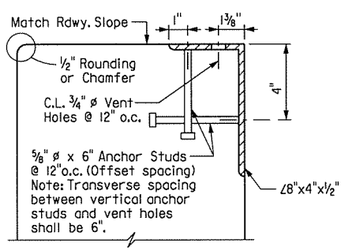
Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

For detail of textured coating finish, see Dwg. No. 55207.




SECTION A-A
½" = 1'-0"




Note: For additional joint details, See Dwg. No. 55224.

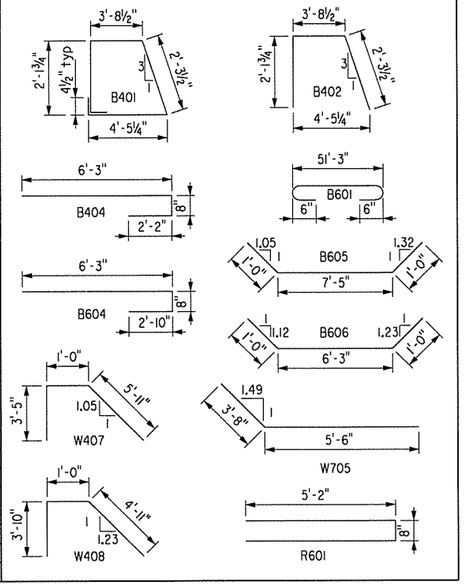
Note: Concrete shall be hand packed under the joint armor in the backwall.

DETAIL Z
3"= 1'-0"

## BAR LIST - BENT 1

| MARK | NO. REQ'D | LENGTH | "A" | PIN DIA. |
|---|---|---|---|---|
| B401 | 64 | 11'-11" | -- | 2" |
| B402 | 21 | 7'-6" | -- | 2" |
| B403 | 28 | 26'-9" | -- | Str. |
| B404 | 44 | 8'-11" | -- | 2" |
| B405 | 6 | 6'-0" | -- | Str. |
| | | | | |
| B601 | 6 | 52'-7" | -- | 4½" |
| B602 | 6 | 51'-3" | -- | Str. |
| B603 | 54 | 5'-3" | -- | Str. |
| B604 | 10 | 9'-5" | -- | 4½" |
| B605 | 4 | 9'-5" | -- | 4½" |
| B606 | 4 | 8'-3" | -- | 4½" |
| | | | | |
| R401 | 36 | 5'-2" | -- | Str. |
| | | | | |
| R601 | 10 | 10'-8" | -- | 4½" |
| R602 | 16 | 10'-8" | -- | Str. |
| | | | | |
| W401 | 16 | 7'-1" | -- | Str. |
| | | | | |
| W402 to W406 | 4 ea. | 1'-9" to 4'-4" | -- | Str. |
| | | | | |
| W407 | 4 | 10'-3" | -- | 3" |
| W408 | 4 | 9'-8" | -- | 3" |
| | | | | |
| W701 | 12 | 10'-8" | -- | Str. |
| W702 | 4 | 7'-2" | -- | Str. |
| W703 | 4 | 6'-0" | -- | Str. |
| W704 | 4 | 4'-11" | -- | Str. |
| W705 | 4 | 9'-2" | -- | 5¼" |

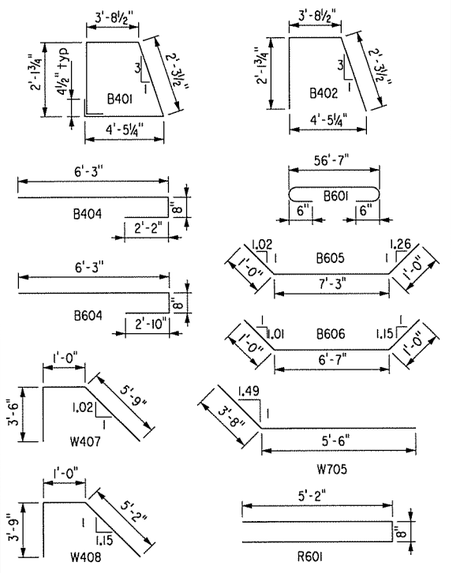
BENDING DIAGRAMS (Dimensions are out to out of Bars)

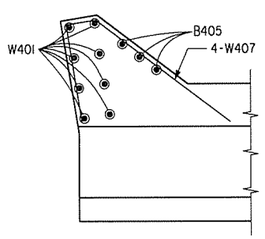



## BAR LIST - BENT 6

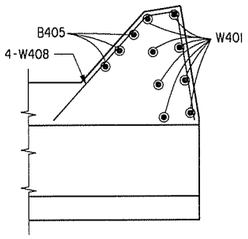
| MARK | NO. REQ'D | LENGTH | "A" | PIN DIA. |
|---|---|---|---|---|
| B401 | 70 | 11'-11" | -- | 2" |
| B402 | 21 | 7'-6" | -- | 2" |
| B403 | 28 | 29'-4" | -- | Str. |
| B404 | 49 | 8'-11" | -- | 2" |
| B405 | 6 | 6'-0" | -- | Str. |
| | | | | |
| B601 | 6 | 57'-11" | -- | 4½" |
| B602 | 6 | 56'-7" | -- | Str. |
| B603 | 59 | 5'-3" | -- | Str. |
| B604 | 10 | 9'-5" | -- | 4½" |
| B605 | 4 | 9'-3" | -- | 4½" |
| B606 | 4 | 8'-7" | -- | 4½" |
| | | | | |
| R401 | 36 | 5'-2" | -- | Str. |
| | | | | |
| R601 | 10 | 10'-8" | -- | 4½" |
| R602 | 16 | 10'-8" | -- | Str. |
| | | | | |
| W401 | 16 | 7'-1" | -- | Str. |
| | | | | |
| W402 to W406 | 4 ea. | 1'-9" to 4'-4" | -- | Str. |
| | | | | |
| W407 | 4 | 10'-2" | -- | 3" |
| W408 | 4 | 9'-10" | -- | 3" |
| | | | | |
| W701 | 12 | 10'-8" | -- | Str. |
| W702 | 4 | 7'-2" | -- | Str. |
| W703 | 4 | 6'-0" | -- | Str. |
| W704 | 4 | 4'-11" | -- | Str. |
| W705 | 4 | 9'-2" | -- | 5¼" |

BENDING DIAGRAMS (Dimensions are out to out of Bars)

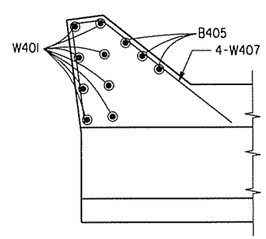


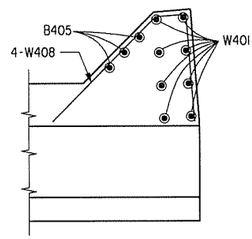

SECTION G-G
(WING A - BENT 1)
⅜" = 1'-0"




SECTION G-G
(WING B - BENT 1)
⅜" = 1'-0"




SECTION G-G
(WING A - BENT 6)
⅜" = 1'-0"




SECTION G-G
(WING B - BENT 6)
⅜" = 1'-0"

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 357 | 897 |
| (1) A7306 | | END BENT DETAILS | | 55211 |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENTS
PUPPY CREEK

ROUTE 412 SEC. 2

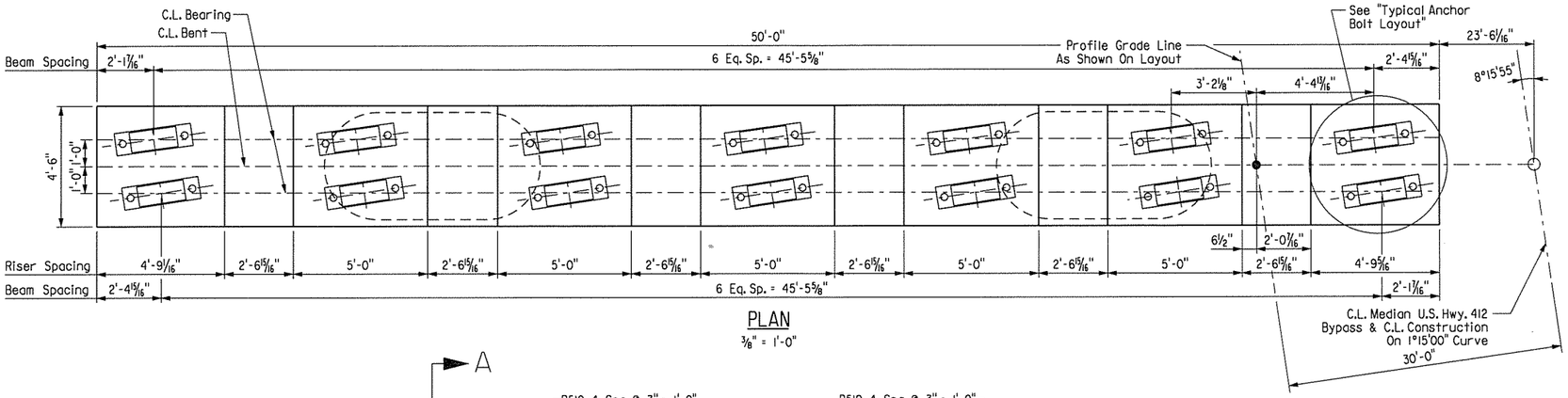
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907a3_b14.dgn
SCALE: AS SHOWN

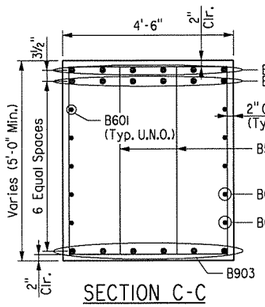
BRIDGE NO. A7306 DRAWING NO. 55211

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

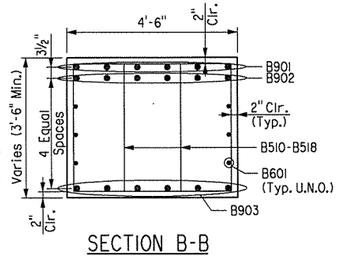
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 358 | 897 |
| (1) A7306 | | BENT 2 DETAILS | | 55212 |



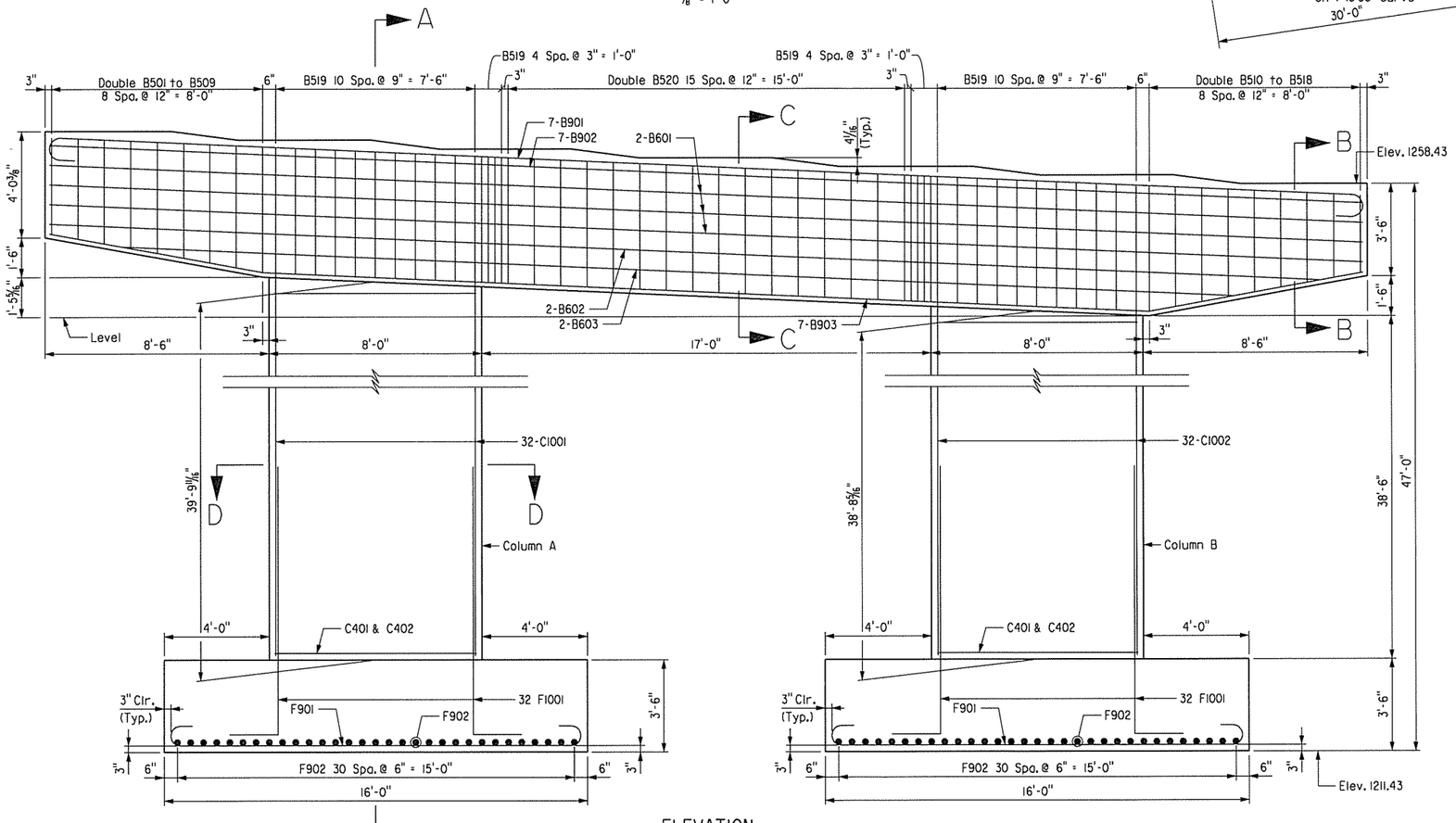

PLAN
⅜" = 1'-0"



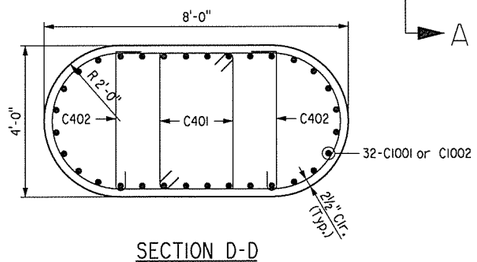

SECTION C-C
½" = 1'-0"




SECTION B-B
½" = 1'-0"

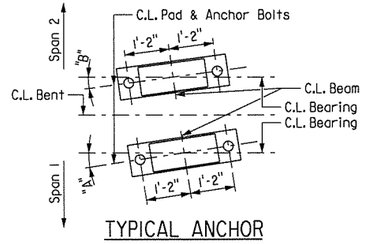



ELEVATION
⅜" = 1'-0"
(Looking Ahead)




SECTION D-D
½" = 1'-0"

Note: For Bar List and General Notes, See Dwg. No. 55216



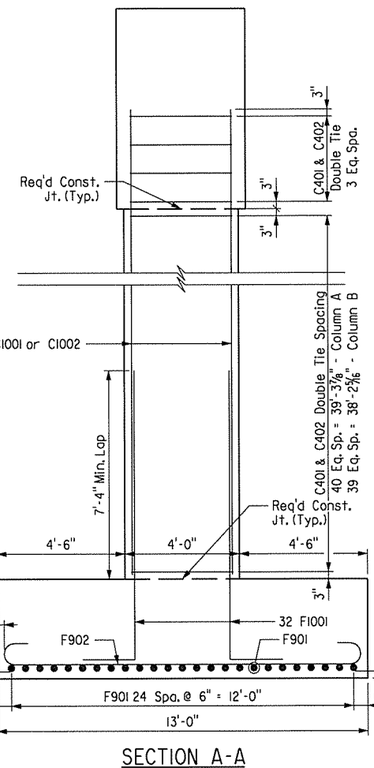

TYPICAL ANCHOR BOLT LAYOUT
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55225

ANCHOR BOLT VARIABLES

| BEAM LINE | "A" | "B" |
|---|---|---|
| 1 | 8°40'34" | 7°42'35" |
| 2 | 8°41'24" | 7°43'20" |
| 3 | 8°42'15" | 7°44'6" |
| 4 | 8°43'7" | 7°44'51" |
| 5 | 8°43'58" | 7°45'36" |
| 6 | 8°44'49" | 7°46'22" |
| 7 | 8°45'41" | 7°47'8" |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER




SECTION A-A
⅜" = 1'-0"

# DETAILS OF INTERMEDIATE BENT NO. 2 PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

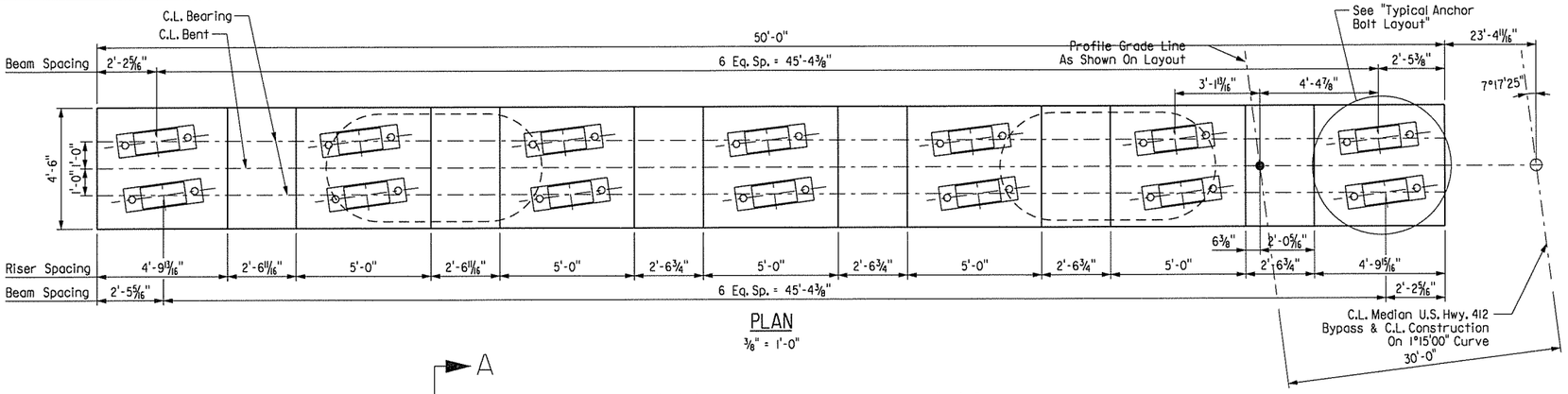
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_b21.dgn
CHECKED BY: DATE:
DESIGNED BY: EG DATE: 3-12 SCALE: AS SHOWN

BRIDGE NO. A7306 DRAWING NO. 55212

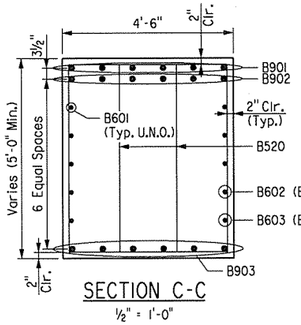
B001966A14_B21.dgn 9/3/2014 3:22:58 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |

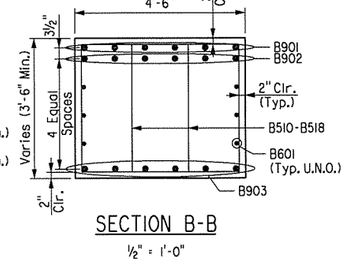
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 359 | 897 |
| (1) A7306 | | BENT 3 DETAILS | | 55213 |



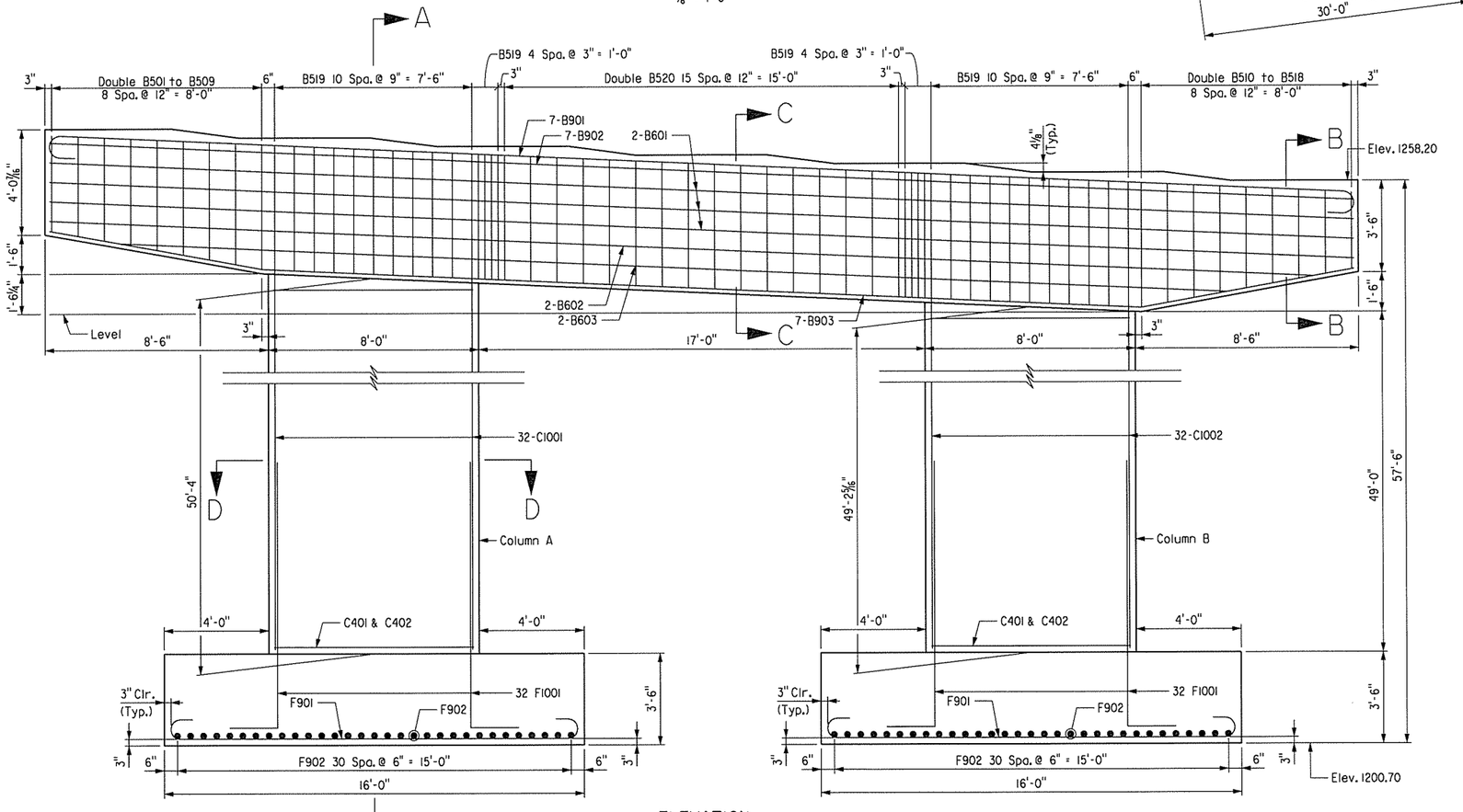

PLAN
⅜" = 1'-0"



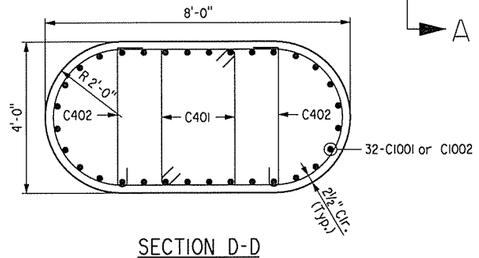

SECTION C-C
½" = 1'-0"




SECTION B-B
½" = 1'-0"

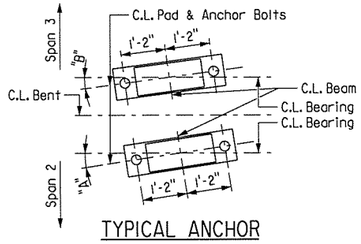



ELEVATION
⅜" = 1'-0"
(Looking Ahead)




SECTION D-D
½" = 1'-0"

Note: For Bar List and General Notes, See Dwg. No. 55216

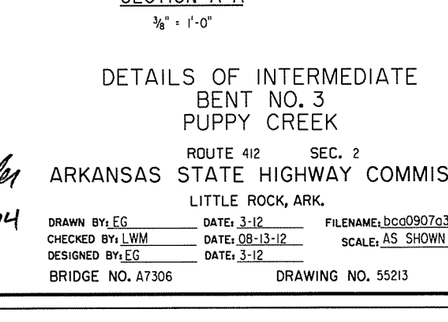



TYPICAL ANCHOR BOLT LAYOUT
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55225

ANCHOR BOLT VARIABLES

| BEAM LINE | "A" | "B" |
|---|---|---|
| 1 | 7°42'35" | 7°9'12" |
| 2 | 7°43'20" | 7°5'46" |
| 3 | 7°44'6" | 7°2'20" |
| 4 | 7°44'51" | 6°58'54" |
| 5 | 7°45'36" | 6°55'27" |
| 6 | 7°46'22" | 6°52'1" |
| 7 | 7°47'8" | 6°48'35" |




SECTION A-A
⅜" = 1'-0"

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# DETAILS OF INTERMEDIATE BENT NO. 3 PUPPY CREEK

ROUTE 412 SEC. 2

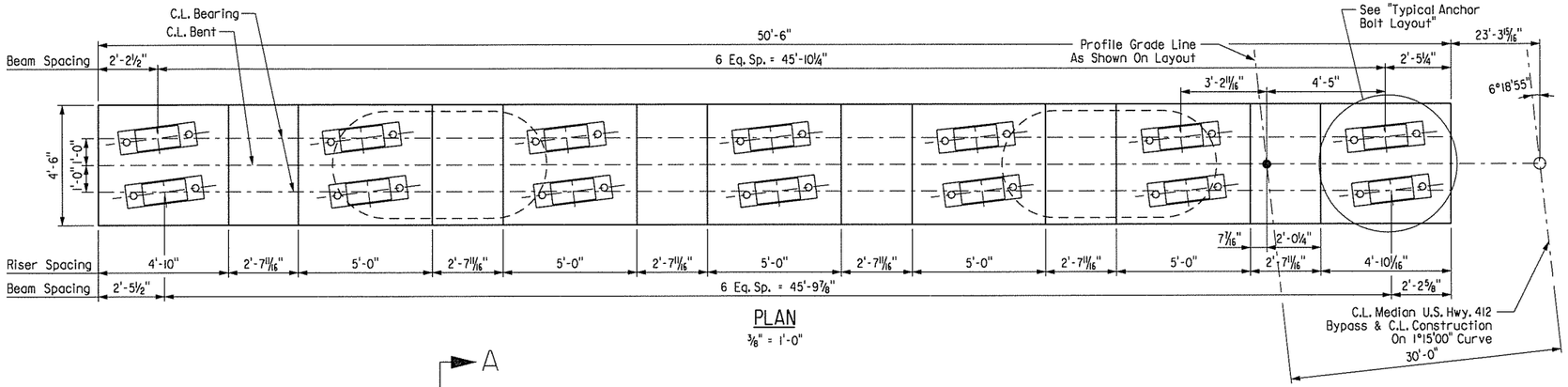
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907a3_b31.dgn
SCALE: AS SHOWN

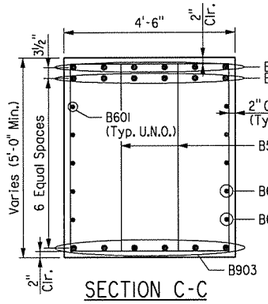
BRIDGE NO. A7306 DRAWING NO. 55213

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 360 | 897 |
| | | | | (1) A7306 | | BENT 4 DETAILS | | 55214 |



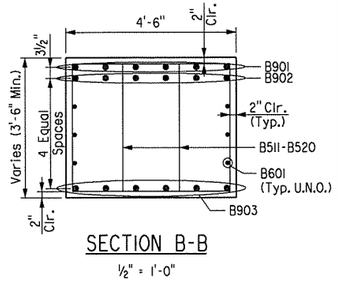

PLAN

⅜" = 1'-0"



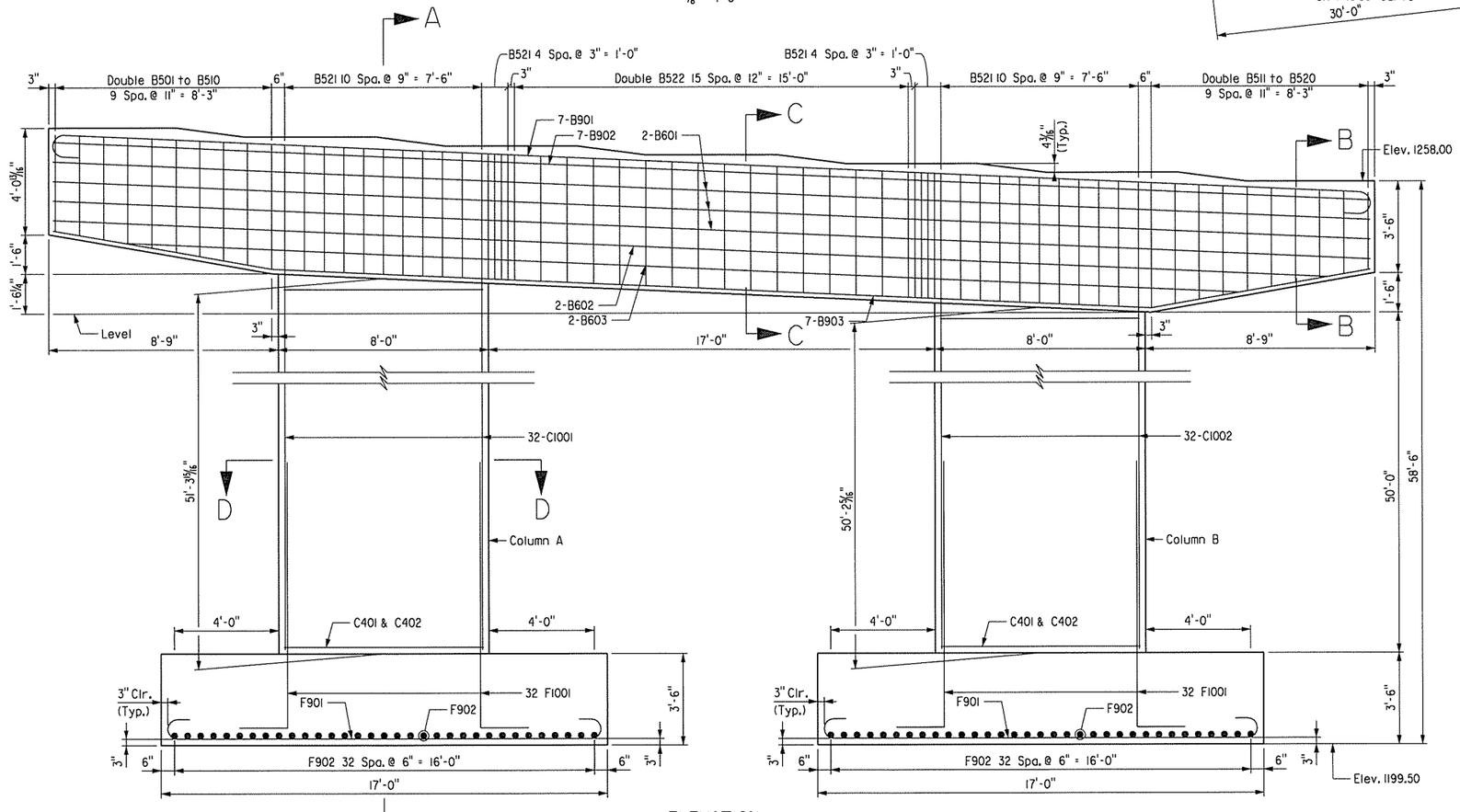

SECTION C-C

½" = 1'-0"




SECTION B-B

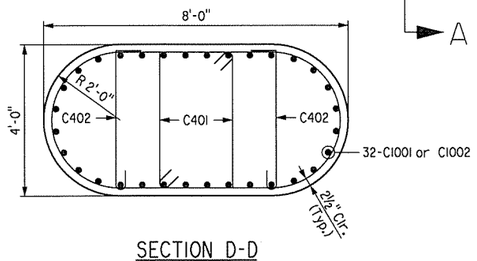
½" = 1'-0"




ELEVATION

⅜" = 1'-0"

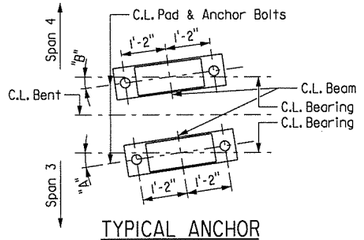
(Looking Ahead)




SECTION D-D

½" = 1'-0"

Note: For Bar List and General Notes, See Dwg. No. 55216



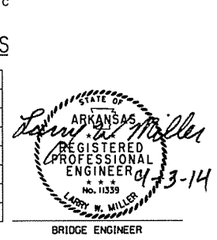

TYPICAL ANCHOR BOLT LAYOUT

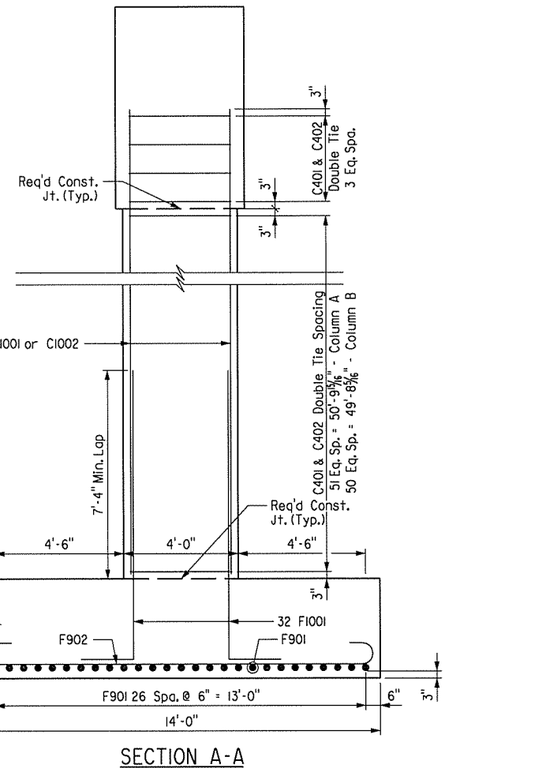
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55225

ANCHOR BOLT VARIABLES

| BEAM LINE | "A" | "B" |
|---|---|---|
| 1 | 7°9'12" | 7°9'35" |
| 2 | 7°5'46" | 6°56'21" |
| 3 | 7°2'20" | 6°43'6" |
| 4 | 6°58'54" | 6°29'51" |
| 5 | 6°55'27" | 6°16'35" |
| 6 | 6°52'1" | 6°3'19" |
| 7 | 6°48'35" | 5°50'2" |




SECTION A-A

⅜" = 1'-0"

# DETAILS OF INTERMEDIATE BENT NO. 4 PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

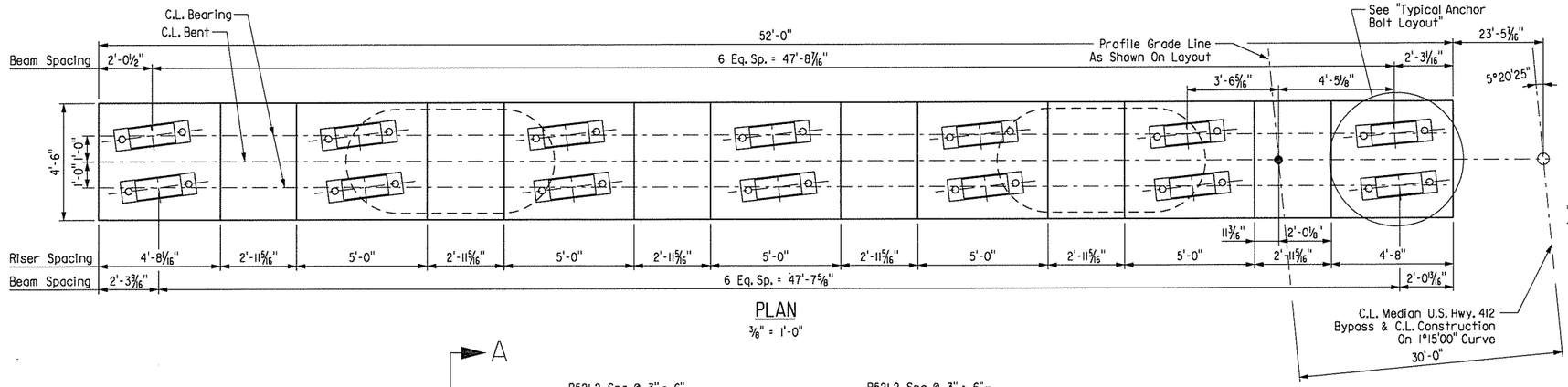
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_b41.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

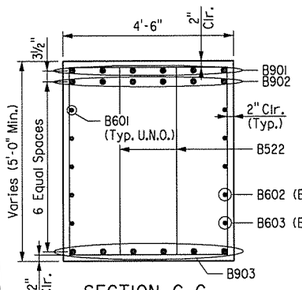
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55214

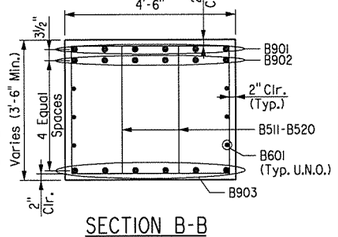
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 361 | 897 |
| | | | | (1) A7306 | | BENT 5 DETAILS | | 55215 |



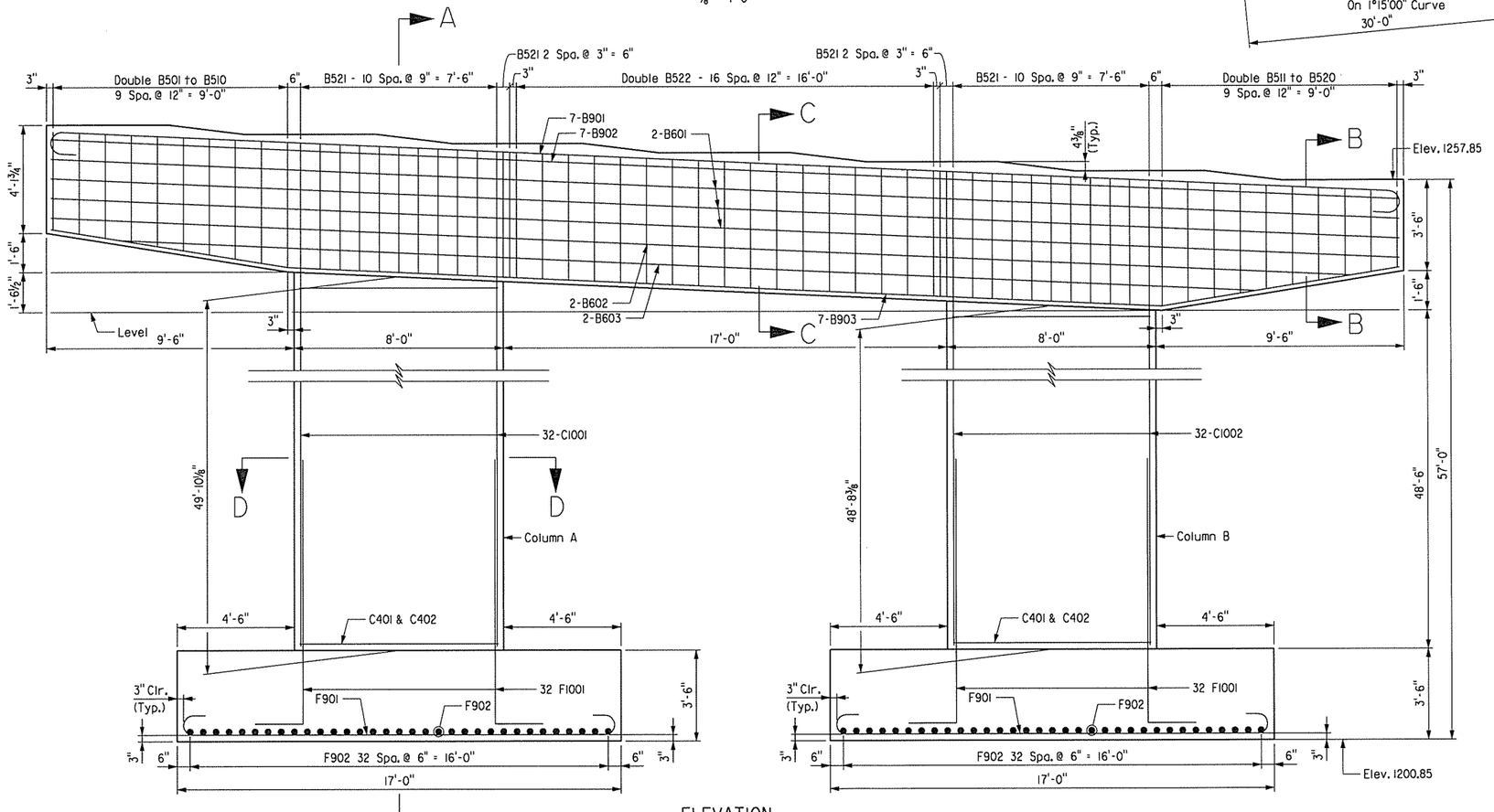

PLAN
⅜" = 1'-0"



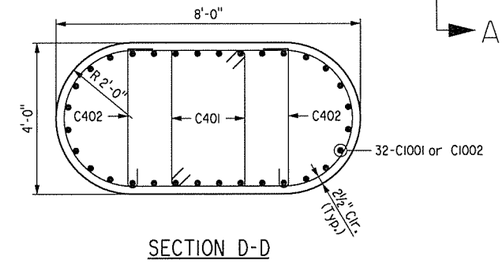

SECTION C-C
½" = 1'-0"




SECTION B-B
½" = 1'-0"

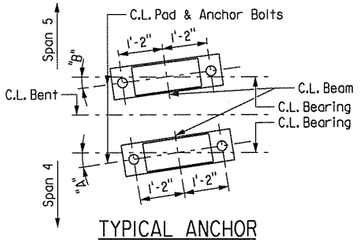



ELEVATION
⅜" = 1'-0"
(Looking Ahead)




SECTION D-D
½" = 1'-0"

Note: For Bar List and General Notes, See Dwg. No. 55216

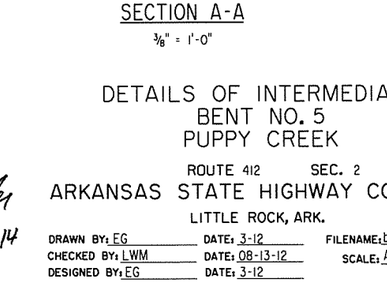



TYPICAL ANCHOR BOLT LAYOUT
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55225

ANCHOR BOLT VARIABLES

| BEAM LINE | "A" | "B" |
|---|---|---|
| 1 | 7°9'35" | 7°9'35" |
| 2 | 6°56'21" | 6°46'39" |
| 3 | 6°43'6" | 6°23'41" |
| 4 | 6°29'51" | 6°0'40" |
| 5 | 6°16'35" | 5°37'38" |
| 6 | 6°3'19" | 5°14'34" |
| 7 | 5°50'2" | 4°51'29" |




SECTION A-A
⅜" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
Larry W. Miller 3-14
BRIDGE ENGINEER

# DETAILS OF INTERMEDIATE BENT NO. 5 PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_b51.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

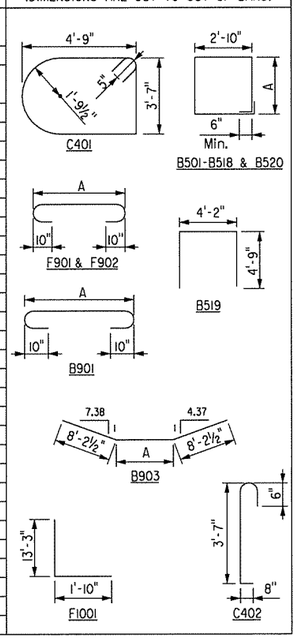
BRIDGE NO. A7306 DRAWING NO. 55215

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 362 | 897 |
| | | | | (1) A7306 | | INT. BENT DETAILS | | 55216 |

## BAR LIST - BENT NO. 2

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B509 | 2 ea. | 13'-6" to 15'-8" | 3'-8" to 4'-9" | 2½" |
| B510 to B518 | 2 ea. | 12'-0" to 15'-8" | 2'-11" to 4'-9" | 2½" |
| B519 | 30 | 13'-5" | | 2½" |
| B520 | 32 | 15'-8" | 4'-9" | 2½" |
| B601 | 6 | 49'-8" | | Str. |
| B602 | 2 | 48'-2" | | Str. |
| B603 | 2 | 42'-1" | | Str. |
| B901 | 7 | 51'-5" | 48'-11" | 9" |
| B902 | 7 | 49'-8" | | Str. |
| B903 | 7 | 49'-11" | 33'-6" | 9" |
| C401 | 178 | 15'-9" | | 3" |
| C402 | 178 | 4'-9" | | 3" |
| C1001 | 32 | 42'-2" | | Str. |
| C1002 | 32 | 40'-8" | | Str. |
| F901 | 50 | 17'-3" | 14'-9" | 9" |
| F902 | 62 | 14'-3" | 11'-9" | 9" |
| F1001 | 64 | 14'-9" | | 10" |

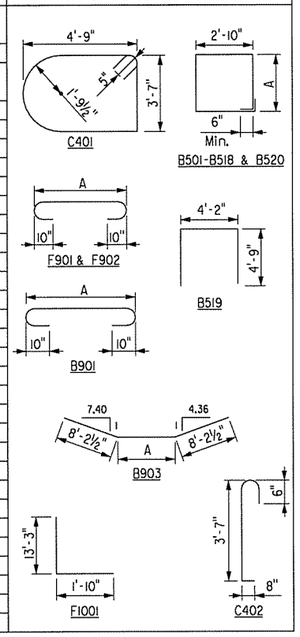
BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




## BAR LIST - BENT NO. 3

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B509 | 2 ea. | 13'-6" to 15'-8" | 3'-8" to 4'-9" | 2½" |
| B510 to B518 | 2 ea. | 12'-0" to 15'-8" | 2'-11" to 4'-9" | 2½" |
| B519 | 30 | 13'-5" | | 2½" |
| B520 | 32 | 15'-8" | 4'-9" | 2½" |
| B601 | 6 | 49'-8" | | Str. |
| B602 | 2 | 48'-2" | | Str. |
| B603 | 2 | 42'-3" | | Str. |
| B901 | 7 | 51'-5" | 48'-11" | 9" |
| B902 | 7 | 49'-8" | | Str. |
| B903 | 7 | 49'-11" | 33'-6" | 9" |
| C401 | 218 | 15'-9" | | 3" |
| C402 | 218 | 4'-9" | | 3" |
| C1001 | 32 | 52'-8" | | Str. |
| C1002 | 32 | 51'-2" | | Str. |
| F901 | 54 | 17'-3" | 14'-9" | 9" |
| F902 | 62 | 15'-3" | 12'-9" | 9" |
| F1001 | 64 | 14'-9" | | 10" |

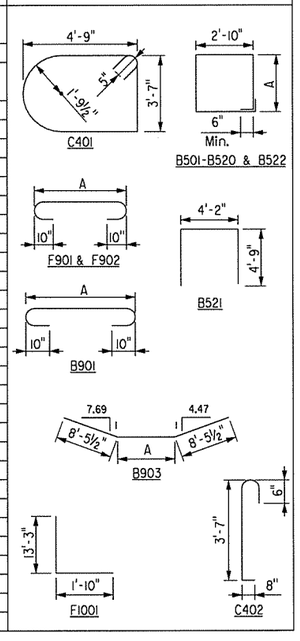
BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




## BAR LIST - BENT NO. 4

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B510 | 2 ea. | 13'-8" to 15'-8" | 3'-8" to 4'-9" | 2½" |
| B511 to B520 | 2 ea. | 12'-0" to 15'-8" | 2'-11" to 4'-9" | 2½" |
| B521 | 30 | 13'-5" | | 2½" |
| B522 | 32 | 15'-8" | 4'-9" | 2½" |
| B601 | 6 | 50'-2" | | Str. |
| B602 | 2 | 48'-7" | | Str. |
| B603 | 2 | 42'-7" | | Str. |
| B901 | 7 | 51'-11" | 49'-5" | 9" |
| B902 | 7 | 50'-2" | | Str. |
| B903 | 7 | 50'-5" | 33'-6" | 9" |
| C401 | 222 | 15'-9" | | 3" |
| C402 | 222 | 4'-9" | | 3" |
| C1001 | 32 | 53'-8" | | Str. |
| C1002 | 32 | 52'-2" | | Str. |
| F901 | 54 | 18'-3" | 15'-9" | 9" |
| F902 | 66 | 15'-3" | 12'-9" | 9" |
| F1001 | 64 | 14'-9" | | 10" |

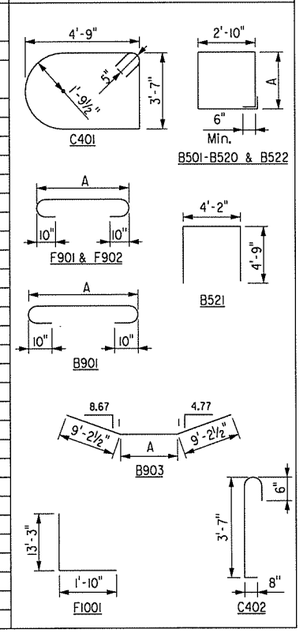
BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




## BAR LIST - BENT NO. 5

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B510 | 2 ea. | 13'-8" to 15'-8" | 3'-9" to 4'-9" | 2½" |
| B511 to B520 | 2 ea. | 12'-0" to 15'-8" | 2'-11" to 4'-9" | 2½" |
| B521 | 26 | 13'-5" | | 2½" |
| B522 | 34 | 15'-8" | 4'-9" | 2½" |
| B601 | 6 | 51'-8" | | Str. |
| B602 | 2 | 49'-10" | | Str. |
| B603 | 2 | 43'-7" | | Str. |
| B901 | 7 | 53'-5" | 50'-11" | 9" |
| B902 | 7 | 51'-8" | | Str. |
| B903 | 7 | 51'-11" | 33'-6" | 9" |
| C401 | 218 | 15'-9" | | 3" |
| C402 | 218 | 4'-9" | | 3" |
| C1001 | 32 | 52'-2" | | Str. |
| C1002 | 32 | 50'-8" | | Str. |
| F901 | 58 | 18'-3" | 15'-9" | 9" |
| F902 | 66 | 16'-3" | 13'-9" | 9" |
| F1001 | 64 | 14'-9" | | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform AASHTO M31 or M322 Type A, Grade 60 (yield strength = 60,000 psi)

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
4-3-14
BRIDGE ENGINEER

# DETAILS OF INTERMEDIATE BENTS PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

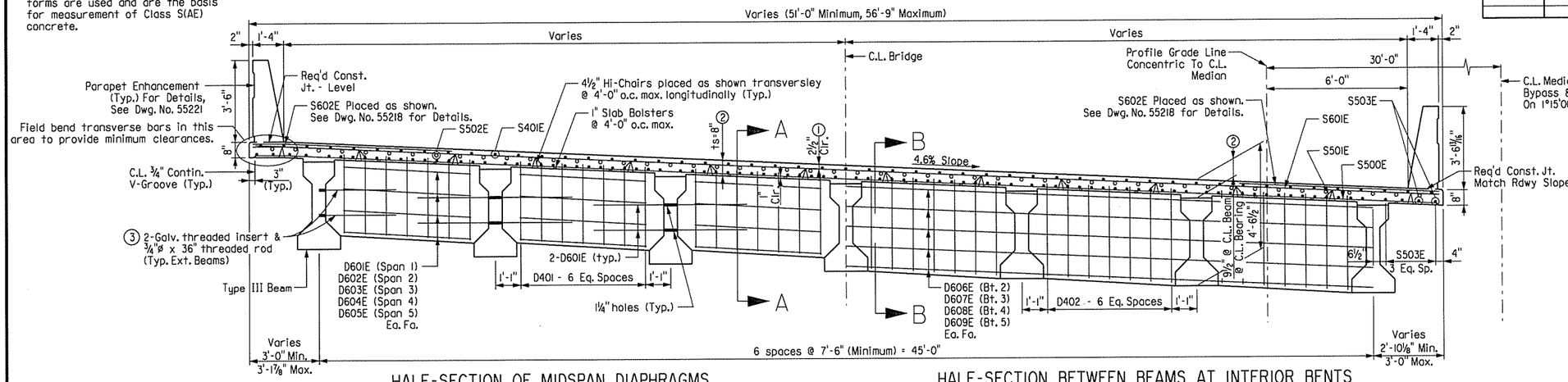
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_b52.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55216

B001966A14_B52.dgn 9/3/2014 3:23:04 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 363 | 897 |
| | | | | (1) A7306 | | SPAN DETAILS | | 55217 |

Note: Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

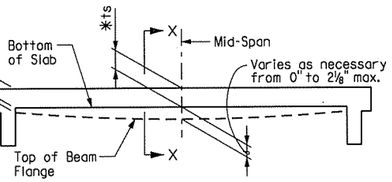



HALF-SECTION OF MIDSPAN DIAPHRAGMS

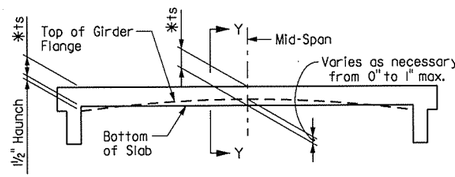
HALF-SECTION BETWEEN BEAMS AT INTERIOR BENTS

## HALF-SECTIONS: MIDSPAN & BEAM END DIAPHRAGMS

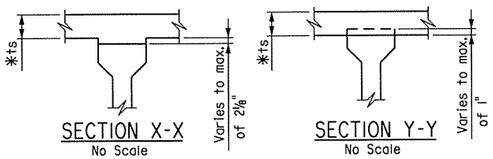
⅜" = 1'-0"
(Looking Ahead)




BEAM ELEVATION
No Scale




BEAM ELEVATION
No Scale




Note: ts = slab thickness as shown on superstructure details. See "Section of Midspan Diaphragms".

*Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

'Beam Elevation' sketches show the range of acceptability of the top of the Beam relative to bottom of slab after the placement of the slab. When the top of the Beam projects more than ½" into the slab, a raise in grade will be necessary. Beams shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

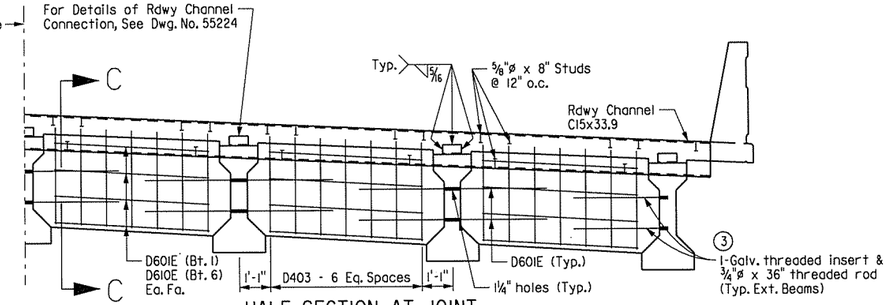
SLAB REINFORCING:

Transverse:
- S500E @ 14" centers (bottom)
- S501E @ 14" centers (bent up over beams)
- S601E @ 14" centers (top)
- S602E Place as shown (See Detail A on Dwg. No. 55218)

Longitudinal:
- S401E @ 12" centers (top)
- S402E-S406E @ 12" centers (top)
- S503E @ equal spaces (bottom)
- S502E @ 12" centers (top)

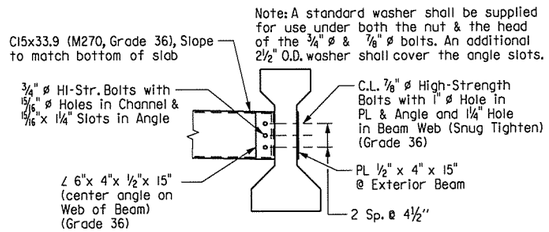
EXPANSION DEVICE

Rdwy. Channel - C15x33.9
Conn. Angle from MC18x42.7 (Cope one flange)




HALF-SECTION AT JOINT

⅜" = 1'-0"
(Looking Ahead)




## DETAIL OF ALTERNATE MIDSPAN DIAPHRAGM

½"= 1'-0"

Galvanized Steel Diaphragms may be used in place of Concrete at Midspan Diaphragms only. All components of the Alternate Steel Diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.

## NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

All bars designated with an E suffix are to be epoxy coated.

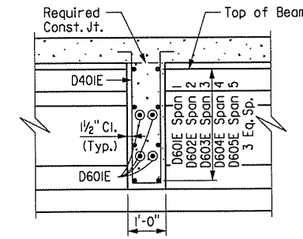
All transverse dimensions are measured perpendicular to C.L. Bridge, unless noted otherwise.

(1) TOLERANCE:
Minus ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

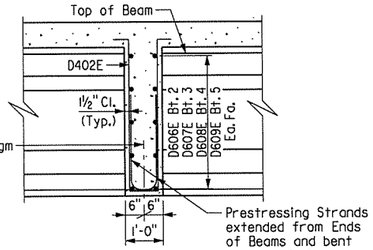
(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Galvanized Threaded Inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø Threaded Rods to be AASHTO M270, Grade 36 or AASHTO M31 or M53, Gr. 60. These are to be Non-Pay Items-subsidiary to the Item "Prestressed Concrete Girders (Type III)". Galvanizing shall be in accordance with AASHTO M232 Class C or AASHTO M298 Class 50.

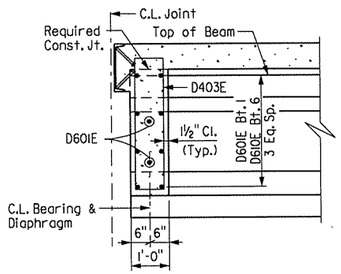
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
9-3-14
BRIDGE ENGINEER




SECTION A-A
Midspan Diaphragm
(Normal To Grade)
½" = 1'-0"




SECTION B-B
Interior Bent Diaphragm
(Normal To Grade)
½" = 1'-0"




SECTION C-C
End of Unit Diaphragm
(Normal To Grade)
½" = 1'-0"

Sections A-A, B-B, and C-C are cut normal to diaphragm.

# SHEET 1 OF 7
# DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT PUPPY CREEK

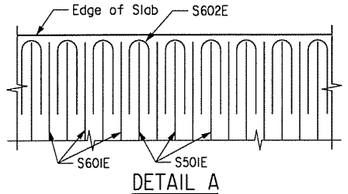
ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

| | | | |
|---|---|---|---|
| DRAWN BY: EG | DATE: 3-12 | FILENAME: bca0907a3_sll.dgn | |
| CHECKED BY: LWM | DATE: 08-13-12 | SCALE: AS SHOWN | |
| DESIGNED BY: EG | DATE: 3-12 | | |

BRIDGE NO. A7306 DRAWING NO. 55217

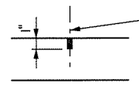



DETAIL A

No Scale

Pours must be made in order as numbered. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.



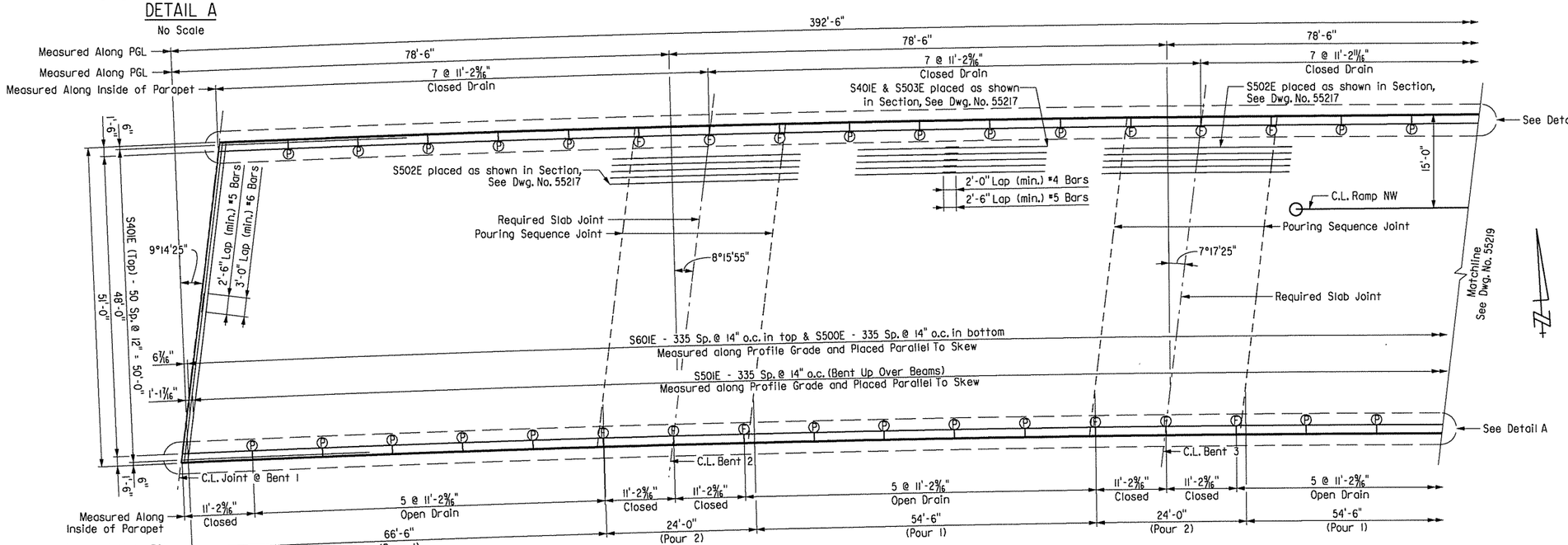
SLAB JOINT DETAIL

No Scale

½" x 1" Type 3 or 4 Joint Sealer. See subsection 501.02 (h) and 501.05 (j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Backer rod filler will not be required. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set up to allow the sawing of joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.

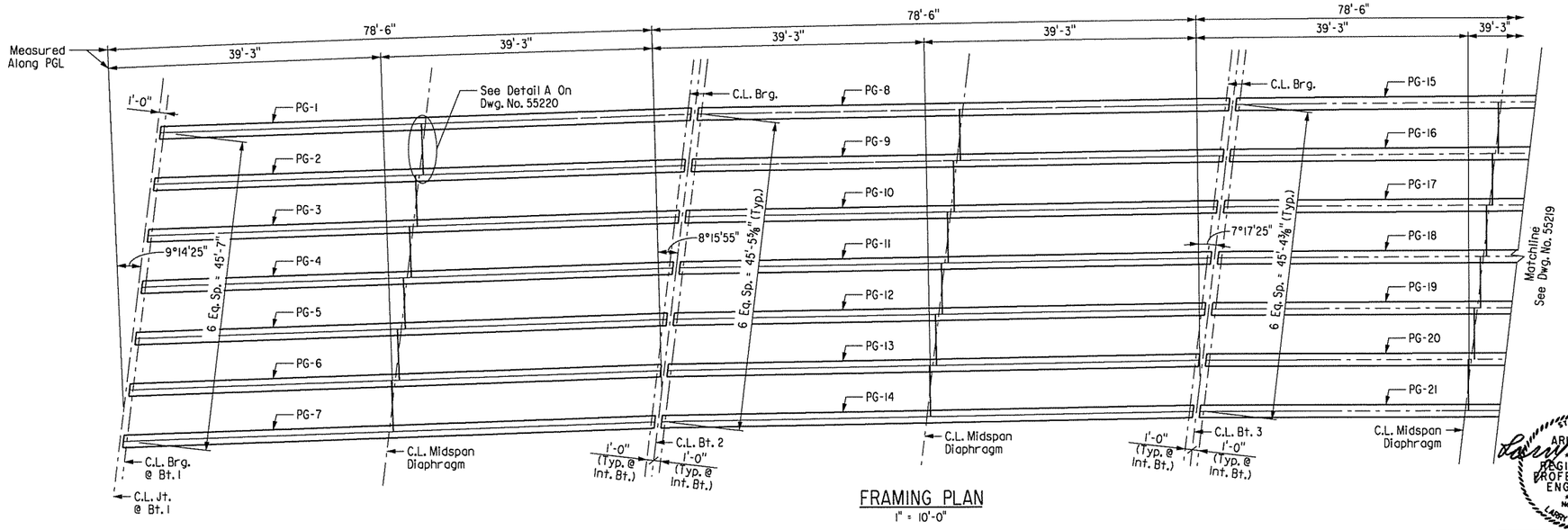
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 364 | 897 |
| (1) A7306 | | SPAN DETAILS | | 55218 |




POURING SEQUENCE & REINFORCING PLAN

1" = 10'-0"



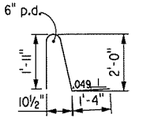

FRAMING PLAN

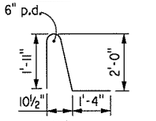
1" = 10'-0"

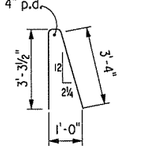
## BAR LIST

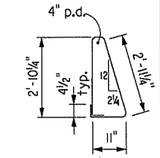
Bending Diagrams
(Dimensions are out to out of bars.)

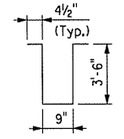
| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| S401E | 756 | 27'-2" | Str. |
| | | | |
| S500E | 672 | 29'-7" | Str. |
| S501E | 336 | 51'-9" to 57'-6" | 3" |
| S502E | 200 | 30'-0" | Str. |
| S503E | 1380 | 27'-5" | Str. |
| | | | |
| S601E | 672 | 29'-10" | Str. |
| S602E | 672 | 12'-8" | 4½" |
| | | | |
| P401E | 1385 | 6'-3" | 3" |
| P402E | 225 | 7'-3" | 3" |
| | | | |
| P500E | 580 | 5'-7" | 3¾" |
| P501E | 805 | 5'-7" | 3¾" |
| P502E | 12 | 34'-8" | Str. |
| P503E | 295 | 10'-9" | Str. |
| P504E | 6 | 55'-7" | Str. |
| P505E | 47 | 10'-9" | Str. |
| P506E | 6 | 55'-8" | Str. |
| P507E | 89 | 10'-9" | Str. |
| P508E | 6 | 55'-9" | Str. |
| P509E | 12 | 31'-10" | Str. |
| P510E | 24 | 34'-8" | Str. |
| | | | |
| D401E | 210 | 8'-2" | 2" |
| D402E | 168 | 9'-4" | 2" |
| D403E | 84 | 8'-10" | 2" |
| | | | |
| D601E | 216 | 5'-6" | Str. |
| D602E | 48 | 5'-5" | Str. |
| D603E | 48 | 5'-6" | Str. |
| D604E | 48 | 5'-8" | Str. |
| D605E | 48 | 6'-1" | Str. |
| D606E | 10 | 45'-6" | Str. |
| D607E | 10 | 45'-5" | Str. |
| D608E | 10 | 45'-10" | Str. |
| D609E | 10 | 47'-8" | Str. |
| D610E | 48 | 6'-4" | Str. |



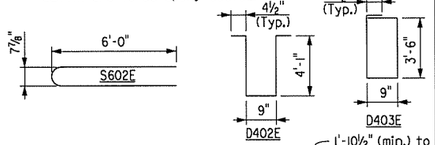



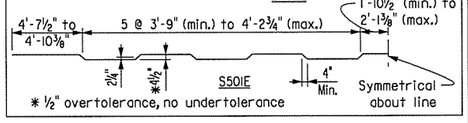




Note: All bars designated with an "E" suffix are to be epoxy coated.




* ½" overtolerance, no undertolerance

SHEET 2 OF 7

DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT

PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER 9-3-14

BRIDGE ENGINEER

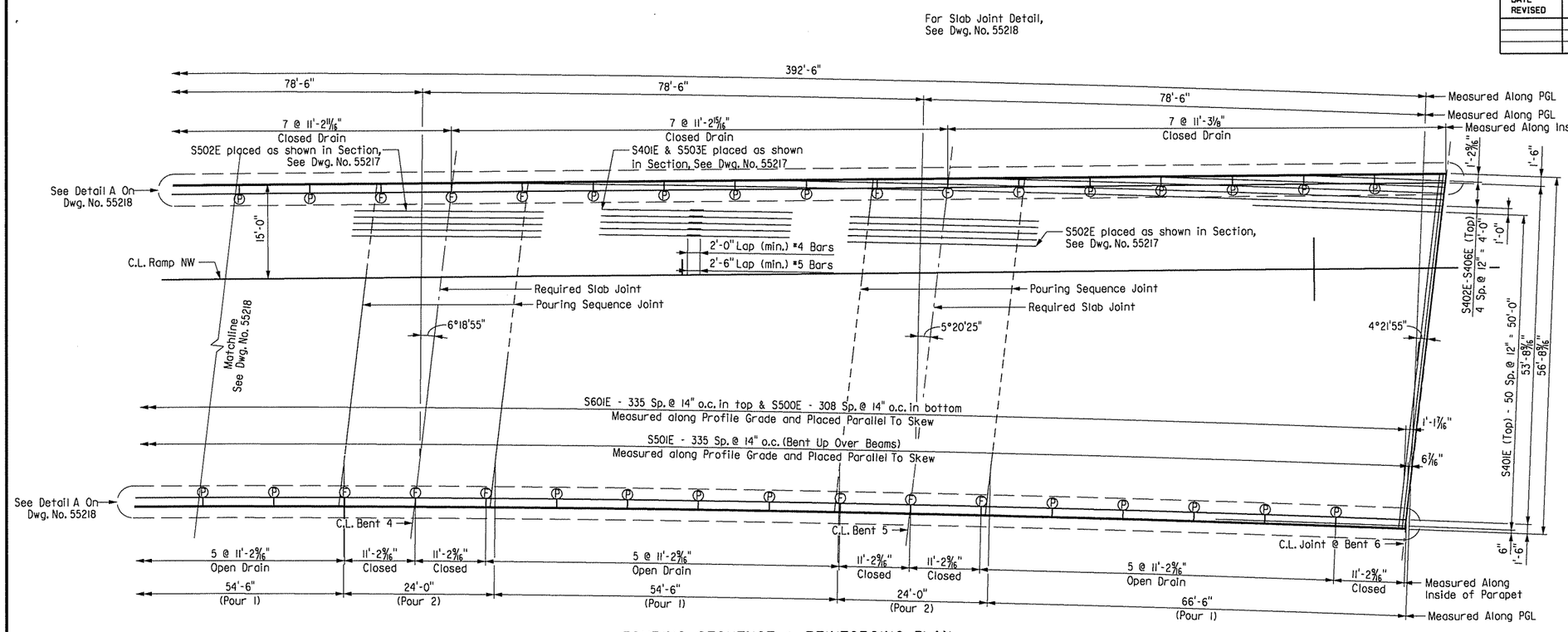
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_s12.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55218

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 365 | 897 |
| | | | | (1) A7306 | | SPAN DETAILS | | 55219 |

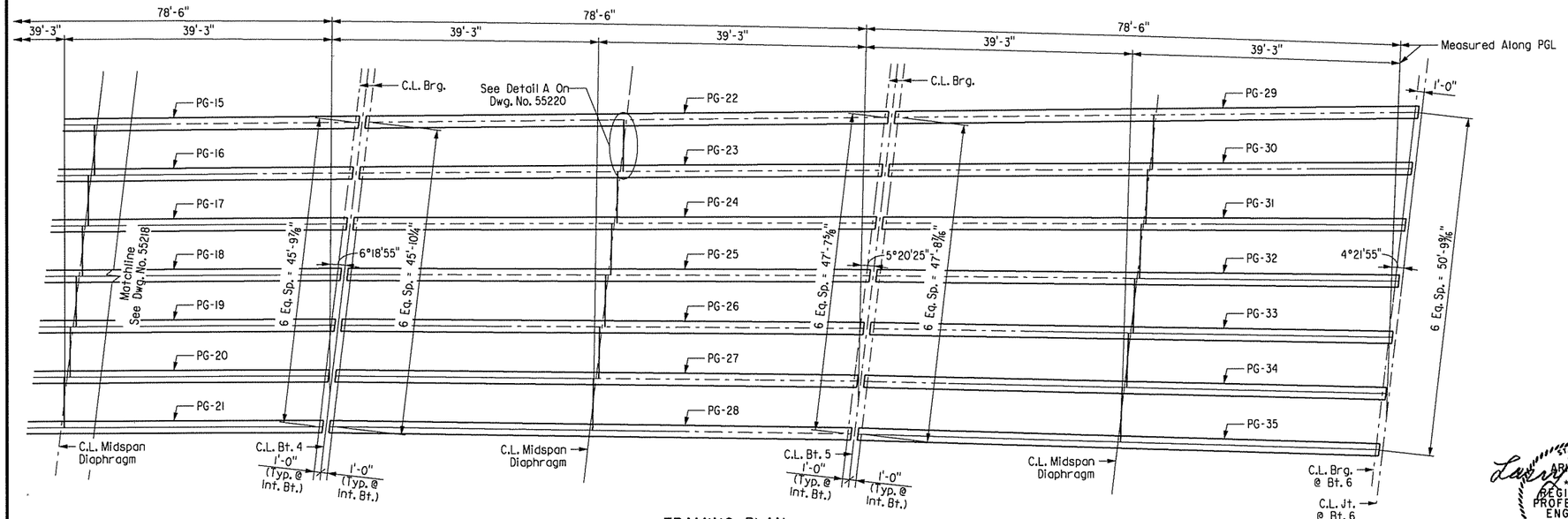



## POURING SEQUENCE & REINFORCING PLAN

1" = 10'-0"

Pours must be made in order as numbered. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.




## FRAMING PLAN

1" = 10'-0"

Camber and deflection values shown are based on a concrete girder strength, f'c = 6000 psi. Greater strengths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade.

SPECIAL CAMBER NOTES

The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER 9-3-14

BRIDGE ENGINEER

# SHEET 3 OF 7
# DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_s13.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

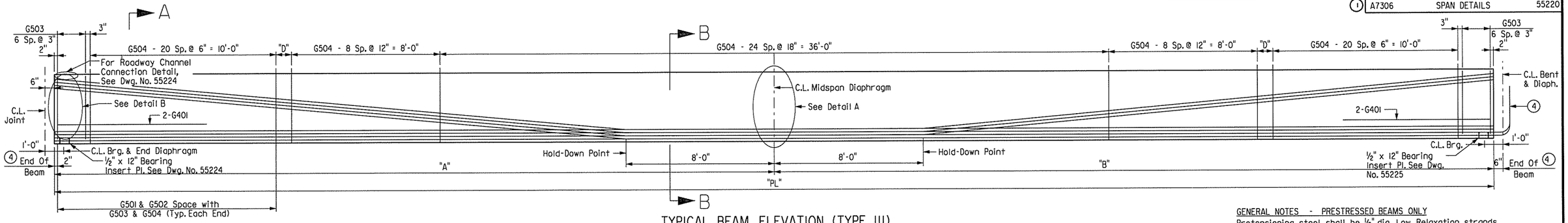
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55219

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 366 | 897 |
| | | | | (1) A7306 | | SPAN DETAILS | | 55220 |

(4) Prestressing strands at end bents 1 and 6 shall be sawn flush with the end of the beam. Prestressing strands at intermediate bents 2 thru 5 shall be bent up into diaphragms as shown in "ELEVATION OF BEAMS AT INTERMEDIATE BENTS"

Note: See Dwg. No. 55224 for locations of ¾" ø H.S. bolts for connection plates.

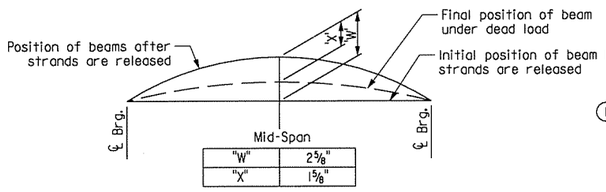



## TYPICAL BEAM ELEVATION (TYPE III)

⅜" = 1'-0"

LOAD DISTRIBUTION TO BEAMS:

| | Exterior Beams | Interior Beams |
|---|---|---|
| Dead Loads: To Beam | 764 PLF + Beam + Diphm. | 871 PLF + Beam + Diphm. |
| Dead Loads: To Composite Beam | 260 PLF, Includes 148 PLF Future Wearing Surface | 324 PLF, Includes 212 PLF Future Wearing Surface |



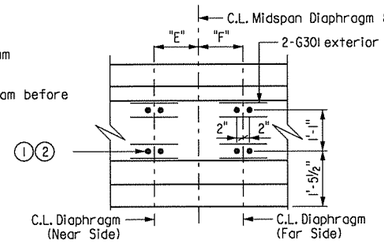

| | |
|---|---|
| "W" | 2⅝" |
| "X" | 1⅝" |

'W' is expected camber of Beam at 90 days after release (Prestress + Dead Load of Beam)

'X' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

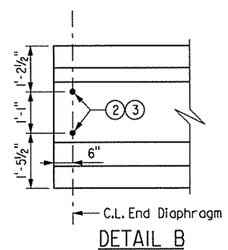
Camber is based on f'c=6000 psi. Higher actual strengths may require adjustment.

## CAMBER & DEFLECTIONS (INCHES)




## DETAIL A

½" = 1'-0"



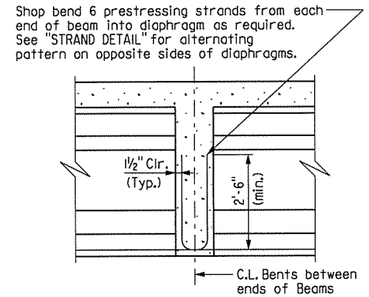

## DETAIL B

½" = 1'-0"

(1) Inserts shown are for concrete Midspan Diaphragms. See Dwg. No. 55217 for Alternate Steel Diaphragms.

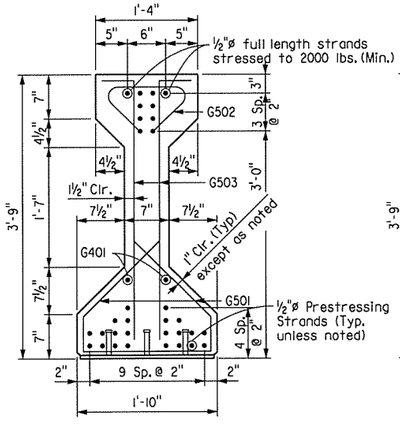
(2) Galvanized ¾"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. (Omit in exterior face of exterior beams.) These are to be non-Pay Item-subsidiary to the item "Prestressed Concrete Girders (Type III)". For Alternate Steel Diaphragms, See Dwg. No. 55217.

(3) Inserts on inside of Exterior Beams and 1¼" ø holes for Interior Beams



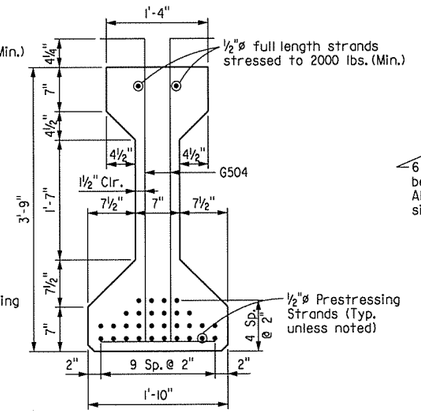

## ELEVATION OF BEAMS AT INTERMEDIATE BENTS

½" = 1'-0"



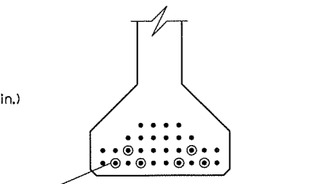

## SECTION A-A

1" = 1'-0"



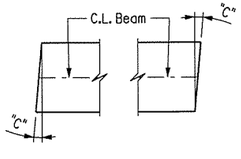

## SECTION B-B

1" = 1'-0"




## STRAND DETAIL

1" = 1'-0"




## BEAM END DETAIL

½" = 1'-0"

## BEAM VARIABLES

| MARK | "PL" | "A" | "B" | "C" | "D" | "E" | "F" |
|---|---|---|---|---|---|---|---|
| PG-1 | 77'-5⅝" | 38'-8½" | 38'-9⅛" | 8°40'34" | 9¹¹⁄₁₆" | 6⁹⁄₁₆" | -- |
| PG-2 | 77'-5¹¹⁄₁₆" | 38'-8½" | 38'-9⅛" | 8°41'24" | 9¹¹⁄₁₆" | 6⁹⁄₁₆" | 7¹⁄₁₆" |
| PG-3 | 77'-5¹¹⁄₁₆" | 38'-8⁹⁄₁₆" | 38'-9³⁄₁₆" | 8°42'15" | 9⅞" | 6⁹⁄₁₆" | 7¹⁄₁₆" |
| PG-4 | 77'-5¾" | 38'-8⁹⁄₁₆" | 38'-9³⁄₁₆" | 8°43'7" | 9⅞" | 6⅝" | 7¹⁄₁₆" |
| PG-5 | 77'-5¹¹⁄₁₆" | 38'-8⁹⁄₁₆" | 38'-9³⁄₁₆" | 8°43'58" | 9⅞" | 6⅝" | 7¹⁄₁₆" |
| PG-6 | 77'-5¹¹⁄₁₆" | 38'-8⅝" | 38'-9³⁄₁₆" | 8°44'49" | 9¹⁵⁄₁₆" | 6⅝" | 7¼" |
| PG-7 | 77'-5⅞" | 38'-8⅝" | 38'-9¼" | 8°45'41" | 9¹⁵⁄₁₆" | -- | 7¼" |
| PG-8 | 77'-5¾" | 38'-8⁹⁄₁₆" | 38'-9⅛" | 7°42'35" | 9⅞" | 5¹⁵⁄₁₆" | -- |
| PG-9 | 77'-5¾" | 38'-8⅝" | 38'-9⅛" | 7°43'20" | 9⅞" | 5¹⁵⁄₁₆" | 6⅜" |
| PG-10 | 77'-5¹¹⁄₁₆" | 38'-8⅝" | 38'-9³⁄₁₆" | 7°44'6" | 9⅞" | 5⅞" | 6⅜" |
| PG-11 | 77'-5¹¹⁄₁₆" | 38'-8⅝" | 38'-9³⁄₁₆" | 7°44'51" | 9⁵⁄₁₆" | 5⅞" | 6⅜" |
| PG-12 | 77'-5¹¹⁄₁₆" | 38'-8⅝" | 38'-9³⁄₁₆" | 7°45'36" | 9⁵⁄₁₆" | 5⅞" | 6⅜" |
| PG-13 | 77'-5⅞" | 38'-8¹¹⁄₁₆" | 38'-9³⁄₁₆" | 7°46'22" | 9⁵⁄₁₆" | 5⅞" | 6⁷⁄₁₆" |
| PG-14 | 77'-5⅞" | 38'-8¹¹⁄₁₆" | 38'-9¼" | 7°47'8" | 9⁵⁄₁₆" | -- | 6⁷⁄₁₆" |
| PG-15 | 77'-6⅜" | 38'-9⁷⁄₁₆" | 38'-9⁵⁄₁₆" | 7°9'12" | 10⁵⁄₁₆" | 5⅛" | -- |
| PG-16 | 77'-6½" | 38'-9" | 38'-9½" | 7°5'46" | 10¼" | 5⅛" | 5⅝" |
| PG-17 | 77'-6⅜" | 38'-8⁵⁄₁₆" | 38'-9⁷⁄₁₆" | 7°2'20" | 10³⁄₁₆" | 5⅛" | 5⅝" |
| PG-18 | 77'-6¼" | 38'-8⅞" | 38'-9⅜" | 6°58'54" | 10⅛" | 5⅛" | 5⅝" |
| PG-19 | 77'-6⅛" | 38'-8¹³⁄₁₆" | 38'-9⁵⁄₁₆" | 6°55'27" | 10¹⁄₁₆" | 5⅛" | 5⅝" |
| PG-20 | 77'-6⅛" | 38'-8¾" | 38'-9¼" | 6°52'1" | 10" | 5³⁄₁₆" | 5⅝" |
| PG-21 | 77'-5¹⁵⁄₁₆" | 38'-8¾" | 38'-9³⁄₁₆" | 6°48'35" | 9¹⁵⁄₁₆" | -- | 5⅝" |
| PG-22 | 77'-8⅜" | 38'-10" | 38'-10⅜" | 7°9'35" | 11³⁄₁₆" | 4½" | -- |
| PG-23 | 77'-7¹⁵⁄₁₆" | 38'-9¾" | 38'-10⁷⁄₁₆" | 6°56'21" | 11" | 4½" | 4¹⁵⁄₁₆" |
| PG-24 | 77'-7½" | 38'-9⅜" | 38'-9¹⁵⁄₁₆" | 6°43'6" | 10¾" | 4½" | 4¹⁵⁄₁₆" |
| PG-25 | 77'-7⅛" | 38'-9⅜" | 38'-9¾" | 6°29'51" | 10⁹⁄₁₆" | 4½" | 4¹⁵⁄₁₆" |
| PG-26 | 77'-6¹¹⁄₁₆" | 38'-9⅛" | 38'-9⁷⁄₁₆" | 6°16'35" | 10⅜" | 4⁹⁄₁₆" | 4¹⁵⁄₁₆" |
| PG-27 | 77'-6⁵⁄₁₆" | 38'-8⅞" | 38'-9³⁄₁₆" | 6°3'19" | 10³⁄₁₆" | 4⁹⁄₁₆" | 4¹⁵⁄₁₆" |
| PG-28 | 77'-5⁵⁄₁₆" | 38'-8¾" | 38'-9³⁄₁₆" | 5°50'2" | 10" | -- | 4¹⁵⁄₁₆" |
| PG-29 | 77'-9⅞" | 38'-10¾" | 38'-11⅛" | 7°9'35" | 11¹⁵⁄₁₆" | 3¹⁵⁄₁₆" | -- |
| PG-30 | 77'-9⅛" | 38'-10⅜" | 38'-10¾" | 6°46'39" | 11⅜" | 4" | 4⁵⁄₁₆" |
| PG-31 | 77'-8⁷⁄₁₆" | 38'-10⅛" | 38'-10⅜" | 6°23'41" | 11³⁄₁₆" | 4" | 4⁵⁄₁₆" |
| PG-32 | 77'-7¾" | 38'-9⅛" | 38'-10⅛" | 6°0'40" | 10⅞" | 4" | 4⁵⁄₁₆" |
| PG-33 | 77'-7⅛" | 38'-9⅜" | 38'-9¾" | 5°37'38" | 10⁹⁄₁₆" | 4" | 4⁵⁄₁₆" |
| PG-34 | 77'-6½" | 38'-9⅛" | 38'-9⅞" | 5°14'34" | 10¼" | 4" | 4⁵⁄₁₆" |
| PG-35 | 77'-5⁵⁄₁₆" | 38'-8¹¹⁄₁₆" | 38'-9⅛" | 4°51'29" | 10" | -- | 4⁵⁄₁₆" |

## BAR LIST-PER BEAM

| MARK | NO. REQ'D | LENGTH | P.D. | BENDING DIAGRAMS (Dimensions are out to out of bars.) |
|---|---|---|---|---|
| G301 | 8 | 1'-3" | Str. | |
| G401 | 4 | 8'-0" | Str. | |
| G501 | 112 | 3'-6" | 2" | 5½", 1'-5", 1'-8" |
| G502 | 56 | 2'-7" | 3" | 1'-0", 8½" |
| G503 | 28 | 3'-9" | 2" | 5", 3'-5" |
| G504 | 166 | 5'-4" | 2" | 7", 4'-0", 11" |

G501 G502 G503 G504

## GENERAL NOTES - PRESTRESSED BEAMS ONLY

Pretensioning steel shall be ½" dia. Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

All Beams shall be AASHTO TYPE III I-Beams as shown on the details. All Beams shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Section 802.22 of the Standard Specifications.

Concrete shall be Class 'S' and shall have a minimum 28 day compressive strength f'c = 6000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each ½" dia. strand shall be 31000 pounds. Transfer of this tensioning load to the beam shall not be done until the compressive strengh of the concrete is 5500 psi.

The contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the beams.

The first 16" along the top of the beam at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beam lengths shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep, and shrinkage.

All exposed steel at ends of beams not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Extreme care shall be excercised in handling and moving precast prestressed concrete beams.

Beams must be maintained in an upright position at all times and must be picked up from points near the beam ends. Disregard of this requirement may lead to collapse of the beam. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with subsection 802.22 except that only ½" diameter strands shall be allowed.

Reinforcing Steel shall be AASHTO M31 or M53 Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

The point of support and direction of the reactions with respect to the member shall be approximately the same during transportation and storage as when member is in its final position.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approved secured before fabrication is begun.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# SHEET 4 OF 7
# DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

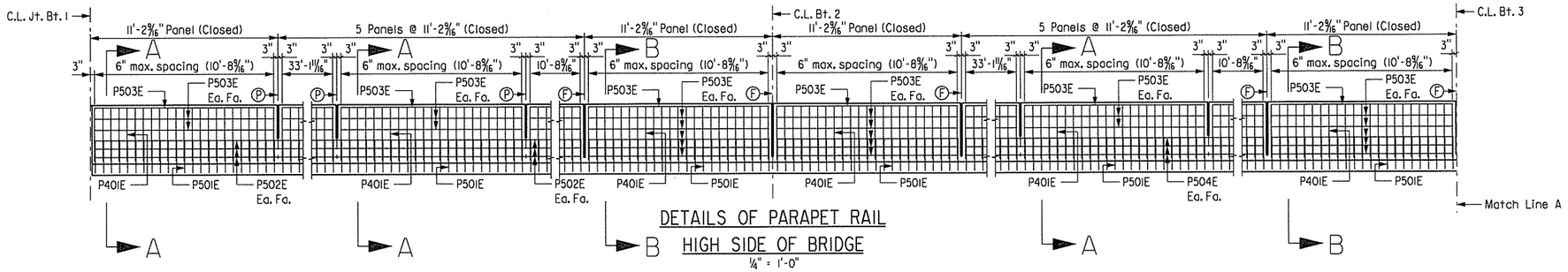
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_sl4.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55220

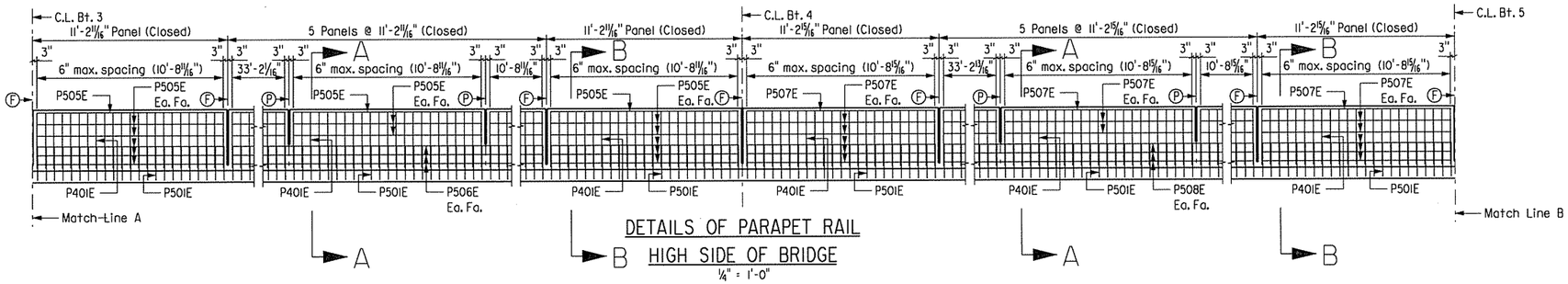
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 367 | 897 |
| | | | | (1) A7306 | | SPAN DETAILS | | 55221 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

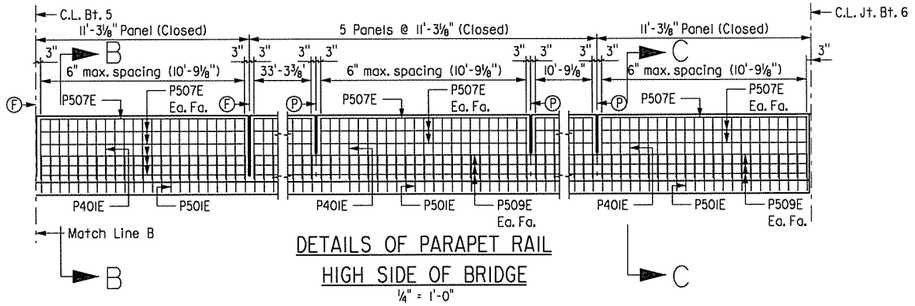
Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.



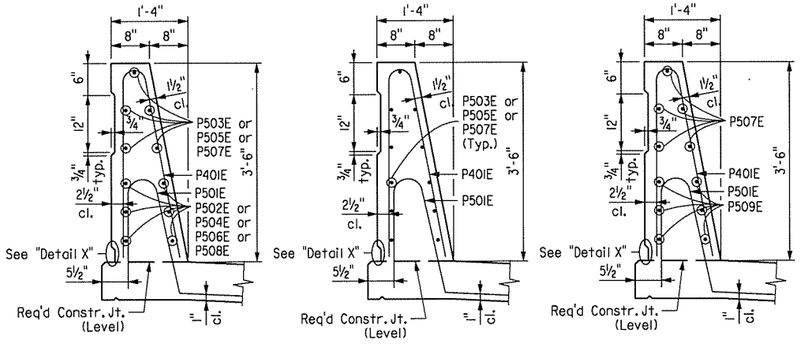

DETAILS OF PARAPET RAIL
HIGH SIDE OF BRIDGE
¼" = 1'-0"




DETAILS OF PARAPET RAIL
HIGH SIDE OF BRIDGE
¼" = 1'-0"



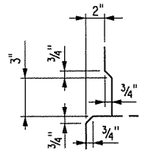

DETAILS OF PARAPET RAIL
HIGH SIDE OF BRIDGE
¼" = 1'-0"



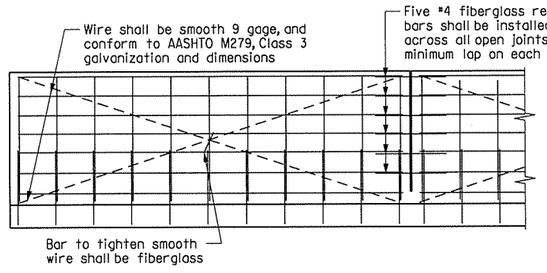

SECTION A-A
Scale: ¾" = 1'-0"

SECTION B-B
Scale: ¾" = 1'-0"

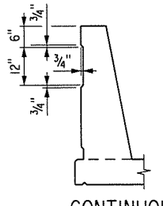
SECTION C-C
Scale: ¾" = 1'-0"



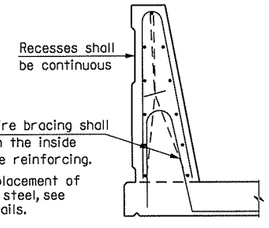

DETAIL X
Scale: 1½" = 1'-0"




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.




CONTINUOUS
PARAPET ENHANCEMENT
Scale: ½" = 1'-0"




The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Traffic face and top surface may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

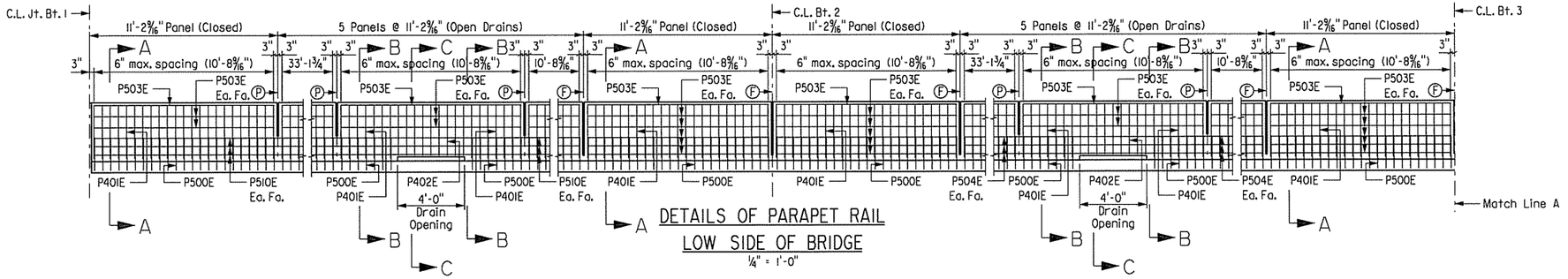
DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907a3_s15.dgn
SCALE: AS SHOWN
BRIDGE NO. A7306
DRAWING NO. 55221

B001966A14_S15.dgn 9/4/2014 1:28:47 PM

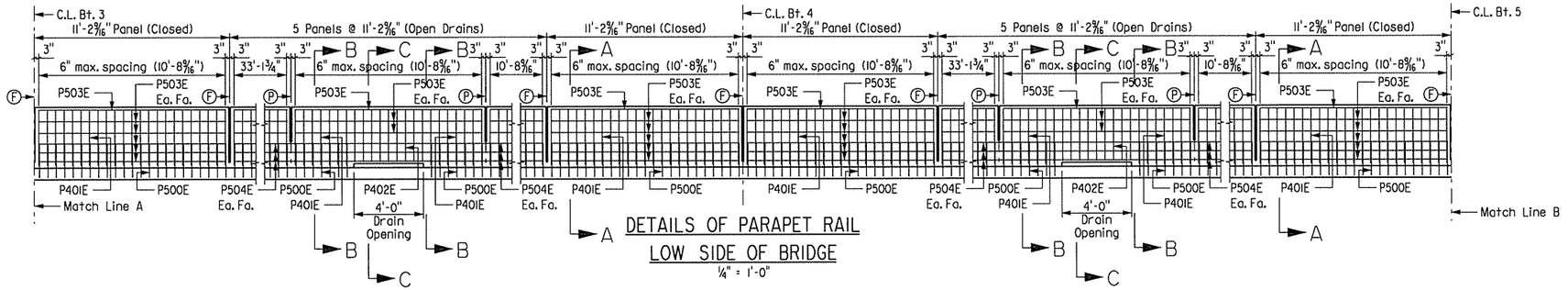
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 368 | 897 |
| | | | | (1) A7306 | | SPAN DETAILS | | 55222 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

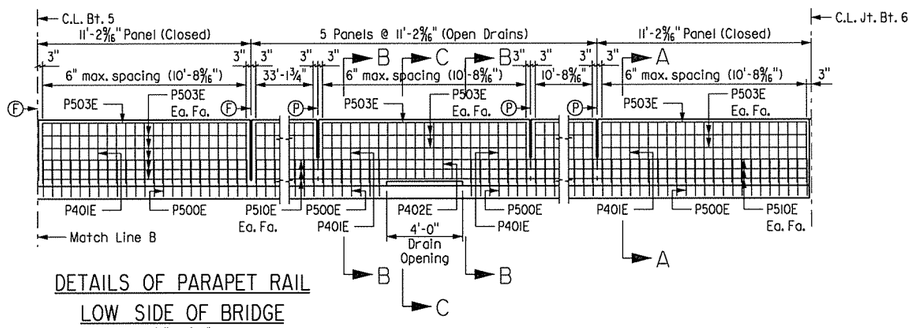
Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.



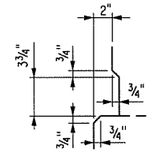

DETAILS OF PARAPET RAIL
LOW SIDE OF BRIDGE
¼" = 1'-0"



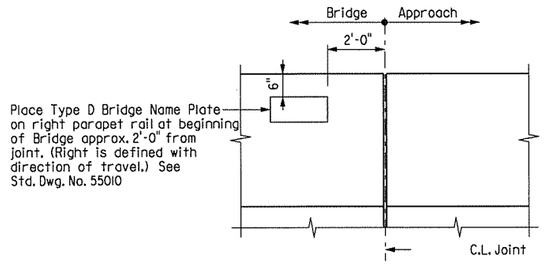

DETAILS OF PARAPET RAIL
LOW SIDE OF BRIDGE
¼" = 1'-0"




DETAILS OF PARAPET RAIL
LOW SIDE OF BRIDGE
¼" = 1'-0"

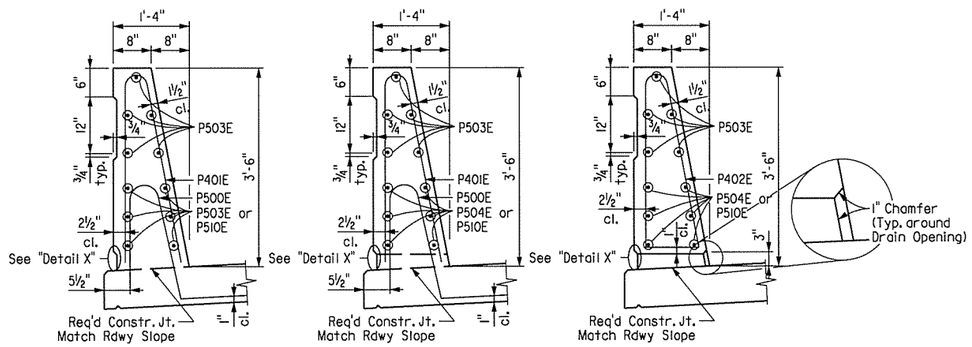



DETAIL X
Scale: 1½" = 1'-0"




Place Type D Bridge Name Plate on right parapet rail at beginning of Bridge approx. 2'-0" from joint. (Right is defined with direction of travel.) See Std. Dwg. No. 55010

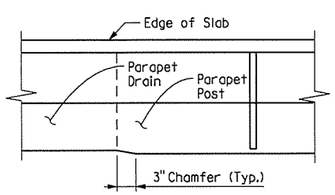
NAME PLATE DETAIL
No Scale



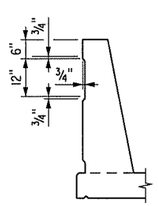

SECTION A-A
Scale: ¾" = 1'-0"

SECTION B-B
Scale: ¾" = 1'-0"

SECTION C-C
Scale: ¾" = 1'-0"




PLAN OF RAIL POST CHAMFER
(Typ. for Open Median Drain Panels Only)
1" = 1'-0"




CONTINUOUS PARAPET ENHANCEMENT
Scale: ½" = 1'-0"

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907a3_s16.dgn
SCALE: AS SHOWN

BRIDGE NO. A7306 DRAWING NO. 55222

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 369 | 897 |
| | | | | (1) A7306 | | SPAN DETAILS | | 55223 |

SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions.

LIVE LOADING: HL93

Elastomeric bearings shall be firmly seated in accordance with Subsection 808.08 of the specifications. This work to be considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

CONCRETE:

All concrete in slab, parapets, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured, unless otherwise noted. Interior bent diaphragms shall be cast monolithically with the slab.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi.)

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of EPOXY COATED REINFORCING STEEL (Grade 60).

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 unless noted otherwise and shall be paid for as STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50). Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36.

Cleaning and painting of all exposed surfaces shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50). Structural steel completely embedded in concrete need not be painted. For cleaning and painting requirements of external load plates of elastomeric bearings, see Dwg. No. 55225.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If the Contractor or Erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Engineer for approval. All welding shall conform to Section 807.26.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

Anchor bolts shall be galvanized according to Subsection 807.07 and shall be Grade 55.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER

Larry W. Miller 9-3-14

BRIDGE ENGINEER

SHEET 7 OF 7

# DETAILS OF 392'-6" CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

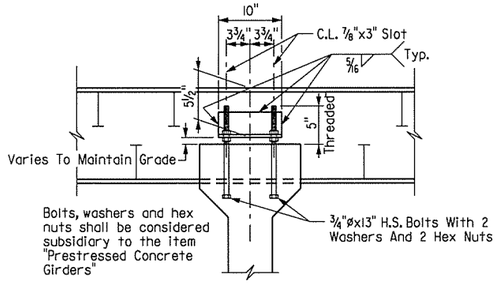
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_s17.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

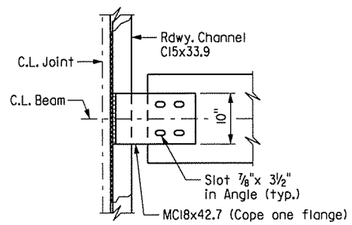
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55223

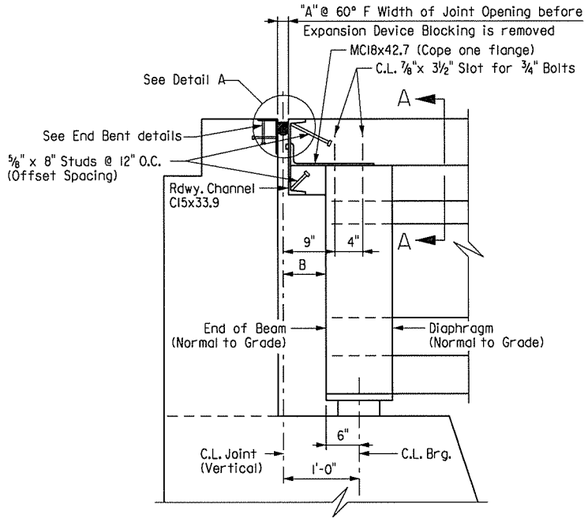
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 370 | 897 |
| | | | | (1) A7306 | | JOINT DETAILS | | 55224 |




SECTION A-A

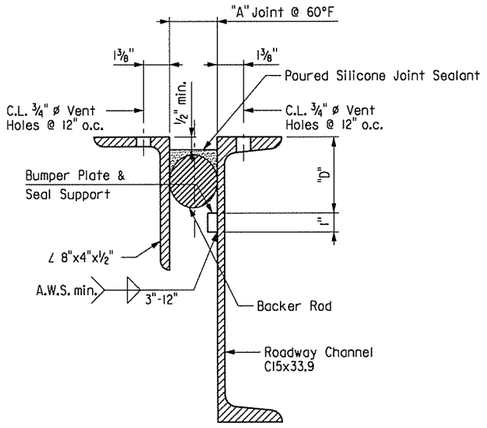



ROADWAY CHANNEL CONNECTION DETAIL



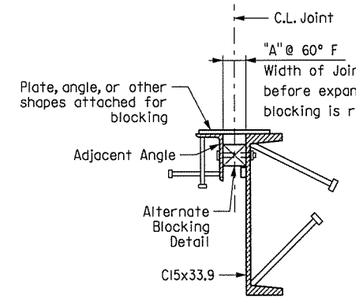

SECTION THRU JOINT AT END BENTS

Note: Sections thru Joints are taken normal to C.L. Joints




Note: Concrete shall be hand packed under the joint armor. Care shall be taken to ensure that concrete completely fills the areas below the top channel flange and the horizontal leg of the angle.

DETAIL A




## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note:
Each Expansion Joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

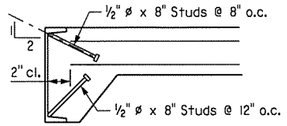
## SILICONE JOINT DATA

| "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Perpendicular to Joint @ 60°F | "D" | Bumper Plate Size |
|---|---|---|---|---|---|
| 40° F | 60° F | 80° F | | | |
| 2 3/16" | 2½" | 2 13/16" | 6" | 5" | 1" x ⅝" |

**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

The temperature limitations by the lubricant - adhesive manufacture shall be observed.

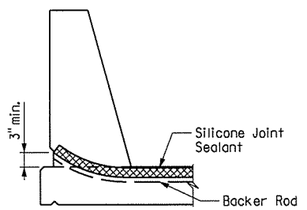
Installation is limited to 40°F min. and 80°F max. Interpolation of the table may be necessary.




Note: As an alternate to ⅝" ø studs, ½" ø x 8" studs spaced as shown may be used. Use weight of ⅝" ø stud as basis of measurement of structural steel in anchors.

DETAIL OF ALTERNATE ANCHORS

No Scale




JOINT SEAL PLACEMENT AT CURB

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# DETAILS OF POURED SILICONE JOINT PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

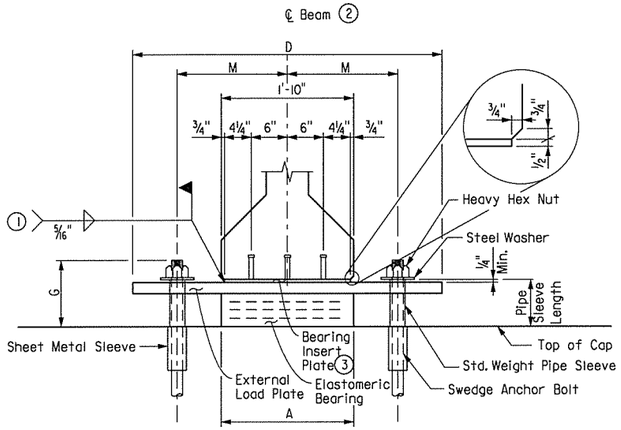
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_jil.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

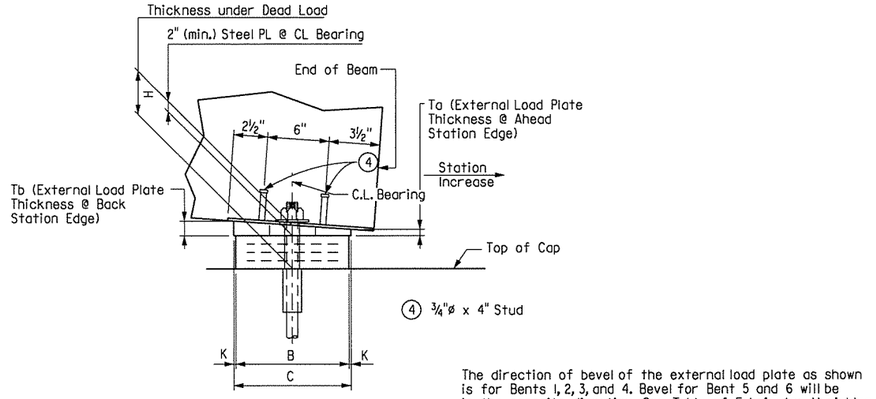
BRIDGE NO. A7306 DRAWING NO. 55224

B001966A14_J11.dgn 9/3/2014 3:23:17 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 371 | 897 |
| | | | | (1) A7306 | | ELASTO. BRGS. | | 55225 |




FRONT VIEW



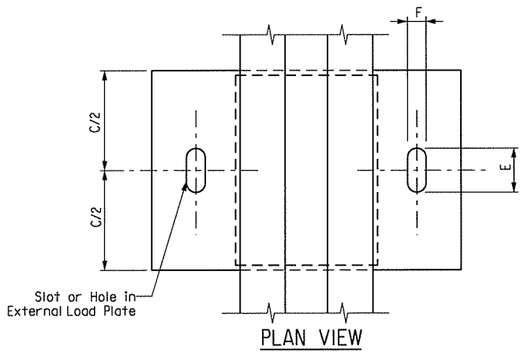

SIDE VIEW

The direction of bevel of the external load plate as shown is for Bents 1, 2, 3, and 4. Bevel for Bent 5 and 6 will be in the opposite direction. See Table of Fabricator Variables for dimensions.

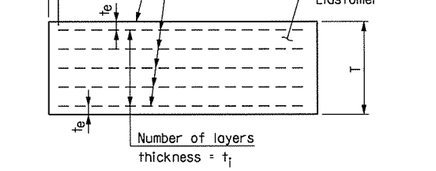
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) C.L. Elastomeric Pad shall be aligned with C.L. Beam

(3) Bearing Insert Plate (M270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)"




PLAN VIEW

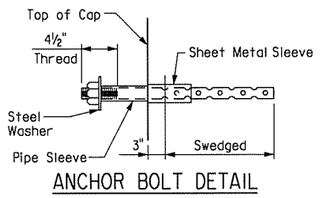



$t_e$ = thickness of elastomer cover on top and bottom of pad

$t_i$ = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness $t_i$

ELASTOMERIC BEARING




ANCHOR BOLT DETAIL

NOTE:
Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required. If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item STRUCTURAL STEEL IN PLATE GIRDER SPANS, (M270, Gr. 50).

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be cleaned and painted in accordance with Subsection 638.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for STRUCTURAL STEEL IN PLATE GIRDER SPANS, (M270, Gr. 50).

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

TABLE OF FABRICATOR VARIABLES

| LOCATION | | | BEARING TYPE | NO. of BEARINGS EACH BENT | *MAXIMUM DESIGN LOAD (KIPS) | ELASTOMERIC PAD | | | | | | EXTERNAL LOAD PLATE | | | | | | | | ANCHOR BOLT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BENT NO(S). | SPAN NO. | BEAM OR GIRDER NO. | | | | G | H | A | B | N | $t_i$ | $t_e$ | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | $T_a$ | $T_b$ | ANCHOR BOLT (ø x L) | GRADE | PIPE SLEEVE SIZE (ø x L) | SHEET METAL SLEEVE SIZE (ø x L) | STEEL WASHER SIZE (O.D.) |
| 1 | 1 | All | Exp. | 7 | 75.71 | 10 3/4" | 6 3/4" | 19" | 8" | 7 | 1/2" | 1/4" | 8 @ 12 Ga. | 4 13/16" | 9" | 35 1/2" | 8" | 3 3/4" | 1/2" | 14 1/4" | 1.98 | 2.02 | 2 1/2"ø x 37 1/4" | 55 | 3"ø x 7 1/8" | 4"ø x 5 1/2" | 4 1/2" |
| 2 | 1 | All | Fixed | 7 | 93.13 | 10" | 6 3/16" | 21" | 9" | 6 | 1/2" | 1/4" | 7 @ 12 Ga. | 4 1/4" | 10" | 35 1/2" | 3 3/4" | 3 3/4" | 1/2" | 14 1/4" | 2.21 | 2.27 | 2 1/2"ø x 36 1/2" | 55 | 3"ø x 6 1/2" | 4"ø x 5 1/2" | 4 1/2" |
| 2 | 2 | All | Fixed | 7 | 93.13 | 10" | 6 7/16" | 21" | 9" | 6 | 1/2" | 1/4" | 7 @ 12 Ga. | 4 1/4" | 10" | 35 1/2" | 3 3/4" | 3 3/4" | 1/2" | 14 1/4" | 1.97 | 2.03 | 2 1/2"ø x 36 1/2" | 55 | 3"ø x 6 1/2" | 4"ø x 5 1/2" | 4 1/2" |
| 3 | 2 | All | Fixed | 7 | 89.40 | 8 3/4" | 5" | 19 1/2" | 9 1/2" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 10 1/2" | 34 1/2" | 3 1/8" | 3 1/8" | 1/2" | 14" | 1.98 | 2.02 | 2 1/4"ø x 33 1/4" | 55 | 2 1/2"ø x 5 3/8" | 4"ø x 5 1/2" | 4" |
| 3 | 3 | All | Fixed | 7 | 89.40 | 8 3/4" | 5" | 19 1/2" | 9 1/2" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 10 1/2" | 34 1/2" | 3 1/8" | 3 1/8" | 1/2" | 14" | 1.98 | 2.02 | 2 1/4"ø x 33 1/4" | 55 | 2 1/2"ø x 5 3/8" | 4"ø x 5 1/2" | 4" |
| 4 | 3 | All | Fixed | 7 | 89.40 | 8 3/4" | 5" | 19 1/2" | 9 1/2" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 10 1/2" | 34 1/2" | 3 1/8" | 3 1/8" | 1/2" | 14" | 2.11 | 2.13 | 2 1/4"ø x 33 1/4" | 55 | 2 1/2"ø x 5 3/8" | 4"ø x 5 1/2" | 4" |
| 4 | 4 | All | Fixed | 7 | 89.40 | 8 3/4" | 5 1/8" | 19 1/2" | 9 1/2" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 10 1/2" | 34 1/2" | 3 1/8" | 3 1/8" | 1/2" | 14" | 1.99 | 2.01 | 2 1/4"ø x 33 1/4" | 55 | 2 1/2"ø x 5 3/8" | 4"ø x 5 1/2" | 4" |
| 5 | 4 | All | Fixed | 7 | 93.13 | 10" | 6 3/16" | 21" | 9" | 6 | 1/2" | 1/4" | 7 @ 12 Ga. | 4 1/4" | 10" | 35 1/2" | 3 3/4" | 3 3/4" | 1/2" | 14 1/4" | 2.00 | 2.00 | 2 1/2"ø x 36 1/2" | 55 | 3"ø x 6 1/2" | 4"ø x 5 1/2" | 4 1/2" |
| 5 | 5 | All | Fixed | 7 | 93.13 | 10" | 6 3/16" | 21" | 9" | 6 | 1/2" | 1/4" | 7 @ 12 Ga. | 4 1/4" | 10" | 35 1/2" | 3 3/4" | 3 3/4" | 1/2" | 14 1/4" | 2.00 | 2.00 | 2 1/2"ø x 36 1/2" | 55 | 3"ø x 6 1/2" | 4"ø x 5 1/2" | 4 1/2" |
| 6 | 5 | All | Exp. | 7 | 75.71 | 10 3/4" | 6 3/4" | 19" | 8" | 7 | 1/2" | 1/4" | 8 @ 12 Ga. | 4 13/16" | 9" | 35 1/2" | 8" | 3 3/4" | 1/2" | 14 1/4" | 2.01 | 1.99 | 2 1/2"ø x 37 1/4" | 55 | 3"ø x 7 1/8" | 4"ø x 5 1/2" | 4 1/2" |

*Maximum Design Load = Service I Limit State

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14

BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_ell.dgn

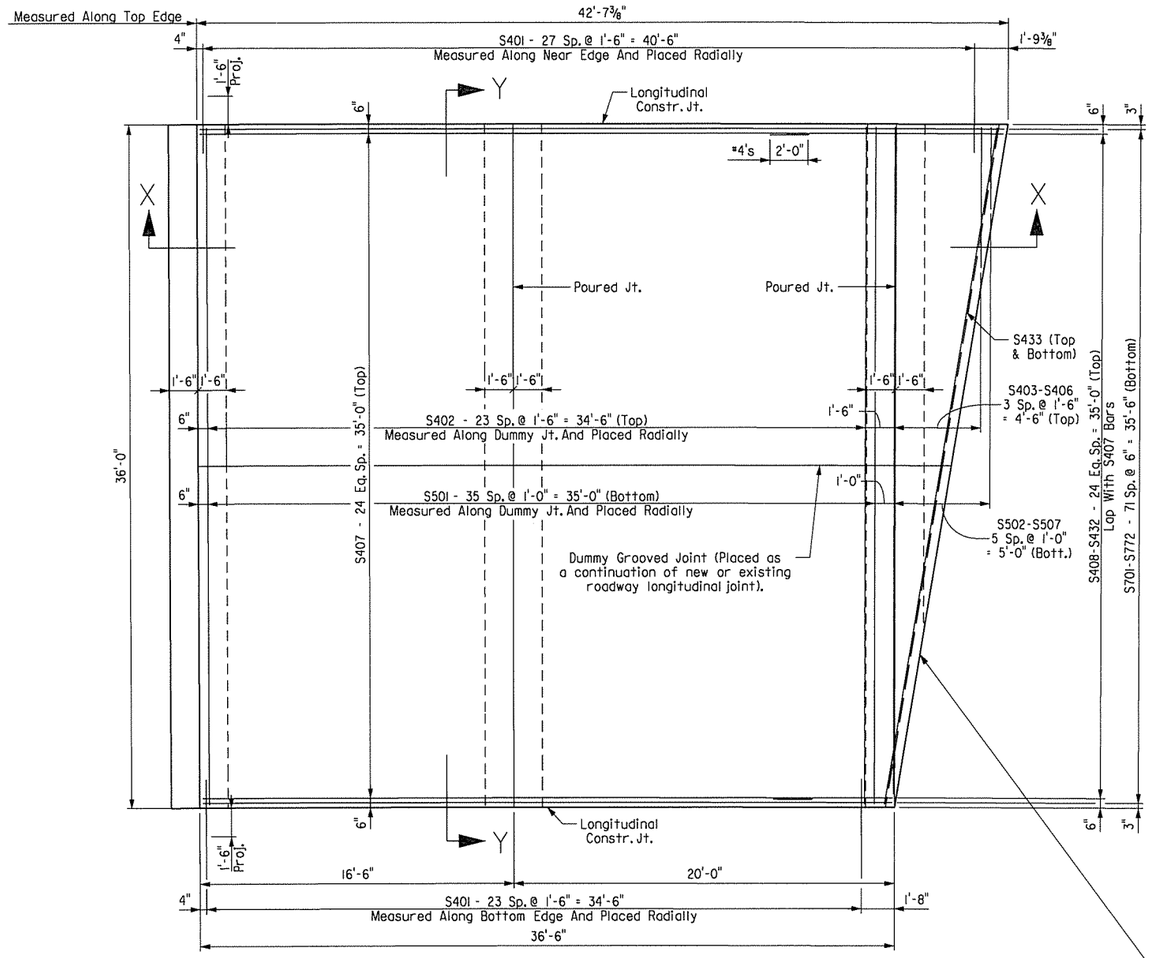
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

DESIGNED BY: EG DATE: 3-12

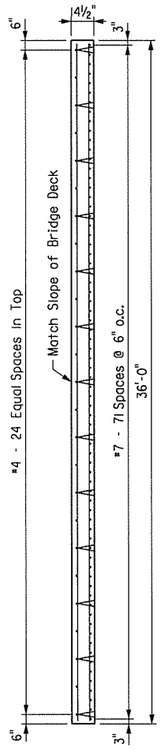
BRIDGE NO. A7306 DRAWING NO. 55225

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 372 | 897 |
| (1) A7306 | | APPROACH SLAB | | 55226 |




PLAN - APPROACH SLAB @ BEGIN BRIDGE
¼" = 1'-0"

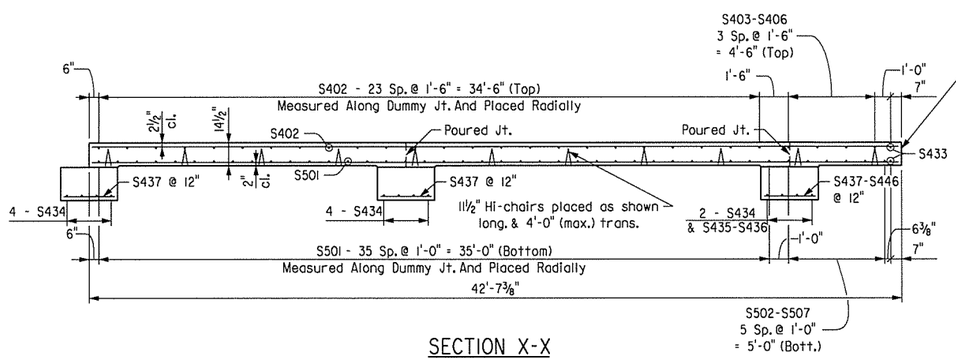



SECTION Y-Y
¼" = 1'-0"

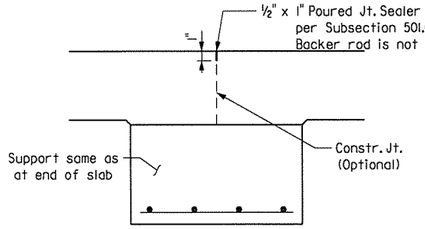
## BAR LIST

| MARK | NO. REQ'D | LENGTH | "A" | PIN DIA. |
|---|---|---|---|---|
| S401 | 52 | 3'-0" | -- | Str. |
| S402 | 24 | 35'-8" | -- | Str. |
| S403 to S406 | 1 ea. | 7'-5" to 35'-1" | -- | Str. |
| S407 | 25 | 32'-0" | -- | Str. |
| S408 to S432 | 1 ea. | 6'-3" to 12'-3" | -- | Str. |
| S433 | 2 | 36'-1" | -- | Str. |
| S434 | 10 | 35'-7" | -- | Str. |
| S435 to S436 | 1 ea. | 27'-4" to 32'-1" | -- | Str. |
| S437 | 99 | 2'-7" | -- | Str. |
| S438 to S446 | 1 ea. | 1'-1" to 2'-5" | -- | Str. |
| S501 | 36 | 35'-8" | -- | Str. |
| S502 to S507 | 1 ea. | 4'-3" to 35'-1" | -- | Str. |
| S701 to S772 | 1 ea. | 36'-2" to 42'-3" | -- | Str. |

½" Preformed Joint Filler (AASHTO M 153 Type 1) and ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02 (h) (2)

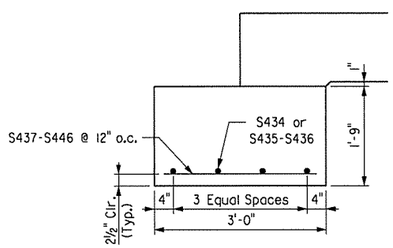



SECTION X-X
¼" = 1'-0"




DETAIL OF SUPPORT AT MIDDLE OF SLAB
¾" = 1'-0"

DETAIL OF LONGITUDINAL CONSTRUCTION JOINT
¾" = 1'-0"




DETAIL OF SUPPORT AT END OF SLAB
¾" = 1'-0"

## TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 2 APPROACH SLAB

| Slab Width | Reinforcing Steel | Concrete |
|---|---|---|
| 36'-0" | 9,161 lbs. | 82.10 C.Y. |
| | | |

GENERAL NOTES

Concrete shall be Class "S" (AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M53. Grade 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504.

Joint Sealer and Joint Filler shall be included in the pay item "Approach Slab".

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
Larry W. Miller 9-3-14
BRIDGE ENGINEER

# SHEET 1 OF 2
# DETAILS OF TYPE SPECIAL 3 APPROACH SLAB PUPPY CREEK

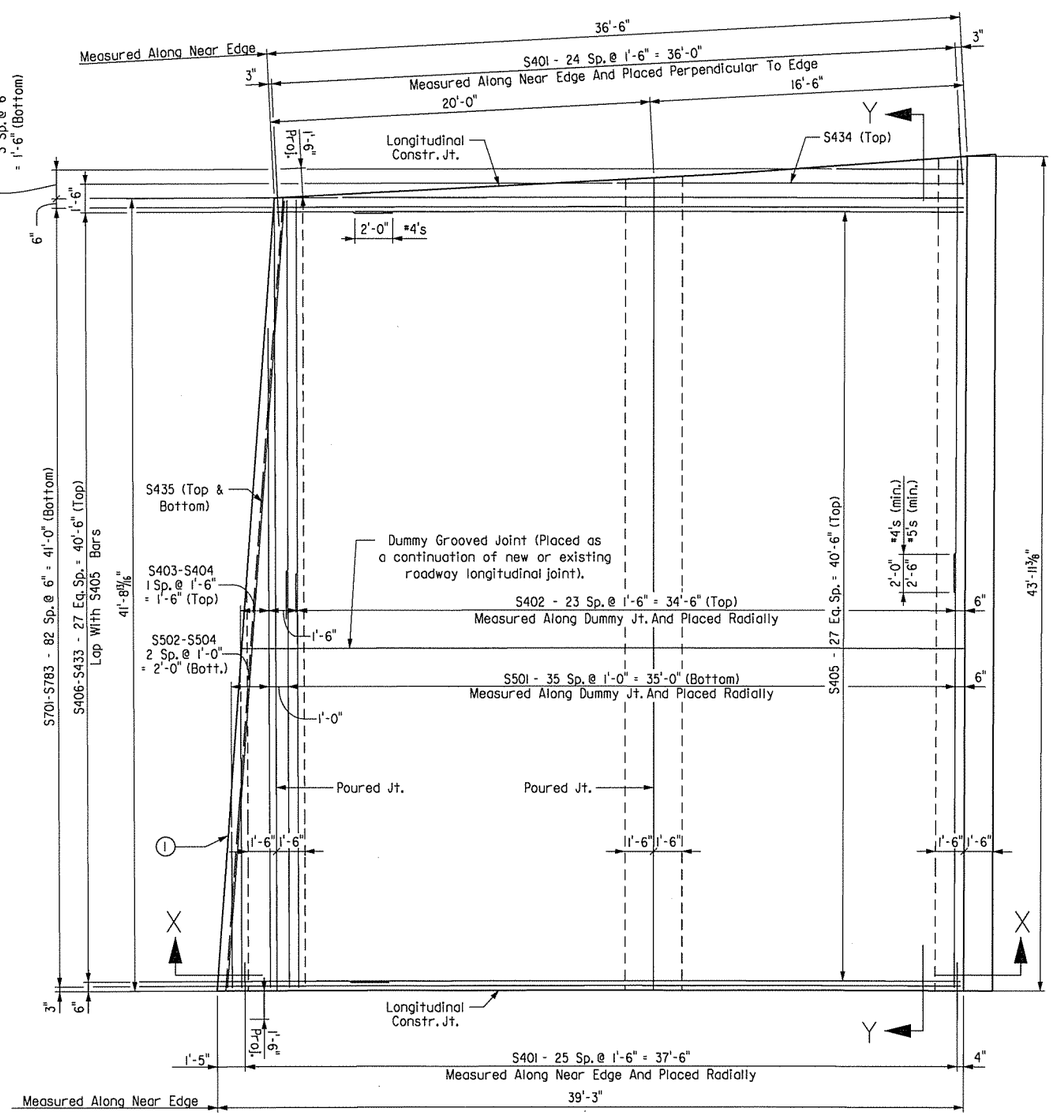
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

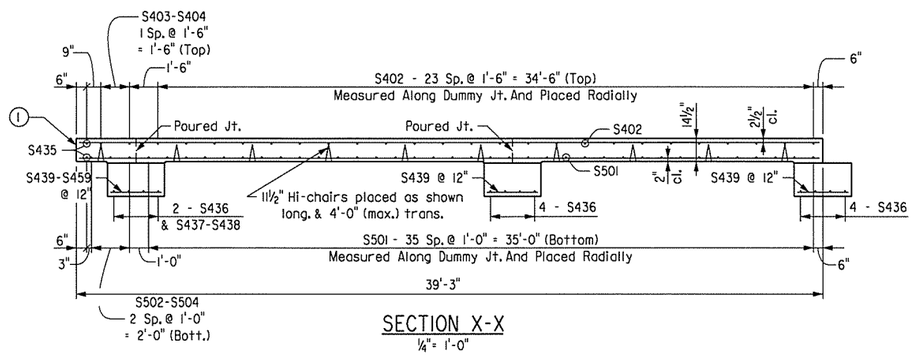
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907a3_asl.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: As Shown
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. A7306 DRAWING NO. 55226

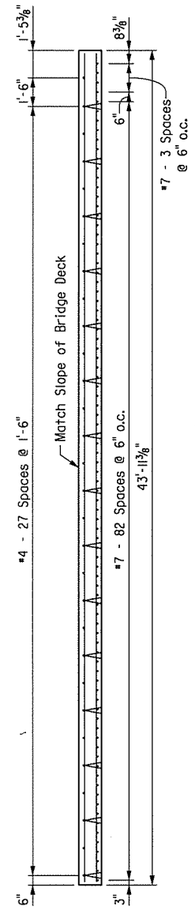
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 373 | 897 |
| | | | | (1) A7306 | | APPROACH SLAB | | 55227 |




PLAN - APPROACH SLAB @ END BRIDGE
¼" = 1'-0"




SECTION X-X
¼" = 1'-0"

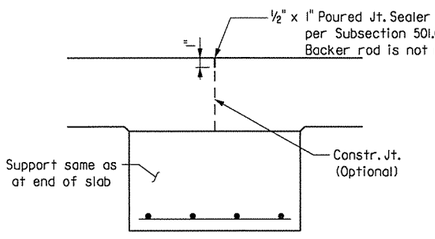



SECTION Y-Y
¼" = 1'-0"

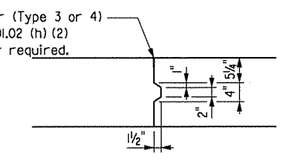
(1) ½" Preformed Joint Filler (AASHTO M 153 Type II) and ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02 (h) (2)

## BAR LIST

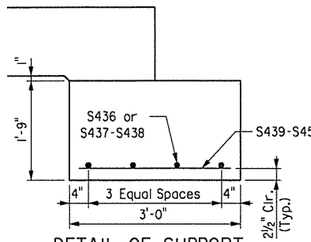
| MARK | NO. REQ'D | LENGTH | "A" | PIN DIA. |
|---|---|---|---|---|
| S401 | 51 | 3'-0" | -- | Str. |
| S402 | 48 | 22'-10" | -- | Str. |
| S403 to S404 | 1 ea. | 14'-9" to 34'-8" | -- | Str. |
| S405 | 28 | 32'-0" | -- | Str. |
| S406 to S433 | 1 ea. | 6'-2" to 8'-11" | -- | Str. |
| S434 | 1 | 18'-3" | -- | Str. |
| S435 | 4 | 21'-9" | -- | Str. |
| S436 | 20 | 22'-10" | -- | Str. |
| S437 to S438 | 1 ea. | 23'-3" to 33'-7" | -- | Str. |
| S439 | 109 | 2'-7" | -- | Str. |
| S440 to S459 | 1 ea. | 1'-1" to 2'-6" | -- | Str. |
| S501 | 72 | 23'-1" | -- | Str. |
| S502 to S504 | 1 ea. | 8'-2" to 34'-8" | -- | Str. |
| S701 to S783 | 1 ea. | 36'-1" to 38'-11" | -- | Str. |
| S784 to S787 | 1 ea. | 6'-8" to 32'-8" | -- | Str. |




DETAIL OF SUPPORT AT MIDDLE OF SLAB
¾" = 1'-0"




DETAIL OF LONGITUDINAL CONSTRUCTION JOINT
¾" = 1'-0"




DETAIL OF SUPPORT AT END OF SLAB
¾" = 1'-0"

## TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 2 APPROACH SLAB

| Slab Width | Reinforcing Steel | Concrete |
|---|---|---|
| Varies: 41'-8⅛" to 43'-11⅜" | 9,712 lbs. | 97.45 C.Y. |

GENERAL NOTES

Concrete shall be Class "S" (AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M53. Grade 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504.

Joint Sealer and Joint Filler shall be included in the pay item "Approach Slab".

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
Larry W. Miller 9-3-14
BRIDGE ENGINEER

# SHEET 2 OF 2
# DETAILS OF TYPE SPECIAL 3 APPROACH SLAB PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

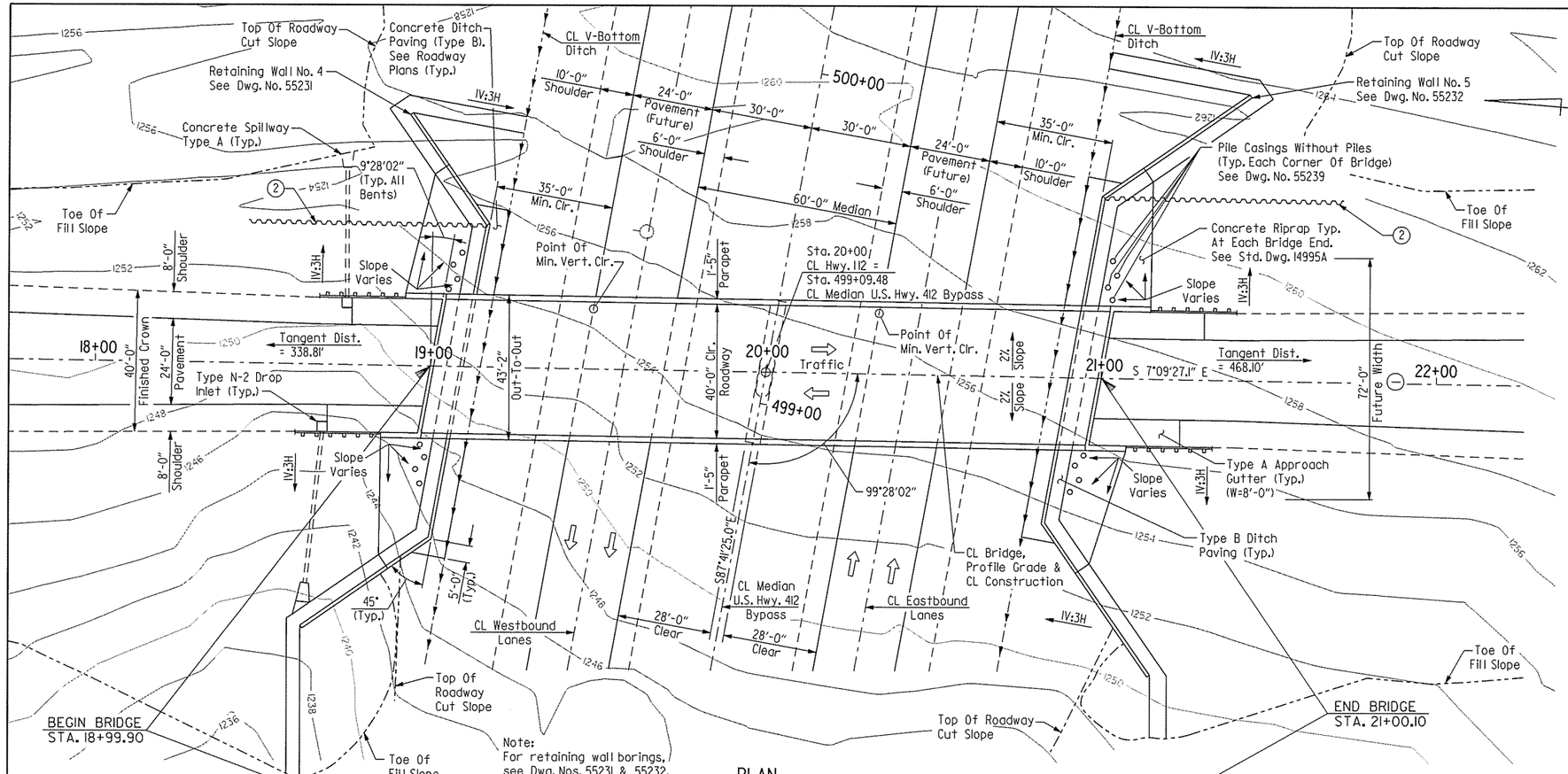
LITTLE ROCK, ARK.

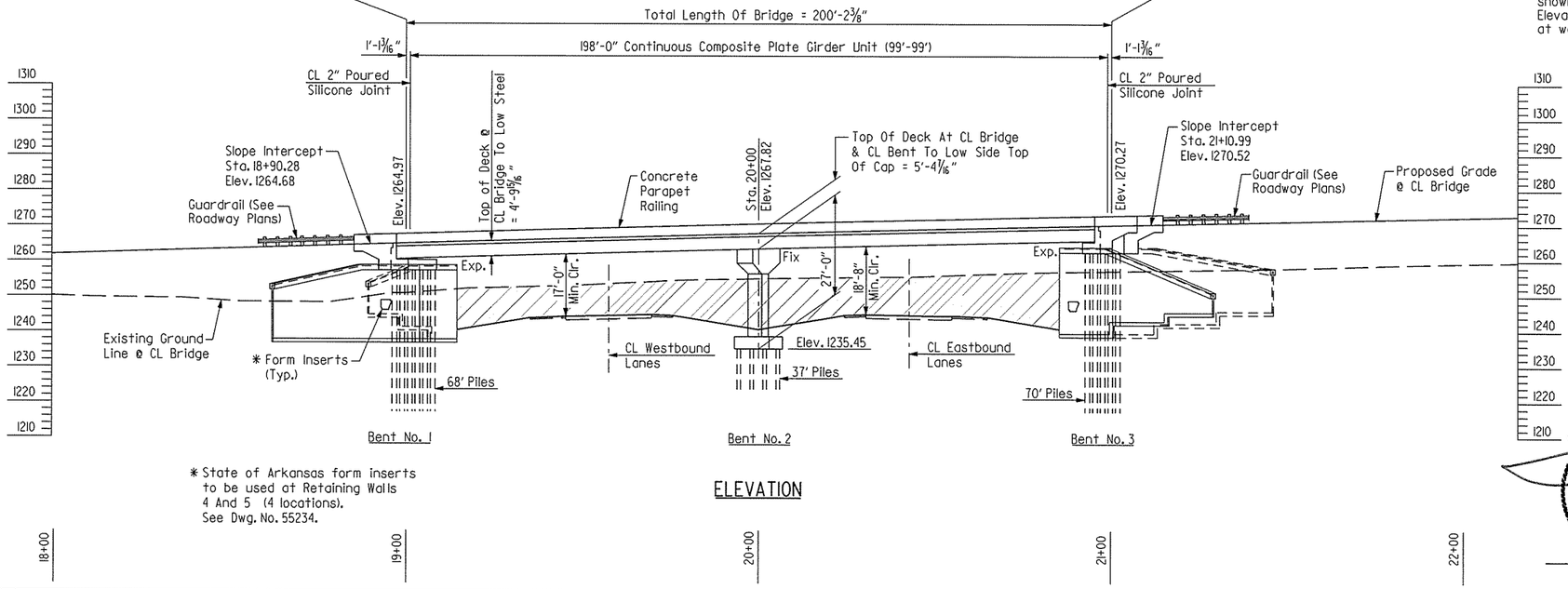
DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bcg0907a3_as2.dgn
SCALE: As Shown

BRIDGE NO. A7306 DRAWING NO. 55227

B001966A14_AS2.dgn 9/3/2014 3:23:21 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 374 | 897 |
| | | | | (1) 07307 | | LAYOUT | | 55228 |




* State of Arkansas form inserts to be used at Retaining Walls 4 And 5 (4 locations). See Dwg. No. 55234.

Note: Stations and elevations shown are along CL Bridge. Elevations shown are at working point.

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

Notes:
Use Type A approach gutters (W=8'-0") at each end of bridge. See Std. Dwg. No. 55030A.

Use Type N-2 inlets at begin bridge only.

For GENERAL NOTES, see Dwg. No. 55230.

For BORING LEGEND & "N" VALUES, see Dwg. No. 55229.

(1) Retaining walls accomodate a future bridge width consisting of a 12' painted median and four 11' lanes with two 6'-6" sidewalks.

(2) Shoring will be required, as needed, to excavate existing embankment and construct Retaining Wall Nos. 4 & 5 while maintaining traffic on existing Hwy. 112. See SP JOB CA0907 "SHORING". Location to be determined by Contractor.

PVI Sta. 495+00
Elev. 1239.96
V.C. = 500'
-1.20%
+1.20%

**VERTICAL CURVE DATA**
U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge Of Pavement)

PVI Sta. 21+10
Elev. 1280.26
V.C. = 1400'
+5.00%
-0.58%

**VERTICAL CURVE DATA**
Highway 112
(Profile Grade Along CL Highway 112)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 7
# LAYOUT OF BRIDGE
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2007
CHECKED BY: JHR DATE: MAY 2007
DESIGNED BY: JRD DATE: MAY 2007
FILENAME: BCA0907X4_LI.DGN
SCALE: 1"=20'

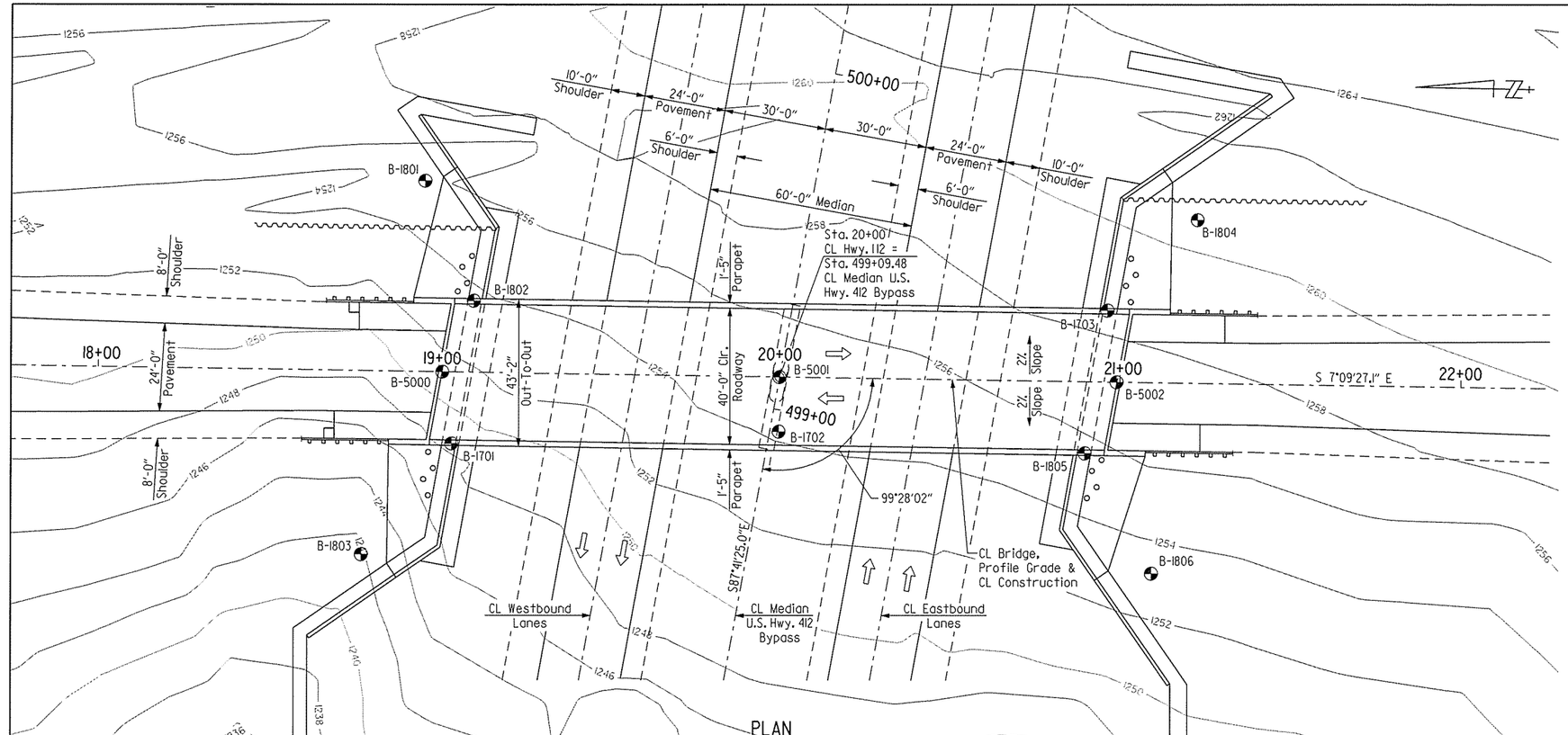
BRIDGE NO. 07307 DRAWING NO. 55228

dropod 9/4/2004
WORKSPACE: AHTD Britton
\\GLITDCO\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_LI.dgn
REVISED DATE:

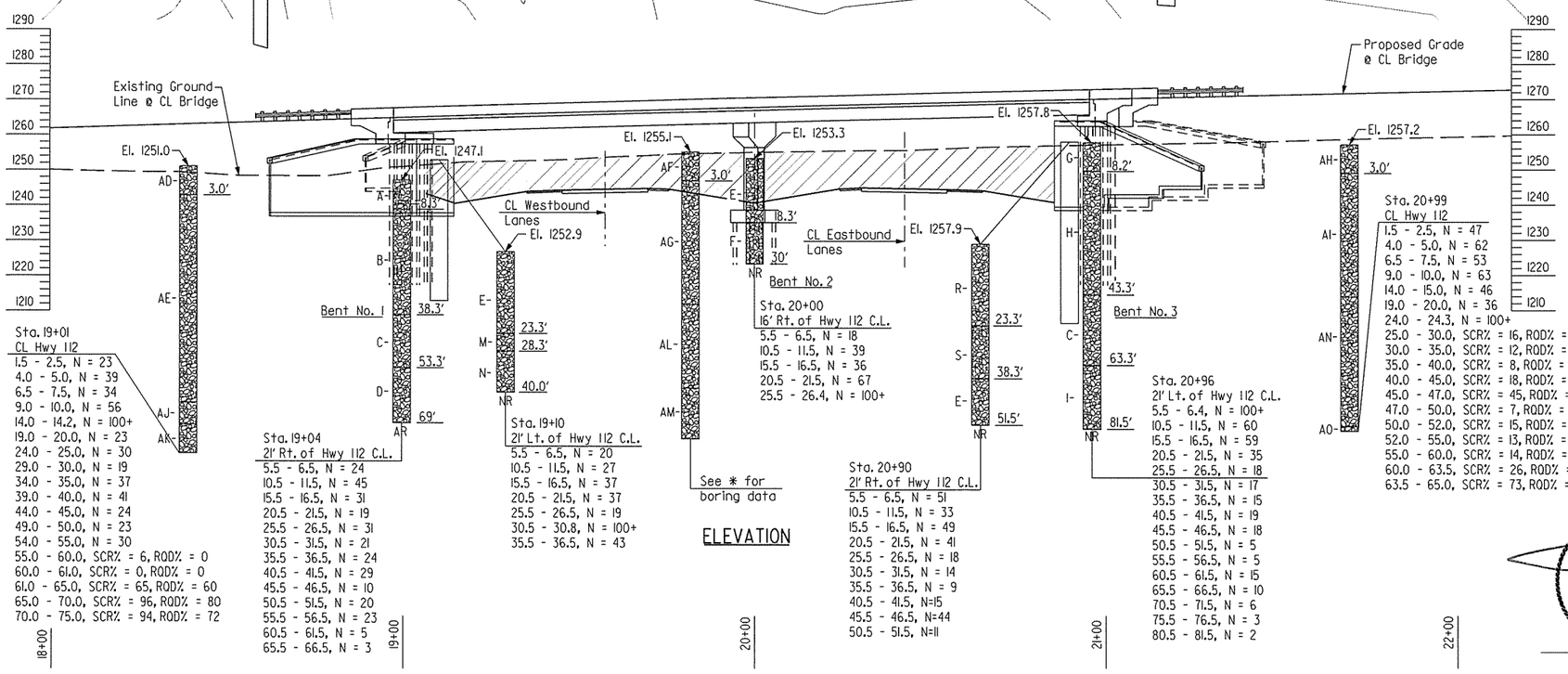
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 375 | 897 |
| | | | | (1) 07307 | | LAYOUT | | 55229 |

## BORING LEGEND

A - Red, medium dense, silty gravel with sand.
B - Red, medium dense to dense, silty gravel with sand.
C - Brown, loose to medium dense, silty gravel with sand.
D - Brown, very loose to medium dense, silty gravel with sand.
E - Brown, medium dense to dense, silty gravel with sand.
F - Brown, very dense, silty gravel with sand.
G - Red, very dense, silty gravel with sand.
H - Brown, medium dense to very dense, silty gravel with sand.
I - Brown & gray, very loose to loose, silty gravel with sand.
J - Red, loose to very dense, silty gravel with sand.
K - Red, dense to very dense, silty gravel with sand.
L - Red, dense, silty gravel with sand.
M - Brown, medium dense, silty gravel with sand.
N - Brown & white, dense to very dense, silty gravel with sand.
O - Brown, dense, silty gravel with sand.
P - Brown, dense to very dense, silty gravel with sand.
Q - Red & brown, medium dense to dense, silty gravel with sand.
R - Tan, reddish brown & white, dense to very dense, silty gravel with sand.
S - Reddish tan, reddish brown, tan & beige, loose to medium dense, silty gravel with sand.
T - Red, medium dense to very dense, silty gravel with sand.
U - White & tan, medium dense to very dense, silty gravel with sand.




PLAN




ELEVATION

Sta. 19+01
CL Hwy 112
1.5 - 2.5, N = 23
4.0 - 5.0, N = 39
6.5 - 7.5, N = 34
9.0 - 10.0, N = 56
14.0 - 14.2, N = 100+
19.0 - 20.0, N = 23
24.0 - 25.0, N = 30
29.0 - 30.0, N = 19
34.0 - 35.0, N = 37
39.0 - 40.0, N = 41
44.0 - 45.0, N = 24
49.0 - 50.0, N = 23
54.0 - 55.0, N = 30
55.0 - 60.0, SCR% = 6, RQD% = 0
60.0 - 61.0, SCR% = 0, RQD% = 0
61.0 - 65.0, SCR% = 65, RQD% = 60
65.0 - 70.0, SCR% = 96, RQD% = 80
70.0 - 75.0, SCR% = 94, RQD% = 72

Sta. 19+04
21' Rt. of Hwy 112 C.L.
5.5 - 6.5, N = 24
10.5 - 11.5, N = 45
15.5 - 16.5, N = 31
20.5 - 21.5, N = 19
25.5 - 26.5, N = 31
30.5 - 31.5, N = 21
35.5 - 36.5, N = 24
40.5 - 41.5, N = 29
45.5 - 46.5, N = 10
50.5 - 51.5, N = 20
55.5 - 56.5, N = 23
60.5 - 61.5, N = 5
65.5 - 66.5, N = 3

Sta. 19+10
21' Lt. of Hwy 112 C.L.
5.5 - 6.5, N = 20
10.5 - 11.5, N = 27
15.5 - 16.5, N = 37
20.5 - 21.5, N = 37
25.5 - 26.5, N = 19
30.5 - 30.8, N = 100+
35.5 - 36.5, N = 43

Sta. 20+90
21' Rt. of Hwy 112 C.L.
5.5 - 6.5, N = 51
10.5 - 11.5, N = 33
15.5 - 16.5, N = 49
20.5 - 21.5, N = 41
25.5 - 26.5, N = 18
30.5 - 31.5, N = 14
35.5 - 36.5, N = 9
40.5 - 41.5, N=15
45.5 - 46.5, N=44
50.5 - 51.5, N=11

Sta. 20+96
21' Lt. of Hwy 112 C.L.
5.5 - 6.4, N = 100+
10.5 - 11.5, N = 60
15.5 - 16.5, N = 59
20.5 - 21.5, N = 35
25.5 - 26.5, N = 18
30.5 - 31.5, N = 17
35.5 - 36.5, N = 15
40.5 - 41.5, N = 19
45.5 - 46.5, N = 18
50.5 - 51.5, N = 5
55.5 - 56.5, N = 5
60.5 - 61.5, N = 15
65.5 - 66.5, N = 10
70.5 - 71.5, N = 6
75.5 - 76.5, N = 3
80.5 - 81.5, N = 2

Sta. 20+99
CL Hwy 112
1.5 - 2.5, N = 47
4.0 - 5.0, N = 62
6.5 - 7.5, N = 53
9.0 - 10.0, N = 63
14.0 - 15.0, N = 46
19.0 - 20.0, N = 36
24.0 - 24.3, N = 100+
25.0 - 30.0, SCR% = 16, RQD% = 0
30.0 - 35.0, SCR% = 12, RQD% = 0
35.0 - 40.0, SCR% = 8, RQD% = 0
40.0 - 45.0, SCR% = 18, RQD% = 0
45.0 - 47.0, SCR% = 45, RQD% = 0
47.0 - 50.0, SCR% = 7, RQD% = 0
50.0 - 52.0, SCR% = 15, RQD% = 0
52.0 - 55.0, SCR% = 13, RQD% = 0
55.0 - 60.0, SCR% = 14, RQD% = 0
60.0 - 63.5, SCR% = 26, RQD% = 0
63.5 - 65.0, SCR% = 73, RQD% = 33

## LEGEND

AR - Auger Refusal
NR - No Refusal

* Sta. 20+00
CL Hwy 112
1.5 - 2.5, N = 45
4.0 - 5.0, N = 38
6.5 - 7.5, N = 49
9.0 - 10.0, N = 50
14.0 - 14.3, N = 100+
19.0 - 20.0, N = 51
24.0 - 25.0, N = 40
29.0 - 30.0, N = 63
34.0 - 35.0, N = 36
35.0 - 40.0, SCR% = 14, RQD% = 0
40.0 - 45.0, SCR% = 8, RQD% = 0
45.0 - 50.0, SCR% = 18, RQD% = 0
50.0 - 55.0, SCR% = 8, RQD% = 0
55.0 - 60.0, SCR% = 64, RQD% = 42
60.0 - 65.0, SCR% = 96, RQD% = 88
65.0 - 70.0, SCR% = 98, RQD% = 72

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 2 OF 7
# LAYOUT OF BRIDGE
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2007
CHECKED BY: JHR DATE: MAY 2007
DESIGNED BY: JRD DATE: MAY 2007
FILENAME: BCA0907X4_L2.DGN
SCALE: 1"=20'

BRIDGE NO. 07307 DRAWING NO. 55229

9/4/2014
WORKSPACE: AHTD Bridge
\\OLITDCONLITP\Projects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\WHY112\BCA0907X4_L2.dgn
dr'good
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 376 | 897 |
| | | | | 07307 | | LAYOUT | | 55230 |

# GENERAL NOTES

BENCH MARK: TBM 924 CPS. 1.80' Rt. Of Sta. 500+43.07
Elevation = 1264.41

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2014 Edition) with Applicable Supplemental Specifications And Special Provisions. Unless otherwise noted in the plans, section and subsection refer to The Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{01}$= 0.125 Site Class = D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Superstructure) | f'c = 4000 psi |
| Class S - Bridge Concrete (Substructure) | f'c = 3500 psi |
| Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, GR. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, GR. 36) | Fy = 36,000 psi |

FORM INSERT: State Of Arkansas Form Insert to be used on Retaining Walls (4 Locations). See Dwg. No. 55234.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0907 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

PREBORING: Preboring is required for all piling in Bent 3 to obtain the minimum pile penetration requirements. Quantities of preboring shown are for bidding purposes only. The actual size and depth of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled in accordance with Subsection 805.08(a) to completely fill voids. The backfill and any required casing will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

STEEL PILING: All Piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons. Drive all piles in Bents 1 & 3 to a minimum penetration of 15' below leveling pad and all piles in Bent 2 to a minimum penetration of 15' below bottom of footing. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

The Contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction, extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven through the open casings after embankment to bottom of cap is in place. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill shall not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

PILE CASINGS WITHOUT PILES: Additional pile casings will be required in accordance with Dwg. No. 55239 to provide for future widening. These casings shall be installed during embankment construction and shall extend from top of leveling pad to approximately one foot below the finished ground. Pile casing diameter and material shall conform to the above. No piling shall be driven through these casings, but they shall be kept clean from debris and capped at the top with a durable waterproof material as approved by the Engineer. Payment for this work and materials shall be considered subsidiary to other contract items in the job.

SHORING: Shoring will be required to excavate existing embankment and construct MSE Retaining Wall Nos. 4 and 5 while maintaining traffic on existing Hwy. 112. Location of the shoring shall be determined by the Contractor. Shoring shall be constructed and paid for in accordance with SP JOB CA0907 "SHORING".

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

BORING LOGS: Boring Logs may be obtained from Programs And Contracts Division.

PILE FOOTING: The top of footings shall be set a minimum of 2'-0" below finished ground. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled in accordance with Subsection 801.08.

MAINTENANCE OF TRAFFIC: See Roadway Drawings.

| DETAIL DRAWINGS: | DRAWING NOS: |
|---|---|
| End Bents | 55235-55239 |
| Intermediate Bent | 55240 & 55241 |
| 198' Cont. Comp. Plate Girder Unit | 55242-55249 |
| Elastomeric Bearings | 55250 |
| Type A Approach Gutters | 55030A |
| Concrete Riprap | 55002 |
| Steel Piling | 55020 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 3 OF 7
LAYOUT OF BRIDGE
HIGHWAY 112
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: 2008 FILENAME: BCA0907X4_L3.DGN
CHECKED BY: JRD DATE: 2008 SCALE: AS SHOWN
DESIGNED BY: JRD DATE: 2008

BRIDGE NO. 07307 DRAWING NO. 55230

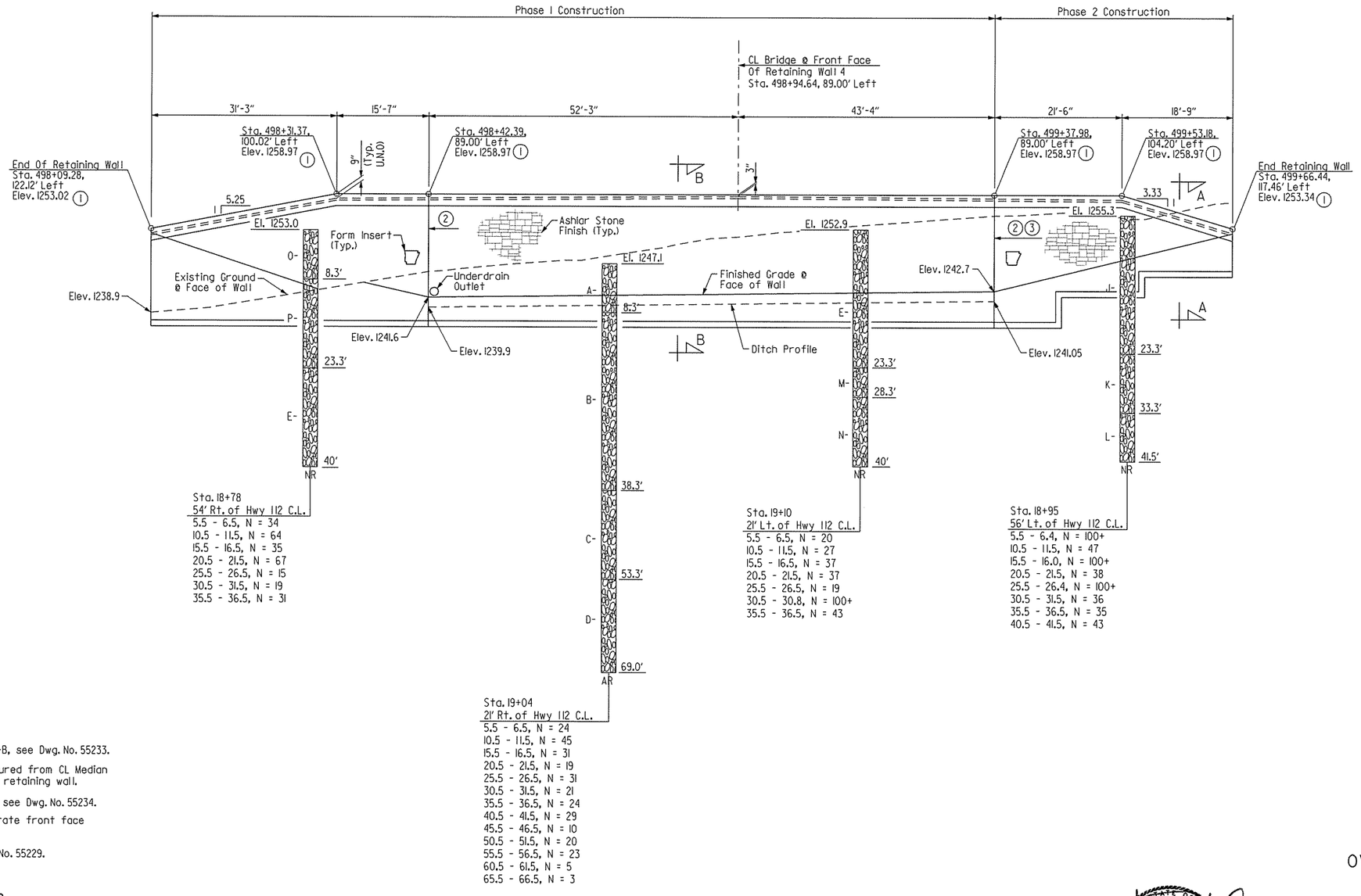
drgood 9/4/2014 10:15:13 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_L3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 377 | 897 |
| | | | | 07307 | | LAYOUT | | 55231 |

(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall.

(3) Construction joint required to accommodate Phase Construction of Wall. Location to be determined by Contractor.




Sta. 18+78
54' Rt. of Hwy 112 C.L.
5.5 - 6.5, N = 34
10.5 - 11.5, N = 64
15.5 - 16.5, N = 35
20.5 - 21.5, N = 67
25.5 - 26.5, N = 15
30.5 - 31.5, N = 19
35.5 - 36.5, N = 31

Sta. 19+04
21' Rt. of Hwy 112 C.L.
5.5 - 6.5, N = 24
10.5 - 11.5, N = 45
15.5 - 16.5, N = 31
20.5 - 21.5, N = 19
25.5 - 26.5, N = 31
30.5 - 31.5, N = 21
35.5 - 36.5, N = 24
40.5 - 41.5, N = 29
45.5 - 46.5, N = 10
50.5 - 51.5, N = 20
55.5 - 56.5, N = 23
60.5 - 61.5, N = 5
65.5 - 66.5, N = 3

Sta. 19+10
21' Lt. of Hwy 112 C.L.
5.5 - 6.5, N = 20
10.5 - 11.5, N = 27
15.5 - 16.5, N = 37
20.5 - 21.5, N = 37
25.5 - 26.5, N = 19
30.5 - 30.8, N = 100+
35.5 - 36.5, N = 43

Sta. 18+95
56' Lt. of Hwy 112 C.L.
5.5 - 6.4, N = 100+
10.5 - 11.5, N = 47
15.5 - 16.0, N = 100+
20.5 - 21.5, N = 38
25.5 - 26.4, N = 100+
30.5 - 31.5, N = 36
35.5 - 36.5, N = 35
40.5 - 41.5, N = 43

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55233.

Offset dimensions are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55234.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55229.

LEGEND
U.N.O - Unless Noted Otherwise
AR - Auger Refusal
NR - No Refusal

ELEVATION - RETAINING WALL 4
(Looking From Front Face of Wall)
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 4 OF 7
LAYOUT OF BRIDGE
HIGHWAY 112
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: 2008 FILENAME: BCA0907X4_L4.DGN
CHECKED BY: MRA/SFH DATE: 2008 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: 2008
BRIDGE NO. 07307 DRAWING NO. 55231

drgood 9/4/2014
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\HHY112\BCA0907x4_L4.dgn
REVISED DATE:

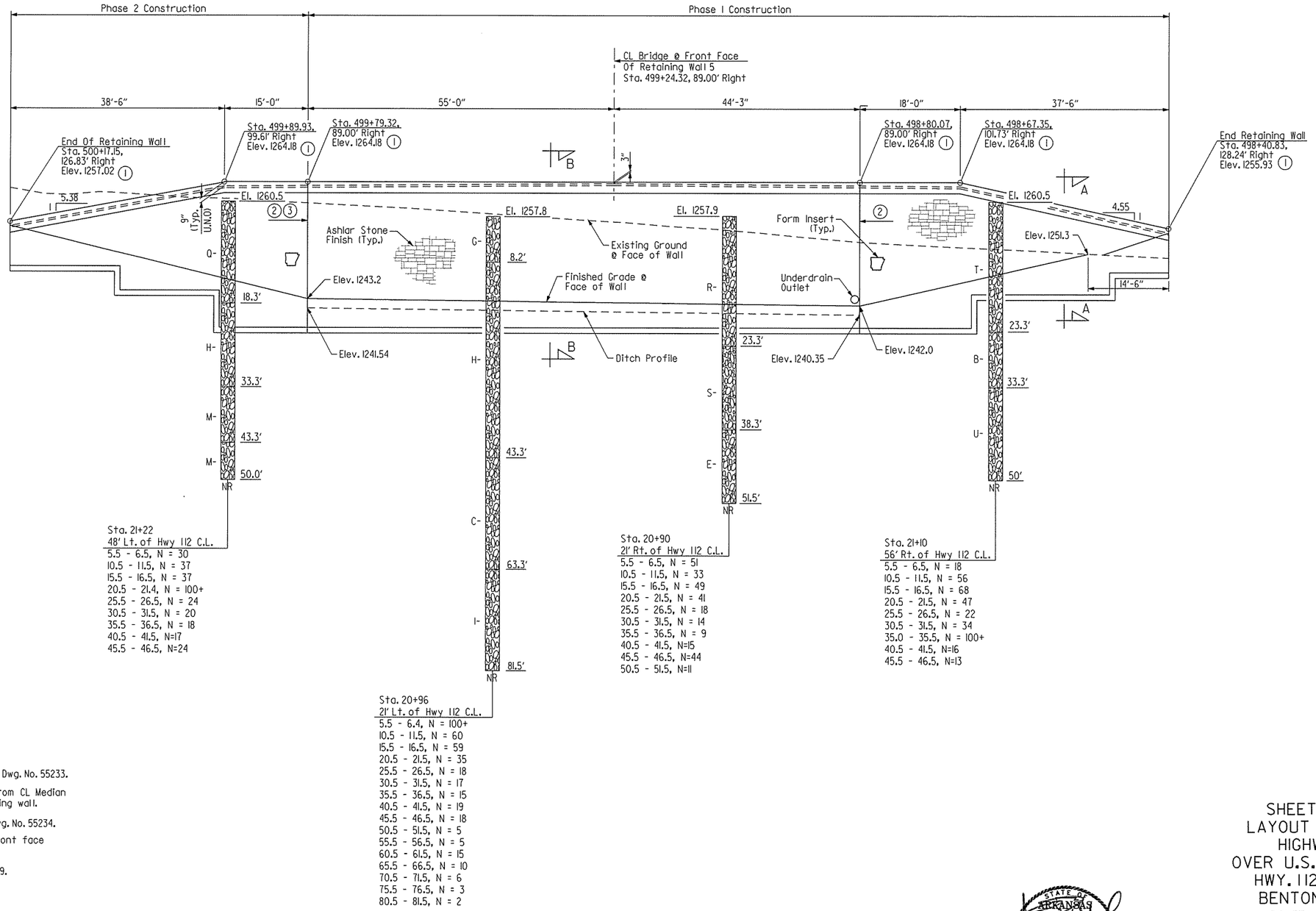
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 378 | 897 |
| 07307 | | LAYOUT | | 55232 |

(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall.

(3) Construction joint required to accommodate Phase Construction of Wall. Location to be determined by Contractor.




ELEVATION - RETAINING WALL 5
(Looking From Front Face of Wall)
Scale: NTS

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55233.

Offset dimensions are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55234.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55229.

LEGEND
U.N.O - Unless Noted Otherwise
AR - Auger Refusal
NR - No Refusal

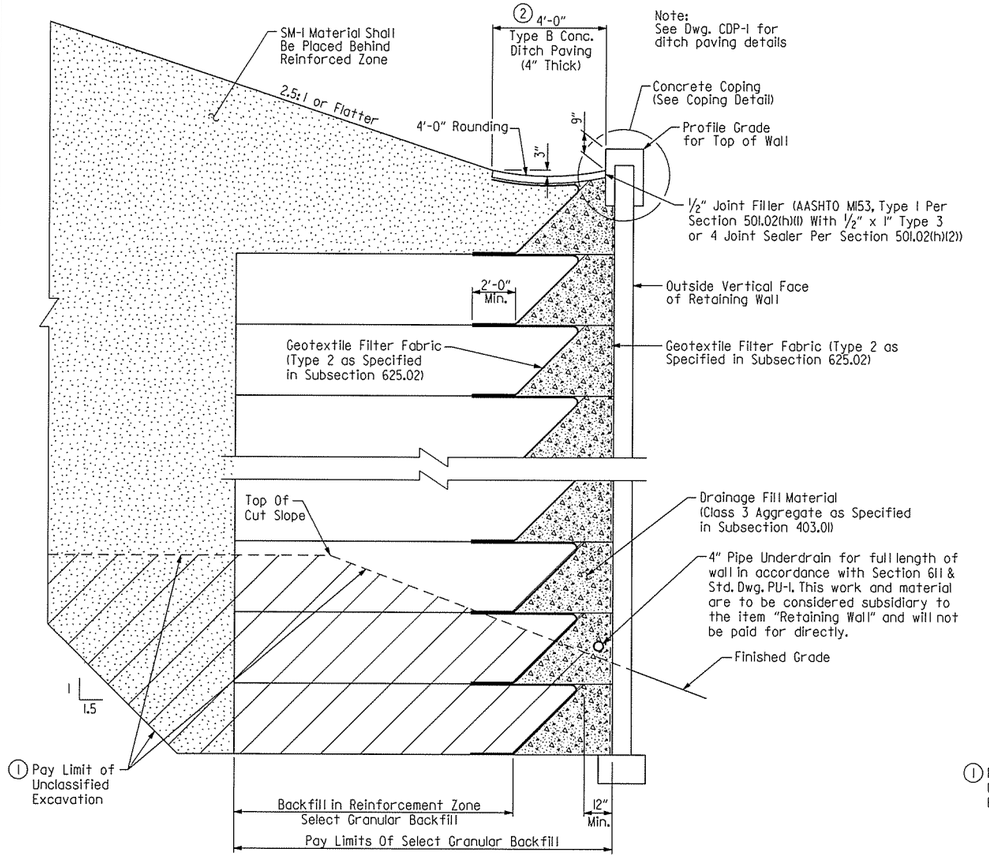
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 7
LAYOUT OF BRIDGE
HIGHWAY 112
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

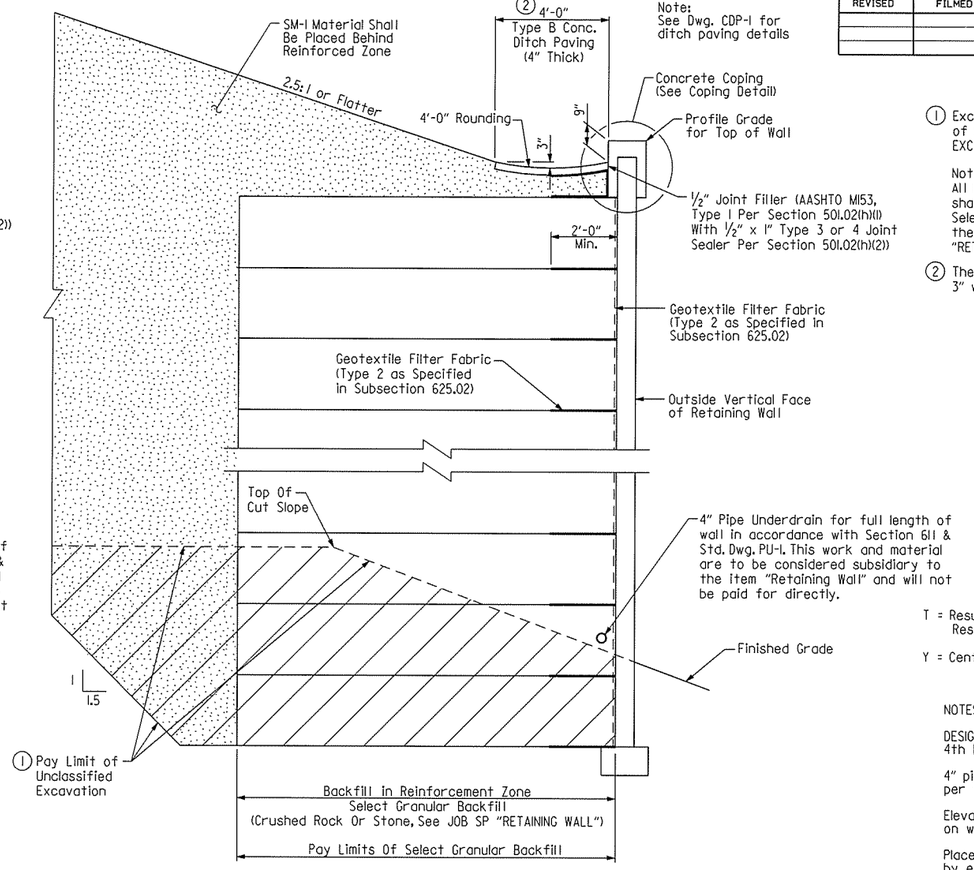
DRAWN BY: HEW DATE: 2008 FILENAME: BCA0907X4_L5.DGN
CHECKED BY: SFH DATE: 2008 SCALE: AS SHOWN
DESIGNED BY: ABH DATE: 2008
BRIDGE NO. 07307 DRAWING NO. 55232

drgood
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_L5.dgn
REVISED DATE: 9/4/2014

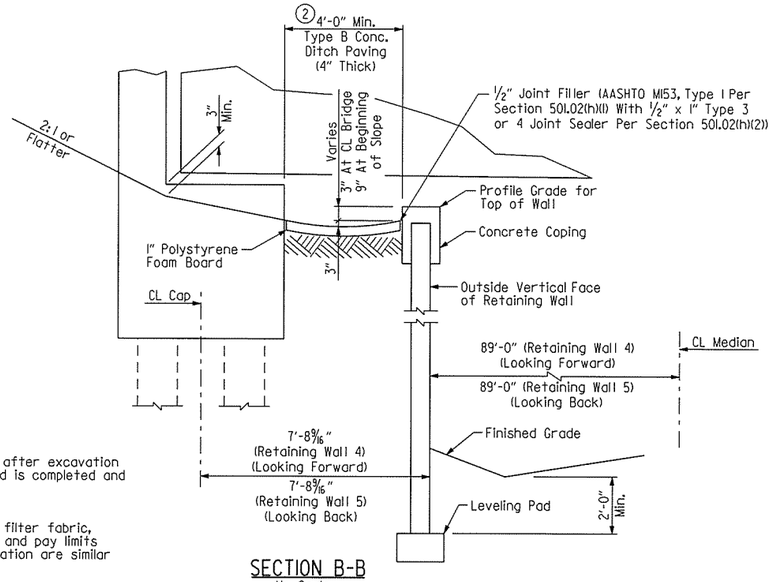
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 379 | 897 |
| | | | | (1) 07307 | | LAYOUT | | 55233 |




SECTION A-A
(Backfill Method A)
No Scale



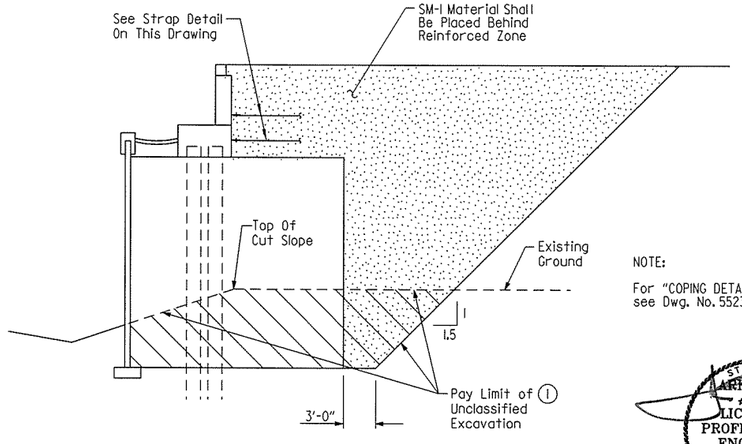

SECTION A-A
(Backfill Method B)
No Scale




Note:
Piling shall be driven after excavation to top of leveling pad is completed and prior to backfilling.

Note:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to SECTION A-A.

SECTION B-B
No Scale



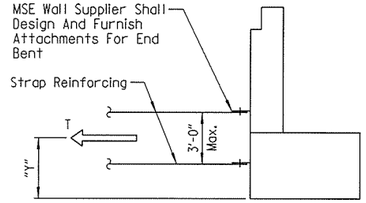

EMBANKMENT DETAIL
No Scale

NOTE:
For "COPING DETAIL" and "OUTLET DETAIL", see Dwg. No. 55234.

(1) Excavation required for reinforcing zone, leveling pad and placement of SM-I material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP Job CA0907 "RETAINING WALL".

Note:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL". Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP Job CA0907 "RETAINING WALL".

(2) The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.




END BENT STRAP DETAIL

T = Resultant Force Required To Be Resisted By Strap Reinforcing

Y = Centroid Of Strap Reinforcing

| LIMIT STATE | T | Y |
|---|---|---|
| | Kips/Ft. | Ft. |
| Service | 3.0 | 3 |
| Strength | 4.6 | |

NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 55235-55239 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See Special Provision Job CA0907 "RETAINING WALL" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP Job CA0907 "RETAINING WALL".

See Dwg. No. 55234 for form insert location and details.

Large scale undercut is not anticipated, however some undercutting and backfilling may be required to satisfy factored bearing resistance requirements based on the final wall design.

Undercutting, if required, shall be backfilled with Select Material (Class SM-1) meeting the requirements of Section 302.

Any excavation and backfill required for undercutting shall be paid for as "Select Material (Class SM-1)" in accordance with SP Job CA0907 "RETAINING WALL".

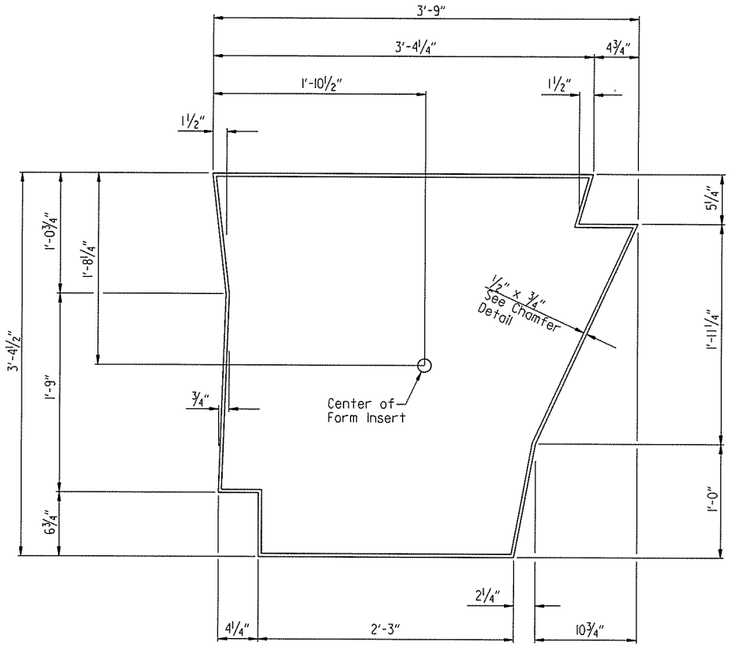
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 6 OF 7
LAYOUT OF BRIDGE
HIGHWAY 112
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X4_L6.DGN
SCALE: AS SHOWN
BRIDGE NO. 07307 DRAWING NO. 55233

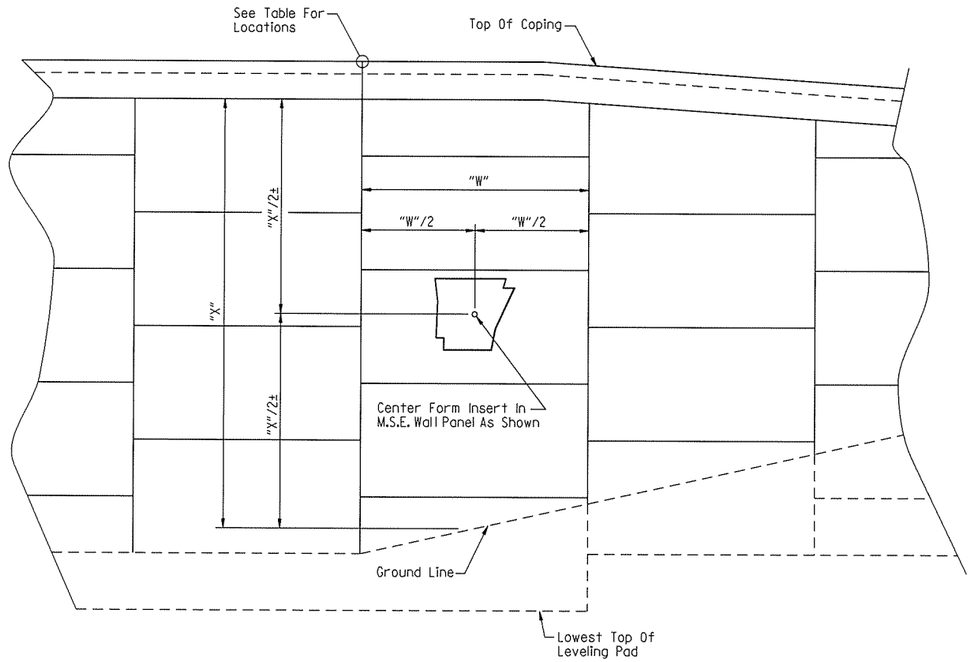
dropod 9/4/2014 10:15:14 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_L6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 380 | 897 |
| | | | | (1) 07307 | | ARK. FORM INSERT | | 55234 |

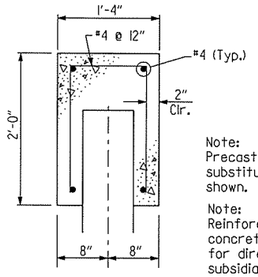



Note:
Use form insert on designated walls as noted on details of M.S.E. Walls, Dwg. Nos. 55231 & 55232.

## FORM INSERT DETAILS AT MSE WALL
Scale: 1½" = 1'-0"




## DEVELOPED ELEVATION AT MSE WALL
Scale: NTS

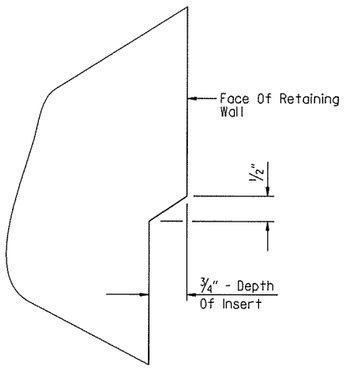



Note:
Precast concrete coping may be substituted for cast-in-place coping shown.

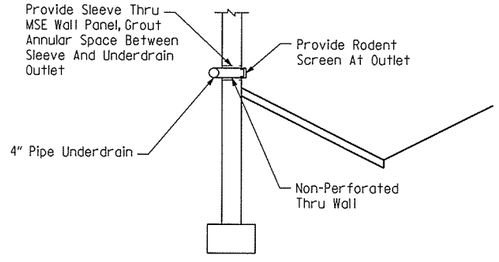
Note:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALL".

## COPING DETAIL
Scale: 1" = 1'-0"

| LOCATION OF FORM INSERT | |
|---|---|
| Location | Station |
| Retaining Wall 4 | 498+42.39 And 499+37.98 |
| Retaining Wall 5 | 498+80.07 And 499+79.32 |




## CHAMFER DETAIL
Scale: NTS




## OUTLET DETAIL
Scale: NTS

GENERAL NOTES:

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALL".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

Recessed image (including chamfers) of State of Arkansas insert shall be given a Class 3 Textured Coating Finish as specified in SP Job CA0907 "TEXTURED COATING FINISH."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

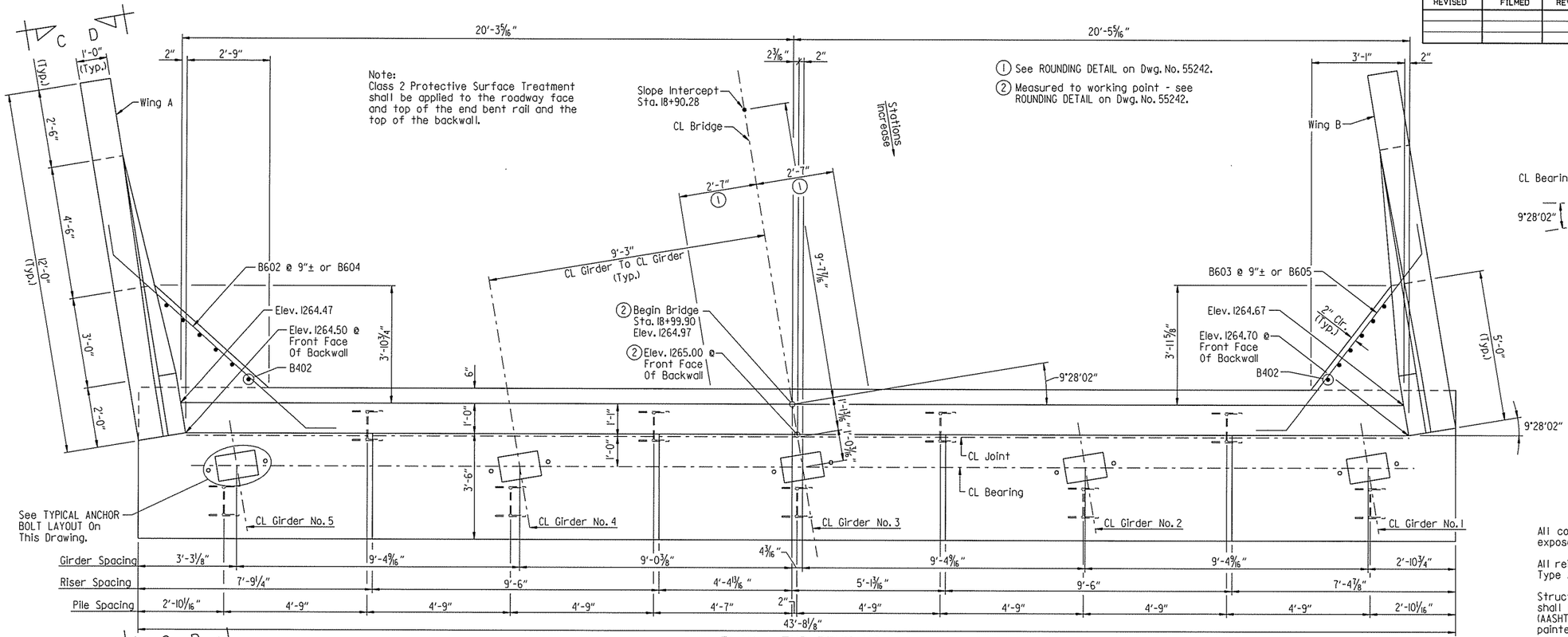
SHEET 7 OF 7
LAYOUT OF BRIDGE
HIGHWAY 112
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: PCC DATE: FEB. 2011
FILENAME: BCA0907X4_L7.DGN
SCALE: AS SHOWN

BRIDGE NO. 07307 DRAWING NO. 55234

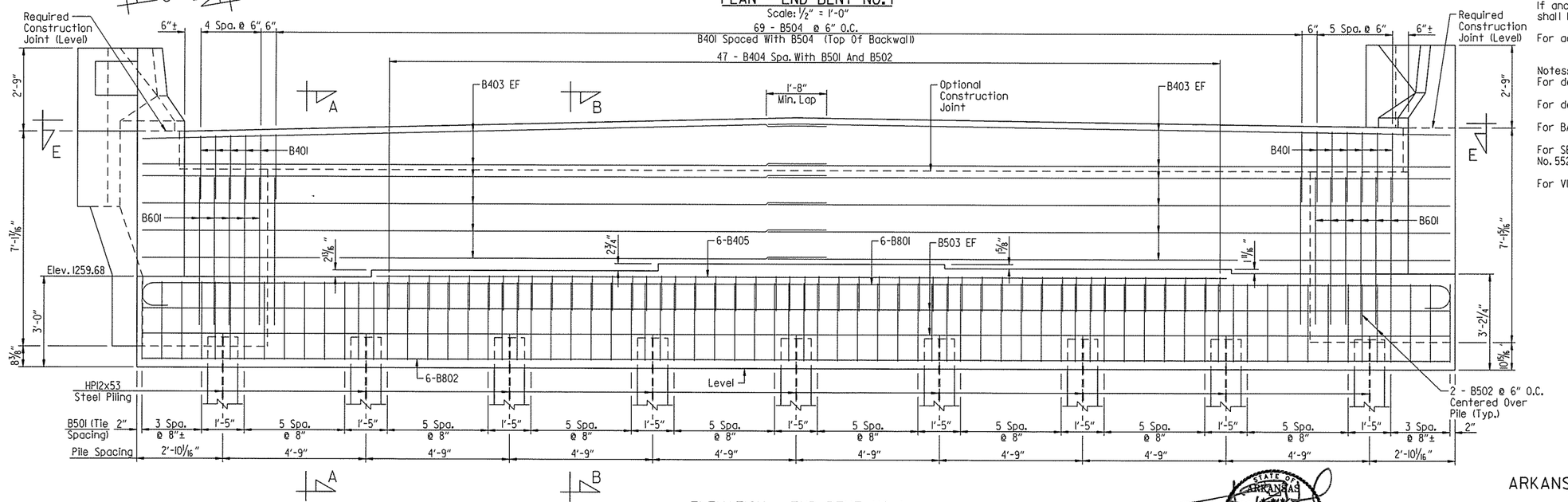
drgood 9/4/2014 10:15:15 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05981680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_L7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 381 | 897 |
| | | | | (1) 07307 | | END BENT DETAILS | | 55235 |



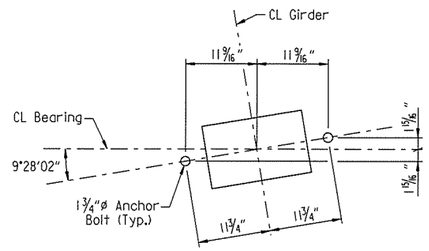

## PLAN - END BENT NO. 1

Scale: 1/2" = 1'-0"




## ELEVATION - END BENT NO. 1

(Looking Back)
Scale: 1/2" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, See LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55237 & 55238.

For details of elastomeric bearing pads, see Dwg. No. 55250.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55238.

For SECTION A-A, SECTION B-B, VIEW C-C, & VIEW D-D, see Dwg. No. 55237.

For VIEW E-E, see Dwg. No. 55238.

## LEGEND

EF = Each Face

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 1 OF 5
# DETAILS OF END BENTS
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

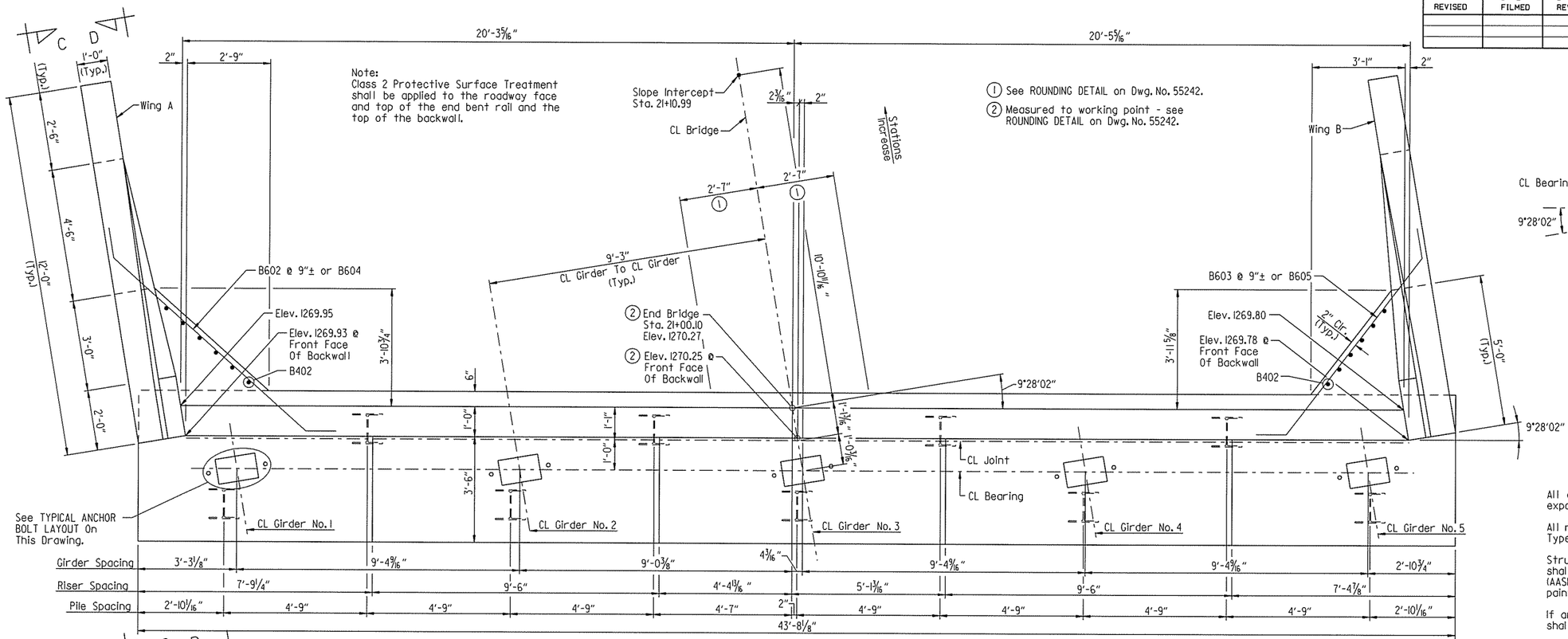
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X4_A1.DGN
SCALE: AS SHOWN

BRIDGE NO. 07307 DRAWING NO. 55235

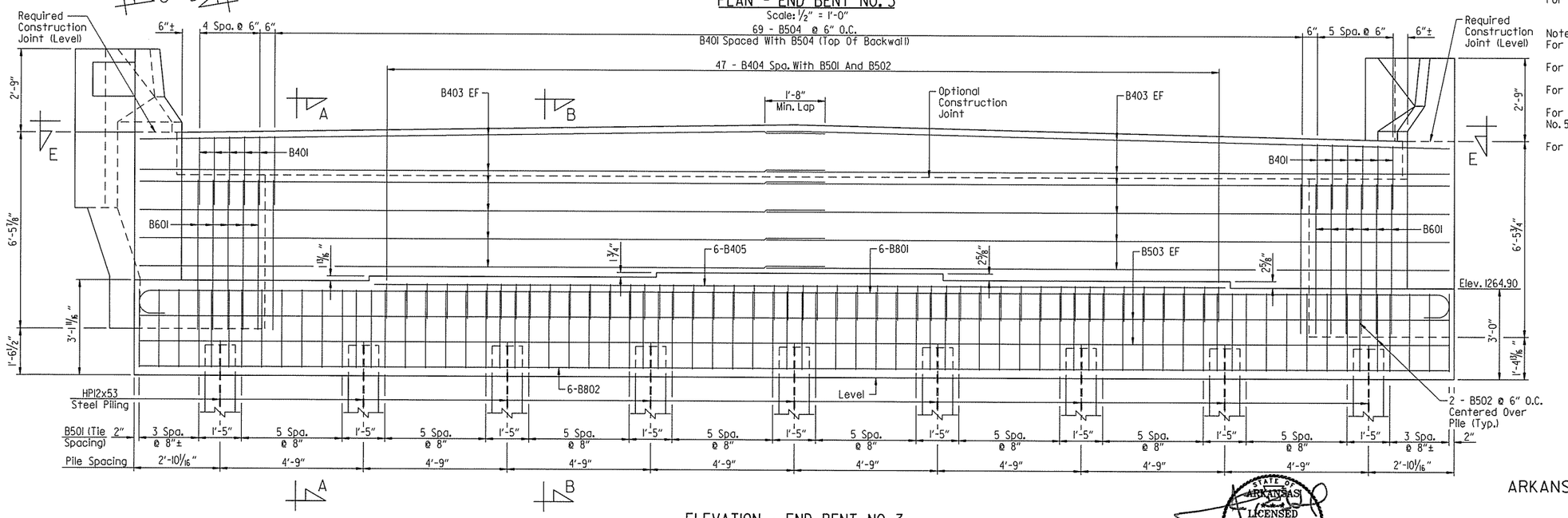
drgood 9/4/2014 10:15:16 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4-A1.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 382 | 897 |
| | | | | 1 07307 | | END BENT DETAILS | | 55236 |



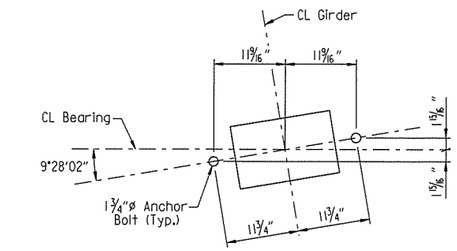

## PLAN - END BENT NO. 3

Scale: 1/2" = 1'-0"




## ELEVATION - END BENT NO. 3

(Looking Ahead)
Scale: 1/2" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, See LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55237 & 55238.

For details of elastomeric bearing pads, see Dwg. No. 55250.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55238.

For SECTION A-A, SECTION B-B, VIEW C-C, & VIEW D-D, see Dwg. No. 55237.

For VIEW E-E, see Dwg. No. 55238.

## LEGEND

EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 2 OF 5
# DETAILS OF END BENTS
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

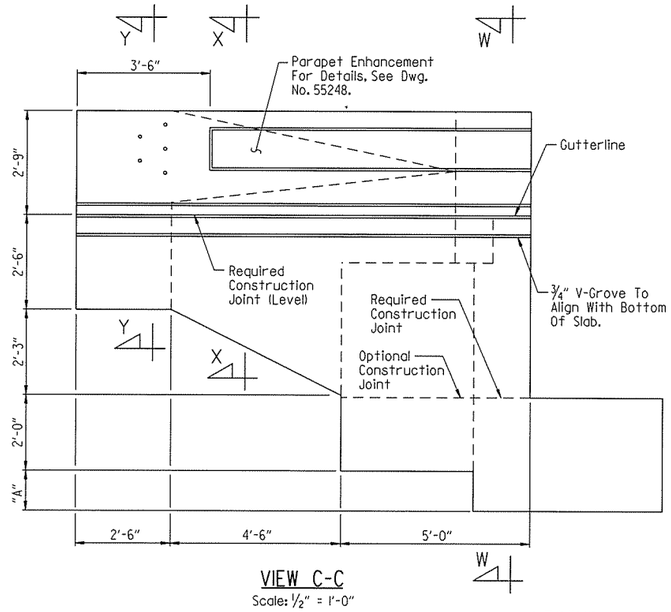
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X4_A2.DGN
CHECKED BY: ABH DATE: OCT. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

BRIDGE NO. 07307 DRAWING NO. 55236

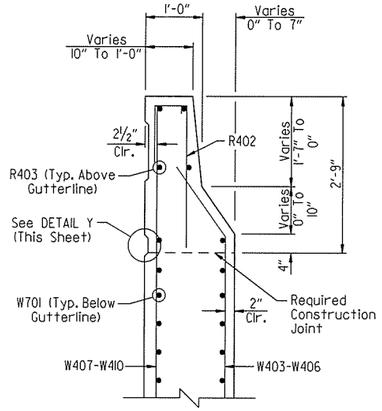
dragood 9/4/2014 10:15:16 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRGVHHY112\BCA0907x4_A2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 383 | 897 |
| | | | | 1 | 07307 | END BENT DETAILS | | 55237 |

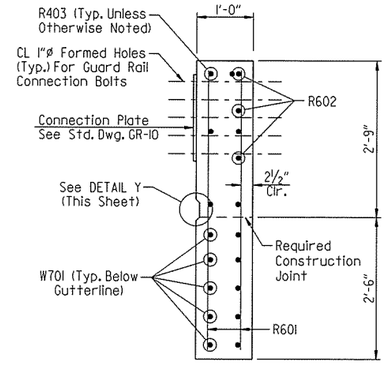



VIEW C-C
Scale: ½" = 1'-0"

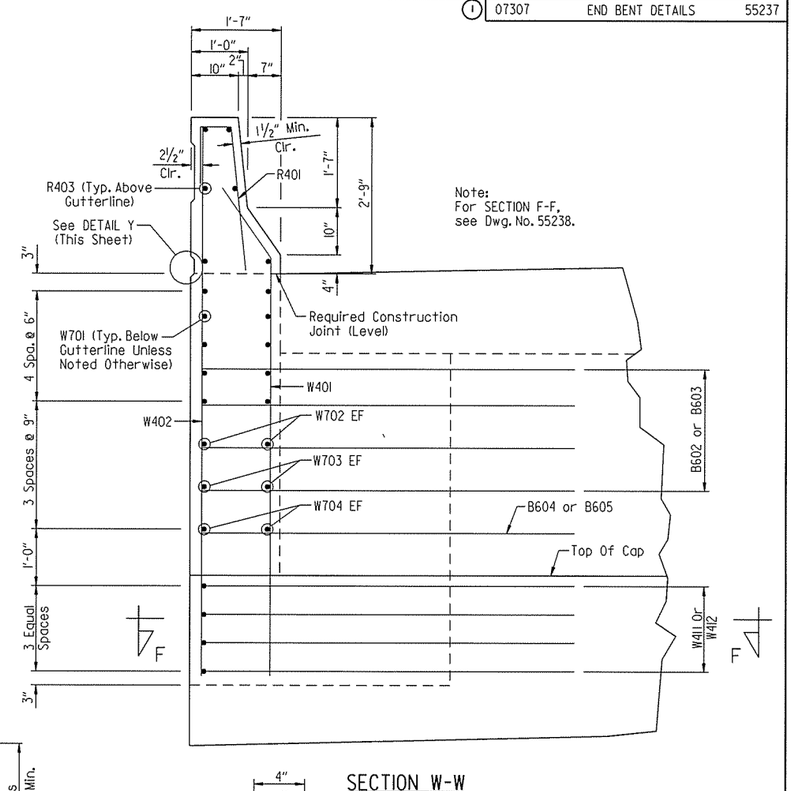
LEGEND
FF = Front Face
BF = Back Face
EF = Each Face

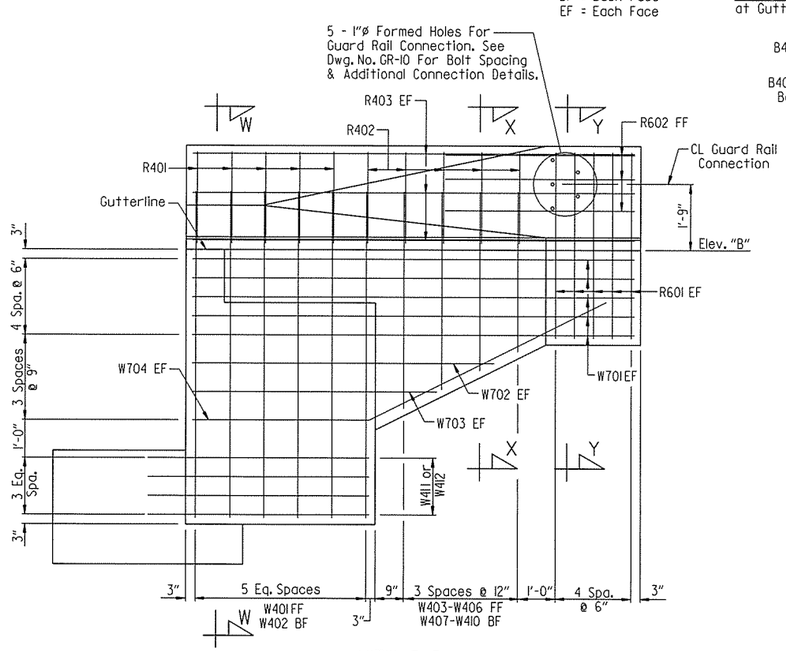



SECTION X-X
Scale: ¾" = 1'-0"

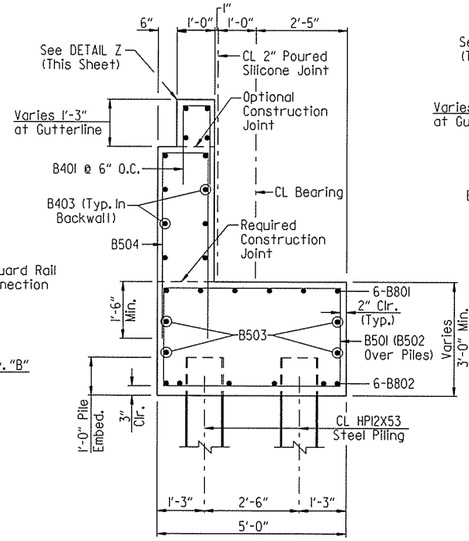



SECTION Y-Y
Scale: ¾" = 1'-0"

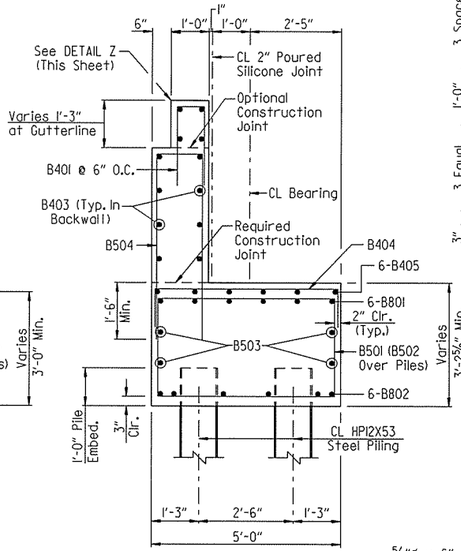


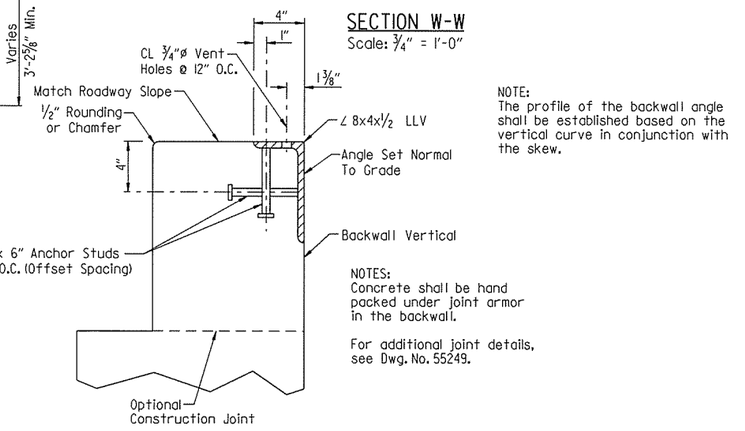

VIEW D-D
Scale: ½" = 1'-0"




SECTION A-A
Scale: ¼" = 1'-0"



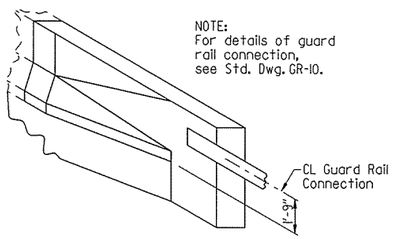

SECTION B-B
Scale: ¼" = 1'-0"



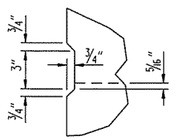

DETAIL Z
Scale: 2" = 1'-0"

| TABLE OF VARIABLES | | | |
|---|---|---|---|
| Bent No. | Wing | Dim. "A" | Elev. "B" |
| 1 | A | 8⅜" | 1264.13 |
| 1 | B | 10⅝" | 1264.34 |
| 3 | A | 1'-6½" | 1270.19 |
| 3 | B | 1'-4⅞" | 1270.05 |

Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE on Dwg. No. 55249 for additional information.




THREE DIMENSIONAL VIEW OF RAIL
Scale: NTS




DETAIL Y
Scale: NTS

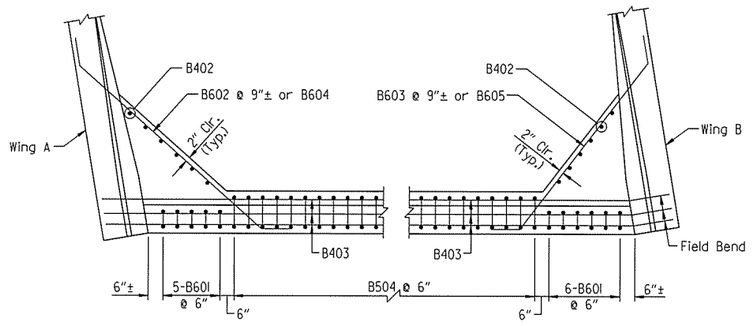
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF END BENTS
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

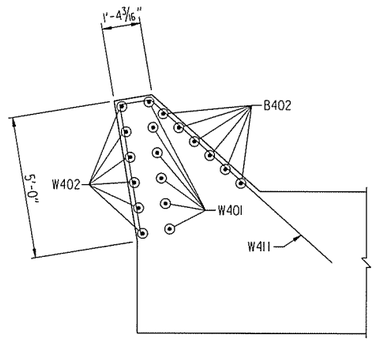
DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X4_A3.DGN
SCALE: AS SHOWN
BRIDGE NO. 07307 DRAWING NO. 55237

dropod 9/4/2014 10:15:17 AM
WORKSPACE: AHTD Bridge
\\GLITDCDN\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\NW112\BCA0907X4_A3.dgn
REVISED DATE:

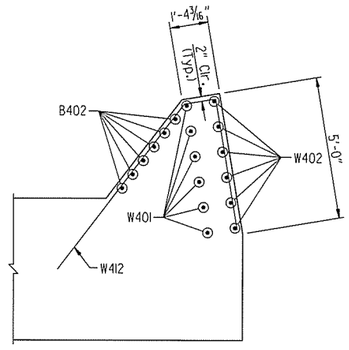
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 384 | 897 |
| | | | | (1) 07307 | | END BENT DETAILS | | 55238 |



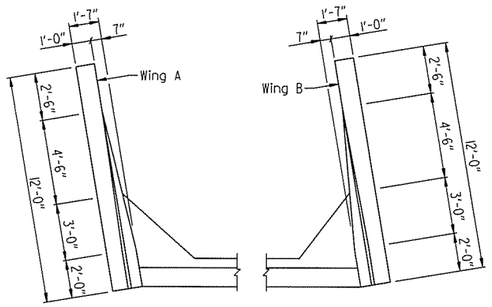

VIEW E-E
Scale: 3/8" = 1'-0"




SECTION F-F (WING A)
Scale: 3/8" = 1'-0"




SECTION F-F (WING B)
Scale: 3/8" = 1'-0"

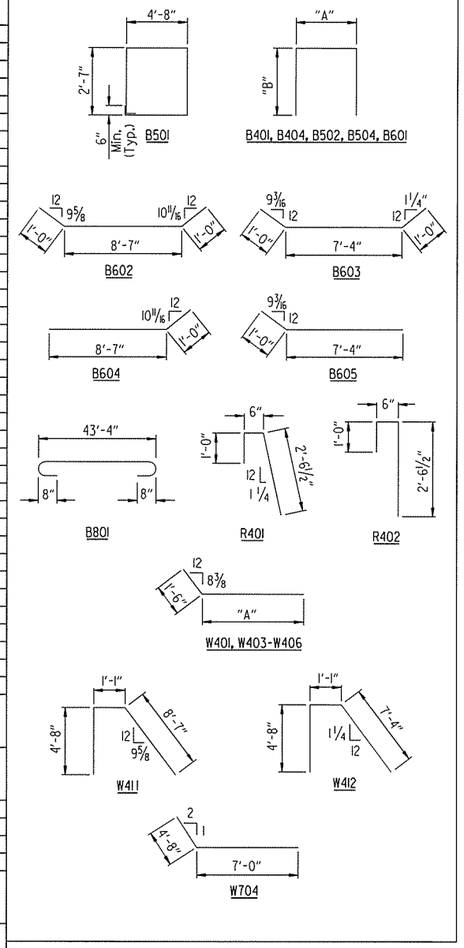



PLAN OF RAIL
Scale: 1/4" = 1'-0"

## BAR LIST

| | MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|---|
| COMMON BARS - PER BENT | B401 | 80 | 5'-10" | 8" | 2'-8" | 2" |
| | B403 | 24 | 22'-7" | | | Str. |
| | B404 | 47 | 7'-0" | 4'-8" | 1'-3" | 2" |
| | B405 | 6 | 28'-2" | | | Str. |
| | | | | | | |
| | B501 | 56 | 15'-0" | | | 2 1/2" |
| | B502 | 18 | 9'-7 1/2" | 4'-8" | 2'-7" | 2 1/2" |
| | B503 | 4 | 43'-4" | | | Str. |
| | B504 | 69 | 10'-9 1/2" | 1'-2" | 4'-11" | 2 1/2" |
| | | | | | | |
| | B601 | 11 | 10'-2" | 8" | 4'-11" | 4 1/2" |
| | B602 | 4 | 10'-7" | | | 4 1/2" |
| | B603 | 4 | 9'-4" | | | 4 1/2" |
| | B604 | 1 | 9'-7" | | | 4 1/2" |
| | B605 | 1 | 8'-4" | | | 4 1/2" |
| | | | | | | |
| | B801 | 6 | 45'-2" | | | 6" |
| | B802 | 6 | 43'-4" | | | Str. |
| | | | | | | |
| | R401 | 10 | 3'-11" | | | 2" |
| | R402 | 10 | 4'-0" | | | 2" |
| | R403 | 12 | 11'-8" | | | Str. |
| | | | | | | |
| | R601 | 20 | 4'-11" | | | Str. |
| | R602 | 6 | 5'-0" | | | Str. |
| | | | | | | |
| | W411 | 4 | 14'-3" | | | 2" |
| | W412 | 4 | 13'-0" | | | 2" |
| | | | | | | |
| | W701 | 20 | 11'-8" | | | Str. |
| | W702 | 4 | 7'-11" | | | Str. |
| | W703 | 4 | 6'-5" | | | Str. |
| | W704 | 4 | 11'-8" | | | 5 1/4" |
| | | | | | | |
| END BENT NO.1 | B402 | 12 | 5'-5" | | | Str. |
| | | | | | | |
| | W401 | 12 | 8'-8" | 7'-2" | | 3" |
| | W402 | 12 | 9'-5 1/2" | | | Str. |
| | W403 To W406 | 2 Each | 4'-7" To 6'-2" | 3'-1" To 4'-8" | | 3" |
| | W407 To W410 | 2 Each | 5'-4 1/2" To 6'-11 1/2" | | | Str. |
| END BENT NO.3 | B402 | 12 | 4'-10" | | | Str. |
| | | | | | | |
| | W401 | 12 | 8'-2" | 6'-8" | | 3" |
| | W402 | 12 | 8'-11 1/2" | | | Str. |
| | W403 To W406 | 2 Each | 4'-5" To 5'-10" | 2'-11" To 4'-4" | | 3" |
| | W407 To W410 | 2 Each | 5'-2 1/2" To 6'-7 1/2" | | | Str. |

## BAR BENDING DIAGRAMS




Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of common bars shown is for one bent only.

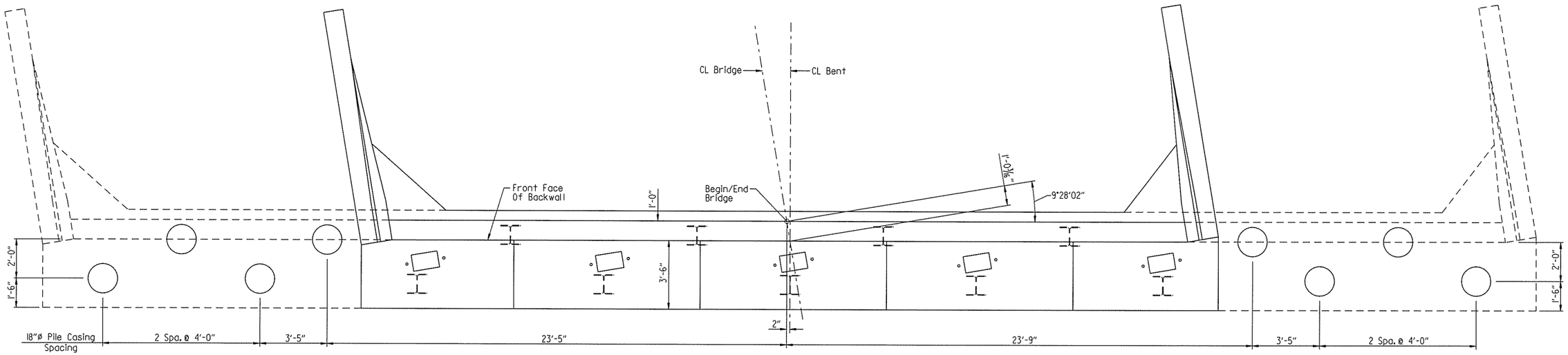
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.8017
JOHN H. RUDDELL
9-5-14
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF END BENTS
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

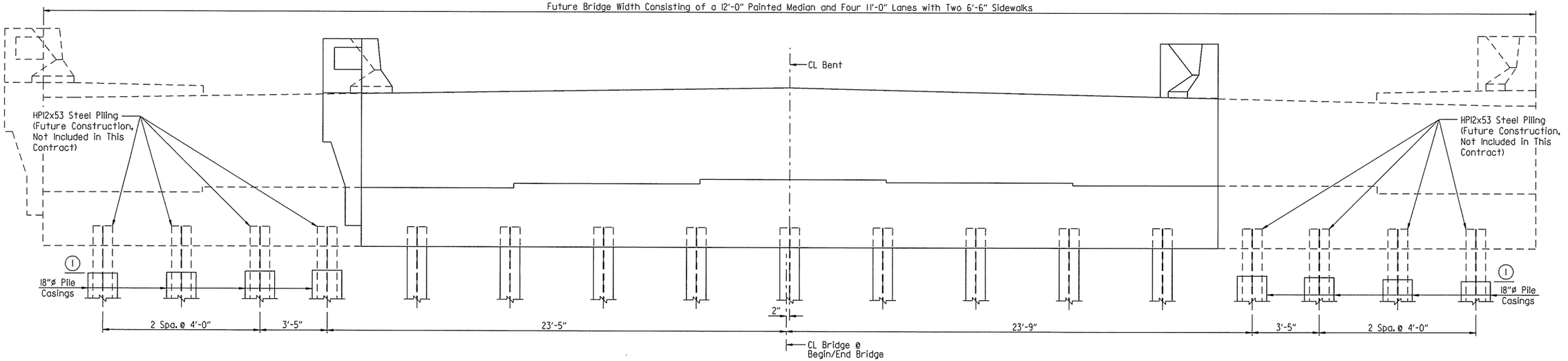
DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X4_A4.DGN
SCALE: AS SHOWN
BRIDGE NO. 07307 DRAWING NO. 55238

dropod 9/4/2014 10:15:17 AM
WORKSPACE: AHTD Std-cfg
\\GLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_A4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 385 | 897 |
| | | | | (1) 07307 | | END BENT DETAILS | | 55239 |




PLAN - END BENT
Scale: ⅜" = 1'-0"




ELEVATION - END BENT
Scale: ⅜" = 1'-0"

(1) Set top of casing at an elevation 1'-0" min. below finished ground.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

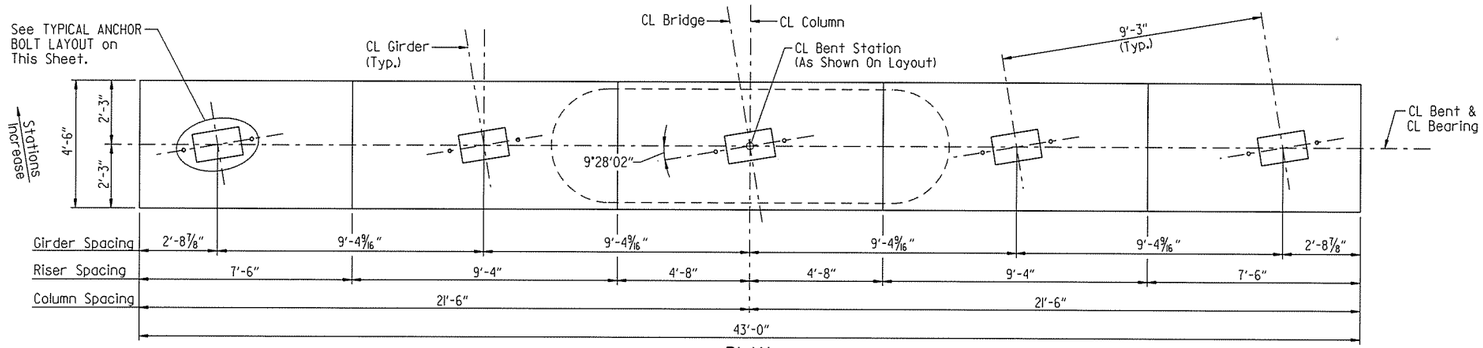
SHEET 5 OF 5
DETAILS OF END BENTS
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X4_A5.DGN
CHECKED BY: ABH DATE: OCT. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

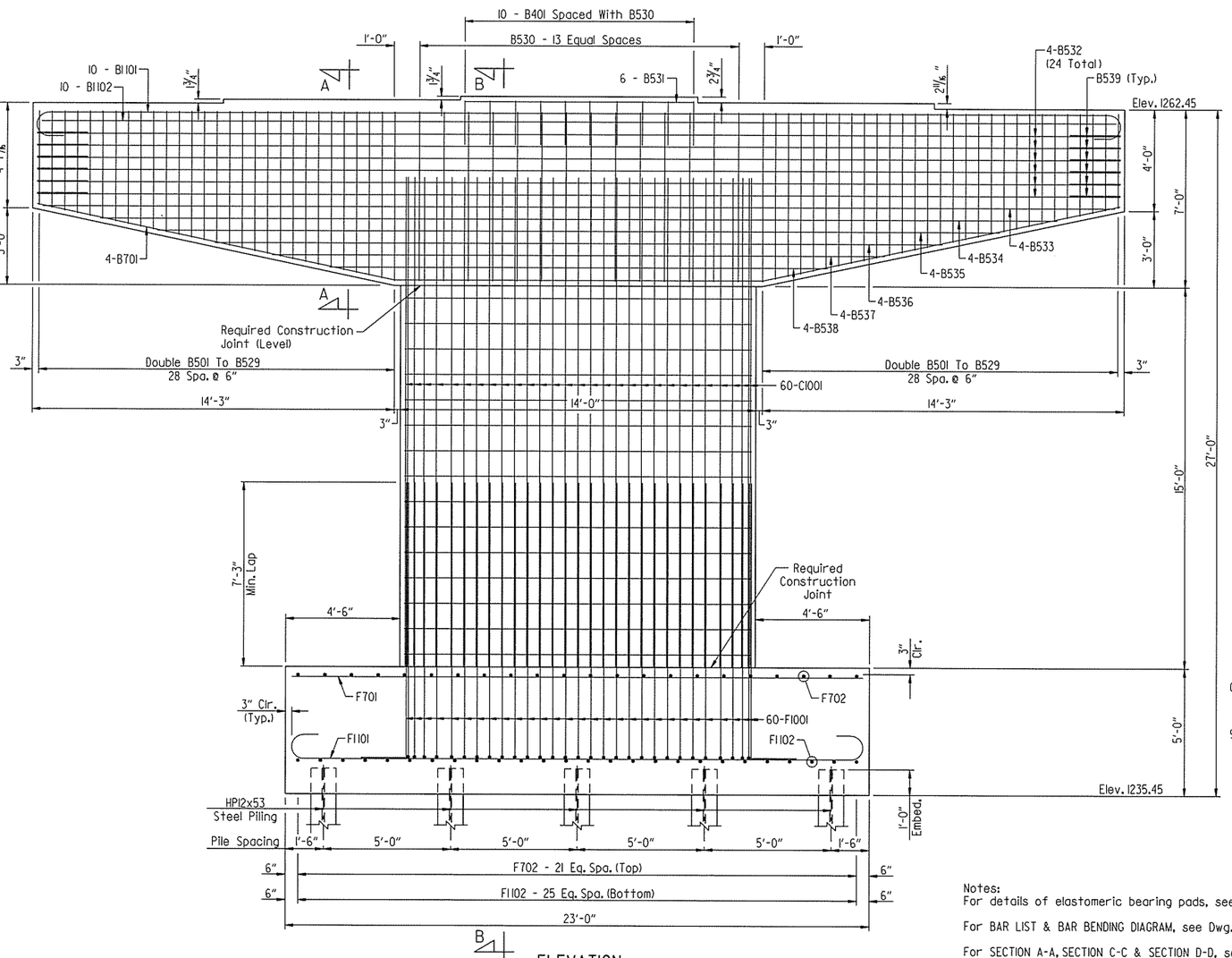
BRIDGE NO. 07307 DRAWING NO. 55239

dr good 9/4/2014 10:15:18 AM
WORKSPACE: AHTD Bridge
\\CLITDCN\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_A5.dgn
REVISED DATE:

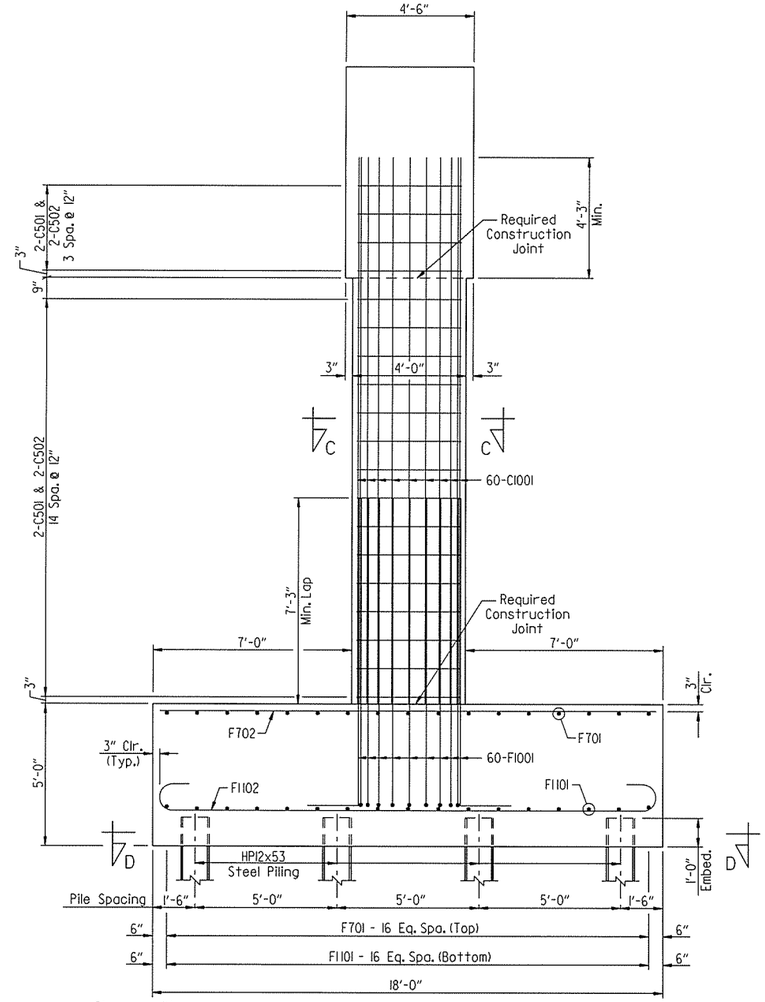
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 386 | 897 |
| | | | | (1) 07307 | | INT. BENT DETAILS | | 55240 |



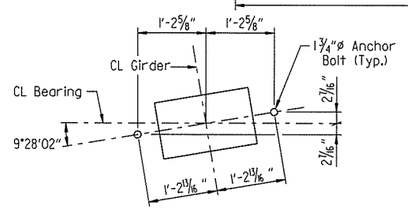

PLAN
Scale: 3/8" = 1'-0"




ELEVATION
(Looking Ahead)
Scale: 3/8" = 1'-0"




SECTION B-B
Scale: 3/8" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55250.

For BAR LIST & BAR BENDING DIAGRAM, see Dwg. No. 55241.

For SECTION A-A, SECTION C-C & SECTION D-D, see Dwg. No. 55241.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 3017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 2
# DETAILS OF INTERMEDIATE BENT NO. 2
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

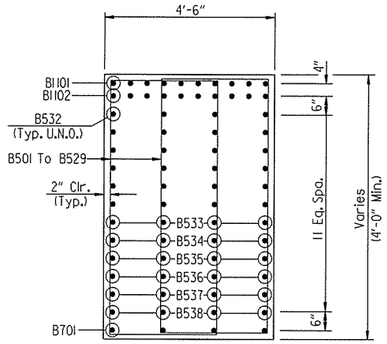
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2012
CHECKED BY: ABH DATE: JUNE 2012
DESIGNED BY: PCC DATE: JUNE 2012
FILENAME: BCA0907X4_BI.DGN
SCALE: AS SHOWN

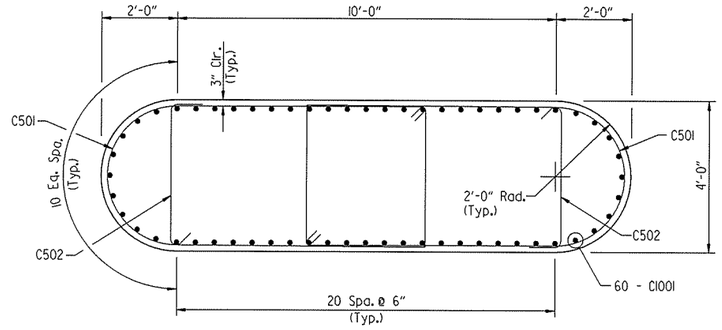
BRIDGE NO. 07307 DRAWING NO. 55240

drgood 9/4/2014 10:15:18 AM
WORKSPACE: AHTD Bridge
V:\SUBCON\LITPro\Jobs\2005\05911680 - AHTD Springdale Byposs\Drawings\BRG\HWY112\BCA0907X4_BI.dgn
REVISED DATE:

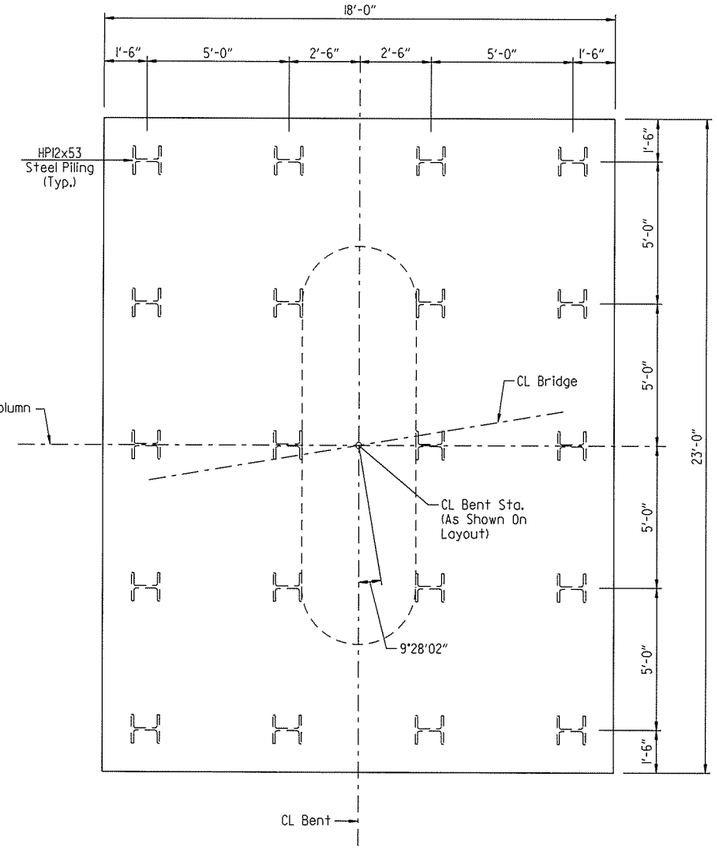
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 387 | 897 |
| | | | | (1) 07307 | | INT. BENT DETAILS | | 55241 |




SECTION A-A
Scale: 1/2" = 1'-0"




SECTION C-C
Scale: 1/2" = 1'-0"



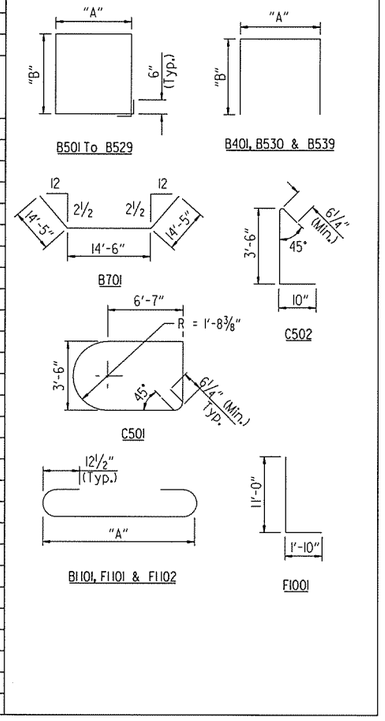

SECTION D-D
Scale: 3/8" = 1'-0"

## BAR LIST

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B401 | 10 | 7'-6" | 4'-2" | 1'-9" | 2" |
| | | | | | |
| B501 To B529 | 4 Ea. | 13'-7" To 19'-6" | 2'-10" | 3'-8 1/2" To 6'-8" | 2 1/2" |
| B530 | 14 | 17'-3 1/2" | 4'-2" | 6'-8" | 2 1/2" |
| B531 | 6 | 9'-0" | | | Str. |
| B532 | 24 | 42'-8" | | | Str. |
| B533 | 4 | 42'-3" | | | Str. |
| B534 | 4 | 37'-8" | | | Str. |
| B535 | 4 | 33'-2" | | | Str. |
| B536 | 4 | 28'-8" | | | Str. |
| B537 | 4 | 24'-2" | | | Str. |
| B538 | 4 | 19'-7" | | | Str. |
| B539 | 12 | 7'-11" | 4'-1" | 2'-0" | 2 1/2" |
| | | | | | |
| B701 | 4 | 43'-4" | | | 5 1/4" |
| | | | | | |
| B1101 | 10 | 45'-8" | 42'-8" | | 11 1/4" |
| B1102 | 10 | 42'-4" | | | Str. |
| | | | | | |
| C501 | 38 | 23'-10" | | | 3 3/4" |
| C502 | 38 | 4'-10" | | | 3 3/4" |
| | | | | | |
| C1001 | 60 | 19'-3" | | | Str. |
| | | | | | |
| F701 | 17 | 22'-6" | | | Str. |
| F702 | 22 | 17'-6" | | | Str. |
| | | | | | |
| F1001 | 60 | 12'-0" | | | 10" |
| | | | | | |
| F1101 | 17 | 25'-6" | 22'-6" | | 11 1/4" |
| F1102 | 26 | 20'-6" | 17'-6" | | 11 1/4" |

NOTE:
Dimensions of bars are out-to-out.

## BAR BENDING DIAGRAM




## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see LAYOUT.

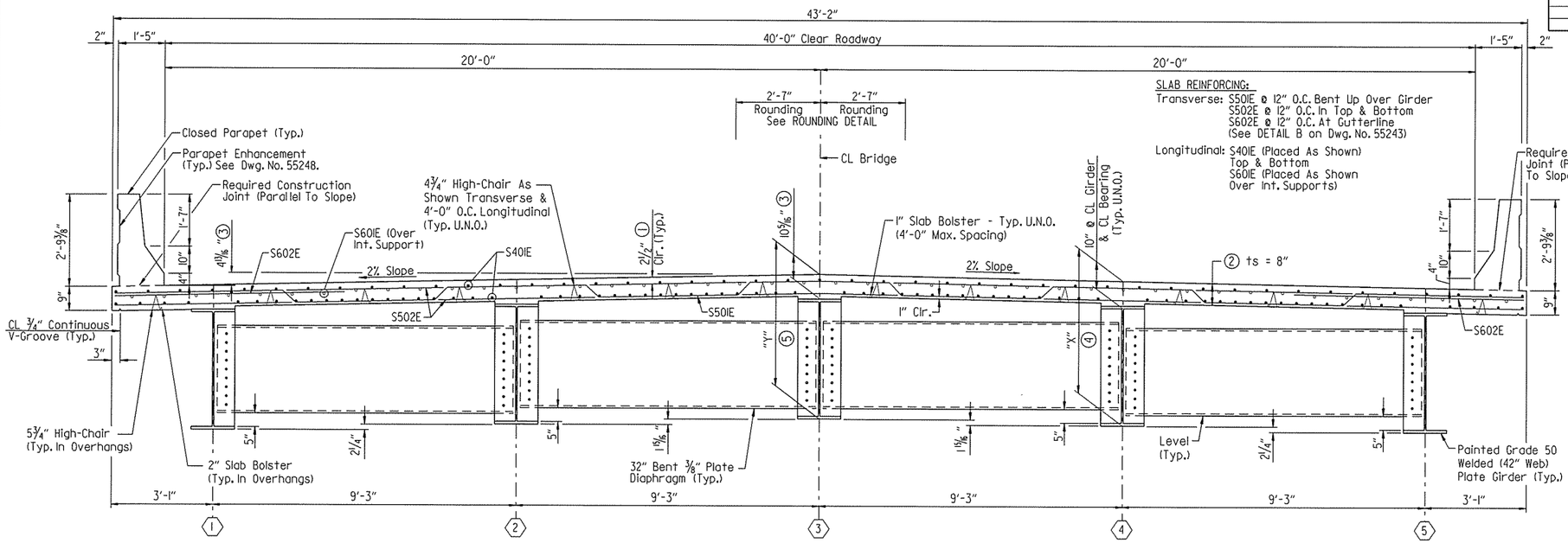
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2012 FILENAME: BCA0907X4_B2.DGN
CHECKED BY: ABH DATE: JUNE 2012 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JUNE 2012
BRIDGE NO. 07307 DRAWING NO. 55241

drgood 9/4/2014 10:15:19 AM
WORKSPACE: AHTD Bridge
V:\CLIENTDGN\LITPFiles\S2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_B2.dgn
REVISED DATE:

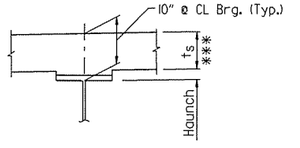
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 388 | 897 |
| | | | | (1) 07307 | | SPAN DETAILS | | 55242 |




## TYPICAL SECTION
Scale: ½" = 1'-0"

SLAB REINFORCING:
Transverse: S501E @ 12" O.C. Bent Up Over Girder
S502E @ 12" O.C. In Top & Bottom
S602E @ 12" O.C. At Gutterline
(See DETAIL B on Dwg. No. 55243)

Longitudinal: S401E (Placed As Shown)
Top & Bottom
S601E (Placed As Shown
Over Int. Supports)



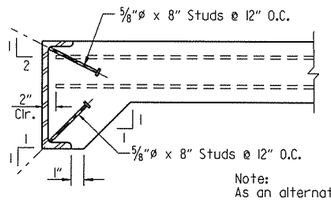

Note: $t_S$ = Slab thickness as shown on TYPICAL SECTION.

*** Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED
Scale: NTS

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

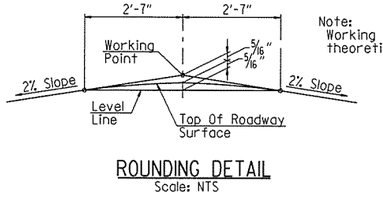
Tolerances shown are applicable only when removable deck forming is used. see Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.




Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced @ 8" O.C. may be used. Use weight of ⅞"ø stud as basis of measurement of structural steel in anchors.

## SECTION X-X
Scale: NTS

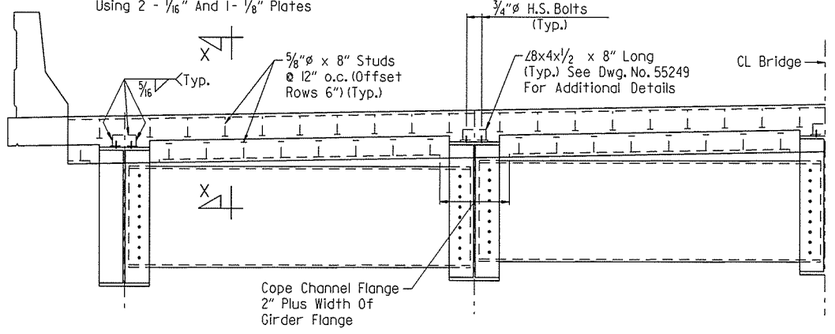
Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.




Note:
Working point matches theoretical profile grade.

## ROUNDING DETAIL
Scale: NTS

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Conn. Angles ∠8x4x½ x 8" Long
Detail Device ⅛" High And Provide ¼" Shims
Using 2 - 1/16" And 1- ⅛" Plates




## VIEW AT CL JOINT
Looking Ahead - End Bent No. 1
Looking Back - End Bent No. 3
Scale: NTS

(1) TOLERANCE:
Minus = ¼"
Plus = Equal To Amount Of Slab Thickening Used To Meet Slab Thickness Tolerance - See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

(2) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

(3) Measured To Working Point - See ROUNDING DETAIL.

(4) "X" = 4'-4" + bottom flange thickness, measured at CL Bearing & CL Girder.

(5) "Y" = 4'-4⅝" + bottom flange thickness, measured at CL Bearing & CL Girder (measured to working point - see ROUNDING DETAIL).

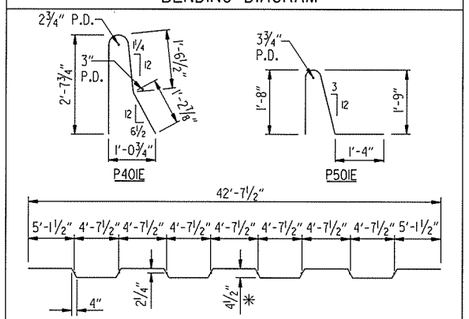
(6) Non-typical pin diameter

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substitued for each bar S501E. Payment will be based on the weight of bar S501E.

Note:
Class 2 protective surface treatment shall be applied to the roadway surface and the face and top of parapet rail.

## LEGEND
U.N.O. = Unless Noted Otherwise

## BENDING DIAGRAM




## BAR LIST

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| S401E | 702 | 35'-1" | STR. |
| | | | |
| S501E | 191 | 43'-5½" | 3" |
| S502E | 382 | 42'-10" | STR. |
| S503E To S514E | 4 Each | 6'-5" To 39'-5" | STR. |
| | | | |
| S601E | 132 | 27'-0" | STR. |
| S602E | 393 | 14'-3" | 5¼" (6) |
| | | | |
| S701E | 8 | 7'-1" | 5¼" |
| | | | |
| P401E | 788 | 5'-6" | 2¾", 3" |
| P402E | 48 | 28'-3" | STR. |
| P403E | 84 | 9'-8" | STR. |
| P404E | 16 | 9'-4" | STR. |
| | | | |
| P501E | 788 | 4'-10" | 3¾" |

Note:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
7-15-14

BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X4_S1.DGN
CHECKED BY: ABH DATE: OCT. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: MAR. 2011
BRIDGE NO. 07307 DRAWING NO. 55242

dropod 9/4/2014 10:15:19 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_S1.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 389 | 897 |
| | | | | (I) 07307 | | SPAN DETAILS | | 55243 |

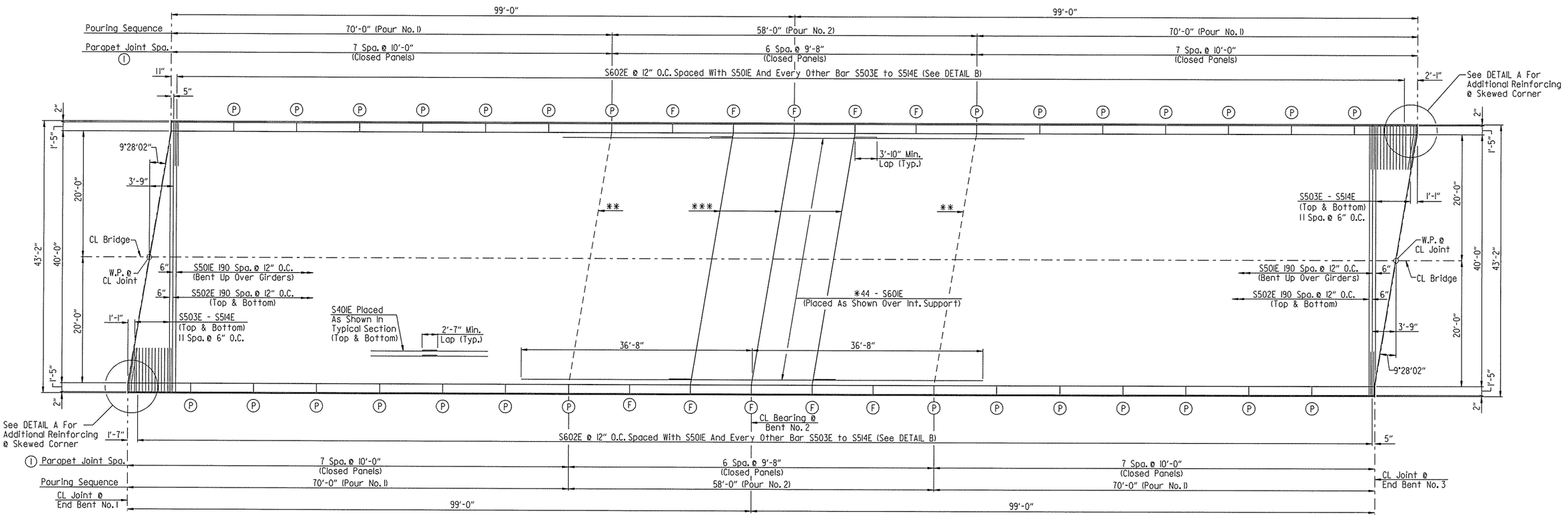
(I) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION on Dwg. No. 55242 for placement

** Pouring Sequence Construction Joint

*** Required Slab Joint

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.



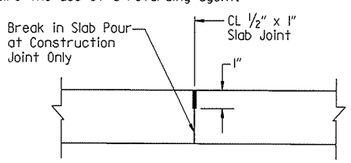

## REINFORCING PLAN & POURING SEQUENCE

Scale: 1/8" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

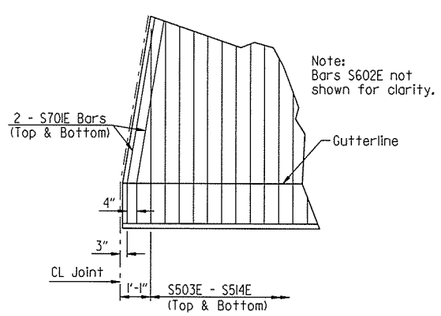
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) And 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

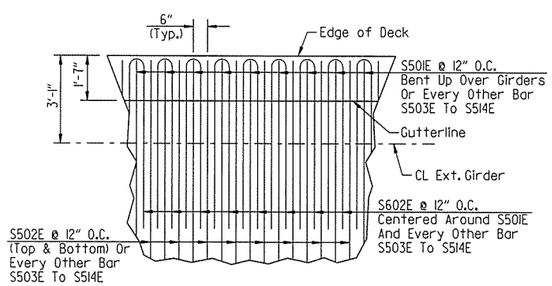
## SLAB JOINT DETAIL

Scale: NTS



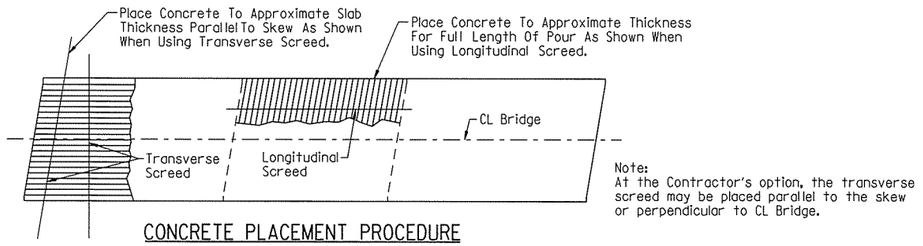

## DETAIL A

Scale: NTS




## DETAIL B

Scale: NTS




Note:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

## CONCRETE PLACEMENT PROCEDURE

Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 2 OF 8
# DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

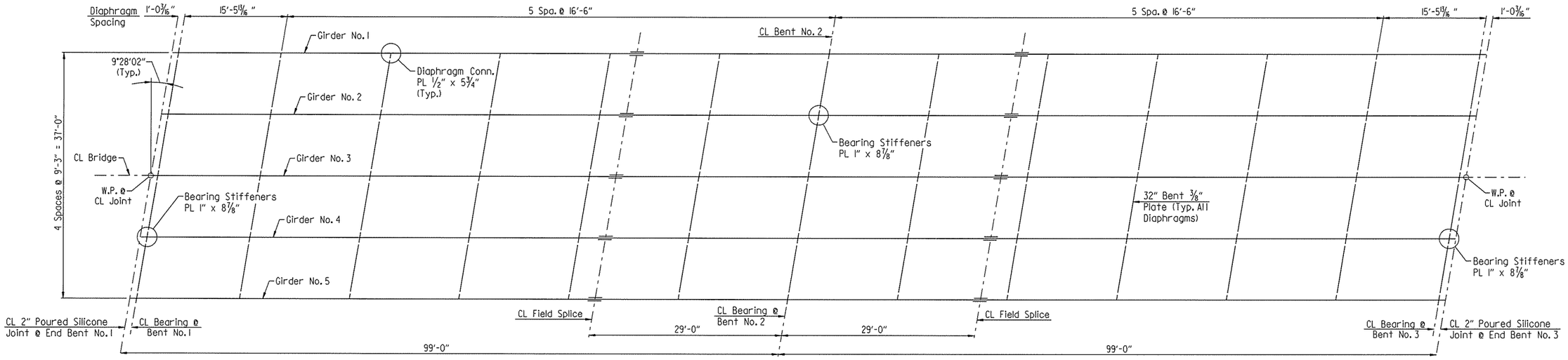
LITTLE ROCK, ARK.

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | HEW | DATE: | MAR. 2011 | FILENAME: | BCA0907X4_S2.DGN |
| CHECKED BY: | ABH | DATE: | OCT. 2011 | SCALE: | AS SHOWN |
| DESIGNED BY: | WRF | DATE: | MAR. 2011 | | |

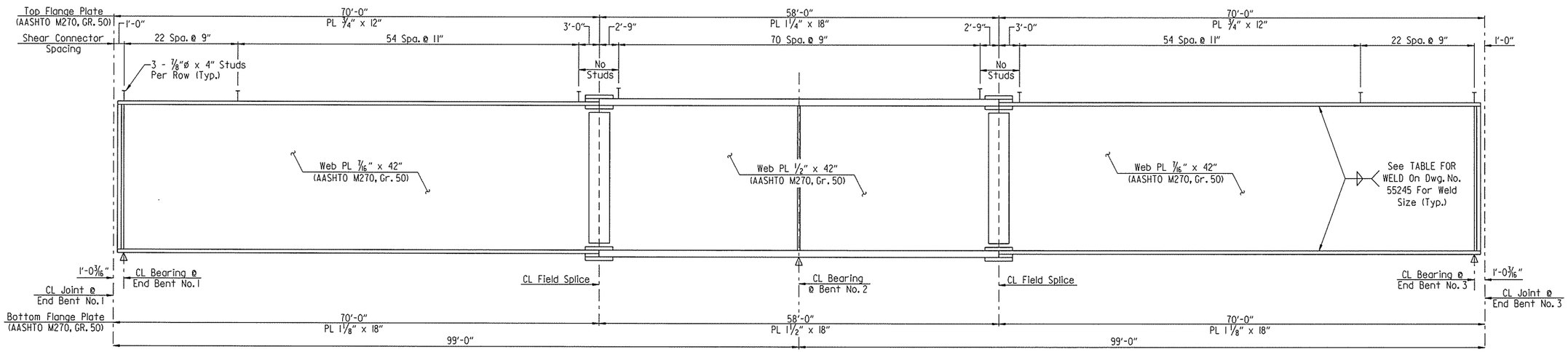
BRIDGE NO. 07307 DRAWING NO. 55243

dropod 9/4/2014 10:15:20 AM
WORKSPACE: AHTD Bridge
\\GLITDCIN\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_S2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 390 | 897 |
| | | | | (1) 07307 | | SPAN DETAILS | | 55244 |




## FRAMING PLAN
Scale: 1/8" = 1'-0"




## TYP. GIRDER ELEVATION
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

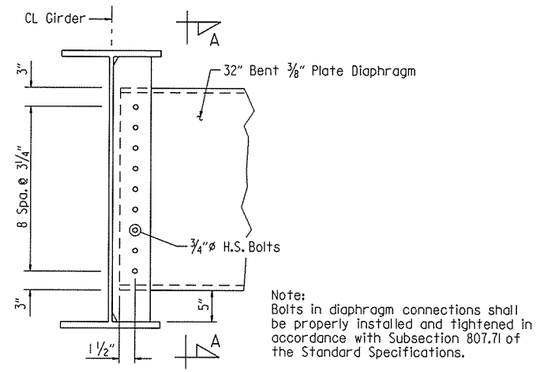
SHEET 3 OF 8
DETAILS OF 198'-0" COMPOSITE
PLATE GIRDER UNIT
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X4_S3.DGN
SCALE: AS SHOWN

BRIDGE NO. 07307 DRAWING NO. 55244

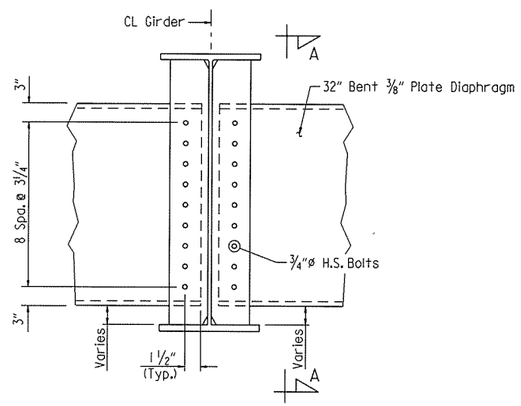
dgood 9/4/2014 10:15:20 AM
WORKSPACE: AHTD Bridge
\\CLITDGN\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907X4_S3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 391 | 897 |
| | | | | (1) 07307 | | SPAN DETAILS | | 55245 |

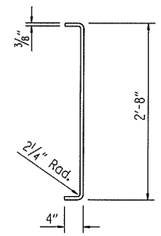



Note:
Bolts in diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.7.1 of the Standard Specifications.

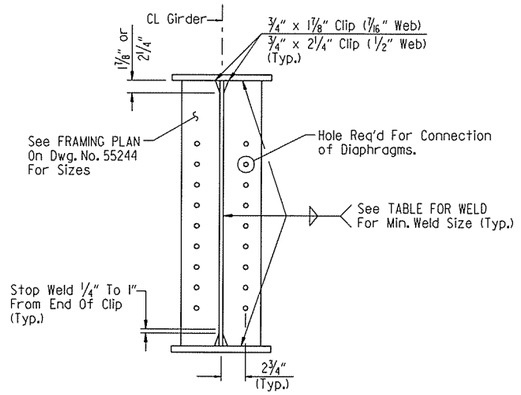
DIAPHRAGM CONNECTIONS AT EXTERIOR GIRDER
Scale: NTS



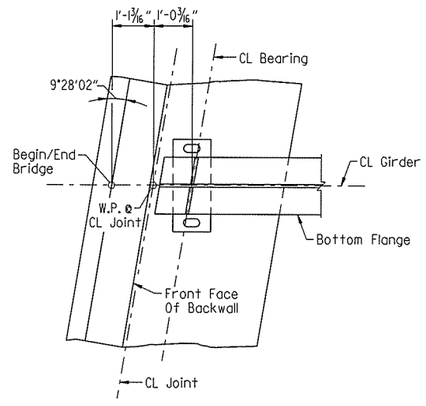

DIAPHRAGM CONNECTIONS AT INTERIOR GIRDER
Scale: NTS



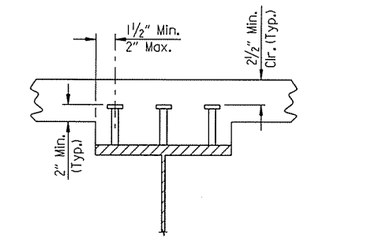

SECTION A-A
Scale: NTS




DIAPHRAGM CONNECTION PLATE DETAIL
Scale: NTS



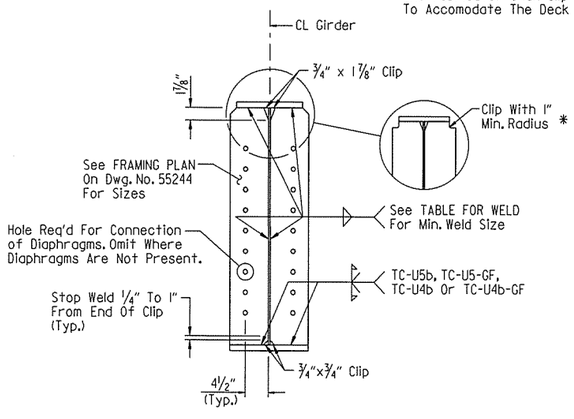

BEARING PLAN AT END BENT
Scale: 1/4" = 1'-0"



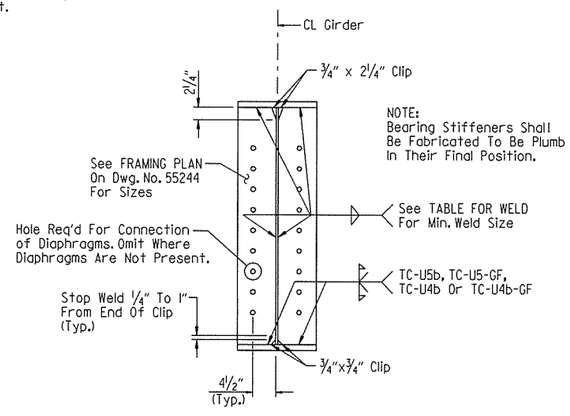

Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio ratio of 1.361- 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL
Scale: NTS

* If Permanent Steel Bridge Deck Forms Are Used, The Fabricator Shall Clip The Plate As Necessary To Accomodate The Deck Form Support.




BEARING STIFFENER @ END BENTS
Scale: NTS




BEARING STIFFENER @ INTERIOR BENT
Scale: NTS

TABLE FOR WELD

| Material Thickness of Thicker Part Joined (Inches) | Minimum Size of Fillet Weld (Inches) | Single Pass Weld Must Be Used |
|---|---|---|
| To 3/4" Inclusive | 1/4" | |
| Over 3/4" | 5/16" | |

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTES:
1. For GENERAL NOTES, see Drawing No. 55248.
2. All structural steel, including girders, diaphragms, bearing stiffeners and conn. plates, shall be AASHTO M270 Grade 50.
3. For elastomeric bearing details, see Drawing No. 55250.
4. For details of field splices, see Drawing No. 55246.
5. For typical haunch details, see Dwg. No. 55242.
6. For DEAD LOAD DEFLECTION, see Drawing No. 55246.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 4 OF 8
# DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

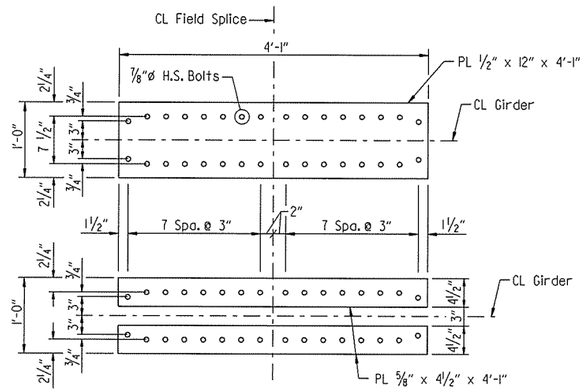
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X4_S4.DGN
SCALE: AS SHOWN

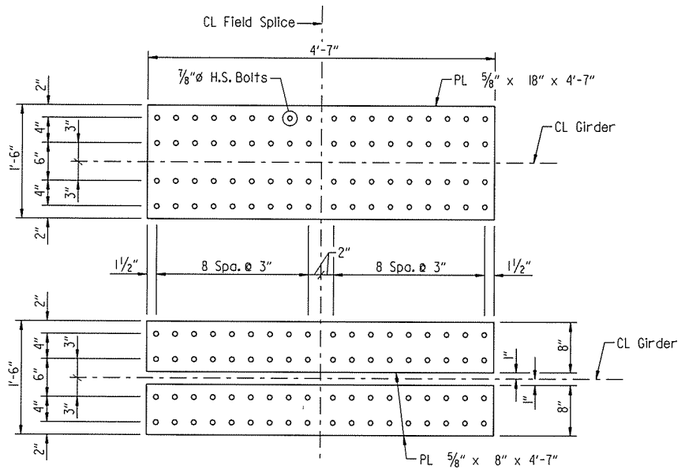
BRIDGE NO. 07307 DRAWING NO. 55245

drgood 9/4/2004 10:15:21 AM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_S4.dgn
REVISED DATE:

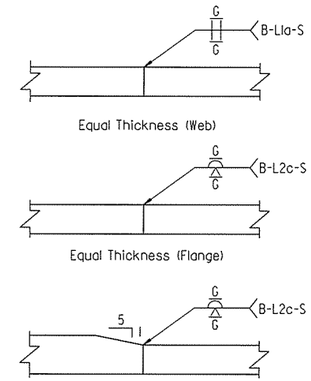
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 392 | 897 |
| | | | | (1) 07307 | | SPAN DETAILS | | 55246 |



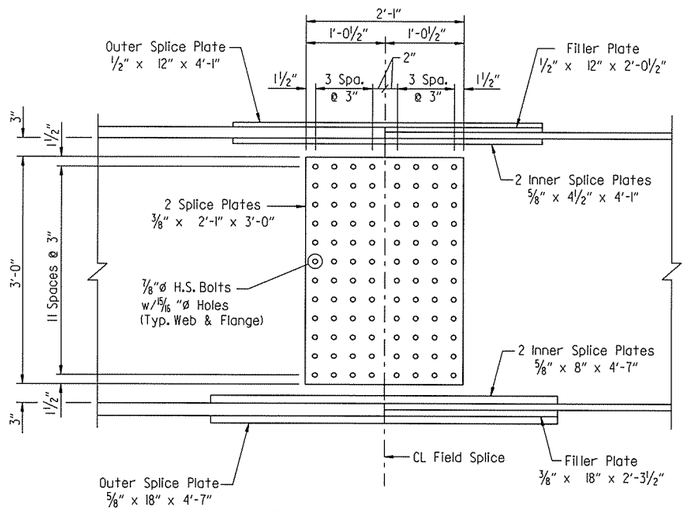

TOP FLANGE SPLICE
Scale: 1" = 1'-0"




BOTTOM FLANGE SPLICE
Scale: 1" = 1'-0"



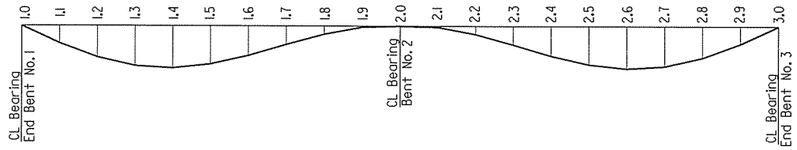

DETAILS OF WELDED SPLICES
Scale: NTS




ELEVATION OF FIELD SPLICE
Scale: 1" = 1'-0"
(Span No. 2 Field Splice Shown,
Span No. 1 Field Splice Similar By Orientation)

Notes:
All field splice bolts shall be 7/8"ø H.S. bolts.
All holes for splice bolts shall be 15/16 "ø.
All field splice plates shall be AASHTO M270 Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted sith approval of the Engineer. Payment will be made on the basis of the plan quantities.




DEAD LOAD DEFLECTION
Scale: NTS

| TABLE OF DEAD LOAD DEFLECTIONS (Inches) | | | |
|---|---|---|---|
| Point Of Deflection | Wt. Of Girder And Diaphragms | Wt. Of Girder, Diaphragms And Slab | Wt. Of Girder, Diaphragms, Slab And Parapet |
| 1.0 | 0.00 | 0.00 | 0.00 |
| 1.1 | 0.13 | 0.68 | 0.72 |
| 1.2 | 0.24 | 1.24 | 1.33 |
| 1.3 | 0.31 | 1.60 | 1.72 |
| 1.4 | 0.33 | 1.73 | 1.86 |
| 1.5 | 0.31 | 1.63 | 1.75 |
| 1.6 | 0.26 | 1.33 | 1.44 |
| 1.7 | 0.18 | 0.92 | 0.99 |
| 1.8 | 0.09 | 0.49 | 0.52 |
| 1.9 | 0.03 | 0.14 | 0.15 |
| 2.0 | 0.00 | 0.00 | 0.00 |
| 2.1 | 0.03 | 0.14 | 0.15 |
| 2.2 | 0.09 | 0.49 | 0.52 |
| 2.3 | 0.18 | 0.92 | 0.99 |
| 2.4 | 0.26 | 1.33 | 1.44 |
| 2.5 | 0.31 | 1.63 | 1.75 |
| 2.6 | 0.33 | 1.73 | 1.86 |
| 2.7 | 0.31 | 1.60 | 1.72 |
| 2.8 | 0.24 | 1.24 | 1.33 |
| 2.9 | 0.13 | 0.68 | 0.72 |
| 3.0 | 0.00 | 0.00 | 0.00 |

Note:
Camber for dead load deflection plus vertical curve ± 1/4" tolerance. Deflections shown are from a chord from centerline bearing to centerline bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

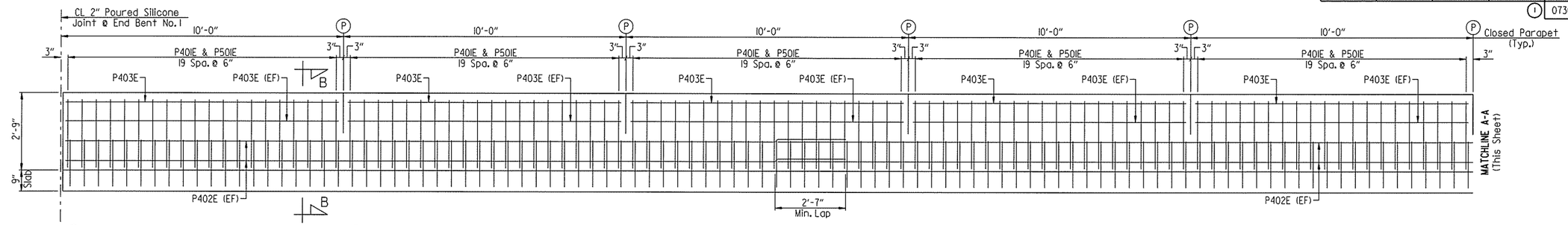
SHEET 5 OF 8
DETAILS OF 198'-0" COMPOSITE
PLATE GIRDER UNIT
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

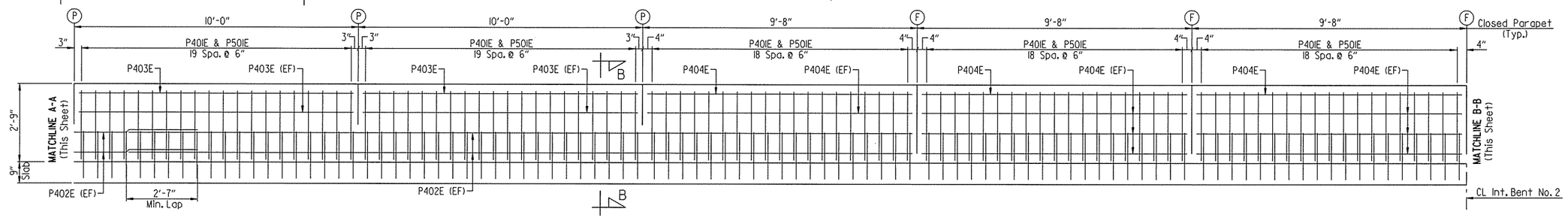
DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X4_S5.DGN
SCALE: AS SHOWN
BRIDGE NO. 07307 DRAWING NO. 55246

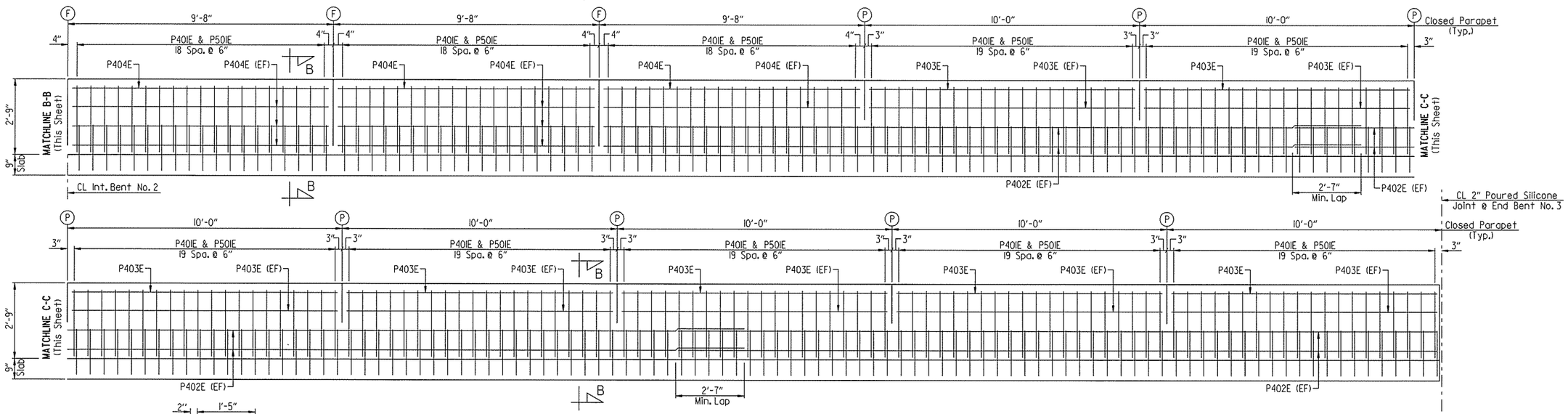
drgood 9/4/2014 10:15:21 AM
WORKSPACE: AHTD Bridge
\\CLITOOLS\IHTProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_S5.dgn
REVISED DATE:

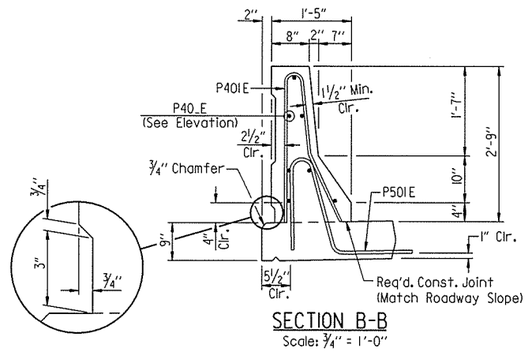
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 393 | 897 |
| (1) 07307 | | SPAN DETAILS | | 55247 |




SECTION B-B
Scale: ¾" = 1'-0"

LEFT PARAPET ELEVATION
(Looking At Inside Face Of Parapet Rail)
(Left Parapet Shown, Right Parapet Similar By Orientation)
Scale: ½" = 1'-0"

Note:
For additional parapet details, see Dwg. No. 55248.

## GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day Compressive Strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

## LEGEND

EF = Each Face

(P) Partial depth parapet joints (1/4" to 1" max.) shall be stopped 1'-2" from top of slab.

(F) Full depth parapet joints (1/4" to 1" max.) shall be stopped 4" from top of slab.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 6 OF 8
# DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: JES DATE: JULY 2011
FILENAME: BCA0907X4_S6.DGN
SCALE: AS SHOWN

BRIDGE NO. 07307 DRAWING NO. 55247

drgood 9/4/2014 10:55:22 AM
WORKSPACE: AHTD Bridge
\\CLITDCONLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_S6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 394 | 897 |
| | | | | (1) 07307 | | SPAN DETAILS | | 55248 |

# GENERAL NOTES

## CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

## REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

## STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36 unless noted otherwise. All structural steel shall be cleaned in accordance with Section 807.84 unless noted otherwise. See Drawing No. 55250 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girders, including field splice plates, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splice, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54(b)(2) of the Standard Specifications. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications.

Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method.

All Quality Control (Q.C.) testing is at the Contractor's expense.

All connection plates shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plans. All bearing stiffeners shall be fabricated to be plumb in their final position.

Diaphragms shall be installed as girders are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

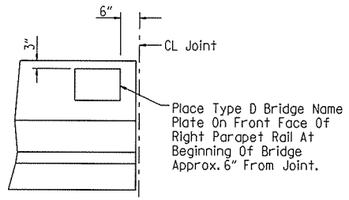
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Holes for ¾"ø high-strength bolts may be ⅞"ø if a washer is supplied for use under both the nut and head of the bolt.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

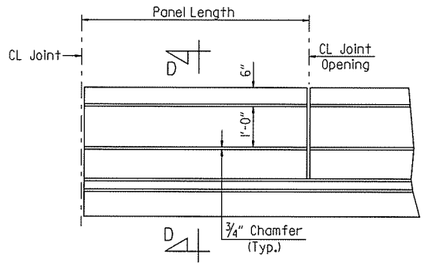
All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08 of the Standard Specifications. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

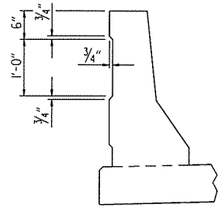
Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".



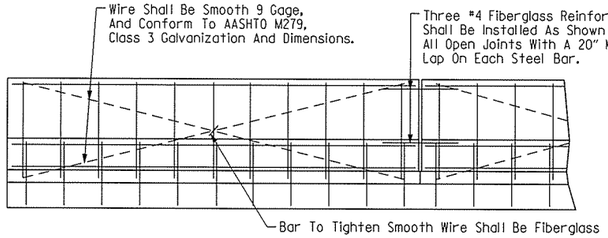

VIEW SHOWING LOCATION OF NAME PLATE
Scale: ½" = 1'-0"

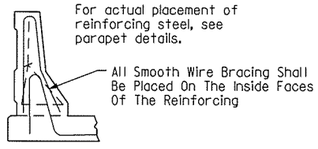



PARAPET ENHANCEMENT DETAILS
Scale: ½" = 1'-0"




SECTION D-D
Scale: ¾" = 1'-0"




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-5-14

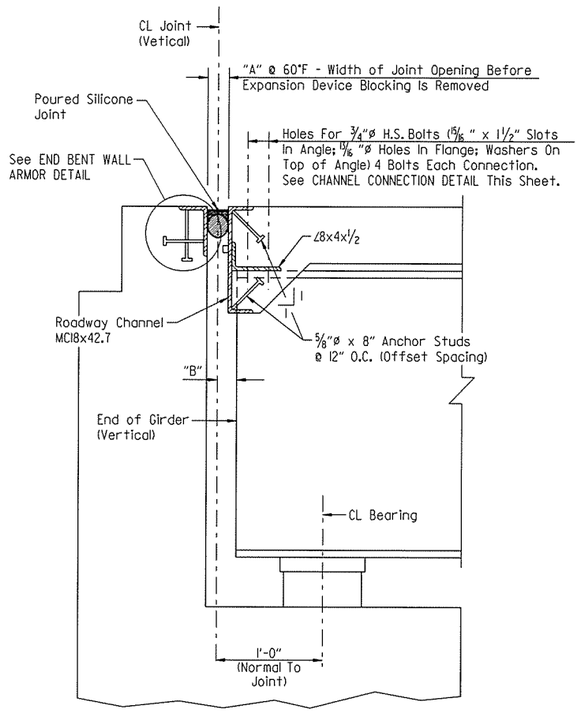
BRIDGE ENGINEER

SHEET 7 OF 8
DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT
HIGHWAY 112
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X4_S7.DGN
CHECKED BY: ABH DATE: OCT. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011
BRIDGE NO. 07307 DRAWING NO. 55248

drgood 9/4/2014 10:15:22 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_S7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 395 | 897 |
| | | | | (1) 07307 | | SPAN DETAILS | | 55249 |




## SECTION THRU JOINT AT END BENTS
(Perpendicular To Joint)
Scale: NTS

Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

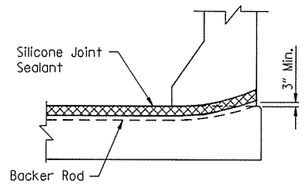
| SILICONE JOINT DATA | | | | | |
|---|---|---|---|---|---|
| "A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of: | | | "B" Perpendicular To Joint At 60°F | "D" | Bumper Plate Size |
| 40°F | 60°F | 80°F | | | |
| 2⅛" | 2" | 1⅞" | 2¼" ± | 4½" | 1" x 1" |

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

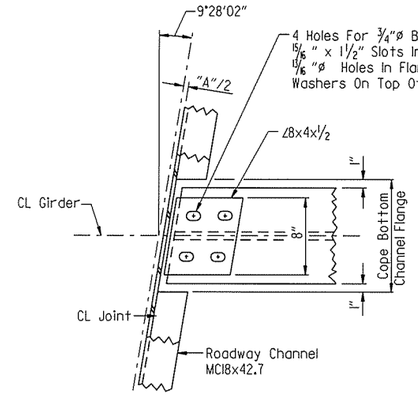
Notes:
The temperature limitations recommended by the sealant manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.




## JOINT SEAL PLACEMENT @ CURB
Scale: NTS



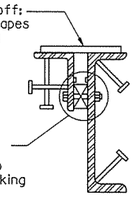

## CHANNEL CONNECTION DETAIL
Scale: NTS




** Recess depth as recommended by the Sealant Manufacturer.

## DETAIL OF POURED SILICONE JOINT
Scale: NTS

One of two different blocking systems is required depending on the type of span finishing machine that is used.




Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

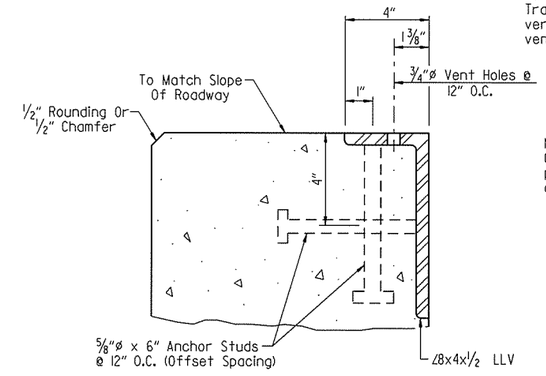
EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the Expansion Device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE
Scale: NTS




Note:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

Note:
Concrete shall be hand packed under the joint armor in the backwall.

## END BENT WALL ARMOR DETAIL
Scale: NTS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.8017 JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 8 OF 8
# DETAILS OF 198'-0" COMPOSITE PLATE GIRDER UNIT
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

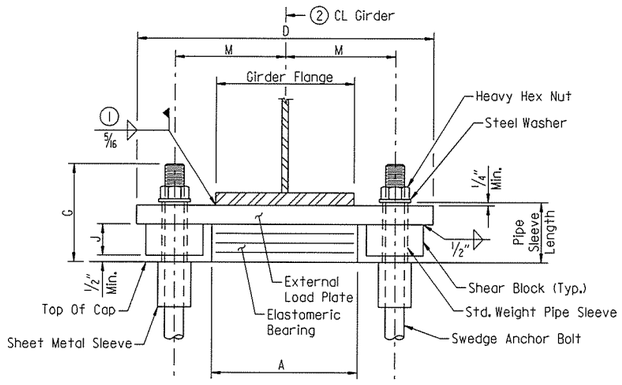
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: OCT. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X4_S8.DGN
SCALE: AS SHOWN

BRIDGE NO. 07307 DRAWING NO. 55249

drgood 9/4/2014 10:15:23 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_S8.dgn
REVISED DATE:

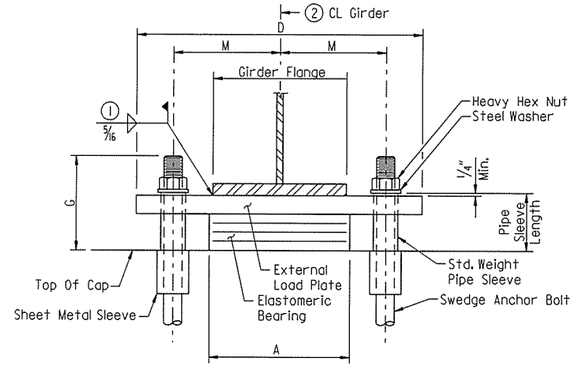
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 396 | 897 |
| | | | | ① 07307 | | ELAST. BEARINGS | | 55250 |



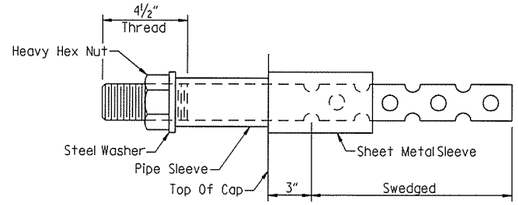

FRONT VIEW - AT BENT 2

① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

② Centerline elastomeric pad shall be aligned with centerline girder.



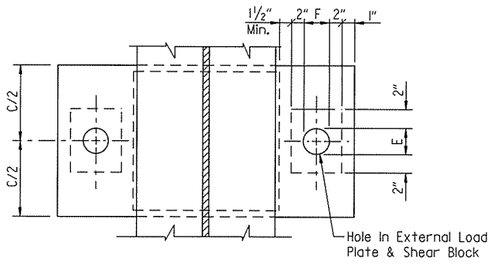

FRONT VIEW - AT BENTS 1, 3



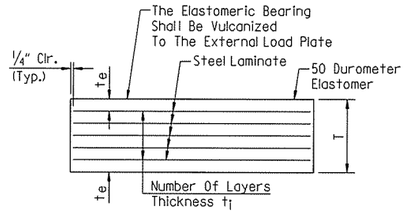

ANCHOR BOLT DETAIL

Note: Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

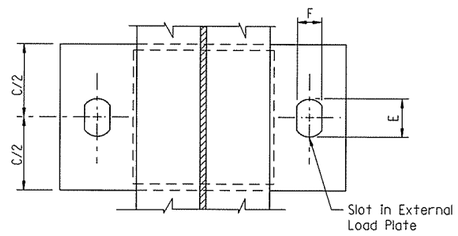



PLAN VIEW - AT BENT 2




$t_e$ = Thickness Of Elastomer Cover On Top And Bottom Of Pad
$t_i$ = Thickness Of Elastomer Between Steel Laminate
N = Number Of Elastomer Layers Of Thickness $t_i$

ELASTOMERIC BEARING




PLAN VIEW - AT BENTS 1, 3

## GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

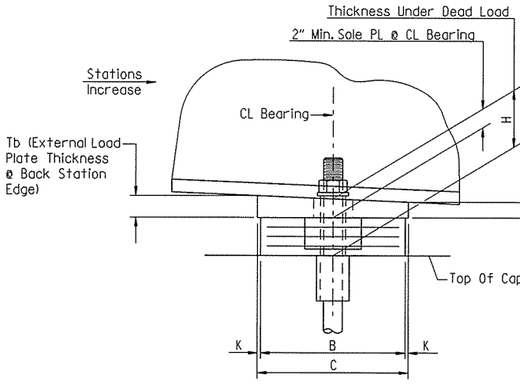
External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Section 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. The color of paint shall be Dark Brown and shall match Fed. Std. 595B, Color Chip No. 20108. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the TABLE OF FABRICATOR VARIABLES. Indentations shall be circular with rounded bottoms and staggered as shown in the details.

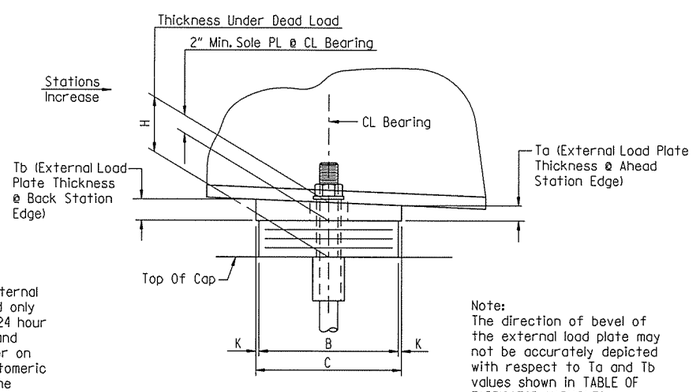
Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.




SIDE VIEW - AT BENT 2

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



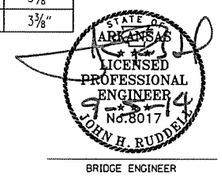

SIDE VIEW - AT BENTS 1, 3

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in TABLE OF FABRICATOR VARIABLES.

## TABLE OF FABRICATOR VARIABLES

| Bridge No. | Location | | Bearing Type | No. Of Bearings Each Bent | *Maximum Design Load (Kips) | Elastomeric Pad | | | | | | | External Load Plate | | | | | | | | Anchor Bolt | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bent No.(s) | Beam Or Girder No. | | | | G | H | A | B | N | $t_i$ | $t_e$ | No. & Thickness Of Steel Laminate | T | C | D | E | F | J | K | M | $T_a$ | $T_b$ | Anchor Bolt (Dia. x L) | Anchor Bolt Grade | Pipe Sleeve Size (Dia. x L) | Sheet Metal Sleeve Size (Dia. x L) | Steel Washer Size (O.D.) |
| - | 1 | All | Exp. | 5 | 142 | 8 9/16" | 5 5/16" | 18" | 10" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 11" | 29 1/2" | 4 1/4" | 2 5/8" | - | 1/2" | 11 3/4" | 2.17" | 1.83" | 1 3/4" x 29" | 55 | 2" x 5 13/16" | 4" x 7" | 3 3/8" |
| | 2 | All | Fixed | 5 | 364 | 8 9/16" | 5 5/16" | 20" | 12" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 13" | 38 1/4" | 2 5/8" | 2 5/8" | 3" | 1/2" | 14 11/16" | 2.17" | 1.83" | 1 3/4" x 29" | 55 | 2" x 5 11/16" | 4" x 7" | 3 3/8" |
| | 3 | All | Exp. | 5 | 142 | 8 9/16" | 5 5/16" | 18" | 10" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 11" | 29 1/2" | 4 1/4" | 2 5/8" | - | 1/2" | 11 3/4" | 2.12" | 1.88" | 1 3/4" x 29" | 55 | 2" x 5 13/16" | 4" x 7" | 3 3/8" |

* Maximum Design Load = Service I Limit State




BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS
# HIGHWAY 112
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X4_EI.DGN
CHECKED BY: ABH DATE: OCT. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

BRIDGE NO. 07307 DRAWING NO. 55250

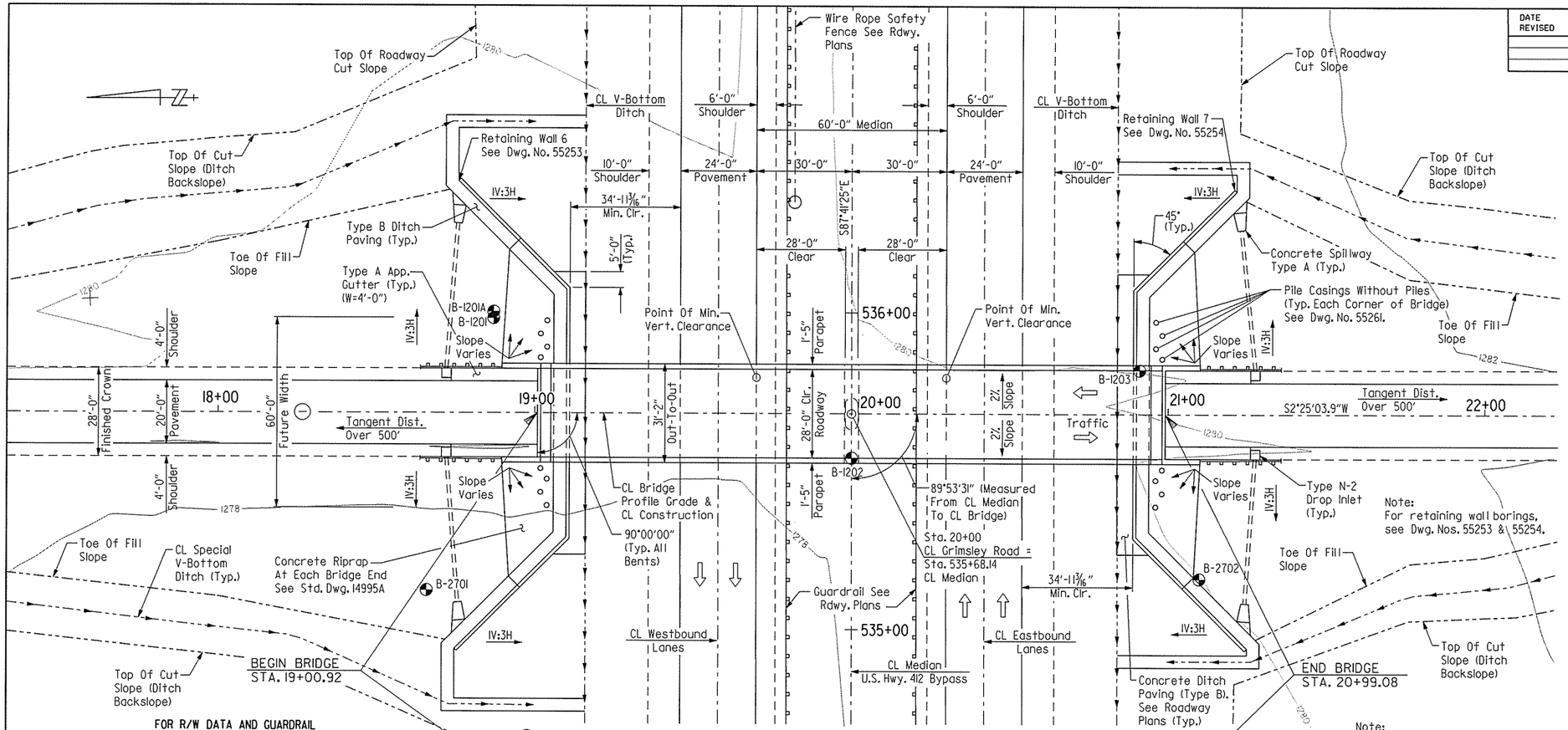
drgood 9/4/2014 10:15:23 AM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\059I1680 - AHTD Springdale Bypass\Drawings\BRG\HWY112\BCA0907x4_EI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 397 | 897 |
| | | | | ① 07308 | | LAYOUT | | 55251 |

## BORING LEGEND

A - Tan, gray & yellowish orange, very dense clayey gravel.
B - Brown & white, very stiff fat clay with gravel.
C - Brown & tan, medium dense to dense clayey gravel with sand.
D - Tan, white, light gray, brown, black & beige, dense to very dense silty gravel with sand.
E - Gray, dark beige & light gray, very loose to very dense clayey gravel with sand.
F - Dark brown & dark gray, very dense clayey gravel.
G - Brown & light gray, medium dense to dense clayey gravel with sand.
H - Light brown, beige, brown & light tan, medium dense to dense silty gravel with sand.
I - Light beige, brown, light gray, tan, olive gray & gray, dense to very dense clayey gravel with sand.
J - Gray, dark tan & yellowish orange, very dense clayey gravel.
K - Brown & red, very dense, clayey gravel with sand.
L - Red, dense to very dense, clayey gravel with sand.
M - Brown & red, very dense, clayey gravel with sand.
N - Red, dense to very dense, silty sand with gravel.
O - Red, clayey gravel with sand.
P - Chert: White, lt. gray, weathered.
Q - Limestone: Lt. gray, gray, fresh.
R - Chert: White, lt. gray, gray, fresh.
S - Chert: White, lt. gray, intensely weathered.
T - Clay: Dark red, brown.
U - Chert: White, lt. gray, gray, porous.
V - Clay: Red, lt. brown, plastic.

Note:
For retaining wall borings, see Dwg. Nos. 55253 & 55254.




PLAN

① Retaining walls accomodate a future bridge width consisting of four 11' lanes with two 6'-6" sidewalks.

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

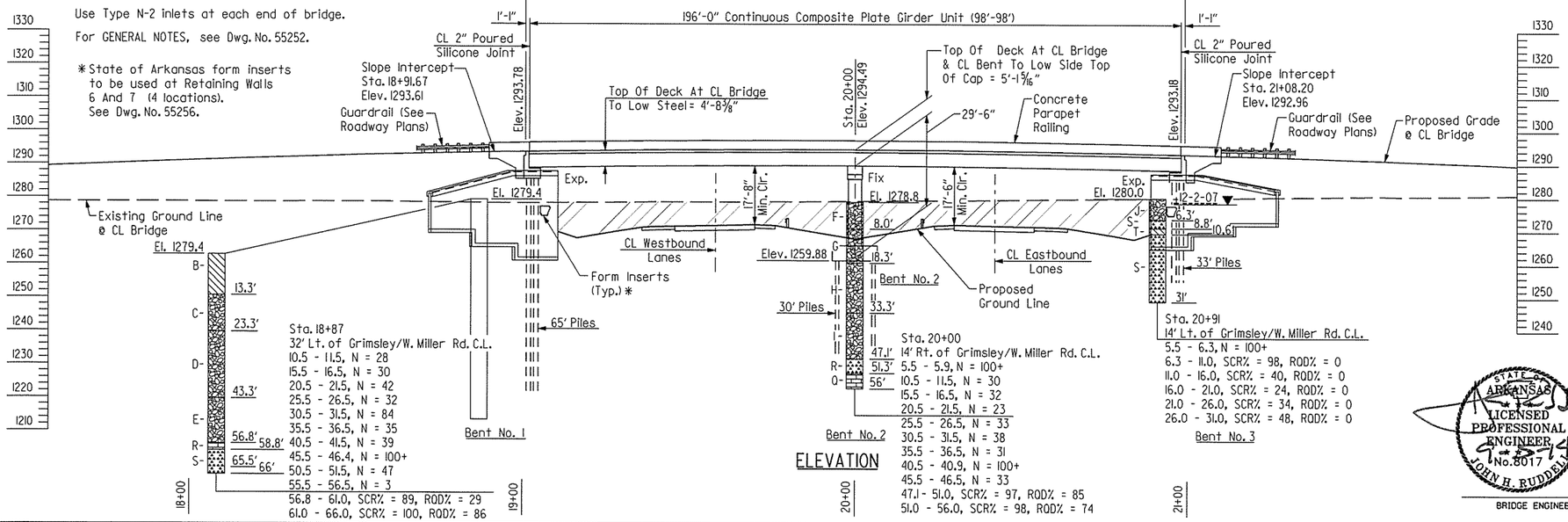
Notes:
Use Type A approach gutters (W=4'-0") at each end of bridge. See Std. Dwg. No. 55030A.

Use Type N-2 inlets at each end of bridge.

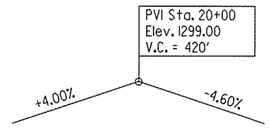
For GENERAL NOTES, see Dwg. No. 55252.

* State of Arkansas form inserts to be used at Retaining Walls 6 And 7 (4 locations). See Dwg. No. 55256.

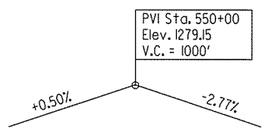
Note:
Stations and elevations shown are along CL Bridge. Elevations shown are at working point.




ELEVATION




**VERTICAL CURVE DATA**
Grimsley Road
(Profile Grade Along CL Bridge)




**VERTICAL CURVE DATA**
U.S. Highwy 412 Bypass
(Profile Grade Along Inside Edge Of Pavement)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 6
# LAYOUT OF BRIDGE
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2007 FILENAME: BCA0907X5_LI.DGN
CHECKED BY: JHR DATE: MAY 2007 SCALE: 1"=20'
DESIGNED BY: JRD DATE: MAY 2007

BRIDGE NO. 07308 DRAWING NO. 55251

9/3/2014
drgood
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_LI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 398 | 897 |
| | | | | 07308 | | LAYOUT | | 55252 |

# GENERAL NOTES

BENCH MARK: TBM 924 CPS. 1.80' Rt. Of Sta. 500+43.07
Elevation = 1264.41

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{01}$ = 0.125 Site Class = D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Superstructure) | f'c = 4000 psi |
| Class S - Bridge Concrete (Substructure) | f'c = 3500 psi |
| Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, GR. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, GR. 36) | Fy = 36,000 psi |

FORM INSERT: State of Arkansas form insert to be used on retaining walls (4 locations). See Dwg. No. 55256.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0907 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons. Drive all piles in Bent 2 to a minimum penetration of 15' below bottom of footing. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

The Contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction, extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven after any required preboring and through the open casings after embankment to bottom of cap is in place. Any required preboring will be measured from bottom of leveling pad. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill shall not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

PILE CASINGS WITHOUT PILES: Additional pile casings will be required in accordance with Dwg. No. 55261 to provide for future widening. These casings shall be installed during embankment construction and shall extend from top of leveling pad to approximately one foot below the finished ground. Pile casing diameter and material shall conform to the above. No piling shall be driven through these casings, but they shall be kept clean from debris and capped at the top with a durable waterproof material as approved by the Engineer. Payment for this work and materials shall be considered subsidiary to other contract items in the job.

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at Bents 1 and 3 in accordance with SP Job CA0907 "EXPLORATORY HOLES". The quantities of exploratory holes shown are for bidding purposes only. The actual locations, number, and depths of exploratory holes are to be determined in the field by the Engineer.

PREBORING: Preboring is required for all piling at Bents 1 and 3 if exploratory holes indicate that the depth of rock is less than 8'. Preboring at Bents 1 and 3, if required, shall take place after excavation to top of leveling pad is complete and shall be to a 3' depth into material designated as Chert or Limestone on the boring legend. Quantities of preboring shown are for bidding purposes only. The actual size and depths of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored hole shall be backfilled with an approved non-shrink grout, or other approved material to completely fill voids. The backfill and any required casings will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

BORING LOGS: Boring Logs may be obtained from Programs And Contracts Division.

PILE FOOTING: The top of footings shall be set a minimum of 2'-0" below finished ground. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled in accordance with Subsection 801.08.

MAINTENANCE OF TRAFFIC: See roadway drawings.

| DETAIL DRAWINGS: | DRAWING NOS: |
|---|---|
| End Bents | 55257-55261 |
| Intermediate Bent | 55262 & 55263 |
| 196' Cont. Comp. Plate Girder Unit | 55264-55271 |
| Elastomeric Bearings | 55272 |
| Type A Approach Gutters | 55030A |
| Concrete Riprap | 55002 |
| Steel Piling | 55020 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-5-14

BRIDGE ENGINEER

SHEET 2 OF 6
LAYOUT OF BRIDGE
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2008 FILENAME: BCA0907X5_L2.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: JRD DATE: JAN. 2008

BRIDGE NO. 07308 DRAWING NO. 55252

drgood 9/3/2014 1:27:05 PM
WORKSPACE: AHTD Bridge
\\GLITDCN\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907X5_L2.dgn
REVISED DATE:

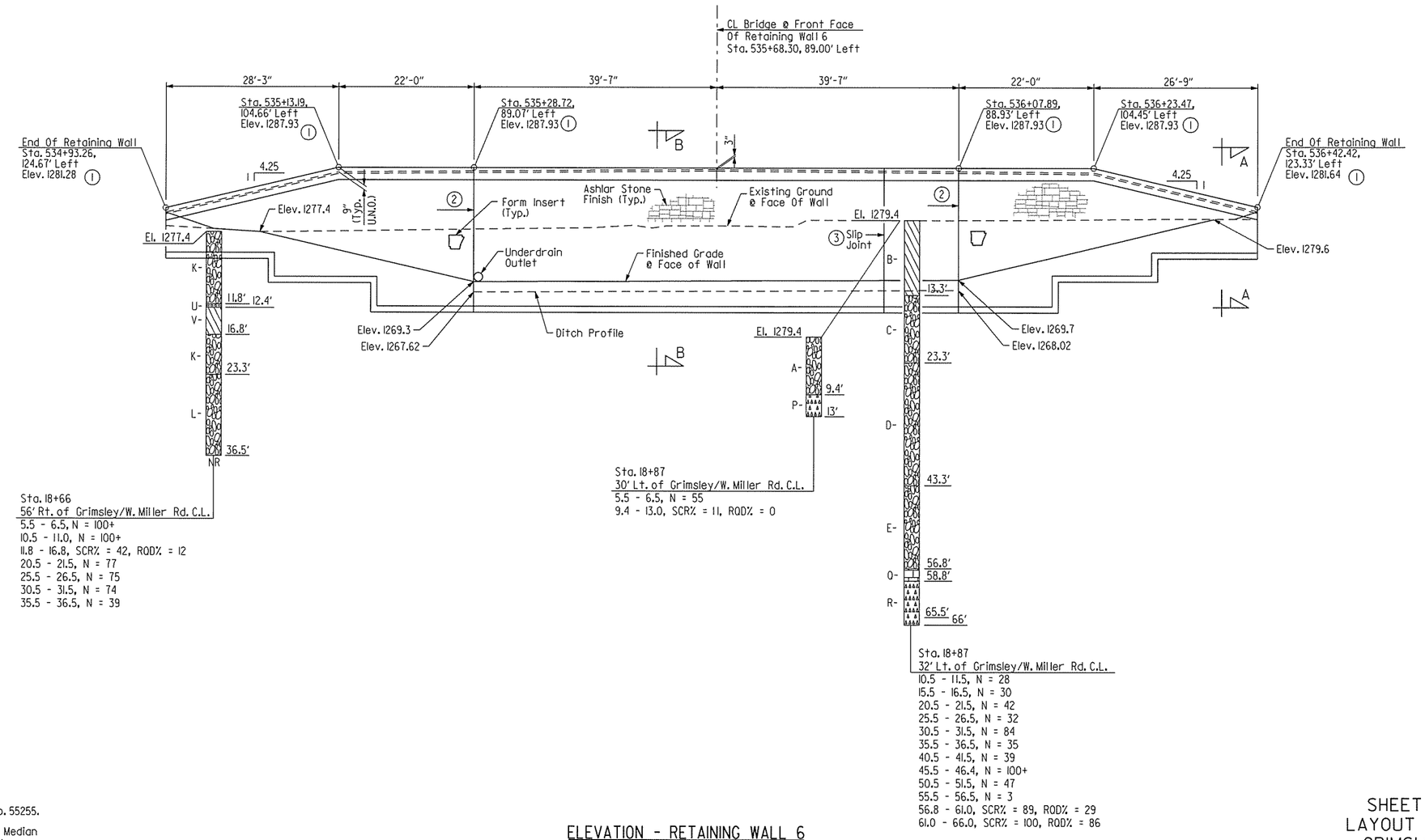
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 399 | 897 |
| 07308 | | LAYOUT | | 55253 |

(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall

(3) Install slip joints. Location to be determined by the Contractor prior to fabrication of panels.




Sta. 18+66
56' Rt. of Grimsley/W. Miller Rd. C.L.
5.5 - 6.5, N = 100+
10.5 - 11.0, N = 100+
11.8 - 16.8, SCR% = 42, ROD% = 12
20.5 - 21.5, N = 77
25.5 - 26.5, N = 75
30.5 - 31.5, N = 74
35.5 - 36.5, N = 39

Sta. 18+87
30' Lt. of Grimsley/W. Miller Rd. C.L.
5.5 - 6.5, N = 55
9.4 - 13.0, SCR% = 11, ROD% = 0

Sta. 18+87
32' Lt. of Grimsley/W. Miller Rd. C.L.
10.5 - 11.5, N = 28
15.5 - 16.5, N = 30
20.5 - 21.5, N = 42
25.5 - 26.5, N = 32
30.5 - 31.5, N = 84
35.5 - 36.5, N = 35
40.5 - 41.5, N = 39
45.5 - 46.4, N = 100+
50.5 - 51.5, N = 47
55.5 - 56.5, N = 3
56.8 - 61.0, SCR% = 89, ROD% = 29
61.0 - 66.0, SCR% = 100, ROD% = 86

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55255.

Offset dimensions are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55256.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55251.

LEGEND
U.N.O - Unless Noted Otherwise
NR - No Refusal

ELEVATION - RETAINING WALL 6
(Looking From Front Face of Wall)
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
4-15-14
BRIDGE ENGINEER

SHEET 3 OF 6
LAYOUT OF BRIDGE
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2008 FILENAME: BCA0907X5_L3.DGN
CHECKED BY: BWS DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: JRD DATE: JAN. 2008

BRIDGE NO. 07308 DRAWING NO. 55253

drgopsd
WORKSPACE: AHTD 9/5/2014 1:27:06 PM
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_L3.dgn
REVISED DATE:

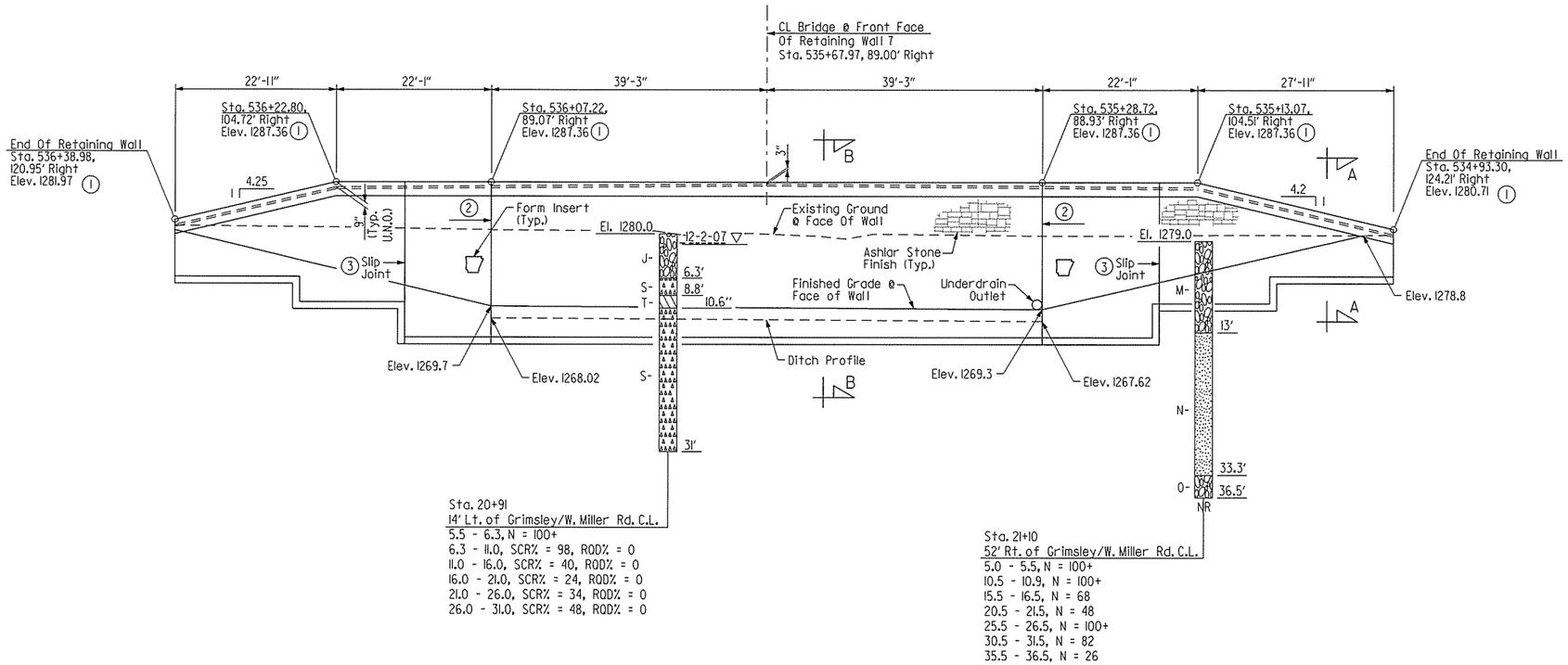
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 400 | 897 |
| 07308 | | LAYOUT | | 55254 |

(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall

(3) Install slip joints. Location to be determined by the Contractor prior to fabrication of panels.




Sta. 20+91
14' Lt. of Grimsley/W. Miller Rd. C.L.
5.5 - 6.3, N = 100+
6.3 - 11.0, SCR% = 98, RQD% = 0
11.0 - 16.0, SCR% = 40, RQD% = 0
16.0 - 21.0, SCR% = 24, RQD% = 0
21.0 - 26.0, SCR% = 34, RQD% = 0
26.0 - 31.0, SCR% = 48, RQD% = 0

Sta. 21+10
52' Rt. of Grimsley/W. Miller Rd. C.L.
5.0 - 5.5, N = 100+
10.5 - 10.9, N = 100+
15.5 - 16.5, N = 68
20.5 - 21.5, N = 48
25.5 - 26.5, N = 100+
30.5 - 31.5, N = 82
35.5 - 36.5, N = 26

## ELEVATION - RETAINING WALL 7

(Looking From Front Face of Wall)
Scale: NTS

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55255.

Offset dimensions are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55256.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55251.

### LEGEND

U.N.O - Unless Noted Otherwise
NR - No Refusal

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 4 OF 6
LAYOUT OF BRIDGE
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2

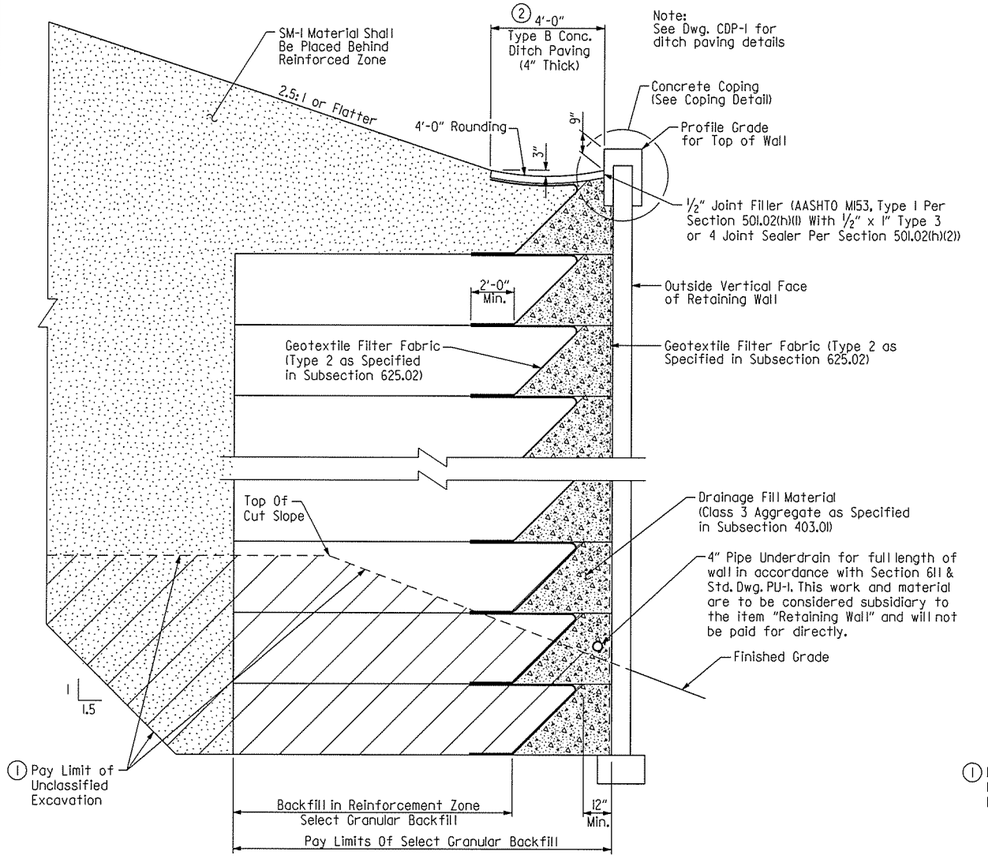
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2008
CHECKED BY: BWS DATE: NOV. 2011
DESIGNED BY: JRD DATE: JAN. 2008
FILENAME: BCA0907X5_L4.DGN
SCALE: AS SHOWN

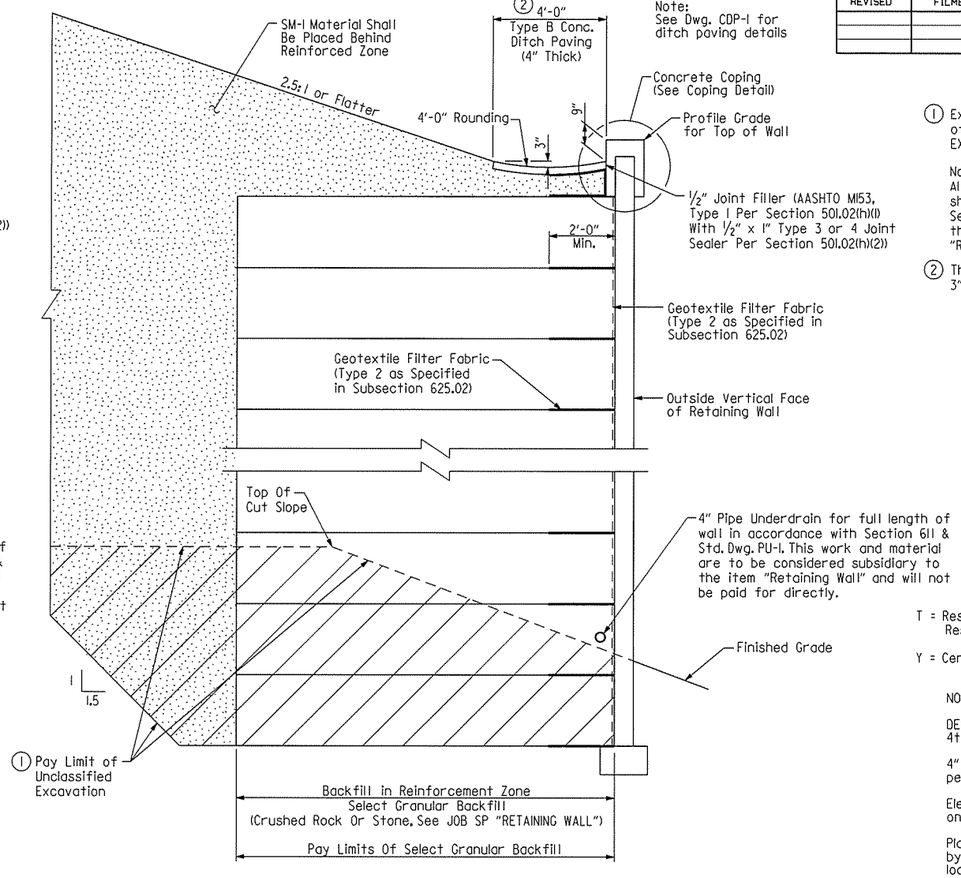
BRIDGE NO. 07308 DRAWING NO. 55254

dropod 9/3/2014 1:27:06 PM
WORKSPACE: AHTD Bridge
\\LITDCON\LITProjects\2005\0598680 - AHTD Springdale Byposs\Drawings\BRG\Grimsley\BCA0907X5_L4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 401 | 897 |
| | | | | 07308 | | LAYOUT | | 55255 |




## SECTION A-A
(Backfill Method A)
No Scale

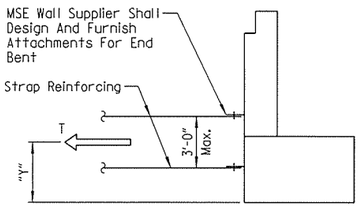



## SECTION A-A
(Backfill Method B)
No Scale

(1) Excavation required for reinforcing zone, leveling pad and placement of SM-1 material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP Job CA0907 "RETAINING WALL".

Note:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL". Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP Job CA0907 "RETAINING WALL".

(2) The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.




## END BENT STRAP DETAIL

| LIMIT STATE | T | Y |
|---|---|---|
| | Kips/Ft. | Ft. |
| Service | 3.3 | 3 |
| Strength | 4.9 | |

T = Resultant Force Required To Be Resisted By Strap Reinforcing

Y = Centroid Of Strap Reinforcing

NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

4" pipe underdrain shall maintain a minimum slope of 1/8" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 55257-55261 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See Special Provision Job CA0907 "RETAINING WALL" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

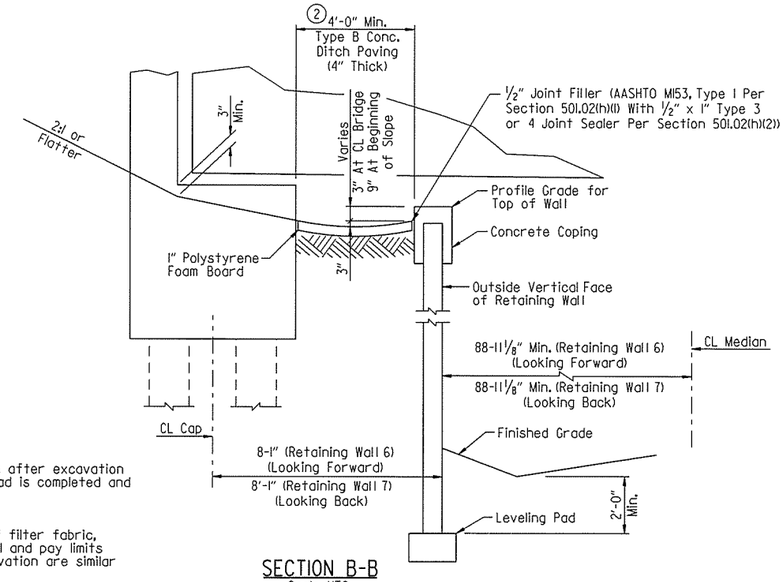
Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP Job CA0907 "RETAINING WALL".

See Dwg. No. 55256 for form insert location and details.

Large scale undercut is not anticipated, however some undercutting and backfilling may be required to satisfy factored bearing resistance requirements based on the final wall design.

Undercutting, if required, shall be backfilled with Select Material (Class SM-1) meeting the requirements of Section 302.

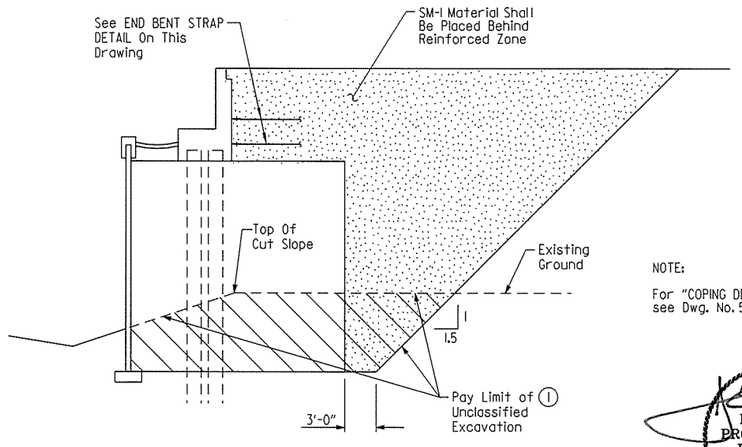
Any excavation and backfill required for undercutting shall be paid for as "Select Material (Class SM-1)" in accordance with SP Job CA0907 "RETAINING WALL".




## SECTION B-B
Scale: NTS

Note:
Piling shall be driven after excavation to top of leveling pad is completed and prior to backfilling.

Note:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to SECTION A-A.




## EMBANKMENT DETAIL
Scale: NTS

NOTE:

For "COPING DETAIL" and "OUTLET DETAIL", see Dwg. No. 55234.

STATE OF ARKANSAS 13547 LICENSED PROFESSIONAL ENGINEER No. 13547 JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 5 OF 6
# LAYOUT OF BRIDGE
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

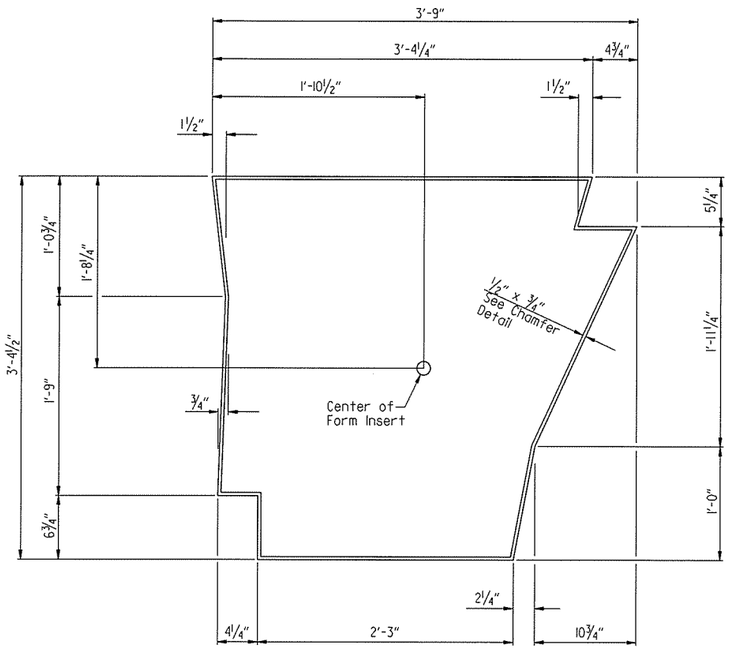
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X5_L5.DGN
CHECKED BY: JHR DATE: MAR. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF/PCC DATE: MAR. 2011

BRIDGE NO. 07308 DRAWING NO. 55255

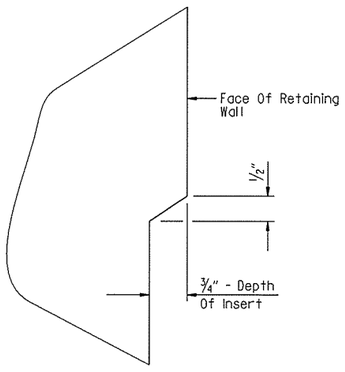
dropod 9/3/2014 12:17:06 PM
WORKSPACE: AHTD Bridge
\\GLITDCOLL\ITP\Projects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_L5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 402 | 897 |
| | | | | (1) 07308 | | ARK. FORM INSERT | | 55256 |

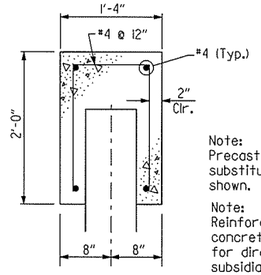



Note:
Use form insert on designated walls as noted on details of M.S.E. Walls, Dwg. Nos. 55231 & 55232.

## FORM INSERT DETAILS AT MSE WALL
Scale: 1½" = 1'-0"



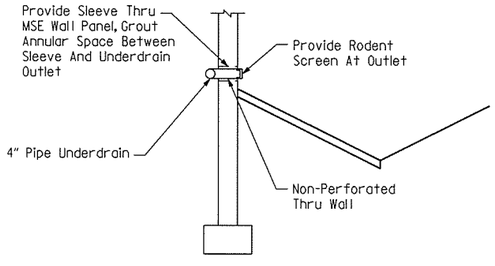

## CHAMFER DETAIL
Scale: NTS



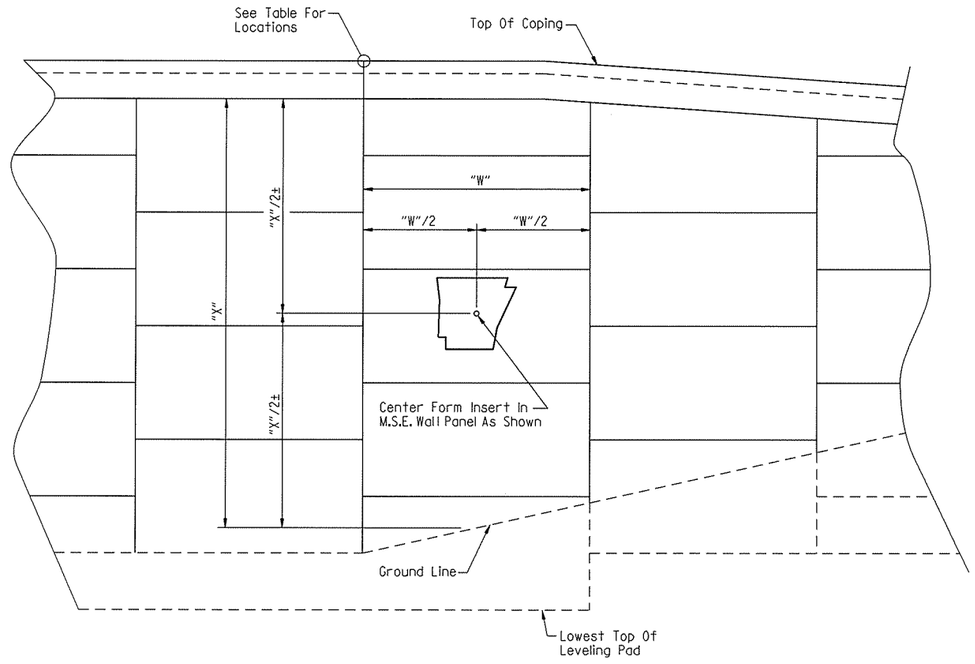

Note:
Precast concrete coping may be substituted for cast-in-place coping shown.

Note:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALL".

## COPING DETAIL
Scale: 1" = 1'-0"




## OUTLET DETAIL
Scale: NTS




## DEVELOPED ELEVATION AT MSE WALL
Scale: NTS

| LOCATION OF FORM INSERT | |
|---|---|
| Location | Station |
| Retaining Wall 6 | 535+28.72 And 536+07.89 |
| Retaining Wall 7 | 535+28.72 And 536+07.22 |

GENERAL NOTES:

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALL".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

Recessed image (including chamfers) of State of Arkansas insert shall be given a Class 3 Textured Coating Finish as specified in SP Job CA0907 "TEXTURED COATING FINISH."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

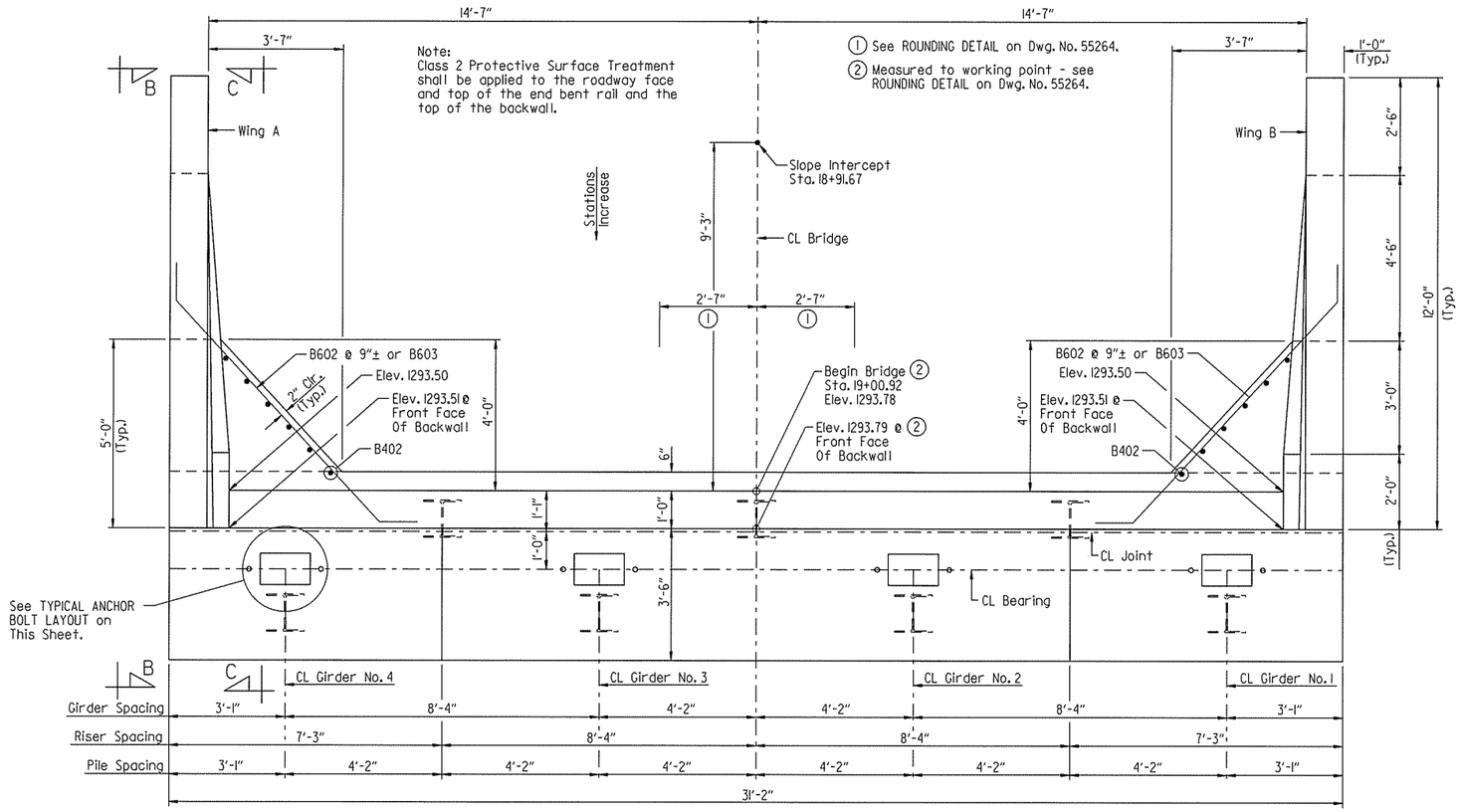
SHEET 6 OF 6
LAYOUT OF BRIDGE
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2011
CHECKED BY: WRF DATE: FEB. 2011
DESIGNED BY: PCC DATE: FEB. 2011
FILENAME: BCA0907X5_L6.DGN
SCALE: AS SHOWN

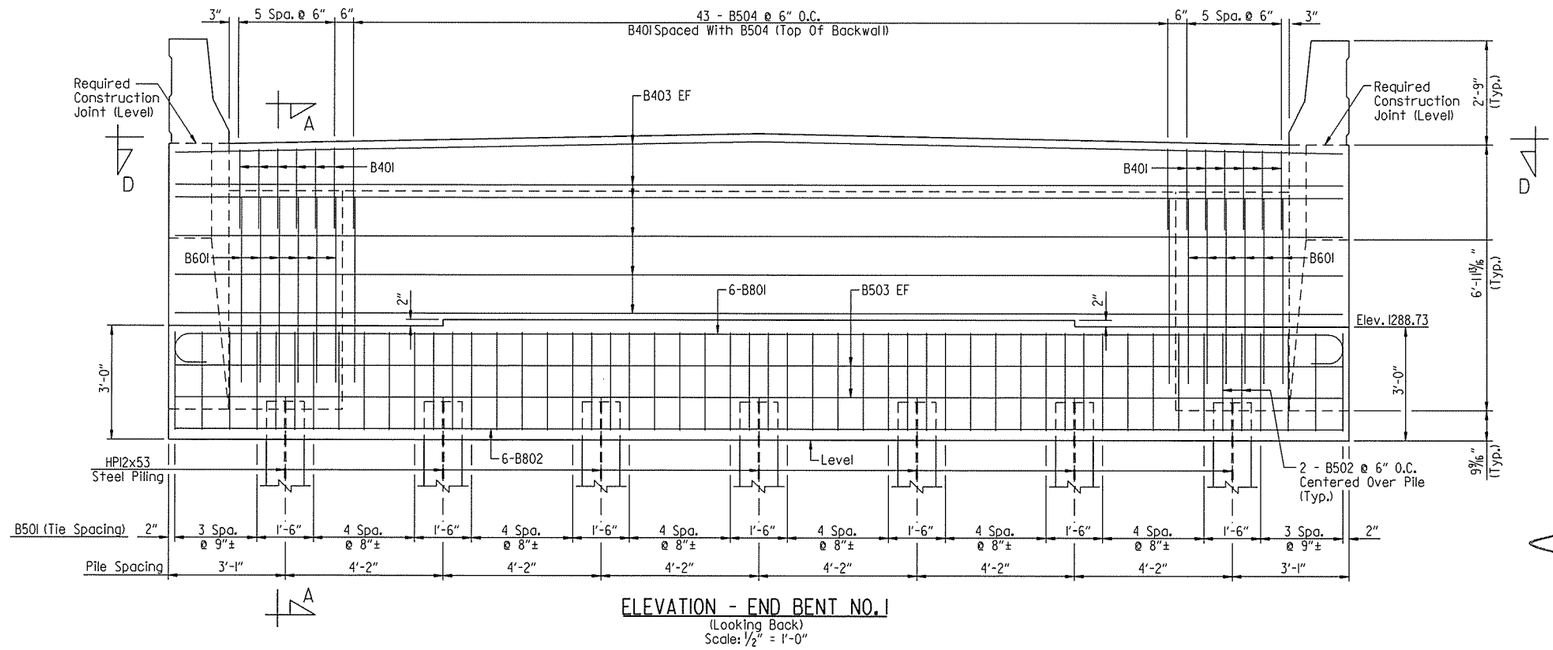
BRIDGE NO. 07308 DRAWING NO. 55256

drgood 9/3/2014 1:27:07 PM
WORKSPACE: AHTD Bridge
V:\ALLTDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_L6.dgn
REVISED DATE:

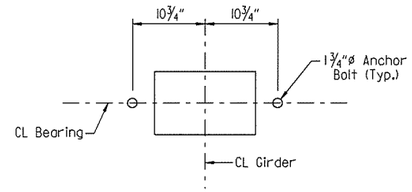
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 403 | 897 |
| | | | | (1) 07308 | | END BENT DETAILS | | 55257 |




PLAN - END BENT NO. 1
Scale: 1/2" = 1'-0"




ELEVATION - END BENT NO. 1
(Looking Back)
Scale: 1/2" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, See LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55259 & 55260.

For details of elastomeric bearing pads, see Dwg. No. 55272.

For BAR LIST - PER BENT & BAR BENDING DIAGRAMS, see Dwg. No. 55260.

For SECTION A-A, VIEW B-B & VIEW C-C, see Dwg. No. 55259.

For VIEW D-D, see Dwg. No. 55260.

## LEGEND

EF = Each Face

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8014 JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 1 OF 5
# DETAILS OF END BENTS
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

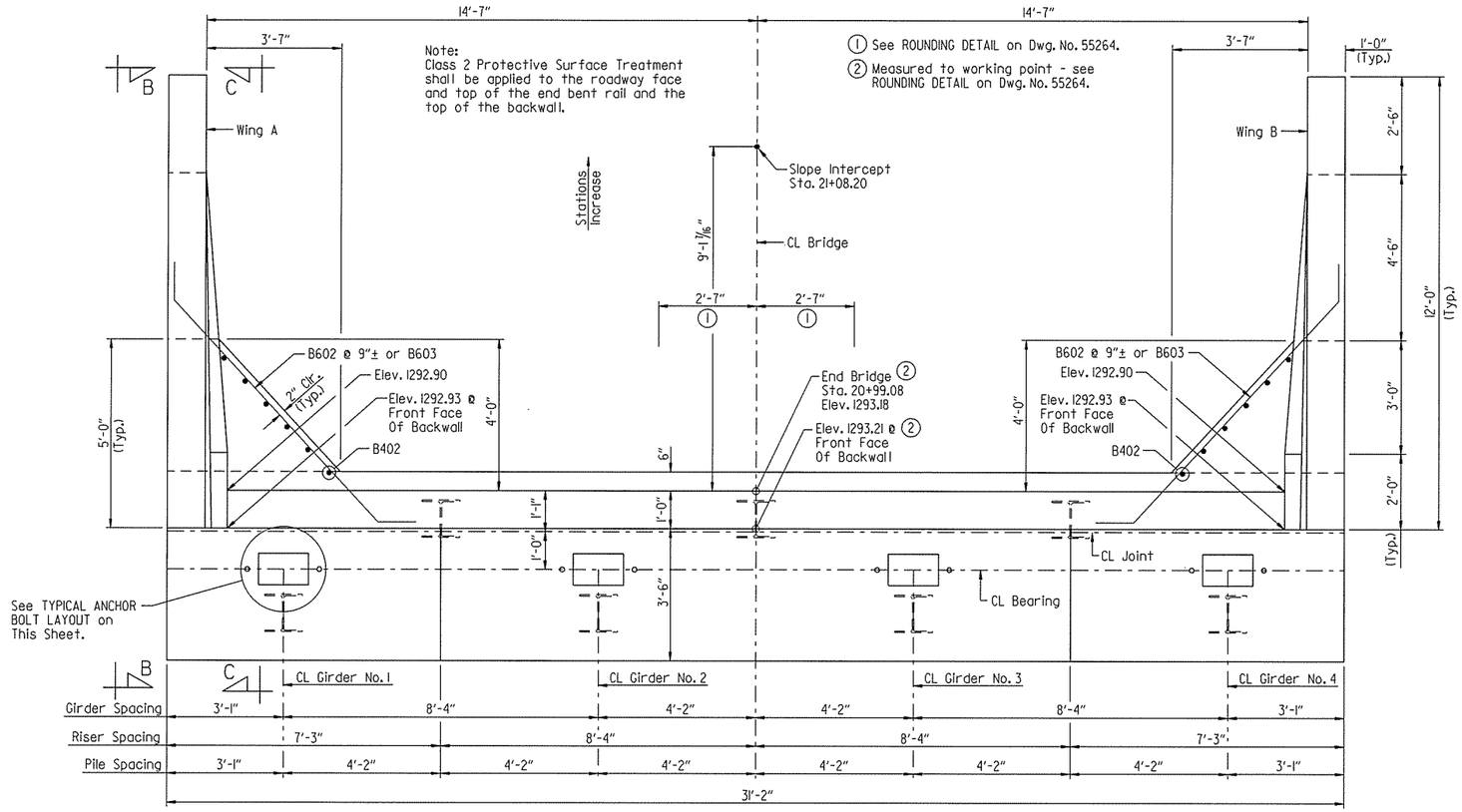
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X5_A1.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

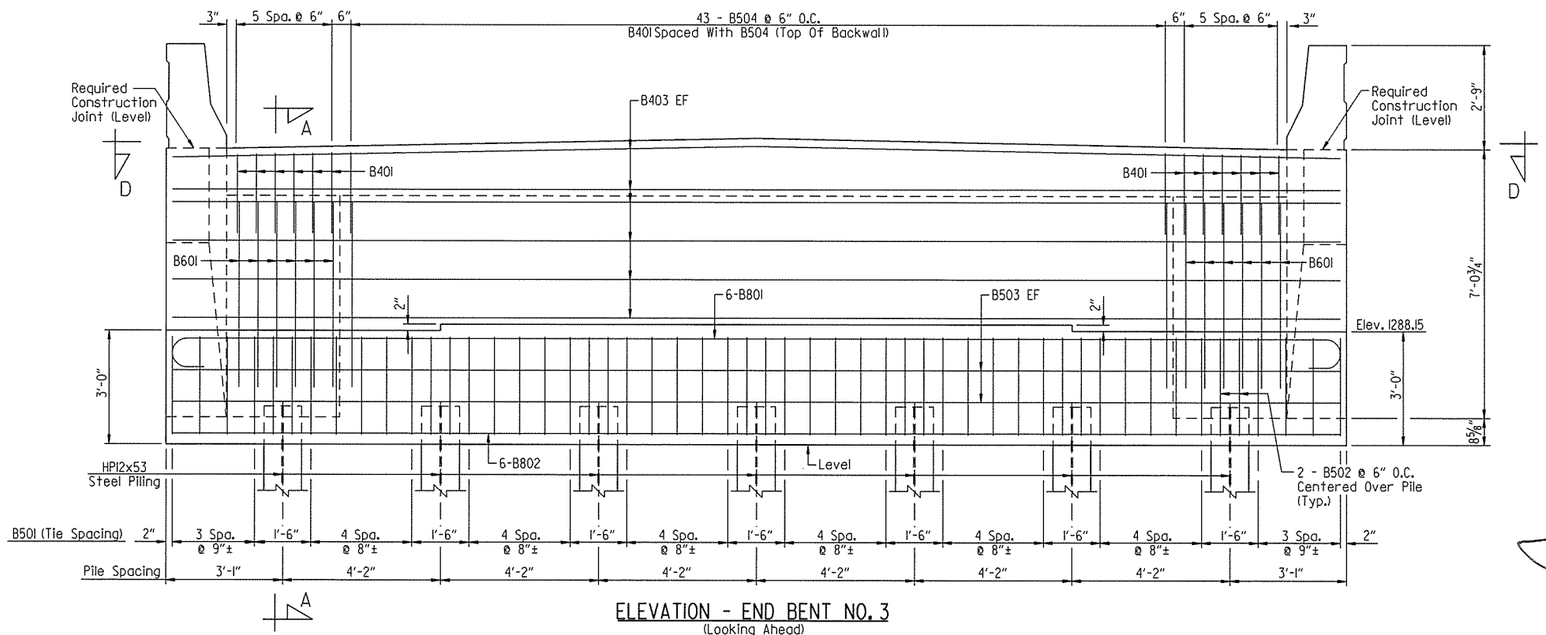
BRIDGE NO. 07308 DRAWING NO. 55257

drgood 9/3/2014 1:27:08 PM
WORKSPACE: AHTD Bridge
\\COLITIDOFL1\Projects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_A1.dgn
REVISED DATE:

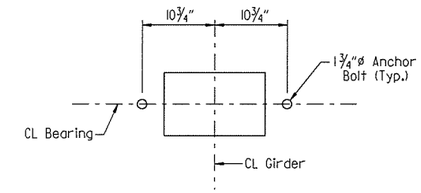
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 404 | 897 |
| | | | | (1) 07308 | | END BENT DETAILS | | 55258 |




PLAN - END BENT NO. 3
Scale: 1/2" = 1'-0"




ELEVATION - END BENT NO. 3
(Looking Ahead)
Scale: 1/2" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55259 & 55260.

For details of elastomeric bearing pads, see Dwg. No. 55272.

For BAR LIST - PER BENT & BAR BENDING DIAGRAMS, see Dwg. No. 55260.

For SECTION A-A, VIEW B-B & VIEW C-C, see Dwg. No. 55259.

For VIEW D-D, see Dwg. No. 55260.

## LEGEND

EF = Each Face

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 2 OF 5
# DETAILS OF END BENTS
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

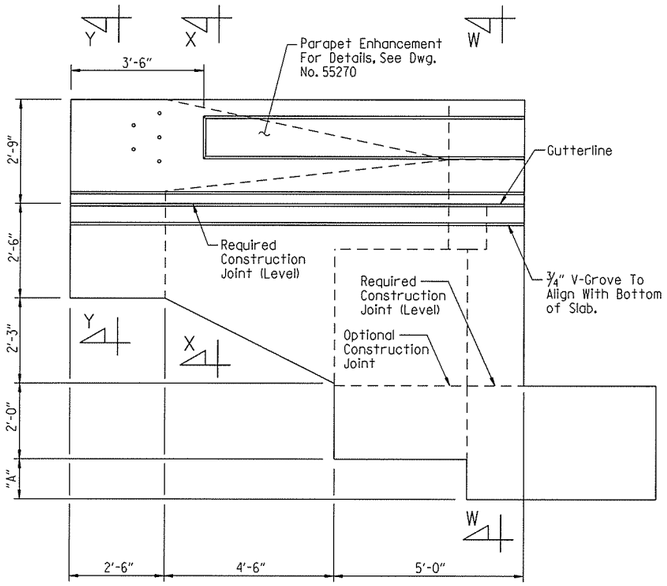
DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: APR. 2011
DESIGNED BY: PCC DATE: MAR. 2011

FILENAME: BCA0907X5_A2.DGN
SCALE: AS SHOWN

BRIDGE NO. 07308 DRAWING NO. 55258

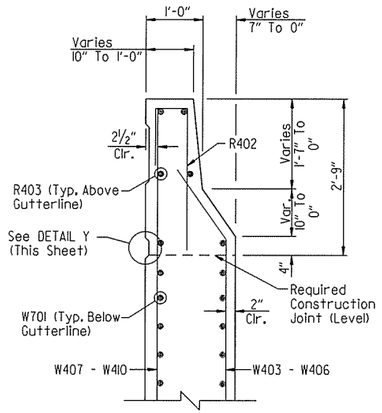
drgood 9/3/2014 1:27:08 PM
WORKSPACE: AHTD Bridge
\\CLITDCON_ITP\Projects\2005\059II680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_A2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 405 | 897 |
| | | | | 1 | 07308 | END BENT DETAILS | | 55259 |

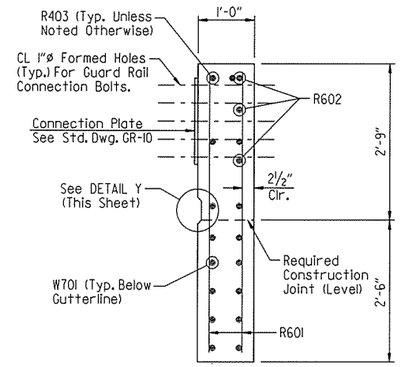



VIEW B-B
Scale: ½" = 1'-0"

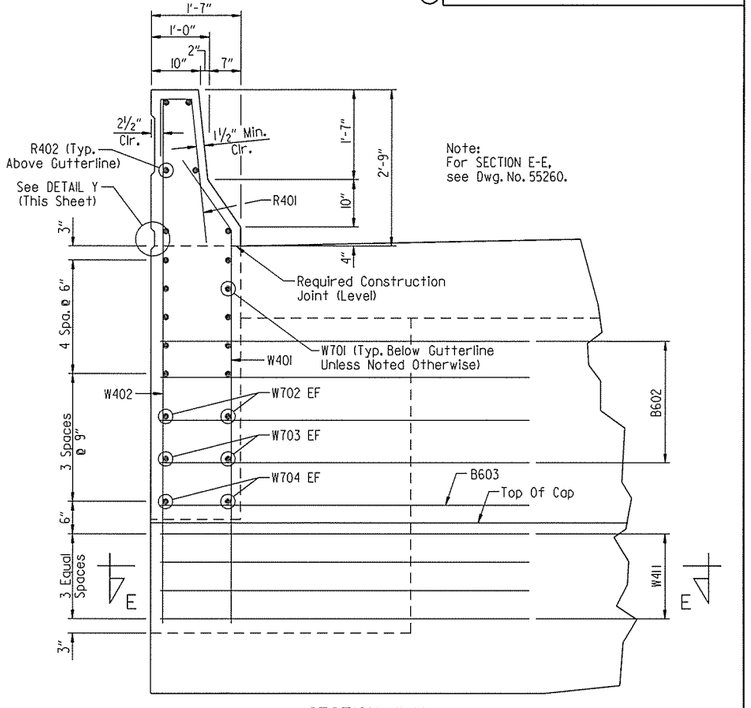
LEGEND
FF = Front Face
BF = Back Face
EF = Each Face



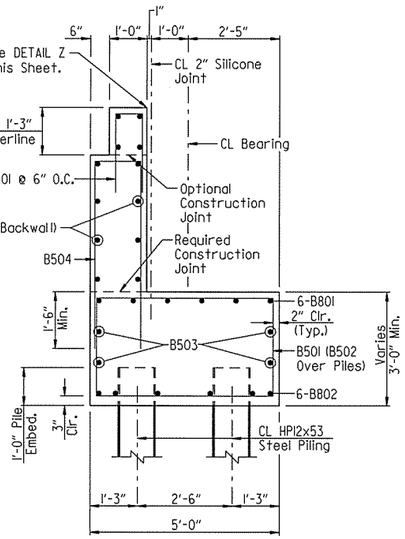

SECTION X-X
Scale: ¾" = 1'-0"



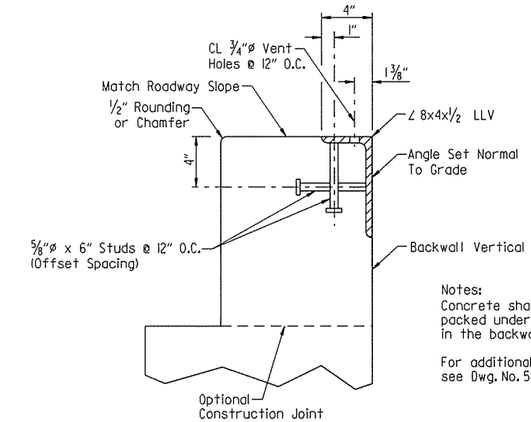

SECTION Y-Y
Scale: ¾" = 1'-0"



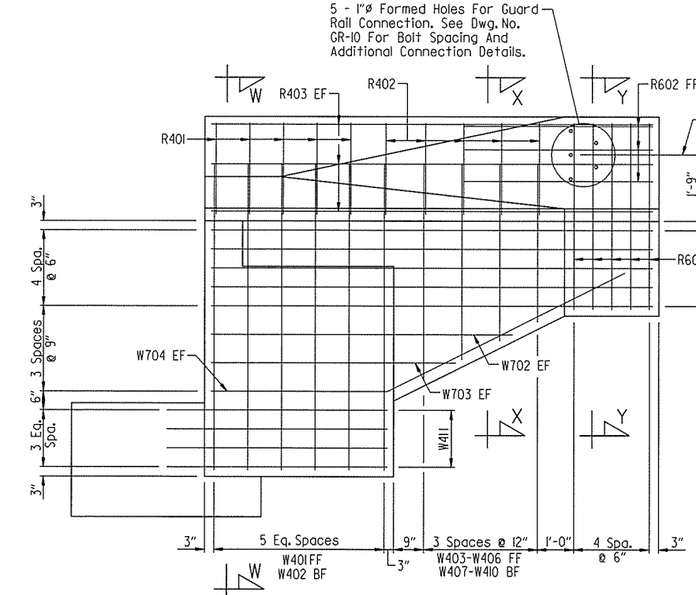

SECTION W-W
Scale: ¾" = 1'-0"




SECTION A-A
Scale: ¼" = 1'-0"



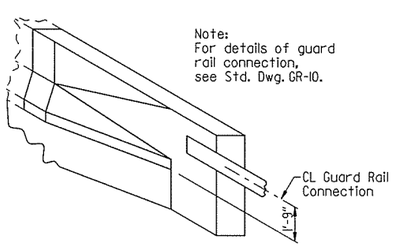

DETAIL Z
Scale: 2" = 1'-0"



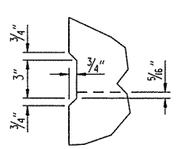

VIEW C-C
Scale: ½" = 1'-0"

| TABLE OF VARIABLES | | | |
|---|---|---|---|
| Bent No. | Wing | Dim. "A" | Elev. "B" |
| 1 | A | 9 9/16" | 1293.28 |
| 1 | B | 9 9/16" | 1293.28 |
| 3 | A | 8 5/8" | 1292.62 |
| 3 | B | 8 5/8" | 1292.62 |

Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE on Dwg. No. 55271 for additional information.




THREE DIMENSIONAL VIEW OF RAIL
Scale: NTS




DETAIL Y
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 3 OF 5
# DETAILS OF END BENTS
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

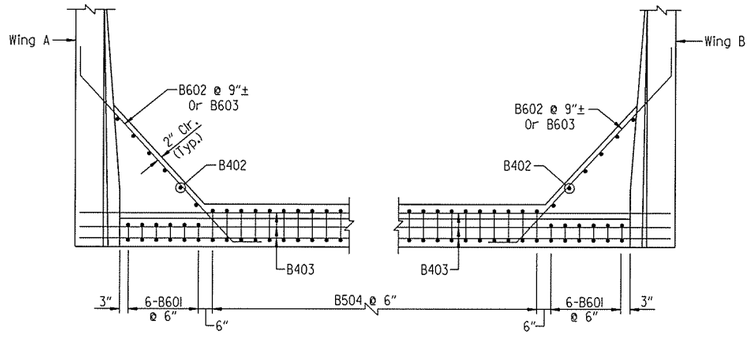
DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: BWS DATE: APR. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X5_A3.DGN
SCALE: AS SHOWN

BRIDGE NO. 07308 DRAWING NO. 55259

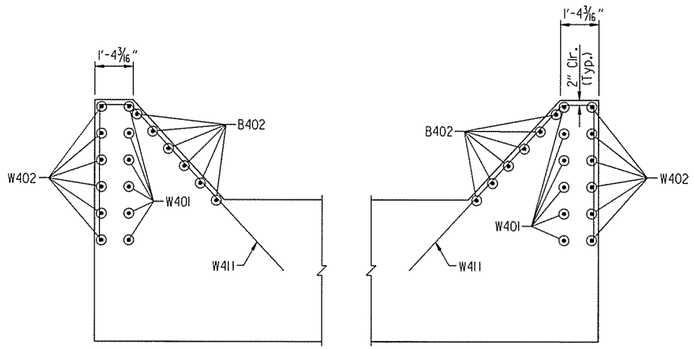
drgood 9/3/2004 1:27:09 PM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907X5_A3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 406 | 897 |
| 1 | 07308 | END BENT DETAILS | | 55260 |



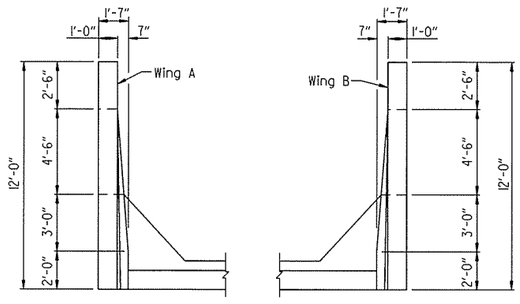

VIEW D-D
Scale: 3/8" = 1'-0"




SECTION E-E (WING A)
Scale: 3/8" = 1'-0"




SECTION E-E (WING B)
Scale: 3/8" = 1'-0"




PLAN OF RAIL
Scale: 1/4" = 1'-0"

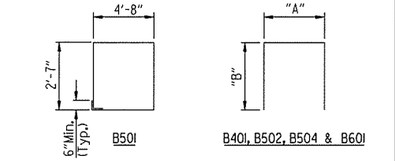
## BAR LIST - PER BENT

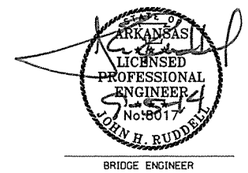
| MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|
| B401 | 56 | 5'-6" | 8" | 2'-6" | 2" |
| B402 | 12 | 5'-2" | | | Str. |
| B403 | 12 | 30'-10" | | | Str. |
| | | | | | |
| B501 | 38 | 15'-0" | | | 2 1/2" |
| B502 | 14 | 9'-7 1/2" | 4'-8" | 2'-7" | 2 1/2" |
| B503 | 4 | 30'-10" | | | Str. |
| B504 | 43 | 10'-11 1/2" | 1'-2" | 5'-0" | 2 1/2" |
| | | | | | |
| B601 | 12 | 10'-10" | 8" | 5'-3" | 4 1/2" |
| B602 | 8 | 10'-0" | | | 4 1/2" |
| B603 | 2 | 9'-0" | | | 4 1/2" |
| | | | | | |
| B801 | 6 | 32'-8" | | | 6" |
| B802 | 6 | 30'-10" | | | Str. |
| | | | | | |
| R401 | 10 | 3'-11" | | | 2" |
| R402 | 10 | 4'-0" | | | 2" |
| R403 | 12 | 11'-8" | | | Str. |
| | | | | | |
| R601 | 20 | 4'-6" | | | Str. |
| R602 | 6 | 5'-0" | | | Str. |
| | | | | | |
| W401 | 12 | 8'-0" | 6'-10" | | 3" |
| W402 | 12 | 9'-2" | | | Str. |
| W403 To W406 | 2 Ea. | 4'-2" To 5'-8" | 3'-0" To 4'-6" | | 3" |
| W407 To W410 | 2 Ea. | 5'-3" To 6'-9" | | | Str. |
| W411 | 8 | 14'-0" | | | 2" |
| | | | | | |
| W701 | 20 | 11'-8" | | | Str. |
| W702 | 4 | 7'-11" | | | Str. |
| W703 | 4 | 6'-5" | | | Str. |
| W704 | 4 | 11'-8" | | | 5 1/4" |

Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of bars shown is for one bent only.

## BAR BENDING DIAGRAMS




BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF END BENTS
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY

ROUTE 412 SEC. 2

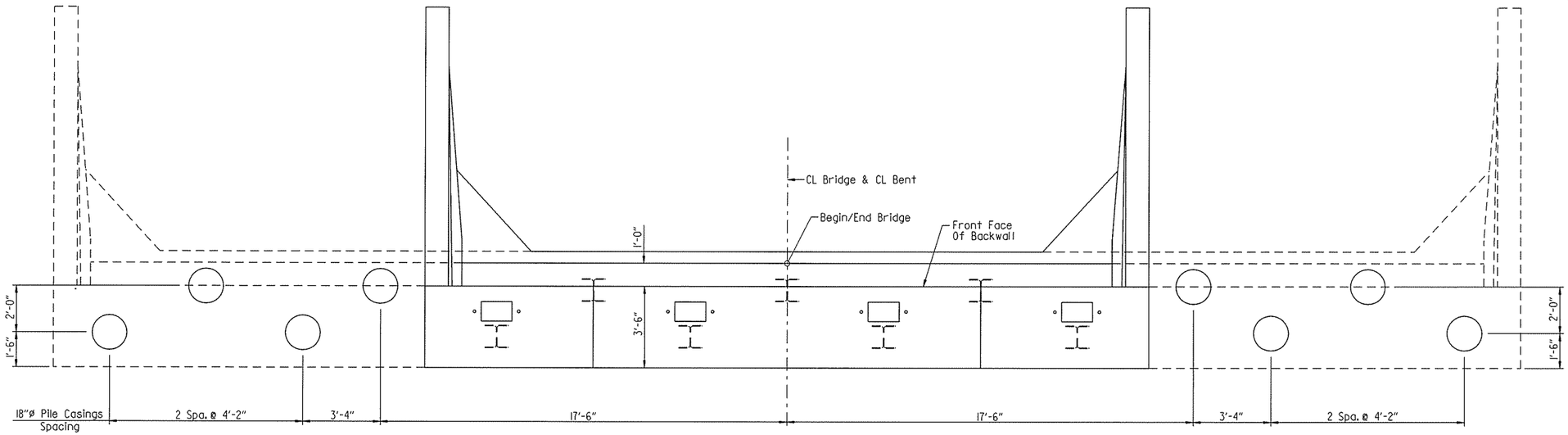
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X5_A4.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

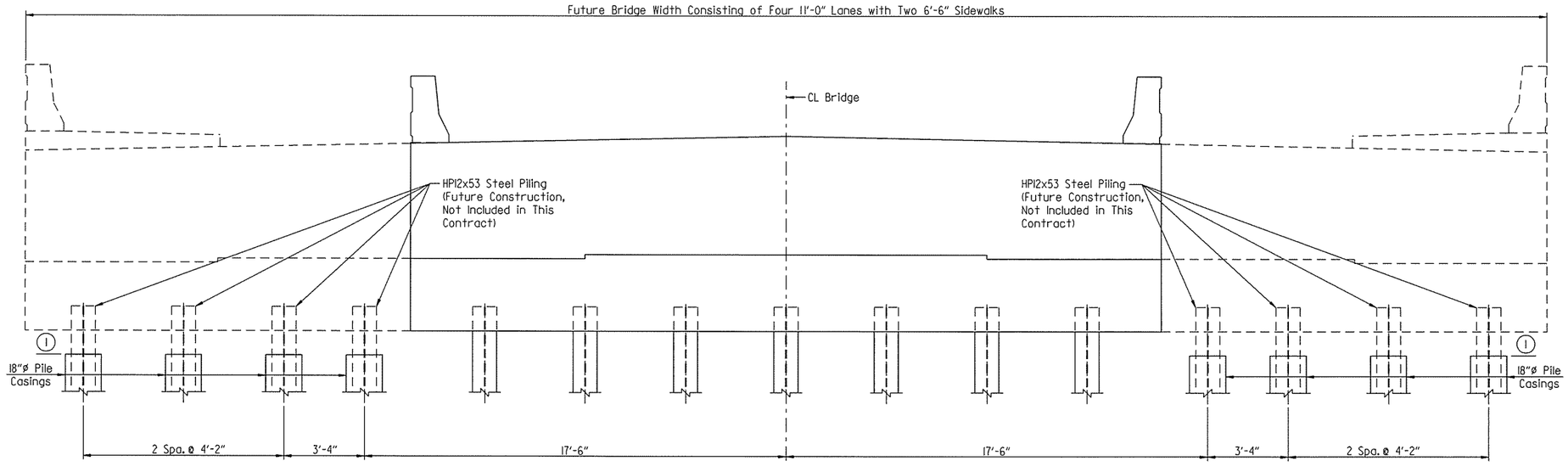
BRIDGE NO. 07308 DRAWING NO. 55260

dropad 9/3/2014 12:09 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907X5_A4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 407 | 897 |
| | | | | (1) 07308 | | END BENT DETAILS | | 55261 |




PLAN - END BENT
Scale: 3/8" = 1'-0"




ELEVATION - END BENT
Scale: 3/8" = 1'-0"

(1) Set top of casing at an elevation 1'-0" min. below finished ground.

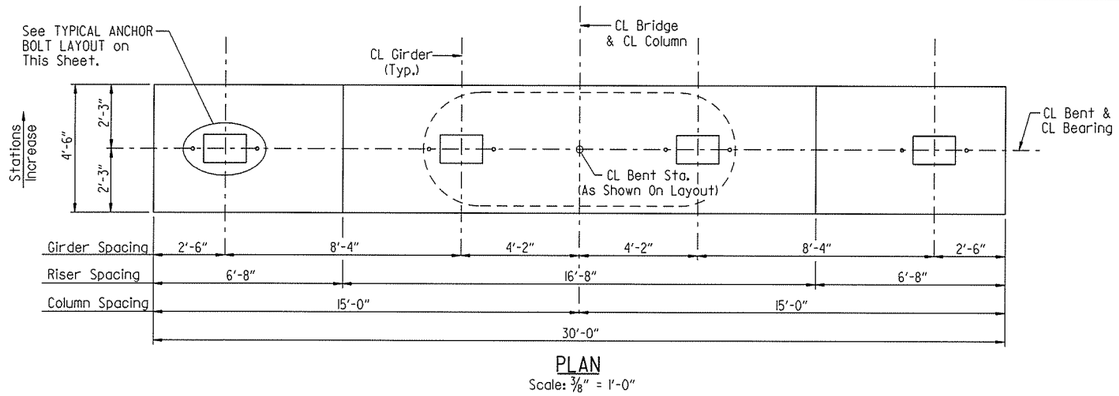
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF END BENTS
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

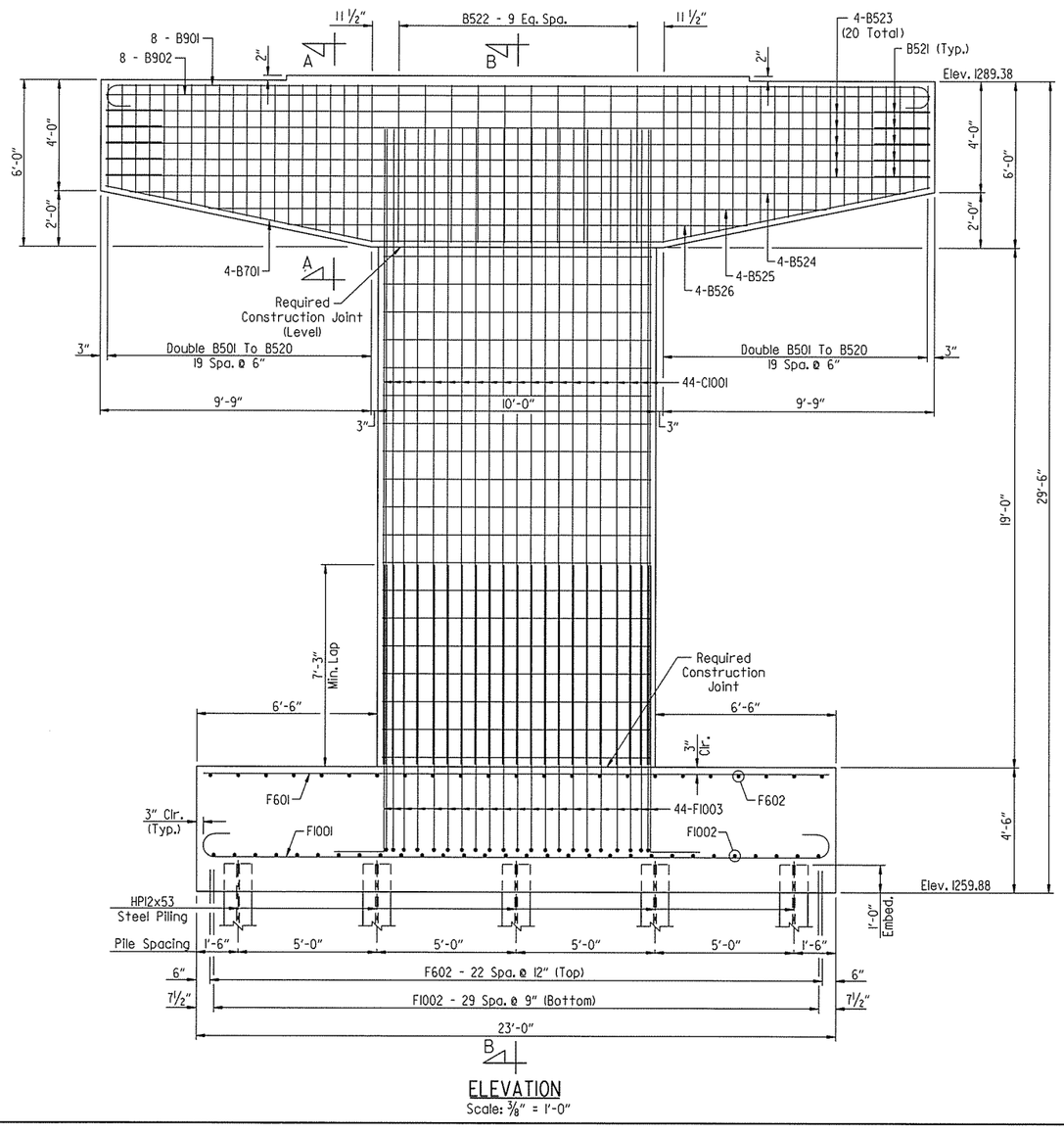
DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X5_A5.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011
BRIDGE NO. 07308 DRAWING NO. 55261

drgood 9/3/2014 12:09 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_A5.dgn
REVISED DATE:

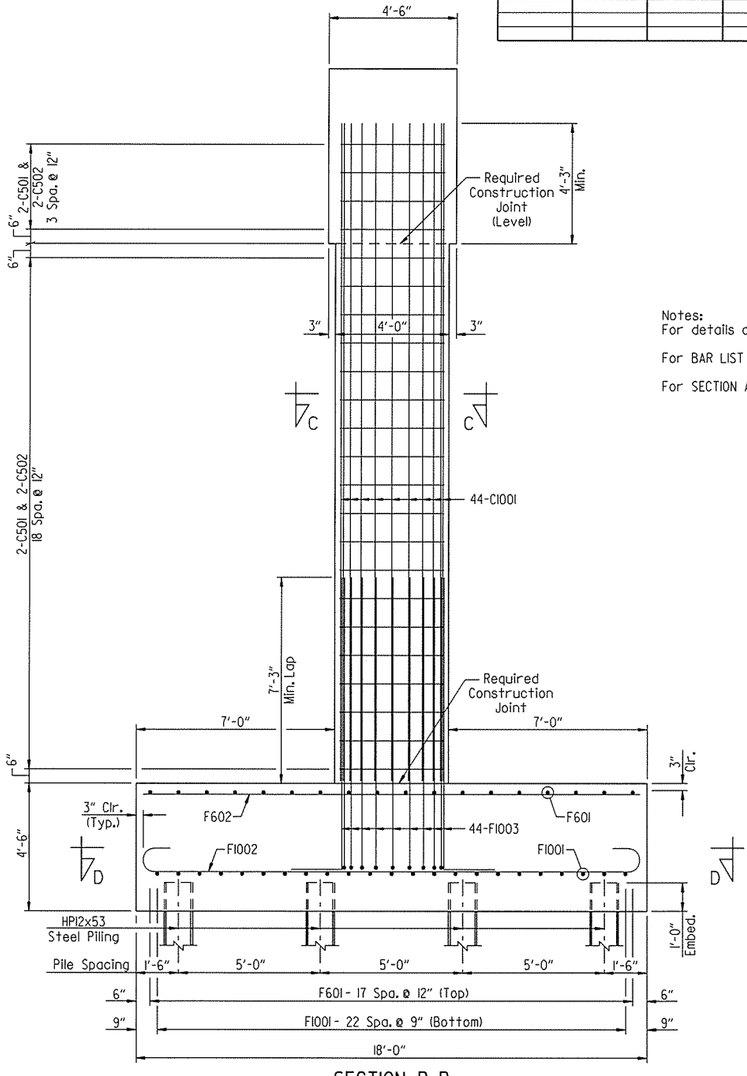
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 408 | 897 |
| | | | | (1) 07308 | | INT. BENT DETAILS | | 55262 |




PLAN
Scale: 3/8" = 1'-0"




ELEVATION
Scale: 3/8" = 1'-0"

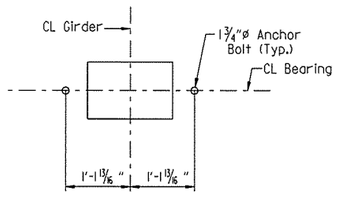



SECTION B-B
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55272.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55263.

For SECTION A-A, SECTION C-C & SECTION D-D, see Dwg. No. 55263.




TYPICAL ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

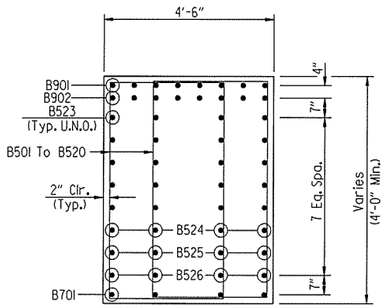
SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X5_BI.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JAN. 2011

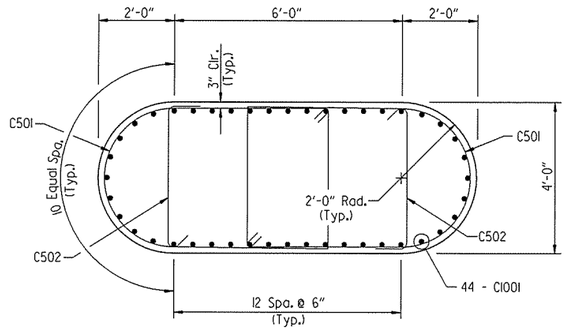
BRIDGE NO. 07308 DRAWING NO. 55262

drgood 9/3/2014 12:21:10 PM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_BI.dgn
REVISED DATE:

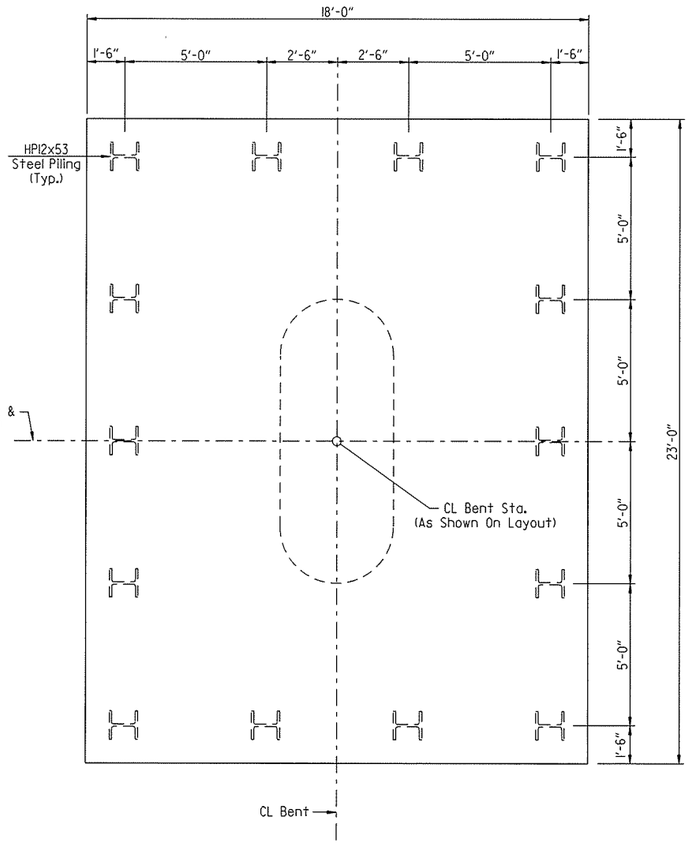
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 409 | 897 |
| | | | | (1) 07308 | | INT. BENT DETAILS | | 55263 |




SECTION A-A
Scale: 1/2" = 1'-0"




SECTION C-C
Scale: 1/2" = 1'-0"



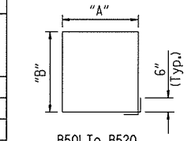

SECTION D-D
Scale: 3/8" = 1'-0"

## BAR LIST

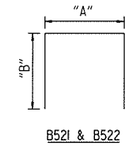
| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B520 | 4 Ea. | 13'-11" To 17'-10" | 3'-0" | 3'-8 1/2" To 5'-8" | 2 1/2" |
| B521 | 10 | 7'-11" | 4'-1" | 2'-0" | 2 1/2" |
| B522 | 10 | 15'-3 1/2" | 4'-2" | 5'-8" | 2 1/2" |
| B523 | 20 | 29'-8" | | | Str. |
| B524 | 4 | 27'-11" | | | Str. |
| B525 | 4 | 22'-3" | | | Str. |
| B526 | 4 | 16'-6" | | | Str. |
| | | | | | |
| B701 | 4 | 30'-0" | | | 5 1/4" |
| | | | | | |
| B901 | 8 | 32'-2" | 29'-4" | 10" | 9" |
| B902 | 8 | 29'-4" | | | Str. |
| | | | | | |
| C501 | 46 | 18'-1" | | | 3 3/4" |
| C502 | 46 | 4'-10" | | | 3 3/4" |
| | | | | | |
| C1001 | 44 | 23'-3" | | | Str. |
| | | | | | |
| F601 | 18 | 22'-6" | | | Str. |
| F602 | 23 | 17'-6" | | | Str. |
| | | | | | |
| F1001 | 23 | 25'-4" | 22'-6" | 11 1/2" | 10" |
| F1002 | 30 | 20'-4" | 17'-6" | 11 1/2" | 10" |
| F1003 | 44 | 12'-0" | | | 10" |

NOTE:
Dimensions of bars are out-to-out.

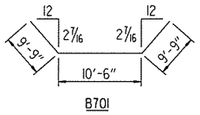
## BAR BENDING DIAGRAMS



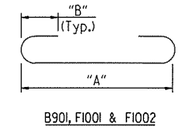

B501 To B520



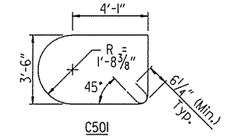

B521 & B522



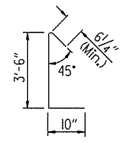

B701



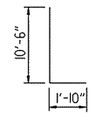

B901, F1001 & F1002




C501




C502




F1003

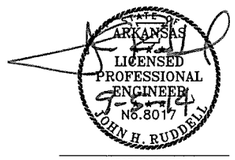
## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see LAYOUT.



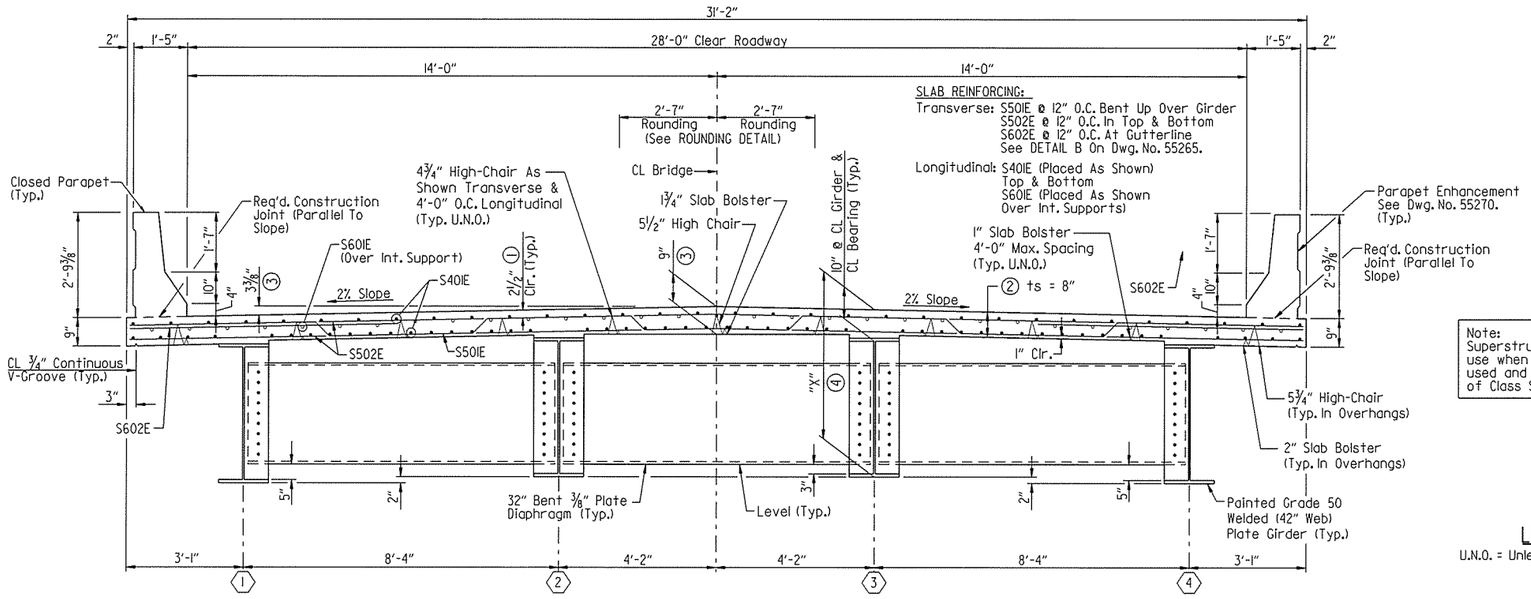

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X5_B2.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JAN. 2011
BRIDGE NO. 07308 DRAWING NO. 55263

drgood 9/3/2014 1:27:10 PM
WORKSPACE: AHTD Bridge
\\CLIENTDOCS\LITProJects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_B2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 410 | 897 |
| | | | | (1) 07308 | | SPAN DETAILS | | 55264 |

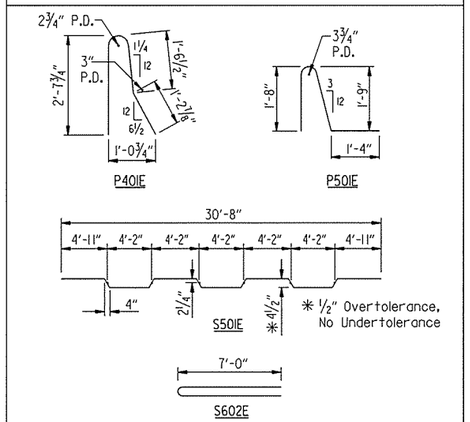



## TYPICAL SECTION
Scale: ½" = 1'-0"

Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

## LEGEND
U.N.O. = Unless Noted Otherwise

## BENDING DIAGRAM

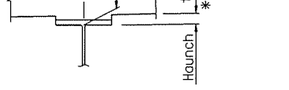



## BAR LIST

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| S401E | 492 | 34'-9" | STR. |
| | | | |
| S501E | 196 | 31'-3½" | 3" |
| S502E | 392 | 30'-10" | STR. |
| | | | |
| S601E | 93 | 25'-8" | STR. |
| S602E | 390 | 14'-3" | 5¼" (5) |
| | | | |
| P401E | 784 | 5'-6" | 2¾", 3" |
| P402E | 12 | 10'-8" | STR. |
| P403E | 72 | 9'-8" | STR. |
| P404E | 68 | 8'-8" | STR. |
| P405E | 48 | 28'-4" | STR. |
| | | | |
| P501E | 784 | 4'-10" | 3¾" |

Note:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.



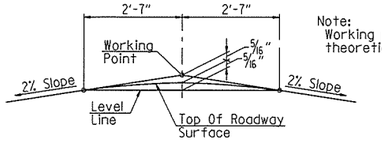

Note: $t_S$ = Slab thickness as shown on TYPICAL SECTION.

*** Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED
Scale: NTS

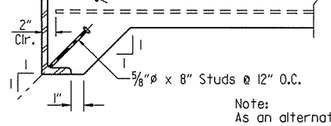
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. see Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



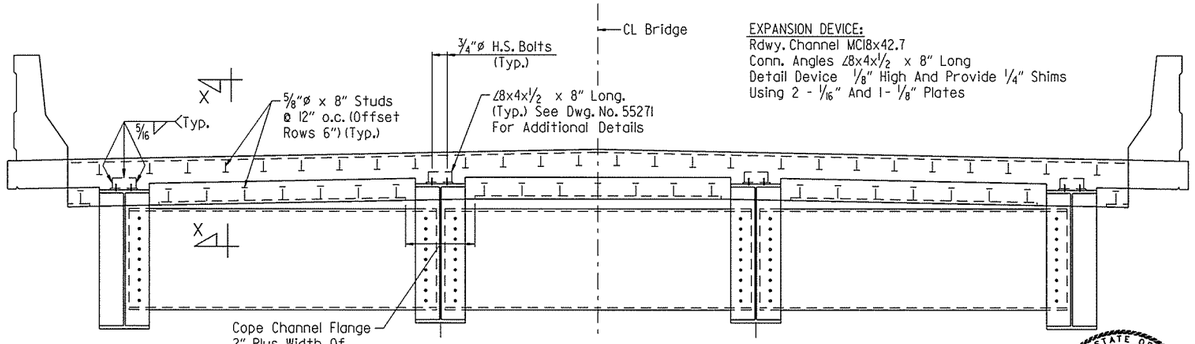

Note:
Working point matches theoretical profile grade.

## ROUNDING DETAIL
Scale: NTS




Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced @ 8" O.C. may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

## SECTION X-X
Scale: NTS




## VIEW AT CL JOINT
Looking Ahead - End Bent No. 1
Looking Back - End Bent No. 3
Scale: ½" = 1'-0"

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Conn. Angles ∠8x4x½ x 8" Long
Detail Device ⅛" High And Provide ¼" Shims
Using 2 - 1/16" And 1- ⅛" Plates

① TOLERANCE:
Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

② See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

③ Measured to Working Point - see ROUNDING DETAIL.

④ "X" = 4'-4" + bottom flange thickness, measured at CL Bearing & CL Girder.

⑤ Non-typical pin diameter

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

Note:
Class 2 protective surface treatment shall be applied to the roadway surface and the face and top of parapet rail.

STATE OF ARKANSAS
JOHN H. RUDDELL
LICENSED PROFESSIONAL ENGINEER
No. 8017
9-5-14

BRIDGE ENGINEER

# SHEET 1 OF 8
# DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT GRIMSLEY ROAD OVER U.S. HIGHWAY 412 BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X5_SI.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: MAR. 2011

BRIDGE NO. 07308 DRAWING NO. 55264

drgood 9/3/2014 12:11:41 PM
WORKSPACE: AHTD Bridge - AHTD Springdale Bypass\Drawings\BRGVG\Grimsley\BCA0907x5_SI.dgn
\\OLITDCON\LITProjects\2005\059680
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | G | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 411 | 897 |
| | | | | (I) 07308 | | SPAN DETAILS | | 55265 |

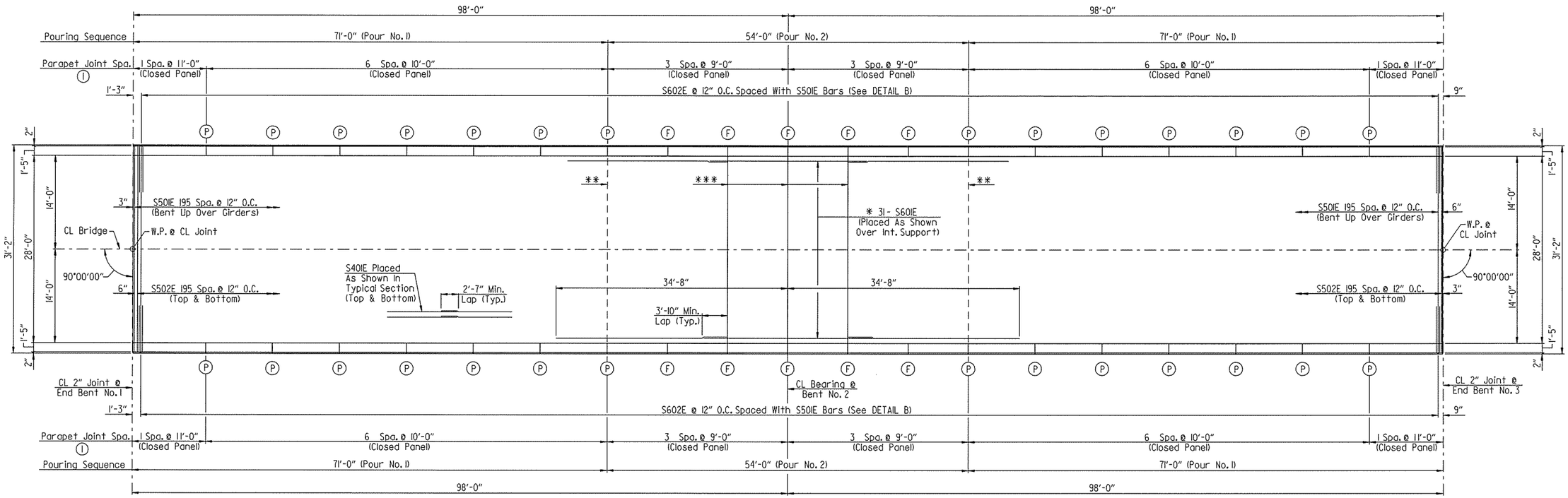
(I) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION on Dwg. No. 55264 for placement

** Pouring Sequence Construction Joint

*** Required Slab Joint

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.

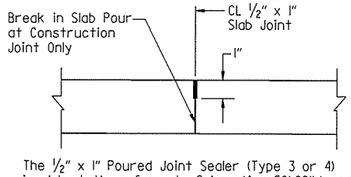



## REINFORCING PLAN & POURING SEQUENCE
Scale: 1/8" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

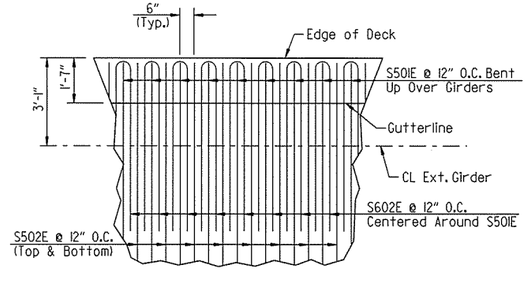
The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

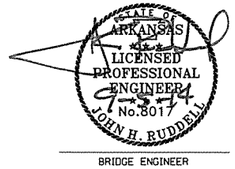



The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) and 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

## SLAB JOINT DETAIL
Scale: NTS




## DETAIL B
Scale: NTS




BRIDGE ENGINEER

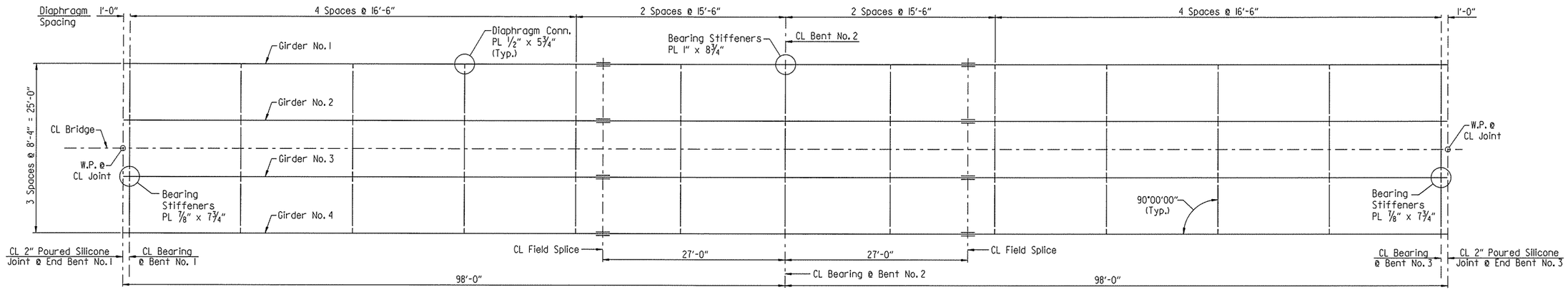
SHEET 2 OF 8
DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: BWS DATE: APR. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X5_S2.DGN
SCALE: AS SHOWN

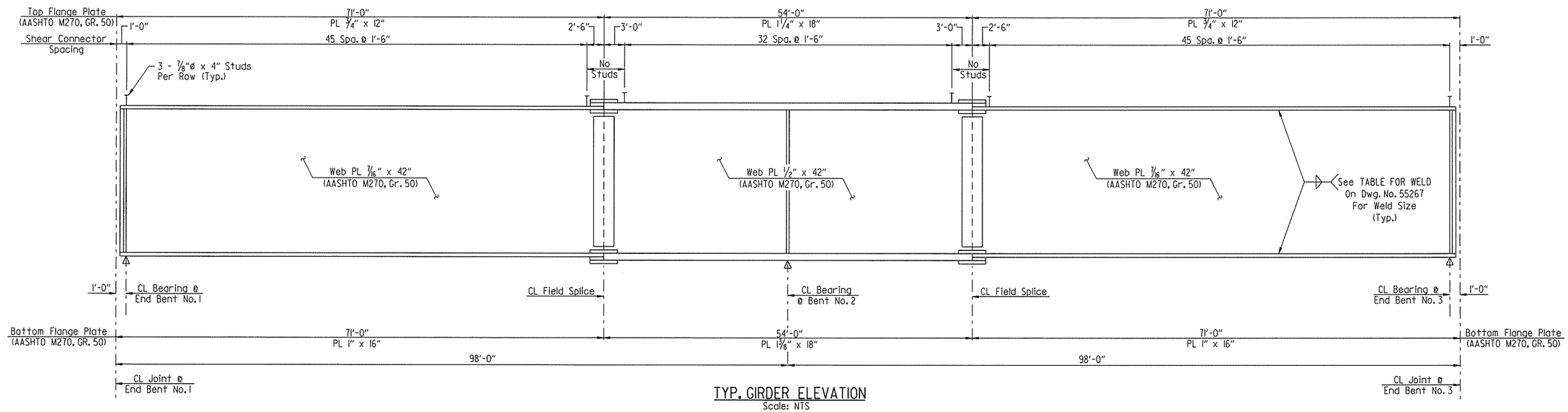
BRIDGE NO. 07308 DRAWING NO. 55265

dfgood 9/3/2014 1:27:11 PM
W:\ROADWAY\CE AHTD Bridges
\\GLLIDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907X5_S2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 412 | 897 |
| | | | | (1) 07308 | | SPAN DETAILS | | 55266 |




## FRAMING PLAN
Scale: 1/8" = 1'-0"




## TYP. GIRDER ELEVATION
Scale: NTS

ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No. 8017

BRIDGE ENGINEER

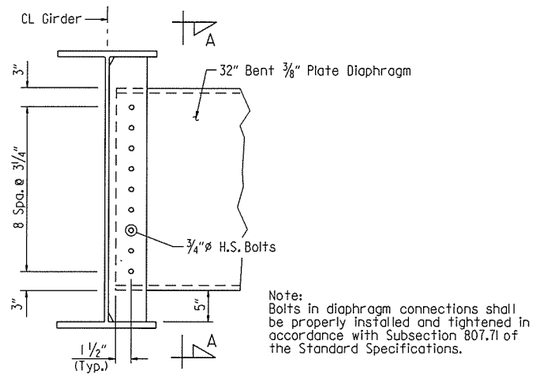
SHEET 3 OF 8
DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: BWS DATE: APR. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X5_S3.DGN
SCALE: AS SHOWN

BRIDGE NO. 07308 DRAWING NO. 55266

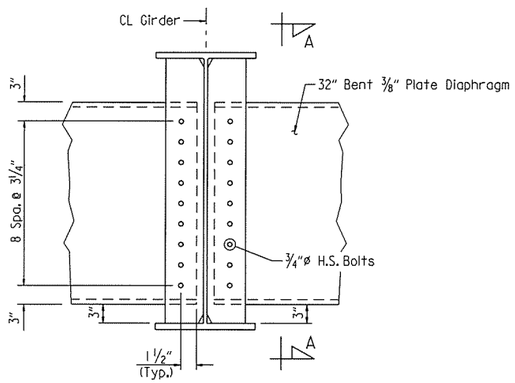
dr'goad 9/3/2014 1:27:12 PM
WORKSPACE: AHTD Bridge
\\OLITDOM\LITProjects2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907X5_S3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 413 | 897 |
| | | | | (1) 07308 | | SPAN DETAILS | | 55267 |

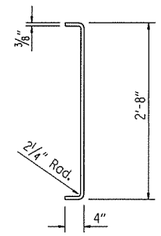



Note:
Bolts in diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.71 of the Standard Specifications.

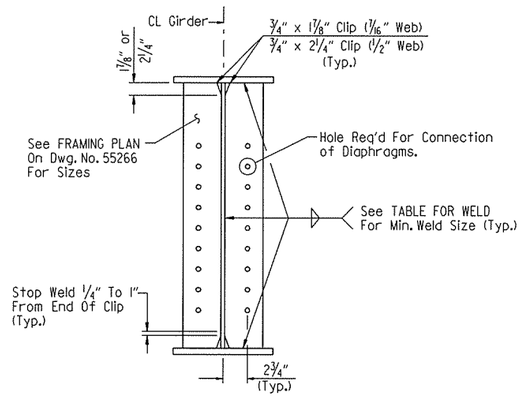
## DIAPHRAGM CONNECTIONS AT EXTERIOR GIRDER
Scale: NTS



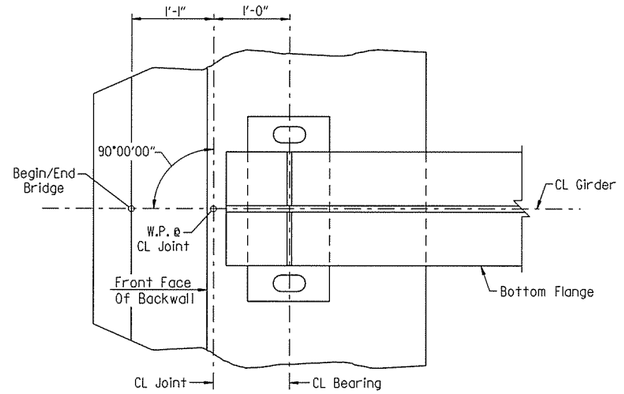

## DIAPHRAGM CONNECTIONS AT INTERIOR GIRDER
Scale: NTS



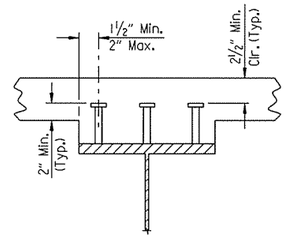

## SECTION A-A
Scale: NTS




## DIAPHRAGM CONNECTION PLATE DETAIL
Scale: NTS




## BEARING PLAN AT END BENT
Scale: NTS

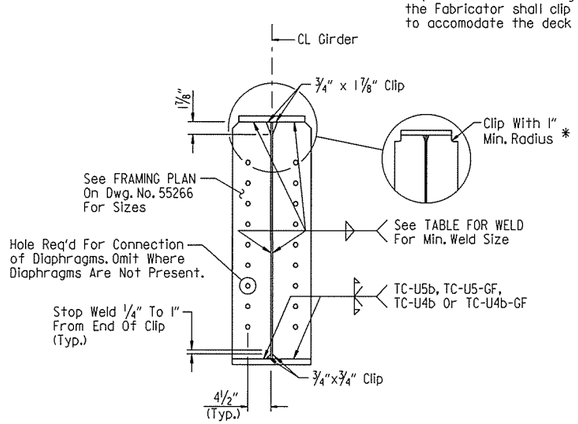



Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio ratio of 1.361 - 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

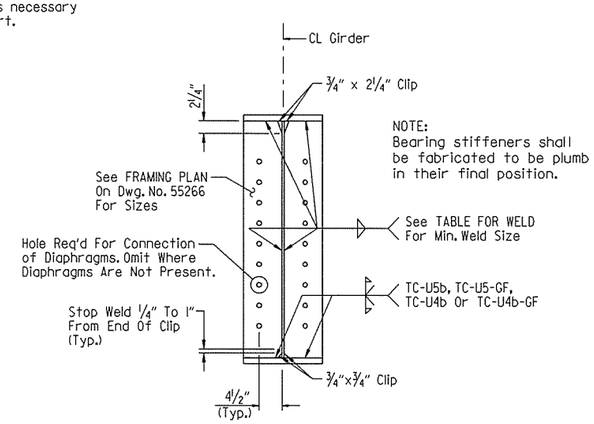
## SHEAR CONNECTOR DETAIL
Scale: NTS

NOTES:
1. For GENERAL NOTES, see Drawing No. 55270.
2. All structural steel, including girders, diaphragms, bearing stiffeners and conn. plates, shall be AASHTO M270, Grade 50.
3. For elastomeric bearing details, see Drawing No. 55272.
4. For details of field splices, see Drawing No. 55268.
5. For typical haunch details, see Dwg. No. 55264.
6. For DEAD LOAD DEFLECTION, see Drawing No. 55268.

* If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.




## BEARING STIFFENER @ END BENTS
Scale: NTS




NOTE:
Bearing stiffeners shall be fabricated to be plumb in their final position.

## BEARING STIFFENER @ INTERIOR BENT
Scale: NTS

## TABLE FOR WELD

| Material Thickness of Thicker Part Joined (Inches) | Minimum Size of Fillet Weld (Inches) | Single Pass Weld Must Be Used |
|---|---|---|
| To 3/4" Inclusive | 1/4" | |
| Over 3/4" | 5/16" | |

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 4 OF 8
# DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

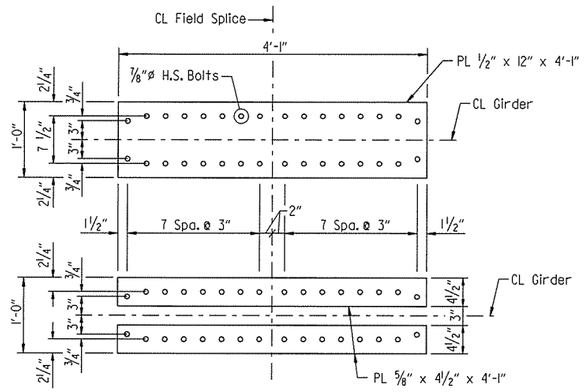
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: BWS DATE: APR. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X5_S4.DGN
SCALE: AS SHOWN

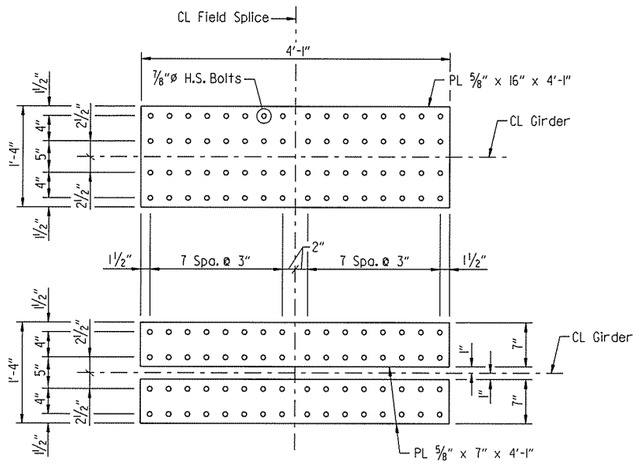
BRIDGE NO. 07308 DRAWING NO. 55267

dropod 9/3/2014 1:27:12 PM
WORKSPACE: AHTD BP-2005
\\GLITDCDN\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_S4.dgn
REVISED DATE:

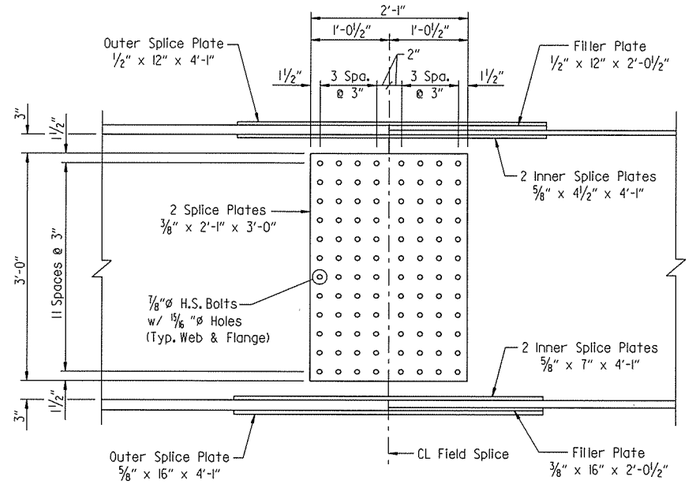
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 414 | 897 |
| | | | | (1) 07308 | | SPAN DETAILS | | 55268 |




TOP FLANGE SPLICE
Scale: 1" = 1'-0"



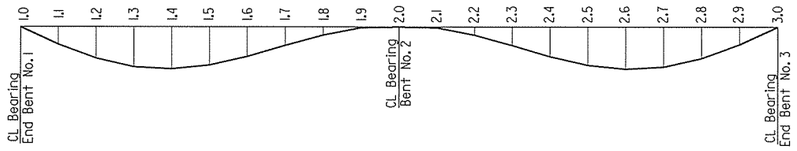

BOTTOM FLANGE SPLICE
Scale: 1" = 1'-0"




ELEVATION OF FIELD SPLICE
Scale: 1" = 1'-0"
(Span No. 2 Field Splice Shown,
Span No. 1 Field Splice Similar By Orientation)

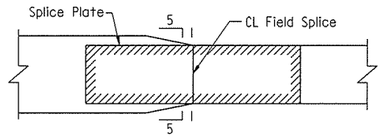
NOTES:
All field splice bolts shall be 7/8"ø H.S. bolts.
All holes for splice bolts shall be 15/16 "ø.
All field splice plates shall be AASHTO M270 Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted sith approval of the Engineer. Payment will be made on the basis of the plan quantities.

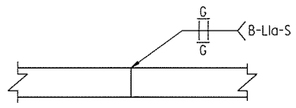



DEAD LOAD DEFLECTION
Scale: NTS

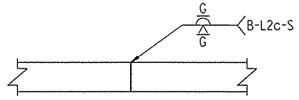
| TABLE OF DEAD LOAD DEFLECTIONS (Inches) | | | |
|---|---|---|---|
| Point Of Deflection | Wt. Of Girder And Diaphragms | Wt. Of Girder, Diaphragms And Slab | Wt. Of Girder, Diaphragms, Slab And Parapet |
| 1.0 | 0.00 | 0.00 | 0.00 |
| 1.1 | 0.12 | 0.64 | 0.71 |
| 1.2 | 0.22 | 1.17 | 1.30 |
| 1.3 | 0.29 | 1.52 | 1.68 |
| 1.4 | 0.31 | 1.64 | 1.82 |
| 1.5 | 0.29 | 1.54 | 1.71 |
| 1.6 | 0.24 | 1.26 | 1.39 |
| 1.7 | 0.17 | 0.86 | 0.96 |
| 1.8 | 0.09 | 0.46 | 0.51 |
| 1.9 | 0.03 | 0.13 | 0.15 |
| 2.0 | 0.00 | 0.00 | 0.00 |
| 2.1 | 0.03 | 0.13 | 0.15 |
| 2.2 | 0.09 | 0.46 | 0.51 |
| 2.3 | 0.17 | 0.86 | 0.96 |
| 2.4 | 0.24 | 1.26 | 1.39 |
| 2.5 | 0.29 | 1.54 | 1.71 |
| 2.6 | 0.31 | 1.64 | 1.82 |
| 2.7 | 0.29 | 1.52 | 1.68 |
| 2.8 | 0.22 | 1.17 | 1.30 |
| 2.9 | 0.12 | 0.64 | 0.71 |
| 3.0 | 0.00 | 0.00 | 0.00 |



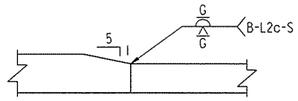

DETAILS OF BOTTOM FLANGE TRANSITION
Scale: NTS




Equal Thickness (Web)




Equal Thickness (Flange)




Unequal Thickness (Flange)

DETAILS OF WELDED SPLICES
Scale: NTS

Note:
Camber for dead load deflection plus vertical curve ± 1/4" tolerance deflections shown are from a chord from centerline bearing to centerline bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF 196'-0" COMPOSITE
PLATE GIRDER UNIT
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

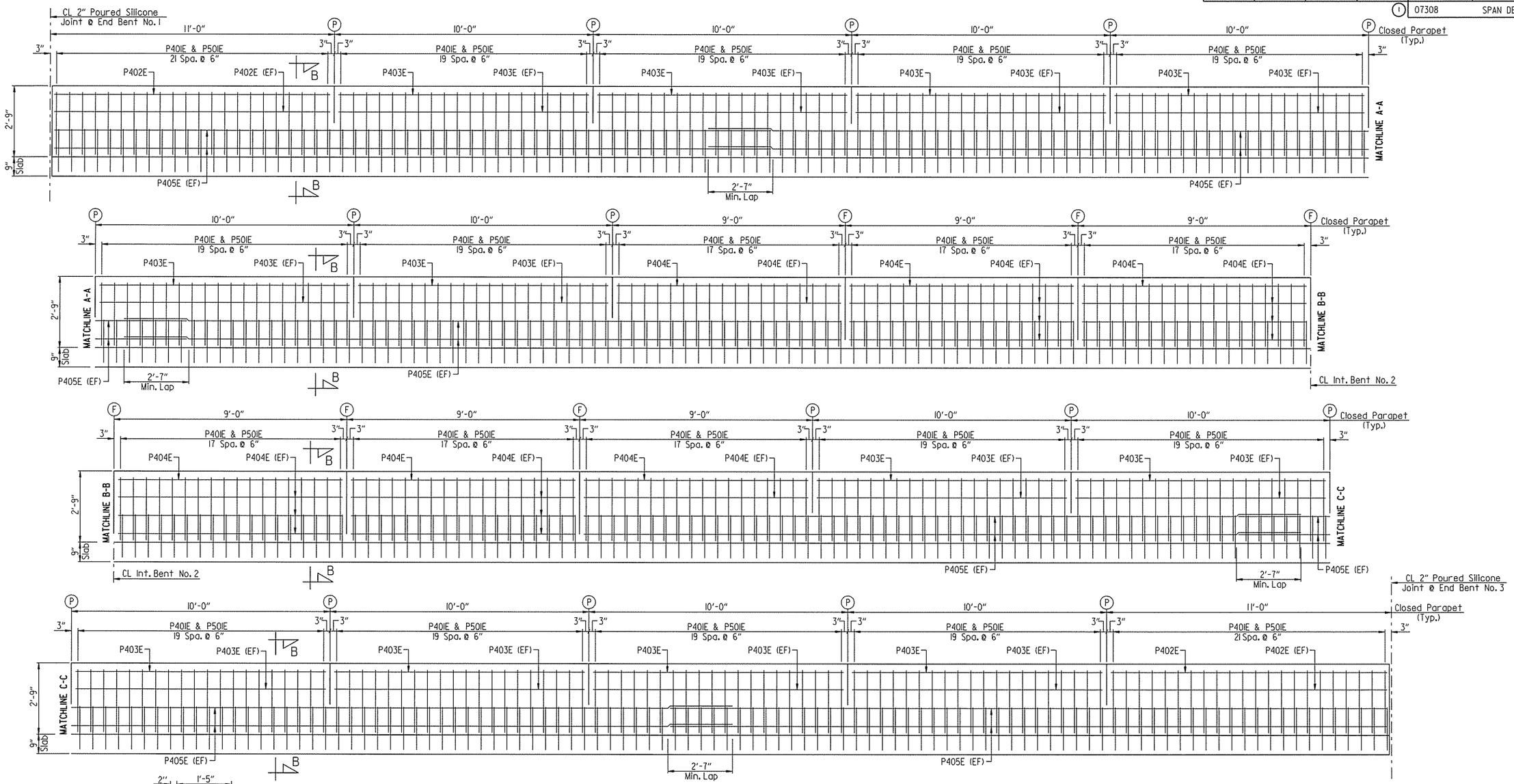
DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: BWS DATE: APR. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X5_S5.DGN
SCALE: AS SHOWN

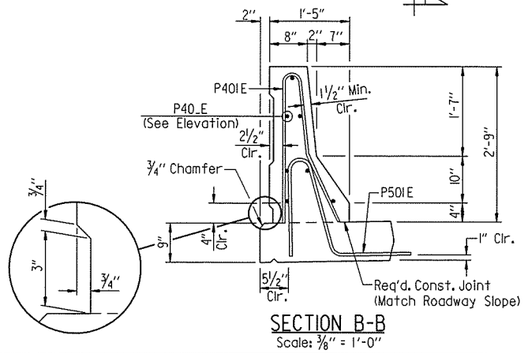
BRIDGE NO. 07308 DRAWING NO. 55268

dropod 9/13/2014 1:27:12 PM
WORKSPACE: AHTD Bridge Design
\\GLITDCDN\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_S5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 415 | 897 |
| (1) 07308 | | SPAN DETAILS | | 55269 |




SECTION B-B
Scale: ⅜" = 1'-0"

Note:
For additional parapet details, see Dwg. No. 55270.

## GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day Compressive Strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

## LEGEND

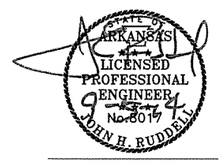
EF = Each Face

(P) Partial depth parapet joints (¼" to 1" max.) shall be stopped 1'-2" from top of slab.

(F) Full depth parapet joints (¼" to 1" max.) shall be stopped 4" from top of slab.

## LEFT PARAPET - ELEVATION

(Looking At Inside Face Of Parapet Rail)
(Left Parapet Shown, Right Parapet Similar By Orientation)
Scale: ½" = 1'-0"




BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT
GRIMSLEY ROAD OVER U.S. HIGHWAY 412
OVER U.S. HIGHWAY 412
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2011
CHECKED BY: ABH DATE: JULY 2011
DESIGNED BY: JES DATE: JULY 2011
FILENAME: BCA0907X5_S6.DGN
SCALE: AS SHOWN

BRIDGE NO. 07308 DRAWING NO. 55269

REVISED DATE:
drgood W:\ROADWAY\ACE_AHTD Bridges\BCA0907X5\PLOT\DGN\LITPlotSt2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_S6.dgn 9/3/2014 12:13 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 416 | 897 |
| | | | | (1) 07308 | | SPAN DETAILS | | 55270 |

## GENERAL NOTES:

### CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

### REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

### STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". Structural steel completely embedded in concrete may be AASHTO M270, Gr.36 unless noted otherwise. All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. See Drawing No. 55272 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girders, including field splice plates, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splice, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54(b)(2) of the Standard Specifications. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications.

Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method.

All Quality Control (Q.C.) testing is at the Contractor's expense.

All connection plates shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plans. All bearing stiffeners shall be fabricated to be plumb in their final position.

Diaphragms shall be installed as girders are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

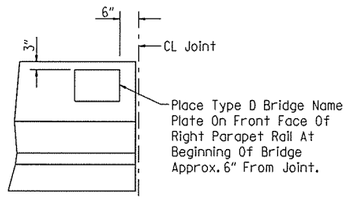
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Holes for ¾"ø high-strength bolts may be 15/16 "ø if a washer is supplied for use under both the nut and head of the bolt.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

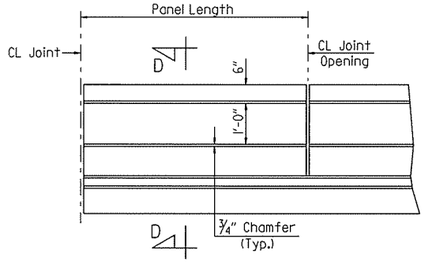
All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the manufacturer.

Bearings shall be firmly seated in accordance with Section 808.08 of the Standard Specifications. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

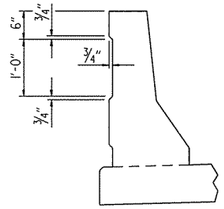
Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".



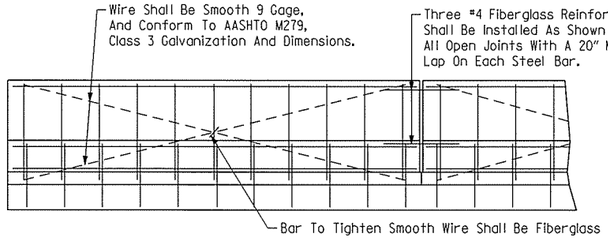

VIEW SHOWING LOCATION OF NAME PLATE
Scale: ½" = 1'-0"

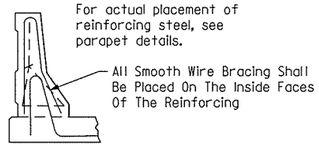



PARAPET ENHANCEMENT DETAILS
Scale: ½" = 1'-0"




SECTION D-D
Scale: ¾" = 1'-0"




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

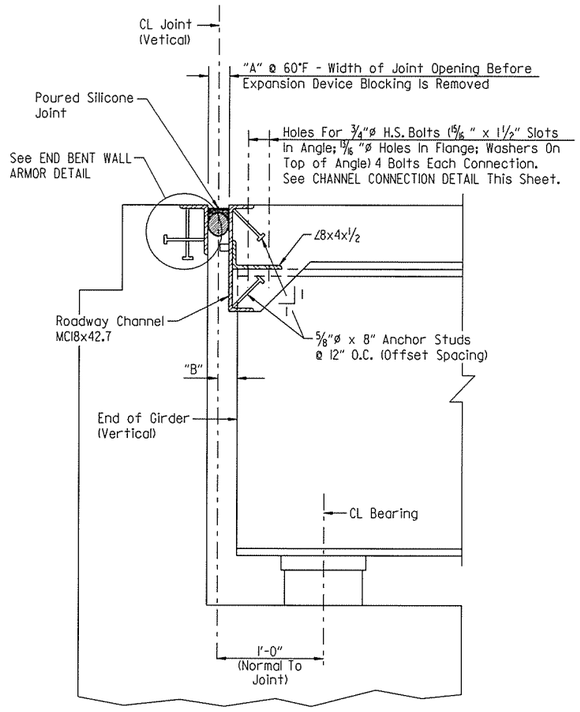
SHEET 7 OF 8
DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT
GRIMSLEY ROAD
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011
CHECKED BY: BWS DATE: APR. 2011
DESIGNED BY: WRF DATE: JAN. 2011
FILENAME: BCA0907X5_S7.DGN
SCALE: AS SHOWN

BRIDGE NO. 07308 DRAWING NO. 55270

dropod 9/3/2014 1:27:13 PM
WORKSPACE: AHTD Bridges
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_S7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 417 | 897 |
| | | | | (1) 07308 | | SPAN DETAILS | | 55271 |




## SECTION THRU JOINT AT END BENTS
(Perpendicular To Joint)
Scale: NTS

Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

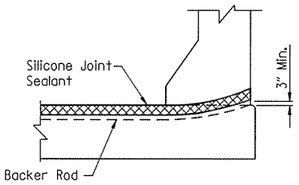
| SILICONE JOINT DATA | | | | | |
|---|---|---|---|---|---|
| "A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of: | | | "B" Perpendicular To Joint At 60°F | "D" | Bumper Plate Size |
| 40°F | 60°F | 80°F | | | |
| 2⅛" | 2" | 1⅞" | 2¼"± | 4½" | 1" x 1" |

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

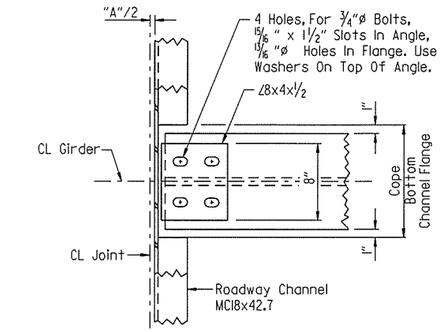
Notes:
The temperature limitations recommended by the Sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

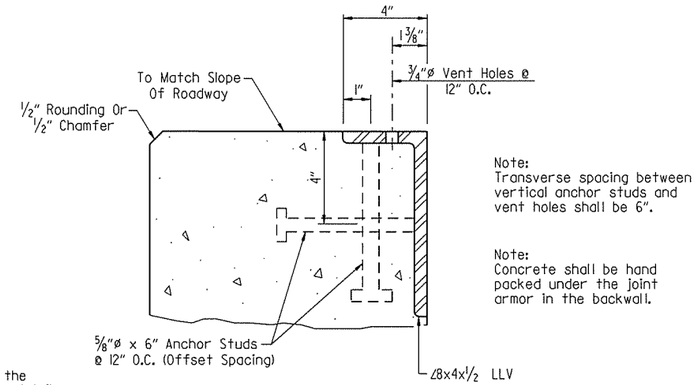
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.




## JOINT SEAL PLACEMENT @ CURB
Scale: NTS



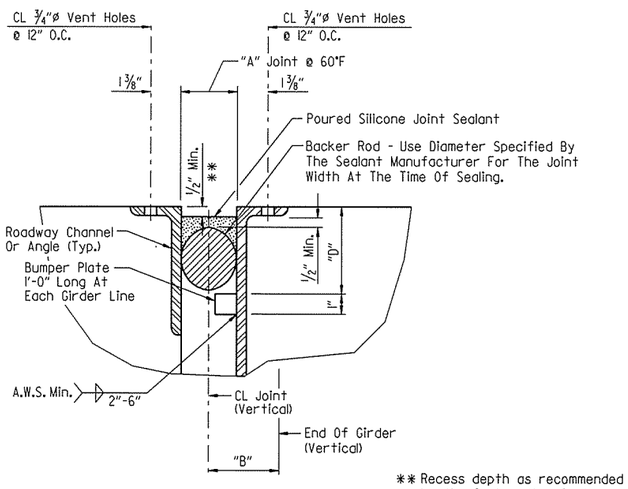

## CHANNEL CONNECTION DETAIL
Scale: NTS




Note:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

Note:
Concrete shall be hand packed under the joint armor in the backwall.

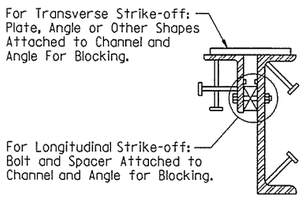
## END BENT WALL ARMOR DETAIL
Scale: NTS




** Recess depth as recommended by the Sealant Manufacturer.

## DETAIL OF POURED SILICONE JOINT
Scale: NTS

One of two different blocking systems is required depending on the type of span finishing machine that is used.




Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the Expansion Device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
9-5-14
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 8 OF 8
# DETAILS OF 196'-0" COMPOSITE PLATE GIRDER UNIT
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

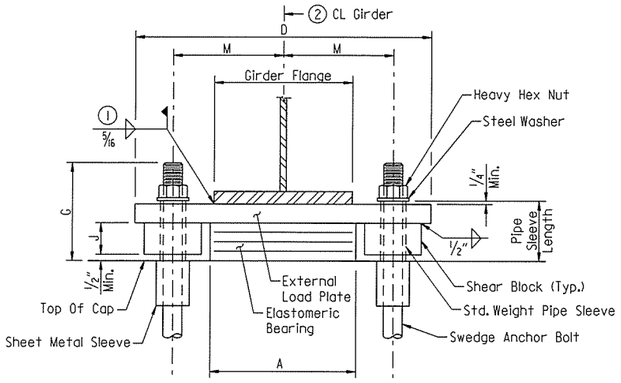
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X5_S8.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: MAR. 2011

BRIDGE NO. 07308 DRAWING NO. 55271

dragood 9/3/2014 12:14 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907x5_S8.dgn
REVISED DATE:

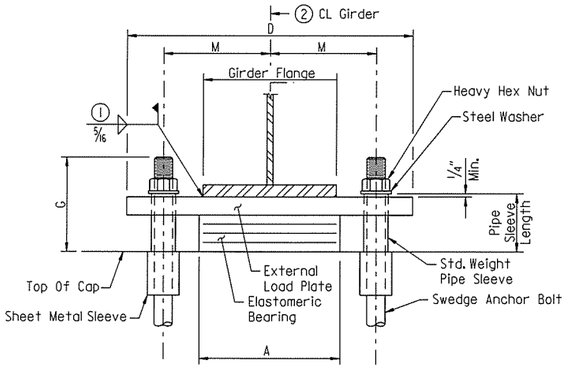
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 418 | 897 |
| | | | | ① 07308 | | ELAST. BEARINGS | | 55272 |



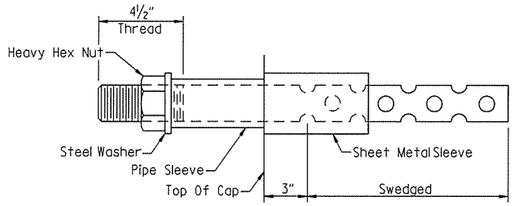

FRONT VIEW - AT BENT 2

① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

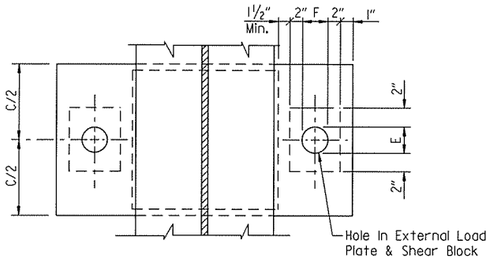
② Centerline elastomeric pad shall be aligned with centerline girder.



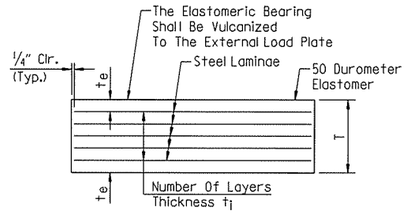

FRONT VIEW - AT BENTS 1, 3




ANCHOR BOLT DETAIL

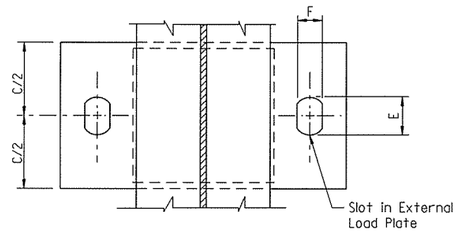



PLAN VIEW - AT BENT 2

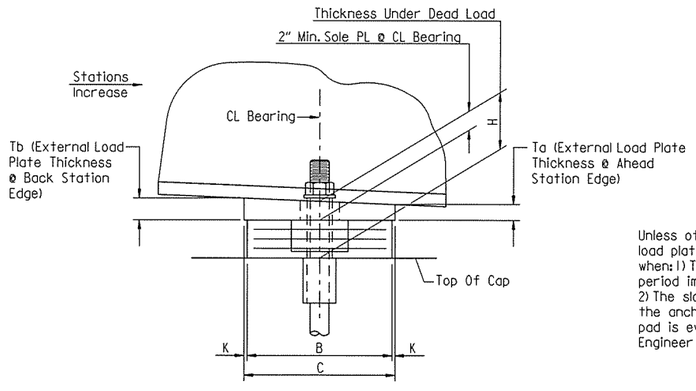



$t_e$ = Thickness Of Elastomer Cover On Top And Bottom Of Pad
$t_i$ = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness $t_i$

ELASTOMERIC BEARING

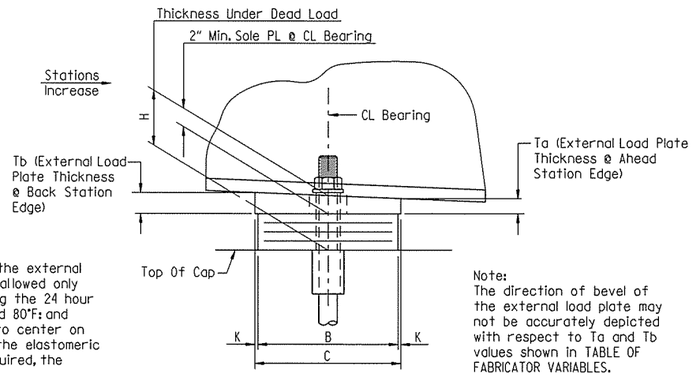



PLAN VIEW - AT BENTS 1, 3




SIDE VIEW - AT BENT 2

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.




SIDE VIEW - AT BENTS 1, 3

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in TABLE OF FABRICATOR VARIABLES.

Note: Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

## GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Section 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. The color of paint shall be Dark Brown and shall match Fed. Std. 595B, Color Chip No. 20108. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the TABLE OF FABRICATOR VARIABLES. Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

## TABLE OF FABRICATOR VARIABLES

| Bridge No. | Location | | Bearing Type | No. Of Bearings Each Bent | * Maximum Design Load (Kips) | Elastomeric Pad | | | | | | | | | External Load Plate | | | | | | | | | | Anchor Bolt | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bent No.(s) | Beam Or Girder No. | | | | G | H | A | B | N | $t_i$ | $t_e$ | No. & Thickness Of Steel Laminate | T | C | D | E | F | J | K | M | $T_a$ | $T_b$ | Anchor Bolt (Dia. x L) | Anchor Bolt Grade | Pipe Sleeve Size (Dia. x L) | Sheet Metal Sleeve Size (Dia. x L) | Steel Washer Size (O.D.) |
| - | 1 | All | Exp. | 4 | 128 | 7 15/16" | 4 15/16" | 16" | 10" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 11" | 27 1/2" | 4 1/4" | 2 5/8" | - | 1/2" | 10 3/4" | 2.09" | 1.91" | 1 3/4" x 28" | 55 | 2" x 5 7/16" | 4" x 7" | 3 3/8" |
| | 2 | All | Fixed | 4 | 336 | 7 15/16" | 4 15/16" | 18" | 12" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 13" | 36 1/4" | 2 5/8" | 2 5/8" | 2 1/2" | 1/2" | 13 13/16" | 1.98" | 2.02" | 1 3/4" x 28" | 55 | 2" x 5 7/16" | 4" x 7" | 3 3/8" |
| | 3 | All | Exp. | 4 | 128 | 7 15/16" | 4 15/16" | 16" | 10" | 4 | 1/2" | 1/4" | 5 @ 12 Ga. | 3" | 11" | 27 1/2" | 4 1/4" | 2 5/8" | - | 1/2" | 10 3/4" | 1.87" | 2.13" | 1 3/4" x 28" | 55 | 2" x 5 7/16" | 4" x 7" | 3 3/8" |

* Maximum Design Load = Service I Limit State

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-5-14

BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS
# GRIMSLEY ROAD
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X5_EI.DGN
CHECKED BY: BWS DATE: APR. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

BRIDGE NO. 07308 DRAWING NO. 55272

drgood 9/3/2014 12:24:14 PM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\059680 - AHTD Springdale Bypass\Drawings\BRG\Grimsley\BCA0907X5_EI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 419 | 897 |
| | | | | ① 07309 | | LAYOUT | | 55273 |

**FOR R/W DATA AND GUARDRAIL DETAILS, SEE ROADWAY PLANS**

Notes:
Use Type C approach gutters (W=4'-0") at each end of bridge. See Std. Dwg. No. 55030C.

Use Type N-2 inlets at each end of bridge.

For GENERAL NOTES and BORING LEGEND, see Dwg. No. 55274.

For "N" Values, see Dwg. Nos. 55275, 55276 & this drawing.

**CURVE NO. 1 DATA**
PI = 16+09.15
Δ = 73°22'32.8" LT.
D = 13°00'00"
T = 328.37
L = 564.43
PC = 12+80.78
PT = 18+45.21

**CURVE NO. 2 DATA**
PI = 24+02.15
Δ = 17°30'45.0" LT.
D = 4°00'00"
T = 220.63
L = 437.81
PC = 21+81.53
PT = 26+19.34

① Retaining walls accommodate a future bridge width consisting of an 11' painted median and two 11' lanes with two 6'-6" sidewalks.

PVI Sta. 20+00
Elev. 1294.81
V.C. = 300'
+3.20% -3.30%

**VERTICAL CURVE DATA**
County Road 236
(Profile Grade Along CL Bridge)

PVI Sta. 614+85
Elev. 1251.04
V.C. = 600'
Back Sta. 625+00.00=
Ahead Sta. 625+81.89
PVI Sta. 649+41
Elev. 1288.15
V.C. = 600'
+2.77% +1.10% +1.10% -0.52%

**VERTICAL CURVE DATA**
U.S. Highway 412 Bypass
(Profile Grade Along Inside Edge Of Pavement)

Note:
For retaining wall borings, see Dwg. Nos. 55275 & 55276.

**PLAN**

Note:
Stations and elevations shown are along CL Bridge. Elevations shown are at working point.

Total Length Of Bridge = 249'-7⅞"
1'-3⅛" 247'-0" Continuous Composite Plate Girder Unit (119'-128') 1'-3⅛"

Sta. 18+80
25' Lt. of Zion Road
5.5 - 6.5, N = 100+
10.5 - 11.1, N = 100+
15.5 - 16.5, N = 39
20.5 - 21.5, N = 40
25.5 - 26.5, N = 38
30.5 - 31.5, N = 60
35.5 - 36.5, N = 20
40.5 - 41.5, N = 22
45.5 - 46.5, N = 32
47.6 - 50.6, SCR% = 83, RQD% = 70
50.6 - 55.6, SCR% = 100, RQD% = 90

Sta. 20+00
25' Rt. of Zion Road
5.5 - 6.5, N = 70
10.5 - 11.5, N = 69
15.5 - 16.5, N = 41
20.5 - 21.5, N= 52
25.5 - 26.5, N = 49
30.5 - 31.5, N = 18
35.5 - 36.5, N = 22
40.5 - 41.5, N = 17
45.5 - 46.5, N = 21
50.0 - 50.5, N = 100+
50.5 - 55.5, SCR% = 100, RQD% = 64
55.5 - 60.5, SCR% = 90, RQD% = 44

Sta. 21+32
25' Lt. of Zion Road
5.5 - 6.5, N = 59
10.5 - 11.5, N = 48
15.5 - 16.5, N = 33
20.5 - 21.5, N = 48
25.5 - 26.5, N = 38
30.5 - 31.5, N = 30
35.5 - 36.5, N = 17
40.0 - 40.2, N = 100+
45.5 - 46.5, N = 5
48.9 - 53.9, SCR% = 40, RQD% = 14
53.9 - 58.9, SCR% = 98, RQD% = 46

*State of Arkansas form inserts to be used at Retaining Walls 8 and 9 (4 locations). See Dwg. No. XXXXX.

**ELEVATION**

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 6
# LAYOUT OF BRIDGE
# COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAY 2007 FILENAME: BCA0907X6_LI.DGN
CHECKED BY: JHR DATE: MAY 2007 SCALE: 1"=20'
DESIGNED BY: MRA/SFH DATE: MAY 2007

BRIDGE NO. 07309 DRAWING NO. 55273

9/3/2014
drgood
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRO\Zion\BCA0907x6_LI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 420 | 897 |
| | | | | (1) 07309 | | LAYOUT | | 55274 |

# GENERAL NOTES

BENCH MARK: TBM 79 RBR Alum. Cap, 952.37 Rt. Of Sta. 634+75.42
Elevation = 1287.82

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$ = 0.125 Site Class = D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Superstructure) | f'c = 4000 psi |
| Class S - Bridge Concrete (Substructure) | f'c = 3500 psi |
| Reinforcing Steel (AASHTO M31 Or M322 Type A, GR. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, GR. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, GR. 36) | Fy = 36,000 psi |

FORM INSERT: State of Arkansas form insert to be used on retaining walls (4 locations). See Dwg. No. 55278.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0907 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons. Drive all piles in Bents 1 and 3 to a minimum penetration of 10' below leveling pad and all piles in Bent 2 to a minimum penetration of 15' below bottom of footing. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

The Contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction, extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven after any required preboring and through the open casings after embankment to bottom of cap is in place. Any required preboring will be measured from bottom of leveling pad. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill shall not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

PILE CASINGS WITHOUT PILES: Additional pile casings will be required in accordance with Dwg. No. 55283 to provide for future widening. These casings shall be installed during embankment construction and shall extend from top of leveling pad to approximately one foot below the finished ground. Pile casing diameter and material shall conform to the above. No piling shall be driven through these casings, but they shallbe kept clean from debris and capped at the top with a durable waterproof material as approved by the Engineer. Payment for this work and materials shall be considered subsidiary to other contract items in the job.

PREBORING: Preboring is required for all piling in Bents 1 and 3 to obtain a minimum pile penetration of 10' below leveling pad and shall take place after excavation to the top of leveling pad is complete. Quantities of preboring shown are for bidding purposes only. The actual size and depths of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled with with an approved non-shrink grout, or other approved material to completely fill voids. The backfill and any required casings will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

BORING LOGS: Boring Logs may be obtained from Programs And Contracts Division.

PILE FOOTING: The top of footings shall be set a minimum of 2'-0" below finished ground. Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled in accordance with Subsection 801.08.

MAINTENANCE OF TRAFFIC: See Roadway Drawings.

| DETAIL DRAWINGS: | DRAWING NOS: |
|---|---|
| End Bents | 55279-55283 |
| Intermediate Bent | 55284 & 55285 |
| 247' Cont. Comp. Plate Girder Unit | 55286-55295 |
| Elastomeric Bearings | 55296 |
| Type C Approach Gutters | 55030C |
| Steel Piling | 55020 |
| Concrete Riprap | 55002 |

# BORING LEGEND

A - Red, very dense, silty gravel with sand.
B - Red, dense to very dense, silty gravel with sand.
C - Red, dense, silty gravel with sand.
D - Red, hard, sandy lean clay.
E - Beige, medium dense to dense, silty gravel with sand.
F - Red, medium dense to very dense, silty gravel with sand.
G - Red, very stiff, sandy lean clay.
H - Beige, medium dense to very dense, silty gravel with sand.
I - Red, dense to very dense, well-graded gravel with clay and sand.
J - Red, loose to very dense, clayey gravel with sand.
K - Red, medium dense, clayey gravel with sand.
L - Red, medium dense, silty gravel with sand.
M - Light beige, very dense, silty gravel with sand.
N - Red, very dense, clayey gravel with sand.
O - Red, dense to very dense, clayey gravel with sand.
P - Red, medium dense to dense, clayey gravel with sand.
Q - Chert: White, lt. gray, gray, fresh to weathered.
R - Limestone: Lt. gray, gray, fresh to slightly weathered.
S - Chert: White, lt. gray, gray, fresh.
T - Chert: White, lt. gray, gray, slightly staining.
U - Chert: Fragmented, intensely weathered.
V - Chert: White, lt. gray, gray, fresh to moderately weathered.
W - Chert: White, lt. gray, gray, intensely weathered.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER JOHN H. RUDDELL No. 8017

BRIDGE ENGINEER

SHEET 2 OF 6
LAYOUT OF BRIDGE
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY

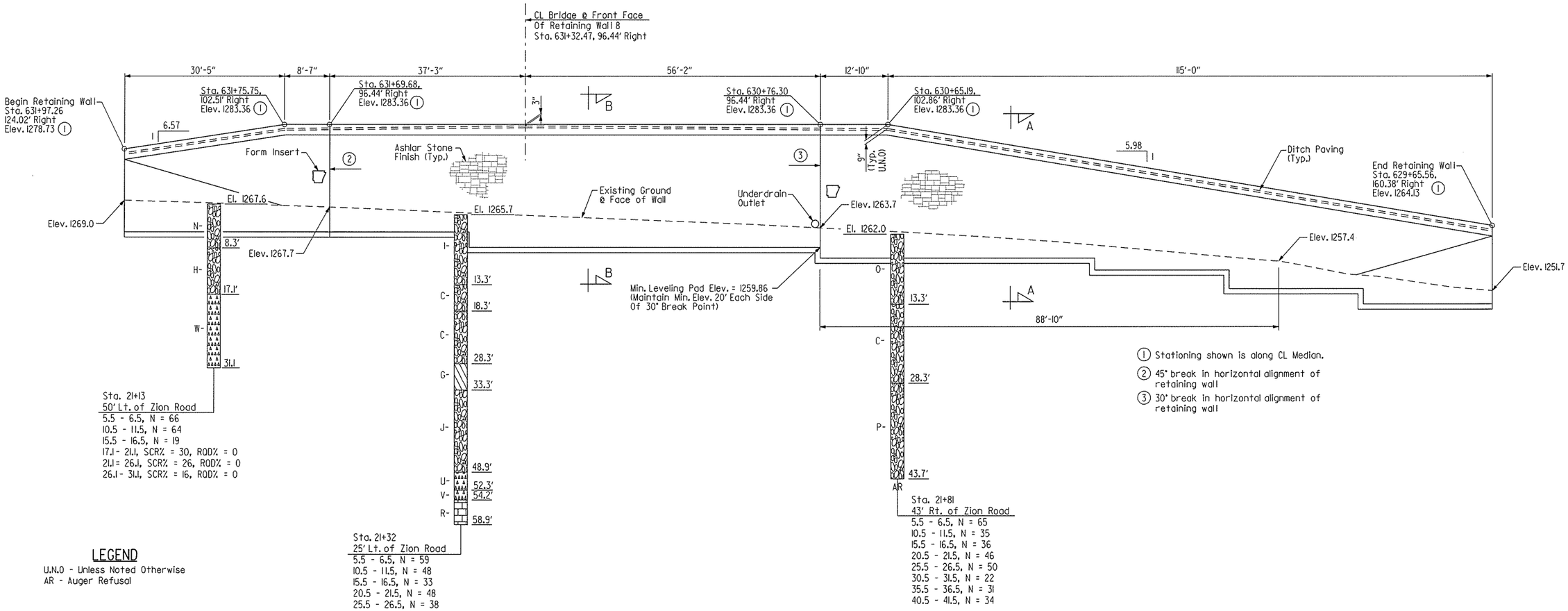
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2007 FILENAME: BCA0907X6_L2.DGN
CHECKED BY: JHR DATE: JULY 2007 SCALE: 1"=20'
DESIGNED BY: WMM/SFH DATE: JULY 2007

BRIDGE NO. 07309 DRAWING NO. 55274

drgood 9/3/2014 2:41:41 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059II680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_L2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 421 | 897 |
| | | | | (1) 07309 | | LAYOUT | | 55275 |




Sta. 21+13
50' Lt. of Zion Road
5.5 - 6.5, N = 66
10.5 - 11.5, N = 64
15.5 - 16.5, N = 19
17.1 - 21.1, SCR% = 30, ROD% = 0
21.1 = 26.1, SCR% = 26, ROD% = 0
26.1 - 31.1, SCR% = 16, ROD% = 0

Sta. 21+32
25' Lt. of Zion Road
5.5 - 6.5, N = 59
10.5 - 11.5, N = 48
15.5 - 16.5, N = 33
20.5 - 21.5, N = 48
25.5 - 26.5, N = 38
30.5 - 31.5, N = 30
35.5 - 36.5, N = 17
40.0 - 40.2, N = 100+
45.5 - 46.5, N = 5
48.9 - 53.9, SCR% = 40, ROD% = 14
53.9 - 58.9, SCR% = 96, ROD% = 46

Sta. 21+81
43' Rt. of Zion Road
5.5 - 6.5, N = 65
10.5 - 11.5, N = 35
15.5 - 16.5, N = 36
20.5 - 21.5, N = 46
25.5 - 26.5, N = 50
30.5 - 31.5, N = 22
35.5 - 36.5, N = 31
40.5 - 41.5, N = 34

## LEGEND

U.N.O - Unless Noted Otherwise
AR - Auger Refusal

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55277.

Offset dimensions for retaining walls are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55278.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55274.

## ELEVATION - RETAINING WALL 8

(Looking From Front Face of Wall)
Scale: NTS

(1) Stationing shown is along CL Median.
(2) 45° break in horizontal alignment of retaining wall
(3) 30° break in horizontal alignment of retaining wall

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8077
JOHN H. RUDDELL
9-5-14

BRIDGE ENGINEER

# SHEET 3 OF 6
# LAYOUT OF BRIDGE
# COUNTY ROAD 236 (ZION RD.)
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

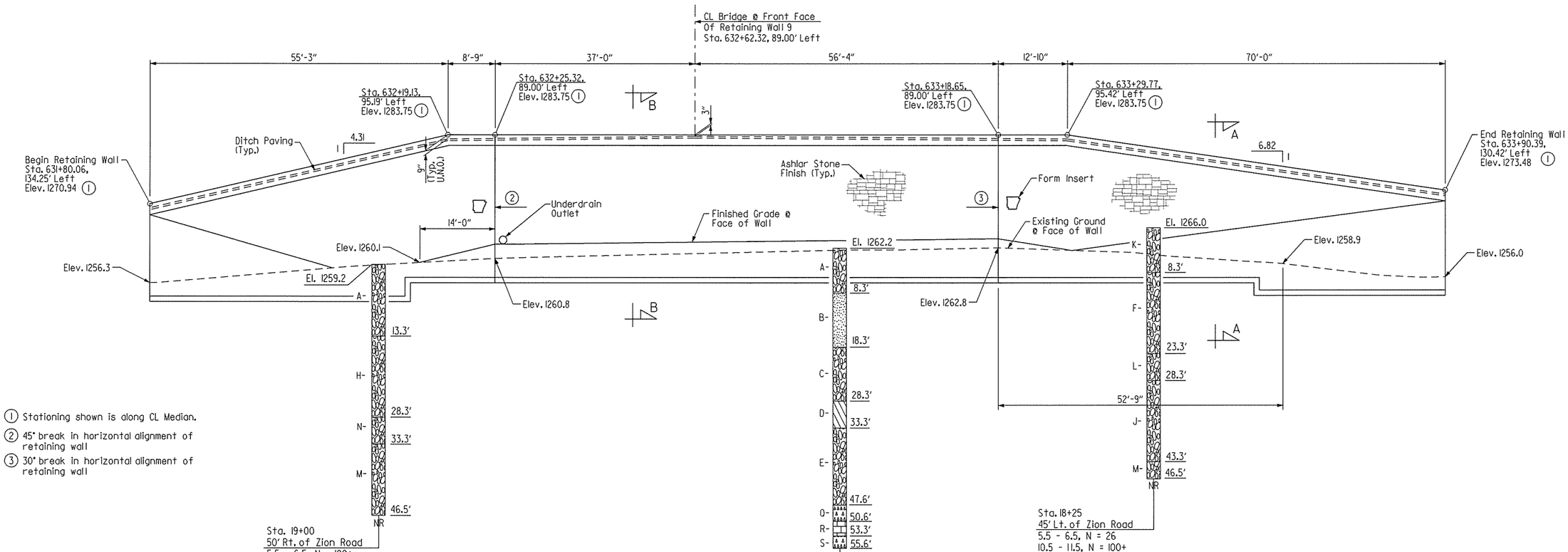
DRAWN BY: HEW DATE: 2008 FILENAME: BCA0907X6_L3.DGN
CHECKED BY: MRA DATE: 2008 SCALE: AS SHOWN
DESIGNED BY: MRA/SFH DATE: 2008

BRIDGE NO. 07309 DRAWING NO. 55275

dropod 9/3/2014
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Byposs\Drawings\BRG\Zion\BCA0907X6_L3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 422 | 897 |
| (1) 07309 | | LAYOUT | | 55276 |




(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall

(3) 30° break in horizontal alignment of retaining wall

Sta. 19+00
50' Rt. of Zion Road
5.5 - 6.5, N = 100+
10.5 - 11.5, N = 73
15.5 - 16.5, N = 100+
20.5 - 21.5, N = 23
25.5 - 26.5, N = 46
30.5 - 31.5, N = 63
35.5 - 36.5, N = 65
40.5 - 41.5, N = 71
45.5 - 46.5, N = 65

Sta. 18+80
25' Lt. of Zion Road
5.5 - 6.5, N = 100+
10.5 - 11.1, N = 100+
15.5 - 16.5, N = 39
20.5 - 21.5, N = 40
25.5 - 26.5, N = 38
30.5- 31.5, N = 60
35.5 - 36.5, N = 20
40.5 - 41.5, N = 22
45.5 - 46.5, N = 32
47.6 - 50.6, SCR% = 83, ROD% = 70
50.6 - 55.6, SCR% = 100, ROD% = 90

Sta. 18+25
45' Lt. of Zion Road
5.5 - 6.5, N = 26
10.5 - 11.5, N = 100+
15.5 - 16.5, N = 26
20.5 - 21.5, N = 24
25.5 - 26.5, N = 29
30.5 - 31.5, N = 10
35.5 - 36.5, N = 38
40.5 - 41.5, N = 59
45.5 - 46.5, N = 52

## LEGEND

U.N.O - Unless Noted Otherwise
NR - No Refusal

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55277.

Offset dimensions for retaining walls are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55278.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55274.

## ELEVATION - RETAINING WALL 9

(Looking From Front Face of Wall)
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 4 OF 6
# LAYOUT OF BRIDGE
# COUNTY ROAD 236 (ZION RD.)
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

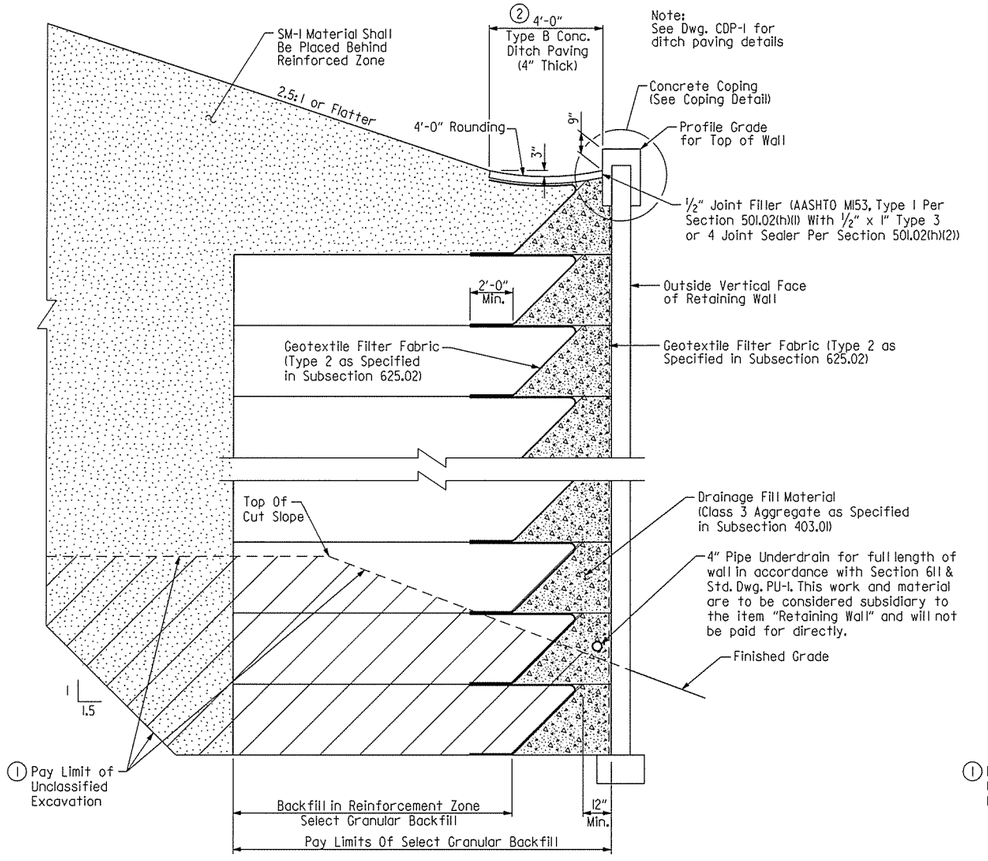
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: 2008
CHECKED BY: MRA DATE: 2008
DESIGNED BY: MRA/SFH DATE: 2008
FILENAME: BCA0907X6_L4.DGN
SCALE: AS SHOWN

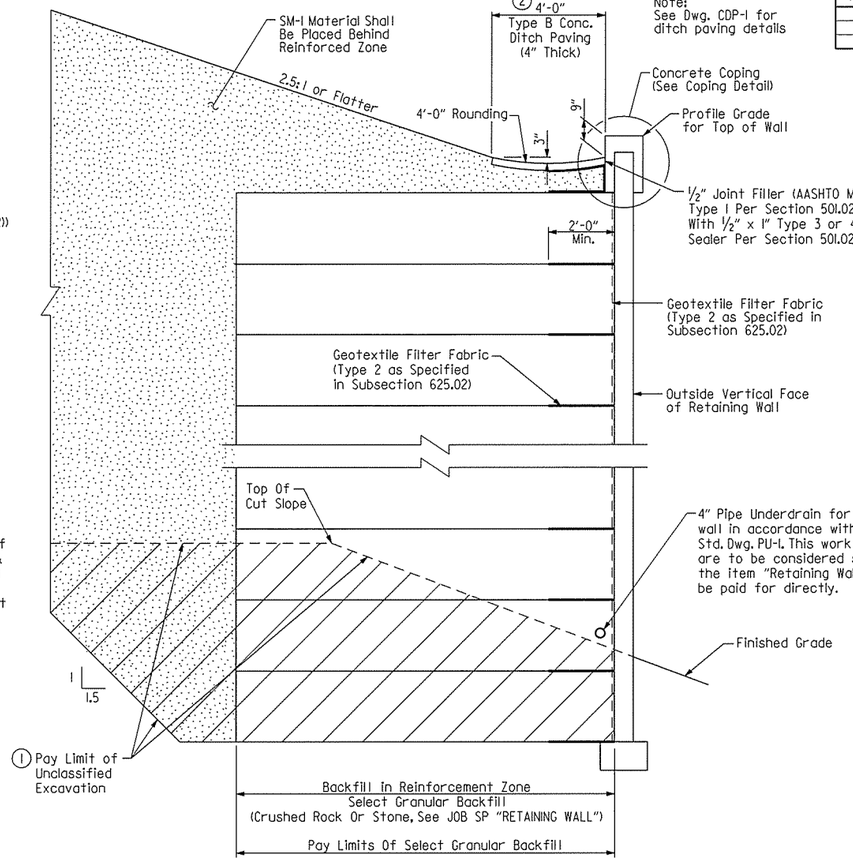
BRIDGE NO. 07309 DRAWING NO. 55276

drgood 9/3/2014
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_L4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 423 | 897 |
| | | | | (1) 07309 | | LAYOUT | | 55277 |




SECTION A-A
(Backfill Method A)
No Scale

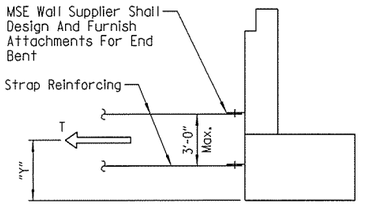



SECTION A-A
(Backfill Method B)
No Scale

(1) Excavation required for reinforcing zone, leveling pad and placement of SM-1 material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP Job CA0907 "RETAINING WALL".

Note:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL". Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP Job CA0907 "RETAINING WALL".

(2) The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.




END BENT STRAP DETAIL

T = Resultant Force Required To Be Resisted By Strap Reinforcing

Y = Centroid Of Strap Reinforcing

| LIMIT STATE | T Kips/Ft. | Y Ft. |
|---|---|---|
| Service | 3.3 | 3 |
| Strength | 4.8 | |

NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 55279-55283 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See Special Provision Job CA0907 "RETAINING WALL" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

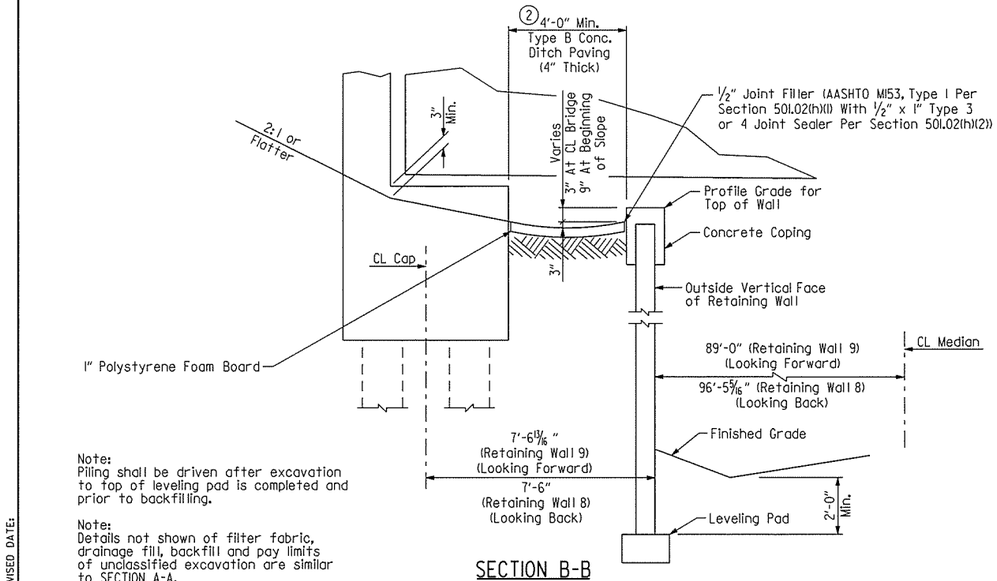
Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP Job CA0907 "RETAINING WALL".

See Dwg. No. 55278 for form insert location and details.

Large scale undercut is not anticipated, however some undercutting and backfilling may be required to satisfy factored bearing resistance requirements based on the final wall design.

Undercutting, if required, shall be backfilled with Select Material (Class SM-1) meeting the requirements of Section 302.

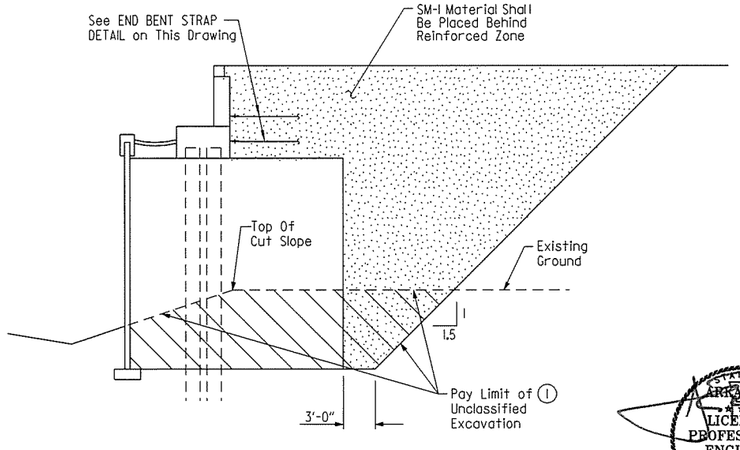
Any excavation and backfill required for undercutting shall be paid for as "Select Material (Class SM-1)" in accordance with SP Job CA0907 "RETAINING WALL".




Note:
Piling shall be driven after excavation to top of leveling pad is completed and prior to backfilling.

Note:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to SECTION A-A.

SECTION B-B
Scale: NTS




EMBANKMENT DETAIL
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

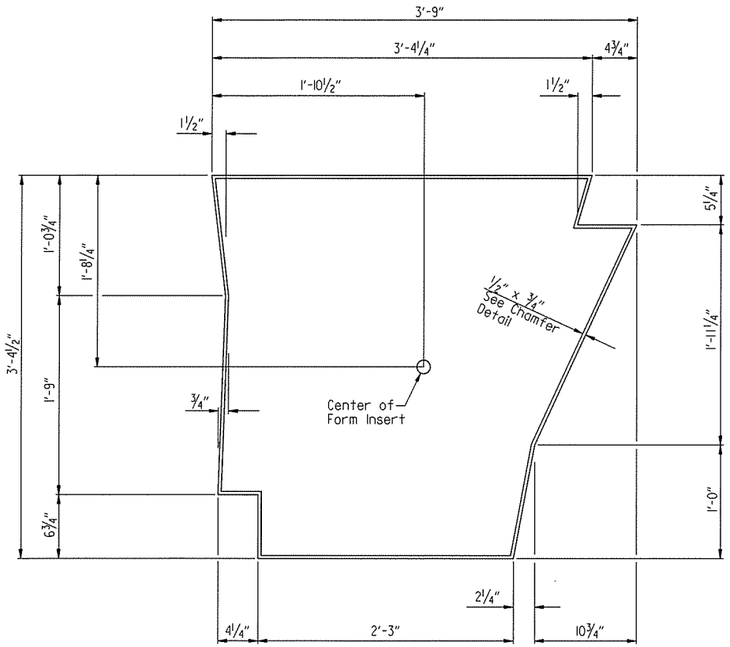
SHEET 5 OF 6
LAYOUT OF BRIDGE
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: WF DATE: MAR. 2011
FILENAME: BCA0907X6_L5.DGN
SCALE: AS SHOWN

BRIDGE NO. 07309 DRAWING NO. 55277

REVISED DATE:
dgood 9/3/2014 2:41:42 PM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_L5.dgn

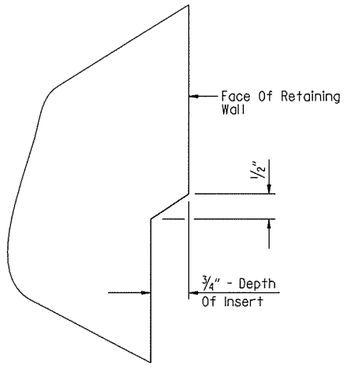
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 424 | 897 |
| | | | | (1) 07309 | | ARK. FORM INSERT | | 55278 |




Note:
Use form insert on designated walls as noted on details of M.S.E. Walls, Dwg. Nos. 55231 & 55232.

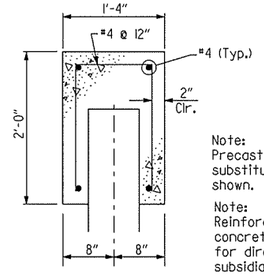
## FORM INSERT DETAILS AT MSE WALL

Scale: 1½" = 1'-0"




## CHAMFER DETAIL

Scale: NTS

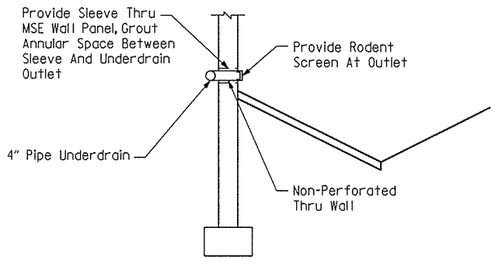



Note:
Precast concrete coping may be substituted for cast-in-place coping shown.

Note:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALL".

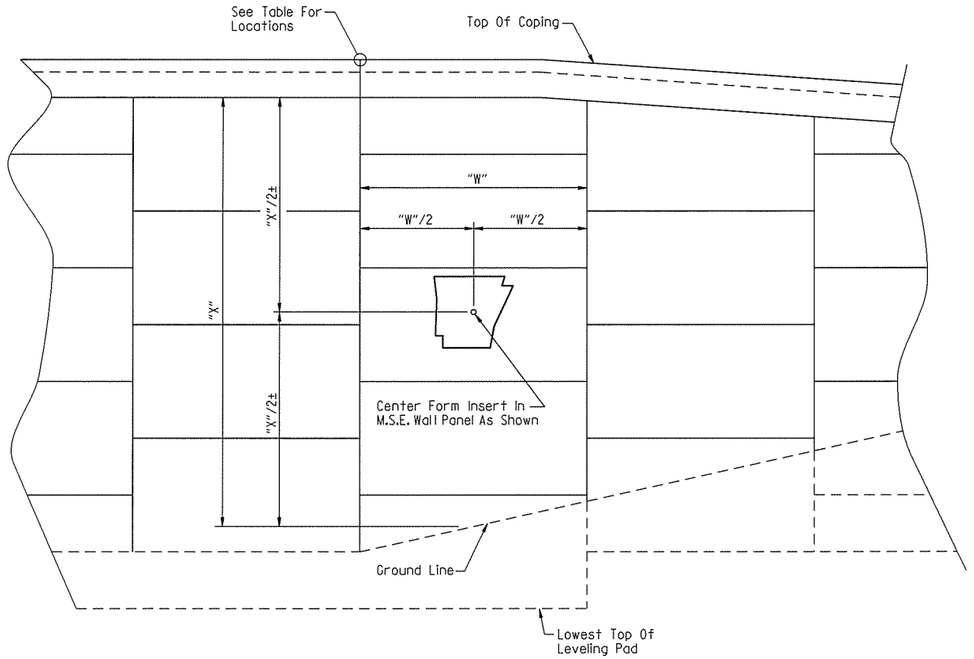
## COPING DETAIL

Scale: 1" = 1'-0"




## OUTLET DETAIL

Scale: NTS




## DEVELOPED ELEVATION AT MSE WALL

Scale: NTS

| LOCATION OF FORM INSERT | |
|---|---|
| Location | Station |
| Retaining Wall 9 | 632+25.32 And 633+18.65 |
| Retaining Wall 8 | 630+76.30 And 631+69.68 |

## GENERAL NOTES:

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALL".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

Recessed image (including chamfers) of State of Arkansas insert shall be given a Class 3 Textured Coating Finish as specified in SP Job CA0907 "TEXTURED COATING FINISH."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

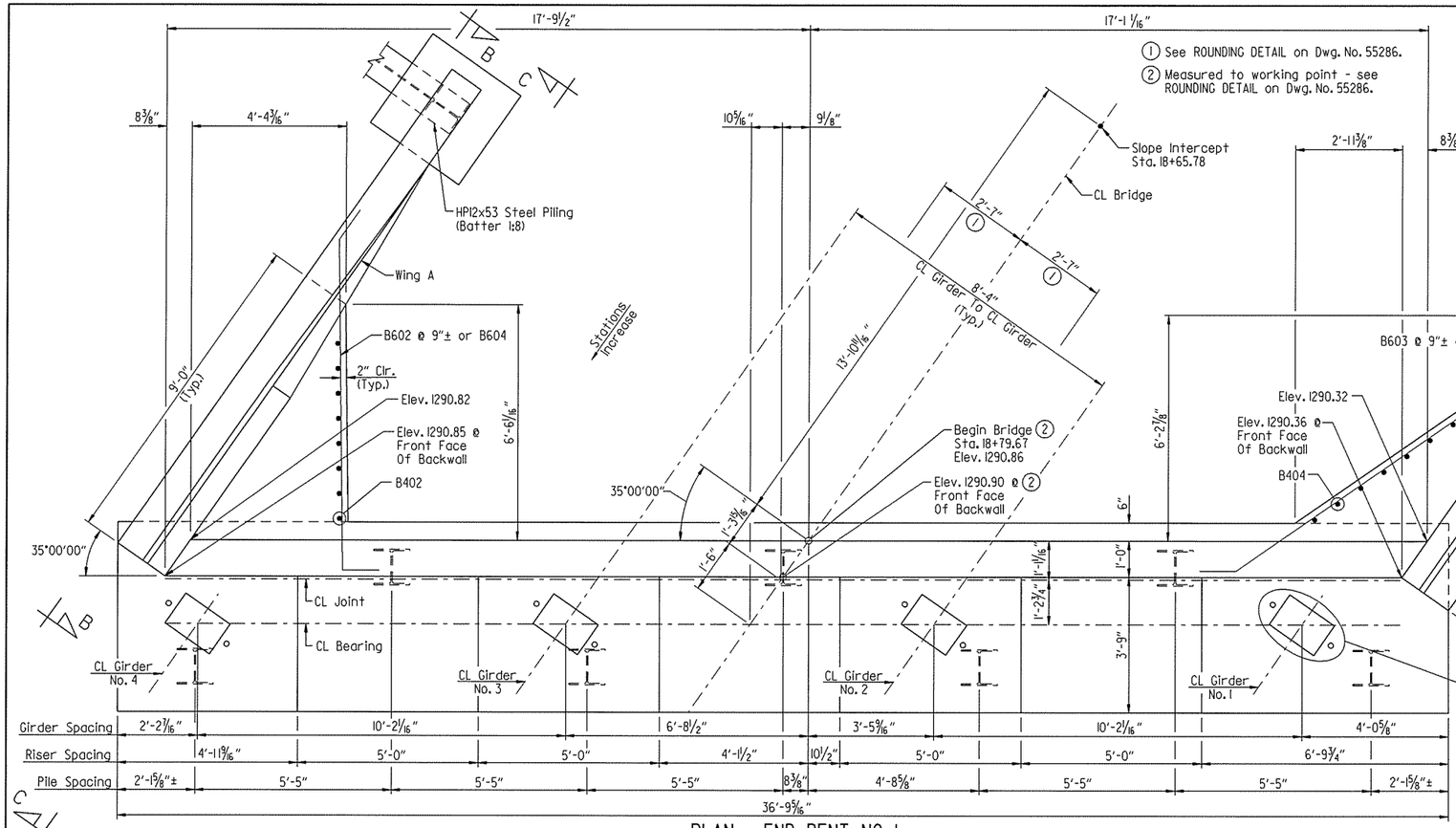
SHEET 6 OF 6
LAYOUT OF BRIDGE
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2011 FILENAME: BCA0907X6_L6.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: FEB. 2011

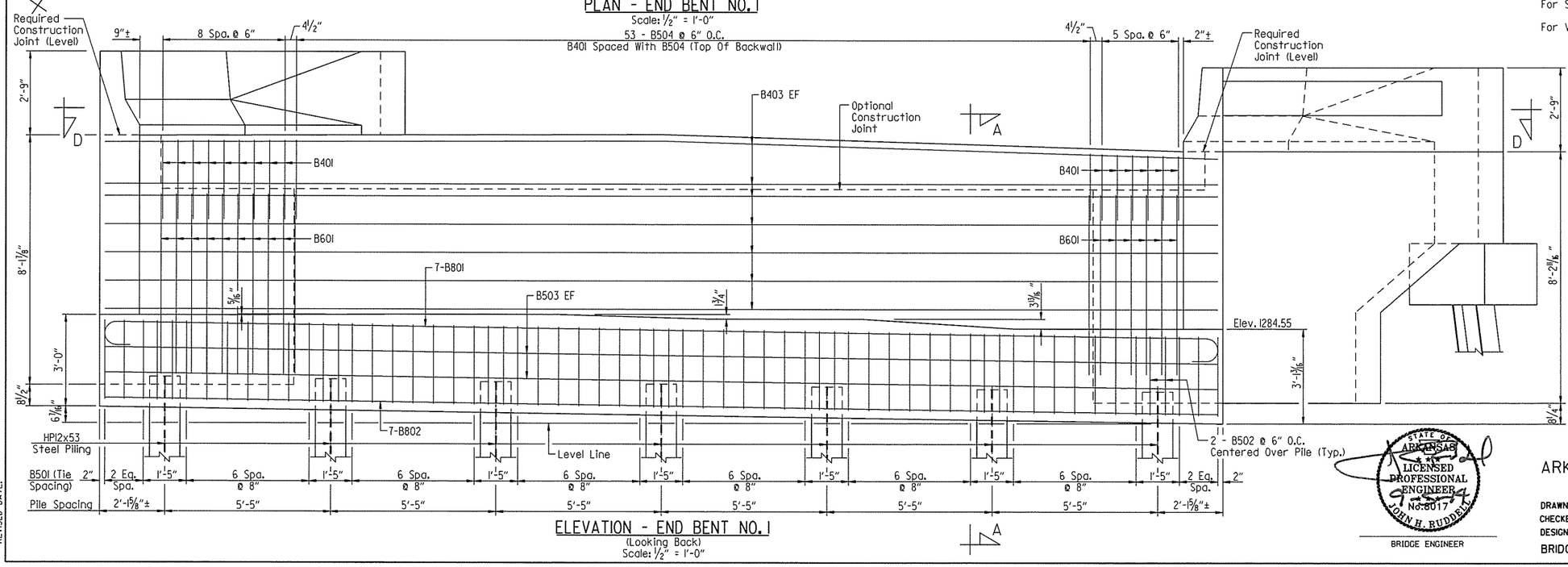
BRIDGE NO. 07309 DRAWING NO. 55278

drgood 9/3/2014 2:41:43 PM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRGV.Zion\BCA0907x6_L6.dgn
REVISED DATE:

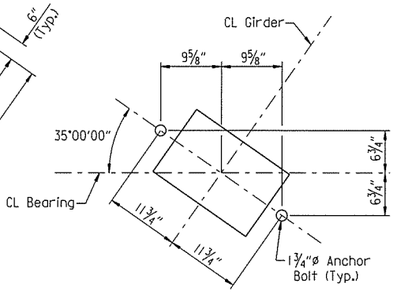
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 425 | 897 |
| | | | | 1 | 07309 | END BENT DETAILS | | 55279 |




PLAN - END BENT NO. 1
Scale: ½" = 1'-0"




ELEVATION - END BENT NO. 1
(Looking Back)
Scale: ½" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55281 & 55282.

For details of elastomeric bearing pads, see Dwg. No. 55296.

For BAR LIST - PER BENT & BAR BENDING DIAGRAMS, see Dwg. No. 55282.

For SECTION A-A, VIEW B-B & VIEW C-C, see Dwg. No. 55281.

For VIEW D-D, see Dwg. No. 55282.

## LEGEND
EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-30-14
BRIDGE ENGINEER

# SHEET 1 OF 5
# DETAILS OF END BENTS
# COUNTY ROAD 236 (ZION RD.)
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

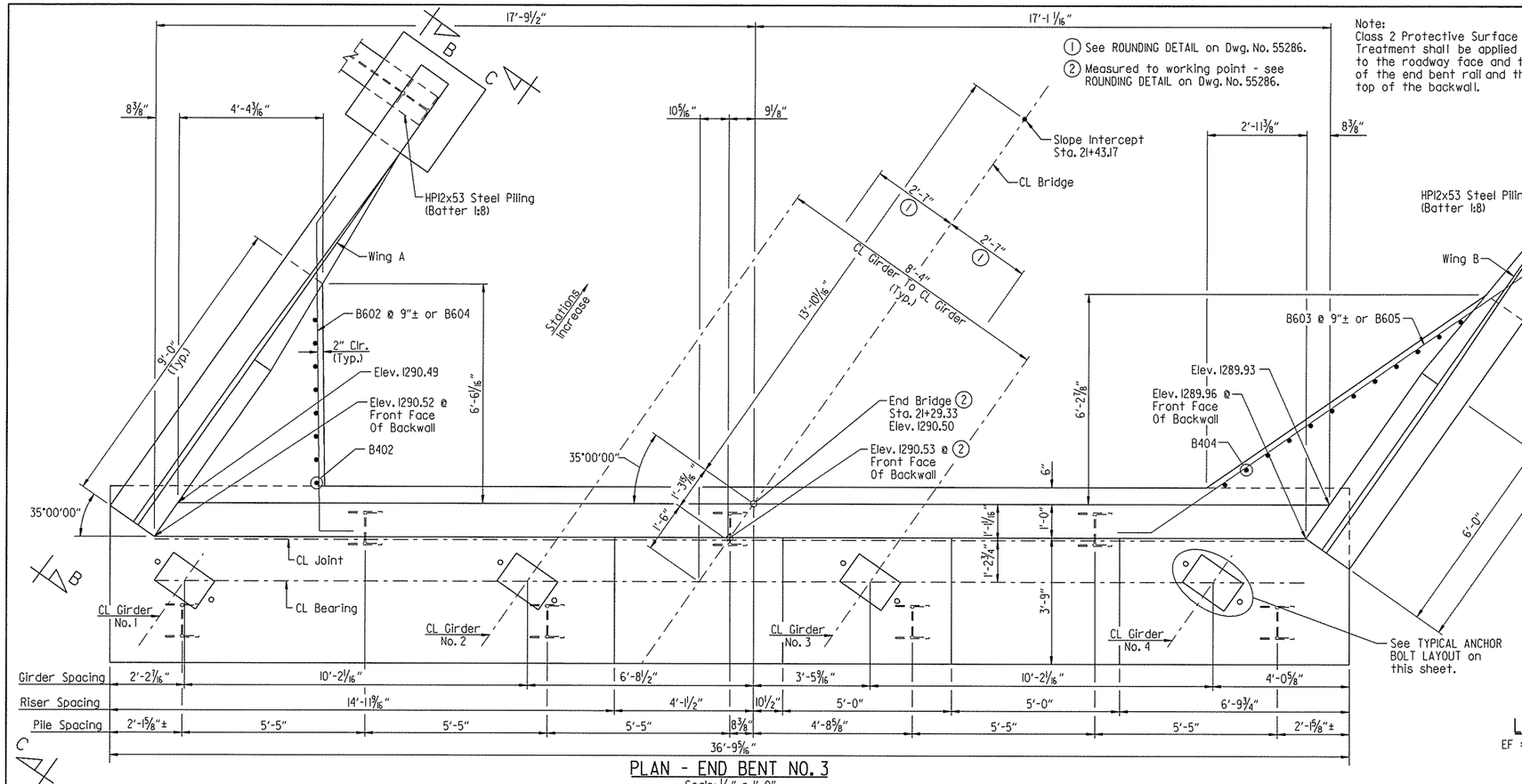
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X6_A1.DGN
SCALE: AS SHOWN

BRIDGE NO. 07309 DRAWING NO. 55279

dr'good
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_A1.dgn
9/3/2014 2:41:43 PM
REVISED DATE:

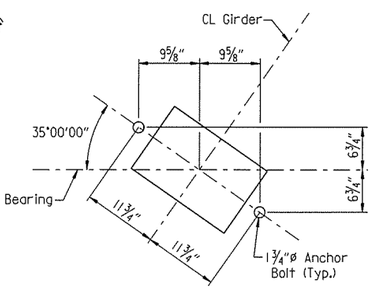
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 426 | 897 |
| | | | | (1) 07309 | | END BENT DETAILS | | 55280 |




Note:
Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

(1) See ROUNDING DETAIL on Dwg. No. 55286.

(2) Measured to working point - see ROUNDING DETAIL on Dwg. No. 55286.




## TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

## PLAN - END BENT NO. 3
Scale: ½" = 1'-0"

## LEGEND
EF = Each Face

## GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see LAYOUT.

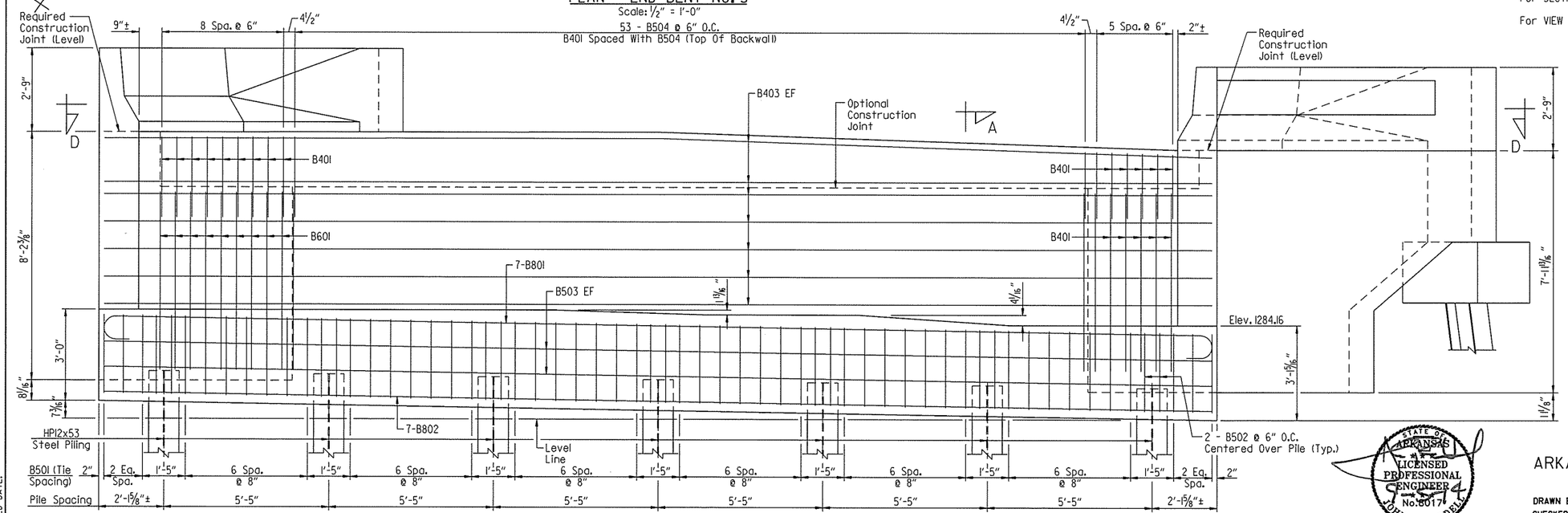
Notes:
For details of wing & rail, see Dwg. Nos. 55281 & 55282.

For details of elastomeric bearing pads, see Dwg. No. 55296.

For BAR LIST - PER BENT & BAR BENDING DIAGRAMS, see Dwg. No. 55282.

For SECTION A-A, VIEW B-B & VIEW C-C, see Dwg. No. 55281.

For VIEW D-D, see Dwg. No. 55282.




## ELEVATION - END BENT NO. 3
(Looking Ahead)
Scale: ½" = 1'-0"

STATE OF ARKANSAS
JOHN H. RUDDELL
No. 8017
LICENSED PROFESSIONAL ENGINEER
BRIDGE ENGINEER

# SHEET 2 OF 5
# DETAILS OF END BENTS
# COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

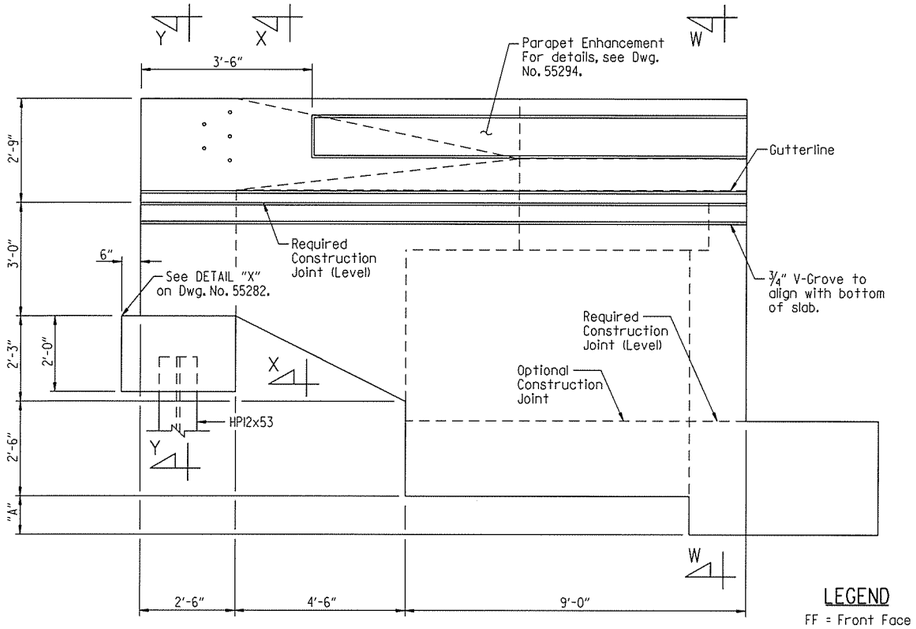
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X6_A2.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

BRIDGE NO. 07309 DRAWING NO. 55280

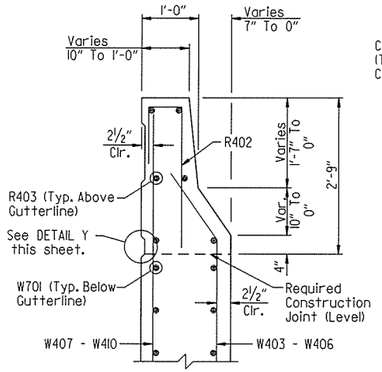
dr.good 9/3/2014 2:41:44 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005.05\61680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_A2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 427 | 897 |
| | | | | ① 07309 | | END BENT DETAILS | | 55281 |

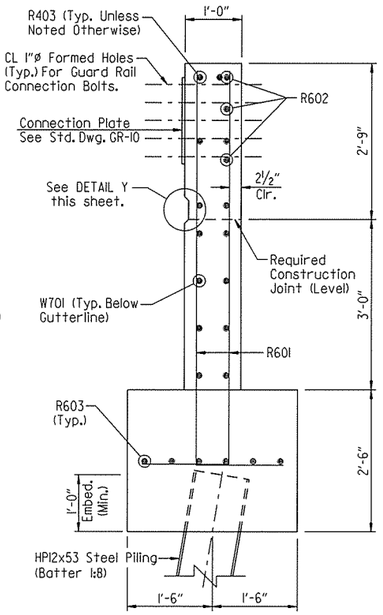



VIEW B-B
Scale: 1/2" = 1'-0"

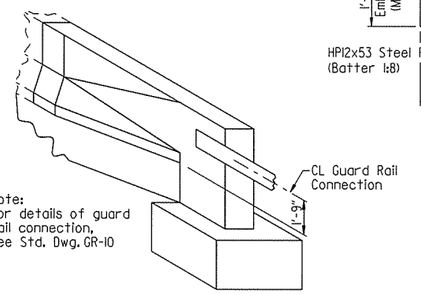
LEGEND
FF = Front Face
BF = Back Face
EF = Each Face




SECTION X-X
Scale: 3/4" = 1'-0"



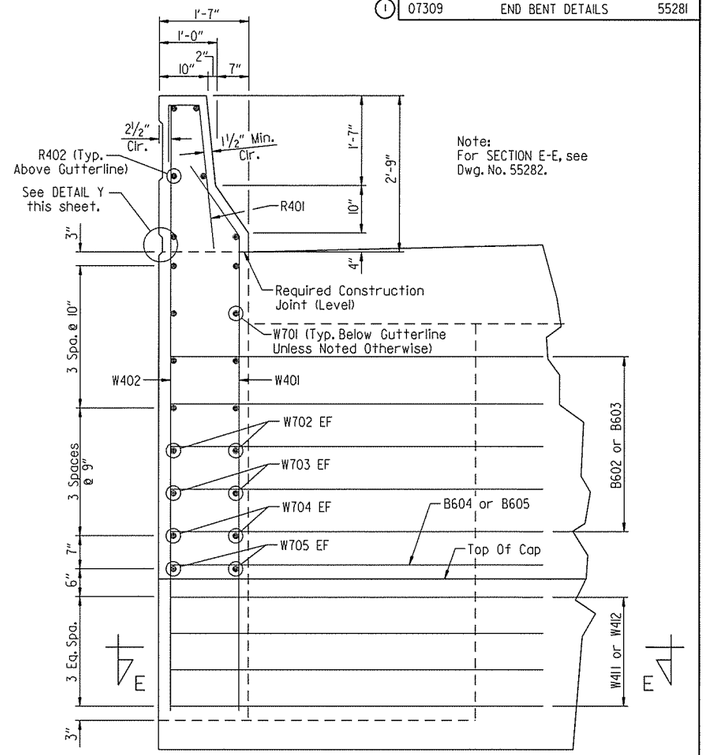

SECTION Y-Y
Scale: 3/4" = 1'-0"




Note:
For details of guard rail connection, see Std. Dwg. GR-10

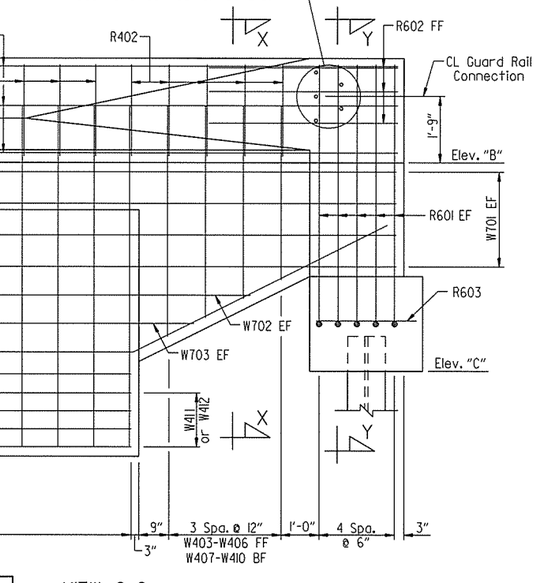
THREE DIMENSIONAL VIEW OF RAIL
Scale: NTS

NOTE:
The profile of the backwall channel shall be established based on the vertical curve in conjunction with the skew.




Note:
For SECTION E-E, see Dwg. No. 55282.

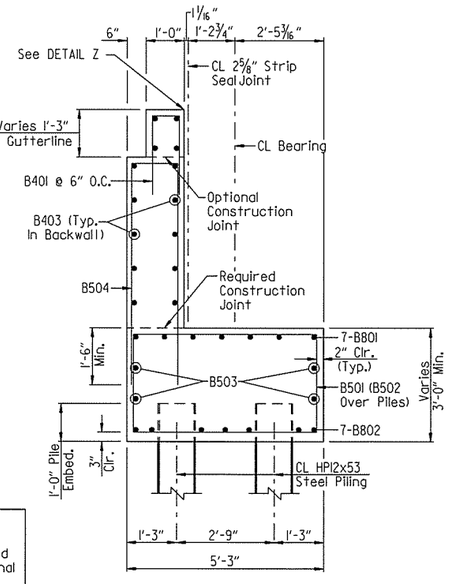
SECTION W-W
Scale: 3/4" = 1'-0"



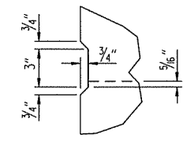

VIEW C-C
Scale: 1/2" = 1'-0"

| TABLE OF VARIABLES | | | | |
|---|---|---|---|---|
| Bent No. | Wing | Dim. "A" | Elev. "B" | Elev. "C" |
| 1 | A | 8 1/2" | 1290.45 | 1285.45 |
| 1 | B | 8 1/4" | 1289.89 | 1284.89 |
| 3 | A | 8 1/16" | 1290.07 | 1285.07 |
| 3 | B | 11 1/8" | 1289.73 | 1284.73 |

Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE on Dwg. No. 55295 for additional information.



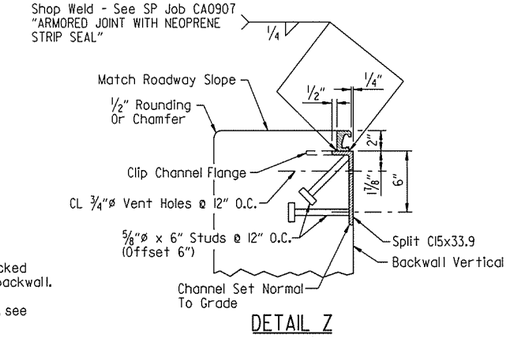

SECTION A-A
Scale: 1/4" = 1'-0"




DETAIL Y
Scale: NTS

NOTES:
Concrete shall be hand packed under joint armor in the backwall.

For additional joint details, see Dwg. No. 55295.




DETAIL Z
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

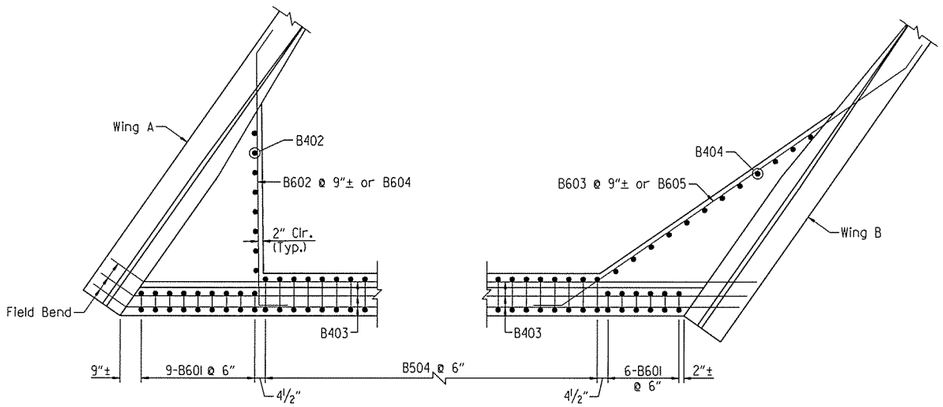
SHEET 3 OF 5
DETAILS OF END BENTS
COUNTY ROAD 236 (ZION ROAD)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X6_A3.DGN
SCALE: AS SHOWN

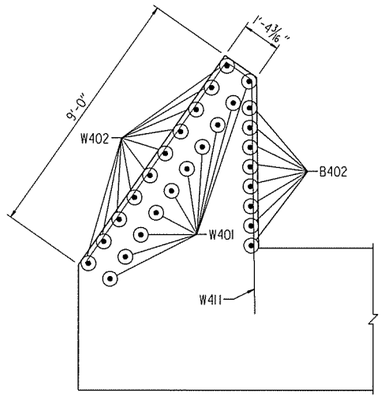
BRIDGE NO. 07309 DRAWING NO. 55281

drgood 9/3/2014 2:41:44 PM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907tx6_A3.dgn
REVISED DATE:

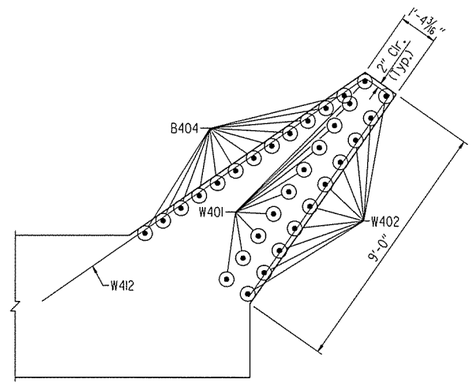
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 428 | 897 |
| | | | | (1) 07309 | | END BENT DETAILS | | 55282 |



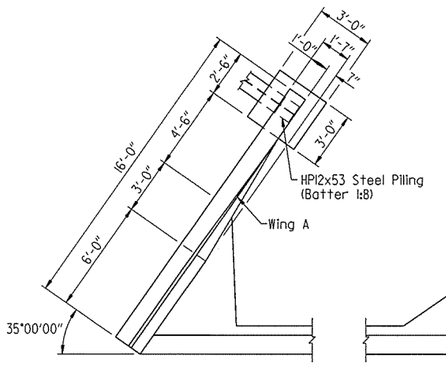

VIEW D-D
Scale: ⅜" = 1'-0"

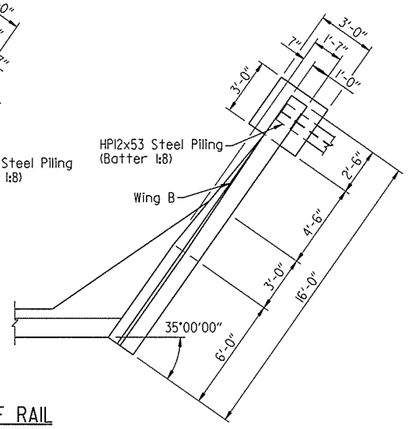



SECTION E-E (WING A)
Scale: ⅜" = 1'-0"

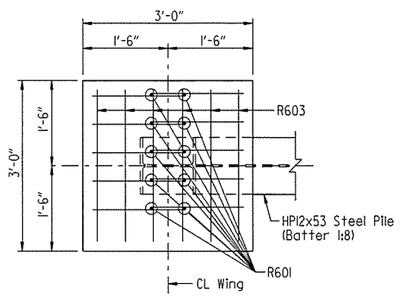



SECTION E-E (WING B)
Scale: ⅜" = 1'-0"




PLAN OF RAIL
Scale: ¼" = 1'-0"

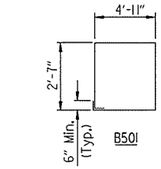



DETAIL X
(Plan Of Wing Pile Footing)
Scale: ⅜" = 1'-0"

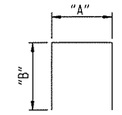
## BAR LIST - PER BENT

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|
| B401 | 68 | 5'-10" | 8" | 2'-8" | 2" |
| B402 | 10 | 6'-0½" | | | Str. |
| B403 | 14 | 37'-3" | | | Str. |
| B404 | 10 | 6'-6" | | | Str. |
| | | | | | |
| B501 | 48 | 15'-6" | | | 2½" |
| B502 | 14 | 10'-1½" | 4'-11" | 2'-7" | 2½" |
| B503 | 4 | 36'-5" | | | Str. |
| B504 | 53 | 12'-9½" | 1'-2" | 5'-11" | 2½" |
| | | | | | |
| B601 | 15 | 12'-2" | 8" | 5'-11" | 4½" |
| B602 | 5 | 10'-11" | | | 4½" |
| B603 | 5 | 17'-1" | | | 4½" |
| B604 | 1 | 10'-0" | 9'-1" | 1'-0" | 4½" |
| B605 | 1 | 16'-1" | 1'-0" | 15'-1" | 4½" |
| | | | | | |
| B801 | 7 | 38'-3" | | | 6" |
| B802 | 7 | 36'-5" | | | Str. |
| | | | | | |
| R401 | 18 | 3'-11" | | | 2" |
| R402 | 10 | 4'-0" | | | 2" |
| R403 | 12 | 15'-8" | | | Str. |
| | | | | | |
| R601 | 20 | 8'-3" | 6'-10" | 1'-7" | 4½" |
| R602 | 6 | 5'-0" | | | Str. |
| R603 | 12 | 2'-8" | | | Str. |
| | | | | | |
| W401 | 20 | 9'-7½" | 1'-6" | 8'-1½" | 3" |
| W402 | 20 | 10'-5" | | | Str. |
| W403 To W406 | 2 Each | 5'-0½" To 6'-7½" | 1'-6" | 3'-6½" To 5'-1½" | 3" |
| W407 To W410 | 2 Each | 5'-10" To 7'-5" | | | Str. |
| W411 | 4 | 17'-11" | 8'-3" | 8⅝" | 2" |
| W412 | 4 | 23'-6" | 13'-10" | 4⅞" | 2" |
| | | | | | |
| W701 | 16 | 15'-8" | | | Str. |
| W702 | 4 | 11'-9" | | | Str. |
| W703 | 4 | 10'-3" | | | Str. |
| W704 | 4 | 16'-2" | | | 5¼" |
| W705 | 4 | 8'-8" | | | Str. |

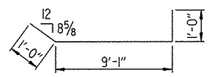
## BAR BENDING DIAGRAMS



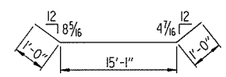

B501



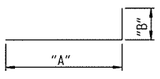

B401, B502, B504 & B601



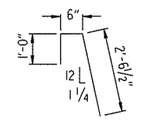

B602



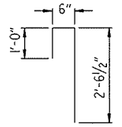

B603



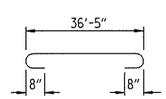

B604 & R601



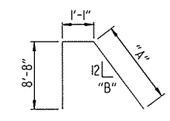

R401




R402




B801




W411 & 412




B605, W401, W403-W406




W704

Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of bars shown is for one bent only.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 4 OF 5
# DETAILS OF END BENTS
# COUNTY ROAD 236 (ZION ROAD)
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

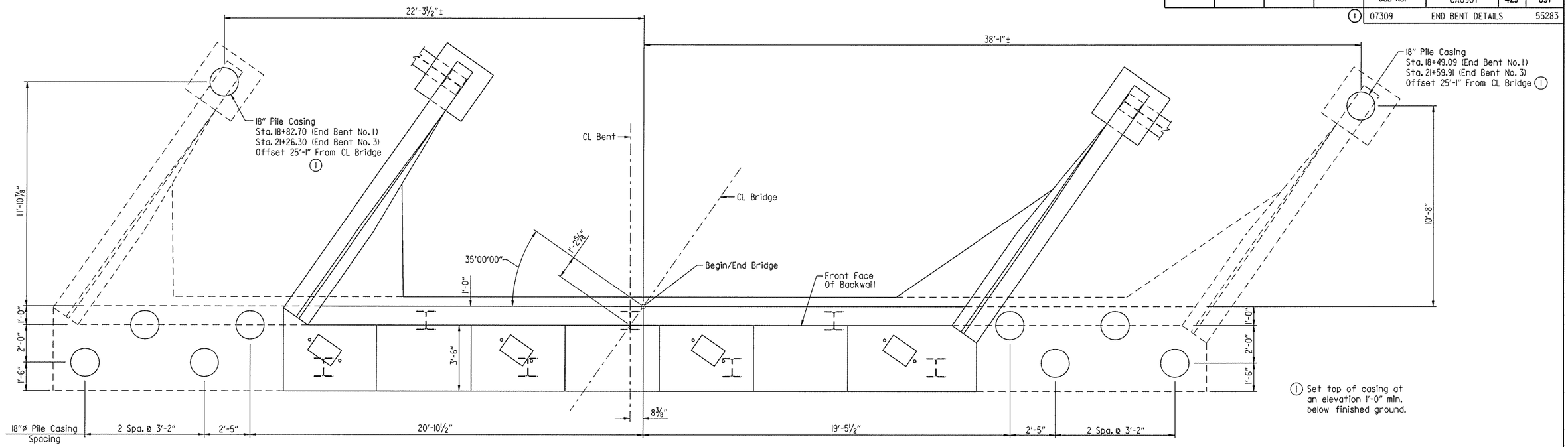
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X6_A4.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

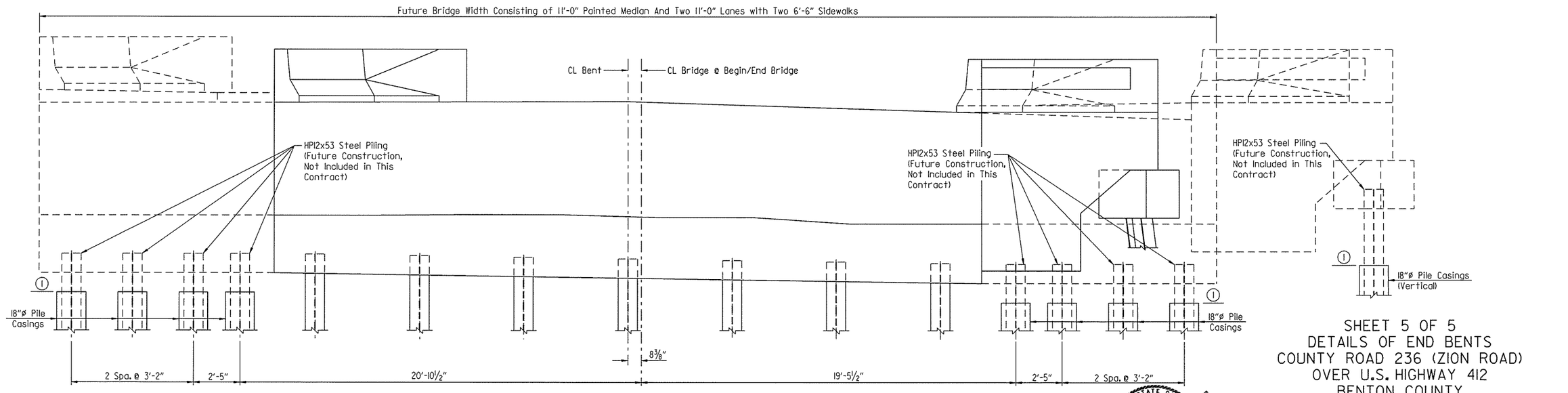
BRIDGE NO. 07309 DRAWING NO. 55282

dr.good 9/3/2014 2:41:45 PM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\05916B0 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_A4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 429 | 897 |
| | | | | (1) 07309 | | END BENT DETAILS | | 55283 |




PLAN - END BENT
Scale: ⅜" = 1'-0"




ELEVATION - END BENT
Scale: ⅜" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 5 OF 5
# DETAILS OF END BENTS
# COUNTY ROAD 236 (ZION ROAD)
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

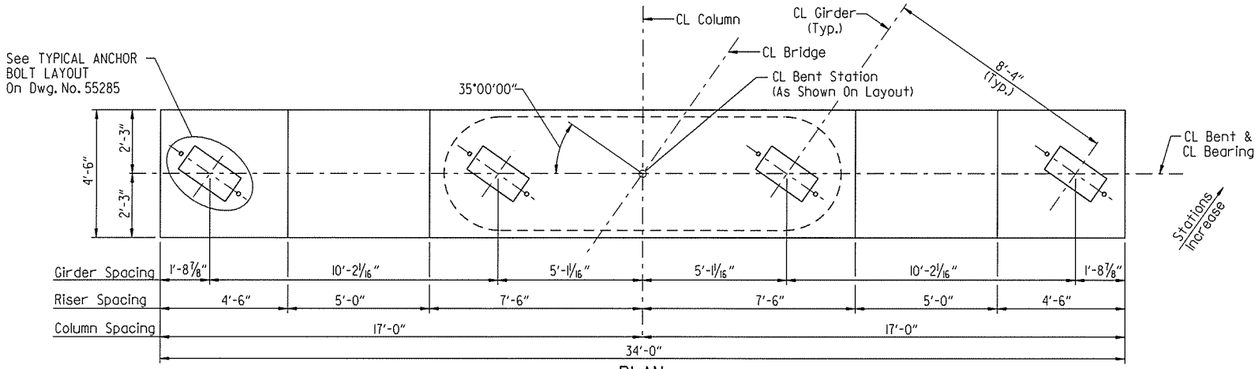
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X6_A5.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011

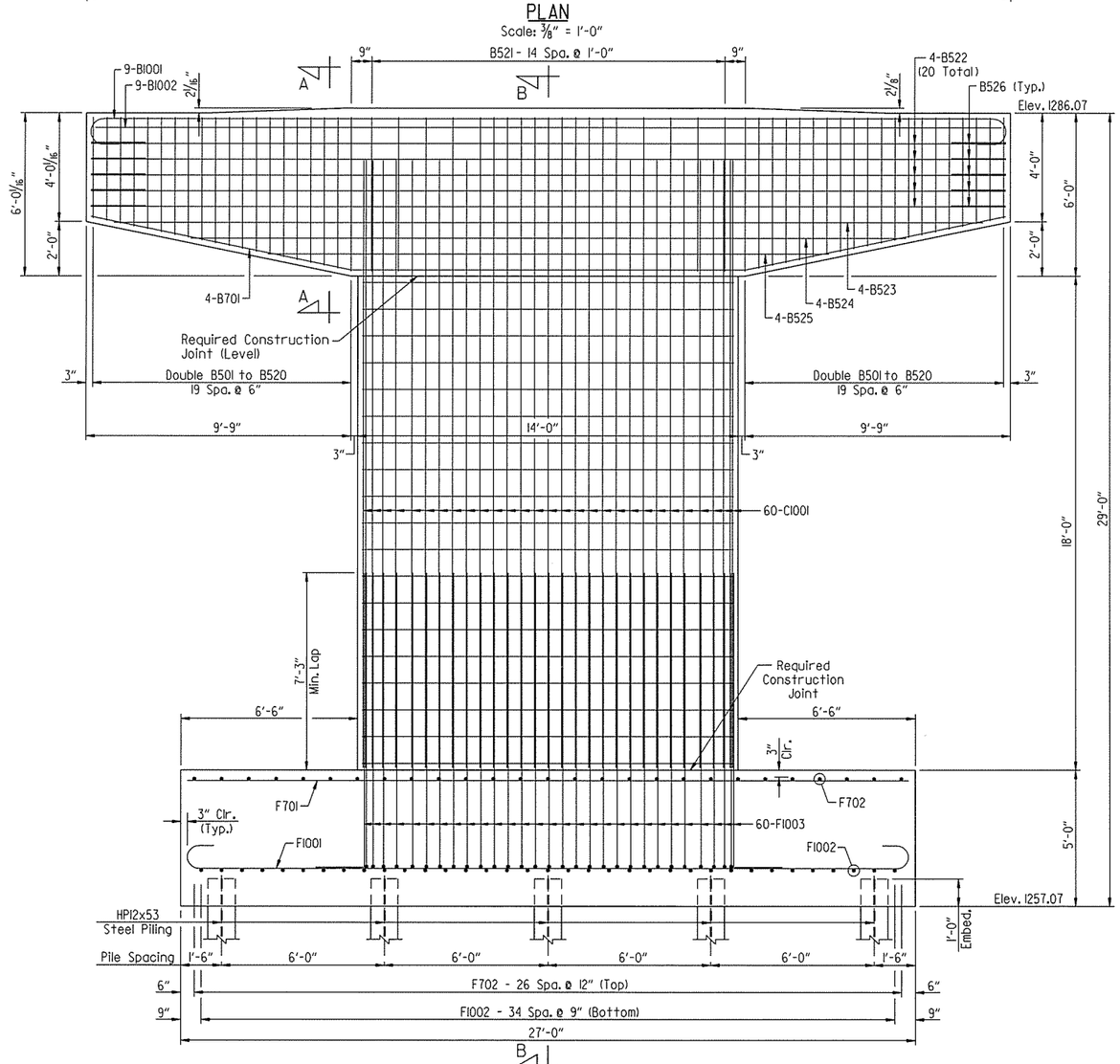
BRIDGE NO. 07309 DRAWING NO. 55283

dr.good 9/3/2014 2:41:45 PM
WORKSPACE: AHTD Bridge
\\LITTDOLLIFP\Projects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_A5.dgn
REVISED DATE:

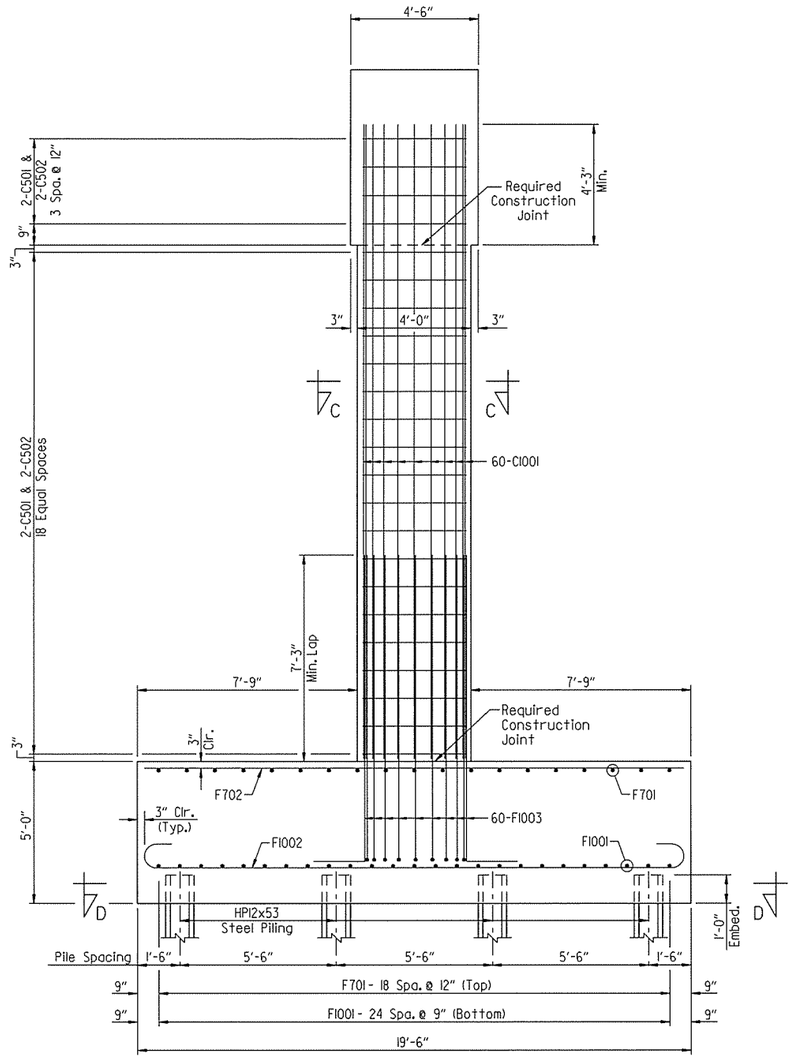
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 430 | 897 |
| | | | | (1) 07309 | | INT. BENT DETAILS | | 55284 |




PLAN
Scale: 3/8" = 1'-0"




ELEVATION
(Looking Ahead)
Scale: 3/8" = 1'-0"




SECTION B-B
Scale: 3/8" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55296.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55285.

For SECTION A-A, SECTION C-C & SECTION D-D, see Dwg. No. 55285.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
JOHN H. RUDDELL
No. 8017
8-13-14

BRIDGE ENGINEER

# SHEET 1 OF 2
# DETAILS OF INTERMEDIATE BENT NO. 2
# COUNTY ROAD 236 (ZION RD.)
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

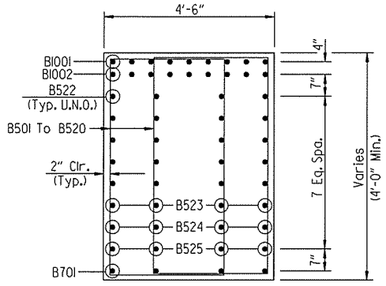
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X6_BI.DGN
SCALE: AS SHOWN

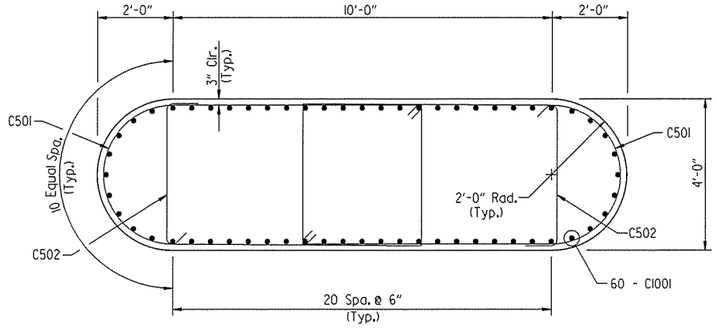
BRIDGE NO. 07309 DRAWING NO. 55284

drgood
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_BI.dgn
REVISED DATE: 9/3/2014 2:41:46 PM

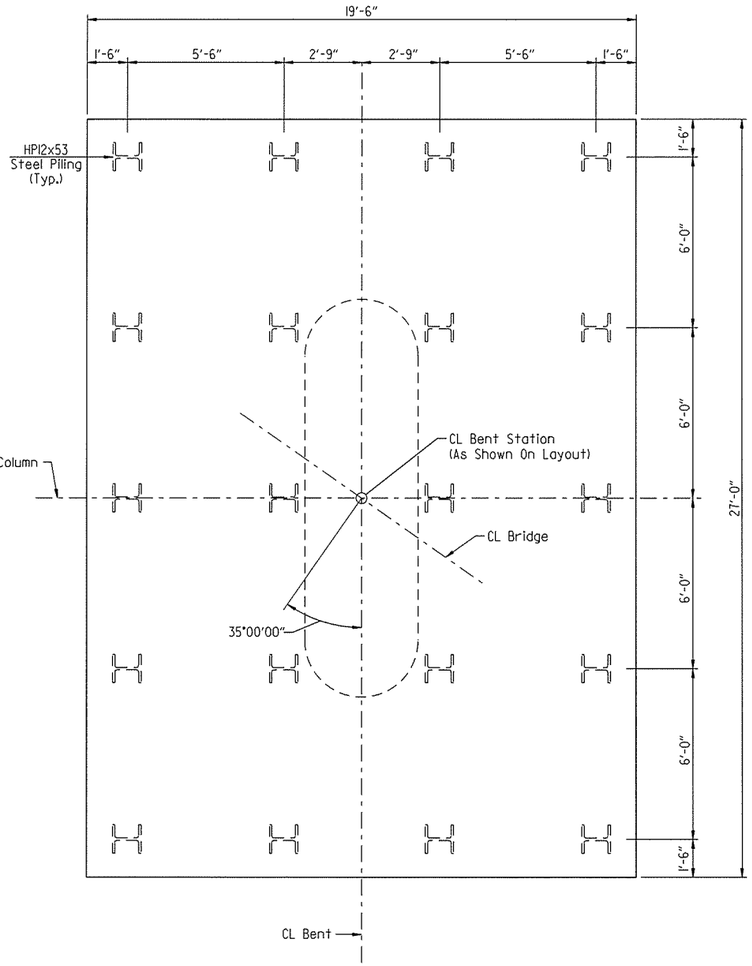
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 431 | 897 |
| | | | | (1) 07309 | | INT. BENT DETAILS | | 55285 |




SECTION A-A
Scale: 1/2" = 1'-0"




SECTION C-C
Scale: 1/2" = 1'-0"

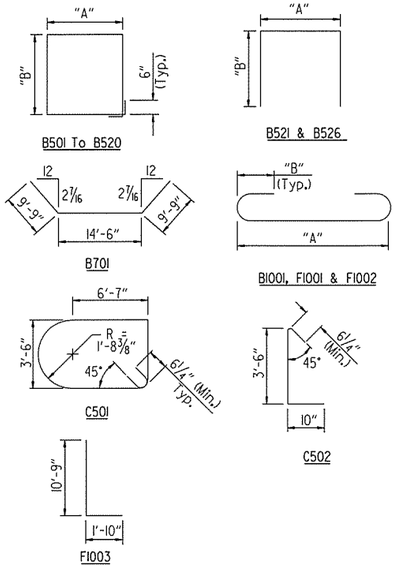



SECTION D-D
Scale: 3/8" = 1'-0"

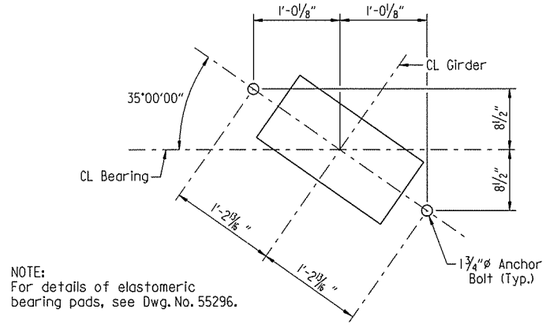
## BAR LIST

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B520 | 4 Ea. | 13'-11" To 17'-10" | 3'-0" | 3'-8 1/2" To 5'-8" | 2 1/2" |
| B521 | 15 | 15'-3 1/2" | 4'-2" | 5'-8" | 2 1/2" |
| B522 | 20 | 33'-8" | | | Str. |
| B523 | 4 | 32'-0" | | | Str. |
| B524 | 4 | 26'-4" | | | Str. |
| B525 | 4 | 20'-8" | | | Str. |
| B526 | 10 | 7'-11" | 4'-1" | 2'-0" | 2 1/2" |
| | | | | | |
| B701 | 4 | 34'-0" | | | 5 1/4" |
| | | | | | |
| B1001 | 9 | 36'-6" | 33'-8" | 11 1/2" | 10" |
| B1002 | 9 | 33'-4" | | | Str. |
| | | | | | |
| C501 | 46 | 23'-10" | | | 3 3/4" |
| C502 | 46 | 4'-10" | | | 3 3/4" |
| | | | | | |
| C1001 | 60 | 22'-4" | | | Str. |
| | | | | | |
| F701 | 19 | 26'-6" | | | Str. |
| F702 | 27 | 19'-0" | | | Str. |
| | | | | | |
| F1001 | 25 | 29'-4" | 26'-6" | 11 1/2" | 10" |
| F1002 | 35 | 21'-8" | 19'-0" | 11 1/2" | 10" |
| F1003 | 60 | 12'-4" | | | 10" |

## BAR BENDING DIAGRAMS




NOTE:
Dimensions of bars are out-to-out.




NOTE:
For details of elastomeric bearing pads, see Dwg. No. 55296.

TYPICAL ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"

## LEGEND

U.N.O. = Unless Noted Otherwise

## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see LAYOUT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

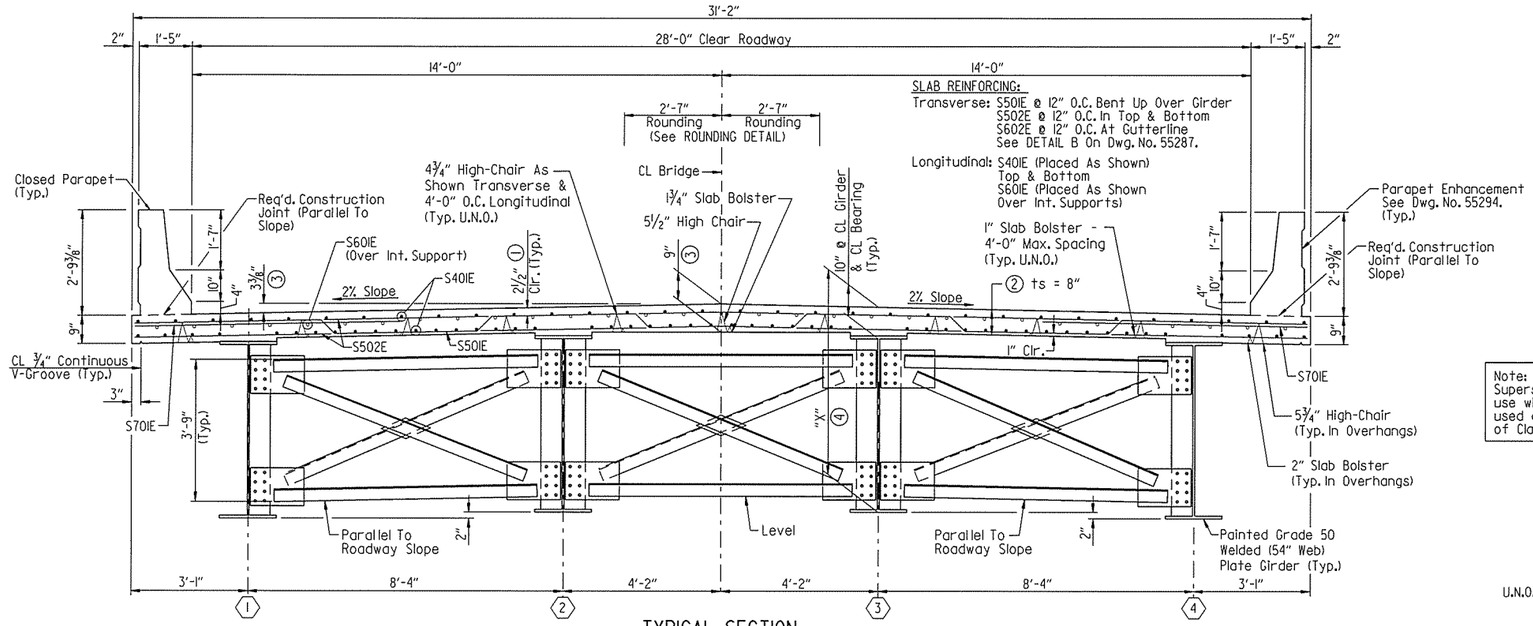
SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X6_B2.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: MAR. 2011
BRIDGE NO. 07309 DRAWING NO. 55285

dropood 9/3/2014 2:41:46 PM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_B2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 432 | 897 |
| (1) 07309 | | SPAN DETAILS | | 55286 |




## TYPICAL SECTION
Scale: ½" = 1'-0"

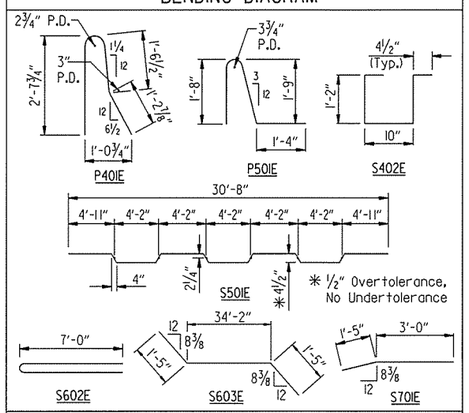
SLAB REINFORCING:
Transverse: S50IE @ 12" O.C. Bent Up Over Girder
S502E @ 12" O.C. In Top & Bottom
S602E @ 12" O.C. At Gutterline
See DETAIL B On Dwg. No. 55287.

Longitudinal: S40IE (Placed As Shown)
Top & Bottom
S60IE (Placed As Shown
Over Int. Supports)

Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

## LEGEND
U.N.O. = Unless Noted Otherwise

## BENDING DIAGRAM

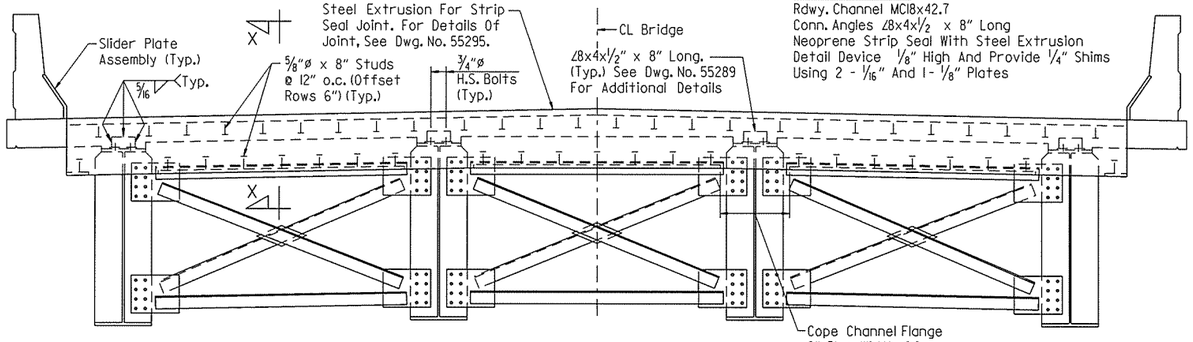



## BAR LIST

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| S40IE | 574 | 37'-6" | Str. |
| S402E | 48 | 3'-7" | 2" |
| | | | |
| S50IE | 227 | 31'-3½" | 3" |
| S502E | 454 | 30'-10" | Str. |
| S503E TO S532E | 2 Ea. | 8'-1½" TO 28'-10" | Str. |
| S533E TO S56IE | 2 Ea. | 8'-11" TO 28'-9" | Str. |
| | | | |
| S60IE | 93 | 31'-8" | Str. |
| S602E | 484 | 14'-3" | 5¼" (5) |
| S603E | 6 | 37'-0" | 4½" |
| S604E | 12 | 9'-11" | Str. |
| | | | |
| S70IE | 20 | 4'-5" | 5¼" |
| S702E TO S710E | 4 Ea. | 3'-9" TO 7'-6½" | Str. |
| S711E | 2 | 8'-0" | Str. |
| | | | |
| P40IE | 988 | 5'-7½" | 2¾", 3" |
| P402E | 24 | 33'-4" | Str. |
| P403E | 6 | 10'-8" | Str. |
| P404E | 104 | 11'-8" | Str. |
| P405E | 48 | 11'-2" | Str. |
| P406E | 24 | 36'-4" | Str. |
| P407E | 8 | 15'-8" | Str. |
| | | | |
| P50IE | 988 | 4'-10" | 3¾" |

Note:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.




## VIEW AT CL JOINT
Looking Ahead - End Bent No. 1
Looking Back - End Bent No. 3
Scale: NTS

(1) TOLERANCE:
Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

(2) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

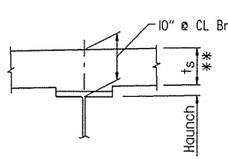
(3) Measured to Working Point - see ROUNDING DETAIL.

(4) "X" = 5'-4" + bottom flange thickness, measured at CL Bearing & CL Girder.

(5) Non-typical pin diameter

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S50IE. Payment will be based on the weight of bar S50IE.

Note:
Class 2 protective surface treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.

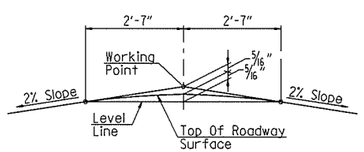



Note: $t_s$ = Slab thickness as shown on TYPICAL SECTION.
** Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED
Scale: NTS

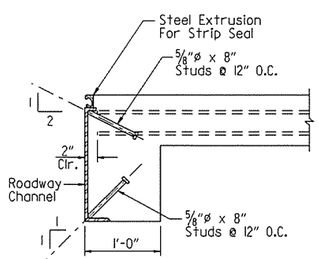
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. see Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.




Note:
Working point matches theoretical profile grade.

## ROUNDING DETAIL
Scale: NTS




Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced @ 8" O.C. may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

## SECTION X-X
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 1 OF 10
# DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
# COUNTY ROAD 236 (ZION RD.)
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: WFF DATE: JAN. 2011
FILENAME: BCA0907X6_SI.DGN
SCALE: AS SHOWN

BRIDGE NO. 07309 DRAWING NO. 55286

dropod 9/3/2014 2:41:47 PM
WORKSPACE: AHTD Bridge
\\GLITGCDN\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_SI.dgn
REVISED DATE:

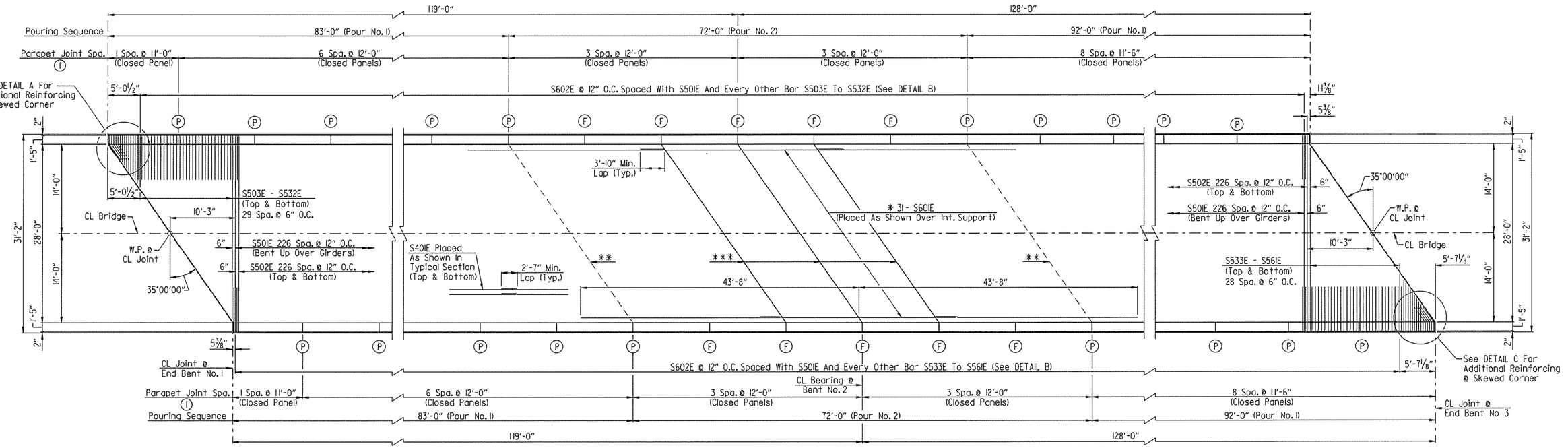
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 433 | 897 |
| | | | | (I) 07309 | | SPAN DETAILS | | 55287 |

(I) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION on Dwg. No. 55286 for placement

** Pouring Sequence Construction Joint

*** Required Slab Joint



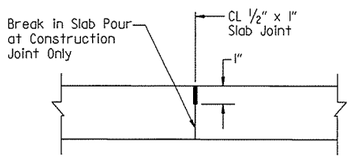

## REINFORCING PLAN & POURING SEQUENCE

Scale: ⅛" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse before the end of a Pour and the start of the next Pour. 72 hours shall elapse between the end of a Pour and the start of an adjacent Pour. 72 hours shall elapse between the completion of the entire deck and the Pouring of the parapet. Any railing Pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

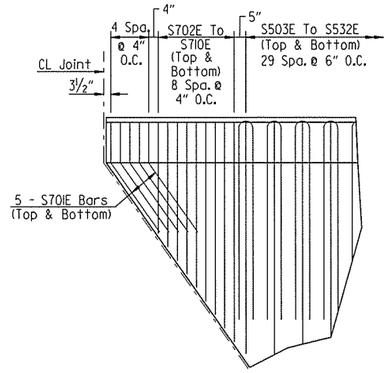
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) And 501.05(j). Backer Rod filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

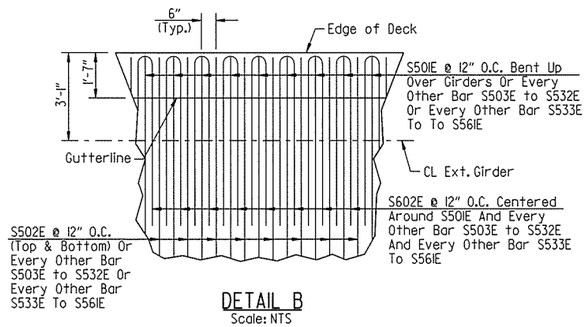
## SLAB JOINT DETAIL

Scale: NTS



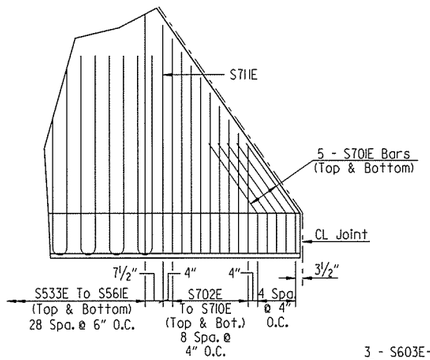

## DETAIL A

Scale: NTS



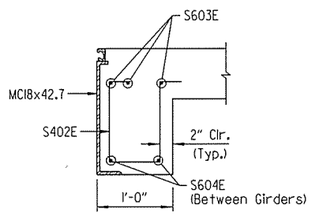

## DETAIL B

Scale: NTS



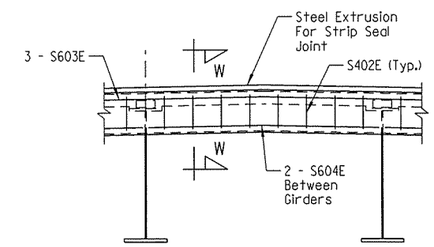

## DETAIL C

Scale: NTS



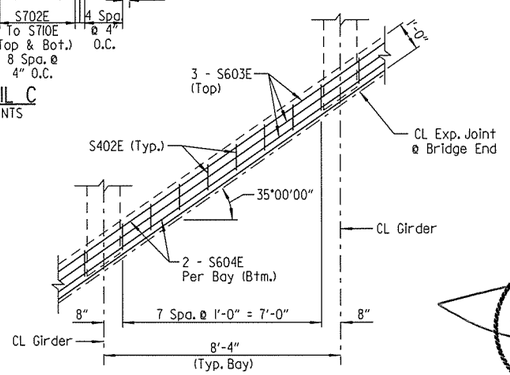

## SECTION W-W

Scale: NTS




## ELEVATION OF TURNDOWN AT BRIDGE ENDS

Scale: NTS




## PLAN OF TURNDOWN AT BRIDGE ENDS

Scale: NTS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 10
DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

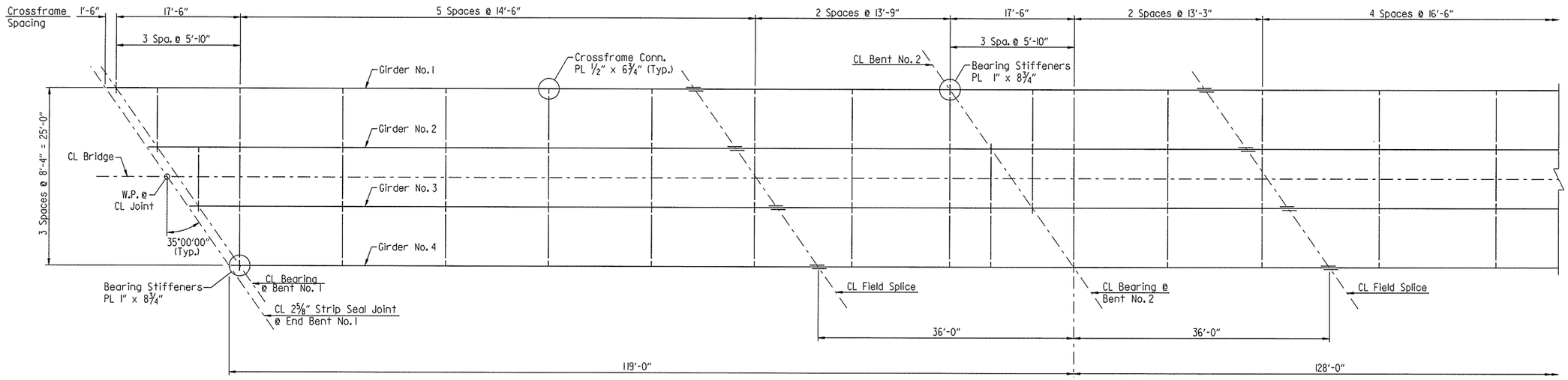
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X6_S2.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

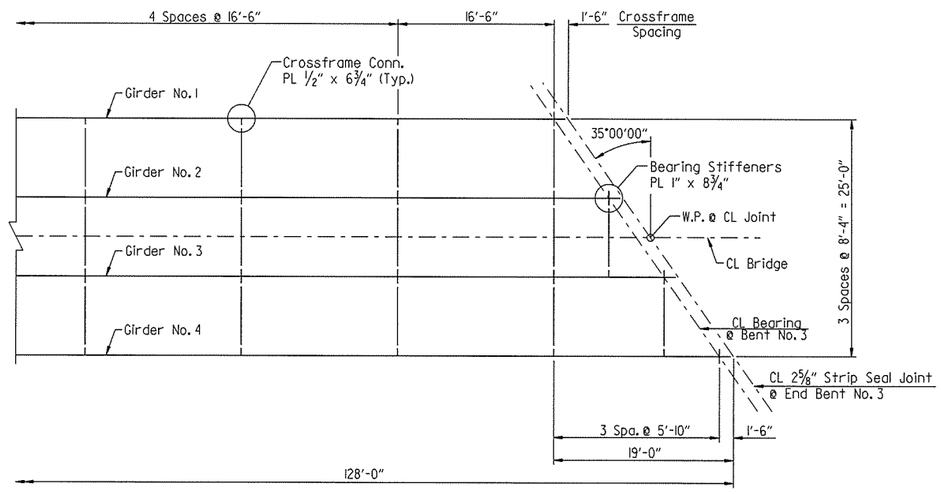
BRIDGE NO. 07309 DRAWING NO. 55287

drgood 9/3/2014 2:44:47 PM
WORKSPACE: AHTD Bridge
\\CLUTDOOLLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_S2.dgn
REVISED DATE:

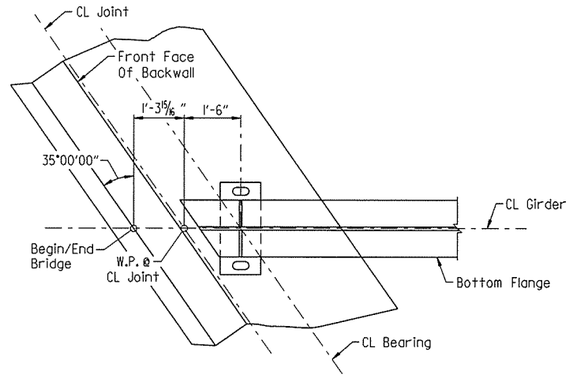
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 434 | 897 |
| | | | | (1) 07309 | | SPAN DETAILS | | 55288 |




FRAMING PLAN
Scale: 1/8" = 1'-0"




FRAMING PLAN
Scale: 1/8" = 1'-0"




BEARING PLAN AT END BENT
Scale: 1/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 3 OF 10
DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

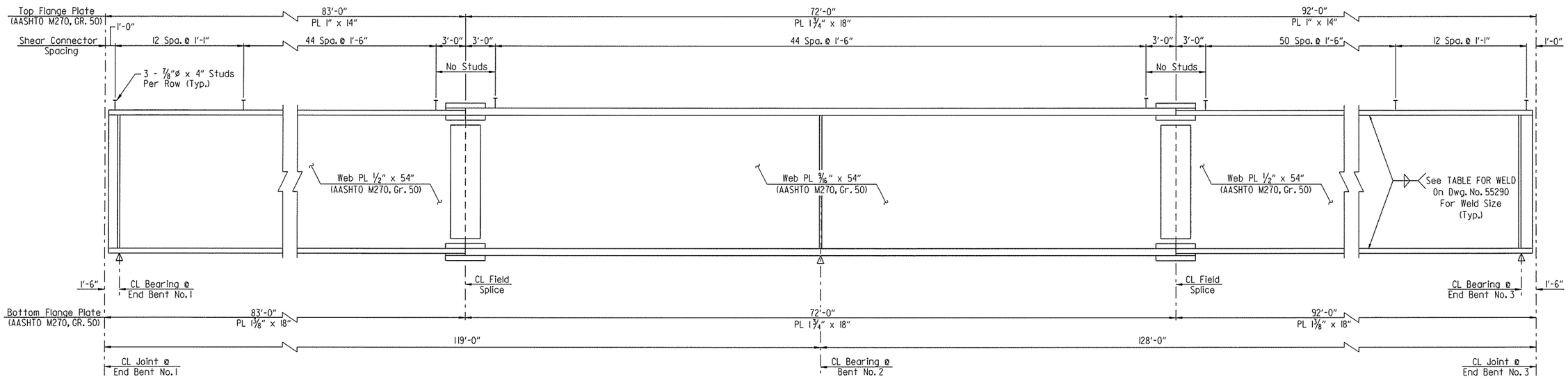
DRAWN BY: HEW DATE: JAN. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: WRF DATE: JAN. 2011
FILENAME: BCA0907X6_S3.DGN
SCALE: AS SHOWN

BRIDGE NO. 07309 DRAWING NO. 55288

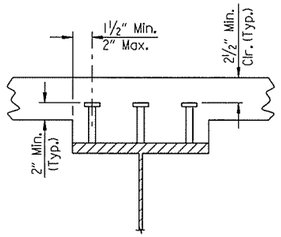
dropod 9/3/2014 2:41:48 PM
WORKSPACE: AHTD Bridges
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_S3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 435 | 897 |
| (1) 07309 | | SPAN DETAILS | | 55289 |

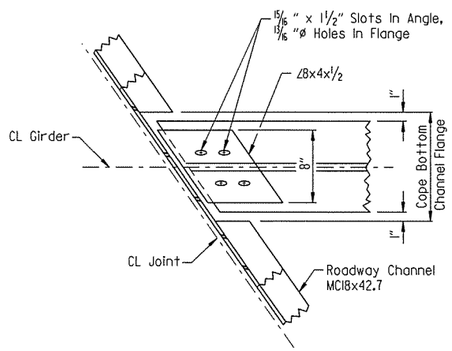



TYP. GIRDER ELEVATION
Scale: NTS

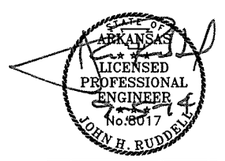



Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio ratio of 1.361- 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL
Scale: NTS




CHANNEL CONNECTION DETAIL
Scale: NTS




BRIDGE ENGINEER

SHEET 4 OF 10
DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

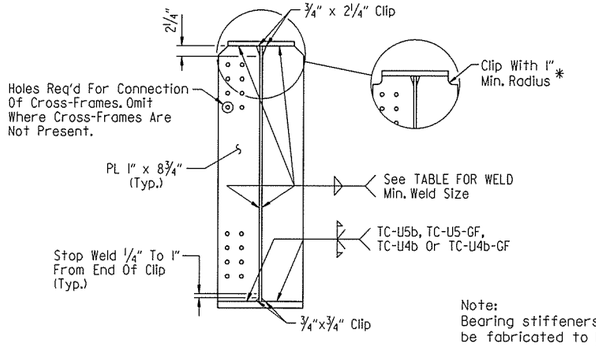
DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X6_S4.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

BRIDGE NO. 07309 DRAWING NO. 55289

drgood 9/3/2014 2:41:48 PM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_S4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 436 | 897 |
| | | | | (1) 07309 | | SPAN DETAILS | | 55290 |

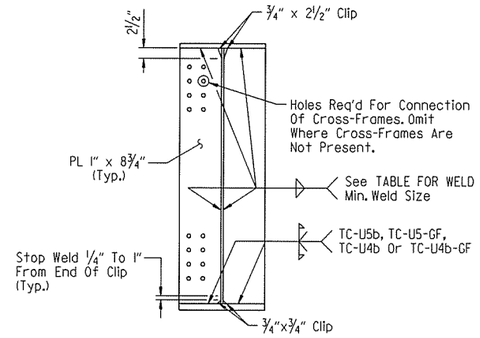
* If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.




Note:
Bearing stiffeners shall be fabricated to be plumb in their final position.

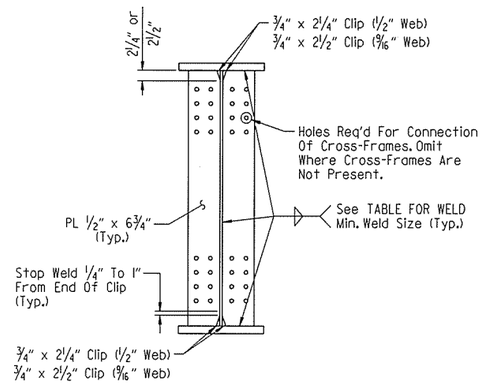
## BEARING STIFFENER @ END BENTS

Scale: ¾" = 1'-0"




## BEARING STIFFENER @ INTERIOR BENT

Scale: ¾" = 1'-0"




## CROSSFRAME CONNECTION PLATE DETAIL

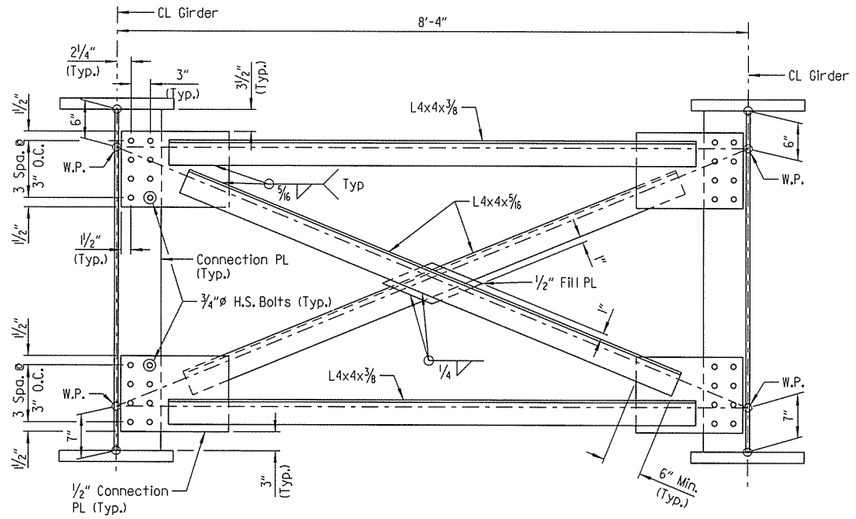
Scale: ¾" = 1'-0"

## TABLE FOR WELD

| Material Thickness of Thicker Part Joined (Inches) | Minimum Size of Fillet Weld (Inches) | Single Pass Weld Must Be Used |
|---|---|---|
| To ¾" Inclusive | ¼" | |
| Over ¾" | 5/16" | |

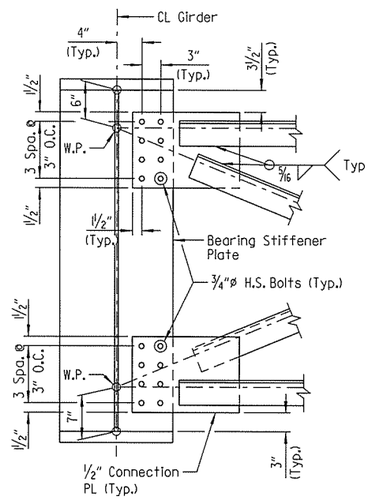
Note:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTES:
1. For GENERAL NOTES, see Drawing No. 55294.
2. All structural steel, including girders, crossframes, bearing stiffeners and conn. plates, shall be AASHTO M270, Grade 50.
3. For elastomeric bearing details, see Drawing No. 55296.
4. For details of field splices, see Drawing No. 55291.
5. For typical haunch details, see Dwg. No. 55286.
6. For DEAD LOAD DEFLECTION, see Drawing No. 55291.




## INTERMEDIATE CROSS FRAME DETAIL

Scale: 1" = 1'-0"




## CROSS FRAME CONNECTION DETAIL AT BEARING STIFFENER PLATES

Scale: 1" = 1'-0"

Note:
Bolts in cross-frame connections shall be properly installed and tightened in accordance with Subsection 807.11 of the Standard Specifications.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 5 OF 10
DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

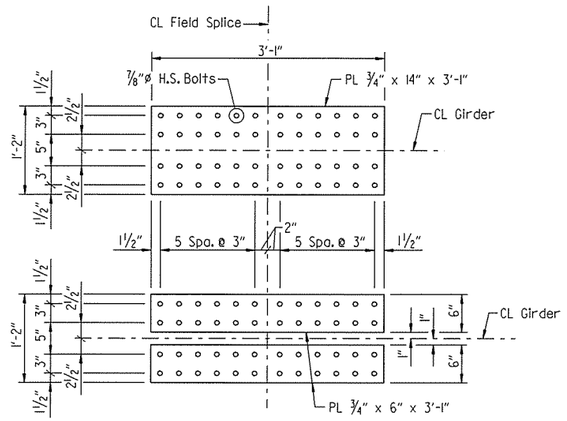
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X6_S5.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

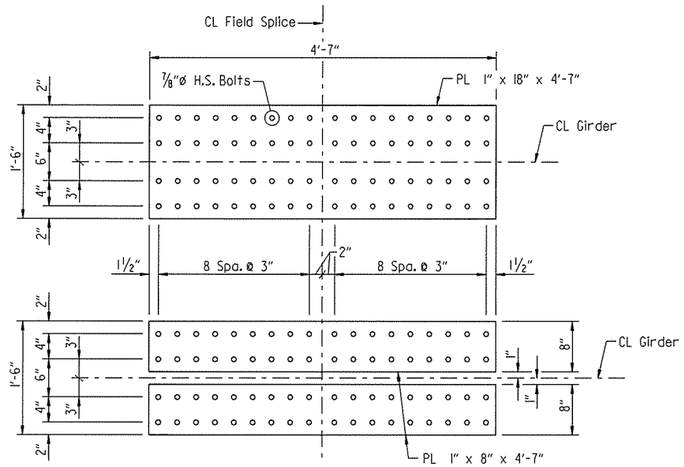
BRIDGE NO. 07309 DRAWING NO. 55290

dr.good 9/3/2014 2:41:49 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_S5.dgn
REVISED DATE:

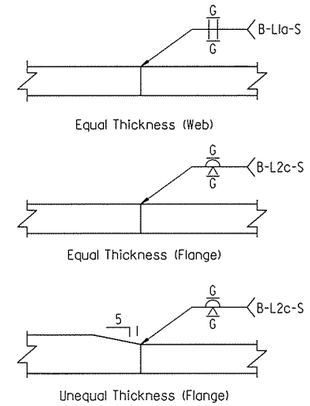
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 437 | 897 |
| | | | | (1) 07309 | | SPAN DETAILS | | 55291 |



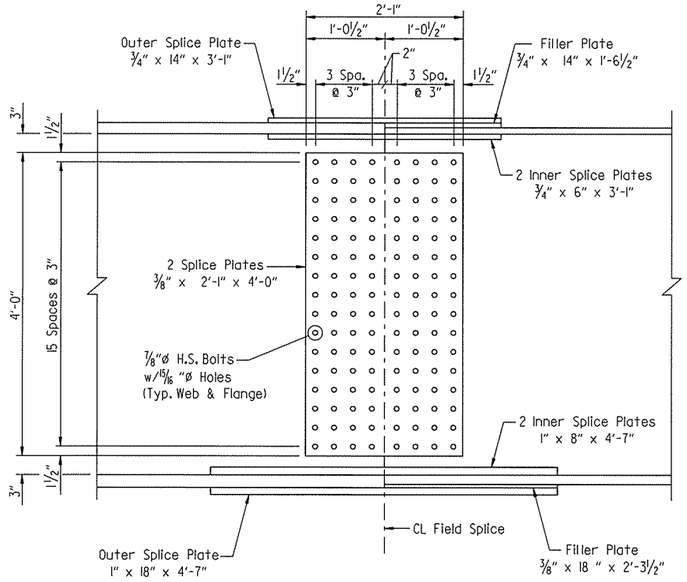

TOP FLANGE SPLICE
Scale: 1" = 1'-0"




BOTTOM FLANGE SPLICE
Scale: 1" = 1'-0"



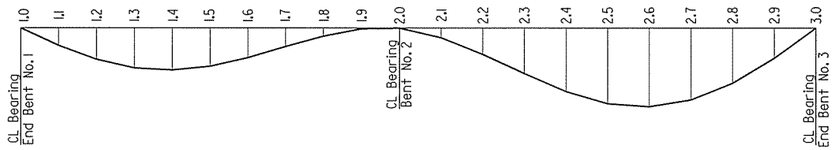

DETAILS OF WELDED SPLICES
Scale: NTS




ELEVATION OF FIELD SPLICE
Scale: 1" = 1'-0"
(Span No. 2 Field Splice Shown,
Span No. 1 Field Splice Similar By Orientation)

NOTES:
All field splice bolts shall be 7/8"ø H.S. bolts.
All holes for splice bolts shall be 15/16 "ø.
All field splice plates shall be AASHTO M270, Gr. 50 Steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.




DEAD LOAD DEFLECTION
Scale: NTS

| TABLE OF DEAD LOAD DEFLECTIONS (Inches) | | | |
|---|---|---|---|
| Point Of Deflection | Wt. Of Girder And Crossframes | Wt. Of Girder, Crossframes And Slab | Wt. Of Girder, Crossframes, Slab And Parapet |
| 1.0 | 0.00 | 0.00 | 0.00 |
| 1.1 | 0.16 | 0.56 | 0.62 |
| 1.2 | 0.29 | 1.02 | 1.13 |
| 1.3 | 0.37 | 1.32 | 1.46 |
| 1.4 | 0.40 | 1.42 | 1.57 |
| 1.5 | 0.38 | 1.31 | 1.46 |
| 1.6 | 0.31 | 1.04 | 1.16 |
| 1.7 | 0.21 | 0.68 | 0.76 |
| 1.8 | 0.10 | 0.32 | 0.36 |
| 1.9 | 0.02 | 0.06 | 0.07 |
| 2.0 | 0.00 | 0.00 | 0.00 |
| 2.1 | 0.06 | 0.27 | 0.29 |
| 2.2 | 0.19 | 0.76 | 0.84 |
| 2.3 | 0.34 | 1.34 | 1.48 |
| 2.4 | 0.48 | 1.87 | 2.07 |
| 2.5 | 0.58 | 2.24 | 2.46 |
| 2.6 | 0.60 | 2.34 | 2.57 |
| 2.7 | 0.55 | 2.13 | 2.34 |
| 2.8 | 0.43 | 1.64 | 1.80 |
| 2.9 | 0.23 | 0.90 | 0.98 |
| 3.0 | 0.00 | 0.00 | 0.00 |

NOTE:
Camber for dead load deflection plus vertical curve ± 1/4" tolerance. Delections shown are from a chord from centerline bearing to centerline bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9013
JOHN H. RUDDELL
BRIDGE ENGINEER

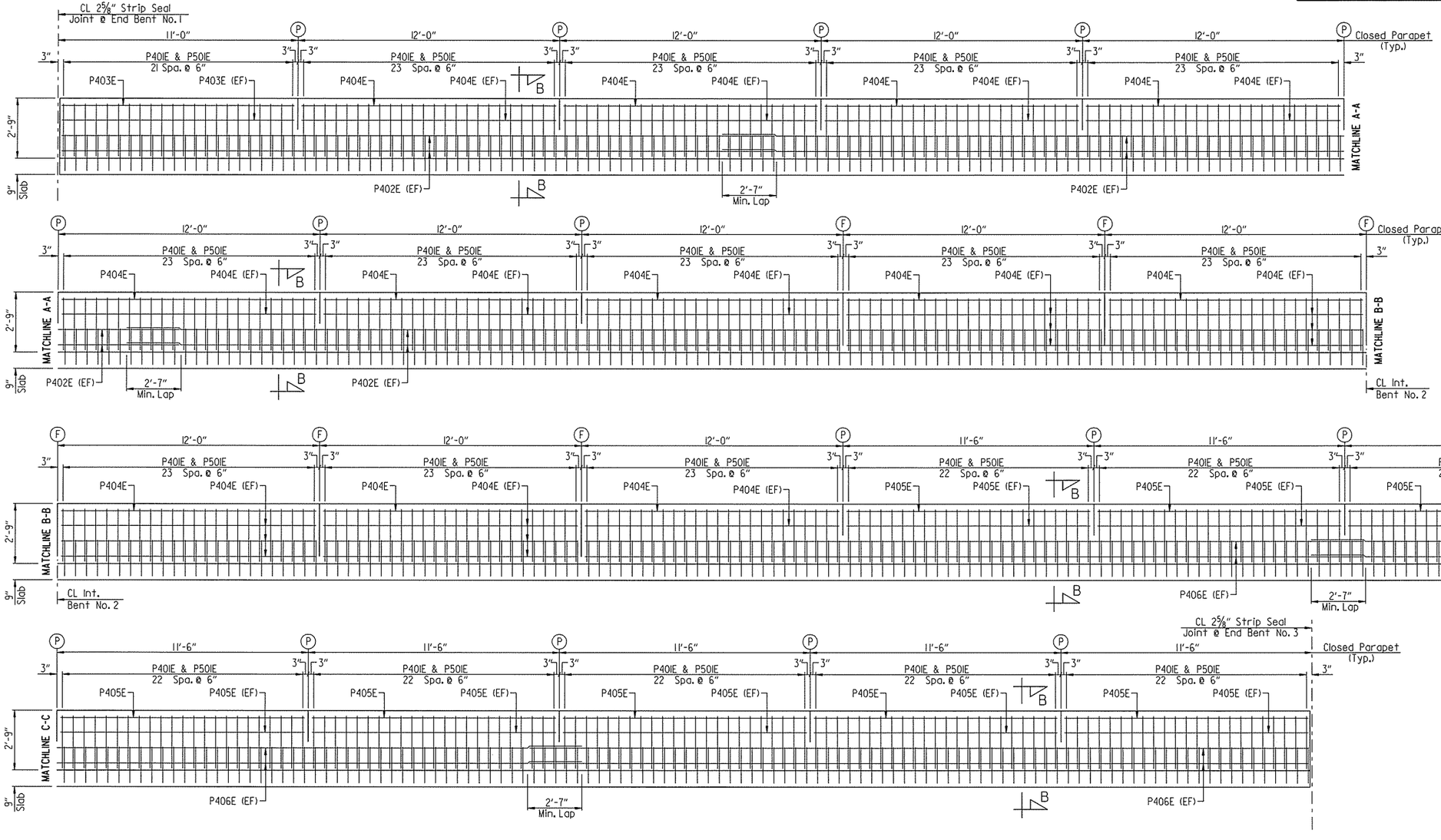
SHEET 6 OF 10
DETAILS OF 247'-0" COMPOSITE
PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

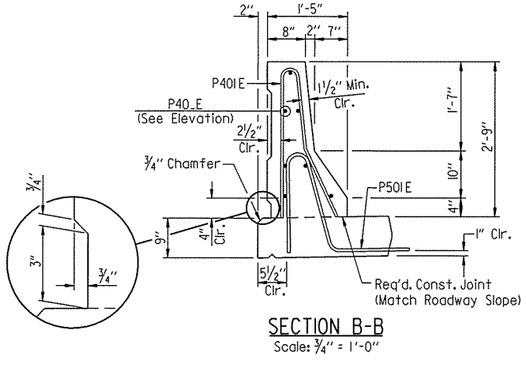
DRAWN BY: HEW DATE: JAN. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: WRF DATE: JAN. 2011
FILENAME: BCA0907X6_S6.DGN
SCALE: AS SHOWN
BRIDGE NO. 07309 DRAWING NO. 55291

dropod 9/3/2014 2:41:49 PM
WORKSPACE: AHTD Bridge
\\OLITOCOR\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_S6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 438 | 897 |
| 1 07309 | | SPAN DETAILS | | 55292 |




## SECTION B-B
Scale: ¾" = 1'-0"

## LEFT PARAPET - ELEVATION
(Looking At Inside Face Of Parapet Rail)
Scale: ⅜" = 1'-0"

Note:
For additional parapet details, see Dwg. No. 55294.

## GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day Compressive Strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60

## LEGEND

EF = Each Face

(P) Partial depth parapet joints (¼" to 1" max.) shall be stopped 1'-2" from top of slab.

(F) Full depth parapet joints (¼" to 1" max.) shall be stopped 4" from top of slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 7 OF 10
# DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
# COUNTY ROAD 236 (ZION RD.) OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

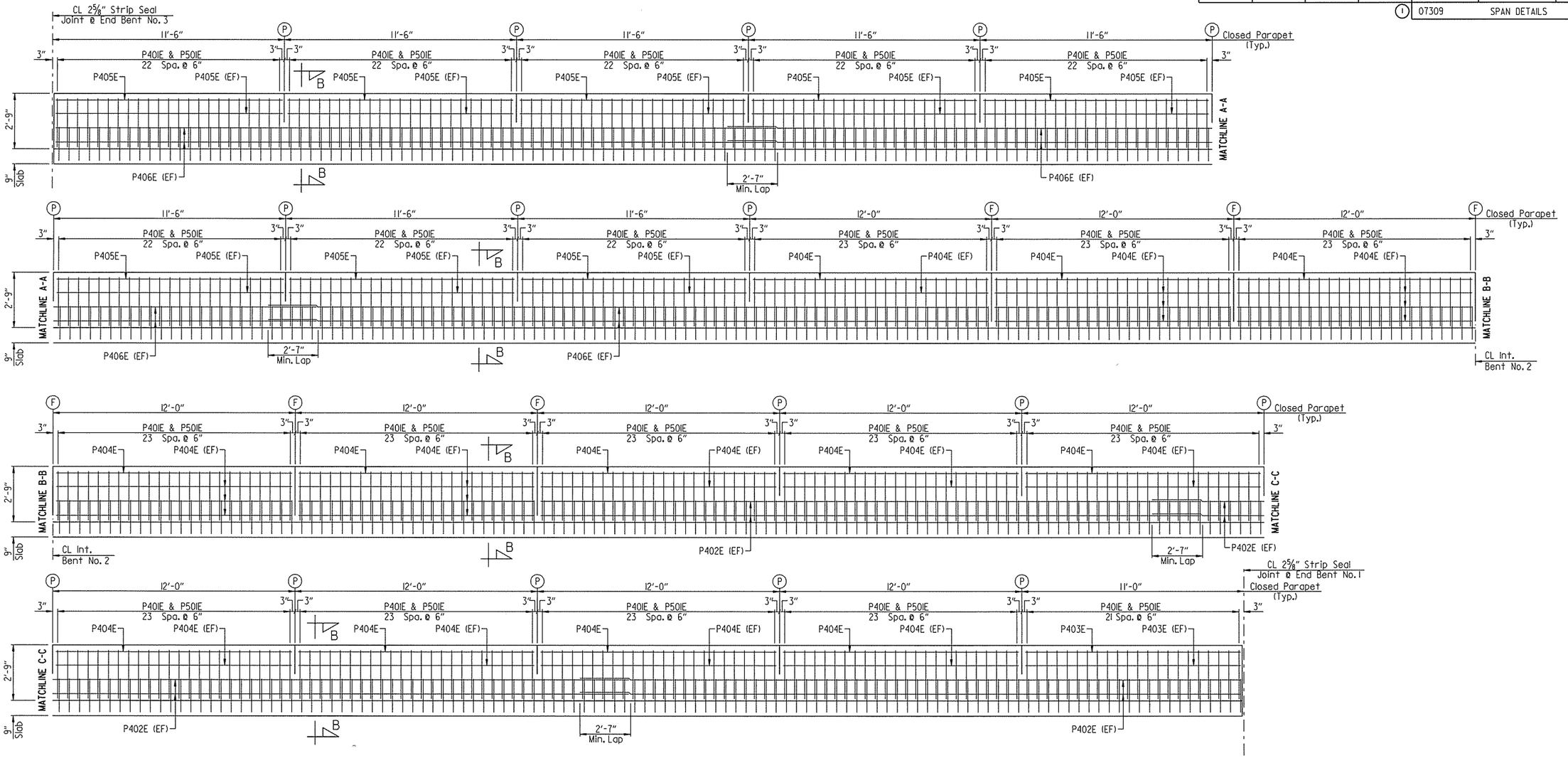
LITTLE ROCK, ARK.

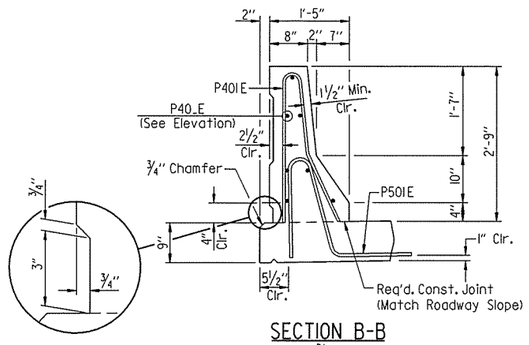
DRAWN BY: HEW DATE: JULY 2011 FILENAME: BCA0907X6_S7.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2011

BRIDGE NO. 07309 DRAWING NO. 55292


drgood 9/3/2014 2:41:50 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907X6_S7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 439 | 897 |
| | | | | (1) 07309 | | SPAN DETAILS | | 55293 |




SECTION B-B
Scale: ¾" = 1'-0"

RIGHT PARAPET - ELEVATION
(Looking At Inside Face Of Parapet Rail)
Scale: ⅜" = 1'-0"

Note:
For additional parapet details, see Dwg. No. 55294.

## GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day Compressive Strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60

## LEGEND

EF = Each Face

(P) Partial depth parapet joints (¼" to 1" max.) shall be stopped 1'-2" from top of slab.

(F) Full depth parapet joints (¼" to 1" max.) shall be stopped 4" from top of slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
7-3-14

BRIDGE ENGINEER

SHEET 8 OF 10
DETAILS OF 247'-0" COMPOSITE
PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2011 FILENAME: BCA0907X6_S8.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: JES DATE: JULY 2011

BRIDGE NO. 07309 DRAWING NO. 55293

dr.goad 9/3/2014 2:41:51 PM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_S8.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 440 | 897 |
| | | | | (1) 07309 | | SPAN DETAILS | | 55294 |

## GENERAL NOTES:

### CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

### REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

### STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". Structural steel completely embedded in concrete may be AASHTO M270, Gr.36 unless noted otherwise. All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. See Drawing No. 55296 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girders, including field splice plates, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splice, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54(b)(2) of the Standard Specifications. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- ¼" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications.

Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method.

All Quality Control (Q.C.) testing is at the Contractor's expense.

All connection plates shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plans. All bearing stiffeners shall be fabricated to be plumb in their final position.

Crossframes shall be installed as girders are erected. All bolts in crossframes and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

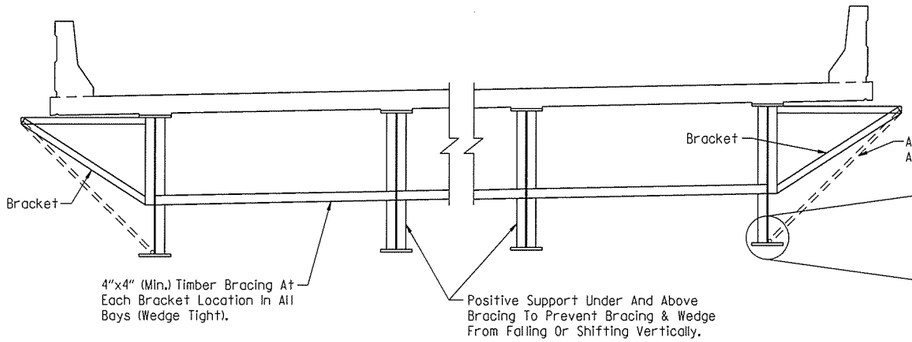
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Holes for ¾"ø high-strength bolts may be ⅝ "ø if a washer is supplied for use under both the nut and head of the bolt.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

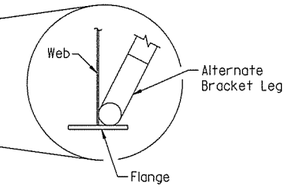
All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08 of the Standard Specifications. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695 Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

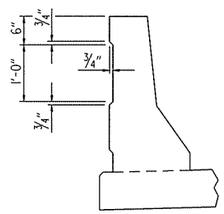



Note:
The brackets shall be installed in a manner that avoids any nicks or gouges in the flange, web and weld.

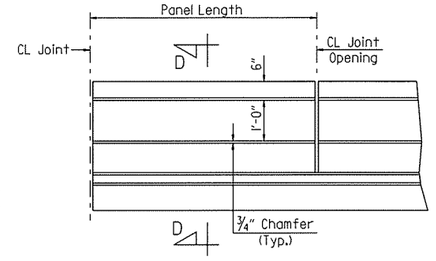



Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½" x 6¾" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket shown above is used. The alternate bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffeners shall conform to the details for intermediate connection plates shown on Dwg. Nos. 55288 & 55290. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)."

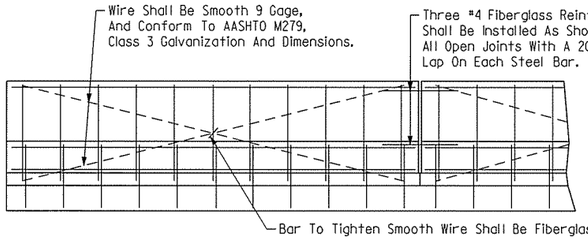
## SCREED RAIL SUPPORT DETAIL
Scale: NTS

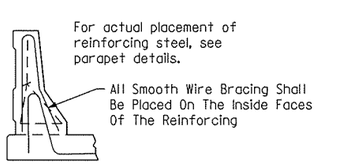



## SECTION D-D
Scale: ¾" = 1'-0"




## PARAPET ENHANCEMENT DETAILS
Scale: ½" = 1'-0"

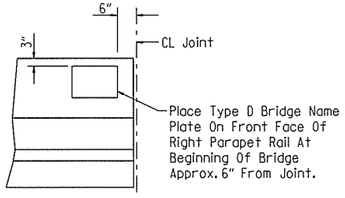


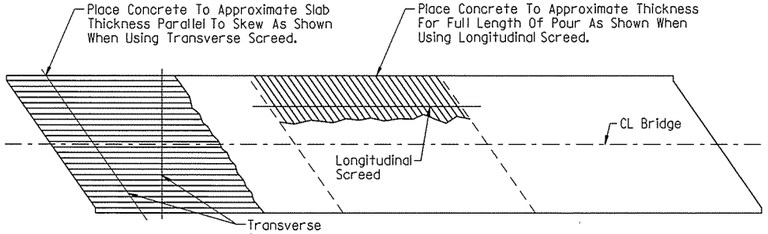

All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

## DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: NTS




## VIEW SHOWING LOCATION OF NAME PLATE
Scale: ½" = 1'-0"




Note:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

## CONCRETE PLACEMENT PROCEDURE
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

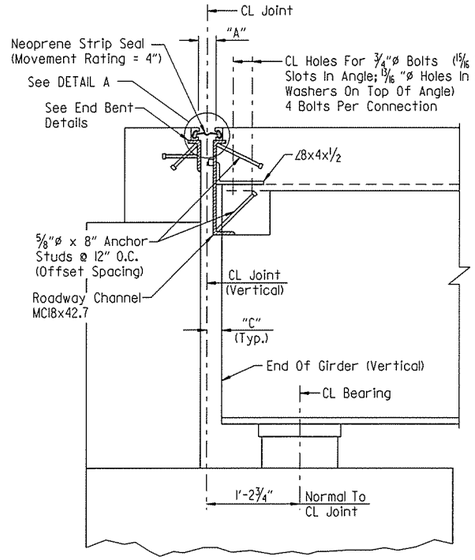
SHEET 9 OF 10
DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X6_S9.DGN
CHECKED BY: ABH DATE: NOV. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

BRIDGE NO. 07309 DRAWING NO. 55294

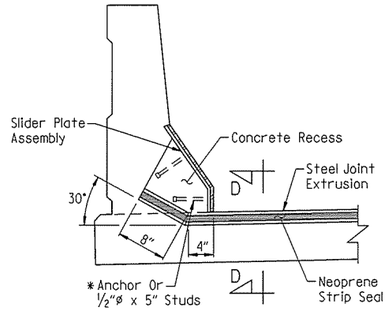
dragood 9/3/2014 2:41:51 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_S9.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 441 | 897 |
| | | | | ① 07309 | | SPAN DETAILS | | 55295 |




## SECTION THRU JOINT AT END BENTS

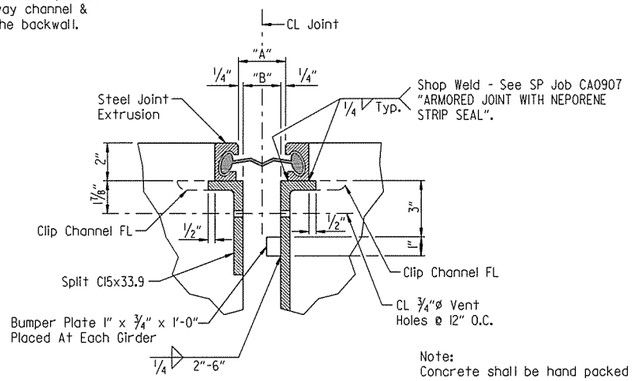
Note: Section Taken Normal To CL Joint
Scale: NTS




## SECTION B-B

Scale: 1" = 1'-0"

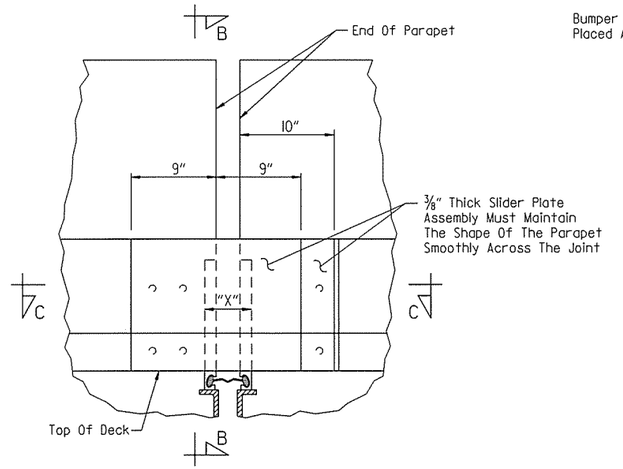
Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.




## DETAIL A

Scale: 3" = 1'-0"

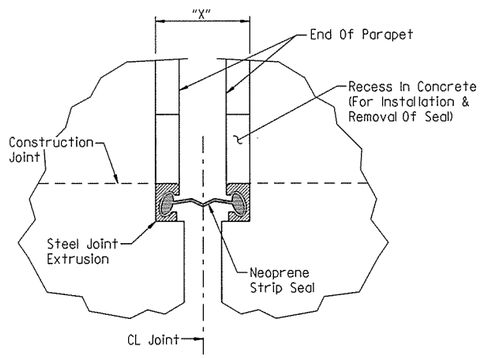
Note:
Concrete shall be hand packed under the joint armor.




## DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"

Note:
Dimension "X" equals the width of the recess in parapet at gutterline to allow for removal or repair of joint.



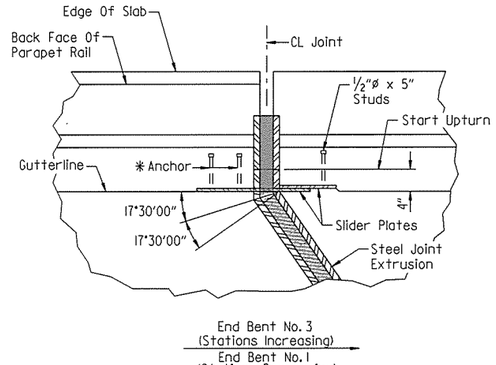

## SECTION D-D

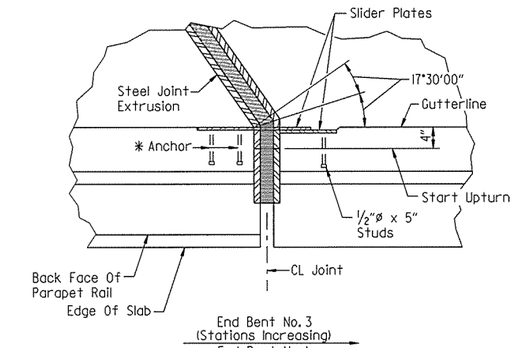
Scale: 3" = 1'-0"

| STRIP SEAL JOINT DATA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bent No. | Movement Rating (inch) | "A" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of: | | | "B" Width Perpendicular To Joint At 24 Hour Average Temperature ** Of: | | | "C" Perpendicular To Joint At 24 Hour Average Temperature Of 60°F |
| | | 40°F | 60°F | 80°F | 40°F | 60°F | 80°F | |
| 1/3 | 4" | 2 13/16 " | 2 5/8" | 2 1/16" | 2 5/16" | 2 1/8" | 1 15/16 " | 2 3/8" |

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40 degrees fahrenheit min. and 80 degrees fahrenheit max. interpolation of the table may be necessary. The temperature limitations of the lubricant-adhesive manufacturer shall be observed.




## SECTION C-C

Scale: 1" = 1'-0"

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Method of installation and fabrication shall be determined by the Manufacturer.

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

## GENERAL NOTES

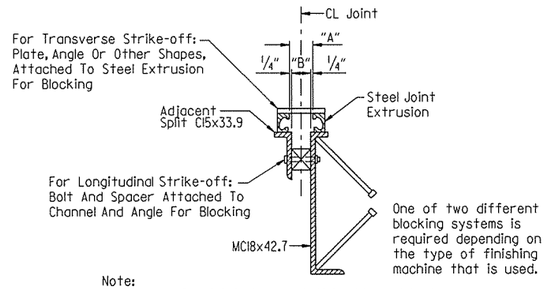
EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 4" as shown in the STRIP SEAL JOINT DATA table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

All structural steel shall be AASHTO M270, Grade 50 unless otherwise noted. Structural steel completely embedded in concrete need not be painted.

All structural steel, except for the steel extrusion for the strip seal, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". The steel extrusion and neoprene strip seal shall be paid for in accordance with Section 809.

Details of the proposed slider plate assembly shall be submitted to and approved by the Engineer prior to fabrication of the structural steel at the expansion device.

All exposed surfaces including the parapet slider plates are to be cleaned and painted as directed in Section 638 and will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".




One of two different blocking systems is required depending on the type of finishing machine that is used.

Note:
Each expansion joint device shall be blocked in the shop by the fabricator to the dimension shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

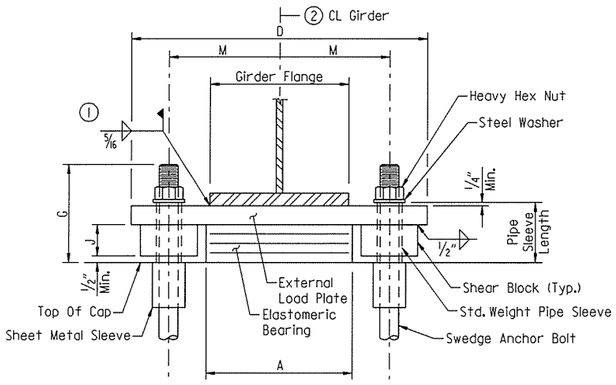
SHEET 10 OF 10
DETAILS OF 247'-0" COMPOSITE PLATE GIRDER UNIT
COUNTY ROAD 236 (ZION RD.)
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: APR. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: PCC DATE: APR. 2011
FILENAME: BCA0907X6_S10.DGN
SCALE: AS NOTED

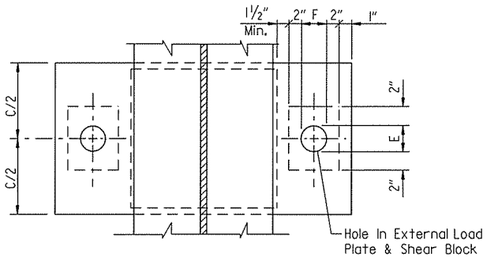
BRIDGE NO. 07309 DRAWING NO. 55295

drgood 9/3/2014 2:41:52 PM
WORKSPACE: AHTD Bridge
\\LITTLEROCK\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\Zion\BCA0907x6_S10.dgn
REVISED DATE:

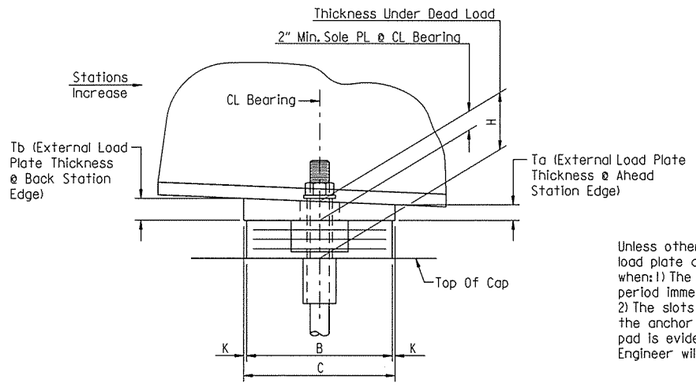
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 442 | 897 |
| | | | | (1) 07309 | | ELAST. BEARINGS | | 55296 |




FRONT VIEW - AT BENT 2



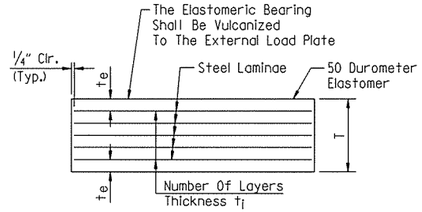

PLAN VIEW - AT BENT 2




SIDE VIEW - AT BENT 2

① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

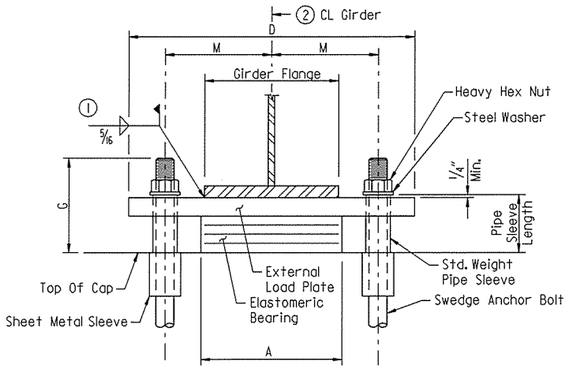
② Centerline elastomeric pad shall be aligned with centerline girder.



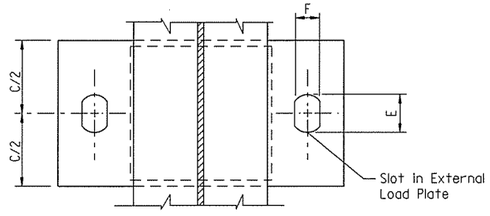

$t_e$ = Thickness Of Elastomer Cover On Top And Bottom Of Pad
$t_i$ = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness $t_i$

ELASTOMERIC BEARING

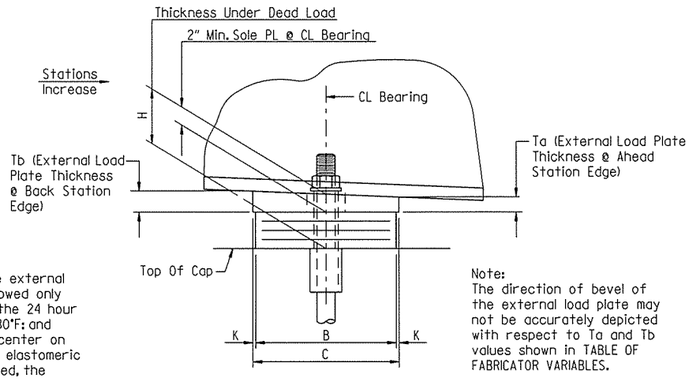
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.




FRONT VIEW - AT BENTS 1, 3

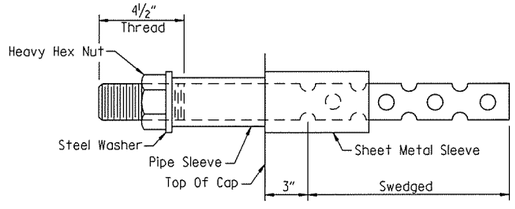



PLAN VIEW - AT BENTS 1, 3




Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in TABLE OF FABRICATOR VARIABLES.

SIDE VIEW - AT BENTS 1, 3




ANCHOR BOLT DETAIL

Note: Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

## GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Section 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. The color of paint shall be Dark Brown and shall match Fed. Std. 595B, Color Chip No. 20108. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the TABLE OF FABRICATOR VARIABLES. Indentations shall be circular with rounded bottoms and staggered as shown in the details.

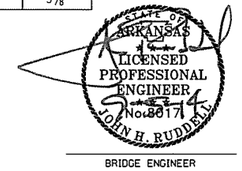
Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

## TABLE OF FABRICATOR VARIABLES

| Bridge No. | Location | | Bearing Type | No. Of Bearings Each Bent | * Maximum Design Load (Kips) | Elastomeric Pad | | | | | | | | | External Load Plate | | | | | | | | | Anchor Bolt | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bent No.(s) | Beam Or Girder No. | | | | G | H | A | B | N | $t_i$ | $t_e$ | No. & Thickness Of Steel Laminate | T | C | D | E | F | J | K | M | $T_a$ | $T_b$ | Anchor Bolt (Dia. x L) | Anchor Bolt Grade | Pipe Sleeve Size (Dia. x L) | Sheet Metal Sleeve Size (Dia. x L) | Steel Washer Size (O.D.) |
| - | 1 | All | Exp. | 4 | 167 | 8 9/16" | 5 9/16" | 18" | 10" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 11" | 29 1/2" | 4 1/2" | 2 5/8" | - | 1/2" | 11 3/4" | 2.17" | 1.83" | 1 3/4" x 29" | 55 | 2" x 5 11/16" | 4" x 7" | 3 3/8" |
| | 2 | All | Fixed | 4 | 459 | 9 3/4" | 6 3/4" | 20" | 12" | 7 | 1/2" | 1/4" | 8 @ 12 Ga. | 4 1/16" | 13" | 38 1/4" | 2 5/8" | 2 5/8" | 4 1/4" | 1/2" | 1'-2 13/16" | 2.17" | 1.83" | 1 3/4" x 30" | 55 | 2" x 7" | 4" x 7" | 3 3/8" |
| | 3 | All | Exp. | 4 | 191 | 8 9/16" | 5 9/16" | 18" | 10" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 11" | 29 1/2" | 4 3/4" | 2 5/8" | - | 1/2" | 11 3/4" | 2.12 | 1.88" | 1 3/4" x 29" | 55 | 2" x 5 11/16" | 4" x 7" | 3 3/8" |

* Maximum Design Load = Service I Limit State




BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS
# COUNTY ROAD 236 (ZION RD.)
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

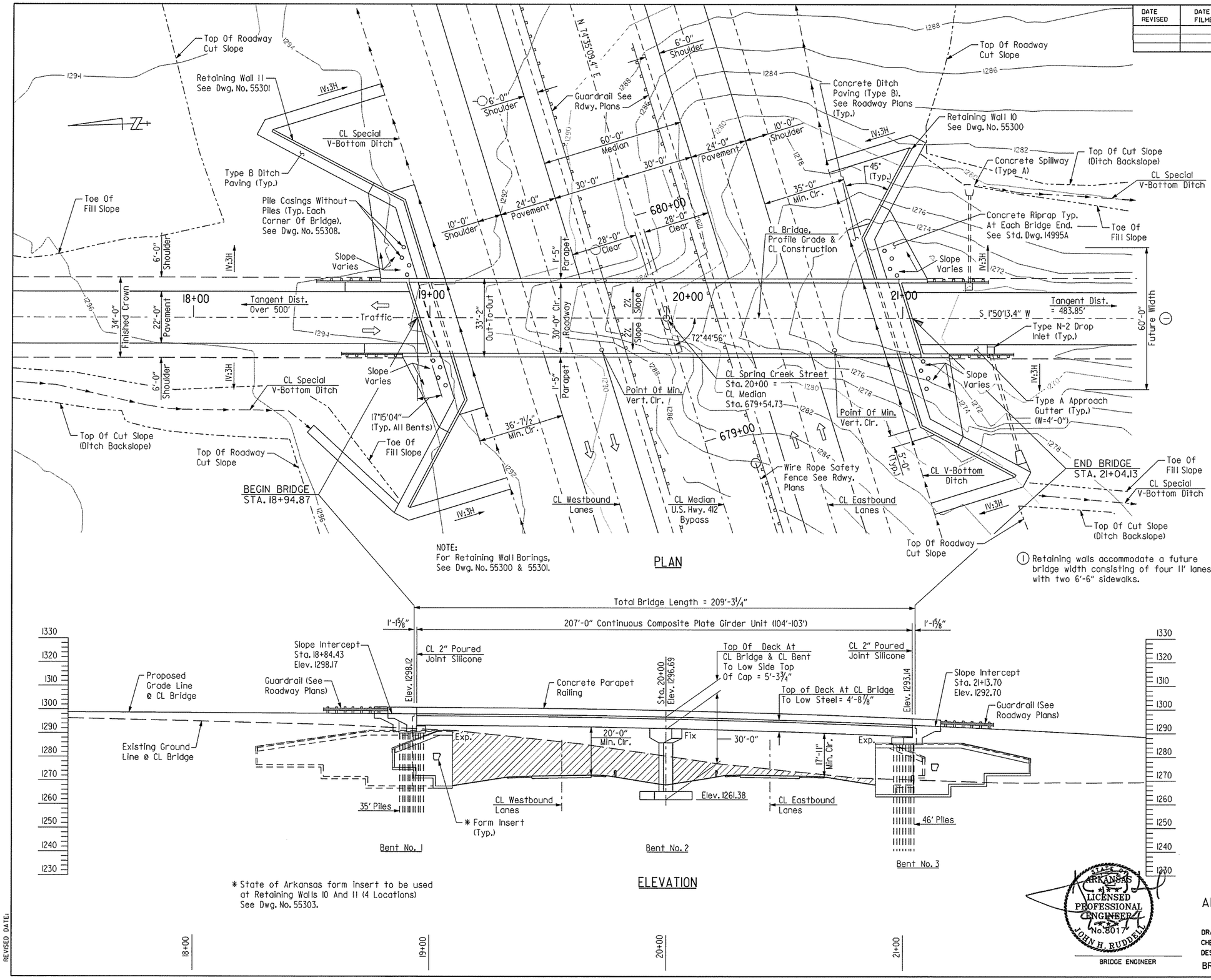
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011
CHECKED BY: ABH DATE: NOV. 2011
DESIGNED BY: WRF DATE: JAN. 2011
FILENAME: BCA0907X6_EI.DGN
SCALE: AS SHOWN

BRIDGE NO. 07309 DRAWING NO. 55296

drgood 9/3/2014 2:46:52 PM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRC\Zion\BCA0907X6_EI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 443 | 897 |
| | | | | (1) 07310 | | LAYOUT | | 55297 |







* State of Arkansas form insert to be used at Retaining Walls 10 And 11 (4 Locations) See Dwg. No. 55303.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 1 OF 7
# LAYOUT OF BRIDGE
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

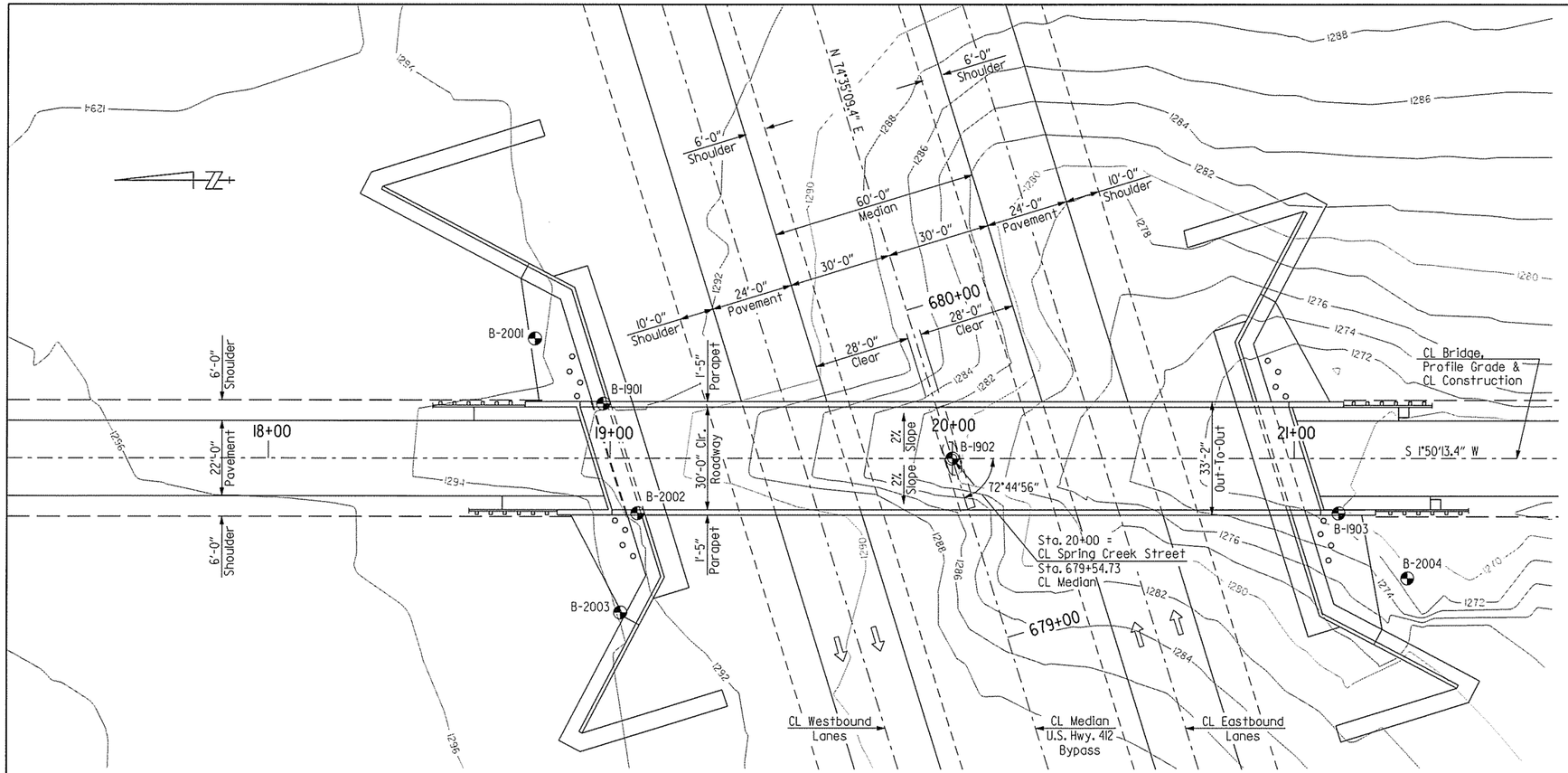
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2008
CHECKED BY: JHR DATE: AUG. 2008
DESIGNED BY: MRA DATE: AUG. 2008
FILENAME: BCA0907X7_LI.DGN
SCALE: 1"=20'

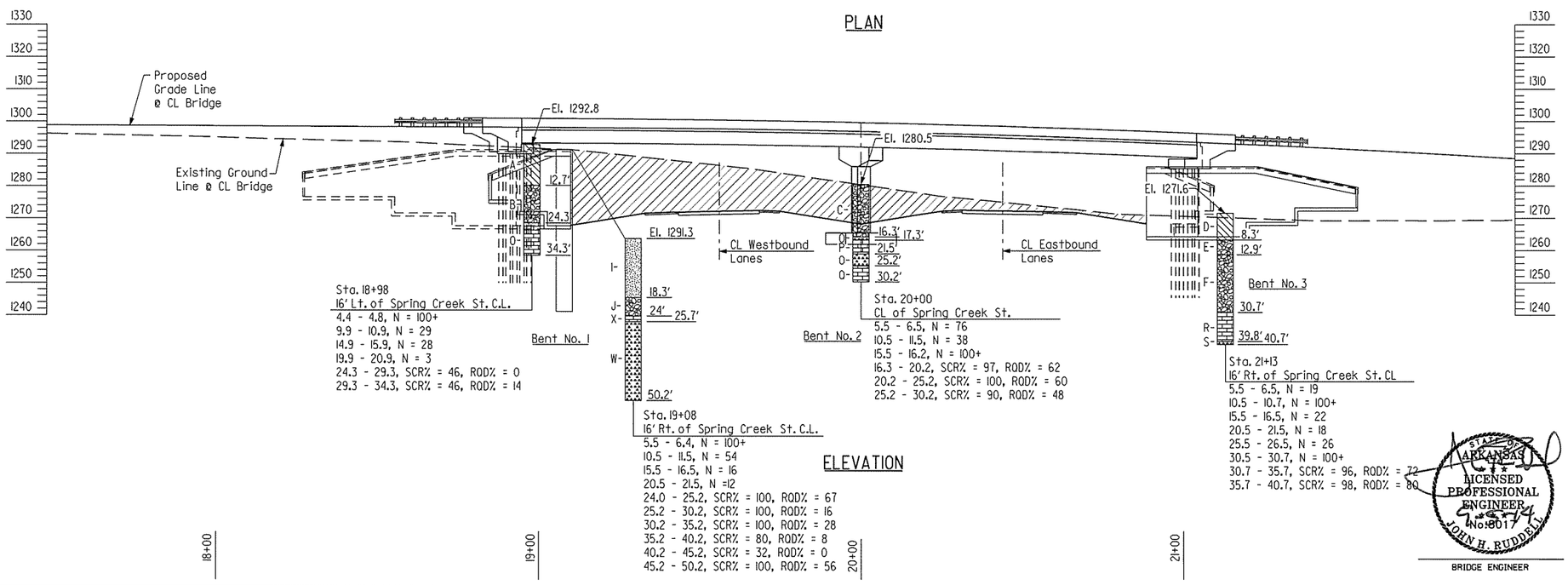
BRIDGE NO. 07310 DRAWING NO. 55297

drgood 9/3/2014 2:40:20 PM
W:\BRIDGE_AHTD Bridges\
V:\CLIENTDOCS\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_LI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 444 | 897 |
| | | | | (1) 07310 | | LAYOUT | | 55298 |




## PLAN




## ELEVATION

## BORING LEGEND

A - Red, very stiff to very hard, sandy lean clay with gravel.
B - Red, very loose to medium dense, silty gravel with sand.
C - Red, dense to very dense, silty gravel with sand.
D - Brown, very stiff, sandy lean clay with gravel.
E - Brown, very dense, silty gravel with sand.
F - Brown & red, medium dense to very dense, clayey gravel with sand.
G - Brown, very stiff, gravelly fat clay with sand.
H - Brown, tan & light gray, loose to dense, silty gravel with sand.
I - Light red, medium dense to very dense, silty sand with gravel.
J - Light red, medium dense, silty gravel with sand.
K - Light red, dense to very dense, silty gravel with sand.
L - Copper, tan & dark brown, medium dense, silty sand with gravel.
M - Copper, brown, dark brown & beige, loose to medium dense, clayey gravel with sand.
N - Limestone: White, lt. gray, gray, fine grain, highly fractured, weathered with clay seams.
O - Chert: White, lt. gray, gray, fresh to slightly weathered.
P - Limestone: White, lt. gray, gray, fine grain, slightly weathered with clay seams.
Q - Limestone: White, lt. gray, gray, fine to medium grain, fresh to slightly weathered.
R - Limestone: Gray to lt. gray, white, fine grain, fresh with slight weathering.
S - Chert: Lt. gray, gray.
T - Limestone: High angle fracture.
U - Chert: White, lt. gray, gray, weathered.
V - Limestone: Lt. gray, fresh.
W - Chert: White, lt. gray, gray, slightly to moderately weathered.
X - Limestone: White, lt. gray, fine to medium grain, slight to moderate weathering.
Y - Limestone: Lt. gray, gray, fine to medium grain, fresh to slightly weathered.
Z - Chert: White, lt. gray, gray, fresh to moderately weathered.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 2 OF 7
# LAYOUT OF BRIDGE
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# HWY. 112 - I-49(S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: AUG. 2008
CHECKED BY: JHR DATE: AUG. 2008
DESIGNED BY: MRA DATE: AUG. 2008

FILENAME: BCA0907X7_L2.DGN
SCALE: 1"=20'

BRIDGE NO. 07310 DRAWING NO. 55298

drgood 9/3/2014 2:40:21 PM
WORKSPACE: AHTD Bridge
\\CLUTDC01\LIVE\Projects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_L2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 445 | 897 |
| | | | | (1) | 07310 | LAYOUT | | 55299 |

# GENERAL NOTES

BENCH MARK: TBM 86 RBR Alum Cap, 365.59' Lt. of Sta 680+84.71
Elev. 1298.29

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications And Special Provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{01}$= 0.125 Site Class = D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Superstructure) | f'c = 4000 psi |
| Class S - Bridge Concrete (Substructure) | f'c = 3500 psi |
| Reinforcing Steel(AASHTO M31 Or M322 Type A, GR. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, GR. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, GR. 36) | Fy = 36,000 psi |

FORM INSERT: State Of Arkansas Form Insert to be used on Retaining Walls (4 Locations). See Dwg. No. 55303.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0907 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

STEEL PILING: All Piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons. Drive all piles at Bent 3 to a minimum penetration of 10' below leveling pad. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

The Contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction, extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven after any required preboring and through the open casings after embankment to bottom of cap is in place. Any required preboring will be measured from bottom of leveling pad. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill shall not be paid for directly but shall be considered subsidiary to the item "STEEL PILING (HP12x53)".

PILE CASINGS WITHOUT PILES: Additional pile casings will be required in accordance with Dwg. No. 55308 to provide for future widening. These casings shall be installed during embankment construction and shall extend from top of leveling pad to approximately one foot below the finished ground. Pile casing diameter and material shall conform to the above. No piling shall be driven through these casings, but they shall be kept clean from debris and capped at the top with a durable waterproof material as approved by the Engineer. Payment for this work and materials shall be considered subsidiary to other contract items in the job.

PREBORING: Preboring is required for all piling in Bent 1 after excavation to the top of leveling pad is complete and to a 3' depth into material designated as chert or limestone on the boring legend. Quantities of preboring shown are for bidding purposes only. The actual size and depths of preboring are to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored hole shall be backfilled with an approved non-shrink grout, or other approved material to completely fill voids. The backfill and any required casings will not be paid for directly but shall be considered subsidiary to the item "PREBORING".

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to roadway face and top of the concrete parapet rail.

BORING LOGS: Boring Logs may be obtained from Programs and Contracts Division.

SPREAD FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as limestone or chert on the boring legend and shall have a minimum cover above top of footing of 2'. Foundations for footings shall be prepared in accordance with Subsection 801.04 of the Standard Specifications. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

MAINTENANCE OF TRAFFIC: See Roadway Drawings.

| DETAIL DRAWINGS: | DRAWING NOS: |
|---|---|
| End Bents | 55304-55308 |
| Intermediate Bent | 55309 & 55310 |
| 207' Cont. Comp. Plate Girder Unit | 55311-55319 |
| Elastomeric Bearings | 55320 |
| Type A Approach Gutters | 55030A |
| Steel Piling | 55020 |
| Concrete Riprap | 55002 |

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 3 OF 7
LAYOUT OF BRIDGE
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: 2008 FILENAME: BCA0907X7_L3.DGN
CHECKED BY: ABH DATE: 2008 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: 2008

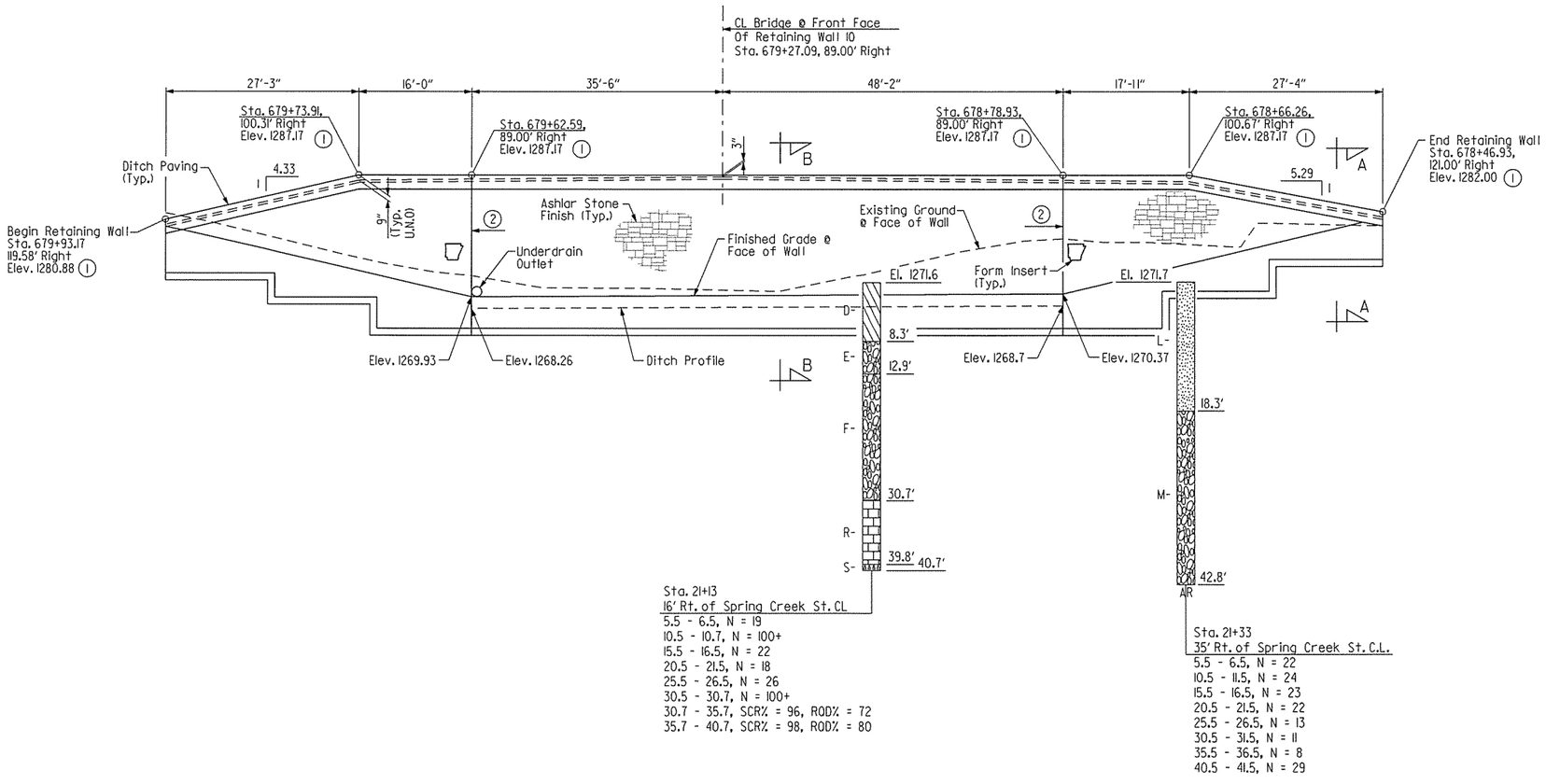
BRIDGE NO. 07310 DRAWING NO. 55299

dropod 9/3/2014 2:40:21 PM
WORKSPACE: AHTD Bridges
\\GLITDCDN_LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_L3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 446 | 897 |
| | | | | (1) 07310 | | LAYOUT | | 55300 |

(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall




ELEVATION - RETAINING WALL 10
(Looking From Front Face of Wall)
Scale: NTS

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55302.

Offset dimensions are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55303.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55298.

LEGEND

U.N.O - Unless Noted Otherwise
AR - Auger Refusal

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-13-07
BRIDGE ENGINEER

SHEET 4 OF 7
LAYOUT OF BRIDGE
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: 2008
CHECKED BY: MRA DATE: 2008
DESIGNED BY: MRA DATE: 2008
FILENAME: BCA0907X7_L4.DGN
SCALE: AS SHOWN

BRIDGE NO. 07310 DRAWING NO. 55300

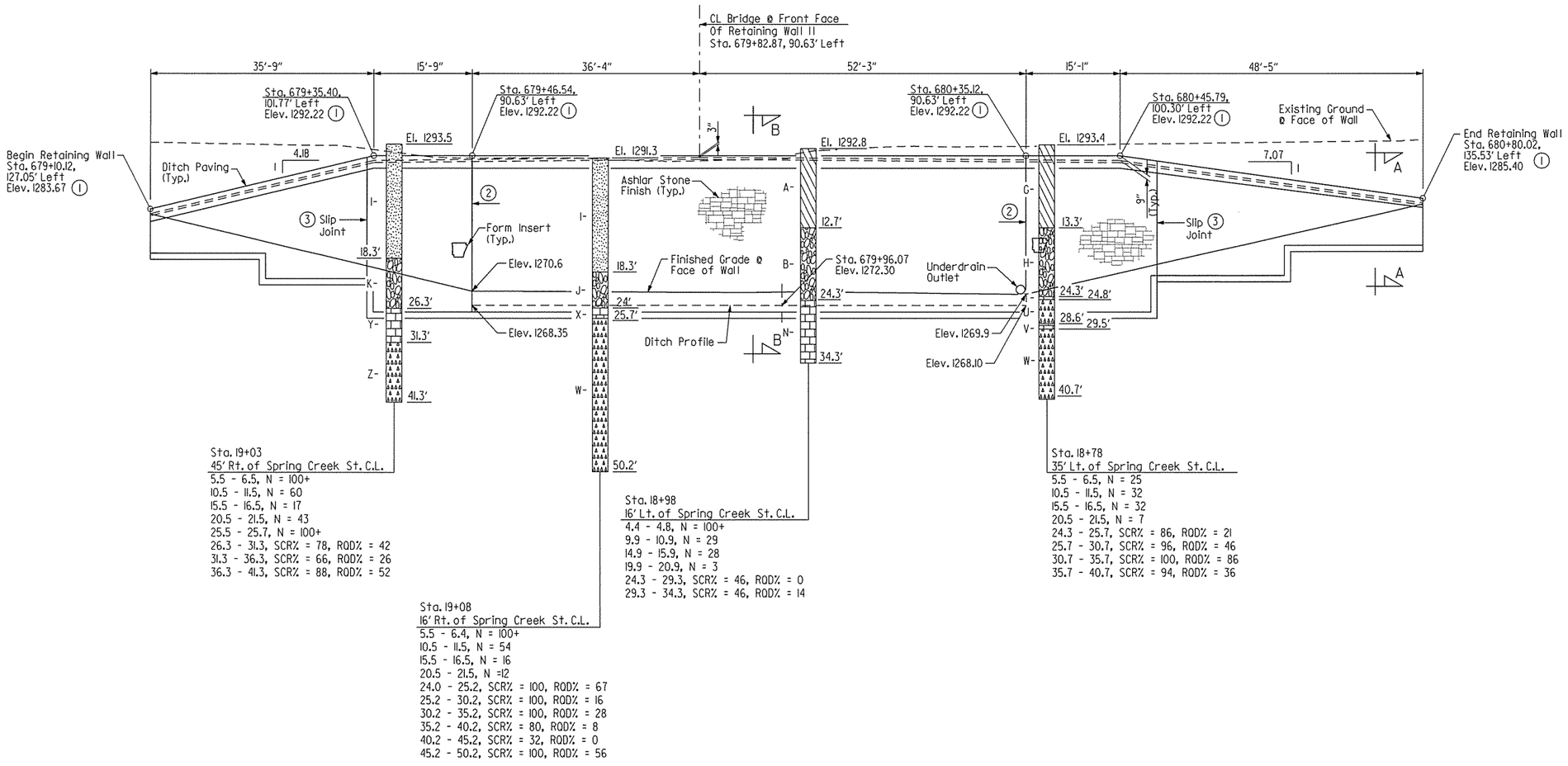
dropod 9/3/2004 2:40:22 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_L4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 447 | 897 |
| | | | | (1) 07310 | | LAYOUT | 55301 | |

(1) Stationing shown is along CL Median.

(2) 45° break in horizontal alignment of retaining wall

(3) Install slip joints. Location to be determined by the contractor prior to fabrication of panels.




Sta. 19+03
45' Rt. of Spring Creek St. C.L.
5.5 - 6.5, N = 100+
10.5 - 11.5, N = 60
15.5 - 16.5, N = 17
20.5 - 21.5, N = 43
25.5 - 25.7, N = 100+
26.3 - 31.3, SCR% = 78, RQD% = 42
31.3 - 36.3, SCR% = 66, RQD% = 26
36.3 - 41.3, SCR% = 88, RQD% = 52

Sta. 19+08
16' Rt. of Spring Creek St. C.L.
5.5 - 6.4, N = 100+
10.5 - 11.5, N = 54
15.5 - 16.5, N = 16
20.5 - 21.5, N =12
24.0 - 25.2, SCR% = 100, RQD% = 67
25.2 - 30.2, SCR% = 100, RQD% = 16
30.2 - 35.2, SCR% = 100, RQD% = 28
35.2 - 40.2, SCR% = 80, RQD% = 8
40.2 - 45.2, SCR% = 32, RQD% = 0
45.2 - 50.2, SCR% = 100, RQD% = 56

Sta. 18+98
16' Lt. of Spring Creek St. C.L.
4.4 - 4.8, N = 100+
9.9 - 10.9, N = 29
14.9 - 15.9, N = 28
19.9 - 20.9, N = 3
24.3 - 29.3, SCR% = 46, RQD% = 0
29.3 - 34.3, SCR% = 46, RQD% = 14

Sta. 18+78
35' Lt. of Spring Creek St. C.L.
5.5 - 6.5, N = 25
10.5 - 11.5, N = 32
15.5 - 16.5, N = 32
20.5 - 21.5, N = 7
24.3 - 25.7, SCR% = 86, RQD% = 21
25.7 - 30.7, SCR% = 96, RQD% = 46
30.7 - 35.7, SCR% = 100, RQD% = 86
35.7 - 40.7, SCR% = 94, RQD% = 36

Notes:
For SECTION A-A & SECTION B-B, see Dwg. No. 55302.

Offset dimensions are measured from CL Median to outside vertical face of retaining wall.

For details of form insert, see Dwg. No. 55303.

Underdrain outlet to penetrate front face of retaining wall.

For BORING LEGEND, see Dwg. No. 55298.

LEGEND

U.N.O - Unless Noted Otherwise

ELEVATION - RETAINING WALL II
(Looking From Front Face of Wall)
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8011
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 7
LAYOUT OF BRIDGE
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

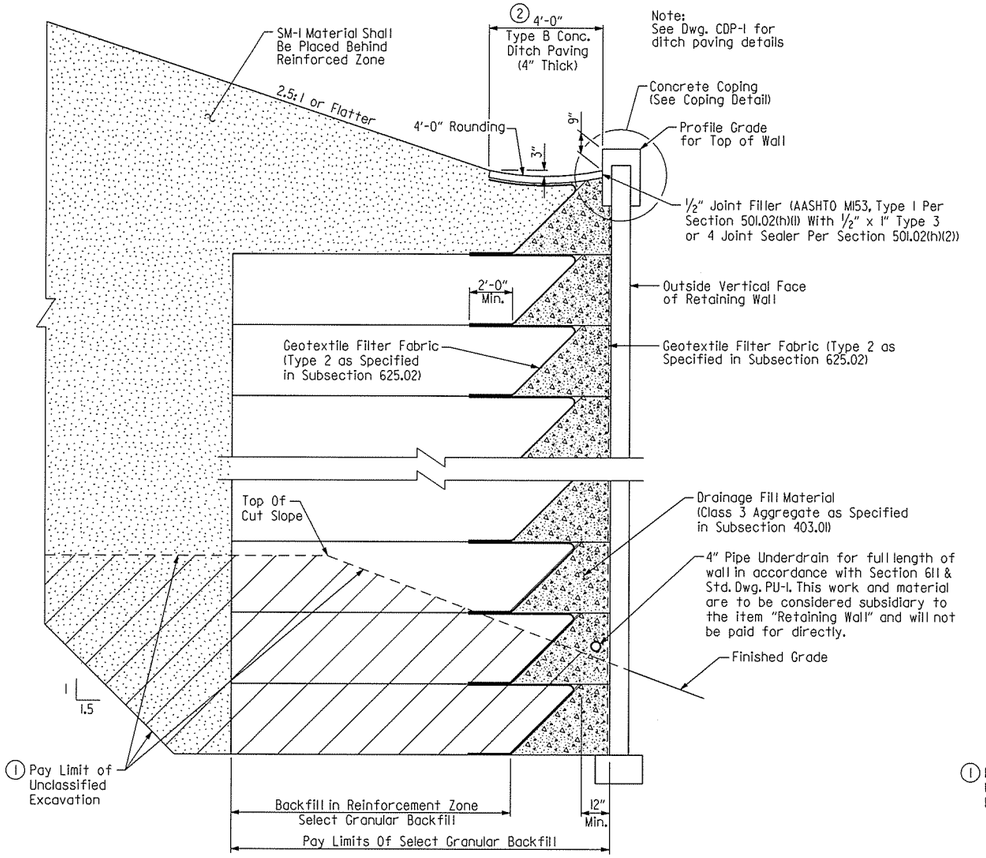
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: 2008 FILENAME: BCA0907X7_L5.DGN
CHECKED BY: MRA DATE: 2008 SCALE: AS SHOWN
DESIGNED BY: MRA DATE: 2008

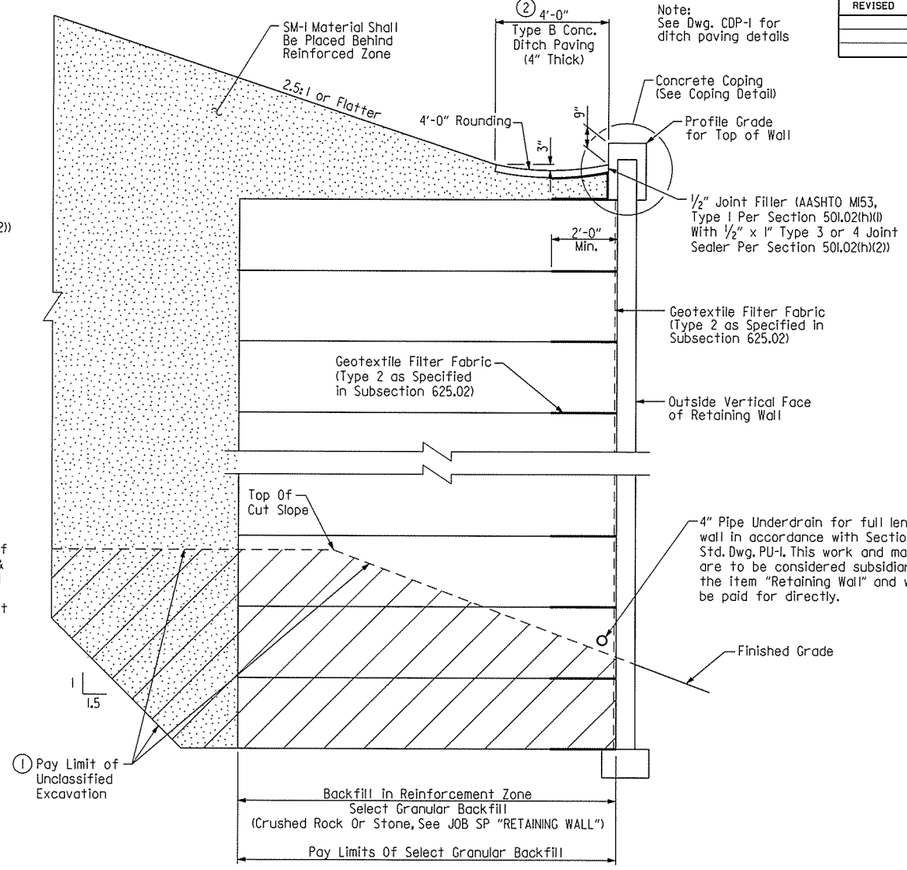
BRIDGE NO. 07310 DRAWING NO. 55301

drgood 9/3/2014 2:40:22 PM
WORKSPACE: AHTD Bridge
\\LITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_L5.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 448 | 897 |
| | | | | (1) 07310 | | LAYOUT | | 55302 |




## SECTION A-A
(Backfill Method A)
No Scale

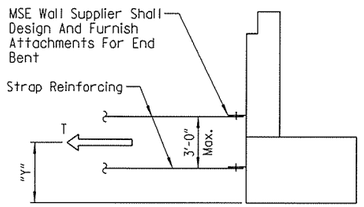



## SECTION A-A
(Backfill Method B)
No Scale

(1) Excavation required for reinforcing zone, leveling pad and placement of SM-1 material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP Job CA0907 "RETAINING WALL".

Note:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR MATERIAL". Select material required behind reinforced zone shall be included in the price bid for "SELECTED MATERIAL (CLASS SM-1)". See SP Job CA0907 "RETAINING WALL".

(2) The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Drawing CDP-1.




## END BENT STRAP DETAIL

T = Resultant Force Required To Be Resisted By Strap Reinforcing

Y = Centroid Of Strap Reinforcing

| LIMIT STATE | T Kips/Ft. | Y Ft. |
|---|---|---|
| Service | 3.1 | 3 |
| Strength | 4.6 | |

NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See Dwg. Nos. 55304-55308 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See Special Provision Job CA0907 "RETAINING WALL" for additional information.

Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

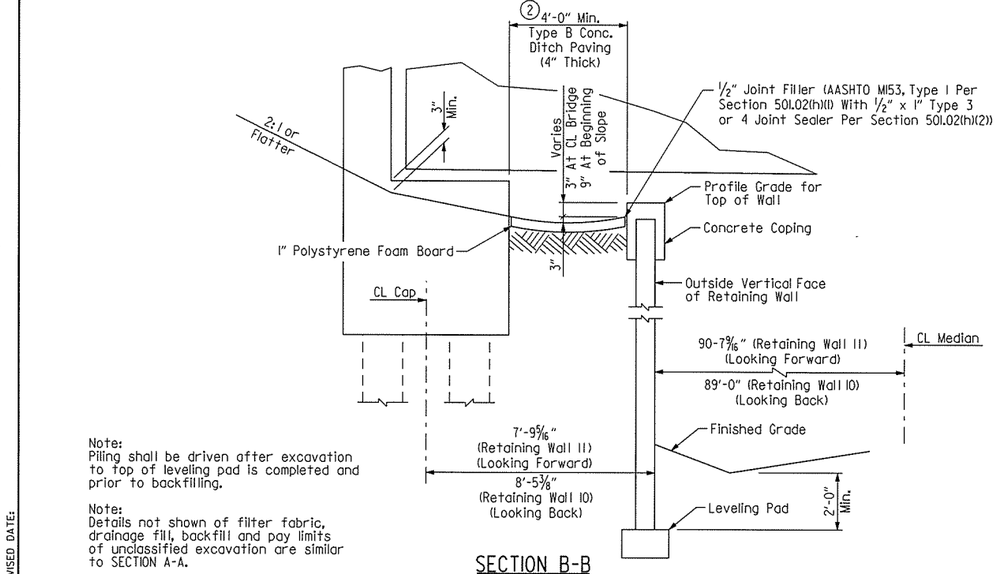
Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP Job CA0907 "RETAINING WALL".

See Dwg. No. 55303 for form insert location and details.

Large scale undercut is not anticipated, however some undercutting and backfilling may be required to satisfy factored bearing resistance requirements based on the final wall design.

Undercutting, if required, shall be backfilled with Select Material (Class SM-1) meeting the requirements of Section 302.

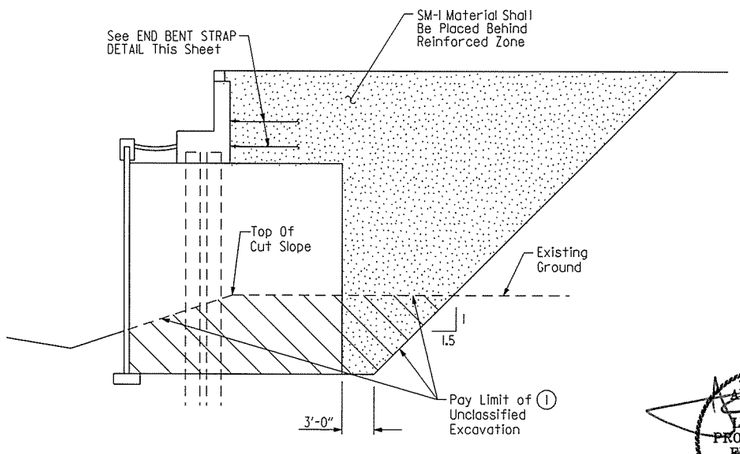
Any excavation and backfill required for undercutting shall be paid for as "Select Material (Class SM-1)" in accordance with SP Job CA0907 "RETAINING WALL".




Note:
Piling shall be driven after excavation to top of leveling pad is completed and prior to backfilling.

Note:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to SECTION A-A.

## SECTION B-B
Scale: NTS




## EMBANKMENT DETAIL
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 6 OF 7
LAYOUT OF BRIDGE
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY

ROUTE 412 SEC. 2

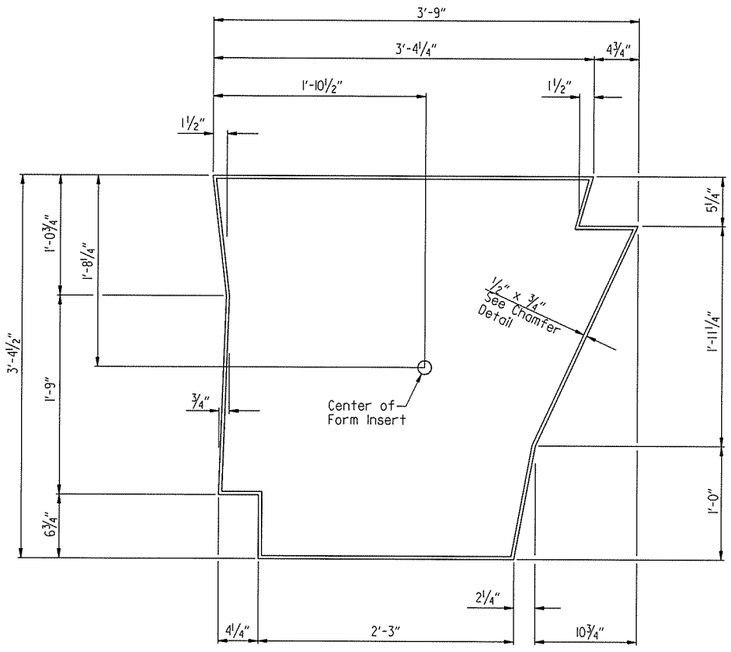
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X7_L6.DGN
SCALE: AS SHOWN

BRIDGE NO. 07310 DRAWING NO. 55302

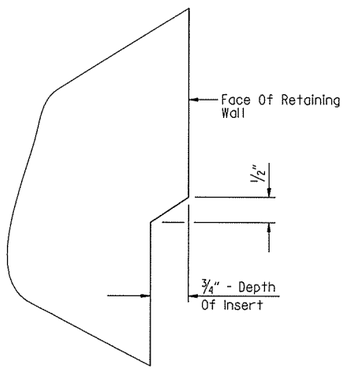
drgood 9/3/2014 2:40:23 PM
WORKSPACE: AHTD Bridge
\\OLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_L6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 449 | 897 |
| | | | | (1) 07310 | | ARK. FORM INSERT | | 55303 |

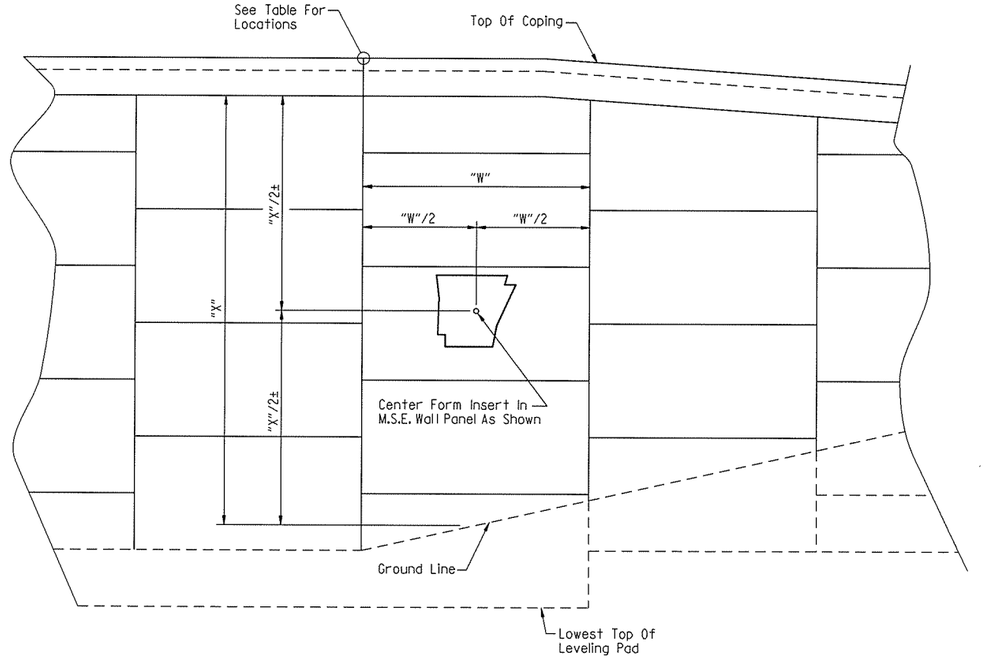



Note:
Use form insert on designated walls as noted on details of M.S.E. Walls, Dwg. Nos. 55231 & 55232.

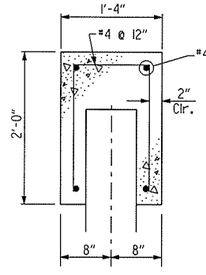
## FORM INSERT DETAILS AT MSE WALL
Scale: 1½" = 1'-0"




## CHAMFER DETAIL
Scale: NTS



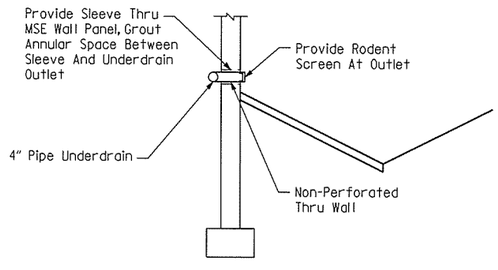

## DEVELOPED ELEVATION AT MSE WALL
Scale: NTS




Note:
Precast concrete coping may be substituted for cast-in-place coping shown.

Note:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALL".

## COPING DETAIL
Scale: 1" = 1'-0"




## OUTLET DETAIL
Scale: NTS

| LOCATION OF FORM INSERT | |
|---|---|
| Location | Station |
| Retaining Wall 11 | 679+46.54 And 680+35.12 |
| Retaining Wall 10 | 678+78.93 And 679+62.59 |

GENERAL NOTES:

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALL".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

Recessed image (including chamfers) of State of Arkansas insert shall be given a Class 3 Textured Coating Finish as specified in SP Job CA0907 "TEXTURED COATING FINISH."

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

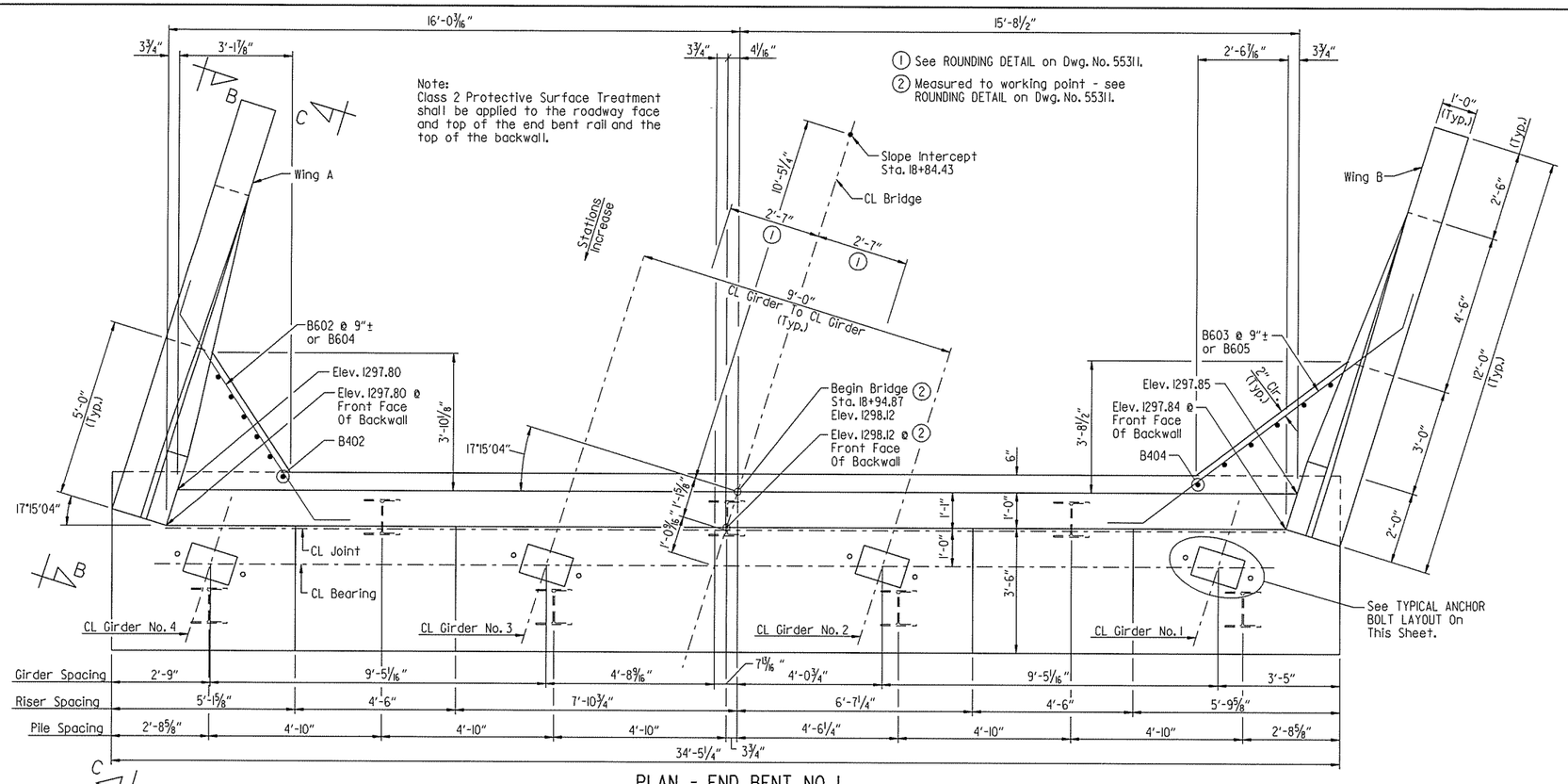
SHEET 7 OF 7
LAYOUT OF BRIDGE
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
HWY. 112 - I-49(S)
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: FEB. 2011
CHECKED BY: WRF DATE: FEB. 2011
DESIGNED BY: PCC DATE: FEB. 2011
FILENAME: BCA0907X7_L7.DGN
SCALE: AS SHOWN

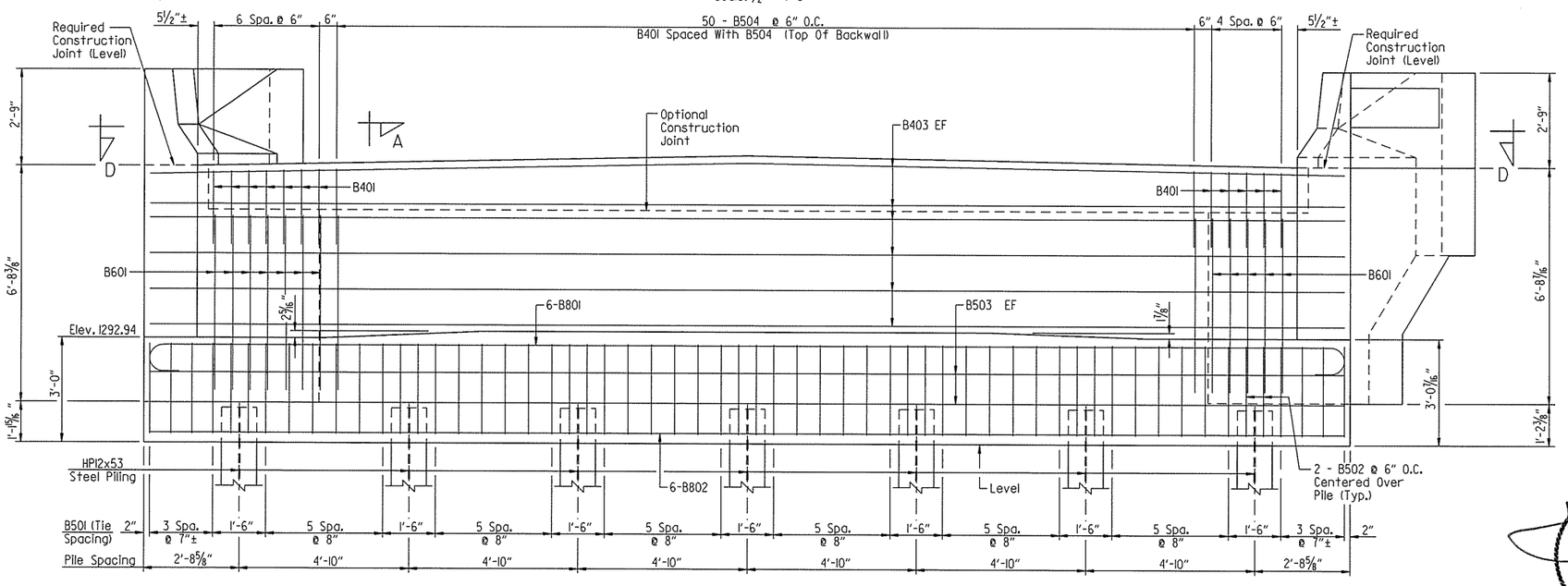
BRIDGE NO. 07310 DRAWING NO. 55303

drgood 9/3/2014 2:40:24 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05916B0 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_L7.dgn
REVISED DATE:

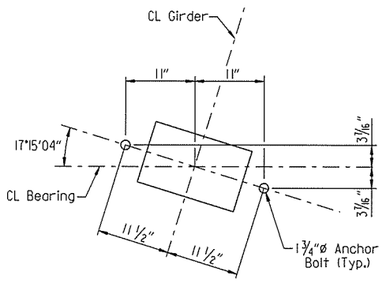
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 450 | 897 |
| | | | | (1) 07310 | | END BENT DETAILS | | 55304 |




## PLAN - END BENT NO. 1
Scale: 1/2" = 1'-0"




## ELEVATION - END BENT NO. 1
(Looking Back)
Scale: 1/2" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT
Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, See LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55306 & 55307.

For details of elastomeric bearing pads, see Dwg. No. 55320.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55307.

For SECTION A-A, VIEW B-B & VIEW C-C, see Dwg. No. 55306.

For VIEW D-D, see Dwg. No. 55307.

## LEGEND
EF = Each Face

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8617
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF END BENTS
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: JULY 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_A1.DGN
SCALE: AS SHOWN

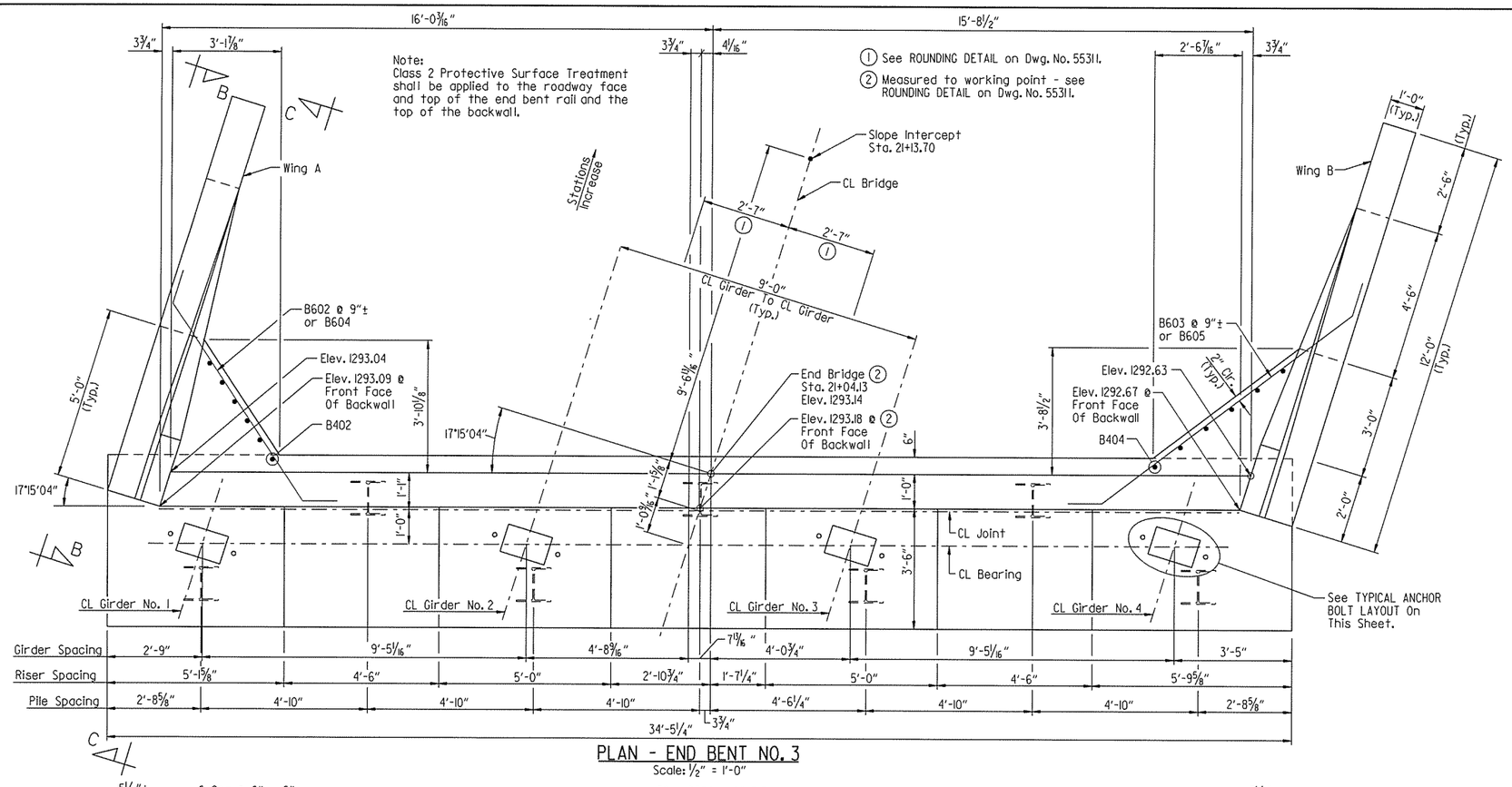
BRIDGE NO. 07310 DRAWING NO. 55304

drgood 9/3/2014 2:40:25 PM
WORKSPACE: AHTD Bridge
\\OLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_A1.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

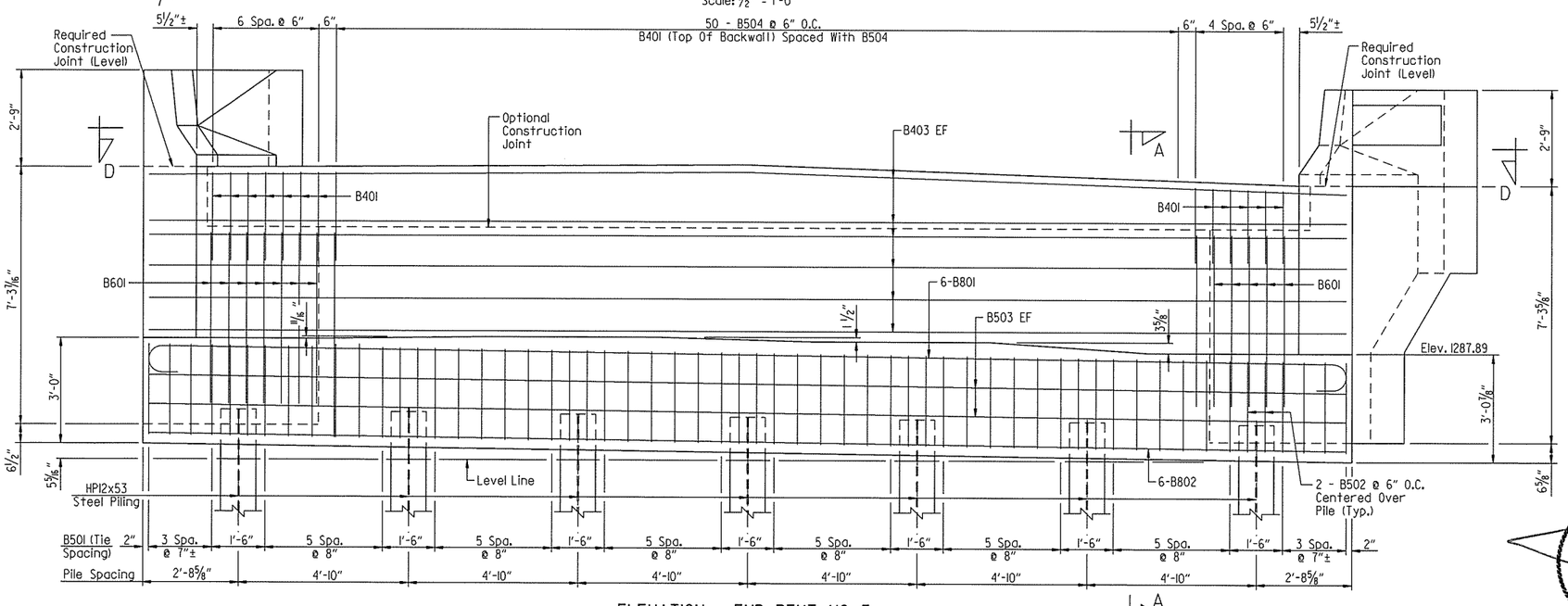
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 451 | 897 |

(1) 07310 END BENT DETAILS 55305



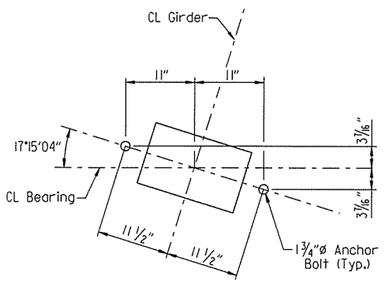

## PLAN - END BENT NO. 3

Scale: 1/2" = 1'-0"




## ELEVATION - END BENT NO. 3

(Looking Ahead)
Scale: 1/2" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT

Scale: 1" = 1'-0"

## GENERAL NOTES

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners shall be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Gr. 60.

Structural steel in end bents shall be AASHTO M270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M270, GR. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, See LAYOUT.

Notes:
For details of wing & rail, see Dwg. Nos. 55306 & 55307.

For details of elastomeric bearing pads, see Dwg. No. 55320.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55307.

For SECTION A-A, VIEW B-B & VIEW C-C, see Dwg. No. 55306.

For VIEW D-D, see Dwg. No. 55307.

## LEGEND

EF = Each Face

STATE OF ARKANSAS
JOHN H. RUDDELL
No. 8017
LICENSED PROFESSIONAL ENGINEER
BRIDGE ENGINEER

# SHEET 2 OF 5
# DETAILS OF END BENTS
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

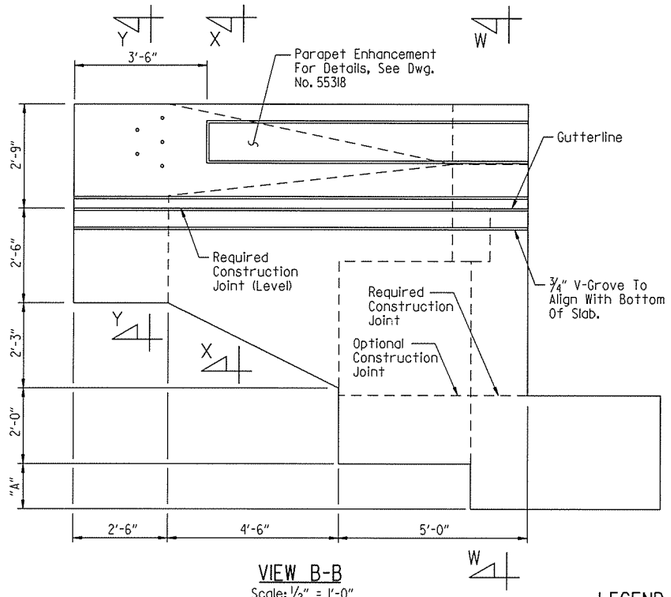
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: JULY 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_A2.DGN
SCALE: AS SHOWN

BRIDGE NO. 07310 DRAWING NO. 55305

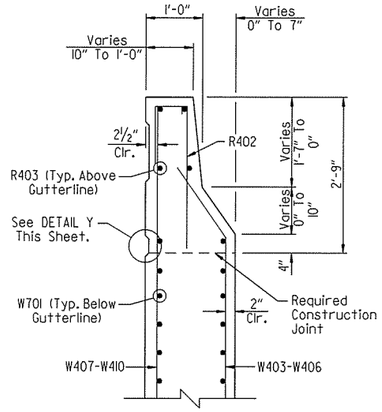
dr good
WORKSPACE: AHTD Bridge
\\GLITDCN\LITProjects\2005\059W680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_A2.dgn
9/3/2014 2:40:25 PM
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 452 | 897 |
| | | | | (1) 07310 | | END BENT DETAILS | | 55306 |

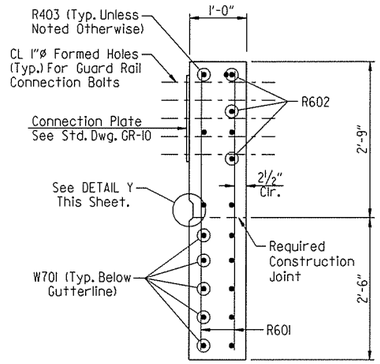



VIEW B-B
Scale: ½" = 1'-0"

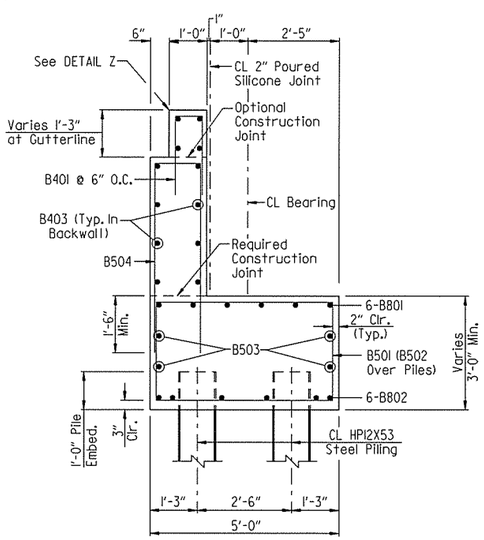
LEGEND
FF = Front Face
BF = Back Face
EF = Each Face



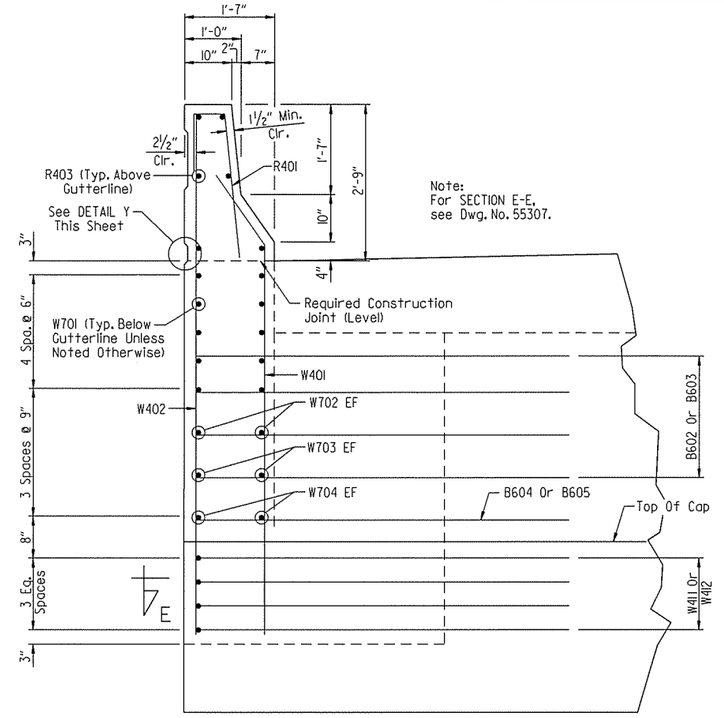

SECTION X-X
Scale: ¾" = 1'-0"




SECTION Y-Y
Scale: ¾" = 1'-0"

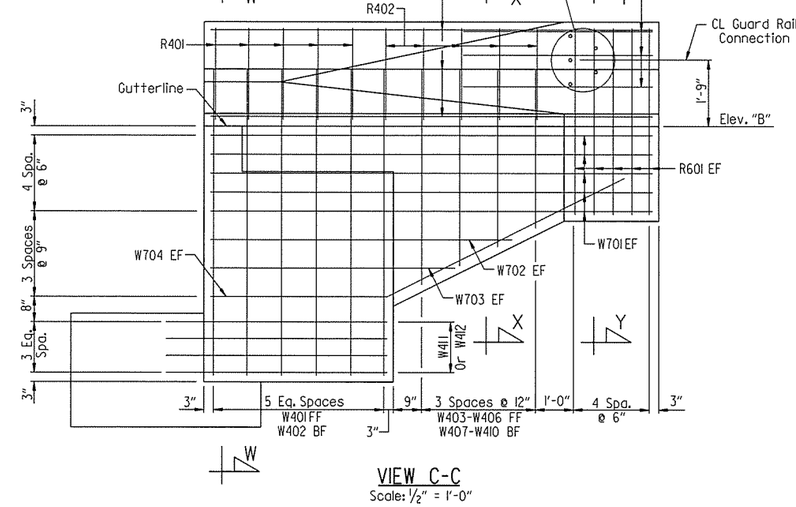



SECTION A-A
Scale: ¼" = 1'-0"




Note:
For SECTION E-E, see Dwg. No. 55307.

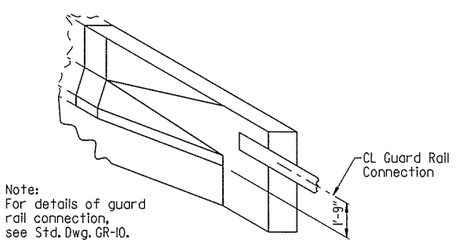
SECTION W-W
Scale: ¾" = 1'-0"




VIEW C-C
Scale: ½" = 1'-0"

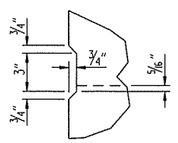
| TABLE OF VARIABLES | | | |
|---|---|---|---|
| Bent No. | Wing | Dim. "A" | Elev. "B" |
| 1 | A | 1'-1 15/16" | 1297.85 |
| 1 | B | 1'-2 3/8" | 1297.89 |
| 3 | A | 6½" | 1292.55 |
| 3 | B | 6 5/8" | 1292.12 |

Note:
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See DETAILS FOR BLOCKING EXPANSION JOINT DEVICE on Dwg. No. 55319 for additional information.

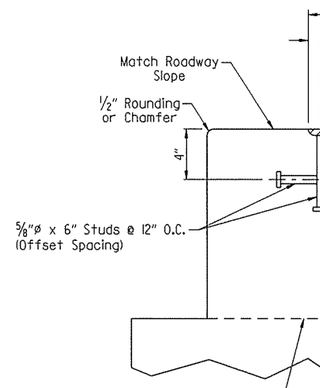



Note:
For details of guard rail connection, see Std. Dwg. GR-10.

THREE DIMENSIONAL VIEW OF RAIL
Scale: NTS




DETAIL Y
Scale: NTS




NOTE:
The profile of the backwall angle shall be established based on the vertical curve in conjunction with the skew.

Notes:
Concrete shall be hand packed under joint armor in the backwall.

For additional joint details, see Dwg. No. 55319.

DETAIL Z
Scale: 2" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 3 OF 5
# DETAILS OF END BENTS
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

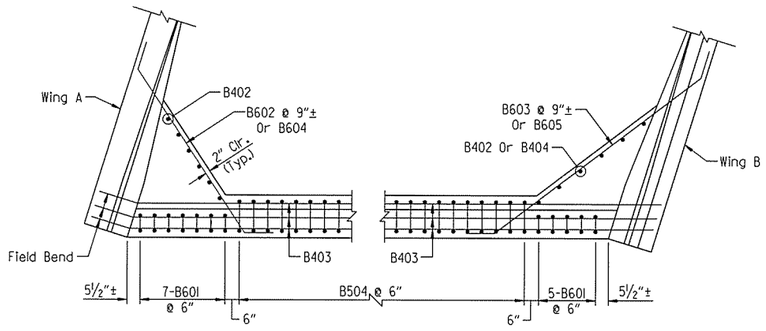
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X7_A3.DGN
SCALE: AS SHOWN

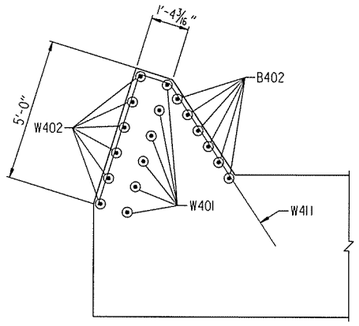
BRIDGE NO. 07310 DRAWING NO. 55306

drgood 9/3/2014 2:40:26 PM
WORKSPACE: AHTD Bridge
\\GLITDCS\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_A3.dgn
REVISED DATE:

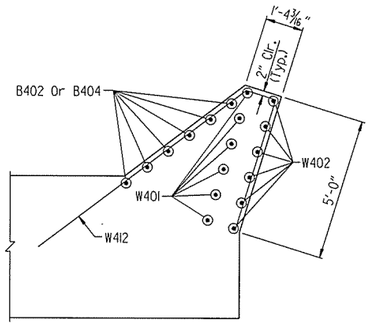
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 453 | 897 |
| | | | | (1) 07310 | | END BENT DETAILS | | 55307 |



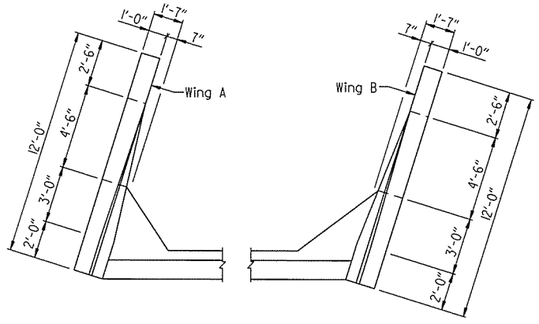

VIEW D-D
Scale: ⅜" = 1'-0"




SECTION E-E (WING A)
Scale: ⅜" = 1'-0"




SECTION E-E (WING B)
Scale: ⅜" = 1'-0"

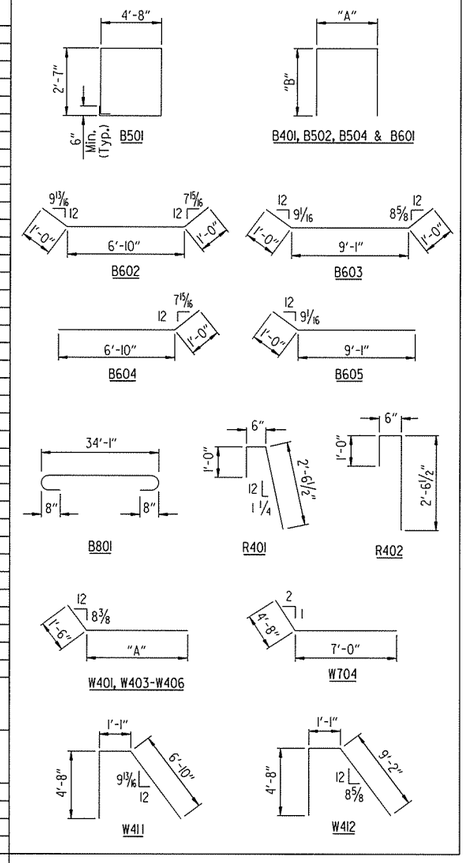



PLAN OF RAIL
Scale: ¼" = 1'-0"

## BAR LIST

| | MARK | NO. REQ'D. | LENGTH | "A" | "B" | PIN DIA. |
|---|---|---|---|---|---|---|
| COMMON BARS - PER BENT | B401 | 62 | 5'-10" | 8" | 2'-8" | 2" |
| | B402 | 6 | 5'-2" | | | Str. |
| | B403 | 12 | 34'-3" | | | Str. |
| | | | | | | |
| | B501 | 44 | 15'-0" | | | 2½" |
| | B502 | 14 | 9'-7½" | 4'-8" | 2'-7" | 2½" |
| | B503 | 4 | 34'-1" | | | Str. |
| | B504 | 50 | 10'-9½" | 1'-2" | 5'-0" | 2½" |
| | | | | | | |
| | B601 | 12 | 10'-4" | 8" | 5'-0" | 4½" |
| | B602 | 4 | 8'-10" | | | 4½" |
| | B603 | 4 | 11'-1" | | | 4½" |
| | B604 | 1 | 7'-10" | | | 4½" |
| | B605 | 1 | 10'-1" | | | 4½" |
| | | | | | | |
| | B801 | 6 | 35'-11" | | | 6" |
| | B802 | 6 | 34'-1" | | | Str. |
| | | | | | | |
| | R401 | 10 | 3'-11" | | | 2" |
| | R402 | 10 | 4'-0" | | | 2" |
| | R403 | 12 | 11'-8" | | | Str. |
| | | | | | | |
| | R601 | 20 | 4'-11" | | | Str. |
| | R602 | 6 | 5'-0" | | | Str. |
| | | | | | | |
| | W411 | 4 | 12'-6" | | | 2" |
| | W412 | 4 | 14'-10" | | | 2" |
| | | | | | | |
| | W701 | 20 | 11'-8" | | | Str. |
| | W702 | 4 | 7'-11" | | | Str. |
| | W703 | 4 | 6'-5" | | | Str. |
| | W704 | 4 | 11'-8" | | | 5¼" |
| | | | | | | |
| END BENT NO. 1 | B402 | 6 | 5'-2" | | | Str. |
| | | | | | | |
| | W401 | 12 | 8'-4" | 6'-10" | | 3" |
| | W402 | 12 | 9'-1" | | | Str. |
| | W403 To W406 | 2 Each | 4'-5" To 5'-11" | 2'-11" To 4'-5" | | 3" |
| | W407 To W410 | 2 Each | 5'-3" To 6'-9" | | | Str. |
| | | | | | | |
| END BENT NO. 3 | B404 | 6 | 5'-8" | | | Str. |
| | | | | | | |
| | W401 | 12 | 8'-9½" | 7'-3½" | | 3" |
| | W402 | 12 | 9'-7" | | | Str. |
| | W403 To W406 | 2 Each | 4'-7" To 6'-3" | 3'-1" To 4'-9" | | 3" |
| | W407 To W410 | 2 Each | 5'-5" To 7'-1" | | | Str. |

## BAR BENDING DIAGRAMS




Note:
Dimensions of bars in bending diagrams are out-to-out.

Number of commom bars shown is for one end bent only.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 13314 JOHN H. RUDDELL
BRIDGE ENGINEER

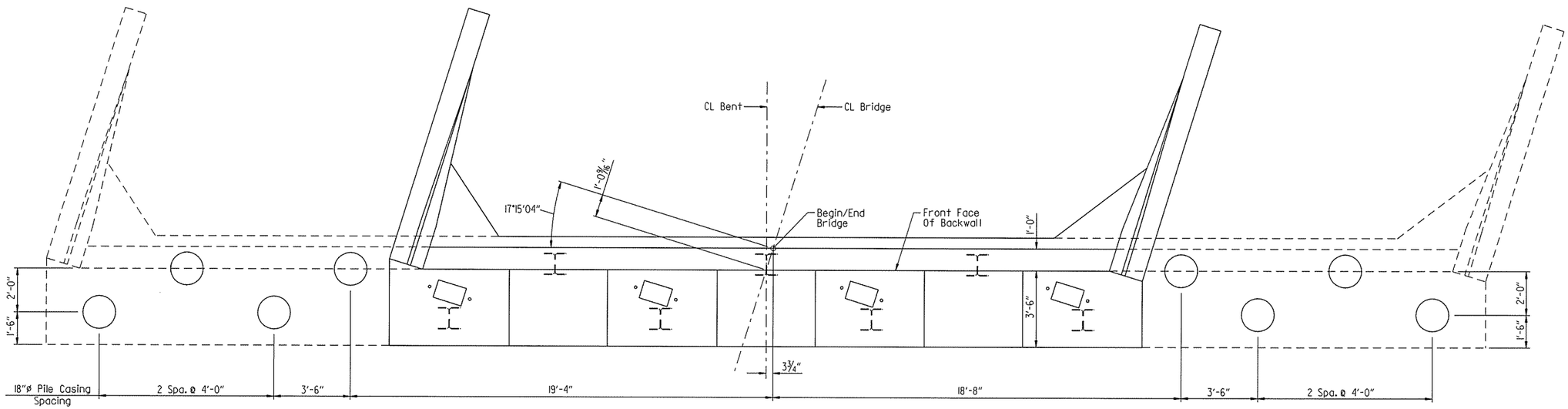
SHEET 4 OF 5
DETAILS OF END BENTS
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X7_A4.DGN
SCALE: AS SHOWN
BRIDGE NO. 07310 DRAWING NO. 55307

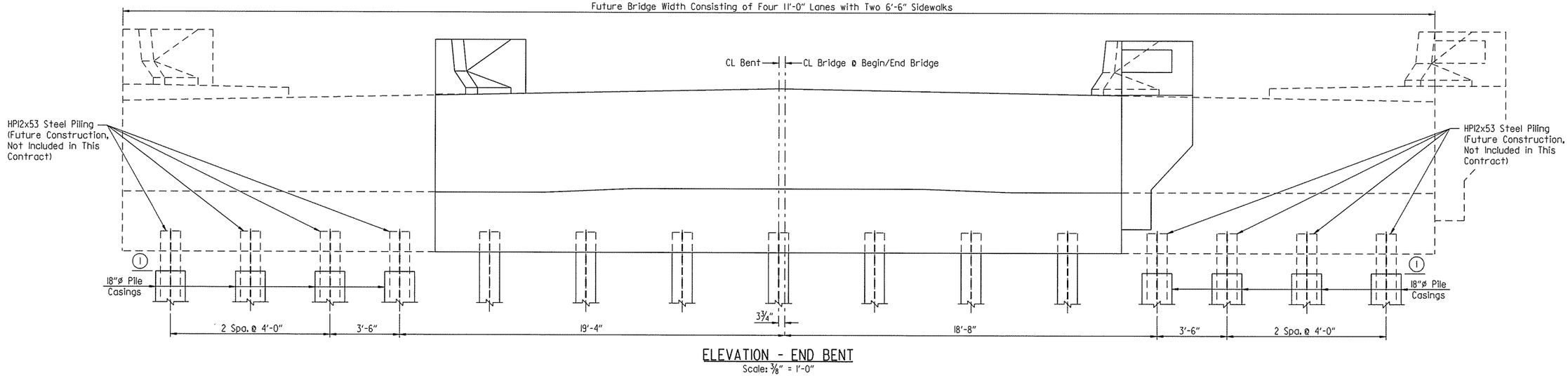
drgood 9/3/2014 2:40:26 PM
WORKSPACE: AHTD Bridge
\\GLITDCONLITFP\Projects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_A4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 454 | 897 |
| (1) 07310 | | END BENT DETAILS | | 55308 |




PLAN - END BENT
Scale: ⅜" = 1'-0"




ELEVATION - END BENT
Scale: ⅜" = 1'-0"

(1) Set top of casing at an elevation 1'-0" min. below finished ground.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 5 OF 5
# DETAILS OF END BENTS
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

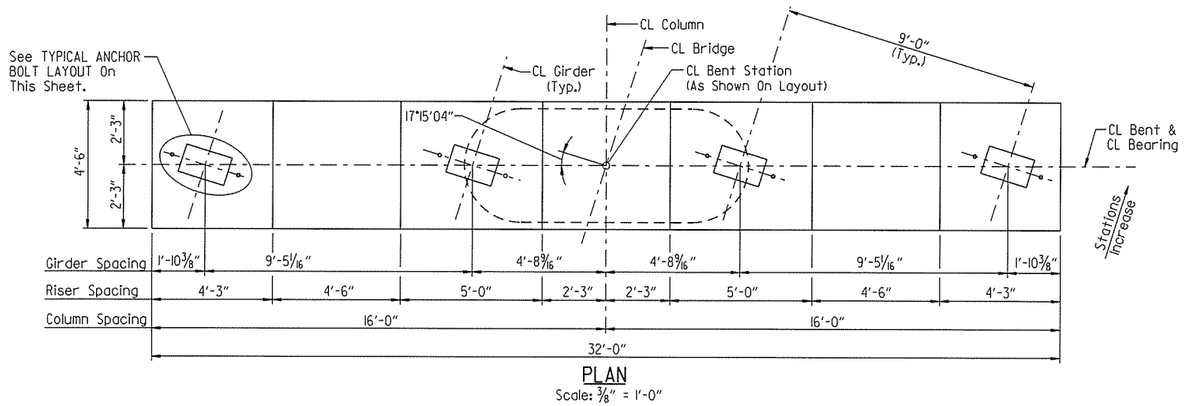
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: PCC DATE: MAR. 2011
FILENAME: BCA0907X7_A5.DGN
SCALE: AS SHOWN

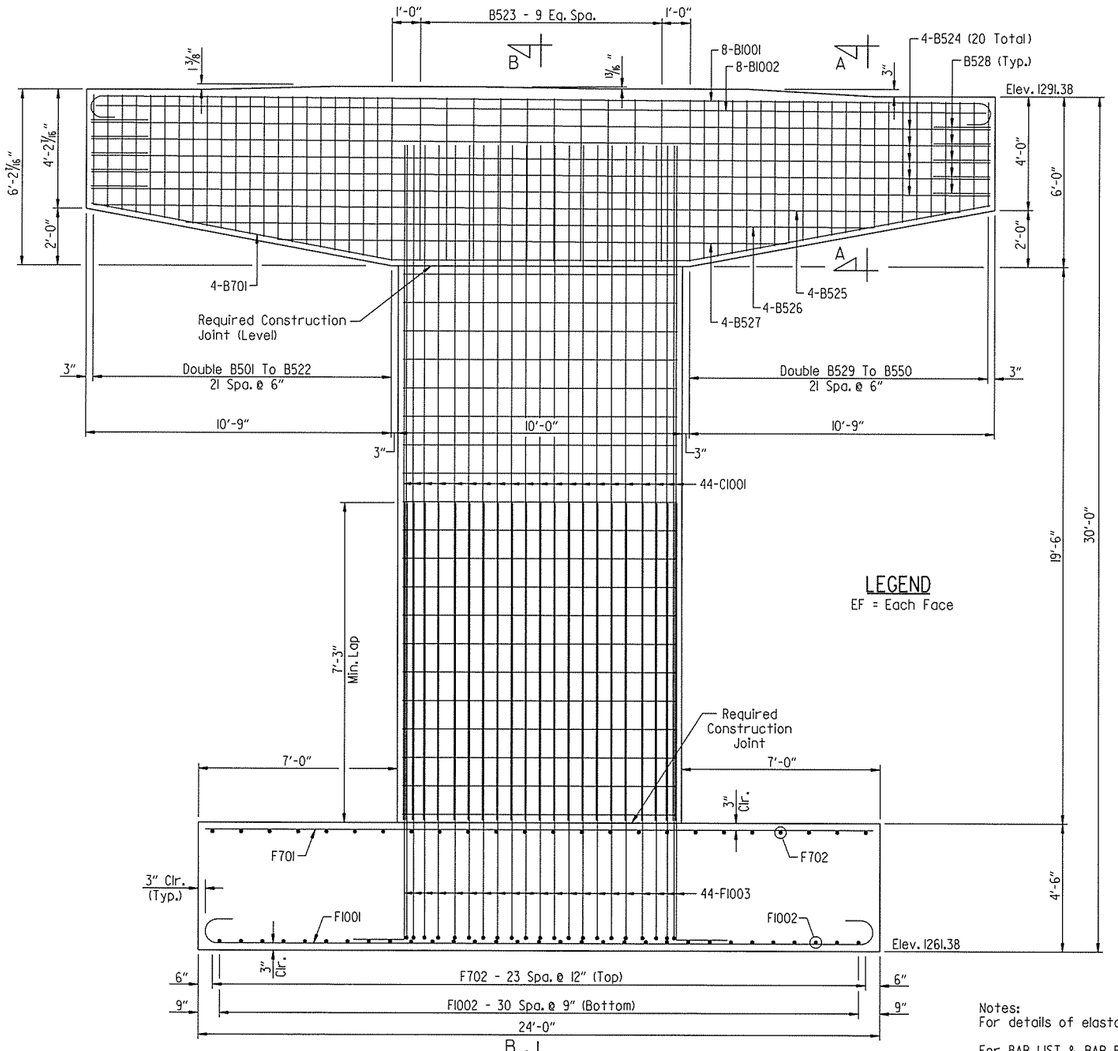
BRIDGE NO. 07310 DRAWING NO. 55308

drgood 9/3/2014 2:40:27 PM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_A5.dgn
REVISED DATE:

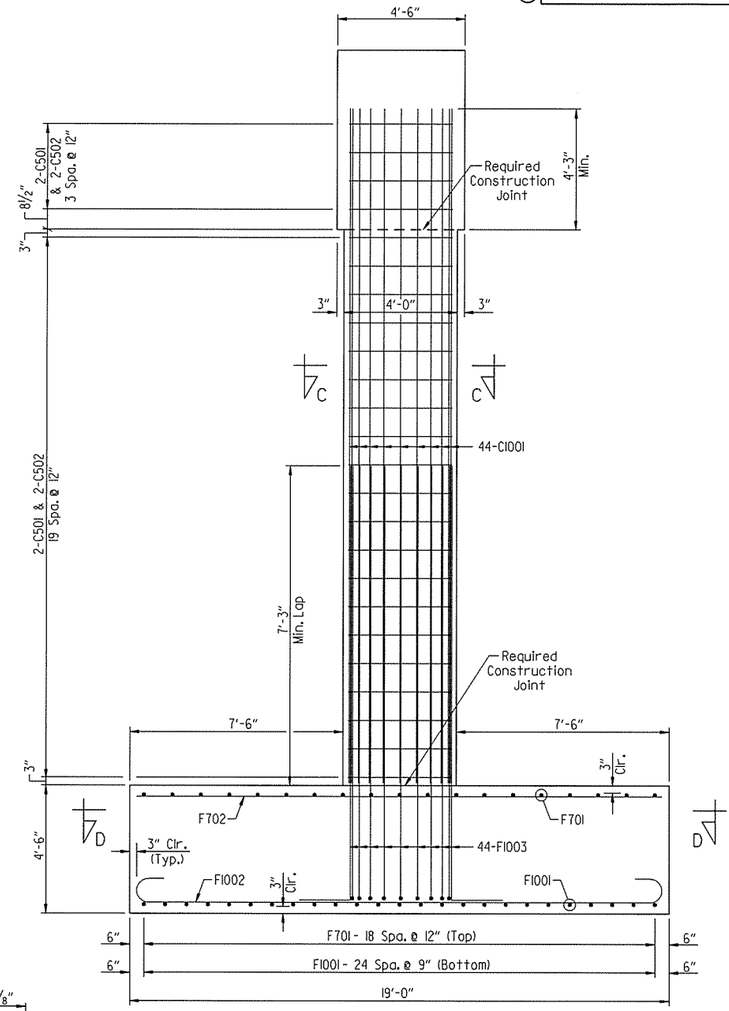
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 455 | 897 |
| | | | | (1) 07310 | | INT. BENT DETAILS | | 55309 |



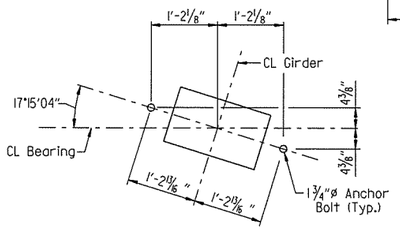

PLAN
Scale: 3/8" = 1'-0"




ELEVATION
Scale: 3/8" = 1'-0"




SECTION B-B
Scale: 3/8" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 3/4" = 1'-0"

Notes:
For details of elastomeric bearing pads, see Dwg. No. 55320.

For BAR LIST & BAR BENDING DIAGRAMS, see Dwg. No. 55310.

For SECTION A-A, SECTION C-C & SECTION D-D, see Dwg. No. 55310.

STATE OF ARKANSAS 12514 LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 1 OF 2
# DETAILS OF INTERMEDIATE BENT NO. 2
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

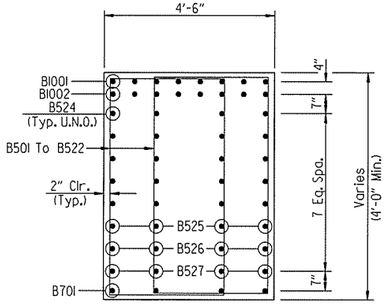
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_BI.DGN
SCALE: AS SHOWN

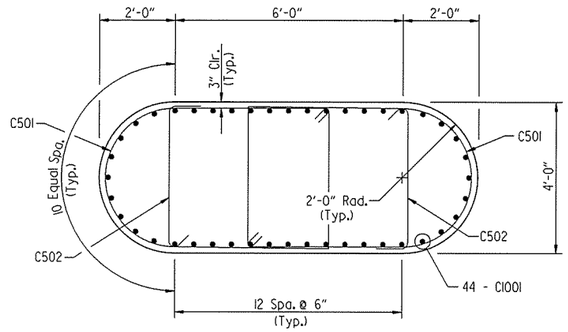
BRIDGE NO. 07310 DRAWING NO. 55309

drgood 9/3/2014 2:40:27 PM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\05981680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_BI.dgn
REVISED DATE:

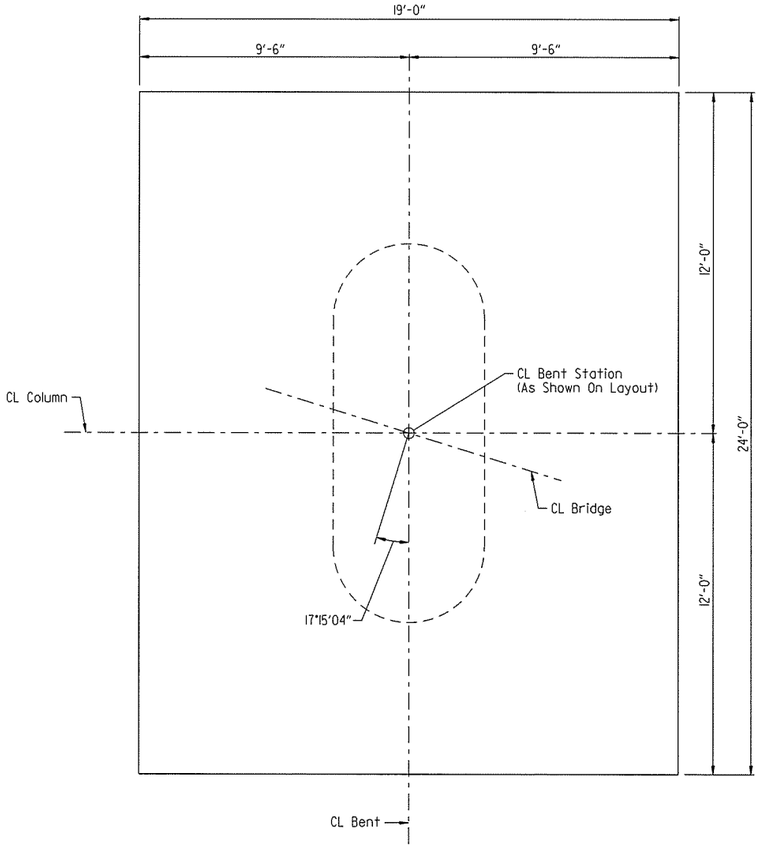
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 456 | 897 |
| | | | | (1) 07310 | | INT. BENT DETAILS | | 55310 |




SECTION A-A
Scale: ½" = 1'-0"




SECTION C-C
Scale: ½" = 1'-0"

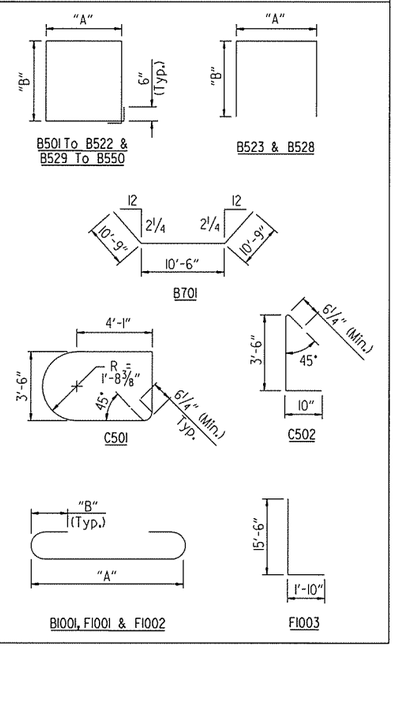



SECTION D-D
Scale: ⅜" = 1'-0"

## BAR LIST

| MARK | NO. REQ'D. | LENGTH | "A" | "B" | P.D. |
|---|---|---|---|---|---|
| B501 To B522 | 2 Ea. | 14'-3" To 18'-0" | 3'-0" | 3'-10½" To 5'-9" | 2½" |
| B523 | 10 | 15'-3½" | 4'-2" | 5'-9" | 2½" |
| B524 | 20 | 31'-8" | | | Str. |
| B525 | 4 | 30'-6" | | | Str. |
| B526 | 4 | 24'-2½" | | | Str. |
| B527 | 4 | 17'-11" | | | Str. |
| B528 | 10 | 7'-11" | 4'-1" | 2'-0" | 2½" |
| B529 To B550 | 2 Ea. | 13'-10" To 17'-11" | 3'-0" | 3'-8" To 5'-8½" | 2½" |
| | | | | | |
| B701 | 4 | 32'-0" | | | 5¼" |
| | | | | | |
| B1001 | 8 | 34"-6" | 31'-8" | 11½" | 10" |
| B1002 | 8 | 31'-4" | | | Str. |
| | | | | | |
| C501 | 48 | 18'-10" | | | 3¾" |
| C502 | 48 | 4'-10" | | | 3¾" |
| | | | | | |
| C1001 | 44 | 23'-9" | | | Str. |
| | | | | | |
| F701 | 19 | 23'-6" | | | Str. |
| F702 | 24 | 18'-6" | | | Str. |
| | | | | | |
| F1001 | 25 | 26'-4" | 23'-6" | 11½" | 10" |
| F1002 | 31 | 21'-4" | 18'-6" | 11½" | 10" |
| F1003 | 44 | 17'-0" | | | 10" |

## BAR BENDING DIAGRAMS




NOTE:
Dimensions of bars are out-to-out.

## GENERAL NOTES

All concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see LAYOUT.

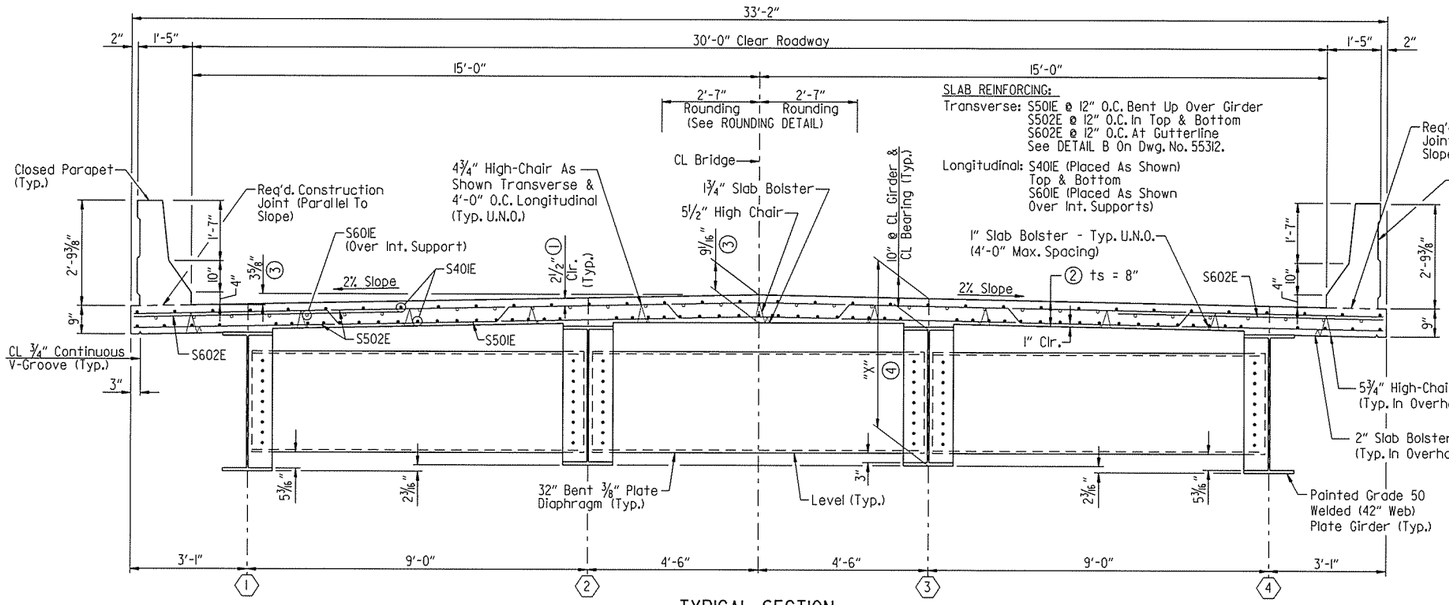
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENT NO. 2
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_B2.DGN
SCALE: AS SHOWN
BRIDGE NO. 07310 DRAWING NO. 55310

drgood 9/3/2014 2:40:27 PM
WORKSPACE: AHTD Bridge
\\CLITDDOLLFP\Projects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_B2.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 457 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55311 |

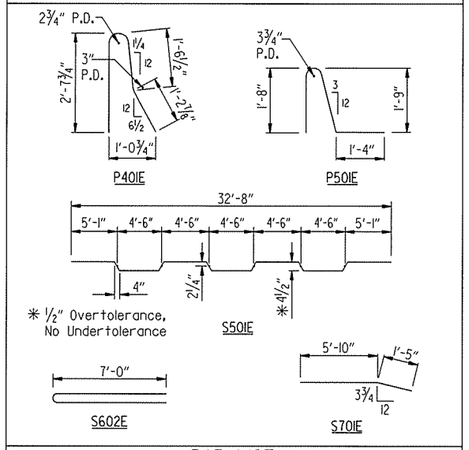



## TYPICAL SECTION
Scale: ½" = 1'-0"

Note:
Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

## LEGEND
U.N.O. = Unless Noted Otherwise

## BENDING DIAGRAM




## BAR LIST

| Mark | No. Req'd. | Length | Pin. Dia. |
|---|---|---|---|
| S401E | 558 | 36'-7" | STR. |
| | | | |
| S501E | 198 | 33'-3½" | 3" |
| S502E | 394 | 32'-10" | STR. |
| S503E To S518E | 4 Ea. | 5'-11" To 30'-1" | STR. |
| | | | |
| S601E | 99 | 27'-8" | STR. |
| S602E | 408 | 14'-3" | 5¼" (5) |
| | | | |
| S701E | 16 | 7'-3" | 5¼" |
| | | | |
| P401E | 828 | 5'-6" | 2¾", 3" |
| P402E | 24 | 29'-8" | STR. |
| P403E | 6 | 13'-8" | STR. |
| P404E | 140 | 9'-8" | STR. |
| P405E | 6 | 12'-8" | STR. |
| P406E | 24 | 29'-4" | STR. |
| | | | |
| P501E | 828 | 4'-10" | 3¾" |

Note:
Dimensions of bars are out-to-out.

Bar designations ending with "E" indicate epoxy coated bars.

(1) TOLERANCE:
Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance - see ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

(2) See ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED.

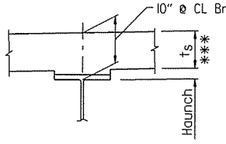
(3) Measured to Working Point - see ROUNDING DETAIL.

(4) "X" = 4'-4" + bottom flange thickness, measured at CL Bearing & CL Girder.

(5) Non-typical pin diameter

Note:
One epoxy coated #5 bar in the top and one epoxy coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

Note:
Class 2 protective surface treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.



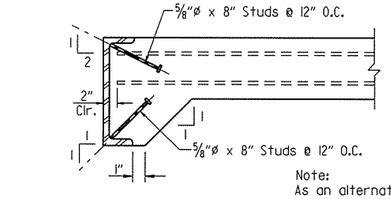

Note: $t_S$ = Slab thickness as shown on TYPICAL SECTION.

*** Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED
Scale: NTS

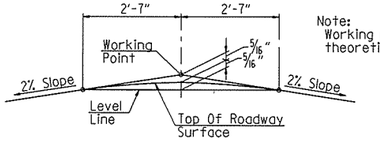
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the top flange contacts the bottom reinforcing steel; Maximum - top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used, see Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



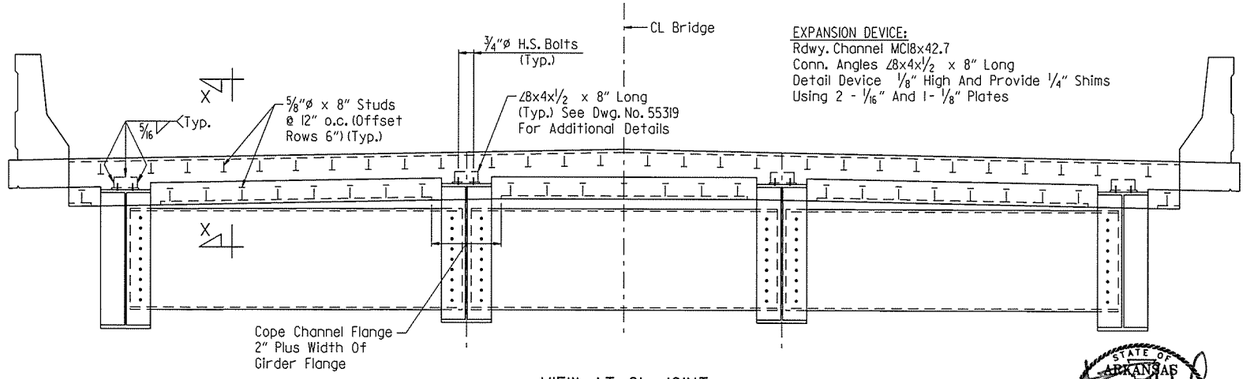

Note:
As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced @ 8" O.C. may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

## SECTION X-X
Scale: NTS




Note:
Working point matches theoretical profile grade.

## ROUNDING DETAIL
Scale: NTS




## VIEW AT CL JOINT
Looking Ahead - End Bent No. 1
Looking Back - End Bent No. 3
Scale: NTS

EXPANSION DEVICE:
Rdwy. Channel MC18x42.7
Conn. Angles L8x4x½ x 8" Long
Detail Device ⅛" High And Provide ¼" Shims Using 2 - 1/16" And 1- ⅛" Plates

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 1 OF 9
DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_SI.DGN
SCALE: AS SHOWN
BRIDGE NO. 07310 DRAWING NO. 55311

dr:good 9/3/2014 2:40:28 PM
WORKSPACE: AHTD Bridge
\\LITTDOOLITProjects\2005\05916B0 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_SI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 458 | 897 |
| | | | | (I) 07310 | | SPAN DETAILS | | 55312 |

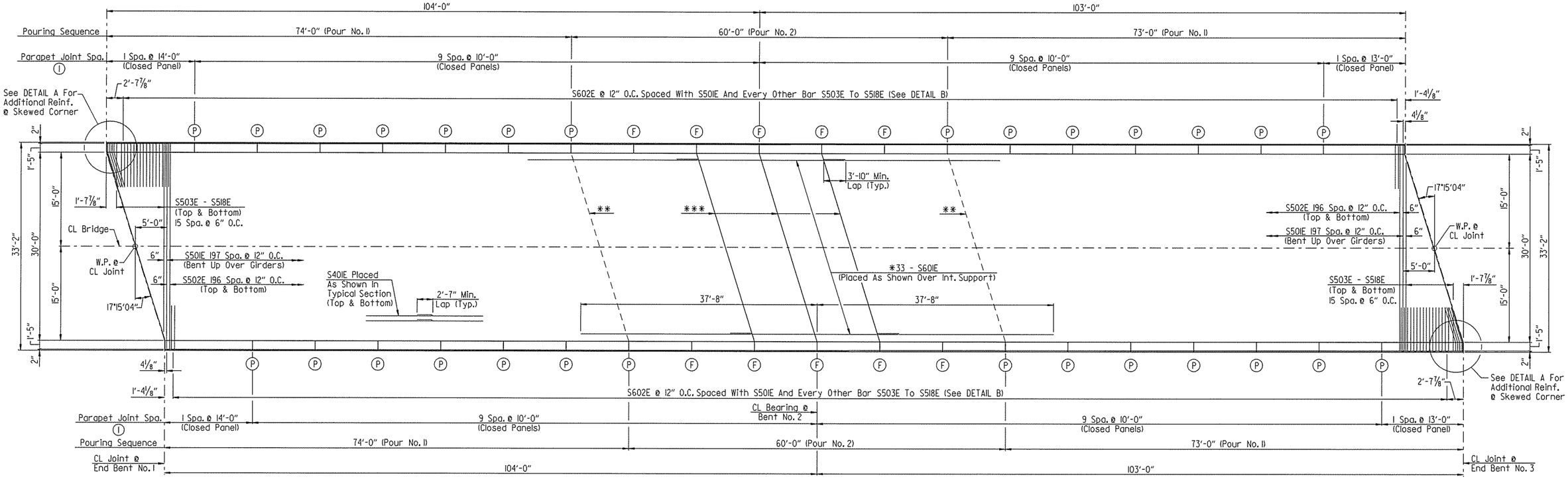
(I) Parapet joints designated with symbol (F) shall be stopped 4" from top of slab. All other parapet joints with symbol (P) shall be partial depth joints stopped 1'-2" from top of slab.

* Refer to TYPICAL SECTION on Dwg. No. 55311 for placement

** Pouring Sequence Construction Joint

*** Required Slab Joint

Note:
Required slab joints and pouring sequence joints shall align with the parapet open joints at the gutterline.



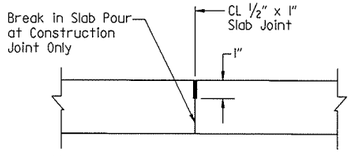

## REINFORCING PLAN & POURING SEQUENCE

Scale: ⅛" = 1'-0"

Note:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

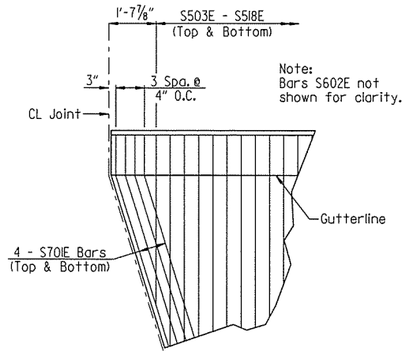
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.




The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to Subsection 501.02(h) and 501.05(j). Backer Rod Filler will not be required. The Poured Joint Sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

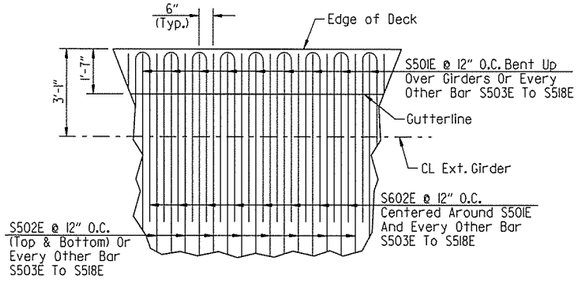
## SLAB JOINT DETAIL

Scale: NTS



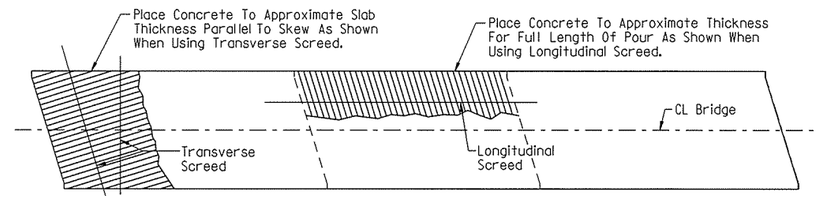

## DETAIL A

Scale: NTS




## DETAIL B

Scale: NTS




## CONCRETE PLACEMENT PROCEDURE

Scale: NTS

Note:
At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to CL Bridge.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 8017 JOHN H. RUDDELL

BRIDGE ENGINEER

SHEET 2 OF 9
DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY

ROUTE 412 SEC. 2

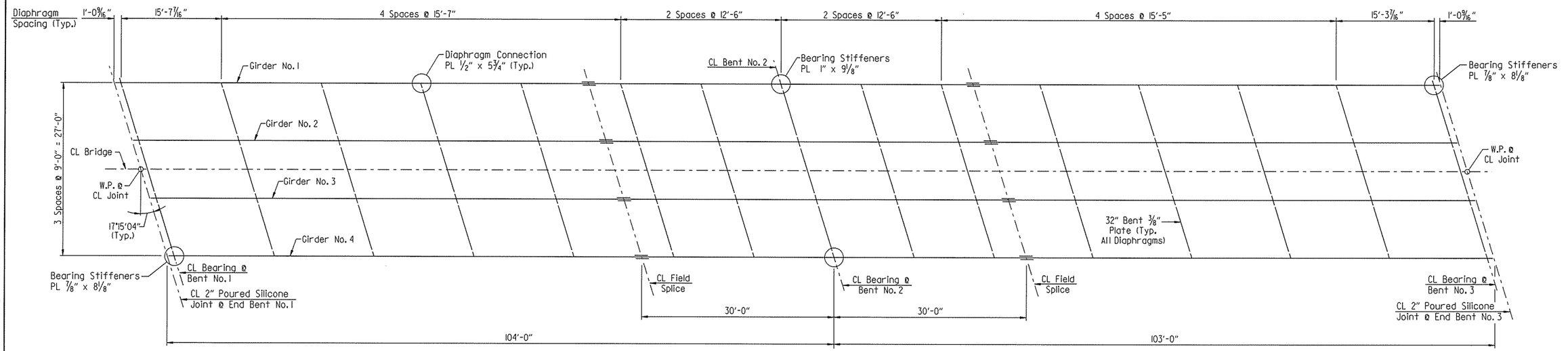
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_S2.DGN
SCALE: AS SHOWN

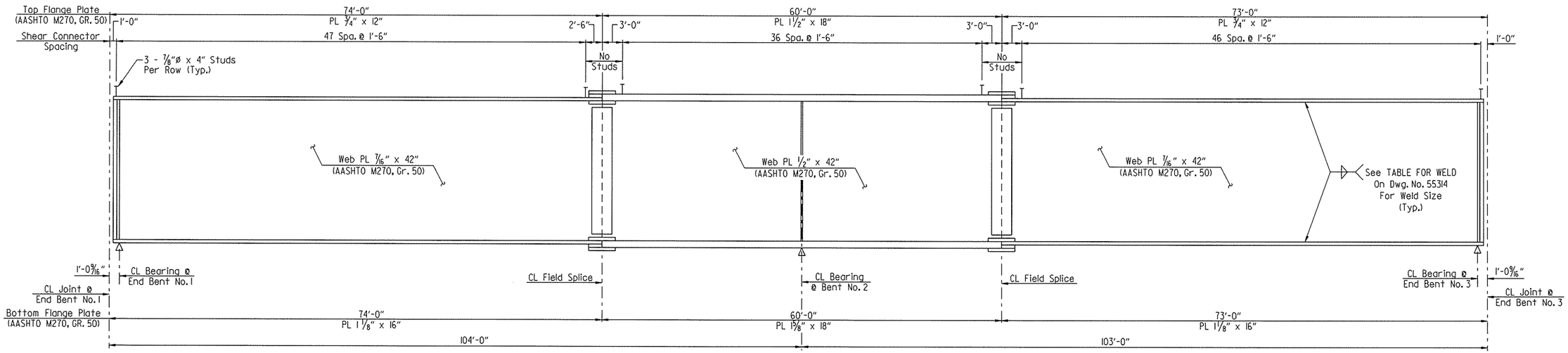
BRIDGE NO. 07310 DRAWING NO. 55312

dropod 9/3/2014 2:40:28 PM
WORKSPACE: AHTD Bridge
\\COLITDCDN\LITProjects\2005\05916680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_S2.dgn
REVISED DATE:

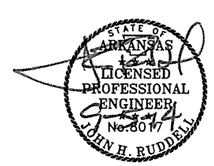
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 459 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55313 |




## FRAMING PLAN
Scale: 1/8" = 1'-0"




## TYP. GIRDER ELEVATION
Scale: NTS




BRIDGE ENGINEER

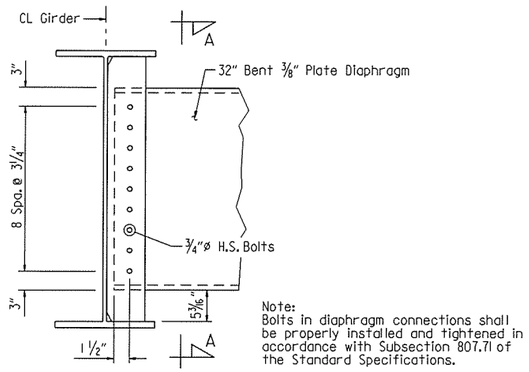
SHEET 3 OF 9
DETAILS OF 207'-0" COMPOSITE
PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_S3.DGN
SCALE: AS SHOWN

BRIDGE NO. 07310 DRAWING NO. 55313

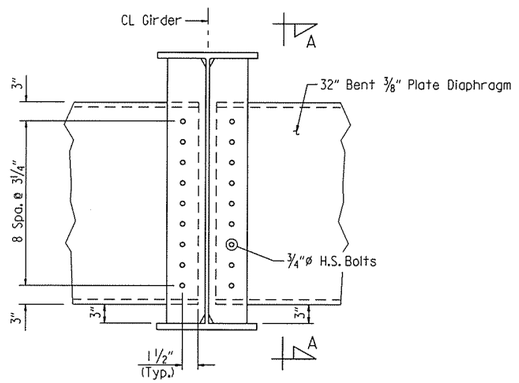
drgood 9/3/2014 2:40:29 PM
WORKSPACE: AHTD Bridge
\\Cl\TUDOR\LITPro\Jobs\S2005\059II680 - AHTD Springdale Byposs\Drawings\BRG\SpringCreek-Street\BCA0907x7_S3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 460 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55314 |

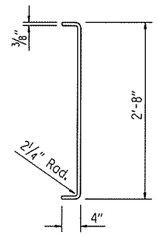



Note:
Bolts in diaphragm connections shall be properly installed and tightened in accordance with Subsection 807.71 of the Standard Specifications.

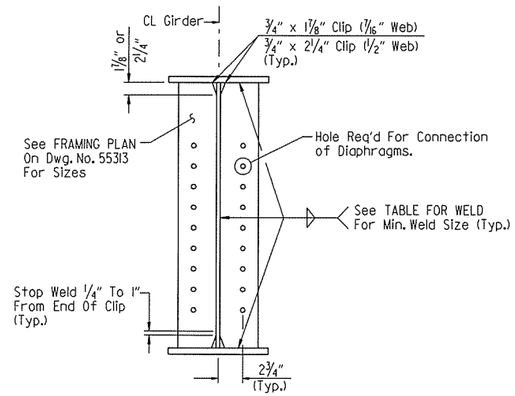
## DIAPHRAGM CONNECTIONS AT EXTERIOR GIRDER
Scale: NTS



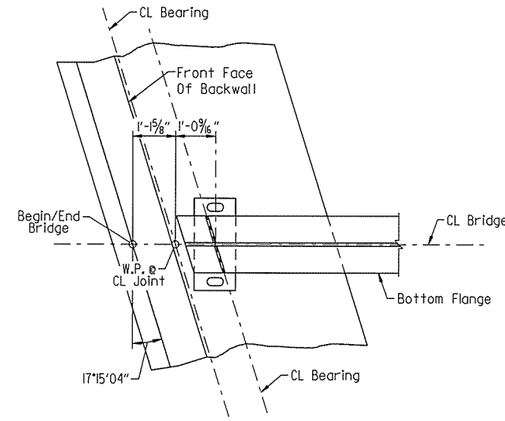

## DIAPHRAGM CONNECTIONS AT INTERIOR GIRDER
Scale: NTS



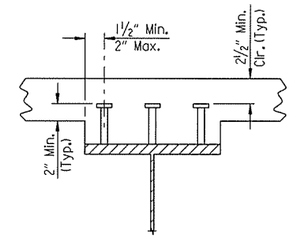

## SECTION A-A
Scale: NTS




## DIAPHRAGM CONNECTION PLATE DETAIL
Scale: NTS



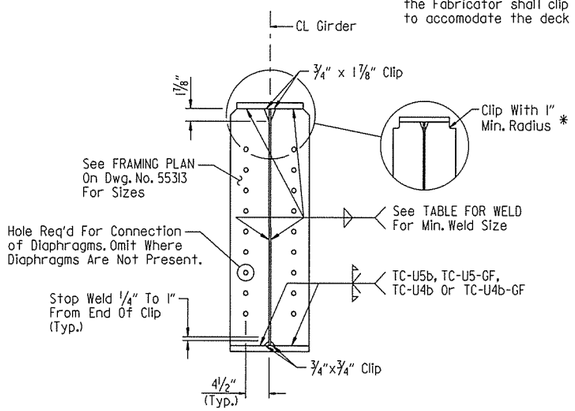

## BEARING PLAN AT END BENT
Scale: 1/4" = 1'-0"



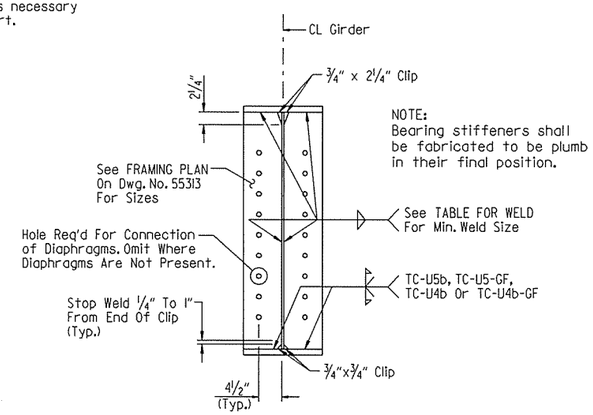

Stud shear connectors shown shall be 7/8"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer. 3/4"ø studs may be used in place of the 7/8"ø studs shown, at the ratio ratio of 1.361 - 3/4"ø studs in place of one 7/8"ø stud. 7/8"ø studs will be used as basis for measurement of structural steel in shear connectors.

## SHEAR CONNECTOR DETAIL
Scale: NTS

* If permanent steel bridge deck forms are used, the Fabricator shall clip the plate as necessary to accomodate the deck form support.




## BEARING STIFFENER @ END BENTS
Scale: NTS




## BEARING STIFFENER @ INTERIOR BENT
Scale: NTS

## TABLE FOR WELD

| Material Thickness of Thicker Part Joined (Inches) | Minimum Size of Fillet Weld (Inches) | Single Pass Weld Must Be Used |
|---|---|---|
| To 3/4" Inclusive | 1/4" | |
| Over 3/4" | 5/16" | |

NOTE:
When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

NOTES:
1. For GENERAL NOTES, see Drawing No. 55318.
2. All structural steel, including girders, diaphragms, bearing stiffeners and conn. plates, shall be AASHTO M270, Grade 50.
3. For elastomeric bearing details, see Drawing No. 55320.
4. For details of field splices, see Drawing No. 55315.
5. For typical haunch details, see Dwg. No. 55311.
6. For DEAD LOAD DEFLECTION, see Drawing No. 55315.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

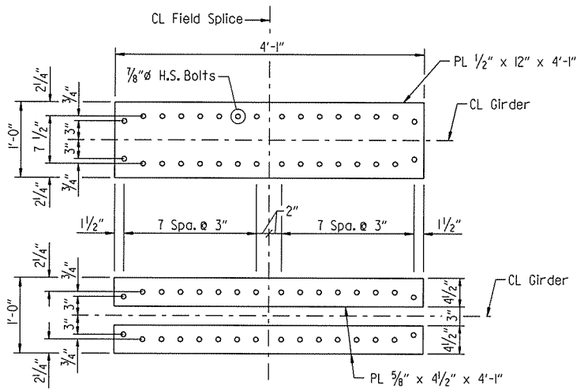
SHEET 4 OF 9
DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X7_S4.DGN
CHECKED BY: ABH DATE: AUG. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: MAR. 2011

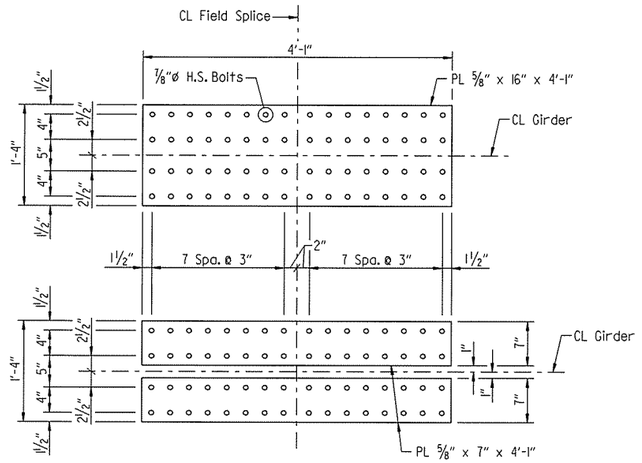
BRIDGE NO. 07310 DRAWING NO. 55314

drgood 9/3/2014 2:40:29 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_S4.dgn
REVISED DATE:

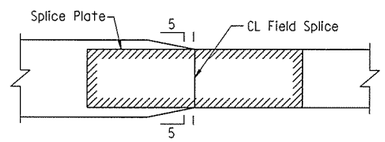
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 461 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55315 |



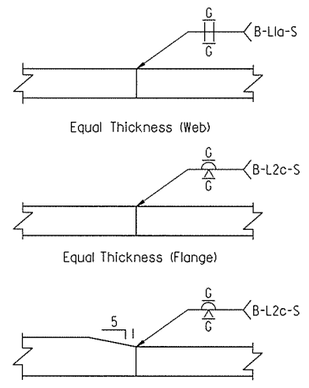

TOP FLANGE SPLICE
Scale: 1" = 1'-0"



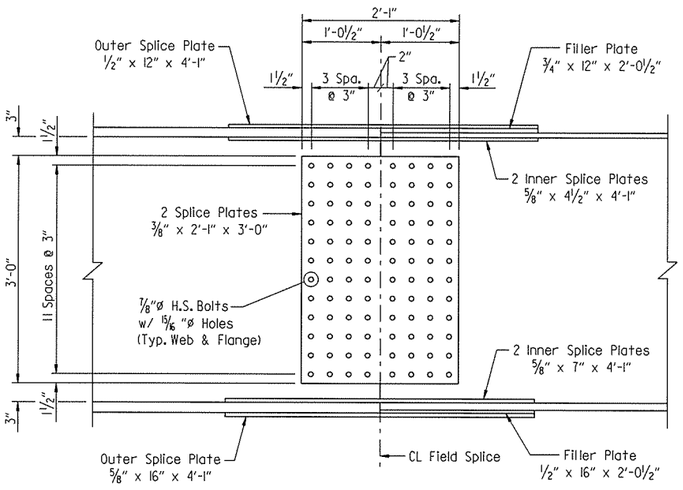

BOTTOM FLANGE SPLICE
Scale: 1" = 1'-0"




DETAILS OF BOTTOM FLANGE TRANSITION
Scale: NTS



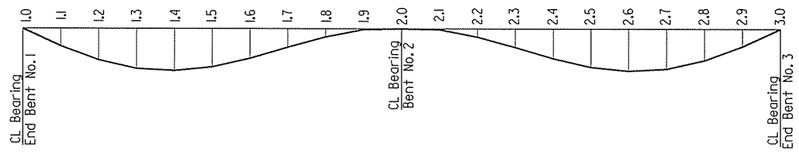

DETAILS OF WELDED SPLICES
Scale: NTS




ELEVATION OF FIELD SPLICE
Scale: 1" = 1'-0"
(Span No. 2 Field Splice Shown,
Span No. 1 Field Splice Similar By Orientation)

Notes:
All field splice bolts shall be 7/8"ø H.S. bolts.
All holes for splice bolts shall be 15/16 "ø.
All field splice plates shall be AASHTO M270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted sith approval of the Engineer. Payment will be made on the basis of the plan quantities.




DEAD LOAD DEFLECTION
Scale: NTS

TABLE OF DEAD LOAD DEFLECTIONS (Inches)

| Point Of Deflection | Wt. Of Girder And Diaphragms | Wt. Of Girder, Diaphragms And Slab | Wt. Of Girder, Diaphragms, Slab And Parapet |
|---|---|---|---|
| 1.0 | 0.00 | 0.00 | 0.00 |
| 1.1 | 0.15 | 0.80 | 0.88 |
| 1.2 | 0.28 | 1.47 | 1.61 |
| 1.3 | 0.36 | 1.90 | 2.09 |
| 1.4 | 0.39 | 2.05 | 2.25 |
| 1.5 | 0.36 | 1.92 | 2.11 |
| 1.6 | 0.30 | 1.56 | 1.72 |
| 1.7 | 0.21 | 1.06 | 1.18 |
| 1.8 | 0.11 | 0.57 | 0.63 |
| 1.9 | 0.03 | 0.17 | 0.19 |
| 2.0 | 0.00 | 0.00 | 0.00 |
| 2.1 | 0.03 | 0.14 | 0.15 |
| 2.2 | 0.10 | 0.50 | 0.55 |
| 2.3 | 0.18 | 0.96 | 1.06 |
| 2.4 | 0.27 | 1.42 | 1.57 |
| 2.5 | 0.34 | 1.77 | 1.95 |
| 2.6 | 0.36 | 1.90 | 2.09 |
| 2.7 | 0.33 | 1.77 | 1.94 |
| 2.8 | 0.26 | 1.37 | 1.51 |
| 2.9 | 0.14 | 0.75 | 0.83 |
| 3.0 | 0.00 | 0.00 | 0.00 |

Note:
Camber for dead load deflection plus vertical curve ± 1/4" tolerance deflections shown are from a chord from centerline bearing to centerline bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

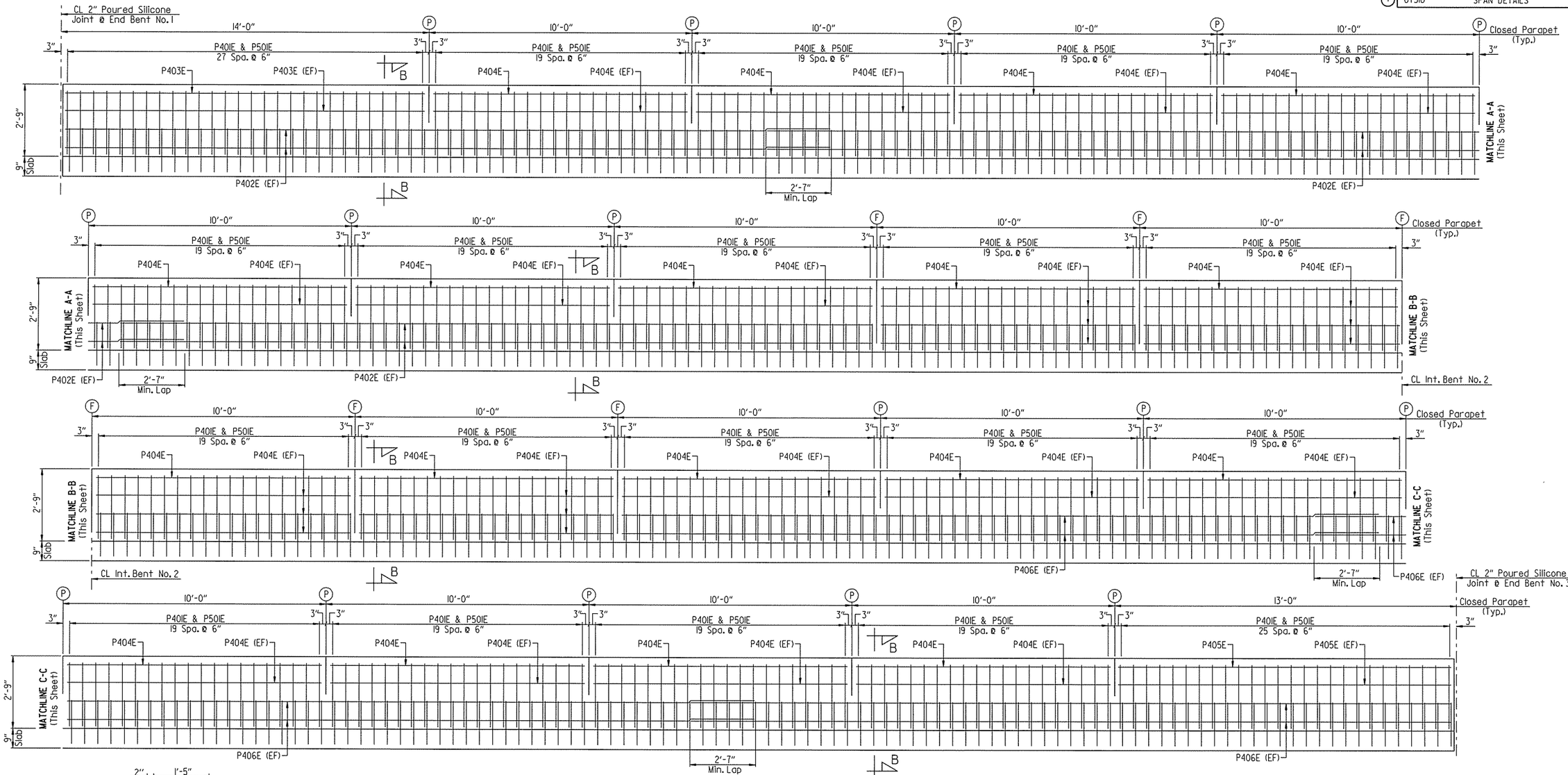
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 5 OF 9
DETAILS OF 207'-0" COMPOSITE
PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: WRF DATE: MAR. 2011
FILENAME: BCA0907X7_S5.DGN
SCALE: AS SHOWN
BRIDGE NO. 07310 DRAWING NO. 55315

drgood 9/3/2014 2:40:30 PM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907x7_S5.dgn
REVISED DATE:

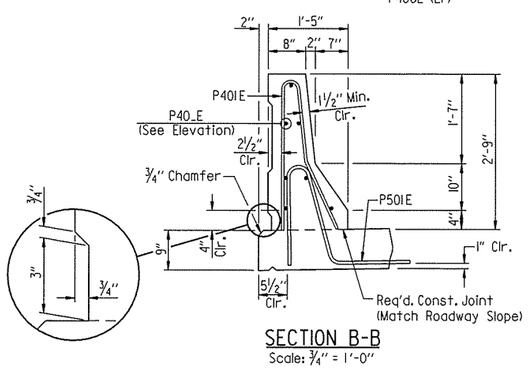
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 462 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55316 |




PARAPET ELEVATION - LEFT SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)

Scale: 1/2" = 1'-0"




SECTION B-B

Scale: 3/4" = 1'-0"

Note:
For additional parapet details, see Dwg. No. 55318.

## GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day Compressive Strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

## LEGEND

EF = Each Face

(P) Partial depth parapet joints (1/4" to 1" max.) shall be stopped 1'-2" from top of slab.

(F) Full depth parapet joints (1/4" to 1" max.) shall be stopped 4" from top of slab.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL

BRIDGE ENGINEER

# SHEET 6 OF 9
# DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2011 FILENAME: BCA0907X7_S6.DGN

CHECKED BY: ABH DATE: AUG. 2011 SCALE: AS SHOWN

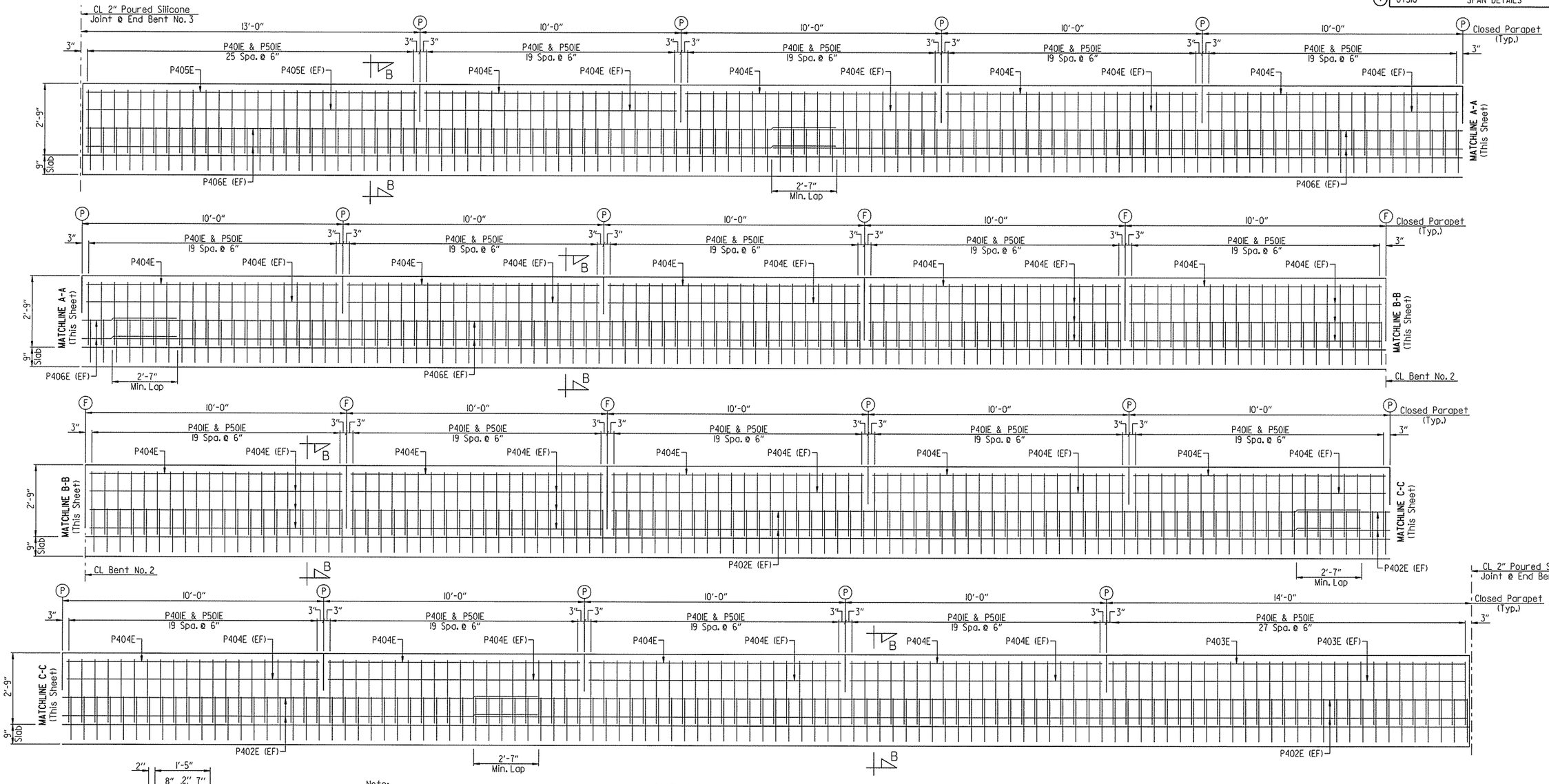
DESIGNED BY: JES DATE: JULY 2011

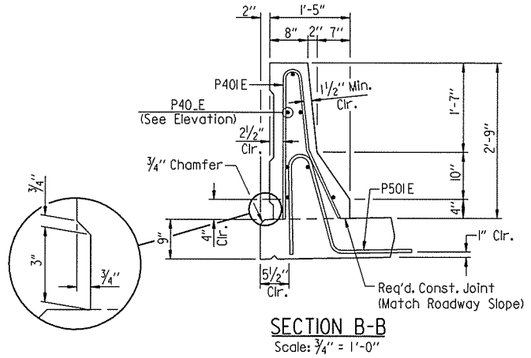
BRIDGE NO. 07310 DRAWING NO. 55316

dragood 9/3/2014 2:40:30 PM
WORKSPACE, AHTD Bridge
\\GLITDCONLITP\Projects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_S6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 463 | 897 |
| (1) 07310 | | SPAN DETAILS | | 55317 |




SECTION B-B
Scale: ¾" = 1'-0"

Note:
For additional parapet details, see Dwg. No. 55318.

## GENERAL NOTES

CONCRETE: All concrete shall be Class S(AE) with a minimum 28 day Compressive Strength f'c = 4000 psi.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60.

## LEGEND

EF = Each Face

(P) Partial depth parapet joints (¼" to 1" max.) shall be stopped 1'-2" from top of slab.

(F) Full depth parapet joints (¼" to 1" max.) shall be stopped 4" from top of slab.

## PARAPET ELEVATION - RIGHT SIDE OF BRIDGE

(Looking At Inside Face Of Parapet Rail)
Scale: ½" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
9-5-14

BRIDGE ENGINEER

SHEET 7 OF 9
DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JULY 2011
CHECKED BY: ABH DATE: AUG. 2011
DESIGNED BY: JES DATE: JULY 2011
FILENAME: BCA0907X7_S7.DGN
SCALE: AS SHOWN

BRIDGE NO. 07310 DRAWING NO. 55317

dropod 9/3/2014 2:40:31 PM
WORKSPACE: AHTD Bridge
\\GLITDCD\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_S7.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 464 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55318 |

## GENERAL NOTES:

### CONCRETE:

Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurements of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when permanent steel bridge deck forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

### REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

### STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 and shall be paid for at the unit price per pound bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36 unless noted otherwise. All structural steel shall be cleaned in accordance with Subsection 807.84 unless noted otherwise. See Drawing No. 55320 for cleaning requirements of external load plates on elastomeric bearings.

All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of plan quantities.

All girders, including field splice plates, are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly but are considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

Steel plates for main load carrying members (flange and web plates) and flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with a minimum length of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with a minimum length of 25'-0" for sections. Material specifications and locations of shop-welded splice, if any, shall be shown on the shop drawings. No additional payment for these welded splices will be made.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

All girders shall be blocked in their true positions with webs horizontal in the shop as specified in Subsection 807.54 (b)(2) of the Standard Specifications. The camber, length of sections, distance between bearings and opening of joints shall be measured with the girders in their true positions and this information shall become a part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of +/- 1/4" is allowed for camber.

Groove welds in flange and web plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications.

Fillet welds at flange to web plate connections shall be Quality Control (Q.C.) tested by the magnetic particle method.

All Quality Control (Q.C.) testing is at the Contractor's expense.

All connection Plates shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plans. All bearing stiffeners shall be fabricated to be plumb in their final position.

Diaphragms shall be installed as girders are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring of the concrete deck.

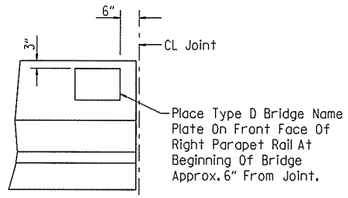
Field connections shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Holes for ¾"ø high-strength bolts may be 15/16 "ø if a washer is supplied for use under both the nut and head of the bolt.

All contact surfaces between plates at field splices shall be free of paint, oil, rust or scale before assembly.

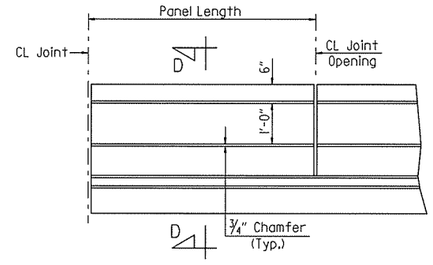
All stud shear connectors shall be granular flux filled, solid fluxed or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

Bearings shall be firmly seated in accordance with Subsection 808.08 of the Standard Specifications. This work is to be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)" and will not be paid for directly.

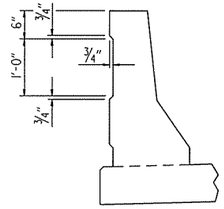
Anchor bolts shall be AASHTO designation M314 Gr. 55, including supplemental requirement S1, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50. Anchor bolts will be paid for at the contract unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".



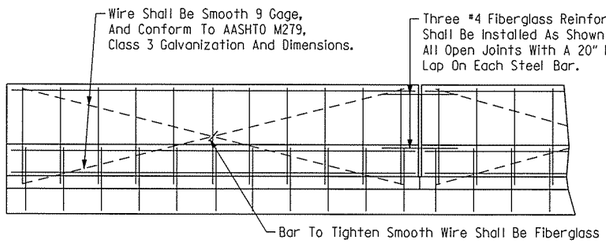

VIEW SHOWING LOCATION OF NAME PLATE
Scale: ½" = 1'-0"

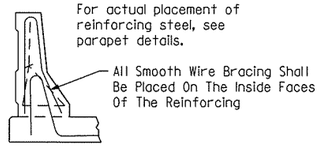



PARAPET ENHANCEMENT DETAILS
Scale: ½" = 1'-0"




SECTION D-D
Scale: ¾" = 1'-0"




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: NTS

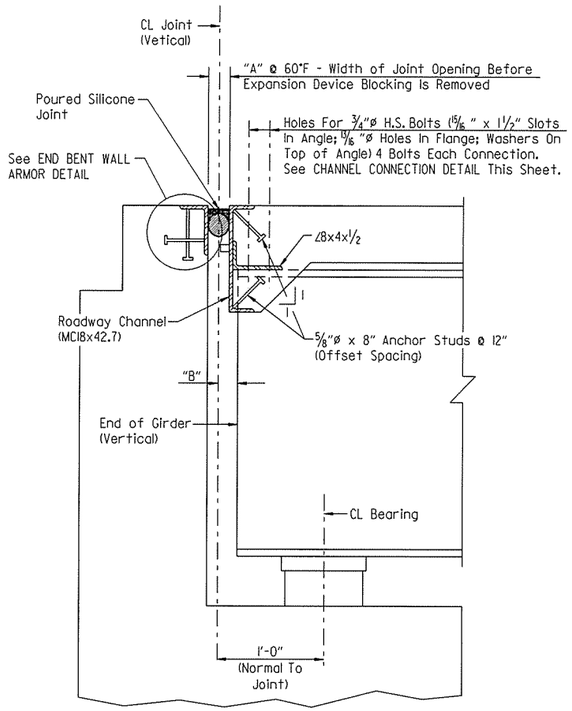
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

SHEET 8 OF 9
DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
SPRING CREEK STREET
OVER U.S. HIGHWAY 412
BENTON COUNTY
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X7_S8.DGN
CHECKED BY: ABH DATE: AUG. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: MAR. 2011
BRIDGE NO. 07310 DRAWING NO. 55318

dropod 9/3/2014 2:40:31 PM
WORKSPACE: AHTD Bridge
\\GLITDCONLITP\Projects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_S8.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 465 | 897 |
| | | | | (1) 07310 | | SPAN DETAILS | | 55319 |




## SECTION THRU JOINT AT END BENTS
(Perpendicular To Joint)
Scale: NTS

Note:
Concrete shall be hand packed under the roadway channel & joint armor in the backwall.

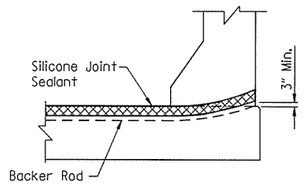
| SILICONE JOINT DATA | | | | | |
|---|---|---|---|---|---|
| "A" Width Perpendicular To Joint At 24 Hour Average Temperature * Of: | | | "B" Perpendicular To Joint At 60°F | "D" | Bumper Plate Size |
| 40°F | 60°F | 80°F | | | |
| 2 3/16" | 2" | 1 13/16" | 2¼"± | 4½" | 1" x 1" |

* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

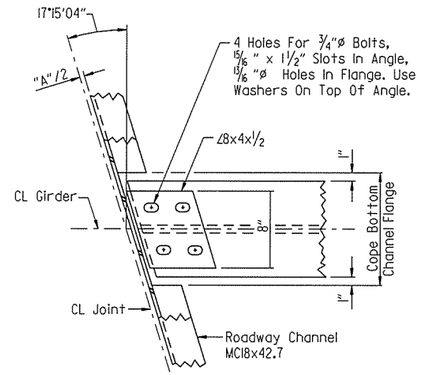
Notes:
The temperature limitations recommended by the Sealant Manufacturer shall be observed.

The sealant may be installed in skewed joints only when the average 24 hour air temperature is between 40° and 80°F.

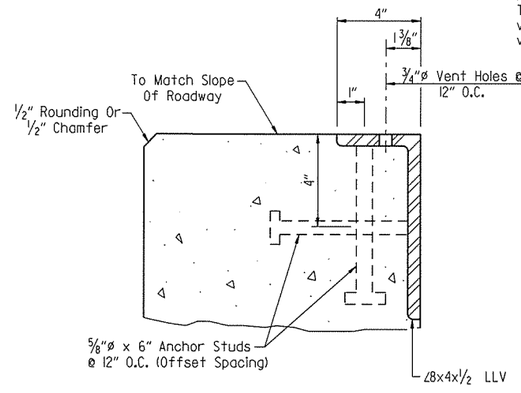
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.




## JOINT SEAL PLACEMENT @ CURB
Scale: NTS



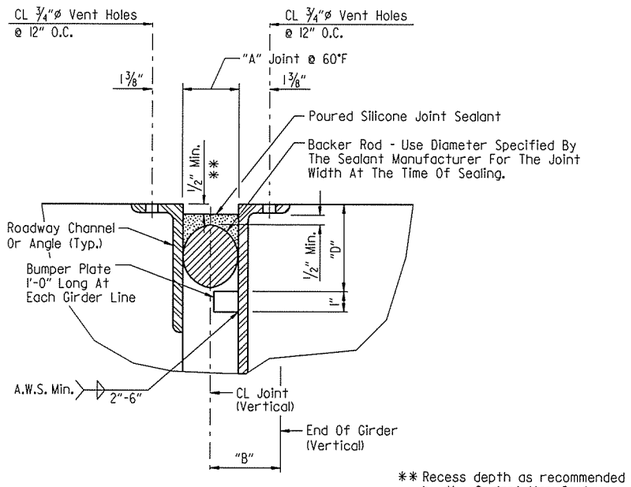

## CHANNEL CONNECTION DETAIL
Scale: NTS




Note:
Transverse spacing between vertical anchor studs and vent holes shall be 6".

Note:
Concrete shall be hand packed under the joint armor in the backwall.

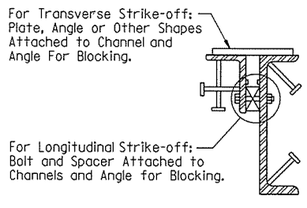
## END BENT WALL ARMOR DETAIL
Scale: NTS




** Recess depth as recommended by the Sealant Manufacturer.

## DETAIL OF POURED SILICONE JOINT
Scale: NTS

One of two different blocking systems is required depending on the type of span finishing machine that is used.




Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2' of each end of the device and with a maximum spacing of 8'.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the Expansion Device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE
Scale: NTS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# SHEET 9 OF 9
# DETAILS OF 207'-0" COMPOSITE PLATE GIRDER UNIT
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

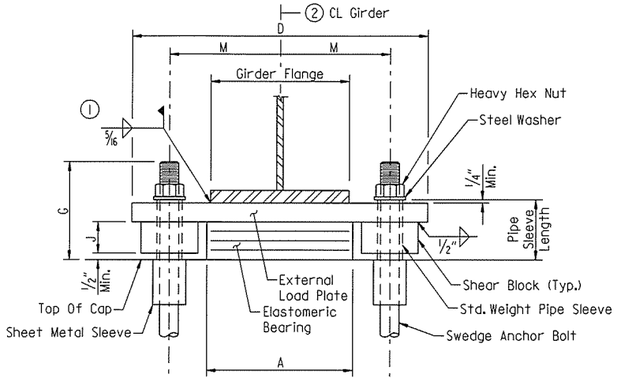
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: MAR. 2011 FILENAME: BCA0907X7_S9.DGN
CHECKED BY: ABH DATE: AUG. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: MAR. 2011

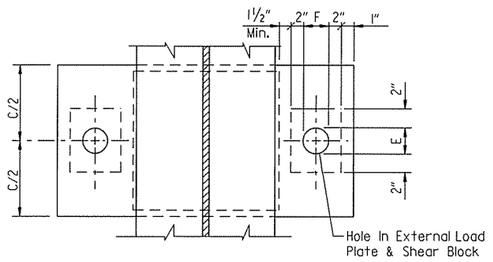
BRIDGE NO. 07310 DRAWING NO. 55319

drgood 9/3/2014 2:40:32 PM
WORKSPACE: AHTD Bridge
\\CLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_S9.dgn
REVISED DATE:

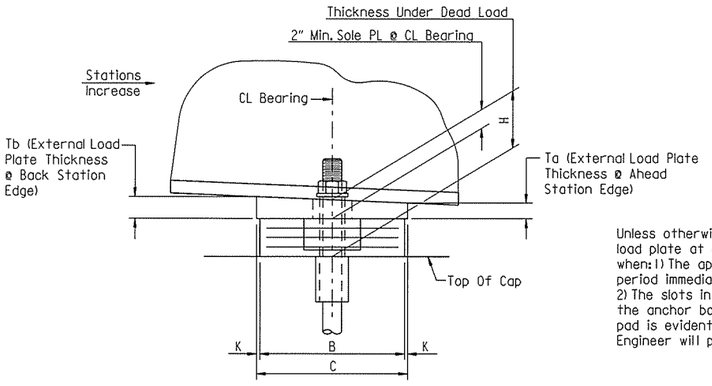
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 466 | 897 |
| | | | | (1) 07310 | | ELAST. BEARINGS | | 55320 |




FRONT VIEW - AT BENT 2



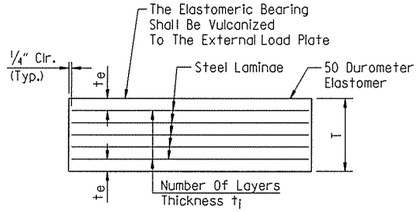

PLAN VIEW - AT BENT 2




SIDE VIEW - AT BENT 2

① Care shall be taken to ensure that the external load plate is in full and complete contact with the girder flange before welding begins.

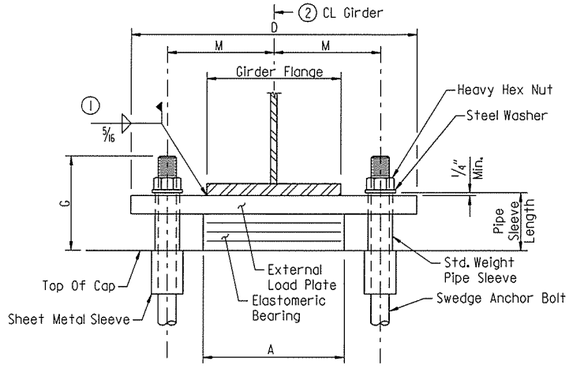
② Centerline elastomeric pad shall be aligned with centerline girder.



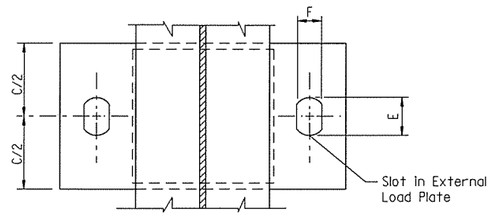

$t_e$ = Thickness Of Elastomer Cover On Top And Bottom Of Pad
$t_i$ = Thickness Of Elastomer Between Steel Laminae
N = Number Of Elastomer Layers Of Thickness $t_i$

ELASTOMERIC BEARING

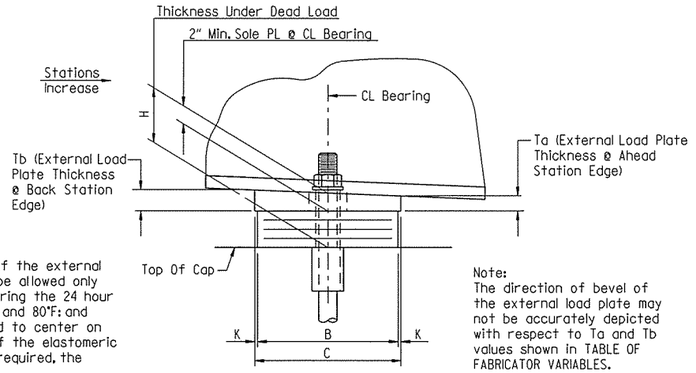
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) The approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) The slots in the external load plate are positioned to center on the anchor bolts; and 3) No horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.




FRONT VIEW - AT BENTS 1, 3

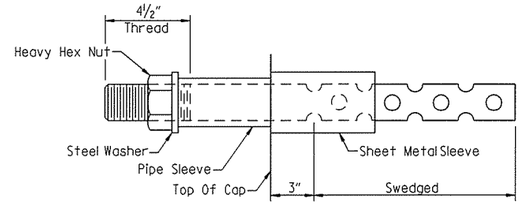



PLAN VIEW - AT BENTS 1, 3




SIDE VIEW - AT BENTS 1, 3

Note:
The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in TABLE OF FABRICATOR VARIABLES.




ANCHOR BOLT DETAIL

Note: Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a DPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)".

## GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates and shear blocks shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Section 808. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and painted in accordance with Subsection 807.75. Mask areas of field welding. The color of paint shall be Dark Brown and shall match Fed. Std. 595B, Color Chip No. 20108. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the TABLE OF FABRICATOR VARIABLES. Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "ELASTOMERIC BEARINGS".

Bearings shall be seated in accordance with Subsection 808.08.

## TABLE OF FABRICATOR VARIABLES

| Bridge No. | Location | | Bearing Type | No. Of Bearings Each Bent | * Maximum Design Load (Kips) | Elastomeric Pad | | | | | | | | External Load Plate | | | | | | | | | Anchor Bolt | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bent No.(s) | Beam Or Girder No. | | | | G | H | A | B | N | $t_i$ | $t_e$ | No. & Thickness Of Steel Laminate | T | C | D | E | F | J | K | M | $T_a$ | $T_b$ | Anchor Bolt (Dia. x L) | Anchor Bolt Grade | Pipe Sleeve Size (Dia. x L) | Sheet Metal Sleeve Size (Dia. x L) | Steel Washer Size (O.D.) |
| - | 1 | All | Exp. | 4 | 145 | 8 9/16" | 5 9/16" | 18" | 10" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 11" | 29" | 4 1/2" | 2 5/8" | - | 1/2" | 11 1/2" | 1.98" | 2.02" | 1 3/4" x 29" | 55 | 2" x 5 11/16" | 4" x 7" | 3 3/8" |
| | 2 | All | Fixed | 4 | 377 | 8 9/16" | 5 9/16" | 20" | 12" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 13" | 38 1/4" | 2 5/8" | 2 5/8" | 3" | 1/2" | 14 13/16" | 1.84" | 2.16" | 1 3/4" x 29" | 55 | 2" x 5 11/16" | 4" x 7" | 3 3/8" |
| | 3 | All | Exp. | 4 | 141 | 8 9/16" | 5 9/16" | 18" | 10" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 11" | 29" | 4 1/4" | 2 5/8" | - | 1/2" | 11 1/2" | 1.76" | 2.24" | 1 3/4" x 29" | 55 | 2" x 5 11/16" | 4" x 7" | 3 3/8" |

* Maximum Design Load = Service I Limit State

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 8017
JOHN H. RUDDELL
BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS
# SPRING CREEK STREET
# OVER U.S. HIGHWAY 412
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JAN. 2011 FILENAME: BCA0907X7_EI.DGN
CHECKED BY: ABH DATE: AUG. 2011 SCALE: AS SHOWN
DESIGNED BY: WRF DATE: JAN. 2011

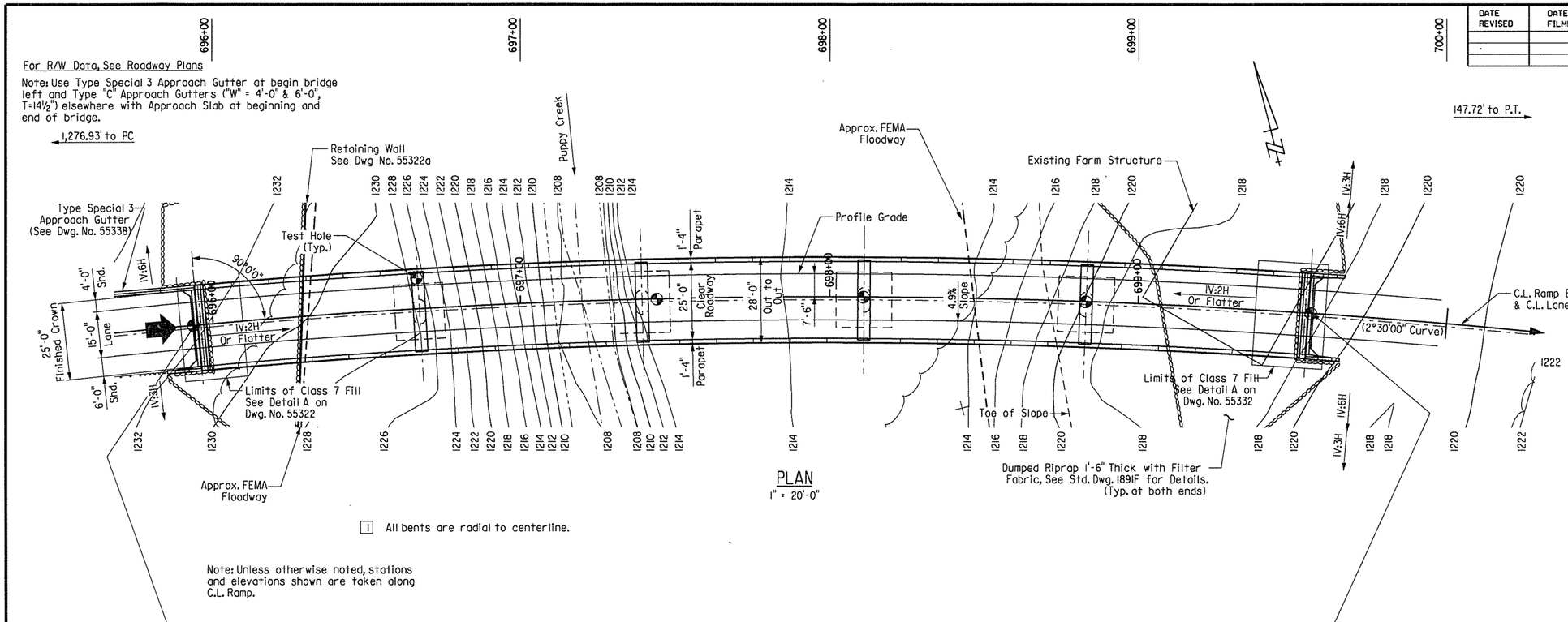
BRIDGE NO. 07310 DRAWING NO. 55320

drgood 9/3/2014 2:40:32 PM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0591680 - AHTD Springdale Bypass\Drawings\BRG\SpringCreek-Street\BCA0907X7_EI.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| - | | | | JOB NO. | | CA0907 | 467 | 897 |
| | | | | (1) 07311 | | LAYOUT | | 55321 |

For R/W Data, See Roadway Plans

Note: Use Type Special 3 Approach Gutter at begin bridge left and Type "C" Approach Gutters ("W" = 4'-0" & 6'-0", T=14½") elsewhere with Approach Slab at beginning and end of bridge.

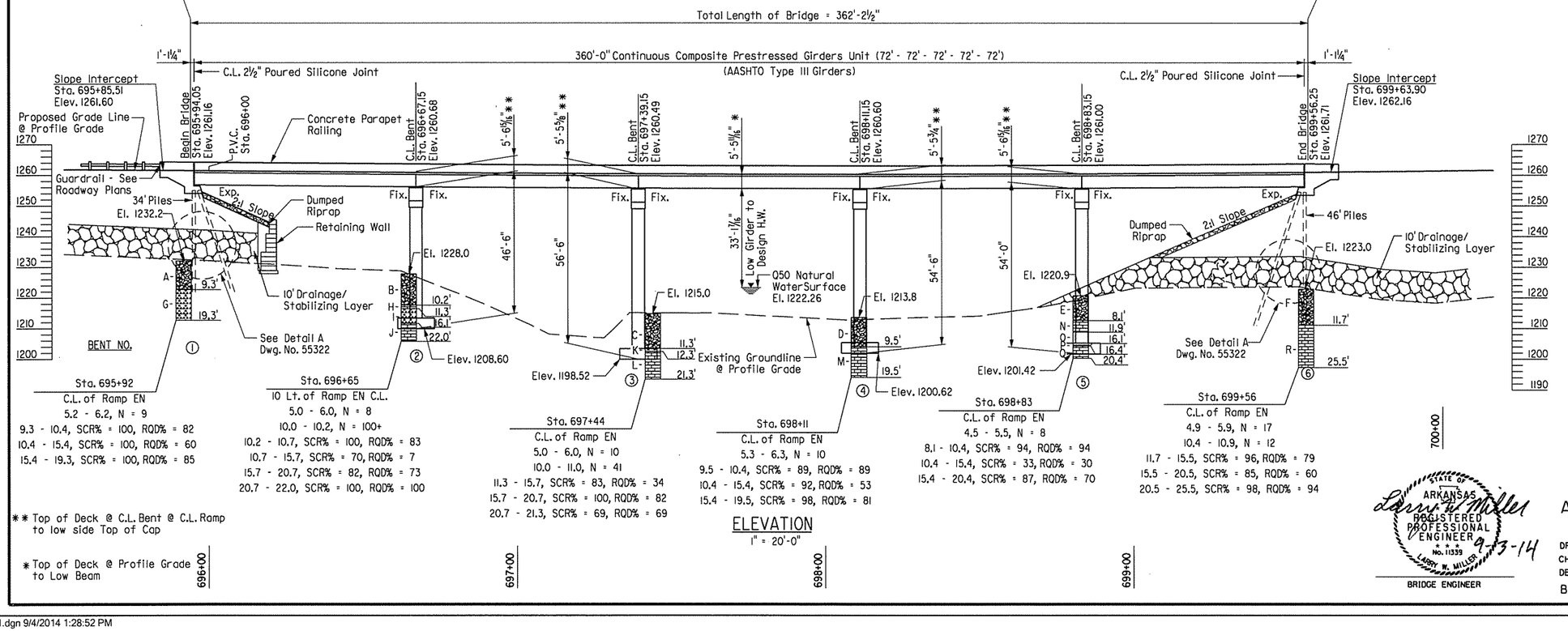



[1] All bents are radial to centerline.

Note: Unless otherwise noted, stations and elevations shown are taken along C.L. Ramp.

For curve data, general notes and soil boring legend, see Dwg. No. 55322.

For limits of riprap, see Dwg. No. 55206.




** Top of Deck @ C.L. Bent @ C.L. Ramp to low side Top of Cap

* Top of Deck @ Profile Grade to Low Beam

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# LAYOUT OF BRIDGE
# RAMP EN OVER PUPPY CREEK
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CB DATE: 9-08 FILENAME: bca0907x8_L1.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: CB DATE: 9-08

BRIDGE NO. 07311 DRAWING NO. 55321

B001966m15_L1.dgn 9/4/2014 1:28:52 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 468 | 897 |
| | | | | (1) 07311 | | LAYOUT | | 55322 |

GENERAL NOTES

BENCH MARK: Rebar in open field. Survey control point no. 90. N=700997.5192, E=672998.6789, Elev. 1231.6712, Mainlane Sta. 694+86.19, Offset 199.59' Right.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$=0.125 Site Class=D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) Concrete (Superstructure) | f'c = 4,000 psi |
| Class S Concrete (Prestressed Girders) | See Girder Details |
| Class S Concrete (Substructure) | f'c = 3,500 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy = 36,000 psi |

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface, top of backwall, top and roadway face of the concrete parapet rail and transition rails.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to surfaces as specified in Special Provision Job CA0907 "Textured Coating Finish" and in accordance with Section 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

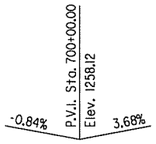
SPREAD FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as competent Limestone or Chert on the boring legend and shall have a minimum cover of 2'-0" above top of footings. Foundations for footings shall be prepared in accordance with Section 801.04 of the Standard Specifications. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons (factored resistance of 140 tons) per pile and into the material designated as competent Limestone or Chert on the boring legend. Drive all piles in Bents 1 and 6 to a minimum penetration of 10' below existing ground. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

PREBORING: Preboring may be required to obtain the minimum pile penetration requirements. The size and depth of preboring, if required, will be determined by the engineer. The contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. The cost of temporary casings and the preboring, if required, will not be paid for directly but will be considered subsidiary to the item STEEL PILING (HP 12x53).

| DETAIL DRAWINGS: | DRAWING NO. |
|---|---|
| End Bents | 55323-55325 |
| Intermediate Bents | 55326-55328 |
| 360'-0" Cont. Comp. Prestressed Girder Unit | 55329-55336 |
| Elastomeric Bearings | 55337 |
| Type 2 Special Approach Gutter | 55338 |
| Type "C" Approach Gutters | 55030c |
| Approach Slabs | 55040cl |
| Steel Piling | 55020 |

MAINTENANCE OF TRAFFIC: See Roadway Plans




V.C. = 800.00'

## VERTICAL CURVE DATA

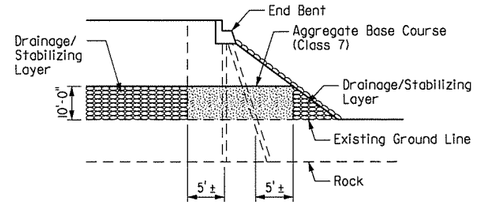
### C.L. RAMP EN

(Along Profile Grade)

## HORIZONTAL CURVE DATA

### C.L. RAMP EN

PI Sta = 696+36.39
PC Sta = 689+25.75
PT Sta = 703+03.94
R = 2291.83
Δ = 34°27'16.7" RT.
D = 2°30'00"
L = 1378.19
T = 710.64

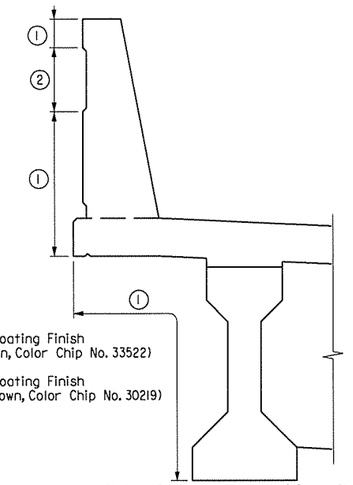



Where a drainage/stabilizing layer is required for embankment construction, aggregate base course (Class 7), in accordance with Section 303.02, shall be placed as shown in areas where piling will be located. Aggregate base course (Class 7) shall be paid for as "COMPACTED EMBANKMENT".

At the Contractor's option, preboring or other methods as approved by the Engineer may be used to facilitate pile installation through the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles, where rock fill is used for embankment construction, will not be paid for separately but shall be included in item "STEEL PILING".

## DETAIL A

No Scale




(1) Class 3 Textured Coating Finish (Color = Light Brown, Color Chip No. 33522)

(2) Class 3 Textured Coating Finish (Color = Medium Brown, Color Chip No. 30219)

Section thru parapet is shown. Similar for end bent transition rail.

## TEXTURED COATING FINISH

Scale: 3/4" = 1'-0"

## HYDRAULIC DATA

Drainage Area = 7.64 Square Miles

| FLOOD DESCRIPTION | FREQUENCY | DISCHARGE | ▲ NATURAL WATER SURFACE ELEV. | WATER SURFACE ELEVATION W/BACKWATER |
|---|---|---|---|---|
| | YEARS | C.F.S. | FEET | FEET |
| Design Flood | 50 | 11,027 | 1222.26 | 1223.05 |
| Basic Flood | 100 | 12,710 | 1222.86 | 1223.81 |
| Extreme Flood | 500 | 17,951 | 1224.56 | 1225.92 |
| Overtopping | >500 | ---- | ---- | ---- |

Low Bridge Member Elevation = 1255.38 (Bridge No. B07311)

▲ Water Surface With Existing Structures But Without Proposed Structure or Roadway Approaches.

Boring Legend

A - Brown, loose, clayey gravel with sand.
B - Brown, loose to very dense, clayey gravel with sand.
C - Brown, loose to dense, clayey gravel with sand.
D - Brown, loose, clayey gravel with sand.
E - Brown, loose, clayey gravel with sand.
F - Brown, medium dense, clayey gravel with sand.
G - Chert: White, lt. gray, gray, fresh to moderately weathered.
H - Limestone: White with gray banding, medium grain, fresh with moderate weathering.
I - Chert: White, lt. gray, gray, weathered.
J - Limestone: White with gray banding, medium grain, fresh with slight to moderate weathering.
K - Chert: White, lt. gray, gray, weathered.
L - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
M - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
N - Limestone: Lt. gray, gray, medium grain, fresh with slight to moderate weathering.
O - Core Loss
P - Chert: White, lt. tan, weathered.
Q - Limestone: Lt. gray, gray, medium grain, fresh with slight to moderate weathering.
R - Limestone: White with gray banding, medium grain, fresh with slight to moderate weathering.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-13-14

BRIDGE ENGINEER

# GENERAL NOTES AND BORING LEGEND
# RAMP EN OVER PUPPY CREEK
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CB DATE: 9-08
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: CB DATE: 9-08

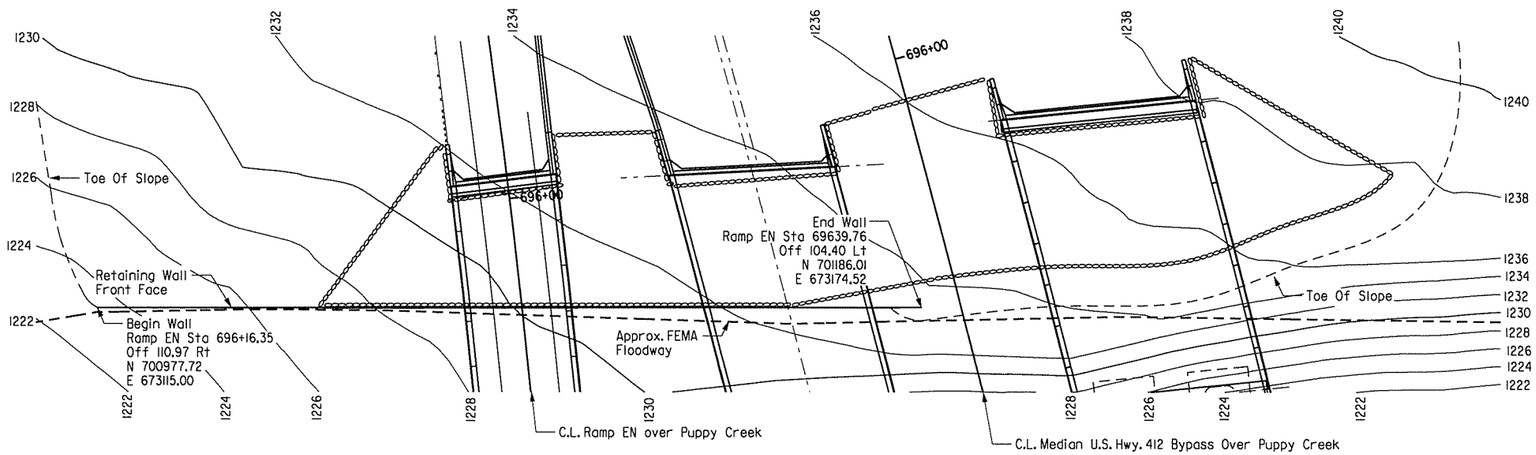
FILENAME: bca0907x8_L2.dgn
SCALE: As Shown

BRIDGE NO. 07311 DRAWING NO. 55322

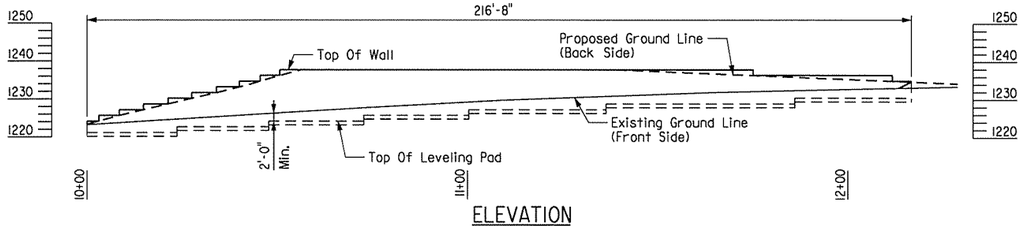
B001966m15_L2.dgn 9/4/2014 1:28:54 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

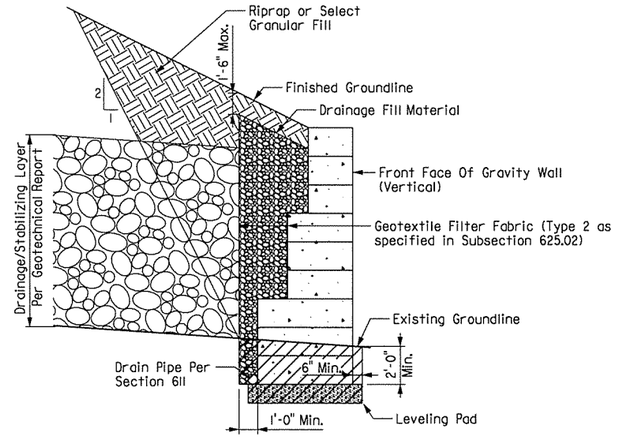
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 469 | 897 |
| 1 07311 | | RETAINING WALL | | 55322a |




PLAN
1" = 20'




ELEVATION
1" = 20'




Hatching denotes pay limits of unclassified excavation.

TYPICAL GRAVITY BLOCK WALL SECTION
No Scale

GENERAL NOTES

Design Specification: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) and Special Provision Job CA0907 "Gravity Block Retaining Wall".

Seismic Performance Zone: 1 $S_{D1}$=0.125 Site Class=D

Front face of wall blocks shall be straight and have a near vertical alignment.

The Contractor has the option of using a cut slope and/or shoring to maintain stability of the cut. Any excavation beyond the detailed pay limits or any shoring used will not be paid for directly but shall be considered incidental to the item "Gravity Block Retaining Wall".

The retaining wall, including all drainage fill, block in-fill materials, geotextile fabric, and leveling pad shall be considered included in the item "Gravity Block Retaining Wall."

Drainage shall be provided behind the wall as specified in SP Job CA0907 "Gravity Block Retaining Walls". If pipe underdrains are used for drainage, installation and details shall be in accordance with Std. Dwg. No. PU-1 and Section 611. Work and materials required for pipe underdrains or drainage systems shall not be paid for directly, but shall be considered incidental to the item "Gravity Block Retaining Walls".

| STATION ALONG WALL | FINISHED GRADE ELEV. |
|---|---|
| 10+00.00 | 1223.41 |
| 10+25.00 | 1224.98 |
| 10+50.00 | 1226.74 |
| 10+75.00 | 1228.11 |
| 11+00.00 | 1229.35 |
| 11+25.00 | 1230.58 |
| 11+50.00 | 1231.51 |
| 11+75.00 | 1232.30 |
| 12+00.00 | 1232.96 |
| 12+16.63 | 1233.36 |

Stations and elevations are at front face of wall. Finished grade at front face equals existing ground line.

FINISHED GRADE AT FACE OF WALL

| STATION ALONG WALL | TOP OF WALL ELEV. |
|---|---|
| 10+00.00 | 1224.48 |
| 10+03.12 | 1225.98 |
| 10+08.62 | 1227.48 |
| 10+15.01 | 1228.98 |
| 10+21.41 | 1230.48 |
| 10+27.65 | 1231.98 |
| 10+34.22 | 1233.48 |
| 10+40.21 | 1234.98 |
| 10+45.64 | 1236.48 |
| 10+50.75 | 1237.98 |
| 11+75.06 | 1237.98 |
| 12+11.59 | 1236.48 |
| 12+16.67 | 1234.98 |

TOP OF WALL ELEVATIONS

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# DETAILS OF GRAVITY RETAINING WALL
# U.S. HIGHWAY 412
# SPRINGDALE NORTHERN BYPASS
# (PROJECT NUMBER ONE)
# BENTON COUNTY

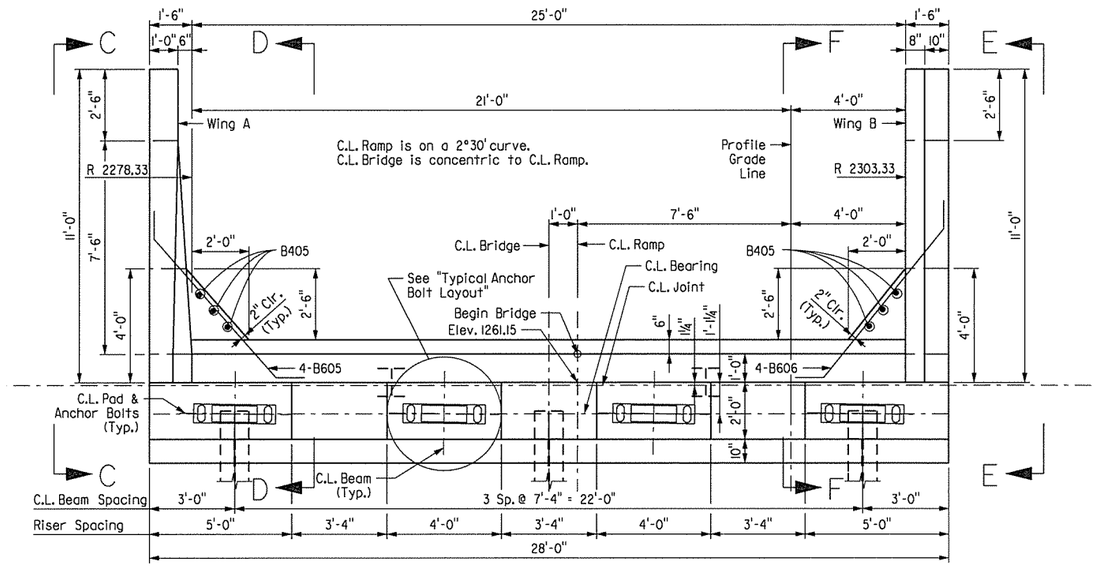
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LWM DATE: 02-14
CHECKED BY: EG DATE: 04-14
DESIGNED BY: LWM DATE: 02-14
FILENAME: bca0907x8_w1.dgn
SCALE: As Shown

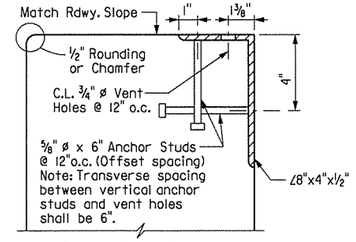
BRIDGE NO. 07311 DRAWING NO. 55322a

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 470 | 897 |
| | | | | (1) 07311 | | END BENT DETAILS | | 55323 |




PLAN-BENT 1
3/8" = 1'-0"

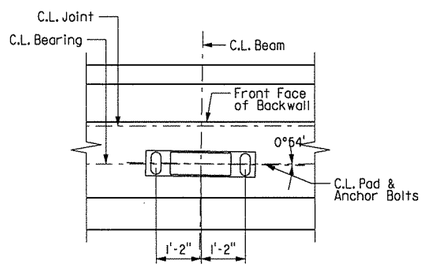
Rails shall be constructed on arcs concentric to C.L. Ramp.



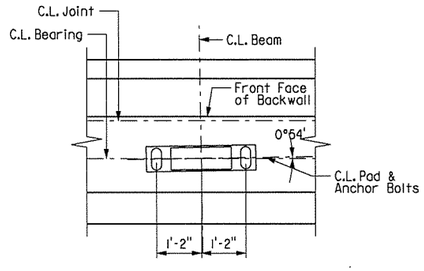

Note: For additional joint details, See Dwg. No. 55336.

Note: Concrete shall be hand packed under the joint armor in the backwall.

DETAIL Z
3" = 1'-0"

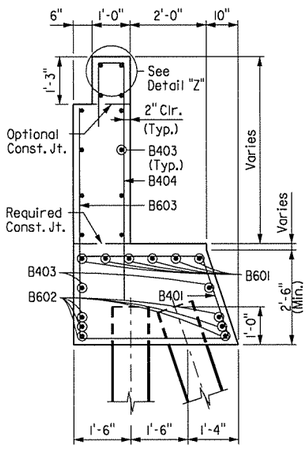



TYPICAL ANCHOR BOLT LAYOUT (BENT 1)
½" = 1'-0"

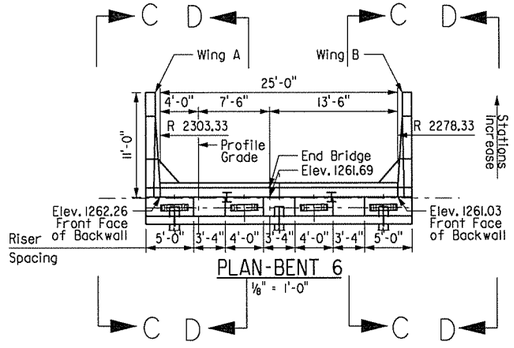



TYPICAL ANCHOR BOLT LAYOUT (BENT 6)
½" = 1'-0"

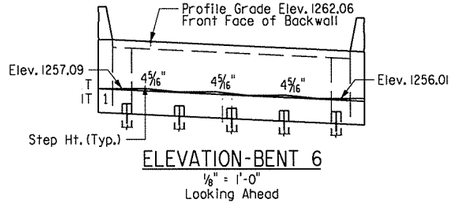
Note: For details of Elastomeric Bearings, See Dwg. No. 55337




SECTION A-A
½" = 1'-0"

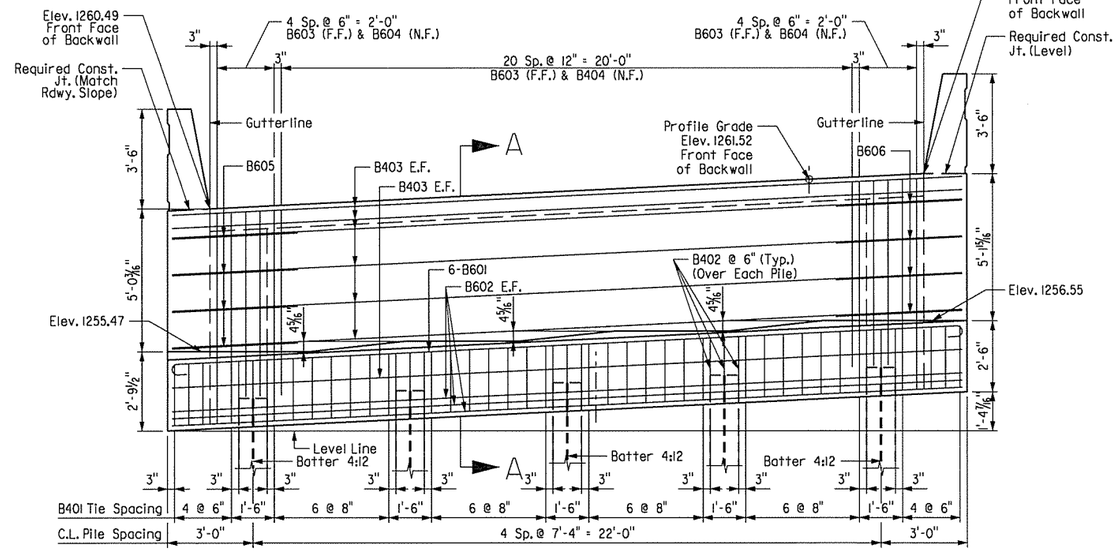



PLAN-BENT 6
⅛" = 1'-0"




ELEVATION-BENT 6
⅛" = 1'-0"
Looking Ahead

Note: Reinforcing steel, details, and dimensions shown for Bent 1 are similar for Bent 6 except as noted.




ELEVATION-BENT 1
Looking Back
⅜" = 1'-0"

Note: For Details of Wing & Rail "A" (Bents 1&6) and Details of Wing & Rail "B" (Bent 6), and view C & D, See Dwg. No. 55324.

Note: For Details of Wing & Rail "B" (Bent 1), and view E & F, See Dwg. No. 55325.

Note: For Bar List, See Dwg. No. 55324.

Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

STATE OF ARKANSAS
Larry M. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY M. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS
PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907x8_b11.dgn
SCALE: AS SHOWN

BRIDGE NO. 07311 DRAWING NO. 55323

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 471 | 897 |
| | | | | (1) 07311 | | END BENT DETAILS | | 55324 |

GENERAL NOTES FOR SUBSTRUCTURE

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (yield strength = 60,000 psi).

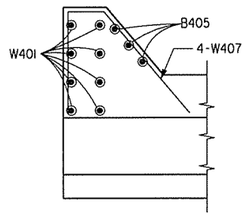
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 55336 for additional information.

For structural steel in end bents, see Dwg. No. 55336.

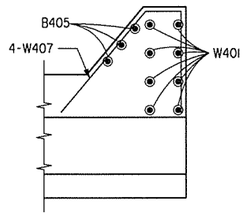
Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

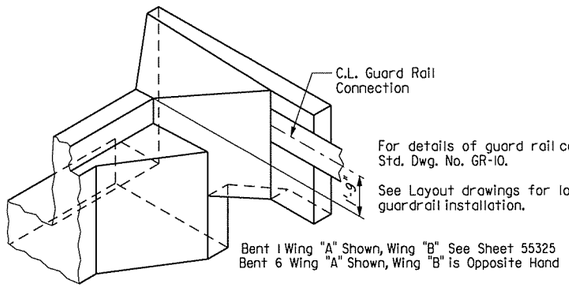
For detail of textured coating finish, see Dwg. No. 55322.




SECTION G-G (WING A)
3/8" = 1'-0"




SECTION G-G (WING B)
3/8" = 1'-0"

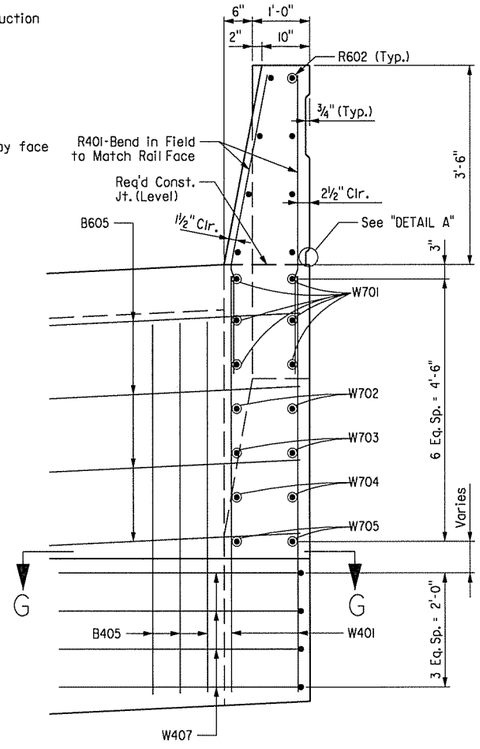



For details of guard rail connection, see Std. Dwg. No. GR-10.

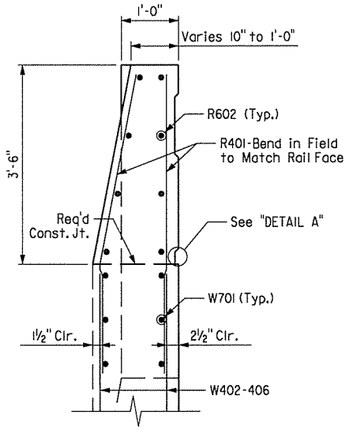
See Layout drawings for locations of guardrail installation.

Bent 1 Wing "A" Shown, Wing "B" See Sheet 55325
Bent 6 Wing "A" Shown, Wing "B" is Opposite Hand

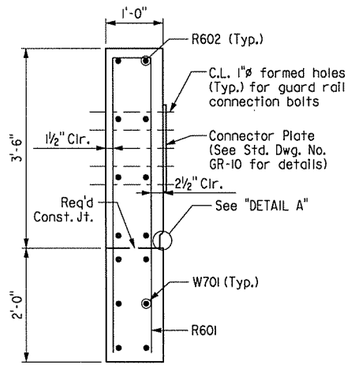
THREE DIMENSIONAL VIEW OF WING & RAIL
No Scale




VIEW W-W
¾" = 1'-0"




SECTION X-X
¾" = 1'-0"




SECTION Y-Y
¾" = 1'-0"

## BAR LIST - BENT 1

| MARK | NO. REQ'D | LENGTH | "A" | PIN DIA. | BENDING DIAGRAMS (Dimensions are out to out of Bars) |
|---|---|---|---|---|---|
| B401 | 38 | 11'-11" | -- | 2" | |
| B402 | 15 | 7'-6" | -- | 2" | |
| B403 | 14 | 27'-8" | -- | Str. | |
| B404 | 21 | 8'-11" | -- | 2" | |
| B405 | 6 | 6'-0" | -- | Str. | |
| | | | | | |
| B601 | 6 | 29'-0" | -- | 4½" | |
| B602 | 6 | 27'-8" | -- | Str. | |
| B603 | 37 | 5'-3" | -- | Str. | |
| B604 | 10 | 9'-5" | -- | 4½" | |
| B605 | 4 | 8'-6" | -- | 4½" | |
| B606 | 4 | 8'-8" | -- | 4½" | |
| | | | | | |
| R401 | 46 | 5'-2" | -- | Str. | |
| | | | | | |
| R601 | 5 | 10'-8" | -- | 4½" | |
| R602 | 16 | 10'-8" | -- | Str. | |
| | | | | | |
| W401 | 16 | 7'-1" | -- | Str. | |
| | | | | | |
| W402 to W406 | 4 ea. | 1'-8" to 4'-4" | -- | Str. | |
| | | | | | |
| W407 | 8 | 9'-6" | -- | 3" | |
| | | | | | |
| W701 | 12 | 10'-8" | -- | Str. | |
| W702 | 4 | 7'-2" | -- | Str. | |
| W703 | 4 | 6'-0" | -- | Str. | |
| W704 | 4 | 4'-10" | -- | Str. | |
| W705 | 4 | 9'-0" | -- | 5¼" | |

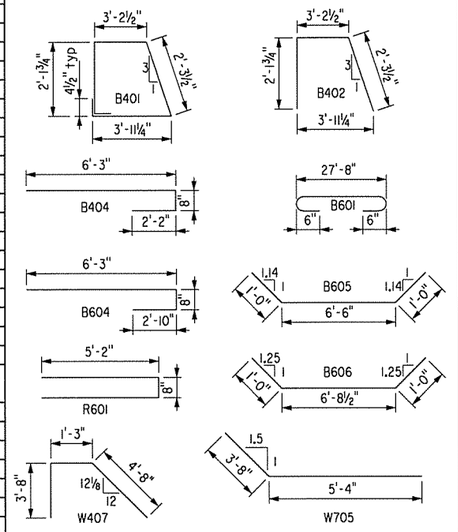
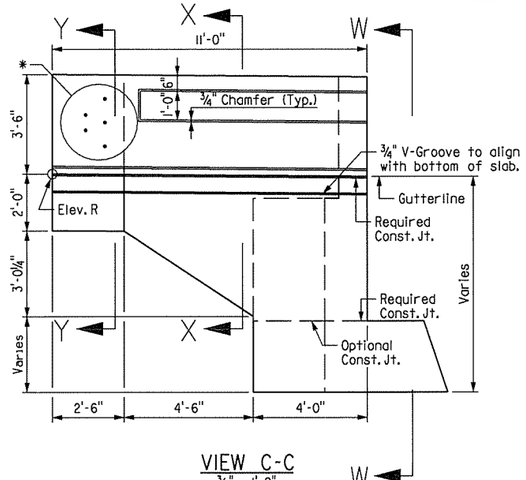


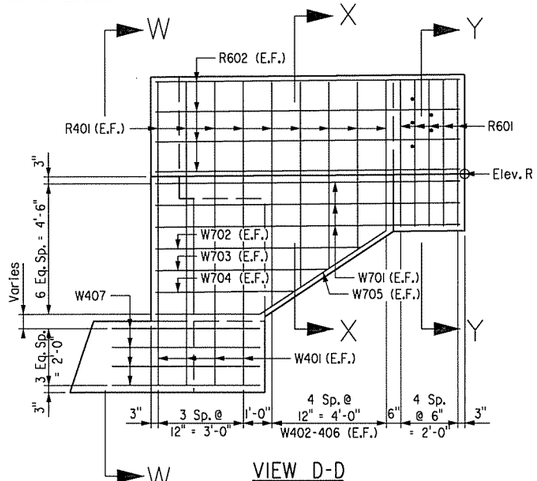

TABLE OF VARIABLES (ELEV. "R")

| BENT NO. | WING | ELEV. |
|---|---|---|
| 1 | A | 1260.56 |
| 1 | B | 1261.81 |
| | | |
| 6 | A | 1262.41 |
| 6 | B | 1261.14 |

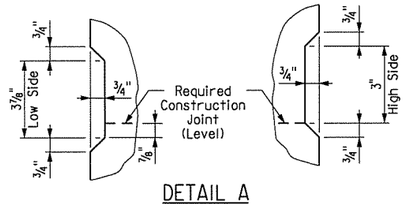
* 5 - 1"ø formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.




VIEW C-C
⅜" = 1'-0"
Bent 1 Wing "A" Shown. For Wing "B" see Dwg. No. 55325.
Bent 6 Wing "A" Shown. Wing "B" is Opposite Hand.




VIEW D-D
⅜" = 1'-0"
Bent 1 Wing "A" Shown. For Wing "B" see Dwg. No. 55325.
Bent 6 Wing "A" Shown. Wing "B" is Opposite Hand




DETAIL A
Scale: 3" = 1'-0"

STATE OF ARKANSAS
LARRY W. MILLER
REGISTERED PROFESSIONAL ENGINEER
No. 11339
9-3-14
BRIDGE ENGINEER

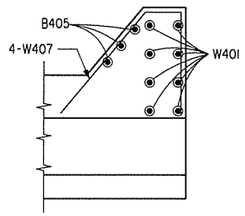
SHEET 2 OF 3
DETAILS OF END BENTS
PUPPY CREEK

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

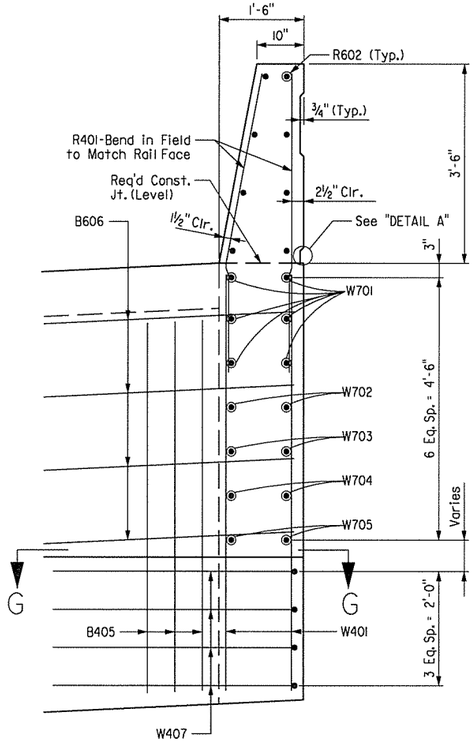
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_bl2.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12
BRIDGE NO. 07311 DRAWING NO. 55324

B001966M15_B12.dgn 9/3/2014 3:23:33 PM

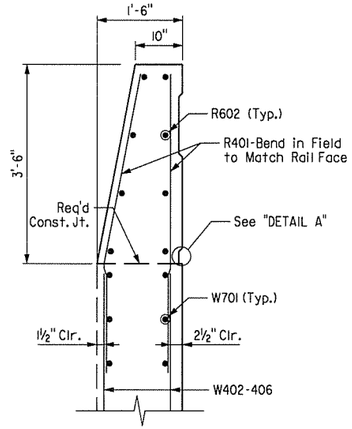
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 472 | 897 |
| | | | | (1) 07311 | | END BENT DETAILS | | 55325 |



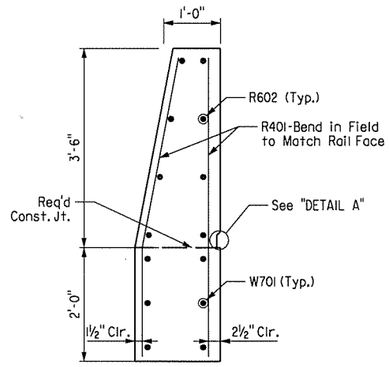

SECTION G-G (WING B)
3/8" = 1'-0"



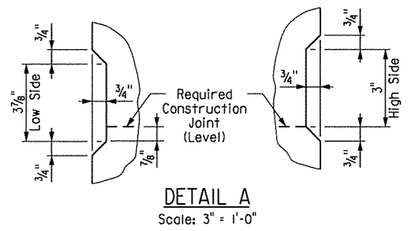

VIEW W-W
3/4"= 1'-0"




SECTION X-X
3/4"= 1'-0"




SECTION Y-Y
3/4"= 1'-0"

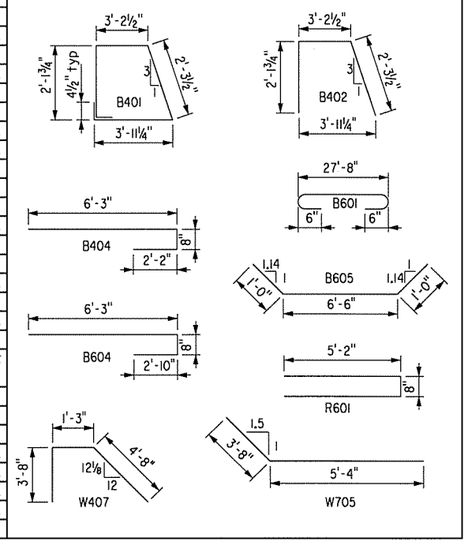


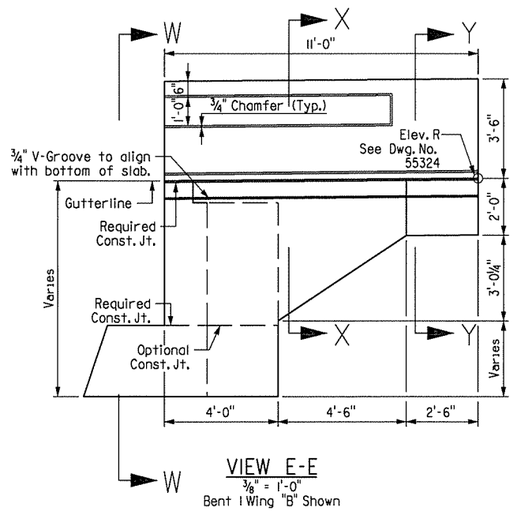

DETAIL A
Scale: 3" = 1'-0"

## BAR LIST - BENT 6

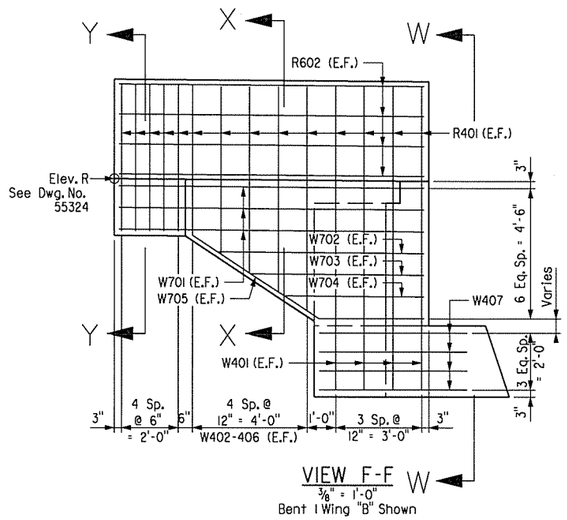
| MARK | NO. REQ'D | LENGTH | "A" | PIN DIA. |
|---|---|---|---|---|
| B401 | 38 | 11'-11" | -- | 2" |
| B402 | 15 | 7'-6" | -- | 2" |
| B403 | 14 | 27'-8" | -- | Str. |
| B404 | 21 | 8'-11" | -- | 2" |
| B405 | 6 | 6'-0" | -- | Str. |
| | | | | |
| B601 | 6 | 29'-0" | -- | 4½" |
| B602 | 6 | 27'-8" | -- | Str. |
| B603 | 37 | 5'-3" | -- | Str. |
| B604 | 10 | 9'-5" | -- | 4½" |
| B605 | 8 | 8'-6" | -- | 4½" |
| | | | | |
| R401 | 36 | 5'-2" | -- | Str. |
| | | | | |
| R601 | 10 | 10'-8" | -- | 4½" |
| R602 | 16 | 10'-8" | -- | Str. |
| | | | | |
| W401 | 16 | 7'-1" | -- | Str. |
| | | | | |
| W402 to W406 | 4 ea. | 1'-8" to 4'-4" | | Str. |
| | | | | |
| W407 | 8 | 9'-6" | -- | 3" |
| | | | | |
| W701 | 12 | 10'-8" | -- | Str. |
| W702 | 4 | 7'-2" | -- | Str. |
| W703 | 4 | 6'-0" | -- | Str. |
| W704 | 4 | 4'-10" | -- | Str. |
| W705 | 4 | 9'-0" | -- | 5¼" |

BENDING DIAGRAMS
(Dimensions are out to out of Bars)




VIEW E-E
3/8" = 1'-0"
Bent 1 Wing "B" Shown




VIEW F-F
3/8" = 1'-0"
Bent 1 Wing "B" Shown

SHEET 3 OF 3
DETAILS OF END BENTS
PUDDY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER

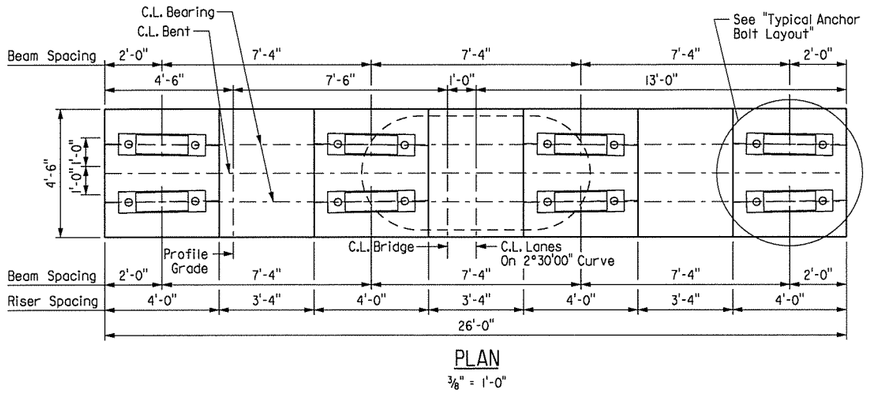
Larry W. Miller 8-13-14
BRIDGE ENGINEER

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907x8_bl3.dgn
SCALE: AS SHOWN

BRIDGE NO. 07311 DRAWING NO. 55325

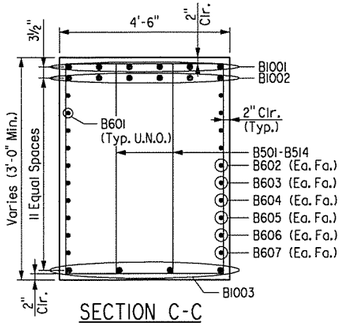
B001966M15_B13.dgn 9/3/2014 3:23:34 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 473 | 897 |
| | | | | (1) 07311 | | BENT 2 | | 55326 |



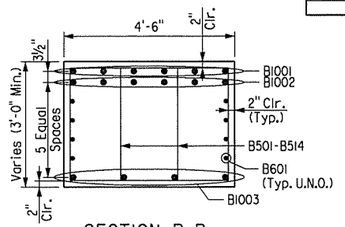

PLAN

3/8" = 1'-0"



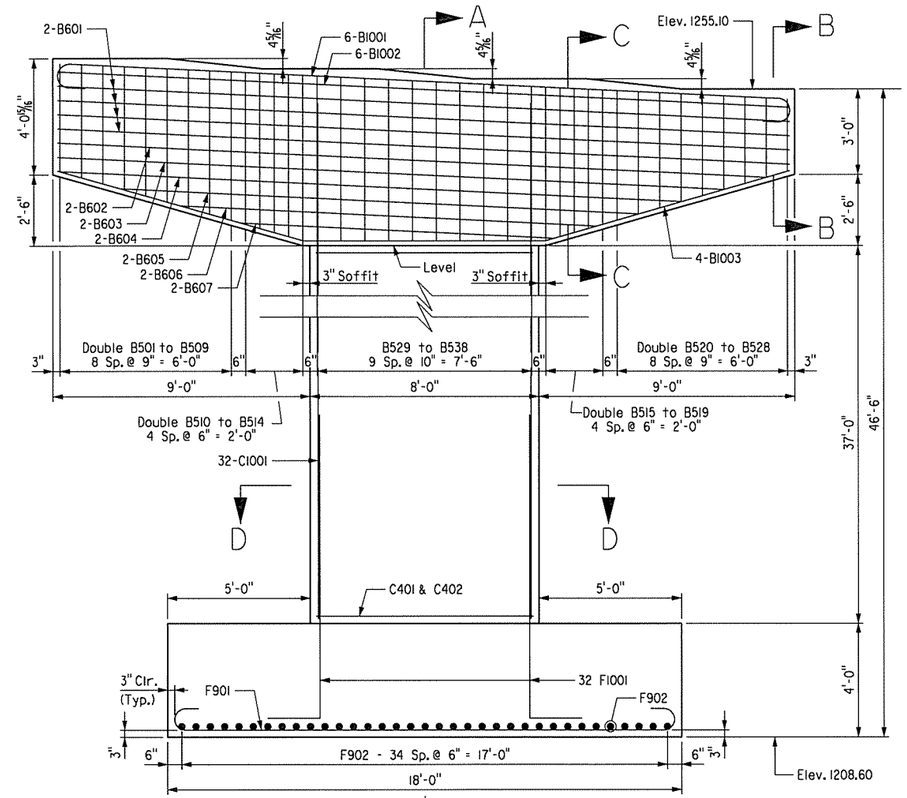

SECTION C-C

½" = 1'-0"



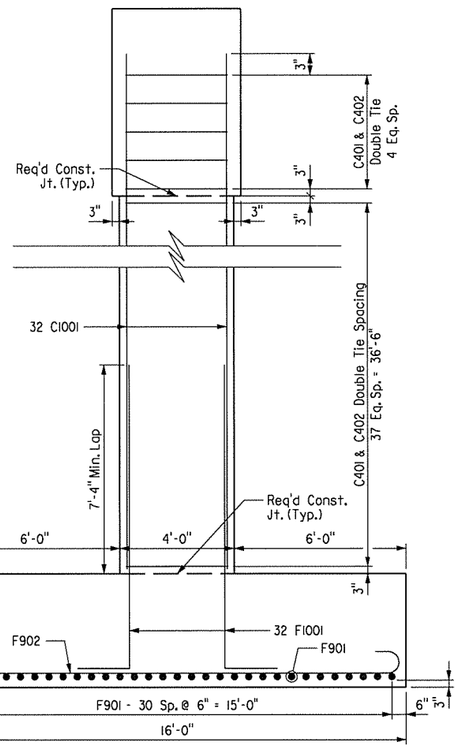

SECTION B-B

½" = 1'-0"




ELEVATION

3/8" = 1'-0"
(Looking Ahead)



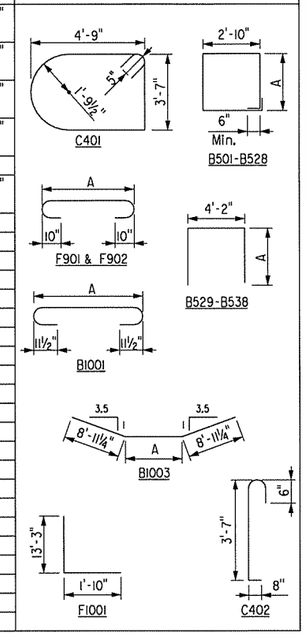

SECTION A-A

3/8" = 1'-0"

## BAR LIST - PER BENT

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B509 | 2 ea. | 13'-9" to 16'-7" | 3'-9 1/2" to 5'-2 1/2" | 2 1/2" |
| B510 to B514 | 2 ea. | 16'-10" to 17'-9" | 5'-4" to 5'-9 1/2" | 2 1/2" |
| B515 to B519 | 2 ea. | 15'-8" to 17'-0" | 4'-9" to 5'-5" | 2 1/2" |
| B520 to B528 | 2 ea. | 11'-3" to 15'-4" | 2'-6 1/2" to 4'-7" | 2 1/2" |
| | | | | |
| B529 to B538 | 1 ea. | 14'-10" to 15'-7" | 5'-5" to 5'-9 1/2" | 2 1/2" |
| | | | | |
| B601 | 8 | 25'-8" | | Str. |
| B602 | 2 | 24'-10" | | Str. |
| B603 | 2 | 23'-5" | | Str. |
| B604 | 2 | 21'-10" | | Str. |
| B605 | 2 | 18'-3" | | Str. |
| B606 | 2 | 14'-7" | | Str. |
| B607 | 2 | 11'-0" | | Str. |
| | | | | |
| B1001 | 6 | 28'-6" | 25'-8" | 10" |
| B1002 | 6 | 25'-8" | | Str. |
| B1003 | 4 | 26'-4" | 8'-5 1/2" | 10" |
| | | | | |
| C401 | 86 | 15'-9" | | 3" |
| C402 | 86 | 4'-9" | | 3" |
| | | | | |
| C1001 | 32 | 41'-10" | | Str. |
| | | | | |
| F901 | 31 | 20'-0" | 17'-6" | 9" |
| F902 | 35 | 18'-0" | 15'-6" | 9" |
| | | | | |
| F1001 | 32 | 14'-9" | | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)



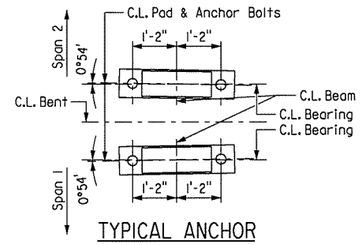

GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi)

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

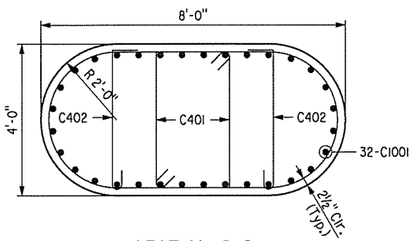
For additional information, see layout.




TYPICAL ANCHOR BOLT LAYOUT

½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55337




SECTION D-D

½" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14

BRIDGE ENGINEER

# DETAILS OF INTERMEDIATE BENT NO. 2 PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

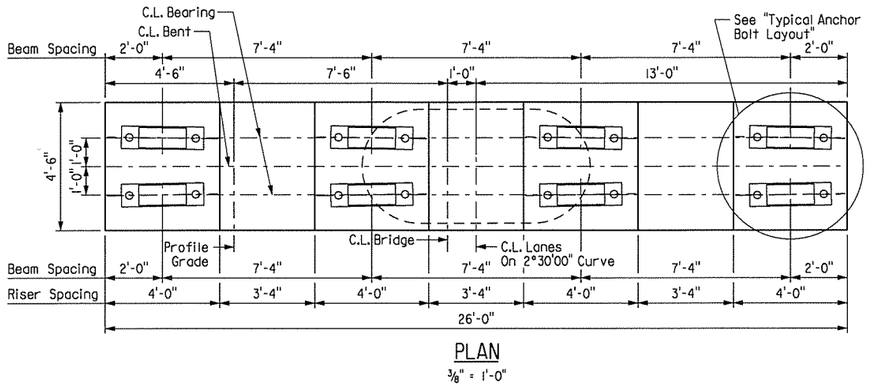
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12

FILENAME: bca0907x8_b21.dgn
SCALE: AS SHOWN

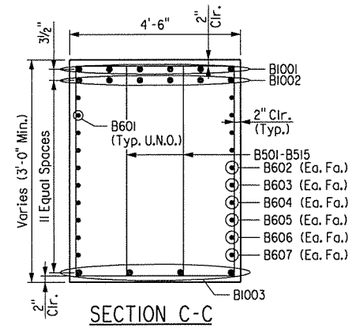
BRIDGE NO. 07311 DRAWING NO. 55326

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 474 | 897 |
| | | | | (1) 07311 | | BENT 3 | | 55327 |



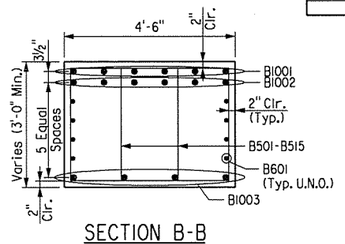

PLAN

3/8" = 1'-0"



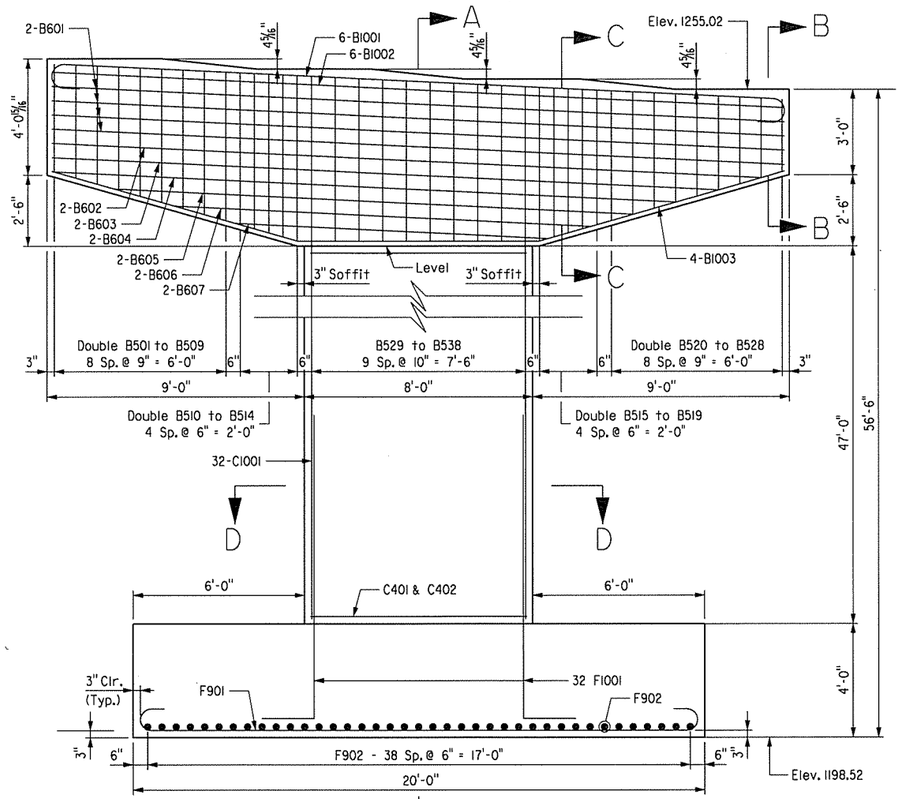

SECTION C-C

½" = 1'-0"



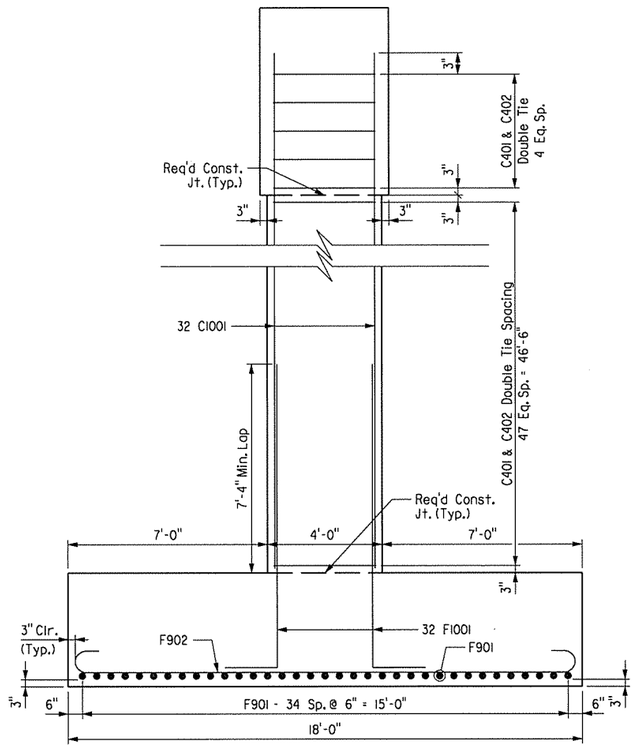

SECTION B-B

½" = 1'-0"



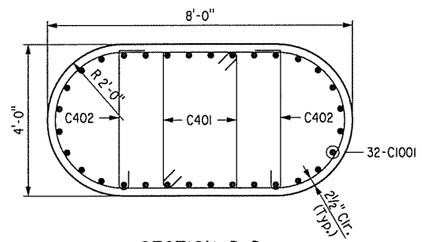

ELEVATION

3/8" = 1'-0"
(Looking Ahead)



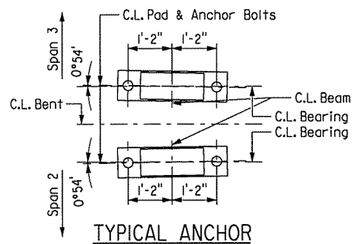

SECTION A-A

3/8" = 1'-0"




SECTION D-D

½" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT

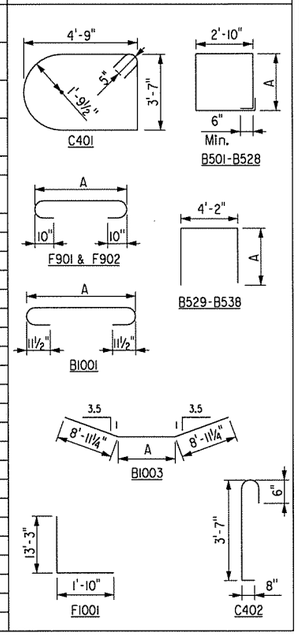
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55337

## BAR LIST - PER BENT

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B509 | 2 ea. | 13'-9" to 16'-7" | 3'-9 1/2" to 5'-2 1/2" | 2 1/2" |
| B510 to B514 | 2 ea. | 16'-10" to 17'-9" | 5'-4" to 5'-9 1/2" | 2 1/2" |
| B515 to B519 | 2 ea. | 15'-8" to 17'-0" | 4'-9" to 5'-5" | 2 1/2" |
| B520 to B528 | 2 ea. | 11'-3" to 15'-4" | 2'-6 1/2" to 4'-7" | 2 1/2" |
| | | | | |
| B529 to B538 | 1 ea. | 14'-10" to 15'-7" | 5'-5" to 5'-9 1/2" | 2 1/2" |
| | | | | |
| B601 | 8 | 25'-8" | | Str. |
| B602 | 2 | 24'-10" | | Str. |
| B603 | 2 | 23'-5" | | Str. |
| B604 | 2 | 21'-10" | | Str. |
| B605 | 2 | 18'-3" | | Str. |
| B606 | 2 | 14'-7" | | Str. |
| B607 | 2 | 11'-0" | | Str. |
| | | | | |
| B1001 | 6 | 28'-6" | 25'-8" | 10" |
| B1002 | 6 | 25'-8" | | Str. |
| B1003 | 4 | 26'-4" | 8'-5 1/2" | 10" |
| | | | | |
| C401 | 106 | 15'-9" | | 3" |
| C402 | 106 | 4'-9" | | 3" |
| | | | | |
| C1001 | 32 | 51'-10" | | Str. |
| | | | | |
| F901 | 35 | 22'-0" | 19'-6" | 9" |
| F902 | 39 | 20'-0" | 7'-6" | 9" |
| | | | | |
| F1001 | 32 | 14'-9" | | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi)

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout.

# DETAILS OF INTERMEDIATE BENT NO. 3 PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER

9-3-14

BRIDGE ENGINEER

DRAWN BY: EG DATE: 3-12

CHECKED BY: LWM DATE: 08-13-12

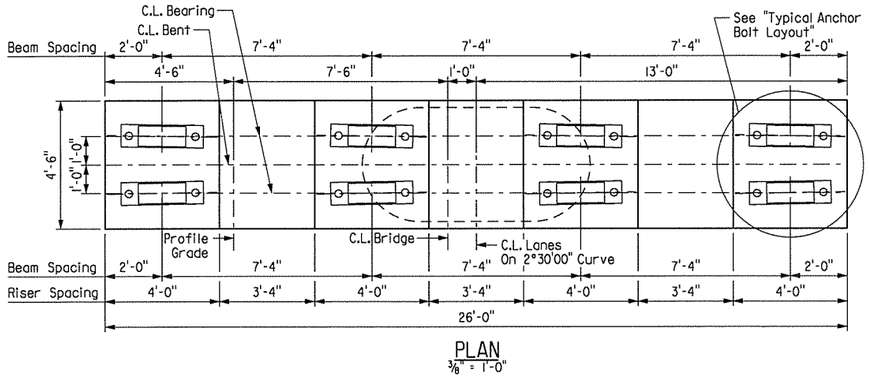
DESIGNED BY: EG DATE: 3-12

FILENAME: bca0907x8_b31.dgn

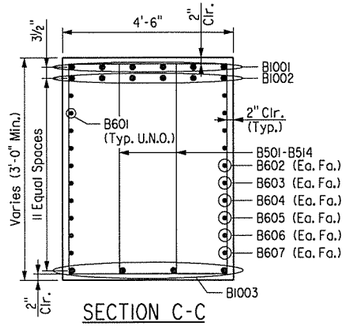
SCALE: AS SHOWN

BRIDGE NO. 07311 DRAWING NO. 55327

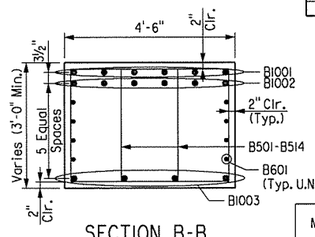
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 475 | 897 |
| | | | | (1) 07311 | | BENTS 4 & 5 | | 55328 |



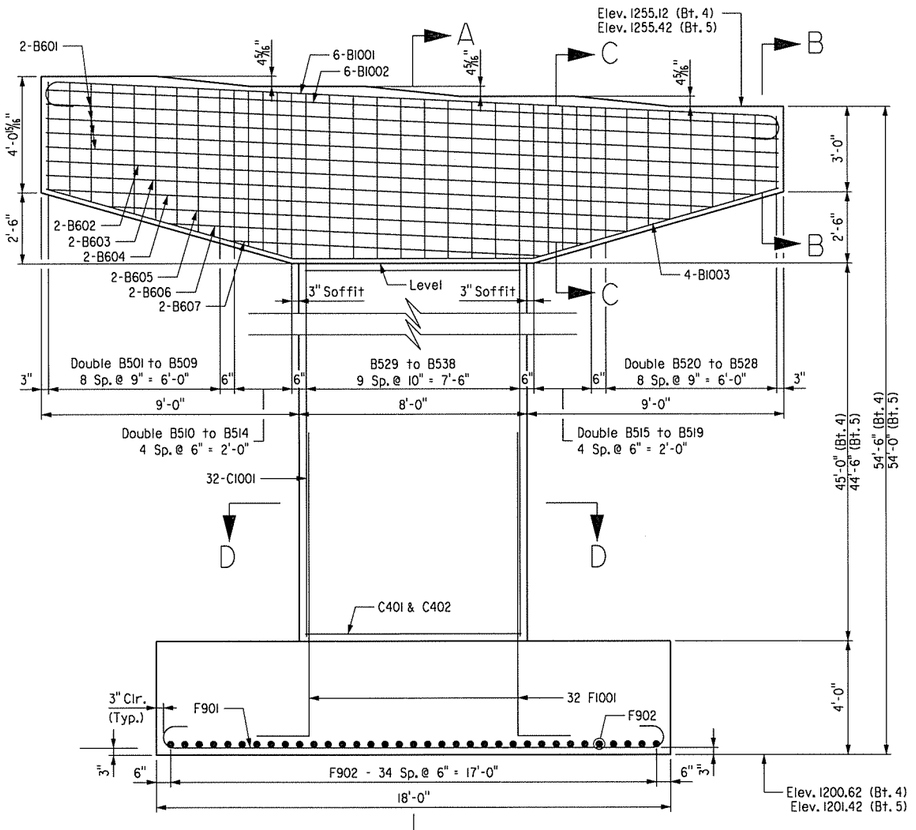

PLAN
3/8" = 1'-0"



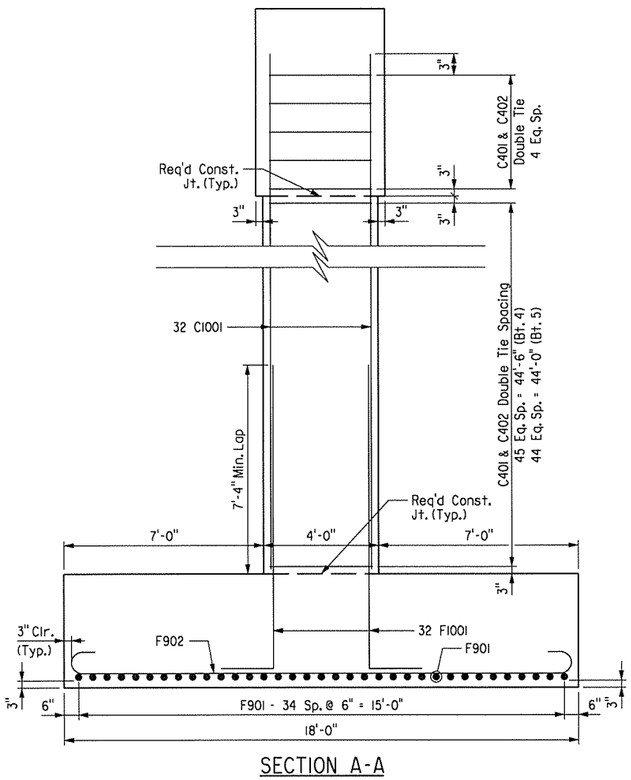

SECTION C-C
½" = 1'-0"



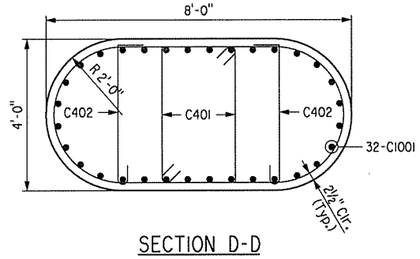

SECTION B-B
½" = 1'-0"



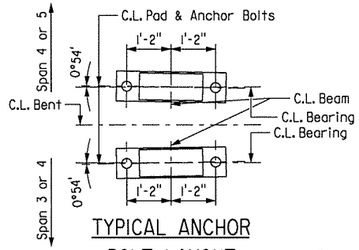

ELEVATION
3/8" = 1'-0"
(Looking Ahead)




SECTION A-A
3/8" = 1'-0"




SECTION D-D
½" = 1'-0"



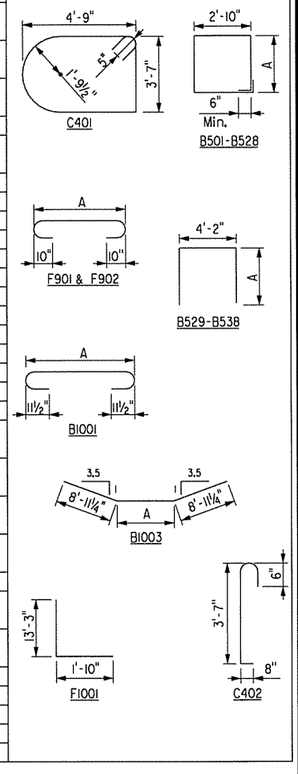

TYPICAL ANCHOR BOLT LAYOUT
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 55337

## BAR LIST - PER BENT

| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B509 | 2 ea. | 13'-9" to 16'-7" | 3'-9 1/2" to 5'-2 1/2" | 2 1/2" |
| B510 to B515 | 2 ea. | 16'-10" to 17'-9" | 5'-4" to 5'-9 1/2" | 2 1/2" |
| B516 to B521 | 2 ea. | 15'-8" to 17'-0" | 4'-9" to 5'-5" | 2 1/2" |
| B522 to B530 | 2 ea. | 11'-3" to 15'-4" | 2'-6 1/2" to 4'-7" | 2 1/2" |
| | | | | |
| B531 to B538 | 1 ea. | 14'-10" to 15'-7" | 5'-5" to 5'-9 1/2" | 2 1/2" |
| | | | | |
| B601 | 8 | 25'-8" | | Str. |
| B602 | 2 | 24'-10" | | Str. |
| B603 | 2 | 23'-5" | | Str. |
| B604 | 2 | 21'-10" | | Str. |
| B605 | 2 | 18'-3" | | Str. |
| B606 | 2 | 14'-7" | | Str. |
| B607 | 2 | 11'-0" | | Str. |
| | | | | |
| B1001 | 6 | 28'-6" | 25'-8" | 10" |
| B1002 | 6 | 25'-8" | | Str. |
| B1003 | 4 | 26'-4" | 8'-5 1/2" | 10" |
| | | | | |
| C401 (Bt. 4) | 102 | 15'-9" | | 3" |
| C401 (Bt. 5) | 98 | 15'-9" | | 3" |
| C402 (Bt. 4) | 102 | 4'-9" | | 3" |
| C402 (Bt. 5) | 98 | 4'-9" | | 3" |
| | | | | |
| C1001 (Bt. 4) | 32 | 49'-10" | | Str. |
| C1001 (Bt. 5) | 32 | 49'-4" | | Str. |
| | | | | |
| F901 | 35 | 20'-0" | 17'-6" | 9" |
| F902 | 35 | 20'-0" | 17'-6" | 9" |
| | | | | |
| F1001 | 32 | 14'-9" | | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




GENERAL NOTES

All Concrete shall be Class "S" with a minimum 28-day compressive strength f'c = 3500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi)

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout.

# DETAILS OF INTERMEDIATE BENTS NO. 4 & 5 PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11539 LARRY W. MILLER

Larry W. Miller 9-3-14

BRIDGE ENGINEER

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_b41.dgn

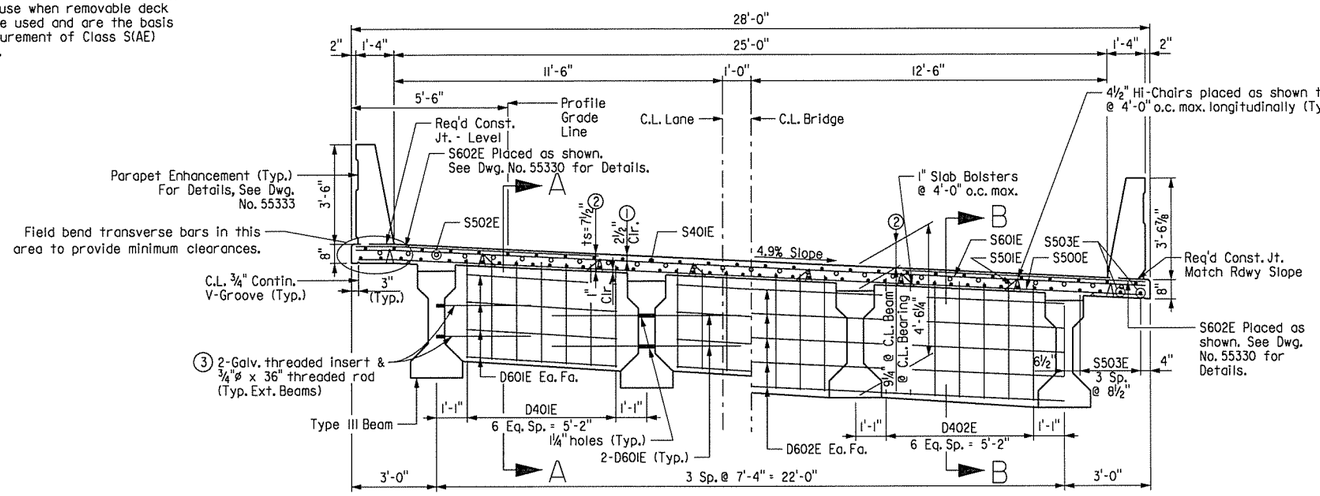
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

DESIGNED BY: EG DATE: 3-12

BRIDGE NO. 07311 DRAWING NO. 55328

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 476 | 897 |
| | | | | (1) 07311 | | SPAN DETAILS | | 55329 |

Note: Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

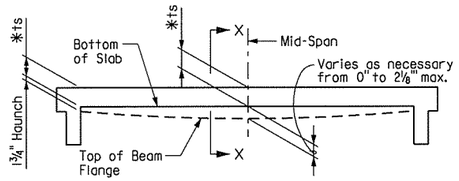



HALF-SECTION OF MIDSPAN DIAPHRAGMS

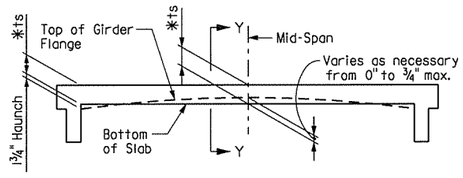
HALF-SECTION BETWEEN BEAMS AT INTERIOR BENTS

HALF-SECTIONS: MIDSPAN & BEAM END DIAPHRAGMS

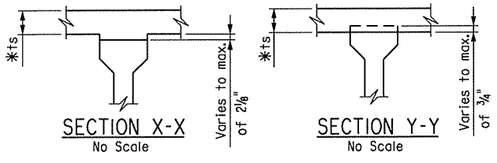
⅜" = 1'-0"
(Looking Ahead)




BEAM ELEVATION
No Scale




BEAM ELEVATION
No Scale

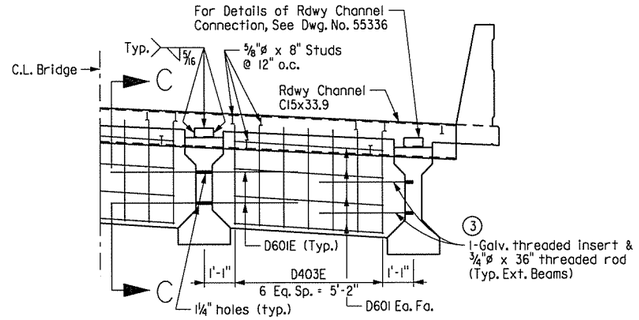



Note: ts = slab thickness as shown on superstructure details. See "Section of Midspan Diaphragms".

*Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

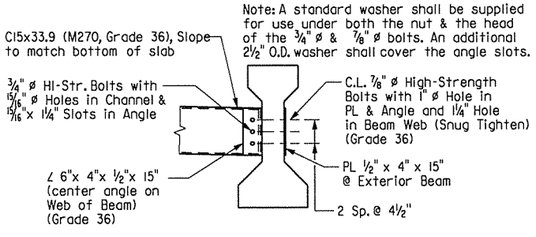
'Beam Elevation' sketches show the range of acceptability of the top of the Beam relative to bottom of slab after the placement of the slab. When the top of the Beam projects more than ½" into the slab, a raise in grade will be necessary. Beams shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED




HALF-SECTION AT JOINT

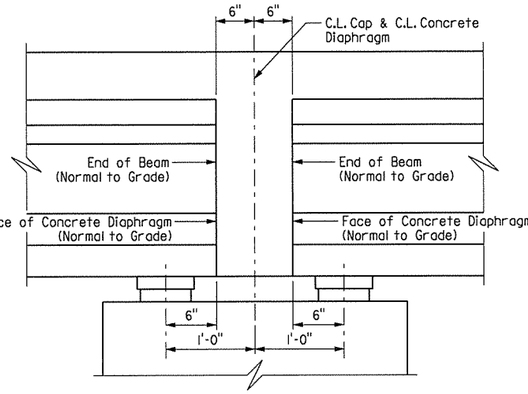
⅜" = 1'-0"
(Looking Ahead)



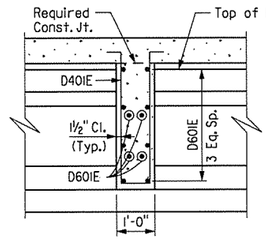

DETAIL OF ALTERNATE MIDSPAN DIAPHRAGM

½"= 1'-0"

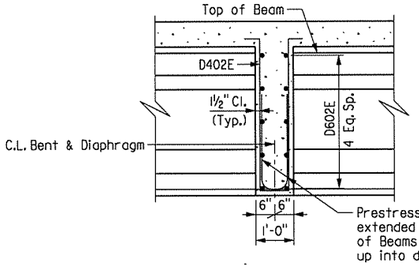
Galvanized Steel Diaphragms may be used in place of Concrete at Midspan Diaphragms only. All components of the Alternate Steel Diaphragms shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on concrete diaphragms.



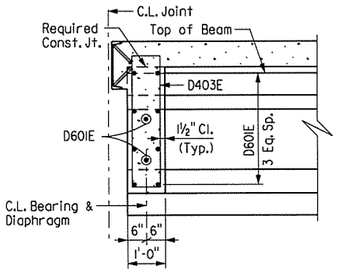

VIEW AT INTERMEDIATE BENT




SECTION A-A
Midspan Diaphragm
(Normal To Grade)
½" = 1'-0"




SECTION B-B
Interior Bent Diaphragm
(Normal To Grade)
½" = 1'-0"




SECTION C-C
End of Unit Diaphragm
(Normal To Grade)
½" = 1'-0"

Sections A-A, B-B, and C-C are cut normal to diaphragm.

SLAB REINFORCING:

Transverse:
- S500E @ 14" centers (bottom)
- S501E @ 14" centers (bent up over beams)
- S601E @ 14" centers (top)
- S602E Place as shown (See Detail A on Dwg. No. 55330)

Longitudinal:
- S401E @ 12" centers (top)
- S503E @ 7" centers (bottom)
- S502E @ 12" centers (top)

EXPANSION DEVICE

Rdwy. Channel - C15x33.9
Conn. Angle from MC18x42.7 (Cope one flange)

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

All bars designated with an E suffix are to be epoxy coated.

All transverse dimensions are measured perpendicular to C.L. Bridge, unless noted otherwise.

(1) TOLERANCE:
Minus ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Galvanized Threaded Inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø Threaded Rods to be AASHTO M270, Grade 36 or AASHTO M31 or M53, Gr. 60. These are to be Non-Pay Items-subsidiary to the Item "Prestressed Concrete Girders (Type III)". Galvanizing shall be in accordance with AASHTO M232 Class C or AASHTO M298 Class 50.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
Larry W. Miller 9-3-14
BRIDGE ENGINEER

SHEET 1 OF 7
DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

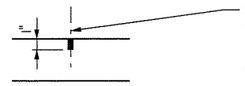
DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907x8_sll.dgn
SCALE: AS SHOWN

BRIDGE NO. 07311 DRAWING NO. 55329

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 477 | 897 |
| | | | | ① 07311 | | SPAN DETAILS | | 55330 |

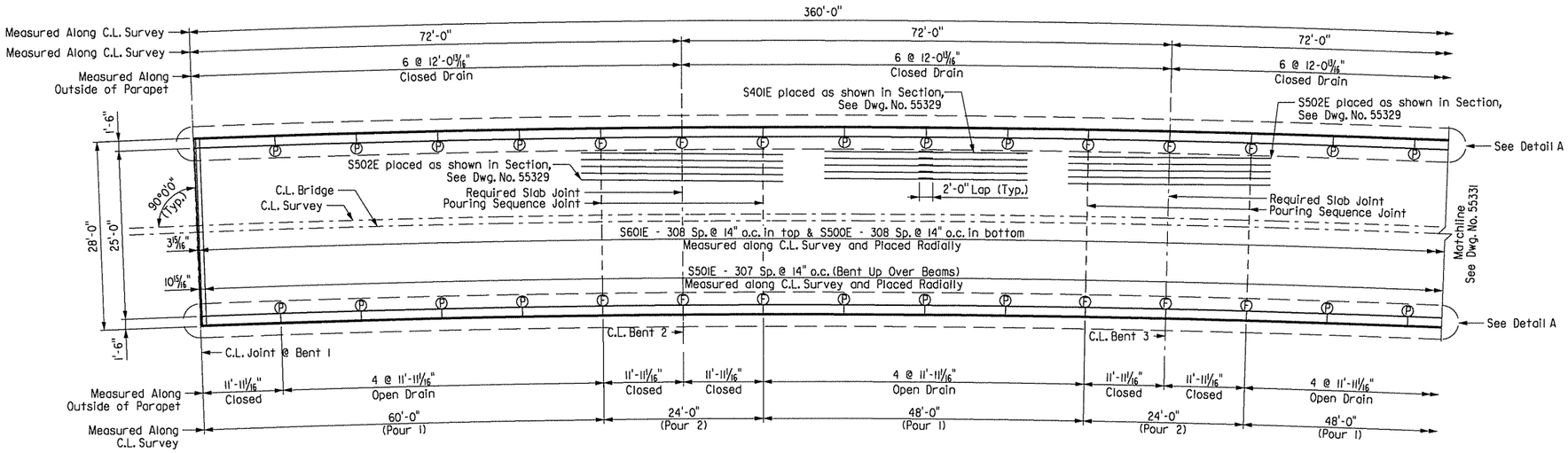
Pours must be made in order as numbered. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

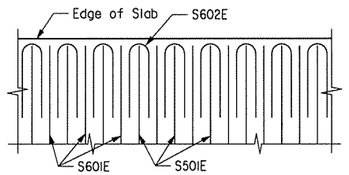


SLAB JOINT DETAIL
No Scale

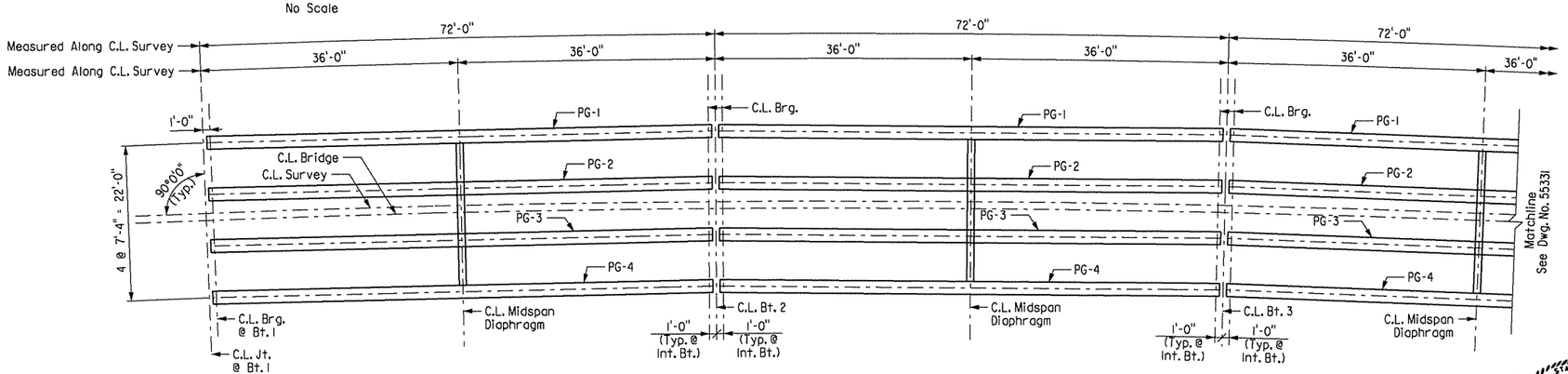
½" x 1" Type 3 or 4 Joint Sealer. See subsection 501.02 (h) and 501.05 (j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Backer rod filler will not be required. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set up to allow the sawing of joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.




POURING SEQUENCE & REINFORCING PLAN
1" = 10'-0"




DETAIL A
No Scale




FRAMING PLAN
1" = 10'-0"

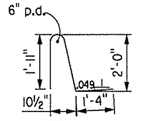
Note: Required slab joints and pouring sequence joints shall align with open joints at front face of parapets.

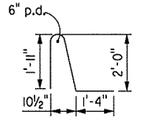
BAR LIST - PER BRIDGE

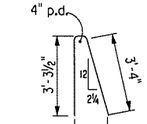
Bending Diagrams
(Dimensions are out to out of bars.)

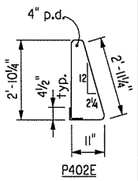
| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| S401E | 280 | 36'-10" | Str. |
| | | | |
| S500E | 309 | 27'-8" | Str. |
| S501E | 308 | 28'-2" | 3" |
| S502E | 108 | 30'-0" | Str. |
| S503E | 440 | 36'-10" | Str. |
| | | | |
| S601E | 309 | 27'-8" | Str. |
| S602E | 616 | 12'-8" | 4 1/2" |
| | | | |
| P401E | 1310 | 6'-3" | 3" |
| P402E | 160 | 7'-3" | 3" |
| | | | |
| P500E | 560 | 5'-7" | 3 3/4" |
| P501E | 750 | 5'-7" | 3 3/4" |
| P502E | 6 | 59'-11" | Str. |
| P503E | 198 | 11'-7" | Str. |
| P505E | 18 | 47'-10" | Str. |
| P506E | 6 | 59'-10" | Str. |
| P507E | 6 | 59'-2" | Str. |
| P508E | 173 | 11'-5" | Str. |
| P509E | 18 | 47'-3" | Str. |
| P510E | 6 | 59'-2" | Str. |
| P511E | 25 | 11'-6" | Str. |
| | | | |
| D401E | 105 | 8'-2" | 2" |
| D402E | 84 | 9'-4" | 2" |
| D403E | 42 | 8'-10" | 2" |
| | | | |
| D601E | 132 | 5'-3" | Str. |
| D602E | 20 | 22'-0" | Str. |

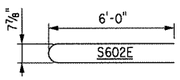
Note: All bars designated with an "E" suffix are to be epoxy coated.

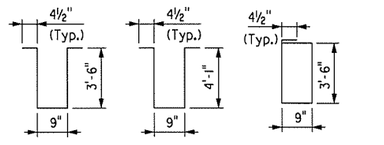



* ½" overtolerance, no undertolerance

SHEET 2 OF 7
DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
LARRY W. MILLER
REGISTERED PROFESSIONAL ENGINEER
No. 11339
9-3-14
BRIDGE ENGINEER

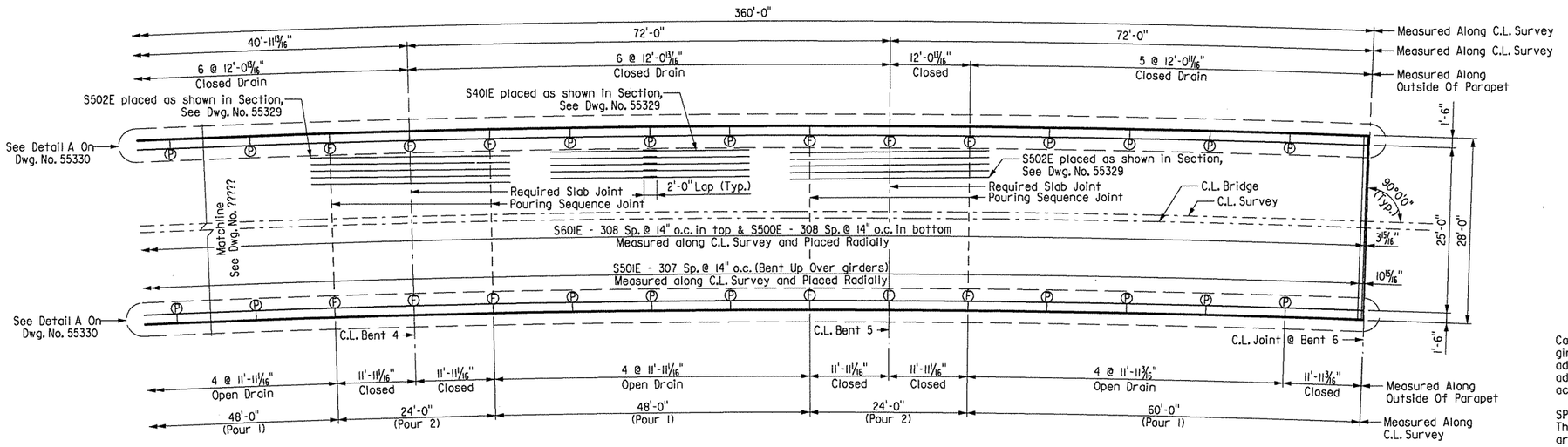
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_sl2.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. 07311 DRAWING NO. 55330

B001966M15_S12.dgn 9/3/2014 3:23:43 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 478 | 897 |
| | | | | (1) 07311 | | SPAN DETAILS | | 55331 |

For Slab Joint Detail,
See Dwg. No. 55330




## POURING SEQUENCE & REINFORCING PLAN

1" = 10'-0"

Note: Required slab joints and pouring sequence joints shall align with open joints at front face of parapets.

Pours must be made in order as numbered. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Camber and deflection values shown are based on a concrete girder strength, f'c = 5500 psi. Greater strengths may require adjustments. The Contractor shall be responsible for any adjustments necessary to meet slab thickness tolerance and to achieve an acceptable finished grade.

SPECIAL CAMBER NOTES
The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

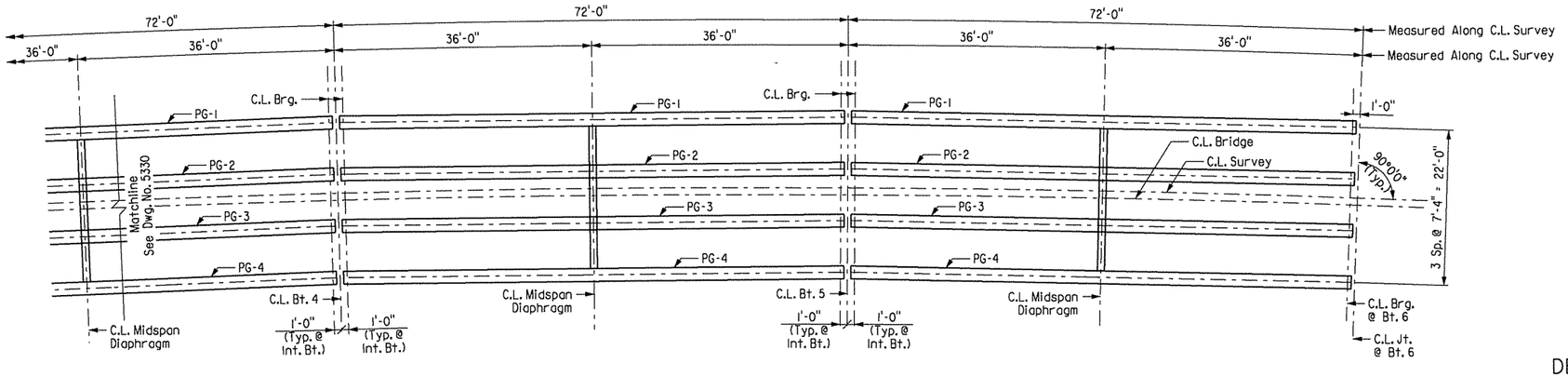
A. Actual 28-day concrete strength of prestressed concrete girders

B. Estimated age of prestressed concrete girders at time of erection

C. Profile of each girder under its own weight.

D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor.




## FRAMING PLAN

1" = 10'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
Larry W. Miller 9-3-14
BRIDGE ENGINEER

# SHEET 3 OF 7
# DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
# PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907x8_sl3.dgn
SCALE: AS SHOWN

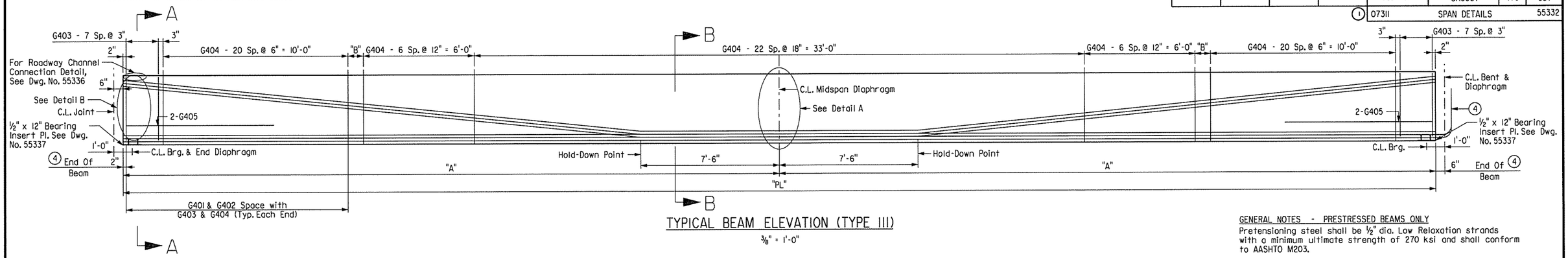
BRIDGE NO. 07311 DRAWING NO. 55331

B001966M15_S13.dgn 9/3/2014 3:23:44 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 479 | 897 |
| | | | | (1) 07311 | | SPAN DETAILS | | 55332 |

(4) Prestressing strands at end bents 1 and 6 shall be sawn flush with the end of the beam. Prestressing strands at intermediate bents 2 thru 5 shall be bent up into diaphragms as shown in "ELEVATION OF BEAMS AT INTERMEDIATE BENTS"

Note: See Dwg. No. 55336 for locations of ¾" ø H.S. bolts for connection plates.

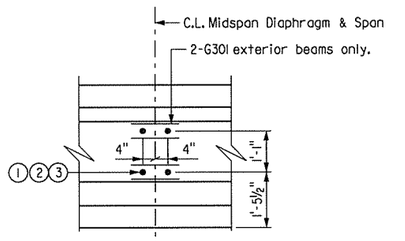



## TYPICAL BEAM ELEVATION (TYPE III)

⅜" = 1'-0"

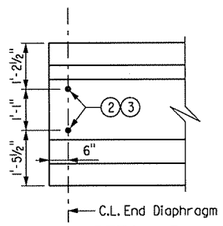
LOAD DISTRIBUTION TO BEAMS:

| | Exterior Beams | Interior Beams |
|---|---|---|
| Dead Loads: To Beam | 673 PLF + Beam + Diphm. | 721 PLF + Beam + Diphm. |
| Dead Loads: To Composite Beam | 328 PLF, Includes 133 PLF Future Wearing Surface | 379 PLF, Includes 184 PLF Future Wearing Surface |




## DETAIL A

½"= 1'-0"




## DETAIL B

½"= 1'-0"

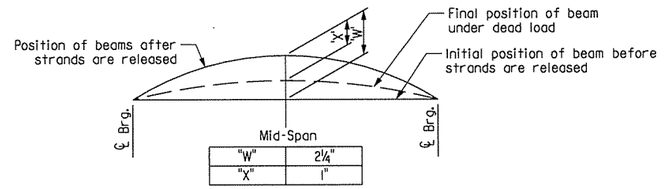
(1) Inserts and holes shown are for concrete Midspan Diaphragms. See Dwg. No. 55329 for Alternate Steel Diaphragms.

(2) Galvanized ¾"ø Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. (Omit in exterior face of exterior beams.) These are to be non-Pay Item-subsidiary to the item "Prestressed Concrete Girders (Type III)". For Alternate Steel Diaphragms, See Dwg. No. 55329.

(3) Inserts on inside of Exterior Beams and 1¼" ø holes for Interior Beams

## BEAM VARIABLES

| MARK | "PL" | "A" | "B" |
|---|---|---|---|
| PG-1 | 71'- 3¾" | 35'-7⅞" | 11⅞" |
| PG-2 | 71'-1" | 35'-6½" | 10½" |
| PG-3 | 70'-10¾6" | 35'-5⅛" | 9⅛" |
| PG-4 | 70'-7⅞6" | 35'-3¾" | 7¾" |



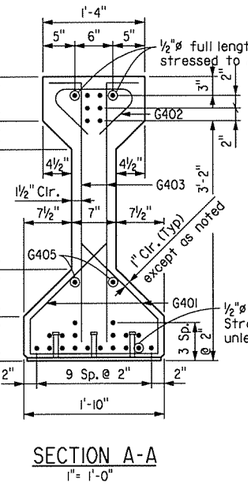

| "W" | 2¼" |
|---|---|
| "X" | 1" |

'W' is expected camber of Beam at 90 days after release (Prestress + Dead Load of Beam)

'X' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

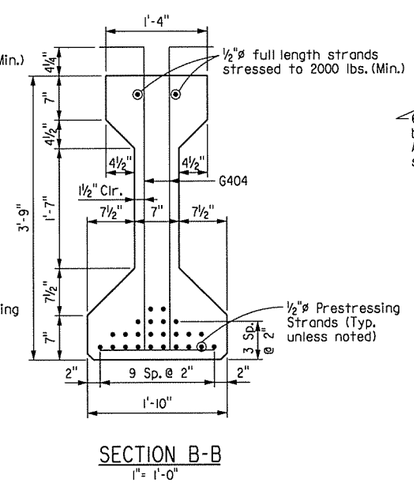
Camber is based on f'c=5500 psi. Higher actual strengths may require adjustment.

## CAMBER & DEFLECTIONS (INCHES)



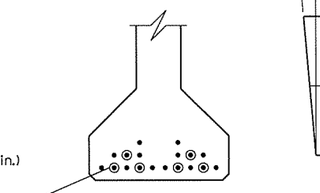

## SECTION A-A

1"= 1'-0"



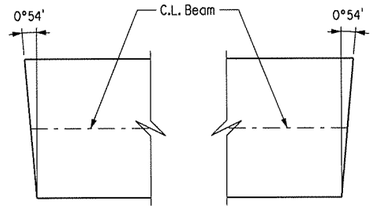

## SECTION B-B

1"= 1'-0"



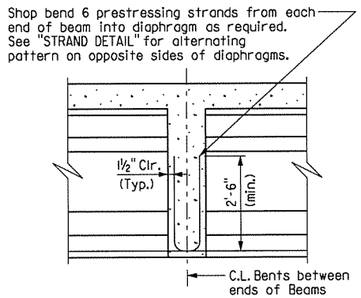

## STRAND DETAIL

1"= 1'-0"




## BEAM END DETAIL

1"= 1'-0"

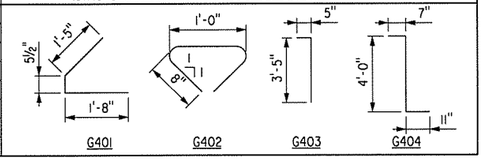



## ELEVATION OF BEAMS AT INTERMEDIATE BENTS

½" = 1'-0"

## BAR LIST-PER BEAM

| MARK | NO. REQ'D | LENGTH | P.D. | BENDING DIAGRAMS (Dimensions are out to out of bars.) |
|---|---|---|---|---|
| G301 | 8 | 1'-3" | Str. | |
| | | | | |
| G401 | 116 | 3'-6" | 2" | |
| G402 | 58 | 2'-7" | 3" | |
| G403 | 32 | 3'-9" | 2" | |
| G404 | 154 | 5'-4" | 2" | |
| G405 | 4 | 8'-0" | Str. | |




GENERAL NOTES - PRESTRESSED BEAMS ONLY

Pretensioning steel shall be ½" dia. Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

All Beams shall be AASHTO TYPE III I-Beams as shown on the details. All Beams shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Section 802.22 of the Standard Specifications.

Concrete shall be Class 'S' and shall have a minimum 28 day compressive strength f'c = 5500 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each ½" dia. strand shall be 31000 pounds. Transfer of this tensioning load to the beam shall not be done until the compressive strengh of the concrete is 4000 psi.

The contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the beams.

The first 16" along the top of the beam at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beam lengths shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep, and shrinkage.

All exposed steel at ends of beams not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Extreme care shall be excercised in handling and moving precast prestressed concrete beams.

Beams must be maintained in an upright position at all times and must be picked up from points near the beam ends. Disregard of this requirement may lead to collapse of the beam. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with subsection 802.22 except that only ½" diameter strands shall be allowed.

Reinforcing Steel shall be AASHTO M31 or M53 Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

The point of support and direction of the reactions with respect to the member shall be approximately the same during transportation and storage as when member is in its final position.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approved secured before fabrication is begun.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
Larry W. Miller 9-3-14
BRIDGE ENGINEER

# SHEET 4 OF 7
# DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
# PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

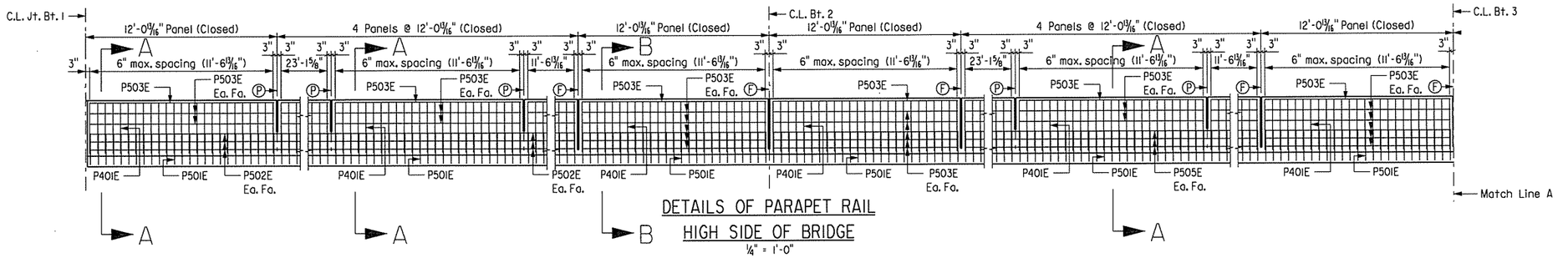
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_sl4.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. 07311 DRAWING NO. 55332

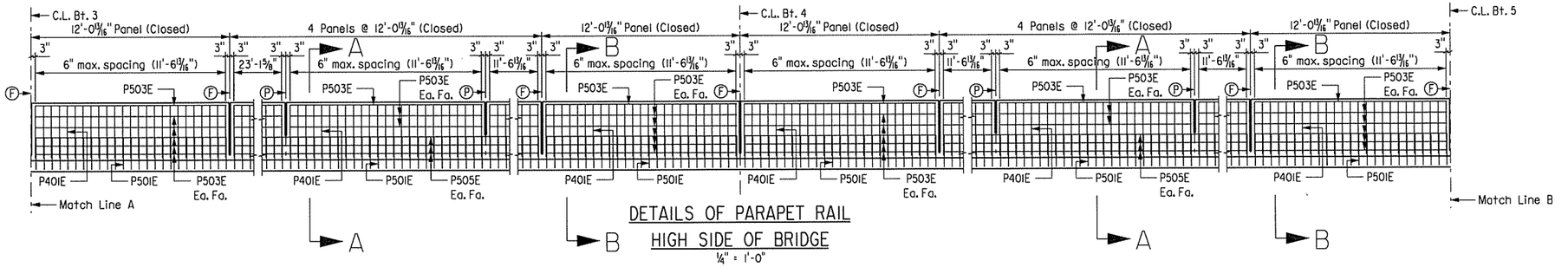
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 480 | 897 |
| | | | | (1) 07311 | | SPAN DETAILS | | 55333 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

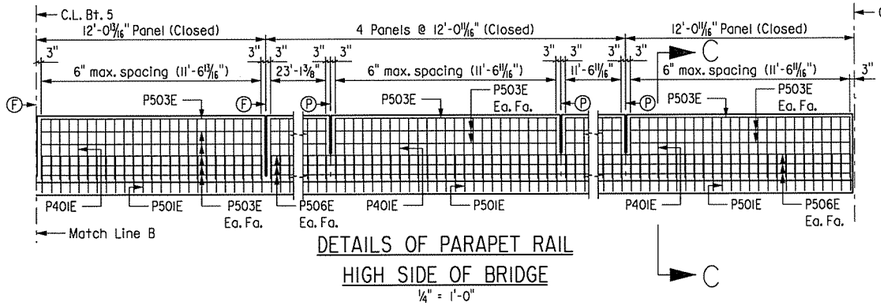
Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.



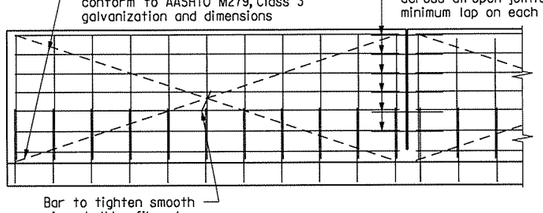

DETAILS OF PARAPET RAIL
HIGH SIDE OF BRIDGE
¼" = 1'-0"



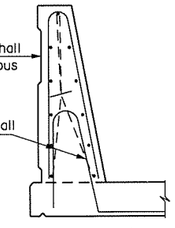

DETAILS OF PARAPET RAIL
HIGH SIDE OF BRIDGE
¼" = 1'-0"




DETAILS OF PARAPET RAIL
HIGH SIDE OF BRIDGE
¼" = 1'-0"

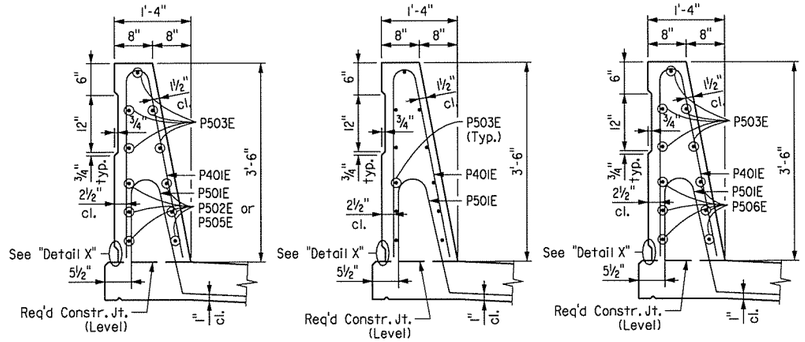



All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.




The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Traffic face and top surface may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

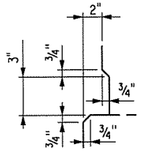
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale



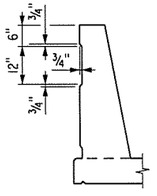

SECTION A-A
Scale: ¾" = 1'-0"

SECTION B-B
Scale: ¾" = 1'-0"

SECTION C-C
Scale: ¾" = 1'-0"




DETAIL X
Scale: 1½" = 1'-0"




CONTINUOUS
PARAPET ENHANCEMENT
Scale: ½" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK

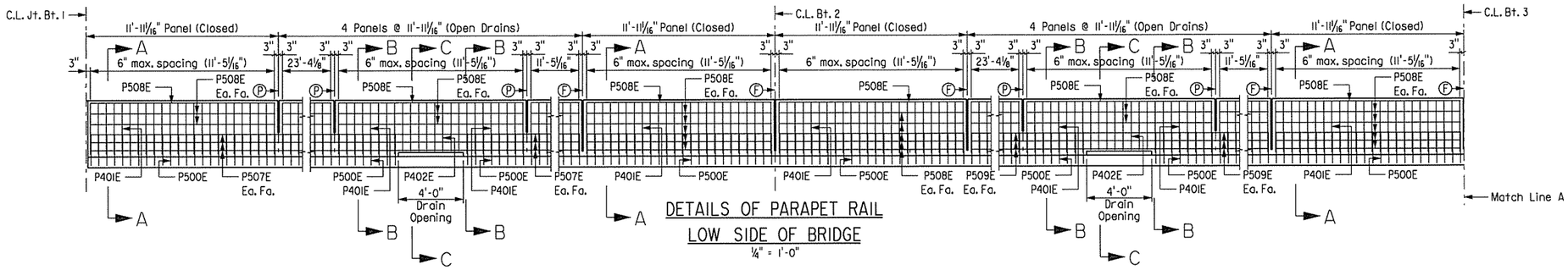
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_sl5.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12
BRIDGE NO. 07311 DRAWING NO. 55333

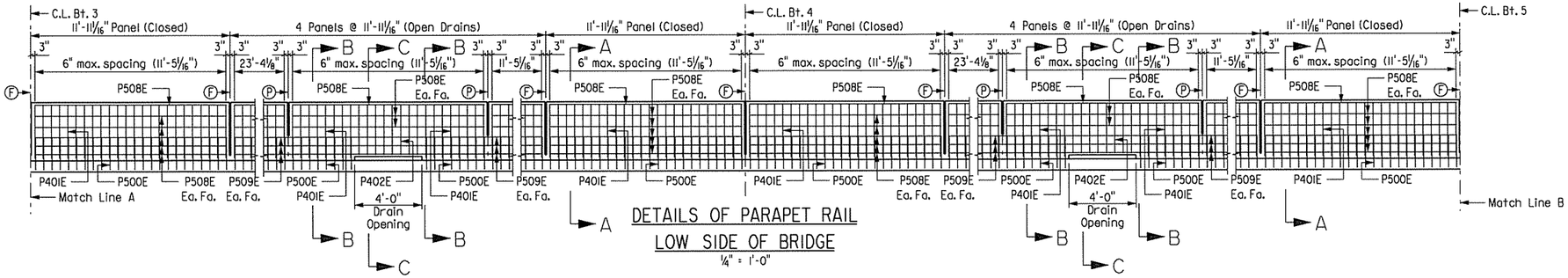
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 481 | 897 |
| | | | | (1) 07311 | | SPAN DETAILS | | 55334 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

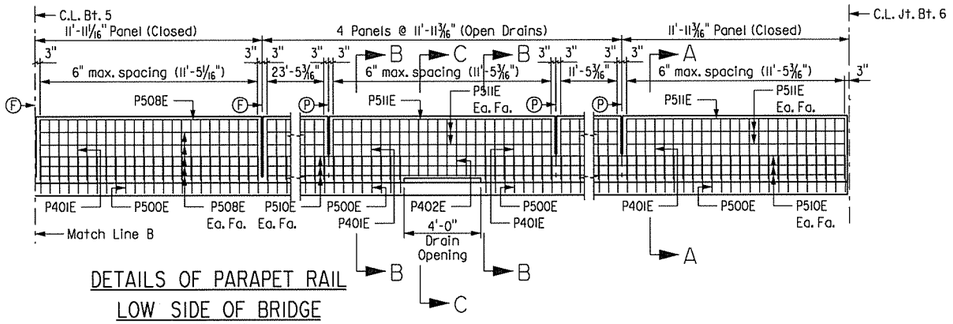
Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.



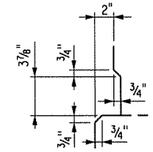

DETAILS OF PARAPET RAIL
LOW SIDE OF BRIDGE
¼" = 1'-0"



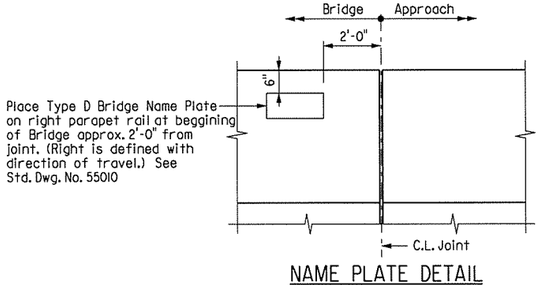

DETAILS OF PARAPET RAIL
LOW SIDE OF BRIDGE
¼" = 1'-0"



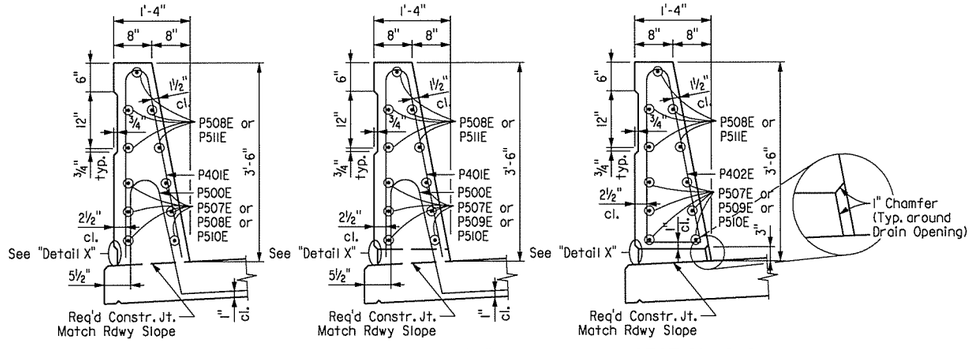

DETAILS OF PARAPET RAIL
LOW SIDE OF BRIDGE
¼" = 1'-0"




DETAIL X
Scale: 1½" = 1'-0"



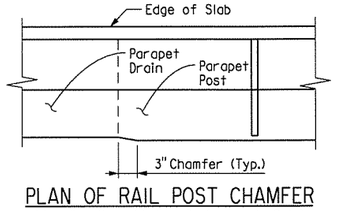

NAME PLATE DETAIL
No Scale



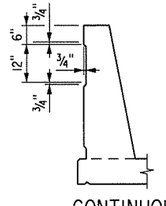

SECTION A-A
Scale: ¾" = 1'-0"

SECTION B-B
Scale: ¾" = 1'-0"

SECTION C-C
Scale: ¾" = 1'-0"




PLAN OF RAIL POST CHAMFER
(Typ. for Open Median Drain Panels Only)
1" = 1'-0"




CONTINUOUS
PARAPET ENHANCEMENT
Scale: ½" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_s16.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. 07311 DRAWING NO. 55334

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 482 | 897 |
| (1) 07311 | | SPAN DETAILS | | 55335 |

SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions.

LIVE LOADING: HL93

Elastomeric bearings shall be firmly seated in accordance with Subsection 808.08 of the specifications. This work to be considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

CONCRETE:

All concrete in slab, parapets, and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured, unless otherwise noted. Interior bent diaphragms shall be cast monolithically with the slab.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

Reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (Yield Strength = 60,000 psi.)

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of EPOXY COATED REINFORCING STEEL (Grade 60).

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50 unless noted otherwise and shall be paid for as STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GR. 50). Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36.

Cleaning and painting of all exposed surfaces shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50). Structural steel completely embedded in concrete need not be painted. For cleaning requirements of external load plates of elastomeric bearings, see Dwg. No. 55337 .

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If the Contractor or Erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Engineer for approval. All welding shall conform to Section 807.26.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

Anchor bolts shall be galvanized according to Subsection 807.07 and shall be Grade 55.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14

BRIDGE ENGINEER

SHEET 7 OF 7
DETAILS OF 360' CONTINUOUS COMP. PRESTRESSED CONCRETE BEAM UNIT
PUPPY CREEK

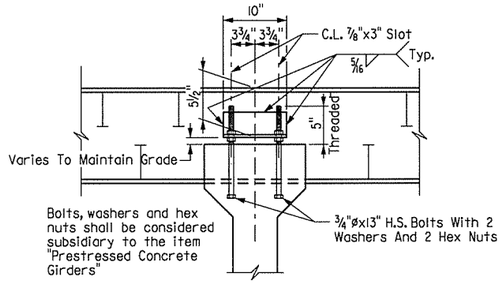
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

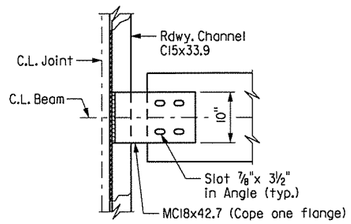
DRAWN BY: EG DATE: 3-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: EG DATE: 3-12
FILENAME: bca0907x8_sl7.dgn
SCALE: AS SHOWN

BRIDGE NO. 07311 DRAWING NO. 55335

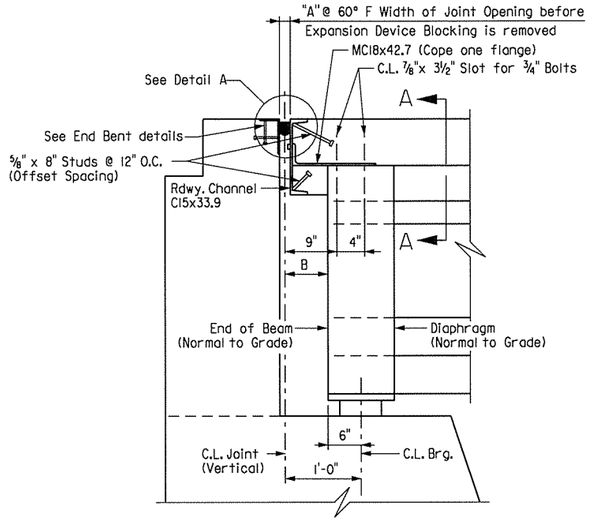
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 483 | 897 |
| | | | | (1) 07311 | | JOINT DETAILS | | 55336 |




SECTION A-A

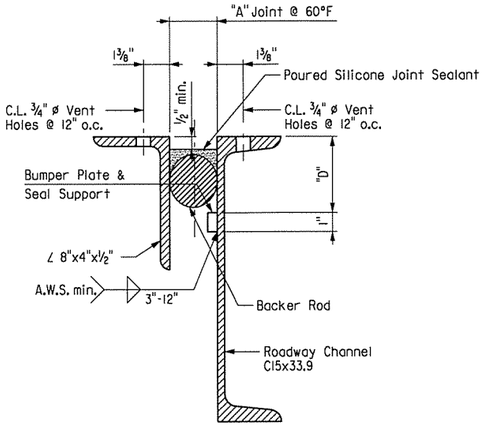



ROADWAY CHANNEL CONNECTION DETAIL



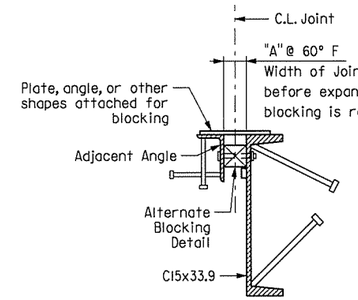

SECTION THRU JOINT AT END BENTS

Note: Sections thru Joints are taken normal to C.L. Joints




Note: Concrete shall be hand packed under the joint armor. Care shall be taken to ensure that concrete completely fills the areas below the top channel flange and the horizontal leg of the angle.

DETAIL A




## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note:
Each Expansion Joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives.

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

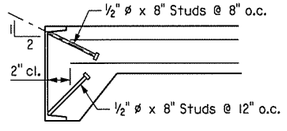
## SILICONE JOINT DATA

| "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Perpendicular to Joint @ 60°F | "D" | Bumper Plate Size |
|---|---|---|---|---|---|
| 40° F | 60° F | 80° F | | | |
| 2¾" | 2½" | 2¼" | 6" | 5" | 1" x ⅝" |

**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

The temperature limitations by the lubricant - adhesive manufacture shall be observed.

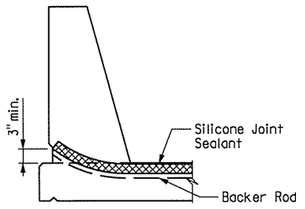
Installation is limited to 40°F min. and 80°F max. Interpolation of the table may be necessary.




Note: As an alternate to ⅝" ø studs, ½" ø x 8" studs spaced as shown may be used. Use weight of ⅝" ø stud as basis of measurement of structural steel in anchors.

DETAIL OF ALTERNATE ANCHORS

No Scale




JOINT SEAL PLACEMENT AT CURB

Scale: ¾" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# DETAILS OF JOINT WITH POURED SEAL PUPPY CREEK

ROUTE 412 SEC. 2

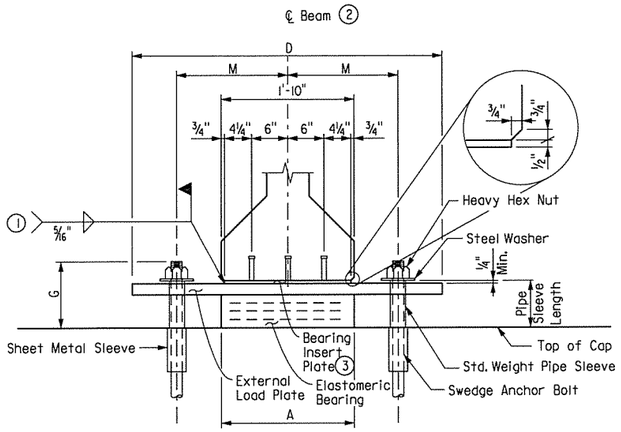
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

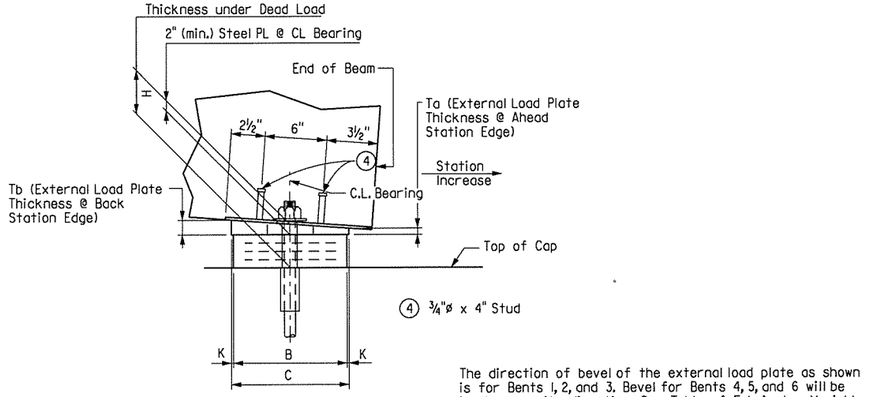
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_J.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. 07311 DRAWING NO. 55336

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 484 | 897 |
| | | | | (1) 07311 | | ELASTO. BRGS. | | 55337 |




FRONT VIEW



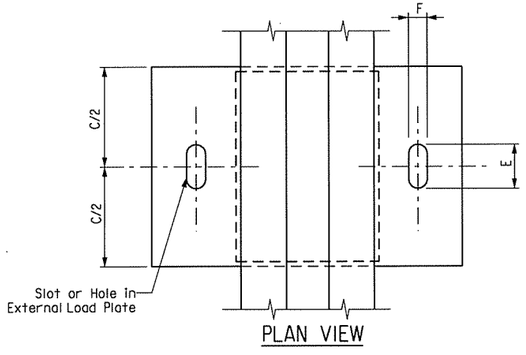

SIDE VIEW

The direction of bevel of the external load plate as shown is for Bents 1, 2, and 3. Bevel for Bents 4, 5, and 6 will be in the opposite direction. See Table of Fabricator Variables for dimensions.

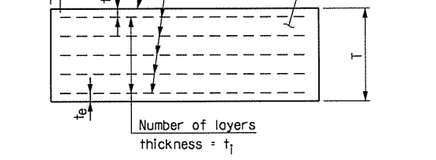
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) C.L. Elastomeric Pad shall be aligned with C.L. Beam

(3) Bearing Insert Plate (M270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders (Type III)"




PLAN VIEW

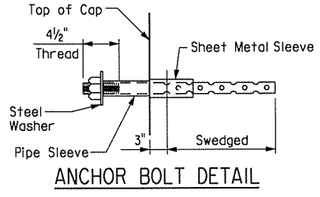



$t_e$ = thickness of elastomer cover on top and bottom of pad

$t_i$ = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness $t_i$

ELASTOMERIC BEARING




ANCHOR BOLT DETAIL

NOTE:
Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required. If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidary to the item STRUCTURAL STEEL IN PLATE GIRDER SPANS, (M270, GR. 50).

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be cleaned and painted in accordance with Subsection 638.

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for STRUCTURAL STEEL IN PLATE GIRDER SPANS, (M270, GR. 50).

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

TABLE OF FABRICATOR VARIABLES

| LOCATION | | | BEARING TYPE | NO. of BEARINGS EACH BENT | *MAXIMUM DESIGN LOAD (KIPS) | G | H | ELASTOMERIC PAD | | | | | | EXTERNAL LOAD PLATE | | | | | | | | ANCHOR BOLT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BENT NO(S). | SPAN NO. | BEAM OR GIRDER NO. | | | | | | A | B | N | $t_i$ | $t_e$ | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | $T_a$ | $T_b$ | ANCHOR BOLT ( ø x L ) | ANCHOR BOLT GRADE | PIPE SLEEVE SIZE ( ø x L ) | SHEET METAL SLEEVE SIZE ( ø x L ) | STEEL WASHER SIZE (O.D.) |
| 1 | 1 | All | Exp. | 4 | 64.28 | 10½" | 6¾" | 19" | 7" | 7 | ½" | ¼" | 8 @ 12 Ga. | 4⅞" | 8" | 34½" | 7" | 3⅛" | ½" | 14" | 1.97 | 2.03 | 2¼"ø x 35" | 55 | 2½"ø x 7⅛" | 4"ø x 5½" | 4" |
| 2 | 1 | All | Fixed | 4 | 82.65 | 9¼" | 5⁹⁄₁₆" | 22" | 8" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅝" | 9" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 1.98 | 2.02 | 2¼"ø x 33¾" | 55 | 2½"ø x 6" | 4"ø x 5½" | 4" |
| 2 | 2 | All | Fixed | 4 | 82.65 | 9¼" | 5¹¹⁄₁₆" | 22" | 8" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅝" | 9" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.10 | 2.14 | 2¼"ø x 33¾" | 55 | 2½"ø x 6" | 4"ø x 5½" | 4" |
| 3 | 2 | All | Fixed | 4 | 78.73 | 7¾" | 4⅜" | 20" | 8½" | 3 | ½" | ¼" | 4 @ 12 Ga. | 2⅞" | 9½" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.00 | 2.00 | 2"ø x 29¼" | 55 | 2½"ø x 4¾" | 4"ø x 5½" | 3¾" |
| 3 | 3 | All | Fixed | 4 | 78.73 | 7¾" | 4⅜" | 20" | 8½" | 3 | ½" | ¼" | 4 @ 12 Ga. | 2⅞" | 9½" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.01 | 2.01 | 2"ø x 29¼" | 55 | 2½"ø x 4¾" | 4"ø x 5½" | 3¾" |
| 4 | 3 | All | Fixed | 4 | 78.73 | 7¾" | 4½" | 20" | 8½" | 3 | ½" | ¼" | 4 @ 12 Ga. | 2⅞" | 9½" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.14 | 2.10 | 2"ø x 29¼" | 55 | 2½"ø x 4¾" | 4"ø x 5½" | 3¾" |
| 4 | 4 | All | Fixed | 4 | 78.73 | 7¾" | 4⅜" | 20" | 8½" | 3 | ½" | ¼" | 4 @ 12 Ga. | 2⅞" | 9½" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.02 | 1.98 | 2"ø x 29¼" | 55 | 2½"ø x 4¾" | 4"ø x 5½" | 3¾" |
| 5 | 4 | All | Fixed | 4 | 82.65 | 9¼" | 5¹¹⁄₁₆" | 22" | 8" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅝" | 9" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.15 | 2.09 | 2¼"ø x 33¾" | 55 | 2½"ø x 6" | 4"ø x 5½" | 4" |
| 5 | 5 | All | Fixed | 4 | 82.65 | 9¼" | 5⁹⁄₁₆" | 22" | 8" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅝" | 9" | 34½" | 3⅛" | 3⅛" | ½" | 14" | 2.03 | 1.97 | 2¼"ø x 33¾" | 55 | 2½"ø x 6" | 4"ø x 5½" | 4" |
| 6 | 5 | All | Exp. | 4 | 64.28 | 10½" | 6¾" | 19" | 7" | 7 | ½" | ¼" | 8 @ 12 Ga. | 4⅞" | 8" | 34½" | 7" | 3⅛" | ½" | 14" | 2.05 | 1.95 | 2¼"ø x 35" | 55 | 2½"ø x 7⅛" | 4"ø x 5½" | 4" |

* Maximum Design Load = Service Load

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

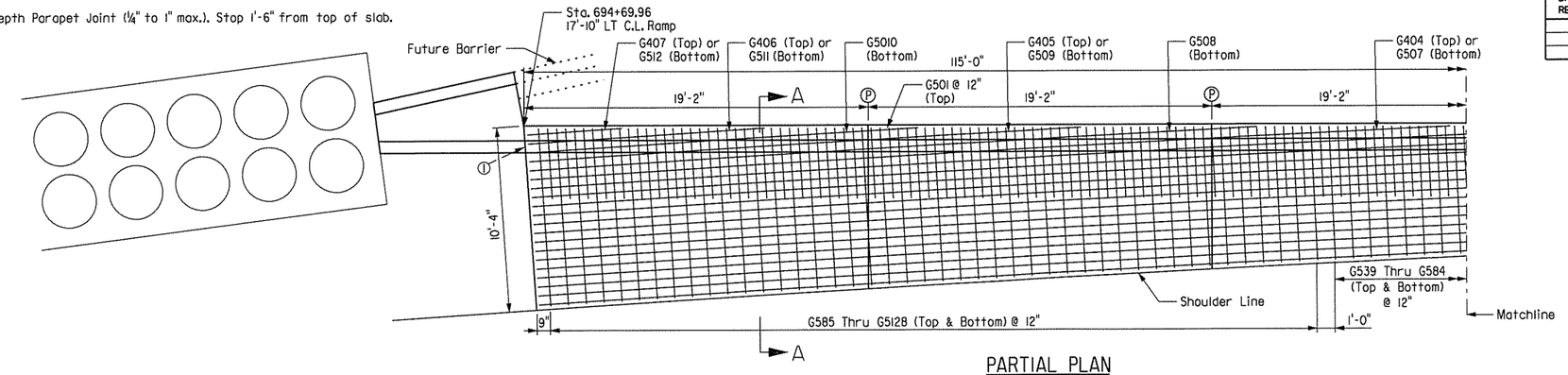
DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_e.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

BRIDGE NO. 07311 DRAWING NO. 55337

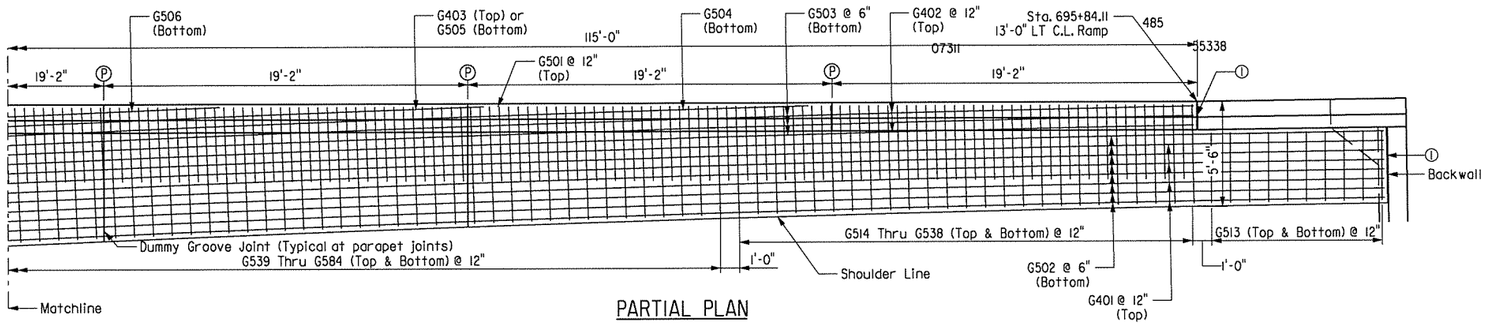
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 485 | 897 |
| ① 07311 | | GUTTER DETAILS | | 55338 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.




## PARTIAL PLAN
## SPECIAL APPROACH GUTTER
¼" = 1'-0"

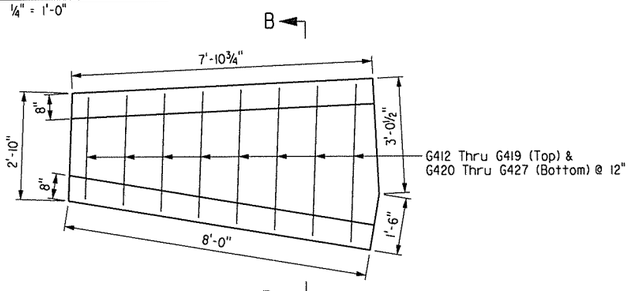



## PARTIAL PLAN
## SPECIAL APPROACH GUTTER
¼" = 1'-0"

① ½" Preformed Joint Filler (AASHTO M 153 Type I) and ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02 (h) (2)

Note: Parapet Rail may be slipformed. See Dwg. No. 55333.

Note: Transverse bar spacings shall be measured along the gutter line, and transverse steel shall be placed along radial lines. Longitudinal bar spacings shall be measured perpendicular to shoulder line, and longitudinal steel shall be placed parallel to shoulder line.

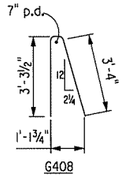


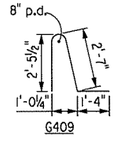

## END BLOCK PLAN
½" = 1'-0"

## FOR INFORMATION ONLY
## BAR LIST FOR CONC. BARRIER WALLS

Bending Diagrams (Dimensions are out to out of bars.)

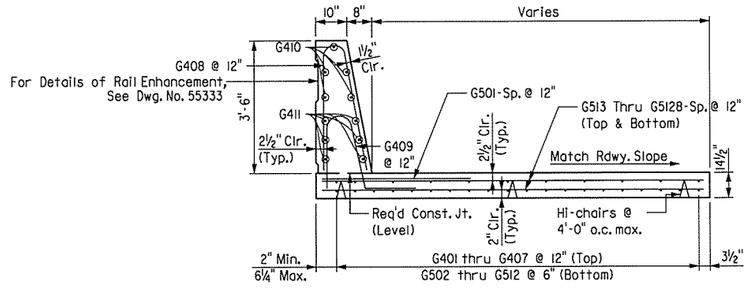
| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| G401 | 16 | 32'-2" | Str. |
| G402 | 6 | 39'-3" | Str. |
| G403 | 2 | 39'-9" | Str. |
| G404 | 2 | 26'-9" | Str. |
| G405 | 1 | 30'-11" | Str. |
| G406 | 1 | 13'-5" | Str. |
| G407 | 1 | 5'-5" | Str. |
| G408 | 115 | 6'-6" | 7" |
| G409 | 115 | 6'-10" | 8" |
| G410 | 36 | 18'-10" | Str. |
| G411 | 18 | 39'-5" | Str. |
| G412 to G419 | 1 ea. | 1'-4" to 2'-10" | Str. |
| G420 to G427 | 1 ea. | 2'-8" to 4'-2" | Str. |
| G428 | 16 | 4'-2" | Str. |
| | | | |
| G501 | 115 | 3'-11" | Str. |
| G502 | 24 | 42'-8" | Str. |
| G503 | 6 | 58'-6" | Str. |
| G504 | 2 | 48'-5" | Str. |
| G505 | 2 | 39'-10" | Str. |
| G506 | 2 | 32'-11" | Str. |
| G507 | 1 | 51'-6" | Str. |
| G508 | 1 | 40'-9" | Str. |
| G509 | 1 | 30'-11" | Str. |
| G510 | 1 | 21'-10" | Str. |
| G511 | 1 | 13'-4" | Str. |
| G512 | 1 | 5'-5" | Str. |
| G513 | 20 | 3'-8" | Str. |
| G514 to G538 | 2 ea. | 5'-2" to 5'-8" | Str. |
| G539 to G584 | 2 ea. | 5'-9" to 7'-5" | Str. |
| G585 to G5128 | 2 ea. | 7'-6" to 9'-11" | Str. |



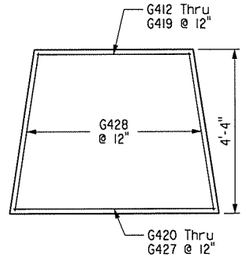




*Bar Lengths Increasing By ¼" Increments
**Bar Lengths Increasing By ½" Increments
***Bar Lengths Increasing By ¾" Increments

Min. Lap Lengths For Longitudinal Bars Are As Follows
No. 4 Bars - 1'-11"
No. 5 Bars - 2'-2"




## SECTION A-A
½" = 1'-0"




## SECTION B-B
½" = 1'-0"

## TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 3 APPROACH GUTTER

| Reinforcing Steel LBS. | Concrete C.Y. |
|---|---|
| 6,751 | 57.39 |
| | |

GENERAL NOTES

Concrete Shall Be Class S(AE) (f'c = 4,000 p.s.i.).

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 p.s.i.).

Preformed Joints and Sealer shall not be paid for directly. Expansion Joints and Sealer shall not be paid for directly. Payment for these items shall be considered incidental to the pay item "Concrete".

Place Slab Joints at every other parapet joint. See Dwg. No. 55330 For Joint Detail.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
Larry W. Miller 3-14
BRIDGE ENGINEER

# DETAILS OF TYPE SPECIAL 3 APPROACH GUTTER PUPPY CREEK

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: EG DATE: 3-12 FILENAME: bca0907x8_g.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: EG DATE: 3-12

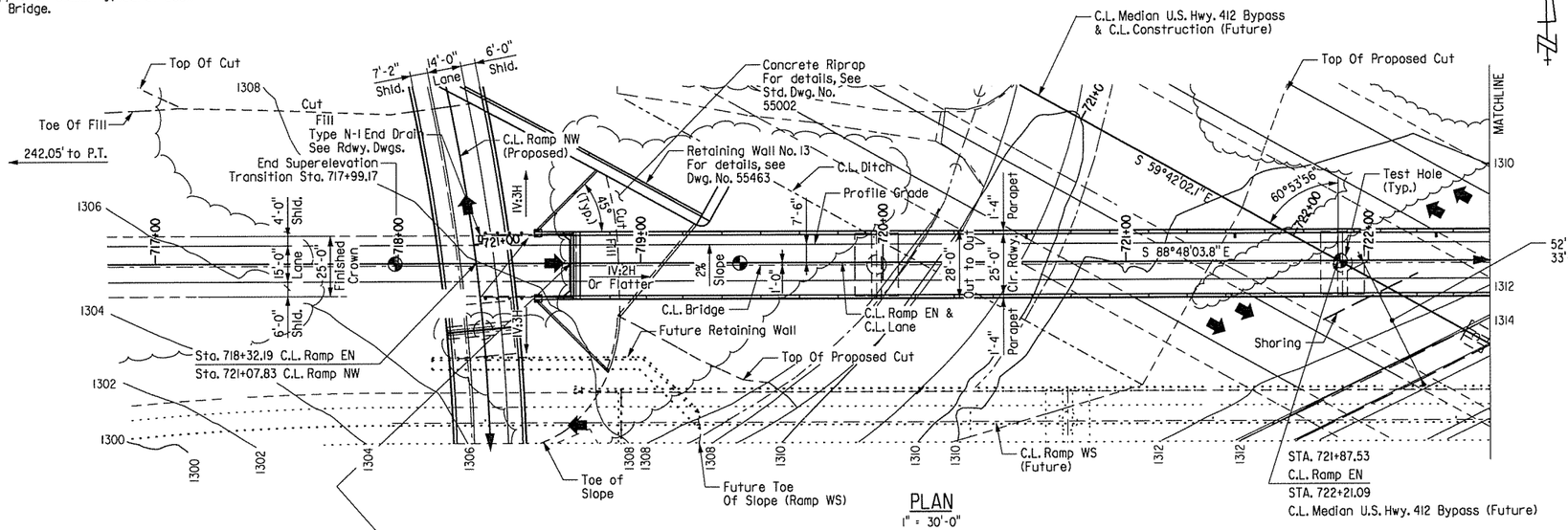
BRIDGE NO. 07311 DRAWING NO. 55338

B001966M15_G.dgn 9/3/2014 3:23:54 PM

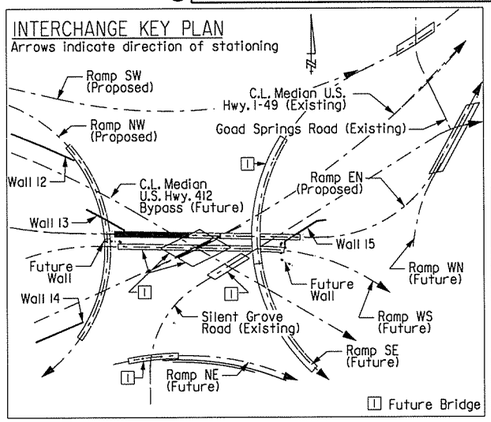
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 486 | 897 |
| | | | | ① 07312 | | LAYOUT | | 55339 |

For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters ("W"=4'-0" & 6'-0", T=14½") with Approach Slabs. Typical at Each End of Bridge.



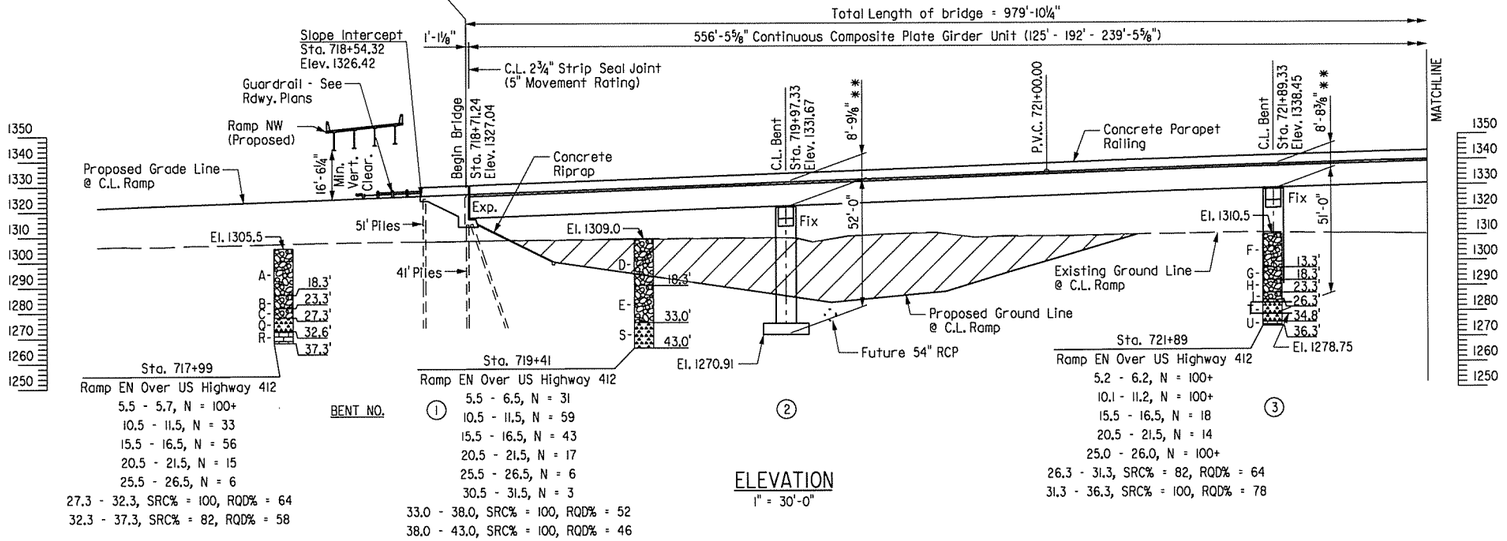

PLAN
1" = 30'-0"




For general notes and curve data, see Dwg. No. 55341.

For Soil Boring Legend, see Dwg. No. 55340.

Note: Unless otherwise noted, stations and elevations shown are taken along C.L. Ramp.




ELEVATION
1" = 30'-0"

** Top of Deck @ C.L. Bent @ C.L. Ramp to low side Top of Cap

* Top of Deck @ C.L. Ramp to Low Girder

Note: For Soil Boring Legend, See Dwg. No. 55340.

SHEET 1 OF 3
LAYOUT OF BRIDGE
1-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS
HWY. 112 - 1-49 (S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

DRAWN BY: JE DATE: 10-07 FILENAME: bca0907x9_L1.dgn
CHECKED BY: BEG DATE: 08-15-12 SCALE: 1" = 30'
DESIGNED BY: LWM DATE: 9-07

BRIDGE NO. 07312 DRAWING NO. 55339

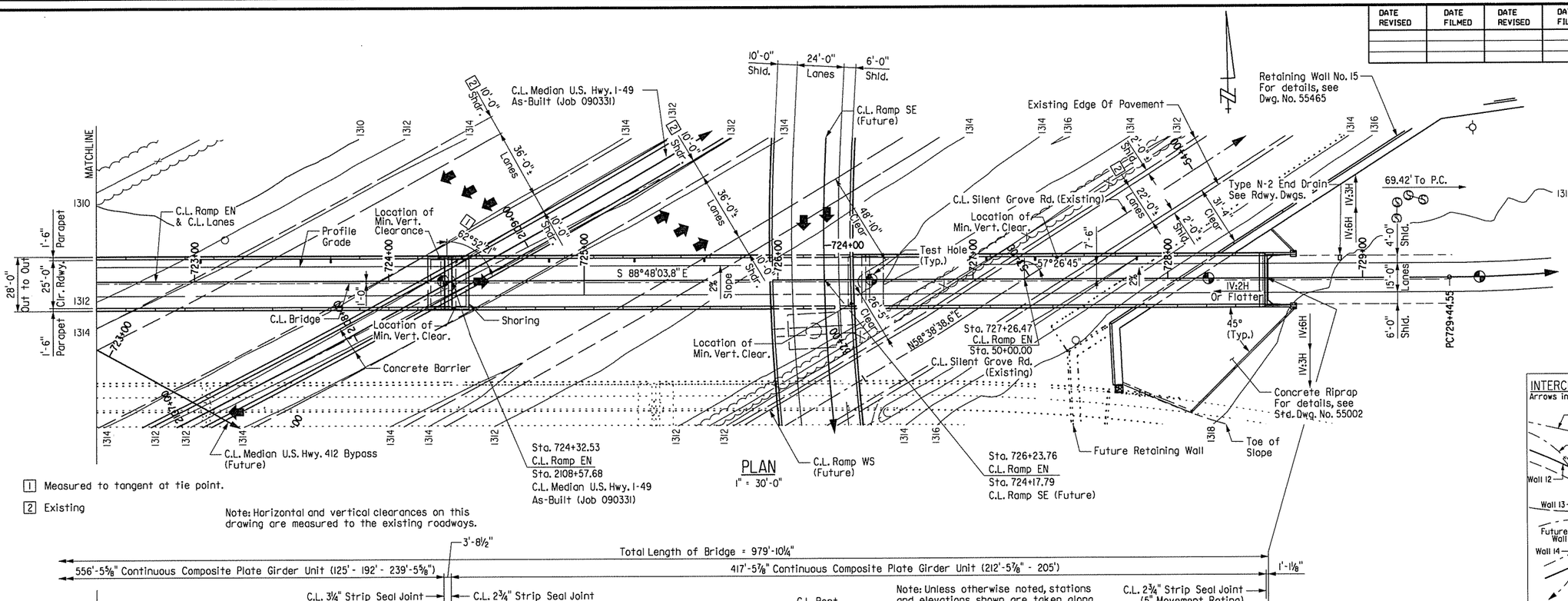
B001966M17_L1.dgn 9/4/2014 7:19:30 AM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 487 | 897 |
| ① 07312 | | LAYOUT | | 55340 |

For General Notes, see Dwg. No. 55341.

For curve data, see Dwg. No. 55341.

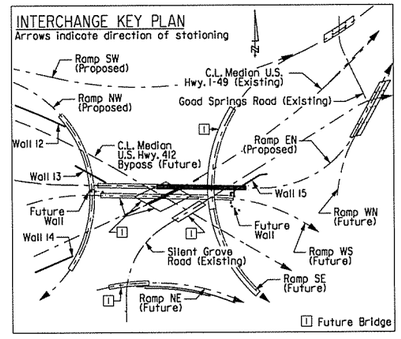


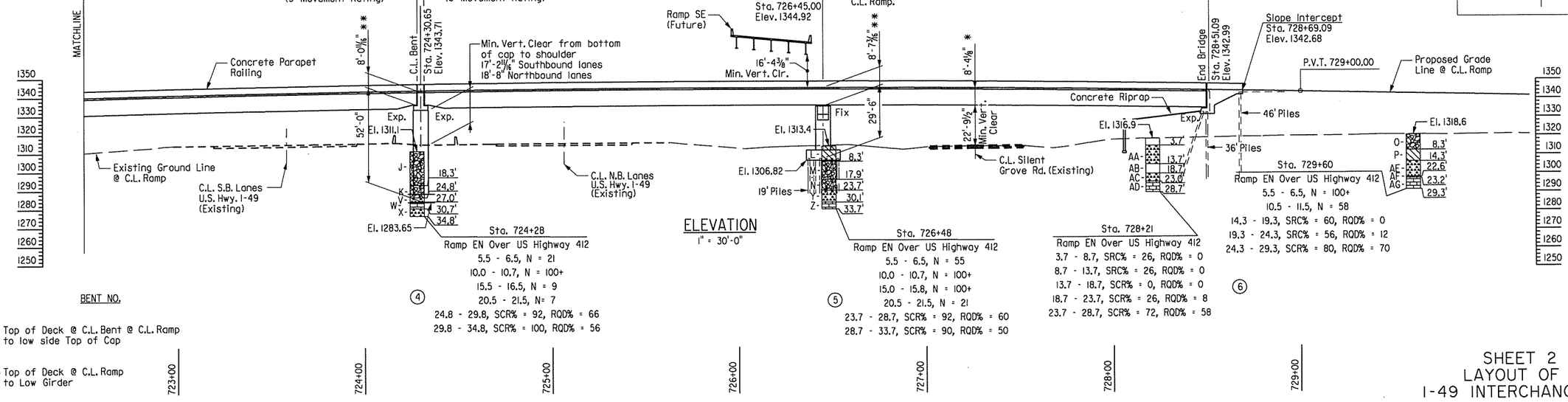

PLAN
1" = 30'-0"

[1] Measured to tangent at tie point.

[2] Existing

Note: Horizontal and vertical clearances on this drawing are measured to the existing roadways.




ELEVATION
1" = 30'-0"

**Boring Legend**

A - Red, dense to very dense, silty gravel with sand.
B - Red, medium dense, clayey gravel with sand.
C - Red, loose, clayey gravel with sand.
D - Red, dense to very dense, silty gravel with sand.
E - Red, brown, lt. gray, very loose to medium dense, silty gravel with sand.
F - Red, very dense, silty gravel with sand.
G - Red, medium dense, clayey gravel with sand.
H - Red, medium dense, clayey gravel with sand.
I - Red. very dense, silty gravel with sand.
J - Red, lt. brown, loose to very dense, clayey gravel with sand.
K - Lt. brown, loose, silty gravel with sand.
L - Red, hard, sandy lean clay with gravel.
M - Red, very dense, clayey gravel with sand.
N - Red, medium dense, silty gravel with sand.
O - Red, very dense, silty gravel with sand.
P - Red, hard, sandy lean clay with gravel.
Q - Chert: White, lt. gray, gray, fresh to slightly weathered.
R - Limestone: Lt. gray, gray, fresh, fine to medium grain.
S - Chert: White, lt. gray, gray, fresh to slightly weathered.
T - Chert: White, lt. gray, gray, fresh to slightly weathered.
U - Limestone: Lt. gray, gray, fresh.
V - Chert: White, lt. gray, gray, fresh to weathered.
W - Limestone: Lt. gray, gray, fresh.
X - Chert: White, lt. gray, gray, fresh, fine to medium grain.
Y - Chert: White, lt. gray, gray, fresh to weathered.
Z - Limestone: Lt. gray, gray, fresh.
AA - Chert: White, lt. gray, moderately to intensely weathered.
AB - Core loss.
AC - Chert: White, lt. gray, moderately to intensely weathered.
AD - Limestone: Lt. gray, gray, fresh to moderately weathered.
AE - Chert: White, lt. gray, moderately to intensely weathered.
AF - Chert: White, lt. gray, fresh.
AG - Limestone: Lt. gray, gray, fresh to slightly weathered.

STATE OF ARKANSAS
Larry M. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY M. MILLER
9-3-14
BRIDGE ENGINEER

# SHEET 2 OF 3
# LAYOUT OF BRIDGE
# I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JE DATE: 10-07 FILENAME: bca0907x9_L2.dgn
CHECKED BY: BEG DATE: 08-15-12 SCALE: 1" = 30'
DESIGNED BY: LWM DATE: 9-07

BRIDGE NO. 07312 DRAWING NO. 55340

B001966M17_L2.dgn 9/4/2014 7:19:34 AM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 488 | 897 |
| ① 07312 | | LAYOUT | | 55341 |

GENERAL NOTES

BENCH MARK: Aluminum cap in shoulder of I-49 SB lanes. Survey control point no. 102. N=700195.6915, E=675140.4283, Elev. 1312.3265, Mainlane Sta. 719+62.26, Offset 442.46 Right

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: I $S_{D1}$ =0.125 Site Class=D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) Concrete (Superstructure) | f'c = 4,000 psi |
| Class S Concrete (Substructure) | f'c = 3,500 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | Fy = 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy = 36,000 psi |

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface, top of backwall, top and roadway face of the concrete parapet rail and transition rails.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to surfaces as specified in Special Provision Job CA0907 "Textured Coating Finish" and in accordance with Section 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of paint shall be DARK BROWN and shall match Fed Std. 595B, Color Chip No. 20108.

SPREAD FOOTINGS: Footings for Bents 2, 3 and 4 shall be set a minimum of 2'-0" into material designated as competent Limestone or Chert on the boring legend. To accommodate future constructions, footings must be constructed at or below the elevations shown. Foundations for footings shall be prepared in accordance with Section 801.04 of the Standard Specifications. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

SHORING: Shoring, at the locations shown, is required but will not be paid for directly and shall be included in item 801. See SP Job No. CA0907 "Special Safety Requirements for Bridges" for additional details.

PILE FOOTINGS: The top of Bent 5 footing shall be set 2'-0" minimum below existing ground. Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled according to subsection 801.08 of the Standard Specifications.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons (factored resistance of 140 tons) per pile and into the material designated as competent Limestone or Chert on the boring legend. Drive all piles in Bent 1 to a minimum penetration of 20' below existing ground and, in Bent 6 to a minimum penetration of 10' below existing ground and all piles in Bent 5 to a minimum penetration of 18' below bottom of footing. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

Pile casings are required for any piling in Bent 6 which will be driven through the reinforced zone of the adjacent MSE wall. Casings shall be installed prior to or during embankment construction and shall extend from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven after any required preboring and through the open casings after embankment to the bottom of cap is in place. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly, but shall be considered subsidiary to the item "Steel Piling (HP12x53)".

PREBORING: Preboring will be required at all piles in Bents 5 & 6 to obtain minimum penetration requirement. Quantities of preboring shown are for bidding purposes only. Actual size and depths to be determined in the field by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. Backfill and temporary casing, if necessary, will not be paid for directly but will be considered subsidiary to the pay item "PREBORING".

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four wingwall locations in accordance with Dwg. No. 55385 and at Bent No. 4 in accordance with Dwg. No. 55350.

HORIZONTAL CURVE DATA
C.L. RAMP EN

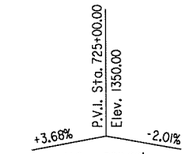
PI Sta = 733+66.22
PC Sta = 729+44.55
PT Sta = 737+02.47
R = 694.49
△ = 62°31'42.7" LT.
D = 8°15'00"
L = 757.92
T = 421.67

FOR INFORMATION ONLY

HORIZONTAL CURVE DATA
C.L. MEDIAN U.S. HWY. I-49
AS-BUILT (JOB 09031)

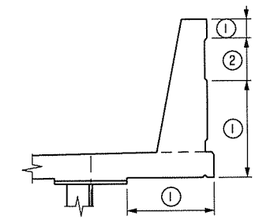
PI Sta = 2134+29.78
PC Sta = 2105+90.54
PT Sta = 2156+74.57
R = 4583.69
△ = 63°33'00" LT.
D = 1°15'00"
L = 5084.03'
T = 2839.24'

| | NORTHING | EASTING |
|---|---|---|
| PC | 700324.51 | 675590.60 |
| PT | 704332.95 | 678280.63 |




VERTICAL CURVE DATA
(Along Profile Grade)

| DETAIL DRAWINGS: | DRAWING NO. |
|---|---|
| End Bents | 55343-55345 |
| Intermediate Bents | 55346-55351 |
| 556'-5⅝" Cont. Comp. Plate Girder Unit | 55352-55356 & 55361-55367 |
| 417'-5⅞" Cont. Comp. Plate Girder Unit | 55357-55367 |
| Elastomeric Bearings | 55368 |
| Type "C" Approach Gutters | 55030c |
| Approach Slabs | 55040cl |
| Steel Piling | 55020 |
| Concrete Riprap | 55002 |




① Class 3 Textured Coating Finish
(Color = Light Brown, Color Chip No. 33522)

② Class 3 Textured Coating Finish
(Color = Medium Brown, Color Chip No. 30219)

Section thru parapet is shown.
Similar for end bent transition rail.

TEXTURED COATING FINISH
Scale: ½" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 3 OF 3
LAYOUT OF BRIDGE
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS
HWY. 112 - I-49 (S)
BENTON COUNTY

ROUTE 412 SEC. 2

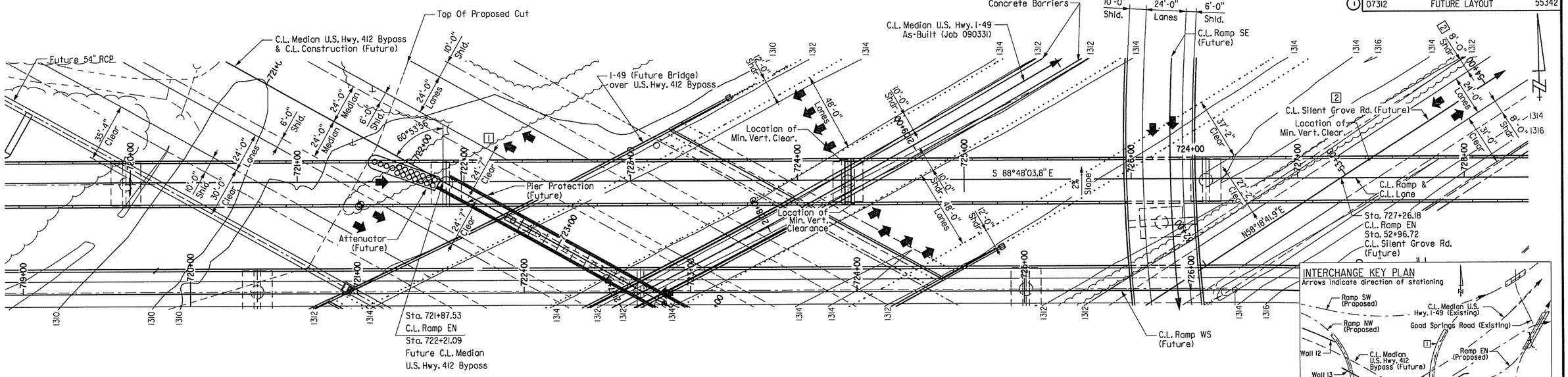
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JE DATE: 10-07 FILENAME: bca0907x9_L3.dgn
CHECKED BY: BEG DATE: 08-15-12 SCALE: None
DESIGNED BY: LM DATE: 09-07

BRIDGE NO. 07312 DRAWING NO. 55341

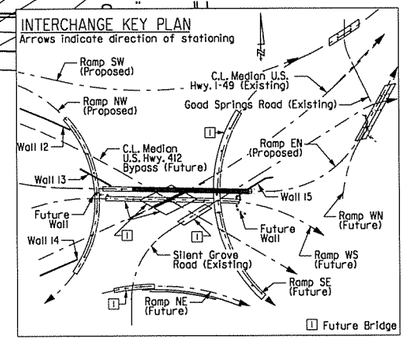
B001966M17_L3.dgn 9/4/2014 8:38:57 AM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 489 | 897 |
| | | | | (1) 07312 | | FUTURE LAYOUT | | 55342 |



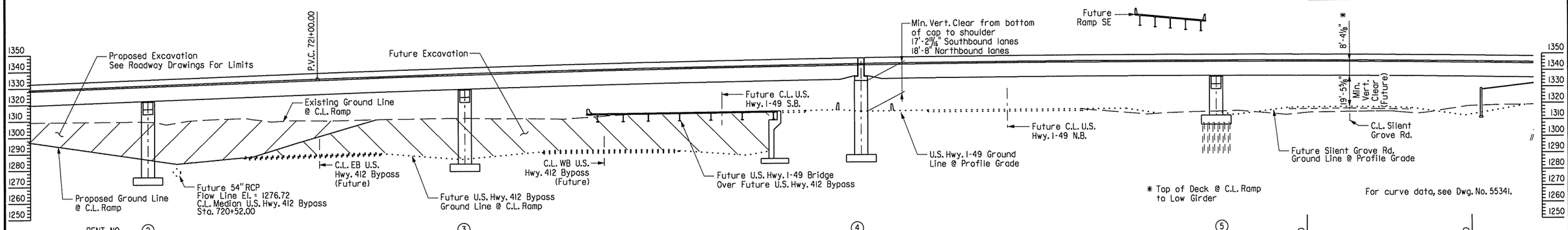

[1] Horizontal clearance is measured to toe of pier protection.

[2] Future for completed interchange




## PLAN SHOWING FUTURE WIDENINGS OF I-49 AND SILENT GROVE ROAD

1" = 30'-0"

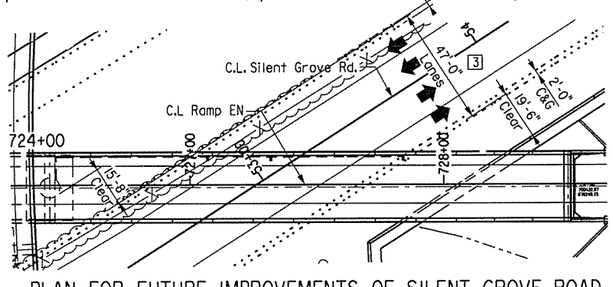



* Top of Deck @ C.L. Ramp to Low Girder

For curve data, see Dwg. No. 55341.

## ELEVATION

1" = 30'-0"




[3] Measured face to face of curbs

## PLAN FOR FUTURE IMPROVEMENTS OF SILENT GROVE ROAD

1" = 30'-0"

# FUTURE LAYOUT OF BRIDGE I-49 INTERCHANGE RAMP EN OVER WIDENED U.S. HWY. I-49 HWY. 112 - I-49 (S) BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER 9-3-14

BRIDGE ENGINEER

DRAWN BY: JE DATE: 10-07 FILENAME: bca0907x9_L4.dgn

CHECKED BY: BEG DATE: 08-15-12 SCALE: 1" = 30'

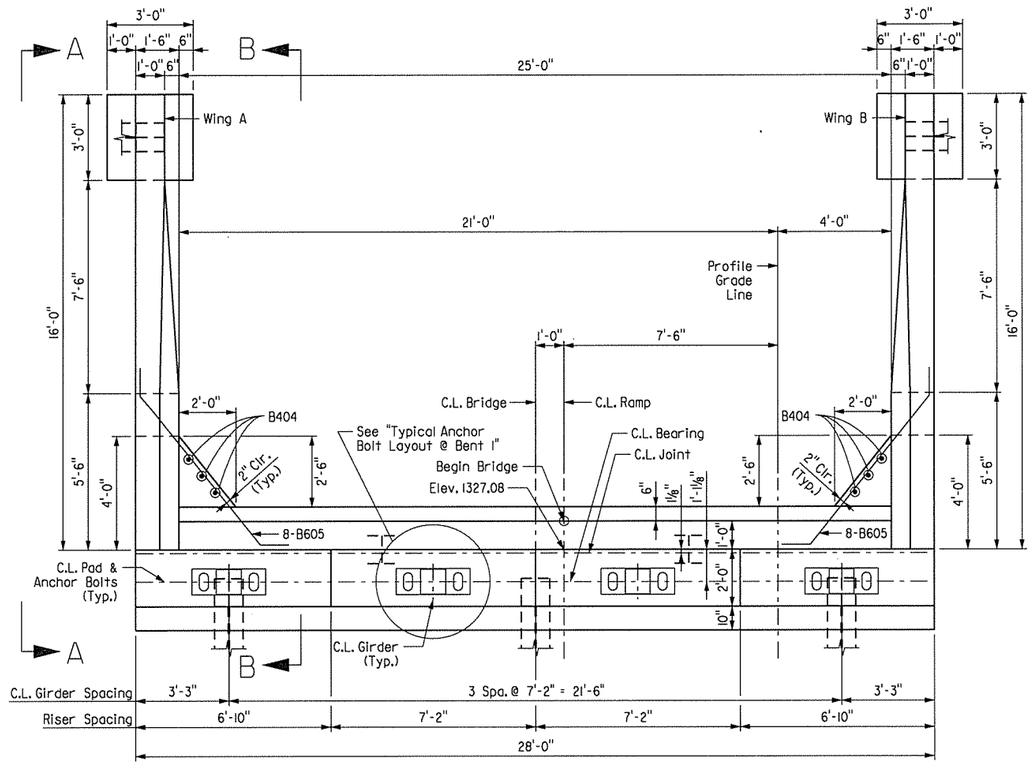
DESIGNED BY: LM DATE: 9-07

BRIDGE NO. 07312 DRAWING NO. 55342

B001966M17_L4.dgn 9/3/2014 3:24:09 PM

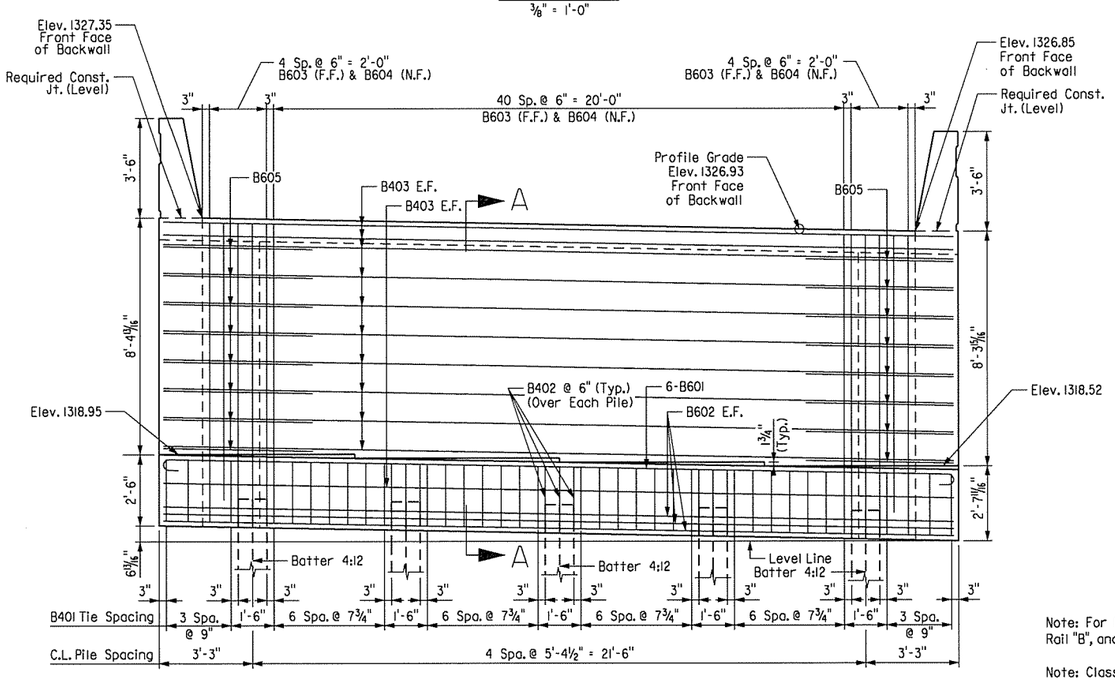
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 490 | 897 |
| ① 07312 | | END BENT DETAILS | | 55343 |




PLAN-BENT 1

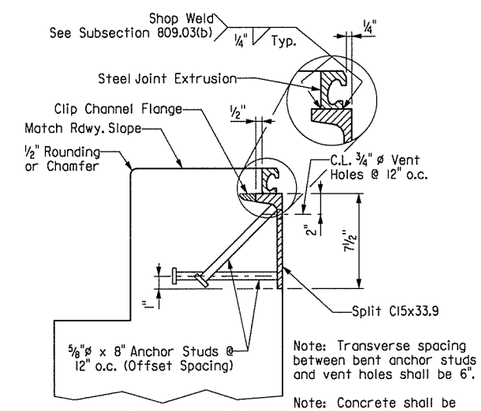
⅜" = 1'-0"




ELEVATION-BENT 1

Looking Back

⅜" = 1'-0"



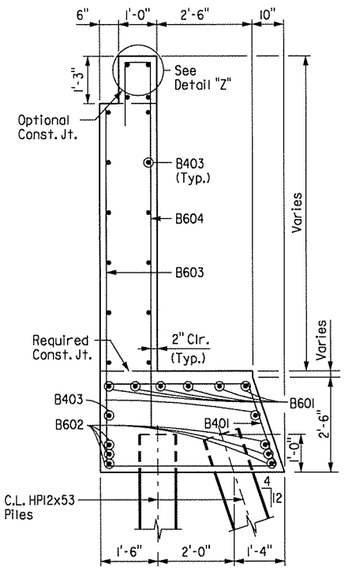

Note: Transverse spacing between bent anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.

Note: For additional joint details, see Dwg. No. 55366.

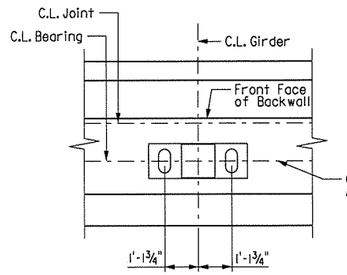
DETAIL Z

Scale: 2" = 1'-0"




SECTION A-A

½" = 1'-0"



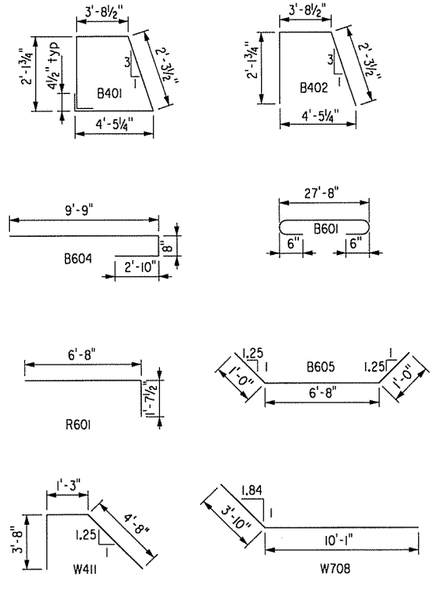

TYPICAL ANCHOR BOLT LAYOUT @ BENT 1

Note: For details of Elastomeric Bearings, See Dwg. No. 55368

BAR LIST - BENT 1

| MARK | NO. REQ'D | LENGTH | PIN DIA. |
|---|---|---|---|
| B401 | 36 | 12'-11" | 2" |
| B402 | 15 | 7'-11" | 2" |
| B403 | 22 | 27'-8" | Str. |
| B404 | 6 | 9'-6" | Str. |
| | | | |
| B601 | 6 | 29'-0" | 4 1/2" |
| B602 | 6 | 27'-8" | Str. |
| B603 | 51 | 8'-6" | Str. |
| B604 | 51 | 12'-11" | 4 1/2" |
| B605 | 16 | 8'-8" | 4 1/2" |
| | | | |
| R401 | 52 | 5'-2" | Str. |
| | | | |
| R601 | 24 | 8'-2" | 4 1/2" |
| R602 | 16 | 15'-8" | Str. |
| R603 | 12 | 2'-8" | Str. |
| | | | |
| W401 | 16 | 10'-5" | Str. |
| | | | |
| W402 to W410 | 4 ea. | 1'-11" to 6'-3" | Str. |
| | | | |
| W411 | 8 | 9'-6" | 3" |
| | | | |
| W701 | 12 | 15'-8" | Str. |
| W702 | 4 | 11'-9" | Str. |
| W703 | 4 | 10'-5" | Str. |
| W704 | 4 | 9'-1" | Str. |
| W705 | 4 | 7'-9" | Str. |
| W706 | 4 | 6'-5" | Str. |
| W707 | 4 | 5'-1" | Str. |
| W708 | 4 | 13'-11" | 5 1/4" |
| W709 | 8 | 3'-8" | Str. |

BENDING DIAGRAMS (Dimensions are out to out of Bars)




Note: For Details of Wing & Rail "A" and Details of Wing & Rail "B", and view A & B, See Dwg. No. 55344.

Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER 9-3-14

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: BEG DATE: 7-12 FILENAME: bca0907x9_bll.dgn
CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN
DESIGNED BY: BEG DATE: 7-12

BRIDGE NO. 07312 DRAWING NO. 55343

B001966M17_B11.dgn 9/3/2014 3:24:11 PM

GENERAL NOTES FOR SUBSTRUCTURE

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (yield strength = 60,000 psi).

The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 55366 for additional information.

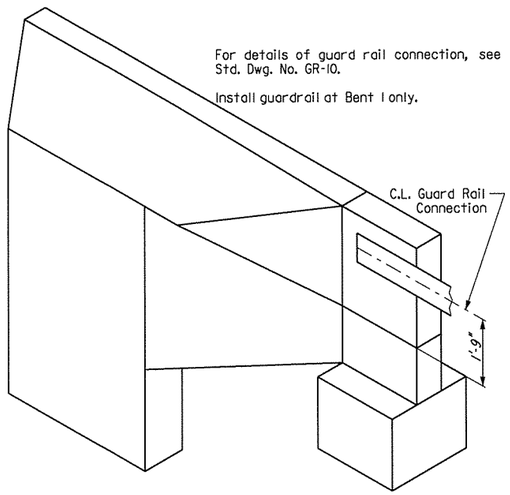
For structural steel in end bents, see Dwg. No. 55366.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For detail of textured coating finish, see Dwg. No. 55341.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

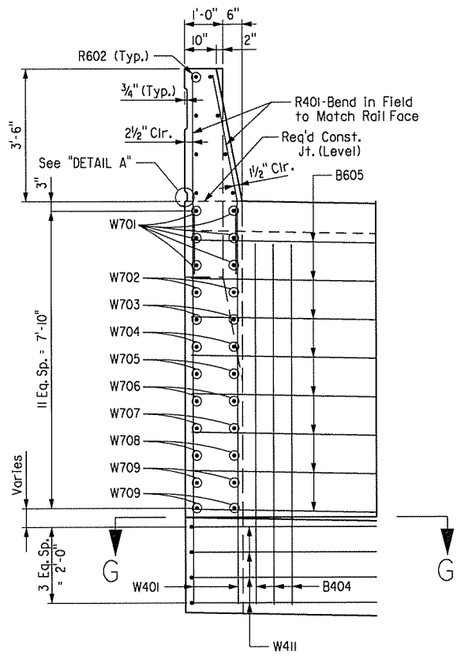
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 491 | 897 |
| ① 07312 | | END BENT DETAILS | | 55344 |




THREE DIMENSIONAL VIEW OF RAIL

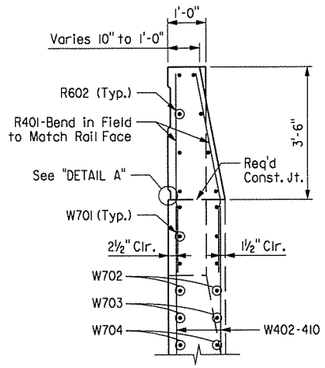
Scale: ⅜" = 1'-0"

Wing "A" Shown, Wing "B" is Opposite Hand



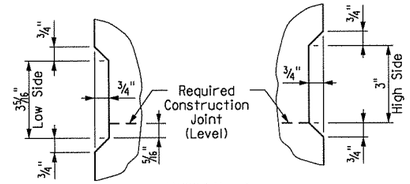

VIEW W-W

½" = 1'-0"



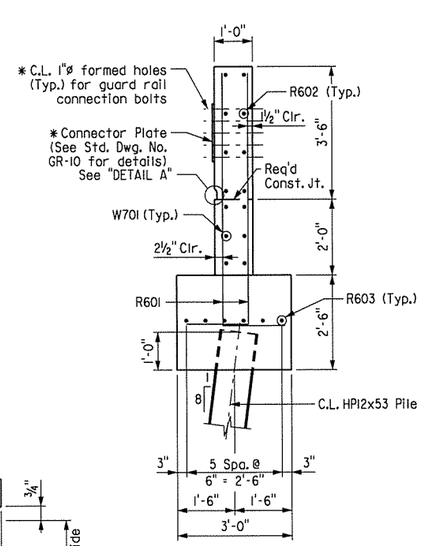

SECTION X-X

½" = 1'-0"




DETAIL A

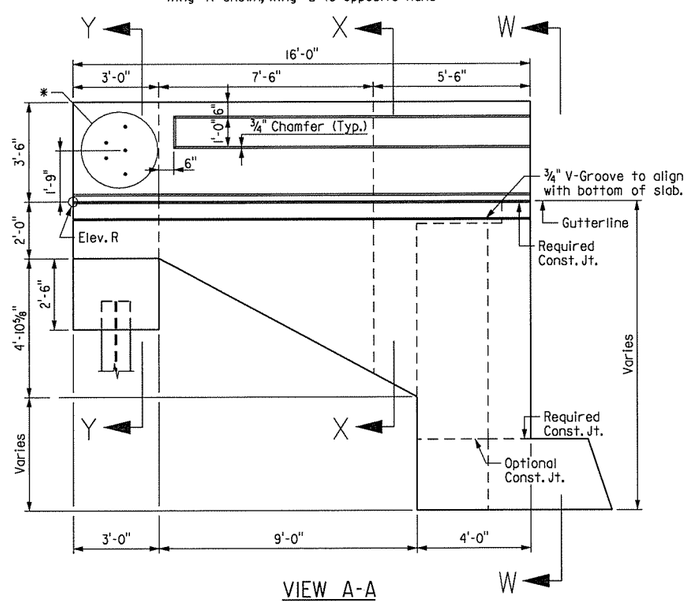
Scale: 3" = 1'-0"




SECTION Y-Y

½" = 1'-0"

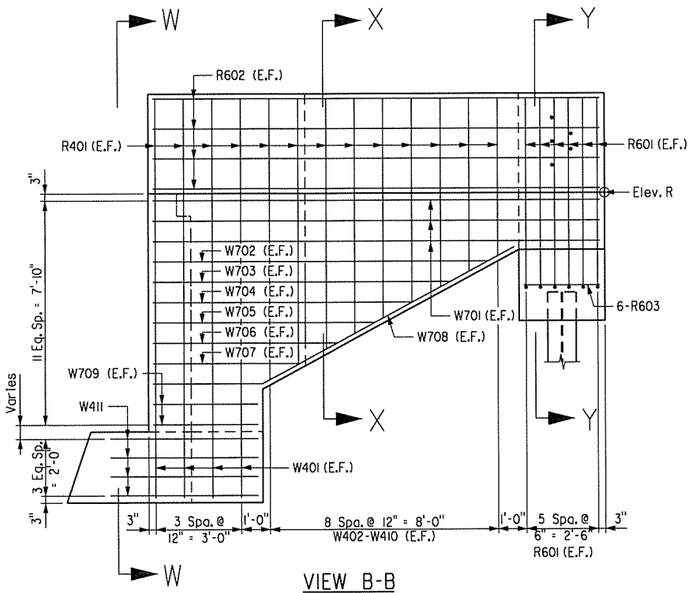
* 5 - 1"ø formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.




VIEW A-A

⅜" = 1'-0"

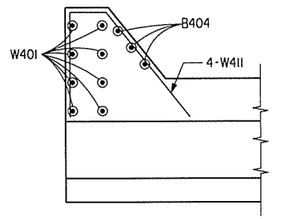
Wing "A" Shown, Wing "B" is Opposite Hand




VIEW B-B

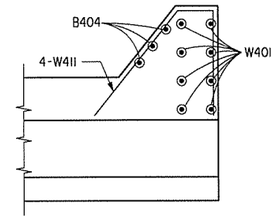
⅜" = 1'-0"

Wing "A" Shown, Wing "B" is Opposite Hand




SECTION G-G (WING A)

⅜" = 1'-0"




SECTION G-G (WING B)

⅜" = 1'-0"

TABLE OF VARIABLES (ELEV. "R")

| BENT NO. | WING | ELEV. |
|---|---|---|
| 1 | A | 1326.77 |
| 1 | B | 1326.25 |
| 6 | A | 1342.49 |
| 6 | B | 1343.01 |

SHEET 2 OF 3
DETAILS OF END BENTS
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
LARRY W. MILLER
REGISTERED PROFESSIONAL ENGINEER
No. 11339
9-3-14

BRIDGE ENGINEER

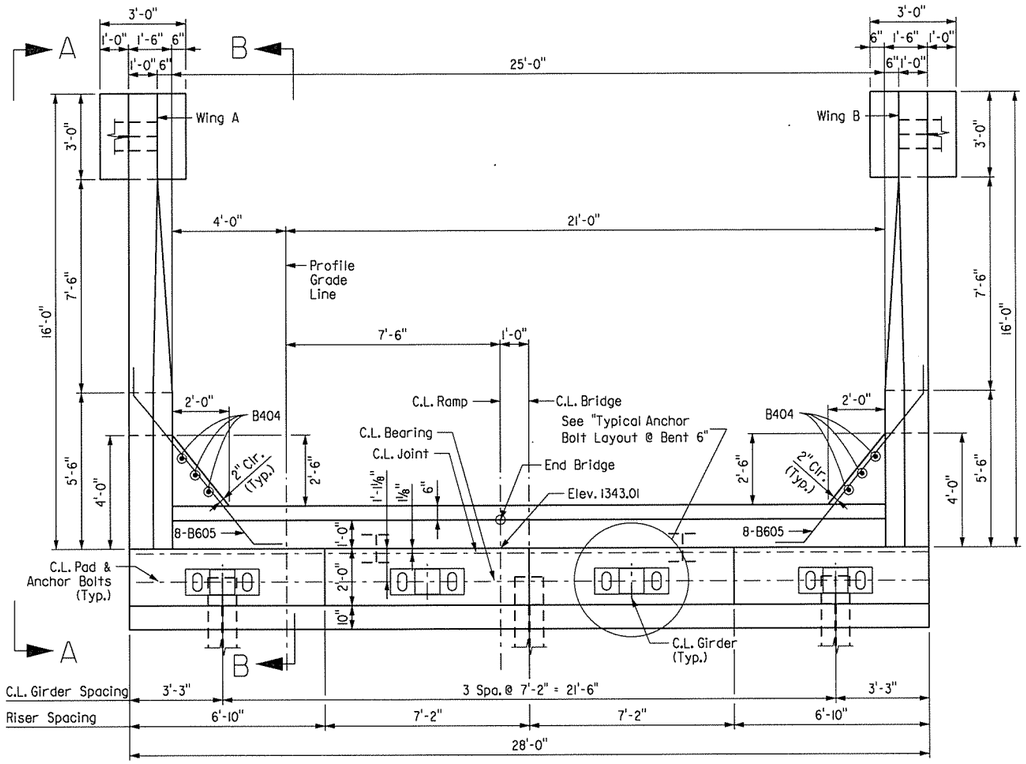
DRAWN BY: BEG DATE: 7-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: BEG DATE: 7-12

FILENAME: bca0907x9_bl2.dgn
SCALE: AS SHOWN

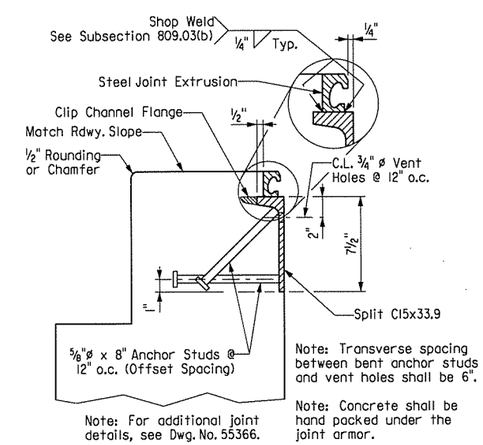
BRIDGE NO. 07312 DRAWING NO. 55344

B001966M17_B12.dgn 9/3/2014 3:24:12 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 492 | 897 |
| | | | | (1) 07312 | | END BENT DETAILS | | 55345 |




PLAN-BENT 6
⅜" = 1'-0"

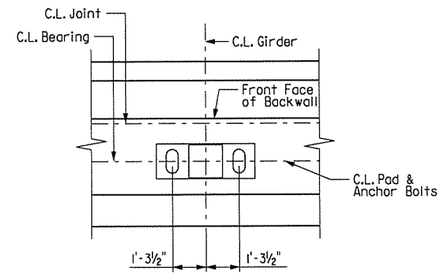



Note: Transverse spacing between bent anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.

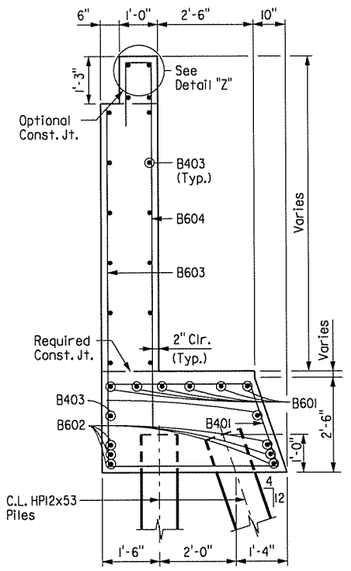
Note: For additional joint details, see Dwg. No. 55366.

DETAIL Z
Scale: 2" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT @ BENT 6

Note: For details of Elastomeric Bearings, See Dwg. No. 55368

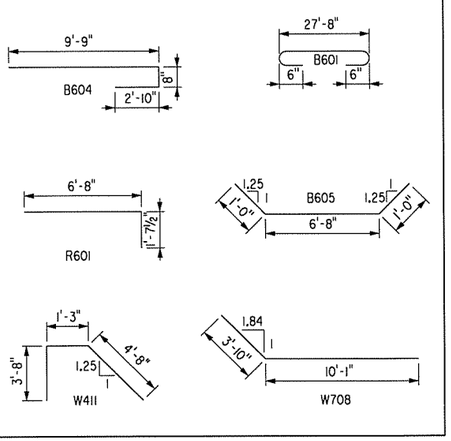


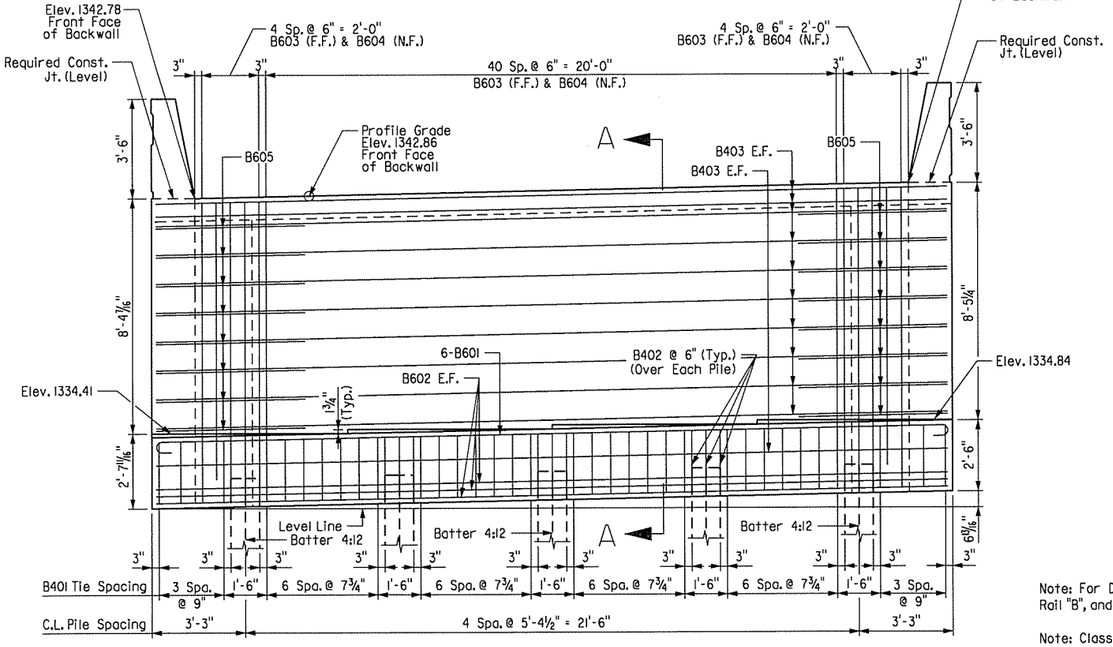

SECTION A-A
½" = 1'-0"

BAR LIST - BENT 6

| MARK | NO. REQ'D | LENGTH | PIN DIA. |
|---|---|---|---|
| B401 | 36 | 12'-11" | 2" |
| B402 | 15 | 7'-11" | 2" |
| B403 | 22 | 27'-8" | Str. |
| B404 | 6 | 9'-6" | Str. |
| | | | |
| B601 | 6 | 29'-0" | 4 1/2" |
| B602 | 6 | 27'-8" | Str. |
| B603 | 51 | 8'-6" | Str. |
| B604 | 51 | 12'-11" | 4 1/2" |
| B605 | 16 | 8'-8" | 4 1/2" |
| | | | |
| R401 | 52 | 5'-2" | Str. |
| | | | |
| R601 | 24 | 8'-2" | 4 1/2" |
| R602 | 16 | 15'-8" | Str. |
| R603 | 12 | 2'-8" | Str. |
| | | | |
| W401 | 16 | 10'-5" | Str. |
| | | | |
| W402 to W410 | 4 ea. | 1'-11" to 6'-3" | Str. |
| | | | |
| W411 | 8 | 9'-6" | 3" |
| | | | |
| W701 | 12 | 15'-8" | Str. |
| W702 | 4 | 11'-9" | Str. |
| W703 | 4 | 10'-5" | Str. |
| W704 | 4 | 9'-1" | Str. |
| W705 | 4 | 7'-9" | Str. |
| W706 | 4 | 6'-5" | Str. |
| W707 | 4 | 5'-1" | Str. |
| W708 | 4 | 13'-11" | 5 1/4" |
| W709 | 8 | 3'-8" | Str. |

BENDING DIAGRAMS (Dimensions are out to out of Bars)




ELEVATION-BENT 6
Looking Ahead
⅜" = 1'-0"

Note: For Details of Wing & Rail "A" and Details of Wing & Rail "B", and view A & B, See Dwg. No. 55344.

Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

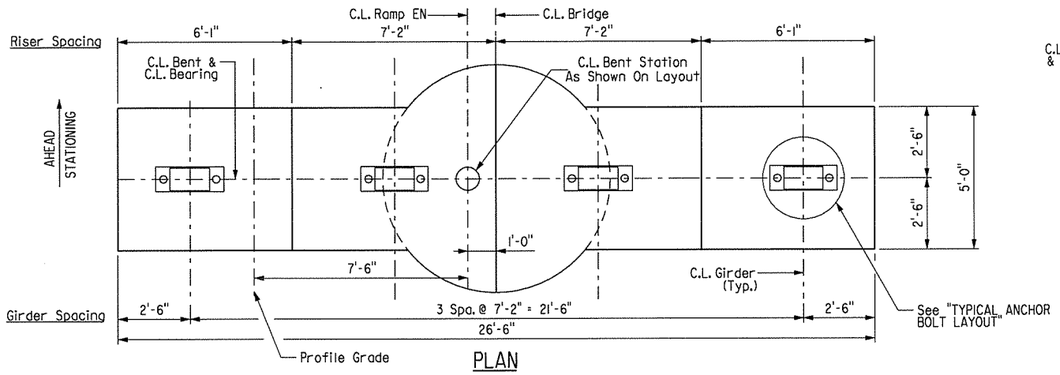
SHEET 3 OF 3
DETAILS OF END BENTS
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: BEG DATE: 7-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: BEG DATE: 7-12
FILENAME: bca0907x9_b61.dgn
SCALE: AS SHOWN

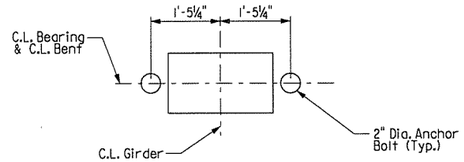
BRIDGE NO. 07312 DRAWING NO. 55345

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 493 | 897 |
| | | | | (1) 07312 | | Bent 2 | | 55346 |



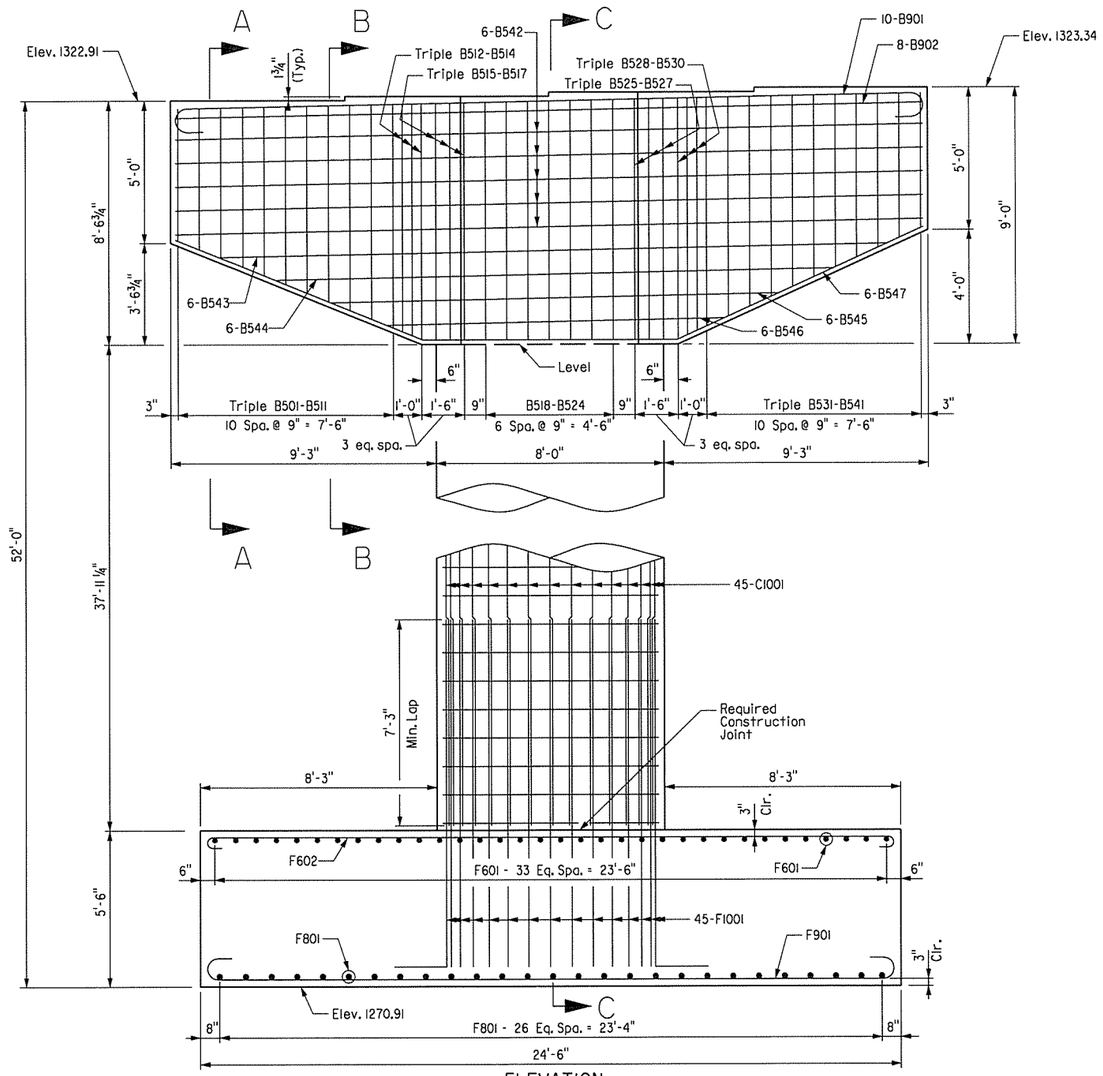

PLAN

3/8" = 1'-0"



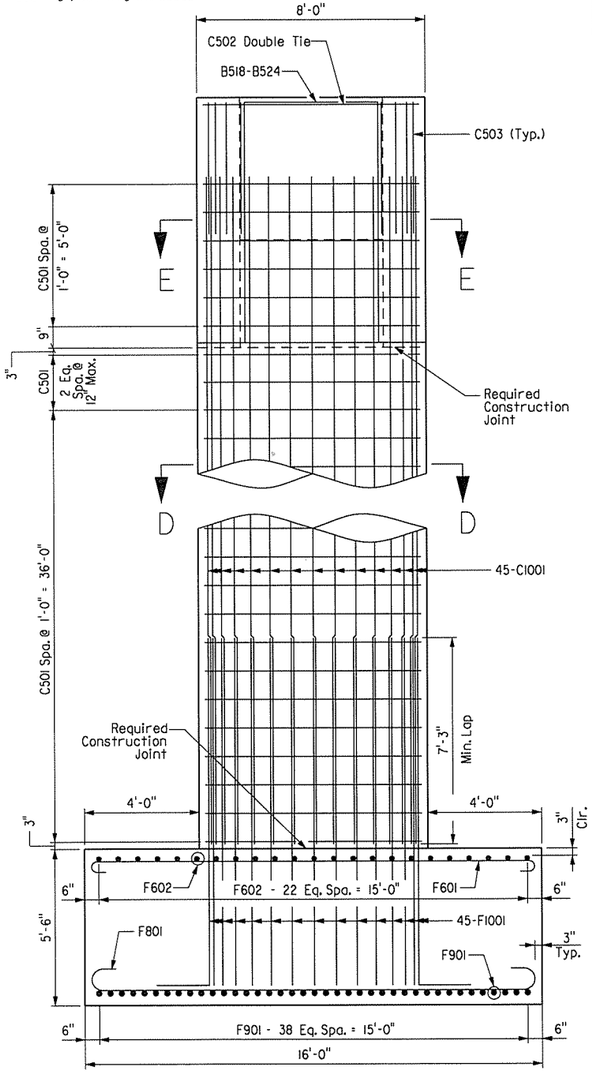

TYPICAL ANCHOR BOLT LAYOUT

Note: For details of Elastomeric Bearings, See Dwg. No. 55368




ELEVATION

3/8" = 1'-0"
(Looking Ahead)



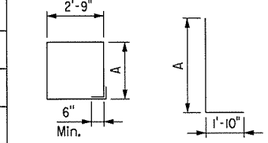

SECTION C-C

3/8" = 1'-0"

## BAR LIST

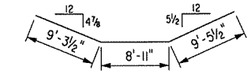
| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B511 | 3 ea. | 15'-3" to 21'-8" | 4'-7½" to 7'-10" | 2½" |
| B512 to B514 | 3 ea. | 22'-0" to 22'-7" | 8'-0" to 8'-3½" | 2½" |
| B515 to B517 | 3 ea. | 22'-7" to 22'-8" | 8'-3½" to 8'-4" | 2½" |
| B518 to B524 | 1 ea. | 21'-2" to 21'-4" | 8'-4" to 8'-5" | 2½" |
| B525 to B527 | 3 ea. | 22'-10" to 22'-11" | 8'-5" to 8'-5½" | 2½" |
| B528 to B530 | 3 ea. | 22'-4" to 22'-11" | 8'-2" to 8'-5½" | 2½" |
| B531 to B541 | 3 ea. | 15'-6" to 22'-0" | 4'-9" to 8'-0" | 2½" |
| B542 | 30 | 26'-2" | | Str. |
| B543 | 6 | 23'-5" | | Str. |
| B544 | 6 | 19'-6" | | Str. |
| B545 | 6 | 15'-8" | | Str. |
| B546 | 6 | 11'-10" | | Str. |
| | 6 | 27'-8" | | Str. |
| | | | | |
| B901 | 10 | 28'-8" | 26'-2" | 9" |
| B902 | 8 | 26'-2" | | Str. |
| | | | | |
| C501 | 45 | 25'-4" | | 3¾" |
| C502 | 2 | 16'-6" | | Str. |
| C503 | 16 | 4'-8" | | Str. |
| C1001 | 45 | 43'-10" | | Str. |
| | | | | |
| F601 | 34 | 17'-4" | 15'-6" | 4½" |
| F602 | 23 | 26'-6" | 24'-0" | 4½" |
| F801 | 27 | 16'-10" | 15'-6" | 6" |
| F901 | 39 | 25'-4" | 24'-0" | 9" |
| | | | | |
| F1001 | 45 | 15'-11" | 14'-4" | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)

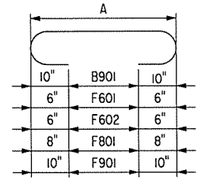



B501-B511, B512-B517, B525-B530, B531-B541

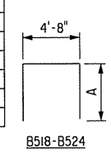
F1001



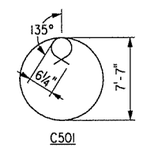

B547



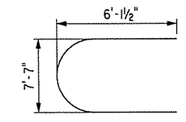

B1001, F601, F602 F801, & F901




B518-B524




C501




C502

Note: For additional details, see Dwg. No. 55347.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14

BRIDGE ENGINEER

# DETAILS OF INTERMEDIATE BENT NO. 2
# I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

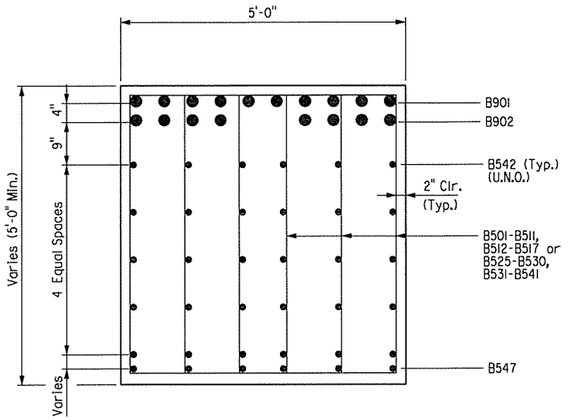
DRAWN BY: JEG DATE: 7-12 FILENAME: bca0907x9_b21.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

DESIGNED BY: BEG DATE: 6-12

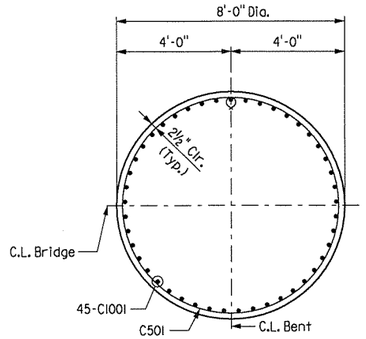
BRIDGE NO. 07312 DRAWING NO. 55346

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 494 | 897 |
| | | | | (1) 07312 | | Int. Bent Details | | 55347 |

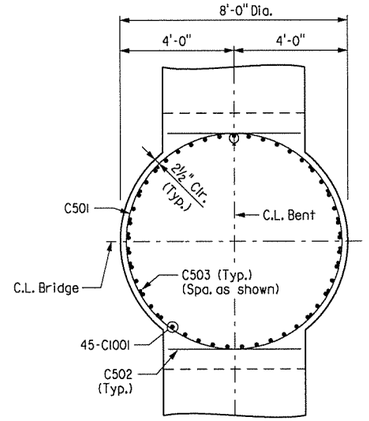



SECTION A-A

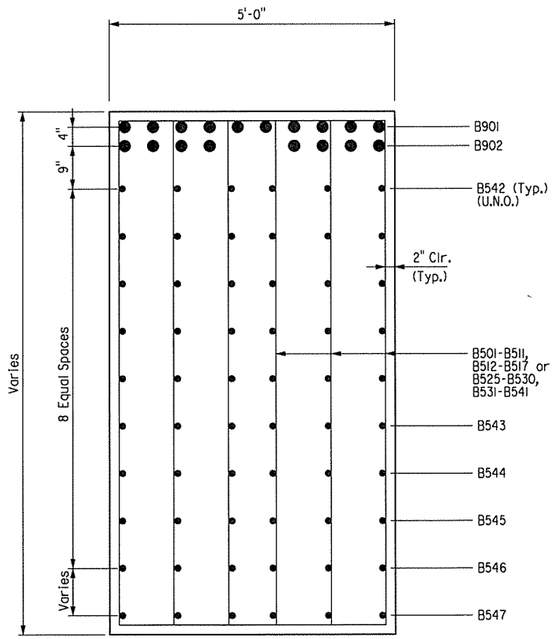
3/4" = 1'-0"




BENTS 2 & 5

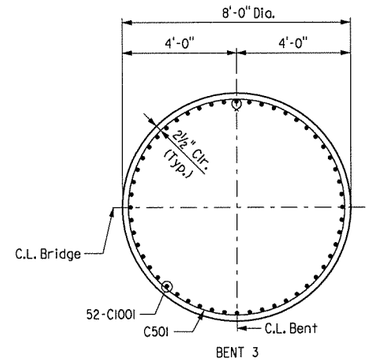



BENTS 2 & 5



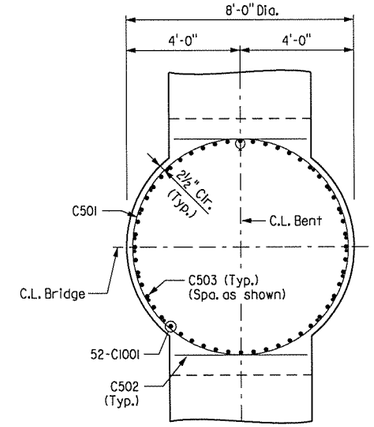

SECTION B-B

3/4" = 1'-0"




SECTION D-D

3/8" = 1'-0"




SECTION E-E

3/8" = 1'-0"

# DETAILS OF INTERMEDIATE BENTS NO. 2-3 & 5 I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS LARRY W. MILLER REGISTERED PROFESSIONAL ENGINEER No. 11339 — 9-3-14

BRIDGE ENGINEER

DRAWN BY: JEG DATE: 7-12

CHECKED BY: LWM DATE: 08-13-12

DESIGNED BY: BEG DATE: 6-12

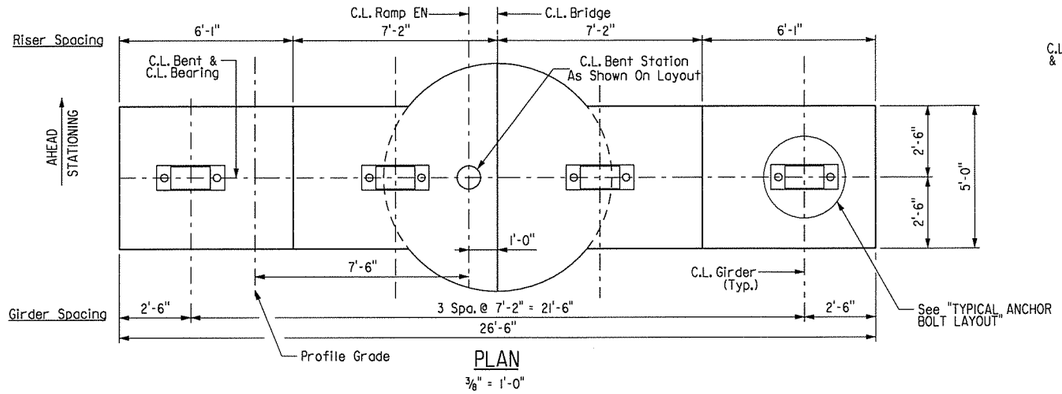
FILENAME: bca0907x9_b22.dgn

SCALE: AS SHOWN

BRIDGE NO. 07312 DRAWING NO. 55347

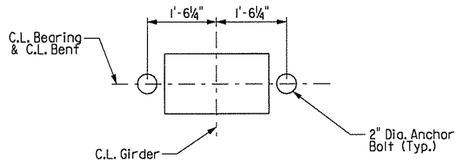
B001966M17_B22.dgn 9/3/2014 3:24:17 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 495 | 897 |
| | | | | 1 | 07312 | Bent 3 | | 55348 |



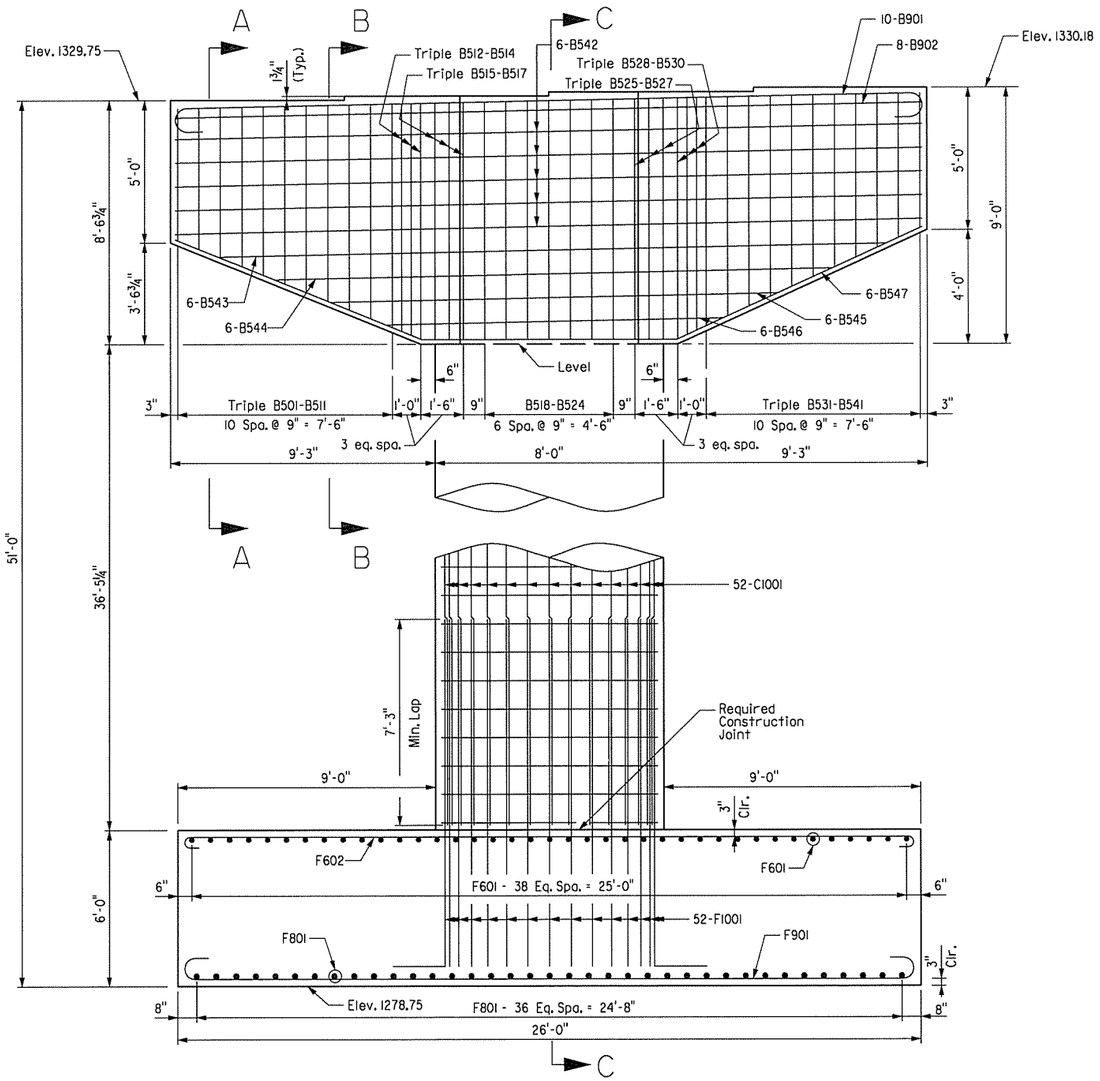

PLAN

3/8" = 1'-0"



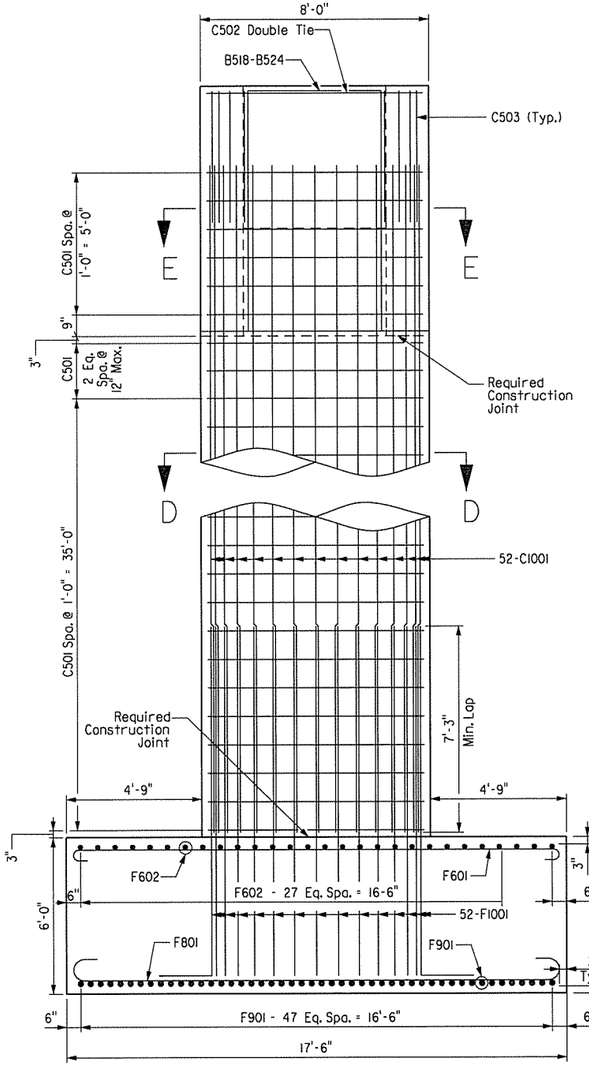

TYPICAL ANCHOR BOLT LAYOUT

Note: For details of Elastomeric Bearings, See Dwg. No. 55368




ELEVATION

3/8" = 1'-0"
(Looking Ahead)



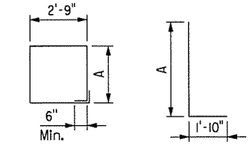

SECTION C-C

3/8" = 1'-0"

## BAR LIST

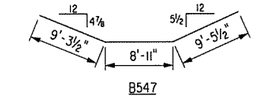
| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B511 | 3 ea. | 15'-3" to 21'-8" | 4'-7½" to 7'-10" | 2½" |
| B512 to B514 | 3 ea. | 22'-0" to 22'-7" | 8'-0" to 8'-3½" | 2½" |
| B515 to B517 | 3 ea. | 22'-7" to 22'-8" | 8'-3½" to 8'-4" | 2½" |
| B518 to B524 | 1 ea. | 21'-2" to 21'-4" | 8'-4" to 8'-5" | 2½" |
| B525 to B527 | 3 ea. | 22'-10" to 22'-11" | 8'-5" to 8'-5½" | 2½" |
| B528 to B530 | 3 ea. | 22'-4" to 22'-11" | 8'-2" to 8'-5½" | 2½" |
| B531 to B541 | 3 ea. | 15'-6" to 22'-0" | 4'-9" to 8'-0" | 2½" |
| B542 | 30 | 26'-2" | | Str. |
| B543 | 6 | 23'-5" | | Str. |
| B544 | 6 | 19'-6" | | Str. |
| B545 | 6 | 15'-8" | | Str. |
| B546 | 6 | 11'-10" | | Str. |
| | 6 | 27'-8" | | Str. |
| | | | | |
| B901 | 10 | 28'-8" | 26'-2" | 9" |
| B902 | 8 | 26'-2" | | Str. |
| | | | | |
| C501 | 44 | 25'-4" | | 3¾" |
| C502 | 2 | 16'-6" | | Str. |
| C503 | 16 | 4'-8" | | Str. |
| C1001 | 52 | 42'-4" | | Str. |
| | | | | |
| F601 | 39 | 18'-4" | 17'-0" | 4½" |
| F602 | 28 | 26'-10" | 25'-6" | 4½" |
| F801 | 37 | 18'-10" | 17'-0" | 6" |
| F901 | 48 | 28'-0" | 25'-6" | 9" |
| | | | | |
| F1001 | 52 | 16'-5" | 14'-10" | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)

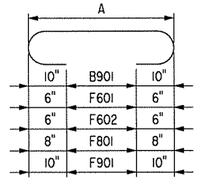



B501-B511, B512-B517, B525-B530, B531-B541

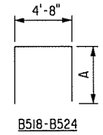
F1001



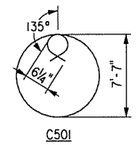

B547



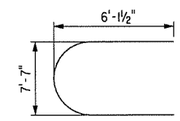

B1001, F601, F602 F801, & F901




B518-B524




C501




C502

Note: For additional details, see Dwg. No. 55347.

STATE OF ARKANSAS
LARRY W. MILLER
REGISTERED PROFESSIONAL ENGINEER
No. 11339
9-3-14

BRIDGE ENGINEER

# DETAILS OF INTERMEDIATE BENT NO. 3 I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

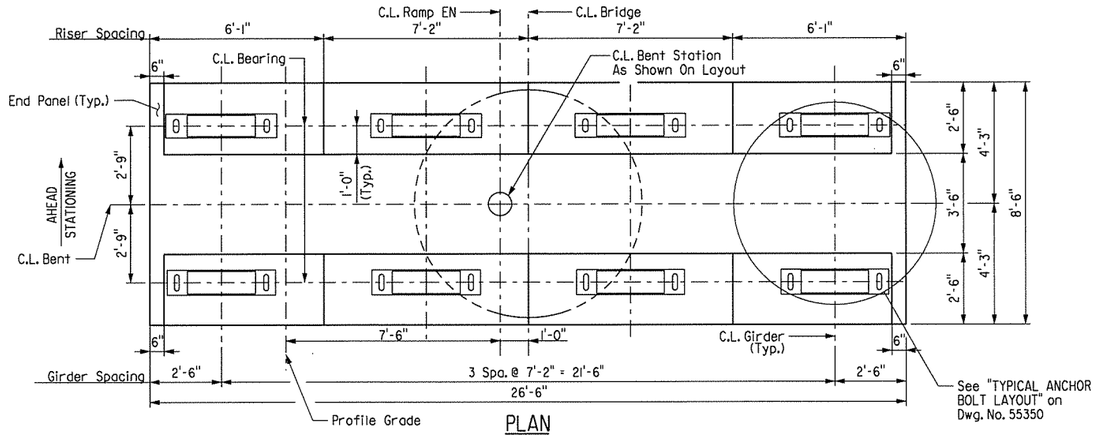
LITTLE ROCK, ARK.

DRAWN BY: JEG DATE: 7-12
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: BEG DATE: 6-12

FILENAME: bca0907x9_b31.dgn
SCALE: AS SHOWN

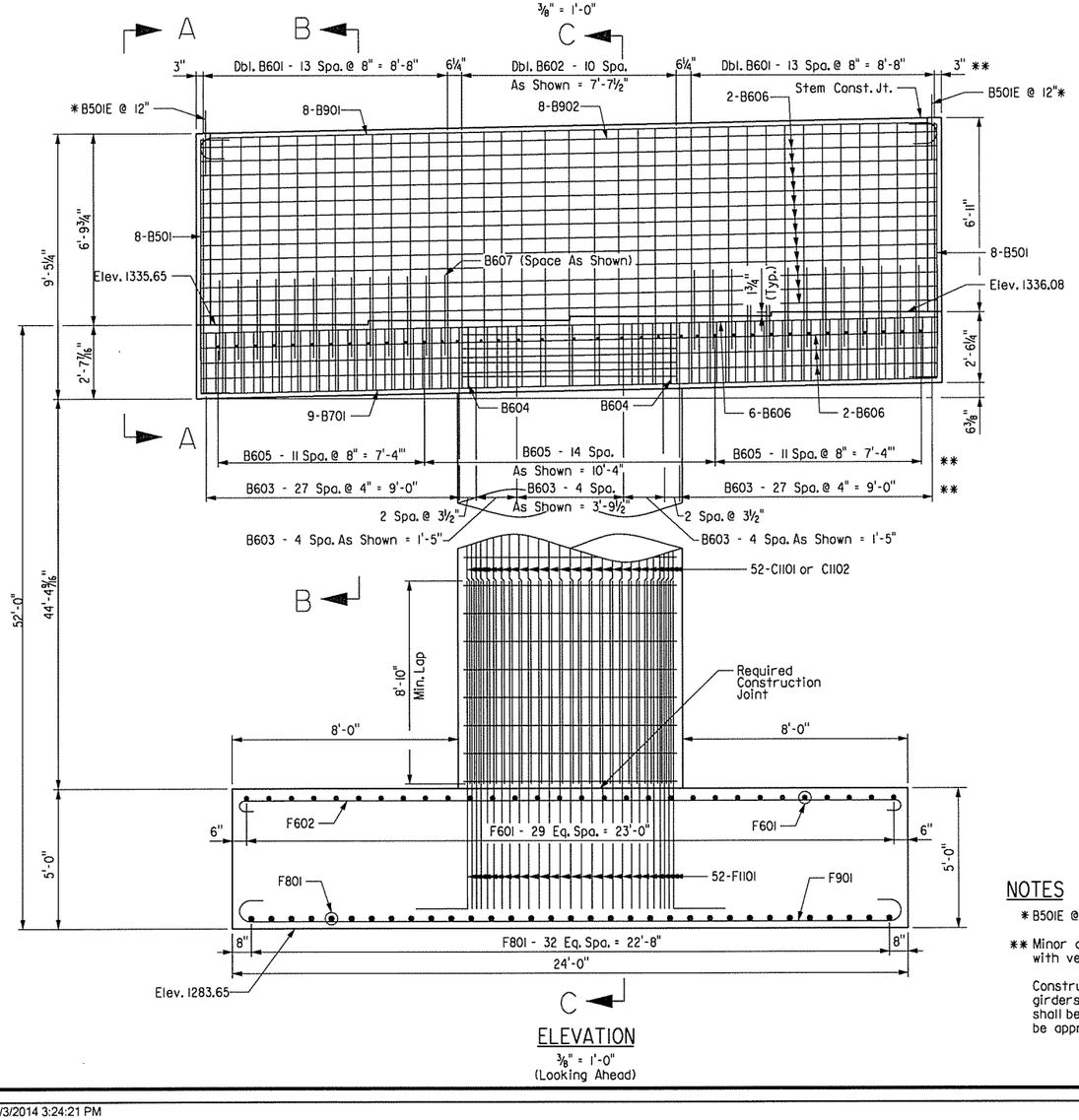
BRIDGE NO. 07312 DRAWING NO. 55348

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 496 | 897 |
| | | | | 07312 | | | | 55349 |



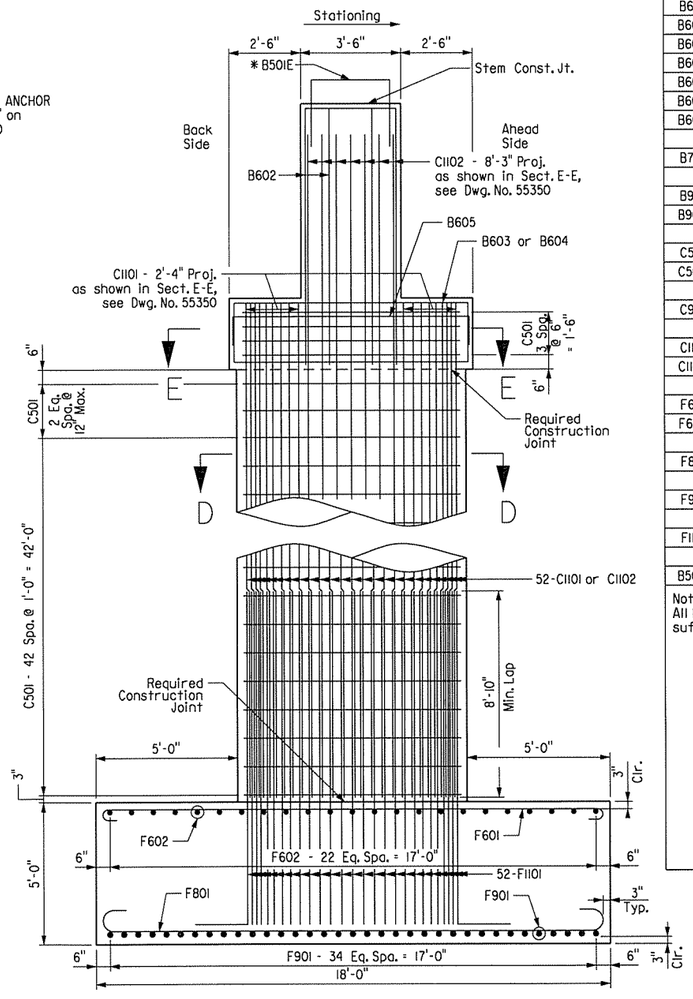

## PLAN

3/8" = 1'-0"




## ELEVATION

3/8" = 1'-0"
(Looking Ahead)




## SECTION C-C

3/8" = 1'-0"

## NOTES

* B501E @ 12", See "SECTION @ TOP OF STEM" on Dwg. No. 55350 for details.

** Minor adjustments to spacing of B601-B605 will be needed to avoid conflicts with vertical column bars.

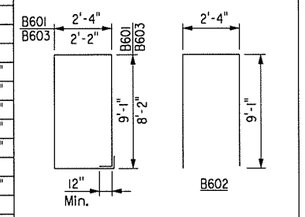
Construction sequence shall minimize unbalanced loading on the bent. All girders shall be erected before any deck concrete is placed. All deck concrete shall be placed before parapets are constructed. Changes to this sequence must be approved by the Engineer.

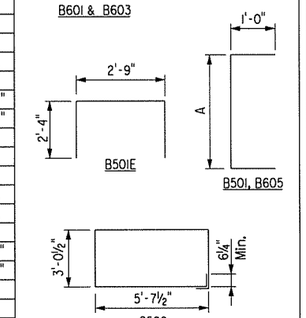
## BAR LIST

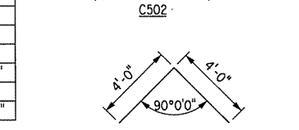
| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 | 16 | 10'-11" | 9'-1" | 2 1/2" |
| B502 | 10 | 7'-4" | | Str. |
| B503 | 12 | 8'-2" | | Str. |
| | | | | |
| B601 | 56 | 24'-0" | | 4 1/2" |
| B602 | 22 | 20'-2" | | 4 1/2" |
| B603 | 69 | 21'-10" | | 4 1/2" |
| B604 | 4 | 11'-6" | | 4 1/2" |
| B605 | 37 | 9'-10" | 8'-2" | 4 1/2" |
| B606 | 36 | 26'-2" | | Str. |
| B607 | 28 | 8'-0" | | 4 1/2" |
| | | | | |
| B701 | 9 | 26'-2" | | Str. |
| | | | | |
| B901 | 8 | 28'-8" | 26'-2" | 9" |
| B902 | 8 | 26'-2" | | Str. |
| | | | | |
| C501 | 49 | 25'-4" | | 3 3/4" |
| C502 | 52 | 18'-0" | | 3 3/4" |
| | | | | |
| C901 | 38 | 50'-7" | | Str. |
| | | | | |
| C1101 | 38 | 46'-10" | | Str. |
| C1102 | 14 | 52'-8" | | Str. |
| | | | | |
| F601 | 30 | 18'-10" | 17'-6" | 4 1/2" |
| F602 | 23 | 24'-10" | 23'-6" | 4 1/2" |
| | | | | |
| F801 | 33 | 19'-4" | 17'-6" | 6" |
| | | | | |
| F901 | 35 | 26'-0" | 23'-6" | 9" |
| | | | | |
| F1101 | 52 | 17'-2" | | 11 1/4" |
| | | | | |
| B501E | 27 | 7'-3" | | 2 1/2" |

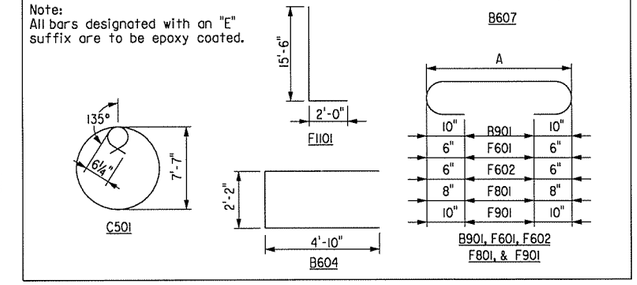
Note:
All bars designated with an "E" suffix are to be epoxy coated.

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)




SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT NO. 4
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

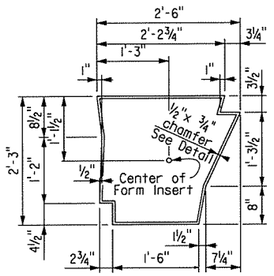
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

DRAWN BY: BEG DATE: 3-14
CHECKED BY: LWM DATE: 08-13-12
DESIGNED BY: BEG DATE: 3-14
FILENAME: bca0907x9_b41.dgn
SCALE: AS SHOWN

BRIDGE NO. 07312
DRAWING NO. 55349

B001966M17_B41.dgn 9/3/2014 3:24:21 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 497 | 897 |
| | | | | (1) 07312 | | Int. Bent 4 Details | | 55350 |




## FORM INSERT DETAILS

Scale: ¾" = 1'-0"

FORM INSERT NOTES

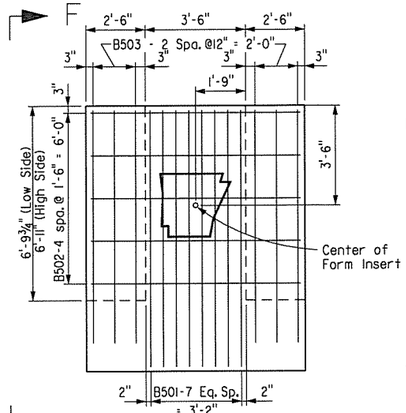
Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

Wash and clean multi-use form inserts before each use.

All work and materials for form inserts shall be included in the unit price bid for Class S Concrete-Bridge.

Damaged or worn form inserts shall be replaced at the contractor's expense.

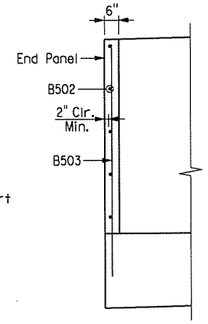
The form insert shall be approved by the Engineer prior to use.




## VIEW A-A

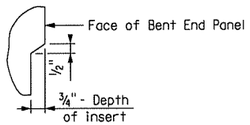
(Showing panel at ends of cap)

⅜" = 1'-0"



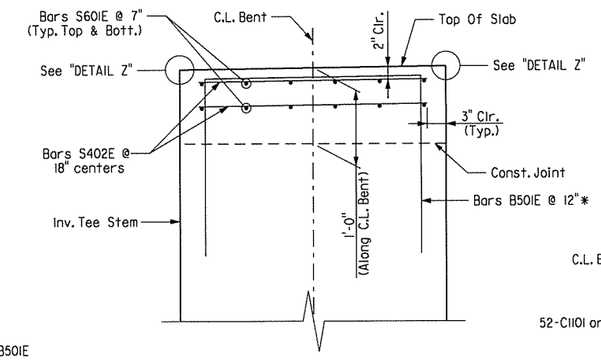

## VIEW F-F

⅜" = 1'-0"



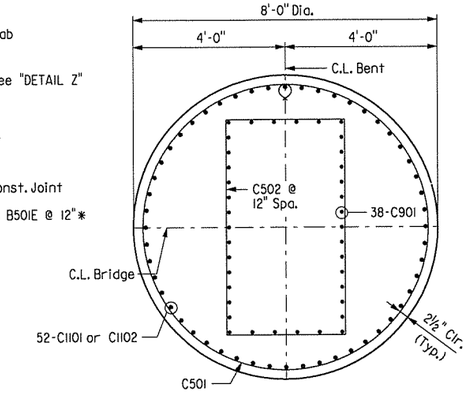

## CHAMFER DETAILS

Scale: 3" = 1'-0"



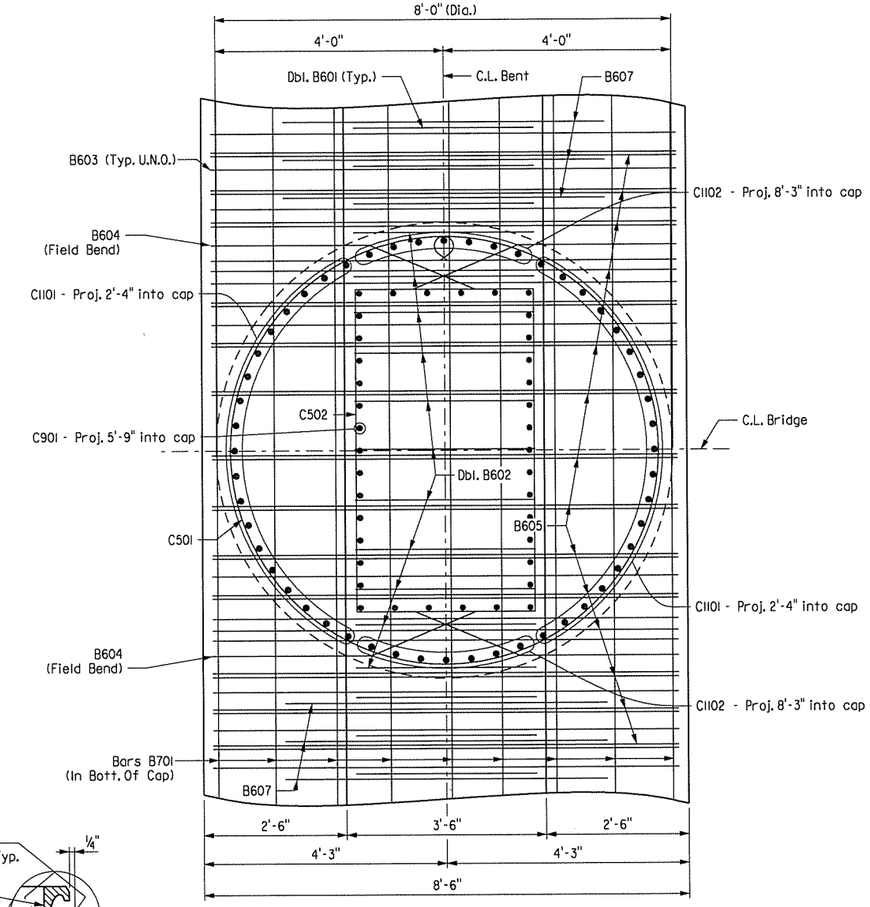

## SECTION @ TOP OF STEM

1½" = 1'-0"




## SECTION D-D

½" = 1'-0"




## SECTION E-E

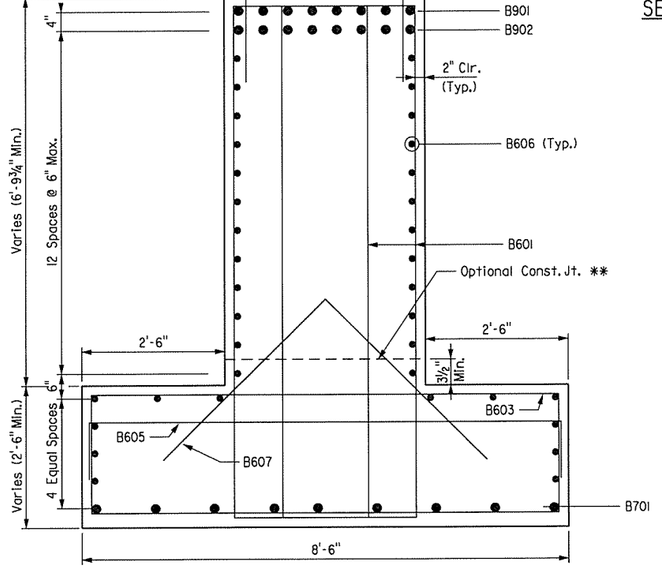
¾" = 1'-0"

NOTES

For slab section @ top of Bent 4 stem Bar List, see Dwg. No. 55353.

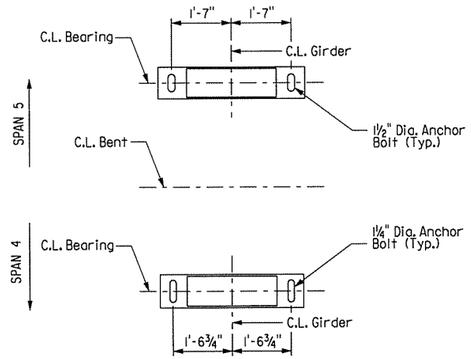
* Bars B501E included in Bent 4 Bar List, see Dwg. No. 55349.

** Girders shall not be set until cap stem is complete.



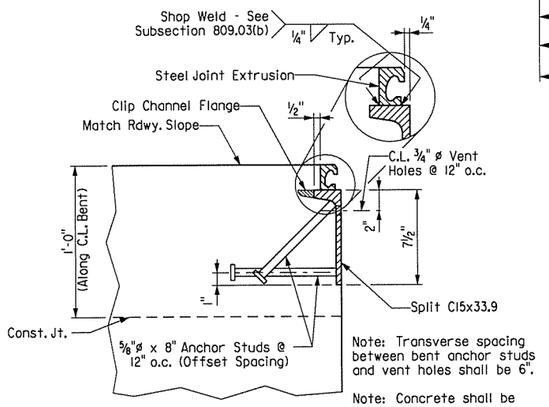

## SECTION B-B

¾" = 1'-0"




## TYPICAL ANCHOR BOLT LAYOUT

Note: For details of Elastomeric Bearings, See Dwg. No. 55368




Note: For additional joint details, see Dwg. No. 55367.

Note: Transverse spacing between bent anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.

## DETAIL Z

Scale: 2" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11539 LARRY W. MILLER

Larry W. Miller 9-3-14

BRIDGE ENGINEER

# SHEET 2 OF 2
# DETAILS OF INTERMEDIATE BENT NO. 4
# I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: BEG DATE: 3-14 FILENAME: bca0907x9_b42.dgn

CHECKED BY: LWM DATE: 08-13-12 SCALE: AS SHOWN

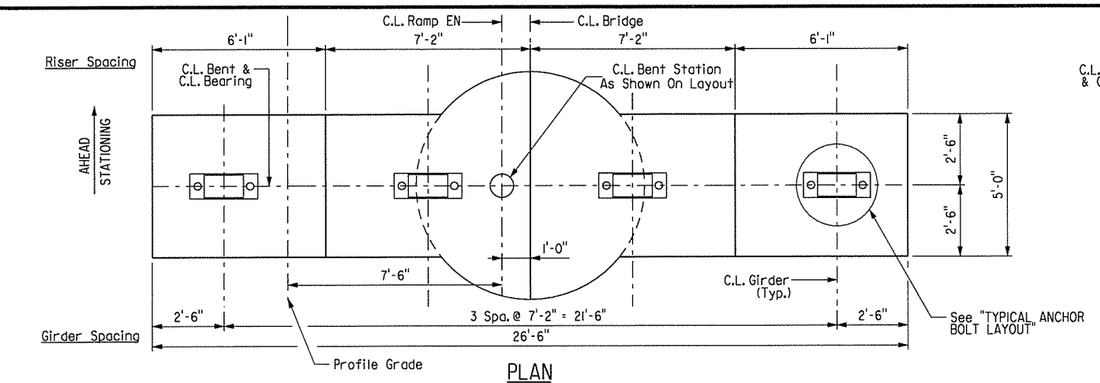
DESIGNED BY: BEG DATE: 3-14

BRIDGE NO. 07312 DRAWING NO. 55350

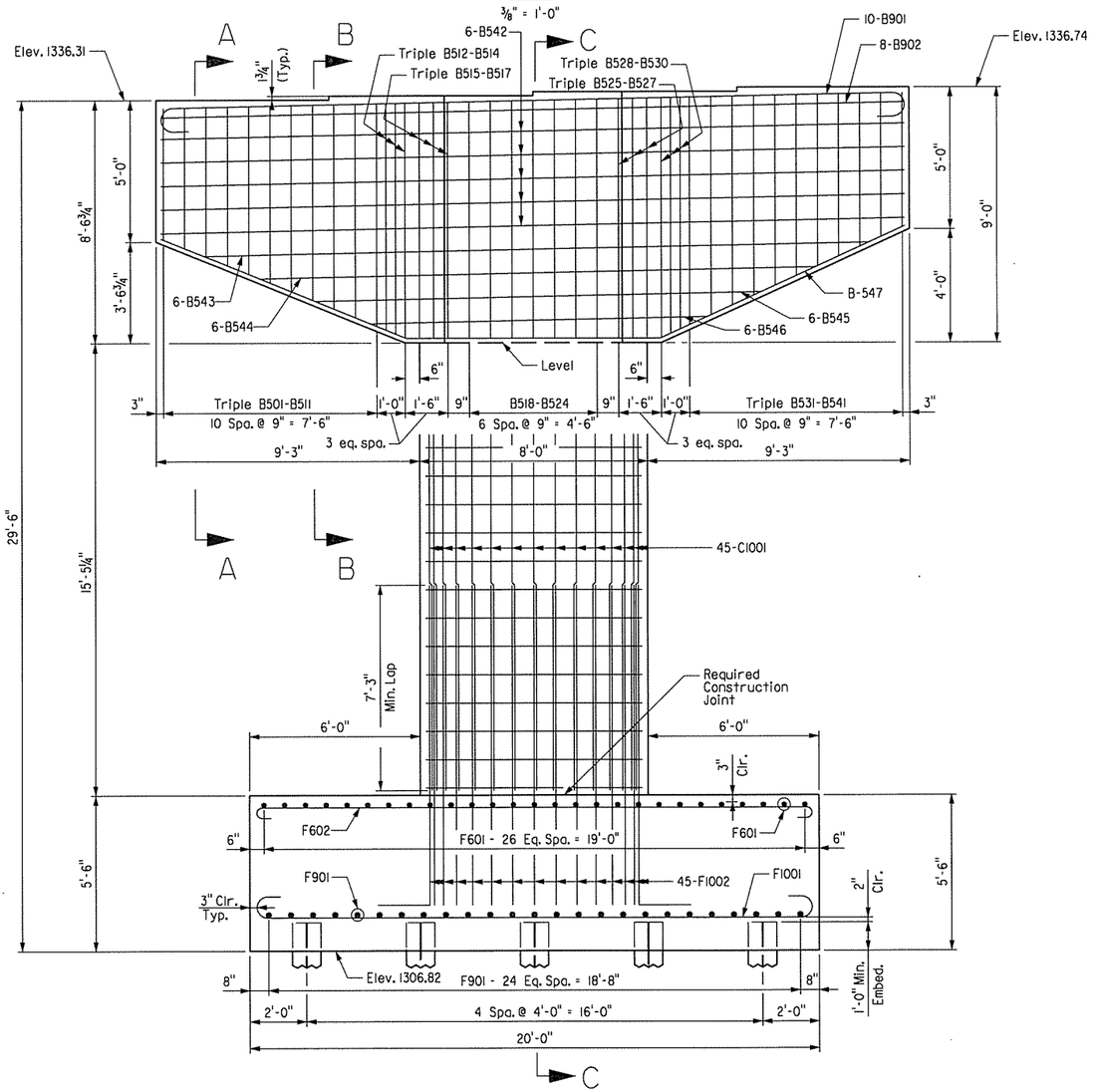
B001966M17_B42.dgn 9/3/2014 3:24:22 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 498 | 897 |
| ① 07312 | | Bent 5 | | 55351 |

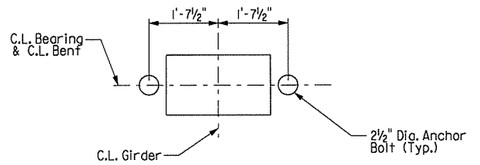



PLAN



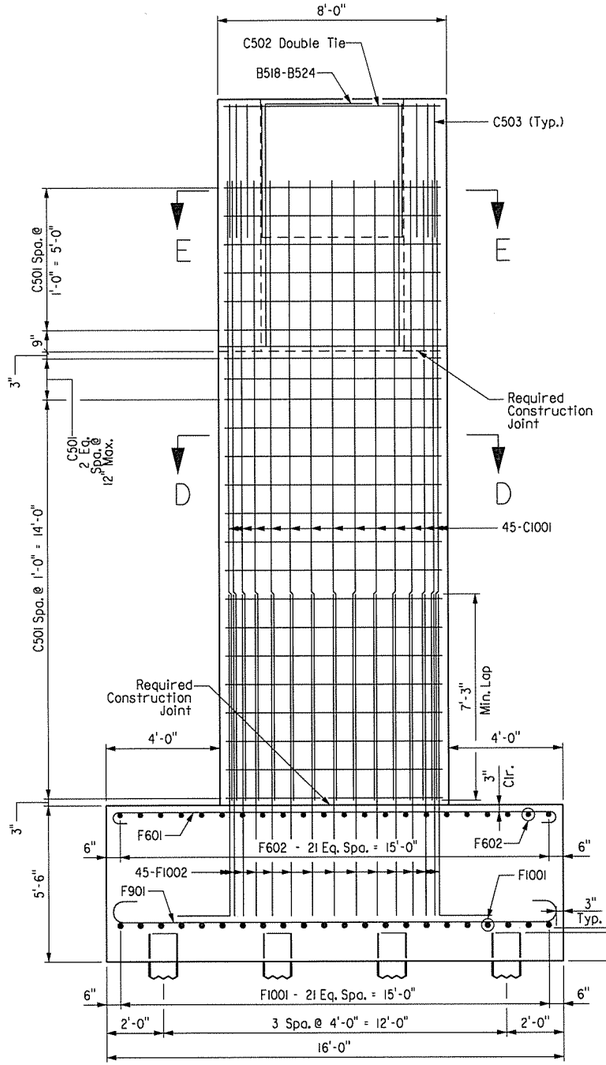

ELEVATION

3/8" = 1'-0"
(Looking Ahead)




TYPICAL ANCHOR BOLT LAYOUT

Note: For details of Elastomeric Bearings, See Dwg. No. 55368



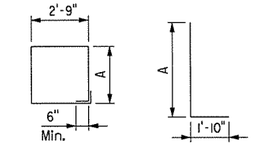

SECTION C-C

3/8" = 1'-0"

## BAR LIST

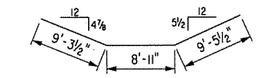
| MARK | NO. REQ'D | LENGTH | "A" | P.D. |
|---|---|---|---|---|
| B501 to B511 | 3 ea. | 15'-3" to 21'-8" | 4'-7 1/2" to 7'-10" | 2 1/2" |
| B512 to B514 | 3 ea. | 22'-0" to 22'-7" | 8'-0" to 8'-3 1/2" | 2 1/2" |
| B515 to B517 | 3 ea. | 22'-7" to 22'-8" | 8'-3 1/2" to 8'-4" | 2 1/2" |
| B518 to B524 | 1 ea. | 21'-2" to 21'-4" | 8'-4" to 8'-5" | 2 1/2" |
| B525 to B527 | 3 ea. | 22'-10" to 22'-11" | 8'-5" to 8'-5 1/2" | 2 1/2" |
| B528 to B530 | 3 ea. | 22'-4" to 22'-11" | 8'-2" to 8'-5 1/2" | 2 1/2" |
| B531 to B541 | 3 ea. | 15'-6" to 22'-0" | 4'-9" to 8'-0" | 2 1/2" |
| B542 | 30 | 26'-2" | | Str. |
| B543 | 6 | 23'-5" | | Str. |
| B544 | 6 | 19'-6" | | Str. |
| B545 | 6 | 15'-8" | | Str. |
| B546 | 6 | 11'-10" | | Str. |
| B547 | 6 | 27'-8" | | Str. |
| | | | | |
| B901 | 10 | 28'-8" | 26'-2" | 9" |
| B902 | 8 | 26'-2" | | Str. |
| | | | | |
| C501 | 23 | 25'-4" | | 3 3/4" |
| C502 | 2 | 16'-6" | | Str. |
| C503 | 16 | 4'-8" | | Str. |
| C1001 | 45 | 21'-10" | | Str. |
| | | | | |
| F601 | 30 | 15'-10" | 14'-6" | 4 1/2" |
| F602 | 20 | 23'-10" | 22'-6" | 4 1/2" |
| F801 | 26 | 16'-4" | 14'-6" | 6" |
| F901 | 35 | 25'-0" | 22'-6" | 9" |
| | | | | |
| F1001 | 45 | 15'-11" | 14'-4" | 10" |

BENDING DIAGRAMS (DIMENSIONS ARE OUT TO OUT OF BARS)

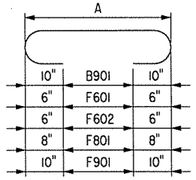



B501-B511, B512-B517, B525-B530, B531-B541

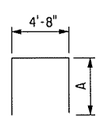
F1001



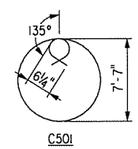

B547



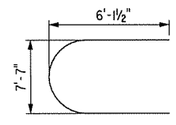

B1001, F601, F602 F801, & F901




B518-B524




C501




C502

Note: For additional details, see Dwg. No. 55347.

# DETAILS OF INTERMEDIATE BENT NO. 5 I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS — Larry W. Miller — REGISTERED PROFESSIONAL ENGINEER — No. 11339 — LARRY W. MILLER — 9-3-14

BRIDGE ENGINEER

DRAWN BY: JEG DATE: 7-12

CHECKED BY: LWM DATE: 08-13-12

DESIGNED BY: BEG DATE: 6-12

FILENAME: bca0907x9_b51.dgn

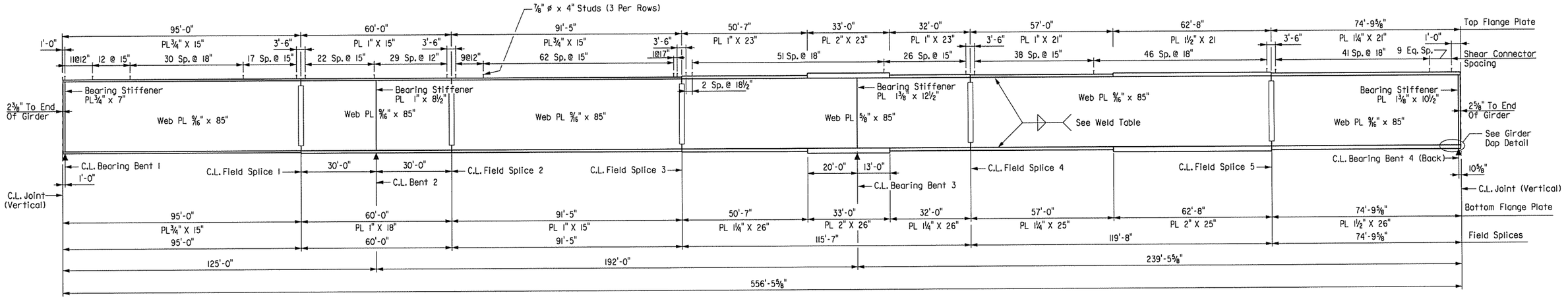
SCALE: AS SHOWN

BRIDGE NO. 07312

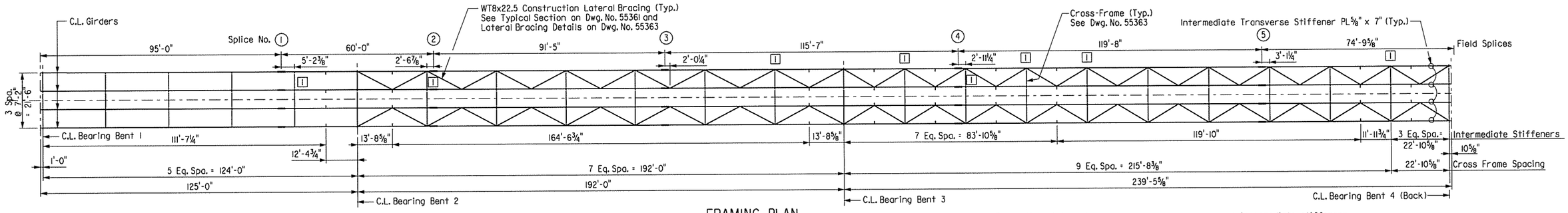
DRAWING NO. 55351

B001966M17_B51.dgn 9/3/2014 3:24:24 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 499 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55352 |




## PLATE GIRDER ELEVATION
Not To Scale




## FRAMING PLAN
Not To Scale

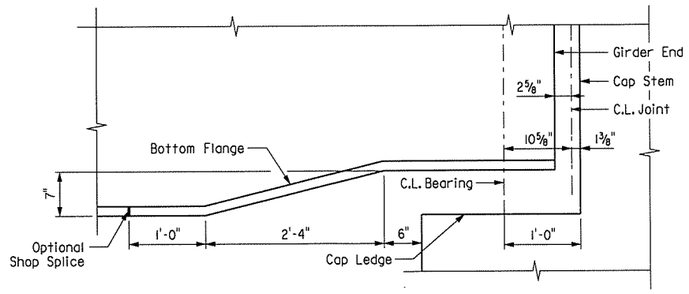
[1] Connection plates at this cross-frame also serve as intermediate stiffeners. (Typical for all girders.)

NOTES

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

All plates are AASHTO M270 Grade 50.

For additional information, see Drawing Nos. 55354 & 55361-55367.




## GIRDER DAP DETAIL
Not To Scale

Note: Cold bending of bottom flange is permitted.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY B. MILLER
9-3-14
BRIDGE ENGINEER

# SHEET 1 OF 5
# DETAILS OF 556'-5 5/8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 10-10 FILENAME: bcq0907x9_sll.dgn

CHECKED BY: BEG DATE: 08-15-12 SCALE: None

DESIGNED BY: LM DATE: 10-10

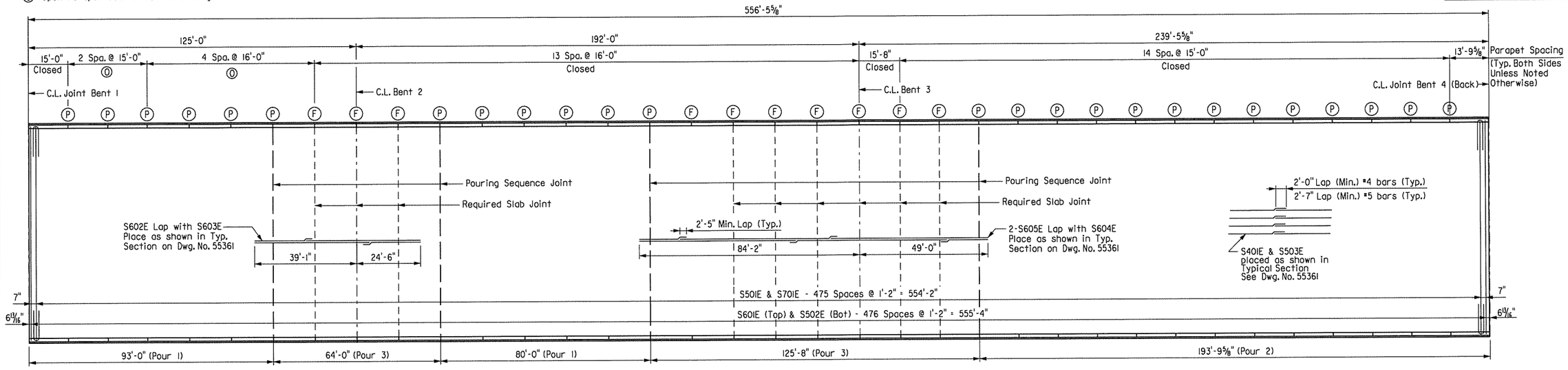
BRIDGE NO. 07312 DRAWING NO. 55352

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 500 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55353 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

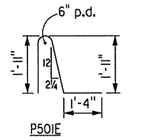
Ⓞ Open Parapet Section (Low Side Only)



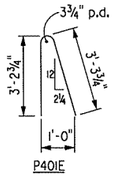

## BAR LIST - PER UNIT

Bending Diagrams
(Dimensions are out to out of bars.)

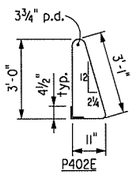
| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| S401E | 285 | 39'-0" | Str. |
| S402E | 38 | 3'-3" | Str. |
| | | | |
| S501E | 476 | 28'-2" | 3" |
| S502E | 477 | 27'-8" | Str. |
| S503E | 290 | 58'-0" | Str. |
| | | | |
| S601E | 489 | 27'-8" | Str. |
| S602E | 36 | 44'-0" | Str. |
| S603E | 36 | 22'-0" | Str. |
| S604E | 36 | 18'-0" | Str. |
| S605E | 72 | 60'-0" | Str. |
| | | | |
| S701E | 952 | 17'-2" | 6⅛" |
| | | | |
| P401E | 2190 | 6'-8" | 3¾" |
| P402E | 48 | 7'-9" | 2" |
| P501E | 2190 | 5'-4" | 3¾" |
| P502E | 24 | 56'-2" | Str. |
| P503E | 172 | 14'-8" | Str. |
| P504E | 242 | 15'-8" | Str. |
| P505E | 24 | 57'-8" | Str. |
| P506E | 22 | 15'-4" | Str. |
| P507E | 48 | 54'-8" | Str. |
| P508E | 10 | 14'-6" | Str. |
| P509E | 10 | 13'-3" | Str. |
| P510E | 22 | 3'-2" | Str. |
| | | | |
| X401E | 40 | 5'-0" | Str. |
| X402E | 40 | 3'-4" | Str. |
| X601E | 40 | 7'-0" | Str. |



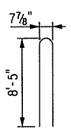
P501E



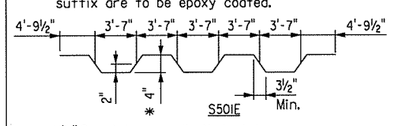
P401E



P402E



S701E



S501E

Note: All bars designated with an "E" suffix are to be epoxy coated.

*½" Overtolerance, No Undertolerance

## REINFORCING PLAN & POURING SEQUENCE

Note: Bar List includes Bars S402E & S502E shown in SECTION @ TOP OF STEM on Dwg No. 55350 and Bars P401E, P501E & P510E shown in DETAILS OF PARAPET RAIL @ BENT NO. 4 on Dwg. No. 55367.

Note: Pours must be made in order as numbered. Pours with the same number may be placed simultaneously or separately. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

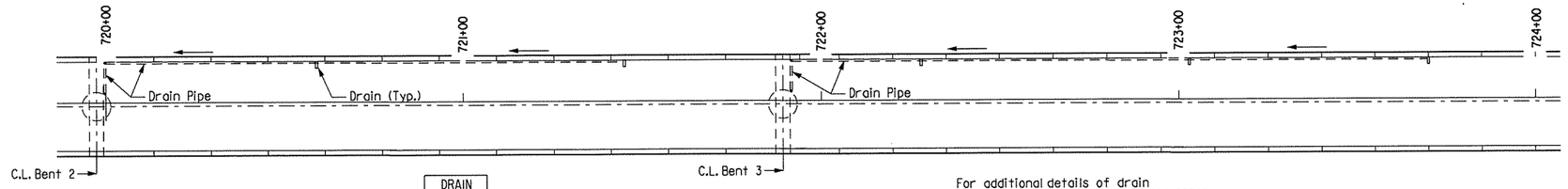
The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Required slab joints and pouring sequence joints shall align with parapet open joint at the gutterline.

For slab joint detail, see Dwg. No. 55361.

For placement of bar S701E, see Detail A on Dwg. No. 55361.

For portion of slab and parapet at Bent 4 details, see Dwg. No. 55350 & 55367




| DRAIN LOCATIONS |
|---|
| 720+59 |
| 721+45 |
| 722+28 |
| 723+03 |
| 723+70 |

For additional details of drain system, see Dwg. Nos. 55361 & 55364-55365.

## DRAIN SYSTEM PLAN

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
Larry W. Miller 9-3-14
BRIDGE ENGINEER

# SHEET 2 OF 5
# DETAILS OF 556'-5⅝" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 10-10 FILENAME: bca0907x9_sl2.dgn

CHECKED BY: BEG DATE: 08-15-12 SCALE: None

DESIGNED BY: LM DATE: 10-10

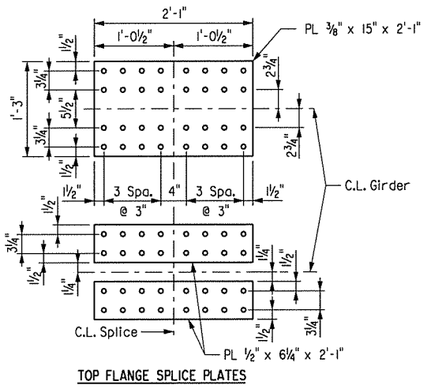
BRIDGE NO. 07312 DRAWING NO. 55353

B001966M17_S12.dgn 9/3/2014 3:24:27 PM

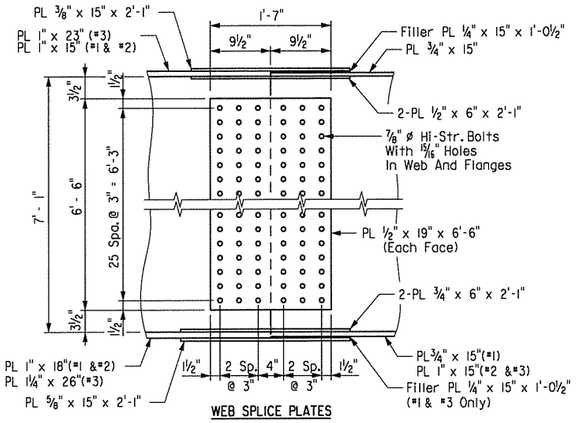
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 501 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55354 |

LOAD DISTRIBUTION TO GIRDERS:

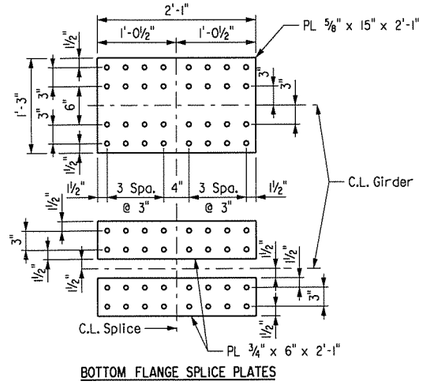
| | Girders 1 & 4 | Girders 2 - 3 |
|---|---|---|
| Dead Loads: To Girder | 790 PLF + 1.12 (wt./ft. of Girder) | 826 PLF + 1.12 (wt./ft. of Girder) |
| Dead Loads: To Composite Girder | 422 PLF, Includes 160 PLF Future Wearing Surface | |




TOP FLANGE SPLICE PLATES

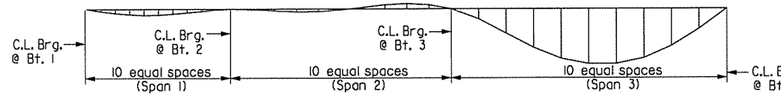



WEB SPLICE PLATES



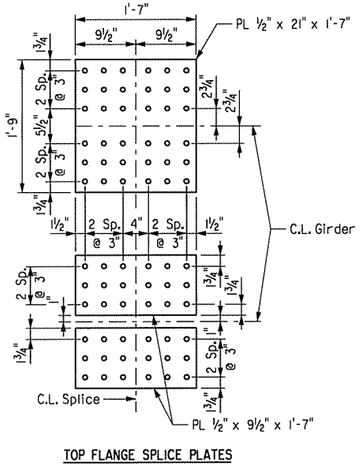

BOTTOM FLANGE SPLICE PLATES

## FIELD SPLICE TYPE A (SPLICES 1, 2, & 3)

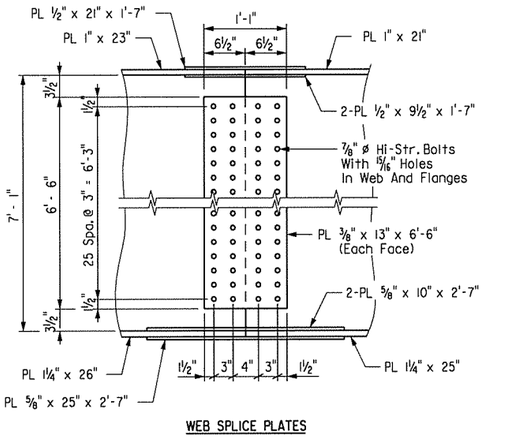



## DEAD LOAD DEFLECTION DIAGRAM

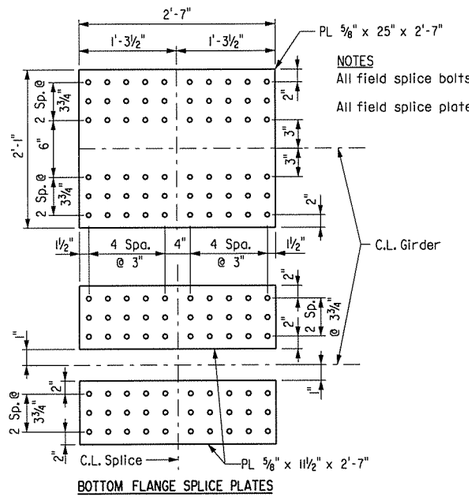
No Scale




TOP FLANGE SPLICE PLATES




WEB SPLICE PLATES




BOTTOM FLANGE SPLICE PLATES

NOTES

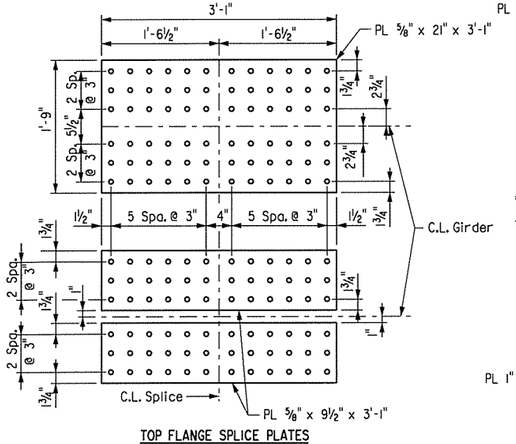
All field splice bolts shall be ⅞" diamter H.S. Bolts.

All field splice plates shall be AASHTO M270, Gr. 50 steel.

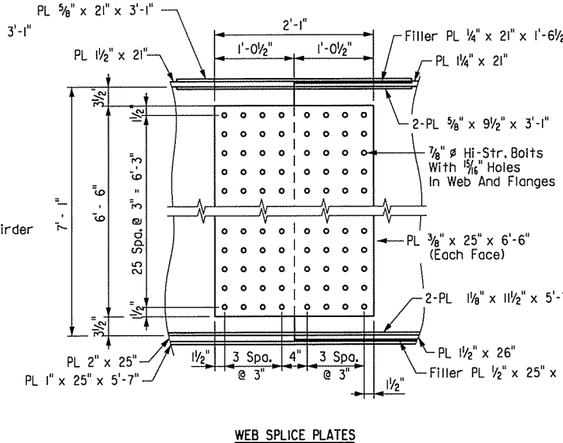
## TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Camber for Dead Load Deflection plus vertical curve +/- ¼" tolerance. Deflections shown are off a chord from C.L. Brg. to C.L. Brg. Vertical curve corrections not included. Negative sign (-) indicates upward deflection.

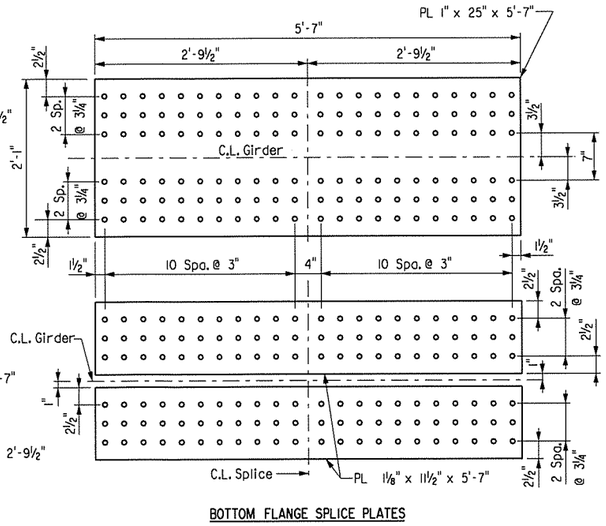
| | POINT OF DEFLECTION | INTERIOR GIRDER | | | EXTERIOR GIRDER | | |
|---|---|---|---|---|---|---|---|
| | | Structural Steel | Structural Steel +Slab | Structural Steel +Slab +Para. Rail | Structural Steel | Structural Steel +Slab | Structural Steel +Slab +Para. Rail |
| SPAN NO. 2 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 1.10 | 0.13 | 0.44 | 0.51 | 0.13 | 0.44 | 0.51 |
| | 1.20 | 0.24 | 0.82 | 0.94 | 0.24 | 0.81 | 0.93 |
| | 1.30 | 0.32 | 1.08 | 1.24 | 0.32 | 1.07 | 1.23 |
| | 1.40 | 0.36 | 1.20 | 1.37 | 0.36 | 1.19 | 1.37 |
| | 1.50 | 0.36 | 1.17 | 1.34 | 0.36 | 1.16 | 1.33 |
| | 1.60 | 0.32 | 1.01 | 1.15 | 0.32 | 1.00 | 1.15 |
| | 1.70 | 0.25 | 0.75 | 0.85 | 0.25 | 0.74 | 0.85 |
| | 1.80 | 0.16 | 0.44 | 0.50 | 0.16 | 0.44 | 0.50 |
| | 1.90 | 0.07 | 0.17 | 0.19 | 0.07 | 0.17 | 0.19 |
| | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 2.10 | -0.04 | 0.04 | 0.06 | -0.04 | 0.04 | 0.06 |
| | 2.20 | -0.05 | 0.25 | 0.32 | -0.05 | 0.25 | 0.32 |
| | 2.30 | -0.08 | 0.40 | 0.51 | -0.08 | 0.40 | 0.51 |
| | 2.40 | -0.15 | 0.35 | 0.47 | -0.15 | 0.35 | 0.46 |
| | 2.50 | -0.27 | 0.07 | 0.14 | -0.27 | 0.07 | 0.14 |
| | 2.60 | -0.41 | -0.37 | -0.36 | -0.41 | -0.37 | -0.36 |
| | 2.70 | -0.50 | -0.79 | -0.86 | -0.50 | -0.79 | -0.86 |
| | 2.80 | -0.51 | -1.01 | -1.13 | -0.51 | -1.01 | -1.13 |
| | 2.90 | -0.36 | -0.79 | -0.90 | -0.36 | -0.79 | -0.90 |
| SPAN NO. 3 | 3.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3.10 | 0.75 | 1.87 | 2.15 | 0.75 | 1.86 | 2.14 |
| | 3.20 | 1.75 | 4.48 | 5.17 | 1.75 | 4.46 | 5.15 |
| | 3.30 | 2.74 | 7.12 | 8.22 | 2.74 | 7.08 | 8.19 |
| | 3.40 | 3.49 | 9.13 | 10.54 | 3.49 | 9.08 | 10.50 |
| | 3.50 | 3.86 | 10.12 | 11.69 | 3.86 | 10.07 | 11.65 |
| | 3.60 | 3.85 | 10.11 | 11.68 | 3.85 | 10.05 | 11.63 |
| | 3.70 | 3.43 | 9.03 | 10.43 | 3.43 | 8.98 | 10.39 |
| | 3.80 | 2.59 | 6.84 | 7.90 | 2.59 | 6.80 | 7.87 |
| | 3.90 | 1.40 | 3.69 | 4.27 | 1.40 | 3.67 | 4.25 |
| | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |




TOP FLANGE SPLICE PLATES




WEB SPLICE PLATES




BOTTOM FLANGE SPLICE PLATES

## FIELD SPLICE TYPE B (SPLICE 4)

## FIELD SPLICE TYPE C (SPLICE 5)

SHEET 3 OF 5
DETAILS OF 556'-5⅝" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

DRAWN BY: JR DATE: 05-12 FILENAME: bca0907x9_s13.dgn
CHECKED BY: BEG DATE: 08-15-12 SCALE: None
DESIGNED BY: LM DATE: 05-12

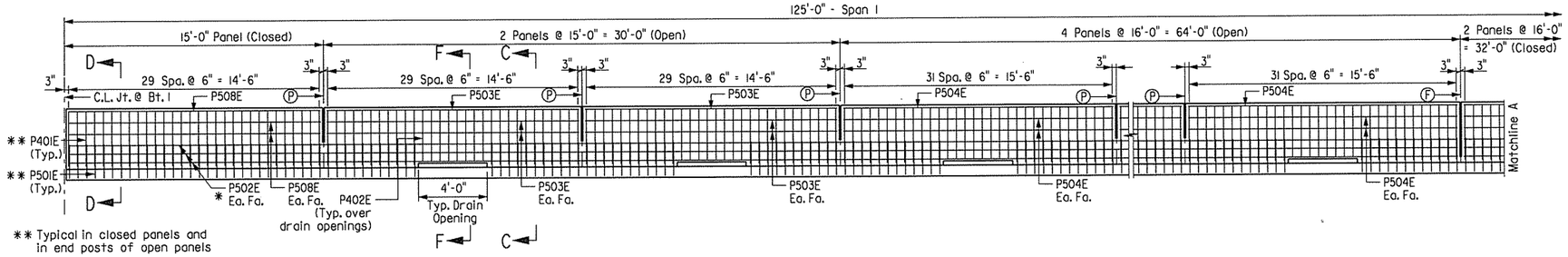
BRIDGE NO. 07312 DRAWING NO. 55354

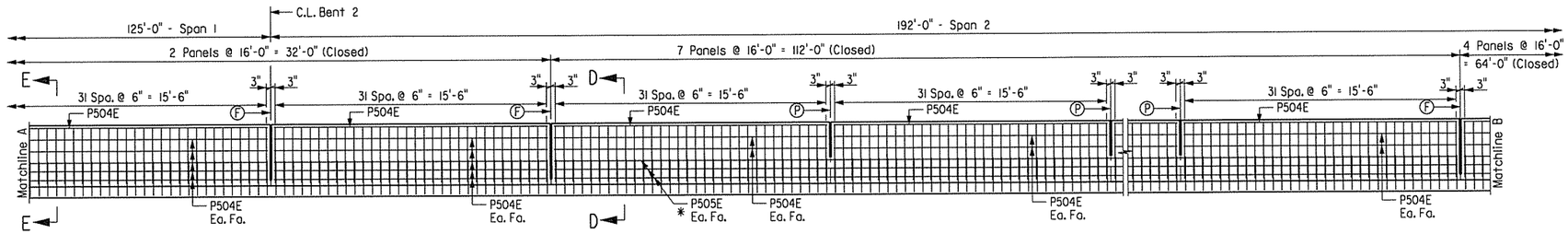
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 502 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55355 |

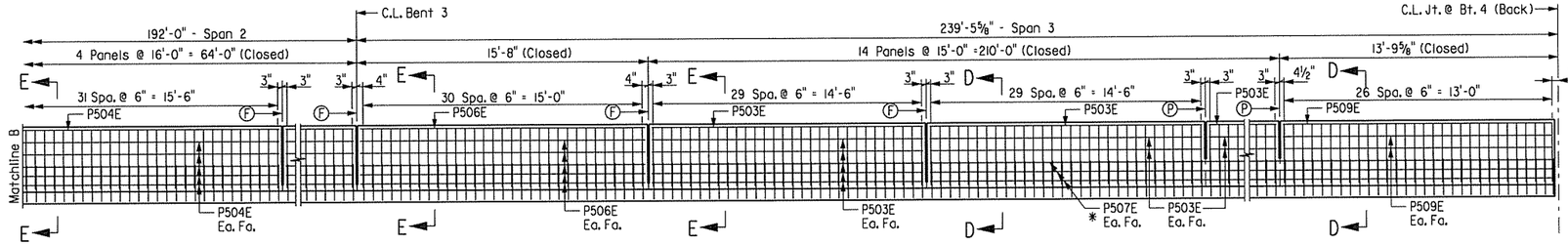
Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

*Minimum splice length for horzontal #5 bars = 3'-7"



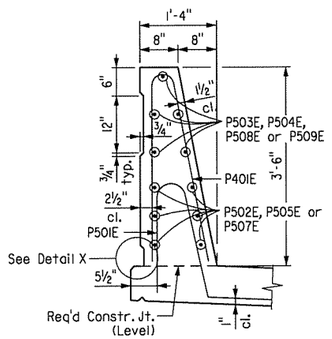




For Detail X and additional parapet details, see Dwg. No. 55364

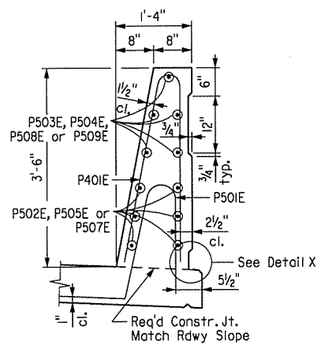
For portion of parapet at Bent 4, see Dwg. No. 55367

## DETAILS OF PARAPET RAIL - LOW SIDE OF BRIDGE

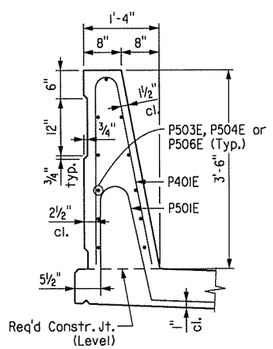
¼" = 1'-0"



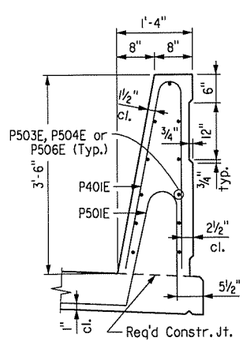

SECTION A-A
(High Side)
Scale: ¾" = 1'-0"



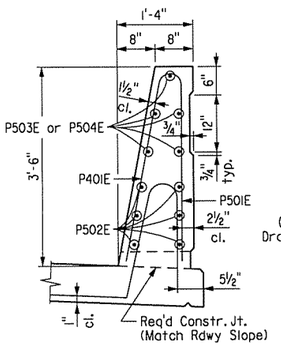

SECTION D-D
(Low Side)
Scale: ¾" = 1'-0"



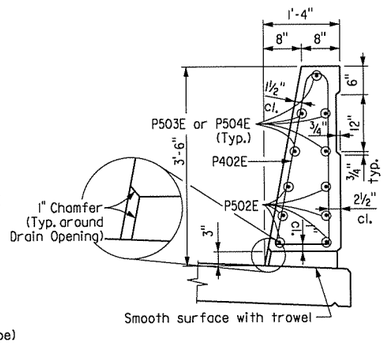

SECTION B-B
(High Side)
Scale: ¾" = 1'-0"




SECTION E-E
(Low Side)
Scale: ¾" = 1'-0"




SECTION C-C
(Low Side)
Scale: ¾" = 1'-0"




SECTION F-F
(Low Side)
Scale: ¾" = 1'-0"

# SHEET 4 OF 5
# DETAILS OF 556'-5⅝" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS — Larry W. Miller — REGISTERED PROFESSIONAL ENGINEER — No. 11339 — LARRY W. MILLER — 9-3-14

BRIDGE ENGINEER

DRAWN BY: LWM DATE: 05/12

CHECKED BY: BEG DATE: 08-15-12

DESIGNED BY: LWM DATE: 05/12

FILENAME: bca0907x9_s14.dgn

SCALE: As Shown

BRIDGE NO. 07312 DRAWING NO. 55355

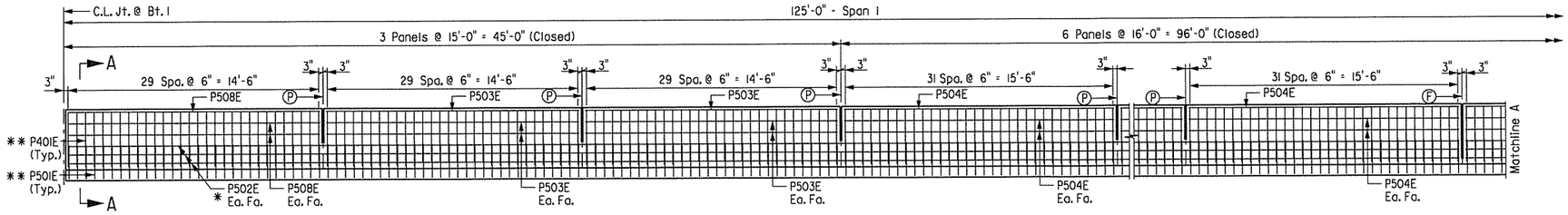
B001966M17_S14.dgn 9/3/2014 3:24:29 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 503 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55356 |

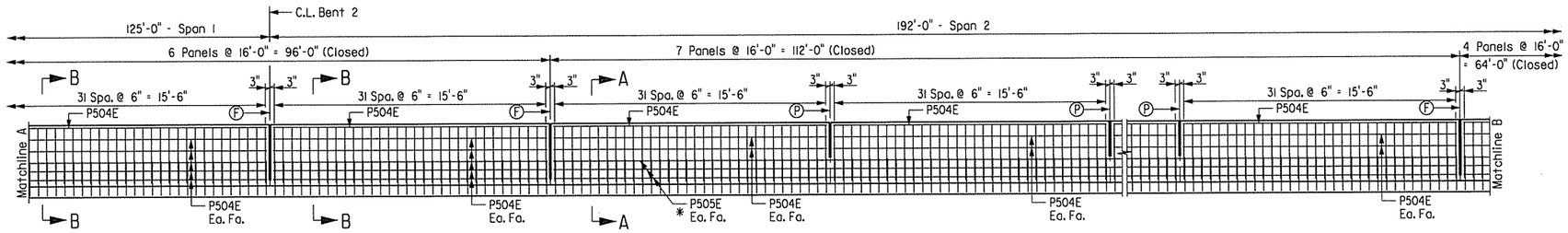
Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

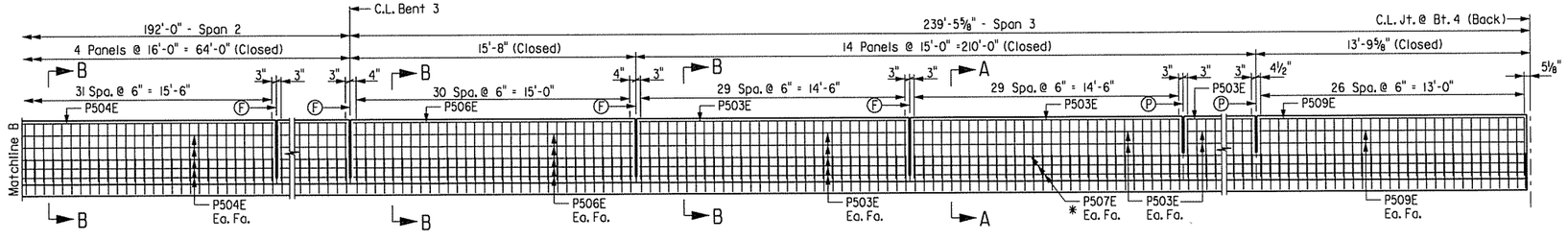
Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

*Minimum splice length for horizontal #5 bars = 3'-7"




** Typical in closed panels and in end posts of open panels



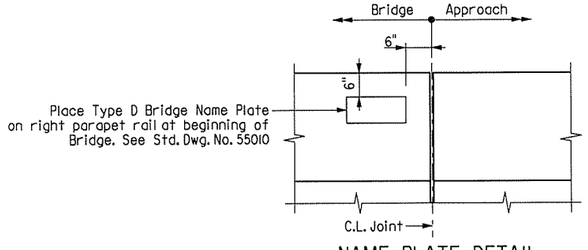




See Dwg. No. 55355 for sections.

For portion of parapet at Bent 4, see Dwg. No. 55367.

## DETAILS OF PARAPET RAIL - HIGH SIDE OF BRIDGE

¼" = 1'-0"




## NAME PLATE DETAIL

No Scale

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER

4-3-14

BRIDGE ENGINEER

# SHEET 5 OF 5
# DETAILS OF 556'-5⅝" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LWM DATE: 05/12 FILENAME: bca0907x9_s15.dgn

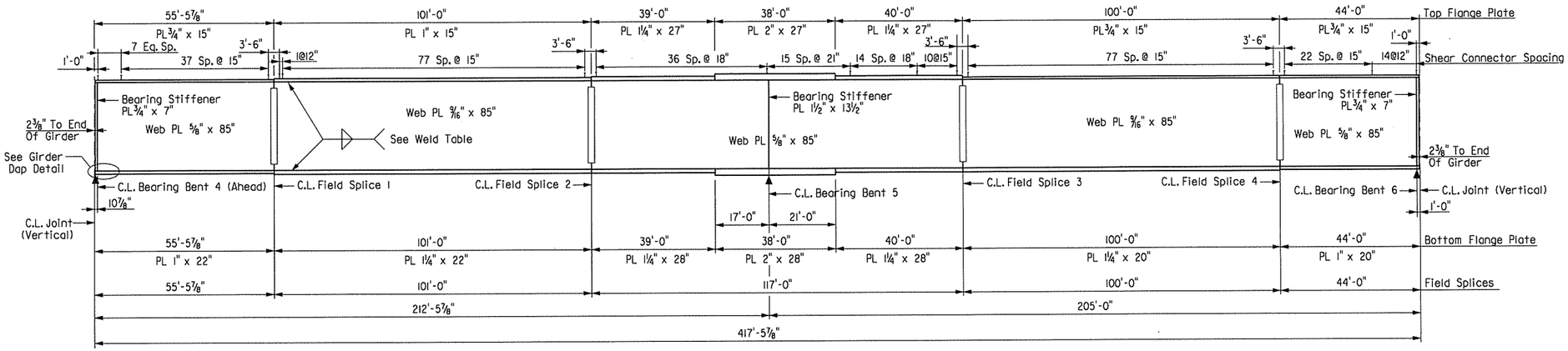
CHECKED BY: BEG DATE: 08-15-12 SCALE: As Shown

DESIGNED BY: LWM DATE: 05/12

BRIDGE NO. 07312 DRAWING NO. 55356

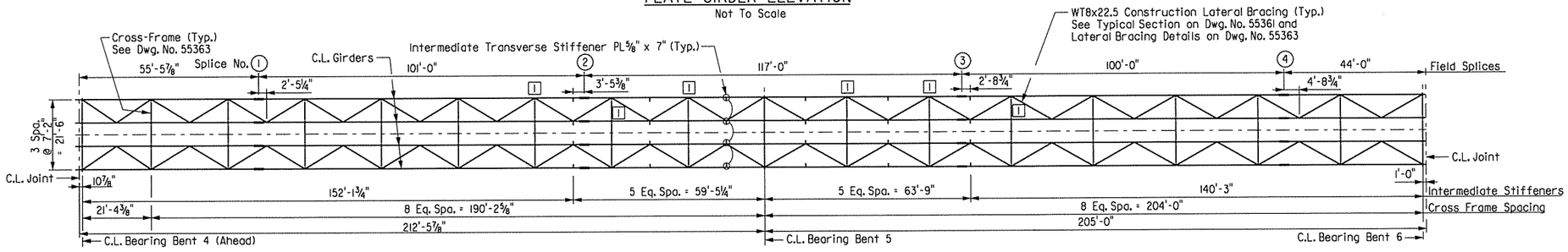
B001966M17_S15.dgn 9/3/2014 3:24:30 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 504 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55357 |




## PLATE GIRDER ELEVATION

Not To Scale




## FRAMING PLAN

Not To Scale

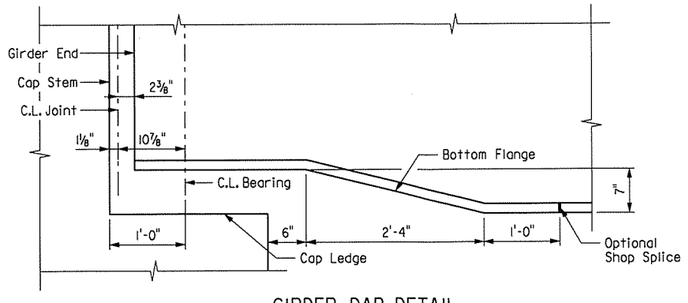
[1] Connection plates at this cross-frame also serve as intermediate stiffeners. (Typical for all girders.)

NOTES

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

All plates are AASHTO M270 Grade 50.

For additional information, see Drawing Nos. 55359 & 55361-55367.




## GIRDER DAP DETAIL

Not To Scale

Note: Cold bending of bottom flange is permitted.

STATE OF ARKANSAS
Larry M. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY M. MILLER
9-3-14
BRIDGE ENGINEER

# SHEET 1 OF 4
# DETAILS OF 417'-5⅞" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 10-10
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 10-10

FILENAME: bcg0907x9_s21.dgn
SCALE: None

BRIDGE NO. 07312

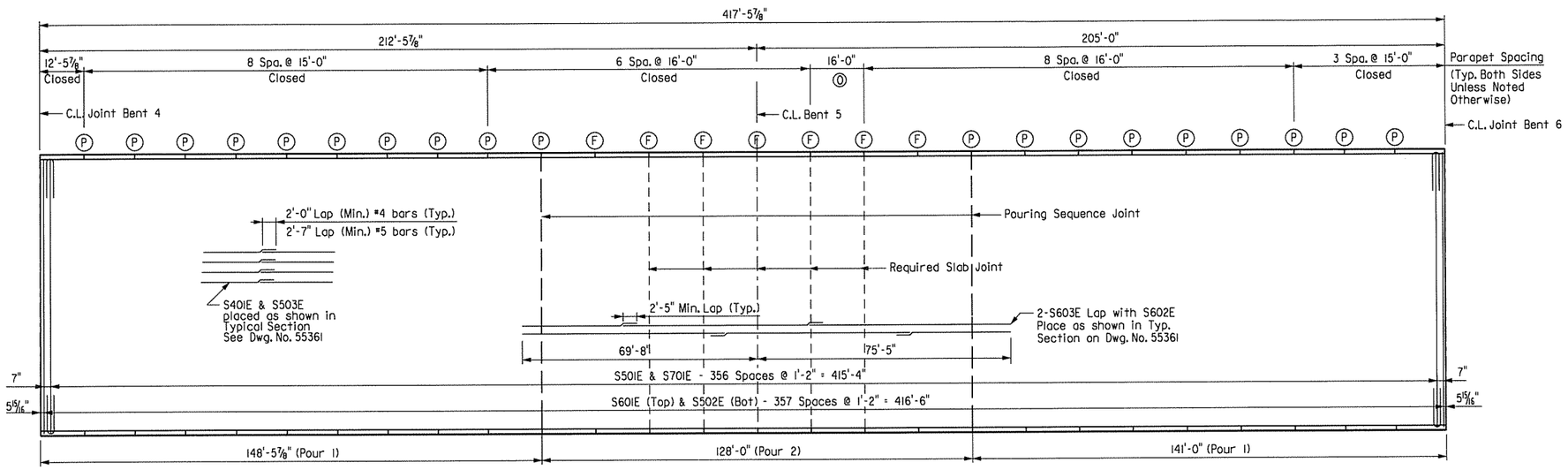
DRAWING NO. 55357

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 505 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55358 |

Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

Ⓞ Open Parapet Section (Low Side Only)




## REINFORCING PLAN & POURING SEQUENCE

Note: Pours must be made in order as numbered. Pours with the same number may be placed simultaneously or separately. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Required slab joints and pouring sequence joints shall align with parapet open joint at the gutterline.

For slab joint detail, see Dwg. No. 55361.

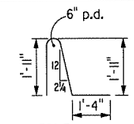
For placement of bar S701E, see Detail A on Dwg. No. 55361.

For portion of slab and parapet at Bent 4 details, see Dwg. No. 55350 & 55367.

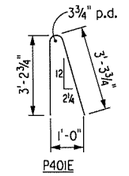
## BAR LIST - PER UNIT

Bending Diagrams (Dimensions are out to out of bars.)

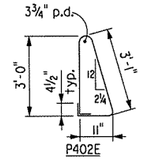
| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| S401E | 209 | 40'-0" | Str. |
| | | | |
| S501E | 357 | 28'-2" | 3" |
| S502E | 358 | 27'-8" | Str. |
| S503E | 232 | 54'-8" | Str. |
| | | | |
| S601E | 358 | 27'-8" | Str. |
| S602E | 36 | 30'-0" | Str. |
| S603E | 72 | 60'-0" | Str. |
| | | | |
| S701E | 714 | 12'-2" | 6⅛" |
| | | | |
| P401E | 1662 | 6'-8" | 3¾" |
| P402E | 8 | 7'-9" | 2" |
| P501E | 1662 | 5'-4" | 3¾" |
| P502E | 36 | 57'-1" | Str. |
| P503E | 10 | 14'-6" | Str. |
| P504E | 100 | 14'-8" | Str. |
| P505E | 222 | 15'-8" | Str. |
| P506E | 36 | 54'-8" | Str. |
| P507E | 10 | 11'-11" | Str. |
| | | | |
| X401E | 56 | 5'-0" | Str. |
| X402E | 56 | 3'-4" | Str. |
| X601E | 56 | 7'-0" | Str. |



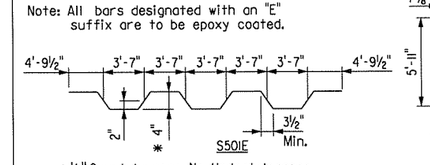
P501E



P401E



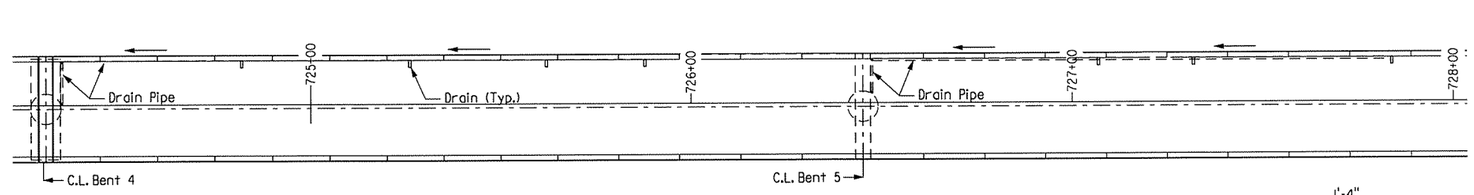
P402E



S501E S701E

Note: All bars designated with an "E" suffix are to be epoxy coated.

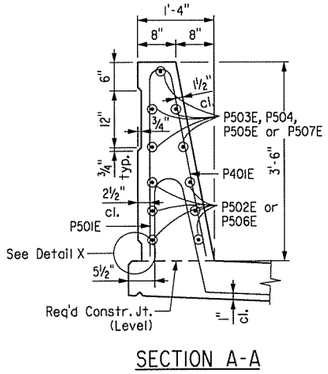
*½" Overtolerance, No Undertolerance



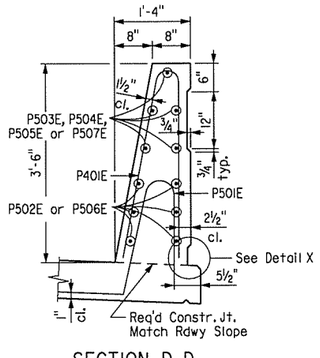

| DRAIN LOCATIONS |
|---|
| 724+35 |
| 724+82 |
| 725+26 |
| 725+62 |
| 725+88 |
| 727+07 |
| 727+32 |
| 727+84 |

## DRAIN SYSTEM PLAN

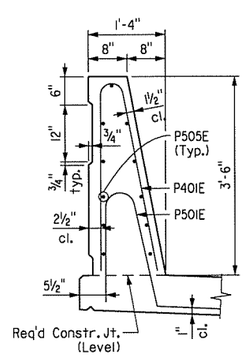
For additional details of drain system, see Dwg. Nos. 55361 & 55364-55365.



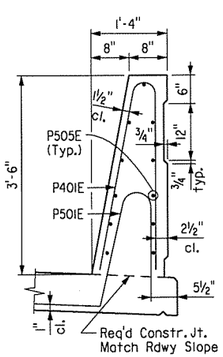

SECTION A-A
(High Side)
Scale: ¾" = 1'-0"



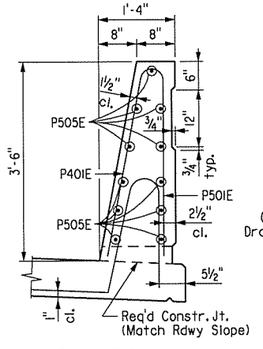

SECTION D-D
(Low Side)
Scale: ¾" = 1'-0"



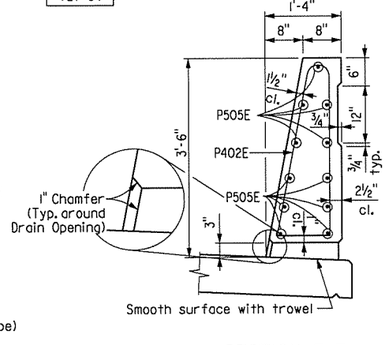

SECTION B-B
(High Side)
Scale: ¾" = 1'-0"




SECTION E-E
(Low Side)
Scale: ¾" = 1'-0"




SECTION C-C
(Low Side)
Scale: ¾" = 1'-0"




SECTION F-F
(Low Side)
Scale: ¾" = 1'-0"

For Detail X and additional parapet details, see Dwg. No. 55364

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF 417'-5⅞" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

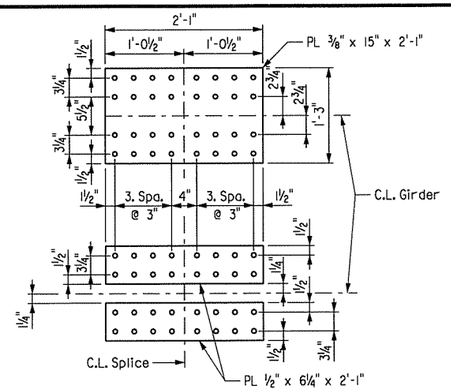
DRAWN BY: LM DATE: 10-10
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 10-10

FILENAME: bca0907x9_s22.dgn
SCALE: None

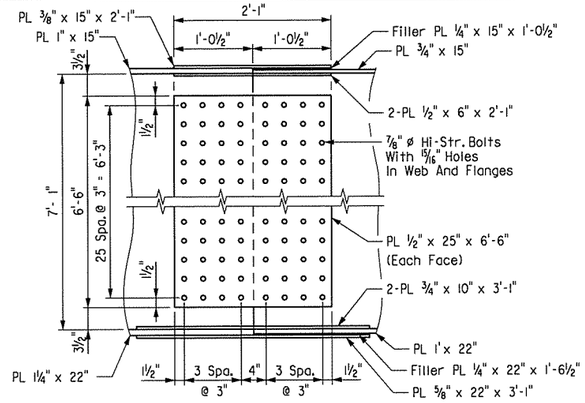
BRIDGE NO. 07312 DRAWING NO. 55358

B001966M17_S22.dgn 9/3/2014 3:24:33 PM

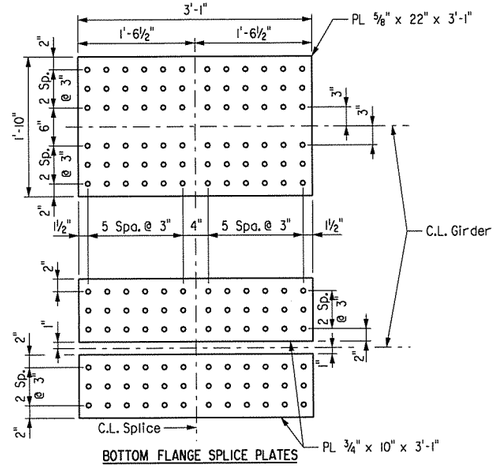
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 506 | 897 |
| | | | | ① 07312 | | SPAN DETAILS | | 55359 |




TOP FLANGE SPLICE PLATES




WEB SPLICE PLATES



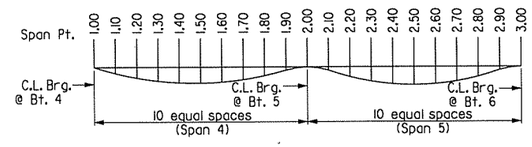

BOTTOM FLANGE SPLICE PLATES

## FIELD SPLICE TYPE A (SPLICE 1)

## TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Camber for Dead Load Deflection plus vertical curve +/- ¼" tolerance.
Deflections shown are off a chord from C.L. Brg. to C.L. Brg.
Vertical curve corrections not included. Negative sign (-) indicates upward deflection.

| SPAN NO. | POINT OF DEFLECTION | INTERIOR GIRDER: Structural Steel | INTERIOR GIRDER: Structural Steel +Slab | INTERIOR GIRDER: Structural Steel +Slab +Para. Rail | EXTERIOR GIRDER: Structural Steel | EXTERIOR GIRDER: Structural Steel +Slab | EXTERIOR GIRDER: Structural Steel +Slab +Para. Rail |
|---|---|---|---|---|---|---|---|
| 4 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 1.10 | 0.77 | 2.45 | 2.84 | 0.77 | 2.44 | 2.83 |
| | 1.20 | 1.40 | 4.46 | 5.16 | 1.40 | 4.43 | 5.14 |
| | 1.30 | 1.80 | 5.71 | 6.62 | 1.80 | 5.68 | 6.60 |
| | 1.40 | 1.95 | 6.14 | 7.12 | 1.95 | 6.10 | 7.10 |
| | 1.50 | 1.84 | 5.76 | 6.70 | 1.84 | 5.72 | 6.67 |
| | 1.60 | 1.51 | 4.70 | 5.48 | 1.51 | 4.67 | 5.46 |
| | 1.70 | 1.05 | 3.23 | 3.77 | 1.05 | 3.21 | 3.76 |
| | 1.80 | 0.57 | 1.71 | 2.00 | 0.57 | 1.70 | 2.00 |
| | 1.90 | 0.18 | 0.52 | 0.62 | 0.18 | 0.52 | 0.61 |
| 5 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 2.10 | 0.05 | 0.20 | 0.24 | 0.05 | 0.20 | 0.24 |
| | 2.20 | 0.28 | 0.98 | 1.15 | 0.28 | 0.97 | 1.14 |
| | 2.30 | 0.62 | 2.12 | 2.48 | 0.62 | 2.10 | 2.47 |
| | 2.40 | 0.98 | 3.31 | 3.86 | 0.98 | 3.29 | 3.84 |
| | 2.50 | 1.25 | 4.24 | 4.92 | 1.25 | 4.21 | 4.90 |
| | 2.60 | 1.37 | 4.63 | 5.38 | 1.37 | 4.60 | 5.35 |
| | 2.70 | 1.29 | 4.37 | 5.06 | 1.29 | 4.34 | 5.04 |
| | 2.80 | 1.01 | 3.42 | 3.96 | 1.01 | 3.40 | 3.94 |
| | 2.90 | 0.56 | 1.89 | 2.19 | 0.56 | 1.88 | 2.18 |
| | 3.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |




DEAD LOAD DEFLECTION DIAGRAM

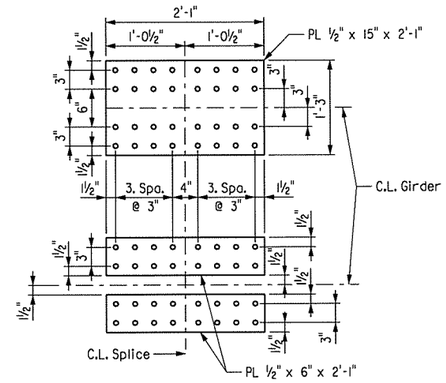
No Scale

LOAD DISTRIBUTION TO GIRDERS:

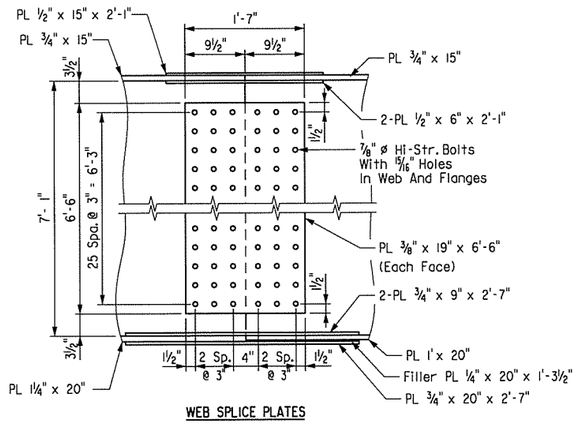
| | Girders 1 & 4 | Girders 2 - 3 |
|---|---|---|
| Dead Loads: To Girder | 790 PLF + 1.12 (wt./ft. of Girder) | 826 PLF + 1.12 (wt./ft. of Girder) |
| Dead Loads: To Composite Girder | 422 PLF, Includes 160 PLF Future Wearing Surface | |

NOTES
All field splice bolts shall be ⅞" diamter H.S. Bolts.

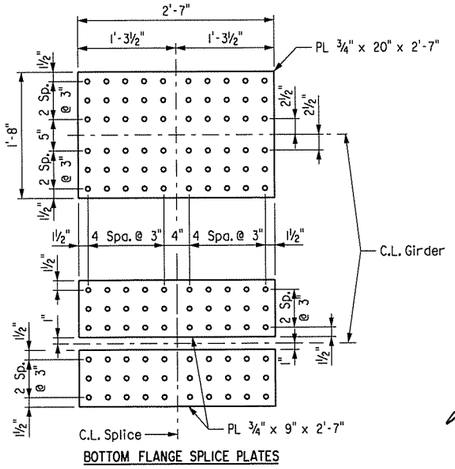
All field splice plates shall be AASHTO M270, Gr. 50 steel.




TOP FLANGE SPLICE PLATES

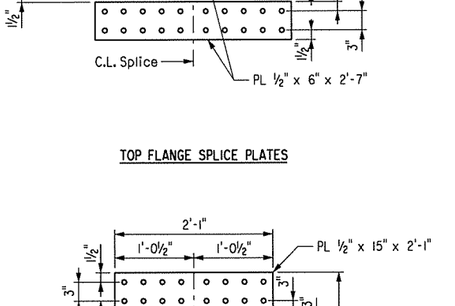



WEB SPLICE PLATES

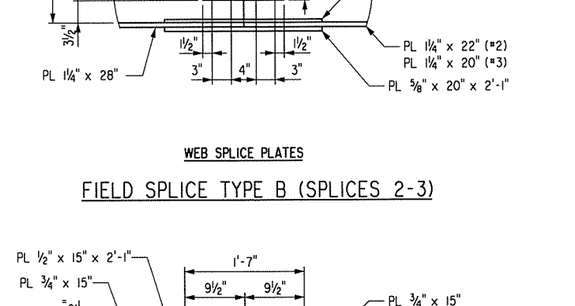



BOTTOM FLANGE SPLICE PLATES

## FIELD SPLICE TYPE B (SPLICES 2-3)




TOP FLANGE SPLICE PLATES




WEB SPLICE PLATES

## FIELD SPLICE TYPE C (SPLICE 4)

STATE OF ARKANSAS
LARRY E. MILLER
REGISTERED PROFESSIONAL ENGINEER
No. 11339
9-3-14

BRIDGE ENGINEER

# SHEET 3 OF 4
# DETAILS OF 417'-5⅞" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JR DATE: 06-12
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 05-12
FILENAME: bca0907x9_s23.dgn
SCALE: None

BRIDGE NO. 07312 DRAWING NO. 55359

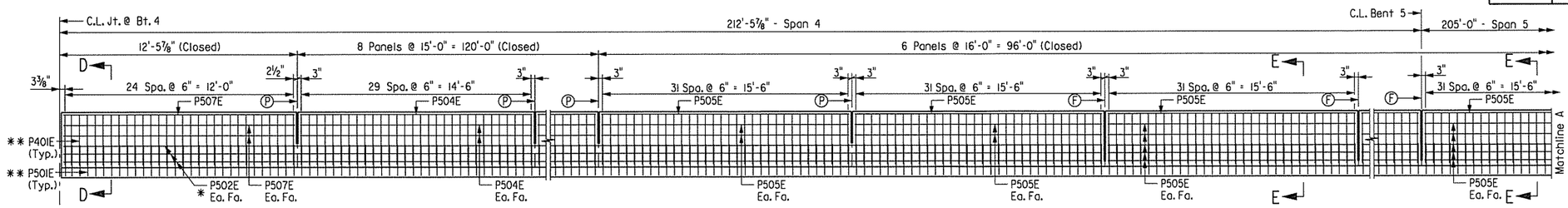
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 507 | 897 |
| (1) 07312 | | SPAN DETAILS | | 55360 |

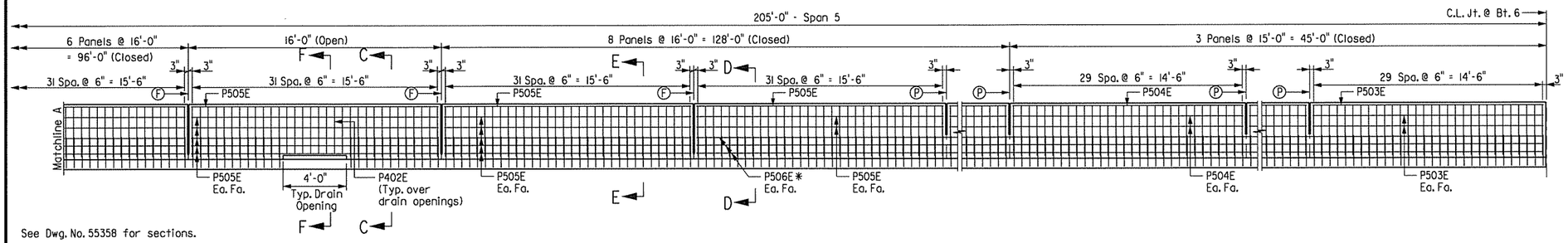
Ⓟ C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

Ⓕ C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

*Minimum splice length for horizontal #5 bars = 3'-7"




** Typical in closed panels and in end posts of open panels



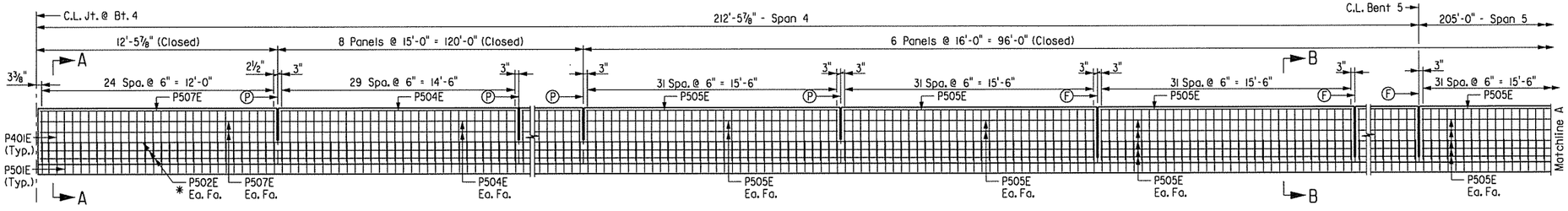

See Dwg. No. 55358 for sections.

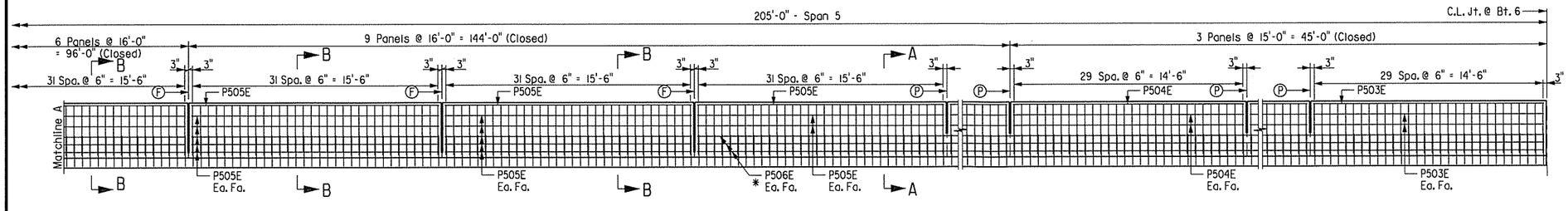
## DETAILS OF PARAPET RAIL - LOW SIDE OF BRIDGE

¼" = 1'-0"

For additional parapet details, see Dwg. No. 55364

For portion of parapet at Bent 4, see Dwg. No. 55367




See Dwg. No. 55358 for sections.

## DETAILS OF PARAPET RAIL - HIGH SIDE OF BRIDGE

¼" = 1'-0"

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

# SHEET 4 OF 4
# DETAILS OF 417'-5⅞" CONTINUOUS COMPOSITE PLATE GIRDER UNIT I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LWM DATE: 05/12 FILENAME: bca0907x9_s24.dgn

CHECKED BY: BEG DATE: 08-15-12 SCALE: As Shown

DESIGNED BY: LWM DATE: 05/12

BRIDGE NO. 07312 DRAWING NO. 55360

B001966M17_S24.dgn 9/3/2014 3:24:36 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 508 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55361 |

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bar S501E.

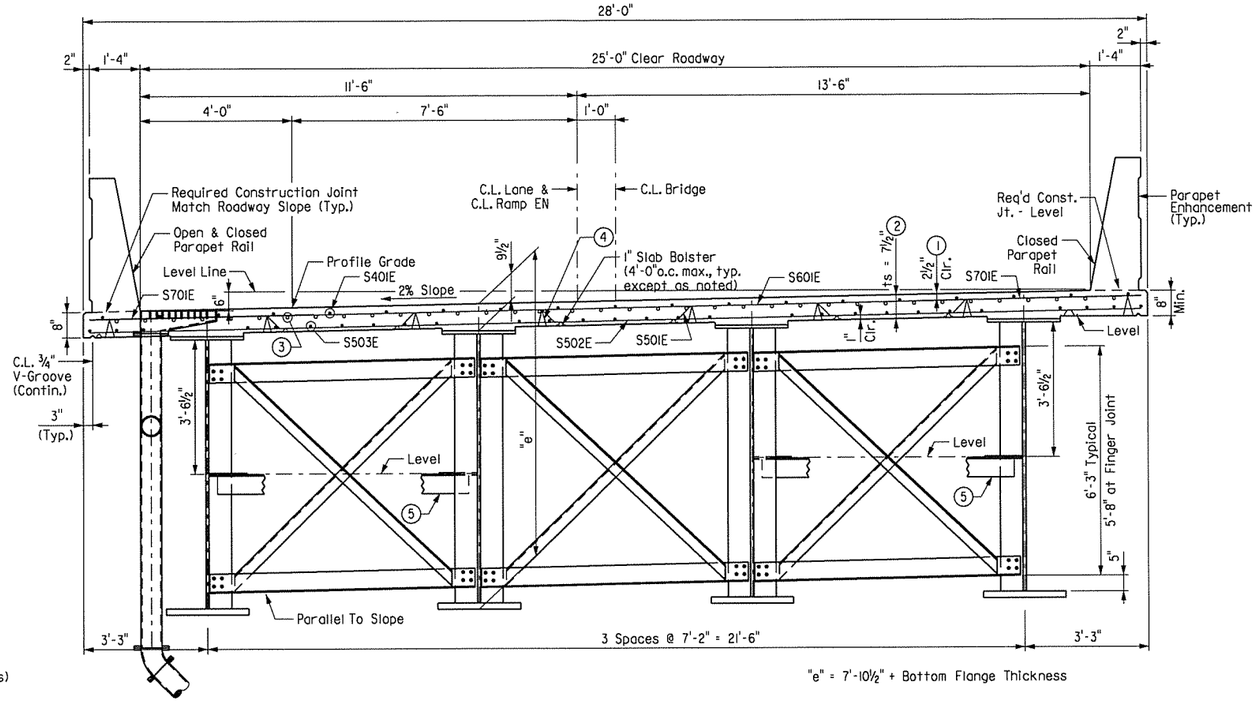
Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

All bars designated with an E suffix are to be epoxy coated.

SLAB REINFORCING:

Transverse:
- S701E @ 14" Centers (Top in cantilevers)
- S501E @ 14" Centers (Bent up over girders)
- S502E @ 14" Centers (Bottom)
- S601E @ 14" centers (Top)

Longitudinal:
- S401E @ 18" Centers (Top)
- S503E Place as shown (Bottom)
- (3) S602E-S605E @ 9" Centers (Top)

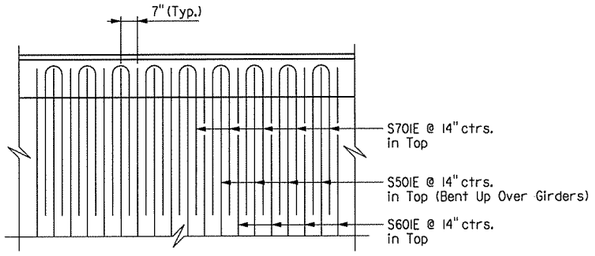



"e" = 7'-10½" + Bottom Flange Thickness

Note: Drainage system to be placed at Bents 2 thru 5. For details, see Dwg. Nos. 55364-55365.

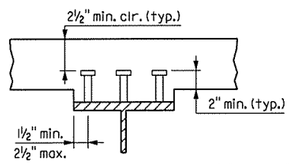
TYPICAL SECTION

½" = 1'-0"
Looking Ahead
(Same As Direction Of Travel)




DETAIL A

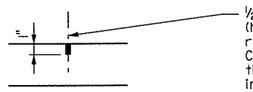
No Scale




Stud Shear Connectors shown shall be ⅞" dia. x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾" dia. studs may be used in place of the ⅞" dia. studs shown, at the ratio of 1.361 - ¾" dia. studs in place of one ⅞" dia. stud. ⅞" dia. studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL

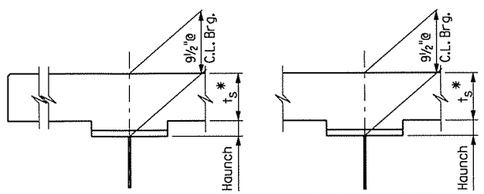
No Scale



½" x 1" Type 3 or 4 Joint Sealer. See Subsection 501.02 (h) and 501.05 (j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set up to allow the sawing of joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint locations.

SLAB JOINT DETAIL

No Scale




Note: ts = slab thickness as shown on "TYPICAL SECTION".
*Tolerance when removable deck forming is used is +½", -¼".
Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when the 2" top flange is ¼" below the bottom reinforcing steel; Maximum - occurs when the ¾" flange is 2¾" below the bottom reinforcing steel. No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

(1) TOLERANCE:
Minus: ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(4) Hi-Chairs placed as shown transversely, @ 4'-0" o.c. max longitudinally
4¼" between girders
4¾" in cantilevers

(5) Construction lateral bracing (exterior bays only.) See Dwg. Nos. 55352 and 55357 for location.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY M. MILLER
9-3-14

BRIDGE ENGINEER

# SHEET 1 OF 5
# COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

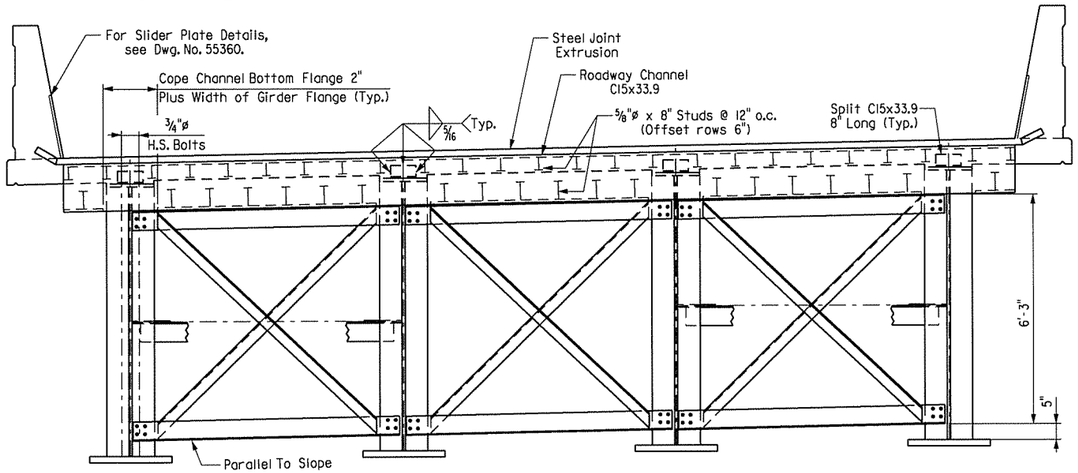
DRAWN BY: LM DATE: 06/12
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 06/12
FILENAME: bcc0907x9_s31.dgn
SCALE: As Shown

BRIDGE NO. 07312 DRAWING NO. 55361

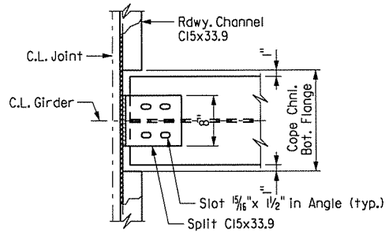
B001966M17_S31.dgn 9/3/2014 3:24:37 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 509 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55362 |

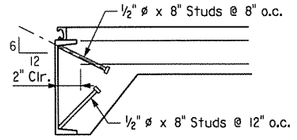
Expansion Devices:
Roadway Channel C15x33.9
Neoprene Strip Seal with Steel Joint Extrusion
Connection Split C15x33.9
Detail Device 1/8" high & provide 1/4" shims
using 1 - 1/8" PL & 2 - 1/16" PLs




SECTION THRU STRIPSEAL JOINT
No Scale



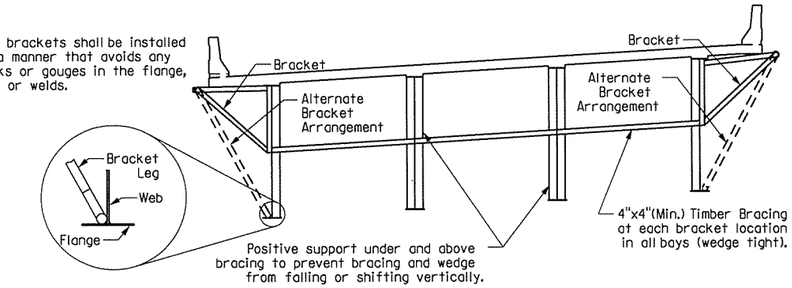

ROADWAY CHANNEL CONNECTION
DETAIL @ BENTS 1, 4 & 6




Note: As an alternate to 5/8" ø studs, 1/2" ø x 8" studs spaced as shown may be used. Use weight of 5/8" ø stud as basis of measurement of structural steel in anchors.

DETAIL OF
ALTERNATE ANCHORS
(Bents 1, 4 & 6 Shown)
No Scale

The brackets shall be installed in a manner that avoids any nicks or gouges in the flange, web or welds.




Note: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 7/16" x6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the cross frame connection detail shown on drawing No. 55363. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel In Plate Girder Spans (M270. Gr. 50)."

SCREED RAIL SUPPORT
No Scale

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 2 OF 5
COMMON DETAILS OF CONTINUOUS
COMPOSITE PLATE GIRDER UNITS
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 06/12
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 06/12
FILENAME: bca0907x9_s32.dgn
SCALE: As Shown

BRIDGE NO. 07312 DRAWING NO. 55362

B001966M17_S32.dgn 9/3/2014 3:24:38 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 510 | 897 |
| | | | | (1) 07312 | | SPAN DETAILS | | 55363 |

SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interims.

LIVE LOADING: HS20 + Military Loading
METHOD OF DESIGN: Load Factor

MATERIALS AND STRENGTHS:

| | | | |
|---|---|---|---|
| Class S(AE) Concrete | fc | = | 4,000 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | Fy | = | 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy | = | 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy | = | 36,000 psi |

Elastomeric bearings shall be firmly seated in accordance with Subsection 808.08 of the specifications. This work is considered subsidiary to the item ELASTOMERIC BEARINGS and will not be paid for directly.

STRUCTURAL STEEL:
All structural steel shall be AASHTO M270, Gr. 50 unless otherwise noted and shall be paid for as STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50). Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36. All surfaces shall be cleaned in accordance with Section 807.84(b) and painted as specified in Subsection 807.75, unless noted otherwise. Galvanized steel shall not be painted. For cleaning and painting of expansion joint devices and slider plates, see Dwg. Nos. 55366 & 55367. For cleaning requirements of external load plates of elastomeric bearings, see Dwg. No. 55368 . The color of paint shall be DARK BROWN and shall match Fed. Std. 595B, Color Chip No. 20108.

Girder web, flange and splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Section 807.05 of the Standard Specifications. This work and material will not be paid for directly but are considered subsidiary to the item STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50.)

Web, flange and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All girders shall be blocked in their true position in the shop in groups of a minimum of three as specified in Section 807.54 (b)(2). Girders shall be blocked with their webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured with the girders in their true position. This information shall become a part of the permanent records of this job. The component parts shall be match-marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60° F. A tolerance of ¼" +/- is allowed for camber.

Drawings show general features of design only. Shop drawings shall be made in accordance with Section 807.04, submitted, and approval secured before fabrication is begun.

Girder webs may be made by shop splicing with minimum lengths of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with minimum lengths of 25'-0" for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment will be made for these splices.

Groove welds in main plate girder members shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the Contractor's expense.
Cross frames and lateral construction bracing shall be installed as girders are erected. All bolts in cross frames, lateral construction bracing and field splices shall be installed and tightened in accordance with Section 807.71 prior to pouring the concrete deck, unless noted otherwise.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Field connections shall be bolted with high-strength bolts. Unless noted otherwise, bolts shall be ¾" diameter and open holes shall be 9/16". Holes for ¾" diameter bolts may be 15/16" diameter if a washer is supplied for use under both the nut and head of the bolt. Bolt spacing shall be 2½" for ¾" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of exterior webs and the bottom of flanges.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of subsection 802.13 will not require approval prior to construction. All welding shall conform to Section 807.26.

Anchor bolts shall be galvanized according to Subsection 807.07 and shall be Grade 55.

CONCRETE:
Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

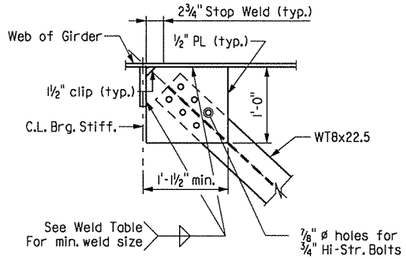
The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

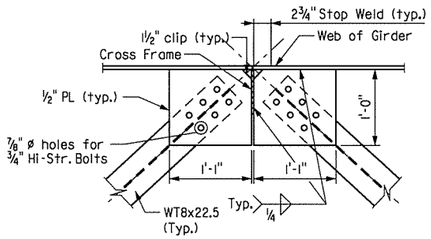
The concrete deck shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing.

A minimum of 72 hours shall elapse between completion of the deck and the pouring of the parapet railing. Any railing pours made before the entire deck has been placed and cured must be approved by the Engineer.

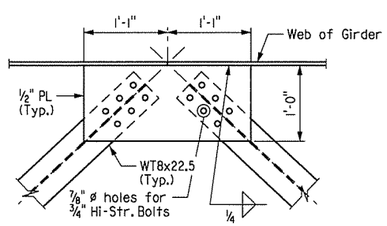
REINFORCING STEEL:
The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item Epoxy Coated Reinforcing Steel (Grade 60.)



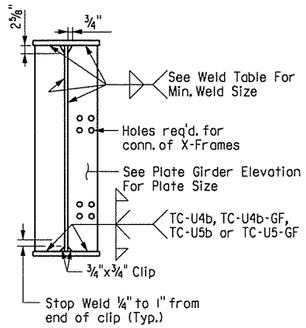

TYP. LATERAL BRACE CONN. AT BEARING
1"= 1'-0"




TYP. LATERAL BRACE CONNECTION AT CROSS-FRAME
1"= 1'-0"

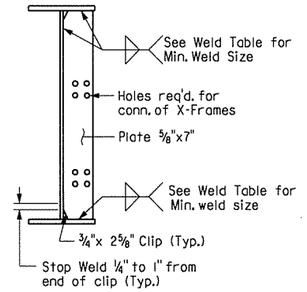



TYP. LATERAL BRACE CONNECTION AT MID-POINTS
1"= 1'-0"

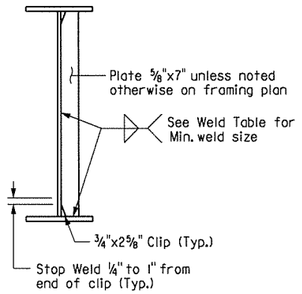



BEARING STIFFENER DETAIL

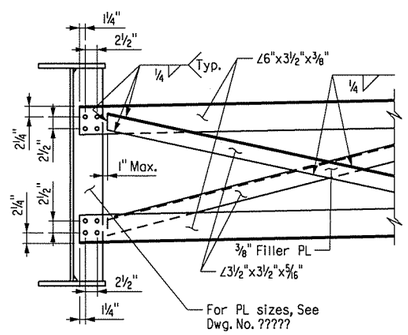
Note: Bearing stiffeners shall be fabricated to be vertical in final position.



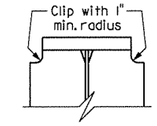

CROSS FRAME CONNECTION DETAIL




INTERMEDIATE STIFFENER DETAIL




TYPICAL CROSSFRAME CONNECTION
¾" = 1'-0"



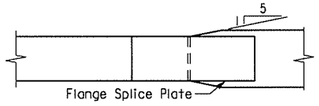

Note: If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

PLATE CLIP DETAIL
Not to Scale

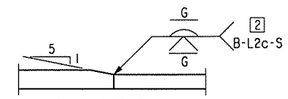
TABLE FOR WELD

| Material Thickness of Thicker Part Joined ( Inches ) | Minimum Size of Fillet Weld ( Inches ) | Single Pass Weld Must Be Used |
|---|---|---|
| To ¾" Inclusive | ¼" | |
| Over ¾" | 5/16" | |

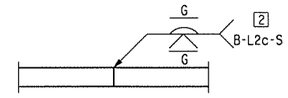
NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



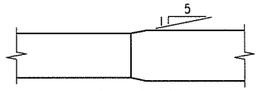

FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS
No Scale



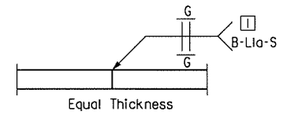

FLANGE SPLICE




FLANGE SPLICE




FLANGE SPLICE




WEB SPLICE

[1] Use for material no more than ⅝" thick.
[2] Use for material no more than 2" thick.

DETAILS OF WELDED SPLICES
No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
LARRY W. MILLER
NO. 11339
9-3-14
BRIDGE ENGINEER

SHEET 3 OF 5
COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 06/12
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 06/12
FILENAME: bca0907x9_s33.dgn
SCALE: As Shown

BRIDGE NO. 07312 DRAWING NO. 55363

B001966M17_S33.dgn 9/3/2014 3:24:40 PM

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 511 | 897 |
| | | | | 1 07312 | | SPAN DETAILS | | 55364 |

DRAIN NOTES:

For Location of Deck Drains, See Drawing Nos. 55353 & 55358.

Drain location may be adjusted to clear shear studs and avoid reinforcing bars.

Steel Fasteners shall be galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Structural Steel in Deck Drain System, including castings, pipe, fittings, clamps and all other necessary components shall not be paid for directly but considered subsidiary to the item "Structural Steel in Plate Girder Spans (AASHTO M270, Gr. 50)."

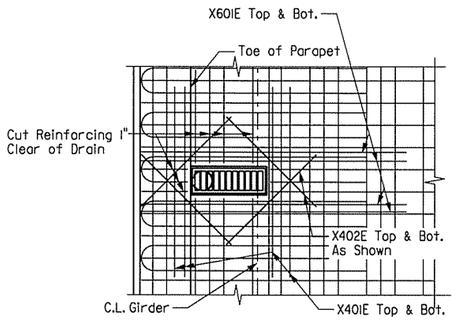
Top Longitudinal Reinforcing Steel in the Slab shall be cut as required to install the Deck drains. Two #4 x 5'-0" Straight bars (longitudinally) shall be placed on each side of the drain.

Top and bottom Transverse Reinforcing Steel in the slab shall be cut as required (Up to a maximum of three bars per mat) to install Deck drains. Add two #6 x 7'-0" Straight bars (transversely, top and bottom) per mat on each side of the drain.

Add one #4 x 3'-4" Straight bar to top and bottom mat of reinforcing @ 45° angle to each corner of Deck drain (Total 8 bars per drain).

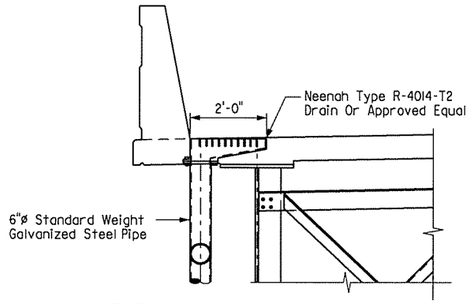
Repair all cut or damaged epoxy bars according to the Standard Construction Specifications.

For additional notes and details, see Dwg. No. 55365.



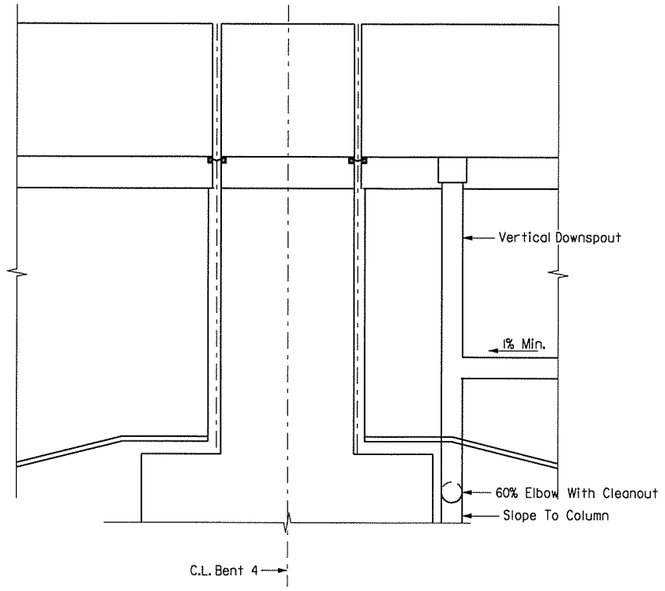

PLAN OF REINFORCING AT DECK DRAINS

½" = 1'-0"



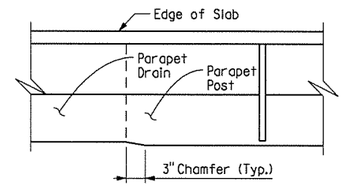

SECTION AT DECK DRAIN

½" = 1'-0"




ELEV. VIEW - DRAIN @ BENT 4

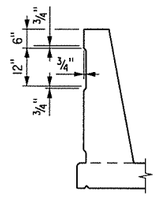
½" = 1'-0"




PLAN OF RAIL POST CHAMFER

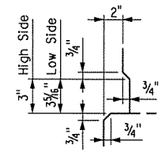
(Typ. for Open Parapet Panels Only)

1" = 1'-0"



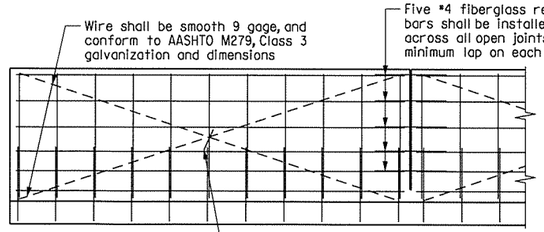

CONTINUOUS PARAPET ENHANCEMENT

Scale: ½" = 1'-0"

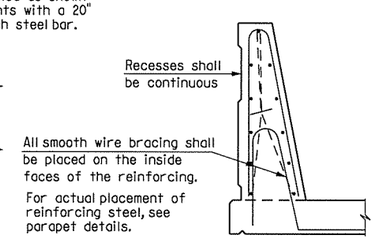



DETAIL X

No Scale




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.




The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Traffic face and top surface may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

STATE OF ARKANSAS
LARRY W. MILLER
REGISTERED PROFESSIONAL ENGINEER
No. 11339
9-3-14
BRIDGE ENGINEER

SHEET 4 OF 5
COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS
I-49 INTERCHANGE RAMP EN
OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

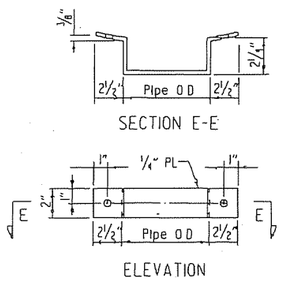
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 06/12 FILENAME: bca0907x9_s34.dgn
CHECKED BY: BEG DATE: 08-15-12 SCALE: As Shown
DESIGNED BY: LM DATE: 06/12

BRIDGE NO. 07312 DRAWING NO. 55364

B001966M17_S34.dgn 9/3/2014 3:24:41 PM

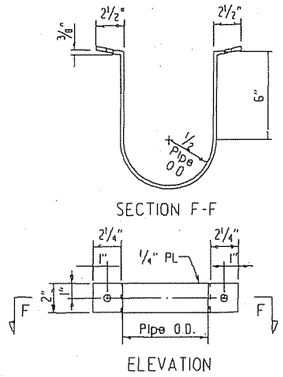
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 512 | 897 |
| | | | | 07312 | | SPAN DETAILS | | 55365 |




SECTION E-E

ELEVATION

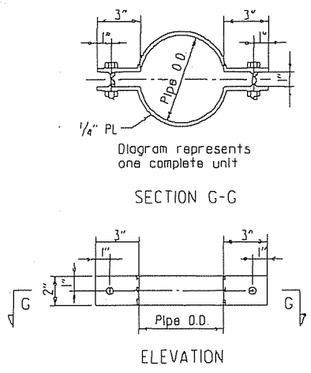
PIPE BRACKET DETAIL
No Scale




SECTION F-F

ELEVATION

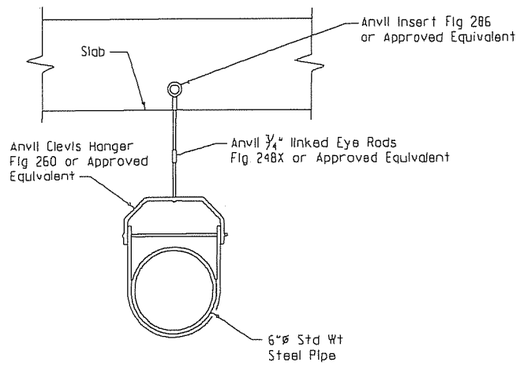
PIPE STRAP DETAIL
No Scale




SECTION G-G

ELEVATION

PIPE CLAMP DETAIL
No Scale

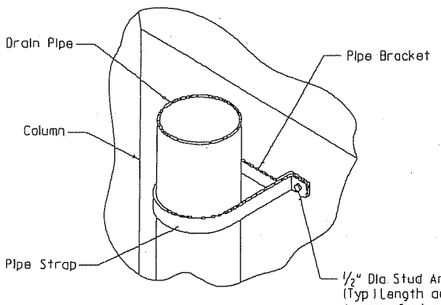



HORIZONTAL PIPE DETAIL
No Scale

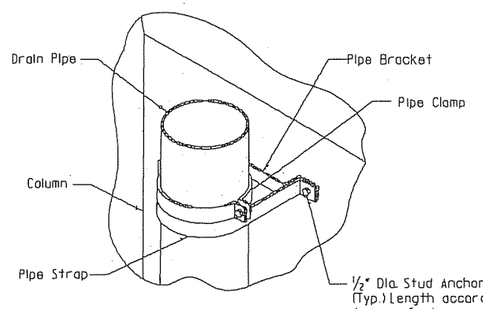
(Spacing not to exceed 2'-0" from C L Drain and not to exceed 9'-0" for the horizontal pipe.)

NOTES:

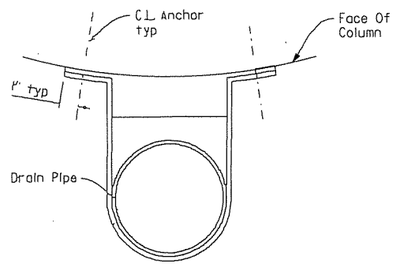
1. Deck drains shall be type R-4014-T2 by Neenah Foundry or approved equal.
2. All pipe and fittings shall be 6" diameter standard weight steel pipe as noted in the plans. Pipe and fittings shall be in conformance with ASTM A53 or ASTM A501 Grade A and shall be hot-dipped galvanized in accordance with AASHTO M111. Pipe and fittings conforming to ASTM A500 Grade B and galvanized in accordance with ASTM A123 may also be provided.
3. All exposed surfaces of galvanized pipe and fittings and any galvanized eye rods, hangers, and fasteners shall be cleaned in accordance with SSPC-SP1 (Solvent Cleaning). All surfaces of the pipe clamps, pipe straps, pipe brackets, drain inlets and any ungalvanized eye rods, hangers and fasteners shall be cleaned in accordance with Section 638. All elements of the drain system shall be painted with an aluminum epoxy paint conforming to Section 638 prior to final assembly on the bridge structure.
4. All exposed areas of the drain system shall be top coated with the finish system conforming to Section 807.75. The color of paint for the pipe, fittings, eye rods, hangers, pipe clamps, pipe straps, pipe brackets, and fasteners shall be DARK BROWN matching Fed. Std. 595B Color Chip No. 20108, to match the adjacent bridge element.
5. All coatings shall be supplied by the same manufacturer to ensure compatibility and shall be from the Departments Qualified Products List 638.02 or 807.76 as appropriate.
6. Refer to Dwg. Nos. 55353 and 55358, for location of inlets and horizontal routing of drain piping. Horizontal pipe runs must not project lower than the bottom flange of exterior beams.
7. Place pipe clamps atop the pipe strap/bracket assemblies attached to cap and column only. Pipe clamp spacing not to exceed 8'-0".
8. Allow for expansion of materials. Contractor shall not clamp bends on bent cap only.
9. Subject to approval by the Engineer, functionally equivalent, commercially available galvanized metal products may be substituted for the Bracket, Clamp, and Strap detailed. If fabricated as shown, Steel materials shall be AASHTO M31, Gr. 36 or stronger, and galvanized after fabrication. Concrete anchor studs and their lock nuts shall be ½" minimum diameter galvanized with mechanical properties as strong as ASTM A307, Gr. B or better. Anchor studs shall have minimum embedment of 9 diameters or deeper per manufacturer's recommendations and epoxy grouted, HIT RE 500 or approved equal. Installation for stud anchors shall be according to the manufacturer's recommendations.



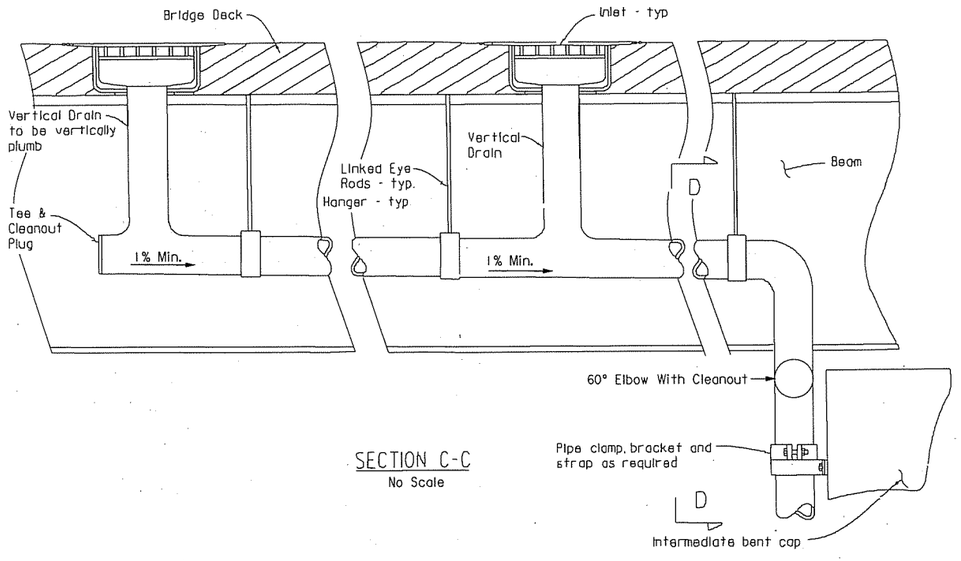

VIEW H-H
No Scale



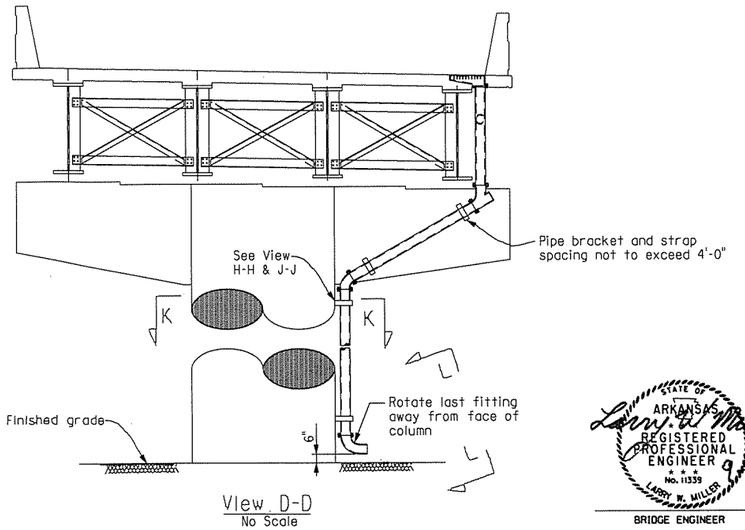

VIEW J-J
No Scale



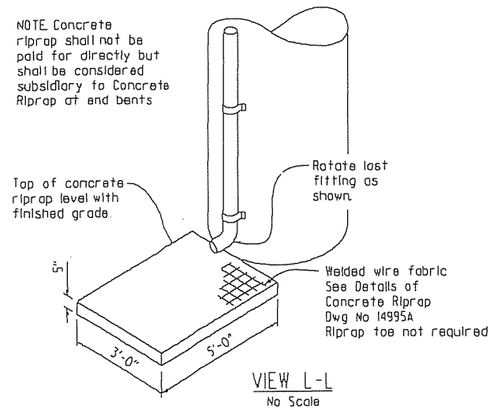

Section K-K
No Scale




SECTION C-C
No Scale




View D-D
No Scale




VIEW L-L
No Scale

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14

BRIDGE ENGINEER

# SHEET 5 OF 5
# COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

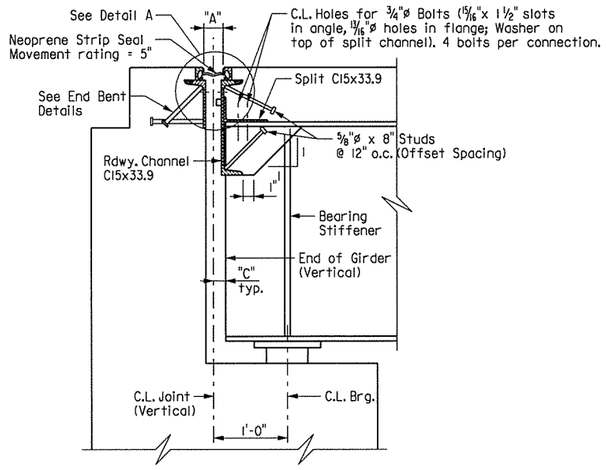
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 06/12
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 06/12
FILENAME: bca0907x9_s35.dgn
SCALE: As Shown

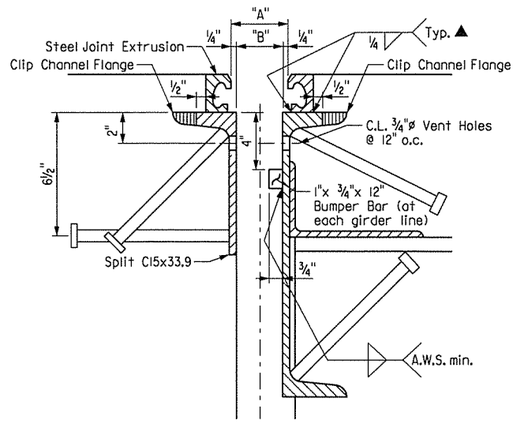
BRIDGE NO. 07312 DRAWING NO. 55365

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 513 | 897 |
| | | | | (1) 07312 | | JOINT DETAILS | | 55366 |




SECTION THRU JOINT AT END BENTS

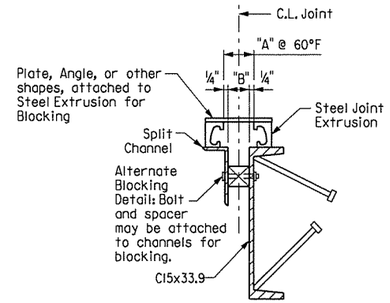
▲ Shop Weld - See Subsection 809.03(b)




DETAIL A

3" = 1'-0"

Note: Concrete shall be hand packed under the joint armor in the backwall and in the span.




DETAILS FOR

BLOCKING EXPANSION JOINT DEVICE

Note:
Each Expansion Joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60° F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

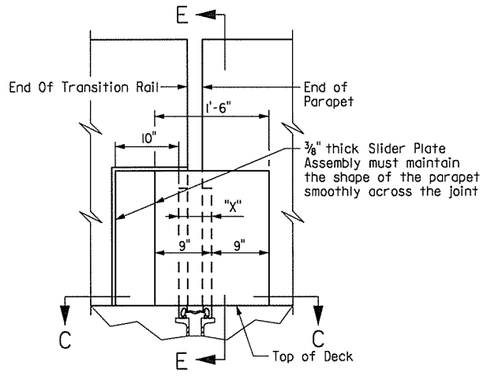
GENERAL NOTES

EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 5" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

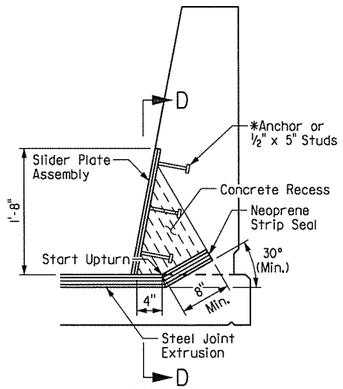
All structural steel in the expansion device shall be AASHTO M270 Gr. 50 steel and, except for the steel extrusion and slider plate anchor system, shall be paid for as STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Grade 50). The steel extrusion, neoprene strip seal, and slider plate anchor system shall be paid for in accordance with Section 809.

Cleaning and painting of all exposed surfaces shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50). Structural steel completely embedded in concrete need not be painted.



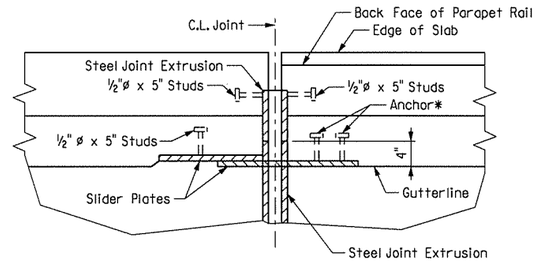

DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"




SECTION E-E

Scale: 1" = 1'-0"




SECTION C-C AT END BENTS

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Grade 50)"

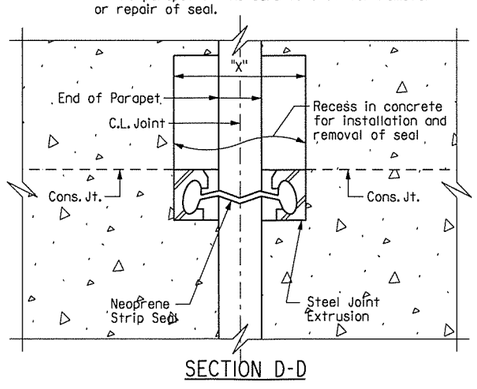
Method of installation and fabrication shall be determined by the Engineer.

STRIP SEAL JOINT DATA

| Bent No.(s) | Movement Rating (inch) | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "C" Perpendicular to Joint at 24 Hour Average Temperature of 60° F |
|---|---|---|---|---|---|---|---|---|
| | | 40° F | 60° F | 80° F | 40° F | 60° F | 80° F | |
| 1 | 5" | 3 1/8" | 2 3/4" | 2 3/8" | 2 5/8" | 2 1/4" | 1 7/8" | 2 3/8"+/- |
| 6 | 5" | 3 1/16" | 2 3/4" | 2 7/16" | 2 9/16" | 2 1/4" | 1 15/16" | 2 3/8"+/- |

**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary.




SECTION D-D

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL
I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

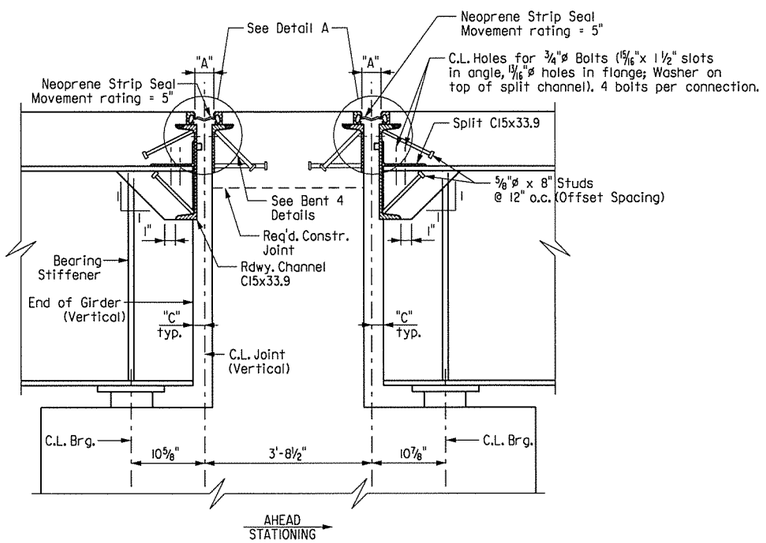
DRAWN BY: LM DATE: 09-10 FILENAME: bca0907x9_jl.dgn
CHECKED BY: BEG DATE: 08-15-12 SCALE: As Shown
DESIGNED BY: LM DATE: 09-10

BRIDGE NO. 07312 DRAWING NO. 55366

B001966M17_J1.dgn 9/3/2014 3:24:48 PM

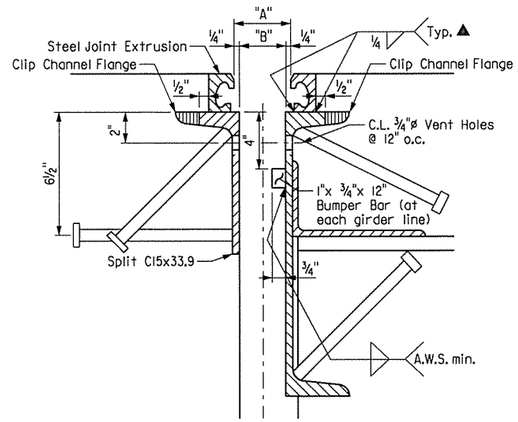
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 514 | 897 |
| 07312 | | JOINT DETAILS | | 55367 |




SECTION THRU JOINT AT BENT 4

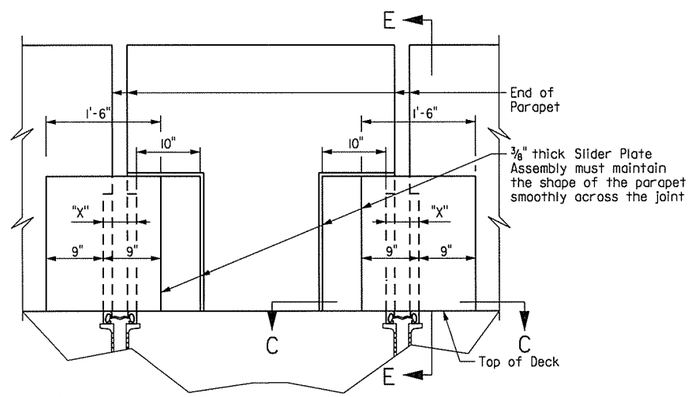
▲ Shop Weld - See Subsection 809.03(b)




DETAIL A

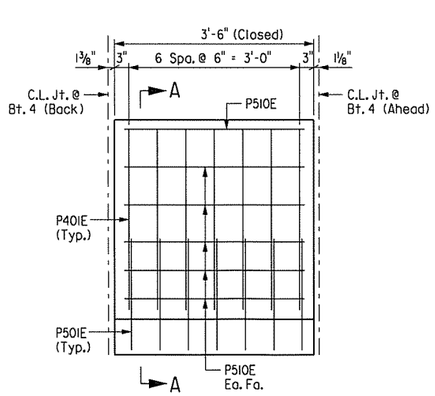
3" = 1'-0"

Note: Concrete shall be hand packed under the joint armor in the backwall and in the span.



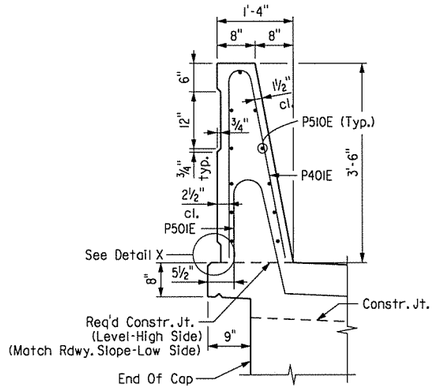

DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"




DETAILS OF PARAPET RAIL @ BENT NO. 4 - BOTH SIDES

¾" = 1'-0"




SECTION A-A

(High Side Shown, Low Side Similar)

Scale: ¾" = 1'-0"

EXPANSION DEVICE INSTALLATION AT INTERIOR BENT NO. 4:

The concrete span pour adjacent to the joints shall be placed before the portion above the top of the cap stem is placed. After the portion above the constuction joint at the top of the bent stem is formed and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the portion above the top of the bent stem, the blocking shall be removed, the opening adjusted for temperature, and the portion above the top of the bent stem constructed.

For Sections C-C, D-D & E-E, General Notes & Blocking Details, see Dwg. No. 55366.

For Detail X and additional parapet details, see Dwg. No. 55364.

For parapet rail at Bent 4 Bar List, see Dwg. No. 55353.

STRIP SEAL JOINT DATA

| Bent No.(s) | Movement Rating (inch) | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "C" Perpendicular to Joint at 24 Hour Average Temperature of 60° F |
|---|---|---|---|---|---|---|---|---|
| | | 40° F | 60° F | 80° F | 40° F | 60° F | 80° F | |
| 4 (Back) | 5" | 3¾" | 3¼" | 2¾" | 3¼" | 2¾" | 2¼" | 2⅝"+/- |
| 4 (Ahead) | 5" | 3 1/16" | 2¾" | 2 7/16" | 2 9/16" | 2¼" | 1 15/16" | 2⅜"+/- |

**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary.

STATE OF ARKANSAS
Larry W. Miller
REGISTERED PROFESSIONAL ENGINEER
No. 11339
LARRY W. MILLER
9-3-14
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL
I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

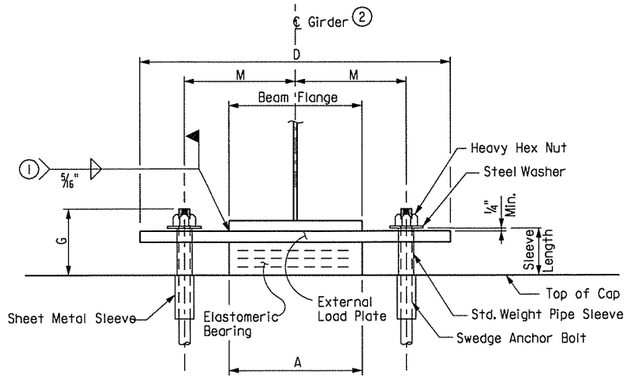
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 09-10
CHECKED BY: BEG DATE: 08-15-12
DESIGNED BY: LM DATE: 09-10
FILENAME: bcg0907x9_12.dgn
SCALE: As Shown

BRIDGE NO. 07312 DRAWING NO. 55367

B001966M17_J2.dgn 9/3/2014 3:24:50 PM

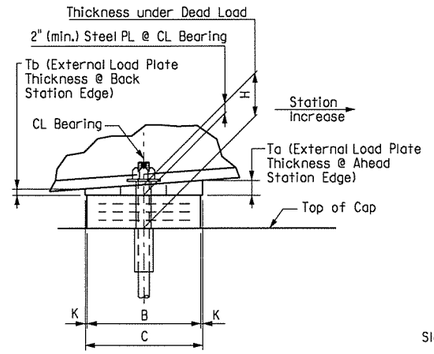
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 515 | 897 |
| | | | | (1) 07312 | | ELASTO. BEARINGS | | 55368 |




FRONT VIEW

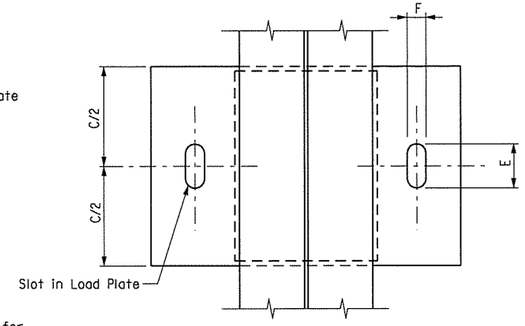
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L. Elastomeric Pad shall be aligned with C.L. Girder.



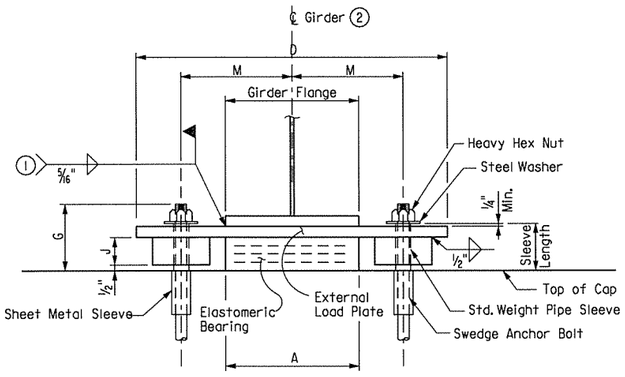

The direction of bevel of the external load plate as shown is for Bent 1. Bevel for Bent 6 will be in the opposite direction. See Table of Fabricator Variables for dimensions.

SIDE VIEW

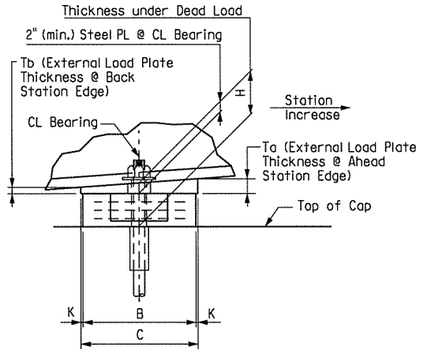



PLAN VIEW

## BENTS 1 & 6

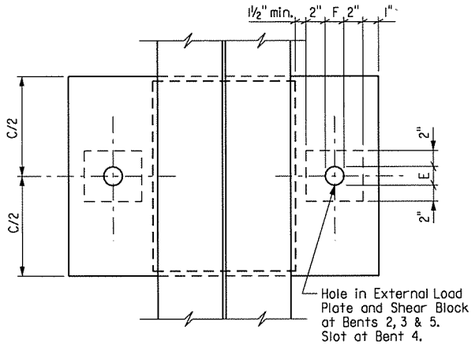



FRONT VIEW




The direction of bevel of the external load plate as shown is for Bents 2-4. Bevel for Bent 5 will be in the opposite direction. See Table of Fabricator Variables for dimensions.

SIDE VIEW




PLAN VIEW

## BENTS 2-5

## TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

| LOCATION | | | BEARING TYPE | NO. OF BEARINGS EACH BENT | *MAXIMUM DESIGN LOAD (KIPS) | ELASTOMERIC PAD | | | | | | | EXTERNAL LOAD PLATE | | | | | | | | | ANCHOR BOLT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BENT NO(S). | LINE ID | BEAM OR GIRDER NO. | | | | G | H | A | B | N | $t_i$ | $t_e$ | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | J | K | M | $T_a$ | $T_b$ | ANCHOR BOLT (ø x L) | GRADE | PIPE SLEEVE SIZE (ø x L) | SHEET METAL SLEEVE SIZE (ø x L) | STEEL WASHER SIZE (O.D.) |
| 1 | -- | All | Exp. | 4 | 151.3 | 9½" | 5 5/16" | 21½" | 10" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅜" | 11" | 34½" | 7½" | 3¾" | na | ½" | 13¾" | 2.20" | 1.80" | 2½" x 36¼" | 55 | 3" x 6" | 4" x 7" | 4½" |
| 2 | -- | All | Fixed | 4 | 399.1 | 10¾" | 7 5/16" | 24" | 14" | 8 | ½" | ¼" | 9 @ 12 Ga. | 5 1/16" | 15" | 43¾" | 3⅛" | 3⅛" | 4 13/16" | ½" | 17¼" | 2.28" | 1.72" | 2" x 33¾" | 55 | 2½" x 7¾" | 4" x 12" | 3¾" |
| 3 | -- | All | Fixed | 4 | 644.5 | 9" | 5 9/16" | 26" | 13" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅜" | 14" | 45¾" | 3⅛" | 3⅛" | 3 1/16" | ½" | 18¼" | 2.21" | 1.79" | 2" x 32" | 55 | 2½" x 5⅞" | 4" x 12" | 3¾" |
| 4 | BACK | All | Exp. | 4 | 263.2 | 7¾" | 4 15/16" | 28½" | 9½" | 4 | ½" | ¼" | 5 @ 12 Ga. | 3" | 10½" | 45½" | 7" | 2" | 2 7/16" | ½" | 18¾" | 2.07" | 1.93" | 1¼" x 22¾" | 55 | 1¼" x 5⅜" | 3" x 12" | 2½" |
| 4 | AHEAD | All | Exp. | 4 | 216.2 | 9¼" | 6 5/16" | 28½" | 9" | 4 | ½" | ¼" | 5 @ 12 Ga. | 3" | 10" | 46¼" | 5½" | 2¼" | 2 7/16" | ½" | 19" | 3.44" | 3.31" | 1½" x 27¼" | 55 | 1½" x 6¾" | 3" x 12" | 3" |
| 5 | -- | All | Fixed | 4 | 664.0 | 8¼" | 4⅜" | 28" | 14" | 3 | ½" | ¼" | 4 @ 12 Ga. | 2 1/16" | 15" | 48¾" | 3¾" | 3¾" | 1⅞" | ½" | 19½" | 1.98" | 2.02" | 2½" x 36¼" | 55 | 3" x 4¾" | 4" x 12" | 4½" |
| 6 | -- | All | Exp. | 4 | 194.0 | 10" | 5 9/16" | 25" | 9¾" | 5 | ½" | ¼" | 6 @ 12 Ga. | 3⅜" | 10¾" | 38" | 5½" | 3¾" | na | ½" | 15½" | 1.91" | 2.09" | 2¾" x 40" | 55 | 3" x 6" | 5" x 8" | 5" |

GENERAL NOTES

Elastomeric bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for ELASTOMERIC BEARINGS.

External load plates and shear blocks shall conform to AASHTO M270, Grade 50 for plates up to 4" thick and ASTM A572 Grade 42 up to 6" thick. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

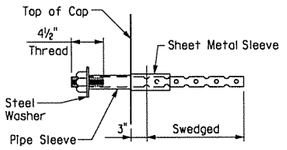
External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) and painted in accordance with Subsection 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to ELASTOMERIC BEARINGS.

Anchor bolts, washers and nuts shall conform to Subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50). External load plates and shear blocks will not be paid for separately but will be included in the unit price bid for ELASTOMERIC BEARINGS.

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident.

If welding at other temperatures is required, the Engineer will provide adjustment data.

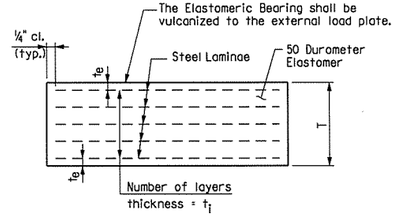



ANCHOR BOLT DETAIL

Anchor bolts may be cast in place or drilled and grouted into place. If anchor bolts are to be cast in place, the galvanized sheet metal sleeves will not be required.

If anchor bolts are to be drilled and grouted in place, the galvanized sheet metal sleeves shall be cast in place as shown. Sleeves shall be dry packed with Styrofoam, urethane foam or approved equal prior to pouring of concrete.

After pouring of the cap and prior to erection of structural steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized sheet metal sleeves will not be paid for directly, but will be considered subsidiary to the item STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Gr. 50)"




$t_e$ = thickness of elastomer cover on top and bottom of pad

$t_i$ = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness $t_i$

ELASTOMERIC BEARING

# DETAILS OF ELASTOMERIC BEARINGS I-49 INTERCHANGE RAMP EN OVER U.S. HWY. 412 BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 08-12 FILENAME: bca0907x9_el.dgn

CHECKED BY: BEG DATE: 08-15-12 SCALE: None

DESIGNED BY: LM DATE: 08-12

BRIDGE NO. 07312 DRAWING NO. 55368

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 11339 LARRY W. MILLER

Larry W. Miller 9-3-14

BRIDGE ENGINEER

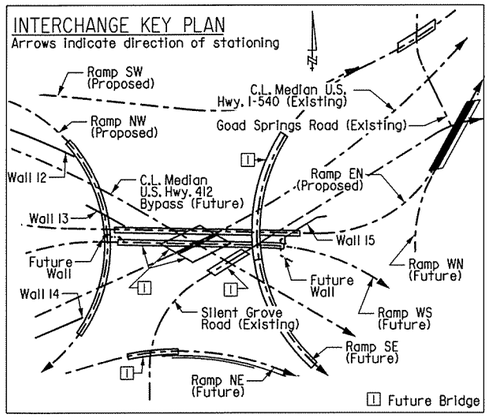
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 516 | 897 |
| | | | | (1) 07313 | | LAYOUT | | 55369 |

NOTES

For GENERAL NOTES and SUPERELEVATION TRANSITION DETAIL see Dwg. No. 55372.

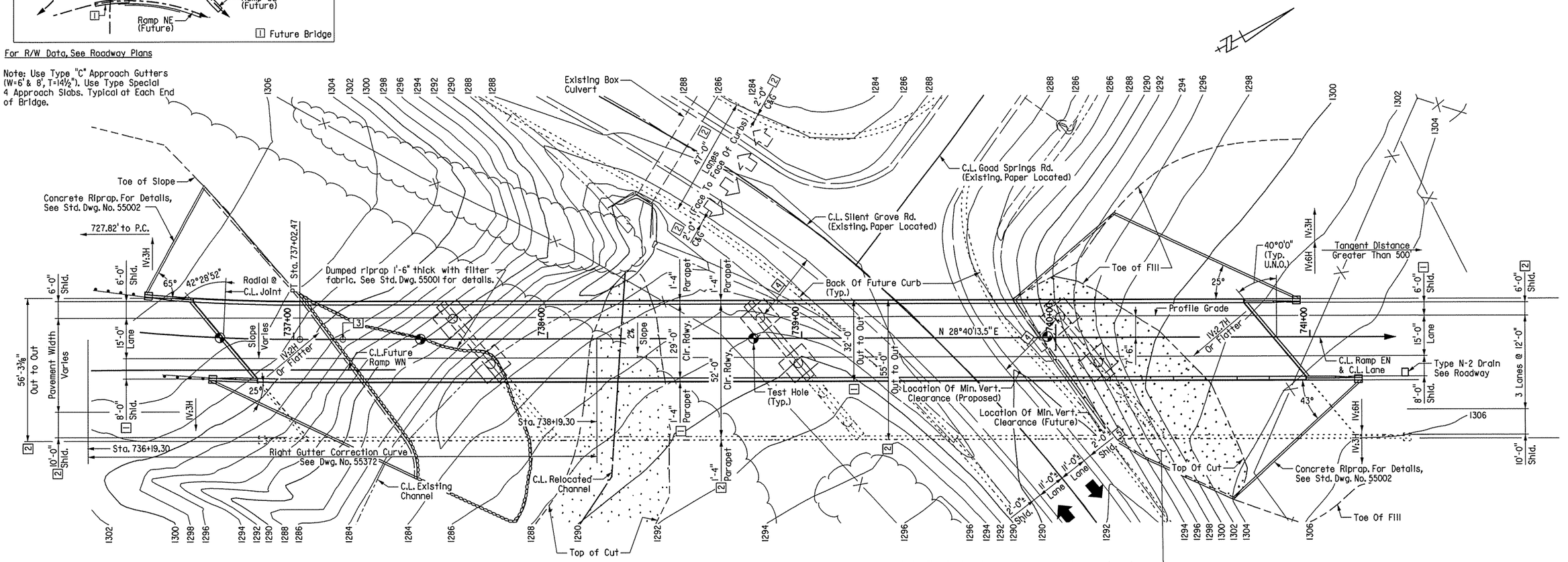
For Soil Boring Legend see Dwg. No. 55370.

For ELEVATION VIEW, see Dwg. No. 55370.




For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters (W=6' & 8', T=14½"). Use Type Special 4 Approach Slabs. Typical at Each End of Bridge.




PLAN

Note: All bents are parallel.

Note: The Contractor shall excavate the existing slope as shown. Approximately 215 cu. yds. of excavation. (Included in Roadway quantities.)

1 Proposed

2 Future

3 End Superelevation Transition Sta. 737+19.30

4 Min. Horiz. Clearances:

| | Proposed | Future |
|---|---|---|
| Bent 3 | 25'-6" | 14'-0" |
| Bent 4 | 25'-8" | 14'-1" |

(Future clearances are measured to face of curb.)

5 Existing

HORIZONTAL CURVE DATA

C.L. RAMP EN

PI Sta = 733+66.22
PC Sta = 729+44.55
PT Sta = 737+02.47
R = 694.49
△ = 62°31'42.7" LT.
D = 8°15'00"
L = 757.92
T = 421.67

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER
2014

# SHEET 1 OF 2
# LAYOUT OF BRIDGE
# I-49 INTERCHANGE RAMP EN
# OVER SILENT GROVE ROAD
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

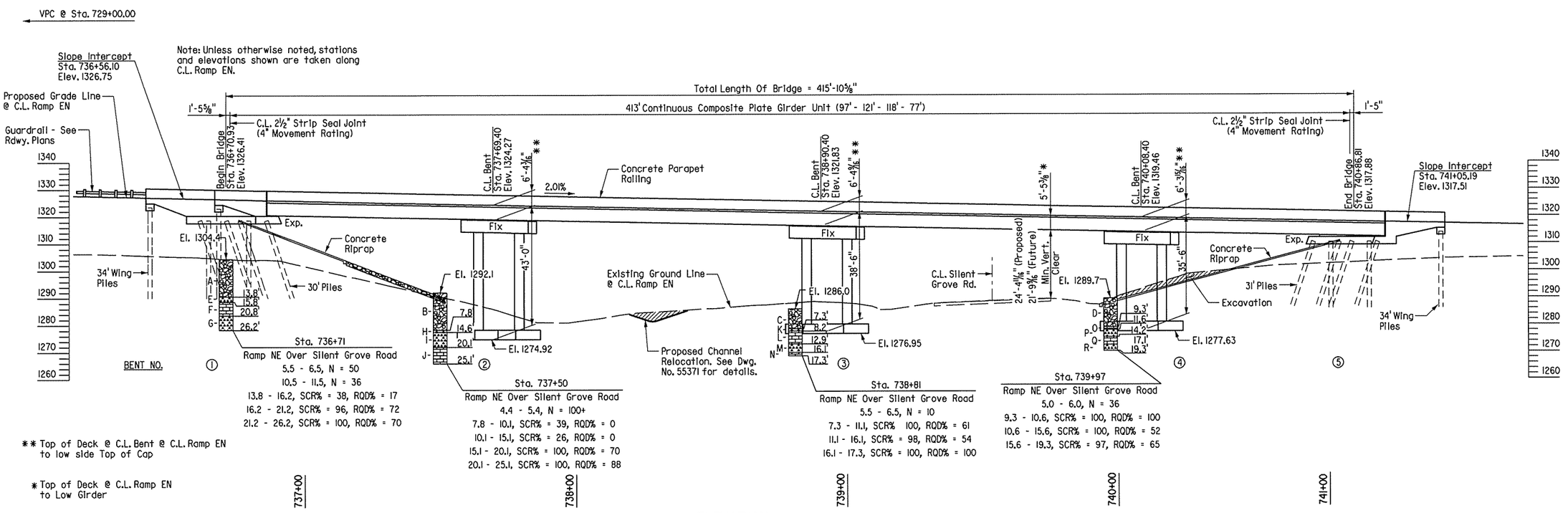
DRAWN BY: JE DATE: 02-08 FILENAME: bca0907x10_LI.dgn
CHECKED BY: GMS DATE: 08-12 SCALE: 1" = 20'-0"
DESIGNED BY: RWG DATE: 02-08

BRIDGE NO. 07313 DRAWING NO. 55369

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 517 | 897 |
| | | | | (1) 07313 | | LAYOUT | | 55370 |

## Boring Legend

A - Red, dense, silty gravel with sand.
B - Brown, very dense, silty gravel with sand.
C - Brown, loose, silty gravel with sand.
D - Red, dense, silty gravel with sand.
E - Chert: White, lt. gray, weathered.
F - Limestone: Lt. gray, gray, fresh to slightly weathered.
G - Chert: White, lt. gray, fresh.
H - Chert: White, lt. gray, weathered.
I - Chert: White, lt. gray, fresh to moderately weathered.
J - Limestone: Lt. gray, gray, fresh, fine to medium grain.
K - Chert: White, lt. gray, gray, fresh to slightly weathered.
L - Limestone: White, lt. gray, gray, medium grain, fresh to slight weathering.
M - Chert: White, lt. gray, gray, fresh to slightly weathered.
N - Limestone: Lt. gray, gray, medium grain, fresh, slightly weathered.
O - Limestone: Lt. gray, gray, fine to medium grain, fresh.
P - Chert: White, lt. gray, gray, fresh to slightly weathered.
Q - Limestone: Lt. gray, gray, fine to medium grain, fresh with slight weathering.
R - Chert: White, lt. gray, gray, fresh to slightly weathered.




ELEVATION

NOTES

For GENERAL NOTES and SUPERELEVATION TRANSITION DETAIL see Dwg. No. 55372.

For PLAN VIEW, see Dwg. No. 55369.

SHEET 2 OF 2
LAYOUT OF BRIDGE
I-49 INTERCHANGE RAMP EN
OVER SILENT GROVE ROAD
HWY. 112 - I-49 (S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

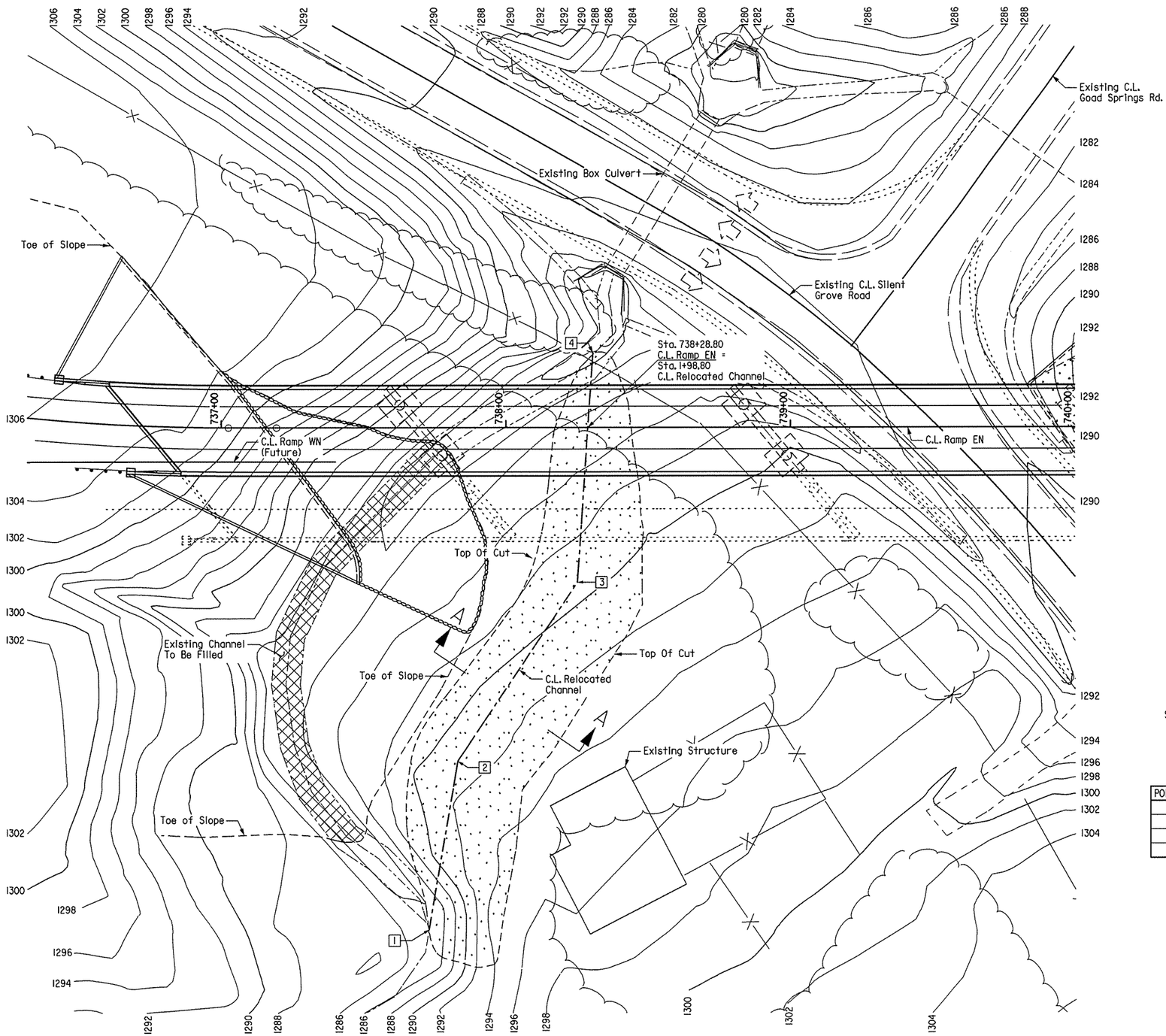
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
PETER J. STAN
BRIDGE ENGINEER

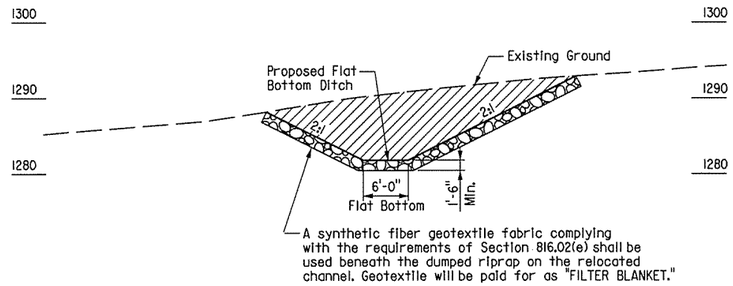
DRAWN BY: JE DATE: 02-08
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 08-12
FILENAME: bca0907x10_L2.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07313 DRAWING NO. 55370

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 518 | 897 |
| (1) 07313 | CHANNEL RELOCATION | | | 55371 |




A synthetic fiber geotextile fabric complying with the requirements of Section 816.02(e) shall be used beneath the dumped riprap on the relocated channel. Geotextile will be paid for as "FILTER BLANKET."

SECTION A-A
1" = 10'-0"

See Roadway drawings from quantities related to channel relocation.

## POINT LOCATIONS

| POINT NO. | STATION | OFFSET | ELEVATION |
|---|---|---|---|
| 1 | 737+72.86 | 176.13 Rt. | 1284.13 |
| 2 | 737+82.97 | 116.99 Rt. | 1282.71 |
| 3 | 738+25.07 | 54.20 Rt. | 1280.93 |
| 4 | 738+30.56 | 25.62 Lt. | 1279.05 |

Note: Stations and offsets are from C.L. Ramp EN.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

# CHANNEL RELOCATION
# I-49 INTERCHANGE RAMP EN
# OVER SILENT GROVE ROAD
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JE DATE: 02-08
CHECKED BY: LM DATE: 03-09
DESIGNED BY: DM DATE: 02-08
FILENAME: bca0907x10_L3.dgn
SCALE: 1"=20'

BRIDGE NO. 07313 DRAWING NO. 55371

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 519 | 897 |
| (1) 07313 | | GENERAL NOTES | | 55372 |

GENERAL NOTES

BENCH MARK: Aluminum cap in shoulder of I-49 at NE corner of SB bridge over Goad Springs Road. Survey control point no. 99. N=701370.7345, E=676955.1799, Elev. 1308.7855, Mainlanes Sta. 729+37.43, Offset 1488.63 Left.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: I $S_{DI}$=0.125 Site Class=D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) Concrete (Superstructure) | f'c = 4,000 psi |
| Class S Concrete (Substructure) | f'c = 3,500 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | fy = 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy = 36,000 psi |

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface, top of backwall, top and roadway face of the concrete parapet rail and transition rails.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to surfaces as specified in Special Provision Job CA0907 "Textured Coating Finish" and in accordance with Section 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

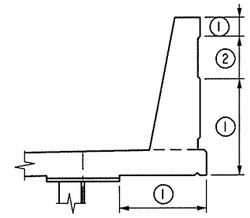
PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of paint shall be Dark Brown and shall match Fed Std. 595B, Color Chip No. 20108.

SPREAD FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as competent Limestone or Chert on the boring legend and shall have a minimum cover of 2'-0" above top of footings. Foundations for footings shall be prepared in accordance with Section 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons (factored resistance of 140 tons) per pile and into the material designated as competent Limestone or Chert on the boring legend. Drive all piles in Bents 1 and 5 to a minimum penetration of 10' below existing ground. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four wingwall locations in accordance with Dwg. No. 55385.

| DETAIL DRAWINGS: | DRAWING NO. |
|---|---|
| End Bents | 55373-55376 & 55381-55384 |
| Intermediate Bents | 55377-55380 |
| 413'-0" Cont. Comp. Plate Girder Unit | 55386-55396 |
| Elastomeric Bearings | 55397 |
| Type "C" Approach Gutters | 55030c |
| Type Special 4 Approach Slabs | 55398-55399 |
| Steel Piling | 55020 |

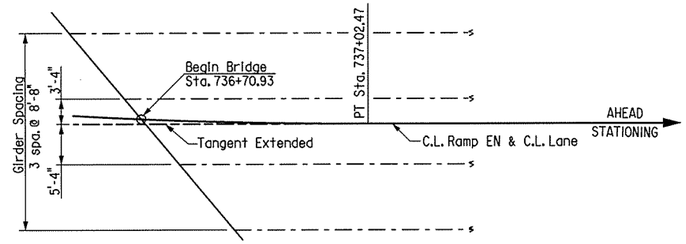



(1) Class 3 Textured Coating Finish
(Color = Light Brown, Color Chip No. 33522)

(2) Class 3 Textured Coating Finish
(Color = Medium Brown, Color Chip No. 30219)

## TEXTURED COATING FINISH

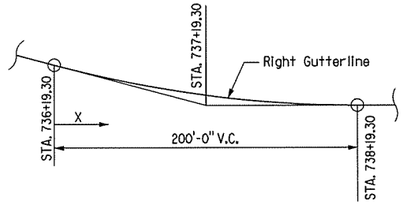
Scale: ½" = 1'-0"




## LAYOUT FOR BEGINNING OF BRIDGE

Not to Scale

Girders are parallel to C.L. Ramp EN ahead of PT at Sta. 737+02.47. Girders are parallel to the Tangent Extended back of PT.




Right is defined when facing direction of increasing station.

The right gutter line has been smoothed with a correction equation between the stations shown. The roadway cross slope at any station is a straight line between the left and right gutter lines.

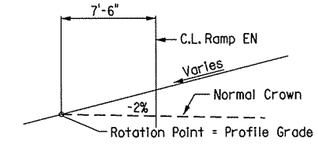
Correction equation applies to bridge only.

Elev. = 1327.94 - .02967(X) + .00002379($X^2$)

X is the distance in feet along centerline Ramp EN from beginning station shown. Elevation is at gutter line.

## RIGHT GUTTER CORRECTION CURVE

No Scale

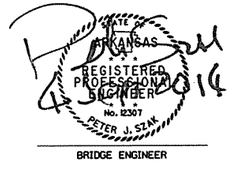



Superelevation varies from +10% to -2%. *

STA. 734+29.30 TO 737+19.30

## SUPERELEVATION TRANSITION DETAIL

(Looking Ahead)
No Scale
* Use outside limits of RIGHT GUTTER CORRECTION CURVE.




BRIDGE ENGINEER

# GENERAL NOTES
# I-49 INTERCHANGE RAMP EN
# OVER SILENT GROVE ROAD
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 08-12 FILENAME: bca0907x10_L4.dgn
CHECKED BY: GMS DATE: 08-12 SCALE: As shown
DESIGNED BY: RWG DATE: 08-12

BRIDGE NO. 07313 DRAWING NO. 55372

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 520 | 897 |
| (1) 07313 | | END BENT 1 DETAILS | | 55373 |

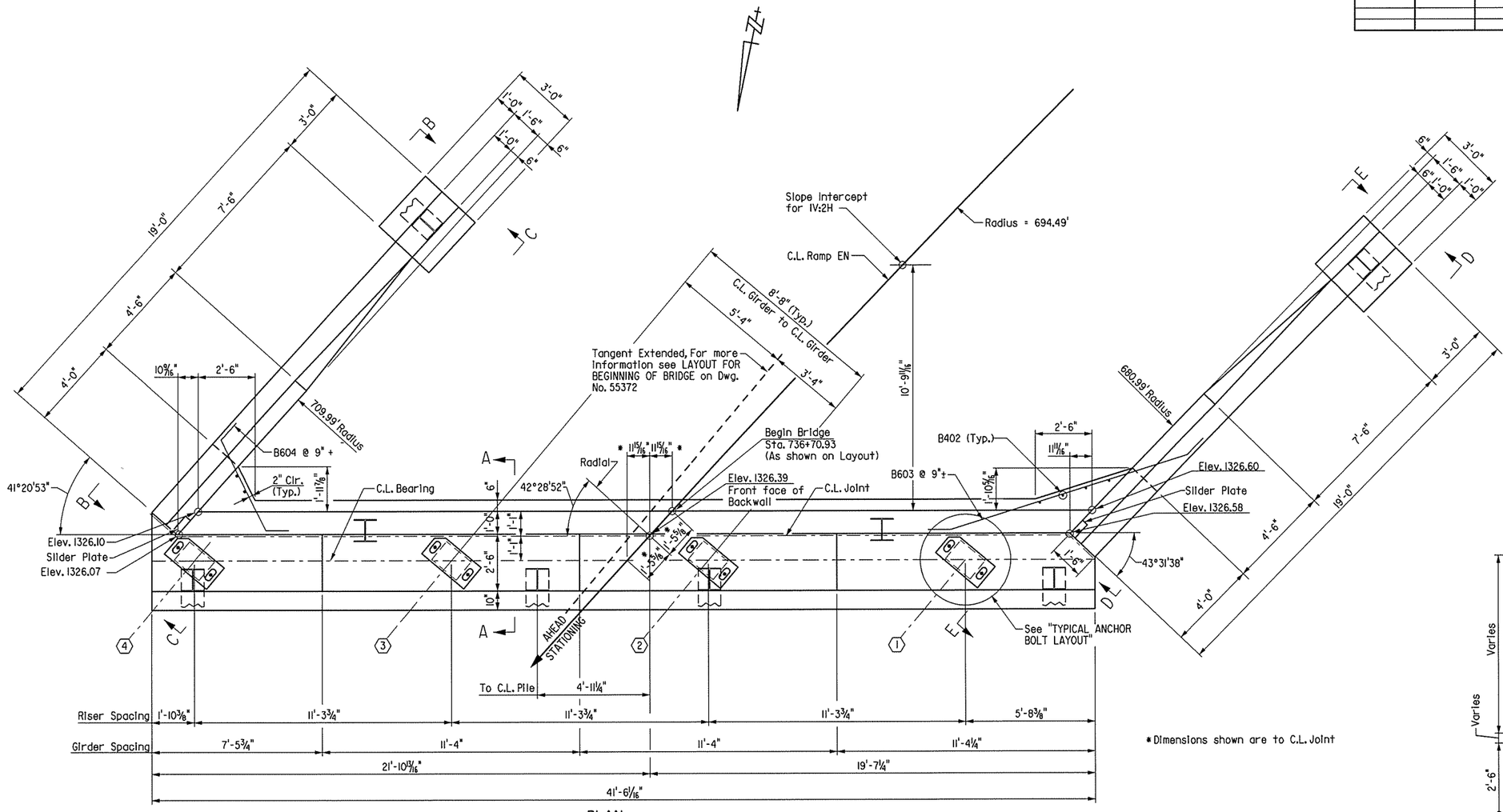
For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For VIEW B-B, VIEW C-C, VIEW D-D, and VIEW E-E see Dwg. No. 55375.

For DETAIL Z, see Dwg. No. 55376.

For Details of Wing and Rail, see Dwg. No. 55376.

For Details of Elastomeric Bearings, see Dwg. No. 55397.




PLAN

Scale: 3/8" = 1'-0"

* Dimensions shown are to C.L. Joint




SECTION A-A

Scale 1/2" = 1'-0"

GENERAL NOTES FOR SUBSTRUCTURE

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A Grade 60 (yield strength = 60,000 psi).

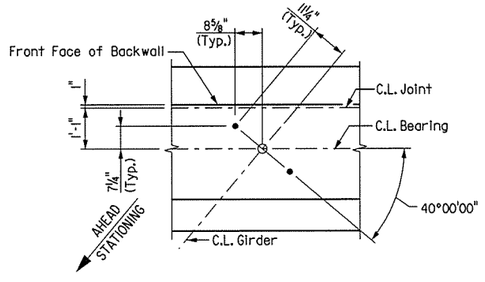
The backwall above the required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 55396 for additional information.

For structural steel in end bents, see Dwg. No. 55396.

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For detail of textured coating finish, see Dwg. No. 55372.

Class 2 Protective Surface Treatment shall be applied to the top of backwall and to the top and roadway face of the transition rails.




TYPICAL ANCHOR BOLT LAYOUT

Scale: 1/2" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

4 SEP 2014

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT 1
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

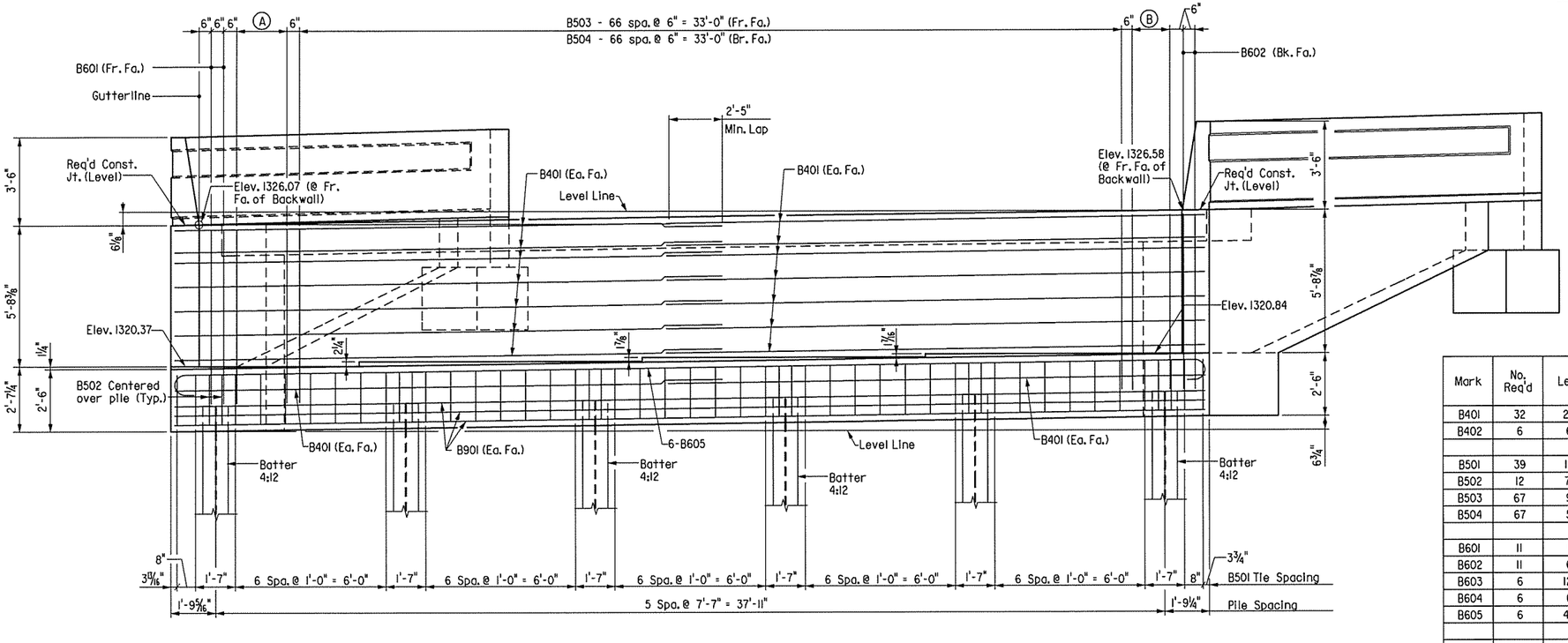
DRAWN BY: PGR DATE: 07-12 FILENAME: bca0907x10_b11.dgn
CHECKED BY: GMS DATE: 08-12 SCALE: AS SHOWN
DESIGNED BY: RWG DATE: 07-12

BRIDGE NO. 07313 DRAWING NO. 55373

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 521 | 897 |
| | | | | (1) 07313 | | END BENT 1 DETAILS | | 55374 |

Ⓐ B601 - 4 Spa. @ 6" = 2'-0" (Fr. Fa.)
B602 - 4 Spa. @ 6" = 2'-0" (Bk. Fa.)

Ⓑ B601 - 3 Spa. @ 6" = 1'-6" (Fr. Fa.)
B602 - 3 Spa. @ 6" = 1'-6" (Bk. Fa.)




ELEVATION
(Looking Back)
Scale: ⅜" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see LAYOUT on Dwg. NoS. 55369 & 55370.

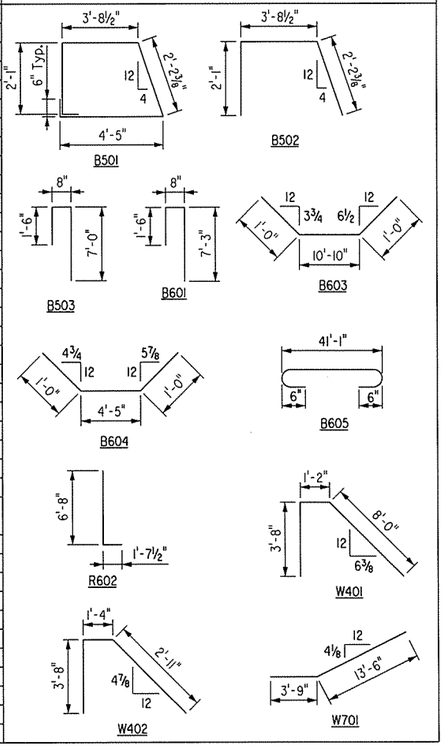
For Details of Wing and Rail, see Dwg. No. 55376.

Note: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

## END BENT 1 BAR LIST

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| B401 | 32 | 21'-10" | Str. |
| B402 | 6 | 6'-7" | Str. |
| | | | |
| B501 | 39 | 12'-11" | 2½" |
| B502 | 12 | 7'-10" | 2½" |
| B503 | 67 | 9'-0" | 2½" |
| B504 | 67 | 5'-9" | Str. |
| | | | |
| B601 | 11 | 9'-1" | 4½" |
| B602 | 11 | 6'-0" | Str. |
| B603 | 6 | 12'-10" | 4½" |
| B604 | 6 | 6'-5" | 4½" |
| B605 | 6 | 42'-5" | 4½" |
| | | | |
| B901 | 6 | 41'-1" | Str. |
| | | | |
| R401 | 160 | 5'-0" | Str. |
| | | | |
| R601 | 16 | 18'-8" | Str. |
| R602 | 24 | 8'-2" | 4½ |
| R603 | 12 | 2'-8" | Str. |
| | | | |
| W401 | 3 | 12'-9" | 3" |
| W402 | 3 | 7'-10" | 3" |
| W403 | 8 | 7'-9" | Str. |
| W404 | 8 | 7'-10" | Str. |
| W405 to W416 | 4 Each | 5'-3" to 1'-9" | Str. |
| | | | |
| W701 | 4 | 17'-3" | 5¼" |
| W702 | 4 | 6'-3" | Str. |
| W703 | 4 | 8'-8" | Str. |
| W704 | 4 | 10'-11" | Str. |
| W705 | 4 | 13'-3" | Str. |
| W706 | 12 | 18'-8" | Str. |

BENDING DIAGRAMS
(Dimensions are out to out of bars)




STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER
2014

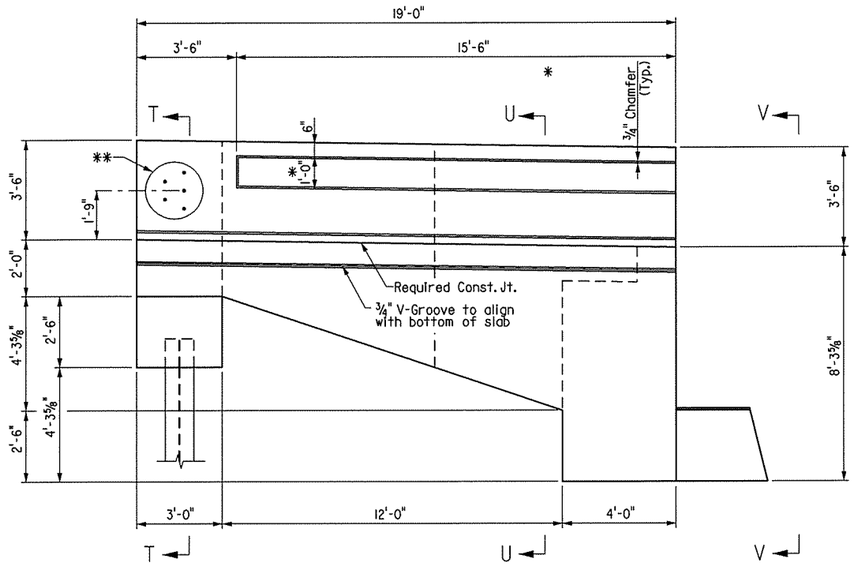
SHEET 2 OF 4
DETAILS OF END BENT 1
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_b12.dgn
SCALE: ⅜" = 1'-0"

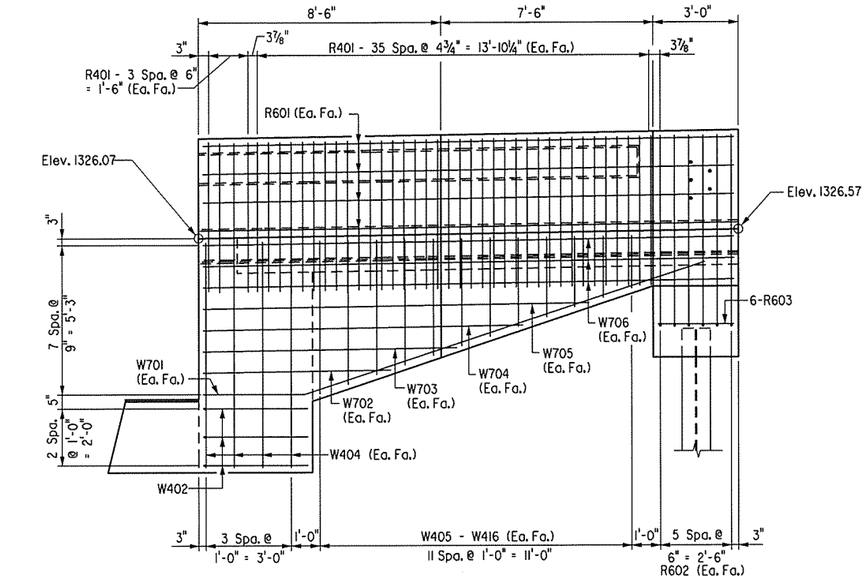
BRIDGE NO. 07313 DRAWING NO. 55374

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

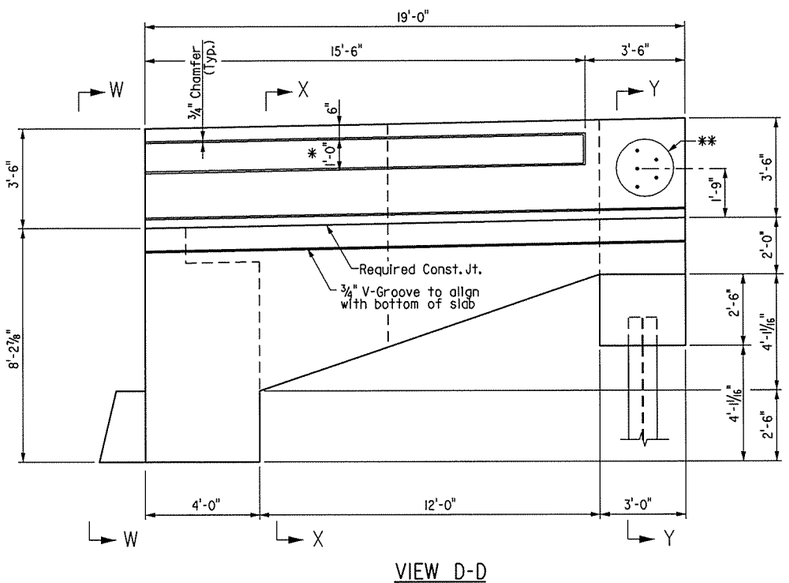
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 522 | 897 |
| (1) 07313 | | END BENT 1 DETAILS | | 55375 |



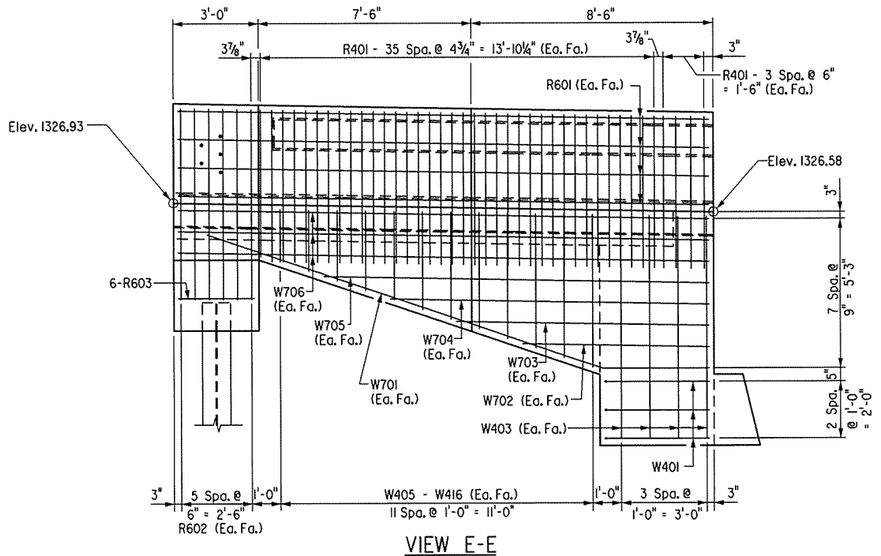

VIEW B-B
Scale 3/8" = 1'-0"




VIEW C-C
Scale 3/8" = 1'-0"




VIEW D-D
Scale 3/8" = 1'-0"




VIEW E-E
Scale 3/8" = 1'-0"

* Parapet Enhancement shall be made continuous.

** 5 - 1" dia. formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see Layout on Dwg. Nos. 55369 & 55370.

For SECTION T-T, SECTION U-U, View V-V, View W-W, SECTION X-X, and Section Y-Y, see Dwg. No. 55376.

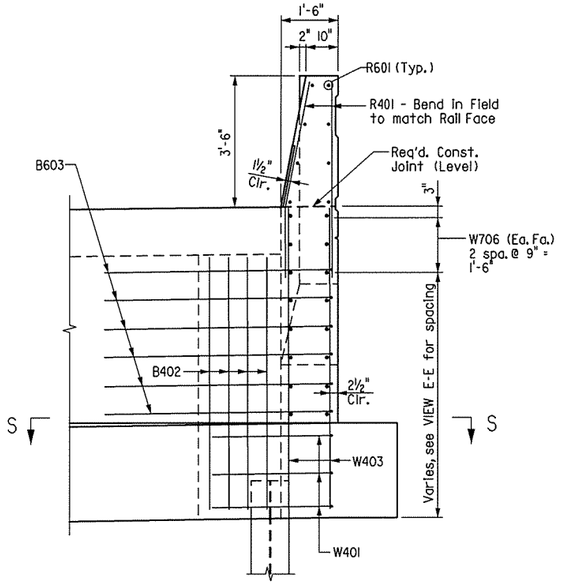
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SILK
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT 1
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_bl3.dgn
SCALE: AS SHOWN

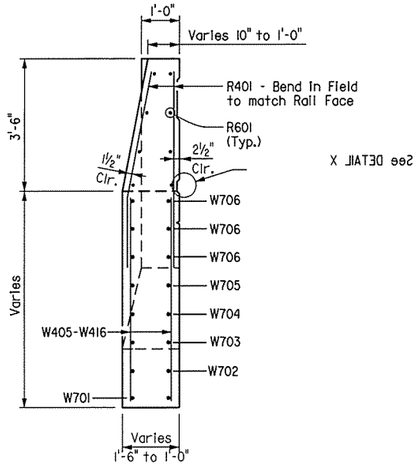
BRIDGE NO. 07313 DRAWING NO. 55375

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 523 | 897 |
| | | | | (1) 07313 | | END BENT 1 DETAILS | | 55376 |



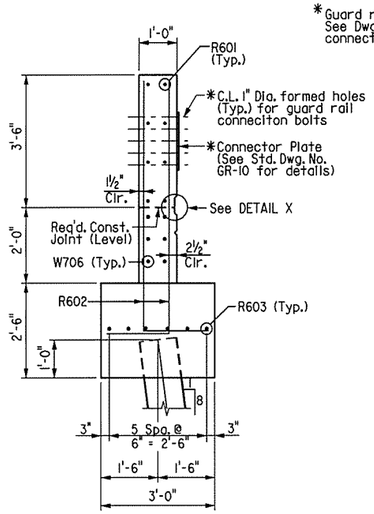

VIEW W-W

Scale: ½" = 1'-0"




SECTION X-X

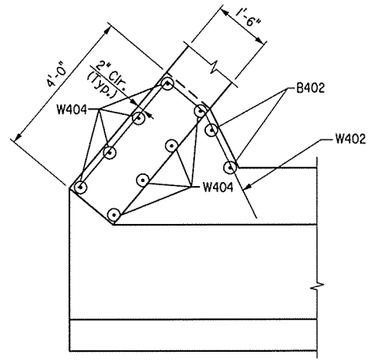
Scale: ½" = 1'-0"




SECTION Y-Y

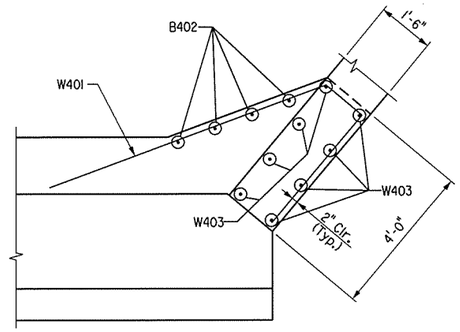
Scale: ½" = 1'-0"

*Guard rail connection is not required on all bents. See Dwg. No. 55369 for location of guard rails connections.



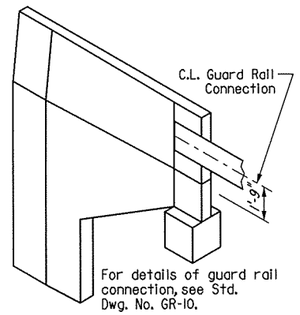

SECTION R-R

Scale: ½" = 1'-0"




SECTION S-S

Scale: ½" = 1'-0"

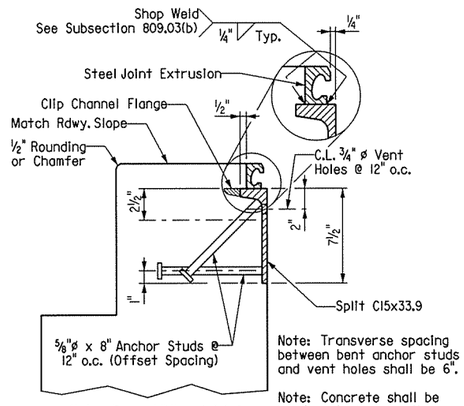



For details of guard rail connection, see Std. Dwg. No. GR-10.

See Layout drawings for locations of guardrail installation.

THREE DIMENSIONAL VIEW OF WING & RAIL

NTS



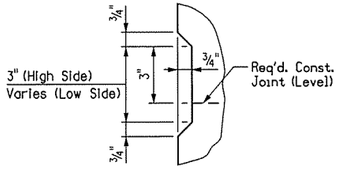

Note: For additional joint details, see Dwg. No. 55396.

Note: Transverse spacing between bent anchor studs and vent holes shall be 6".

Note: Concrete shall be hand packed under the joint armor.

DETAIL Z

Scale: 2" = 1'-0"



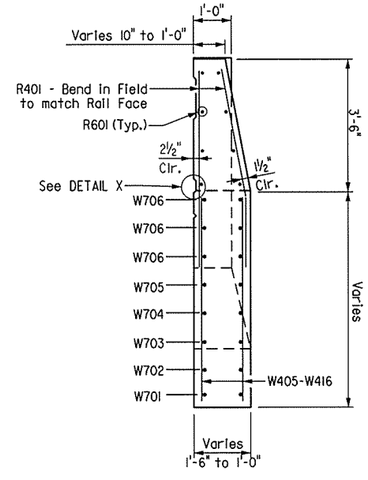

DETAIL X

Scale: 3" = 1'-0"



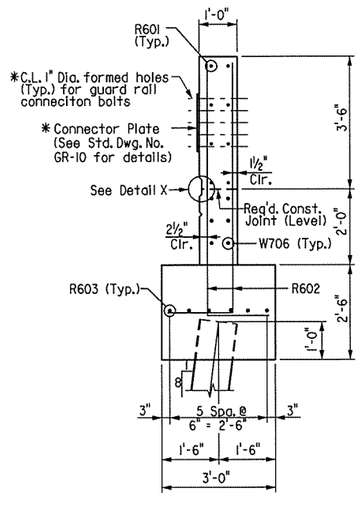

VIEW V-V

Scale: ½" = 1'-0"




SECTION U-U

Scale: ½" = 1'-0"




SECTION T-T

Scale: ½" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZIK 2016

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENT 1
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_b14.dgn
SCALE: AS SHOWN

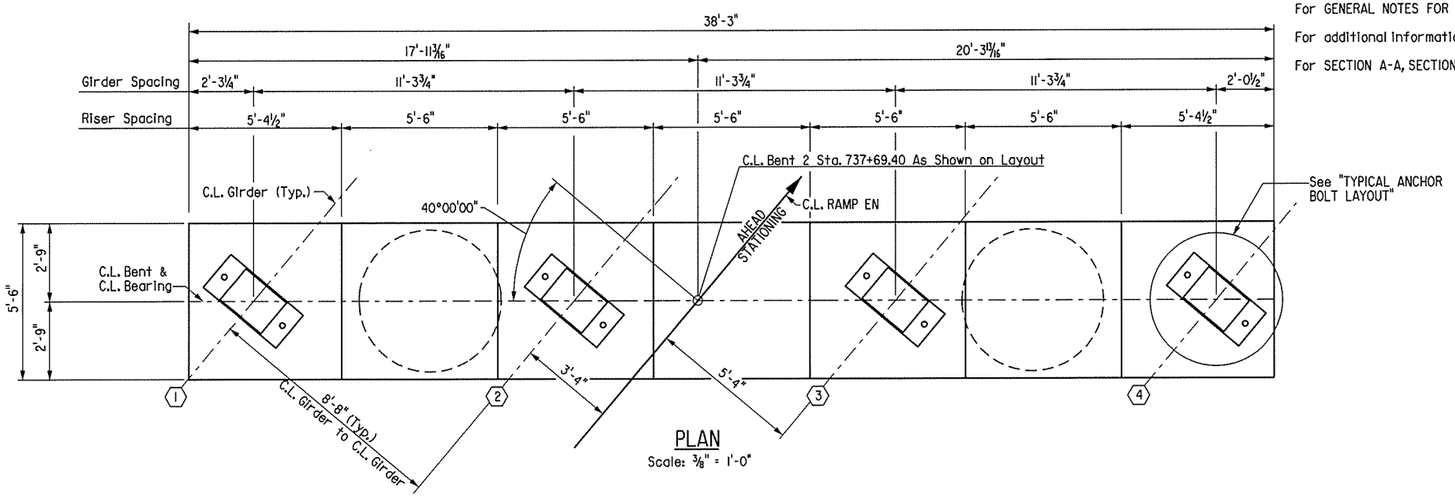
BRIDGE NO. 07313 DRAWING NO. 55376

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 524 | 897 |
| | | | | (1) 07313 | | BENT 2 DETAILS | | 55377 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For SECTION A-A, SECTION B-B, & SECTION C-C, see Dwg. No. 55378.

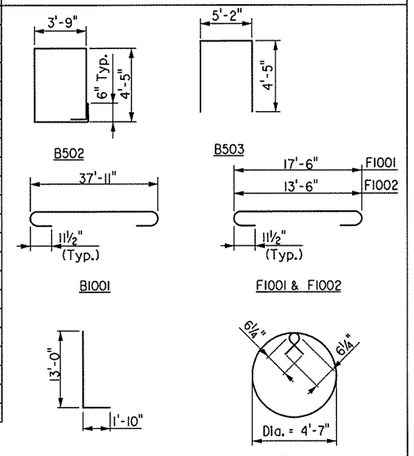


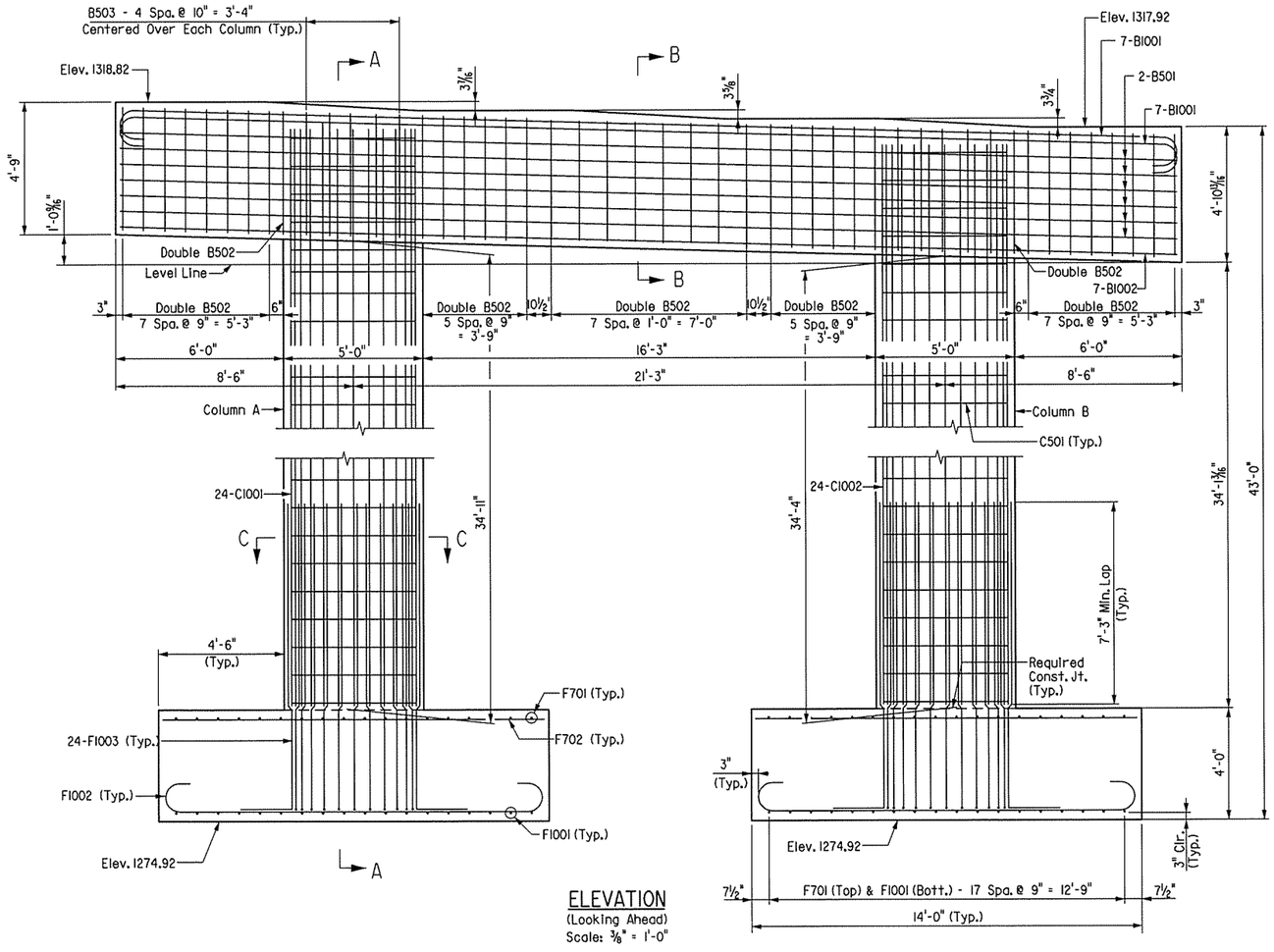

PLAN
Scale: 3/8" = 1'-0"

## BENT 2 BAR LIST

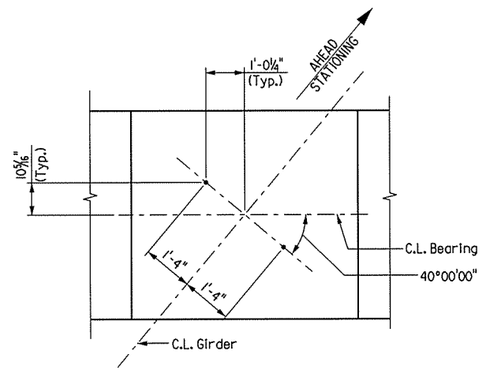
| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| B501 | 12 | 37'-11" | Str. |
| B502 | 76 | 16'-10" | 2 1/2" |
| B503 | 10 | 13'-10" | 2 1/2" |
| | | | |
| B1001 | 14 | 40'-9" | 10" |
| B1002 | 7 | 37'-11" | Str. |
| | | | |
| C501 | 79 | 15'-9" | 3 3/4" |
| | | | |
| C1001 | 24 | 38'-9" | Str. |
| C1002 | 24 | 38'-2" | Str. |
| | | | |
| F701 | 36 | 17'-6" | Str. |
| F702 | 34 | 13'-6" | Str. |
| | | | |
| F1001 | 36 | 20'-4" | 10" |
| F1002 | 34 | 16'-4" | 10" |
| F1003 | 48 | 14'-6" | 10" |

Bending Diagrams (Dimensions are out to out of bars.)




ELEVATION
(Looking Ahead)
Scale: 3/8" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: 1/2" = 1'-0"

Note: For Details of Elastomeric Bearings, see Dwg. No. 55397.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
2014
BRIDGE ENGINEER

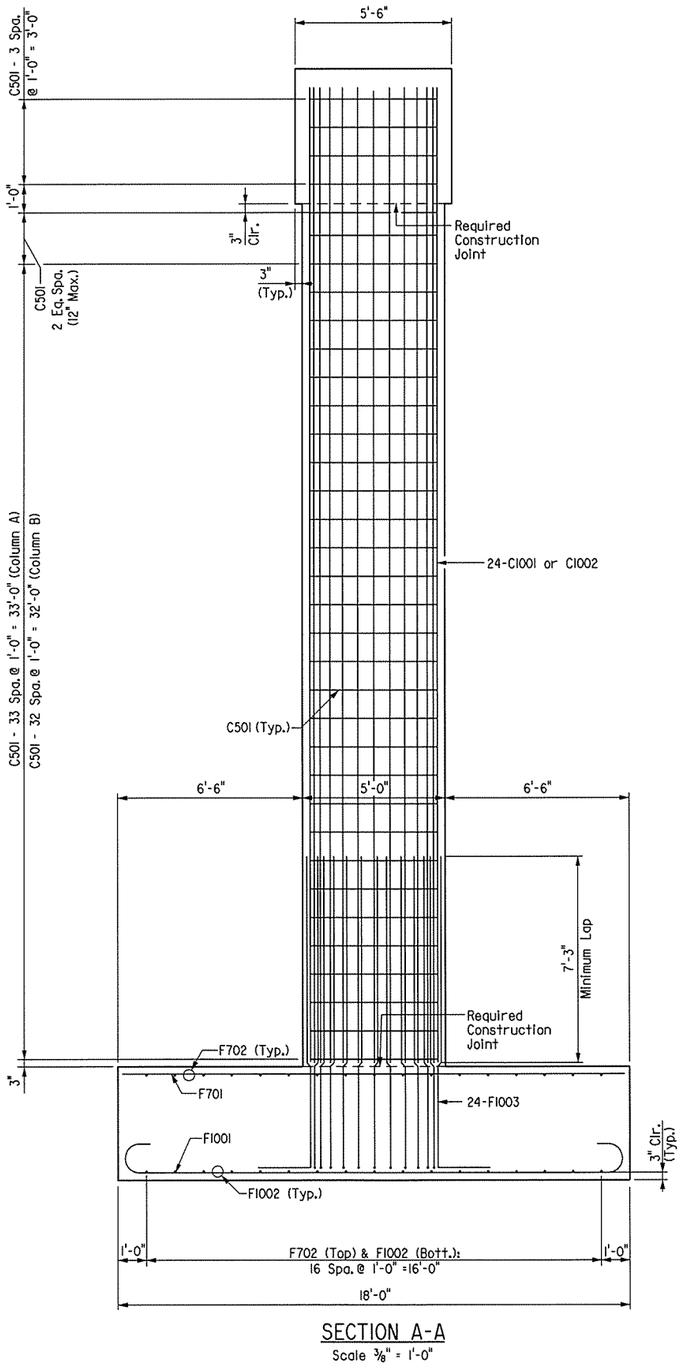
SHEET 1 OF 2
DETAILS OF BENT 2
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 8-10-12
CHECKED BY: RWG DATE: 8-10-12
DESIGNED BY: SRM DATE: 7-10-12
FILENAME: bca0907x10_b21.dgn
SCALE: AS SHOWN

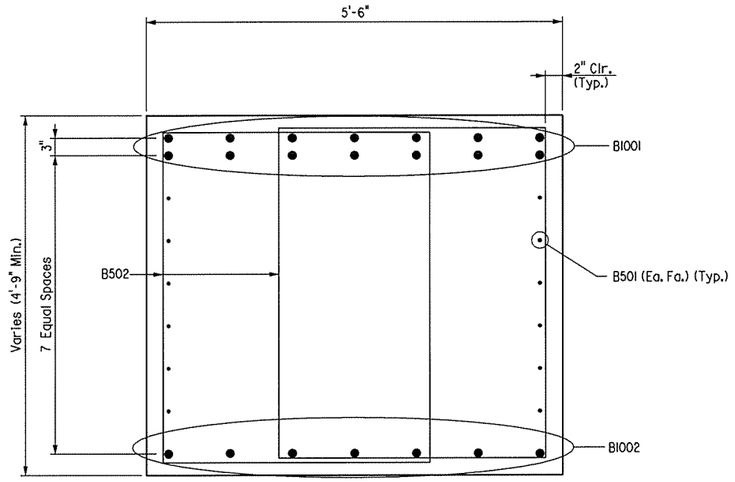
BRIDGE NO. 07313 DRAWING NO. 55377

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

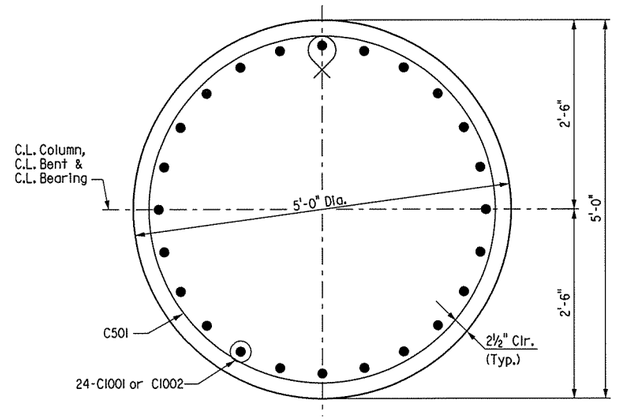
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 525 | 897 |
| (1) 07313 | | BENT 2 DETAILS | | 55378 |




SECTION A-A
Scale 3/8" = 1'-0"




SECTION B-B
Scale 1" = 1'-0"




SECTION C-C
Scale 1" = 1'-0"

NOTES

For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER PETER J. SZAK No. 12307

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 2
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 8-10-12
CHECKED BY: RWG DATE: 8-10-12
DESIGNED BY: SRM DATE: 7-10-12
FILENAME: bca0907x10_b22.dgn
SCALE: AS SHOWN

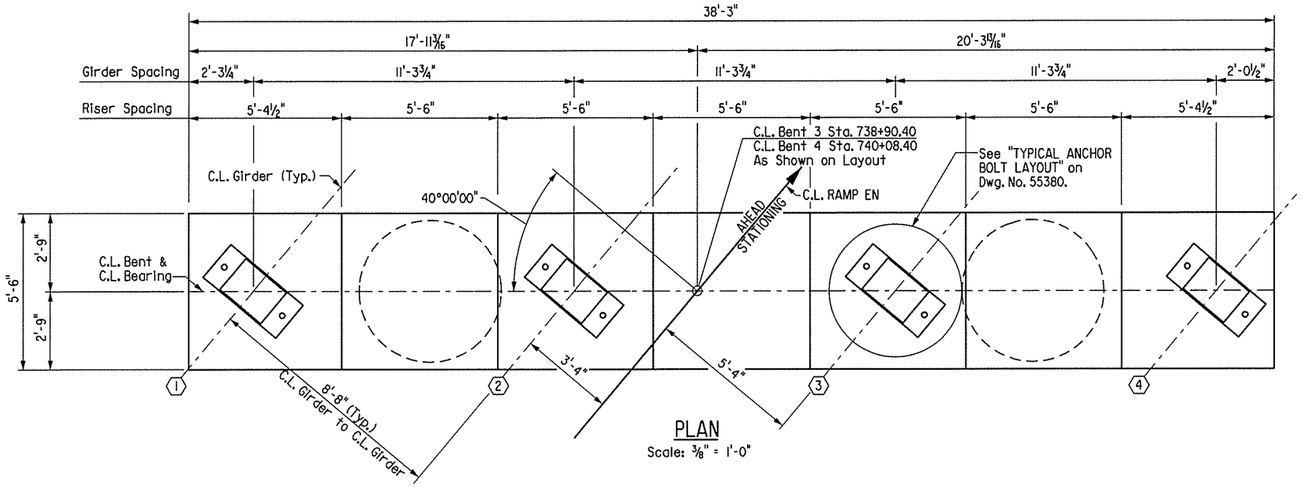
BRIDGE NO. 07313 DRAWING NO. 55378

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 526 | 897 |
| | | | | (1) 07313 | | BENT 3 & 4 DETAILS | | 55379 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

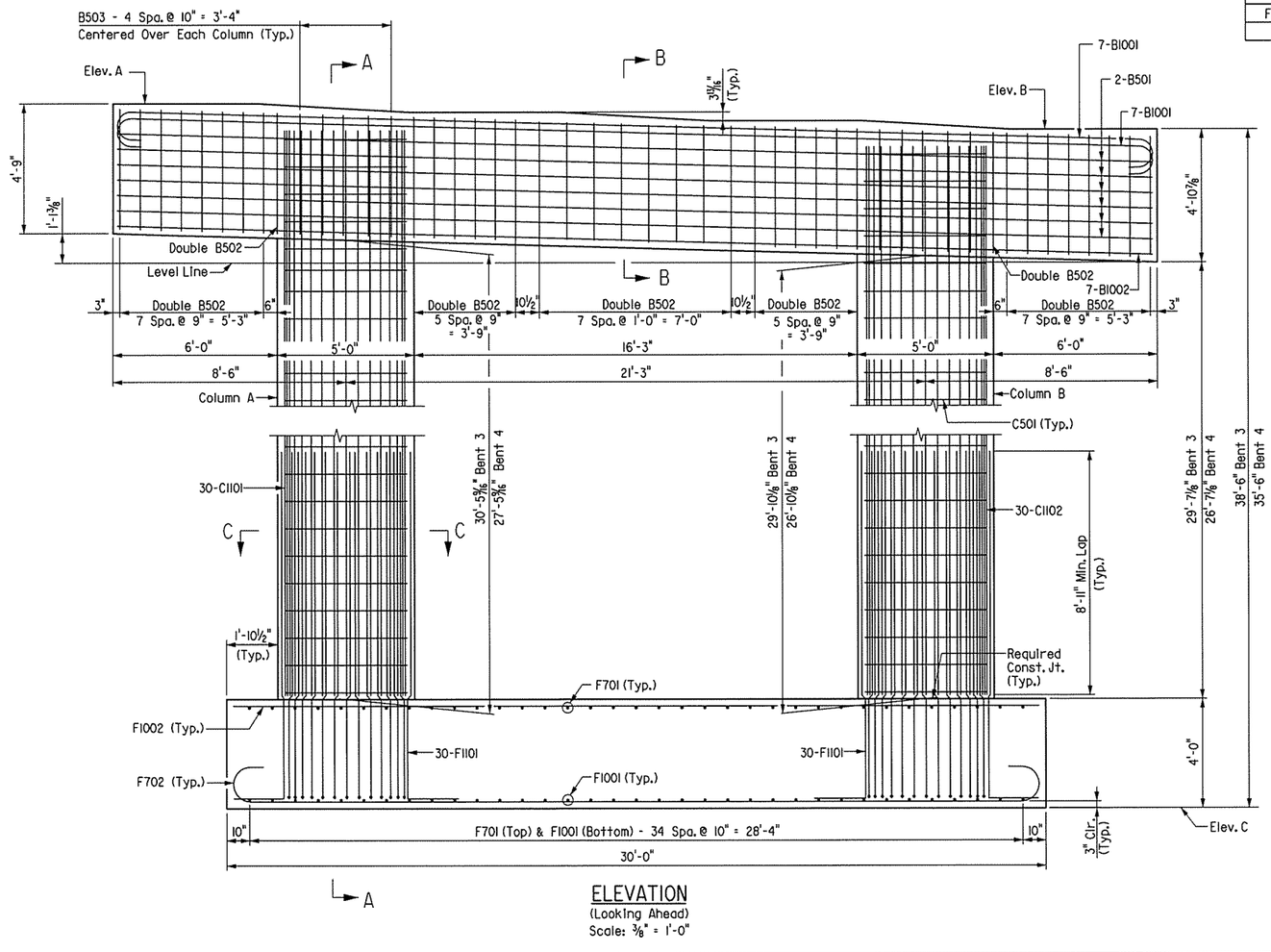
For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For SECTION A-A, SECTION B-B, & SECTION C-C, see Dwg. No. 55380.




PLAN

Scale: 3/8" = 1'-0"




ELEVATION

(Looking Ahead)

Scale: 3/8" = 1'-0"

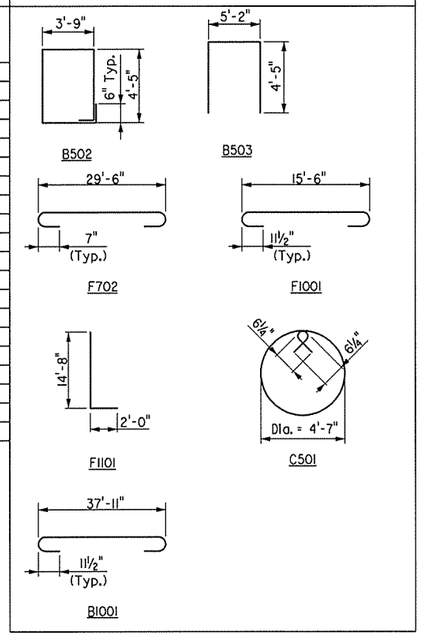
## BENT 3 BAR LIST

| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| B501 | 12 | 37'-11" | Str. |
| B502 | 76 | 16'-10" | 2 1/2" |
| B503 | 10 | 13'-10" | 2 1/2" |
| | | | |
| B1001 | 14 | 40'-9" | 10" |
| B1002 | 7 | 37'-11" | Str. |
| | | | |
| C501 | 70 | 15'-9" | 3 3/4" |
| | | | |
| C1101 | 30 | 34'-3" | Str. |
| C1102 | 30 | 33'-8" | Str. |
| | | | |
| F701 | 35 | 15'-6" | Str. |
| F702 | 16 | 31'-2" | 5 1/4" |
| | | | |
| F1001 | 35 | 18'-4" | 10" |
| F1002 | 31 | 29'-6" | Str. |
| | | | |
| F1101 | 60 | 16'-4" | 11 1/4" |

## BENT 4 BAR LIST

| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| B501 | 12 | 37'-11" | Str. |
| B502 | 76 | 16'-10" | 2 1/2" |
| B503 | 10 | 13'-10" | 2 1/2" |
| | | | |
| B1001 | 14 | 40'-9" | 10" |
| B1002 | 7 | 37'-11" | Str. |
| | | | |
| C501 | 64 | 15'-9" | 3 3/4" |
| | | | |
| C1101 | 30 | 31'-3" | Str. |
| C1102 | 30 | 30'-8" | Str. |
| | | | |
| F701 | 35 | 15'-6" | Str. |
| F702 | 16 | 31'-2" | 5 1/4" |
| | | | |
| F1001 | 35 | 18'-4" | 10" |
| F1002 | 31 | 29'-6" | Str. |
| | | | |
| F1101 | 60 | 16'-4" | 11 1/4" |

Bending Diagrams
(Dimensions are out to out of bars.)




## BENT ELEVATION TABLE

| | Bent 3 | Bent 4 |
|---|---|---|
| Elev. A | 1316.40 | 1314.08 |
| Elev. B | 1315.45 | 1313.13 |
| Elev. C | 1276.95 | 1277.63 |

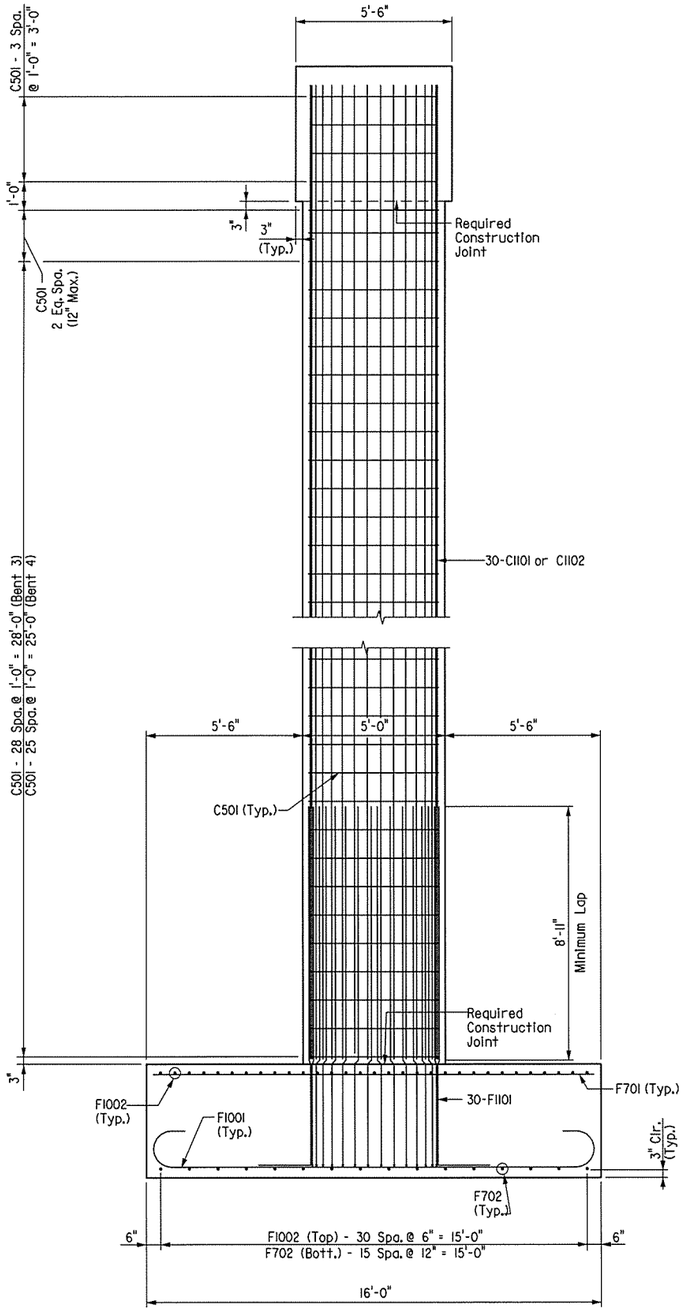
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8307
PETER J. SZAK
BRIDGE ENGINEER
12-2014

SHEET 1 OF 2
DETAILS OF BENT 3 & 4
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

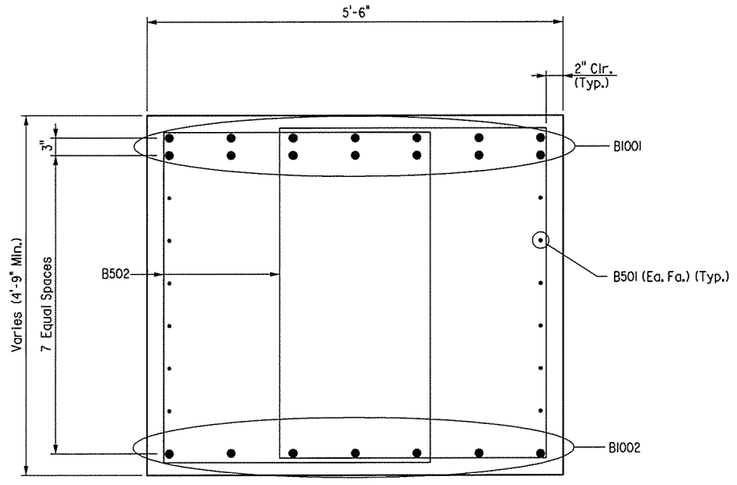
DRAWN BY: PGR DATE: 08-12
CHECKED BY: RWG DATE: 08-12
DESIGNED BY: SRM DATE: 07-12
FILENAME: bca0907x10_b31.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55379

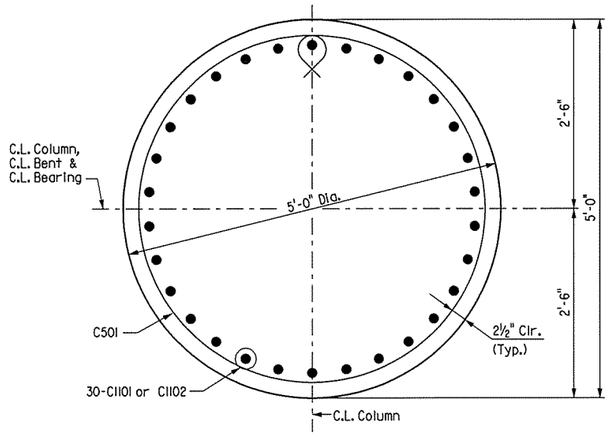
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 527 | 897 |
| | | | | (1) 07313 | | BENT 3 & 4 DETAILS | | 55380 |



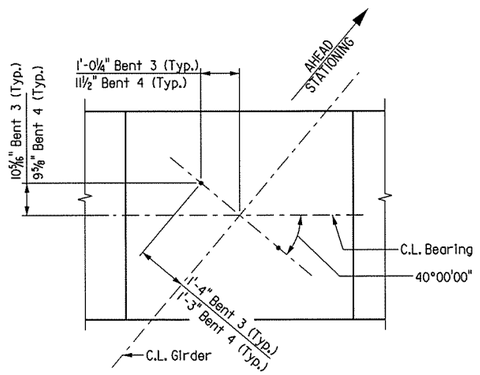

SECTION A-A
Scale 3/8" = 1'-0"




SECTION B-B
Scale 1" = 1'-0"




SECTION C-C
Scale 1" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT
Scale: ½" = 1'-0"
Note: For Details of Elastomeric Bearings, see Dwg. No. 55397.

NOTES

For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SLAK
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 3 & 4
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 08-12 FILENAME: bca0907x10_b32.dgn
CHECKED BY: RWG DATE: 08-12 SCALE: AS SHOWN
DESIGNED BY: SRM DATE: 07-12

BRIDGE NO. 07313 DRAWING NO. 55380

NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 528 | 897 |
| (1) 07313 | | END BENT 5 DETAILS | | 55381 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

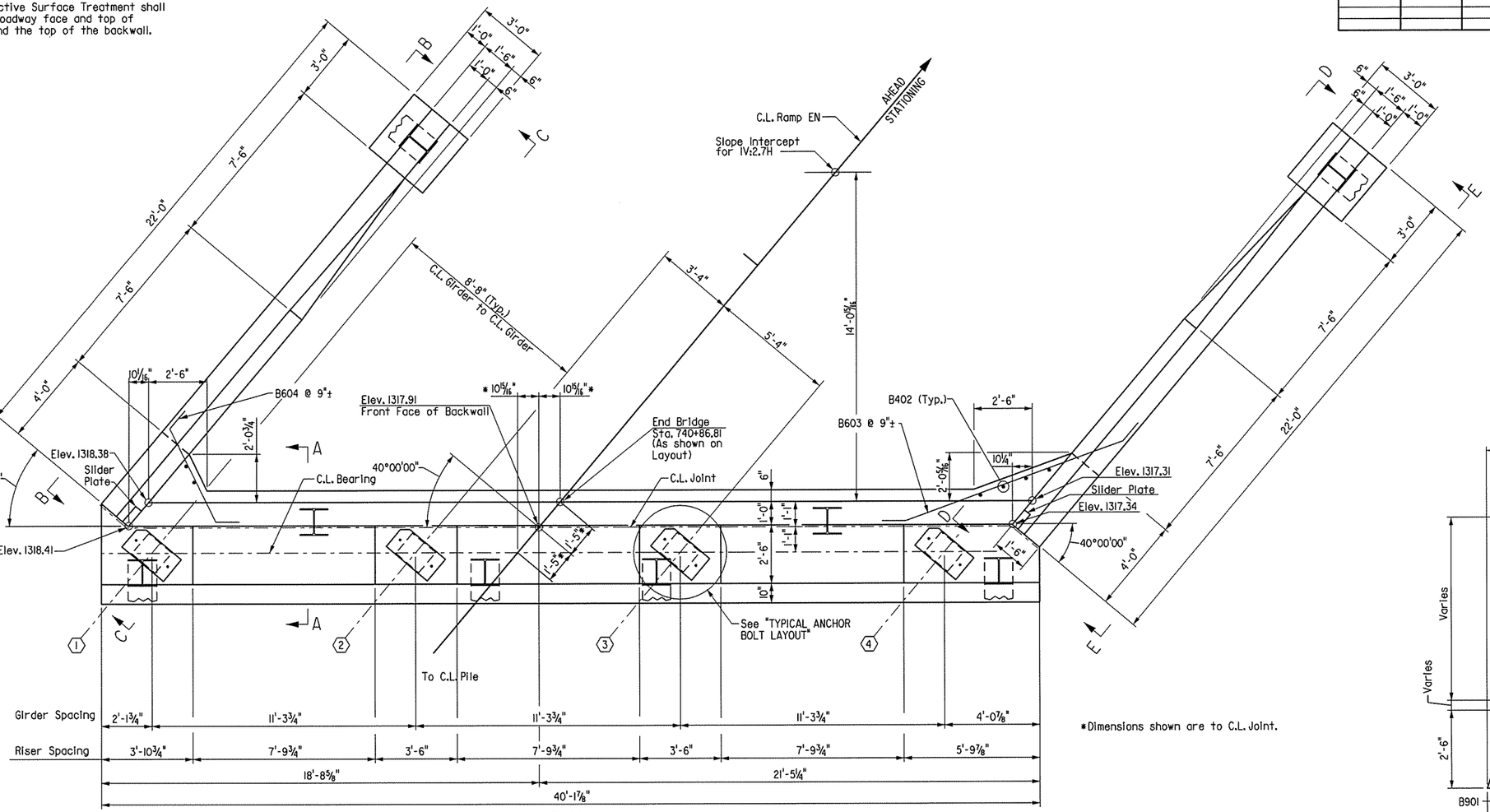
For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For VIEW B-B, VIEW C-C, VIEW D-D, and VIEW E-E see Dwg. No. 55383.

For DETAIL Z, see Dwg. No. 55376.

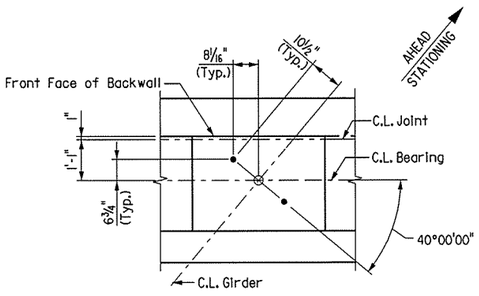
For Details of Wing and Rail, see Dwg. No. 55384.

For Details of Elastomeric Bearings, see Dwg. No. 55397.

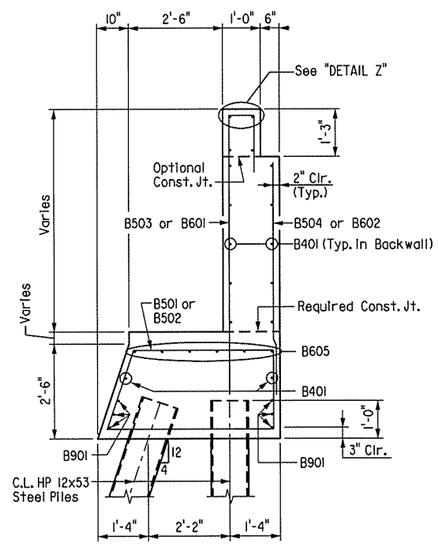



PLAN
Scale: 3/8" = 1'-0"

*Dimensions shown are to C.L. Joint.




TYPICAL ANCHOR BOLT LAYOUT
Scale: 1/2" = 1'-0"




SECTION A-A
Scale 1/2" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 12307 PETER J. SZAK

4-30-2014

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT 5
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_b51.dgn
SCALE: AS SHOWN

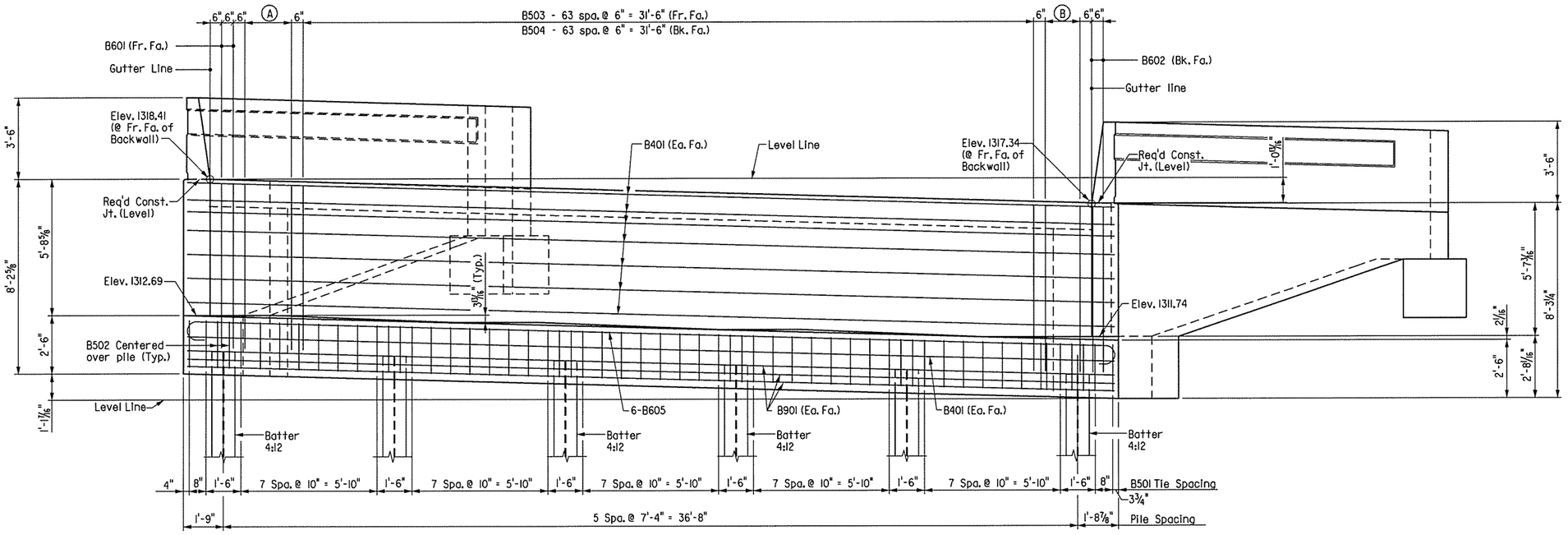
BRIDGE NO. 07313 DRAWING NO. 55381

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 529 | 897 |
| (1) 07313 | | END BENT 5 DETAILS | | 55382 |

(A) B601 - 4 Spa. @ 6" = 2'-0" (Fr. Fa.)
B602 - 4 Spa. @ 6" = 2'-0" (Bk. Fa.)

(B) B601 - 3 Spa. @ 6" = 1'-6" (Fr. Fa.)
B602 - 3 Spa. @ 6" = 1'-6" (Bk. Fa.)




ELEVATION
(Looking Ahead)
Scale: 3/8" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

For Details of Wing and Rail, see Dwg. No. 55384.

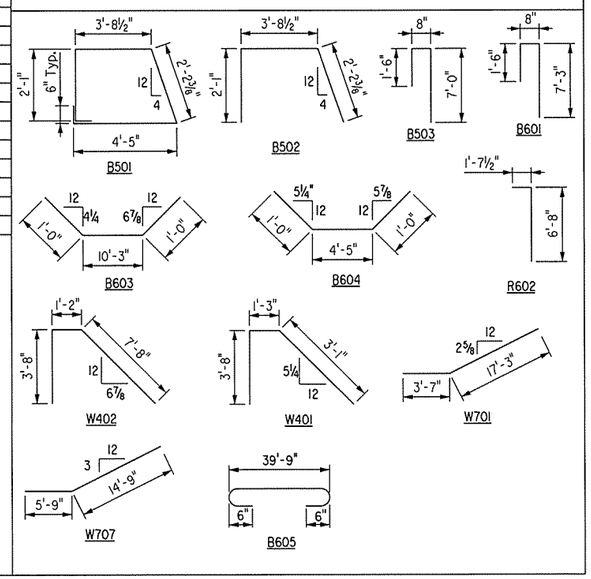
Note: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

## END BENT 5 BAR LIST

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| B401 | 16 | 39'-9" | Str. |
| B402 | 6 | 6'-5" | Str. |
| | | | |
| B501 | 44 | 12'-11" | 2½" |
| B502 | 12 | 7'-10" | 2½" |
| B503 | 64 | 9'-0" | 2½" |
| B504 | 64 | 5'-9" | Str. |
| | | | |
| B601 | 11 | 9'-1" | 4½" |
| B602 | 11 | 6'-0" | Str. |
| B603 | 5 | 12'-3" | 4½" |
| B604 | 5 | 6'-5" | 4½" |
| B605 | 6 | 41'-1" | 4½" |
| | | | |
| B901 | 6 | 39'-9" | Str. |
| | | | |
| R401 | 188 | 5'-1" | Str. |
| | | | |
| R601 | 16 | 21'-8" | Str. |
| R602 | 24 | 8'-2" | 4½ |
| R603 | 12 | 2'-8" | Str. |
| | | | |
| W401 | 3 | 7'-10" | 3" |
| W402 | 3 | 12'-4" | 3" |
| W403 | 8 | 7'-8" | Str. |
| W404 | 8 | 7'-9" | Str. |
| W405 to W419 | 2 Each | 5'-2" to 1'-10" | Str. |
| W420 to W434 | 2 Each | 5'-8" to 1'-10" | Str. |

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| W701 | 2 | 20'-10" | 5¼" |
| W702 | 2 | 6'-5" | Str. |
| W703 | 2 | 9'-7" | Str. |
| W704 | 2 | 12'-8" | Str. |
| W705 | 2 | 15'-10" | Str. |
| W706 | 12 | 21'-8" | Str. |
| W707 | 2 | 20'-5" | 5¼" |
| W708 | 2 | 8'-1" | Str. |
| W709 | 2 | 10'-9" | Str. |
| W710 | 2 | 13'-6" | Str. |
| W711 | 2 | 16'-3" | Str. |
| | | | |

BENDING DIAGRAMS
(Dimensions are out to out of bars)




STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

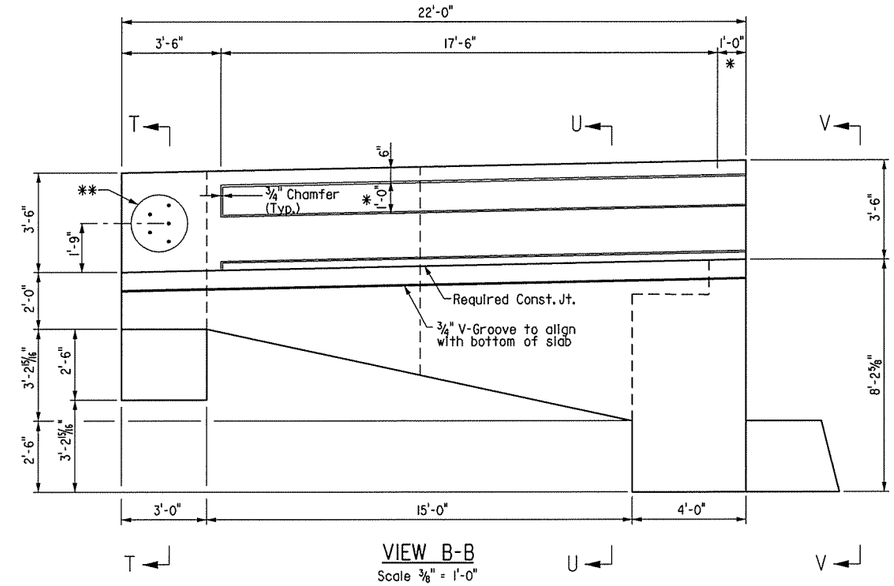
SHEET 2 OF 4
DETAILS OF END BENT 5
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_b52.dgn
SCALE: 3/8" = 1'-0"

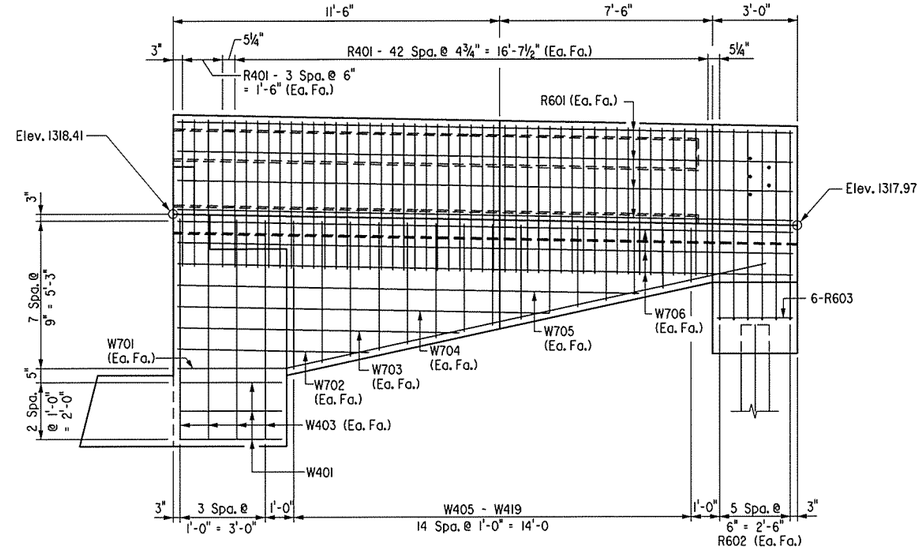
BRIDGE NO. 07313 DRAWING NO. 55382

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

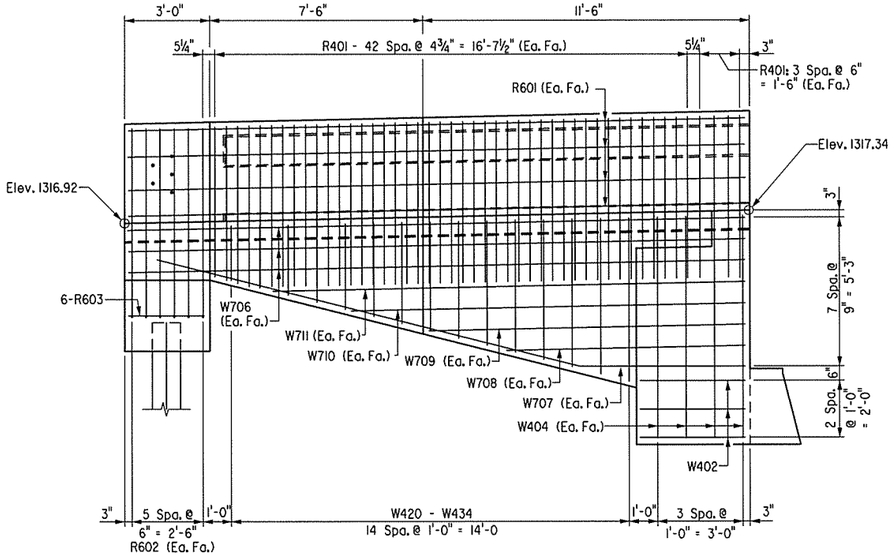
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 530 | 897 |
| (1) 07313 | END BENT 5 DETAILS | | | 55383 |



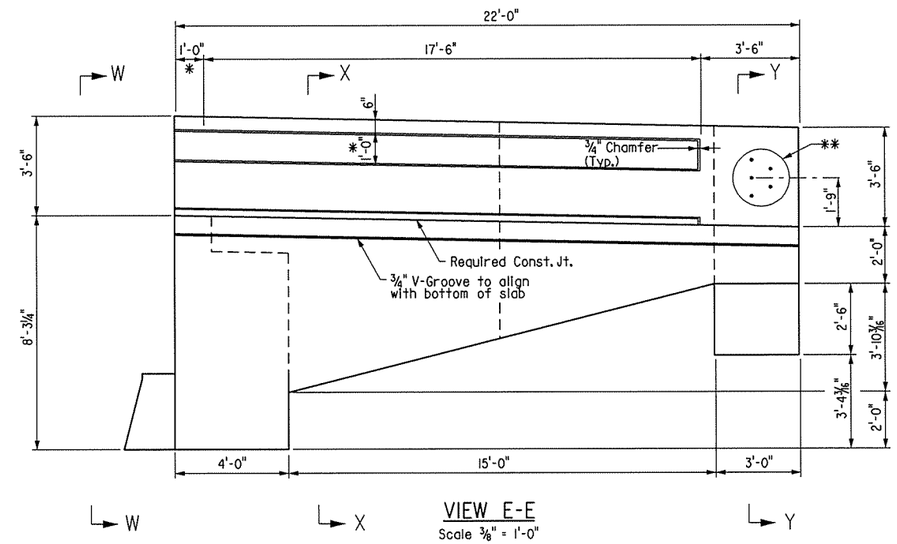

VIEW B-B
Scale ⅜" = 1'-0"




VIEW C-C
Scale ⅜" = 1'-0"




VIEW D-D
Scale ⅜" = 1'-0"




VIEW E-E
Scale ⅜" = 1'-0"

* Parapet Enhancement shall be made continuous.

** 5 - 1" dia. formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see Layout on Dwg. Nos. 55369 & 55370.

For VIEW V-V, SECTION U-U, SECTION T-T, VIEW W-W, SECTION X-X, and SECTION Y-Y, see Dwg. No. 55384.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
7-31-2014

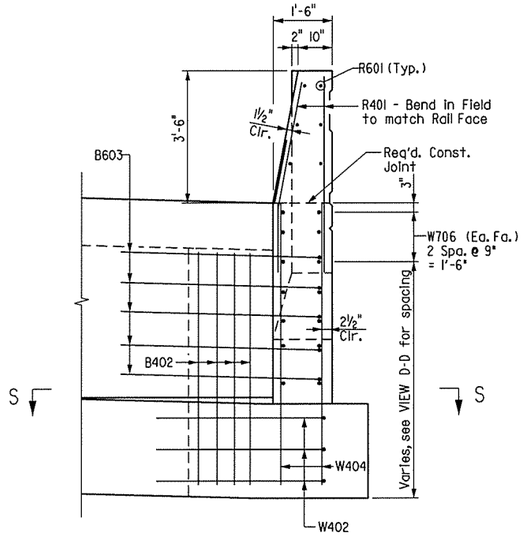
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT 5
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

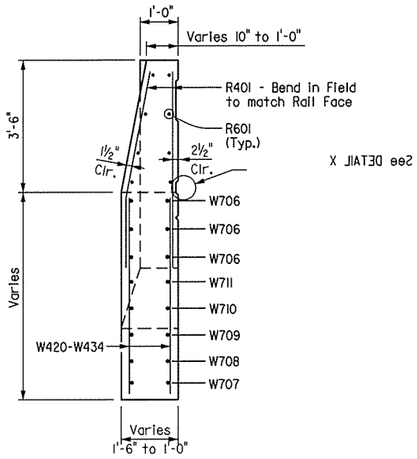
DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_b53.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55383

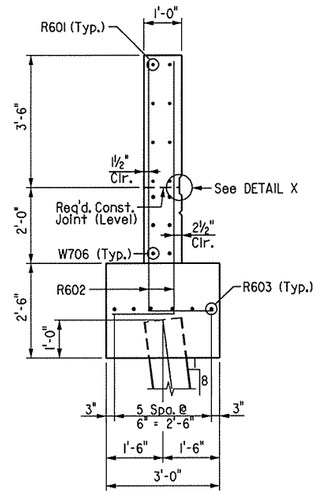
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 531 | 897 |
| | | | | (1) 07313 | | END BENT 5 DETAILS | | 55384 |



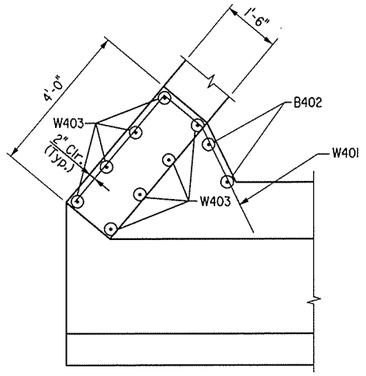

VIEW W-W
Scale: ½" = 1'-0"



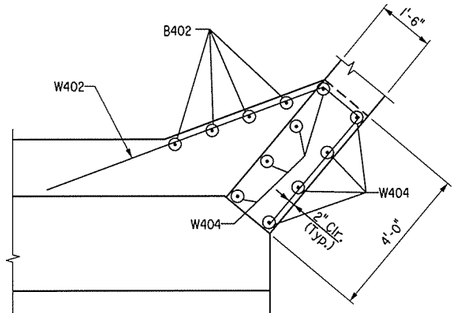

SECTION X-X
Scale: ½" = 1'-0"




SECTION Y-Y
Scale: ½" = 1'-0"




SECTION R-R
Scale: ½" = 1'-0"

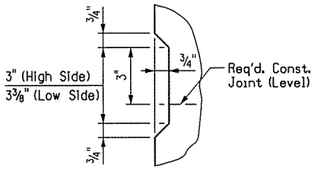



SECTION S-S
Scale: ½" = 1'-0"

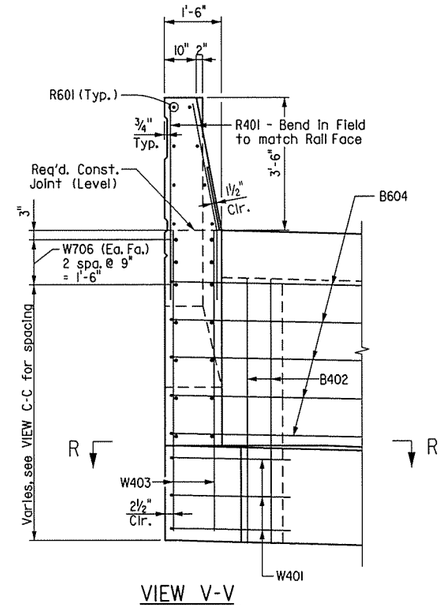
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55373.

For additional information, see LAYOUT on Dwg. Nos. 55369 & 55370.

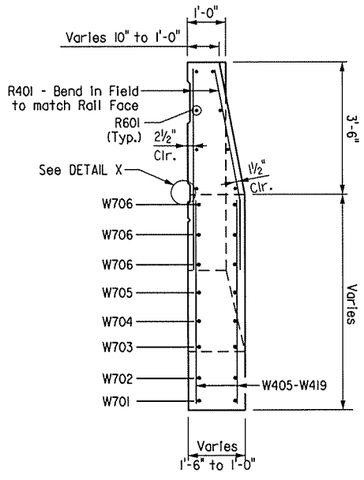
For DETAIL Z, see Dwg. No. 55376.



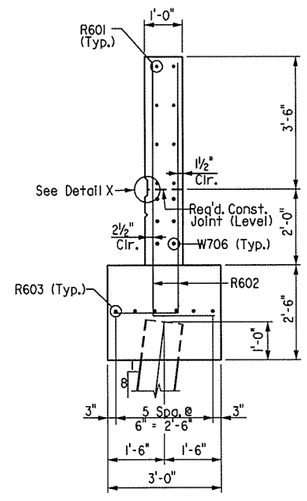

DETAIL X
Scale: 3" = 1'-0"



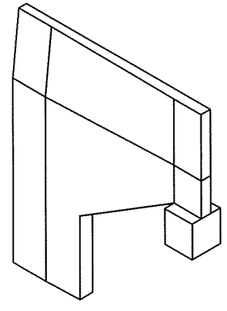

VIEW V-V
Scale: ½" = 1'-0"




SECTION U-U
Scale: ½" = 1'-0"




SECTION T-T
Scale: ½" = 1'-0"



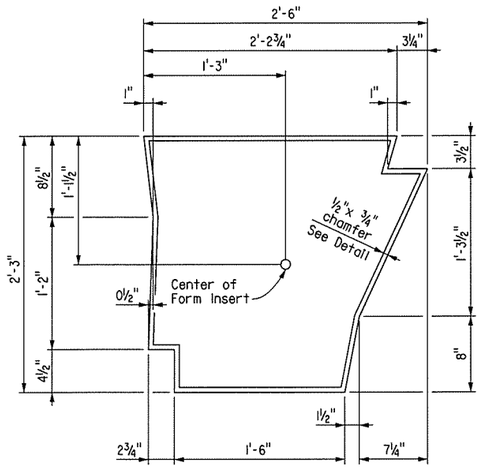
THREE DIMENSIONAL VIEW OF WING & RAIL
NTS

SHEET 4 OF 4
DETAILS OF END BENT 5
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 07-12
FILENAME: bca0907x10_b54.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55384

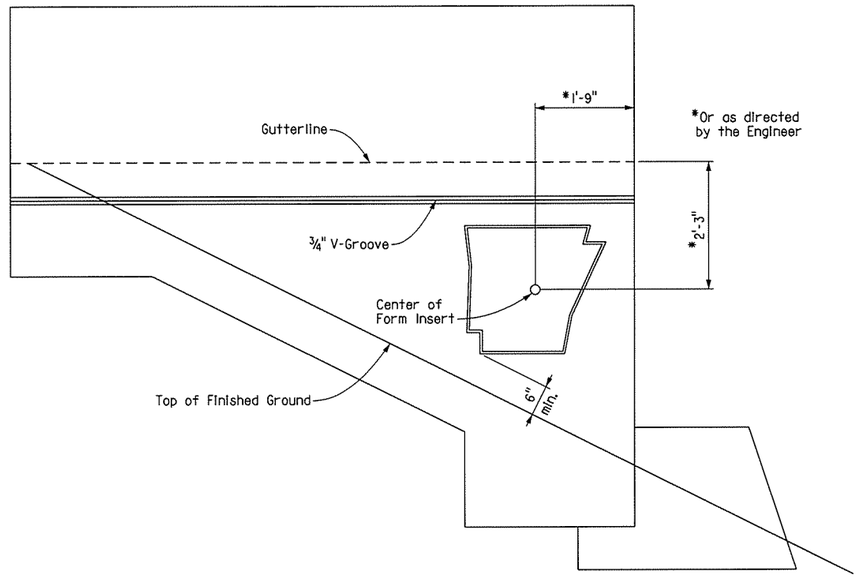
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 532 | 897 |
| | | | | (1) 07313 | | ARK. FORM INSERT | | 55385 |




Note: Use form insert on designated bents as noted on layout or as shown on detail drawings.

## FORM INSERT DETAILS

Scale: 1½" = 1'-0"




## PLACEMENT AT WINGS END BENT

Scale: ¾" = 1'-0"

GENERAL NOTES

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

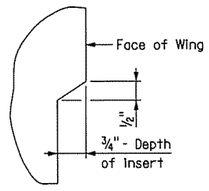
Wash and clean multi-use form inserts before each use.

All work and materials for form inserts shall be included in the unit price bid for "Class S Concrete-Bridge".

Damaged or worn form inserts shall be replaced at the contractor's expense.

The form insert shall be approved by the Engineer before its use.

The State Of Arkansas insert shall be given a Class 3 textured coating finish as specified in SP "TEXTURED COATING FINISH."




## CHAMFER DETAILS

Scale: 6" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

# DETAILS OF STANDARD STATE OF ARKANSAS FORM INSERT RAMP EN OVER SILENT GROVE ROAD

ROUTE 412 SEC. 2

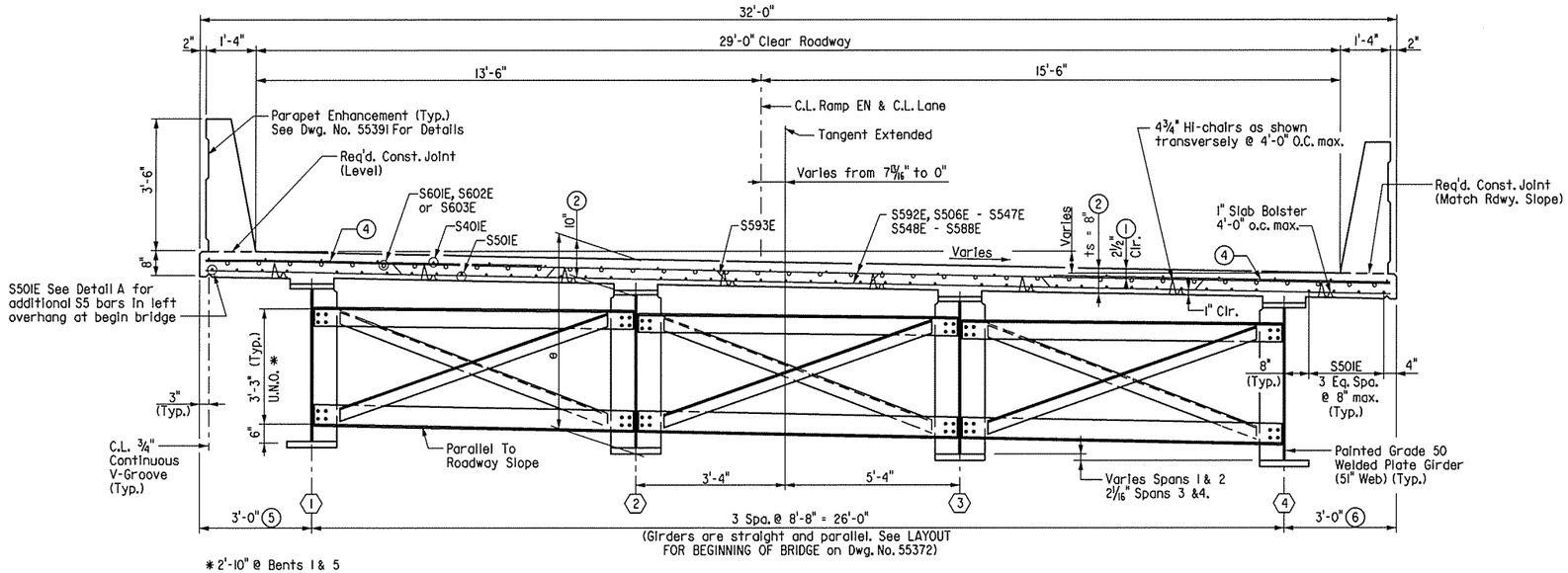
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 03-06 FILENAME: bca0907x10_b55.dgn
CHECKED BY: PJS DATE: 05-08 SCALE: AS SHOWN
DESIGNED BY: PJS DATE: 03-06

BRIDGE NO. 07313 DRAWING NO. 55385

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 533 | 897 |
| | | | | (1) 07313 | | SPAN DETAILS | | 55386 |

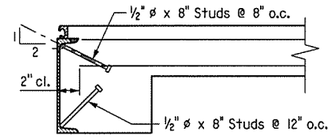



## TYPICAL SECTION

(Looking Ahead)
Scale: ½" = 1'-0"

(1) TOLERANCE:
Minus: ¼"
Plus: Equal to amount of slab thickness used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".




Note: As an alternate to ⅝" ø studs, ½" ø x 8" studs spaced as shown may be used. Use weight of ⅝" ø stud as basis of measurement of structural steel in anchors.

## DETAIL OF ALTERNATE ANCHORS

No Scale

NOTES:

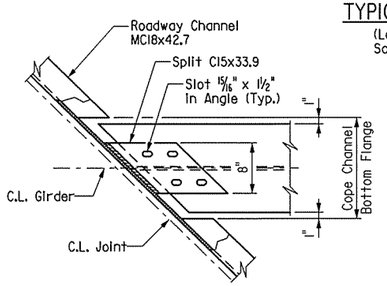
One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S593E. Payment will be based on the weight of bars S593E.

Class 2 Protective Surface Treatment shall be applied to the roadway surface and the top and roadway face of railing.

All bars designated with an "E" suffix are to be epoxy coated.

(5) Varies from 4'-0 7/8" to 3'-0" from Begin Bridge to PT Sta. 737+02.47, left side.

(6) Varies from 2'-9¾" to 3'-0" from Begin Bridge to PT Sta. 737+02.47, right side.




## ROADWAY CHANNEL CONNECTION DETAIL

Scale: 1" = 1'-0"

EXPANSION DEVICE:

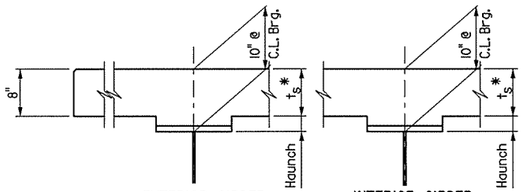
Roadway Channel MC18x42.7 (M 270, Gr. 50)
Neoprene Strip Seal with Steel Joint Extrusion
Connection Split C15x33.9
Detail Device ⅛" high & provide ¼" shims using 1 - ⅛" PL & 2 - 1/16" PL's

For additional details of Expansion Device, see Dwg. No. 55396.

SLAB REINFORCING:

Transverse:
S593E @ 12" Centers (Bent up over girders)
S592E @ 12" Centers (Top & Bottom)
S506E - S547E @ 6" centers (Top & Bottom)
S548E - S588E @ 6" centers (Top & Bottom)
S592E @ 6" centers thru curved portion (Top & Bottom)
(4) S604E (Place as shown)
See DETAIL C on Dwg. No. 55388
Longitudinal:
S401E @ 18" Centers (Top)
S501E @ 8" max. (Bottom)
S601E, S602E, or S603E @ 10" Centers (Top over Int. Bents)

For additional reinforcing details, see Dwg. No. 55387-55389.




EXTERIOR GIRDER INTERIOR GIRDER

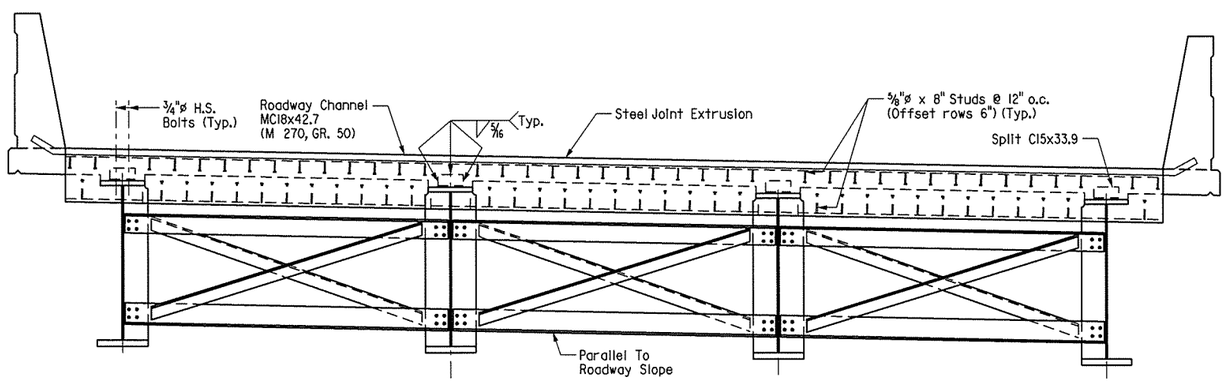
Note: ts = slab thickness as shown on "TYPICAL SECTION".
* Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance; Minimum - occurs when the top flange is ⅝" below the bottom reinforcing steel; Maximum - top flange thickness plus 2⅞". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 or tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.




## VIEW @ C.L. JOINT

(Looking Ahead)
Scale: ½" = 1'-0"

STATE OF ARKANSAS
PETER J. SZAK
No. 12307
REGISTERED PROFESSIONAL ENGINEER
BRIDGE ENGINEER
2014

SHEET 1 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 06-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bca0907x10_sll.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55386

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 534 | 897 |
| (I) 07313 | | SPAN DETAILS | | 55387 |

Note: See TYPICAL SECTION on Dwg. No. 55386 for placement of longitudinal reinforcing.

Note: For Bar List, see Dwg. No. 55389.

Note: For SECTION W-W, see Dwg. No. 55389.

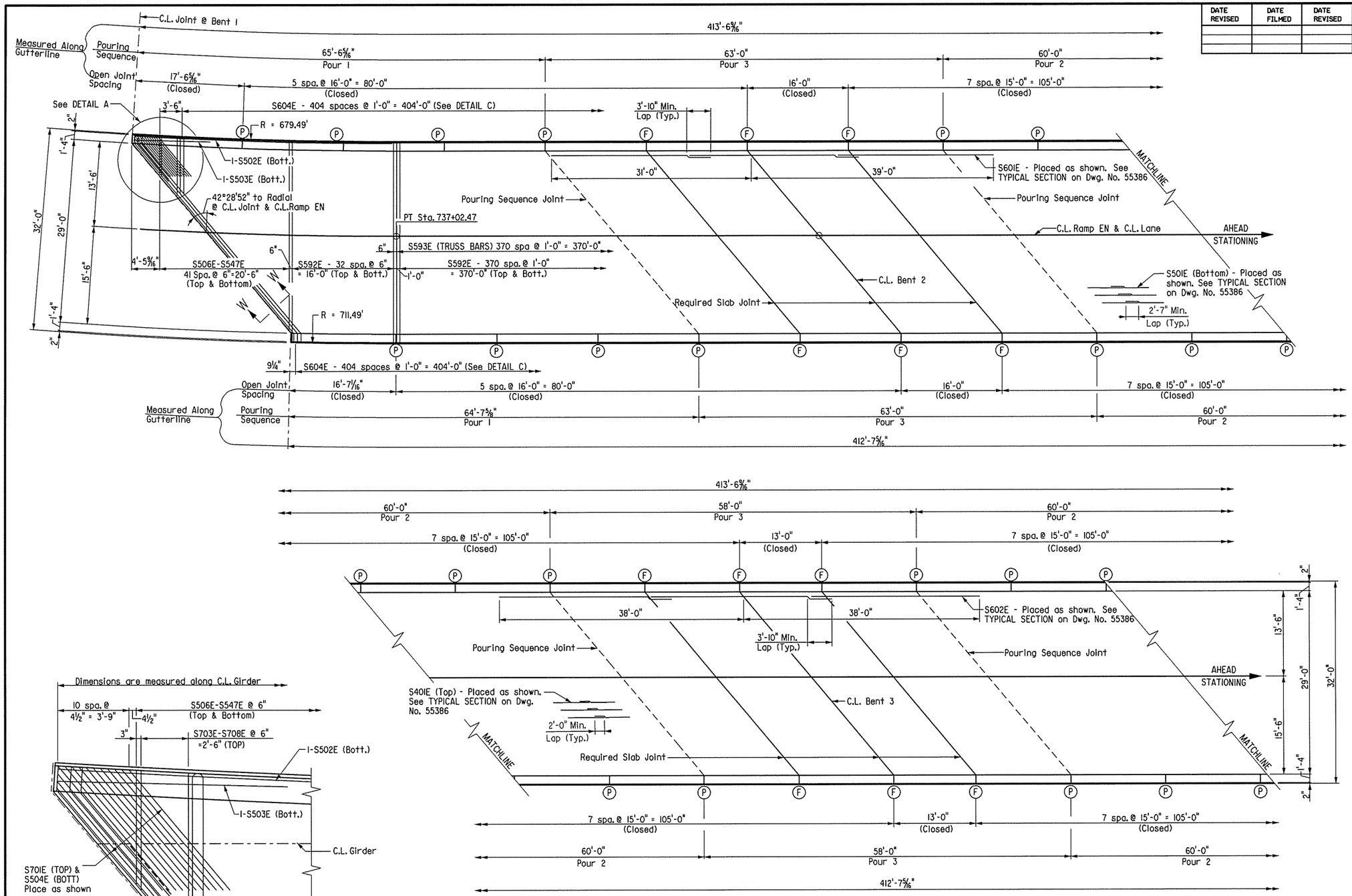
Note: For DETAIL C, see Dwg. No. 55388.

Note: For SLAB JOINT DETAIL, see Dwg. No. 55388.

Note: For CONCRETE PLACEMENT PROCEDURE, see Dwg. No. 55388.

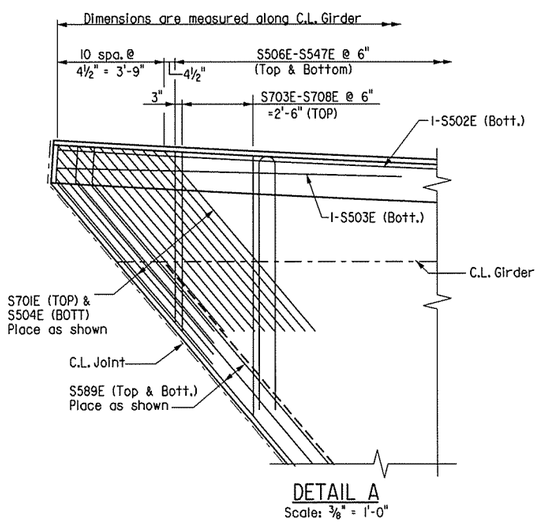
(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.










DETAIL A
Scale: ⅜" = 1'-0"

REINFORCING PLAN & POURING SEQUENCE
Scale: ⅛" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK
BRIDGE ENGINEER

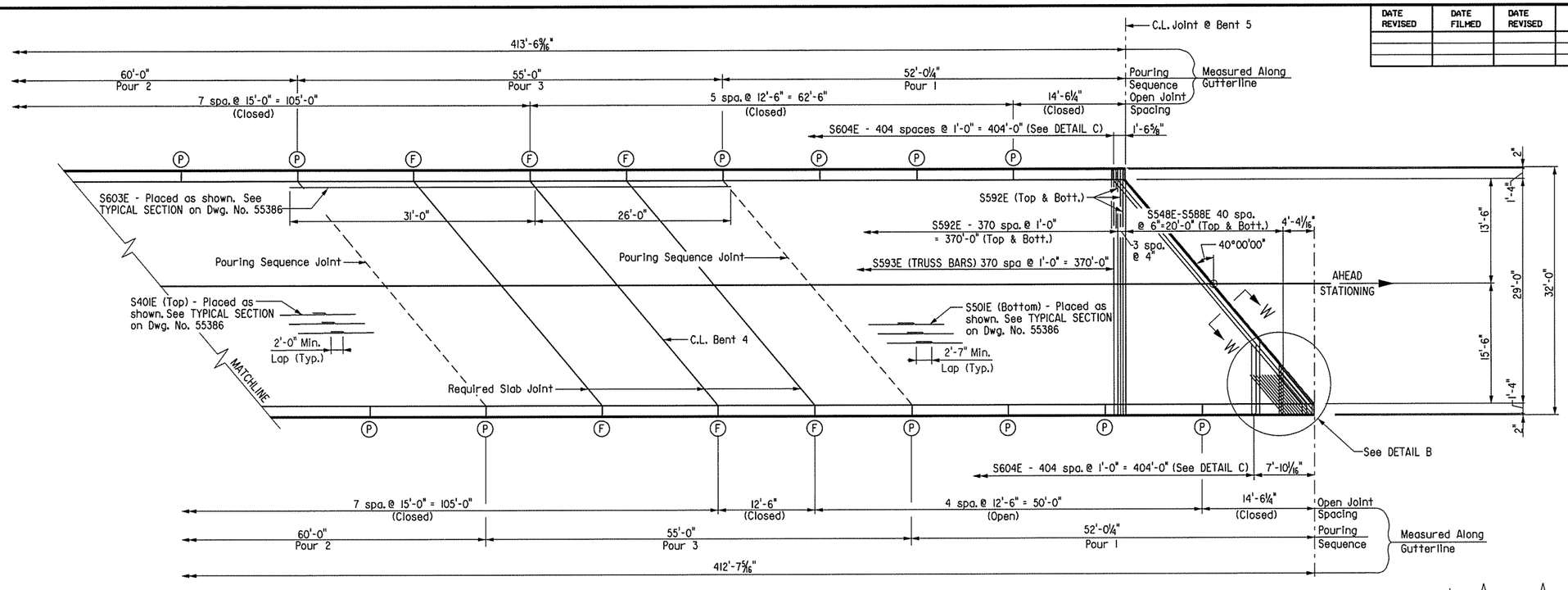
SHEET 2 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 06-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bcg0907x10_s12.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55387

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 535 | 897 |
| 07313 | | SPAN DETAILS | | 55388 |




## REINFORCING PLAN & POURING SEQUENCE

Scale: 1/8" = 1'-0"

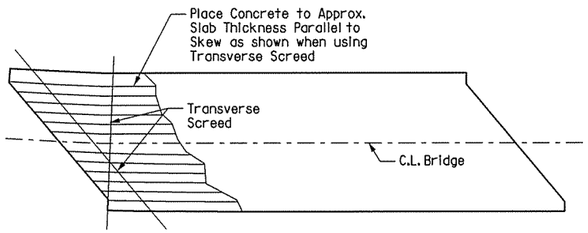
Note: See TYPICAL SECTION on Dwg. No. 55386 for placement of longitudinal reinforcing.

Note: For Bar List, see Dwg. No. 55389.

Note: For Section W-W, see Dwg. No. 55389.

(F) C.L. Full Depth Parapet Joint (1/4" to 1" max.). Stop 4" from top of slab.

(P) C.L. Partial Depth Parapet Joint (1/4" to 1" max.). Stop 1'-6" from top of slab.




Note: At the Contractor's option, the Transverse Screed may be placed parallel to the skew or perpendicular to C.L. Bridge

## CONCRETE PLACEMENT PROCEDURE

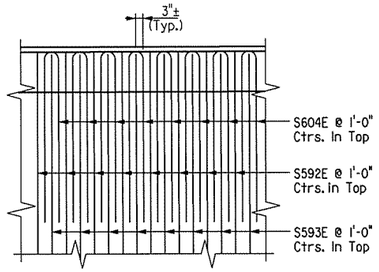
No Scale

Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. All pours (2) must be placed before Pours (3) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

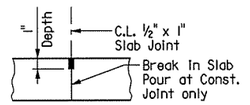
Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

Note: Required slab joints and pouring sequence joints shall align with parapet open joint at the gutterline.




## DETAIL C

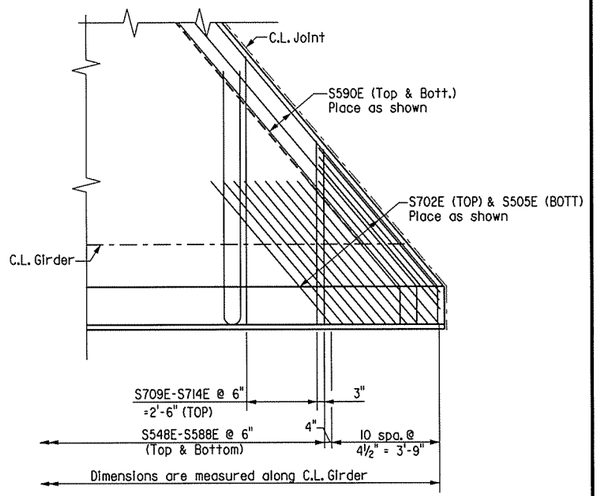
Scale: 3/8" = 1'-0"




## SLAB JOINT DETAIL

No Scale

The 1/2" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to subsection 501.02(h) and 501.05(j). The poured joint sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.




## DETAIL B

Scale: 3/8" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
2014

BRIDGE ENGINEER

# SHEET 3 OF 10
# DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP EN OVER SILENT GROVE ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 06-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bca0907x10_s13.dgn
SCALE: AS SHOWN

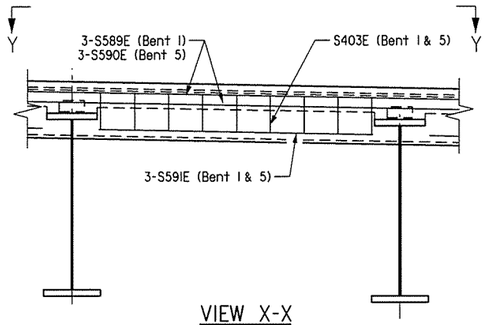
BRIDGE NO. 07313 DRAWING NO. 55388

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 536 | 897 |
| | | | | (1) 07313 | | SPAN DETAILS | | 55389 |

## TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

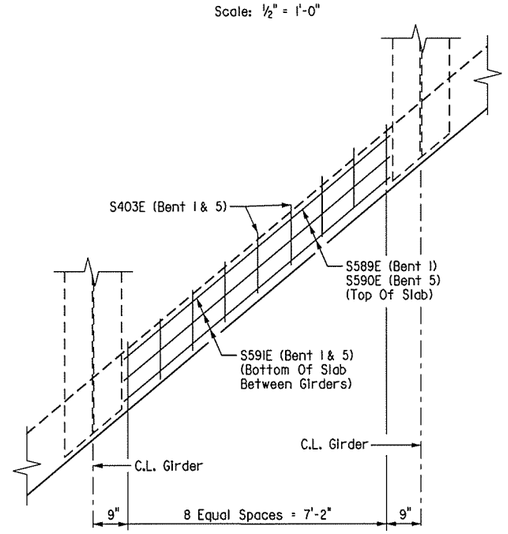
Camber for Dead Load Deflection plus vertical curve +/- ¼" tolerance. Vertical curve corrections not included. Negative sign (-) indicates upward deflection. Deflections shown are off a chord from centerline bearing to centerline bearing.

| | POINT OF DEFLECTION | Structural Steel | | Structural Steel + Slab | | Structural Steel + Slab + Parapet Rail | |
|---|---|---|---|---|---|---|---|
| | | Interior Girder | Exterior Girder | Interior Girder | Exterior Girder | Interior Girder | Exterior Girder |
| SPAN NO. 1 | 1.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 1.10 | 0.081 | 0.077 | 0.418 | 0.364 | 0.471 | 0.420 |
| | 1.20 | 0.148 | 0.141 | 0.767 | 0.667 | 0.864 | 0.769 |
| | 1.30 | 0.192 | 0.183 | 0.997 | 0.867 | 1.124 | 1.000 |
| | 1.40 | 0.207 | 0.198 | 1.083 | 0.942 | 1.221 | 1.087 |
| | 1.50 | 0.195 | 0.186 | 1.023 | 0.890 | 1.154 | 1.028 |
| | 1.60 | 0.158 | 0.151 | 0.839 | 0.729 | 0.947 | 0.843 |
| | 1.70 | 0.106 | 0.102 | 0.575 | 0.499 | 0.649 | 0.578 |
| | 1.80 | 0.053 | 0.051 | 0.297 | 0.258 | 0.335 | 0.298 |
| | 1.90 | 0.013 | 0.012 | 0.083 | 0.072 | 0.094 | 0.083 |
| SPAN NO. 2 | 2.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 2.10 | 0.033 | 0.032 | 0.139 | 0.121 | 0.158 | 0.141 |
| | 2.20 | 0.105 | 0.101 | 0.474 | 0.414 | 0.538 | 0.481 |
| | 2.30 | 0.185 | 0.177 | 0.851 | 0.742 | 0.966 | 0.863 |
| | 2.40 | 0.244 | 0.233 | 1.134 | 0.989 | 1.286 | 1.148 |
| | 2.50 | 0.263 | 0.252 | 1.230 | 1.073 | 1.394 | 1.244 |
| | 2.60 | 0.238 | 0.227 | 1.110 | 0.969 | 1.259 | 1.124 |
| | 2.70 | 0.174 | 0.167 | 0.811 | 0.708 | 0.921 | 0.822 |
| | 2.80 | 0.094 | 0.090 | 0.430 | 0.375 | 0.489 | 0.437 |
| | 2.90 | 0.025 | 0.024 | 0.110 | 0.096 | 0.125 | 0.112 |
| SPAN NO. 3 | 3.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 3.10 | 0.033 | 0.031 | 0.170 | 0.148 | 0.192 | 0.171 |
| | 3.20 | 0.107 | 0.103 | 0.541 | 0.471 | 0.611 | 0.545 |
| | 3.30 | 0.195 | 0.186 | 0.970 | 0.844 | 1.096 | 0.977 |
| | 3.40 | 0.267 | 0.255 | 1.319 | 1.149 | 1.489 | 1.328 |
| | 3.50 | 0.303 | 0.289 | 1.487 | 1.295 | 1.678 | 1.496 |
| | 3.60 | 0.293 | 0.280 | 1.429 | 1.245 | 1.613 | 1.438 |
| | 3.70 | 0.239 | 0.229 | 1.159 | 1.010 | 1.307 | 1.166 |
| | 3.80 | 0.155 | 0.148 | 0.744 | 0.648 | 0.839 | 0.749 |
| | 3.90 | 0.065 | 0.063 | 0.307 | 0.268 | 0.347 | 0.309 |
| SPAN NO. 4 | 4.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 4.10 | -0.015 | -0.015 | -0.059 | -0.052 | -0.066 | -0.059 |
| | 4.20 | -0.013 | -0.013 | -0.033 | -0.029 | -0.036 | -0.032 |
| | 4.30 | 0.000 | 0.000 | 0.048 | 0.040 | 0.056 | 0.049 |
| | 4.40 | 0.017 | 0.016 | 0.144 | 0.124 | 0.165 | 0.146 |
| | 4.50 | 0.033 | 0.031 | 0.226 | 0.196 | 0.257 | 0.228 |
| | 4.60 | 0.042 | 0.040 | 0.272 | 0.236 | 0.309 | 0.274 |
| | 4.70 | 0.043 | 0.041 | 0.270 | 0.234 | 0.306 | 0.272 |
| | 4.80 | 0.035 | 0.034 | 0.217 | 0.188 | 0.246 | 0.218 |
| | 4.90 | 0.020 | 0.019 | 0.122 | 0.105 | 0.138 | 0.122 |
| | 5.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |



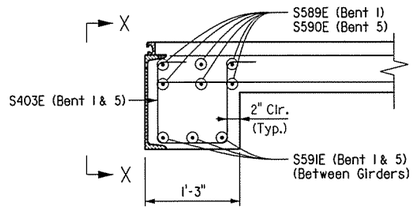

VIEW X-X

Scale: ½" = 1'-0"




VIEW Y-Y

Scale: ½" = 1'-0"

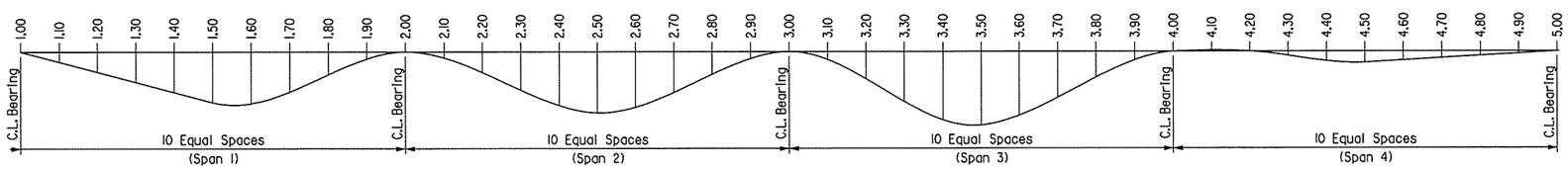



SECTION W-W

Scale: 1" = 1'-0"

LOAD DISTRIBUTION TO GIRDERS:

| | Girders 1 & 4 | Girders 2 - 3 |
|---|---|---|
| Dead Loads: To Girder | 750 PLF + (wt./ft. of Girder) + Diaphragms | 882 PLF + (wt./ft. of Girder) + Diaphragms |
| Dead Loads: To Composite Girder | 438 PLF, Includes 181 PLF Future Wearing Surface | 439 PLF, Includes 181 PLF Future Wearing Surface |



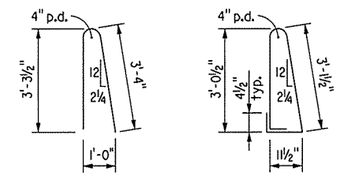

DEAD LOAD DEFLECTION DIAGRAM

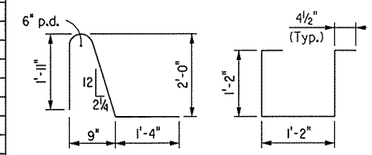
Not to Scale

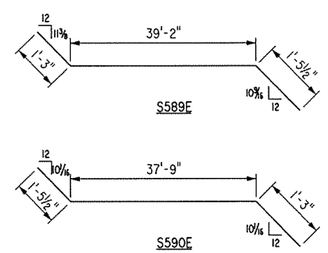
## SUPERSTRUCTURE BAR LIST

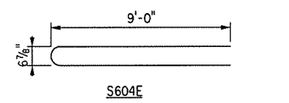
| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| S401E | 242 | 39'-5" | Str. |
| S403E | 54 | 3'-11" | 2" |
| | | | |
| S501E | 352 | 53'-11" | Str. |
| S502E | 1 | 26'-6" | Str. |
| S503E | 1 | 8'-0" | Str. |
| S504 | 14 | 9'-0" | Str. |
| S505E | 14 | 7'-5" | Str. |
| S506E to S547E | 2 ea. | 6'-0" to 29'-7" | Str. |
| S548E to S588E | 2 ea. | 6'-2" to 29'-11" | Str. |
| S589E | 6 | 41'-11" | 3¾" |
| S590E | 6 | 40'-6" | 3¾" |
| S591E | 18 | 11'-0" | Str. |
| S592E | 814 | 31'-8" | Str. |
| S593E | 371 | 32'-2" | 3" |
| | | | |
| S601E | 114 | 25'-11" | Str. |
| S602E | 114 | 27'-11" | Str. |
| S603E | 38 | 57'-0" | Str. |
| S604E | 810 | 18'-2" | 5¼" |
| | | | |
| S701E | 14 | 9'-0" | Str. |
| S702E | 14 | 7'-5" | Str. |
| S703E to S708E | 1 ea. | 6'-3" to 9'-2" | Str. |
| S709E to S714E | 1 ea. | 6'-5" to 9'-5" | Str. |
| | | | |
| P401E | 1608 | 6'-8" | 2" |
| P402E | 48 | 8'-0" | 2" |
| | | | |
| P501E | 1608 | 5'-7" | 3¾" |
| P502E | 84 | 15'-8" | Str. |
| P503E | 164 | 14'-8" | Str. |
| P504E | 5 | 17'-2" | Str. |
| P505E | 22 | 12'-8" | Str. |
| P506E | 62 | 12'-2" | Str. |
| P507E | 10 | 14'-2" | Str. |
| P508E | 24 | 42'-5" | Str. |
| P509E | 48 | 46'-8" | Str. |
| P510E | 5 | 16'-3" | Str. |
| P511E | 24 | 33'-11" | Str. |
| | | | |

Bending Diagrams (Dimensions are out to out of bars.)




** ½" Overtolerance, No Undertolerance

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
4-15-2014
BRIDGE ENGINEER

SHEET 4 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 06-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bca0907x10_s14.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55389

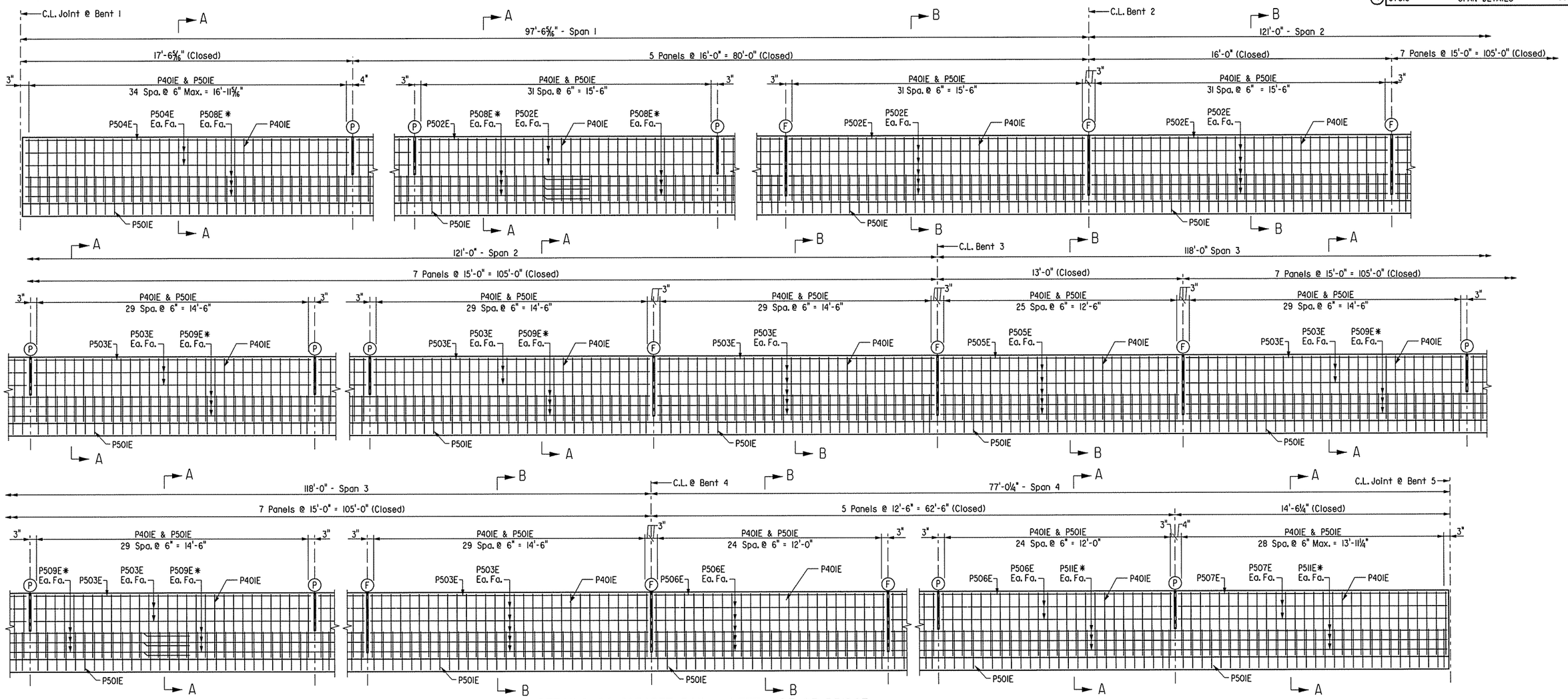
(P) C.L. Partial Depth Parapet Joint (1/4" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (1/4" to 1" max.). Stop 4" from top of slab.

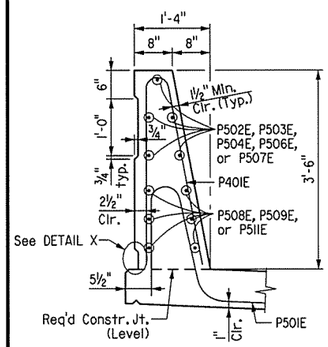
* Minimum splice length for P508E, P509E & P511E bars = 3'-7"

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

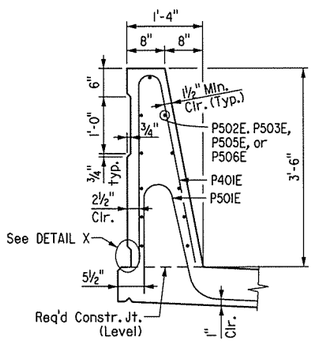
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 537 | 897 |
| (1) 07313 | | SPAN DETAILS | | 55390 |



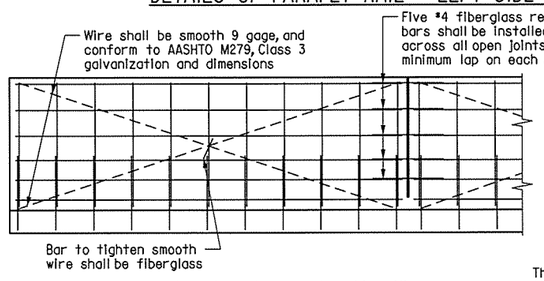

## DETAILS OF PARAPET RAIL - LEFT SIDE OF BRIDGE



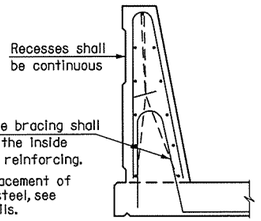

SECTION A-A
Scale: ¾" = 1'-0"




SECTION B-B
Scale: ¾" = 1'-0"



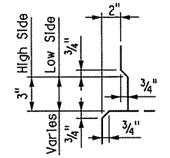

All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.




The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Top and traffic face surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

## DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale




DETAIL X
No Scale

Note: All dimensions are taken along gutterline of bridge.

Note: For Bar List, See Dwg. No. 55389.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
12-31-2014
BRIDGE ENGINEER

SHEET 5 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 08-12
FILENAME: bca0907x10_sl5.dgn
SCALE: AS SHOWN

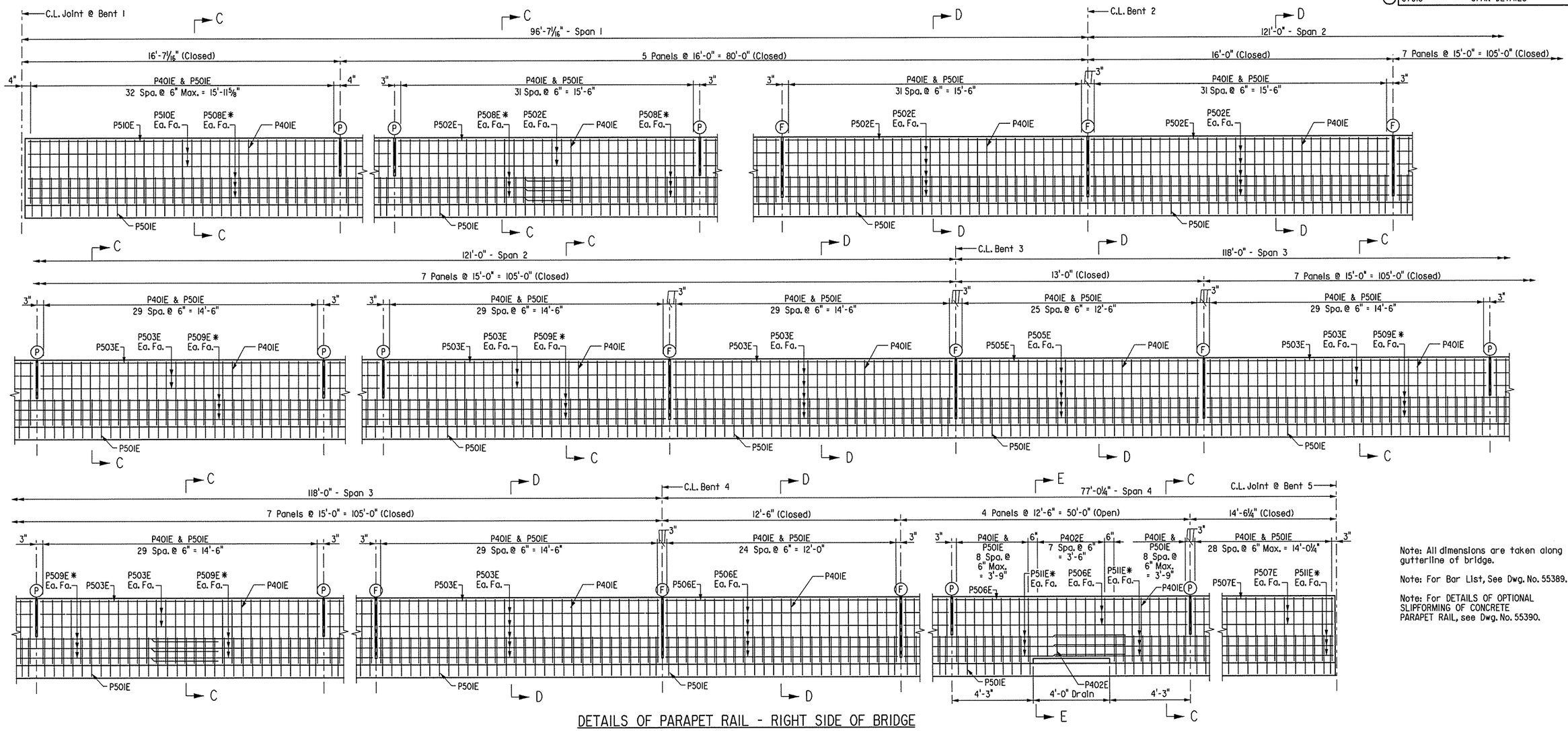
BRIDGE NO. 07313 DRAWING NO. 55390

(P) C.L. Partial Depth Parapet Joint (1/4" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (1/4" to 1" max.). Stop 4" from top of slab.

* Minimum splice length for P508E, P509E & P511E bars = 3'-7"

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 538 | 897 |
| | | | | (1) 07313 | | SPAN DETAILS | | 55391 |

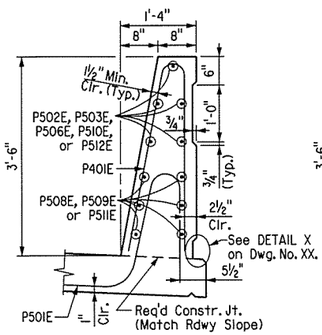



Note: All dimensions are taken along gutterline of bridge.

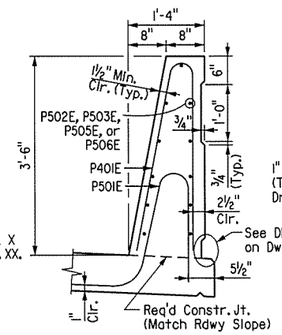
Note: For Bar List, See Dwg. No. 55389.

Note: For DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL, see Dwg. No. 55390.

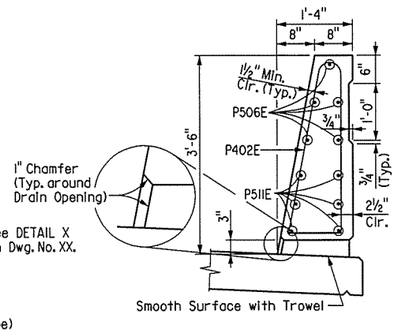
## DETAILS OF PARAPET RAIL - RIGHT SIDE OF BRIDGE



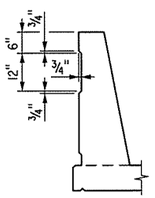

SECTION C-C
Scale: 3/4" = 1'-0"



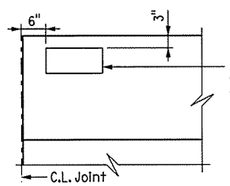

SECTION D-D
Scale: 3/4" = 1'-0"




SECTION E-E
Scale: 3/4" = 1'-0"




CONTINUOUS PARAPET ENHANCEMENT
Scale: 1/2" = 1'-0"




NAME PLATE DETAIL
No Scale

Place Type D Bridge Name Plate on right parapet rail at beginning of Bridge approx. 6" from joint. (Right is defined with direction of travel). See Std. Dwg. No. 55010.

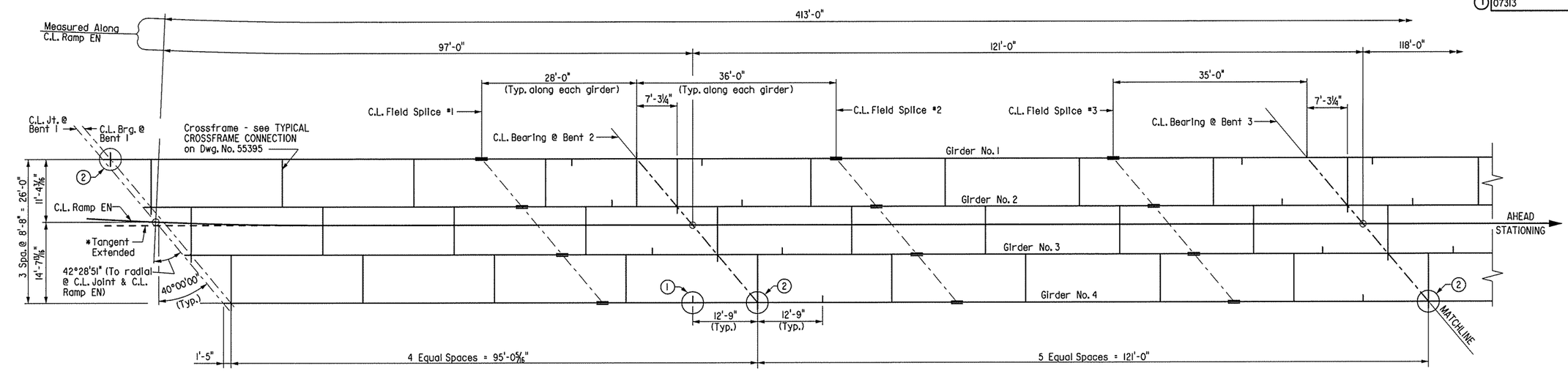
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER
2014

SHEET 6 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12 FILENAME: bca0907x10_s16.dgn
CHECKED BY: GMS DATE: 08-12 SCALE: AS SHOWN
DESIGNED BY: RWG DATE: 08-12
BRIDGE NO. 07313 DRAWING NO. 55391

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

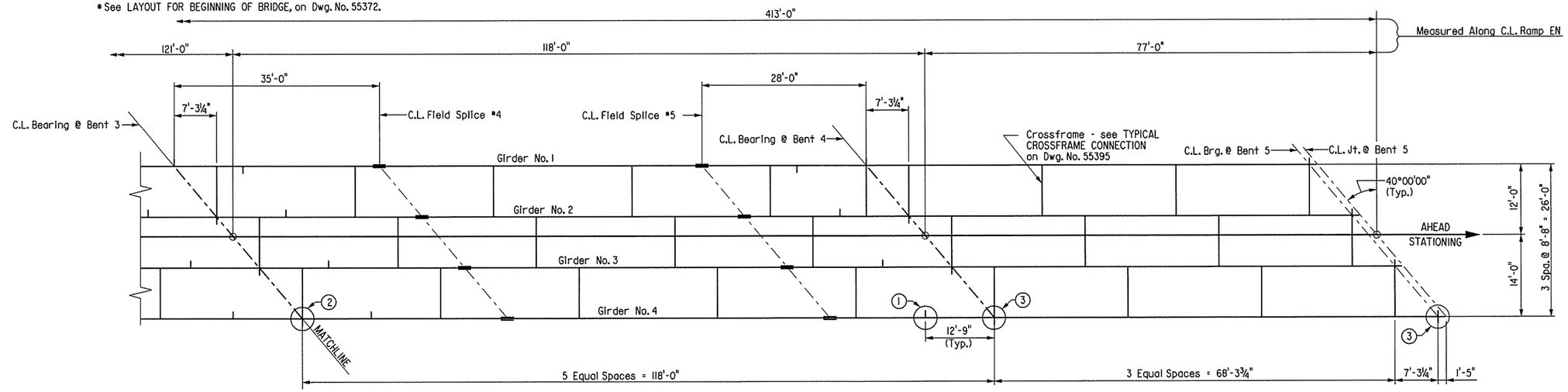
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 539 | 897 |
| (1) 07313 | | SPAN DETAILS | | 55392 |




Girders are parallel to C.L. Ramp EN ahead of PT at Sta. 737+02.47. Girders are parallel to the Tangent Extended back of PT.

## FRAMING PLAN
Scale: 1" = 10'-0"

*See LAYOUT FOR BEGINNING OF BRIDGE, on Dwg. No. 55372.




## FRAMING PLAN
Scale: 1" = 10'-0"

NOTES:

All stiffeners shall be AASHTO M 270, Grade 50 steel.

Girders are straight and parallel. All crossframes are perpendicular to the girders.

For GIRDER ELEVATION, see Dwg. No. 55393

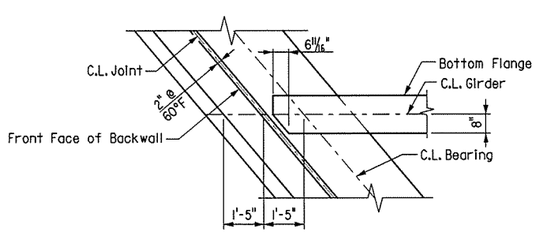
For FIELD SPLICE DETAILS, see Dwg. No. 55394

For TYPICAL CROSSFRAME CONNECTION, see Dwg. No. 55395

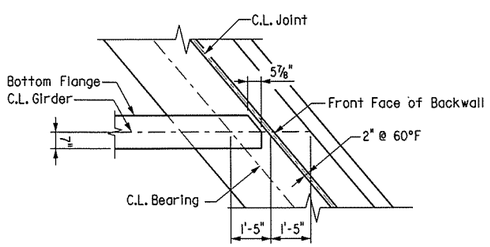
(1) PL ½" x 6" Intermediate Stiffener (Typ.)

(2) PL ⅞" x 7½" Bearing Stiffener (Typ. @ Bents 1, 2 & 3)

(3) PL ⅞" x 6½" Bearing Stiffener (Typ. @ Bents 4 & 5)




## BEARING PLAN AT END BENT 1
Scale: ⅜" = 1'-0"




## BEARING PLAN AT END BENT 5
Scale: ⅜" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK
12-12-2014
BRIDGE ENGINEER

# SHEET 7 OF 10
# DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2

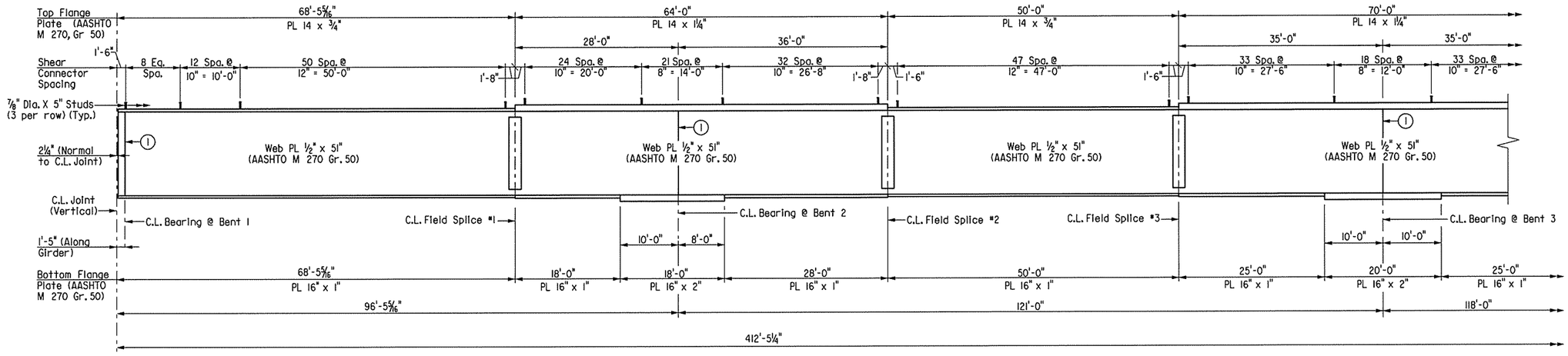
## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bcg0907x10_sl7.dgn
SCALE: AS SHOWN

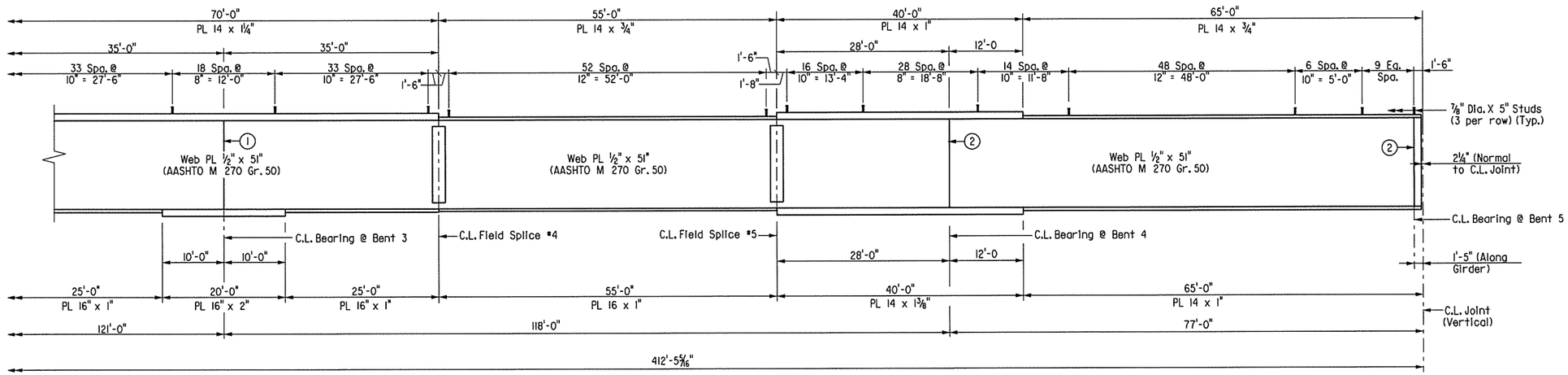
BRIDGE NO. 07313 DRAWING NO. 55392

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 540 | 897 |
| (1) 07313 | | SPAN DETAILS | | 55393 |




GIRDER ELEVATION
No Scale




GIRDER ELEVATION
No Scale

NOTES:

All stiffeners shall be AASHTO M 270, Grade 50 steel.

Girders are straight and parallel. All crossframes are perpendicular to the girders.

For FIELD SPLICE DETAILS, see Dwg. No. 55394

For STIFFENER DETAILS, see Dwg. No. 55394.

For SHEAR CONNECTOR DETAIL, see Dwg. No. 55395.

For WELD DETAILS & TABLE, see Dwg. No. 55394.

(1) PL 7/8" x 7 1/2" Bearing Stiffener (Typ. @ Bents 1, 2 & 3)

(2) PL 7/8" x 6 1/2" Bearing Stiffener (Typ. @ Bents 4 & 5)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
2014

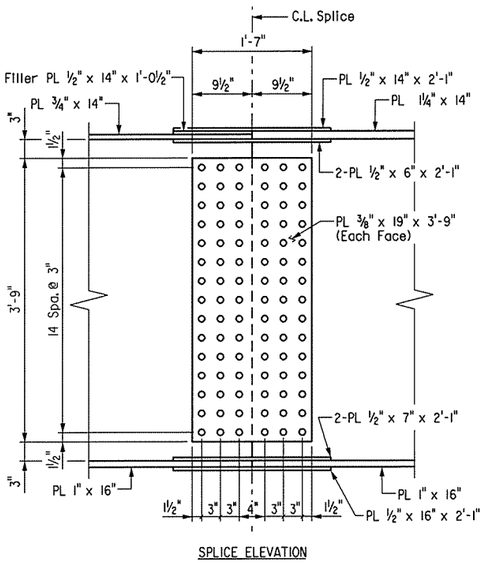
BRIDGE ENGINEER

SHEET 8 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

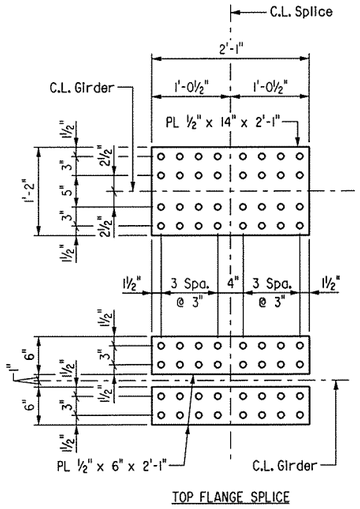
DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bca0907x10_sl8.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55393

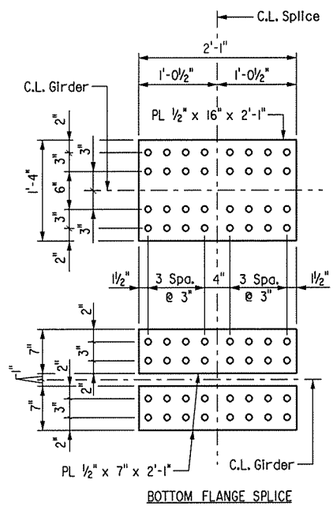
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 541 | 897 |
| | | | | (1) | 07313 | SPAN DETAILS | | 55394 |




SPLICE ELEVATION




TOP FLANGE SPLICE



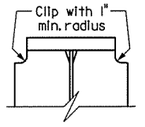

BOTTOM FLANGE SPLICE

## FIELD SPLICE NOS. 1-4 DETAILS

Scale: 1" = 1'-0"

NOTE: All field splice bolts shall be ⅞" ø H.S. bolts. All field splice plates shall be AASHTO M 270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer.




Note: If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

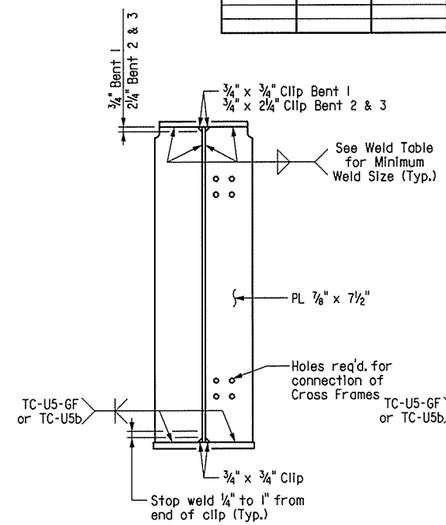
## PLATE CLIP DETAIL

Not to Scale

## TABLE FOR WELD

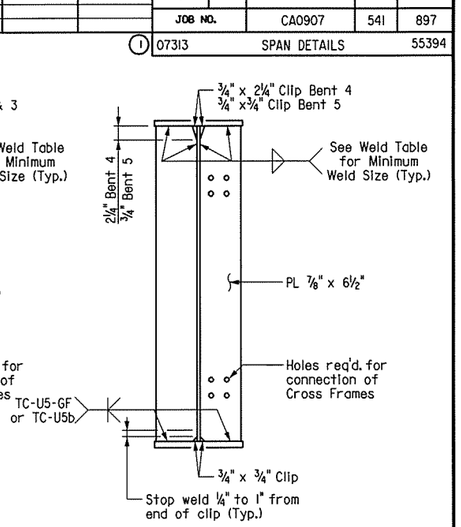
| Material Thickness of Thicker Part Joined ( Inches ) | Minimum Size of Fillet Weld ( Inches ) | Single Pass Weld Must Be Used |
|---|---|---|
| To ¾" Inclusive | ¼" | |
| Over ¾" | 5/16" | |

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



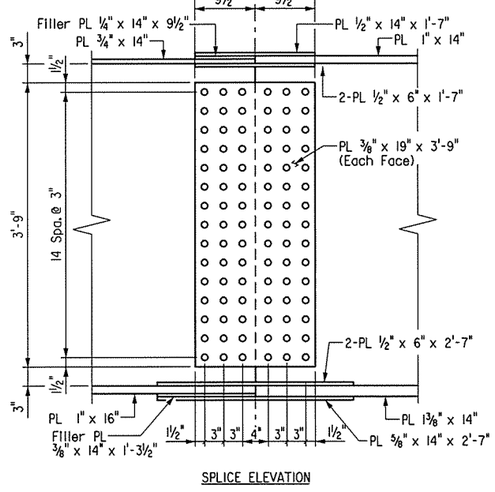

## BENTS 1, 2 & 3 BEARING STIFFENER DETAIL

Scale: 1" = 1'-0"

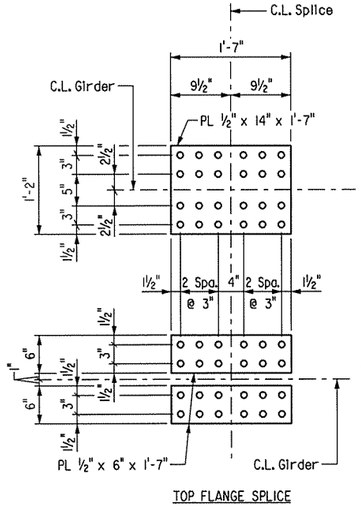



## BENTS 4 & 5 BEARING STIFFENER DETAIL

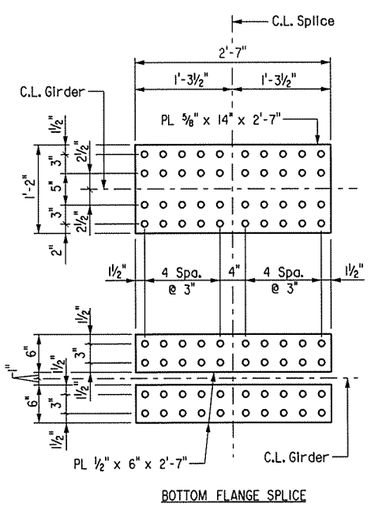
Scale: 1" = 1'-0"




SPLICE ELEVATION



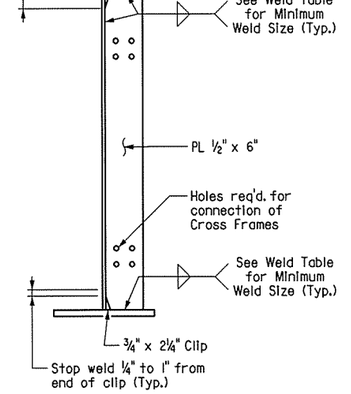

TOP FLANGE SPLICE




BOTTOM FLANGE SPLICE

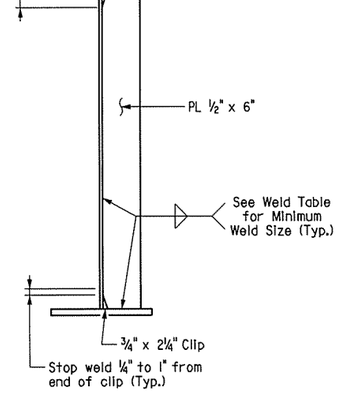
## FIELD SPLICE NO. 5 DETAILS

Scale: 1" = 1'-0"



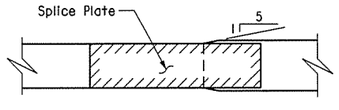

## CROSS FRAME CONNECTION DETAIL

Scale: 1" = 1'-0"



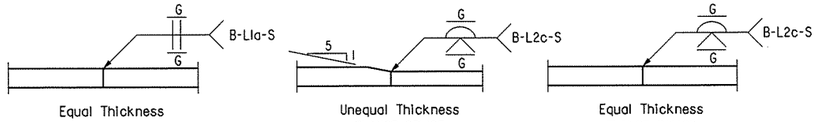

## INTERMEDIATE STIFFENER DETAIL

Scale: 1" = 1'-0"




## DETAILS OF BOTTOM FLANGE TRANSITION

No Scale




## DETAILS OF WELDED SPLICES

Not to Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
12-15-2014

BRIDGE ENGINEER

SHEET 9 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bca0907x10_s21.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55394

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 542 | 897 |
| | | | | (1) 07313 | | SPAN DETAILS | | 55395 |

# SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 4th Edition (2007), with 2008 Interim Revisions.

LIVE LOAD: HL-93
MATERIALS AND STRENGTHS:

| | | |
|---|---|---|
| Class S(AE) Concrete | f'c = | 4,000 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | Fy = | 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy = | 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy = | 36,000 psi |

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. Use of a longitudinal screed is prohibited.

A minimum of 72 hours shall elapse between completion of the deck and the pouring of the parapet railing. Any railing pours made before the entire deck has been placed and cured must be approved by the Engineer.

REINFORCING STEEL: The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL - BRIDGE (GRADE 60)".

STRUCTURAL STEEL: All structural steel shall be AASHTO M 270, Gr. 50 unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)". Structural steel completely encased in concrete may be AASHTO M 270, Gr. 36. All surfaces shall be cleaned in accordance with Section 807.84(b) and painted as specified in Subsection 807.75, unless noted otherwise. Galvanized steel shall not be painted. For cleaning and painting of expansion joint devices and slider plates, see Dwg. No. 55396. For cleaning requirements of external load plates of elastomeric bearings, see Dwg. No. 55397. The color of paint shall be DARK BROWN and shall match Fed. Std. 595B, Color Chip No. 20108.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Girder web, flanges & splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-notch Test specified in subsection 807.05. This work and material will not be paid for directly but are considered subsidiary to item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)".

All connection plates shall be fabricated normal to the top flange and on the side of the girder web as indicated on the framing plan. All bearing stiffeners shall be fabricated to be plum in their final position.

All Girders shall be blocked in their true position in the shop, in groups of a minimum of three (3) sections as specified in subsection 807.54(b)(2). Girders shall be blocked with webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the girders in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of subsection 802.13 will not require approval prior to construction. All welding shall conform to subsection 807.26.

Anchor bolts shall be galvanized according to section 807.07 and shall be Grade 55.

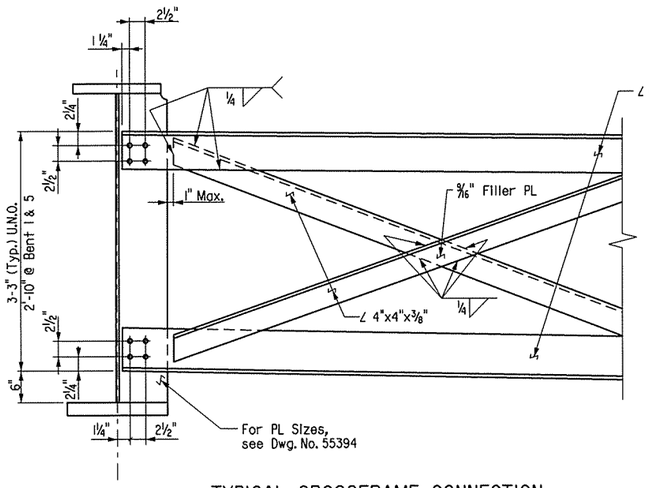
Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for welds for these splices will be made.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the governing specifications in subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the Contractor's expense.

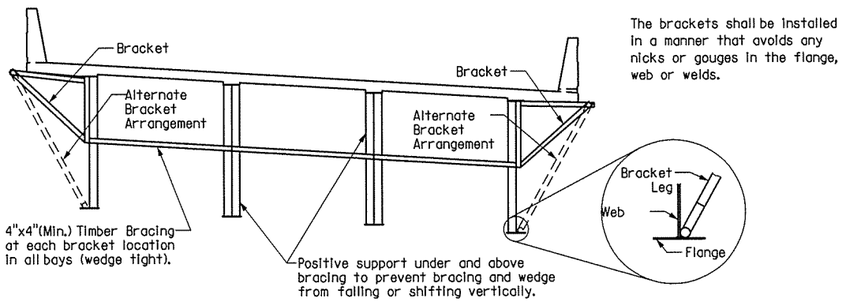
Field connection shall be bolted with high-strength bolts. Unless noted otherwise, bolts shall be ¾"ø and open holes shall be 0.81". Holes for ¾"ø high-strength bolts may be 15/16"ø if a washer is supplied for use under both the nut and head of the bolt. Bolt spacing shall be 2½" for ¾"ø bolts unless noted otherwise. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

Cross-frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck, unless noted otherwise.

Bearings shall be seated in accordance with subsection 808.08. This work and materials are to be considered as subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)" and will not be paid for directly.



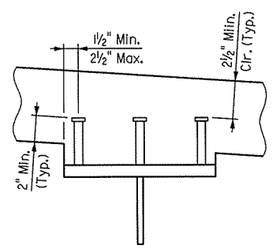

TYPICAL CROSSFRAME CONNECTION
No Scale




The brackets shall be installed in a manner that avoids any nicks or gouges in the flange, web or welds.

Note: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½" x 6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the cross frame connection detail shown on Dwg. No. 55394. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 50)".

SCREED RAIL SUPPORT
No Scale




Stud Shear Connectors shown shall be ⅞"ø x 5" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurment of structural steel in shear connectors. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL
No Scale

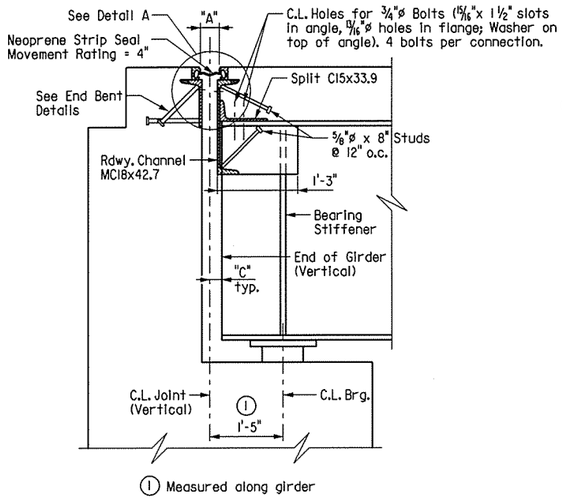
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. STAK
BRIDGE ENGINEER
DATE: 6-30-14

SHEET 10 OF 10
DETAILS OF 413'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 06-12
FILENAME: bca0907x10_s22.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55395

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 543 | 897 |
| | | | | (1) 07313 | | JOINTS | | 55396 |



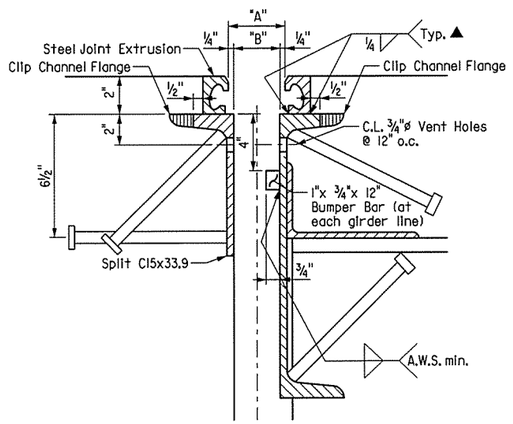

(1) Measured along girder

## SECTION THRU JOINT AT END BENTS

1" = 1'-0"

Note: Sections thru Joints are taken normal to C.L. Joints

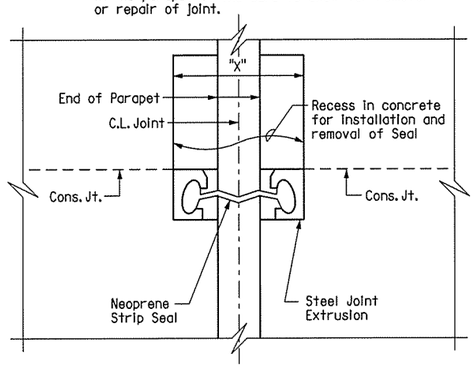
▲ Shop Weld - See Subsection 809.03(b)



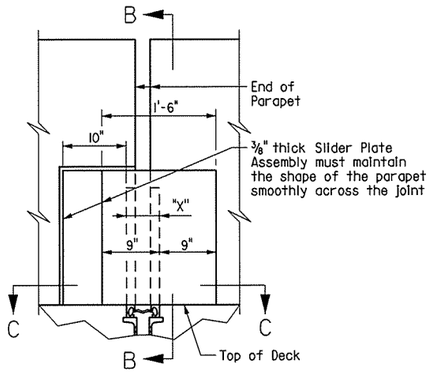

## DETAIL A

3" = 1'-0"

Note: Concrete shall be hand packed under the joint armor in the backwall and in the span.

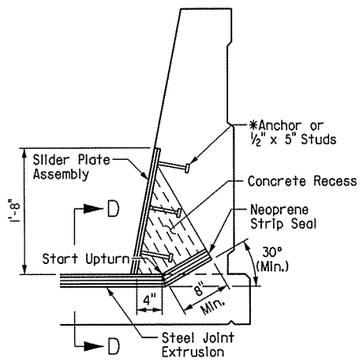



## SECTION D-D



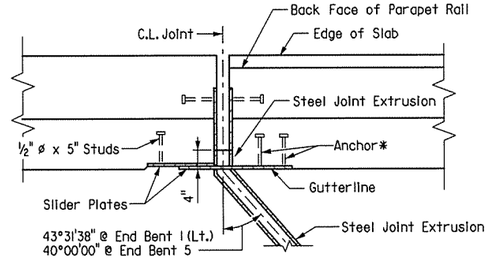

## DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"




## SECTION B-B

Scale: 1" = 1'-0"




## SECTION C-C AT END BENTS

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

  Method of installation and fabrication shall be determined by the manufacturer.

## STRIP SEAL JOINT DATA

| Bent No.(s) | Movement Rating (inch) | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "C" Perpendicular to Joint at 24 Hour Average Temperature of 60° F |
|---|---|---|---|---|---|---|---|---|
| | | 40° F | 60° F | 80° F | 40° F | 60° F | 80° F | |
| 1 | 4" | 2 9/16" | 2½" | 2 3/16" | 2 5/16" | 2" | 1 11/16" | 2¼"± |
| 5 | 4" | 2 11/16" | 2½" | 2 5/16" | 2 3/16" | 2" | 1 7/16" | 2¼"± |

**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary. The temperature limitations by the lubricant-adhesive manufacturer shall be observed.

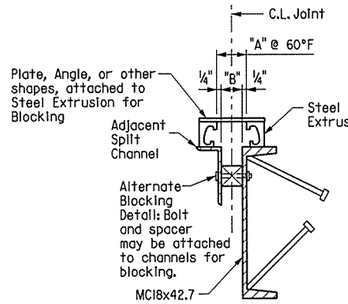
GENERAL NOTES

EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 4" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

All structural steel in the expansion device shall be AASHTO M270 Gr. 50 steel and, except for the steel extrusion and slider plate anchor system, shall be paid for as STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, Grade 50). The steel extrusion, neoprene strip seal, and slider plate anchor system shall be paid for in accordance with Section 809.

Cleaning and painting of all exposed surfaces shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50). Structural steel completely embedded in concrete need not be painted.




## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note: Each Expansion Joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60° F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

# DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL RAMP EN OVER SILENT GROVE ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 08-12
CHECKED BY: GMS DATE: 08-12
DESIGNED BY: RWG DATE: 08-12
FILENAME: bca0907x10_1.dgn
SCALE: AS SHOWN

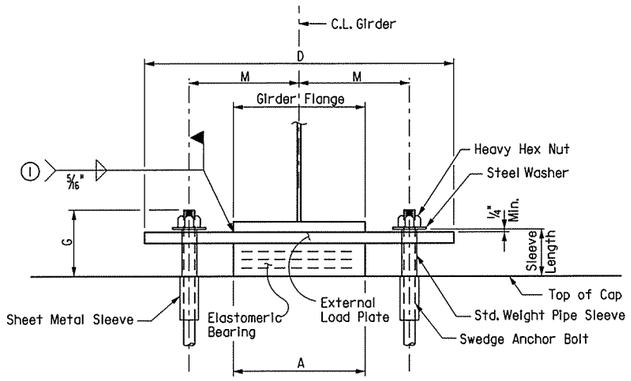
BRIDGE NO. 07313 DRAWING NO. 55396

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 544 | 897 |
| | | | | (1) 07313 | | ELASTOMERIC BEARINGS | | 55397 |

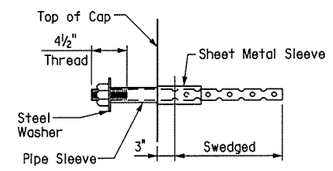
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L. Bearing shall align with C.L. Girder

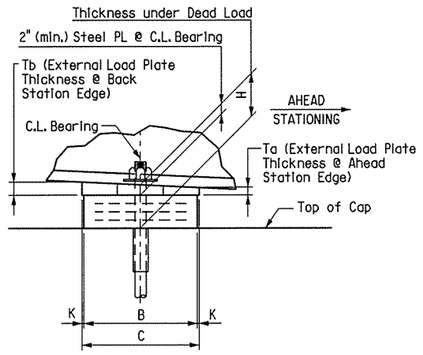
Note: The direction of bevel of the external load plate may not be accurately depicted with respect to the Ta and Tb values shown in the Table of Fabricator Variables.



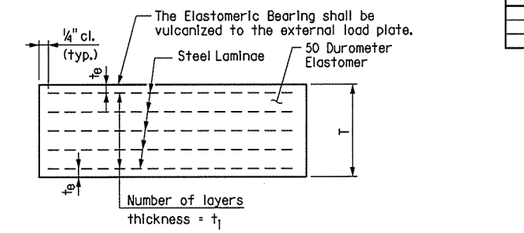

FRONT VIEW @ BENT NOS. 1 & 5




ANCHOR BOLT DETAIL




SIDE VIEW @ BENT NOS. 1 & 5

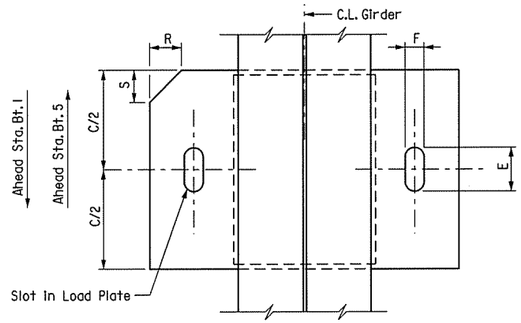



$t_e$ = thickness of elastomer cover on top and bottom of pad

$t_1$ = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness $t_1$

ELASTOMERIC BEARING




PLAN VIEW @ BENT NOS. 1 & 5

NOTE:
Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required. If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam, or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 50)".

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS." Bearings shall be seated in accordance with Subsection 808.08.

External load plates and shear blocks shall conform to AASHTO M 270, Grade 50. Pipe sleeves shall be ASTM A 53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

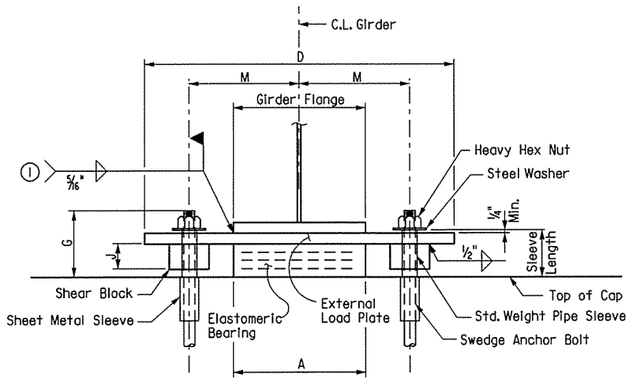
External load plates (with shear blocks as applicable) shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) for painted steel.

Anchor Bolts, Washers, and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

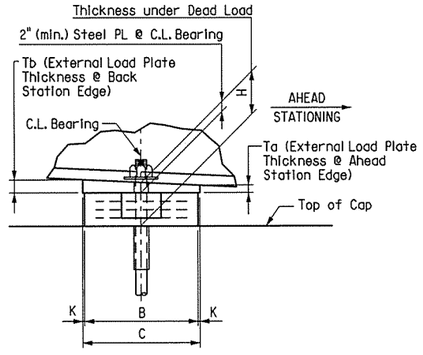
Pipe Sleeves, Anchor Bolts, Washers, and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 50)".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40?F and 80?F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

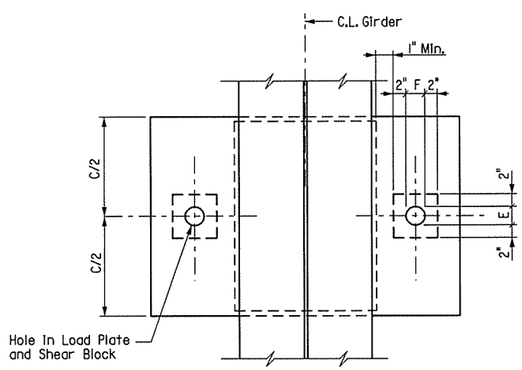
External load plates and shear blocks shall be painted in accordance with Subsection 807.75. Mask areas that are to be welded in the field. Painting will not be paid for directly but will be considered subsidiary to ELASTOMERIC BEARINGS.




FRONT VIEW @ BENT NOS. 2, 3 & 4




SIDE VIEW @ BENT NOS. 2, 3 & 4




PLAN VIEW @ BENT NOS. 2, 3 & 4

TABLE OF FABRICATOR VARIABLES

| LOCATION | | | BEARING TYPE | NO. of BEARINGS EACH BENT | *MAXIMUM DESIGN LOAD (KIPS) | ELASTOMERIC PAD | | | | | | EXTERNAL LOAD PLATE | | | | | | | | | | | ANCHOR BOLT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BENT NO(S). | SPAN NO. | BEAM OR GIRDER NO. | | | | G | H | A | B | N | $t_1$ | $t_e$ | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | J | K | M | R | S | $T_a$ | $T_b$ | ANCHOR BOLT ( ø x L ) | GRADE | PIPE SLEEVE SIZE ( ø x L ) | SHEET METAL SLEEVE SIZE ( ø x L ) | STEEL WASHER SIZE (O.D.) |
| 1 | 1 | All | Exp. | 4 | 147 | 9¾" | 6⅜" | 17" | 13½" | 6 | ½" | ¼" | 7 @ 12 Ga. | 4¼" | 14½" | 29" | 7" | 3⅛" | N/A | ½" | 11¼" | 4½" | 4" | •• | •• | 2¼" x 34½" | 55 | 2½" x 6½" | 4" x 6½" | 4" |
| 2 | 1 & 2 | All | Fixed | 4 | 366 | 10¼" | 7⅜" | 22½" | 17" | 8 | ½" | ¼" | 9 @ 12 Ga. | 5⅞" | 18" | 40¼" | 2¼" | 2¼" | 4" | ½" | 16" | N/A | N/A | 1.81" | 2.19" | 1½" x 28¼" | 55 | 1½" x 7¾" | 3" x 11½" | 3" |
| 3 | 2 & 3 | All | Fixed | 4 | 371 | 10¼" | 7⅜" | 22½" | 17" | 8 | ½" | ¼" | 9 @ 12 Ga. | 5⅞" | 18" | 40¼" | 2¼" | 2¼" | 4" | ½" | 16" | N/A | N/A | 1.82" | 2.18" | 1½" x 28¼" | 55 | 1½" x 7¾" | 3" x 12" | 3" |
| 4 | 3 & 4 | All | Fixed | 4 | 331 | 10¼" | 7⅜" | 20½" | 17½" | 8 | ½" | ¼" | 9 @ 12 Ga. | 5⅞" | 18½" | 38¼" | 2¼" | 2¼" | 4" | ½" | 15" | N/A | N/A | 1.81" | 2.19" | 1½" x 28¼" | 55 | 1½" x 7¾" | 3" x 12" | 3" |
| 5 | 4 | All | Exp. | 4 | 124 | 9½" | 6¼" | 15½" | 13½" | 6 | ½" | ¼" | 7 @ 12 Ga. | 4¼" | 14½" | 27½" | 6" | 3⅛" | N/A | ½" | 10½" | 4" | 3½" | 1.85" | 2.15" | 2" x 31½" | 55 | 2½" x 6½" | 4" x 8" | 3¾" |

• Maximum Design Load = Service I Limit State
•• See TABLE OF LOAD PLATE THICKNESS - BENT 1

TABLE OF LOAD PLATE THICKNESS - BENT 1

| LOCATION | | | $T_a$ | $T_b$ |
|---|---|---|---|---|
| BENT NO(S). | SPAN NO. | BEAM OR GIRDER NO. | | |
| 1 | 1 | 1 | 1.86" | 2.14" |
| 1 | 1 | 2 | 1.84" | 2.16" |
| 1 | 1 | 3 | 1.83" | 2.17" |
| 1 | 1 | 4 | 1.81" | 2.19" |

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZUK 2014

BRIDGE ENGINEER

# DETAILS ELASTOMERIC BEARINGS RAMP EN OVER SILENT GROVE ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 07-12 FILENAME: bca0907x10_e.dgn

CHECKED BY: GMS DATE: 08-12 SCALE: NO SCALE

DESIGNED BY: RWG DATE: 06-12

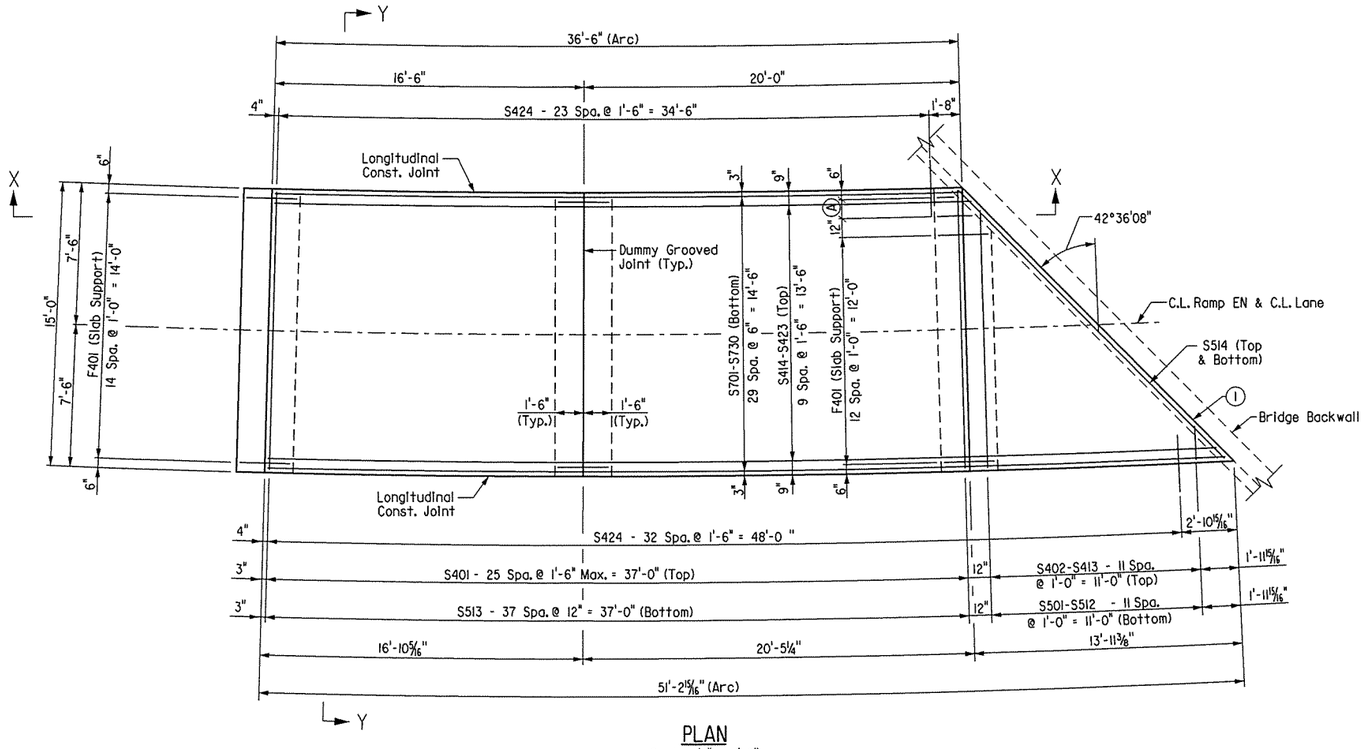
BRIDGE NO. 07313 DRAWING NO. 55397

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 545 | 897 |
| (1) 07313 | | APPROACH SLAB | | 55398 |

(1) ½" Preformed Joint (AASHTO M 153 Type I) and 2" x ½" Poured Joint Sealer Type 3 or 4 per Subsection 501.02 (h) (2)

(A) F402-F403 - 1 Spa. @ 1'-0" = 1'-0"



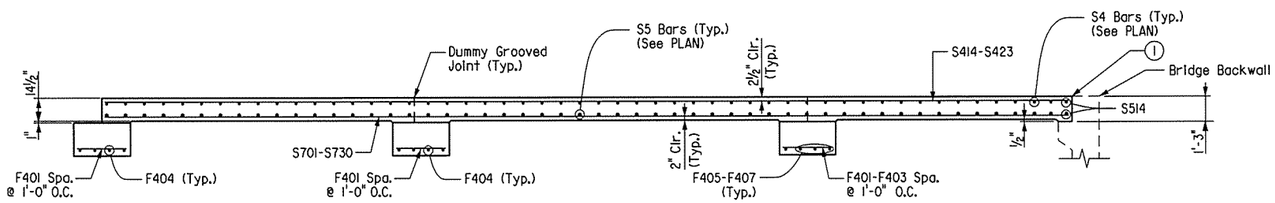

## PLAN

Scale: ¼" = 1'-0"

NOTE: Construct Approach Slab on concentric arcs to C.L. Ramp EN.

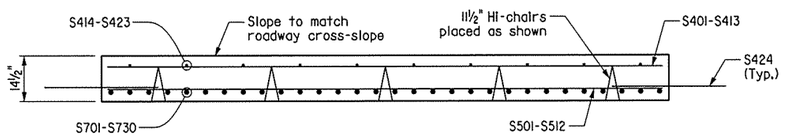
NOTE: All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along right edge of slab (right is defined by direction of stationing).

NOTE: Surface finish shall match that used on the bridge deck.




## SECTION X-X

Scale: ¼" = 1'-0"




## SECTION Y-Y

Scale: ½" = 1'-0"

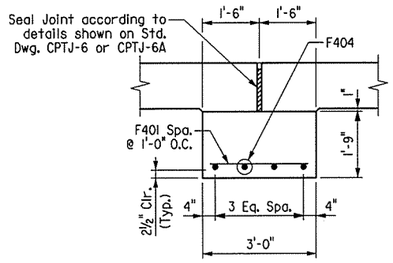
GENERAL NOTES

Concrete shall be Class "S" (AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M53. Grade 60 (fy = 60,000 psi).

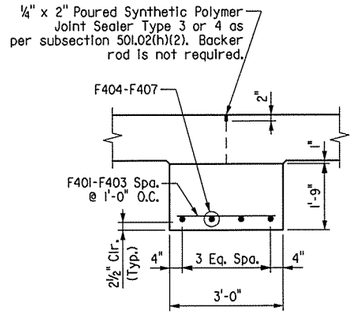
Approach Slabs will be measured and paid for in accordance with Section 504.

Joint Sealer and Joint Filler shall be included in the pay item "Approach Slab".



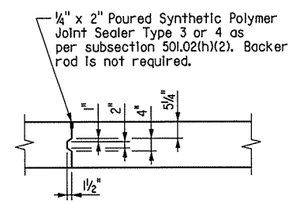

## DETAILS OF SUPPORT AT END OF SLAB

Scale: ½" = 1'-0"



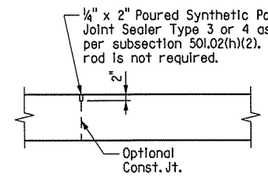

## DETAILS OF INTERIOR SUPPORT OF SLAB

Scale: ½" = 1'-0"




## DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

Scale: ½" = 1'-0"




## DETAILS OF DUMMY GROOVED JOINT

Scale: ½" = 1'-0"

## BAR LIST

| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| F401 | 43 | 2'-8" | Str. |
| F402 | 1 | 1'-10" | Str. |
| F403 | 1 | 0'-8" | Str. |
| F404 | 9 | 14'-8" | Str. |
| F405 | 1 | 14'-3" | Str. |
| F406 | 1 | 13'-3" | Str. |
| F407 | 1 | 12'-3" | Str. |
| | | | |
| S401 | 26 | 14'-8" | Str. |
| S402 to S413 | 1 Each | 13'-7" to 1'-9" | Str. |
| S414to S423 | 1 Each | 50'-1" to 36'-7" | Str. |
| S424 | 57 | 3'-0" | Str. |
| | | | |
| S501 to S512 | 1 Each | 13'-7" to 1'-9" | Str. |
| S513 | 38 | 14'-8" | Str. |
| S514 | 2 | 19'-11" | Str. |
| | | | |
| S701 to S730 | 1 Each | 50'-7" to 36'-4" | Str. |
| | | | |
| | | | |

## QUANTITIES FOR TYPE SPECIAL 4 APPROACH SLAB AT BEGIN BRIDGE

| Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|
| 4300 | 38.48 |

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 2014

BRIDGE ENGINEER

SHEET 1 OF 2

# DETAILS OF TYPE SPECIAL 4 APPROACH SLAB RAMP EN OVER SILENT GROVE ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PGR DATE: 06-12 FILENAME: bca0907x10_asl.dgn

CHECKED BY: LMS DATE: 08-12 SCALE: AS SHOWN

DESIGNED BY: RWG DATE: 08-12

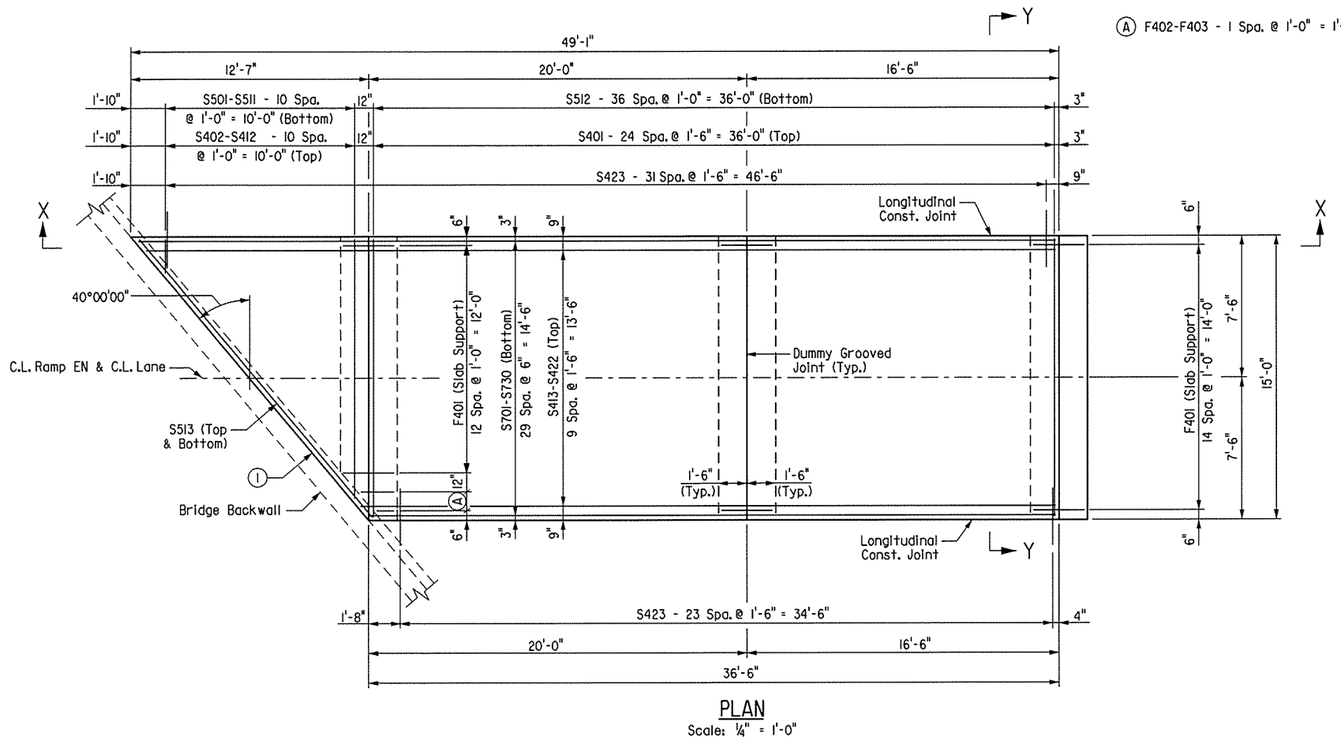
BRIDGE NO. 07313 DRAWING NO. 55398

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 546 | 897 |
| (1) 07313 | | APPROACH SLAB | | 55399 |

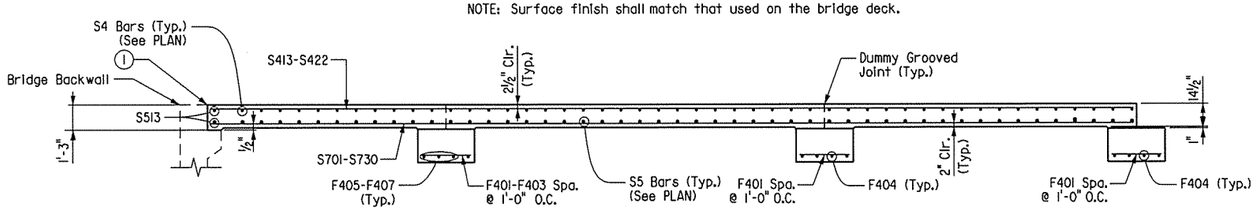
(1) ½" Preformed Joint (AASHTO M 153 Type 1) and 2" x ½" Poured Joint Sealer Type 3 or 4 as per Subsection 501.02 (h) (2)

(A) F402-F403 - 1 Spa. @ 1'-0" = 1'-0"

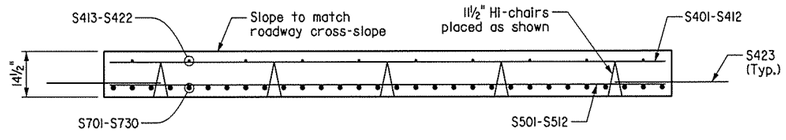



## PLAN
Scale: ¼" = 1'-0"

NOTE: Surface finish shall match that used on the bridge deck.




## SECTION X-X
Scale: ¼" = 1'-0"




## SECTION Y-Y
Scale: ½" = 1'-0"

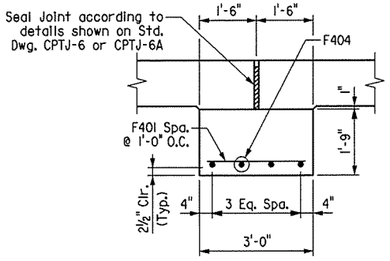
GENERAL NOTES

Concrete shall be Class "S" (AE) (f'c = 4,000 psi).

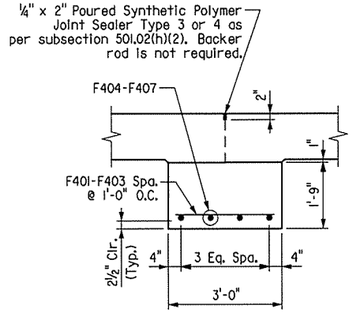
Reinforcing Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504.

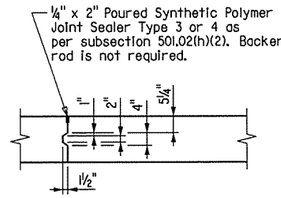
Joint Sealer and Joint Filler shall be included in the pay item "Approach Slab".



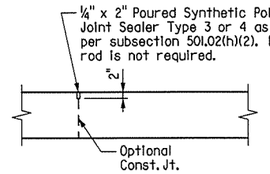

## DETAILS OF SUPPORT AT END OF SLAB
Scale: ½" = 1'-0"




## DETAILS OF INTERIOR SUPPORT OF SLAB
Scale: ½" = 1'-0"




## DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
Scale: ½" = 1'-0"



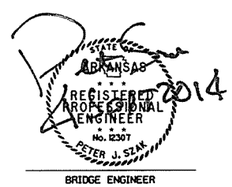

## DETAILS OF DUMMY GROOVED JOINT
Scale: ½" = 1'-0"

## BAR LIST

| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| F401 | 43 | 2'-8" | Str. |
| F402 | 1 | 1'-10" | Str. |
| F403 | 1 | 0'-8" | Str. |
| F404 | 9 | 14'-8" | Str. |
| F405 | 1 | 14'-3" | Str. |
| F406 | 1 | 13'-3" | Str. |
| F407 | 1 | 12'-3" | Str. |
| | | | |
| S401 | 25 | 14'-8" | Str. |
| S402 to S412 | 1 Each | 13'-8" to 1'-9" | Str. |
| S413to S422 | 1 Each | 36'-8" to 48'-0" | Str. |
| S423 | 56 | 3'-0" | Str. |
| | | | |
| S501 to S511 | 1 Each | 13'-8" to 1'-9" | Str. |
| S512 | 37 | 14'-8" | Str. |
| S513 | 2 | 19'-1" | Str. |
| | | | |
| S701 to S730 | 1 Each | 48'-5" to 36'-3" | Str. |

## QUANTITIES FOR TYPE SPECIAL 4 APPROACH SLAB AT END BRIDGE

| Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|
| 4180 | 37.75 |




BRIDGE ENGINEER

# SHEET 2 OF 2
# DETAILS OF TYPE SPECIAL 4 APPROACH SLAB RAMP EN OVER SILENT GROVE ROAD
ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

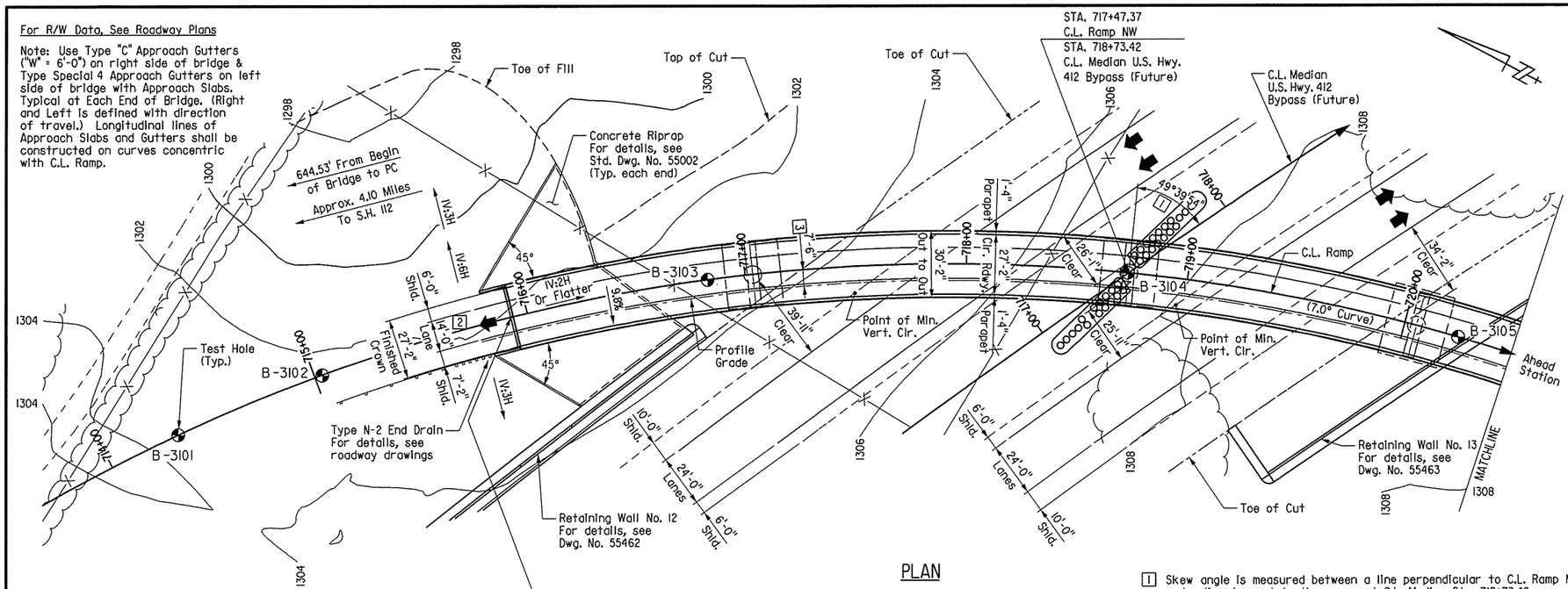
DRAWN BY: PGR DATE: 06-12
CHECKED BY: LMS DATE: 08-12
DESIGNED BY: RWG DATE: 08-12
FILENAME: bca0907x10_as2.dgn
SCALE: AS SHOWN

BRIDGE NO. 07313 DRAWING NO. 55399

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 547 | 897 |
| | | | | (1) 07314 | | LAYOUT | | 55400 |

For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters ("W" = 6'-0") on right side of bridge & Type Special 4 Approach Gutters on left side of bridge with Approach Slabs. Typical at Each End of Bridge. (Right and Left is defined with direction of travel.) Longitudinal lines of Approach Slabs and Gutters shall be constructed on curves concentric with C.L. Ramp.




PLAN

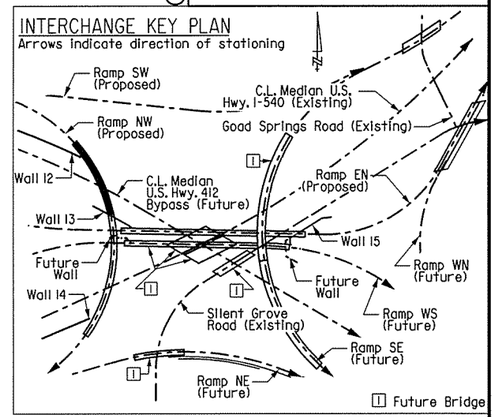
[1] Skew angle is measured between a line perpendicular to C.L. Ramp NW and a line tangent to the curve at C.L. Median Sta. 718+73.42

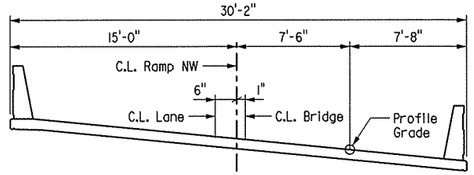
[2] For Lane Width Transition Details, See Roadway Drawings

[3] Measured from C.L. Ramp to Profile Grade

## INTERCHANGE KEY PLAN

Arrows indicate direction of stationing




## BRIDGE LAYOUT

Looking Ahead
Not To Scale

For GENERAL NOTES, see Dwg. No. 55402.

Note: All bents are radial to C.L. Ramp.

Note: Unless otherwise noted, stations and elevations shown are taken along C.L. Ramp.

For Soil Boring Legend, See Dwg. No. 55402.

** Top of Deck @ C.L. Bent @ C.L. Ramp to low side Top of Cap

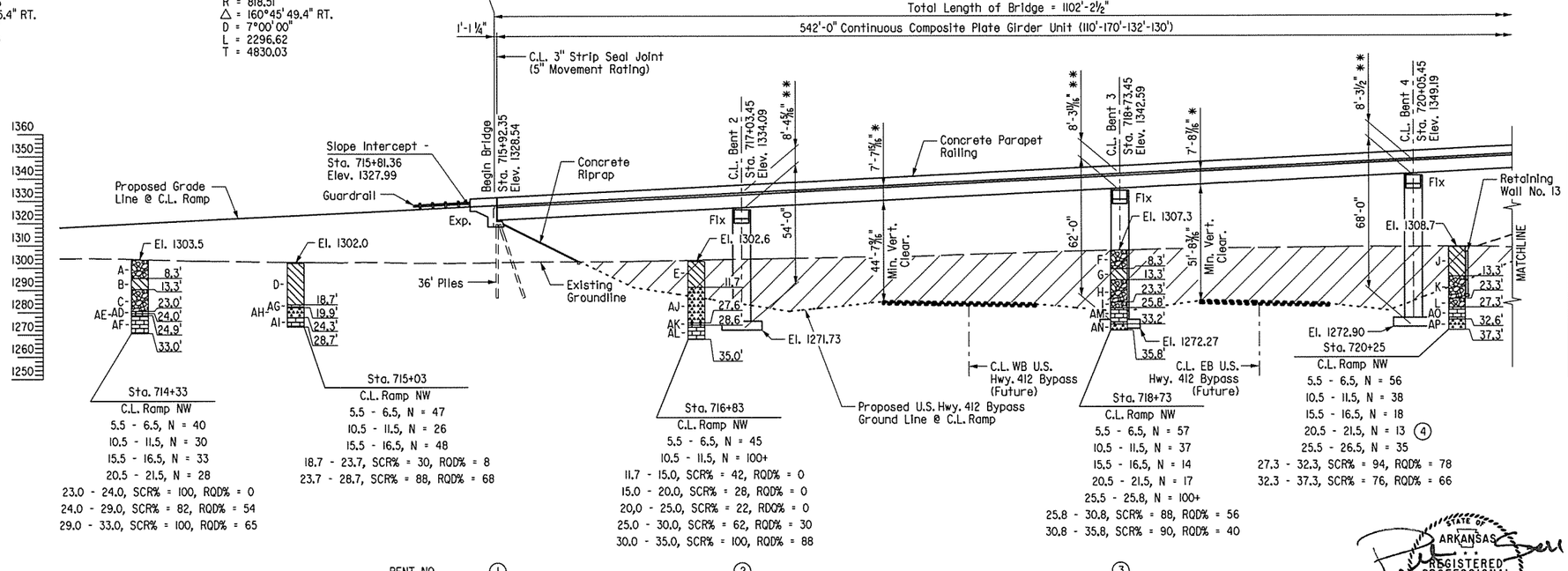
* Top of Deck @ C.L. Ramp to Low Beam

HORIZONTAL CURVE DATA
U.S. HWY. 412 BYPASS (FUTURE)

PI Sta = 701+30.94
PC Sta = 680+23.42
PT Sta = 719+74.21
R = 4583.66
△ = 49°23'5.4" RT.
D = 1°15'00"
L = 3950.79
T = 2107.51

HORIZONTAL CURVE DATA
C.L. RAMP NW

PI Sta = 757+77.76
PC Sta = 709+47.73
PT Sta = 732+44.35
R = 818.51
△ = 160°45'49.4" RT.
D = 7°00'00"
L = 2296.62
T = 4830.03




ELEVATION

Sta. 714+33
C.L. Ramp NW
5.5 - 6.5, N = 40
10.5 - 11.5, N = 30
15.5 - 16.5, N = 33
20.5 - 21.5, N = 28
23.0 - 24.0, SCR% = 100, RQD% = 0
24.0 - 29.0, SCR% = 82, RQD% = 54
29.0 - 33.0, SCR% = 100, RQD% = 65

Sta. 715+03
C.L. Ramp NW
5.5 - 6.5, N = 47
10.5 - 11.5, N = 26
15.5 - 16.5, N = 48
18.7 - 23.7, SCR% = 30, RQD% = 8
23.7 - 28.7, SCR% = 88, RQD% = 68

Sta. 716+83
C.L. Ramp NW
5.5 - 6.5, N = 45
10.5 - 11.5, N = 100+
11.7 - 15.0, SCR% = 42, RQD% = 0
15.0 - 20.0, SCR% = 28, RQD% = 0
20,0 - 25.0, SCR% = 22, RDO% = 0
25.0 - 30.0, SCR% = 62, RQD% = 30
30.0 - 35.0, SCR% = 100, RQD% = 88

Sta. 718+73
C.L. Ramp NW
5.5 - 6.5, N = 57
10.5 - 11.5, N = 37
15.5 - 16.5, N = 14
20.5 - 21.5, N = 17
25.5 - 25.8, N = 100+
25.8 - 30.8, SCR% = 88, RQD% = 56
30.8 - 35.8, SCR% = 90, RQD% = 40

Sta. 720+25
C.L. Ramp NW
5.5 - 6.5, N = 56
10.5 - 11.5, N = 38
15.5 - 16.5, N = 18
20.5 - 21.5, N = 13 (4)
25.5 - 26.5, N = 35
27.3 - 32.3, SCR% = 94, RQD% = 78
32.3 - 37.3, SCR% = 76, RQD% = 66

P.V.I. Sta. 724+50.00
Elev. 1370.68
5.00% -3.92%
V.C. = 800.00'

## VERTICAL CURVE DATA

(Along Profile Grade)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
2016
BRIDGE ENGINEER

# SHEET 1 OF 3
# LAYOUT OF BRIDGE
# I-49 INTERCHANGE RAMP NW
# OVER U.S. HWY. 412 BYPASS
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 03-09 FILENAME: bca0907ml6_111.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: 1" = 30'
DESIGNED BY: LWM DATE: 09-07

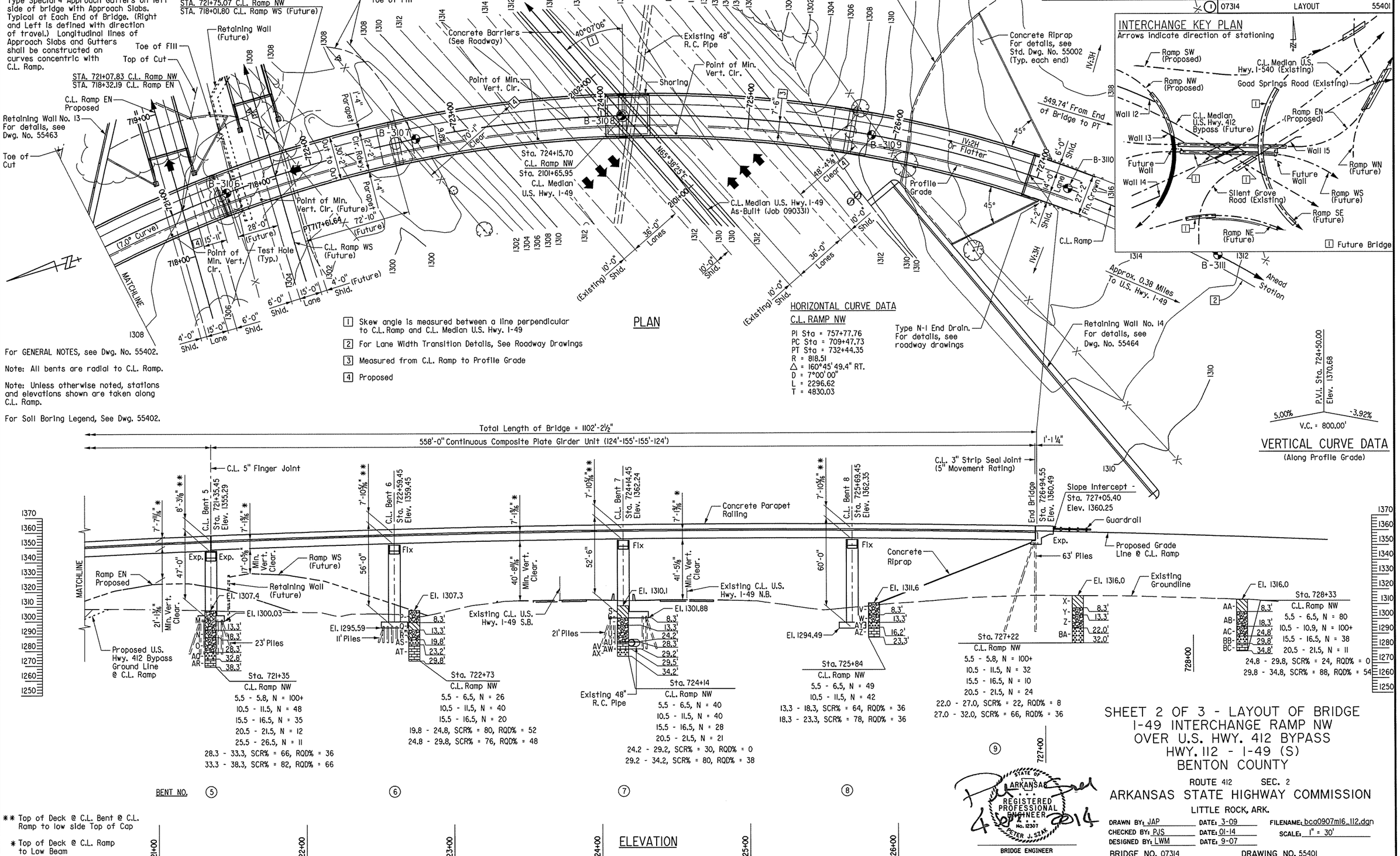
BRIDGE NO. 07314 DRAWING NO. 55400

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 548 | 897 |
| 07314 | | LAYOUT | | 55401 |

For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters ("W" = 6'-0") on right side of bridge & Type Special 4 Approach Gutters on left side of bridge with Approach Slabs. Typical at Each End of Bridge. (Right and Left is defined with direction of travel.) Longitudinal lines of Approach Slabs and Gutters shall be constructed on curves concentric with C.L. Ramp.




INTERCHANGE KEY PLAN

Arrows indicate direction of stationing




1 Skew angle is measured between a line perpendicular to C.L. Ramp and C.L. Median U.S. Hwy. I-49

2 For Lane Width Transition Details, See Roadway Drawings

3 Measured from C.L. Ramp to Profile Grade

4 Proposed

PLAN

HORIZONTAL CURVE DATA

C.L. RAMP NW

PI Sta = 757+77.76
PC Sta = 709+47.73
PT Sta = 732+44.35
R = 818.5I
△ = 160°45'49.4" RT.
D = 7°00'00"
L = 2296.62
T = 4830.03




VERTICAL CURVE DATA

(Along Profile Grade)

For GENERAL NOTES, see Dwg. No. 55402.

Note: All bents are radial to C.L. Ramp.

Note: Unless otherwise noted, stations and elevations shown are taken along C.L. Ramp.

For Soil Boring Legend, See Dwg. 55402.




** Top of Deck @ C.L. Bent @ C.L. Ramp to low side Top of Cap

* Top of Deck @ C.L. Ramp to Low Beam

ELEVATION

SHEET 2 OF 3 - LAYOUT OF BRIDGE
I-49 INTERCHANGE RAMP NW
OVER U.S. HWY. 412 BYPASS
HWY. 112 - I-49 (S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZIK 4-30-2014

BRIDGE ENGINEER

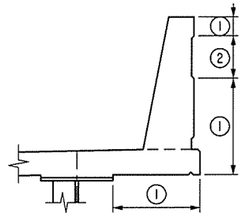
DRAWN BY: JAP DATE: 3-09
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LWM DATE: 9-07

FILENAME: bca0907mi6_112.dgn
SCALE: 1" = 30'

BRIDGE NO. 07314

DRAWING NO. 55401

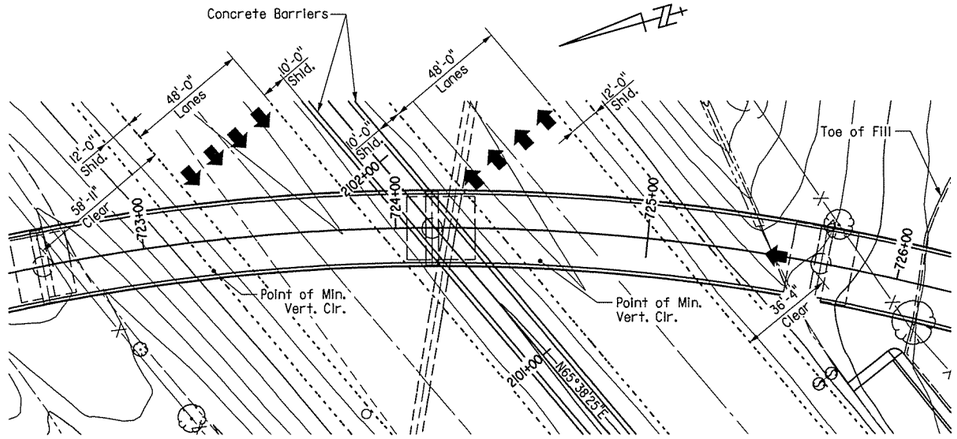
| DETAIL DRAWINGS: | DRAWING NO. |
|---|---|
| End Bent 1 | 55403-55405 |
| Intermediate Bents | 55406-55413 |
| End Bent 9 | 55414-55416 |
| 542'-0" Cont. Comp. Plate Girder Unit | 55417-55423 |
| 558'-0" Cont. Comp. Plate Girder Unit | 55424-55429 |
| Common Details Of Plate Girder Units | 55430-55432 |
| Strip Seal Joint Details | 55433 |
| Finger Joint Details | 55434 |
| Elastomeric Bearings | 55435 |
| Type "C" Approach Gutters | 55030C |
| Type Special 4 Approach Gutters | 55436 |
| Approach Slab | 55040cl |
| Steel Piling | 55020 |
| Retaining Walls | 55462-55464 |



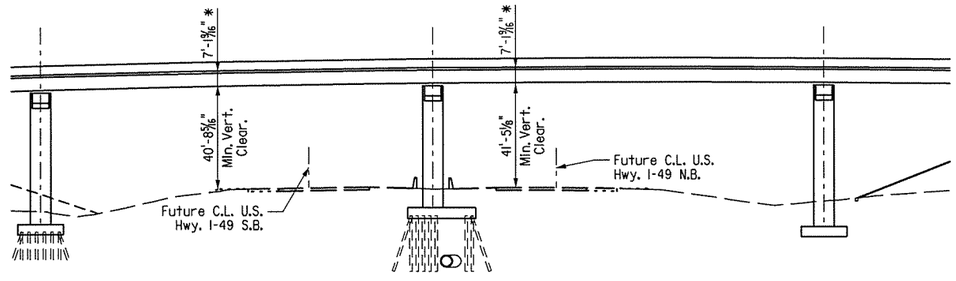

① Class 3 Textured Coating Finish
(Color = Light Brown, Color Chip No. 33522)

② Class 3 Textured Coating Finish
(Color = Medium Brown, Color Chip No. 30219)

TEXTURED COATING FINISH
Scale: ½" = 1'-0"




PLAN SHOWING FUTURE WIDENING OF I-49




ELEVATION

GENERAL NOTES

BENCH MARK: T 102 RBR CAP. Survey control point no. 102. N=700195.6915, E=675140.4283, Elev. 1312.3265, Mainline Sta. 719+62.25, Offset 441.46' Right.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted on the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interims.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$ =0.125 Site Class=D

MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S(AE) - Bridge Concrete (Superstructure) | f'c = 4,000 psi |
| Class S - Bridge Concrete (Substructure) | f'c = 3,500 psi |
| Reinforcing Steel (AASHTO M 31 or M 322 Type A, Gr. 60) | Fy = 60,000 psi |
| Structural Steel (AASHTO M 270, Gr. 50) | Fy = 50,000 psi |
| Structural Steel (AASHTO M 270, Gr. 36) | Fy = 36,000 psi |

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

STEEL PILING: All piling shall be HP 12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons per pile. All piling shall be driven into the material designated as Limestone or Chert on the boring legend. Drive all piles at End Bents to a minimum of 10' below existing groundline. Drive all piles at interior Bents to a minimum of 10' below bottom of footing. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

PREBORING: Preboring may be required at Bents 1, 5, and 9 to obtain the minimum pile penetration requirement. The size and depth of preboring, if required, will be determined by the Engineer.

Preboring will be required at Bent 6 and for the two rows of piles adjacent to the existing storm drain at Bent 7. Preboring at these locations shall extend below invert of the pipe for 10'-0" into soil or 3'-0" into rock. Any portion in rock shall be backfilled with Class S concrete to the top of rock. The remaining portion of the prebored hole shall be backfilled per Subsection 805.08(a).

The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. The cost of the preboring and, if required, temporary casings and will be paid for under the item "PREBORING".

SPREAD FOOTING: Footings for Bents 2, 3, 4, & 8 shall be set a minimum of 2'-0" into competent Limestone or Chert. For minimum cover above top of footings, 2'-0" below finished ground for Bents 2, 3, & 4 and 2'-0" below existing ground for Bent 8. Foundations for footings shall be prepared in accordance with Section 801.04 of the Standard Specifications. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

PILE FOOTING: The top of footings for Bents 5, 6, & 7 shall be set a minimum of 2'-0" below existing ground. Foundations for footings shall be prepared in accordance with Section 801.04 and backfilled in accordance with Section 801.08 of the Standard Specifications.

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at pile locations adjacent to the existing 48" R.C. pipe at Bent 7 in accordance with SP Job CA0907 "EXPLORATORY HOLES". The quantities of exploratory holes shown are for bidding purposes only. The actual location, number, and depths of exploratory holes are to be determined in the field by the Engineer.

SHORING: Shoring, at the locations shown, is required but will not be paid for directly and shall be included in Item 801. See SP Job No. CA0907 "Special Safety Requirements for Bridges" for additional details.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of paint shall be Dark Brown and shall match Fed Std. 595B, Color Chip No. 20108.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to surfaces as specified in SP Job CA0907 "TEXTURED COATING FINISH" and in accordance with Section 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface, top of backwall, top and roadway face of the concrete parapet rail and transition rails.

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four wingwall locations in accordance with Dwg. No. 55385.

MAINTENANCE OF TRAFFIC: See Roadway drawings.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 549 | 897 |
| | | | | ① 07314 | | LAYOUT | | 55402 |

Boring Legend

A - Red, dense, clayey gravel with sand.
B - Red, very stiff, fat clay with sand.
C - Red, medium dense to dense, silty gravel with sand.
D - Red, very stiff to hard, fat clay with sand.
E - Red, hard to very hard, fat clay with sand.
F - Red, very dense, clayey gravel with sand.
G - Red, hard, fat clay with sand.
H - Red, red & brown, medium dense, silty gravel with sand.
I - Red, very dense, clayey gravel with sand.
J - Red, hard, fat clay with sand.
K - Red, red & brown, medium dense, silty gravel with sand.
L - Red, dense, silty gravel with sand.
M - Red, dense to very dense, clayey gravel with sand.
N - Red, dense, silty gravel with sand.
O - Red & brown, red, medium dense, silty gravel with sand.
P - Brown, medium dense, clayey gravel with sand.
Q - Brown, hard, fat clay with sand.
R - Brown, medium dense, silty gravel with sand.
S - Red, hard, fat clay with sand.
T - Red, dense, silty gravel with sand.
U - Red, medium dense, clayey gravel with sand.
V - Red, dense, clayey gravel with sand.
W - Brown, dense, silty gravel with sand.
X - Red, very hard, fat clay with sand.
Y - Red, dense, silty gravel with sand.
Z - Red, loose to medium dense, clayey gravel with sand.
AA - Red, very hard, fat clay with sand.
AB - Red, very dense, silty gravel with sand.
AC - Red, medium dense, clayey gravel with sand.
AD - Limestone: Lt. gray, slightly weathered.
AE - Clay: Red, brown, with sand and gravel.
AF - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
AG - Limestone: White, lt. gray, gray, medium grain, fresh with weathering.
AH - Core loss.
AI - Limestone: White, lt. gray, gray, medium grain, fresh with weathering.
AJ - Chert: White, lt. gray, gray, tan, highly weathered.
AK - Chert: White, lt. gray, gray, tan, slightly to moderately weathered.
AL - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
AM - Limestone: White, lt. gray, gray, fine to medium grain, fresh to slightly weathered.
AN - Chert: White, lt. gray, intermittent limestone.
AO - Limestone: White, lt, gray, gray, fine to medium grain, fresh.
AP - Chert: White, lt. gray, gray, fresh.
AQ - Chert: White, lt. gray, gray, fresh to slightly weathered.
AR - Limestone: Gray, fresh.
AS - Chert: White, lt. gray, gray, fresh to moderately weathered.
AT - Limestone: Gray, fresh to weathered.
AU - Clay: Brown, moist.
AV - Limestone: Gray, pebbly, weathered.
AW - Clay: Lt. brown, tan, moist.
AX - Chert: White, lt. gray, gray, tan, fresh to moderately weathered.
AY - Chert: White, lt. gray, gray, tan, fresh to highly weathered.
AZ - Limestone: White, lt. gray, gray, medium grain, fresh with slight weathering.
BA - Chert: White, lt. gray, gray, tan, fresh to highly weathered.
BB - Chert: White, lt. gray, gray, tan, weathered.
BC - Limestone: White, lt. gray, gray, fresh to weathered.

SHEET 3 OF 3
LAYOUT OF BRIDGE
I-49 INTERCHANGE RAMP NW
OVER U.S. HWY. 412 BYPASS
HWY. 112 - I-49 (S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

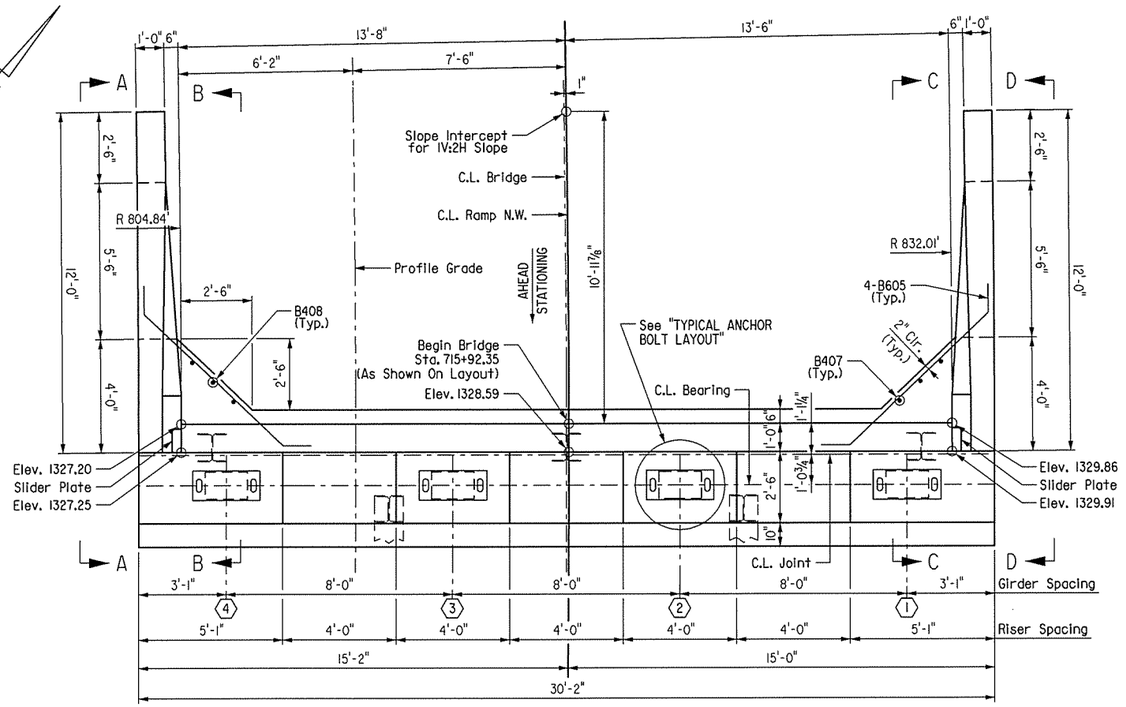
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
4-30-2014
BRIDGE ENGINEER

DRAWN BY: JAP DATE: 03-09 FILENAME: bca0907mi6_113.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: 1" = 30'
DESIGNED BY: PJS DATE: 09-08

BRIDGE NO. 07314 DRAWING NO. 55402

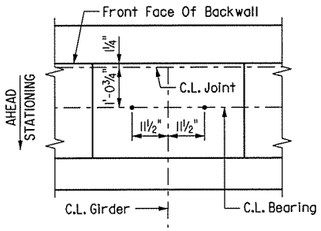
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 550 | 897 |
| | | | | (1) 07314 | | END BENT 1 DETAILS | | 55403 |

NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and to the top of the backwall.



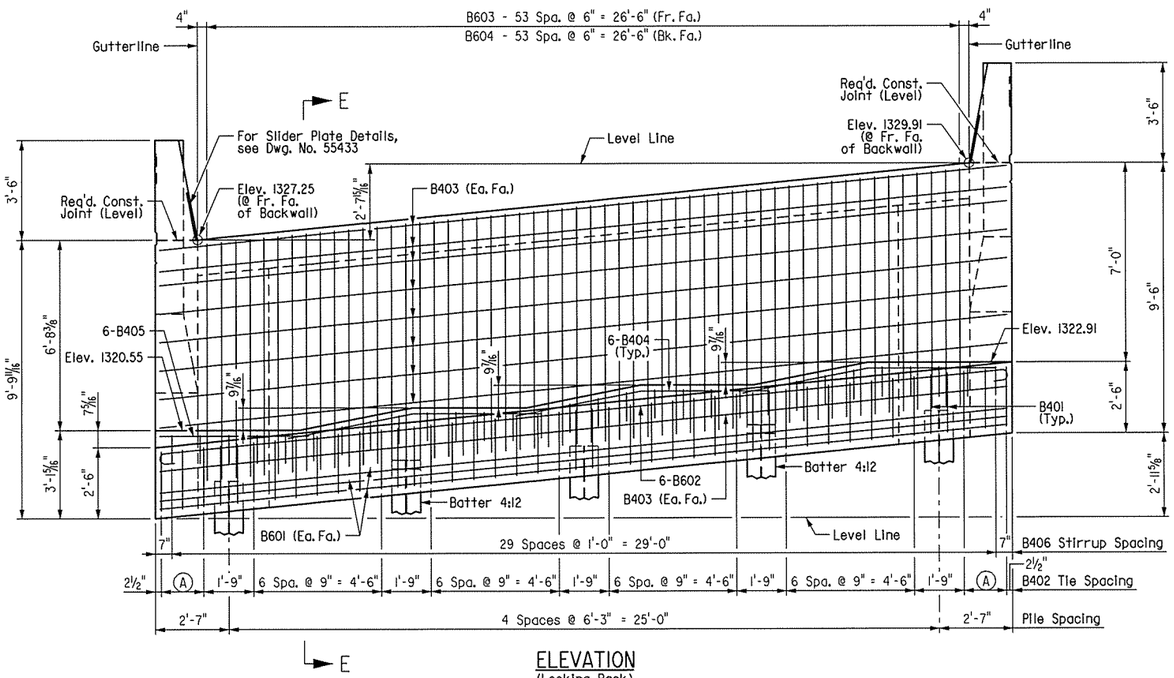

PLAN

Scale: ⅜" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT

Scale: ½" = 1'-0"

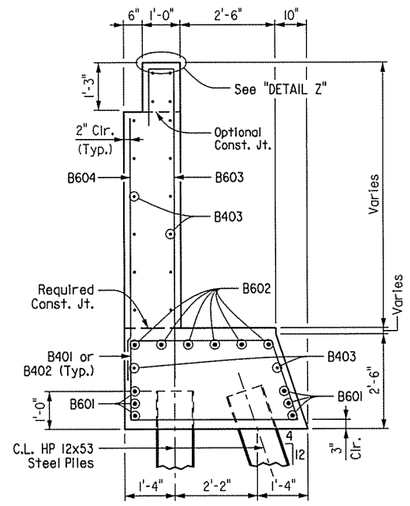



ELEVATION

(Looking Back)

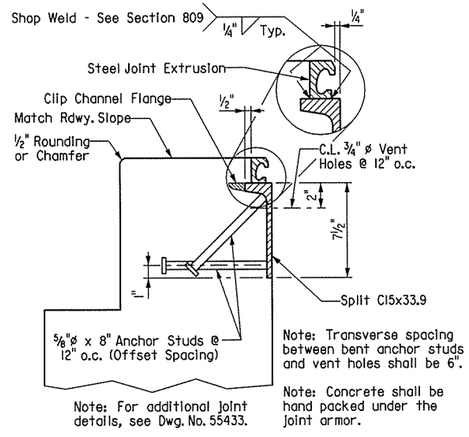
Scale: ⅜" = 1'-0"

(A) 2 Spa. @ 9" = 1'-6"




SECTION E-E

Scale: ½" = 1'-0"




DETAIL Z

Scale: 2" = 1'-0"

GENERAL NOTES FOR SUBSTRUCTURE

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M 31 or M 322 Type A, Grade 60 (yield strength = 60,000 psi).

The backwall above required construction joint shall not be poured until the girders are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" On Dwg. No. 55433 for additional information.

All structural steel shall be AASHTO M 270, Grade 50 unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)". All exposed surfaces shall be cleaned and painted in accordance with Section 638 and will be paid for under the pay item "PAINTING STRUCTURAL STEEL". The color of paint shall be Dark Brown and shall match Fed. Std. 595B, Color Chip No. 20108.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For detail of textured coating finish, see Dwg. No. 55402.

For additional information, see LAYOUT.

For VIEW A-A, VIEW B-B, VIEW C-C, and VIEW D-D, see Dwg. No. 55404.

For Details of Wing and Rail, see Dwg. Nos. 55404 & 55405.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12367 PETER J. SZIK 4-2014

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENT 1
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 06-12
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907ml6_b11.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55403

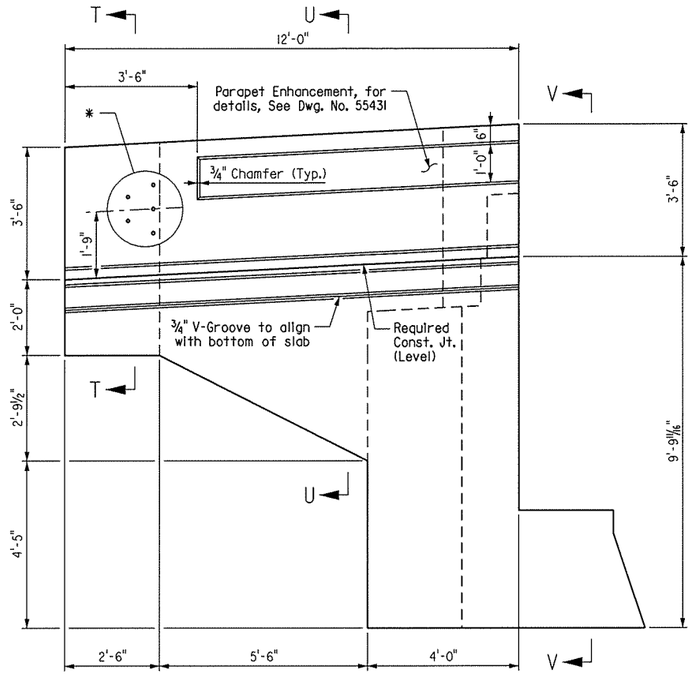
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 551 | 897 |
| | | | | (1) 07314 | | END BENT 1 DETAILS | | 55404 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55400.

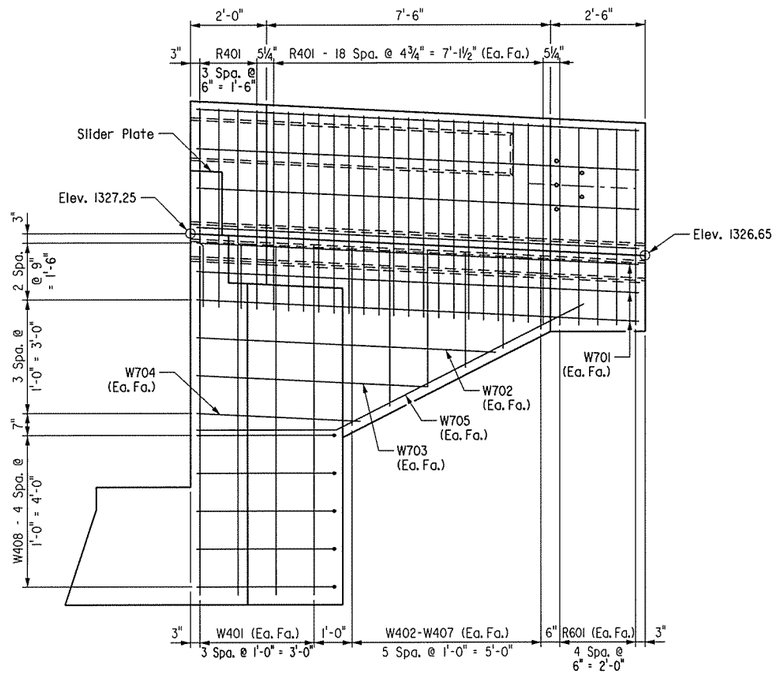
For SECTION T-T, SECTION U-U, VIEW V-V, VIEW W-W, SECTION X-X, and SECTION Y-Y, see Dwg. No. 55405.

* 5 - 1"ø formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.



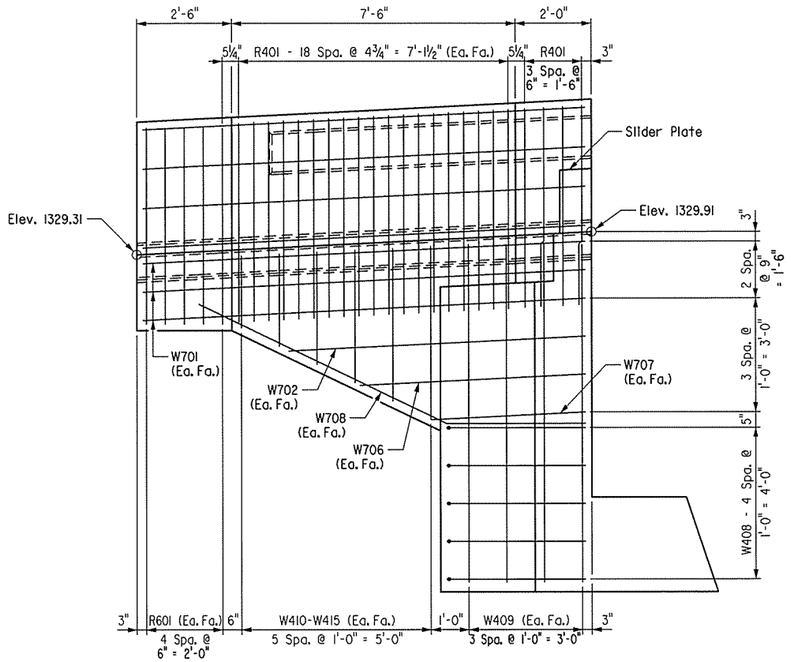

VIEW A-A

Scale: ½" = 1'-0"



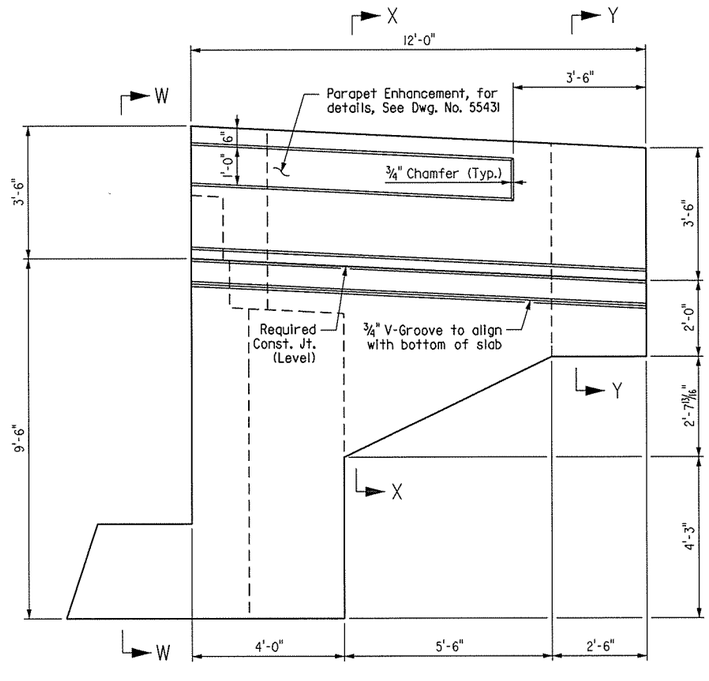

VIEW B-B

Scale: ½" = 1'-0"




VIEW C-C

Scale: ½" = 1'-0"



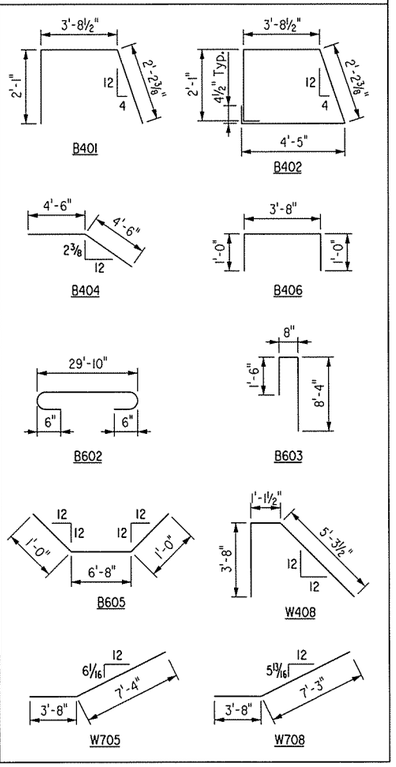

VIEW D-D

Scale: ½" = 1'-0"

## BAR LIST - END BENT 1

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| B401 | 10 | 7'-10" | 2" |
| B402 | 34 | 12'-9" | 2" |
| B403 | 18 | 29'-10" | Str. |
| B404 | 18 | 9'-0" | 3" |
| B405 | 6 | 5'-3" | Str. |
| B406 | 30 | 5'-6" | 2" |
| B407 | 3 | 7'-11" | Str. |
| B408 | 3 | 8'-1" | Str. |
| | | | |
| B601 | 6 | 29'-10" | Str. |
| B602 | 6 | 31'-2" | 4½" |
| B603 | 54 | 10'-2" | 4½" |
| B604 | 54 | 7'-1" | Str. |
| B605 | 8 | 8'-8" | 4½" |
| | | | |
| R401 | 92 | 5'-3" | Str. |
| | | | |
| R601 | 20 | 5'-2" | Str. |
| R602 | 16 | 11'-8" | Str. |
| | | | |
| W401 | 8 | 9'-3" | Str. |
| W402 to W407 | 2 Each | 4'-8" to 1'-11" | Str. |
| W408 | 10 | 10'-0" | 3" |
| W409 | 8 | 8'-11" | Str. |
| W410 to W415 | 2 Each | 4'-6" to 1'-11" | Str. |
| | | | |
| W701 | 12 | 11'-8" | Str. |
| W702 | 4 | 7'-10" | Str. |
| W703 | 2 | 6'-1" | Str. |
| W704 | 2 | 4'-3" | Str. |
| W705 | 2 | 11'-0" | 5¼" |
| W706 | 2 | 5'-11" | Str. |
| W707 | 2 | 4'-1" | Str. |
| W708 | 2 | 10'-11" | 5¼" |

BENDING DIAGRAMS (Dimensions are out to out of bars)




STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

4-30-2014

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF END BENT 1
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 06-12 FILENAME: bca0907m16_b12.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55404

* Guard rail connection is not required on all bents.
See Dwg. No. 55400 for location of guard rail connections.

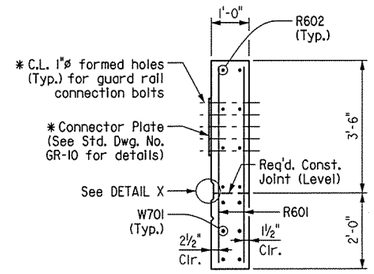
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 552 | 897 |
| | | | | (1) 07314 | | END BENT 1 DETAILS | | 55405 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

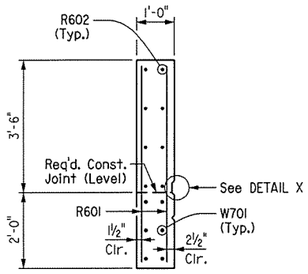
For additional information, see LAYOUT on Dwg. No. 55400.

For Details of Wing and Rail, see Dwg. No. 55404.

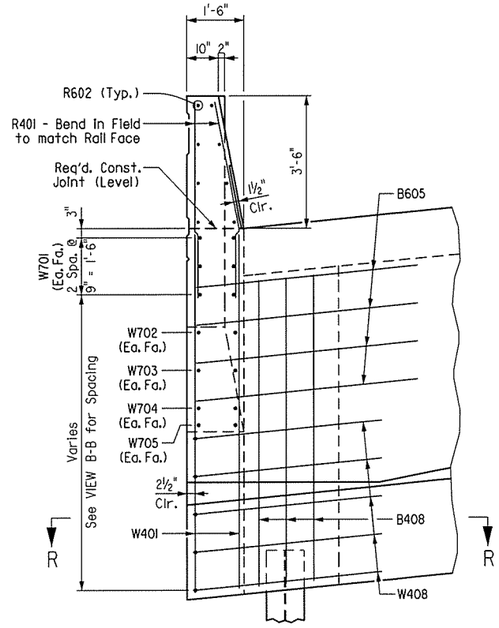
For VIEW B-B & VIEW C-C, see Dwg. No. 55404.



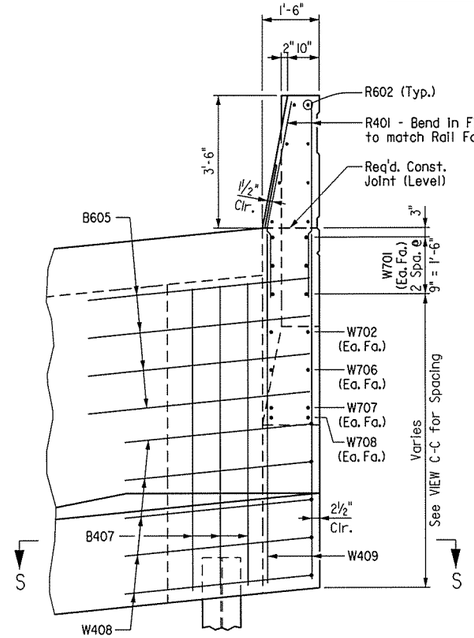

SECTION T-T
Scale: ½" = 1'-0"



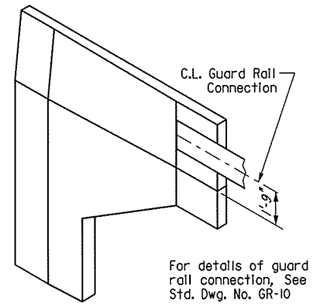

SECTION Y-Y
Scale: ½" = 1'-0"




VIEW V-V
Scale: ½" = 1'-0"

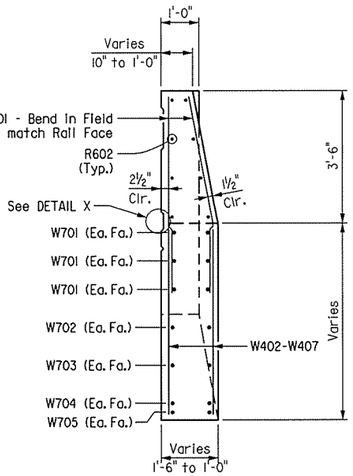



VIEW W-W
Scale: ½" = 1'-0"

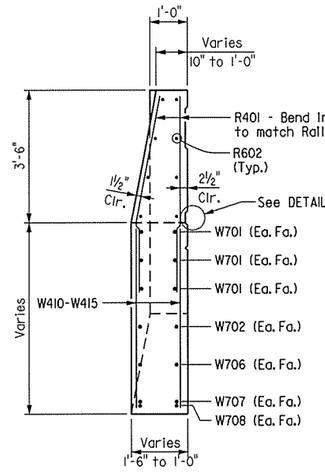



For details of guard rail connection, See Std. Dwg. No. GR-10

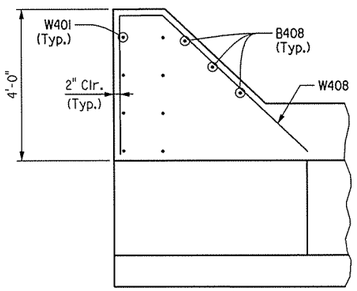
THREE DIMENSIONAL VIEW OF WING & RAIL
Scale: ¼" = 1'-0"



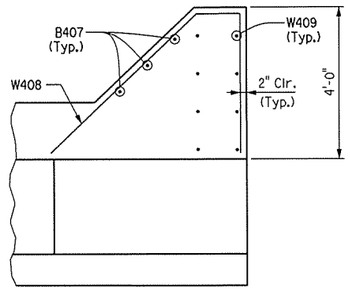

SECTION U-U
Scale: ½" = 1'-0"



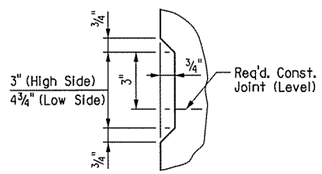

SECTION X-X
Scale: ½" = 1'-0"




SECTION R-R
Scale: ½" = 1'-0"




SECTION S-S
Scale: ½" = 1'-0"




DETAIL X
Scale: 3" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZIK
BRIDGE ENGINEER
4-30-2014

SHEET 3 OF 3
DETAILS OF END BENT 1
RAMP NW BRIDGE

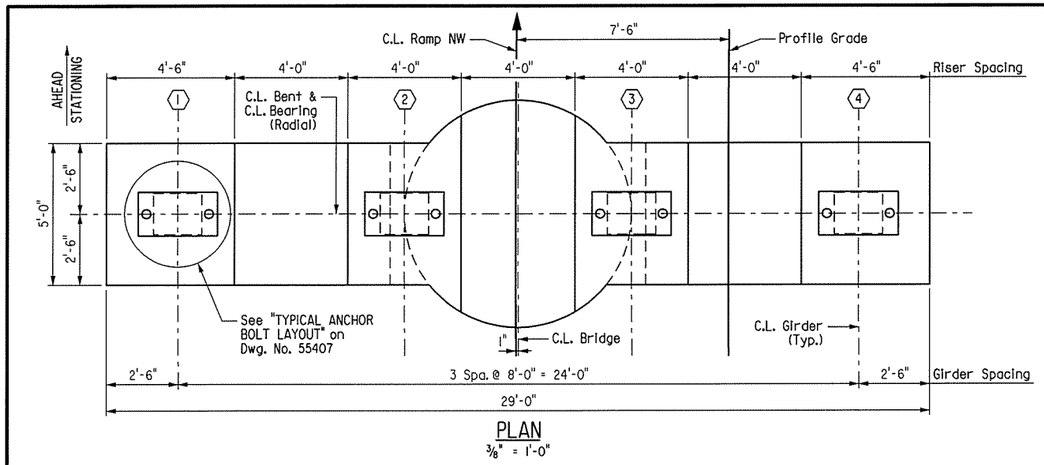
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

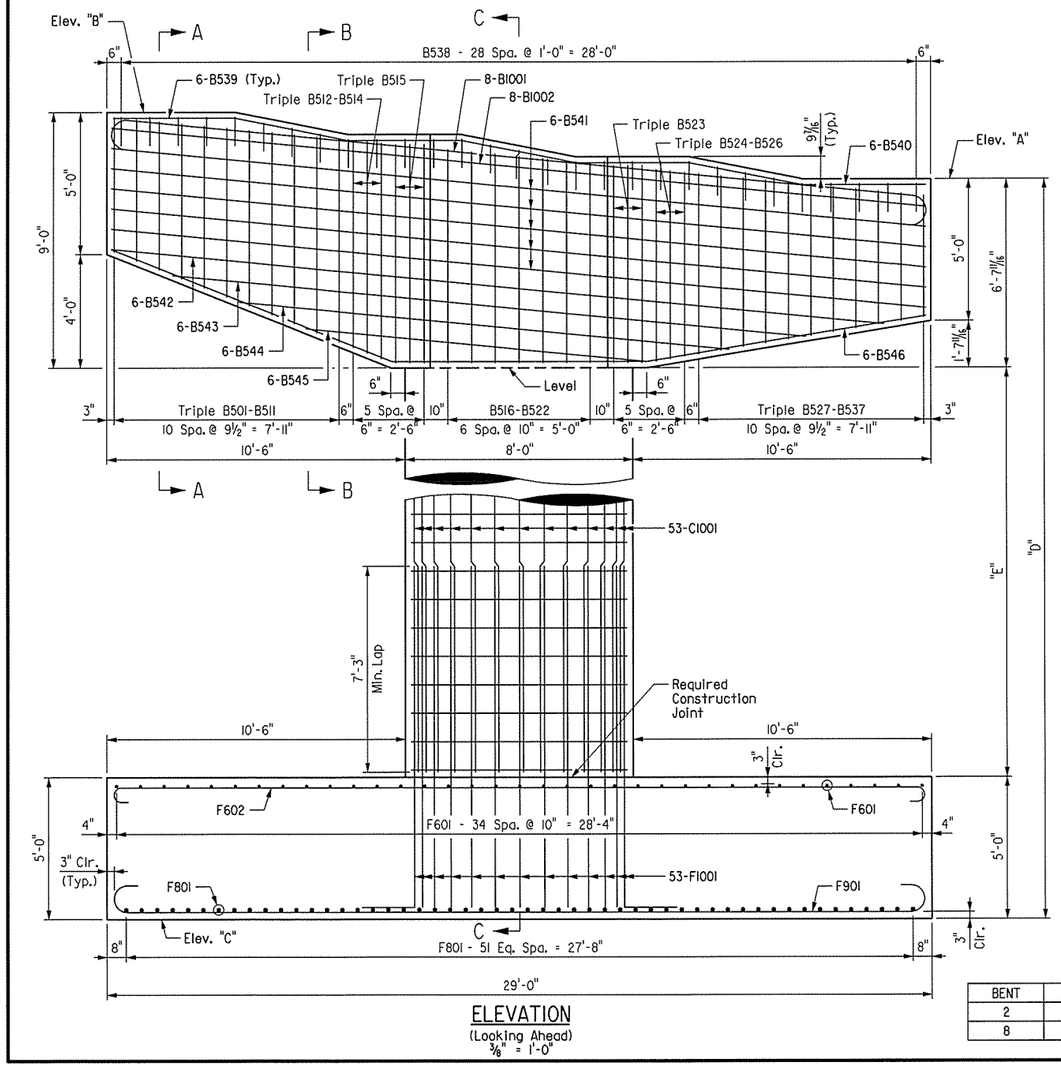
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 06-12 FILENAME: bca0907ml6_bl3.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 08-11

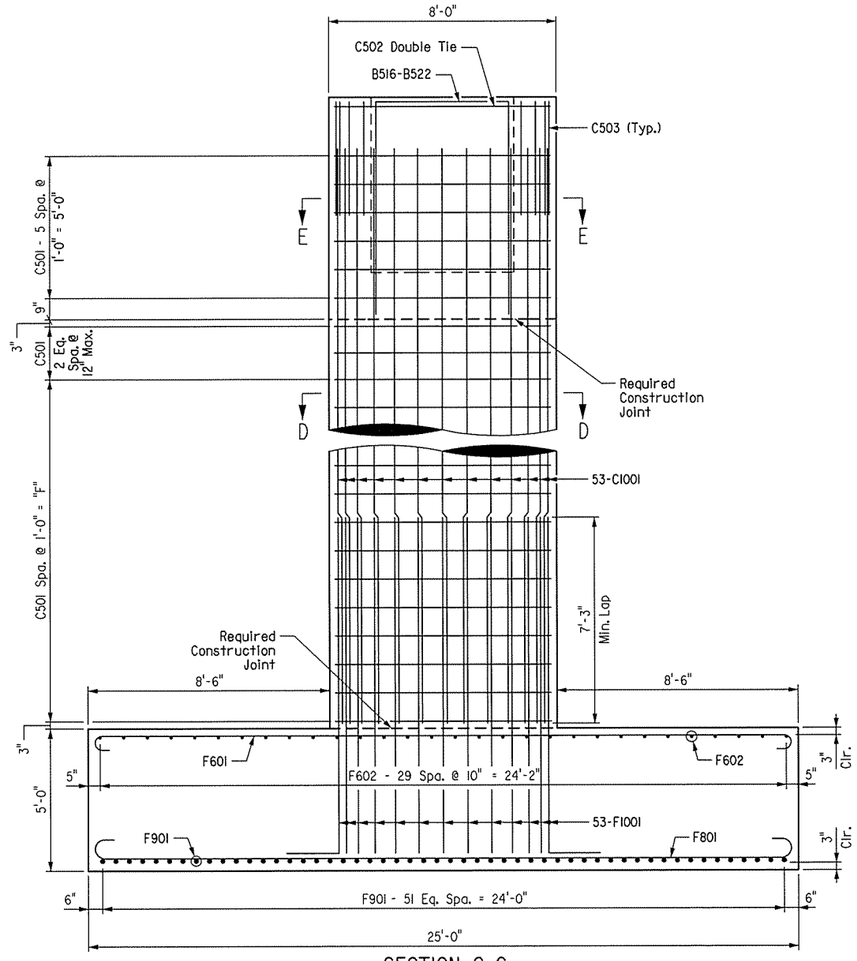
BRIDGE NO. 07314 DRAWING NO. 55405




PLAN
3/8" = 1'-0"




ELEVATION
(Looking Ahead)
3/8" = 1'-0"




SECTION C-C
3/8" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55400-55401.

For SECTIONS A-A, B-B, D-D, & E-E, see Dwg. No. 55407.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

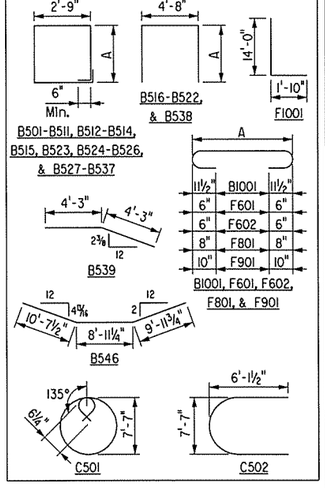
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 553 | 897 |

| | | | |
|---|---|---|---|
| 1 | 07314 | Int. Bents 2 & 8 | 55406 |

## BAR LIST PER BENT

| Mark | Number Required | Length | "A" | Pin Dia. |
|---|---|---|---|---|
| B501 to B511 | 3 Each | 15'-6" to 20'-4" | 4'-9" to 7'-1¾" | 2½" |
| B512 to B514 | 3 Each | 20'-7" to 21'-2½" | 7'-3½" to 7'-7¼" | 2½" |
| B515 | 9 | 21'-5" | 7'-8⅜" | 2½" |
| B516 to B522 | 1 Each | 19'-6" to 18'-6½" | 7'-6¼" to 7'-0½" | 2½" |
| B523 | 9 | 19'-11" | 6'-11½" | 2½" |
| B524 to B526 | 3 Each | 19'-6" to 19'-0" | 6'-9" to 6'-6" | 2½" |
| B527 to B537 | 3 Each | 18'-8½" to 14'-7" | 6'-4¼" to 4'-3½" | 2½" |
| B538 | 29 | 6'-6" | 1'-0" | 2½" |
| B539 | 18 | 8'-6" | | 3¾" |
| B540 | 6 | 4'-6" | | Str. |
| B541 | 30 | 28'-9" | | Str. |
| B542 | 6 | 27'-4" | | Str. |
| B543 | 6 | 22'-5" | | Str. |
| B544 | 6 | 17'-4" | | Str. |
| B545 | 6 | 12'-0" | | Str. |
| B546 | 6 | 29'-7" | | 3¾" |
| B1001 | 8 | 31'-6" | 28'-8" | 10" |
| B1002 | 8 | 28'-8" | | Str. |
| C501 | "H" | 25'-2" | | 3¾" |
| C502 | 2 | 16'-6" | | 7'-5¾" |
| C503 | 14 | 2'-0" | | Str. |
| C1001 | 53 | "G" | | Str. |
| F601 | 35 | 25'-10" | 24'-6" | 4½" |
| F602 | 30 | 29'-10" | 28'-6" | 4½" |
| F801 | 52 | 26'-4" | 24'-6" | 6" |
| F901 | 52 | 31'-0" | 28'-6" | 9" |
| F1001 | 53 | 15'-7" | | 10" |

Bending Diagrams
(Dimensions are out to out of bars.)




## TABLE OF VARIABLES

| BENT | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" |
|---|---|---|---|---|---|---|---|---|
| 2 | 1325.73 | 1328.09 | 1271.73 | 54'-0" | 42'-4 5/16" | 40'-0" | 48'-3" | 49 |
| 8 | 1354.49 | 1356.85 | 1294.49 | 60'-0" | 48'-4 5/16" | 46'-0" | 54'-3" | 55 |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SIAK
4-25-2014

BRIDGE ENGINEER

# DETAILS OF BENTS 2 & 8 RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 05-12 FILENAME: bca0907ml6_b21.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55406

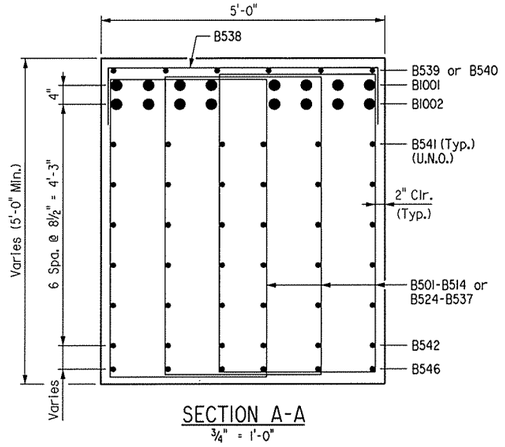
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55400-55401.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

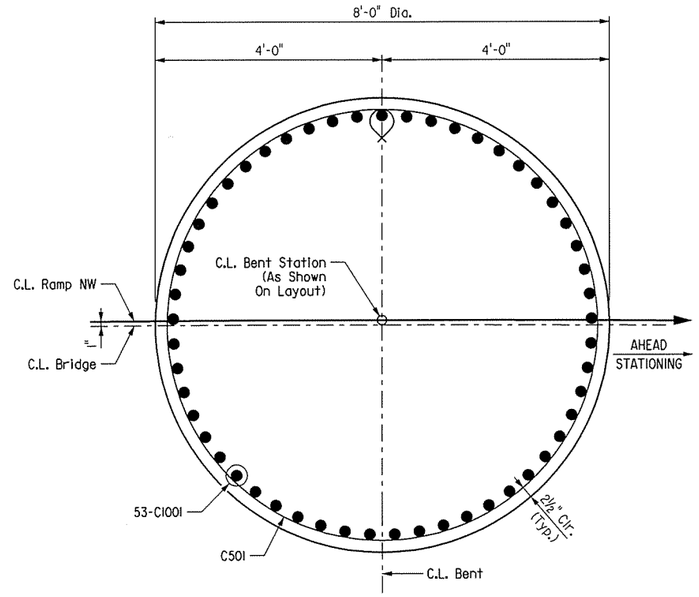
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 554 | 897 |

(1) 07314 Int. Bent 2-4 & 6-8 Details 55407



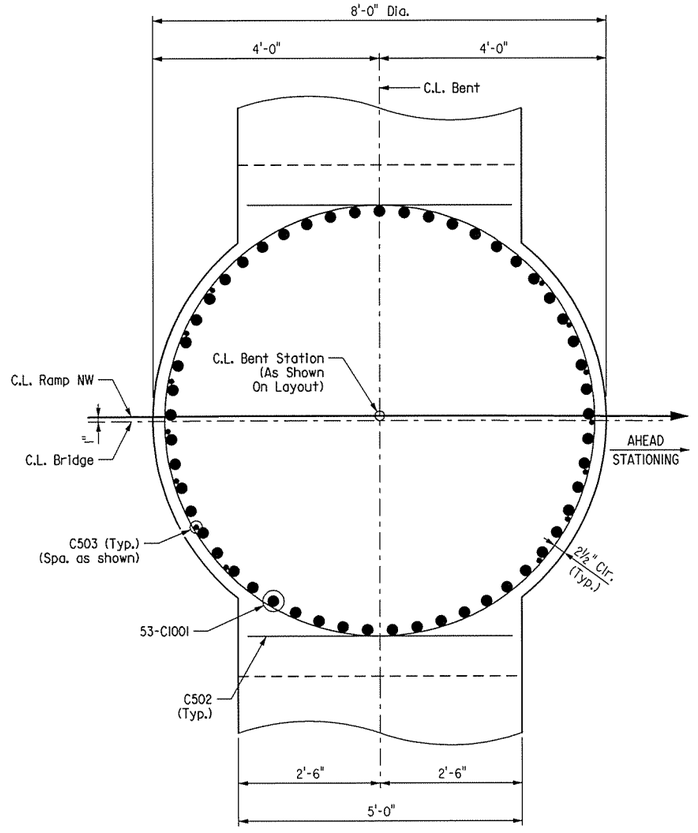

SECTION A-A

¾" = 1'-0"



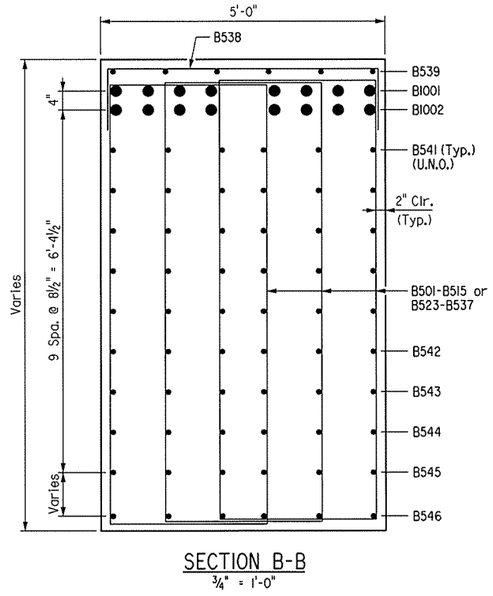

SECTION D-D

¾" = 1'-0"



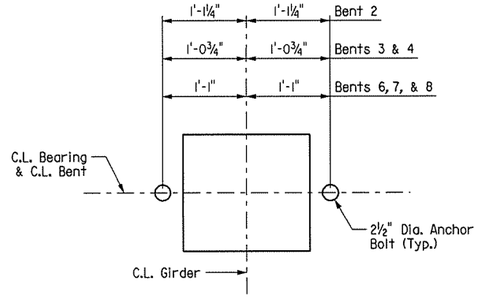

SECTION E-E

¾" = 1'-0"




SECTION B-B

¾" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT

1" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

4-25-2014

BRIDGE ENGINEER

# DETAILS OF BENTS 2-4 & 6-8 RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 05-12 FILENAME: bca0907ml6_b22.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55407

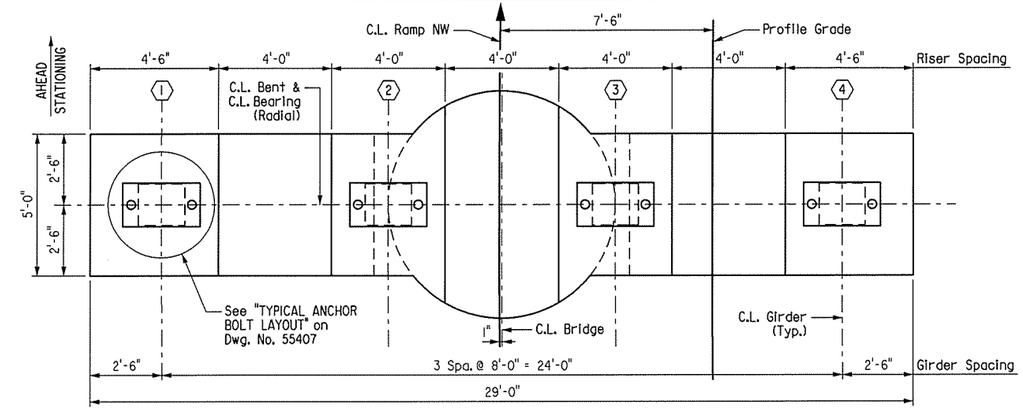
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55400.

For SECTIONS A-A, B-B, D-D, & E-E, see Dwg. No. 55407.

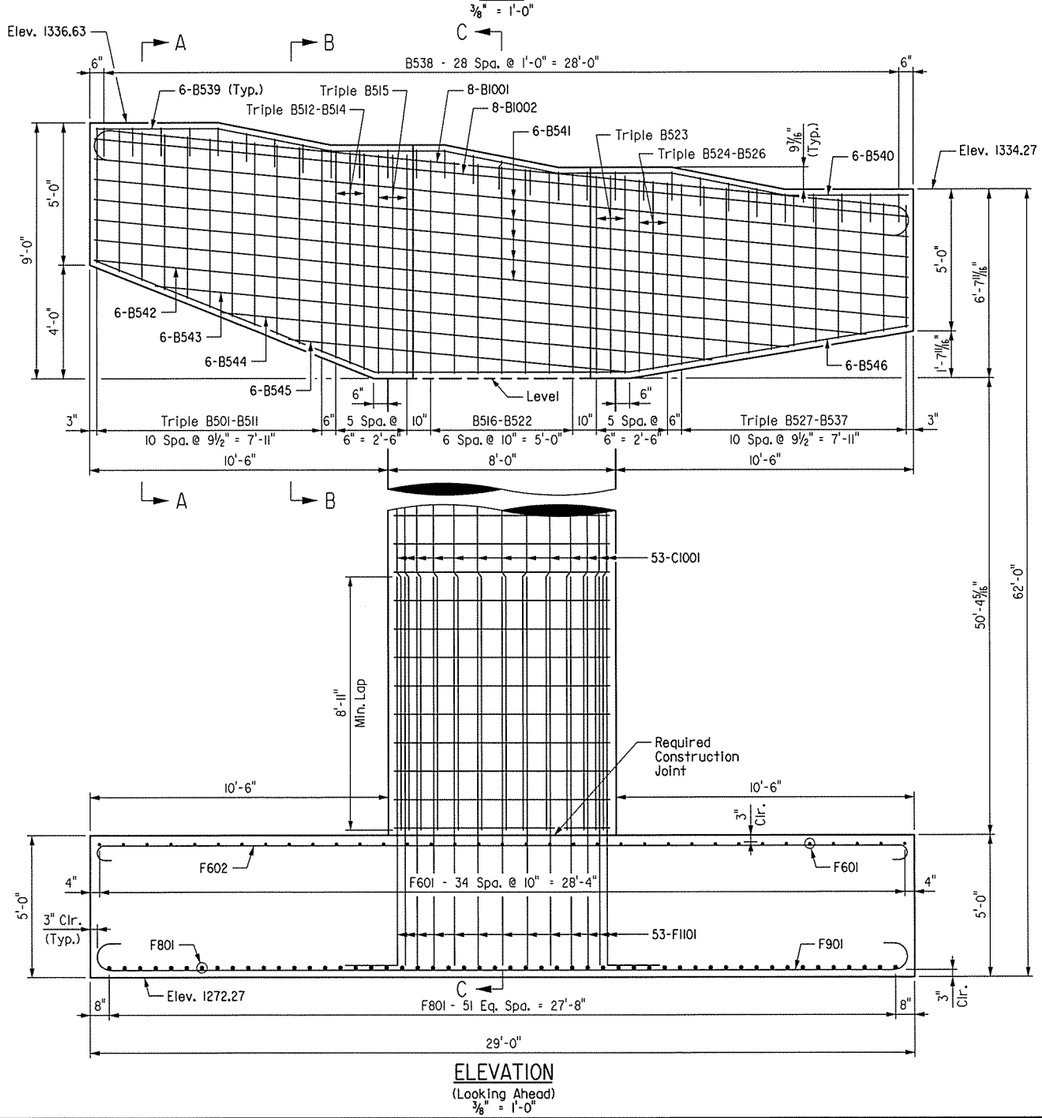
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 555 | 897 |
| (1) 07314 | | Int. Bent 3 | | 55408 |




PLAN

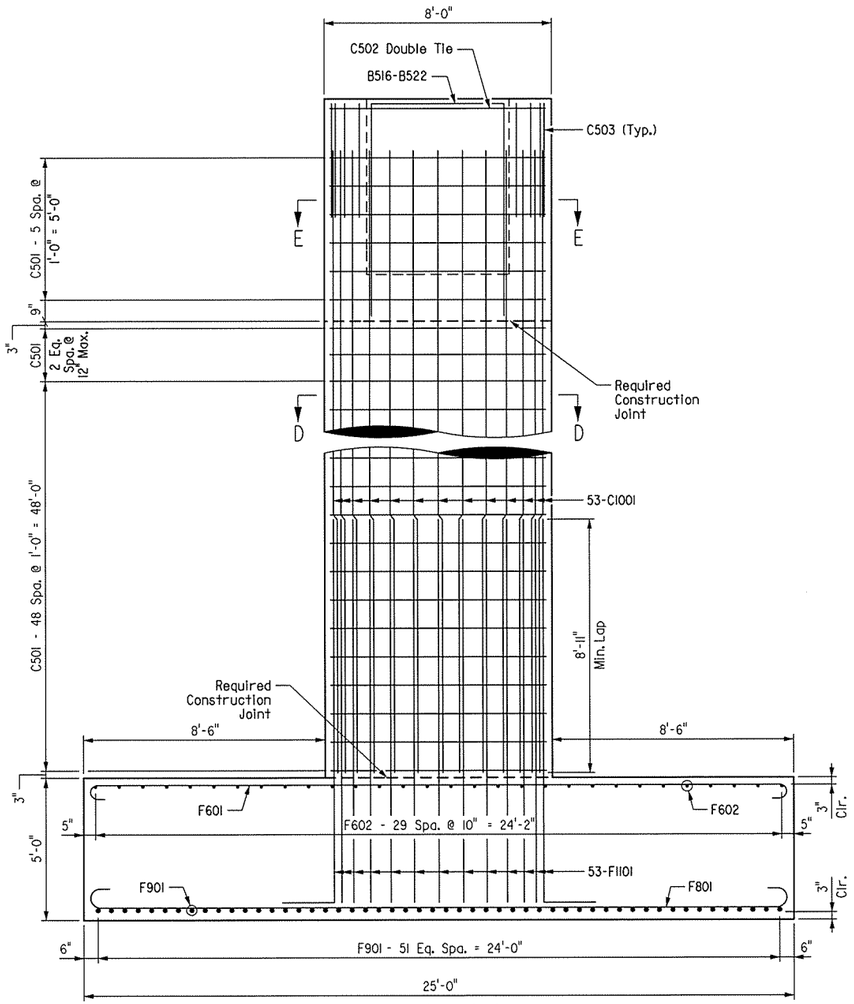
3/8" = 1'-0"




ELEVATION

(Looking Ahead)

3/8" = 1'-0"



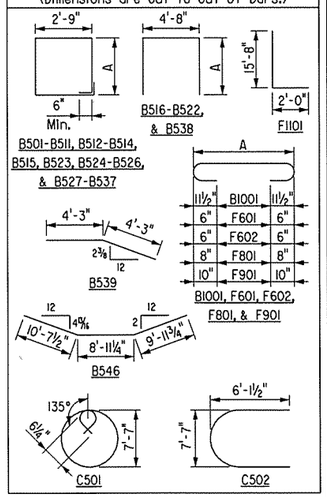

SECTION C-C

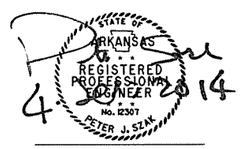
3/8" = 1'-0"

BAR LIST - BENT 3

| Mark | Number Required | Length | "A" | Pin Dia. |
|---|---|---|---|---|
| B501 to B511 | 3 Each | 15'-6" to 20'-4" | 4'-9" to 7'-1 3/4" | 2 1/2" |
| B512 to B514 | 3 Each | 20'-7" to 21'-2 1/2" | 7'-3 1/2" to 7'-7 1/4" | 2 1/2" |
| B515 | 9 | 21'-5" | 7'-8 3/8" | 2 1/2" |
| B516 to B522 | 1 Each | 19'-6" to 18'-6 1/2" | 7'-6 1/4" to 7'-0 1/2" | 2 1/2" |
| B523 | 9 | 19'-11" | 6'-11 1/2" | 2 1/2" |
| B524 to B526 | 3 Each | 19'-6" to 19'-0" | 6'-9" to 6'-6" | 2 1/2" |
| B527 to B537 | 3 Each | 18'-6 1/2" to 14'-7" | 6'-4 1/4" to 4'-3 1/2" | 2 1/2" |
| B538 | 29 | 6'-6" | 1'-0" | 2 1/2" |
| B539 | 18 | 8'-6" | | 3 3/4" |
| B540 | 6 | 4'-6" | | Str. |
| B541 | 30 | 28'-9" | | Str. |
| B542 | 6 | 27'-4" | | Str. |
| B543 | 6 | 22'-5" | | Str. |
| B544 | 6 | 17'-4" | | Str. |
| B545 | 6 | 12'-0" | | Str. |
| B546 | 6 | 29'-7" | | 3 3/4" |
| B1001 | 8 | 31'-6" | 28'-8" | 10" |
| B1002 | 8 | 28'-8" | | Str. |
| C501 | 57 | 25'-2" | | 3 3/4" |
| C502 | 2 | 16'-6" | | 7'-5 3/4" |
| C503 | 14 | 2'-0" | | Str. |
| C1001 | 53 | 56'-3" | | Str. |
| F601 | 35 | 25'-10" | 24'-6" | 4 1/2" |
| F602 | 30 | 29'-10" | 28'-6" | 4 1/2" |
| F801 | 52 | 26'-4" | 24'-6" | 6" |
| F901 | 52 | 31'-0" | 28'-6" | 9" |
| F1101 | 53 | 17'-4" | | 11 1/4" |

Bending Diagrams
(Dimensions are out to out of bars.)




BRIDGE ENGINEER

# DETAILS OF BENT 3
# RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 05-12

CHECKED BY: PJS DATE: 01-14

DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907mi6_b3.dgn

SCALE: AS SHOWN

BRIDGE NO. 07314

DRAWING NO. 55408

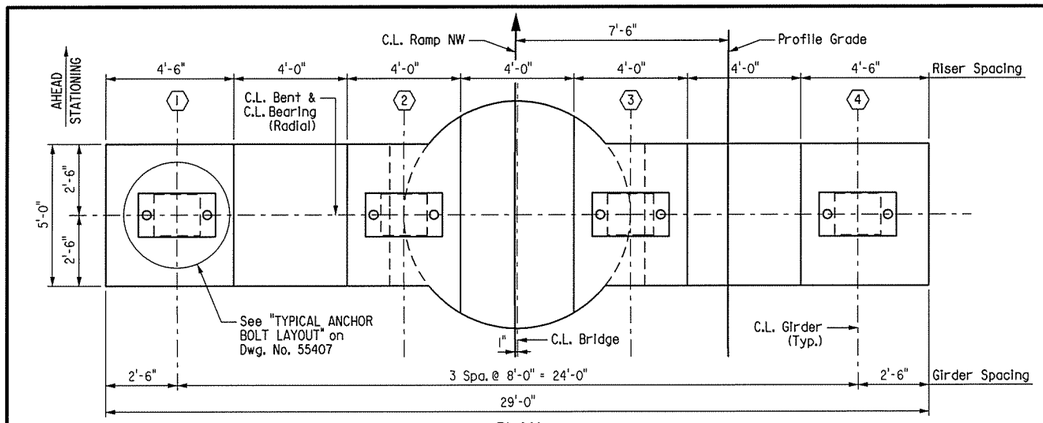
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55400.

For SECTIONS A-A, B-B, D-D, & E-E, see Dwg. No. 55407.

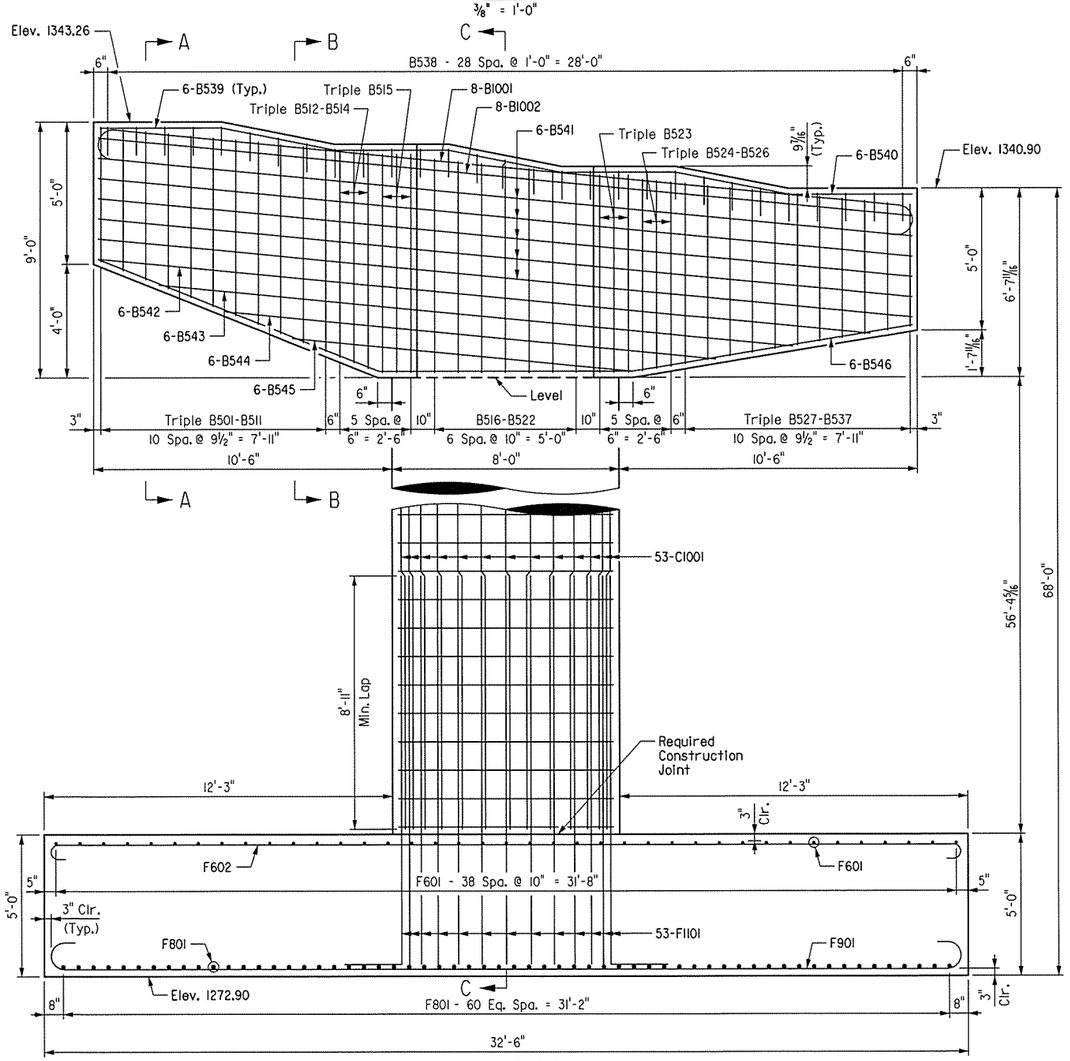
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 556 | 897 |
| (1) 07314 | | Int. Bent 4 | | 55409 |




PLAN

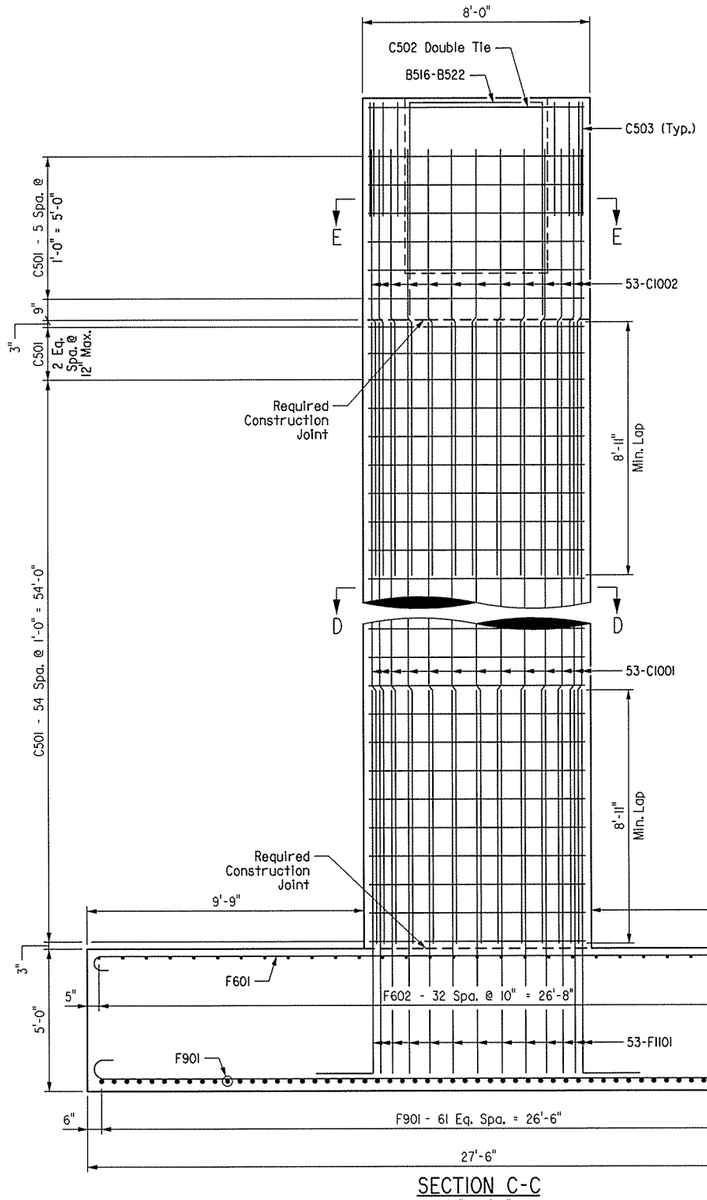
3/8" = 1'-0"




ELEVATION

(Looking Ahead)

3/8" = 1'-0"



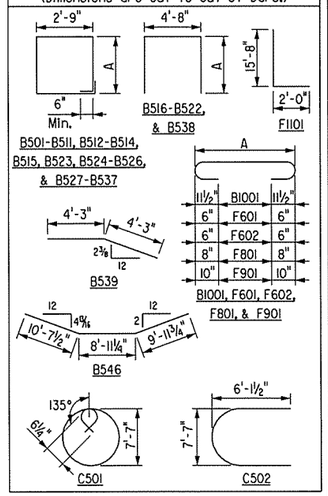

SECTION C-C

3/8" = 1'-0"

BAR LIST - BENT 4

| Mark | Number Required | Length | "A" | Pin Dia. |
|---|---|---|---|---|
| B501 to B511 | 3 Each | 15'-6" to 20'-4" | 4'-9" to 7'-1¾" | 2½" |
| B512 to B514 | 3 Each | 20'-7" to 21'-2½" | 7'-3½" to 7'-7¼" | 2½" |
| B515 | 9 | 21'-5" | 7'-8⅜" | 2½" |
| B516 to B522 | 1 Each | 19'-6" to 18'-6½" | 7'-6¼" to 7'-0½" | 2½" |
| B523 | 9 | 19'-11" | 6'-11½" | 2½" |
| B524 to B526 | 3 Each | 19'-6" to 19'-0" | 6'-9" to 6'-6" | 2½" |
| B527 to B537 | 3 Each | 18'-8½" to 14'-7" | 6'-4¼" to 4'-3½" | 2½" |
| B538 | 29 | 6'-6" | 1'-0" | 2½" |
| B539 | 18 | 8'-6" | | 3¾" |
| B540 | 6 | 4'-6" | | Str. |
| B541 | 30 | 28'-9" | | Str. |
| B542 | 6 | 27'-4" | | Str. |
| B543 | 6 | 22'-5" | | Str. |
| B544 | 6 | 17'-4" | | Str. |
| B545 | 6 | 12'-0" | | Str. |
| B546 | 6 | 29'-7" | | 3¾" |
| B1001 | 8 | 31'-6" | 28'-8" | 10" |
| B1002 | 8 | 28'-8" | | Str. |
| C501 | 63 | 25'-2" | | 3¾" |
| C502 | 2 | 16'-6" | | 7'-5¾" |
| C503 | 14 | 2'-0" | | Str. |
| C1001 | 53 | 56'-2" | | Str. |
| C1002 | 53 | 15'-0" | | Str. |
| F601 | 39 | 28'-4" | 27'-0" | 4½" |
| F602 | 33 | 33'-4" | 32'-0" | 4½" |
| F801 | 61 | 28'-10" | 27'-0" | 6" |
| F901 | 62 | 34'-6" | 32'-0" | 9" |
| F1101 | 53 | 17'-4" | | 11¼" |

Bending Diagrams
(Dimensions are out to out of bars.)




STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

# DETAILS OF BENT 4
# RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

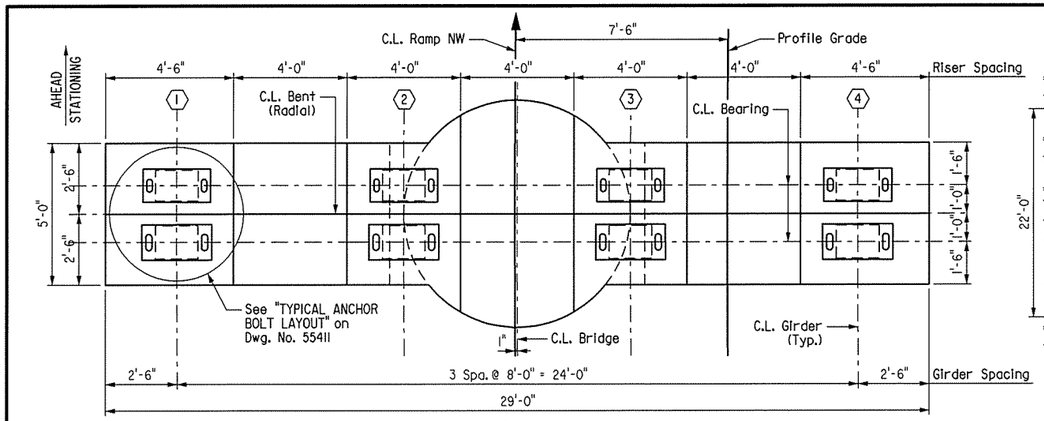
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 05-12 FILENAME: bca0907m16_b4.dgn

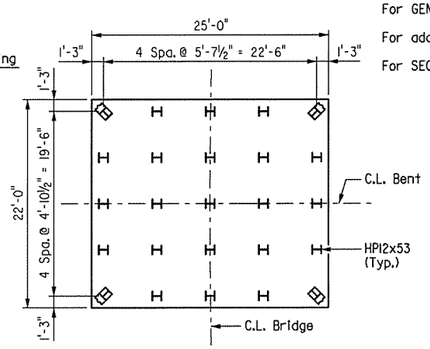
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55409




PLAN
3/8" = 1'-0"




FOOTING PLAN
1/8" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55401.

For SECTIONS A-A, B-B, D-D, & E-E, see Dwg. No. 55411.

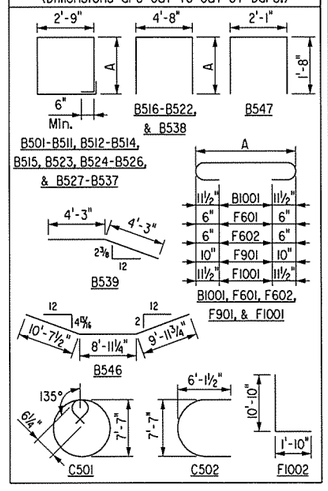
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

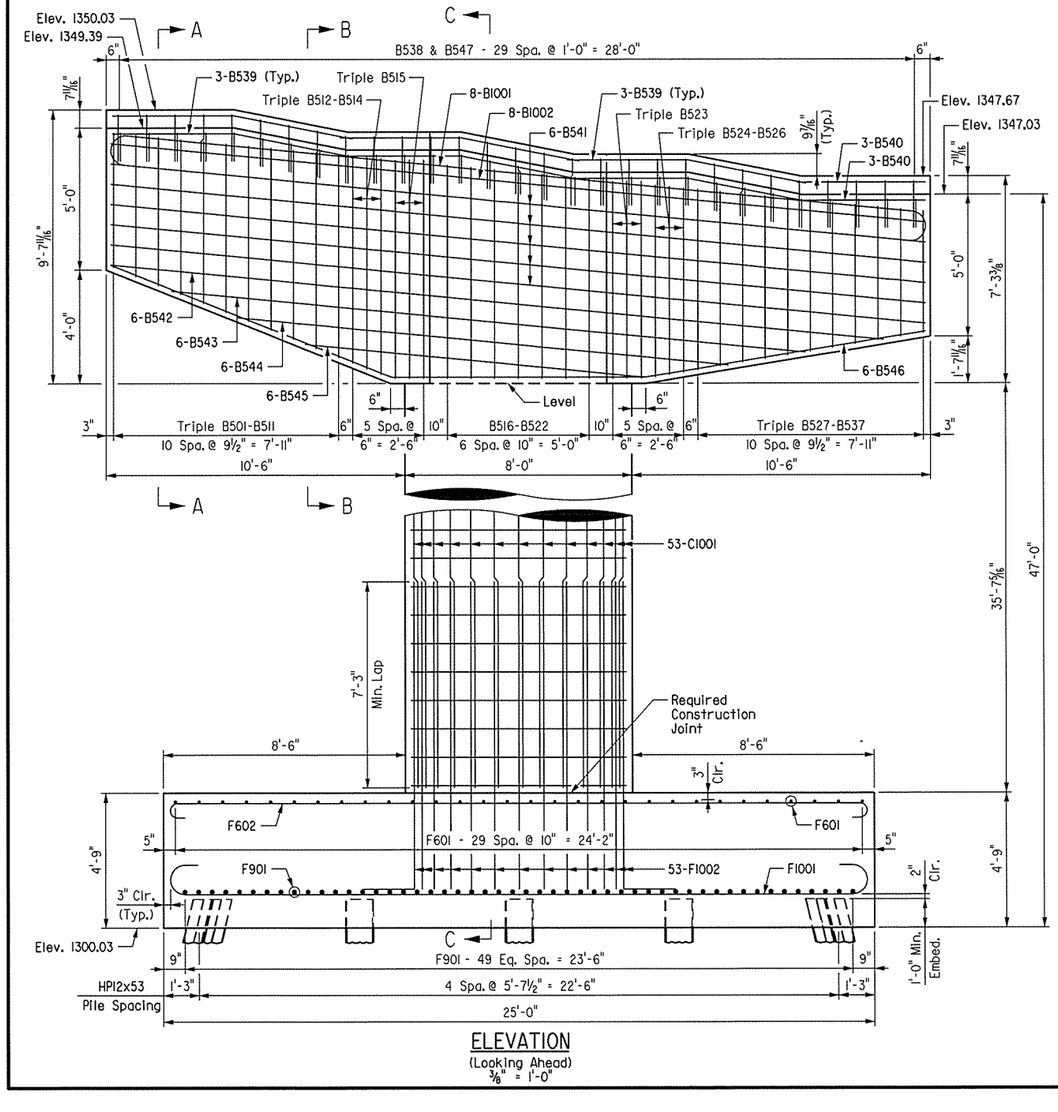
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 557 | 897 |
| 1 07314 | | Int. Bent 5 | | 55410 |

## BAR LIST - BENT 5

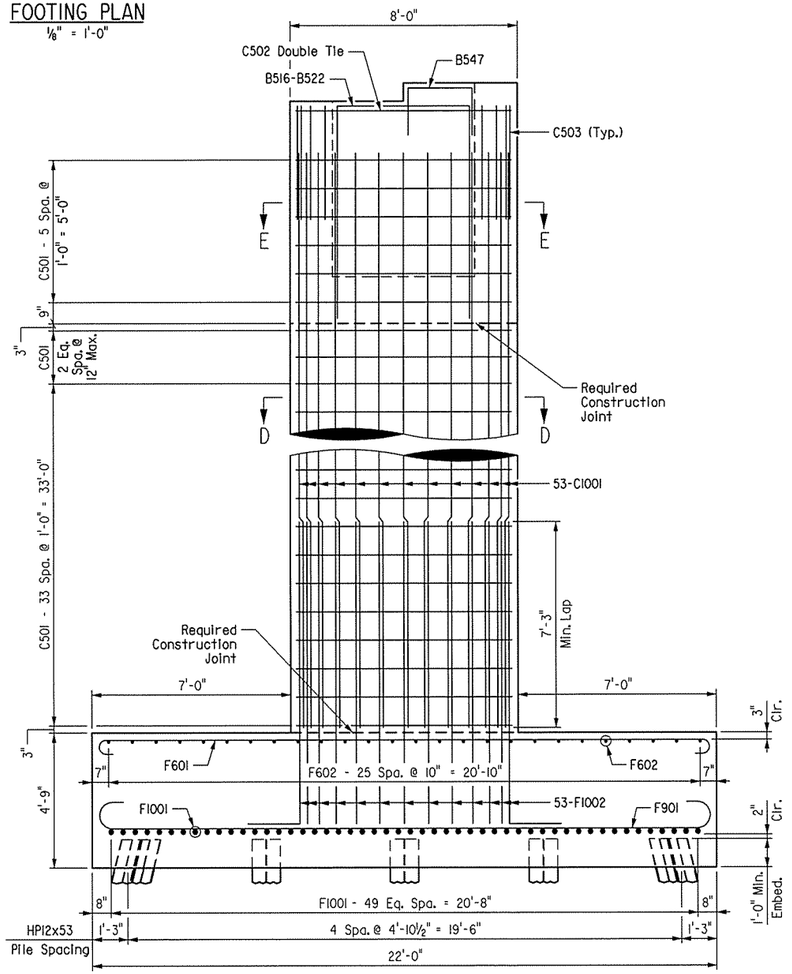
| Mark | Number Required | Length | "A" | Pin Dia. |
|---|---|---|---|---|
| B501 to B511 | 3 Each | 15'-6" to 20'-4" | 4'-9" to 7'-1¾" | 2½" |
| B512 to B514 | 3 Each | 20'-7" to 21'-2½" | 7'-3½" to 7'-7¼" | 2½" |
| B515 | 9 | 21'-5" | 7'-8⅜" | 2½" |
| B516 to B522 | 1 Each | 19'-6" to 18'-6½" | 7'-6¼" to 7'-0½" | 2½" |
| B523 | 9 | 19'-11" | 6'-11½" | 2½" |
| B524 to B526 | 3 Each | 19'-6" to 19'-0" | 6'-9" to 6'-6" | 2½" |
| B527 to B537 | 3 Each | 18'-8½" to 14'-7" | 6'-4¼" to 4'-3½" | 2½" |
| B538 | 29 | 6'-6" | 1'-0" | 2½" |
| B539 | 18 | 8'-6" | | 3¾" |
| B540 | 6 | 4'-6" | | Str. |
| B541 | 30 | 28'-9" | | Str. |
| B542 | 6 | 27'-4" | | Str. |
| B543 | 6 | 22'-5" | | Str. |
| B544 | 6 | 17'-4" | | Str. |
| B545 | 6 | 12'-0" | | Str. |
| B546 | 6 | 29'-7" | | 3¾" |
| B547 | 29 | 5'-3" | | 2½" |
| B1001 | 8 | 31'-6" | 28'-8" | 10" |
| B1002 | 8 | 28'-8" | | Str. |
| C501 | 42 | 25'-2" | | 3¾" |
| C502 | 2 | 16'-6" | | 7'-5¾" |
| C503 | 14 | 2'-0" | | Str. |
| C1001 | 53 | 41'-4" | | Str. |
| F601 | 30 | 22'-10" | 21'-6" | 4½" |
| F602 | 26 | 25'-10" | 24'-6" | 4½" |
| F901 | 50 | 24'-0" | 21'-6" | 9" |
| F1001 | 50 | 27'-4" | 24'-6" | 10" |
| F1002 | 53 | 12'-5" | | 10" |

Bending Diagrams
(Dimensions are out to out of bars.)




ELEVATION
(Looking Ahead)
3/8" = 1'-0"




SECTION C-C
3/8" = 1'-0"

SHEET 1 OF 2
DETAILS OF BENT 5
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SLAK BRIDGE ENGINEER 2014

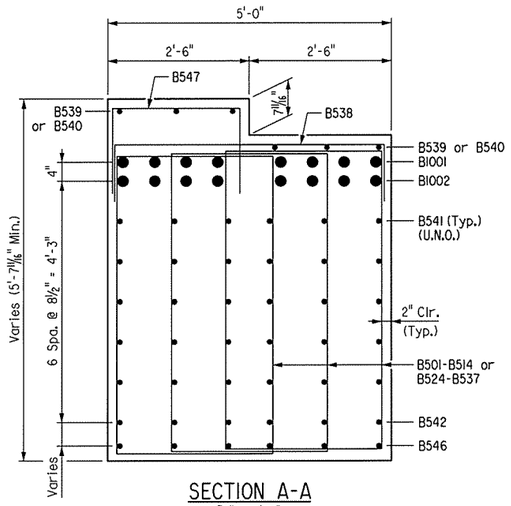
DRAWN BY: JAP DATE: 05-12
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907m16_b5l.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55410

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

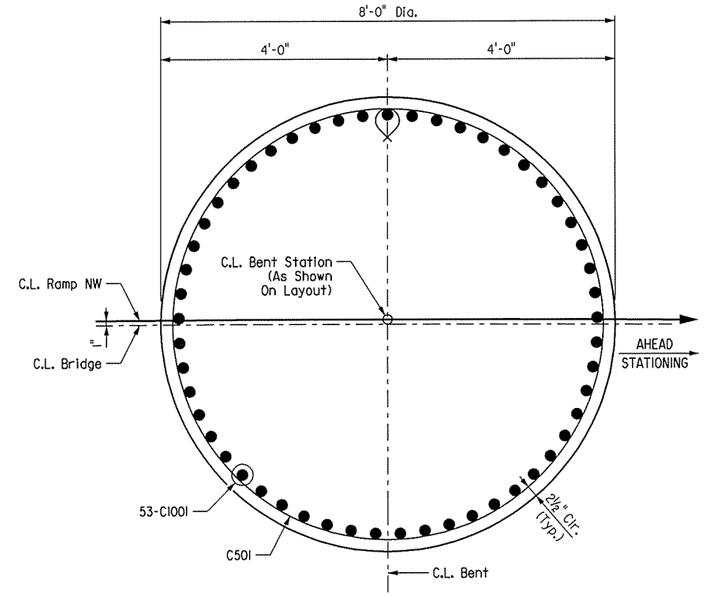
For additional information, see LAYOUT on Dwg. No. 55401.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 558 | 897 |
| | | | | (1) 07314 | | Int. Bent 5 Details | | 55411 |



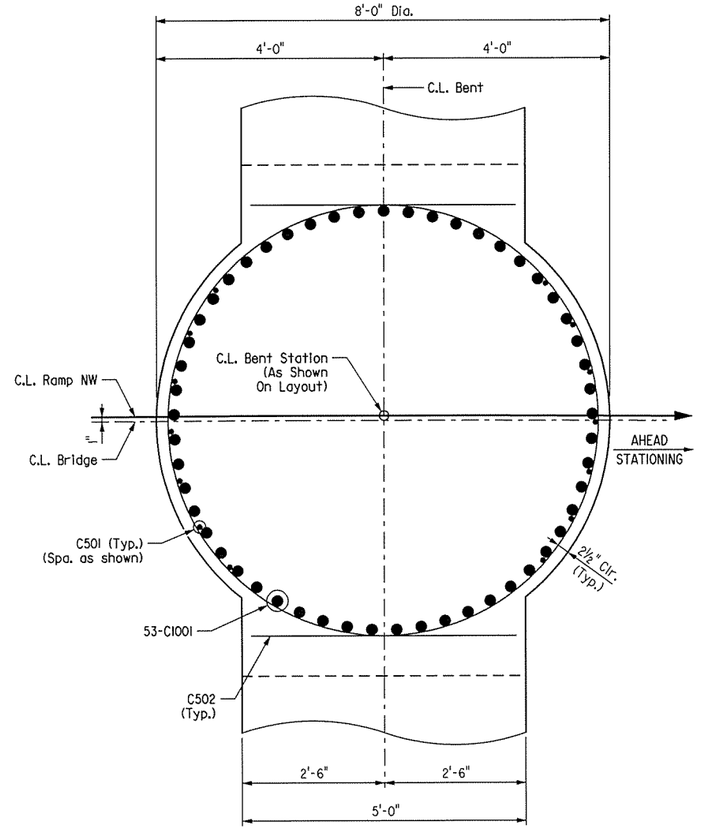

SECTION A-A

3/4" = 1'-0"



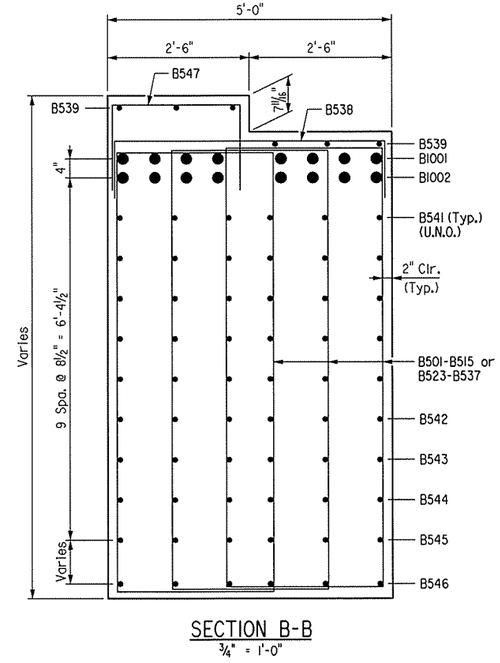

SECTION D-D

3/4" = 1'-0"



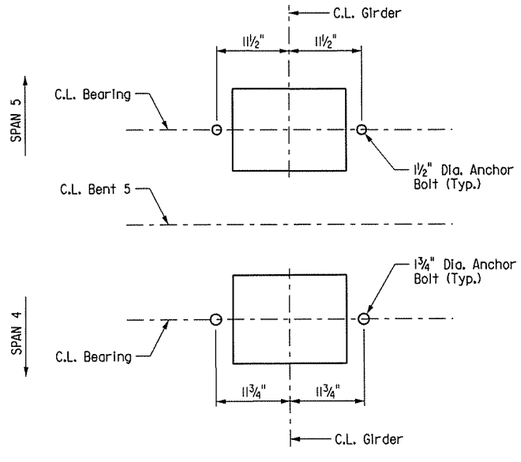

SECTION E-E

3/4" = 1'-0"




SECTION B-B

3/4" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT

1" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

# SHEET 2 OF 2
# DETAILS OF BENT 5
# RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

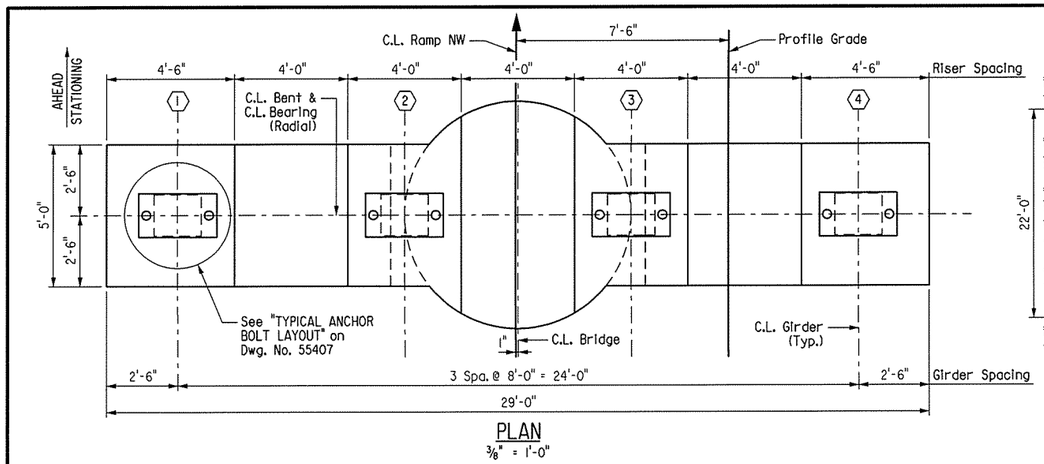
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 05-12 FILENAME: bca0907ml6_b52.dgn

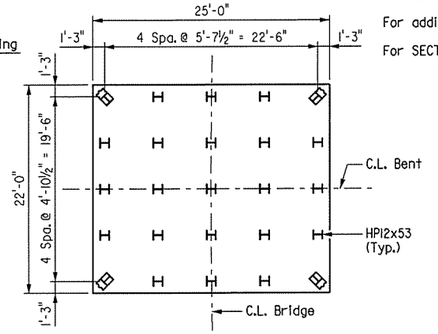
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55411




PLAN
3/8" = 1'-0"




FOOTING PLAN
1/8" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.
For additional information, see LAYOUT on Dwg. No. 55401.
For SECTIONS A-A, B-B, D-D, & E-E, see Dwg. No. 55407.

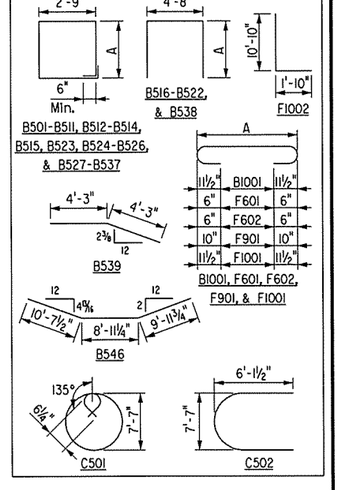
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

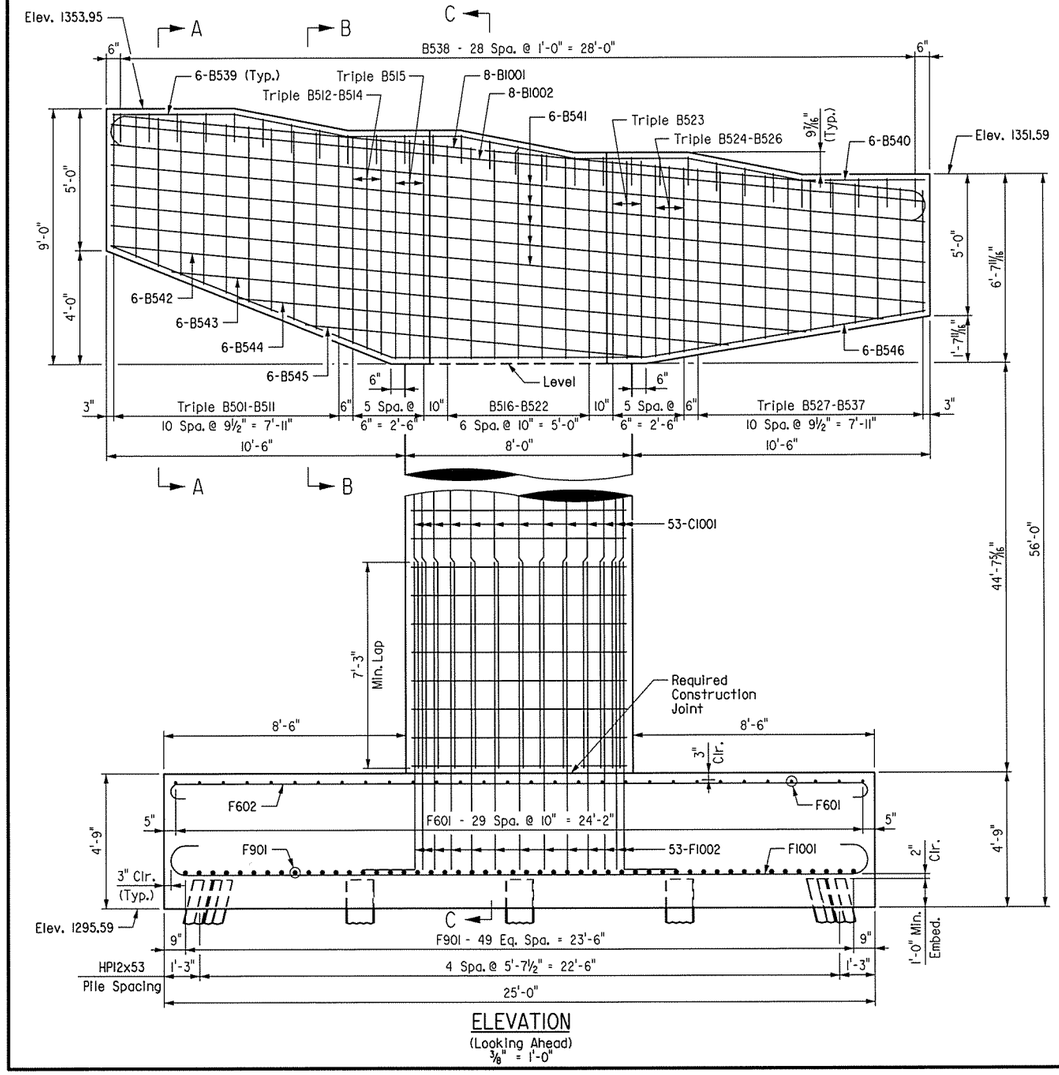
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 559 | 897 |
| 07314 | | Int. Bent 6 | | 55412 |

## BAR LIST - BENT 6

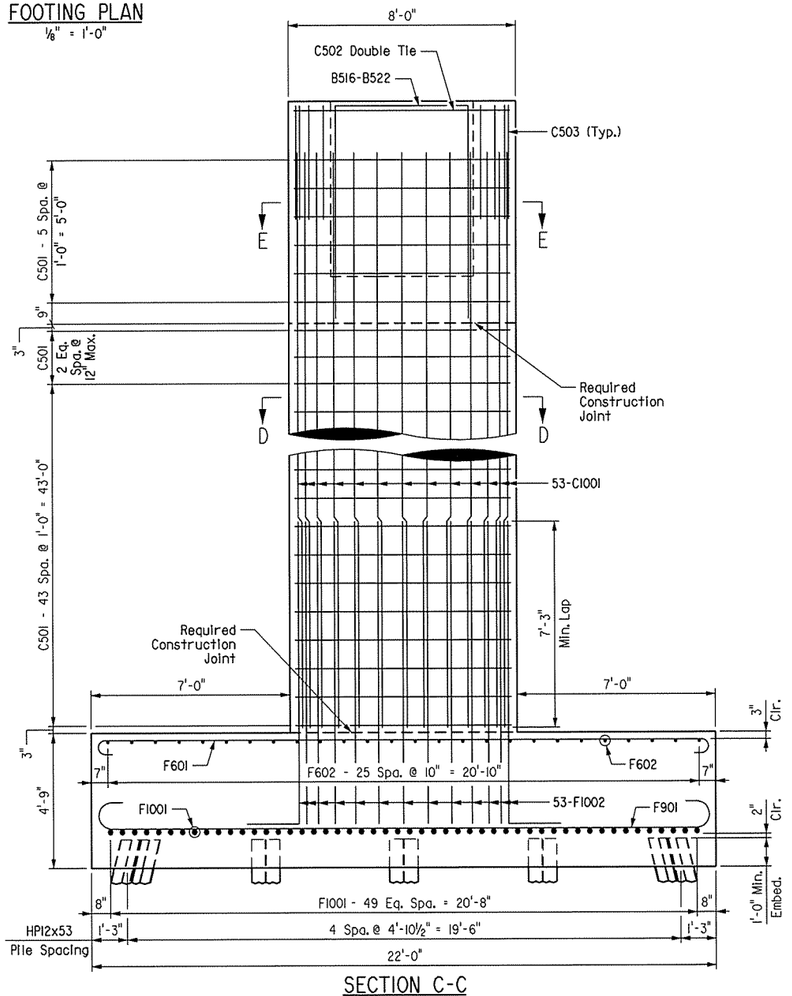
| Mark | Number Required | Length | "A" | Pin Dia. |
|---|---|---|---|---|
| B501 to B511 | 3 Each | 15'-6" to 20'-4" | 4'-9" to 7'-1¾" | 2½" |
| B512 to B514 | 3 Each | 20'-7" to 21'-2½" | 7'-3½" to 7'-7¼" | 2½" |
| B515 | 9 | 21'-5" | 7'-8⅜" | 2½" |
| B516 to B522 | 1 Each | 19'-6" to 18'-6½" | 7'-6¼" to 7'-0½" | 2½" |
| B523 | 9 | 19'-11" | 6'-11½" | 2½" |
| B524 to B526 | 3 Each | 19'-6" to 19'-0" | 6'-9" to 6'-6" | 2½" |
| B527 to B537 | 3 Each | 18'-8½" to 14'-7" | 6'-4¼" to 4'-3½" | 2½" |
| B538 | 29 | 6'-6" | 1'-0" | 2½" |
| B539 | 18 | 8'-6" | | 3¾" |
| B540 | 6 | 4'-6" | | Str. |
| B541 | 30 | 28'-9" | | Str. |
| B542 | 6 | 27'-4" | | Str. |
| B543 | 6 | 22'-5" | | Str. |
| B544 | 6 | 17'-4" | | Str. |
| B545 | 6 | 12'-0" | | Str. |
| B546 | 6 | 29'-7" | | 3¾" |
| B1001 | 8 | 31'-6" | 28'-8" | 10" |
| B1002 | 8 | 28'-8" | | Str. |
| C501 | 52 | 25'-2" | | 3¾" |
| C502 | 2 | 16'-6" | | 7'-5¾" |
| C503 | 14 | 2'-0" | | Str. |
| C1001 | 53 | 50'-6" | | Str. |
| F601 | 30 | 22'-10" | 21'-6" | 4½" |
| F602 | 26 | 25'-10" | 24'-6" | 4½" |
| F901 | 50 | 24'-0" | 21'-6" | 9" |
| F1001 | 50 | 27'-4" | 24'-6" | 10" |
| F1002 | 53 | 12'-5" | | 10" |

Bending Diagrams
(Dimensions are out to out of bars.)




ELEVATION
(Looking Ahead)
3/8" = 1'-0"




SECTION C-C
3/8" = 1'-0"

STATE OF ARKANSAS
REGISTERED
PROFESSIONAL
ENGINEER
No. 12307
PETER J. SZIK
4-30-2014

BRIDGE ENGINEER

# DETAILS OF BENT 6
# RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 05-12 FILENAME: bca0907m16_b6.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55412

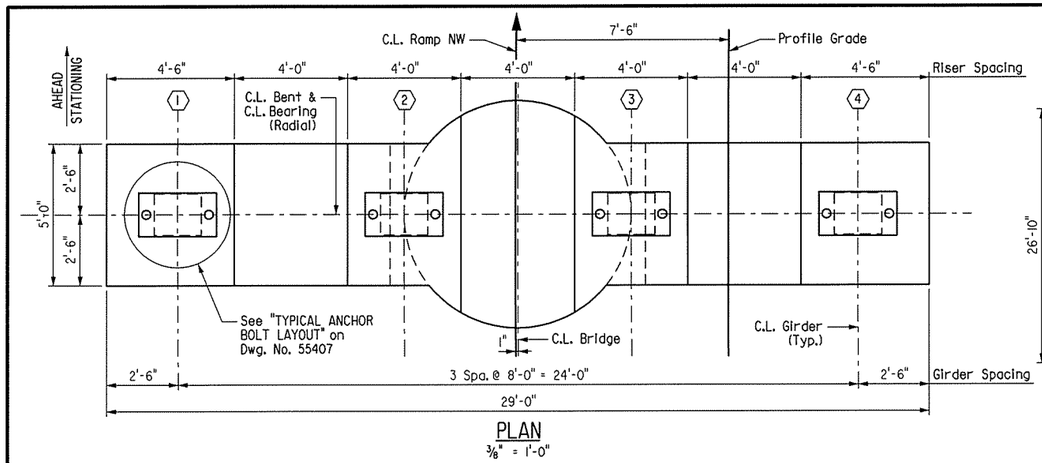
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55401.

For SECTIONS A-A, B-B, D-D, & E-E, see Dwg. No. 55407.

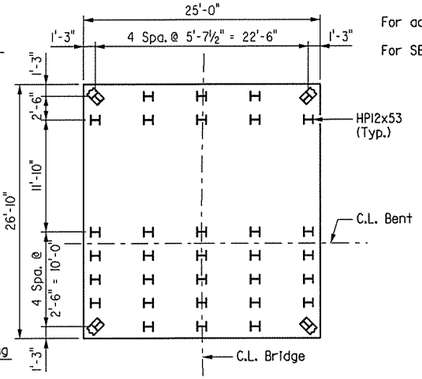
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 560 | 897 |
| 07314 | | Int. Bent 7 | | 55413 |



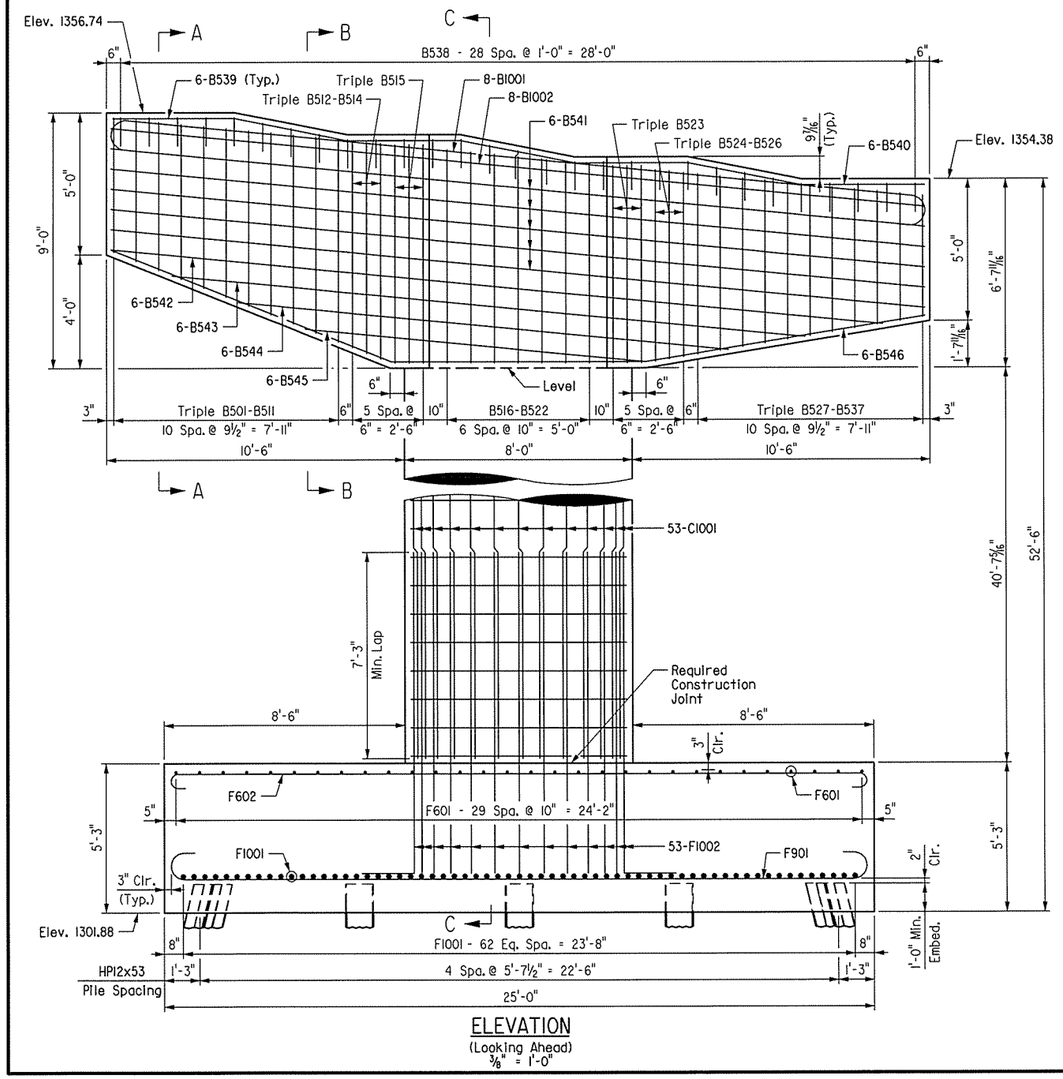

PLAN

3/8" = 1'-0"




FOOTING PLAN

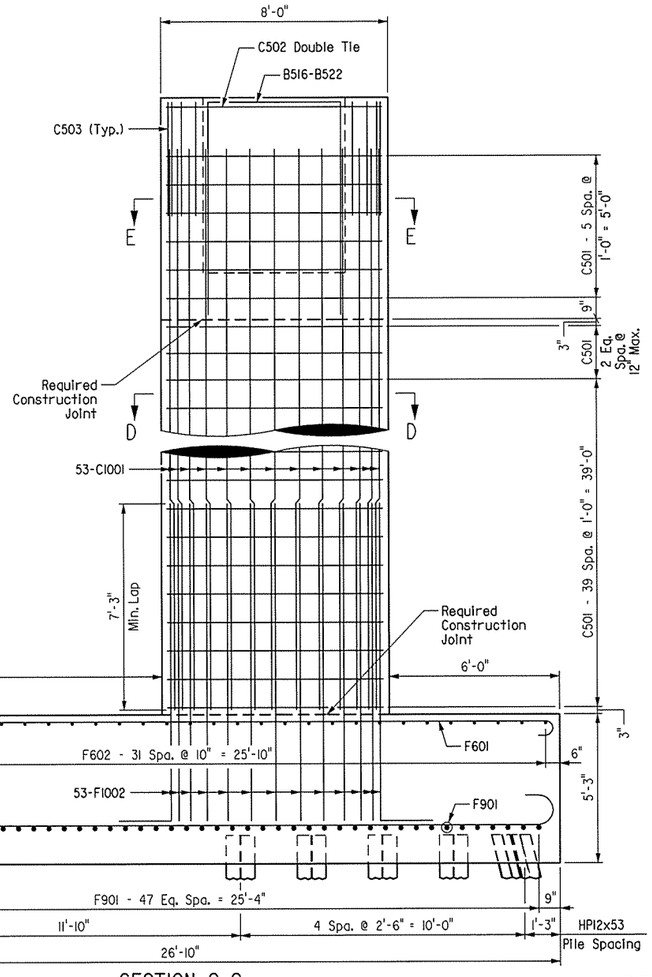
1/8" = 1'-0"




ELEVATION

(Looking Ahead)

3/8" = 1'-0"



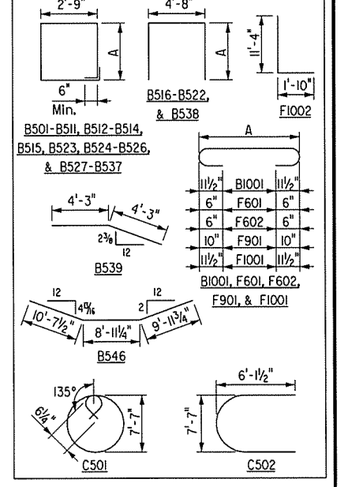

SECTION C-C

3/8" = 1'-0"

## BAR LIST - BENT 7

| Mark | Number Required | Length | "A" | Pin Dia. |
|---|---|---|---|---|
| B501 to B511 | 3 Each | 15'-6" to 20'-4" | 4'-9" to 7'-1¾" | 2½" |
| B512 to B514 | 3 Each | 20'-7" to 21'-2½" | 7'-3½" to 7'-7¼" | 2½" |
| B515 | 9 | 21'-5" | 7'-8⅜" | 2½" |
| B516 to B522 | 1 Each | 19'-6" to 18'-6½" | 7'-6¼" to 7'-0½" | 2½" |
| B523 | 9 | 19'-11" | 6'-11½" | 2½" |
| B524 to B526 | 3 Each | 19'-6" to 19'-0" | 6'-9" to 6'-6" | 2½" |
| B527 to B537 | 3 Each | 18'-8½" to 14'-7" | 6'-4¼" to 4'-3½" | 2½" |
| B538 | 29 | 6'-6" | 1'-0" | 2½" |
| B539 | 18 | 8'-6" | | 3¾" |
| B540 | 6 | 4'-6" | | Str. |
| B541 | 30 | 28'-9" | | Str. |
| B542 | 6 | 27'-4" | | Str. |
| B543 | 6 | 22'-5" | | Str. |
| B544 | 6 | 17'-4" | | Str. |
| B545 | 6 | 12'-0" | | Str. |
| B546 | 6 | 29'-7" | | 3¾" |
| B1001 | 8 | 31'-6" | 28'-8" | 10" |
| B1002 | 8 | 28'-8" | | Str. |
| C501 | 48 | 25'-2" | | 3¾" |
| C502 | 2 | 16'-6" | | 7'-5¾" |
| C503 | 14 | 2'-0" | | Str. |
| C1001 | 53 | 46'-6" | | Str. |
| F601 | 30 | 27'-8" | 26'-4" | 4½" |
| F602 | 32 | 25'-10" | 24'-6" | 4½" |
| F901 | 48 | 27'-0" | 24'-6" | 9" |
| F1001 | 63 | 29'-2" | 26'-4" | 10" |
| F1002 | 53 | 12'-11" | | 10" |

Bending Diagrams
(Dimensions are out to out of bars.)




DETAILS OF BENT 7
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIKA

BRIDGE ENGINEER

DRAWN BY: JAP DATE: 05-12
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907mi6_b7.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314

DRAWING NO. 55413

NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and to the top of the backwall.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 561 | 897 |
| | | | | (1) 07314 | | END BENT 9 DETAILS | | 55414 |

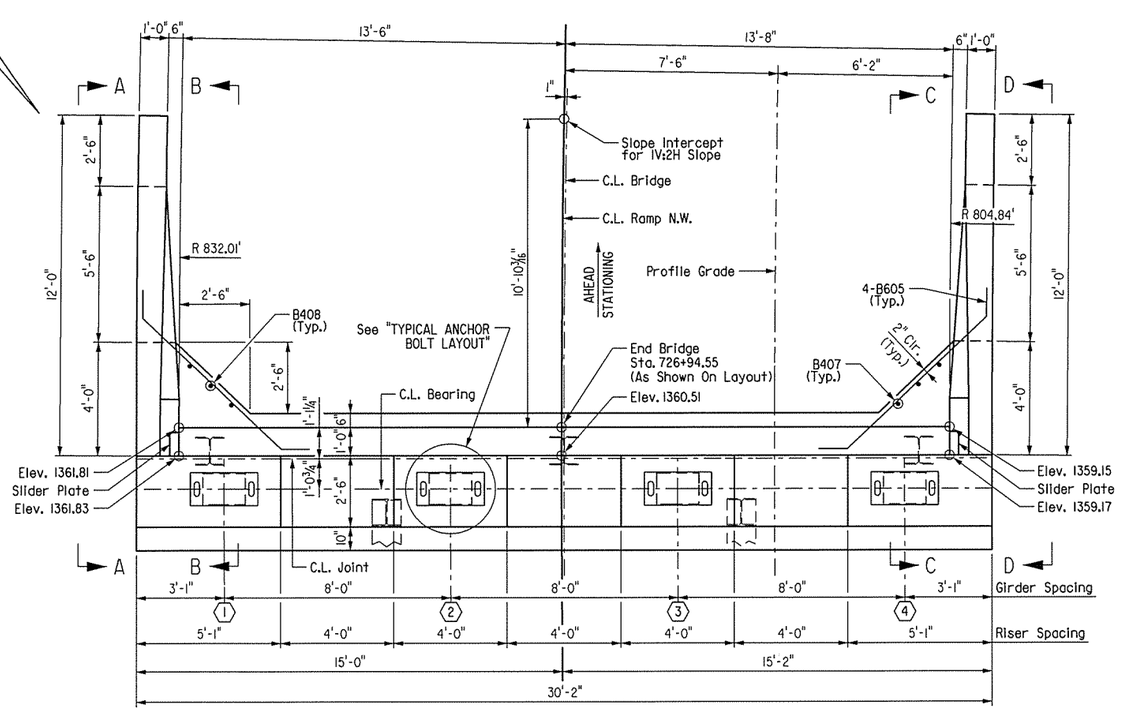
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional Information, see LAYOUT on Dwg. No. 55401.

For VIEW A-A, VIEW B-B, VIEW C-C, and VIEW D-D, see Dwg. No. 55415.

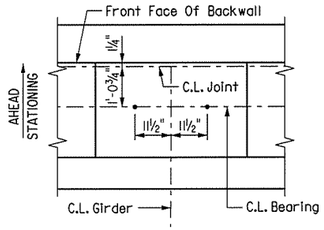
For DETAIL Z, see Dwg. No. 55403.

For Details of Wing and Rail, see Dwg. Nos. 55415 & 55416.



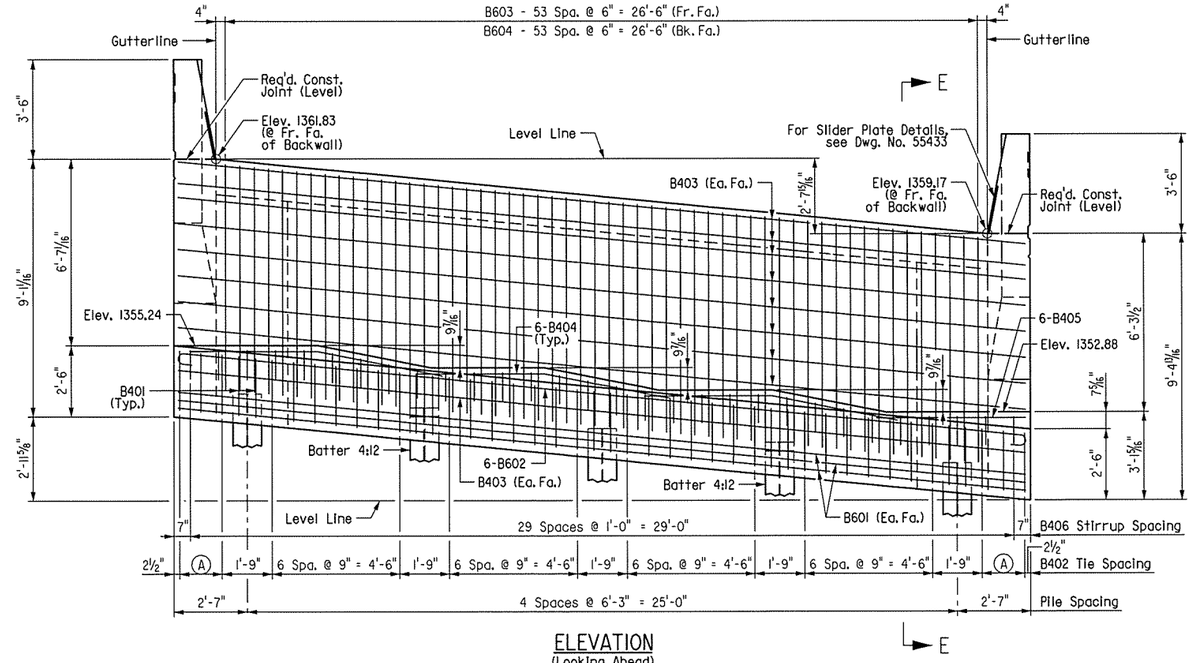

PLAN

Scale: ⅜" = 1'-0"




TYPICAL ANCHOR BOLT LAYOUT

Scale: ½" = 1'-0"

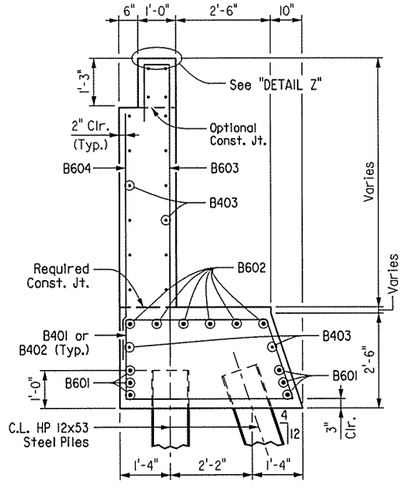



ELEVATION

(Looking Ahead)

Scale: ⅜" = 1'-0"

Ⓐ 2 Spa. @ 9" = 1'-6"




SECTION E-E

Scale: ½" = 1'-0"

SHEET 1 OF 3
DETAILS OF END BENT 9
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

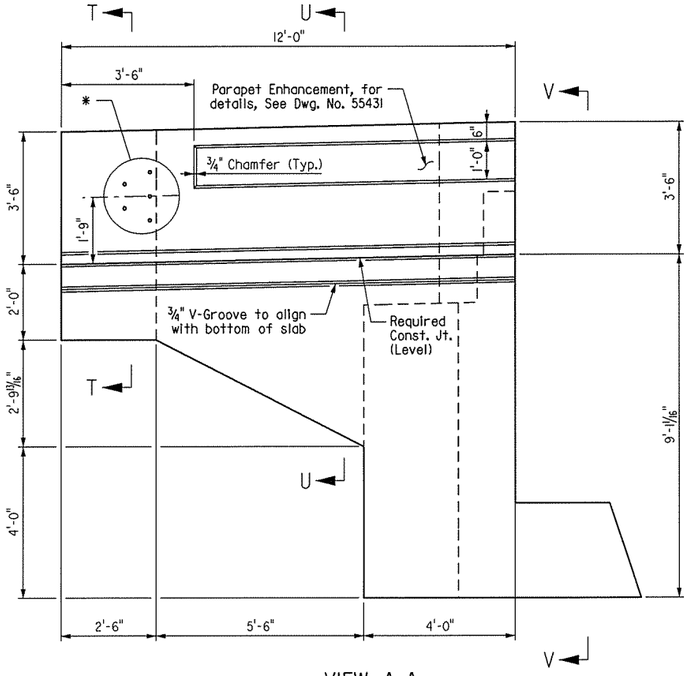
DRAWN BY: JAP DATE: 06-12 FILENAME: bca0907m16_b91.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

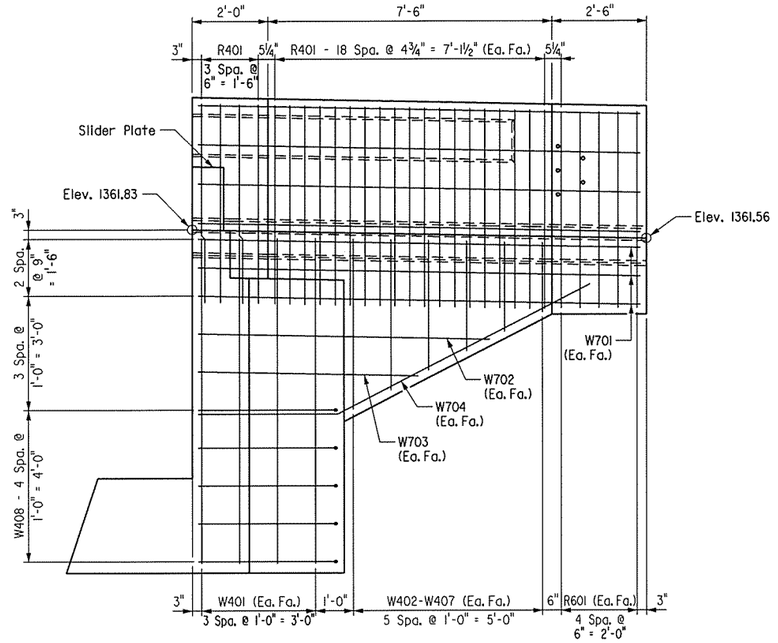
BRIDGE NO. 07314 DRAWING NO. 55414

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 562 | 897 |
| | | | | 1 | 07314 | END BENT 9 DETAILS | | 55415 |




VIEW A-A

Scale: 1/2" = 1'-0"




VIEW B-B

Scale: 1/2" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55401.

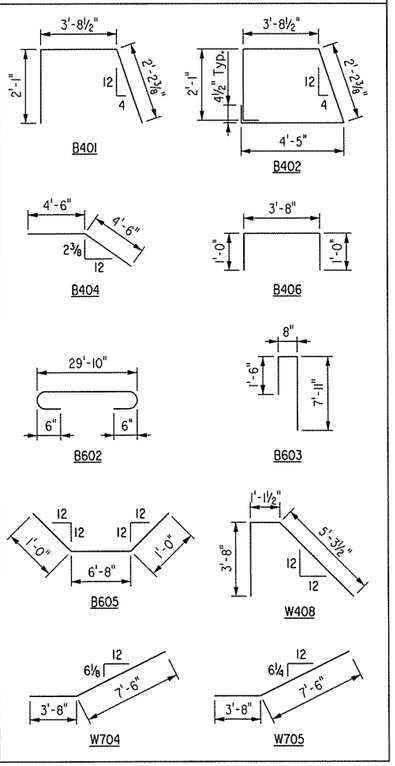
For SECTION T-T, SECTION U-U, VIEW V-V, VIEW W-W, SECTION X-X, and SECTION Y-Y, see Dwg. No. 55416.

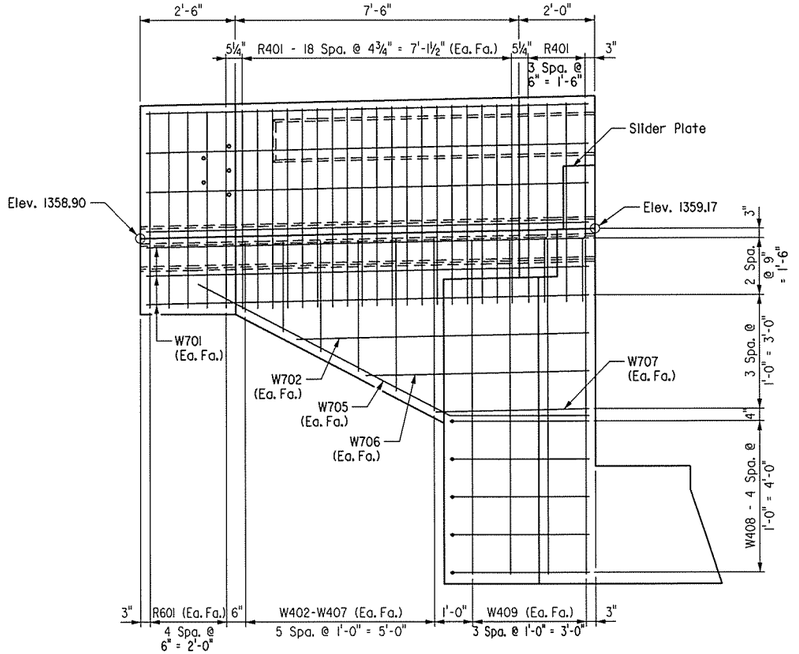
* 5 - 1"ø formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.

## BAR LIST - END BENT 9

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| B401 | 10 | 7'-10" | 2" |
| B402 | 34 | 12'-9" | 2" |
| B403 | 18 | 29'-10" | Str. |
| B404 | 18 | 9'-0" | 3" |
| B405 | 6 | 5'-3" | Str. |
| B406 | 30 | 5'-6" | 2" |
| B407 | 3 | 7'-6" | Str. |
| B408 | 3 | 7'-8" | Str. |
| | | | |
| B601 | 6 | 29'-10" | Str. |
| B602 | 6 | 31'-2" | 4 1/2" |
| B603 | 54 | 9'-9" | 4 1/2" |
| B604 | 54 | 6'-8" | Str. |
| B605 | 8 | 8'-8" | 4 1/2" |
| | | | |
| R401 | 92 | 5'-3" | Str. |
| | | | |
| R601 | 20 | 5'-2" | Str. |
| R602 | 16 | 11'-8" | Str. |
| | | | |
| W401 | 8 | 8'-7" | Str. |
| W402 to W407 | 4 Each | 4'-6" to 1'-10" | Str. |
| W408 | 10 | 10'-0" | 3" |
| W409 | 8 | 8'-10" | Str. |
| | | | |
| W701 | 12 | 11'-8" | Str. |
| W702 | 4 | 7'-8" | Str. |
| W703 | 2 | 5'-9" | Str. |
| W704 | 2 | 11'-2" | 5 1/4" |
| W705 | 2 | 11'-2" | 5 1/4" |
| W706 | 2 | 5'-10" | Str. |
| W707 | 2 | 4'-0" | Str. |

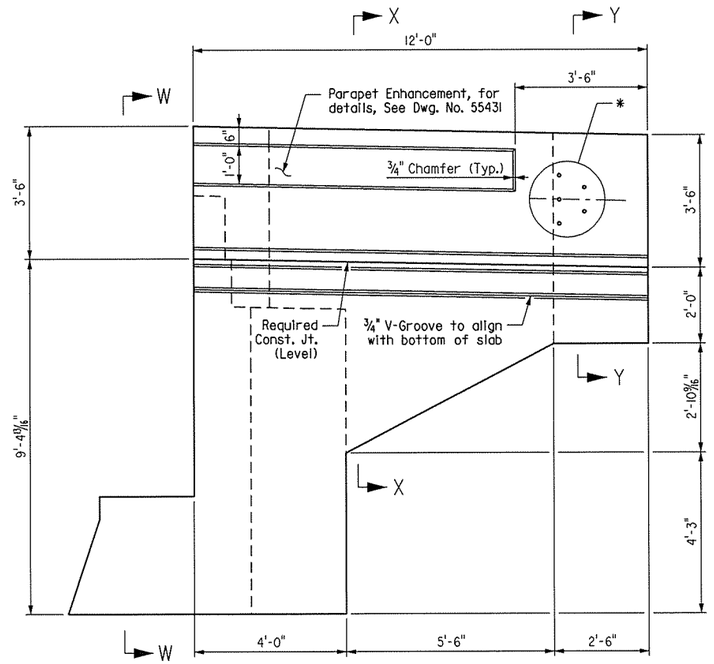
BENDING DIAGRAMS (Dimensions are out to out of bars)




VIEW C-C

Scale: 1/2" = 1'-0"




VIEW D-D

Scale: 1/2" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
2014
BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF END BENT 9
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 06-12
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907ml6_b92.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55415

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

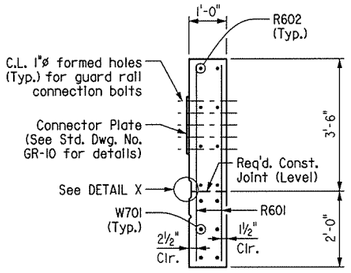
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 563 | 897 |
| (1) 07314 | | END BENT 9 DETAILS | | 55416 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55403.

For additional information, see LAYOUT on Dwg. No. 55401.

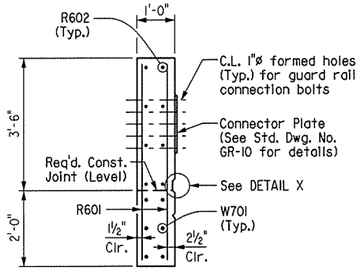
For Details of Wing and Rail, see Dwg. No. 55415.

For VIEW B-B & VIEW C-C, see Dwg. No. 55415.



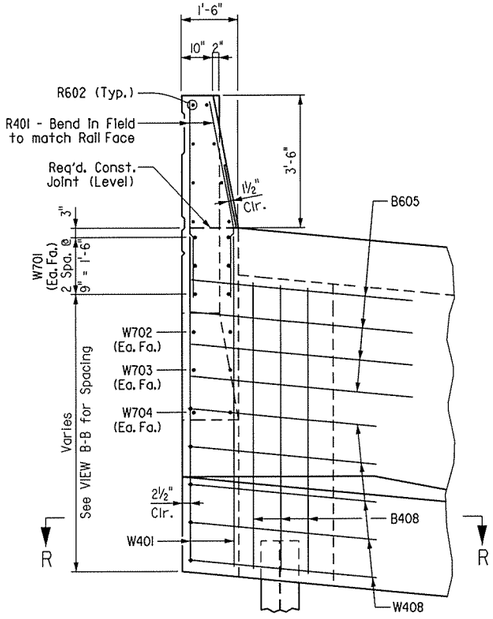

SECTION T-T

Scale: ½" = 1'-0"



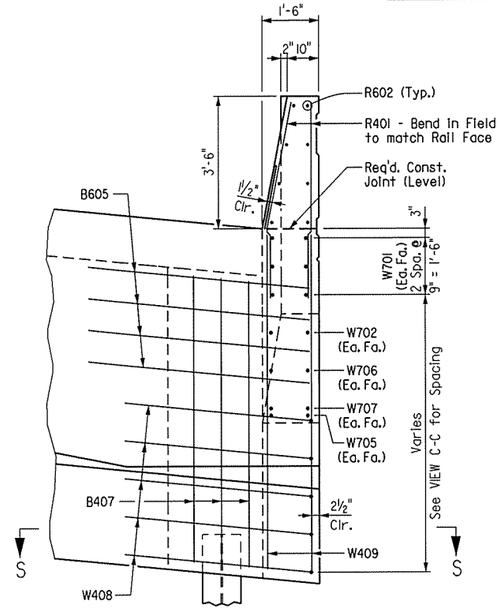

SECTION Y-Y

Scale: ½" = 1'-0"



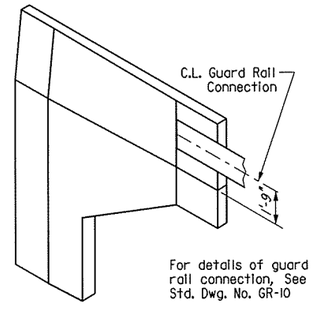

VIEW V-V

Scale: ½" = 1'-0"




VIEW W-W

Scale: ½" = 1'-0"




For details of guard rail connection, See Std. Dwg. No. GR-10

THREE DIMENSIONAL VIEW OF WING & RAIL

Scale: ¼" = 1'-0"



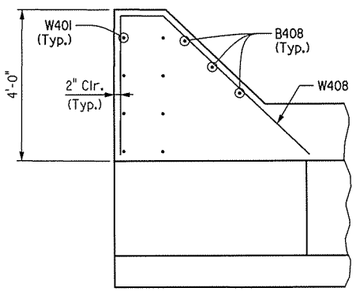

SECTION U-U

Scale: ½" = 1'-0"



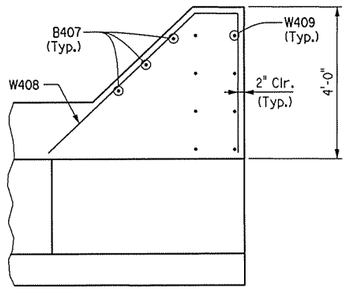

SECTION X-X

Scale: ½" = 1'-0"



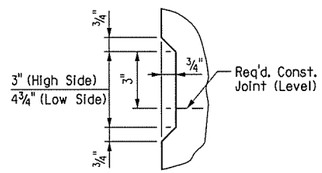

SECTION R-R

Scale: ½" = 1'-0"




SECTION S-S

Scale: ½" = 1'-0"




DETAIL X

Scale: 3" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
4-24-14

BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENT 9
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

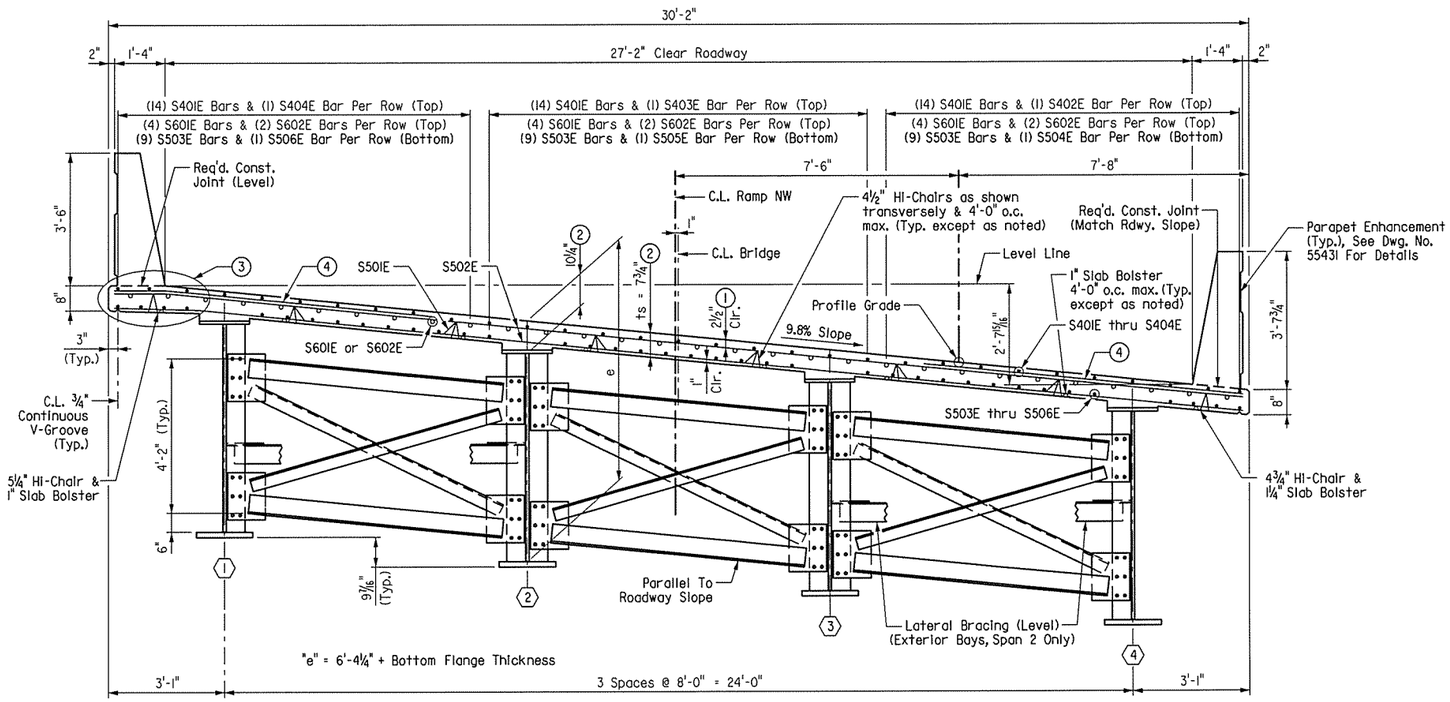
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 06-12
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907mi6_b93.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55416

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 564 | 897 |
| | | | | (1) 07314 | | 542 FT. UNIT | | 55417 |




## TYPICAL SECTION

(Looking Ahead)
Scale: ½" = 1'-0"

(1) TOLERANCE:
Minus: ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED" on Dwg. No. 55430.

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED" on Dwg. No. 55430.

(3) Field bend transverse bars in this area to provide minimum clearances.

SLAB REINFORCING:

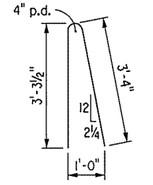
Transverse:
S501E @ 12" Centers (Bent up over girders)
S502E @ 12" Centers (Top & Bottom)
(4) S603E (Place as shown)
See DETAIL A on Dwg. No. 55418
Longitudinal:
S401E thru S404E @ 12" Centers (Top)
S503E thru S506E Place as shown (Bottom)
S601E or S602E @ 12" Centers (Top over Int. Bents)

For additional reinforcing details, see Dwg. No. 55418-55420.

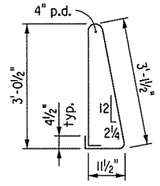
## 542'-0" UNIT BAR LIST

| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| S401E | 434 | 40'-0" | Str. |
| S402E | 10 | 4'-10" | Str. |
| S403E | 11 | 12'-2" | Str. |
| S404E | 10 | 19'-2" | Str. |
| | | | |
| S501E | 540 | 30'-4" | 3" |
| S502E | 1080 | 29'-10" | Str. |
| S503E | 342 | 60'-0" | Str. |
| S504E | 13 | 20'-4" | Str. |
| S505E | 12 | 27'-5" | Str. |
| S506E | 13 | 34'-5" | Str. |
| S507E | 12 | 6'-6" | Str. |
| | | | |
| S601E | 120 | 52'-11" | Str. |
| S602E | 60 | 38'-5" | Str. |
| S603E | 1078 | 17'-1" | 5¼" |
| | | | |
| | | | |
| P401E | 2154 | 6'-9" | 2" |
| P402E | 20 | 8'-0" | 2" |
| | | | |
| P501E | 2154 | 5'-7" | 3¾" |
| P502E | 230 | 10'-10" | Str. |
| P503E | 11 | 10'-11" | Str. |
| P504E | 11 | 11'-5" | Str. |
| P505E | 88 | 11'-2" | Str. |
| P506E | 11 | 11'-0" | Str. |
| P507E | 11 | 10'-9" | Str. |
| P508E | 55 | 10'-8" | Str. |
| P509E | 12 | 40'-9" | Str. |
| P510E | 18 | 44'-6" | Str. |
| P511E | 12 | 35'-2" | Str. |
| P512E | 18 | 42'-8" | Str. |
| P513E | 153 | 10'-6" | Str. |
| P514E | 66 | 10'-4" | Str. |
| P515E | 11 | 10'-3" | Str. |
| P516E | 11 | 10'-2" | Str. |
| P517E | 12 | 39'-7" | Str. |
| P518E | 18 | 43'-3" | Str. |
| P519E | 12 | 34'-2" | Str. |
| P520E | 18 | 41'-5" | Str. |

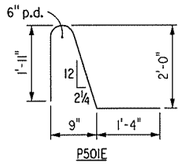
Bending Diagrams (Dimensions are out to out of bars.)



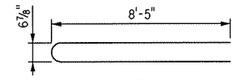
P401E



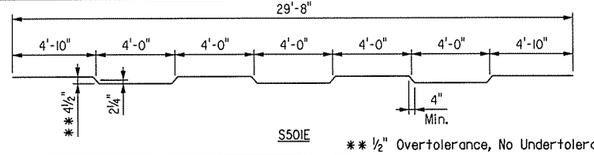
P402E



P501E



S603E



S501E

** ½" Overtolerance, No Undertolerance

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bars S501E.

Class 2 Protective Surface Treatment shall be applied to the roadway surface.

All bars designated with an "E" suffix are to be epoxy coated.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK
4 FEB 2014
BRIDGE ENGINEER

# SHEET 1 OF 7
# DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907m16_sht.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55417

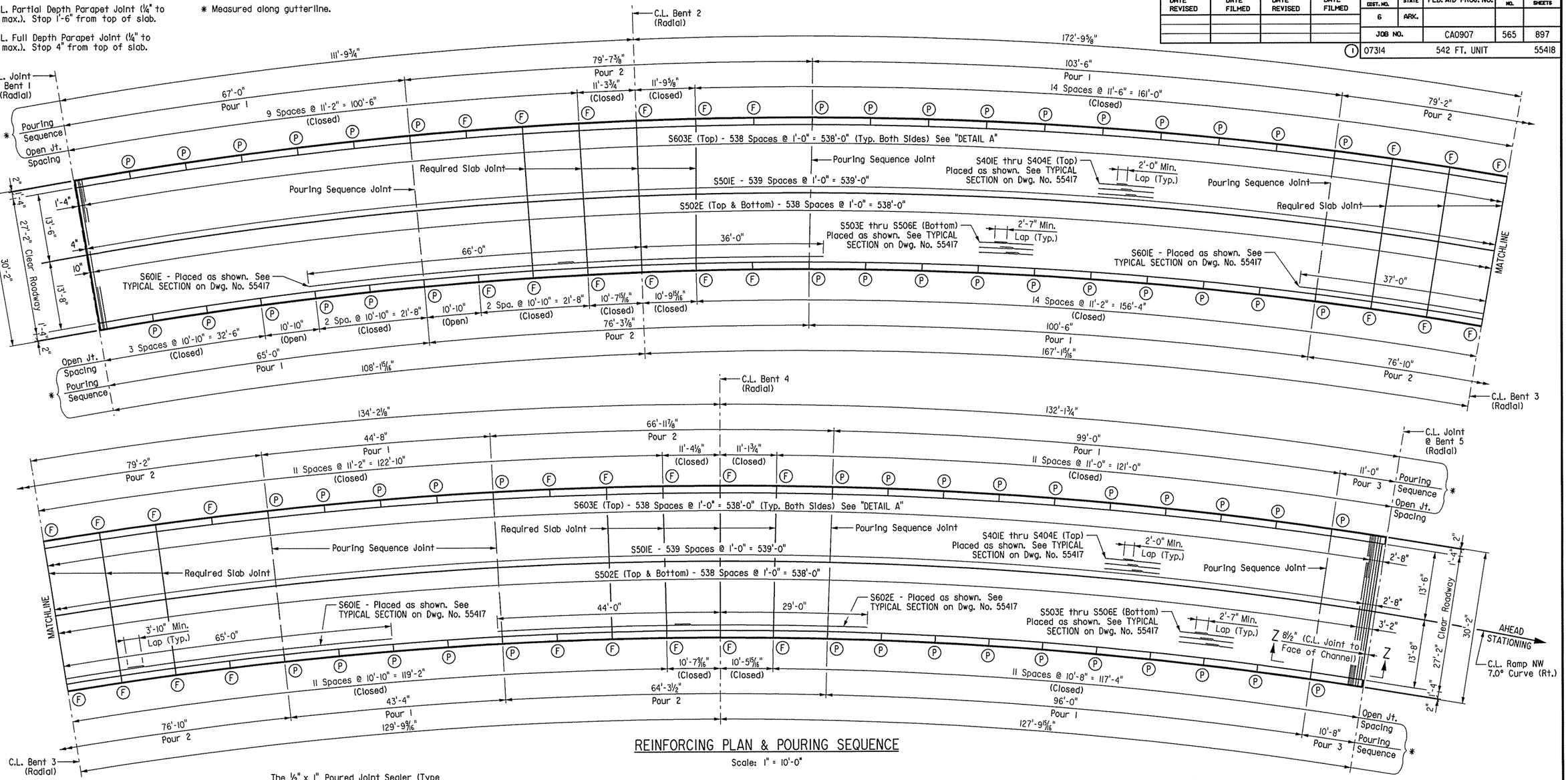
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 565 | 897 |
| (1) 07314 | | 542 FT. UNIT | | 55418 |

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

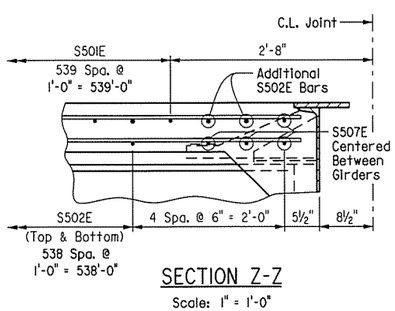
(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

* Measured along gutterline.




## REINFORCING PLAN & POURING SEQUENCE

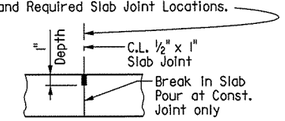
Scale: 1" = 10'-0"




## SECTION Z-Z

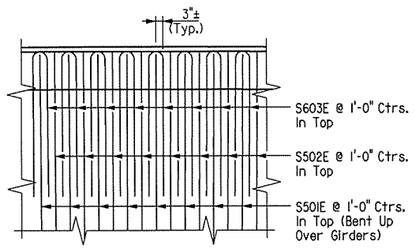
Scale: 1" = 1'-0"

The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to subsection 501.02(h) and 501.05(j). Backer Rod Filler will not be required. The poured joint sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.




## SLAB JOINT DETAIL

No Scale




## DETAIL A

Scale: ⅜" = 1'-0"

Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

Note: Required slab joints and pouring sequence joints shall align with parapet open joints at the gutterline.

Note: See TYPICAL SECTION on Dwg. No. 55417 for placement of longitudinal reinforcing.

Note: All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along C.L. Ramp, unless noted otherwise.

All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Ramp.

Note: For Bar List, see Dwg. No. 55417.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 2016

BRIDGE ENGINEER

# SHEET 2 OF 7
# DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11 FILENAME: bca0907ml6_sl2.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55418

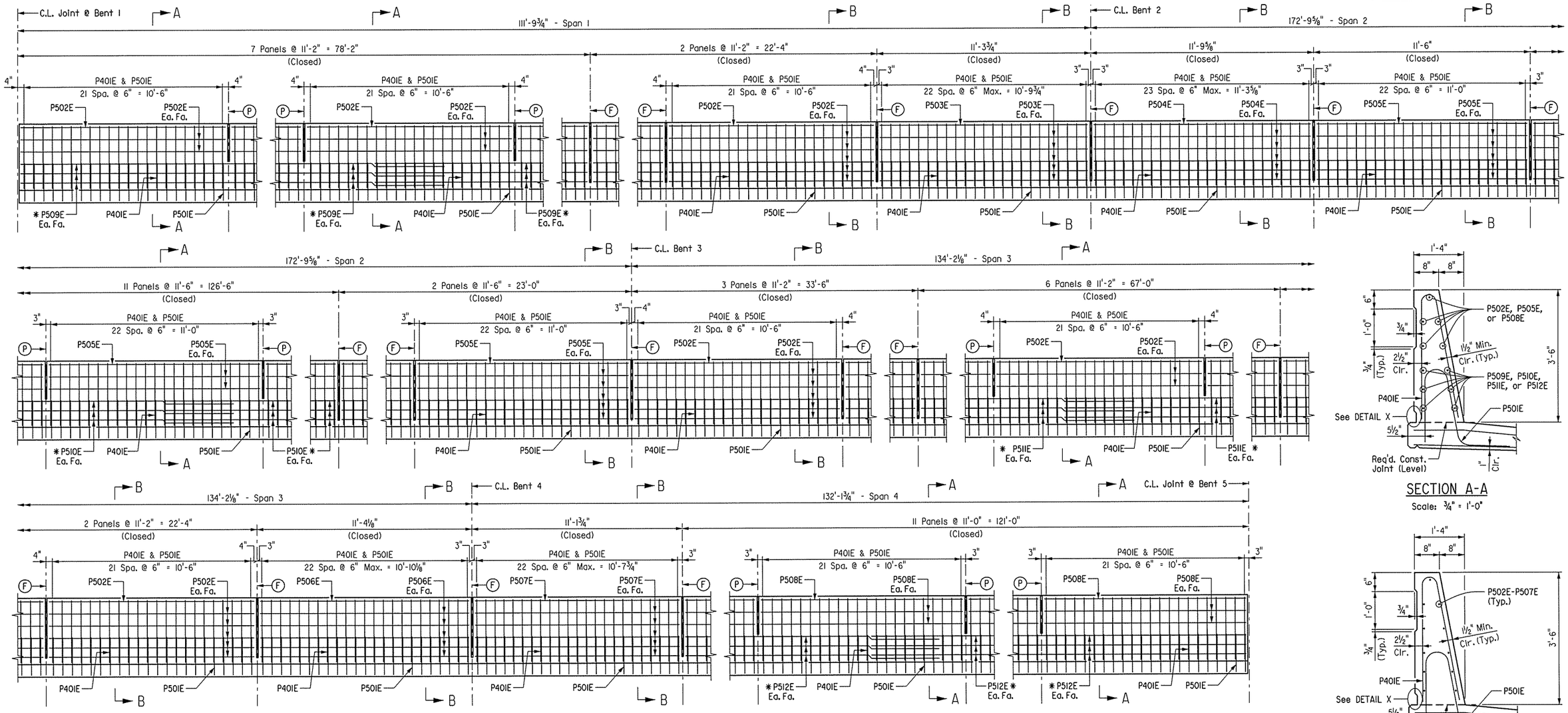
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 566 | 897 |
| (I) 07314 | | 542 FT. UNIT | | 55419 |

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

* Minimum splice length for P509E-P512E bars = 3'-7"



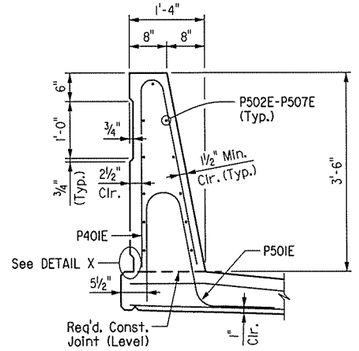

## DETAILS OF PARAPET RAIL - HIGH SIDE OF BRIDGE

Scale: ⅜" = 1'-0"



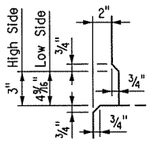

## SECTION A-A

Scale: ¾" = 1'-0"




## SECTION B-B

Scale: ¾" = 1'-0"




## DETAIL X

No Scale

Note: All dimensions shown are taken along gutterline of bridge.

Note: For Bar List, see Dwg. No. 55417.

Note: Parapet rail is to be constructed plumb.

Note: For DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL, see Dwg. No. 55431.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

# SHEET 3 OF 7
# DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11

CHECKED BY: PJS DATE: 01-14

DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907mi6_s13.dgn

SCALE: AS SHOWN

BRIDGE NO. 07314

DRAWING NO. 55419

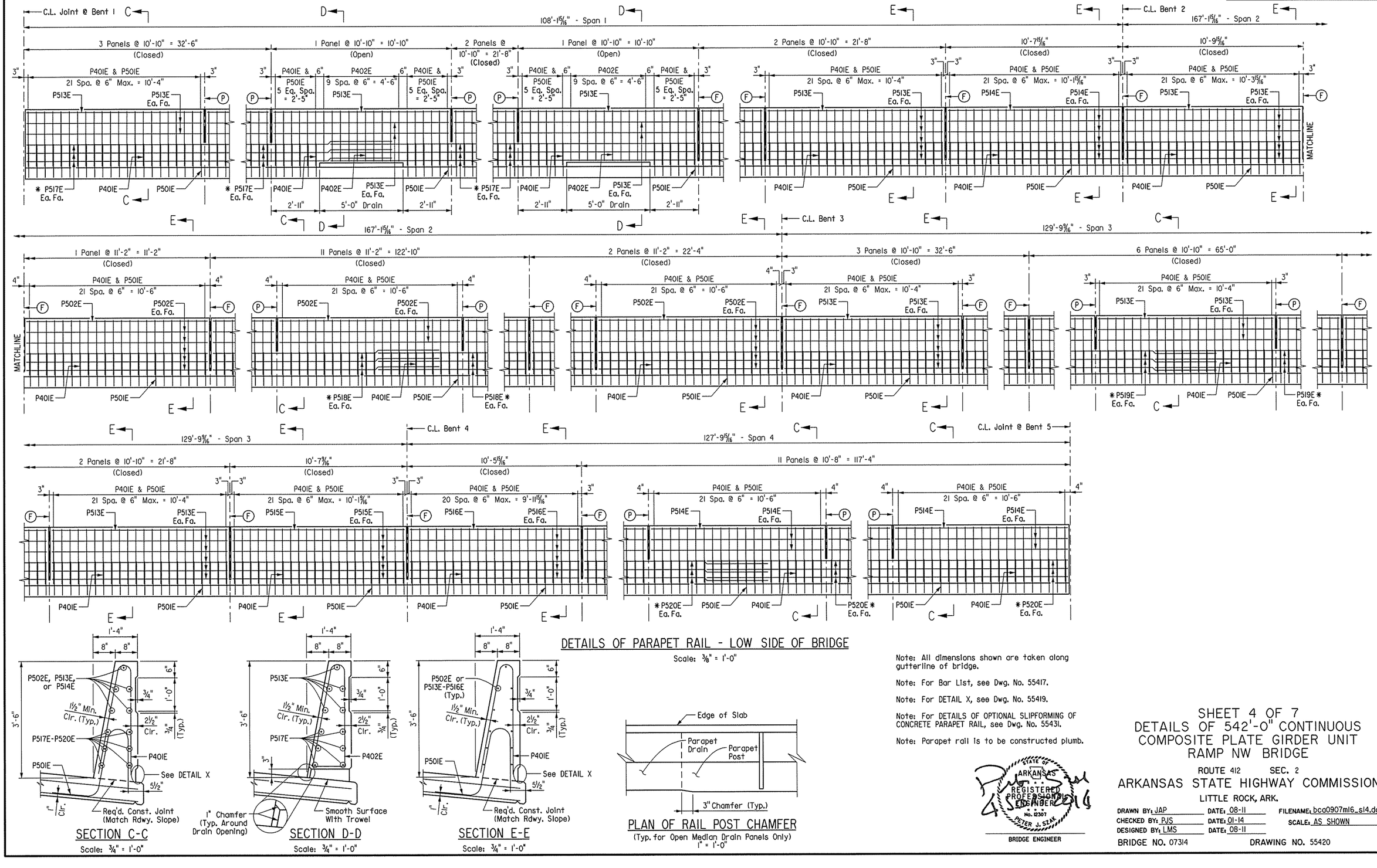
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 567 | 897 |
| (1) 07314 | | 542 FT. UNIT | | 55420 |

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

* Minimum splice length for P517E-P520E bars = 3'-7"







SECTION C-C

Scale: 3/4" = 1'-0"




SECTION D-D

Scale: 3/4" = 1'-0"




SECTION E-E

Scale: 3/4" = 1'-0"

## DETAILS OF PARAPET RAIL - LOW SIDE OF BRIDGE

Scale: 3/8" = 1'-0"




PLAN OF RAIL POST CHAMFER

(Typ. for Open Median Drain Panels Only)
1" = 1'-0"

Note: All dimensions shown are taken along gutterline of bridge.

Note: For Bar List, see Dwg. No. 55417.

Note: For DETAIL X, see Dwg. No. 55419.

Note: For DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL, see Dwg. No. 55431.

Note: Parapet rail is to be constructed plumb.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

SHEET 4 OF 7

# DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11 FILENAME: bca0907m16_sl4.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

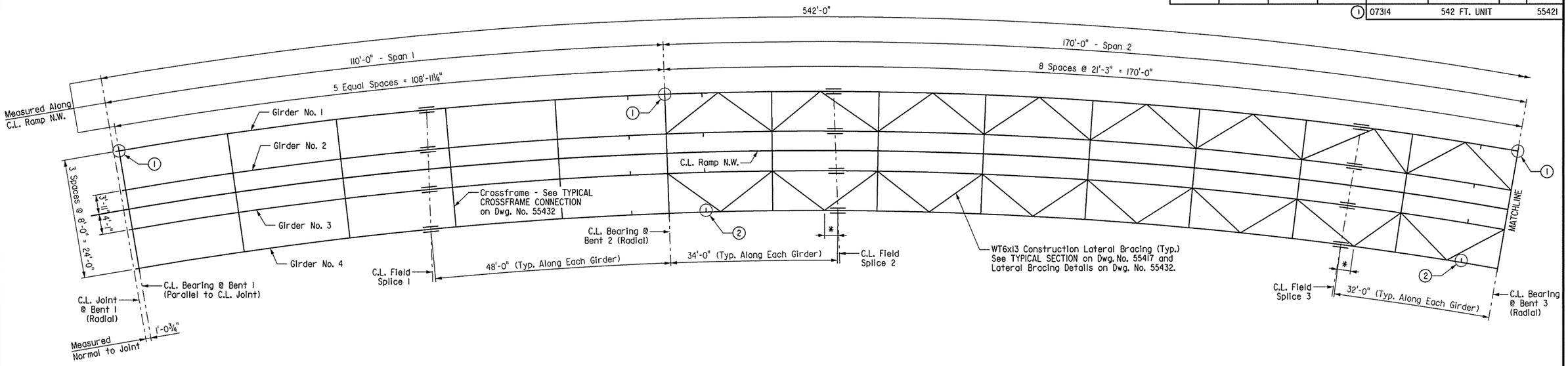
DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55420

* Shift lateral bracing 2'-8" along girder from C.L. Bay In order to prevent interference with the Web Splice Plates.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 568 | 897 |
| (1) 07314 | | 542 FT. UNIT | | 55421 |




## FRAMING PLAN

Scale: 1" = 10'-0"

NOTES:

All stiffeners shall be AASHTO M 270, Grade 50 steel.

Girders are curved and concectric to C.L. Ramp N.W. All crossframes are on radial lines, U.N.O.

For GIRDER ELEVATION, see Dwg. No. 55423.

For FIELD SPLICE DETAILS, see Dwg. No. 55422.

For TYPICAL CROSSFRAME CONNECTION, see Dwg. No. 55432.

(1) PL ¾" x 8½" Bearing Stiffener (Typ.)

(2) PL ⅝" x 6" Intermediate Stiffener (Typ.)

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIAK 2014

BRIDGE ENGINEER

# SHEET 5 OF 7
# DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
# RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11 FILENAME: bca0907m16_sl5.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

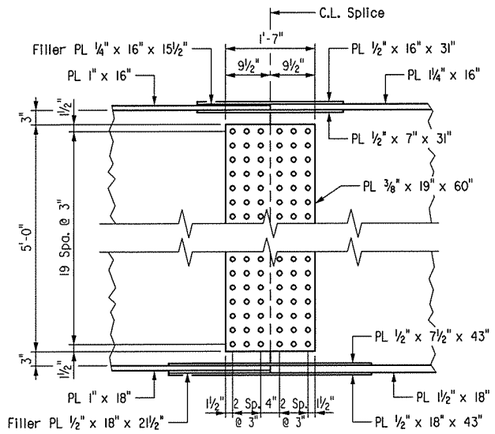
BRIDGE NO. 07314 DRAWING NO. 55421

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 569 | 897 |
| | | | | (1) 07314 | | 542 FT. UNIT | | 55422 |

NOTES:

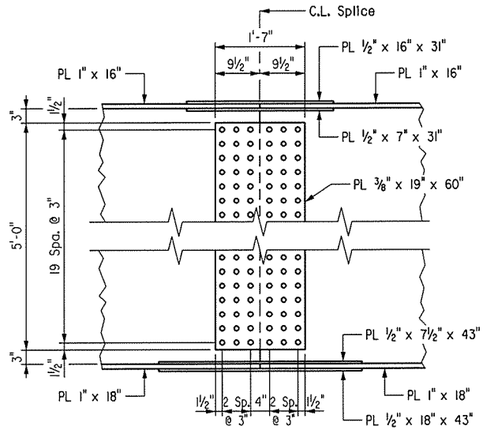
All field splice bolts shall be $\frac{7}{8}$" ø H.S. bolts. All field splice plates shall be AASHTO M 270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer.



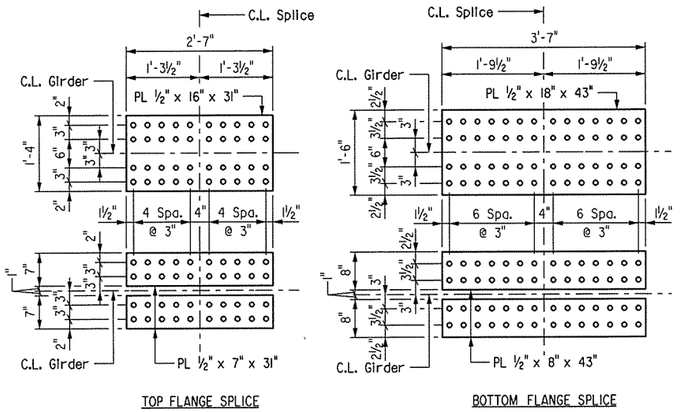

WEB FIELD SPLICE 1

Scale: ¾" = 1'-0"



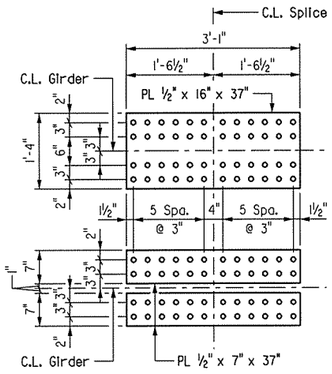

WEB FIELD SPLICE 4

Scale: ¾" = 1'-0"

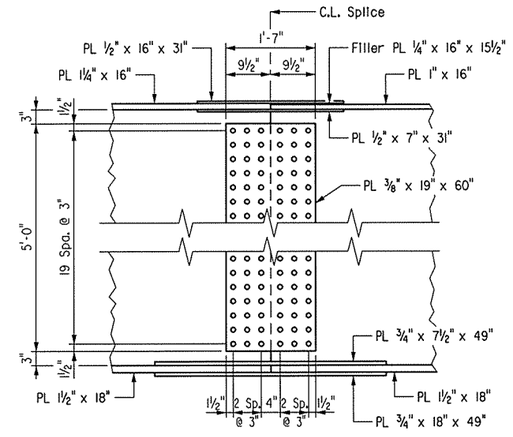



FLANGE FIELD SPLICE 1, 4, & 5

Scale: ¾" = 1'-0"

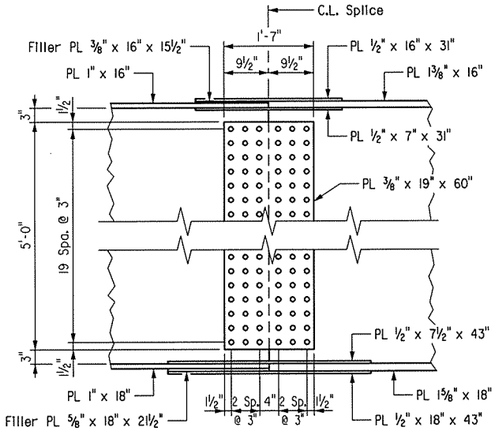



TOP FLANGE SPLICE



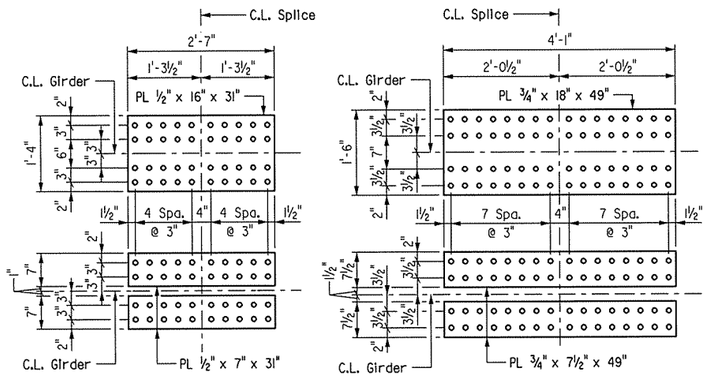

WEB FIELD SPLICE 2

Scale: ¾" = 1'-0"



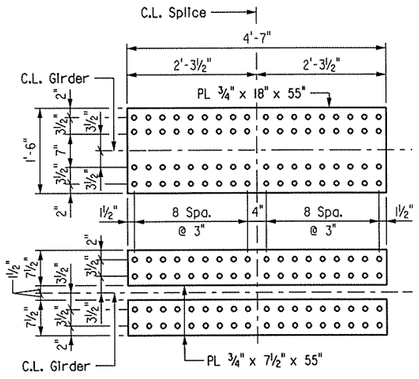

WEB FIELD SPLICE 5

Scale: ¾" = 1'-0"



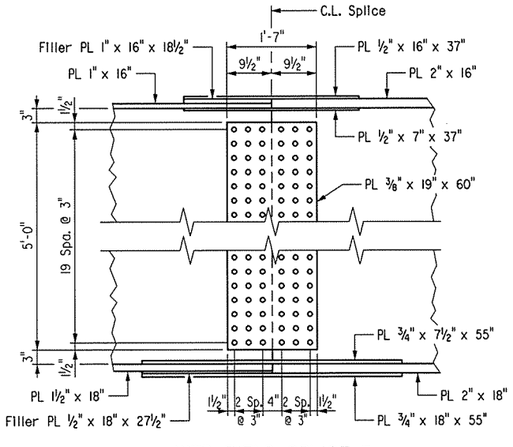

FLANGE FIELD SPLICE 2 & 6

Scale: ¾" = 1'-0"



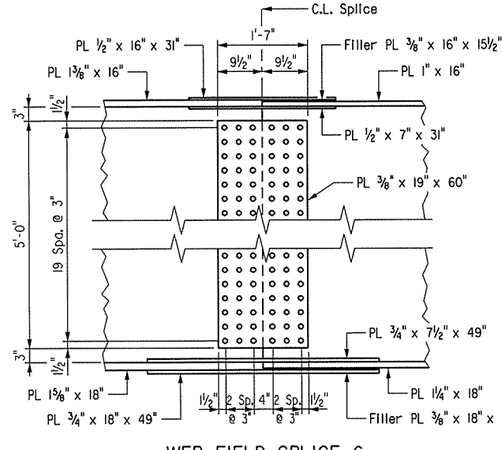

FLANGE FIELD SPLICE 3

Scale: ¾" = 1'-0"




WEB FIELD SPLICE 3

Scale: ¾" = 1'-0"




WEB FIELD SPLICE 6

Scale: ¾" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIAK 2014

BRIDGE ENGINEER

SHEET 6 OF 7
DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

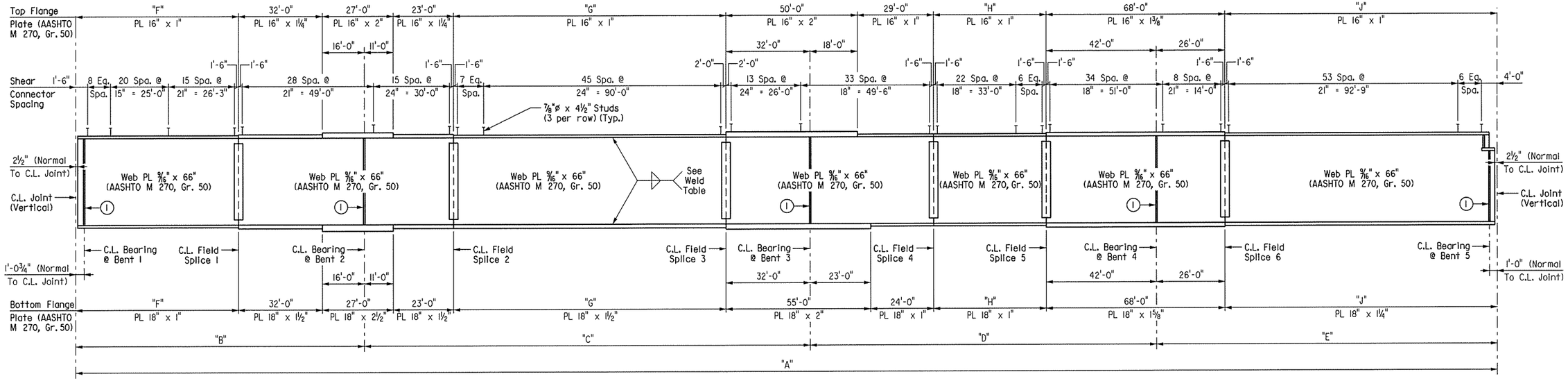
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907ml6_s16.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55422

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 570 | 897 |
| | | | | (1) 07314 | | 542 FT. UNIT | | 55423 |

(1) PL ¾" x 8½" Bearing Stiffener (Typ.)




## TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Camber for Dead Load Deflection plus vertical curve +/- ¼" tolerance. Vertical curve corrections not included. Negative sign (-) indicates upward deflection. Deflections shown are along centerline girder from the plane perpendicular to the web extending from centerline bearing to centerline bearing.

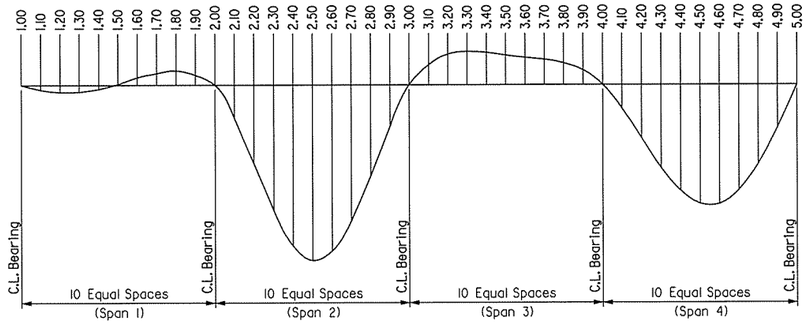
| | POINT OF DEFLECTION | Structural Steel | | | | Structural Steel (+) Slab | | | | Structural Steel (+) Slab (+) Para. Rail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Girder 1 | Girder 2 | Girder 3 | Girder 4 | Girder 1 | Girder 2 | Girder 3 | Girder 4 | Girder 1 | Girder 2 | Girder 3 | Girder 4 |
| SPAN NO. 1 | 1.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 1.10 | 0.024 | 0.031 | 0.038 | 0.044 | 0.107 | 0.131 | 0.153 | 0.169 | 0.128 | 0.154 | 0.179 | 0.198 |
| | 1.20 | 0.034 | 0.048 | 0.062 | 0.074 | 0.157 | 0.206 | 0.250 | 0.283 | 0.189 | 0.243 | 0.294 | 0.332 |
| | 1.30 | 0.028 | 0.049 | 0.070 | 0.088 | 0.148 | 0.221 | 0.288 | 0.339 | 0.182 | 0.263 | 0.339 | 0.399 |
| | 1.40 | 0.008 | 0.036 | 0.064 | 0.088 | 0.082 | 0.180 | 0.269 | 0.340 | 0.107 | 0.217 | 0.318 | 0.401 |
| | 1.50 | -0.022 | 0.011 | 0.043 | 0.071 | -0.025 | 0.090 | 0.194 | 0.280 | -0.017 | 0.113 | 0.232 | 0.332 |
| | 1.60 | -0.064 | -0.027 | 0.007 | 0.039 | -0.179 | -0.051 | 0.062 | 0.162 | -0.196 | -0.051 | 0.079 | 0.195 |
| | 1.70 | -0.087 | -0.051 | -0.019 | 0.012 | -0.268 | -0.145 | -0.038 | 0.060 | -0.302 | -0.162 | -0.039 | 0.076 |
| | 1.80 | -0.101 | -0.071 | -0.045 | -0.018 | -0.329 | -0.227 | -0.138 | -0.051 | -0.376 | -0.259 | -0.156 | -0.055 |
| | 1.90 | -0.068 | -0.050 | -0.034 | -0.019 | -0.225 | -0.164 | -0.111 | -0.059 | -0.258 | -0.188 | -0.127 | -0.066 |
| SPAN NO. 2 | 2.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 2.10 | 0.226 | 0.190 | 0.153 | 0.118 | 0.762 | 0.641 | 0.517 | 0.396 | 0.885 | 0.743 | 0.599 | 0.458 |
| | 2.20 | 0.531 | 0.450 | 0.370 | 0.290 | 1.797 | 1.526 | 1.252 | 0.977 | 2.087 | 1.770 | 1.451 | 1.133 |
| | 2.30 | 0.845 | 0.718 | 0.593 | 0.468 | 2.863 | 2.436 | 2.011 | 1.582 | 3.324 | 2.824 | 2.330 | 1.835 |
| | 2.40 | 1.082 | 0.918 | 0.759 | 0.600 | 3.666 | 3.114 | 2.575 | 2.029 | 4.253 | 3.608 | 2.983 | 2.353 |
| | 2.50 | 1.181 | 1.000 | 0.826 | 0.652 | 3.995 | 3.388 | 2.798 | 2.201 | 4.632 | 3.924 | 3.240 | 2.552 |
| | 2.60 | 1.121 | 0.948 | 0.781 | 0.613 | 3.783 | 3.203 | 2.638 | 2.065 | 4.385 | 3.708 | 3.054 | 2.394 |
| | 2.70 | 0.921 | 0.777 | 0.637 | 0.497 | 3.097 | 2.615 | 2.143 | 1.665 | 3.588 | 3.027 | 2.480 | 1.930 |
| | 2.80 | 0.619 | 0.520 | 0.422 | 0.326 | 2.070 | 1.740 | 1.411 | 1.082 | 2.397 | 2.013 | 1.632 | 1.253 |
| | 2.90 | 0.284 | 0.236 | 0.188 | 0.142 | 0.941 | 0.782 | 0.622 | 0.464 | 1.088 | 0.904 | 0.719 | 0.537 |
| SPAN NO. 3 | 3.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 3.10 | -0.141 | -0.110 | -0.080 | -0.050 | -0.459 | -0.353 | -0.252 | -0.153 | -0.525 | -0.403 | -0.287 | -0.173 |
| | 3.20 | -0.221 | -0.164 | -0.111 | -0.059 | -0.710 | -0.518 | -0.339 | -0.166 | -0.807 | -0.588 | -0.382 | -0.184 |
| | 3.30 | -0.245 | -0.172 | -0.104 | -0.037 | -0.775 | -0.528 | -0.297 | -0.077 | -0.875 | -0.594 | -0.329 | -0.077 |
| | 3.40 | -0.240 | -0.160 | -0.084 | -0.011 | -0.753 | -0.480 | -0.224 | 0.017 | -0.847 | -0.536 | -0.243 | 0.033 |
| | 3.50 | -0.220 | -0.141 | -0.065 | 0.008 | -0.692 | -0.419 | -0.162 | 0.080 | -0.777 | -0.466 | -0.172 | 0.106 |
| | 3.60 | -0.199 | -0.126 | -0.056 | 0.011 | -0.637 | -0.384 | -0.145 | 0.079 | -0.716 | -0.429 | -0.155 | 0.102 |
| | 3.70 | -0.180 | -0.118 | -0.059 | -0.002 | -0.591 | -0.375 | -0.172 | 0.020 | -0.668 | -0.422 | -0.189 | 0.032 |
| | 3.80 | -0.150 | -0.104 | -0.060 | -0.017 | -0.504 | -0.342 | -0.191 | -0.046 | -0.573 | -0.388 | -0.214 | -0.047 |
| | 3.90 | -0.097 | -0.071 | -0.047 | -0.024 | -0.333 | -0.242 | -0.158 | -0.077 | -0.380 | -0.276 | -0.180 | -0.086 |
| SPAN NO. 4 | 4.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 4.10 | 0.157 | 0.129 | 0.101 | 0.074 | 0.548 | 0.449 | 0.351 | 0.255 | 0.632 | 0.517 | 0.404 | 0.293 |
| | 4.20 | 0.347 | 0.290 | 0.233 | 0.177 | 1.219 | 1.016 | 0.815 | 0.615 | 1.407 | 1.171 | 0.938 | 0.709 |
| | 4.30 | 0.541 | 0.454 | 0.370 | 0.287 | 1.904 | 1.598 | 1.300 | 1.001 | 2.200 | 1.843 | 1.498 | 1.155 |
| | 4.40 | 0.687 | 0.580 | 0.476 | 0.372 | 2.423 | 2.045 | 1.676 | 1.304 | 2.800 | 2.359 | 1.932 | 1.505 |
| | 4.50 | 0.769 | 0.651 | 0.537 | 0.423 | 2.718 | 2.302 | 1.897 | 1.486 | 3.141 | 2.656 | 2.188 | 1.716 |
| | 4.60 | 0.771 | 0.653 | 0.541 | 0.428 | 2.726 | 2.313 | 1.913 | 1.507 | 3.150 | 2.669 | 2.207 | 1.741 |
| | 4.70 | 0.681 | 0.578 | 0.480 | 0.381 | 2.410 | 2.049 | 1.700 | 1.344 | 2.785 | 2.365 | 1.962 | 1.553 |
| | 4.80 | 0.512 | 0.435 | 0.362 | 0.288 | 1.814 | 1.544 | 1.284 | 1.017 | 2.096 | 1.782 | 1.482 | 1.176 |
| | 4.90 | 0.277 | 0.236 | 0.196 | 0.157 | 0.981 | 0.837 | 0.697 | 0.554 | 1.134 | 0.966 | 0.804 | 0.640 |
| | 5.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

## GIRDER ELEVATION

No Scale

## TABLE OF GIRDER VARIABLES

| Girder No. | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "J" |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 549'-10⁹⁄₁₆" | 111'-7⅜" | 172'-5¹¹⁄₁₆" | 133'-11¹⁄₁₆" | 131'-10¹¹⁄₁₆" | 63'-7⅜" | 106'-5¹¹⁄₁₆" | 44'-11¹⁄₁₆" | 105'-10¹¹⁄₁₆" |
| 2 | 544'-7⅛" | 110'-6⅝" | 170'-9¾" | 132'-7⅞" | 130'-7⅞" | 62'-6⅝" | 104'-9¾" | 43'-7⅞" | 104'-7⅞" |
| 3 | 539'-3⅝" | 109'-5⅞" | 169'-1⅞" | 131'-4⅛" | 129'-4⅜" | 61'-5⅞" | 103'-1⅞" | 42'-4⅛" | 103'-4⅜" |
| 4 | 534'-0" | 108'-4½" | 167'-5⅞" | 130'-0⅝" | 128'-0⅝" | 60'-4½" | 101'-5⅞" | 41'-0⅝" | 102'-0⅝" |




## DEAD LOAD DEFLECTION DIAGRAM

Not to Scale

NOTES:

All stiffeners shall be AASHTO M 270, Grade 50 steel.

Girders are curved and concectric to C.L. Ramp NW.

For FIELD SPLICE DETAILS, see Dwg. No. 55422.

For STIFFENER DETAILS, see Dwg. No. 55432.

For SHEAR CONNECTOR DETAIL, see Dwg. No. 55431.

For WELD DETAILS & TABLE, see Dwg. No. 55431.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 2016

BRIDGE ENGINEER

# SHEET 7 OF 7
# DETAILS OF 542'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

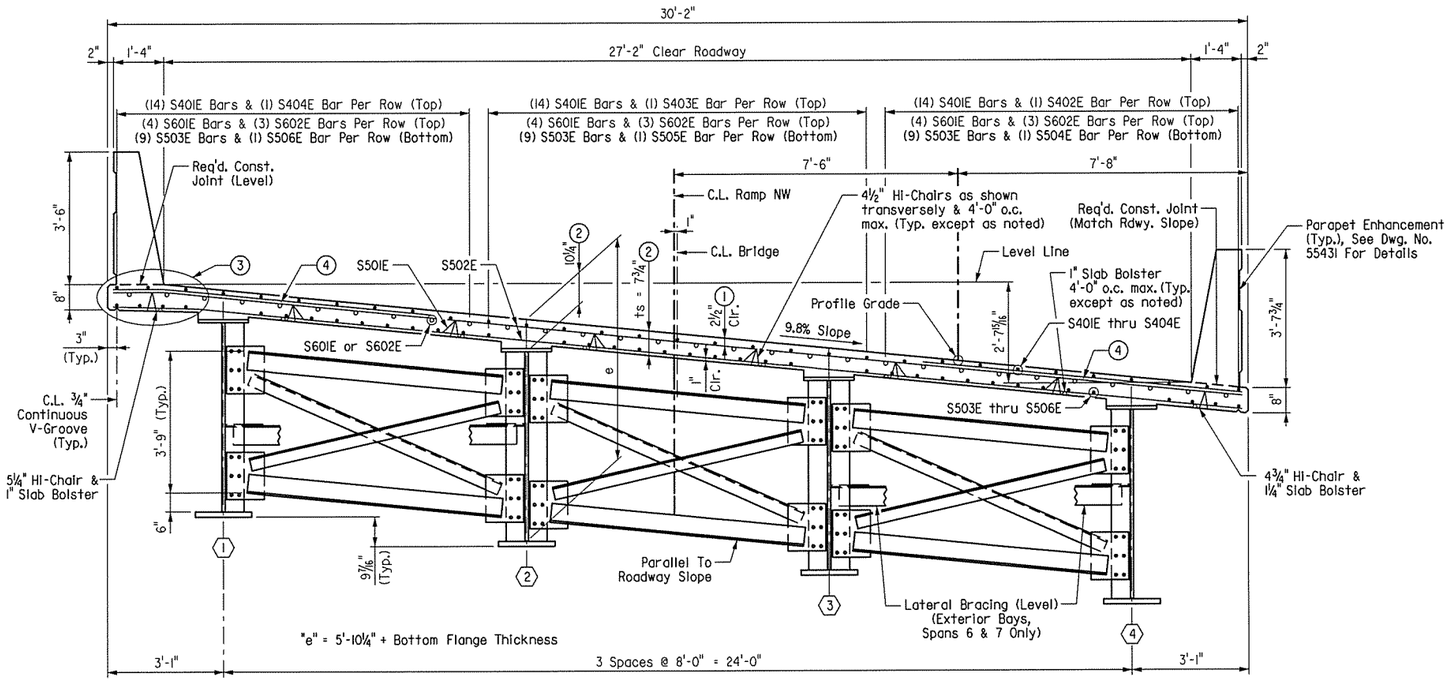
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907m16_sl7.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55423

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 571 | 897 |
| | | | | (1) 07314 | | 558 FT. UNIT | | 55424 |




## TYPICAL SECTION

(Looking Ahead)
Scale: ½" = 1'-0"

(1) TOLERANCE:
Minus: ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED" on Dwg. No. 55430.

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED" on Dwg. No. 55430.

(3) Field bend transverse bars in this area to provide minimum clearances.

SLAB REINFORCING:

Transverse:
S501E @ 12" Centers (Bent up over girders)
S502E @ 12" Centers (Top & Bottom)
(4) S603E (Place as shown)
See DETAIL A on Dwg. No. 55425
Longitudinal:
S401E thru S404E @ 12" Centers (Top)
S503E thru S506E Place as shown (Bottom)
S601E or S602E @ 12" Centers (Top over Int. Bents)

For additional reinforcing details, see Dwg. No. 55425-55427.

## 558'-0" UNIT BAR LIST

| Mark | Number Required | Length | Pin Dia. | Bending Diagrams (Dimensions are out to out of bars.) |
|---|---|---|---|---|
| S401E | 434 | 40'-0" | Str. | |
| S402E | 10 | 20'-9" | Str. | |
| S403E | 11 | 28'-3" | Str. | |
| S404E | 10 | 35'-5" | Str. | |
| | | | | |
| S501E | 556 | 30'-4" | 3" | |
| S502E | 1112 | 29'-10" | Str. | |
| S503E | 342 | 60'-0" | Str. | |
| S504E | 13 | 36'-3" | Str. | |
| S505E | 12 | 43'-6" | Str. | |
| S506E | 13 | 50'-8" | Str. | |
| S507E | 12 | 6'-6" | Str. | |
| | | | | |
| S601E | 120 | 59'-11" | Str. | |
| S602E | 90 | 47'-11" | Str. | |
| S603E | 1110 | 17'-1" | 5¼" | |
| | | | | |
| | | | | |
| P401E | 2248 | 6'-9" | 2" | |
| | | | | |
| P501E | 2248 | 5'-7" | 3¾" | |
| P502E | 112 | 11'-2" | Str. | |
| P503E | 22 | 10'-8" | Str. | |
| P504E | 188 | 10'-11" | Str. | |
| P505E | 24 | 53'-5" | Str. | |
| P506E | 24 | 57'-11" | Str. | |
| P507E | 134 | 10'-9" | Str. | |
| P508E | 22 | 10'-2" | Str. | |
| P509E | 166 | 10'-7" | Str. | |
| P510E | 24 | 51'-7" | Str. | |
| P511E | 24 | 56'-3" | Str. | |

4" p.d.
3'-3½"
3'-4"
12
2¼
1'-0"
P401E

6" p.d.
1'-11"
12
2¼
2'-0"
9"
1'-4"
P501E

6⅞"
8'-5"
S603E

29'-8"
4'-10" 4'-0" 4'-0" 4'-0" 4'-0" 4'-0" 4'-10"
** 4½"
2¼"
4" Min.
S501E
** ½" Overtolerance, No Undertolerance

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S501E. Payment will be based on the weight of bars S501E.

Class 2 Protective Surface Treatment shall be applied to the roadway surface.

All bars designated with an "E" suffix are to be epoxy coated.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SLAK 2014
BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 09-11 FILENAME: bca0907m16_s21.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55424

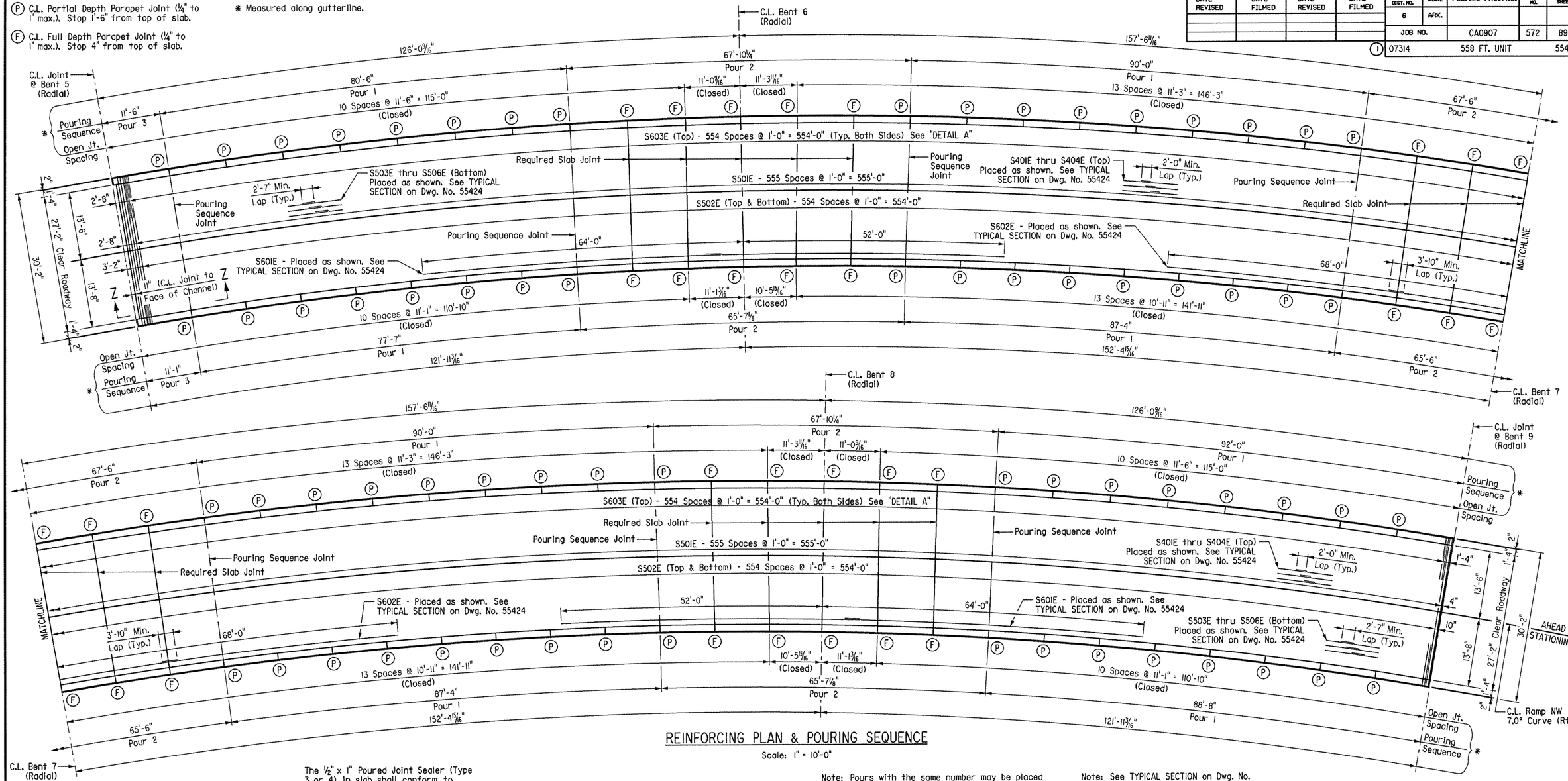
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 572 | 897 |
| (1) 07314 | | 558 FT. UNIT | | 55425 |

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

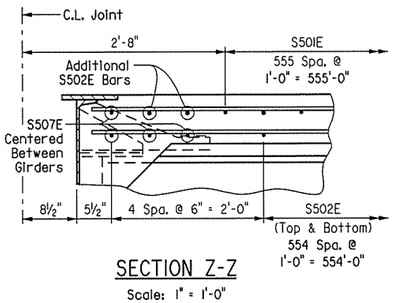
(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

* Measured along gutterline.




## REINFORCING PLAN & POURING SEQUENCE

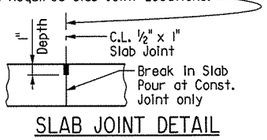
Scale: 1" = 10'-0"




## SECTION Z-Z

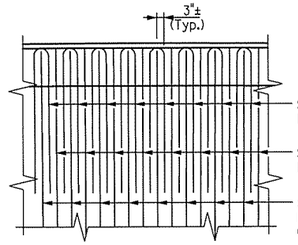
Scale: 1" = 1'-0"

The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to subsection 501.02(h) and 501.05(j). Backer Rod Filler will not be required. The poured joint sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.




## SLAB JOINT DETAIL

No Scale




## DETAIL A

Scale: ⅜" = 1'-0"

Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. 72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

Note: Required slab joints and pouring sequence joints shall align with parapet open joints at the gutterline.

Note: See TYPICAL SECTION on Dwg. No. 55424 for placement of longitudinal reinforcing.

Note: All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along C.L. Ramp, unless noted otherwise.

All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Ramp.

Note: For Bar List, see Dwg. No. 55424.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 2016

BRIDGE ENGINEER

# SHEET 2 OF 6
# DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 09-11 FILENAME: bca0907ml6_s22.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55425

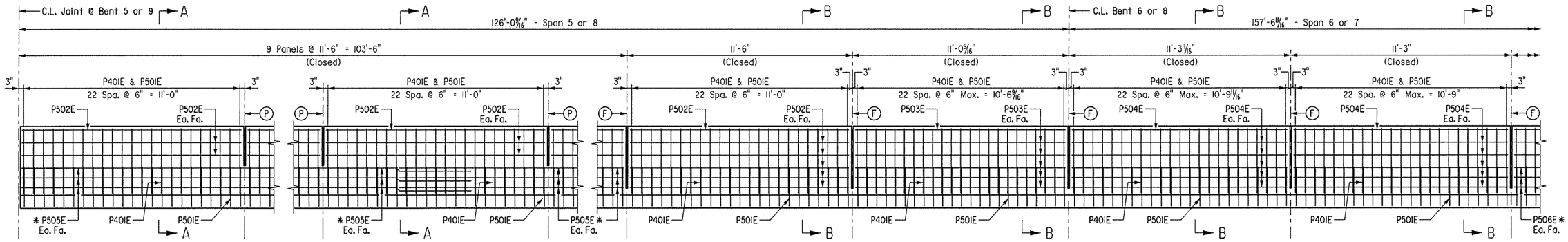
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

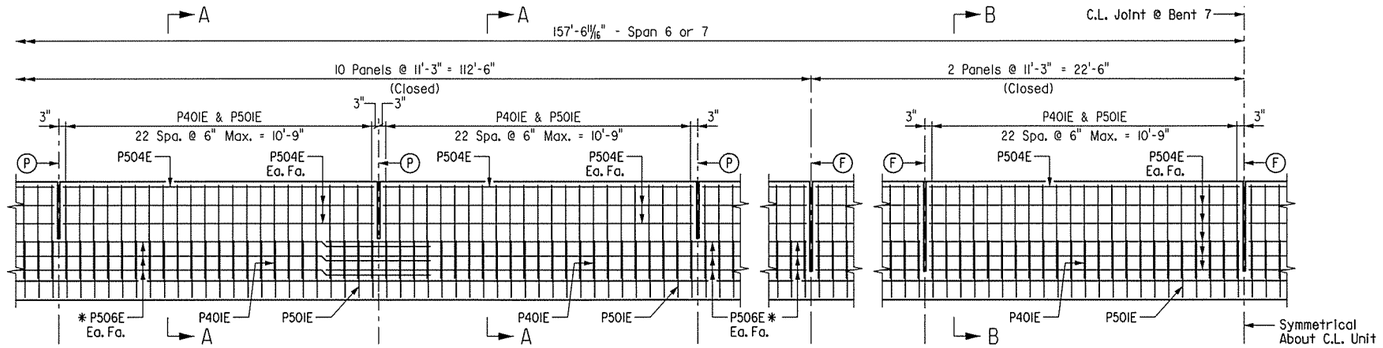
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 573 | 897 |
| (1) 07314 | | 558 FT. UNIT | | 55426 |

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

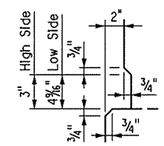
* Minimum splice length for P505E-P506E bars = 3'-7"



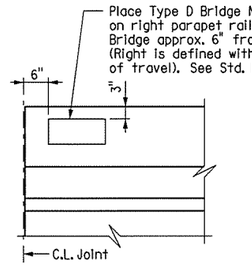

## DETAILS OF PARAPET RAIL - HIGH SIDE OF BRIDGE

Scale: ⅜" = 1'-0"



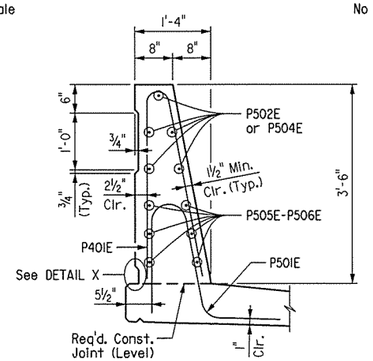

## DETAIL X

No Scale



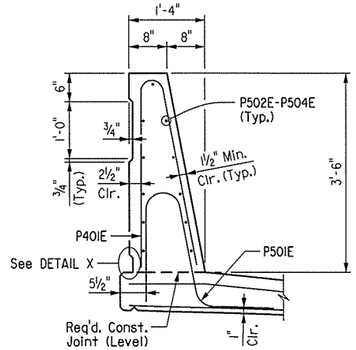

## NAME PLATE DETAIL

No Scale




## SECTION A-A

Scale: ¾" = 1'-0"




## SECTION B-B

Scale: ¾" = 1'-0"

Note: All dimensions shown are taken along gutterline of bridge.

Note: For Bar List, see Dwg. No. 55424.

Note: Parapet rail is to be constructed plumb.

Note: For DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL, see Dwg. No. 55431.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIKA 2014

BRIDGE ENGINEER

SHEET 3 OF 6

# DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11

CHECKED BY: PJS DATE: 01-14

DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907m16_s23.dgn

SCALE: AS SHOWN

BRIDGE NO. 07314

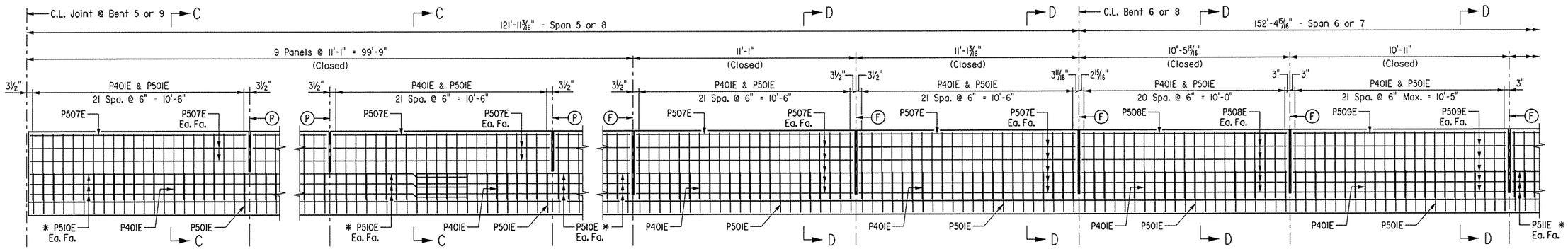
DRAWING NO. 55426

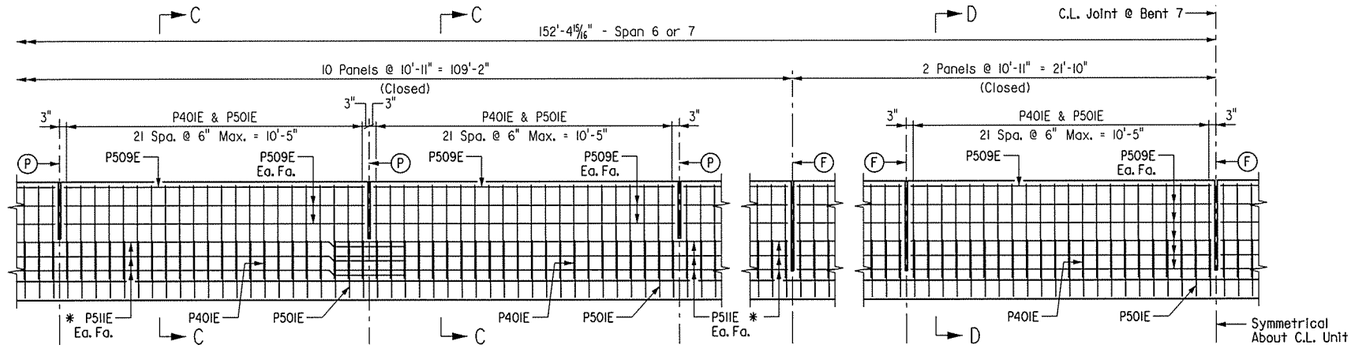
(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

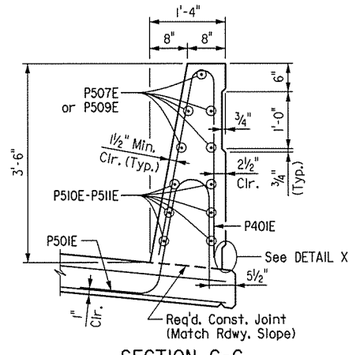
* Minimum splice length for P510E-P511E bars = 3'-7"

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 574 | 897 |
| | | | | (1) 07314 | | 558 FT. UNIT | | 55427 |



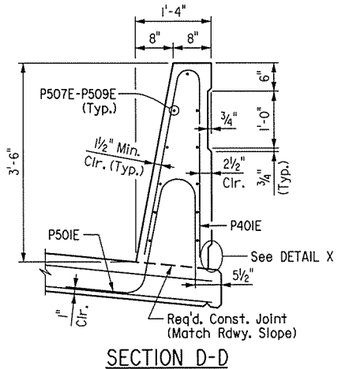




## DETAILS OF PARAPET RAIL - LOW SIDE OF BRIDGE




SECTION C-C

Scale: ¾" = 1'-0"




SECTION D-D

Scale: ¾" = 1'-0"

Note: All dimensions shown are taken along gutterline of bridge.

Note: For Bar List, see Dwg. No. 55424.

Note: For DETAIL X, see Dwg. No. 55426.

Note: For DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL, see Dwg. No. 55431.

Note: Parapet rail is to be constructed plumb.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIKK 2014

BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

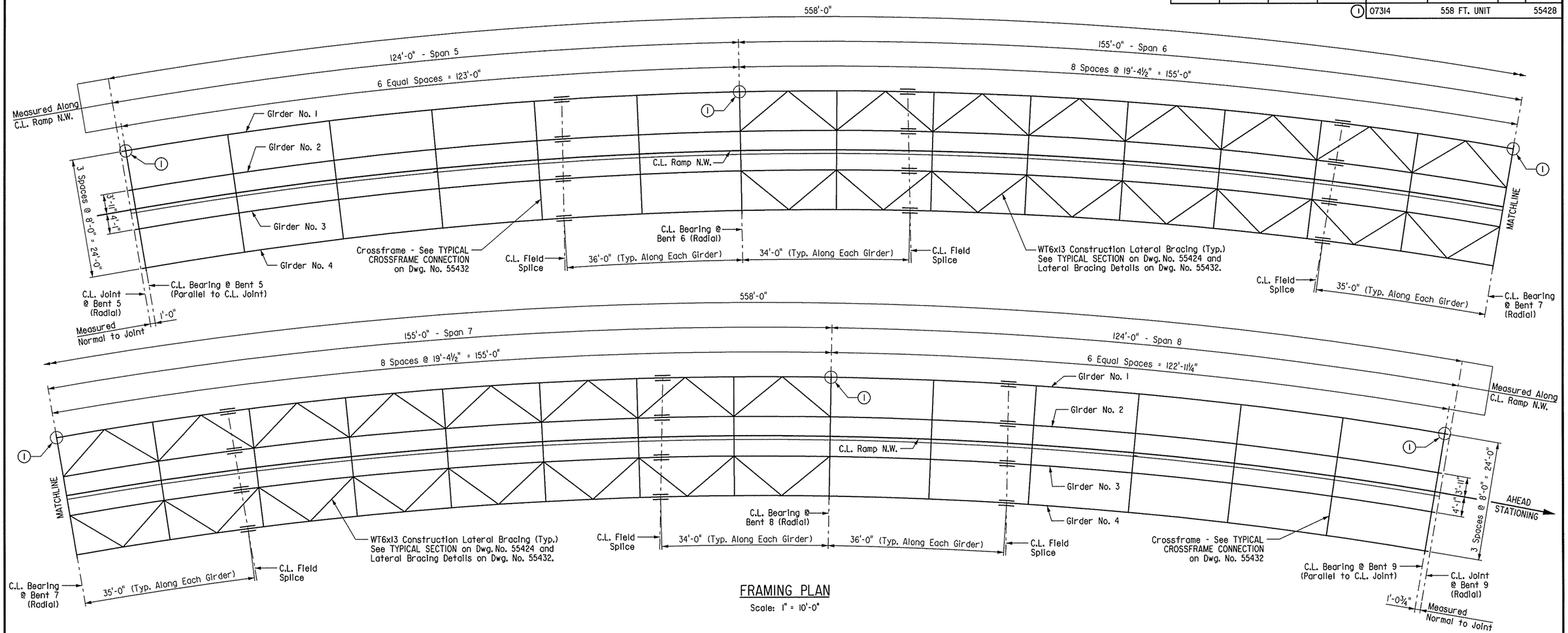
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11

FILENAME: bca0907ml6_s24.dgn
SCALE: AS SHOWN

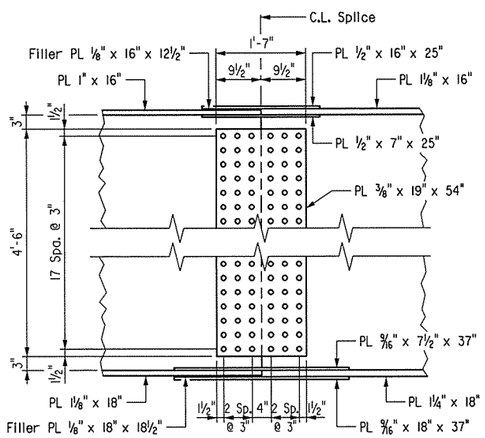
BRIDGE NO. 07314 DRAWING NO. 55427

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 575 | 897 |
| | | | | ① 07314 | | 558 FT. UNIT | | 55428 |



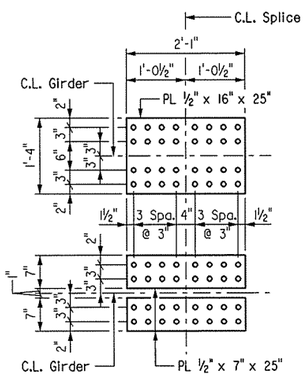

## FRAMING PLAN

Scale: 1" = 10'-0"

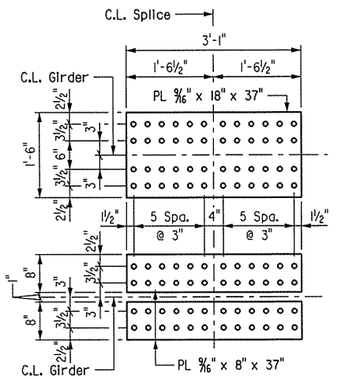



## WEB FIELD SPLICE

Scale: ¾" = 1'-0"




TOP FLANGE SPLICE




BOTTOM FLANGE SPLICE

## FLANGE FIELD SPLICE

Scale: ¾" = 1'-0"

NOTES:

All field splice bolts shall be ⅞" ø H.S. bolts. All field splice plates shall be AASHTO M 270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer.

All stiffeners shall be AASHTO M 270, Grade 50 steel.

Girders are curved and concentric to C.L. Ramp N.W. All crossframes are on radial lines, U.N.O.

For GIRDER ELEVATION, see Dwg. No. 55429.

For TYPICAL CROSSFRAME CONNECTION, see Dwg. No. 55432.

① PL ¾" x 8½" Bearing Stiffener (Typ.)

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 12307 — PETER J. SZAK — 20 16

BRIDGE ENGINEER

# SHEET 5 OF 6
# DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

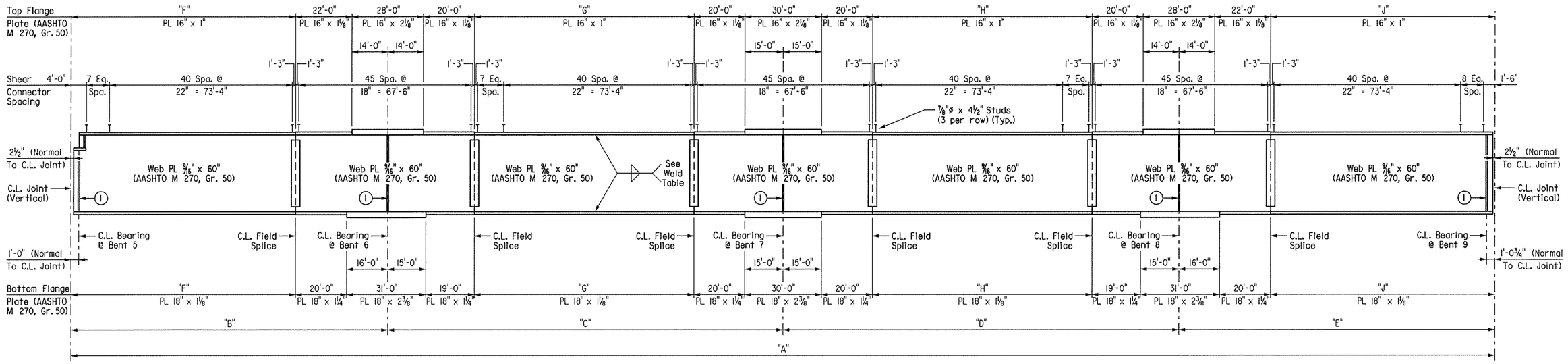
DRAWN BY: JAP DATE: 08-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11

FILENAME: bcd0907ml6_s25.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55428

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 576 | 897 |
| | | | | ① 07314 | | 558 FT. UNIT | | 55429 |

① PL ¾" x 8½" Bearing Stiffener (Typ.)




## TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Camber for Dead Load Deflection plus vertical curve +/- ¼" tolerance. Vertical curve corrections not included. Negative sign (-) indicates upward deflection. Deflections shown are along centerline girder from the plane perpendicular to the web extending from centerline bearing to centerline bearing.

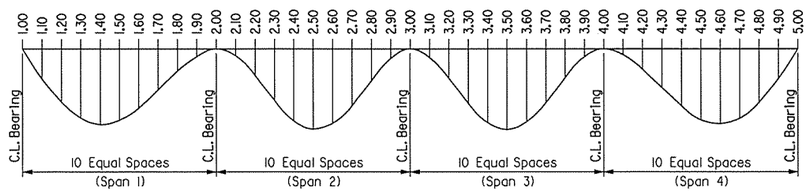
| | POINT OF DEFLECTION | Structural Steel | | | | Structural Steel (+) Slab | | | | Structural Steel (+) Slab (+) Para. Rail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Girder 1 | Girder 2 | Girder 3 | Girder 4 | Girder 1 | Girder 2 | Girder 3 | Girder 4 | Girder 1 | Girder 2 | Girder 3 | Girder 4 |
| SPAN NO. 1 | 1.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 1.10 | 0.186 | 0.165 | 0.146 | 0.126 | 0.687 | 0.614 | 0.545 | 0.468 | 0.798 | 0.711 | 0.631 | 0.543 |
| | 1.20 | 0.328 | 0.292 | 0.258 | 0.222 | 1.212 | 1.084 | 0.961 | 0.826 | 1.407 | 1.256 | 1.113 | 0.959 |
| | 1.30 | 0.427 | 0.380 | 0.336 | 0.289 | 1.574 | 1.409 | 1.248 | 1.073 | 1.828 | 1.633 | 1.446 | 1.246 |
| | 1.40 | 0.469 | 0.417 | 0.368 | 0.318 | 1.723 | 1.542 | 1.365 | 1.176 | 2.001 | 1.787 | 1.582 | 1.366 |
| | 1.50 | 0.445 | 0.396 | 0.350 | 0.302 | 1.625 | 1.457 | 1.291 | 1.112 | 1.888 | 1.690 | 1.497 | 1.293 |
| | 1.60 | 0.372 | 0.332 | 0.293 | 0.253 | 1.349 | 1.213 | 1.074 | 0.925 | 1.568 | 1.407 | 1.246 | 1.076 |
| | 1.70 | 0.260 | 0.233 | 0.205 | 0.177 | 0.931 | 0.840 | 0.743 | 0.639 | 1.083 | 0.975 | 0.862 | 0.744 |
| | 1.80 | 0.146 | 0.131 | 0.115 | 0.099 | 0.513 | 0.464 | 0.408 | 0.350 | 0.596 | 0.538 | 0.473 | 0.407 |
| | 1.90 | 0.053 | 0.047 | 0.041 | 0.035 | 0.178 | 0.161 | 0.139 | 0.118 | 0.206 | 0.186 | 0.161 | 0.137 |
| | 2.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| SPAN NO. 2 | 2.10 | 0.037 | 0.037 | 0.037 | 0.036 | 0.156 | 0.156 | 0.152 | 0.146 | 0.187 | 0.186 | 0.180 | 0.173 |
| | 2.20 | 0.151 | 0.145 | 0.137 | 0.129 | 0.596 | 0.571 | 0.537 | 0.499 | 0.705 | 0.673 | 0.632 | 0.587 |
| | 2.30 | 0.300 | 0.282 | 0.263 | 0.243 | 1.161 | 1.091 | 1.015 | 0.928 | 1.366 | 1.280 | 1.189 | 1.088 |
| | 2.40 | 0.423 | 0.393 | 0.364 | 0.333 | 1.623 | 1.509 | 1.394 | 1.265 | 1.904 | 1.765 | 1.629 | 1.479 |
| | 2.50 | 0.475 | 0.439 | 0.404 | 0.368 | 1.810 | 1.676 | 1.541 | 1.393 | 2.120 | 1.958 | 1.799 | 1.627 |
| | 2.60 | 0.440 | 0.406 | 0.374 | 0.340 | 1.671 | 1.546 | 1.421 | 1.283 | 1.957 | 1.806 | 1.658 | 1.498 |
| | 2.70 | 0.335 | 0.310 | 0.286 | 0.260 | 1.267 | 1.176 | 1.082 | 0.977 | 1.484 | 1.374 | 1.263 | 1.141 |
| | 2.80 | 0.190 | 0.178 | 0.164 | 0.150 | 0.716 | 0.672 | 0.618 | 0.561 | 0.839 | 0.786 | 0.722 | 0.656 |
| | 2.90 | 0.059 | 0.056 | 0.052 | 0.048 | 0.219 | 0.210 | 0.193 | 0.177 | 0.257 | 0.245 | 0.225 | 0.207 |
| | 3.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| SPAN NO. 3 | 3.10 | 0.052 | 0.049 | 0.045 | 0.041 | 0.196 | 0.186 | 0.171 | 0.156 | 0.233 | 0.220 | 0.202 | 0.185 |
| | 3.20 | 0.177 | 0.164 | 0.151 | 0.137 | 0.665 | 0.622 | 0.572 | 0.518 | 0.785 | 0.732 | 0.672 | 0.610 |
| | 3.30 | 0.325 | 0.301 | 0.276 | 0.250 | 1.225 | 1.139 | 1.047 | 0.945 | 1.442 | 1.337 | 1.228 | 1.109 |
| | 3.40 | 0.441 | 0.406 | 0.373 | 0.337 | 1.663 | 1.538 | 1.413 | 1.274 | 1.955 | 1.803 | 1.655 | 1.493 |
| | 3.50 | 0.480 | 0.442 | 0.406 | 0.368 | 1.814 | 1.677 | 1.542 | 1.392 | 2.133 | 1.966 | 1.806 | 1.631 |
| | 3.60 | 0.433 | 0.401 | 0.370 | 0.336 | 1.640 | 1.523 | 1.405 | 1.272 | 1.930 | 1.787 | 1.647 | 1.492 |
| | 3.70 | 0.319 | 0.298 | 0.277 | 0.254 | 1.211 | 1.135 | 1.053 | 0.961 | 1.429 | 1.335 | 1.237 | 1.129 |
| | 3.80 | 0.171 | 0.163 | 0.153 | 0.143 | 0.653 | 0.624 | 0.585 | 0.542 | 0.775 | 0.738 | 0.690 | 0.639 |
| | 3.90 | 0.045 | 0.045 | 0.043 | 0.042 | 0.175 | 0.175 | 0.168 | 0.162 | 0.211 | 0.210 | 0.201 | 0.193 |
| | 4.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| SPAN NO. 4 | 4.10 | 0.038 | 0.034 | 0.029 | 0.024 | 0.136 | 0.121 | 0.103 | 0.084 | 0.157 | 0.140 | 0.119 | 0.098 |
| | 4.20 | 0.129 | 0.116 | 0.102 | 0.087 | 0.467 | 0.423 | 0.371 | 0.317 | 0.544 | 0.492 | 0.431 | 0.370 |
| | 4.30 | 0.241 | 0.216 | 0.191 | 0.165 | 0.883 | 0.797 | 0.705 | 0.606 | 1.029 | 0.927 | 0.820 | 0.707 |
| | 4.40 | 0.349 | 0.312 | 0.276 | 0.239 | 1.288 | 1.160 | 1.028 | 0.886 | 1.501 | 1.349 | 1.196 | 1.033 |
| | 4.50 | 0.434 | 0.387 | 0.343 | 0.297 | 1.611 | 1.445 | 1.282 | 1.104 | 1.876 | 1.679 | 1.490 | 1.286 |
| | 4.60 | 0.456 | 0.406 | 0.359 | 0.311 | 1.696 | 1.519 | 1.346 | 1.160 | 1.974 | 1.764 | 1.563 | 1.350 |
| | 4.70 | 0.423 | 0.377 | 0.333 | 0.288 | 1.578 | 1.412 | 1.251 | 1.077 | 1.835 | 1.639 | 1.452 | 1.253 |
| | 4.80 | 0.326 | 0.290 | 0.257 | 0.222 | 1.218 | 1.090 | 0.966 | 0.831 | 1.416 | 1.265 | 1.121 | 0.966 |
| | 4.90 | 0.183 | 0.162 | 0.144 | 0.124 | 0.683 | 0.610 | 0.541 | 0.465 | 0.794 | 0.708 | 0.627 | 0.541 |
| | 5.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

## GIRDER ELEVATION

No Scale

## TABLE OF GIRDER VARIABLES

| Girder No. | "A" | "B" | "C" | "D" | "E" | "F" | "G" | "H" | "J" |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 566'-1½" | 125'-9 11/16" | 157'-3 1/16" | 157'-3 1/16" | 125'-9 11/16" | 89'-9 11/16" | 88'-3 1/16" | 88'-3 1/16" | 89'-9 11/16" |
| 2 | 560'-8 1/16" | 124'-7 1/8" | 155'-8 7/8" | 155'-8 7/8" | 124'-7 1/8" | 88'-7 1/8" | 86'-8 7/8" | 86'-8 7/8" | 88'-7 1/8" |
| 3 | 555'-2 5/8" | 123'-4 9/16" | 154'-2 3/4" | 154'-2 3/4" | 123'-4 9/16" | 87'-4 9/16" | 85'-2 3/4" | 85'-2 3/4" | 87'-4 9/16" |
| 4 | 549'-9 3/16" | 122'-2 1/16" | 152'-8 9/16" | 152'-8 9/16" | 122'-2 1/16" | 86'-2 1/16" | 83'-8 9/16" | 83'-8 9/16" | 86'-2 1/16" |




## DEAD LOAD DEFLECTION DIAGRAM

Not to Scale

NOTES:

All stiffeners shall be AASHTO M 270, Grade 50 steel.

Girders are curved and concectric to C.L. Ramp NW.

For FIELD SPLICE DETAILS, see Dwg. No. 55428.

For STIFFENER DETAILS, see Dwg. No. 55432.

For SHEAR CONNECTOR DETAIL, see Dwg. No. 55431.

For WELD DETAILS & TABLE, see Dwg. No. 55431.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 2307 PETER J. SZAK 2014

BRIDGE ENGINEER

# SHEET 6 OF 6
# DETAILS OF 558'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

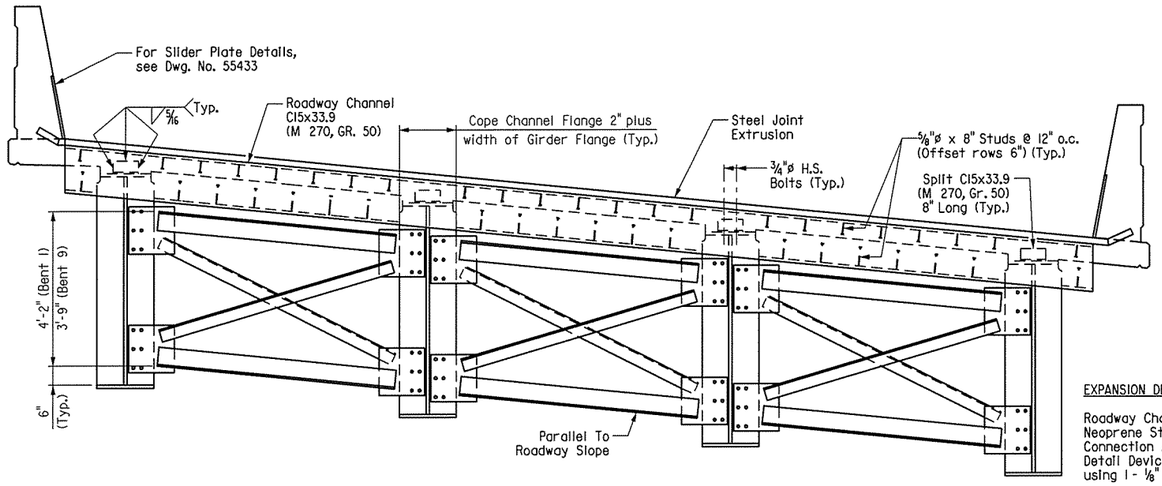
DRAWN BY: JAP DATE: 09-11 FILENAME: bca0907ml6_s26.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55429

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 577 | 897 |
| | | | | (1) 07314 | | 542 FT. UNIT | | 55430 |

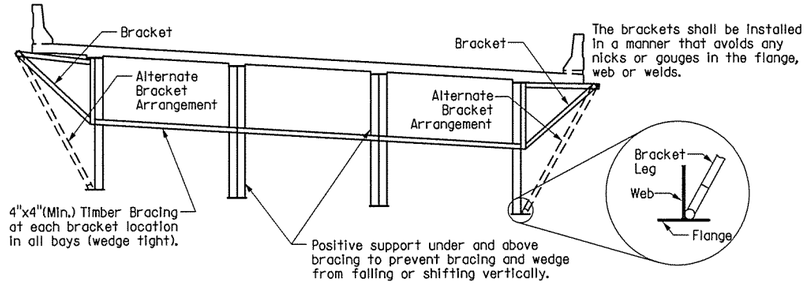



VIEW @ C.L. JOINT @ BENT 1 & 9

(Looking Ahead)
Scale: 1/2" = 1'-0"

EXPANSION DEVICE:

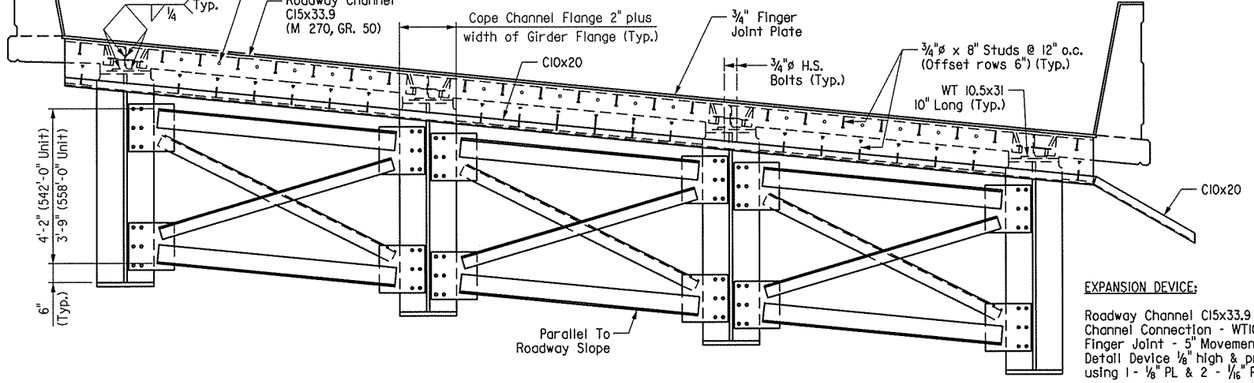
Roadway Channel C15x33.9 (M 270, Gr. 50)
Neoprene Strip Seal with Steel Jt. Extrusion
Connection L's Split C15x33.9 x 8" Long (M 270, Gr. 50)
Detail Device 1/8" high & provide 1/4" shims using 1 - 1/8" PL & 2 - 1/16" PL's




Note: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 3/16"x6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the cross frame connection detail shown on drawing No. 55432. No direct payment will be made or brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 50)."

SCREED RAIL SUPPORT

No Scale



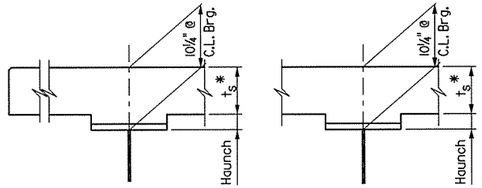

VIEW @ C.L. JOINT @ BENT 5

(Looking Ahead)
Scale: 1/2" = 1'-0"

EXPANSION DEVICE:

Roadway Channel C15x33.9 (M 270, Gr. 50)
Channel Connection - WT10.5x31 x 10" Long
Finger Joint - 5" Movement
Detail Device 1/8" high & provide 1/4" shims using 1 - 1/8" PL & 2 - 1/16" PL's

Note: For details of Finger Joint, see Dwg. No. 55434.




EXTERIOR GIRDER INTERIOR GIRDER

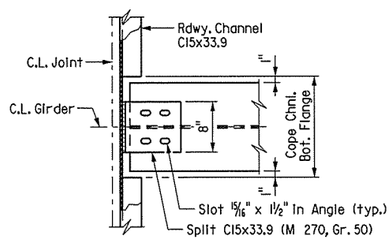
Note: $t_S$ = slab thickness as shown on "TYPICAL SECTION".
*Tolerance when removable deck forming is used is +1/2", -1/4".
Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

No Scale

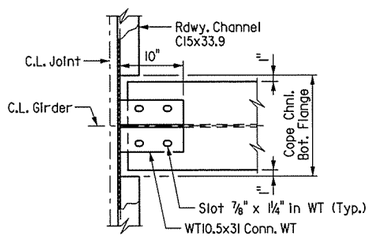
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance; Minimum - occurs when the top flange is 7/8" below the bottom reinforcing steel; Maximum - top flange thickness plus 1 7/8". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55050 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



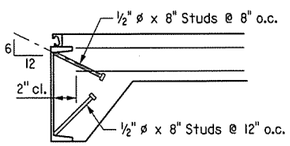

CHANNEL CONNECTION DETAIL @ BENT 1 & 9

No Scale




CHANNEL CONNECTION DETAIL @ BENT 5

No Scale




Note: As an alternate to 5/8" ø studs, 1/2" ø x 8" studs spaced as shown may be used. Use weight of 5/8" ø stud as basis of measurement of structural steel in anchors.

DETAIL OF ALTERNATE ANCHORS

(Bents 1 & 9 Shown)
No Scale

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 2014

BRIDGE ENGINEER

SHEET 1 OF 3
COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS
RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

| | | | |
|---|---|---|---|
| DRAWN BY: JAP | DATE: 08-11 | FILENAME: bca0907ml6_s31.dgn | |
| CHECKED BY: PJS | DATE: 01-14 | SCALE: AS SHOWN | |
| DESIGNED BY: LMS | DATE: 08-11 | | |

BRIDGE NO. 07314 DRAWING NO. 55430

# SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th edition (2007) with 2008 interims.

MATERIALS AND STRENGTHS:

| | | |
|---|---|---|
| Class S(AE) Concrete | fc | = 4,000 psi |
| Reinforcing Steel (AASHTO M 31 or M 322 Type A, Gr. 60) | Fy | = 60,000 psi |
| Structural Steel (AASHTO M 270, Gr. 50) | Fy | = 50,000 psi |
| Structural Steel (AASHTO M 270, Gr. 36) | Fy | = 36,000 psi |

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. Use of a longitudinal screed is prohibited.

A minimum of 72 hours shall elapse between completion of the deck and the pouring of the parapet railing. Any railing pours made before the entire deck has been placed and cured must be approved by the Engineer.

REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M 31 or M 322 Type A, Grade 60. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL (GRADE 60)".

STRUCTURAL STEEL: All structural steel shall be AASHTO M 270, Gr. 50 unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)". Structural steel completely encased in concrete may be AASHTO M 270, Gr. 36. All surfaces shall be cleaned in accordance with Section 807.84(b) and painted as specified in Subsection 807.75, unless noted otherwise. Galvanized steel shall not be painted. For cleaning and painting of expansion joint devices and slider plates, see Dwg. Nos. 55433 and 55434. For cleaning requirements of external load plates of elastomeric bearings, see Dwg. No. 55435. The color of paint shall be DARK BROWN and shall match Fed. Std. 595B, Color Chip No. 20108.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Girder web, flange, splice plates, cross frames, and cross frame connection plates are considered main load carrying members and shall meet the Longitudinal Charpy V-notch Test specified in subsection 807.05. This work and material will not be paid for directly but are considered subsidiary to item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)".

All Girders shall be blocked in their true position in the shop, in groups of a minimum of three (3) sections as specified in subsection 807.54(b)(2). Girders shall be blocked with webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the girders in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of subsection 802.13 will not require approval prior to construction. All welding shall conform to subsection 807.26.

Anchor bolts shall be galvanized according to section 807.07 and shall be Grade 55.

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for welds for these splices will be made.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the governing specifications in subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the Contractor's expense.

Field connection shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Hole for ¾"ø high-strength bolts may be 15/16"ø if a washer is supplied for use under both the nut and head of the bolt.

Cross-frames and lateral bracing shall be installed as girders are erected. All bolts in cross-frames, field splices, and lateral bracing shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck.

Elastomeric bearings shall be firmly seated in accordance with subsection 808.08 of the specifications. This work is considered subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

ERECTION OF STRUCTURAL STEEL: The erection of the structural steel shall be performed according to a plan permitting the steel to be erected plumb with bolts tightened while the steel is as close as possible to the no-load condition, so that the bolt holes can be aligned. This requirement may necessitate the use of large capacity cranes, temporary shoring or jacking frames.

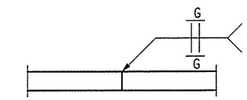
The Contractor shall submit to the Engineer for informational and record purposes, details of falsework construction in accordance with Section 807.64.

The Contractor shall ensure that girders are stable throughout the erection process. The Contractor will be responsible for providing temporary bracing or stiffening devices to accommodate handling stresses in individual members or segments of the structure during erection.

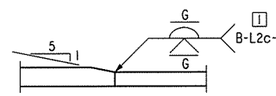
LOAD DISTRIBUTION TO GIRDERS:

| | Girders 1 & 4 | Girders 2 - 3 |
|---|---|---|
| Dead Loads: To Girder | 708 PLF + (wt./ft. of Girder) + Diaphragms | 797 PLF + (wt./ft. of Girder) + Diaphragms |
| Dead Loads: To Composite Girder | 426 PLF, Includes 170 PLF Future Wearing Surface | 426 PLF, Includes 170 PLF Future Wearing Surface |

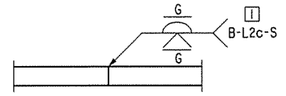
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 578 | 897 |
| | | | | 07314 | | SUPERSTRUCTURE | | 55431 |



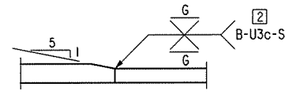

Equal Thickness
WEB SPLICE



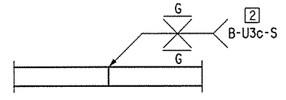

Unequal Thickness
FLANGE SPLICE




Equal Thickness
FLANGE SPLICE




Unequal Thickness
FLANGE SPLICE



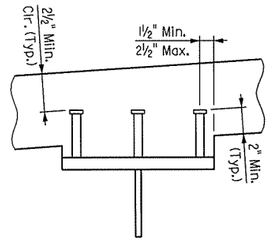

Equal Thickness
FLANGE SPLICE

## DETAILS OF WELDED SPLICES

Not to Scale

1 Use for material no more than 2" thick.

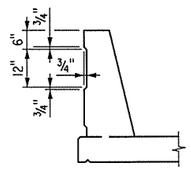
2 Use for material more than 2" thick-Unlimited.




Stud Shear Connectors shown shall be ⅞"ø x 4½" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 - ¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurment of structural steel in shear connectors. Maximum stud spacing = 24".

## SHEAR CONNECTOR DETAIL

No Scale



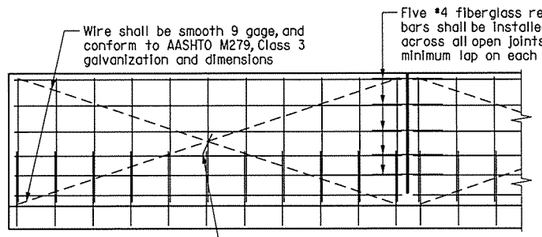

## SECTION E-E

Scale: ½" = 1'-0"

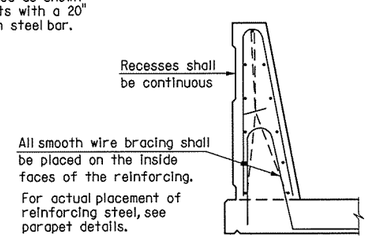
## TABLE FOR WELD

| Material Thickness of Thicker Part Joined ( Inches ) | Minimum Size of Fillet Weld ( Inches ) | Single Pass Weld Must Be Used |
|---|---|---|
| To ¾" Inclusive | ¼" | |
| Over ¾" | 5/16" | |

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



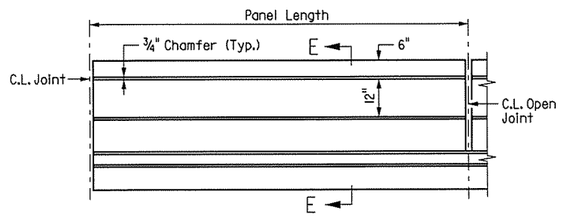

All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.




The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Top and traffic face surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

## DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale




## PARAPET ENHANCEMENT DETAILS

Scale: ½" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK

BRIDGE ENGINEER

SHEET 2 OF 3
COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS
RAMP NW BRIDGE

ROUTE 412 SEC. 2

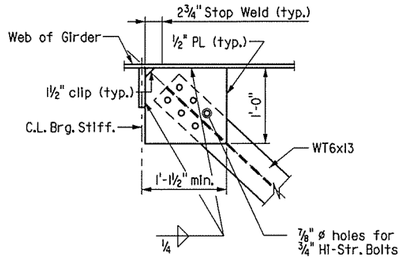
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11 FILENAME: bca0907mi6_s32.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 08-11

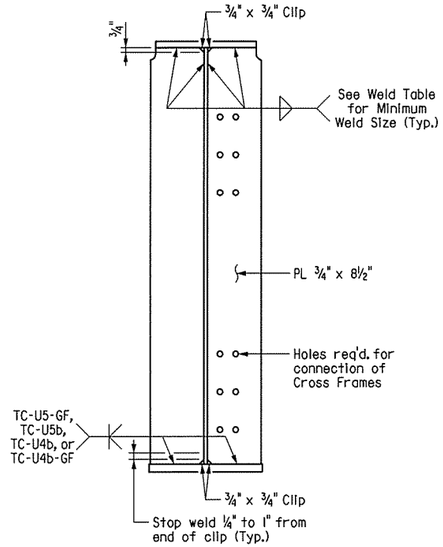
BRIDGE NO. 07314 DRAWING NO. 55431

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 579 | 897 |
| | | | | (1) 07314 | | SUPERSTRUCTURE | | 55432 |



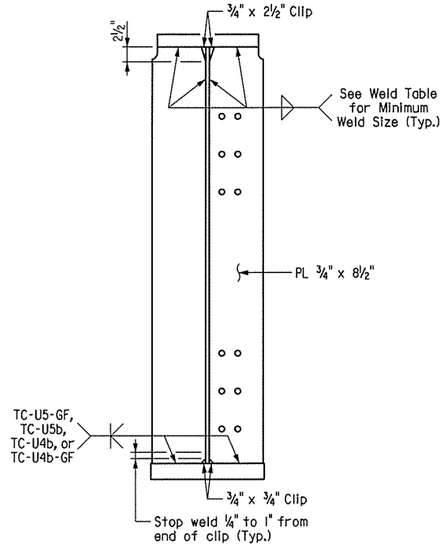

TYP. LATERAL BRACE CONN. AT BEARING

1"= 1'-0"



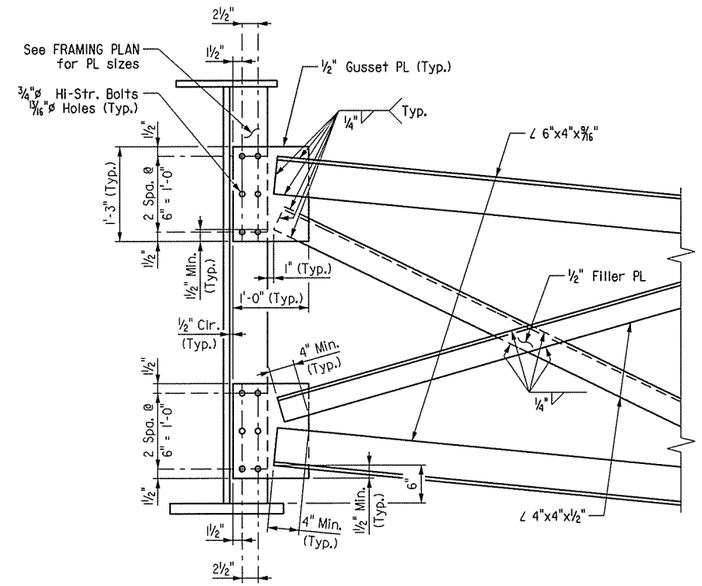

BENTS 1, 5, & 9
BEARING STIFFENER DETAIL

Scale: 1" = 1'-0"



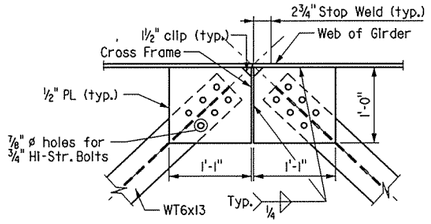

BENTS 2-4 & 6-8
BEARING STIFFENER DETAIL

Scale: 1" = 1'-0"



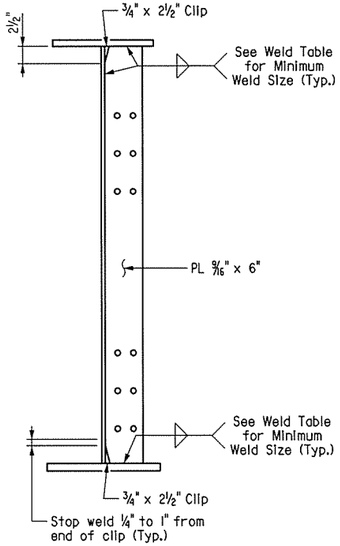

TYPICAL CROSSFRAME CONNECTION

Scale: 1" = 1'-0"



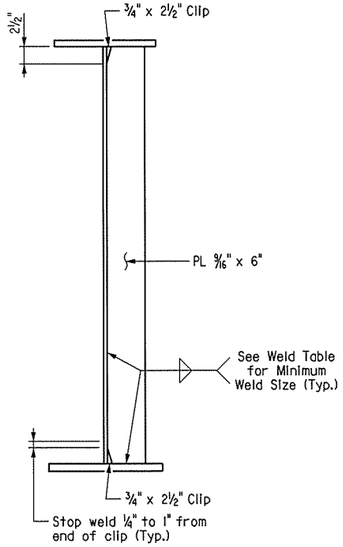

TYP. LATERAL BRACE CONNECTION
AT CROSS-FRAME

1"= 1'-0"



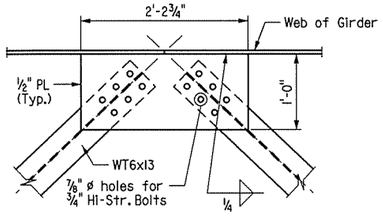

CROSS FRAME
CONNECTION DETAIL

Scale: 1" = 1'-0"



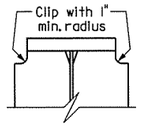

INTERMEDIATE
STIFFENER DETAIL

Scale: 1" = 1'-0"




TYP. LATERAL BRACE CONNECTION
AT GIRDER NOS. 1 & 4

1"= 1'-0"




Note: If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

PLATE CLIP DETAIL

Not to Scale

TABLE FOR WELD

| Material Thickness of Thicker Part Joined ( Inches ) | Minimum Size of Fillet Weld ( Inches ) | Single Pass Weld Must Be Used |
|---|---|---|
| To ¾" Inclusive | ¼" | |
| Over ¾" | 5/16" | |

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
BRIDGE ENGINEER

SHEET 3 OF 3
COMMON DETAILS OF CONTINUOUS COMPOSITE PLATE GIRDER UNITS
RAMP NW BRIDGE

ROUTE 412 SEC. 2

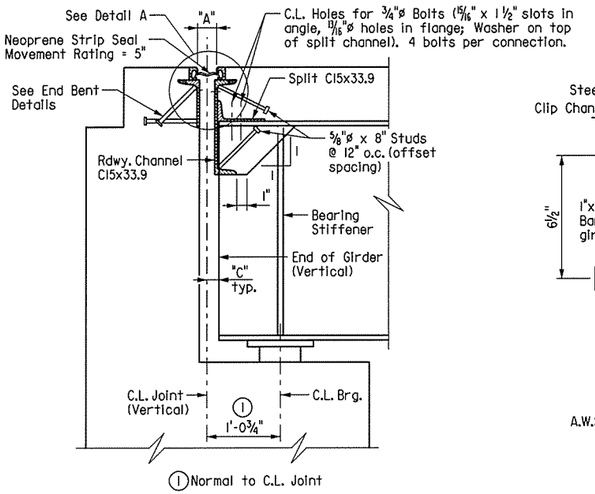
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907ml6_s33.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55432

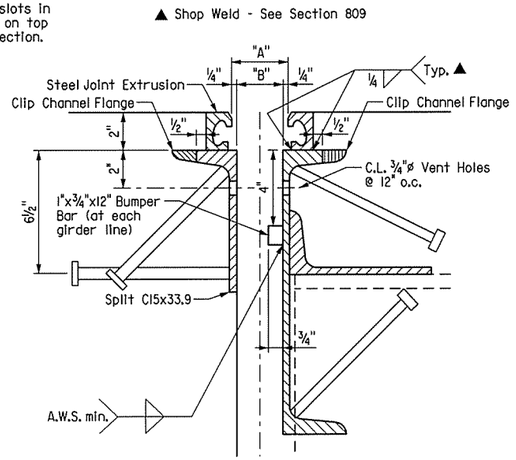
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 580 | 897 |
| | | | | (1) 07314 | | JOINTS | | 55433 |




## SECTION THRU JOINT AT END BENTS

1" = 1'-0"

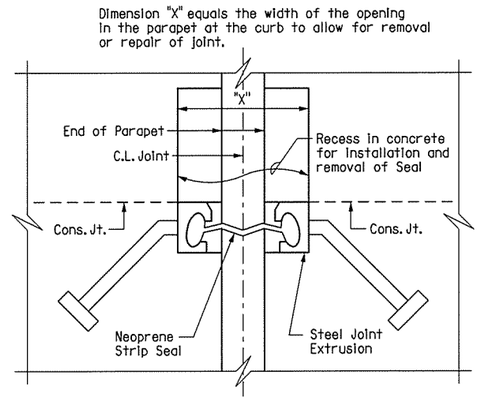
Note: Sections thru joints are taken normal to C.L. Joints



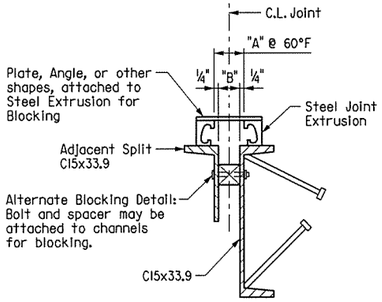

## DETAIL A

3" = 1'-0"

Note: Concrete shall be hand packed under the joint armor in the backwall and in the span.




## SECTION D-D




## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note: Each Expansion Joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60° F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

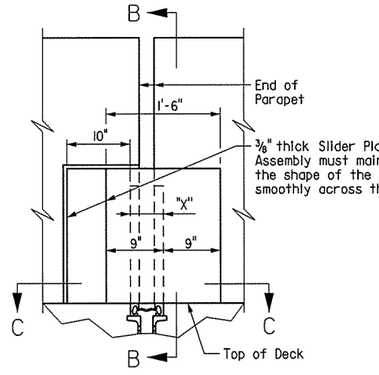
GENERAL NOTES

EXPANSION NEOPRENE STRIP SEAL: The expansion device shall provide a movement of 5" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

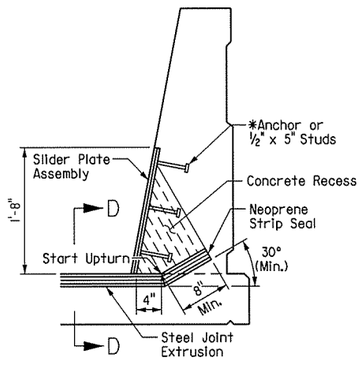
All structural steel in the expansion device shall be AASHTO M 270, Grade 50 steel and, except for the steel extrusion and slider plate anchor system, shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Grade 50). The steel extrusion, neoprene strip seal, and slider plate anchor system shall be paid for in accordance with Subsection 809.

Cleaning and painting of all exposed surfaces shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Grade 50). Structural steel completely embedded in concrete need not be painted.




## DETAIL OF NEOPRENE SEAL AT GUTTERLINE

Scale: 1" = 1'-0"




## SECTION B-B

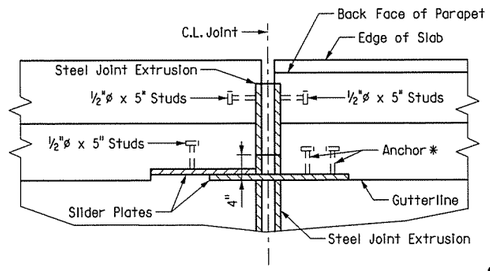
Scale: 1" = 1'-0"

## STRIP SEAL JOINT DATA

| Bent No.(s) | Movement Rating (Inch) | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "C" Perpendicular to Joint at 24 Hour Average Temperature of 60° F |
|---|---|---|---|---|---|---|---|---|
| | | 40° F | 60° F | 80° F | 40° F | 60° F | 80° F | |
| 1 | 5" | 3⅜" | 3" | 2⅝" | 2⅞" | 2½" | 2⅛" | 2½"± |
| 9 | 5" | 3 1/16" | 3" | 2 9/16" | 2 15/16" | 2½" | 2 1/16" | 2½"± |

**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary.




## SECTION C-C AT END BENTS

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Method of installation and fabrication shall be determined by the manufacturer.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 2307
PETER J. SZAK
1-14
BRIDGE ENGINEER

# DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL RAMP NW BRIDGE

ROUTE 412 SEC. 2

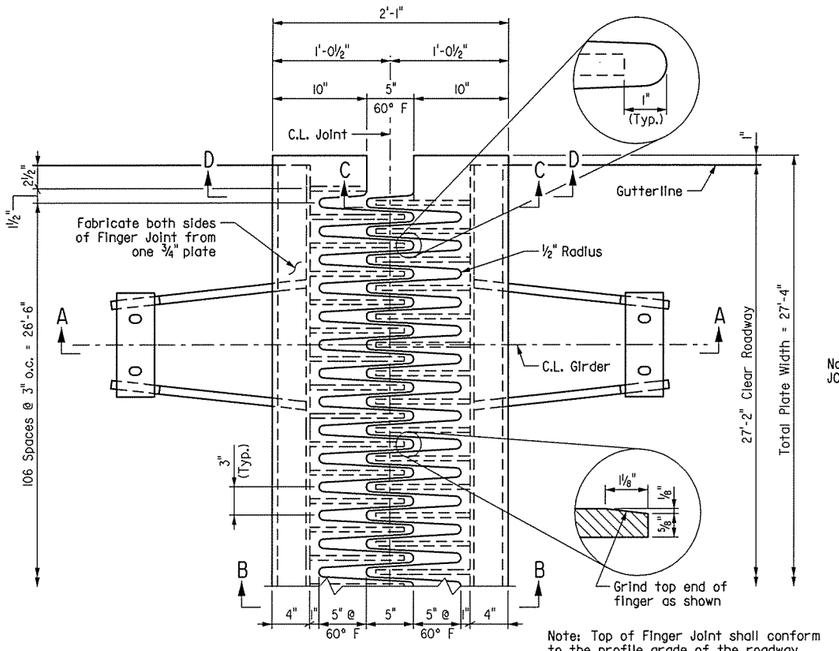
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11
CHECKED BY: PJS DATE: 01-14
DESIGNED BY: LMS DATE: 08-11
FILENAME: bca0907m16_11.dgn
SCALE: AS SHOWN

BRIDGE NO. 07314 DRAWING NO. 55433

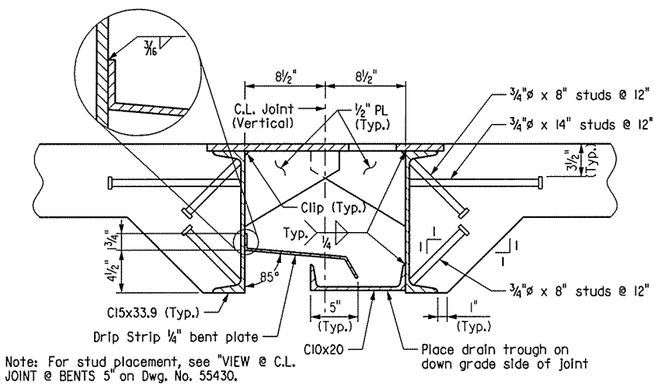
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 581 | 897 |
| | | | | ① 07314 | | JOINTS | | 55434 |




Note: Top of Finger Joint shall conform to the profile grade of the roadway surfaces. Dimensions shown are at 60° F.

## EXPANSION PLATE DETAIL

Scale: 1½" = 1'-0"

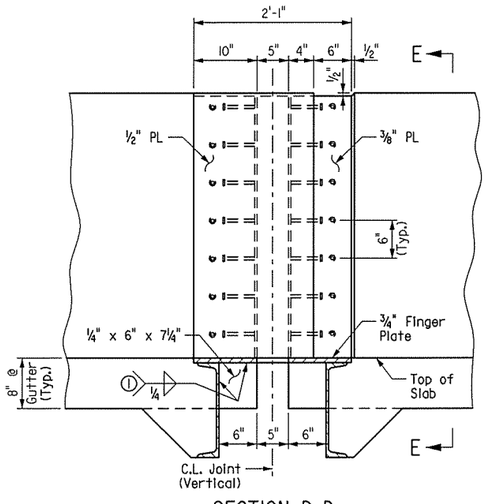



Note: For stud placement, see "VIEW @ C.L. JOINT @ BENTS 5" on Dwg. No. 55430.

Note: The ¾"ø studs shown shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the channel in accordance with recommendations of the manufacturer.

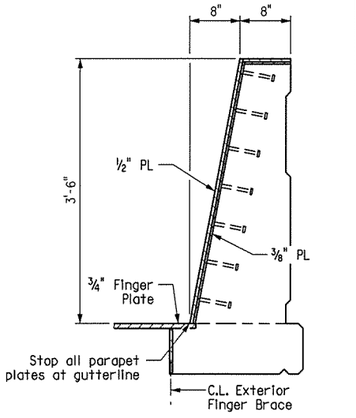
## SECTION B-B

Scale: 1½" = 1'-0"



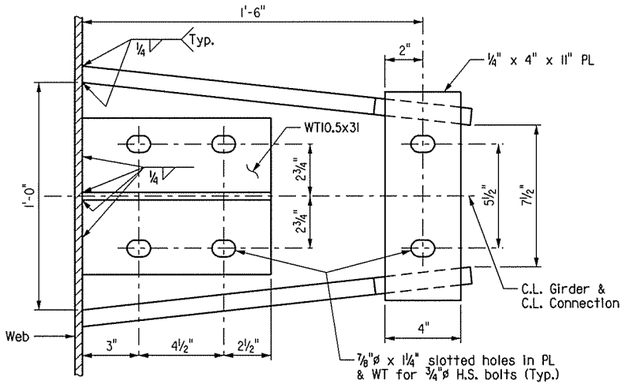

## SECTION D-D

Scale: 1" = 1'-0"




## SECTION E-E

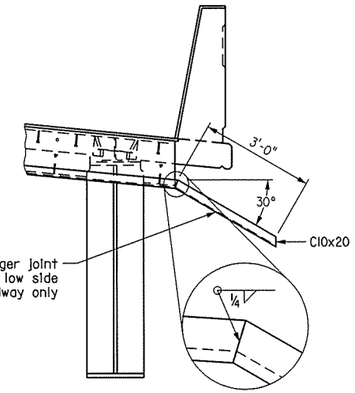
Scale: 1" = 1'-0"




Note: Detail device ⅛" high and provide ¼" shims for Tee using 1-⅛" PL and 2-1/16" PL's.

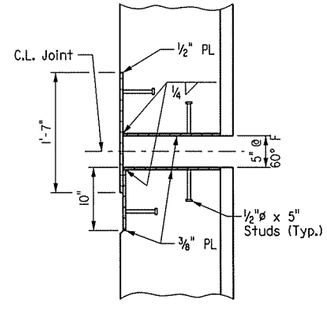
## PLAN OF CONNECTION TO GIRDER

Scale: 3" = 1'-0"



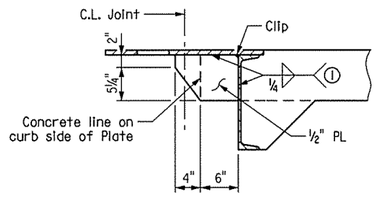

## DRAIN DETAIL

Scale: ½" = 1'-0"




## SECTION F-F

Scale: 1" = 1'-0"



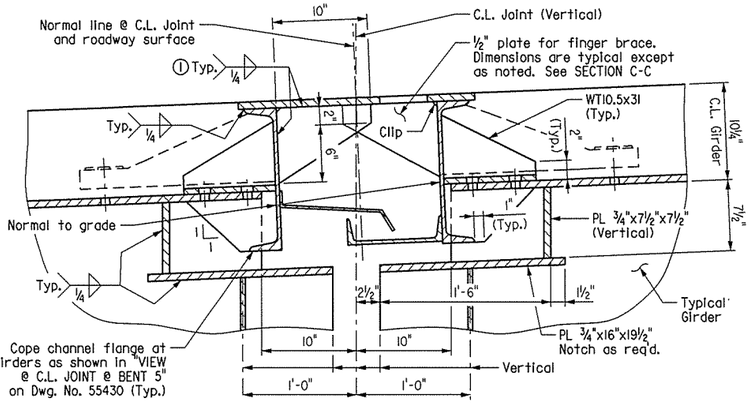

## SECTION C-C

Scale: 1" = 1'-0"

| Joint Width at 24 hour average temperature of: | | |
|---|---|---|
| 40° F | 60° F | 80° F |
| 5 15/16" | 5" | 4 1/16" |

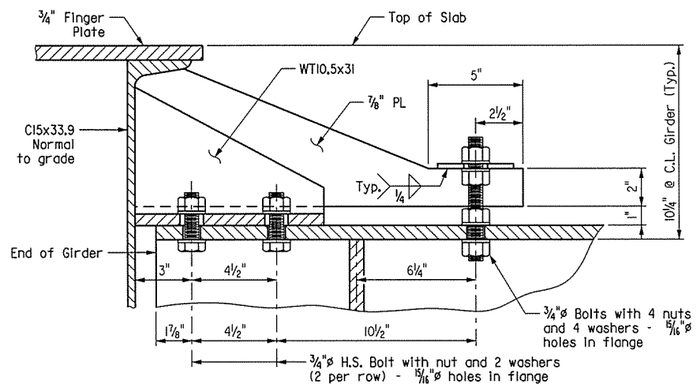
Note: Before joint closure pours are done, joint shall be set and adjusted for grade. Set joint width by interpolating from table.

① Stop weld ¼" to 1" from clip.




## SECTION A-A AT GIRDER

Scale: 1½" = 1'-0"




## SECTION G-G AT GIRDER

Scale: 3" = 1'-0"

GENERAL NOTES

All structural Steel in Finger Joints shall be AASHTO M 270, Grade 50 steel and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M 270, Grade 50)".

Cleaning and painting of all exposed surfaces shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M 270, Grade 50)". Structural steel completely embedded in concrete need not be painted.

STATE OF ARKANSAS
PETER J. SZAK
REGISTERED PROFESSIONAL ENGINEER
No. 12307
BRIDGE ENGINEER
1-14

# DETAILS OF FINGER JOINT RAMP NW BRIDGE

ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11 FILENAME: bca0907mi6_12.dgn
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 08-11

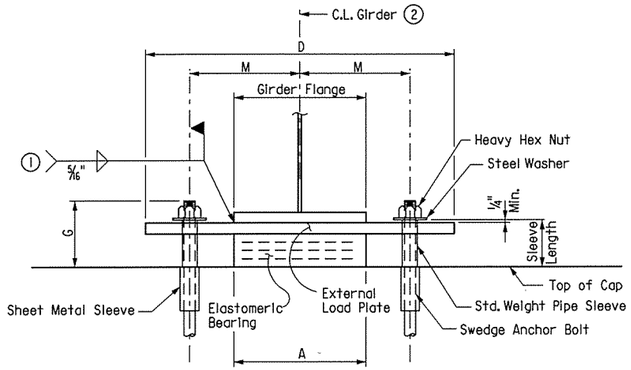
BRIDGE NO. 07314 DRAWING NO. 55434

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 582 | 897 |
| | | | | (1) 07314 | | ELASTO. BEARINGS | | 55435 |

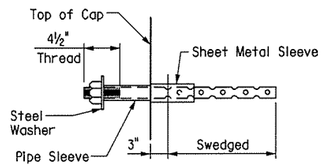
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L. Bearing shall align with C.L. Girder

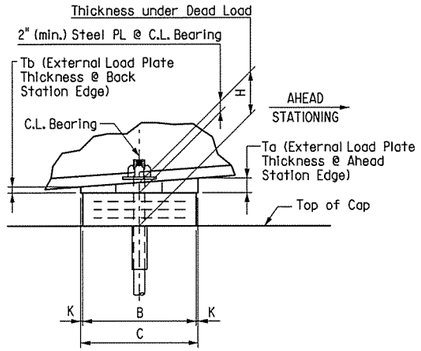
Note: The direction of bevel of the external load plate may not be accurately depicted with respect to the Ta and Tb values shown in the Table of Fabricator Variables.



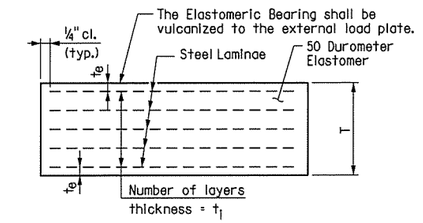

FRONT VIEW @ BENT NOS. 1, 5, & 9




ANCHOR BOLT DETAIL




SIDE VIEW @ BENT NOS. 1, 5, & 9

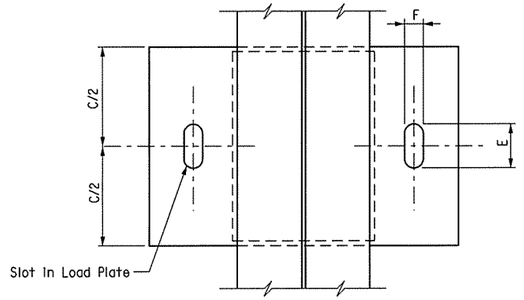



$t_e$ = thickness of elastomer cover on top and bottom of pad

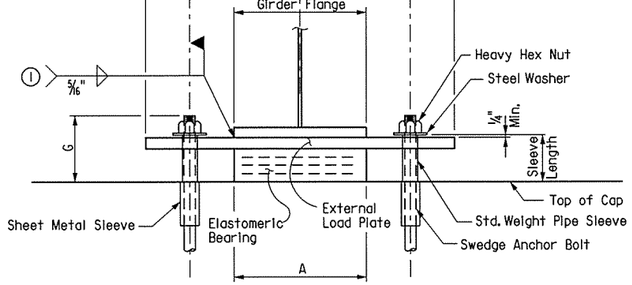
$t_i$ = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness $t_i$

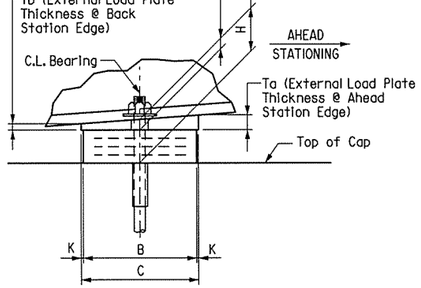
ELASTOMERIC BEARING



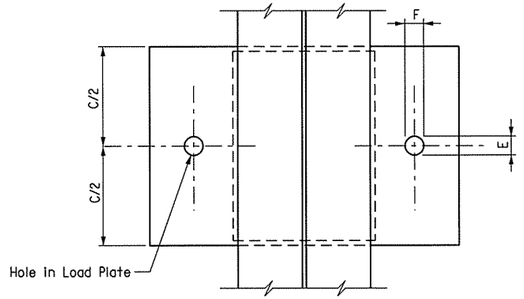

PLAN VIEW @ BENT NOS. 1, 5, & 9




FRONT VIEW @ BENT NOS. 2-4 & 6-8




SIDE VIEW @ BENT NOS. 2-4 & 6-8




PLAN VIEW @ BENT NOS. 2-4 & 6-8

## TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service Limit I State

| LOCATION | | | BEARING TYPE | NO. of BEARINGS EACH BENT | *MAXIMUM DESIGN LOAD (KIPS) | ELASTOMERIC PAD | | | | | | | EXTERNAL LOAD PLATE | | | | | | | | ANCHOR BOLT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BENT NO(S). | SPAN NO. | BEAM OR GIRDER NO. | | | | G | H | A | B | N | $t_i$ | $t_e$ | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | $T_a$ | $T_b$ | ANCHOR BOLT (ø x L) | ANCHOR BOLT GRADE | PIPE SLEEVE SIZE (ø x L) | SHEET METAL SLEEVE SIZE (ø x L) | STEEL WASHER SIZE (O.D.) |
| 1 | 1 | All | Exp. | 4 | 127 | 8 3/16" | 5 5/8" | 18" | 11 1/2" | 5 | 1/2" | 1/4" | 6 @ 12 Ga. | 3 5/8" | 12 1/2" | 28 1/2" | 5 5/8" | 2 1/4" | 1/2" | 11 1/2" | 2.31" | 1.69" | 1 1/2" x 27" | 55 | 1 1/2" x 6" | 3" x 13" | 3" |
| 2 | 1 & 2 | All | Fixed | 4 | 409 | 11 1/4" | 7 3/8" | 20 1/2" | 17 1/2" | 8 | 1/2" | 1/4" | 9 @ 12 Ga. | 5 7/16" | 18 1/2" | 33 1/2" | 3 3/4" | 3 3/4" | 1/2" | 13 1/4" | 2.46" | 1.54" | 2 1/2" x 39 1/2" | 55 | 3" x 7 3/4" | 4" x 13" | 4 1/2" |
| 3 | 2 & 3 | All | Fixed | 4 | 388 | 11 1/4" | 7 3/8" | 19 1/2" | 17 1/2" | 8 | 1/2" | 1/4" | 9 @ 12 Ga. | 5 7/16" | 18 1/2" | 32 1/2" | 3 3/4" | 3 3/4" | 1/2" | 12 3/4" | 2.46" | 1.54" | 2 1/2" x 39 1/2" | 55 | 3" x 7 3/4" | 4" x 13" | 4 1/2" |
| 4 | 3 & 4 | All | Fixed | 4 | 361 | 11 1/4" | 7 3/8" | 19 1/2" | 17 1/2" | 8 | 1/2" | 1/4" | 9 @ 12 Ga. | 5 7/16" | 18 1/2" | 32 1/2" | 3 3/4" | 3 3/4" | 1/2" | 12 3/4" | 2.46" | 1.54" | 2 1/2" x 39 1/2" | 55 | 3" x 7 3/4" | 4" x 13" | 4 1/2" |
| 5 | 4 | All | Exp. | 4 | 160 | 9 7/8" | 6 11/16" | 18" | 14" | 7 | 1/2" | 1/4" | 8 @ 12 Ga. | 4 7/8" | 15" | 29 1/2" | 6 5/16" | 2 5/8" | 1/2" | 11 3/4" | 2.30" | 1.70" | 1 3/4" x 31 1/2" | 55 | 2" x 7 1/8" | 4" x 13" | 3 3/8" |
| 5 | 5 | All | Exp. | 4 | 147 | 9" | 6 1/4" | 18" | 13" | 6 | 1/2" | 1/4" | 7 @ 12 Ga. | 4 1/4" | 14" | 28 1/2" | 5 5/16" | 2 1/4" | 1/2" | 11 1/2" | 2.28" | 1.72" | 1 1/2" x 27 1/2" | 55 | 1 1/2" x 6 1/2" | 3" x 13" | 3" |
| 6 | 5 & 6 | All | Fixed | 4 | 391 | 11 1/4" | 7 3/8" | 20" | 17 1/2" | 8 | 1/2" | 1/4" | 9 @ 12 Ga. | 5 7/16" | 18 1/2" | 33" | 3 3/4" | 3 3/4" | 1/2" | 13" | 2.25" | 1.75" | 2 1/2" x 39 1/2" | 55 | 3" x 7 3/4" | 4" x 13" | 4 1/2" |
| 7 | 6 & 7 | All | Fixed | 4 | 385 | 11 1/4" | 7 3/8" | 20" | 17 1/2" | 8 | 1/2" | 1/4" | 9 @ 12 Ga. | 5 7/16" | 18 1/2" | 33" | 3 3/4" | 3 3/4" | 1/2" | 13" | 2.09" | 1.91" | 2 1/2" x 39 1/2" | 55 | 3" x 7 3/4" | 4" x 13" | 4 1/2" |
| 8 | 7 & 8 | All | Fixed | 4 | 391 | 11 1/4" | 7 3/8" | 20" | 17 1/2" | 8 | 1/2" | 1/4" | 9 @ 12 Ga. | 5 7/16" | 18 1/2" | 33" | 3 3/4" | 3 3/4" | 1/2" | 13" | 1.93" | 2.07" | 2 1/2" x 39 1/2" | 55 | 3" x 7 3/4" | 4" x 13" | 4 1/2" |
| 9 | 8 | All | Exp. | 4 | 147 | 9" | 6 1/4" | 18" | 13" | 6 | 1/2" | 1/4" | 7 @ 12 Ga. | 4 1/4" | 14" | 28 1/2" | 6 1/8" | 2 1/4" | 1/2" | 11 1/2" | 1.85" | 2.15" | 1 1/2" x 27 1/2" | 55 | 1 1/2" x 6 1/2" | 3" x 13" | 3" |

NOTE:
Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required. If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS, (M 270, Gr. 50)".

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS."

External load plates shall conform to AASHTO M 270, Grade 50. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) and painted in accordance with Subsection 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to "ELASTOMERIC BEARINGS".

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 50)". External load plates will not be paid for separately but will be included in the unit price bid for "ELASTOMERIC BEARINGS".

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

External load plates shall be painted in accordance with Section 807.75. The color of the paint shall be Dark Brown and shall match Fed. Std. 595B, Color Chip No. 20108. Mask areas that are to be welded in the field.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZLK 1-14

BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 10-11 FILENAME: bca0907m16_el.dgn

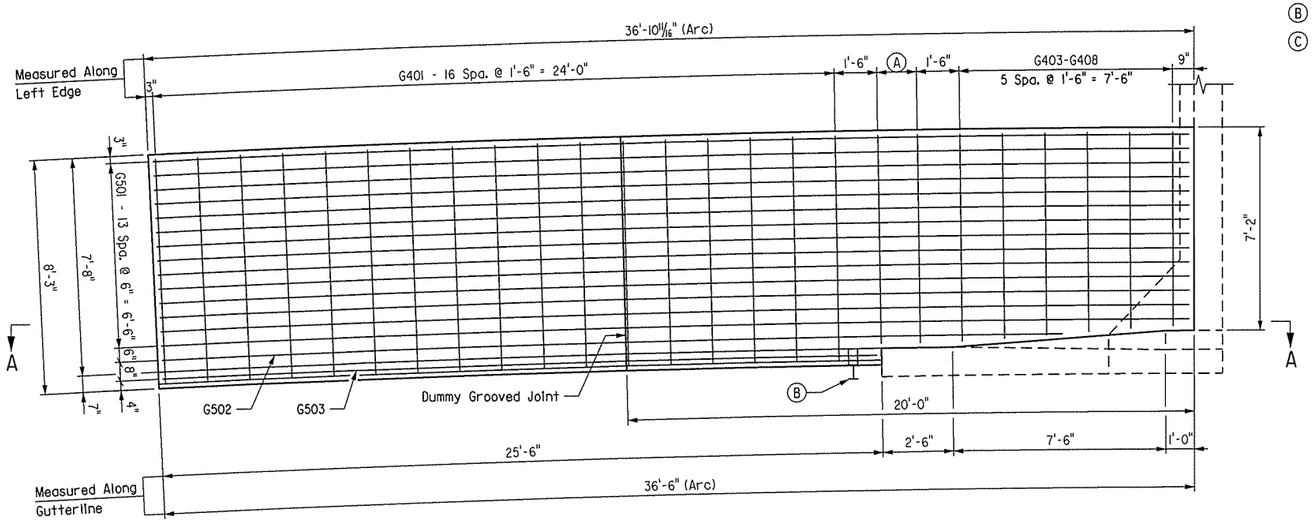
CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

DESIGNED BY: LMS DATE: 08-11

BRIDGE NO. 07314 DRAWING NO. 55435

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 583 | 897 |
| (1) 07314 | | APPROACH GUTTER | | 55436 |




PLAN OF TYPE SPECIAL 4 APPROACH GUTTER

Scale: 3/8" = 1'-0"
(Begin Bridge Shown, End Bridge Similar)

Ⓐ G402 - 1 Spa. @ 18" Max.

Ⓑ See Std. Dwg. No. GR-10 for post details and spacing.

Ⓒ ½" Preformed Joint Filler (AASHTO M 153 Type 1) and ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02 (h) (2)

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcing Steel shall conform to AASHTO M 31 or M 322 Type A, Grade 60 (fy = 60,000 psi).

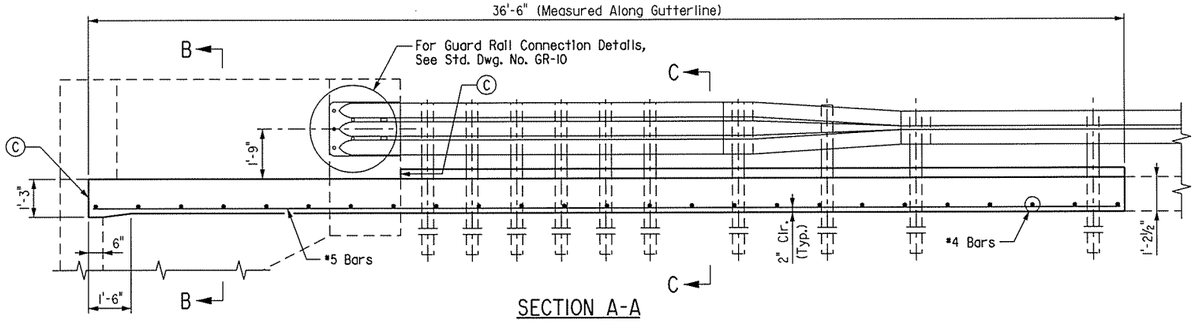
Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

## QUANTITIES FOR ONE TYPE SPECIAL 4 APPROACH GUTTER

| Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|
| 716 | 13.28 |

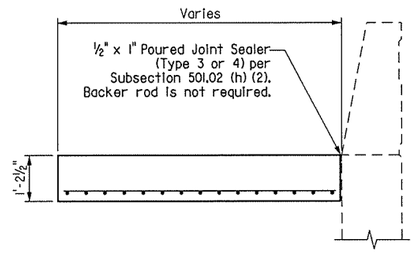
## BAR LIST - ONE TYPE SPECIAL 4 APPROACH GUTTER

| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| G401 | 17 | 7'-11" | Str. |
| G402 | 2 | 7'-4" | Str. |
| G403 to G408 | 1 Each | 7'-3" to 6'-10" | Str. |
| | | | |
| G501 | 14 | 36'-2" | Str. |
| G502 | 1 | 31'-9" | Str. |
| G503 | 1 | 25'-2" | Str. |
| | | | |
| | | | |



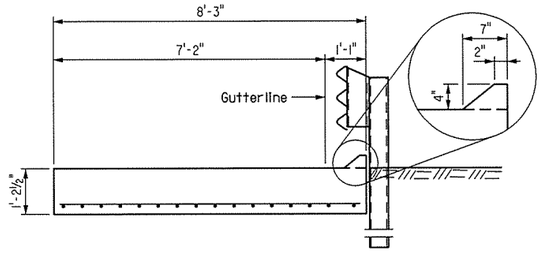

SECTION A-A

Scale: 3/8" = 1'-0"




SECTION B-B

Scale: ½" = 1'-0"




SECTION C-C

Scale: ½" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

# DETAILS OF TYPE SPECIAL 4 APPROACH GUTTERS RAMP NW BRIDGE

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 06-12 FILENAME: bca0907m16_GI.dgn

CHECKED BY: PJS DATE: 01-14 SCALE: AS SHOWN

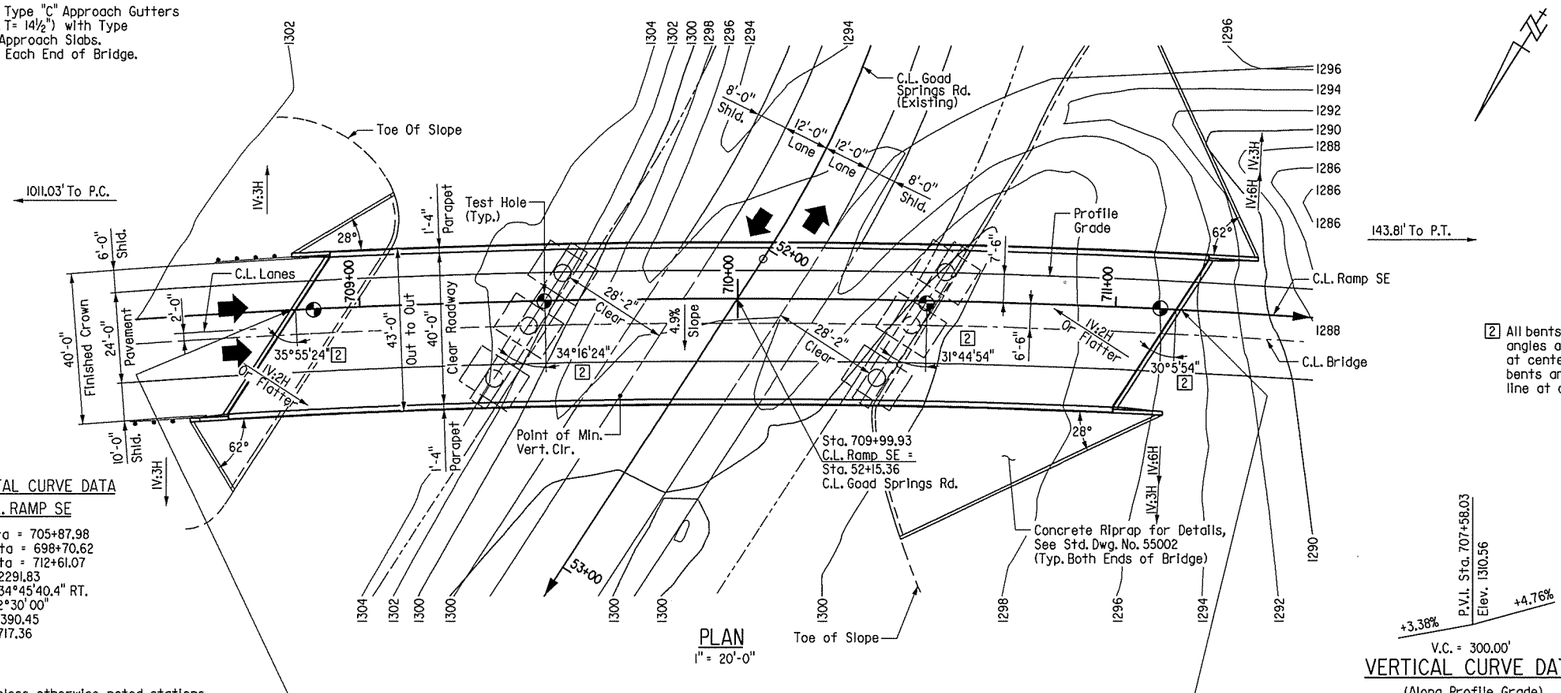
DESIGNED BY: LMS DATE: 06-12

BRIDGE NO. 07314 DRAWING NO. 55436

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 584 | 897 |
| | | | | (1) 07315 | | LAYOUT | | 55437 |

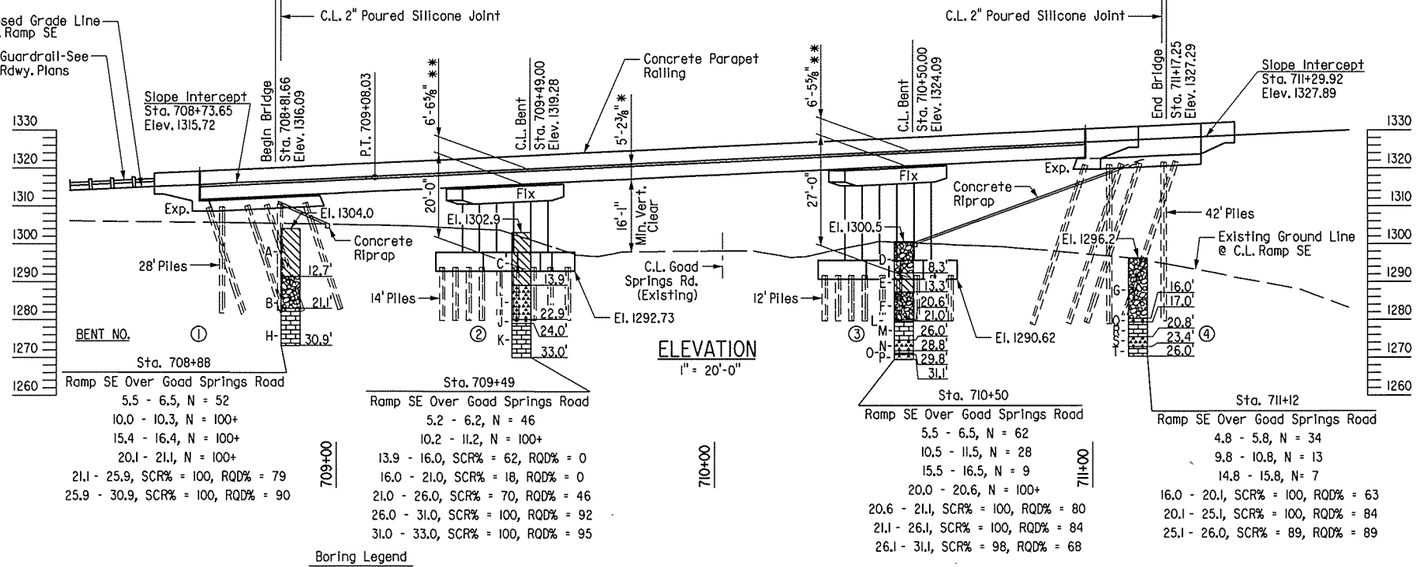
For R/W Data, See Roadway Plans

Note: Use Type "C" Approach Gutters (W=6' & 10', T= 14½") with Type Special 5 Approach Slabs. Typical at Each End of Bridge.




PLAN
1" = 20'-0"

Total Length of Bridge = 235'-7 1/16"
1'-4 1/16" | 233'-0" Continuous Composite W-Beam Unit (66'-101'-66') | 1'-3"
C.L. 2" Poured Silicone Joint
C.L. 2" Poured Silicone Joint




ELEVATION
1" = 20'-0"

Sta. 708+88
Ramp SE Over Goad Springs Road
5.5 - 6.5, N = 52
10.0 - 10.3, N = 100+
15.4 - 16.4, N = 100+
20.1 - 21.1, N = 100+
21.1 - 25.9, SCR% = 100, RQD% = 79
25.9 - 30.9, SCR% = 100, RQD% = 90

Sta. 709+49
Ramp SE Over Goad Springs Road
5.2 - 6.2, N = 46
10.2 - 11.2, N = 100+
13.9 - 16.0, SCR% = 62, RQD% = 0
16.0 - 21.0, SCR% = 18, RQD% = 0
21.0 - 26.0, SCR% = 70, RQD% = 46
26.0 - 31.0, SCR% = 100, RQD% = 92
31.0 - 33.0, SCR% = 100, RQD% = 95

Sta. 710+50
Ramp SE Over Goad Springs Road
5.5 - 6.5, N = 62
10.5 - 11.5, N = 28
15.5 - 16.5, N = 9
20.0 - 20.6, N = 100+
20.6 - 21.1, SCR% = 100, RQD% = 80
21.1 - 26.1, SCR% = 100, RQD% = 84
26.1 - 31.1, SCR% = 98, RQD% = 68

Sta. 711+12
Ramp SE Over Goad Springs Road
4.8 - 5.8, N = 34
9.8 - 10.8, N = 13
14.8 - 15.8, N= 7
16.0 - 20.1, SCR% = 100, RQD% = 63
20.1 - 25.1, SCR% = 100, RQD% = 84
25.1 - 26.0, SCR% = 89, RQD% = 89

Boring Legend

A - Red, hard to very hard, fat clay with sand.
B - Red, very dense, silty gravel with sand.
C - Red, hard to very hard, fat clay with sand.
D - Red, very dense, silty gravel with sand.
E - Red, very stiff, fat clay with sand,
F - Red, loose to very dense, silty gravel with sand.
G - Red, loose to dense, silty gravel with sand.
H - Limestone: Lt. gray, gray, fresh, fine to medium grain.
I - Chert: White, lt. gray, moderate to intense weathering.
J - Chert: White, lt. gray, fresh to slightly weathered.
K - Limestone: Lt. gray, gray, medium to fine grain, fresh.
L - Chert: White, lt. gray, fresh to slightly weathered.
M - Limestone: Lt. gray, gray, fine to medium grain, fresh.
N - Chert: White, lt. gray, fresh, fine to medium grain.
O - Limestone: Lt. gray, gray, fine to medium grain.
P - Chert: White, lt. gray, fresh.
Q - Chert: White, lt. gray, fresh to slightly weathered.
R - Limestone: Lt. gray, gray, fine to medium grain, fresh.
S - Chert: White, lt. gray, fresh, fine to medium grain.
T - Limestone: White, lt. gray, gray, fine to medium grain, fresh.

** Top of Deck @ C.L. Bent @ C.L. Ramp SE to low side Top of Cap

* Top of Deck @ C.L. Ramp SE to Low Beam

HORIZONTAL CURVE DATA

C.L. RAMP SE

PI Sta = 705+87.98
PC Sta = 698+70.62
PT Sta = 712+61.07
R = 2291.83
△ = 34°45'40.4" RT.
D = 2°30'00"
L = 1390.45
T = 717.36

Note: Unless otherwise noted, stations and elevations shown are taken along C.L. Ramp SE.

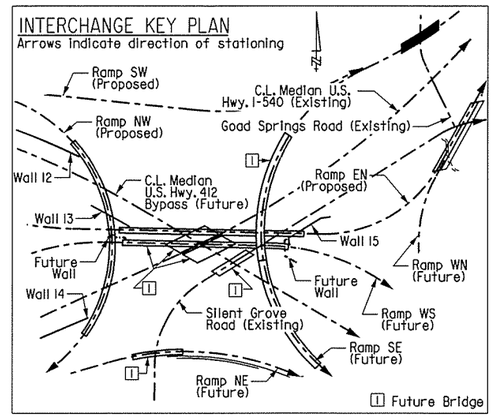



VERTICAL CURVE DATA
(Along Profile Grade)

[2] All bents are parallel. At end bents, angles are measured from a radial line at centerline joint. At interior bents angles are measured from a radial line at centerline of bent.

Note: All Longitudinal lines of bridge, beams, approach slabs, and gutters shall be constructed on curves concentric with C.L. Ramp SE.

INTERCHANGE KEY PLAN
Arrows indicate direction of stationing




For GENERAL NOTES, see Dwg. No. 55438.

LAYOUT OF BRIDGE
I-49 INTERCHANGE RAMP SE
OVER GOAD SPRINGS ROAD
HWY. 112 - I-49 (S)
BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIAS BRIDGE ENGINEER

DRAWN BY: JAP DATE: 09-08
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12
FILENAME: bca0907xl2_Ll.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07315 DRAWING NO. 55437

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 585 | 897 |
| | | | | (1) 07315 | | GENERAL NOTES | | 55438 |

GENERAL NOTES

BENCH MARK: T 99 RBR CAP. Survey control point no. 99. N=701370.7345, E=676955.1799, Elev. 1308.7855, Mainline Sta. 729+37.43, Offset 1488.63' Left.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition), with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007)
with 2008 Interim Revisions.

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 1 $S_{D1}$ =0.125 Site Class=D

MATERIALS AND STRENGTHS:
Class S(AE) Concrete (Superstructure) f'c = 4,000 psi
Class S Concrete (Substructure) f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 50) Fy = 50,000 psi
Structural Steel (AASHTO M270, Gr. 36) Fy = 36,000 psi

BORING LOGS: Boring Logs may be obtained from the Programs and Contracts Division.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface, top of backwall, top and roadway face of the concrete parapet rail and transition rails.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to surfaces as specified in Special Provision Job CA0907 "Textured Coating Finish" and in accordance with Section 802.19. Textured Coating Finish shall not be applied on surfaces where Class 2 Protective Surface Treatment is applied.

PAINT: All structural steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of paint shall be DARK BROWN and shall match Fed Std. 595B, Color Chip No. 20108.

PILE FOOTINGS: The top of all Bent footings shall be set 2'-0" minimum below finished ground. Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled according to subsection 801.08 of the Standard Specifications.

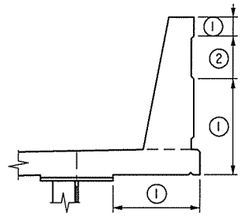
STEEL PILING: All piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons (factored resistance of 140 tons) per pile and into the material designated as competent Limestone or Chert on the boring legend. Drive all piles in Bent 1 to a minimum penetration of 13' below existing ground. Drive all piles in Bent 4 to a minimum penetration of 17' below existing ground. Drive all piles in Bent 2 to a minimum penetration of 13' below bottom of footing. Drive all piles in Bent 3 to a minimum penetration of 11' below bottom of footing. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

PREBORING: At Bent 2, preboring will be required to seat the piles into limestone. If limestone is encountered within 8'-0" of the bottom of footing, preboring shall extend 3'-0" into limestone and shall be backfilled with Class S concrete to the top of the limestone. The remaining portion of the prebored hole shall be backfilled per Section 805.08(a). Quantities of preboring shown are for bidding purposes only.

For all preboring, the actual size and length will be determined by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. Backfill and temporary casings, if necessary, will not be paid for directly but considered subsidiary to the pay item "PREBORING".

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four wingwall locations in accordance with Dwg. No. 55443.

| DETAIL DRAWINGS: | DRAWING NO. |
|---|---|
| End Bents | 55439-55442 & 55447-55450 |
| Intermediate Bents | 55444-55446 |
| 233'-0" Cont. Comp. W-Beam Unit | 55451-55458 |
| Elastomeric Bearings | 55459 |
| Type "C" Approach Gutters | 55030c |
| Type Special 5 Approach Slabs | 55460-55461 |
| Steel Piling | 55020 |
| State Of Arkansas Form Insert | 55443 |




(1) Class 3 Textured Coating Finish
(Color = Light Brown, Color Chip No. 33522)

(2) Class 3 Textured Coating Finish
(Color = Medium Brown, Color Chip No. 30219)

TEXTURED COATING FINISH
Scale: ½" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK
4-29-2014
BRIDGE ENGINEER

# GENERAL NOTES
# I-49 INTERCHANGE RAMP SE
# OVER GOAD SPRINGS ROAD
# HWY. 112 - I-49 (S)
# BENTON COUNTY

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12
FILENAME: bca0907xl2_L2.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07315 DRAWING NO. 55438

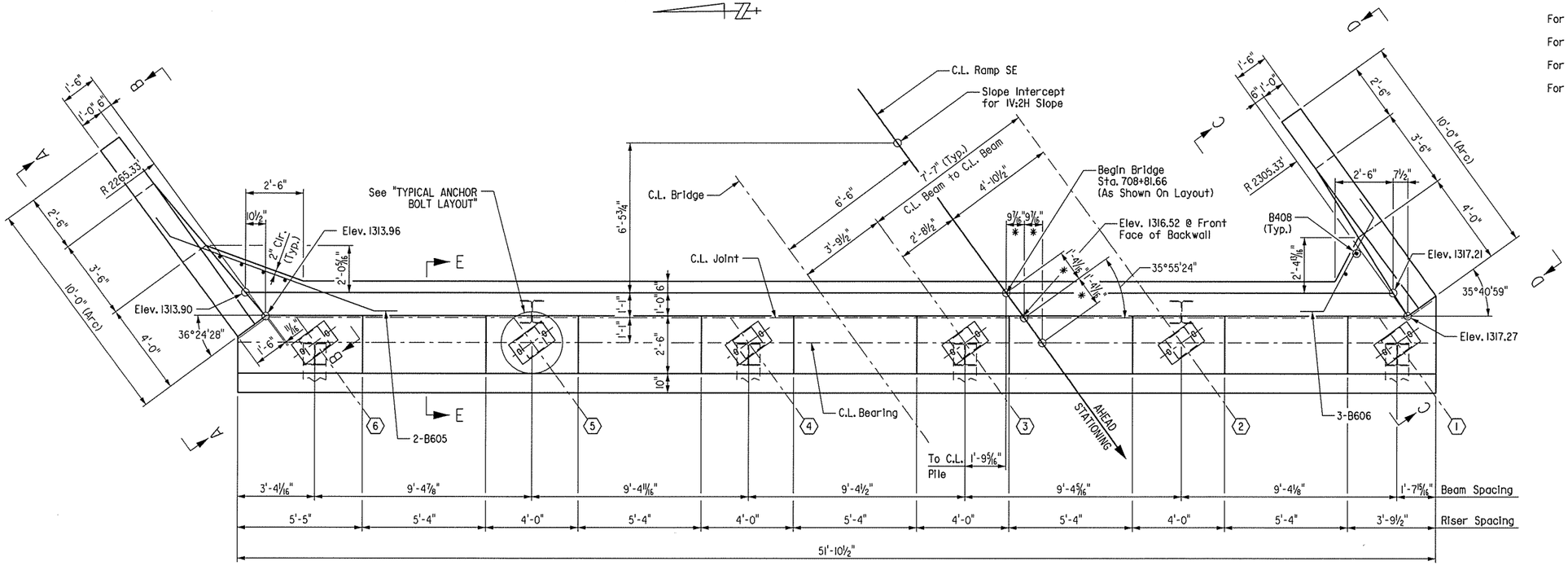
NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 586 | 897 |
| | | | | (1) 07315 | | END BENT 1 DETAILS | | 55439 |

For additional information, see LAYOUT on Dwg. No. 55437.

For VIEW A-A, VIEW B-B, VIEW C-C, and VIEW D-D, see Dwg. No. 55441.

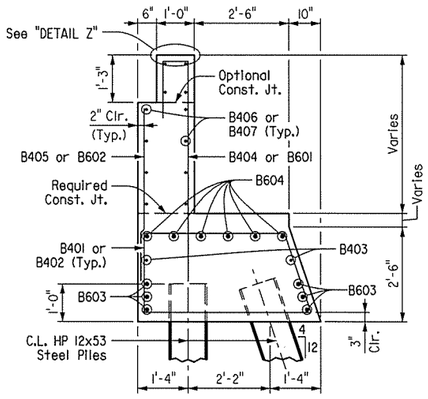
For DETAIL Z, see Dwg. No. 55442.




* Dimensions shown are to C.L. Joint

PLAN

Scale: 3/8" = 1'-0"




SECTION E-E

1/2" = 1'-0"

GENERAL NOTES FOR SUBSTRUCTURE

All concrete shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (yield strength = 60,000 psi).

The backwall above the required construction joint shall not be poured until the beams are in place. Backwall may be placed prior to placing the adjacent concrete deck only if the optional backwall construction joint is used. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Dwg. No. 55458 for additional information.

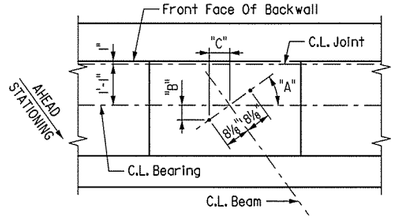
Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Wings and rails shall be constructed on curves concentric to C.L. Ramp SE.

For structural steel in end bents, see Dwg. No. 55458.

Class 2 Protective Surface Treatment shall be applied to the top of the backwall.

For detail of textured coating finish, see Dwg. No. 55438.




| Beam | "A" | "B" | "C" |
|---|---|---|---|
| 1 | 35°39'58" | 4 3/4" | 6 5/8" |
| 2 | 35°48'07" | 4 3/4" | 6 7/16" |
| 3 | 35°56'20" | 4 3/4" | 6 7/16" |
| 4 | 36°04'37" | 4 11/16" | 6 7/16" |
| 5 | 36°12'59" | 4 11/16" | 6 7/16" |
| 6 | 36°21'25" | 4 11/16" | 6 7/16" |

Note: For Details Of Elastomeric Bearings, See Dwg. No. 55459.

TYPICAL ANCHOR BOLT LAYOUT

1/2" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 4 SEPT 2014

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT 1
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12

FILENAME: bca0907xl2_bl1.dgn
SCALE: As Shown

BRIDGE NO. 07315

DRAWING NO. 55439

NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

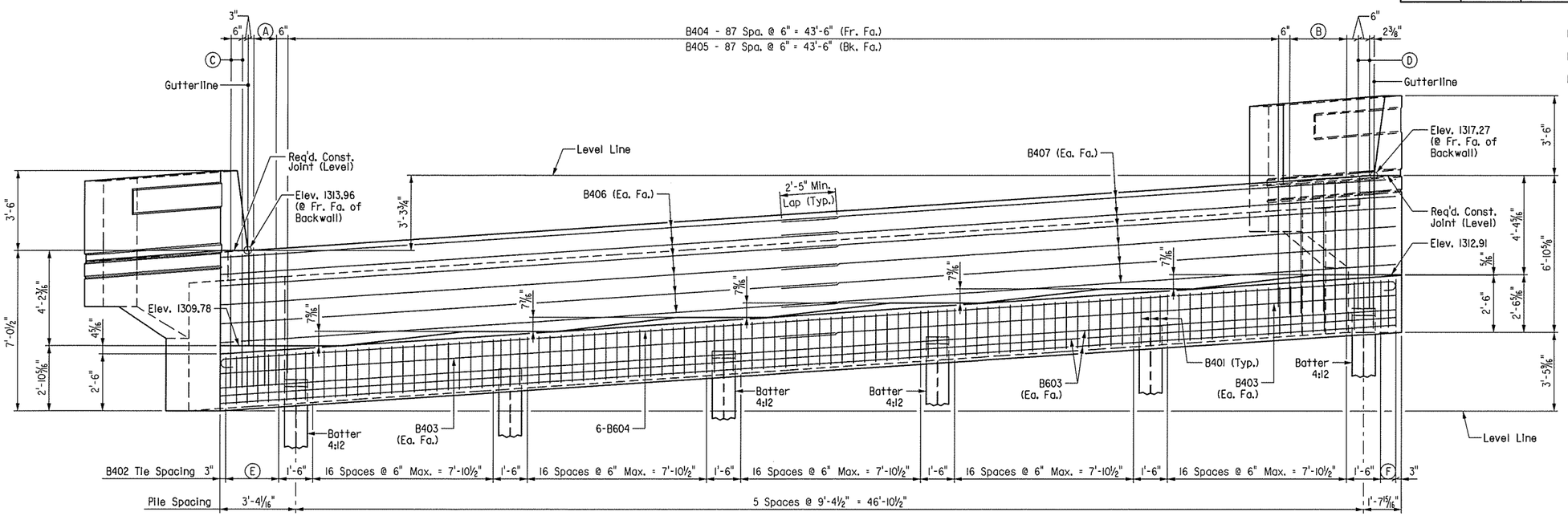
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 587 | 897 |

(I) 07315 END BENT I DETAILS 55440

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

For additional information, see LAYOUT on Dwg. No. 55437.

For Details of Wing and Rail, see Dwg. No. 55442.



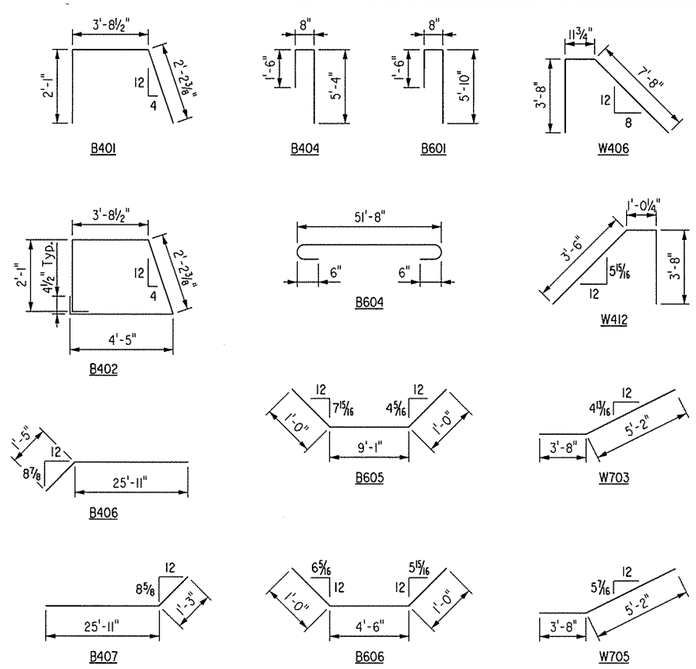

ELEVATION
Looking Back
Scale: 3/8" = 1'-0"

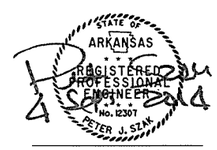
(A) B601 - 2 Spa. @ 6" = 1'-0" (Fr. Fa.)
B602 - 2 Spa. @ 6" = 1'-0" (Bk. Fa.)
(B) B601 - 5 Spa. @ 6" = 2'-6" (Fr. Fa.)
B602 - 5 Spa. @ 6" = 2'-6" (Bk. Fa.)
(C) B602 - Back Face Only
(D) B601 - Front Face Only
(E) 5 Spaces @ 6" Max. = 2'-4 1/16"
(F) 2 Spaces @ 6" Max. = 7 15/16"

## END BENT I BAR LIST

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| B401 | 18 | 7'-10" | 2" |
| B402 | 94 | 12'-9" | 2" |
| B403 | 4 | 27'-0" | Str. |
| B404 | 88 | 7'-4" | 2" |
| B405 | 88 | 4'-1" | Str. |
| B406 | 12 | 27'-4" | 3" |
| B407 | 12 | 27'-2" | 3" |
| B408 | 6 | 6'-5" | Str. |
| | | | |
| B601 | 11 | 7'-8" | 4 1/2" |
| B602 | 11 | 4'-7" | Str. |
| B603 | 6 | 51'-8" | Str. |
| B604 | 6 | 53'-0" | 4 1/2" |
| B605 | 2 | 11'-1" | 4 1/2" |
| B606 | 3 | 6'-6" | 4 1/2" |
| | | | |
| R401 | 76 | 5'-3" | Str. |
| | | | |
| R601 | 20 | 5'-2" | Str. |
| R602 | 16 | 9'-8" | Str. |
| | | | |
| W401 | 8 | 6'-6" | Str. |
| W402 to W405 | 2 Each | 3'-2" to 1'-10" | Str. |
| W406 | 4 | 12'-3" | 3" |
| W407 | 8 | 6'-4" | Str. |
| W408 to W411 | 2 Each | 3'-4" to 1'-10" | Str. |
| W412 | 3 | 8'-1" | 3" |
| | | | |
| W701 | 12 | 9'-8" | Str. |
| W702 | 2 | 5'-6" | Str. |
| W703 | 2 | 8'-10" | 5 1/4" |
| W704 | 2 | 5'-9" | Str. |
| W705 | 2 | 8'-10" | 5 1/4" |

BENDING DIAGRAMS
(Dimensions are out to out of bars)




BRIDGE ENGINEER

SHEET 2 OF 4
DETAILS OF END BENT I
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12

FILENAME: bca0907xl2_bl2.dgn
SCALE: 3/8" = 1'-0"

BRIDGE NO. 07315 DRAWING NO. 55440

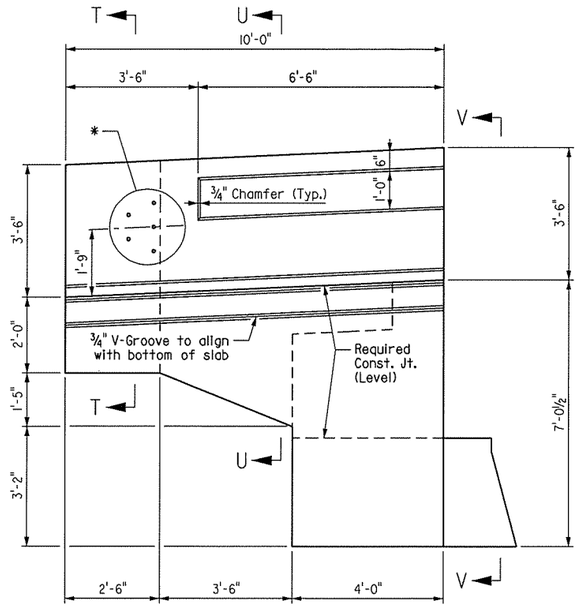
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 588 | 897 |
| | | | | (1) 07315 | | END BENT 1 DETAILS | | 55441 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

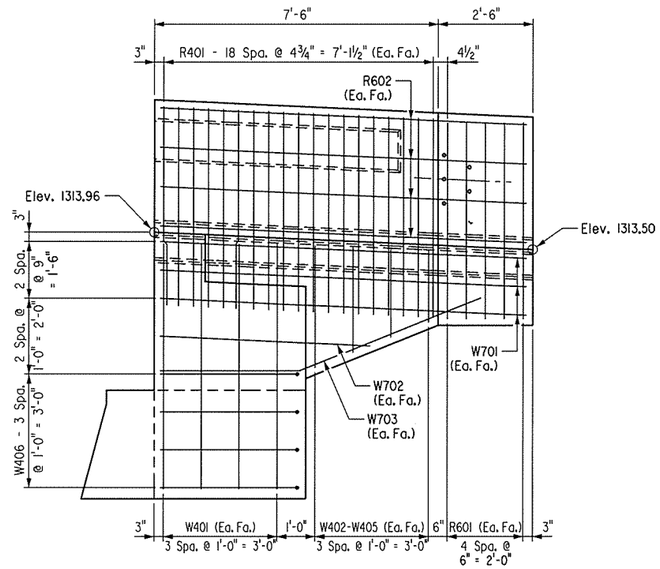
For additional information, see LAYOUT on Dwg. No. 55437.

For SECTION T-T, SECTION U-U, VIEW V-V, VIEW W-W, SECTION X-X, and SECTION Y-Y, see Dwg. No. 55442.

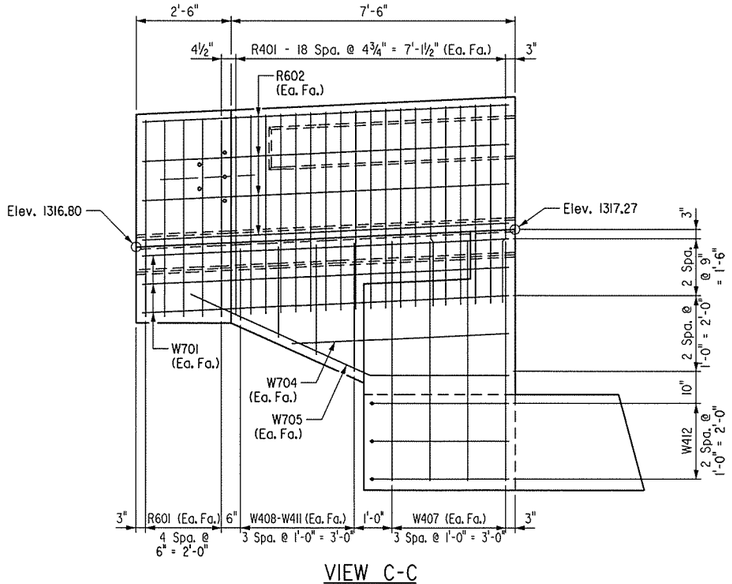
* 5 - 1"ø formed holes for guard rail connection. See Std. Dwg. No. GR-10 for bolt spacing and additional connection details.



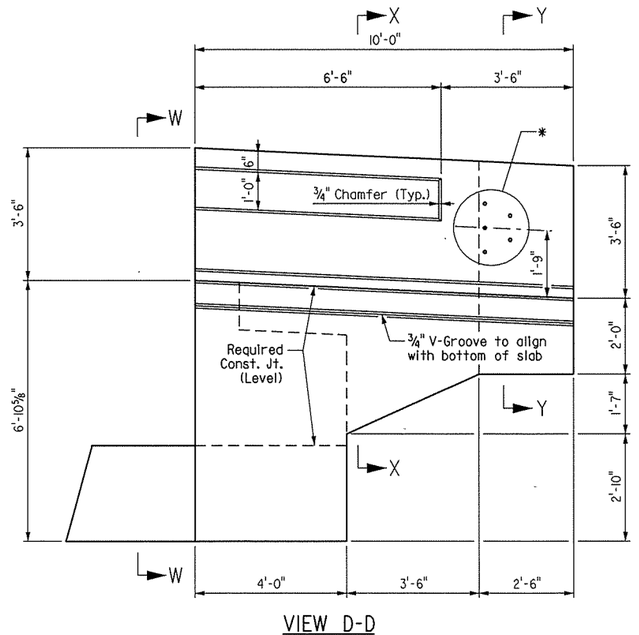

VIEW A-A
Scale: ½" = 1'-0"




VIEW B-B
Scale: ½" = 1'-0"




VIEW C-C
Scale: ½" = 1'-0"




VIEW D-D
Scale: ½" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK
4-30-2014
BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT 1
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

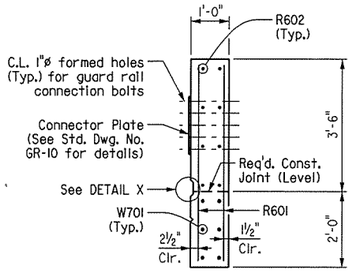
DRAWN BY: JAP DATE: 08-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12
FILENAME: bca0907x12_bl3.dgn
SCALE: As Shown

BRIDGE NO. 07315 DRAWING NO. 55441

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 589 | 897 |
| | | | | (1) | 07315 | END BENT 1 DETAILS | | 55442 |

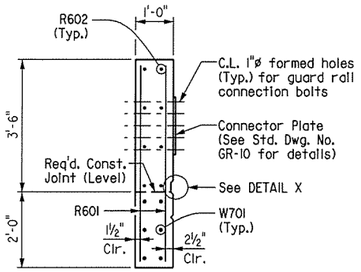
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

For additional information, see LAYOUT on Dwg. No. 55437.



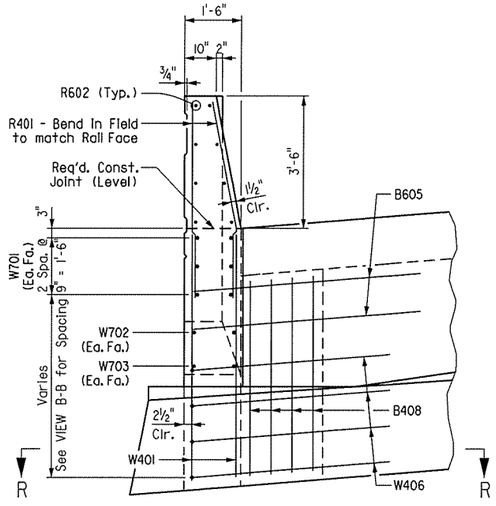

SECTION T-T

Scale: ½" = 1'-0"



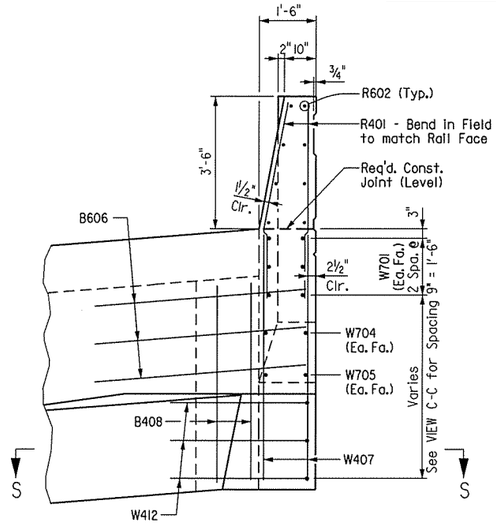

SECTION Y-Y

Scale: ½" = 1'-0"



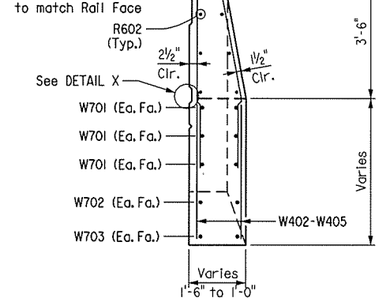

VIEW V-V

Scale: ½" = 1'-0"



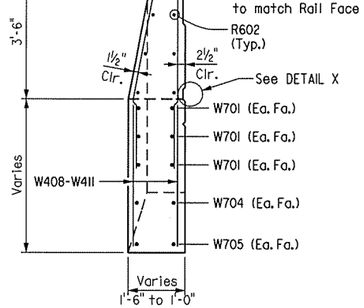

VIEW W-W

Scale: ½" = 1'-0"



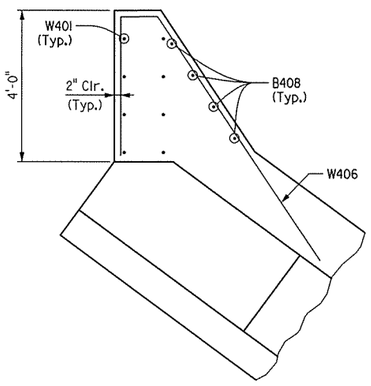

SECTION U-U

Scale: ½" = 1'-0"



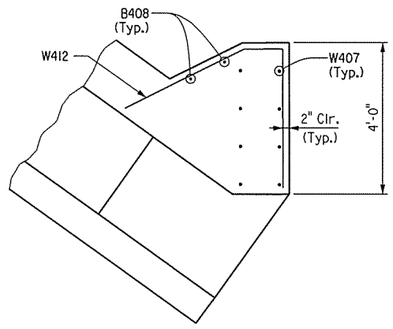

SECTION X-X

Scale: ½" = 1'-0"



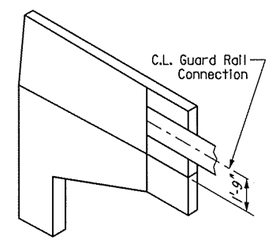

SECTION R-R

Scale: ½" = 1'-0"




SECTION S-S

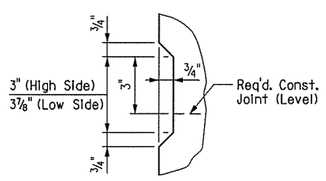
Scale: ½" = 1'-0"




For details of guard rail connection, See Std. Dwg. No. GR-10

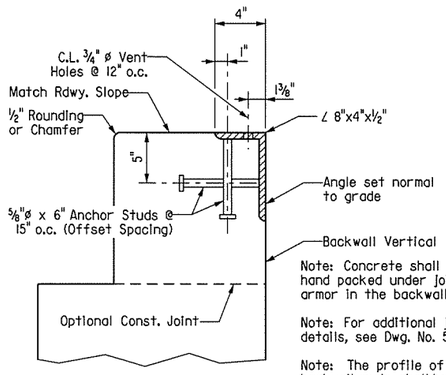
THREE DIMENSIONAL VIEW OF WING & RAIL

Scale: ¼" = 1'-0"




DETAIL X

Scale: 3" = 1'-0"




Note: Concrete shall be hand packed under joint armor in the backwall.

Note: For additional joint details, see Dwg. No. 55458.

Note: The profile of the backwall angle shall be established based on the vertical curve in conjunction with the skew.

DETAIL Z

Scale: 2" = 1'-0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
4-30-2014

BRIDGE ENGINEER

SHEET 4 OF 4
DETAILS OF END BENT 1
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

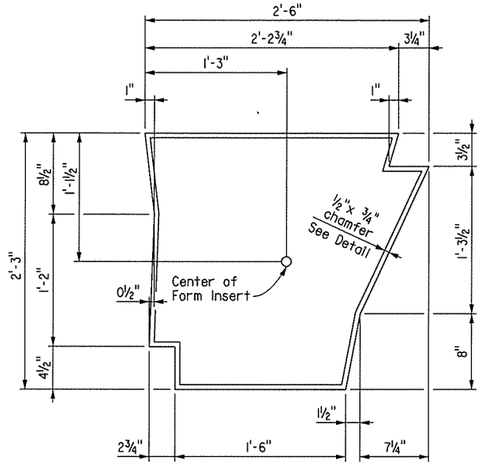
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12
FILENAME: bca0907xl2_bl4.dgn
SCALE: As Shown

BRIDGE NO. 07315 DRAWING NO. 55442

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

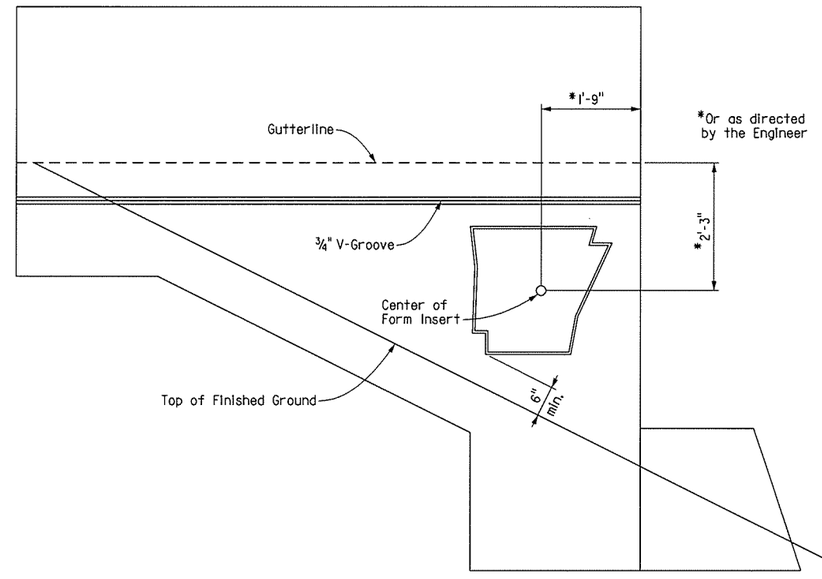
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 590 | 897 |
| (1) 07315 | | FORM INSERT DETAILS | | 55443 |




Note: Use form insert on designated bents as noted on layout or as shown on detail drawings.

## FORM INSERT DETAILS

Scale: 1½" = 1'-0"




## PLACEMENT AT WINGS END BENT

Scale: ¾" = 1'-0"

GENERAL NOTES

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

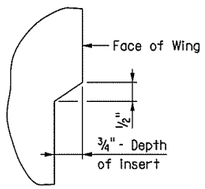
Wash and clean multi-use form inserts before each use.

All work and materials for form inserts shall be included in the unit price bid for "CLASS S CONCRETE - BRIDGE".

Damaged or worn form inserts shall be replaced at the contractor's expense.

The form insert shall be approved by the Engineer before its use.

The State Of Arkansas insert shall be given a Class 3 textured coating finish as specified in SP "TEXTURED COATING FINISH."




## CHAMFER DETAILS

Scale: 6" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

# DETAILS OF STANDARD STATE OF ARKANSAS FORM INSERT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

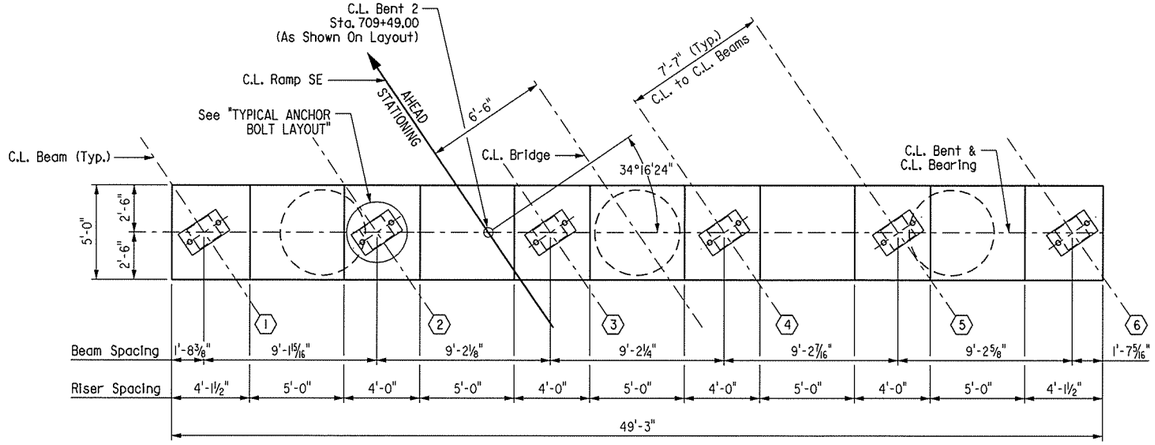
DRAWN BY: JAP DATE: 08-12 FILENAME: bca0907x12_b15.dgn

CHECKED BY: PJS DATE: 08-12 SCALE: 1" = 20'-0"

DESIGNED BY: LMS DATE: 08-12

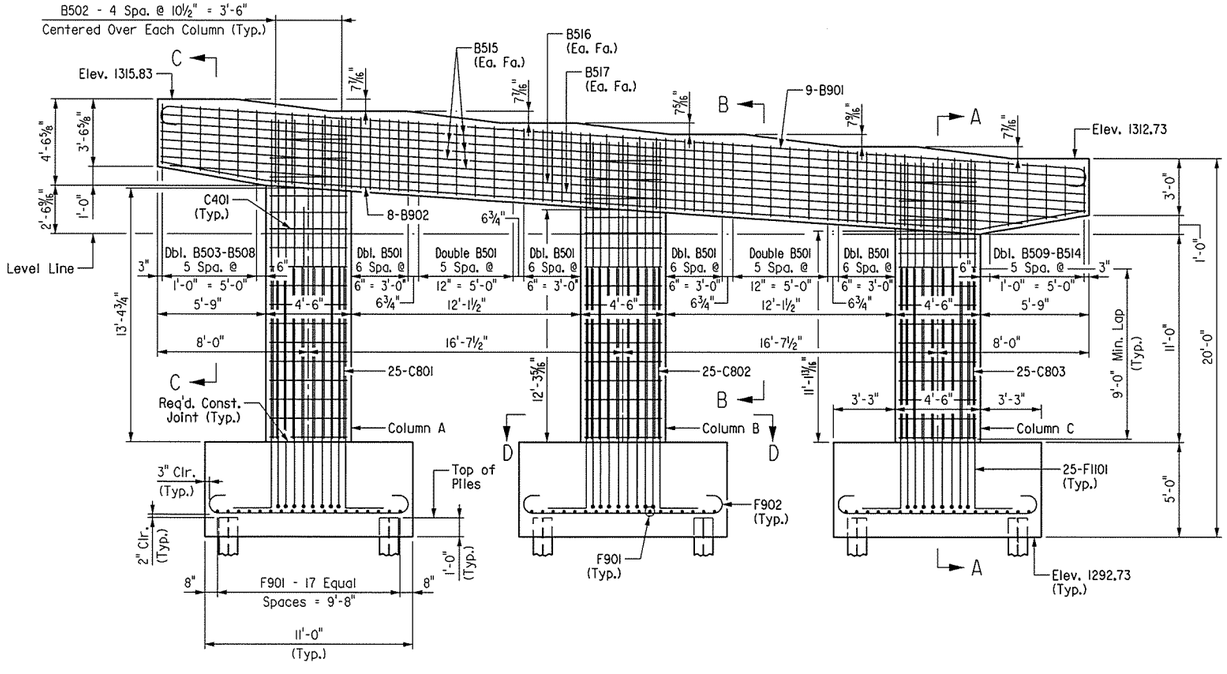
BRIDGE NO. 07315 DRAWING NO. 55443

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 591 | 897 |
| | | | | (1) 07315 | | BENT 2 DETAILS | | 55444 |




PLAN

1/4" = 1'-0"



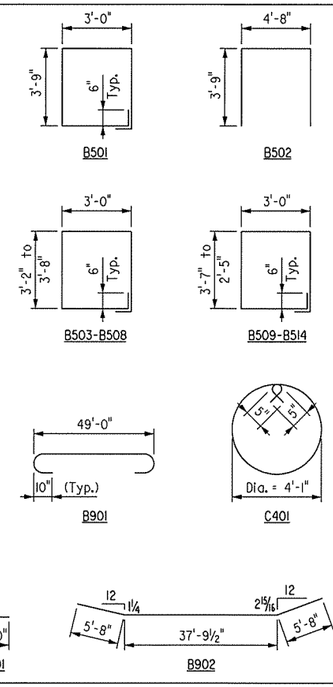

ELEVATION

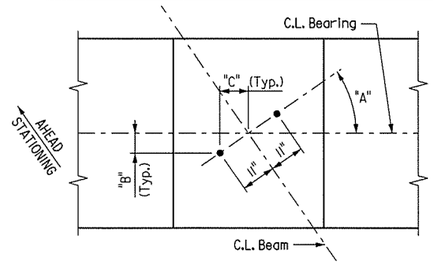
(Looking Ahead)
1/4" = 1'-0"

## BENT 2 BAR LIST

| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| B501 | 80 | 14'-0" | 2½" |
| B502 | 15 | 12'-0" | 2½" |
| B503 to B508 | 2 EA. | 12'-10" to 13'-10" | 2½" |
| B509 to B514 | 2 EA. | 13'-8" to 11'-4" | 2½" |
| B515 | 10 | 49'-0" | Str. |
| B516 | 2 | 47'-6" | Str. |
| B517 | 2 | 45'-2" | Str. |
| | | | |
| B901 | 9 | 51'-6" | 9" |
| B902 | 8 | 49'-2" | 9" |
| | | | |
| C401 | 48 | 13'-11" | 3" |
| | | | |
| C801 | 25 | 16'-10" | Str. |
| C802 | 25 | 15'-8" | Str. |
| C803 | 25 | 14'-7" | Str. |
| | | | |
| F901 | 54 | 17'-0" | 9" |
| F902 | 54 | 13'-0" | 9" |
| | | | |
| F1101 | 75 | 14'-6" | 11¼" |

Bending Diagrams (Dimensions are out to out of bars.)




| BEAM | "A" | "B" | "C" |
|---|---|---|---|
| 1 | 34°03'45" | 6 3/16" | 9 1/8" |
| 2 | 34°11'26" | 6 3/16" | 9⅛" |
| 3 | 34°19'10" | 6 3/16" | 9 1/16" |
| 4 | 34°26'58" | 6¼" | 9 1/16" |
| 5 | 34°34'51" | 6¼" | 9 1/16" |
| 6 | 34°42'47" | 6¼" | 9 1/16" |

Note: For Details Of Elastomeric Bearings, See Dwg. No. 55459.

## TYPICAL ANCHOR BOLT LAYOUT

½" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

For additional information, see LAYOUT on Dwg. No. 55437.

For SECTION A-A, SECTION B-B, SECTION C-C, & SECTION D-D see Dwg. No. 55445.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 12-31-2014

BRIDGE ENGINEER

# DETAILS OF BENT 2
# RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12

CHECKED BY: PJS DATE: 08-12

DESIGNED BY: LMS DATE: 08-12

FILENAME: bca0907x12_b2l.dgn

SCALE: As Shown

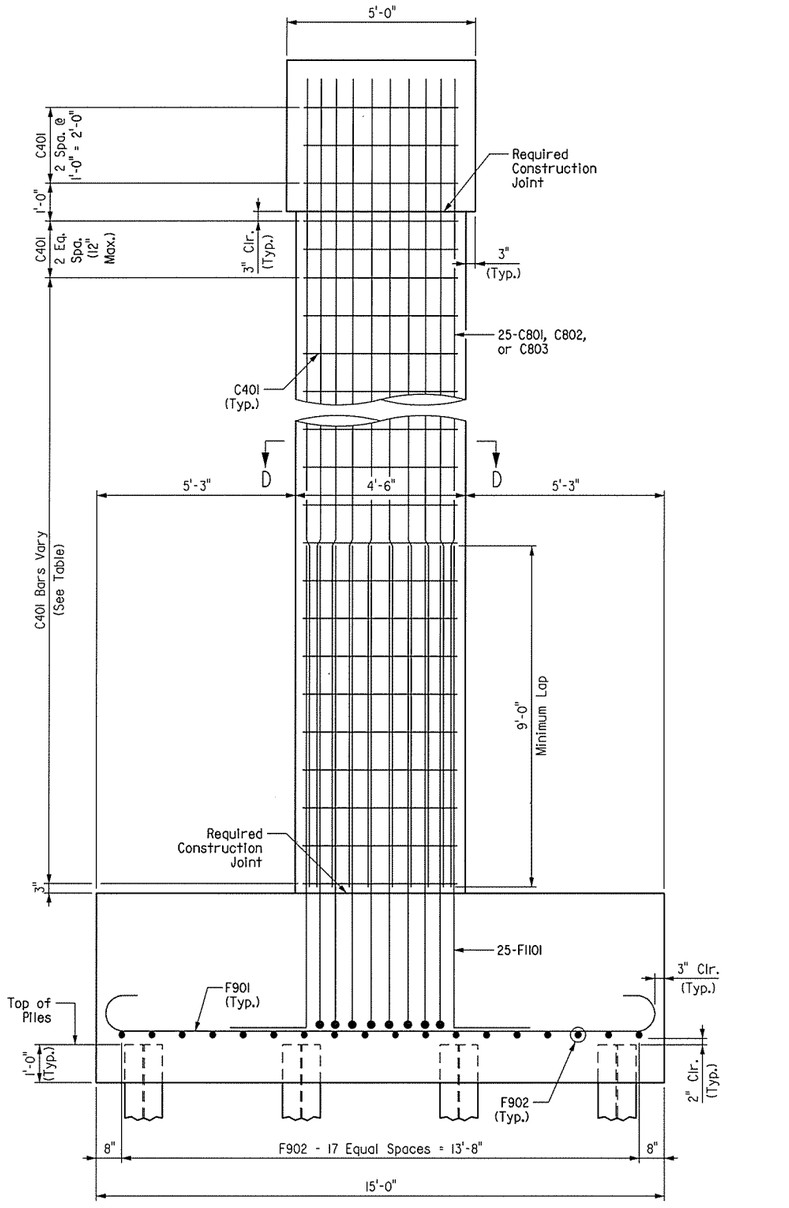
BRIDGE NO. 07315

DRAWING NO. 55444

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 592 | 897 |
| | | | | (1) 07315 | | DETAILS OF BENTS 2 & 3 | | 55445 |

For additional information, see LAYOUT on Dwg. No. 55437.

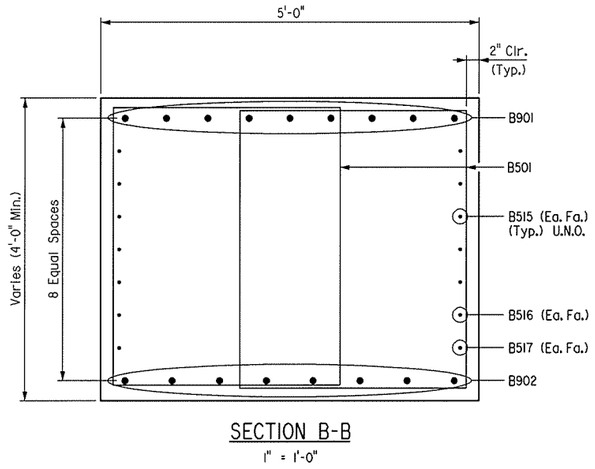
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.




SECTION A-A

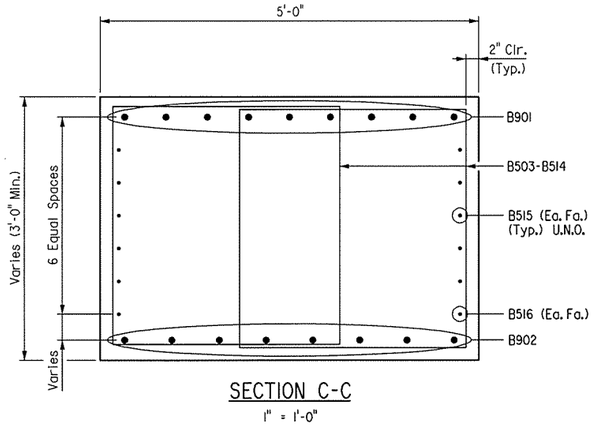
½" = 1'-0"

Note: F902 Bars may rest directly on piles.



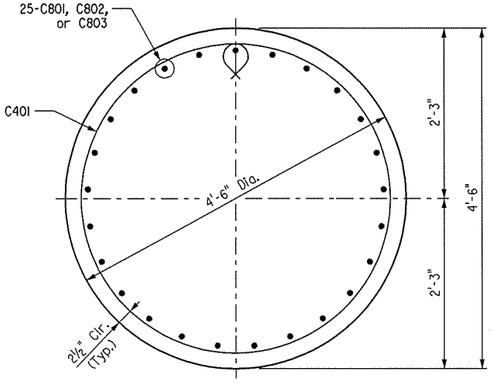

SECTION B-B

1" = 1'-0"



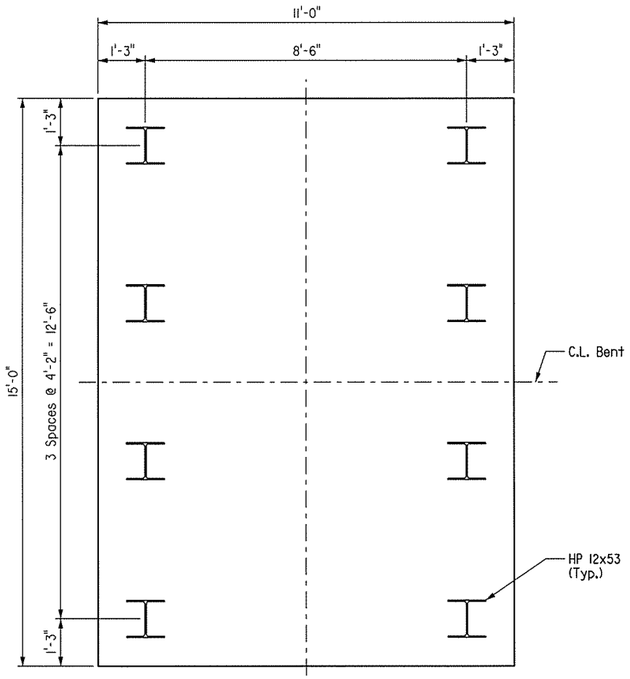

SECTION C-C

1" = 1'-0"




SECTION D-D

1" = 1'-0"




FOOTING PLAN

½" = 1'-0"

## C401 COLUMN BARS

| | Bent 2 | Bent 3 |
|---|---|---|
| Column A | 11 Spa. @ 1'-0" = 11'-0" | 18 Spa. @ 1'-0" = 18'-0" |
| Column B | 10 Spa. @ 1'-0" = 10'-0" | 17 Spa. @ 1'-0" = 17'-0" |
| Column C | 9 Spa. @ 1'-0" = 9'-0" | 16 Spa. @ 1'-0" = 16'-0" |

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

# COMMON DETAILS OF BENTS 2 & 3 RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12

CHECKED BY: PJS DATE: 08-12

DESIGNED BY: LMS DATE: 08-12

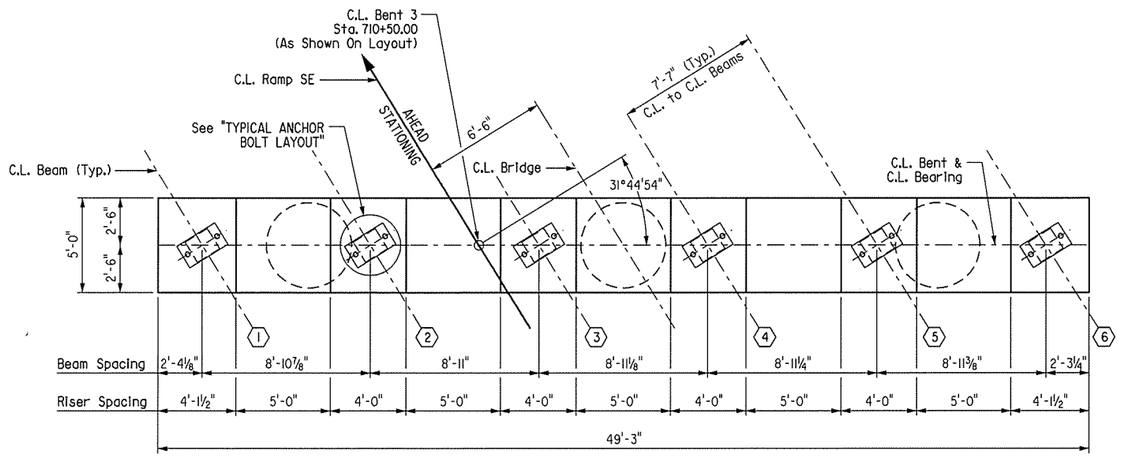
FILENAME: bca0907x12_b22.dgn

SCALE: AS SHOWN

BRIDGE NO. 07315

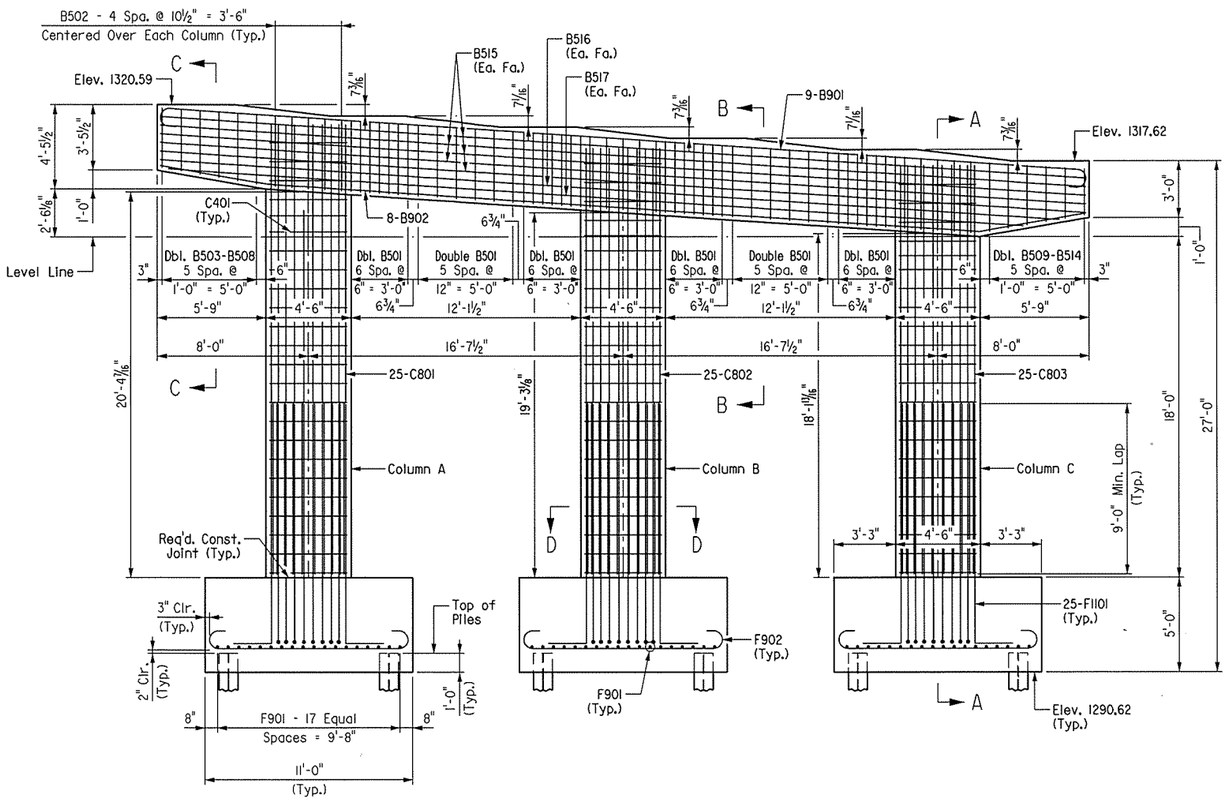
DRAWING NO. 55445

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 593 | 897 |
| | | | | (1) 07315 | | BENT 3 DETAILS | | 55446 |




PLAN

¼" = 1'-0"




ELEVATION

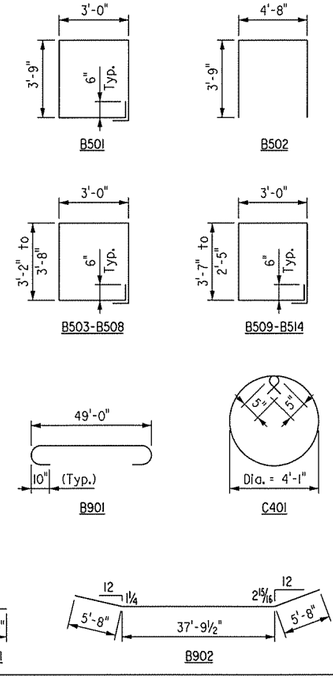
(Looking Ahead)

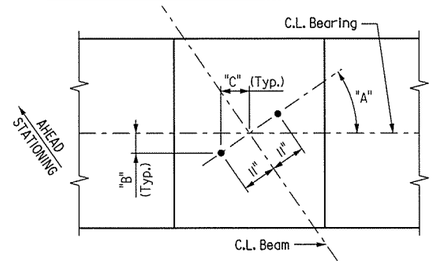
¼" = 1'-0"

## BENT 3 BAR LIST

| Mark | Number Required | Length | Pin Dia. |
|---|---|---|---|
| B501 | 80 | 14'-0" | 2½" |
| B502 | 15 | 12'-0" | 2½" |
| B503 to B508 | 2 EA. | 12'-10" to 13'-10" | 2½" |
| B509 to B514 | 2 EA. | 13'-8" to 11'-4" | 2½" |
| B515 | 10 | 49'-0" | Str. |
| B516 | 2 | 47'-6" | Str. |
| B517 | 2 | 45'-2" | Str. |
| | | | |
| B901 | 9 | 51'-6" | 9" |
| B902 | 8 | 49'-2" | 9" |
| | | | |
| C401 | 69 | 13'-11" | 3" |
| | | | |
| C801 | 25 | 23'-9" | Str. |
| C802 | 25 | 22'-6" | Str. |
| C803 | 25 | 21'-7" | Str. |
| | | | |
| F901 | 54 | 17'-0" | 9" |
| F902 | 54 | 13'-0" | 9" |
| | | | |
| F1101 | 75 | 14'-6" | 1¼" |

Bending Diagrams (Dimensions are out to out of bars.)




| BEAM | "A" | "B" | "C" |
|---|---|---|---|
| 1 | 31°33'24" | 5¾" | 9⅜" |
| 2 | 31°40'23" | 5¾" | 9⅜" |
| 3 | 31°47'25" | 5¹¹⁄₁₆" | 9⅜" |
| 4 | 31°54'30" | 5¹¹⁄₁₆" | 9⅝" |
| 5 | 32°01'39" | 5¹¹⁄₁₆" | 9⅝" |
| 6 | 32°08'51" | 5⅞" | 9⅝" |

Note: For Details Of Elastomeric Bearings, See Dwg. No. 55459.

TYPICAL ANCHOR BOLT LAYOUT

½" = 1'-0"

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

For additional information, see LAYOUT on Dwg. No. 55437.

For SECTION A-A, SECTION B-B, SECTION C-C, & SECTION D-D, see Dwg. No. 55445.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

# DETAILS OF BENT 3
# RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12

CHECKED BY: PJS DATE: 08-12

DESIGNED BY: LMS DATE: 08-12

FILENAME: bcg0907x12_b3.dgn

SCALE: As Shown

BRIDGE NO. 07315

DRAWING NO. 55446

NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 594 | 897 |
| | | | | (1) | 07315 | END BENT 4 DETAILS | | 55447 |

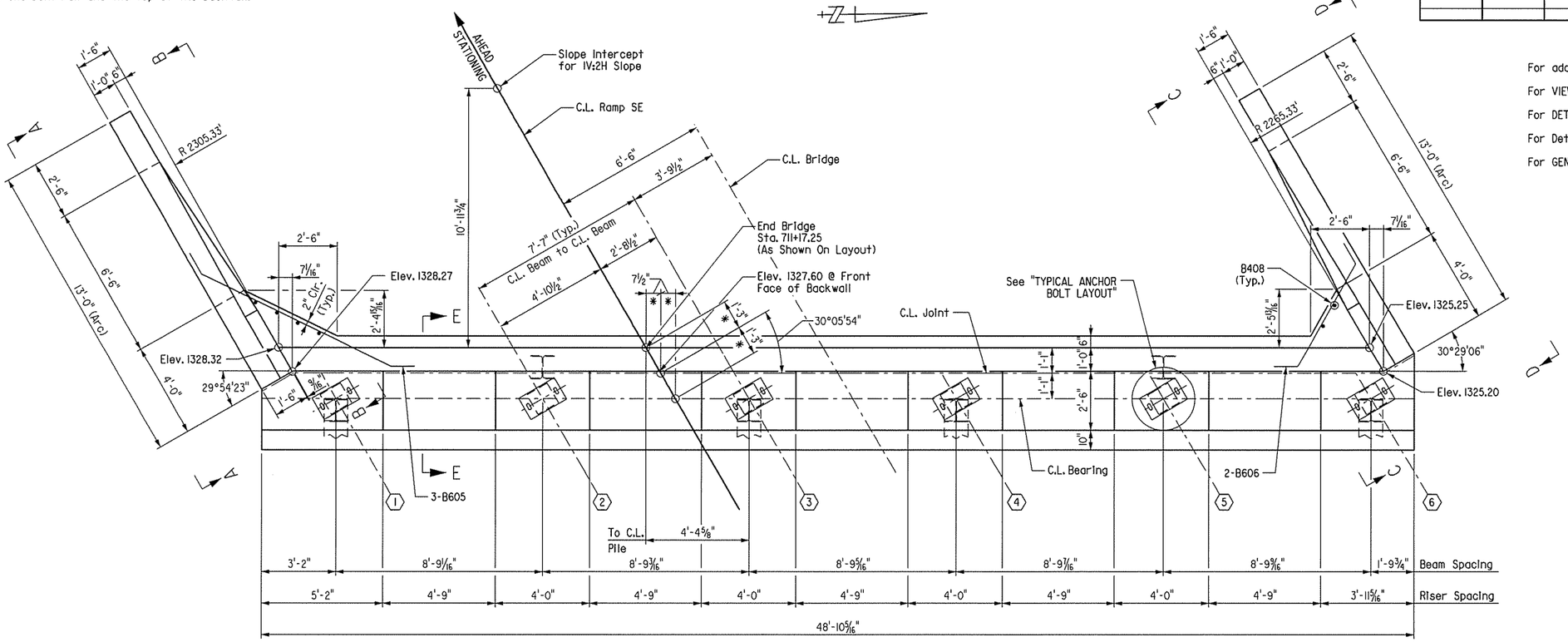
For additional information, see LAYOUT on Dwg. No. 55437.

For VIEW A-A, VIEW B-B, VIEW C-C, and VIEW D-D, see Dwg. No. 55449.

For DETAIL Z, see Dwg. No. 55450.

For Details of Wing and Rail, see Dwg. No. 55450.

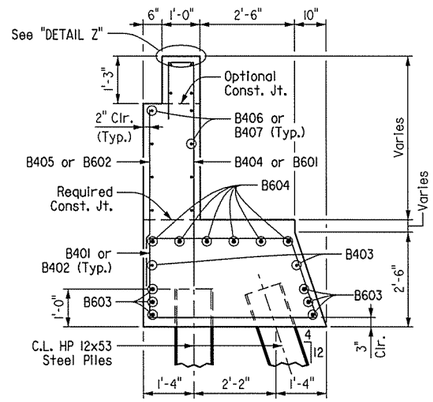
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.




* Dimensions shown are to C.L. Joint

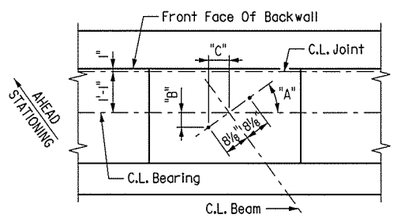
PLAN

Scale: ⅜" = 1'-0"




SECTION E-E

½" = 1'-0"




| Beam | "A" | "B" | "C" |
|---|---|---|---|
| 1 | 29°57'00" | 4 1/16" | 7 1/16" |
| 2 | 30°03'32" | 4 1/16" | 7 1/16" |
| 3 | 30°10'08" | 4 1/16" | 7" |
| 4 | 30°16'47" | 4 1/8" | 7" |
| 5 | 30°23'29" | 4 1/8" | 7" |
| 6 | 30°30'14" | 4 1/8" | 7" |

Note: For Details Of Elastomeric Bearings, See Dwg. No. 55459.

TYPICAL ANCHOR BOLT LAYOUT

½" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIAS

BRIDGE ENGINEER

SHEET 1 OF 4
DETAILS OF END BENT 4
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

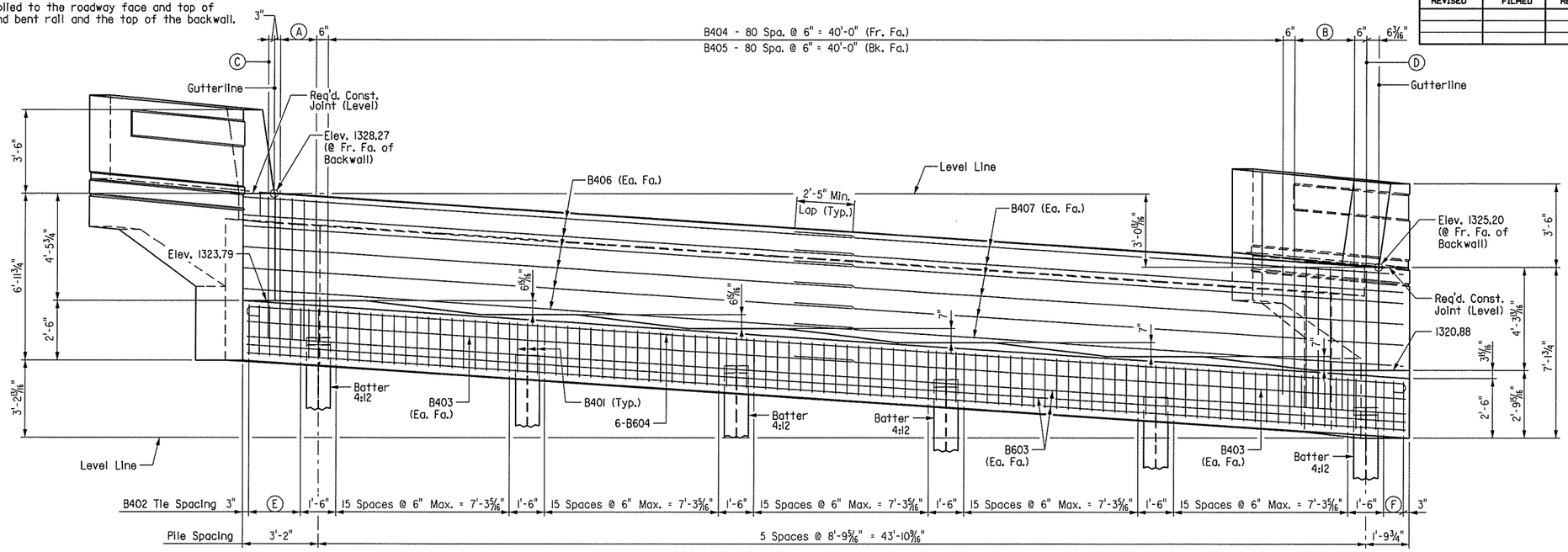
DRAWN BY: JAP DATE: 08-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 08-12

FILENAME: bca0907x12_b41.dgn
SCALE: As Shown

BRIDGE NO. 07315

DRAWING NO. 55447

NOTE: Class 2 Protective Surface Treatment shall be applied to the roadway face and top of the end bent rail and the top of the backwall.




ELEVATION

Looking Ahead

Scale: 3/8" = 1'-0"

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 595 | 897 |

(I) 07315 END BENT 4 DETAILS 55448

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

For additional information, see LAYOUT on Dwg. No. 55437.

For Details of Wing and Rail, see Dwg. No. 55450.

(A) B601 - 3 Spa. @ 6" = 1'-6" (Fr. Fa.)
B602 - 3 Spa. @ 6" = 1'-6" (Bk. Fa.)

(B) B601 - 5 Spa. @ 6" = 2'-6" (Fr. Fa.)
B602 - 5 Spa. @ 6" = 2'-6" (Bk. Fa.)

(C) B602 - Back Face Only

(D) B601 - Front Face Only

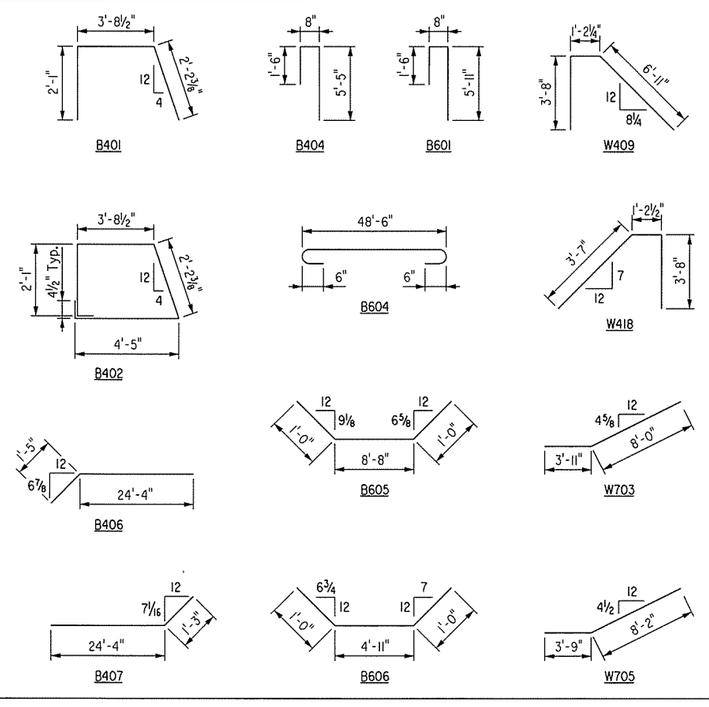
(E) 5 Spaces @ 6" Max. = 2'-2"

(F) 2 Spaces @ 6" Max. = 9 3/4"

## END BENT 4 BAR LIST

| Mark | No. Req'd | Length | Pin Dia. |
|---|---|---|---|
| B401 | 18 | 7'-10" | 2" |
| B402 | 89 | 12'-9" | 2" |
| B403 | 4 | 25'-5" | Str. |
| B404 | 81 | 7'-5" | 2" |
| B405 | 81 | 4'-2" | Str. |
| B406 | 12 | 25'-9" | 3" |
| B407 | 12 | 25'-7" | 3" |
| B408 | 6 | 5'-3" | Str. |
| | | | |
| B601 | 11 | 7'-9" | 4 1/2" |
| B602 | 11 | 4'-8" | Str. |
| B603 | 6 | 48'-6" | Str. |
| B604 | 6 | 49'-10" | 4 1/2" |
| B605 | 3 | 10'-8" | 4 1/2" |
| B606 | 2 | 6'-11" | 4 1/2" |
| | | | |
| R401 | 100 | 5'-3" | Str. |
| | | | |
| R601 | 20 | 5'-2" | Str. |
| R602 | 16 | 12'-8" | Str. |
| | | | |
| W401 | 8 | 6'-7" | Str. |
| W402 to W408 | 2 Each | 3'-8" to 1'-7" | Str. |
| W409 | 3 | 11'-8" | 3" |
| W410 | 8 | 6'-9" | Str. |
| W411 to W417 | 2 Each | 3'-7" to 1'-7" | Str. |
| W418 | 4 | 8'-5" | 3" |
| | | | |
| W701 | 12 | 12'-8" | Str. |
| W702 | 2 | 7'-8" | Str. |
| W703 | 2 | 11'-11" | 5/4" |
| W704 | 2 | 7'-7" | Str. |
| W705 | 2 | 11'-11" | 5/4" |

BENDING DIAGRAMS
(Dimensions are out to out of bars)




SHEET 2 OF 4
DETAILS OF END BENT 4
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

DRAWN BY: JAP DATE: 08-12

CHECKED BY: PJS DATE: 08-12

DESIGNED BY: LMS DATE: 08-12

FILENAME: bca0907x12_b42.dgn

SCALE: 3/8" = 1'-0"

BRIDGE NO. 07315

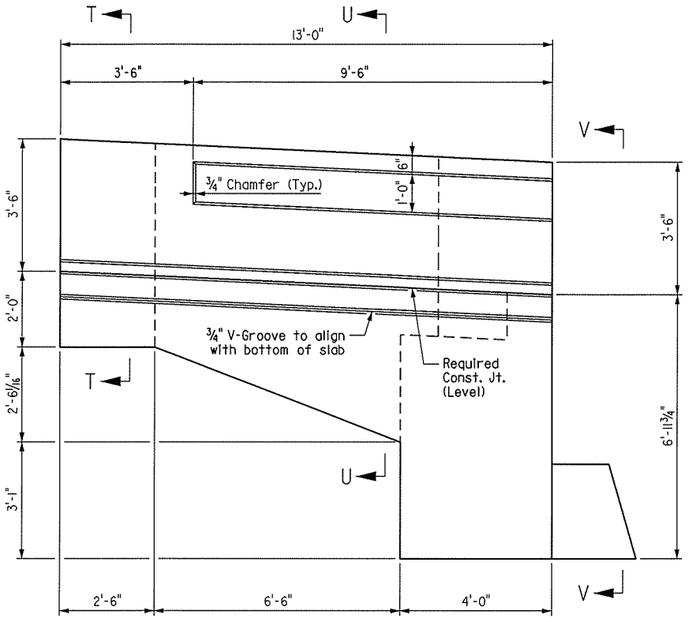
DRAWING NO. 55448

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 596 | 897 |
| | | | | (1) 07315 | | END BENT 4 DETAILS | | 55449 |

For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

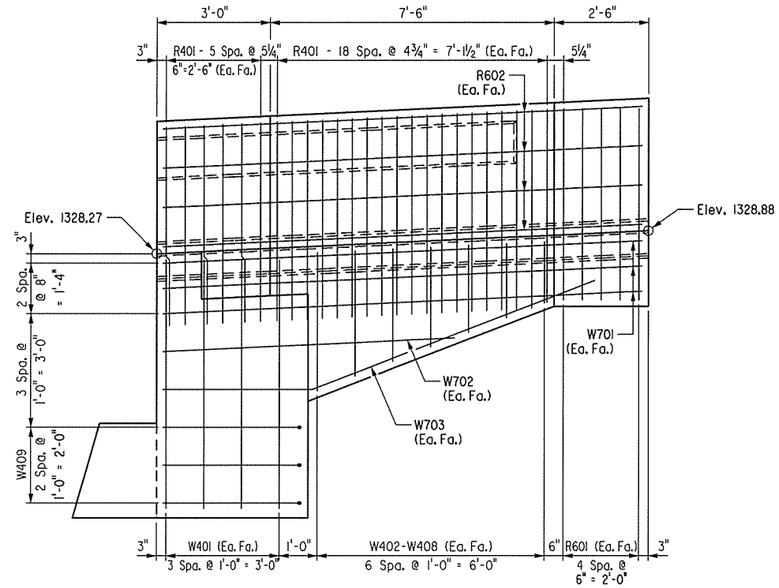
For additional information, see LAYOUT on Dwg. No. 55437.

For SECTION T-T, SECTION U-U, VIEW V-V, VIEW W-W, SECTION X-X, and SECTION Y-Y, see Dwg. No. 55450.



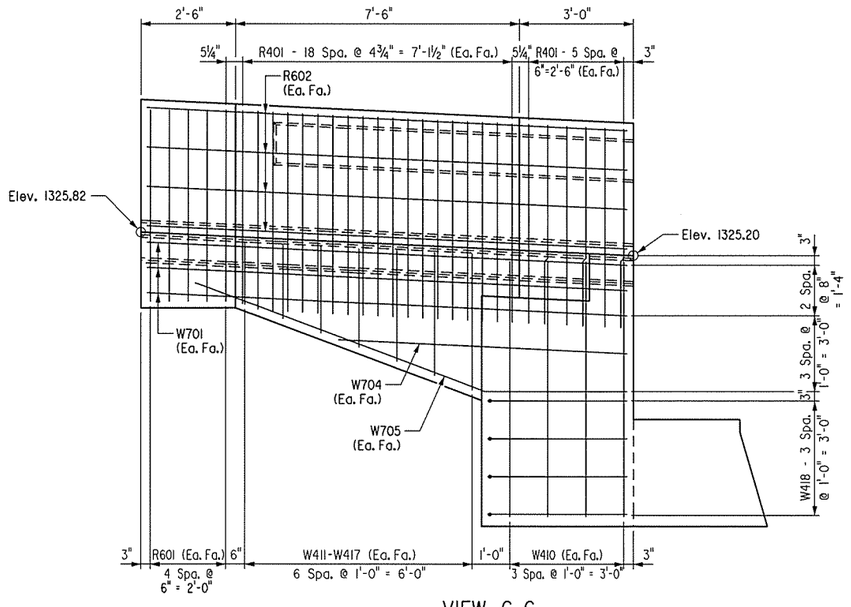

VIEW A-A

Scale: 1/2" = 1'-0"



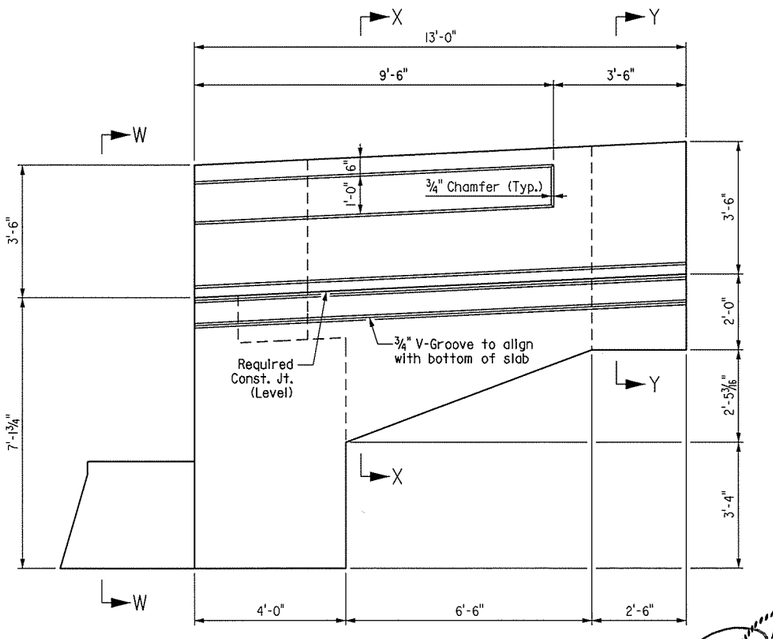

VIEW B-B

Scale: 1/2" = 1'-0"




VIEW C-C

Scale: 1/2" = 1'-0"




VIEW D-D

Scale: 1/2" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SIMS 2-28-14

BRIDGE ENGINEER

SHEET 3 OF 4
DETAILS OF END BENT 4
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

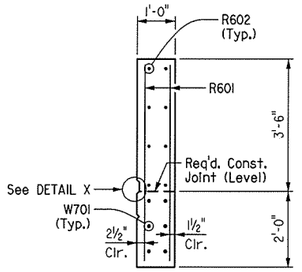
DRAWN BY: JAP DATE: 08-12 FILENAME: bca0907x12_b43.dgn
CHECKED BY: PJS DATE: 08-12 SCALE: As Shown
DESIGNED BY: LMS DATE: 08-12

BRIDGE NO. 07315 DRAWING NO. 55449

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 597 | 897 |
| | | | | (1) 07315 | | END BENT 4 DETAILS | | 55450 |

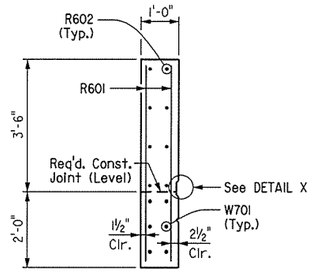
For GENERAL NOTES FOR SUBSTRUCTURE, see Dwg. No. 55439.

For additional information, see LAYOUT on Dwg. No. 55437.



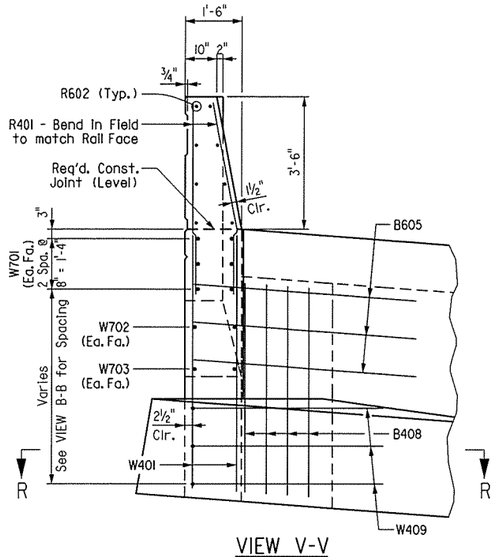

SECTION T-T

Scale: ½" = 1'-0"



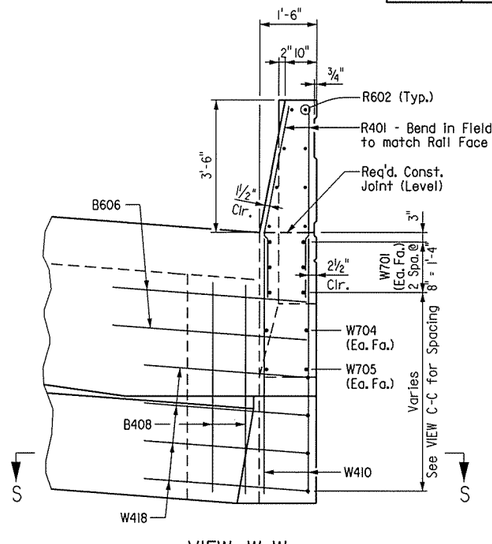

SECTION Y-Y

Scale: ½" = 1'-0"



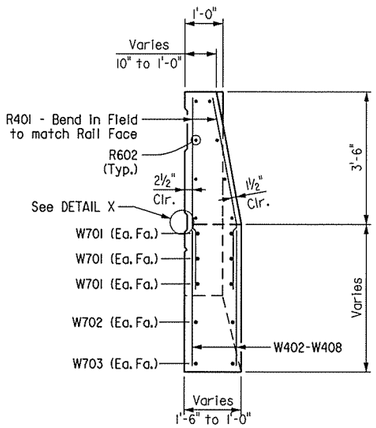

VIEW V-V

Scale: ½" = 1'-0"



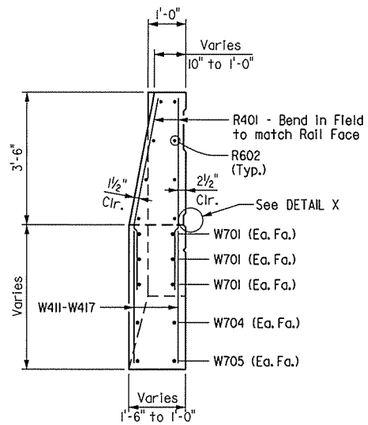

VIEW W-W

Scale: ½" = 1'-0"



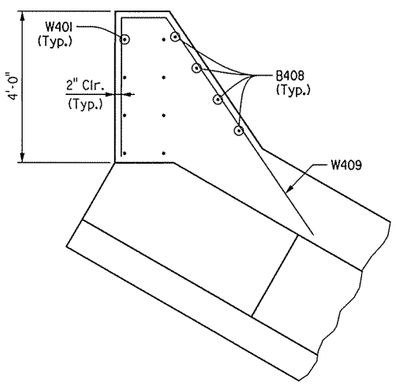

SECTION U-U

Scale: ½" = 1'-0"



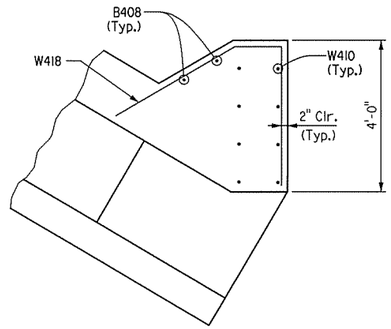

SECTION X-X

Scale: ½" = 1'-0"



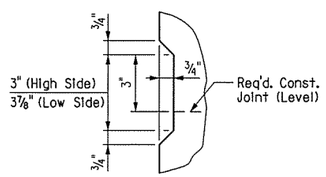

SECTION R-R

Scale: ½" = 1'-0"



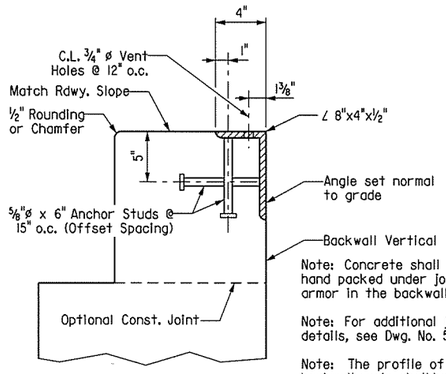

SECTION S-S

Scale: ½" = 1'-0"




DETAIL X

Scale: 3" = 1'-0"



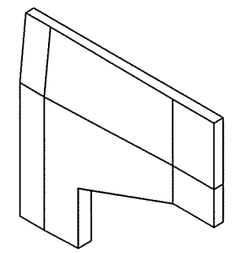

Note: Concrete shall be hand packed under joint armor in the backwall.

Note: For additional joint details, see Dwg. No. 55458.

Note: The profile of the backwall angle shall be established based on the vertical curve in conjunction with the skew.

DETAIL Z

Scale: 2" = 1'-0"



THREE DIMENSIONAL VIEW OF WING & RAIL

Scale: ¼" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SINK

BRIDGE ENGINEER

SHEET 4 OF 4

# DETAILS OF END BENT 4
# RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12

CHECKED BY: PJS DATE: 08-12

DESIGNED BY: LMS DATE: 08-12

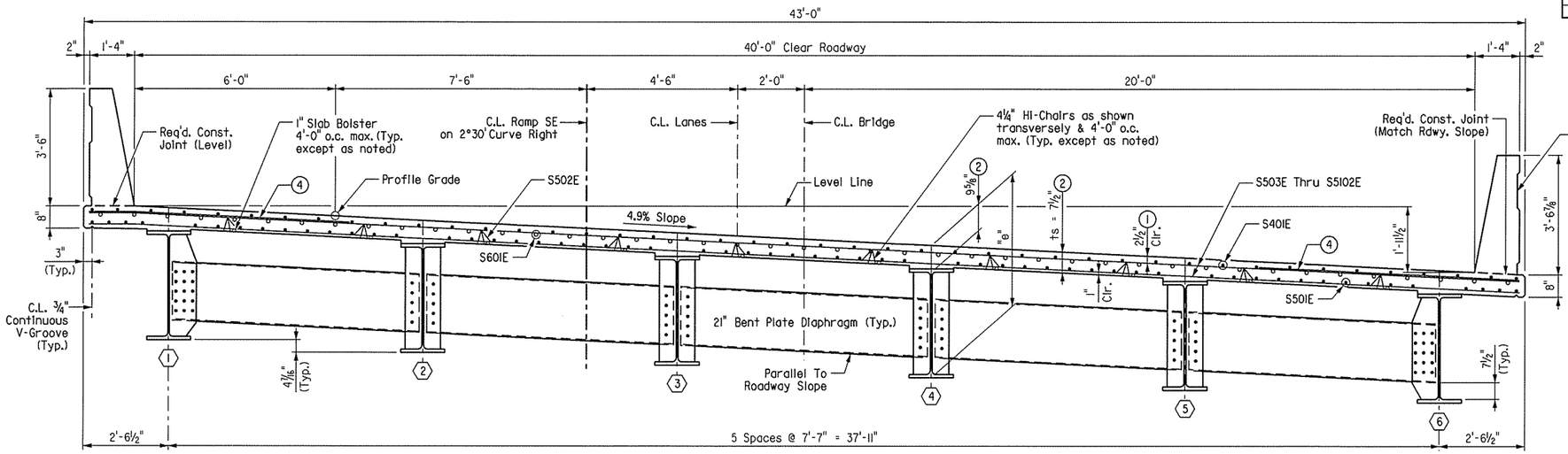
FILENAME: bca0907x12_b44.dgn

SCALE: As Shown

BRIDGE NO. 07315

DRAWING NO. 55450

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 598 | 897 |
| | | | | (1) 07315 | | SPAN DETAILS | | 55451 |




## TYPICAL SECTION

(Looking Ahead)
Scale: ½" = 1'-0"

"e" = 3'-10 5/16" (W40x149)
"e" = 3'-11⅜" (W40x215)
@ C.L. Beam & C.L. Bearing

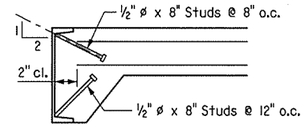
SLAB REINFORCING:

Transverse:
S502E @ 12" Centers (Bent up over girders)
S503E @ 12" Centers (Top & Bottom)
S504E-S5102E @ 6" Centers (Top & Bottom)
(4) S602E (Place as shown)
See DETAIL A on Dwg. No. 55452
Longitudinal:
S401E @ 12" Centers (Top)
S501E as shown (Bottom)
S601E @ 12" Centers (Top over Int. Bents)

For additional reinforcing details, see Dwg. No. 55452.

(1) TOLERANCE:
Minus: ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

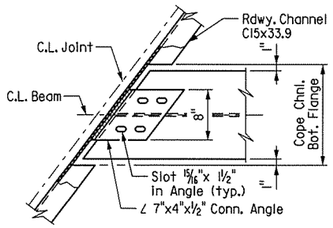
(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".




Note: As an alternate to ⅝" ø studs, ½" ø x 8" studs spaced as shown may be used. Use weight of ⅝" ø stud as basis of measurement of structural steel in anchors.

## DETAIL OF ALTERNATE ANCHORS

No Scale



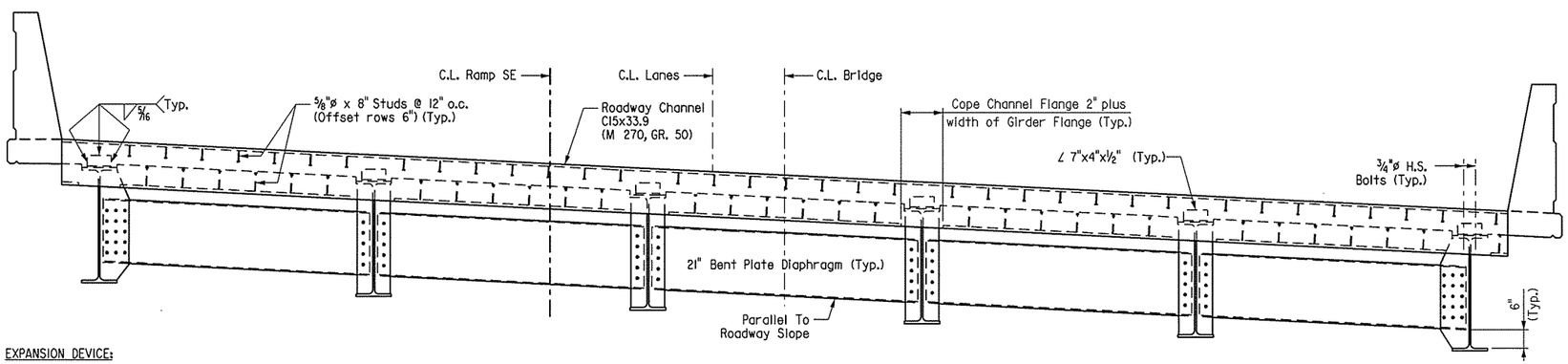

## ROADWAY CHANNEL CONNECTION DETAIL

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S502E. Payment will be based on the weight of bars S502E.

Class 2 Protective Surface Treatment shall be applied to the roadway surface and the top and roadway face of railing.

All bars designated with an "E" suffix are to be epoxy coated.



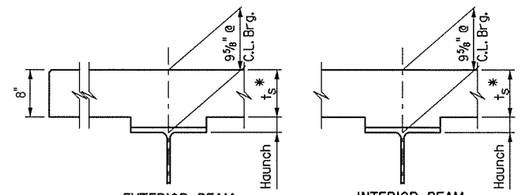

EXPANSION DEVICE:

Roadway Channel C15x33.9 (M 270, Gr. 50)
Connection ∠'s 7"x4"x½"
Detail Device ⅛" high & provide ¼" shims using 1 - ⅛" PL & 2 - 1/16" PL's

For additional details of Poured Silicone Joint, see Dwg. No. 55458.

## VIEW @ C.L. JOINT

(Looking Ahead)
Scale: ½" = 1'-0"




Note: ts = slab thickness as shown on "TYPICAL SECTION".
*Tolerance when removable deck forming is used is +½", -¼".
Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

## ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance; Minimum - occurs when the top flange is ¾" below the bottom reinforcing steel; Maximum - top flange thickness plus 2¼". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SIAK
2019
BRIDGE ENGINEER

# SHEET 1 OF 7
# DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12
FILENAME: bca0907x12_sl.dgn
SCALE: As Shown

BRIDGE NO. 07315 DRAWING NO. 55451

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

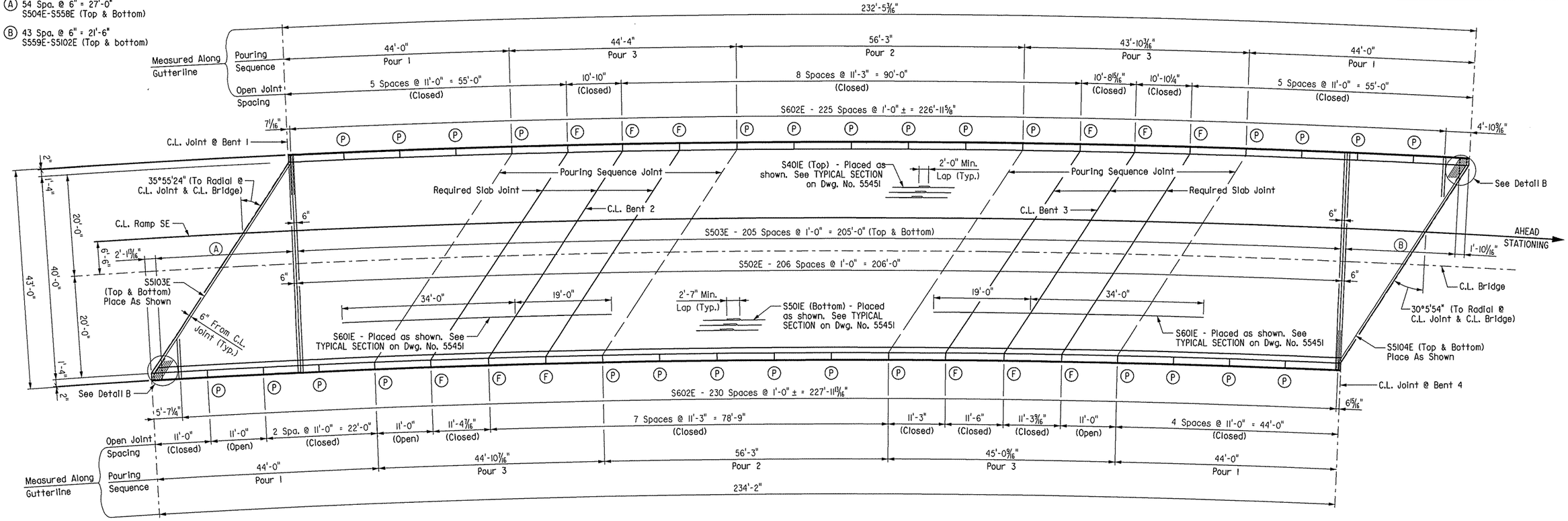
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 599 | 897 |
| (1) 07315 | | SPAN DETAILS | | 55452 |

(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

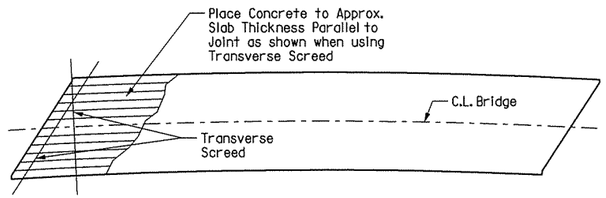
(A) 54 Spa. @ 6" = 27'-0"
S504E-S558E (Top & Bottom)

(B) 43 Spa. @ 6" = 21'-6"
S559E-S5102E (Top & bottom)




## REINFORCING PLAN & POURING SEQUENCE

Scale: 1" = 10'-0"




Note: At the Contractor's option, the Transverse Screed may be placed parallel to the skew or perpendicular to C.L. Bridge

## CONCRETE PLACEMENT PROCEDURE

No Scale

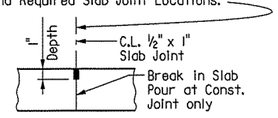
Note: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed, and all Pours (2) before Pours (3). 48 hours shall elapse before the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour.
72 hours shall elapse between the completion of the entire deck and the pouring of the parapet. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.

The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

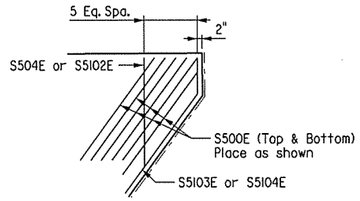
Note: Required slab joints and pouring sequence joints shall align with parapet open joint at the gutterline.

The ½" x 1" Poured Joint Sealer (Type 3 or 4) in slab shall conform to subsection 501.02(h) and 501.05(j). Backer rod filler will not be required. The poured joint sealer shall be paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.



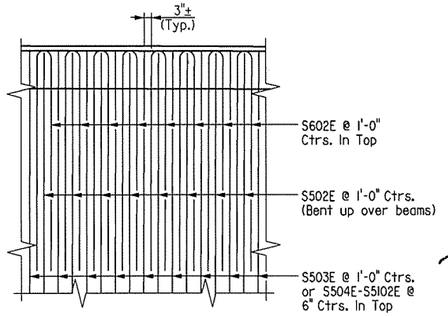

## SLAB JOINT DETAIL

No Scale




## DETAIL B

Scale: ⅜" = 1'-0"




## DETAIL A

Scale: ⅜" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZIN 4-30-2014

BRIDGE ENGINEER

Note: See TYPICAL SECTION on Dwg. No. 55451 for placement of longitudinal reinforcing.

Note: For Bar List, see Dwg. No. 55453.

Note: All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along C.L. Bridge, unless noted otherwise.

All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Bridge.

# SHEET 2 OF 7
# DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12

FILENAME: bca0907xl2_s2.dgn
SCALE: As Shown

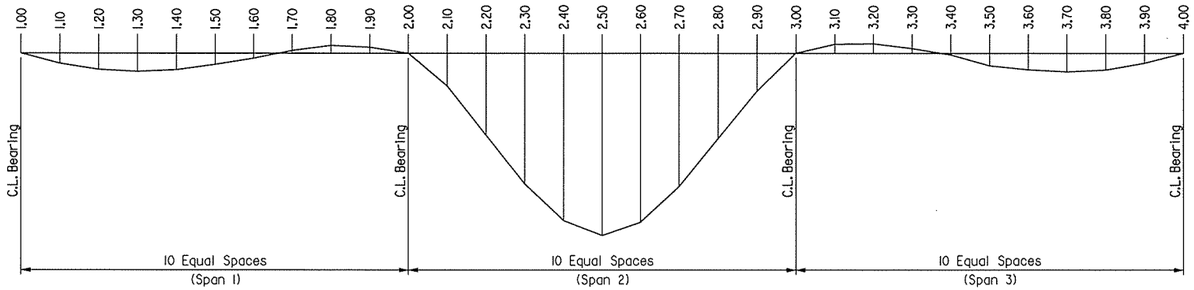
BRIDGE NO. 07315 DRAWING NO. 55452

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 600 | 897 |
| | | | | (1) 07315 | | SPAN DETAILS | | 55453 |

# TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Camber for Dead Load Deflection plus vertical curve +/- ¼" tolerance. Vertical curve corrections not included. Negative sign (-) indicates upward deflection. Deflections shown are along C.L. Beam from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing.

| | POINT OF DEFLECTION | Structural Steel | | | | | | Structural Steel (+) Slab | | | | | | Structural Steel (+) Slab (+) Parapet Rail | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Beam 1 | Beam 2 | Beam 3 | Beam 4 | Beam 5 | Beam 6 | Beam 1 | Beam 2 | Beam 3 | Beam 4 | Beam 5 | Beam 6 | Beam 1 | Beam 2 | Beam 3 | Beam 4 | Beam 5 | Beam 6 |
| SPAN NO. 1 | 1.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 1.10 | 0.018 | 0.018 | 0.018 | 0.018 | 0.019 | 0.019 | 0.077 | 0.086 | 0.085 | 0.086 | 0.089 | 0.082 | 0.087 | 0.095 | 0.094 | 0.095 | 0.098 | 0.092 |
| | 1.20 | 0.030 | 0.031 | 0.031 | 0.032 | 0.032 | 0.033 | 0.125 | 0.148 | 0.146 | 0.150 | 0.153 | 0.139 | 0.141 | 0.163 | 0.161 | 0.165 | 0.169 | 0.157 |
| | 1.30 | 0.035 | 0.038 | 0.038 | 0.039 | 0.040 | 0.041 | 0.142 | 0.179 | 0.176 | 0.181 | 0.186 | 0.172 | 0.160 | 0.197 | 0.194 | 0.200 | 0.206 | 0.194 |
| | 1.40 | 0.033 | 0.037 | 0.036 | 0.037 | 0.038 | 0.041 | 0.129 | 0.169 | 0.164 | 0.169 | 0.175 | 0.171 | 0.145 | 0.186 | 0.181 | 0.187 | 0.194 | 0.193 |
| | 1.50 | 0.024 | 0.028 | 0.027 | 0.028 | 0.029 | 0.033 | 0.086 | 0.121 | 0.114 | 0.119 | 0.125 | 0.133 | 0.097 | 0.133 | 0.126 | 0.132 | 0.138 | 0.151 |
| | 1.60 | 0.013 | 0.014 | 0.013 | 0.013 | 0.014 | 0.019 | 0.039 | 0.051 | 0.044 | 0.047 | 0.053 | 0.068 | 0.044 | 0.055 | 0.049 | 0.052 | 0.059 | 0.078 |
| | 1.70 | -0.001 | 0.000 | -0.001 | -0.001 | 0.000 | 0.007 | -0.022 | -0.016 | -0.023 | -0.021 | -0.016 | 0.017 | -0.025 | -0.019 | -0.025 | -0.023 | -0.018 | 0.020 |
| | 1.80 | -0.011 | -0.012 | -0.012 | -0.012 | -0.012 | -0.006 | -0.063 | -0.068 | -0.073 | -0.072 | -0.069 | -0.038 | -0.071 | -0.076 | -0.081 | -0.080 | -0.077 | -0.043 |
| | 1.90 | -0.009 | -0.012 | -0.013 | -0.013 | -0.014 | -0.009 | -0.048 | -0.066 | -0.070 | -0.070 | -0.073 | -0.048 | -0.054 | -0.074 | -0.077 | -0.077 | -0.081 | -0.054 |
| SPAN NO. 2 | 2.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 2.10 | 0.055 | 0.058 | 0.060 | 0.060 | 0.059 | 0.053 | 0.255 | 0.290 | 0.299 | 0.299 | 0.295 | 0.242 | 0.289 | 0.323 | 0.332 | 0.332 | 0.328 | 0.274 |
| | 2.20 | 0.139 | 0.146 | 0.148 | 0.149 | 0.148 | 0.138 | 0.635 | 0.721 | 0.738 | 0.740 | 0.733 | 0.623 | 0.720 | 0.803 | 0.818 | 0.821 | 0.815 | 0.705 |
| | 2.30 | 0.223 | 0.232 | 0.237 | 0.238 | 0.237 | 0.220 | 1.014 | 1.144 | 1.173 | 1.177 | 1.167 | 0.987 | 1.148 | 1.273 | 1.299 | 1.304 | 1.296 | 1.116 |
| | 2.40 | 0.287 | 0.299 | 0.305 | 0.306 | 0.306 | 0.290 | 1.300 | 1.464 | 1.502 | 1.506 | 1.494 | 1.295 | 1.470 | 1.627 | 1.662 | 1.667 | 1.657 | 1.463 |
| | 2.50 | 0.314 | 0.324 | 0.331 | 0.332 | 0.331 | 0.312 | 1.418 | 1.577 | 1.619 | 1.624 | 1.609 | 1.387 | 1.602 | 1.752 | 1.791 | 1.797 | 1.784 | 1.567 |
| | 2.60 | 0.293 | 0.303 | 0.309 | 0.310 | 0.310 | 0.295 | 1.315 | 1.462 | 1.502 | 1.506 | 1.493 | 1.303 | 1.486 | 1.624 | 1.662 | 1.666 | 1.656 | 1.472 |
| | 2.70 | 0.232 | 0.239 | 0.244 | 0.245 | 0.244 | 0.233 | 1.037 | 1.143 | 1.175 | 1.178 | 1.166 | 1.021 | 1.172 | 1.271 | 1.301 | 1.304 | 1.294 | 1.155 |
| | 2.80 | 0.149 | 0.152 | 0.156 | 0.156 | 0.156 | 0.153 | 0.663 | 0.721 | 0.743 | 0.744 | 0.736 | 0.666 | 0.750 | 0.802 | 0.823 | 0.824 | 0.817 | 0.754 |
| | 2.90 | 0.066 | 0.064 | 0.065 | 0.065 | 0.065 | 0.063 | 0.293 | 0.299 | 0.307 | 0.309 | 0.303 | 0.271 | 0.331 | 0.333 | 0.340 | 0.342 | 0.337 | 0.307 |
| | 3.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| SPAN NO. 3 | 3.10 | -0.016 | -0.016 | -0.016 | -0.016 | -0.016 | -0.015 | -0.073 | -0.072 | -0.076 | -0.076 | -0.074 | -0.066 | -0.082 | -0.080 | -0.084 | -0.084 | -0.082 | -0.075 |
| | 3.20 | -0.016 | -0.016 | -0.017 | -0.017 | -0.017 | -0.017 | -0.077 | -0.072 | -0.079 | -0.078 | -0.074 | -0.075 | -0.086 | -0.080 | -0.087 | -0.086 | -0.082 | -0.085 |
| | 3.30 | -0.007 | -0.005 | -0.007 | -0.007 | -0.006 | -0.006 | -0.040 | -0.017 | -0.026 | -0.025 | -0.018 | -0.026 | -0.043 | -0.019 | -0.028 | -0.026 | -0.020 | -0.029 |
| | 3.40 | 0.004 | 0.008 | 0.006 | 0.007 | 0.008 | 0.006 | 0.010 | 0.050 | 0.040 | 0.043 | 0.050 | 0.028 | 0.013 | 0.055 | 0.046 | 0.049 | 0.056 | 0.032 |
| | 3.50 | 0.023 | 0.023 | 0.021 | 0.022 | 0.023 | 0.019 | 0.093 | 0.126 | 0.115 | 0.119 | 0.127 | 0.086 | 0.107 | 0.139 | 0.129 | 0.133 | 0.141 | 0.098 |
| | 3.60 | 0.030 | 0.033 | 0.031 | 0.032 | 0.033 | 0.031 | 0.125 | 0.174 | 0.164 | 0.168 | 0.175 | 0.143 | 0.143 | 0.192 | 0.182 | 0.187 | 0.194 | 0.162 |
| | 3.70 | 0.033 | 0.035 | 0.034 | 0.035 | 0.035 | 0.033 | 0.141 | 0.184 | 0.177 | 0.181 | 0.186 | 0.150 | 0.161 | 0.203 | 0.196 | 0.201 | 0.206 | 0.169 |
| | 3.80 | 0.030 | 0.030 | 0.029 | 0.030 | 0.030 | 0.029 | 0.129 | 0.156 | 0.151 | 0.154 | 0.158 | 0.131 | 0.146 | 0.172 | 0.167 | 0.170 | 0.175 | 0.148 |
| | 3.90 | 0.017 | 0.017 | 0.017 | 0.017 | 0.018 | 0.018 | 0.075 | 0.090 | 0.088 | 0.089 | 0.092 | 0.081 | 0.085 | 0.099 | 0.097 | 0.098 | 0.101 | 0.091 |
| | 4.00 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

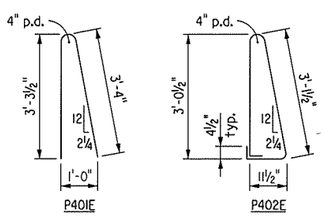


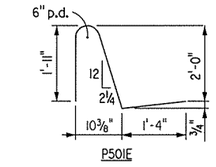

## DEAD LOAD DEFLECTION DIAGRAM

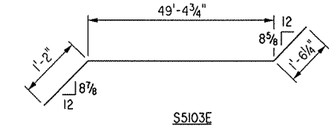
Not to Scale

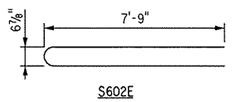
# SUPERSTRUCTURE BAR LIST

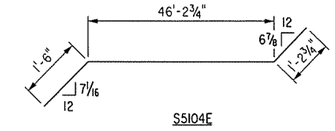
| Mark | Number Required | Length | Pin Dia. | Bending Diagrams (Dimensions are out to out of bars.) |
|---|---|---|---|---|
| S401E | 308 | 35'-1" | Str. | |
| S500E | 24 | 5'-0" | Str. | |
| S501E | 290 | 48'-10" | Str. | |
| S502E | 207 | 43'-6 1/2" | 3" | |
| S503E | 412 | 42'-8" | Str. | |
| S504E to S558E | 2 Each | 3'-10" to 40'-11 3/4" | Str. | |
| S559E to S5102E | 2 Each | 40'-11 1/2" to 4'-0 3/4" | Str. | |
| S5103E | 2 | 52'-1" | 3¾" | |
| S5104E | 2 | 45'-0" | 3¾" | |
| S601E | 86 | 53'-0" | Str. | |
| S602E | 457 | 15'-9" | 5¼" | |
| P401E | 914 | 6'-8" | 2" | |
| P402E | 30 | 8'-0" | 2" | |
| P501E | 914 | 5'-7" | 3¾" | |
| P502E | 100 | 10'-8" | Str. | |
| P503E | 103 | 10'-11" | Str. | |
| P504E | 11 | 10'-5" | Str. | |
| P505E | 22 | 10'-6" | Str. | |
| P506E | 24 | 41'-0" | Str. | |
| P507E | 24 | 54'-8" | Str. | |
| P508E | 11 | 11'-0" | Str. | |
| P509E | 11 | 11'-2" | Str. | |

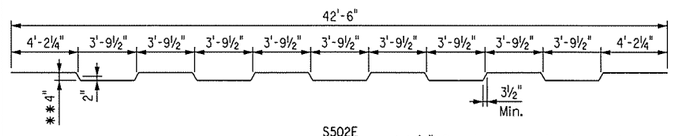



** ½" Overtolerance, No Undertolerance

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12367 PETER J. SEIN BRIDGE ENGINEER

SHEET 3 OF 7
DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12

FILENAME: bcq0907x12_s3.dgn
SCALE: As Shown

BRIDGE NO. 07315 DRAWING NO. 55453

(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

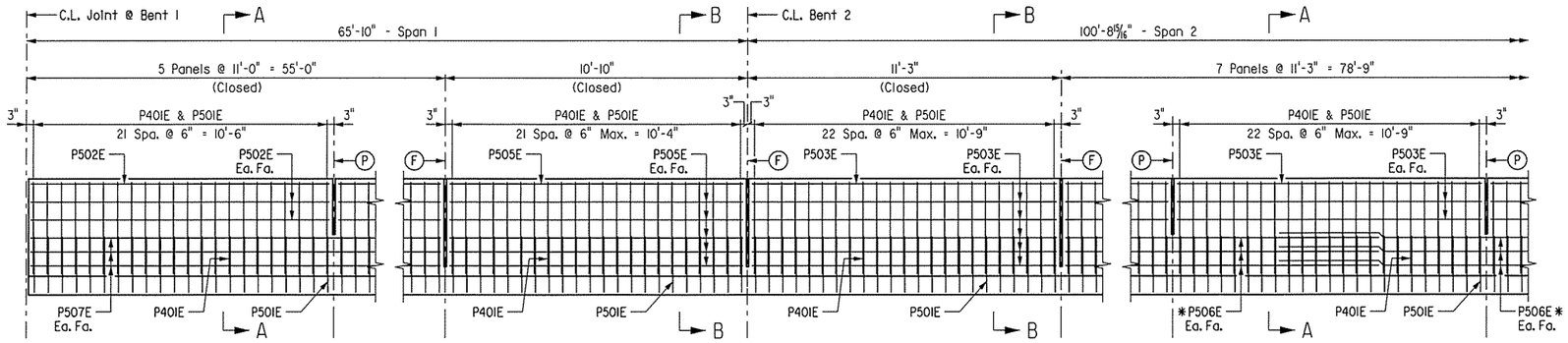
(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

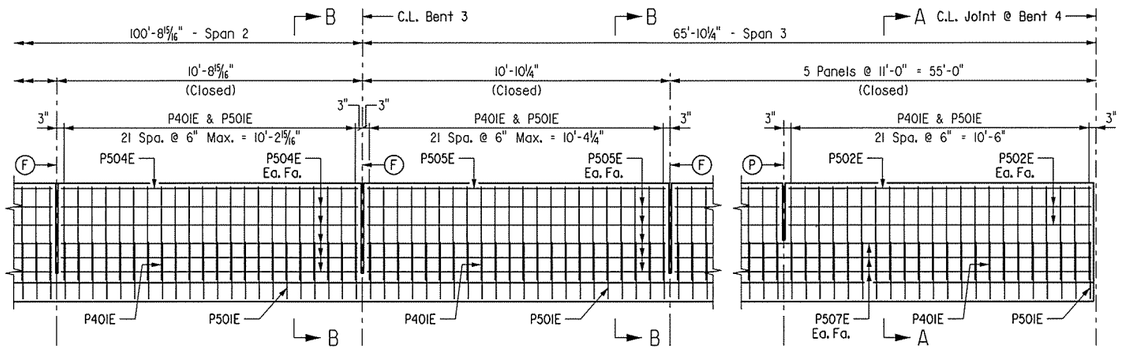
* Minimum splice length for P506E bars = 3'-7"

Note: All dimensions shown are taken along gutterline of bridge.

Note: For Bar List, see Dwg. No. 55453.

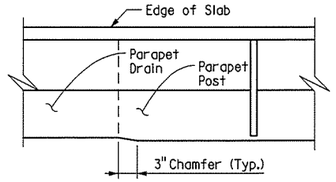
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 601 | 897 |
| | | | | (1) 07315 | | SPAN DETAILS | | 55454 |




DETAILS OF PARAPET RAIL - HIGH SIDE OF BRIDGE

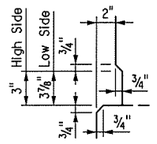
Scale: 3/8" = 1'-0"




PLAN OF RAIL POST CHAMFER

(Typ. for Open Median Drain Panels Only)

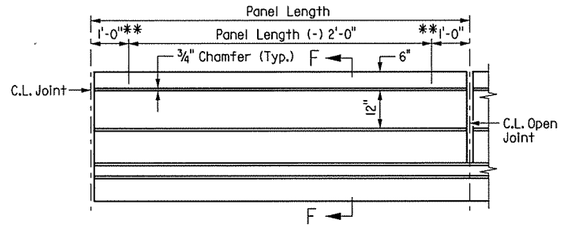
1" = 1'-0"




DETAIL X

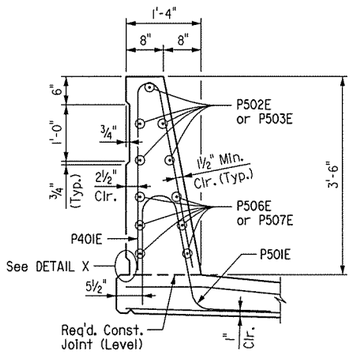
No Scale

** Panel Inset shall be made continuous.



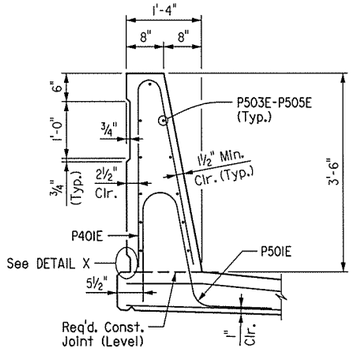

PARAPET ENHANCEMENT DETAILS

Scale: ½" = 1'-0"



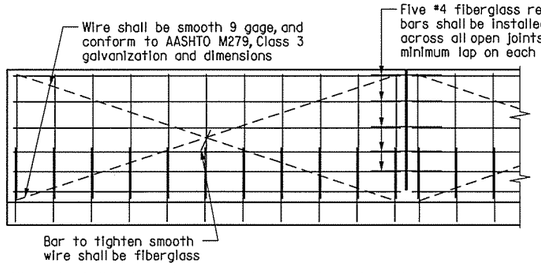

SECTION A-A

Scale: ¾" = 1'-0"

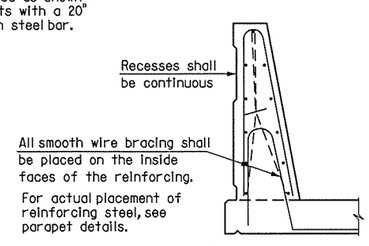



SECTION B-B

Scale: ¾" = 1'-0"



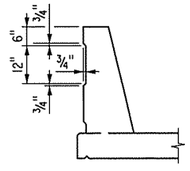

All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.




The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Top and traffic face surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.

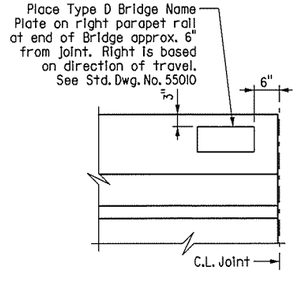
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale




SECTION F-F

Scale: ½" = 1'-0"




NAME PLATE DETAIL

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
4 Dec 2014
BRIDGE ENGINEER

SHEET 4 OF 7
DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12
FILENAME: bca0907xl2_s4.dgn
SCALE: As Shown

BRIDGE NO. 07315

DRAWING NO. 55454

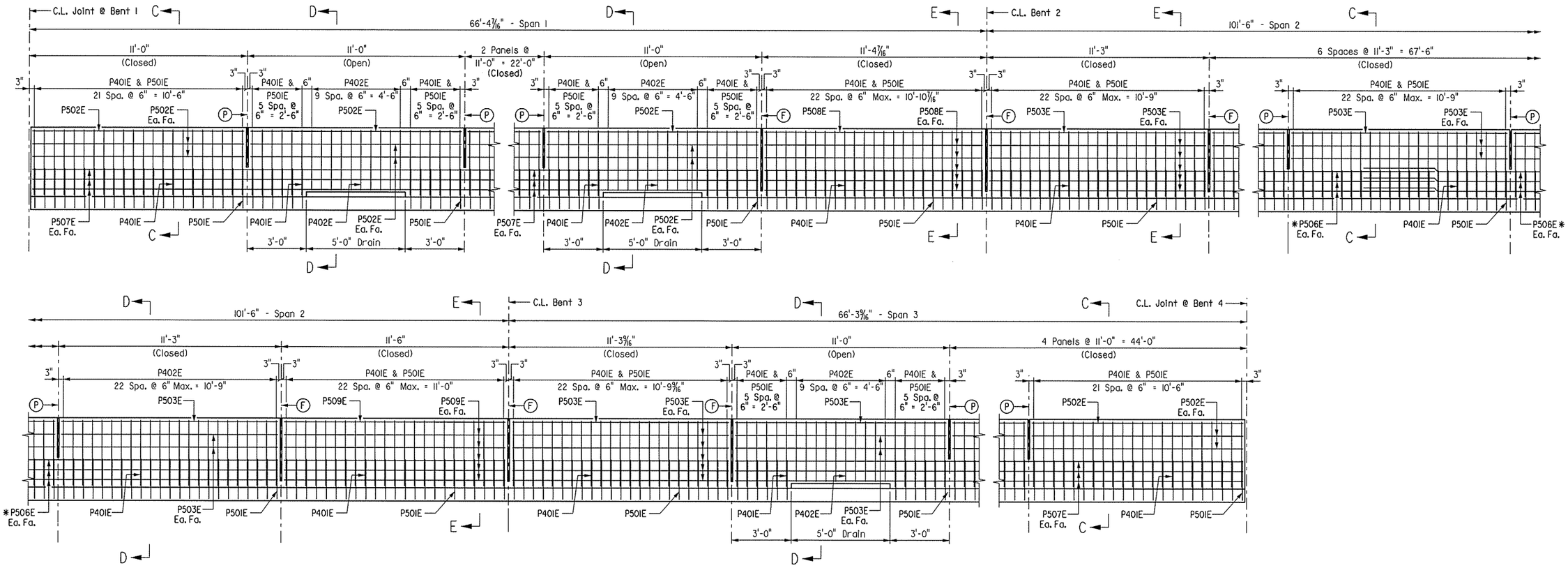
(P) C.L. Partial Depth Parapet Joint (¼" to 1" max.). Stop 1'-6" from top of slab.

(F) C.L. Full Depth Parapet Joint (¼" to 1" max.). Stop 4" from top of slab.

* Minimum splice length for P506E bars = 3'-7"

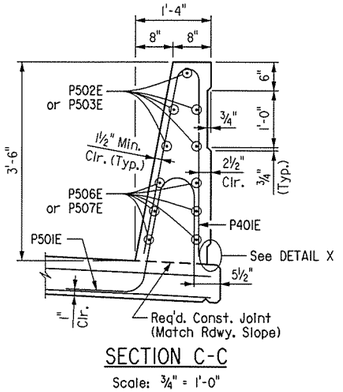
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 602 | 897 |
| (1) 07315 | | SPAN DETAILS | | 55455 |



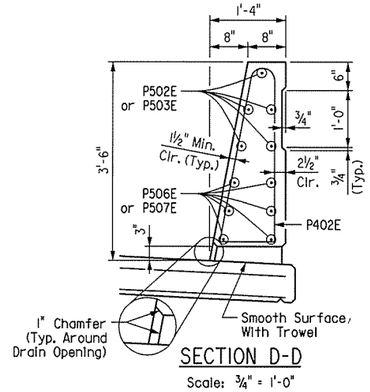

## DETAILS OF PARAPET RAIL - LOW SIDE OF BRIDGE

Scale: ⅜" = 1'-0"



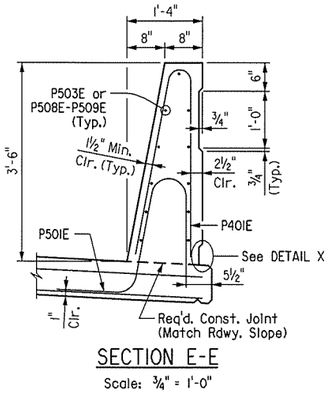

## SECTION C-C

Scale: ¾" = 1'-0"



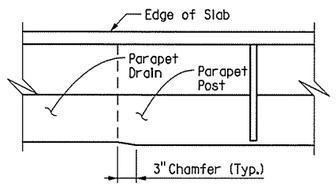

## SECTION D-D

Scale: ¾" = 1'-0"




## SECTION E-E

Scale: ¾" = 1'-0"




## PLAN OF RAIL POST CHAMFER

(Typ. for Open Parapet Panels Only)
1" = 1'-0"

Note: All dimensions shown are taken along gutterline of bridge.

Note: For Bar List, see Dwg. No. 55453.

Note: For DETAIL X, see Dwg. No. 55454.

Note: For DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL, and PARAPET ENHANCEMENT see Dwg. No. 55454.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

4-25-2014

BRIDGE ENGINEER

SHEET 5 OF 7
DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

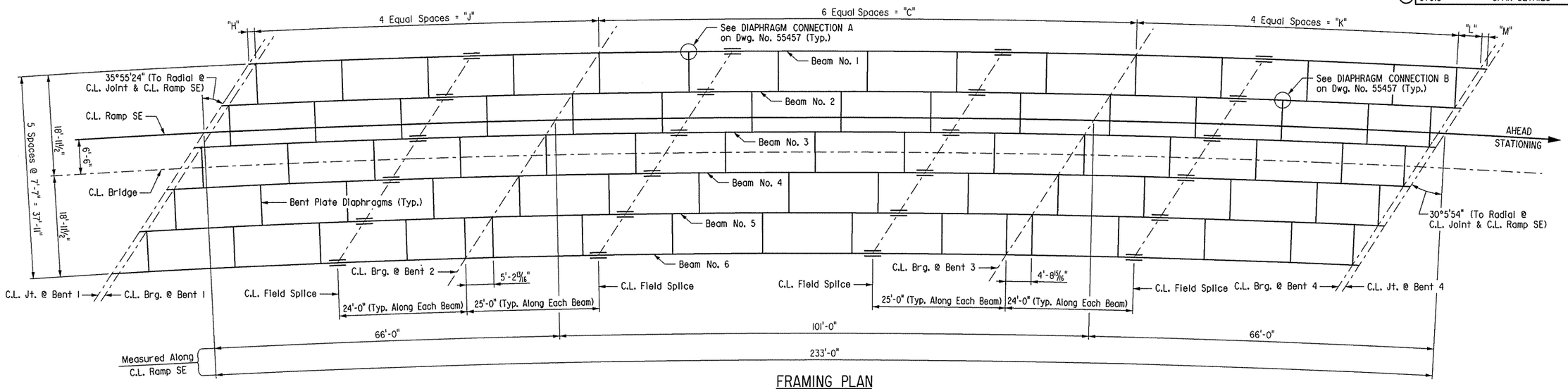
DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12
FILENAME: bca0907x12_s5.dgn
SCALE: As Shown

BRIDGE NO. 07315

DRAWING NO. 55455

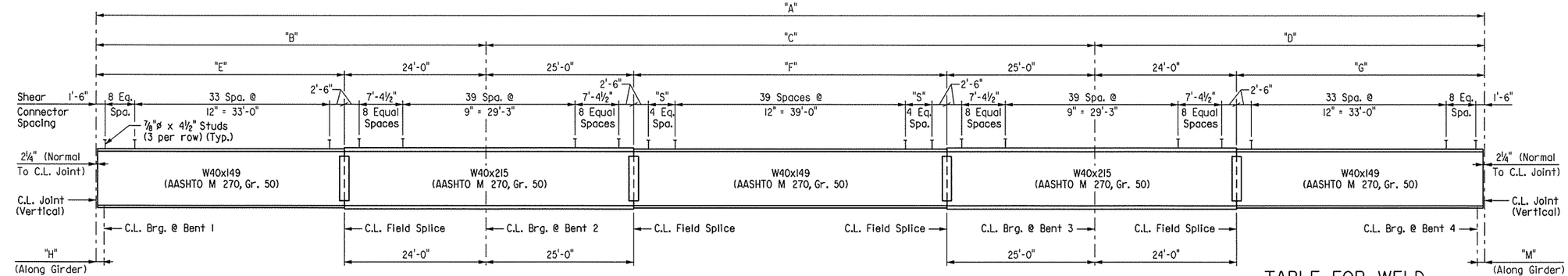
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 603 | 897 |
| (1) 07315 | | SPAN DETAILS | | 55456 |




## FRAMING PLAN

Scale: 1" = 10'-0"




## BEAM ELEVATION

Scale: 1" = 10'-0"

## TABLE OF BEAM VARIABLES

| Beam No. | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| "A" | 232'-5⅝" | 232'-9½" | 233'-1⅜" | 233'-5⅜" | 233'-9⁷⁄₁₆" | 234'-1½" |
| "B" | 65'-9⁵⁄₁₆" | 65'-11⁷⁄₁₆" | 66'-0½" | 66'-1¹¹⁄₁₆" | 66'-3⅛" | 66'-4½" |
| "C" | 100'-9⅛" | 100'-10³⁄₁₆" | 101'-0½" | 101'-2¼" | 101'-4" | 101'-5¾" |
| "D" | 65'-10½" | 65'-11⁷⁄₁₆" | 66'-0⅜" | 66'-1⅝" | 66'-2⅝" | 66'-3⅝" |
| "E" | 41'-9⁵⁄₁₆" | 41'-11⁷⁄₁₆" | 42'-0½" | 42'-1¹¹⁄₁₆" | 42'-3⅛" | 42'-4½" |
| "F" | 50'-9⅛" | 50'-10³⁄₁₆" | 51'-0½" | 51'-2¼" | 51'-4" | 51'-5¾" |
| "G" | 41'-10½" | 41'-11⁷⁄₁₆" | 42'-0⅜" | 42'-1⅝" | 42'-2⅝" | 42'-3⅝" |
| "H" | 1'-4" | 1'-4⅛" | 1'-4⅛" | 1'-4⅛" | 1'-4⅛" | 1'-4⅛" |
| "J" | 64'-5⅝" | 64'-7⅛" | 64'-8⅞" | 64'-9¾" | 64'-11" | 65'-0⅜" |
| "K" | 60'-2⅞" | 60'-2⅞" | 60'-3½" | 60'-4¼" | 60'-5" | 64'-11½" |
| "L" | 4'-4⅝" | 4'-4⅞" | 4'-5⅛" | 4'-5⅝" | 4'-5⅝" | --- |
| "M" | 1'-3" | 1'-3" | 1'-3" | 1'-3" | 1'-3" | 1'-3" |
| "N" | 1'-4" | 1'-4⅛" | 1'-4⅛" | 1'-4⅛" | 1'-4⅛" | 1'-4⅛" |
| "P" | 4½" | 4¼" | 4¼" | 4⅝" | 4⅝" | 4⅜" |
| "Q" | 3⅜" | 3⅛" | 3⅛" | 3⅛" | 3⅛" | 3½" |
| "R" | 1'-3" | 1'-3" | 1'-3" | 1'-3⅛" | 1'-3⅛" | 1'-3⅛" |
| "S" | 3'-4⅞" | 3'-5⅛" | 3'-6¼" | 3'-7⅛" | 3'-8" | 3'-8⅞" |

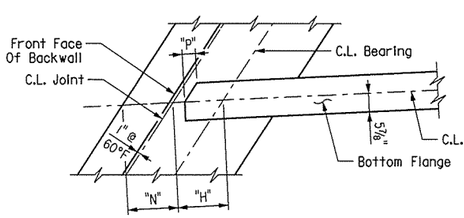
NOTES:

All longitudinal dimensions are taken along C.L. Beam, U.N.O.

Beams are curved and concentric to C.L. Ramp SE.

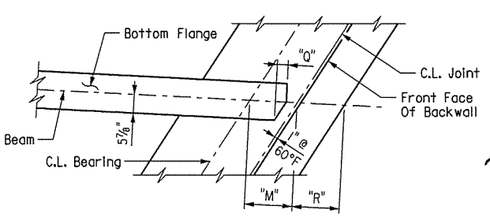
For FIELD SPLICE DETAILS, see Dwg. No. 55457.

For Bent Plate Diaphragm details, see Dwg. No. 55457.




## BEARING PLAN @ END BENT 1

Scale: ½" = 1'-0"




## BEARING PLAN @ END BENT 4

Scale: ½" = 1'-0"

## TABLE FOR WELD

| Material Thickness of Thicker Part Joined ( Inches ) | Minimum Size of Fillet Weld ( Inches ) | Single Pass Weld Must Be Used |
|---|---|---|
| To ¾" Inclusive | ¼" | |
| Over ¾" | ⅝" | |

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK 2014

BRIDGE ENGINEER

# SHEET 6 OF 7
# DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12 FILENAME: bca0907x12_s6.dgn

CHECKED BY: PJS DATE: 08-12 SCALE: As Shown

DESIGNED BY: LMS DATE: 07-12

BRIDGE NO. 07315 DRAWING NO. 55456

# SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 4th Edition (2007), with 2008 interim specifications, and AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (2003 edition).

MATERIALS AND STRENGTHS:

| | | |
|---|---|---|
| Class S(AE) Concrete | fc = | 4,000 psi |
| Reinforcing Steel (AASHTO M31 or M322 Type A, Gr. 60) | Fy = | 60,000 psi |
| Structural Steel (AASHTO M270, Gr. 50) | Fy = | 50,000 psi |
| Structural Steel (AASHTO M270, Gr. 36) | Fy = | 36,000 psi |

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered 3"*4" unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. Use of a longitudinal screed is prohibited.

A minimum of 72 hours shall elapse between completion of the deck and the pouring of the parapet railing. Any railing pours made before the entire deck has been placed and cured must be approved by the Engineer.

REINFORCING STEEL: The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "EPOXY COATED REINFORCING STEEL - BRIDGE (GRADE 60)".

STRUCTURAL STEEL: All structural steel shall be AASHTO M270, Gr. 50 unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M 270, GR. 50)". Structural steel completely embedded in concrete may be AASHTO M270, Gr. 36. All surfaces shall be cleaned in accordance with Section 807.84(b) and painted as specified in Subsection 807.75, unless noted otherwise. Galvanized steel shall not be painted. For cleaning and painting of expansion joint devices, see Dwg. No. 55458. For cleaning requirements of external load plates of elastomeric bearings, see Dwg. No. 55459. The color of paint shall be DARK BROWN and shall match Fed. Std. 595B, Color Chip No. 20108.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted, and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

Beams, splice plates, bent plate diaphragms, and connection plates are considered main load carrying members and shall meet the Longitudinal Charpy V-notch Test specified in subsection 807.05. This work and material will not be paid for directly but are considered subsidiary to item "STRUCTURAL STEEL IN BEAM SPANS (M 270, GR. 50)".

All Beams shall be blocked in their true position in the shop, in groups of a minimum of three (3) sections as specified in subsection 807.54(b)(2). Beams shall be blocked with webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60° F. A tolerance of ¼" +/- is allowed for camber.

Field splice flange plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of subsection 802.13 will not require approval prior to construction. All welding shall conform to subsection 807.26.

Anchor bolts shall be galvanized according to section 807.07 and shall be Grade 55.

Field connection shall be bolted with high-strength bolts and shall be ¾"ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Hole for ¾"ø high-strength bolts may be 15/16"ø if a washer is supplied for use under both the nut and head of the bolt.

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck, unless noted otherwise.

Bearings shall be seated in accordance with subsection 808.08. This work and materials are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

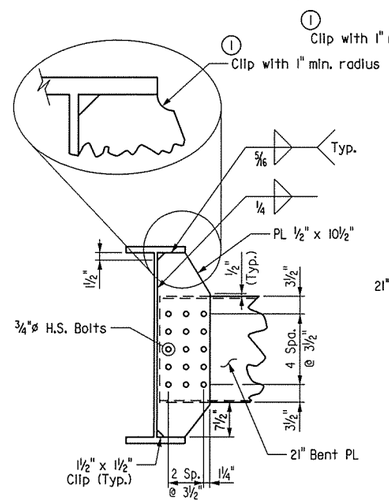
Bent plate diaphragms shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

LOAD DISTRIBUTION TO BEAMS:

| | Beams 1 & 6 | Beams 2 - 5 |
|---|---|---|
| Dead Loads: To Beam | 620 PLF + (wt./ft. of Beam) + Diaphragms | 737 PLF + (wt./ft. of Beam) + Diaphragms |
| Dead Loads: To Composite Beam | 171 PLF, Includes 167 PLF Future Wearing Surface | 171 PLF, Includes 167 PLF Future Wearing Surface |

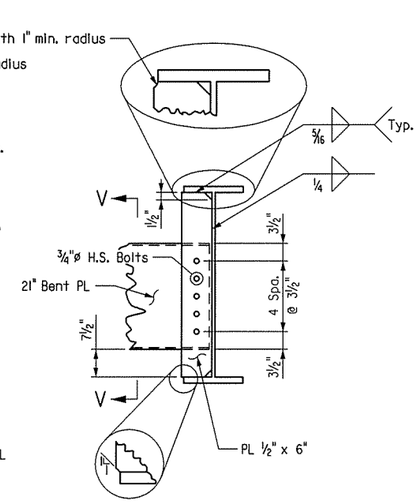
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 604 | 897 |
| | | | | ① 07315 | | SPAN DETAILS | | 55457 |

① If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.




## DIAPHRAGM CONNECTION A

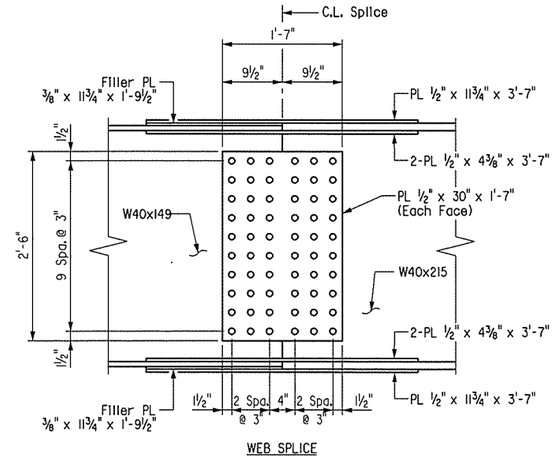
Scale: 1½" = 1'-0"
(Typ. Exterior Beams)
(Unless Noted Otherwise)



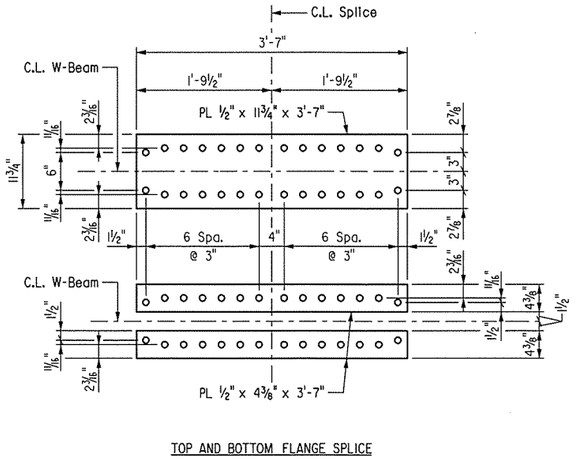

## DIAPHRAGM CONNECTION B

Scale: 1½" = 1'-0"
(Typ. @ Interior Beams @ Diaphragms)
(Unless Noted Otherwise)

Note: Stop weld ¼" to 1" from end of clip (Typ.)




WEB SPLICE



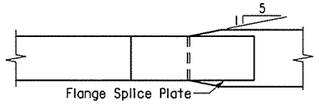

TOP AND BOTTOM FLANGE SPLICE

## FIELD SPLICE DETAILS

Scale: 1" = 1'-0"

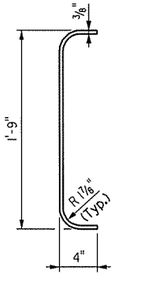
NOTE: All field splice bolts shall be ⅞" ø H.S. bolts. All field splice plates shall be AASHTO M 270, Gr. 50 steel.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer.




## FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS

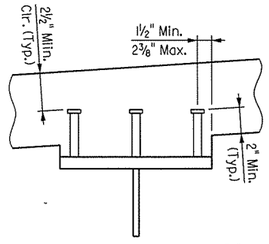
No Scale




Typ. cross-section for all 21" bent plate diaphragms.

## SECTION V-V

Scale: 1½" = 1'-0"




Stud Shear Connectors shown shall be ⅞"ø x 4½" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 -¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurment of structural steel in shear connectors. Maximum stud spacing = 24".

## SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
12-31-2014
BRIDGE ENGINEER

# SHEET 7 OF 7
# DETAILS OF 233'-0" CONTINUOUS COMPOSITE W-BEAM UNIT RAMP SE OVER GOAD SPRINGS ROAD

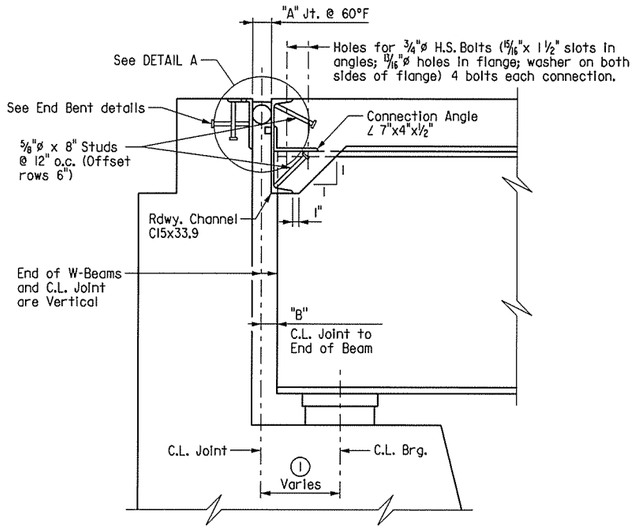
ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12
FILENAME: bca0907xl2_s7.dgn
SCALE: As Shown

BRIDGE NO. 07315 DRAWING NO. 55457

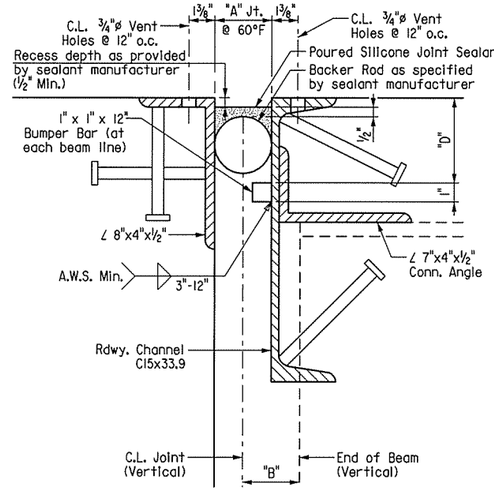
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 605 | 897 |
| | | | | (1) 07315 | | SPAN DETAILS | | 55458 |




(1) Measured Along C.L. Beam. See TABLE OF BEAM VARIABLES on Dwg. No. 55456.

## SECTION THRU JOINT AT END BENTS

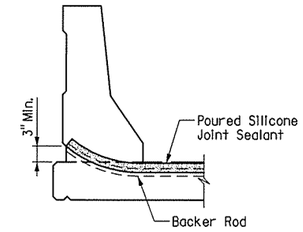
Scale: 1" = 1'-0"
Note: Sections thru Joints are taken normal to C.L. Joints




NOTE: Concrete shall be hand packed under the joint armor. Care shall be taken to ensure that concrete completely fills the areas below the top channel flange.

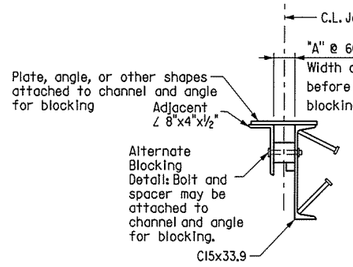
## DETAIL A

Scale: 3" = 1'-0"




## JOINT SEAL PLACEMENT AT CURB

Scale: ¾" = 1'-0"




## DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

NOTE:
Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension shown, and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

Cleaning and painting of all exposed surfaces of the expansion joint device shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL IN BEAM SPANS (M270, GRADE 50). Structural steel completely embedded in concrete need not be painted.

## SILICONE JOINT DATA

| Bent Number | "A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of: | | | "B" Perpendicular to Joint at 60°F | Bumper Plate Size | "D" |
|---|---|---|---|---|---|---|
| | 40° F | 60° F | 80° F | | | |
| 1 | 2 1/8" | 2" | 1 7/8" | 2 1/4" | 1" x 1" | 4 1/2" |
| 4 | 2 3/16" | 2" | 1 15/16" | 2 1/4" | 1" x 1" | 4 1/2" |

** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

NOTES:
The temperature limitations recommended by the sealant manufacturer shall be observed.

The sealant shall be installed only when the average 24 hour air temperature is between 40°F and 80°F.

BACKER ROD NOTE:
Use an appropriately sized backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod than can be sealed in the same day.

The contractor shall verify separation of the backer rod from the joint material after the joint material has set.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SEIN

BRIDGE ENGINEER

# DETAILS OF POURED SILICONE JOINT RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-12
FILENAME: bcg0907x12_j.dgn
SCALE: As Shown

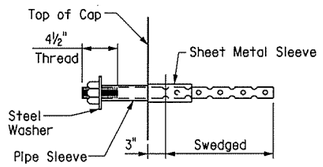
BRIDGE NO. 07315 DRAWING NO. 55458

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 606 | 897 |
| | | | | (1) 07315 | | SPAN DETAILS | | 55459 |

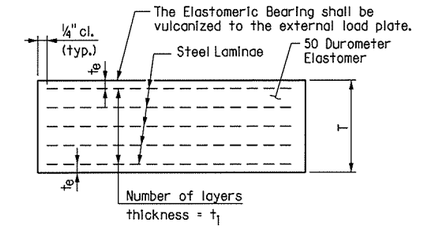
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L. Bearing shall align with C.L. Beam

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to the Ta and Tb values shown in the Table of Fabricator Variables.




ANCHOR BOLT DETAIL

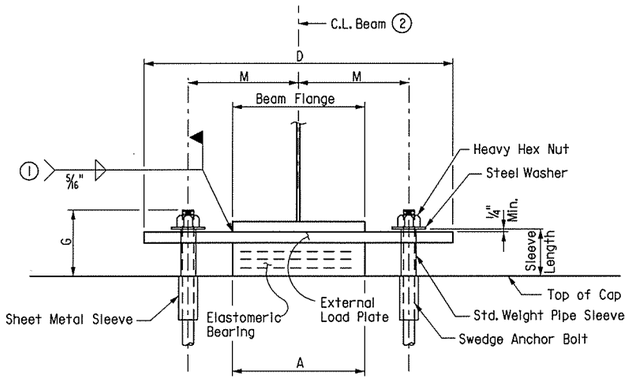



$t_e$ = thickness of elastomer cover on top and bottom of pad

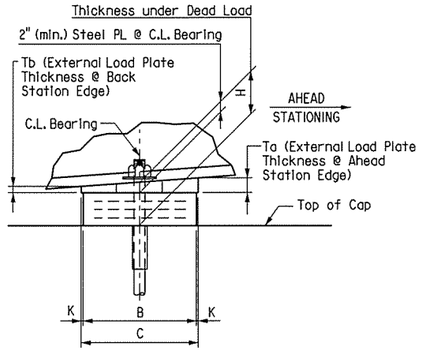
$t_1$ = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness $t_1$

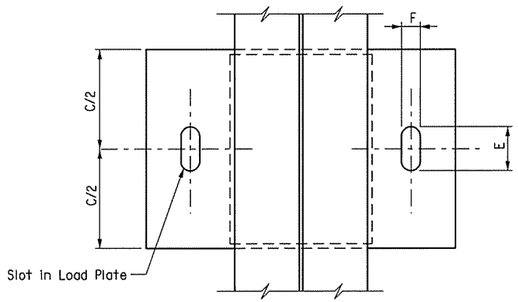
ELASTOMERIC BEARING



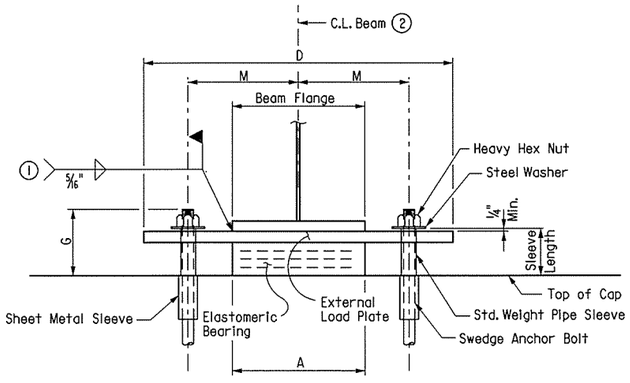

FRONT VIEW @ BENT NOS. 1 & 4



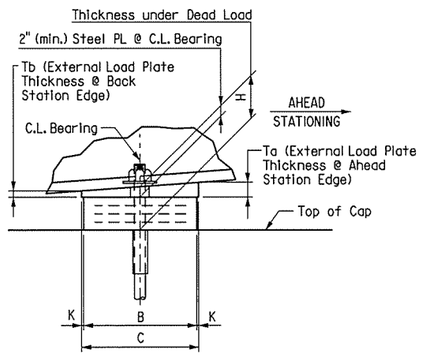

SIDE VIEW @ BENT NOS. 1 & 4



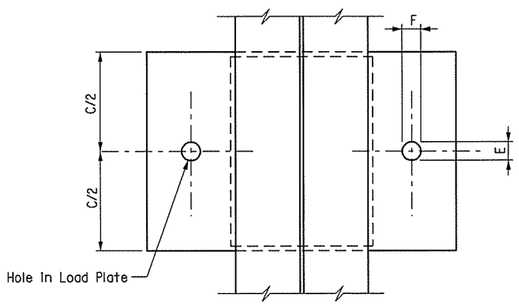

PLAN VIEW @ BENT NOS. 1 & 4




FRONT VIEW @ BENT NOS. 2 & 3




SIDE VIEW @ BENT NOS. 2 & 3




PLAN VIEW @ BENT NOS. 2 & 3

NOTE:
Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required. If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam, or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidary to the item "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 50)".

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "ELASTOMERIC BEARINGS." Bearings shall be seated in accordance with Subsection 808.08.

External load plates shall conform to AASHTO M270, Grade 50. Pipe sleeves shall be ASTM A 53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) and painted in accordance with Subsection 807.75. Mask areas of field welding. Painting will not be paid for directly but will be considered subsidiary to ELASTOMERIC BEARINGS.

Anchor Bolts, Washers, and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "TABLE OF FABRICATOR VARIABLES". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers, and Nuts shall be paid for at the unit price bid for "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 50)". External load plates will not be paid for separately but will be included in the unit price bid for ELASTOMERIC BEARINGS.

Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service Limit I State

| LOCATION | | | BEARING TYPE | NO. of BEARINGS EACH BENT | *MAXIMUM DESIGN LOAD (KIPS) | ELASTOMERIC PAD | | | | | | | EXTERNAL LOAD PLATE | | | | | | | | ANCHOR BOLT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BENT NO(S). | SPAN NO. | BEAM OR GIRDER NO. | | | | G | H | A | B | N | $t_1$ | $t_e$ | NO. & THICKNESS OF STEEL LAMINAE | T | C | D | E | F | K | M | $T_a$ | $T_b$ | ANCHOR BOLT (ø x L) | GRADE | PIPE SLEEVE SIZE (ø x L) | SHEET METAL SLEEVE SIZE (ø x L) | STEEL WASHER SIZE (O.D.) |
| 1 | 1 | All | Exp. | 6 | 83 | 7 5/16" | 5" | 12" | 11½" | 4 | ½" | ¼" | 5 @ 12 Ga. | 3" | 12½" | 21¼" | 2 15/16" | 2" | ½" | 8⅛" | 2.29" | 1.71" | 1¼" x 22½" | 55 | 1¼" x 5⅜" | 3" x 11" | 2¼" |
| 2 | 1 & 2 | All | Fixed | 6 | 228 | 9½" | 6 3/16" | 16½" | 15" | 6 | ½" | ¼" | 7 @ 12 Ga. | 4¼" | 16" | 28½" | 3⅛" | 3⅛" | ½" | 11" | 2.38" | 1.62" | 2" x 32½" | 55 | 2½" x 6½" | 4" x 11" | 3¾" |
| 3 | 2 & 3 | All | Fixed | 6 | 227 | 9½" | 6 3/16" | 16½" | 15" | 6 | ½" | ¼" | 7 @ 12 Ga. | 4¼" | 16" | 28½" | 3⅛" | 3⅛" | ½" | 11" | 2.38" | 1.62" | 2" x 32½" | 55 | 2½" x 6½" | 4" x 11" | 3¾" |
| 4 | 3 | All | Exp. | 6 | 82 | 7 5/16" | 5" | 12" | 11½" | 4 | ½" | ¼" | 5 @ 12 Ga. | 3" | 12½" | 21¼" | 3 7/16" | 2" | ½" | 8⅛" | 2.30" | 1.70" | 1¼" x 22 " | 55 | 1¼" x 5⅜" | 3" x 10½" | 2¼" |

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SLAY
BRIDGE ENGINEER

# DETAILS OF ELASTOMERIC BEARINGS RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-12 FILENAME: bca0907x12_e.dgn

CHECKED BY: PJS DATE: 08-12 SCALE: As Shown

DESIGNED BY: LMS DATE: 07-12

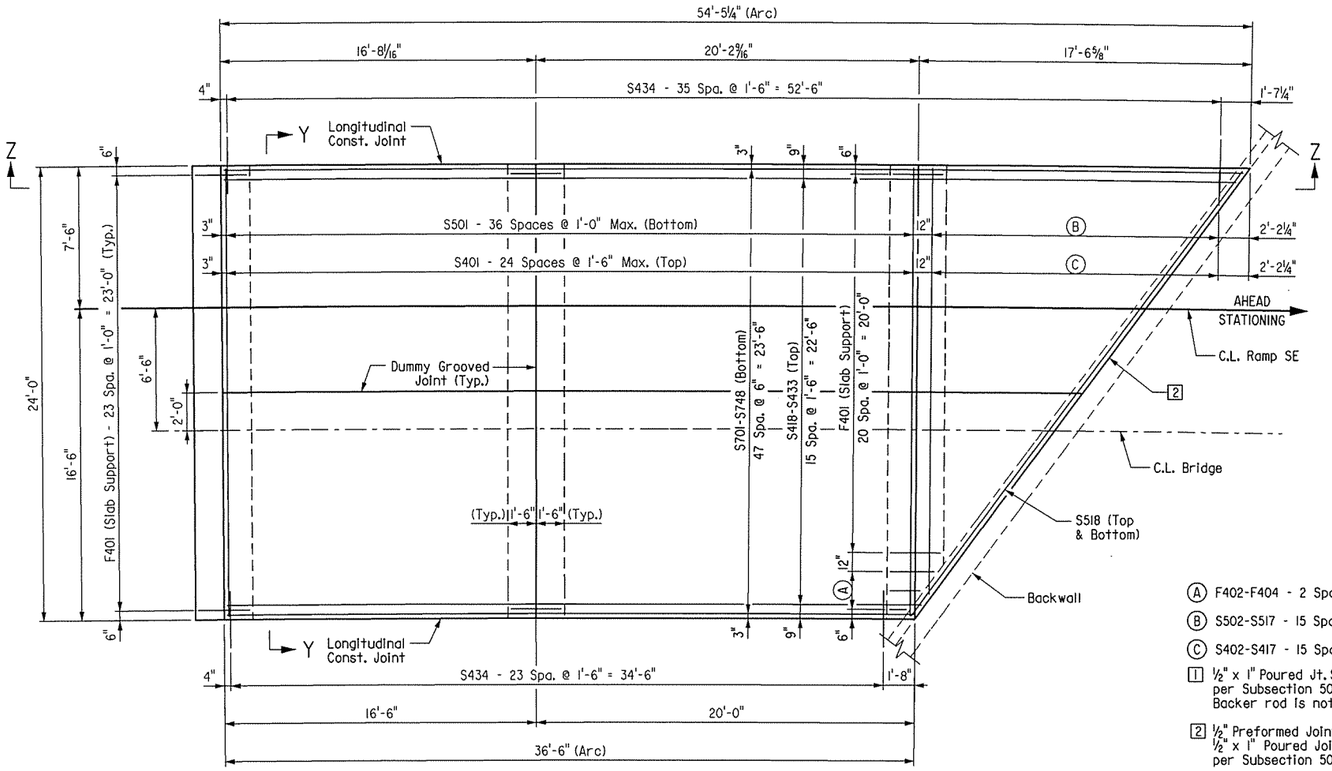
BRIDGE NO. 07315 DRAWING NO. 55459

NOTE: Construct Approach Slab on concentric arcs to C.L. Ramp SE.

NOTE: Surface finish shall match that used on the bridge deck.

NOTE: All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along right edge of slab (right is defined by direction of stationing).

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 607 | 897 |
| | | | | (1) 07315 | | APPROACH SLAB | | 55460 |




PLAN

Scale: ¼" = 1'-0"

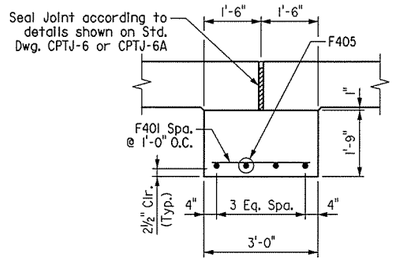
(A) F402-F404 - 2 Spa. @ 1'-0" = 2'-0"

(B) S502-S517 - 15 Spa. @ 1'-0" Max. (Bottom)

(C) S402-S417 - 15 Spa. @ 1'-0" Max. (Top)

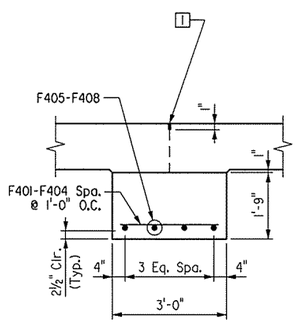
[1] ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02 (h) (2) Backer rod is not required.

[2] ½" Preformed Joint (AASHTO M 153 Type I) and ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02 (h) (2).




DETAILS OF SUPPORT AT END OF SLAB

Scale: ½" = 1'-0"




DETAILS OF INTERIOR SUPPORT OF SLAB

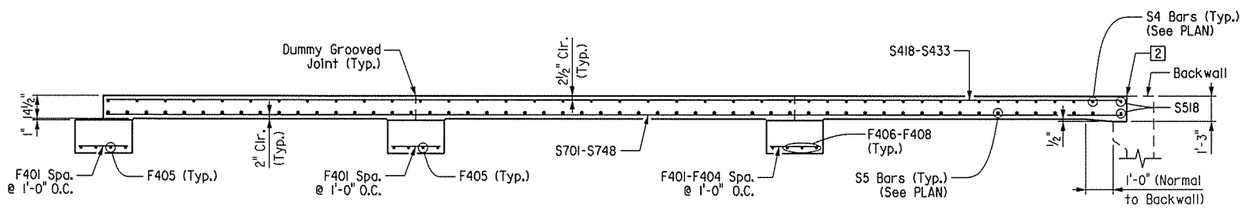
Scale: ½" = 1'-0"

## BAR LIST

| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| F401 | 69 | 2'-8" | Str. |
| F402 to F404 | 1 Each | 2'-4" to 10" | Str. |
| F405 | 9 | 23'-8" | Str. |
| F406 to F408 | 1 Each | 23'-2" to 21'-1" | Str. |
| | | | |
| S401 | 25 | 23'-8" | Str. |
| S402 to S417 | 1 Each | 22'-6" to 1'-9" | Str. |
| S418 to S433 | 1 Each | 53'-6" to 36'-8" | Str. |
| S434 | 60 | 3'-0" | Str. |
| | | | |
| S501 | 37 | 23'-8" | Str. |
| S502 to S517 | 1 Each | 22'-6" to 1'-9" | Str. |
| S518 | 2 | 29'-3" | Str. |
| | | | |
| S701 to S748 | 1 Each | 53'-10" to 36'-3" | Str. |

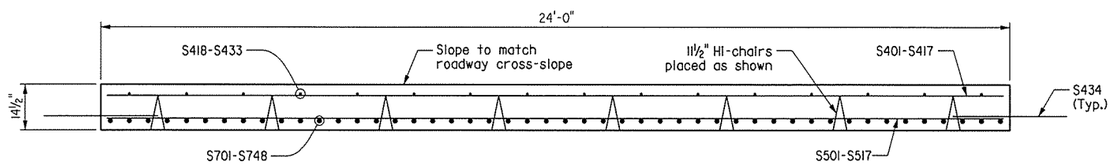
## QUANTITIES FOR TYPE SPECIAL 5 APPROACH SLAB AT BEGIN BRIDGE

| Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|
| 7036 | 63.29 |




SECTION Z-Z

Scale: ¼" = 1'-0"




SECTION Y-Y

Scale: ½" = 1'-0"

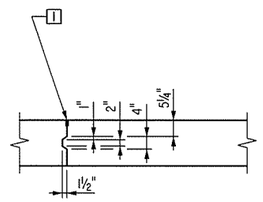
GENERAL NOTES

Concrete shall be Class "S" (AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

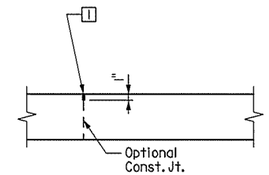
Approach Slabs will be measured and paid for in accordance with Section 504.

Joint Sealer and Joint Filler shall be included in the pay item "Approach Slab".




DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

Scale: ½" = 1'-0"




DETAILS OF DUMMY GROOVED JOINT

Scale: ½" = 1'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SINN 2014

BRIDGE ENGINEER

SHEET 1 OF 2

DETAILS OF TYPE SPECIAL 5 APPROACH SLAB RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 08-12

CHECKED BY: PJS DATE: 08-12

DESIGNED BY: LMS DATE: 08-12

FILENAME: bca0907x12_asl.dgn

SCALE: As Shown

BRIDGE NO. 07315

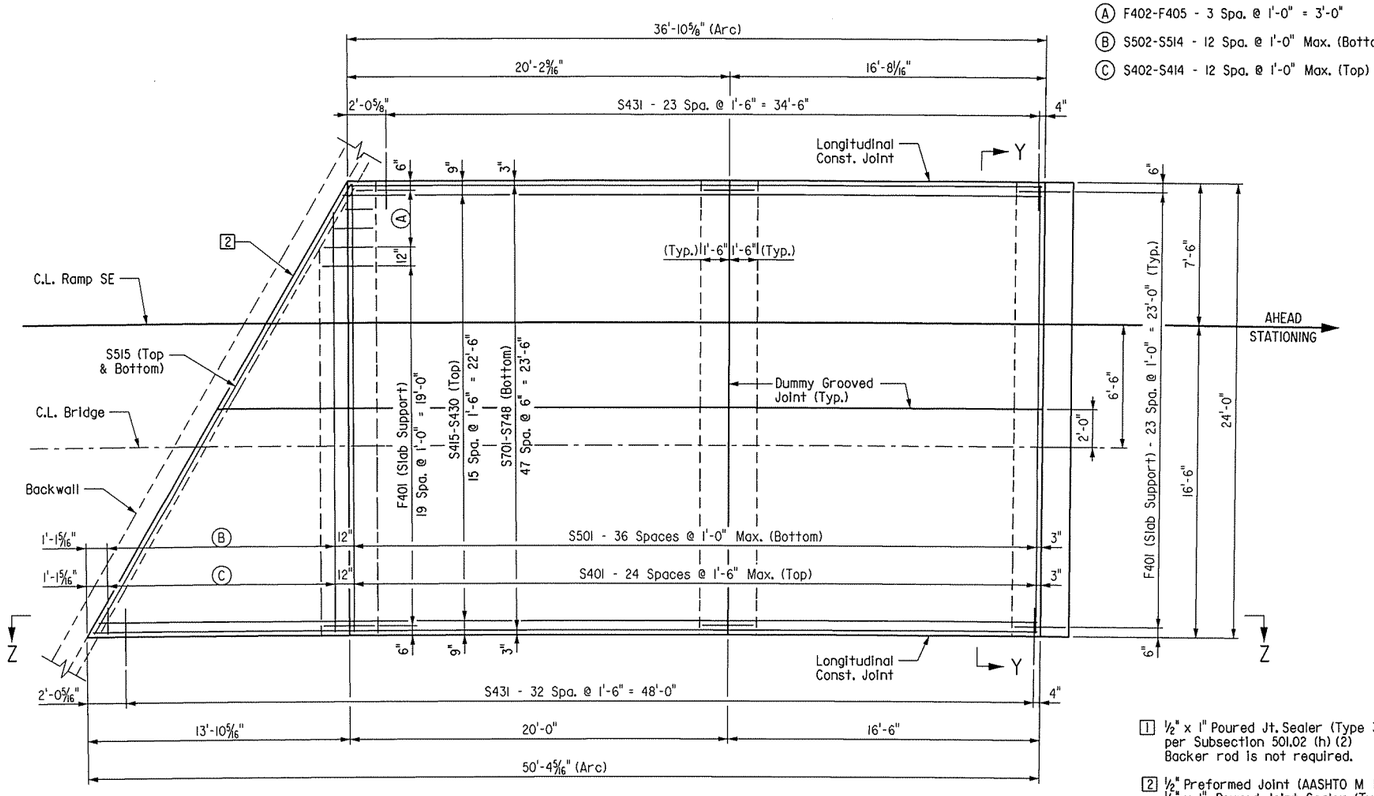
DRAWING NO. 55460

NOTE: Construct Approach Slab on concentric arcs to C.L. Ramp SE.

NOTE: All transverse reinforcing steel shall be placed on radial lines. Spacing is measured along right edge of slab (right is defined by direction of stationing).

NOTE: Surface finish shall match that used on the bridge deck.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 608 | 897 |
| | | | | (1) 07315 | | APPROACH SLAB | | 55461 |




PLAN

Scale: ¼" = 1'-0"

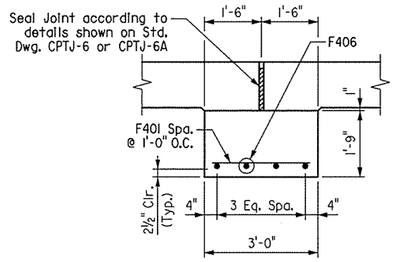
(A) F402-F405 - 3 Spa. @ 1'-0" = 3'-0"

(B) S502-S514 - 12 Spa. @ 1'-0" Max. (Bottom)

(C) S402-S414 - 12 Spa. @ 1'-0" Max. (Top)

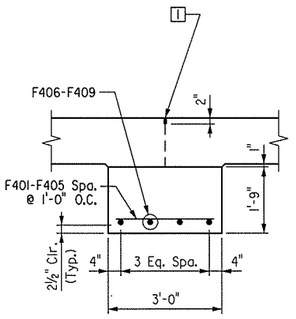
[1] ½" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02 (h) (2) Backer rod is not required.

[2] ½" Preformed Joint (AASHTO M 153 Type I) and ½" x 1" Poured Joint Sealer (Type 3 or 4) per Subsection 501.02 (h) (2).




DETAILS OF SUPPORT AT END OF SLAB

Scale: ½" = 1'-0"




DETAILS OF INTERIOR SUPPORT OF SLAB

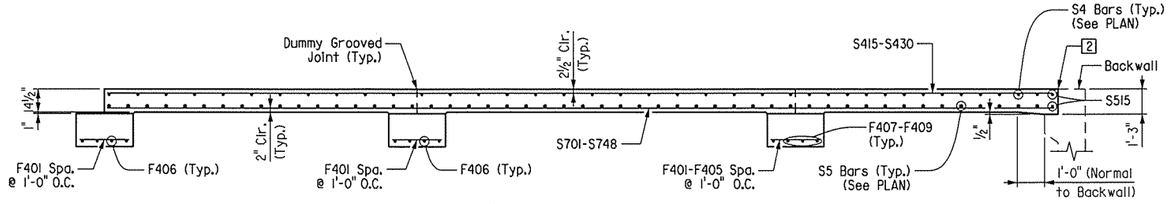
Scale: ½" = 1'-0"

## BAR LIST

| Mark | No. Req'd. | Length | Pin Dia. |
|---|---|---|---|
| F401 | 68 | 2'-8" | Str. |
| F402 to F405 | 1 Each | 2'-7" to 10" | Str. |
| F406 | 9 | 23'-8" | Str. |
| F407 to F409 | 1 Each | 20'-5" to 23'-2" | Str. |
| | | | |
| S401 | 25 | 23'-8" | Str. |
| S402 to S414 | 1 Each | 1'-4" to 22'-2" | Str. |
| S415 to S430 | 1 Each | 36'-11" to 49'-7" | Str. |
| S431 | 57 | 3'-0" | Str. |
| | | | |
| S501 | 37 | 23'-8" | Str. |
| S502 to S514 | 1 Each | 1'-4" to 22'-2" | Str. |
| S515 | 2 | 27'-4" | Str. |
| | | | |
| S701 to S748 | 1 Each | 36'-8" to 49'-10" | Str. |

## QUANTITIES FOR ONE TYPE SPECIAL 5 APPROACH SLAB AT END BRIDGE

| Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|
| 6759 | 61.27 |



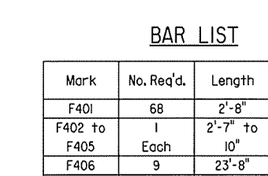

SECTION Z-Z

Scale: ¼" = 1'-0"



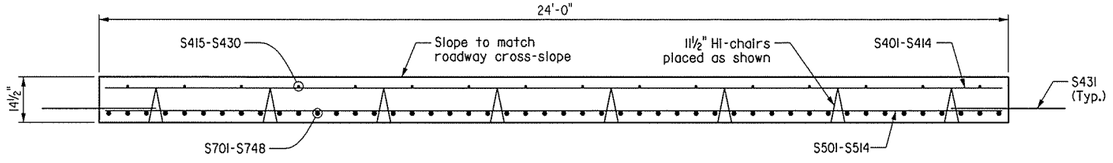

DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

Scale: ½" = 1'-0"




DETAILS OF DUMMY GROOVED JOINT

Scale: ½" = 1'-0"




SECTION Y-Y

Scale: ½" = 1'-0"

GENERAL NOTES

Concrete shall be Class "S" (AE) (f'c = 4,000 psi).

Reinforcing Steel shall conform to AASHTO M31 or M322 Type A, Grade 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504.

Joint Sealer and Joint Filler shall be included in the pay item "Approach Slab".

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZAK

BRIDGE ENGINEER

# SHEET 2 OF 2
# DETAILS OF TYPE SPECIAL 5 APPROACH SLAB RAMP SE OVER GOAD SPRINGS ROAD

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

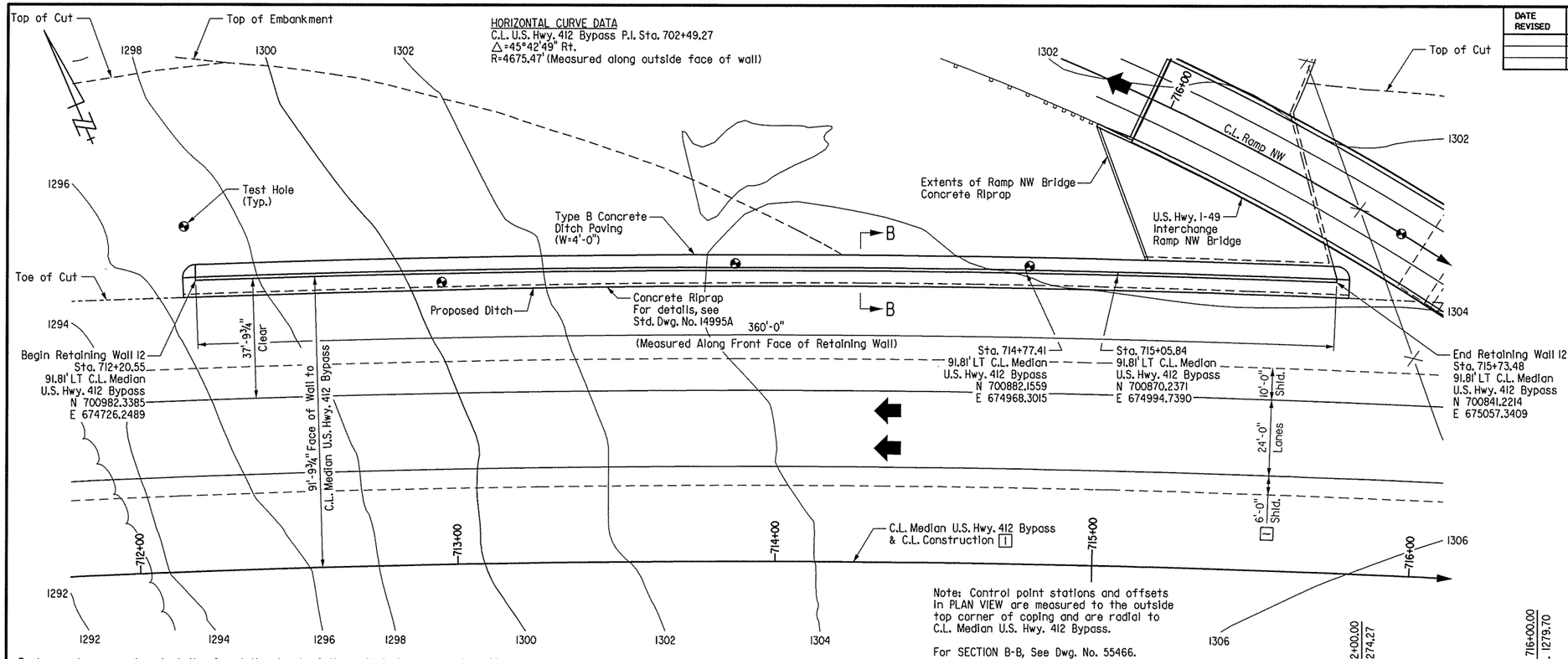
DRAWN BY: JAP DATE: 08-12 FILENAME: bca0907xl2_as2.dgn

CHECKED BY: PJS DATE: 08-12 SCALE: As Shown

DESIGNED BY: LMS DATE: 08-12

BRIDGE NO. 07315 DRAWING NO. 55461

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 609 | 897 |
| | | | | (1) | | RETAINING WALLS | | 55462 |




## PLAN - RETAINING WALL 12

Scale: 1" = 20'-0"

Rock may be encountered at the foundation level of the wall during excavation. If rock is encountered over the full width of the wall panel, excavate the rock 1' below the bottom of the wall and backfill with Class SM-1 in accordance with Section 302.

If a soil/rock interface is encountered within a wall panel, excavate the rock 4' below the bottom of the wall over the full width of the panel, and backfill with Class SM-1 selected material. The leveling pad should be made discontinuous and a backer panel or slip joint cover used at this location in accordance with the details provided by the wall manufacturer.

Note: Control point stations and offsets in PLAN VIEW are measured to the outside top corner of coping and are radial to C.L. Median U.S. Hwy. 412 Bypass.

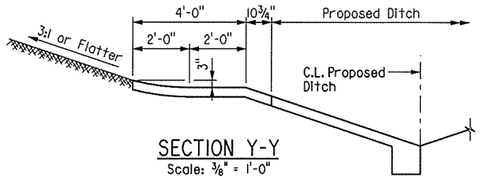
For SECTION B-B, See Dwg. No. 55466.

For MSE Wall General Notes, See Dwg. No. 55466.

For Coping Detail, See Dwg. No. 55466.

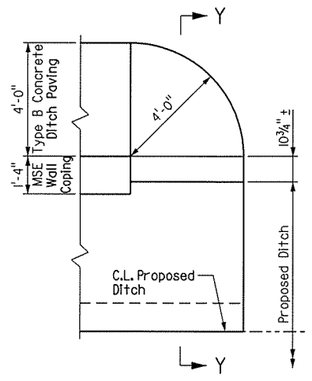
(1) Future

(2) See DITCH PROFILE ELEVATION on this drawing.



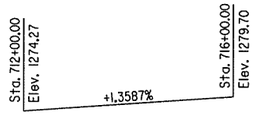

## SECTION Y-Y

Scale: ⅜" = 1'-0"

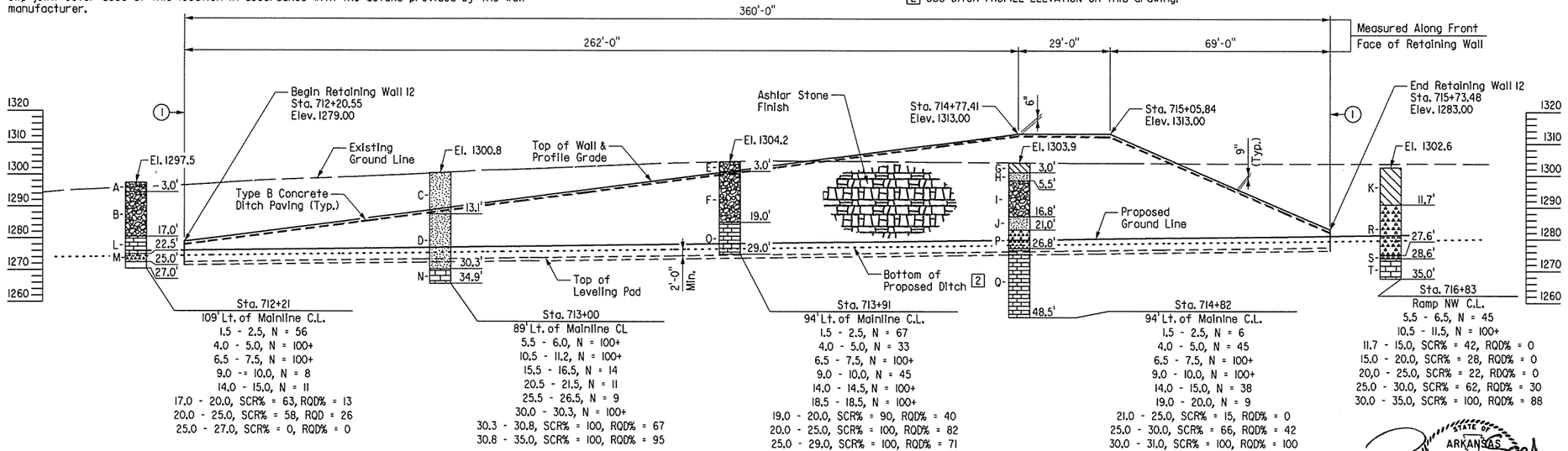



## DETAIL X

Scale: ⅜" = 1'-0"




## DITCH PROFILE ELEVATION




## ELEVATION - RETAINING WALL 12

Scale: 1" = 20'-0"

Note: Elevations shown are profile grade for top of wall.

(1) Continue ditch paving around end of wall and extend to roadside ditch. See DETAIL X.

Boring Legend

- A - Orange & brown, very dense, silty gravel with sand.
- B - Orange & brown, loose to very dense, clayey gravel with sand.
- C - Brown, white & red, clayey sand with gravel.
- D - Brown, beige & white, silty sand with gravel.
- E - Orange & brown, very dense, silty gravel with sand.
- F - Orange & brown, dense to very dense, clayey gravel with sand.
- G - Orange & brown, medium stiff, lean clay with sand.
- H - Orange & brown, dense, clayey sand with gravel.
- I - Orange & brown, dense to very dense, clayey gravel with sand.
- J - Orange & brown, loose, silty sand with gravel.
- K - Red, hard to very hard, fat clay with sand.
- L - Limestone: Light gray-lt. brown, lt. brown, red-orange-brown, slightly to severely weathered, f. crystalline to lithographic.
- M - Chert: Light brown-white, severely weathered, vugular.
- N - Limestone: White, gray, cryptocrystalline, moderately to severely weathered.
- O - Limestone: White, gray, brown & orange, slightly to moderately weathered.
- P - Chert Fragments in Clay: Light brown, red-brown-orange, pouous, vugular.
- Q - Limestone: Light brown-white, gray, red-orange, moderately weathered.
- R - Chert Fragments: Angular to subrounded, white, gray, tan, highly weathered, clay seams.
- S - Chert: White, gray, tan, slightly to moderately weathered.
- T - Limestone: White, gray, microcrystalline to medium grain, fresh w/slight weathering on discontinuities, styolites.

# DETAILS OF MSE RETAINING WALL NO. 12
# U.S. HIGHWAY 412
# SPRINGDALE NORTHERN BYPASS

ROUTE 412 SEC. 2

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER PETER J. SZAK No. 12307

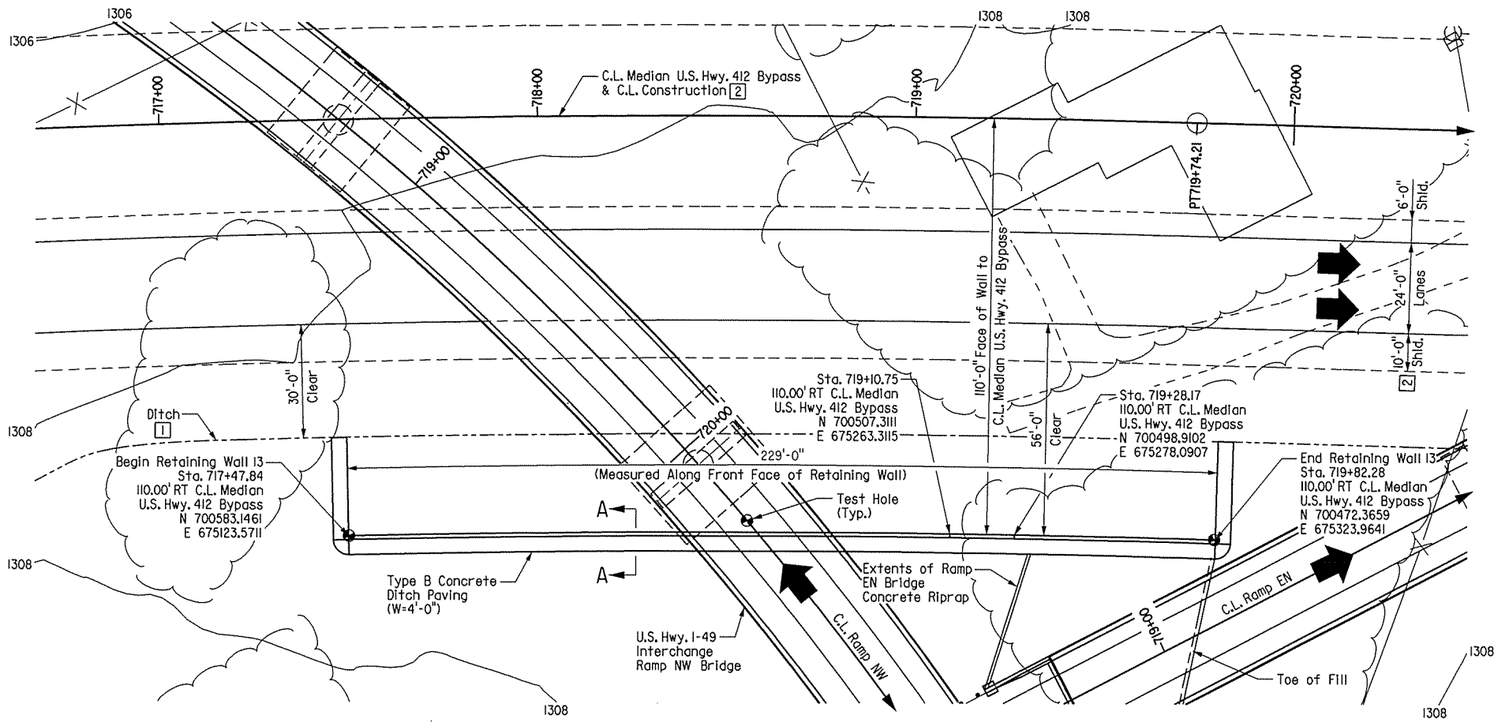
BRIDGE ENGINEER

| | | | |
|---|---|---|---|
| DRAWN BY: JAP | DATE: 07-09 | FILENAME: bca0907_w12.dgn | |
| CHECKED BY: PJS | DATE: 08-12 | SCALE: AS SHOWN | |
| DESIGNED BY: LMS | DATE: 07-09 | | |

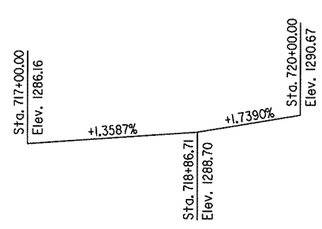
DRAWING NO. 55462

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 610 | 897 |
| | | | | ① | | RETAINING WALLS | | 55463 |

HORIZONTAL CURVE DATA
C.L. U.S. Hwy. 412 Bypass P.I. Sta. 702+49.27
△=45°42'49" Rt.
R=4473.66' (Measured along outside face of wall)




PLAN - RETAINING WALL 13
Scale: 1" = 20'-0"




PROPOSED GROUND LINE PROFILE
AT FRONT FACE OF WALL

Note:

Control point stations and offsets in PLAN VIEW are measured to the outside top corner of coping and radial to C.L. Median U.S. Hwy. 412 Bypass.

For Section A-A, See Dwg. No. 55466.

For MSE Wall General Notes, See Dwg. No. 55466.

For Coping Detail, See Dwg. No. 55466.

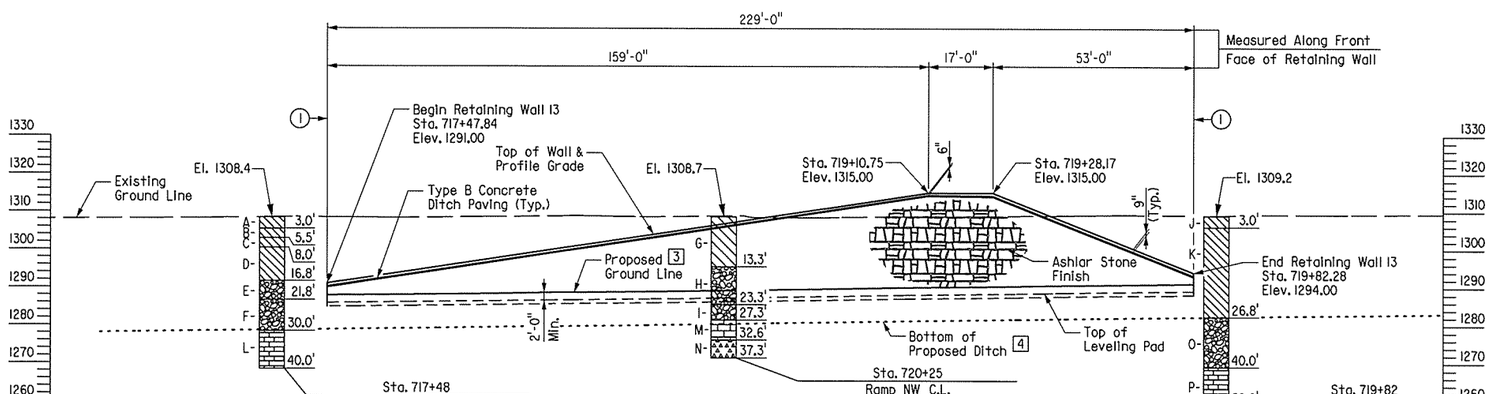
For DETAIL W, See Dwg. No. 55464.

[1] Proposed

[2] Future

[3] See PROPOSED GROUND LINE PROFILE AT FRONT FACE OF WALL on this drawing.

[4] For Ditch Profile Elevation, See Roadway Drawings.




Sta. 717+48
110' Rt. of Mainline C.L.
1.5 - 2.5, N = 9
4.0 - 5.0, N = 68
6.5 - 7.5, N = 15
9.0 - 10.0, N = 51
14.0 - 15.0, N = 46
19.0 - 20.0, N = 7
24.0 - 25.0, N = 29
29.0 - 29.1, N = 100+
30.0 - 35.0, SCR% = 94, RQD% = 74
35.0 - 40.0, SCR% = 100, RQD% = 78

Sta. 720+25
Ramp NW C.L.
5.5 - 6.5, N = 56
10.5 - 11.5, N = 38
15.5 - 16.5, N = 18
20.5 - 21.5, N = 13
25.5 - 26.5, N = 35
27.3 - 32.3, SCR% = 94, RQD% = 78
32.3 - 37.3, SCR% = 76, RQD% = 66

Sta. 719+82
110' Rt. of Mainline C.L.
1.5 - 2.5, N = 3
4.0 - 4.5, N = 100+
6.5 - 7.4, N = 100+
9.0 - 10.0, N = 43
14.0 - 15.0, N = 32
19.0 - 20.0, N = 19
24.0 - 25.0, N = 16
29.0 - 30.0, N = 9
34.0 - 35.0, N = 20
38.5 - 38.7, N = 100+

Note: Elevations shown are profile grade for top of wall.

① Continue ditch paving around end of wall and extend to proposed ditch. See DETAIL W on Dwg. No. 55464.

ELEVATION - RETAINING WALL 13
Scale: 1" = 20'-0"
(Viewed From Fill Side)

Boring Legend
A - Orange & brown, stiff, lean clay with sand.
B - Orange & brown, very hard, gravelly fat clay with sand.
C - Orange & brown, stiff, gravelly lean clay with sand.
D - Orange & brown, hard, gravelly fat clay with sand.
E - Orange & brown, loose, silty gravel with sand.
F - Orange & brown, medium dense to very dense, silty gravel with sand.
G - Red, dense to very dense, fat clay with sand.
H - Red & brown, medium dense, silty gravel with sand.
I - Red, dense, silty gravel with sand.
J - Orange & brown, soft, lean clay with sand.
K - Orange & brown, very stiff to very hard, gravelly fat clay with sand.
L - Brown, loose to very dense, silty gravel with sand.
M - Limestone: White, gray, trcs. brown & orange, slightly to moderately severely weathered.
N - Limestone: White, gray, microcrystalline to macrocrystalline.
O - Chert: White, gray, fresh, intermittent limestone beds.
P - Limestone: White, gray, moderately severe to severely weathered.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SZAK
4-25-2014
BRIDGE ENGINEER

# DETAILS OF MSE RETAINING WALL NO. 13
# U.S. HIGHWAY 412
# SPRINGDALE NORTHERN BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-09 FILENAME: bca0907_wl3.dgn
CHECKED BY: PJS DATE: 08-12 SCALE: AS SHOWN
DESIGNED BY: LMS DATE: 07-09

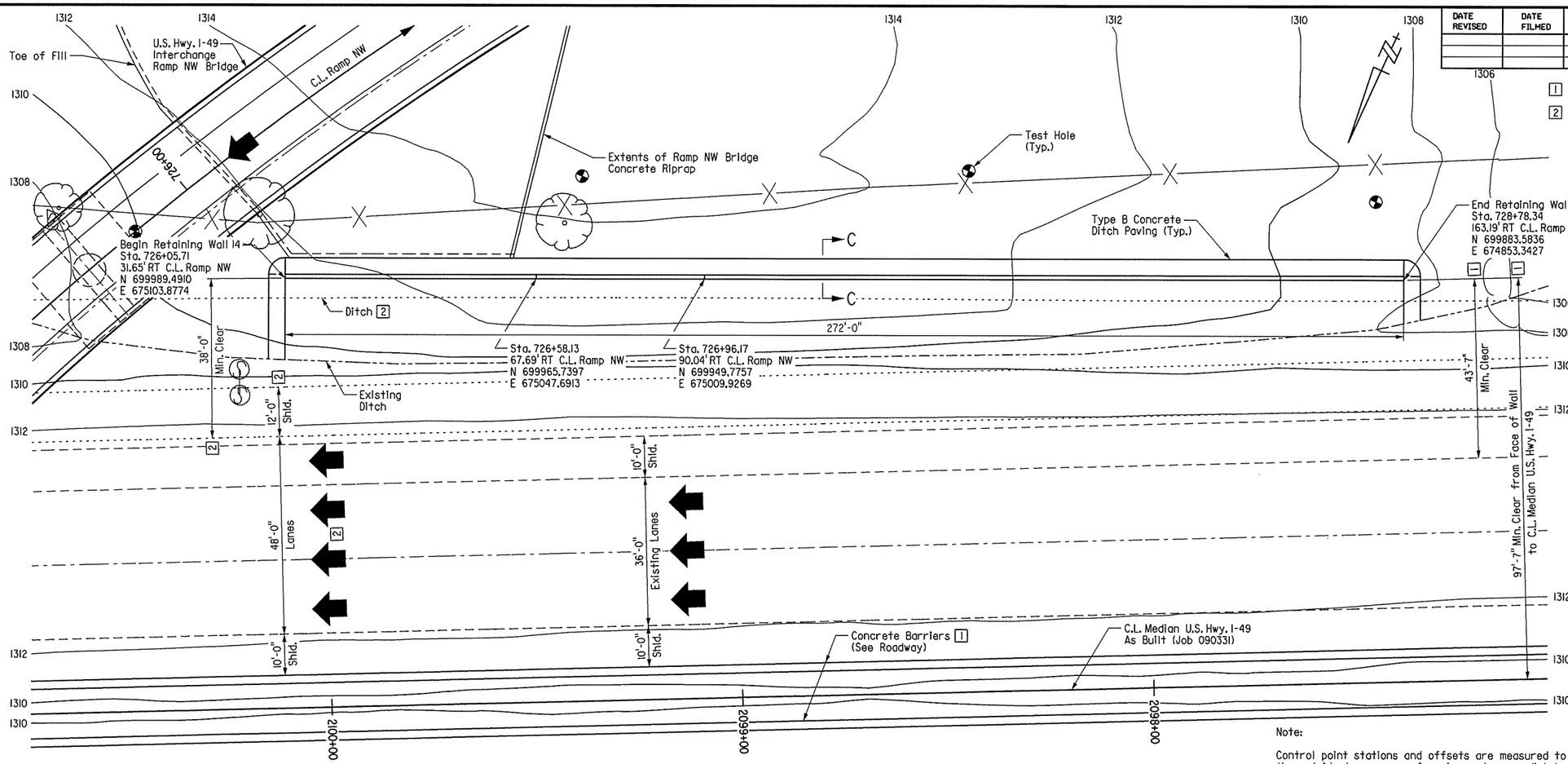
DRAWING NO. 55463

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 611 | 897 |
| (1) | RETAINING WALLS | | | 55464 |

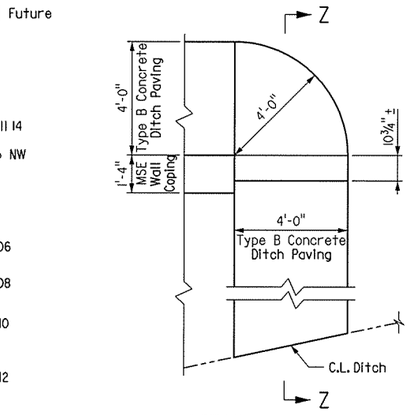
[1] Proposed

[2] Future



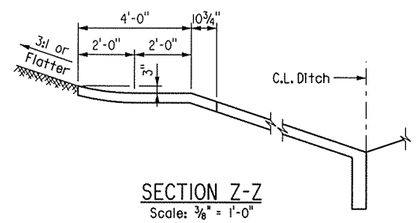

## PLAN - RETAINING WALL 14

Scale: 1" = 15'-0"




## DETAIL W

Scale: ⅜" = 1'-0"




## SECTION Z-Z

Scale: ⅜" = 1'-0"

Note:

Control point stations and offsets are measured to the outside top corner of coping and are radial to C.L. Ramp NW.

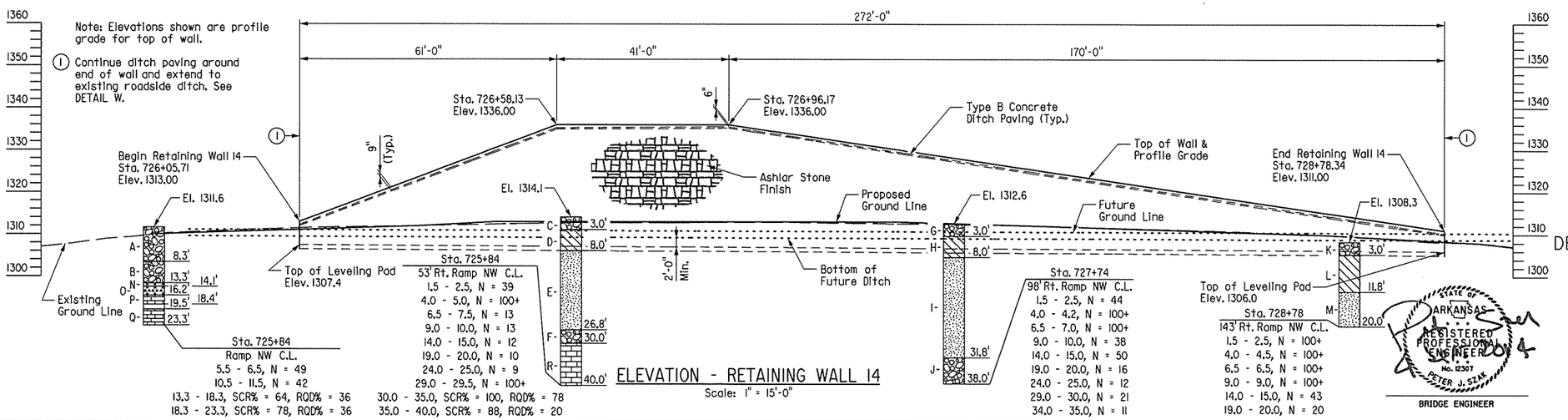
For SECTION C-C, See Dwg. No. 55466.

For MSE Wall General Notes, See Dwg. No. 55466.

For Coping Detail, See Dwg. No. 55466.

Boring Legend

- A - Red, dense, clayey gravel with sand.
- B - Brown, dense, silty gravel with sand.
- C - Red & brown, dense, silty gravel with sand.
- D - Red & brown, stiff to very hard, sandy lean clay with gravel.
- E - Red & brown, loose to medium dense, silty sand with gravel.
- F - Red & brown, very dense, silty gravel with sand.
- G - Red & brown, dense, silty gravel with sand.
- H - Red & brown, very hard, sandy lean clay with gravel.
- I - Red & brown, medium dense to dense, silty sand with gravel.
- J - Brown, medium dense, silty gravel with sand.
- K - Red & brown, very dense, silty gravel with sand.
- L - Red & brown, very hard, sandy lean clay with gravel.
- M - Red & brown, medium dense to dense, silty sand with gravel.
- N - Chert Fragments: Chert fragments and core loss.
- O - Chert: White, gray, tan, fresh to highly weathered.
- P - Limestone: White, gray, microcrystalline to medium grain.
- Q - Limestone: Core loss, fragments.
- R - Limestone: White, gray, brown, orange-red, slightly weathered to severely weathered & broken.




## ELEVATION - RETAINING WALL 14

Scale: 1" = 15'-0"

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER PETER J. SIN No. 12307 2004

BRIDGE ENGINEER

# DETAILS OF MSE RETAINING WALL NO. 14 U.S. HIGHWAY I-49 SPRINGDALE NORTHERN BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-09

CHECKED BY: PJS DATE: 08-12

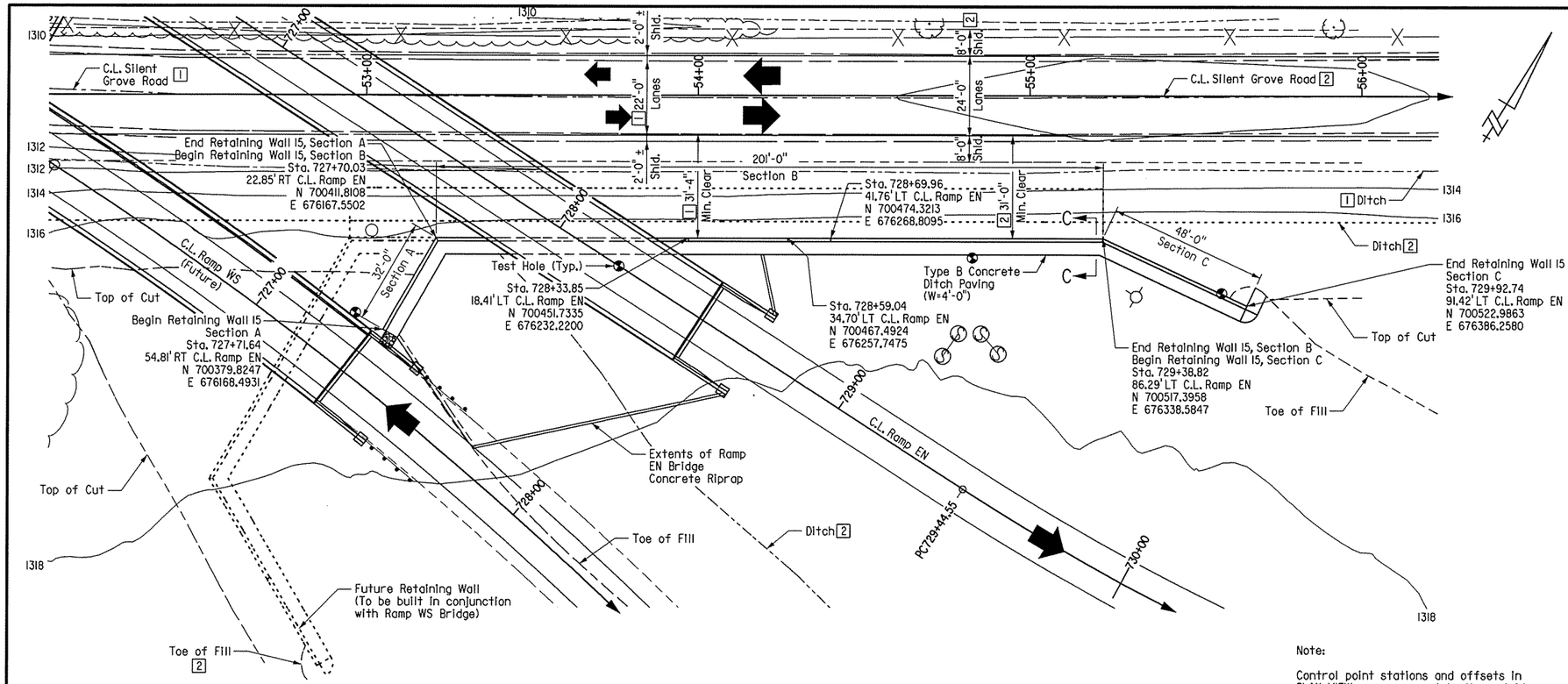
DESIGNED BY: LMS DATE: 07-09

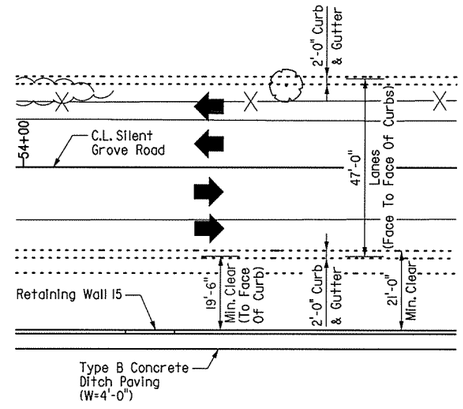
FILENAME: bca0907_w14.dgn

SCALE: AS SHOWN

DRAWING NO. 55464

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 612 | 897 |
| | | | | (1) | | RETAINING WALLS | | 55465 |




PLAN FOR FUTURE IMPROVEMENT OF SILENT GROVE ROAD
Scale: 1" = 20'-0"

Rock may be encountered at the foundation level of the wall during excavation. If rock is encountered over the full width of the wall panel, excavate the rock 1' below the bottom of the wall and backfill with Class SM-1 in accordance with Section 302.

If a soil/rock interface is encountered within a wall panel, excavate the rock 4' below the bottom of the wall over the full width of the panel, and backfill with Class SM-1 selected material. The leveling pad should be made discontinuous and a backer panel or slip joint cover used at this location in accordance with the details provided by the wall manufacturer.

PLAN - RETAINING WALL 15
Scale: 1" = 20'-0"

[1] Existing

[2] Future for completed interchange

[3] Future Ditch Profile Elevations:
Sta. 728+00 - Elev. 1310.54
Sta. 729+00 - Elev. 1309.68

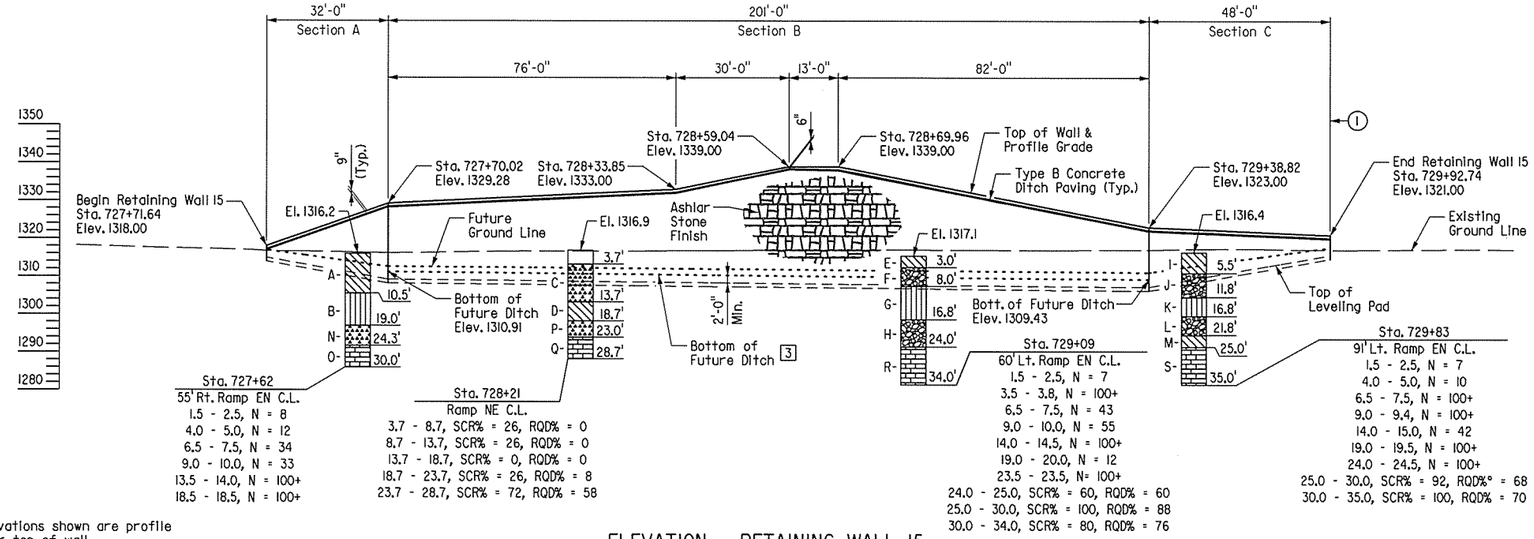
Note:

Control point stations and offsets in PLAN VIEW are measured to the outside top corner of coping and radial to C.L. Ramp EN.

For Section C-C, See Dwg. No. 55466.

For MSE Wall General Notes, See Dwg. No. 55466.

For Coping Detail, See Dwg. No. 55466.




ELEVATION - RETAINING WALL 15
Scale: 1" = 20'-0"
(Viewed From Fill Side)

Note: Elevations shown are profile grade for top of wall.

(1) Continue ditch paving around end of wall and extend to existing ground.

Boring Legend

A - Orange & brown, medium stiff to hard, lean clay with sand.
B - Orange & brown, very hard, elastic silt with gravel.
C - Orange & brown, medium stiff, lean clay with sand.
D - Orange & brown, dense to very dense, clayey gravel with sand.
E - Orange & brown, hard to very hard, elastic silt with gravel.
F - Orange & brown, medium dense to very dense, poorly graded gravel with silt and sand.
G - Orange & brown, medium stiff to stiff, lean clay with sand.
H - Orange & brown, very dense, clayey gravel with sand.
I - Orange & brown, hard, elastic silt with gravel.
J - Orange & brown, very dense, poorly graded gravel with silt and sand.
K - Orange & brown, very dense, sandy lean clay.
L - Chert Fragments & Clay: Light gray, white, lt. brown, severely weathered.
M - Limestone: Light gray, lt. brown, moderately weathered.
N - Chert: White, lt. gray, moderately to intensely weathered.
O - Core loss attributed to dissolutioning and clay.
P - Chert: White, lt. gray, moderately to intensely weathered.
Q - Limestone: Light gray, gray, fresh to moderately weathered.
R - Limestone: Gray, lt. gray-lt. brown, white, fresh to slightly weathered.
S - Limestone: White, gray, fresh w/few severely weathered seams.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12307
PETER J. SINK
2014
BRIDGE ENGINEER

# DETAILS OF MSE RETAINING WALL NO. 15 RAMP EN SPRINGDALE NORTHERN BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

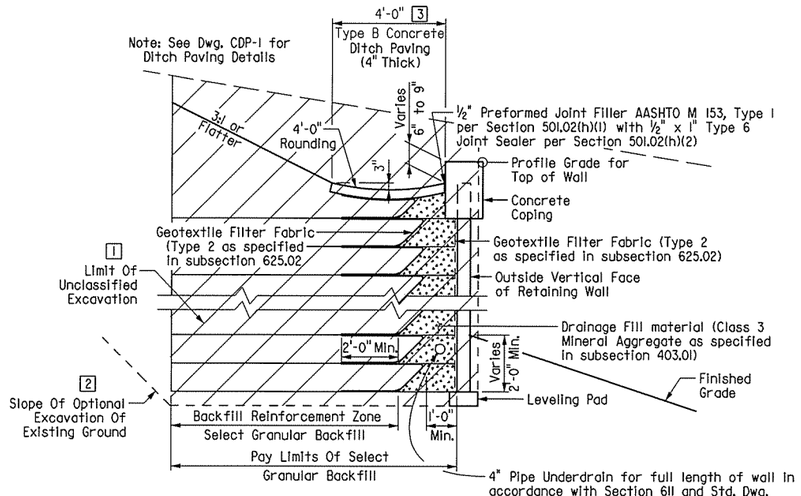
LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-09
CHECKED BY: PJS DATE: 08-12
DESIGNED BY: LMS DATE: 07-09

FILENAME: bca0907_wl5.dgn
SCALE: AS SHOWN

DRAWING NO. 55465

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 613 | 897 |
| | | | | (1) | | RETAINING WALLS 12-15 | | 55466 |



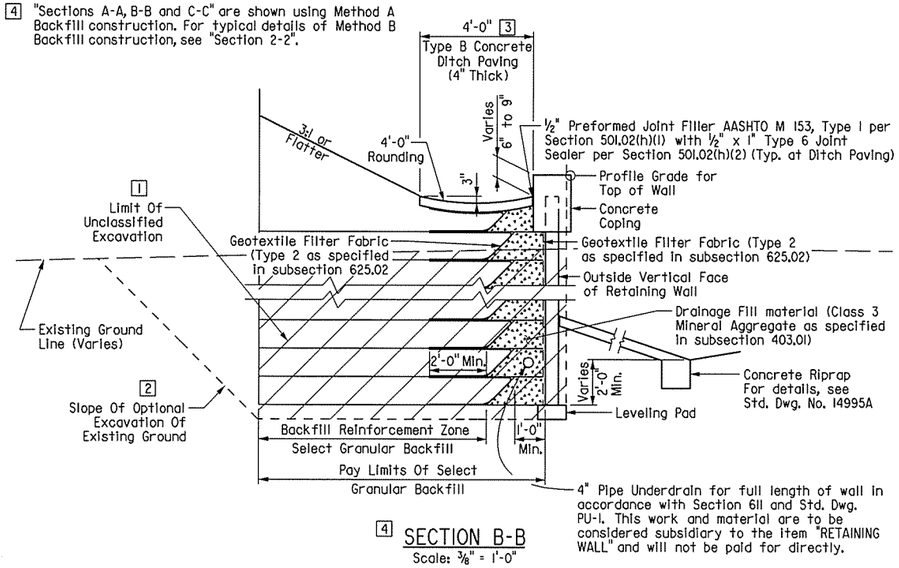

4 SECTION A-A
Scale: 3/8" = 1'-0"

1 Excavation required for area of Reinforcing Zone will be paid for under the pay item 210, "UNCLASSIFIED EXCAVATION". See SP Job CA0907 "RETAINING WALL" for additional information.

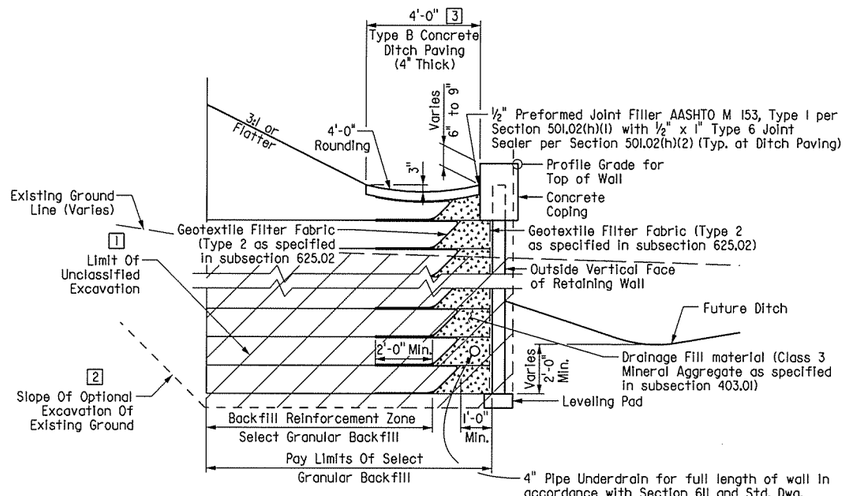
2 Contractor has the option of using a cut slope or shoring to maintain stability of cut. Any excavation beyond the limits of Reinforcing Zone or any shoring used will not be paid for directly but will be considered subsidiary to various pay items. See SP Job CA0907 "RETAINING WALL".

3 Weep holes shall be eliminated.

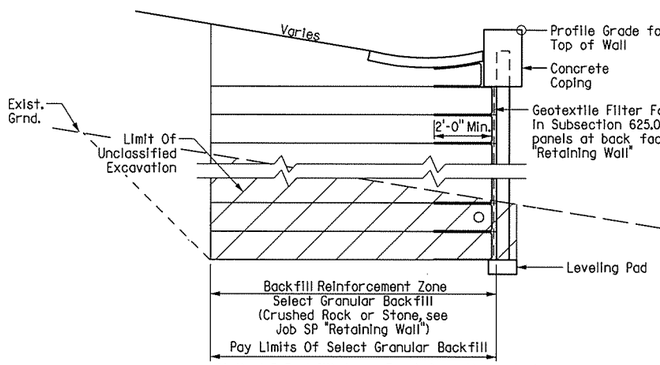
4 "Sections A-A, B-B and C-C" are shown using Method A Backfill construction. For typical details of Method B Backfill construction, see "Section 2-2".




4 SECTION B-B
Scale: 3/8" = 1'-0"

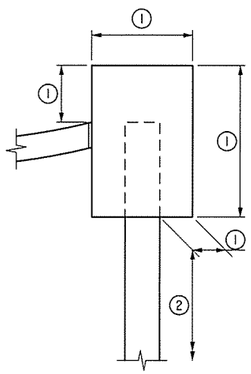



4 SECTION C-C
Scale: 3/8" = 1'-0"




Method B Backfill shown. For information not shown, see Sections A-A, B-B and C-C.

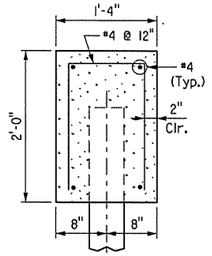
SECTION 2-2
Scale: 3/8" = 1'-0"




1 Class 3 Textured Coating Finish (Color = Light Brown, Color Chip No. 33522)

2 Class 3 Textured Coating Finish (Color = Medium Brown, Color Chip No. 30219)

TEXTURED COATING FINISH
Scale: 1" = 1'-0"




COPING DETAIL
Scale: 1" = 1'-0"

Notes:
Reinforcing steel and Class S(AE) Concrete for coping shall not be paid for directly, but will be considered subsidiary to the item "RETAINING WALL".

Precast coping may be substituted for cast-in-place coping shown.

MSE WALL RETAINING WALL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interims.

SEISMIC ZONE: 1

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for Mechanically Stabilized Earth (MSE) retaining walls may be affected by end bent construction. See bridge drawings for pile locations and wingwall details.

See Special Provision Job No. CA0907 "RETAINING WALL" for additional information.

Boring logs may be obtained from Programs and Contracts Division.

Preformed joint filler and joint sealer will not be paid for directly but will be considered subsidiary to the item "RETAINING WALL".

See Dwg. CDP-1 for Ditch Paving Details.

Pipe underdrains shall be used in the area of backfill and shall daylight as determined by the Engineer. This work and material are to be considered subsidiary to the item "RETAINING WALL" and will not be paid for directly.

Large scale undercut is not anticipated, however some undercutting and backfilling may be required to satisfy factored bearing resistance requirements based on the final wall design.

Undercutting, if required, shall be backfilled with Select Material (Class SM-1) meeting the requirements of Section 302.

Any excavation and backfill required for undercutting shall be paid for as "UNCLASSIFIED EXCAVATION" and "SELECTED MATERIAL (CLASS SM-1)" in accordance with Special Provision Job No. CA0907 "RETAINING WALL".

Class 3 Textured Coating Finish shall be applied to surfaces as specified in Special Provision Job No. CA0907 "TEXTURED COATING FINISH" and in accordance with Section 802.19.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12307 PETER J. SZYK 12-31-14

BRIDGE ENGINEER

# DETAILS OF MSE RETAINING WALLS 12-15 SPRINGDALE NORTHERN BYPASS

ROUTE 412 SEC. 2

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAP DATE: 07-09 FILENAME: bca0907_wdl.dgn

CHECKED BY: PJS DATE: 08-12 SCALE: AS SHOWN

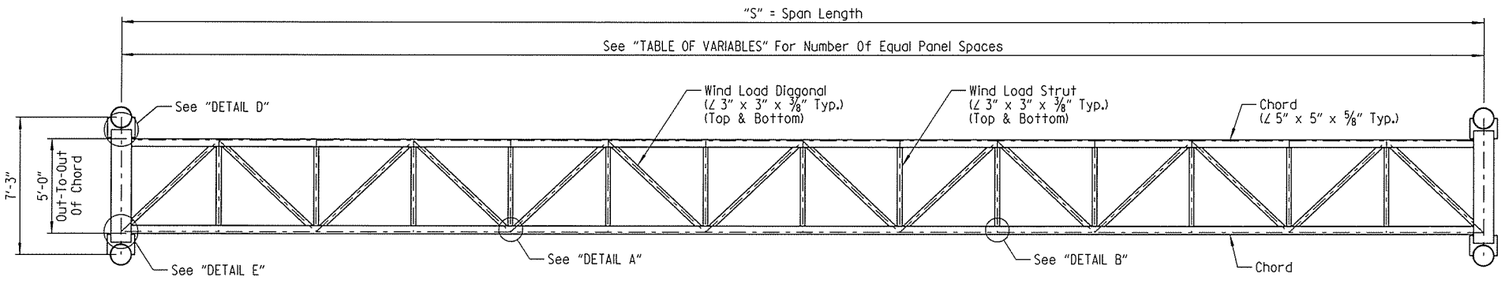
DESIGNED BY: LMS DATE: 07-09

DRAWING NO. 55466

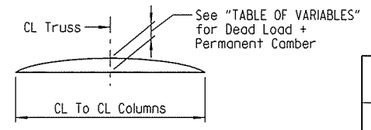
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | | |
| JOB NO. | | CA0907 | 614 | 897 |

| | | |
|---|---|---|
| 1 | OH 049-04-02 SIGN STRUCTURE | 55467 |
| | OH 049-04-03 | |
| | OH 049-04-04 | |



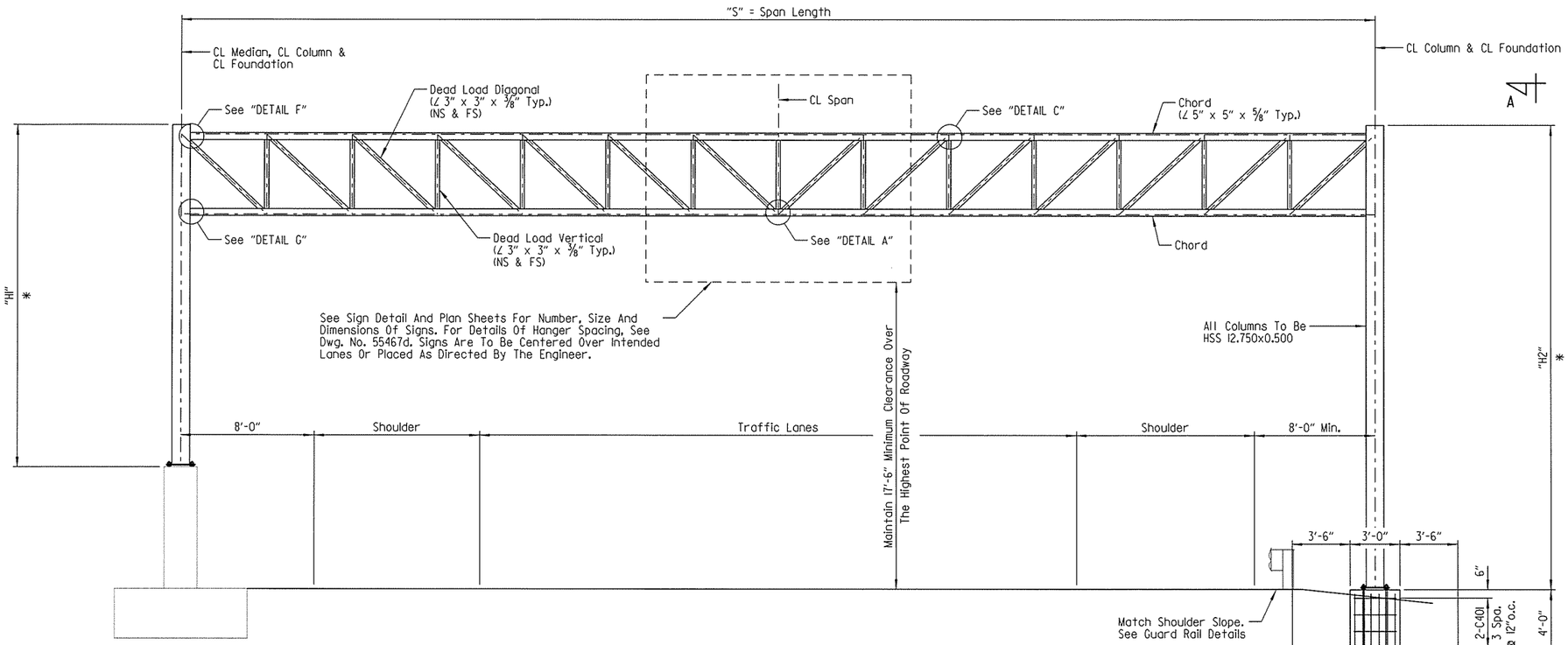

PLAN




TRUSS CAMBER DIAGRAM

## TABLE OF VARIABLES

| Span (ft) | No. of Equal Panel Spaces | Dead Load + Permanent Camber |
|---|---|---|
| 60' thru 65' | 12 | 1" |
| 66' thru 75' | 14 | 1 1/4" |
| 76' thru 85' | 16 | 1 1/2" |




MEDIAN FOUNDATION **

FOUNDATION A

** Median foundation for OH-049-04-02 constructed as part of AHTD Job CA0901. Median foundation for OH-049-04-03 constructed as part of AHTD Job 090331. Median foundation for OH-049-04-04 constructed as part of AHTD Job CA1101.

Note:
For "DETAIL A" thru "DETAIL G", see Dwg. No. 55467b.

For "VIEW A-A, FOUNDATION A", see Dwg. No. 55467a.

ELEVATION

* Note:
The Contractor shall make field measurements to determine the Column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (60'-0" to 85'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.

## SPAN LENGTH TABLE

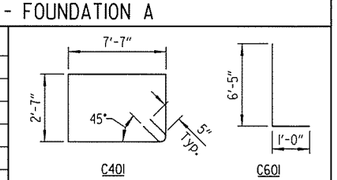
| Structure No. | "S" |
|---|---|
| OH-049-04-02 | 72'-0" |
| OH-049-04-03 | 84'-0" |
| OH-049-04-04 | 72'-0" |

## APPROXIMATE QUANTITIES FOR FOUNDATION A FOR INFORMATION ONLY

| CLASS S CONCRETE (Cu. Yards) | REINFORCING STEEL (Lbs.) | EXCAVATION (Cu. Yards) |
|---|---|---|
| 27.6 | 2946 | 78 |

## BAR LIST - FOUNDATION A

| MARK | NO. REQ'D | LENGTH | P.D. |
|---|---|---|---|
| C401 | 8 | 20'-8" | 2" |
| C601 | 56 | 7'-3" | 4 1/2" |
| F601 | 38 | 19'-6" | Str. |
| F602 | 78 | 9'-6" | Str. |
| | | | |
| | | | |




NOTE: Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS FOR 60' TO 85'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

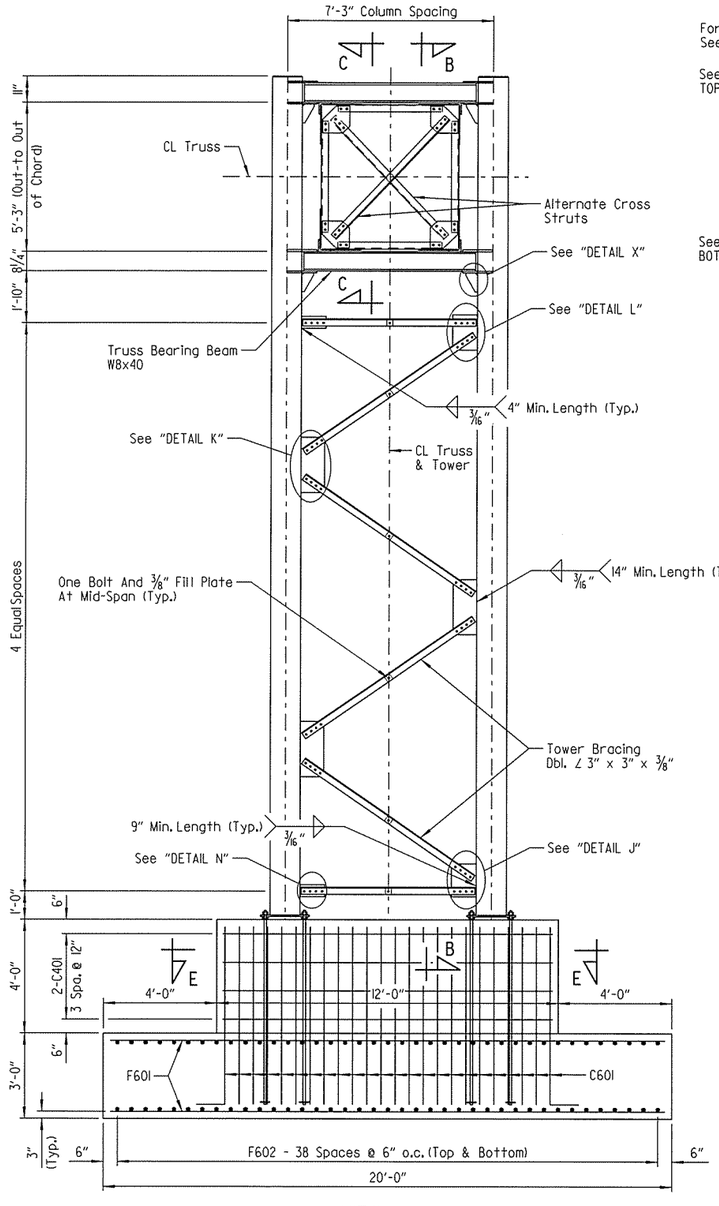
DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T1.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-02 THRU OH-049-04-04 DRAWING NO. 55467

drgpad 9/4/2014 10:28:57 AM
WORKSPACE: AHTD Bridge
\\GLITDC0\LITProjects\2005\059680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xX_T1.dgn
REVISED DATE:

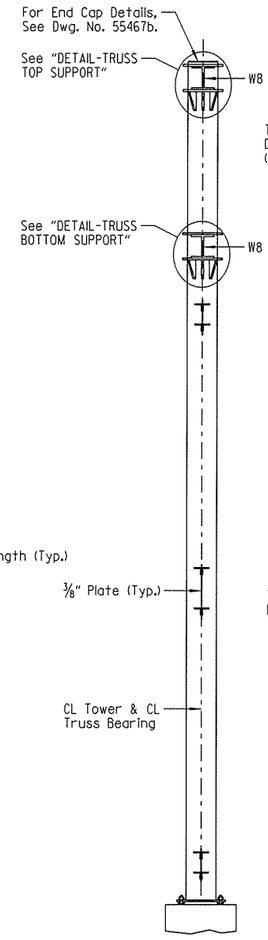
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 615 | 897 |

(1) OH 049-04-02 SIGN STRUCTURE 55467a
OH 049-04-03
OH 049-04-04

(1) Bolts shall be 1" dia. and slotted hole in chord angle 1 1/16" x 2 1/2". Use plate washer on chord angle side.

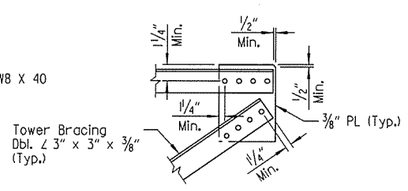



VIEW A-A

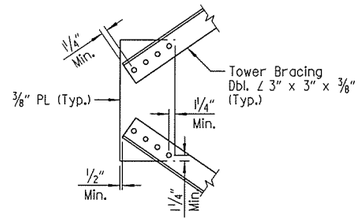



VIEW B-B
Scale: ⅜" = 1'-0"

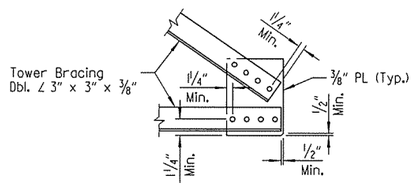
Note:
For "SECTION E-E", see Dwg. No. 55467b.



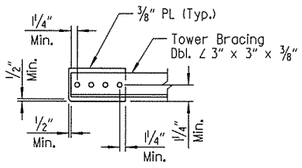

DETAIL L



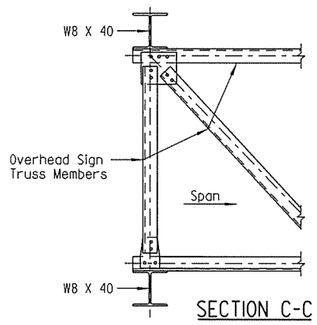

DETAIL K



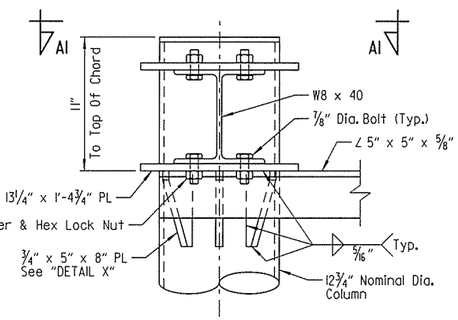

DETAIL J



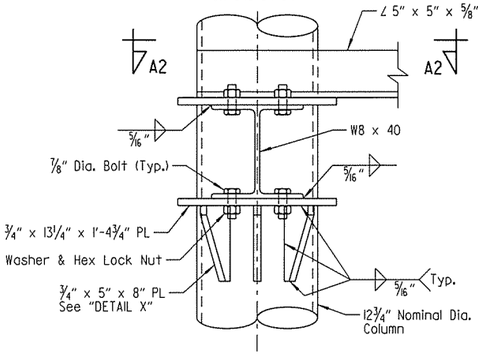

DETAIL N



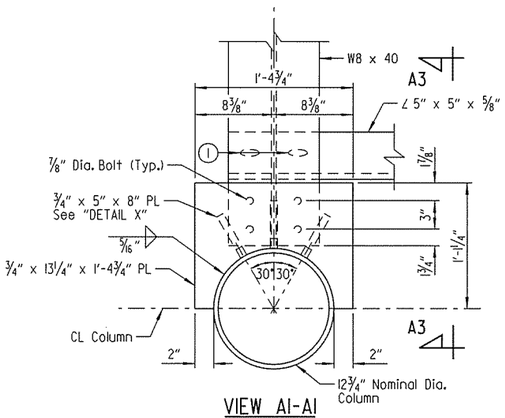

SECTION C-C



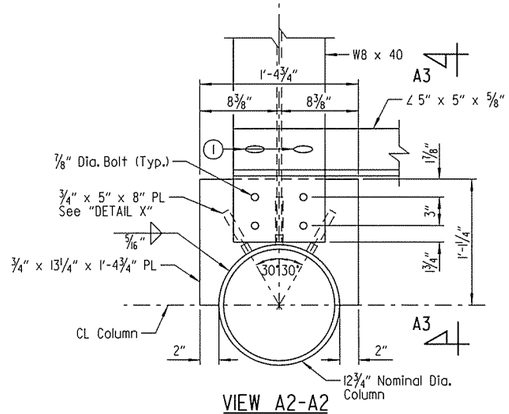

DETAIL - TRUSS TOP SUPPORT



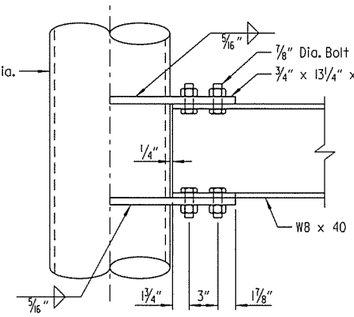

DETAIL - TRUSS BOTTOM SUPPORT



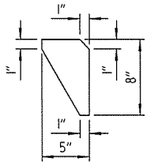

VIEW A1-A1




VIEW A2-A2




VIEW A3-A3
¾" x 5" x 8" Plates
(Not Shown For Clarity)




DETAIL X

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

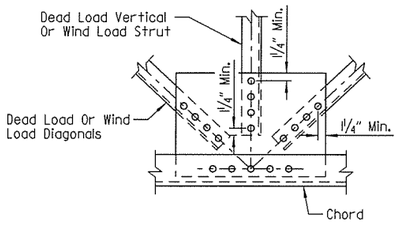
# SHEET 2 OF 5
# DETAILS FOR 60' TO 85' STEEL OVERHEAD SIGN STRUCTURES WITH MEDIAN FOUNDATION
## BENTON COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

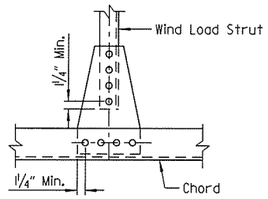
DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T2.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-02 THRU OH-049-04-04 DRAWING NO. 55467a

drgoad 9/4/2014 10:28:58 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xX_T2.dgn
REVISED DATE:

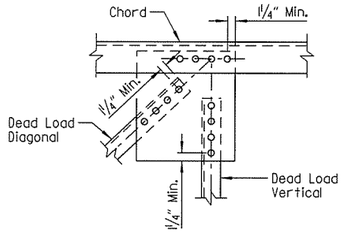
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 616 | 897 |
| | | | | (1) OH 049-04-02 SIGN STRUCTURE | | | | 55467b |
| | | | | OH 049-04-03 | | | | |
| | | | | OH 049-04-04 | | | | |



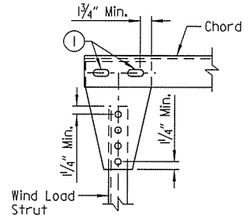

DETAIL "A"




DETAIL "B"



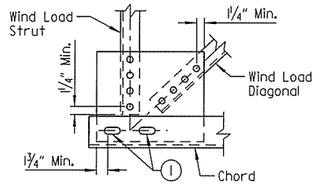

DETAIL "C"



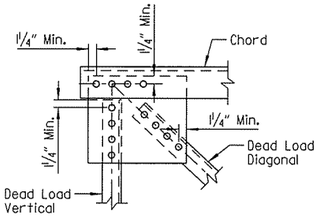

DETAIL "D"

(1) Bolts shall be 1" dia. and slotted holes in gusset plate and chord angle 1 1/16" x 2½". Use plate washer on gusset plate side.

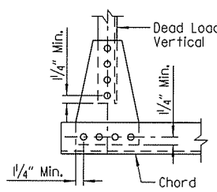
NOTE:
Thickness of all gusset plates shall be ⅜".



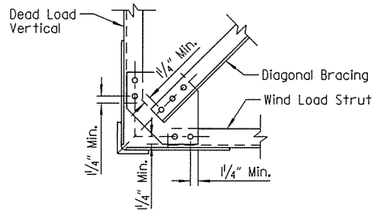

DETAIL "E"



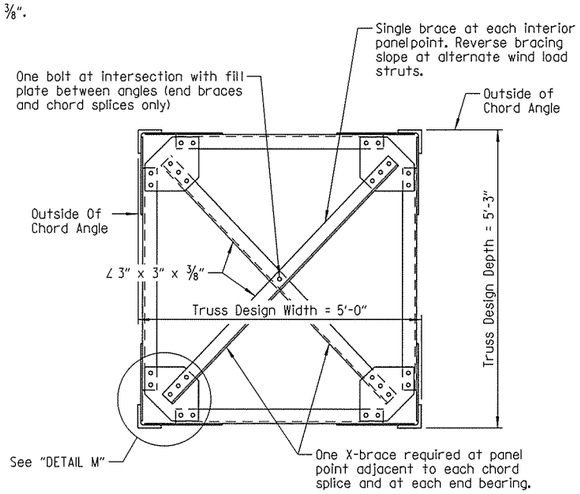

DETAIL "F"



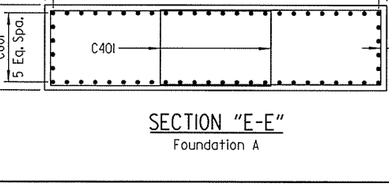

DETAIL "G"



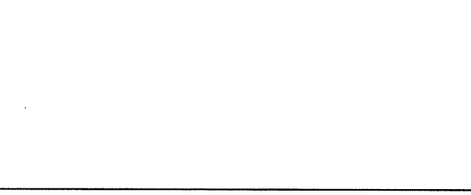

DETAIL "M"




TRUSS SECTION




SECTION ON CL SPLICE

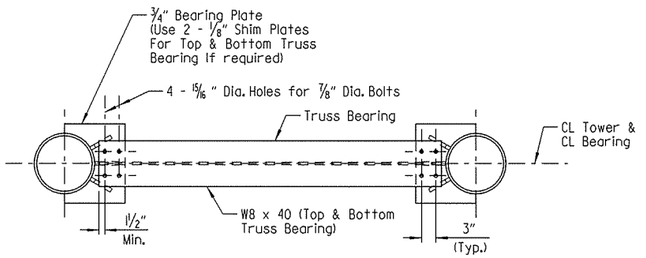



CHORD SPLICE USING PLATE (2)

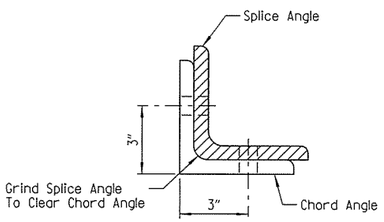
(2) Bolts shall be ¾" Dia. and open holes shall be 1 1/16". Minimum spacing shall be 2¼".



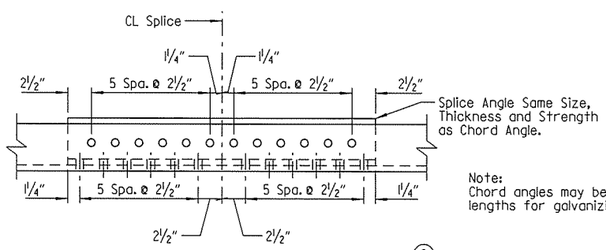

END CAP DETAILS
Scale: 1½" = 1'-0"




PLAN AT TRUSS BEARING

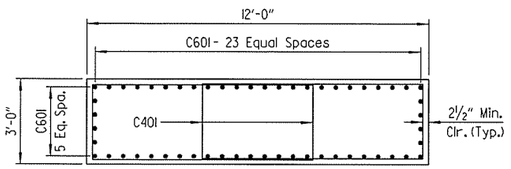



SECTION ON CL SPLICE




OPTIONAL CHORD SPLICE USING ANGLES (2)
Place Splice Angle on Inside of Truss

Note:
Chord angles may be spliced in convenient lengths for galvanizing and sign placement.




SECTION "E-E"
Foundation A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

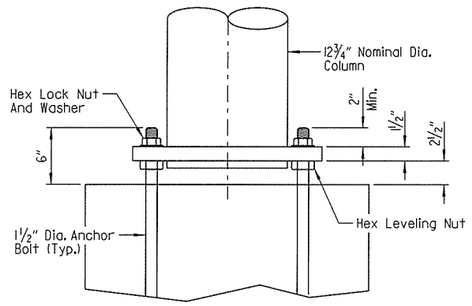
SHEET 3 OF 5
DETAILS FOR 60' TO 85'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T3.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-02 THRU OH-049-04-04 DRAWING NO. 55467b

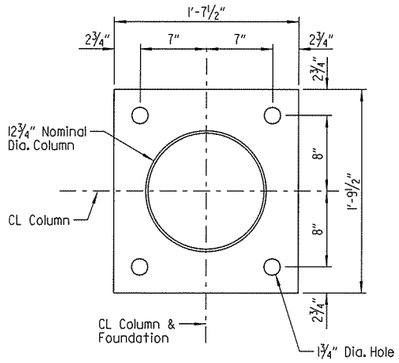
drgoad 9/4/2014 10:28:59 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\0590680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xx_T3.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 617 | 897 |

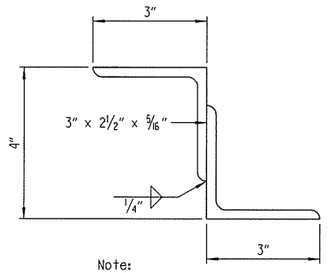
(1) OH 049-04-02 SIGN STRUCTURE 55467c
OH 049-04-03
OH 049-04-04




ELEVATION - COLUMN BASE

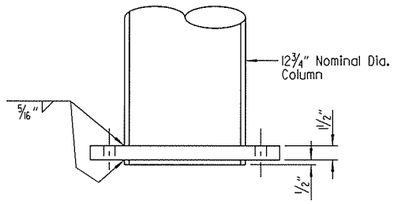



PLAN - COLUMN BASE



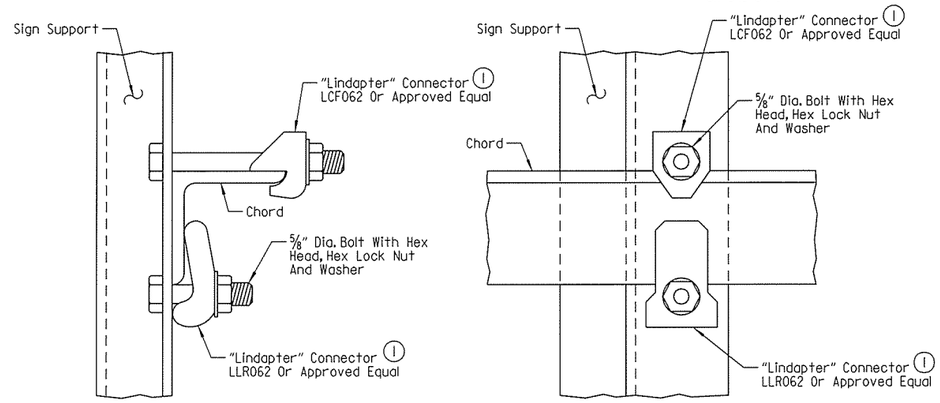

Note:
Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

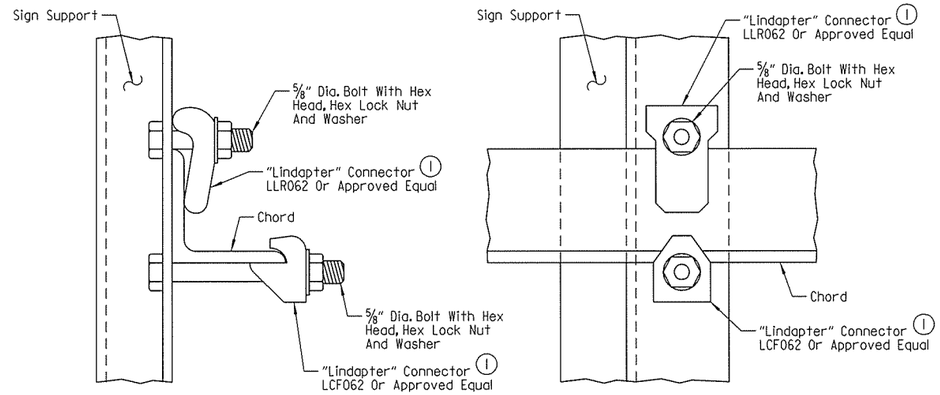



Note:
Diameter of hole in base plate to be ⅛" larger than column diameter.

DETAIL OF COLUMN CONNECTION TO BASE PLATE




TOP CHORD

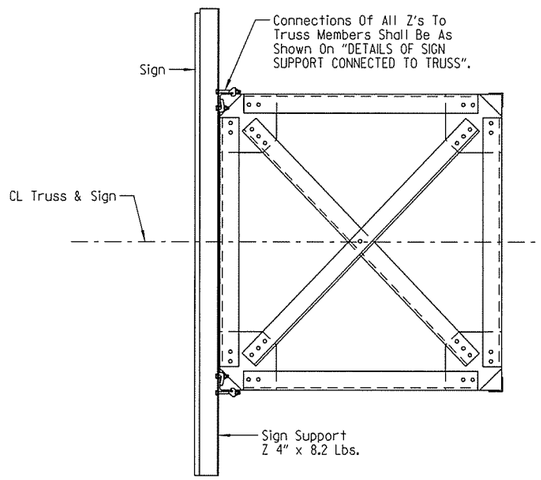



BOTTOM CHORD

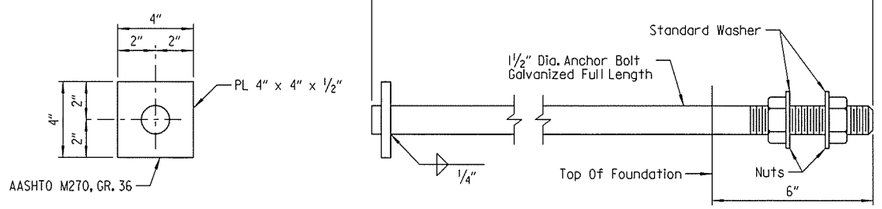
(1) Note:
All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

Note:
Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTED TO TRUSS




SECTION THRU TRUSS




Anchor bolts shall comply with AASHTO M34, Grade 55. with Supplementary Requirement S and galvanized according to Section 807.07. Nuts for bolts shall be as specified in Section 807.07.

ANCHOR BOLT DETAIL

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 15902 PRESTON C. CAMPBELL

BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS FOR 60' TO 85'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T4.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-02 THRU OH-049-04-04 DRAWING NO. 55467c

drgood 9/4/2014 10:28:59 AM
WORKSPACE: AHTD Bridge
\\GLITDCONLITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xx_T4.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 618 | 897 |

| | | | |
|---|---|---|---|
| (1) | OH 049-04-02 | SIGN STRUCTURE | 55467d |
| | OH 049-04-03 | | |
| | OH 049-04-04 | | |

## GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable supplemental specifications and special provisions. Section and subsection refer to the Standard Construction Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition, 2009.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet with a weight of 2.5 lbs. per sq. foot and an additional load of 1200 lbs. for a Variable Message Sign panel when required under this contract or for future installation. Use of additional sign area must be approved by the Engineer. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S Concrete | f'c = 3,500 psi |
| Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A) | fy = 60,000 psi |

Structural steel sign support members shall comply with the following specifications:

| | |
|---|---|
| (1) Angles: | AASHTO M 270, Grade 36 (Fy = 36,000 psi) |
| Plate, W-Section: | AASHTO M 270, Grade 50 (Fy = 50,000 psi) |
| Pipe: | ASTM A 139, Gr. C, straight-seam welded (Fy = 42,000 psi) |
| | ASTM A 500, Gr. B (Fy = 42,000 psi) |
| | ASTM A 501, Gr. B (Fy = 50,000 psi) |
| | ASTM A 714, Class 2, Grade II, Type E or S (Fy = 50,000 psi) |
| Z-Shapes: | AASHTO M 270, Grade 36 (Fy = 36,000 psi) |
| Shim Plates: | ASTM A 1011, SS, Grade 36, Type 2 or Grade 40 |
| Bolts: | ASTM A 325, Type 1 |
| Locknuts - Approved Type: | Meeting or exceeding AASHTO M 292 |
| Washers: | ASTM F 436 |
| Nuts: | ASTM A 563 or AASHTO M 292, Grade DH or Grade 2H |

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearences and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All steel shall be galvanized according to Subsection 807.19. Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall confrom to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "STEEL OVERHEAD SIGN STRUCTURE".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15' apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, wether temporary or permanent, a formal request with detailed drawings shall be subnitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

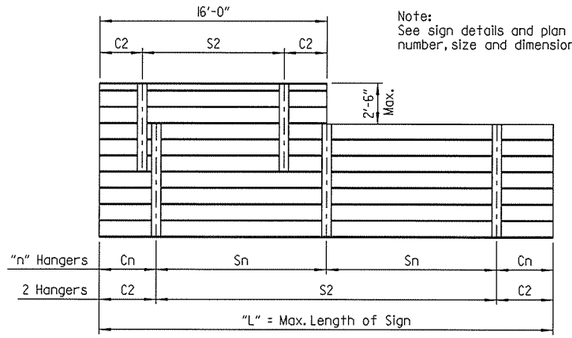
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ¾" diameter and open holes shall be 13/16". Bolt spacing shall be 2½" for ¾" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with AASHTO M 164 Type 1, galvanized according to Subsection 807.06. Nuts and washers for AASHTO M 164 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07.

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "STEEL OVERHEAD SIGN STRUCTURE". The excavations for the footings shall be backfilled before the structure is attached to the foundations.

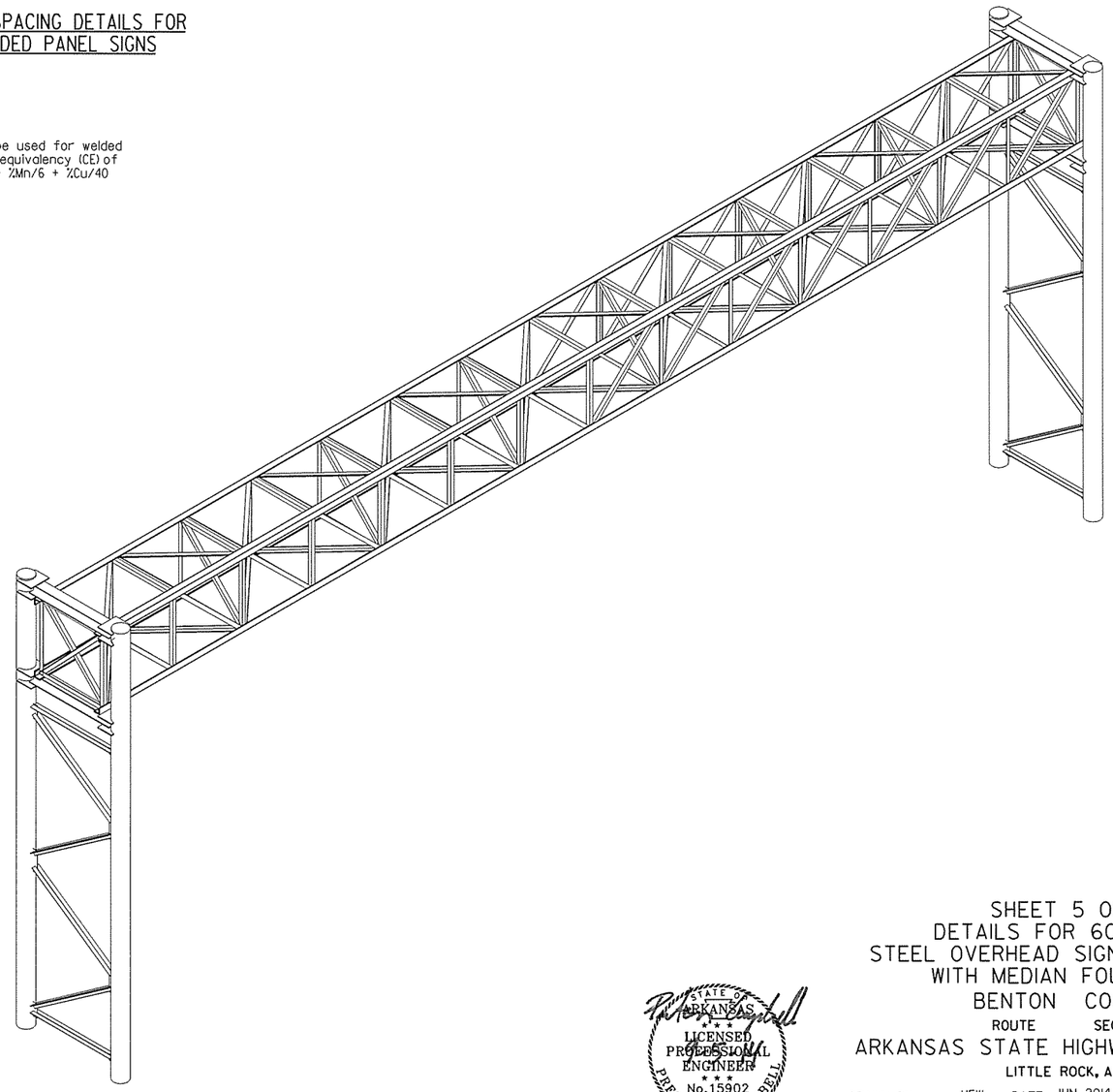



Note:
See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

| HANGER VARIABLES | | | |
|---|---|---|---|
| Max. Length of Sign = "L" | "n" Hangers | Cantilever Length "Cn" | Hanger Spacing "Sn" |
| 15'-0" | 2 Hangers | 0.21 x "L" | 0.58 x "L" |
| 30'-0" | 3 Hangers | 0.145 x "L" | 0.355 x "L" |
| 45'-0" | 4 Hangers | 0.107 x "L" | 0.262 x "L" |

(1) In addition to material requirements all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation: CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10



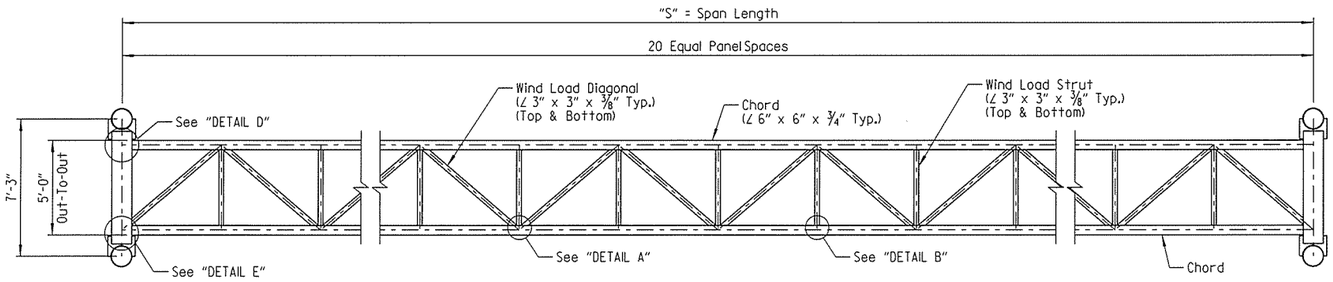
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS FOR 60' TO 85'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

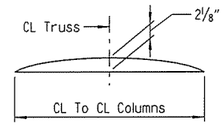
DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T5.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-02 THRU OH-049-04-04 DRAWING NO. 55467d

drgood 9/4/2014 10:29:00 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xX_T5.dgn
REVISED DATE:

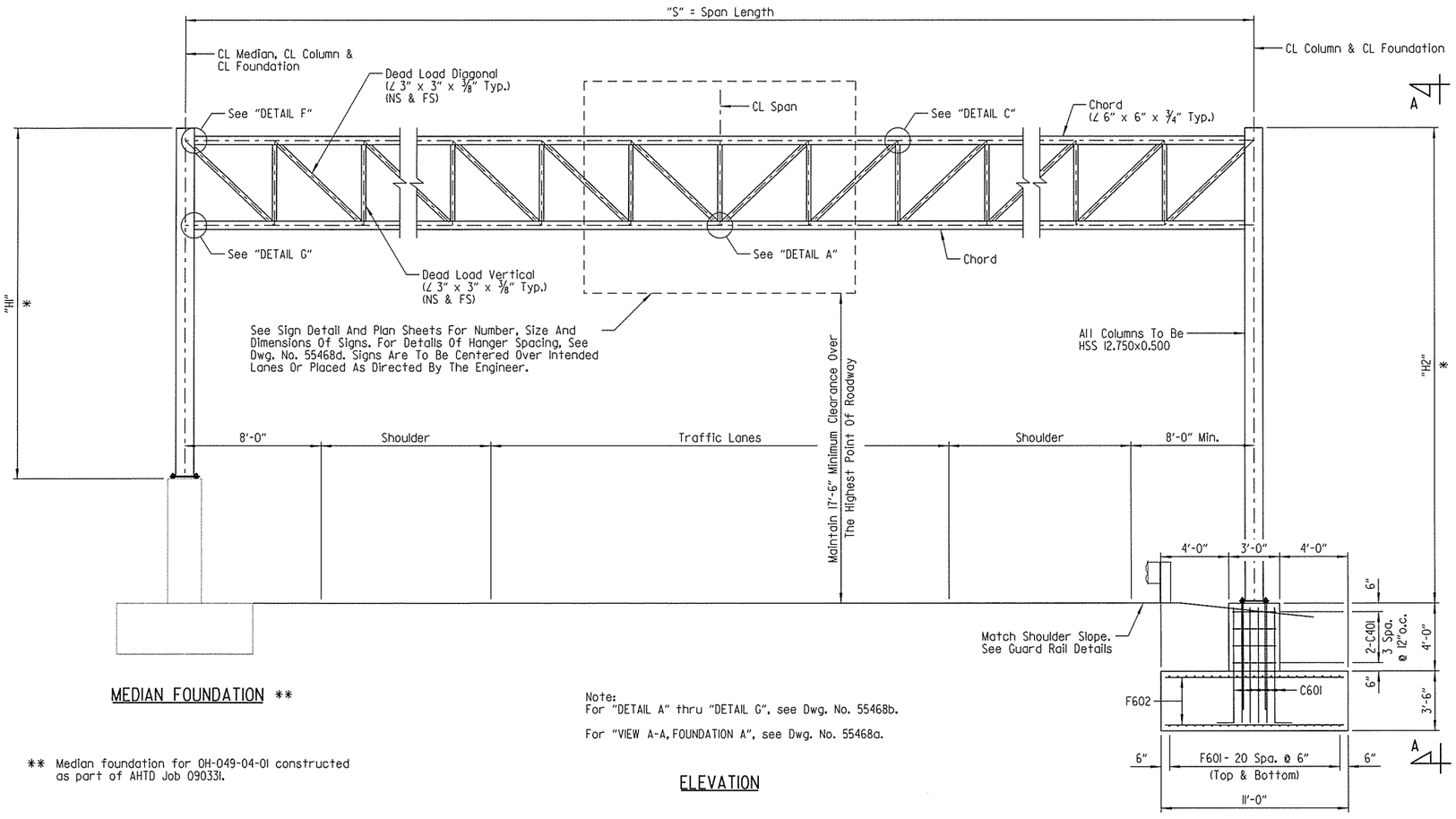
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 619 | 897 |
| | | | | (1) | OH 049-04-01 | SIGN STRUCTURE | | 55468 |




PLAN




TRUSS CAMBER DIAGRAM




MEDIAN FOUNDATION **

FOUNDATION A

** Median foundation for OH-049-04-01 constructed as part of AHTD Job 090331.

Note:
For "DETAIL A" thru "DETAIL G", see Dwg. No. 55468b.

For "VIEW A-A, FOUNDATION A", see Dwg. No. 55468a.

ELEVATION

* Note:
The Contractor shall make field measurements to determine the Column heights "H1" and "H2" that are required to maintain the minimum vertical clearance with the centerline of the sign located at the centerline of the truss. These column heights shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer. The Contractor shall also verify that the variable span length (95'-0" to 105'-0") is sufficient to meet the minimum clearances and to fit the new structure to the existing and/or proposed conditions.

SPAN LENGTH TABLE

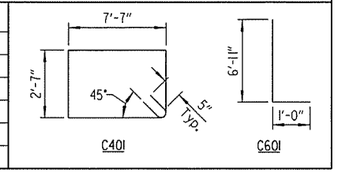
| Structure No. | "S" |
|---|---|
| OH-049-04-01 | 96'-0" |

APPROXIMATE QUANTITIES FOR FOUNDATION A
FOR INFORMATION ONLY

| CLASS S CONCRETE (Cu. Yards) | REINFORCING STEEL (Lbs.) | EXCAVATION (Cu. Yards) |
|---|---|---|
| 36.7 | 3475 | 97 |

BAR LIST - FOUNDATION A

| MARK | NO. REQ'D | LENGTH | P.D. |
|---|---|---|---|
| C401 | 8 | 20'-8" | 2" |
| C601 | 56 | 7'-9" | 4 1/2" |
| F601 | 42 | 21'-6" | Str. |
| F602 | 86 | 10'-6" | Str. |
| | | | |
| | | | |




NOTE: Dimensions of bars are out-to-out.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

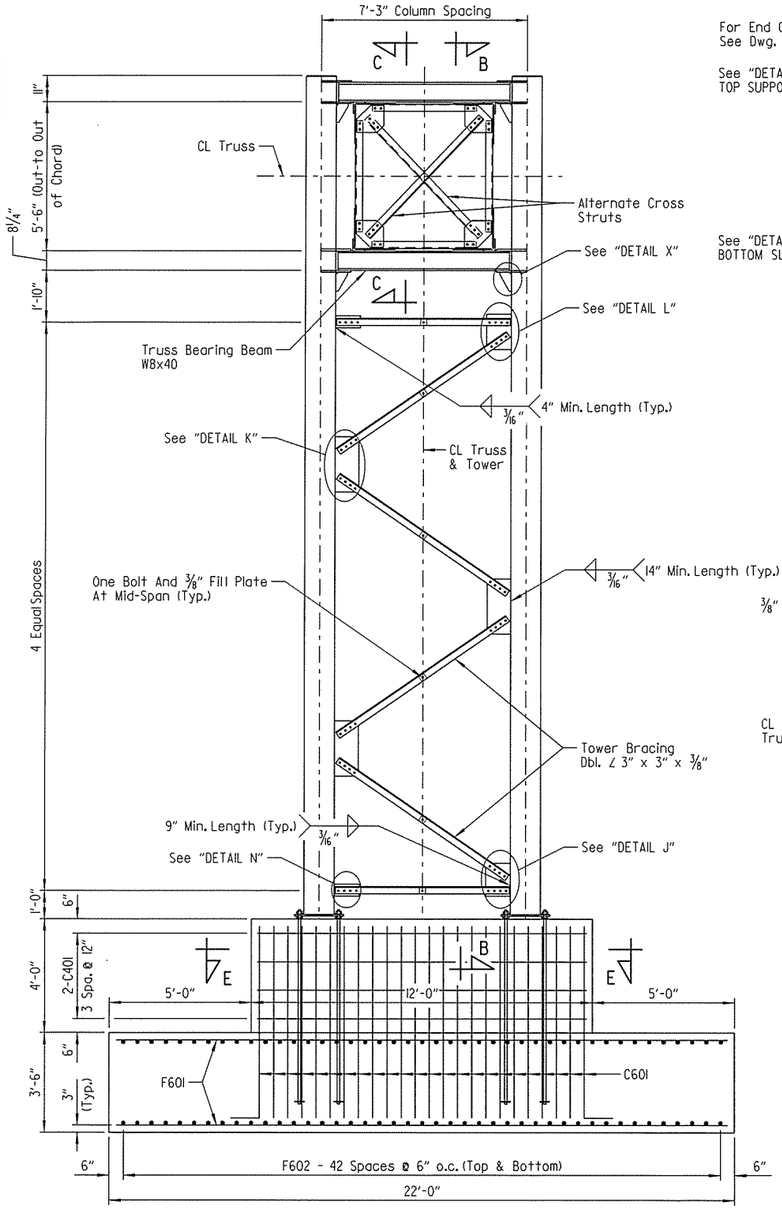
SHEET 1 OF 5
DETAILS FOR 95' TO 105'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T6.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-01 DRAWING NO. 55468

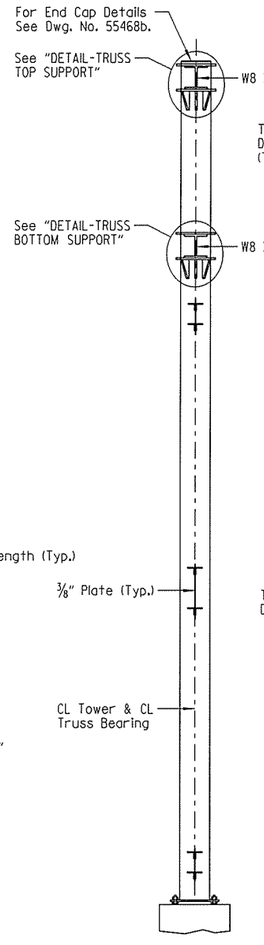
drgood 9/4/2014 10:29:01 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05916180 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xx_T6.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 620 | 897 |
| | | | | (1) OH 049-04-01 | | SIGN STRUCTURE | | 55468a |

(1) Bolts shall be 1" dia. and slotted hole in chord angle 1 1/16" x 2 1/2". Use plate washer on chord angle side.

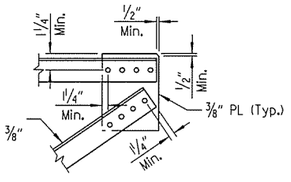



VIEW A-A

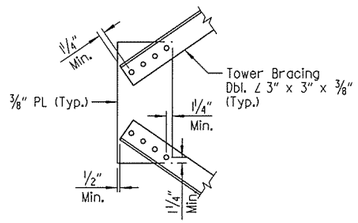



VIEW B-B
Scale: 3/8" = 1'-0"

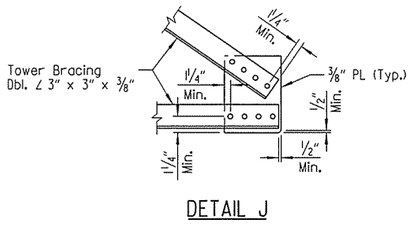
Note:
For "SECTION E-E", see Dwg. No. 55468b.



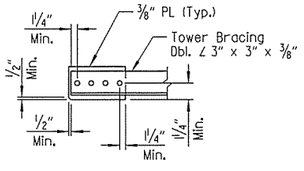

DETAIL L



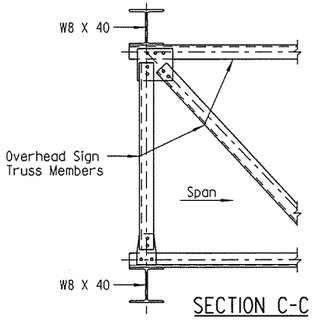

DETAIL K



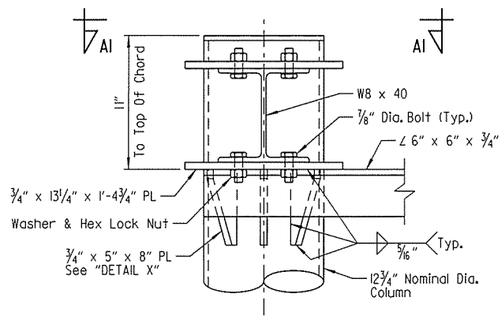

DETAIL J



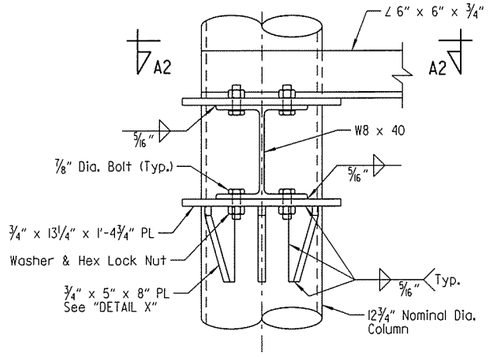

DETAIL N



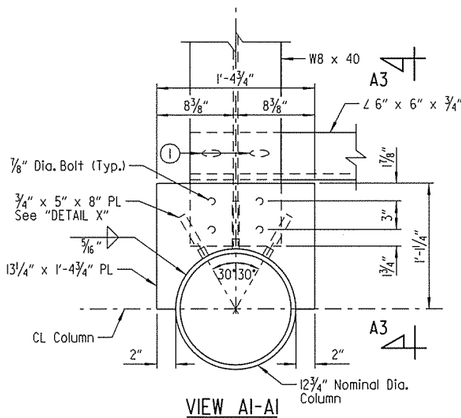

SECTION C-C



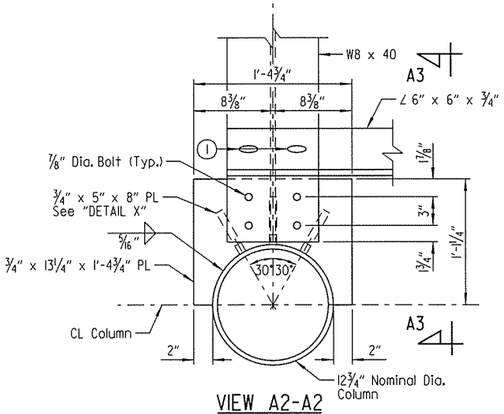

DETAIL - TRUSS TOP SUPPORT



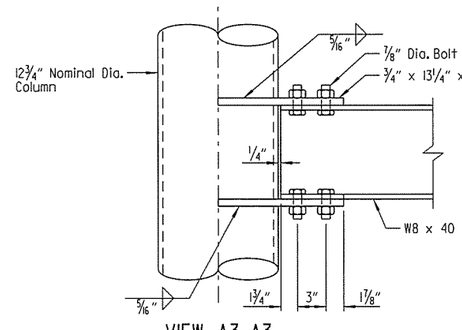

DETAIL - TRUSS BOTTOM SUPPORT



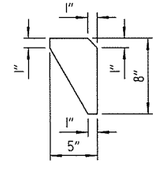

VIEW A1-A1




VIEW A2-A2




VIEW A3-A3
3/4" x 5" x 8" Plates
(Not Shown For Clarity)




DETAIL X

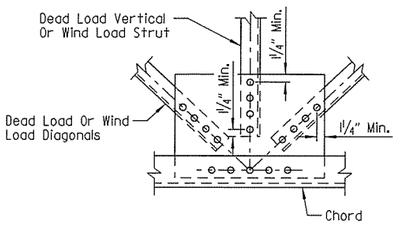
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

SHEET 2 OF 5
DETAILS FOR 95' TO 105'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

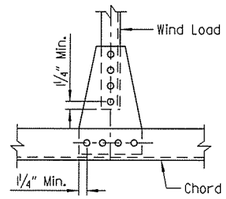
DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T7.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-01 DRAWING NO. 55468a

drgood 9/4/2014 10:29:01 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xx_T7.dgn
REVISED DATE:

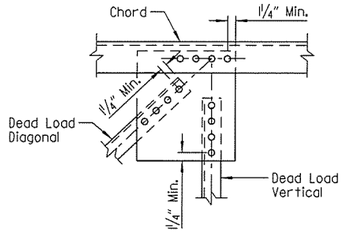
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 621 | 897 |
| | | | | (1) OH 049-04-01 | | SIGN STRUCTURE | | 55468b |



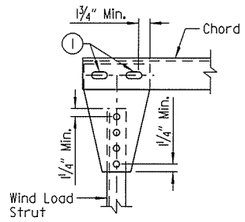

DETAIL "A"




DETAIL "B"



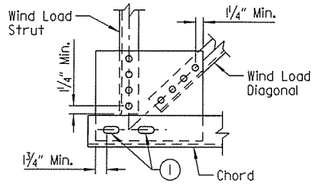

DETAIL "C"



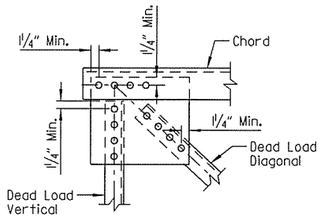

DETAIL "D"

(1) Bolts shall be 1" dia. and slotted holes in gusset plate and chord angle 1 1/16" x 2½". Use plate washer on gusset plate side.

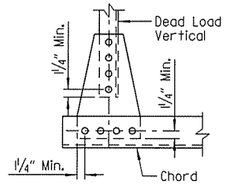
NOTE:
Thickness of all gusset plates shall be ⅜".



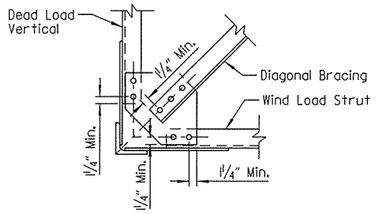

DETAIL "E"



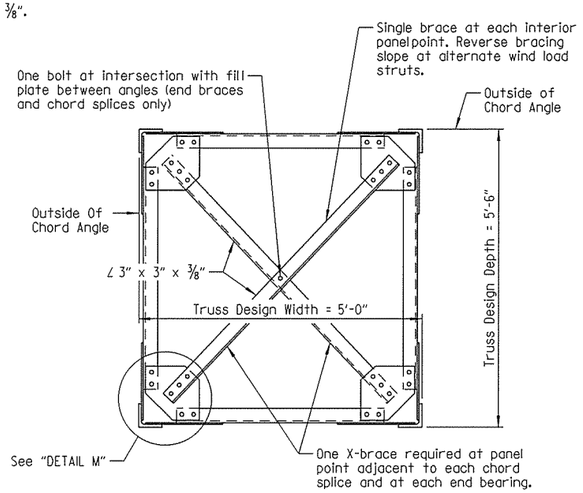

DETAIL "F"




DETAIL "G"




DETAIL "M"




TRUSS SECTION




SECTION ON CL SPLICE



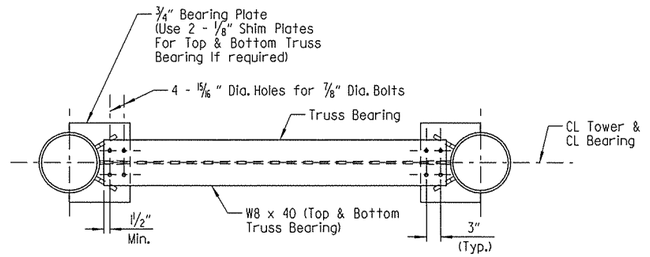

CHORD SPLICE USING PLATE (2)

(2) Bolts shall be ¾" Dia. and open holes shall be 1 1/16". Minimum spacing shall be 2¼".

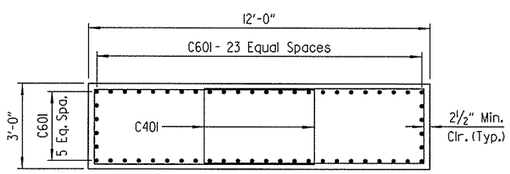
Note:
Chord angles may be spliced in convenient lengths for galvanizing and sign placement.



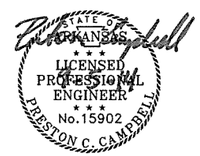

END CAP DETAILS
Scale: 1½" = 1'-0"




PLAN AT TRUSS BEARING




SECTION "E-E"
Foundation A



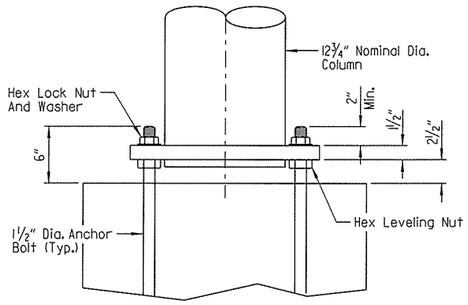

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS FOR 95' TO 105'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

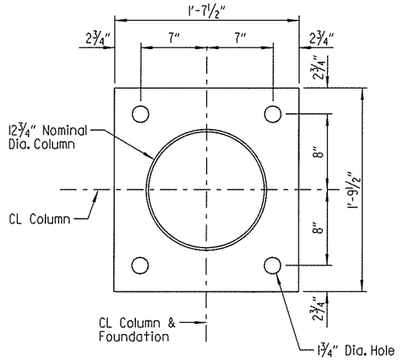
DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T8.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: AS SHOWN
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-01 DRAWING NO. 55468b

drgoad 9/4/2014 10:29:02 AM
WORKSPACE: AHTD Bridge
\\GLITDCO\LITProjects\2005\059I680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xx_T8.dgn
REVISED DATE:

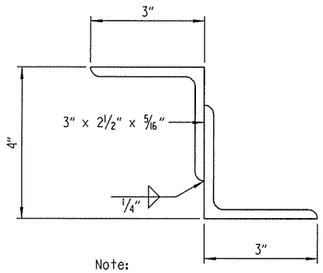
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 622 | 897 |
| | | | | (1) | OH 049-04-01 | SIGN STRUCTURE | | 55468c |




ELEVATION - COLUMN BASE

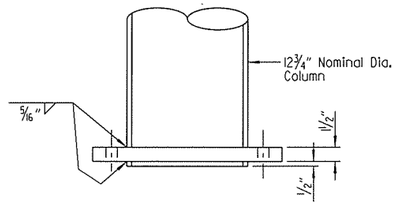



PLAN - COLUMN BASE



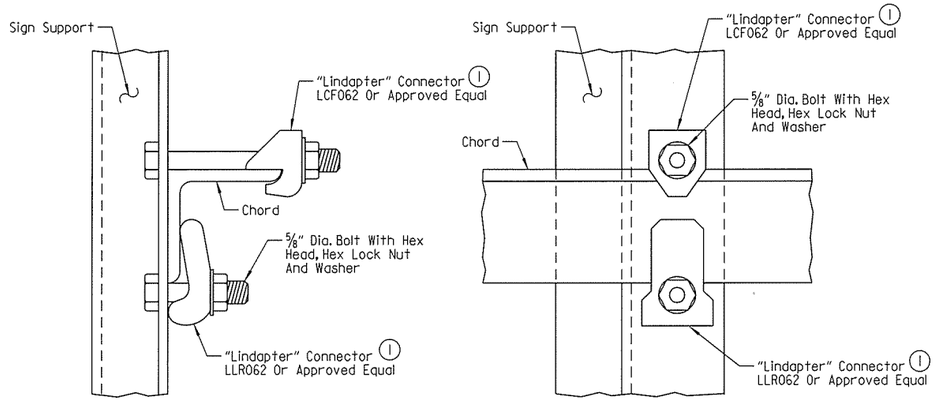

Note:
Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

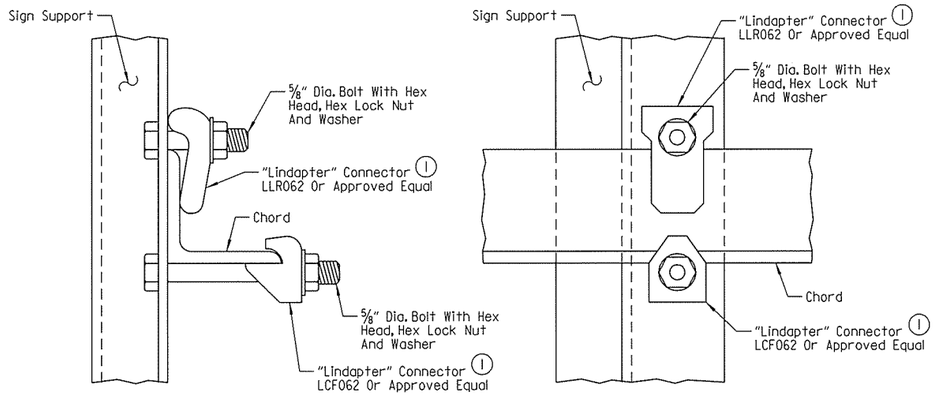



Note:
Diameter of hole in base plate to be ⅛" larger than column diameter.

DETAIL OF COLUMN CONNECTION TO BASE PLATE




TOP CHORD

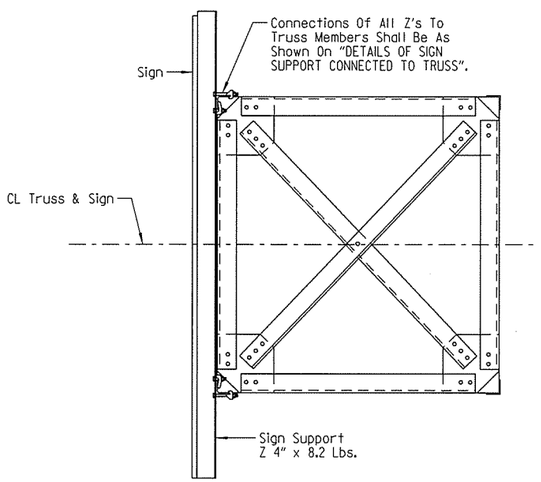



BOTTOM CHORD

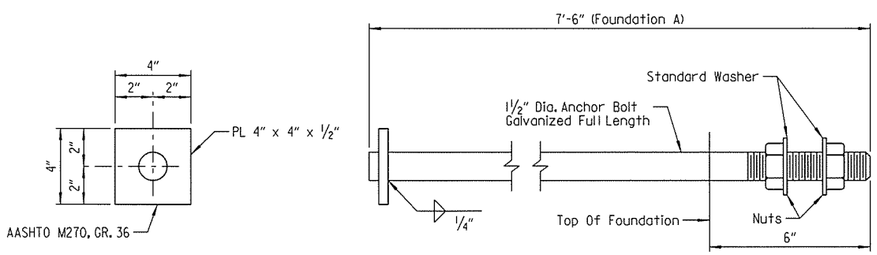
(1) Note:
All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

Note:
Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTED TO TRUSS




SECTION THRU TRUSS




Anchor bolts shall comply with AASHTO M34, Grade 55. with Supplementary Requirement S1and galvanized according to Section 807.07. Nuts for bolts shall be as specified in Section 807.07.

ANCHOR BOLT DETAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS FOR 95' TO 105'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T9.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-01 DRAWING NO. 55468c

drgood 9/4/2014 10:29:02 AM
WORKSPACE: AHTD Bridge
\\GLITDCON\LITProjects\2005\05911680 - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xX_T9.dgn
REVISED DATE:

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | CA0907 | 623 | 897 |
| | | | | (1) OH 049-04-01 | | SIGN STRUCTURE | | 55468d |

## GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable supplemental specifications and special provisions. Section and subsection refer to the Standard Construction Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition, 2009.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for a maximum sign area equal to 75% of the span length times a sign height of 15 feet with a weight of 2.5 lbs. per sq. foot and an additional load of 1200 lbs. for a Variable Message Sign panel when required under this contract or for future installation. Use of additional sign area must be approved by the Engineer. If the structure height ("H1" or "H2") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

| | |
|---|---|
| Class S Concrete | f'c = 3,500 psi |
| Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A) | fy = 60,000 psi |

Structural steel sign support members shall comply with the following specifications:

| | |
|---|---|
| (1) Angles: | AASHTO M 270, Grade 36 (Fy = 36,000 psi) |
| Plate, W-Section: | AASHTO M 270, Grade 50 (Fy = 50,000 psi) |
| Pipe: | ASTM A 139, Gr. C, straight-seam welded (Fy = 42,000 psi)<br>ASTM A 500, Gr. B (Fy = 42,000 psi)<br>ASTM A 501, Gr. B (Fy = 50,000 psi)<br>ASTM A 714, Class 2, Grade II, Type E or S (Fy = 50,000 psi) |
| Z-Shapes: | AASHTO M 270, Grade 36 (Fy = 36,000 psi) |
| Shim Plates: | ASTM A 1011, SS, Grade 36, Type 2 or Grade 40 |
| Bolts: | ASTM A 325, Type 1 |
| Locknuts - Approved Type: | Meeting or exceeding AASHTO M 292 |
| Washers: | ASTM F 436 |
| Nuts: | ASTM A 563 or AASHTO M 292, Grade DH or Grade 2H |

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearences and to fit the new structure to the existing conditions.

Drawings show general features of design only. Shop drawings shall be made in accordance with Subsection 807.04, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Shapes and materials shown in the plans will be the basis of payment and no additional compensation will be made for any adjustments due to substitutions.

All steel shall be galvanized according to Subsection 807.19. Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than 1/2" in thickness shall confrom to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "STEEL OVERHEAD SIGN STRUCTURE".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15' apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, wether temporary or permanent, a formal request with detailed drawings shall be subnitted to the Engineer for approval. All welding shall conform to Subsection 807.26.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

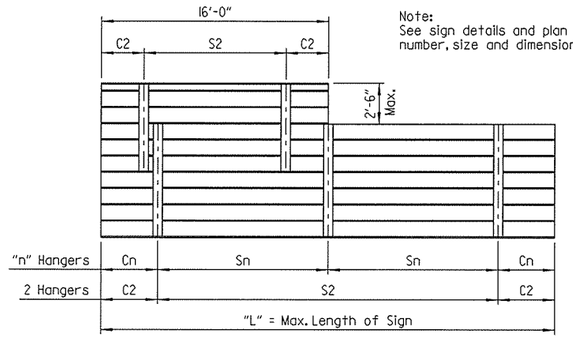
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be 3/4" diameter and open holes shall be 1 1/16". Bolt spacing shall be 2 1/2" for 3/4" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with AASHTO M 164 Type 1, galvanized according to Subsection 807.06. Nuts and washers for AASHTO M 164 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07.

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "STEEL OVERHEAD SIGN STRUCTURE". The excavations for the footings shall be backfilled before the structure is attached to the foundations.

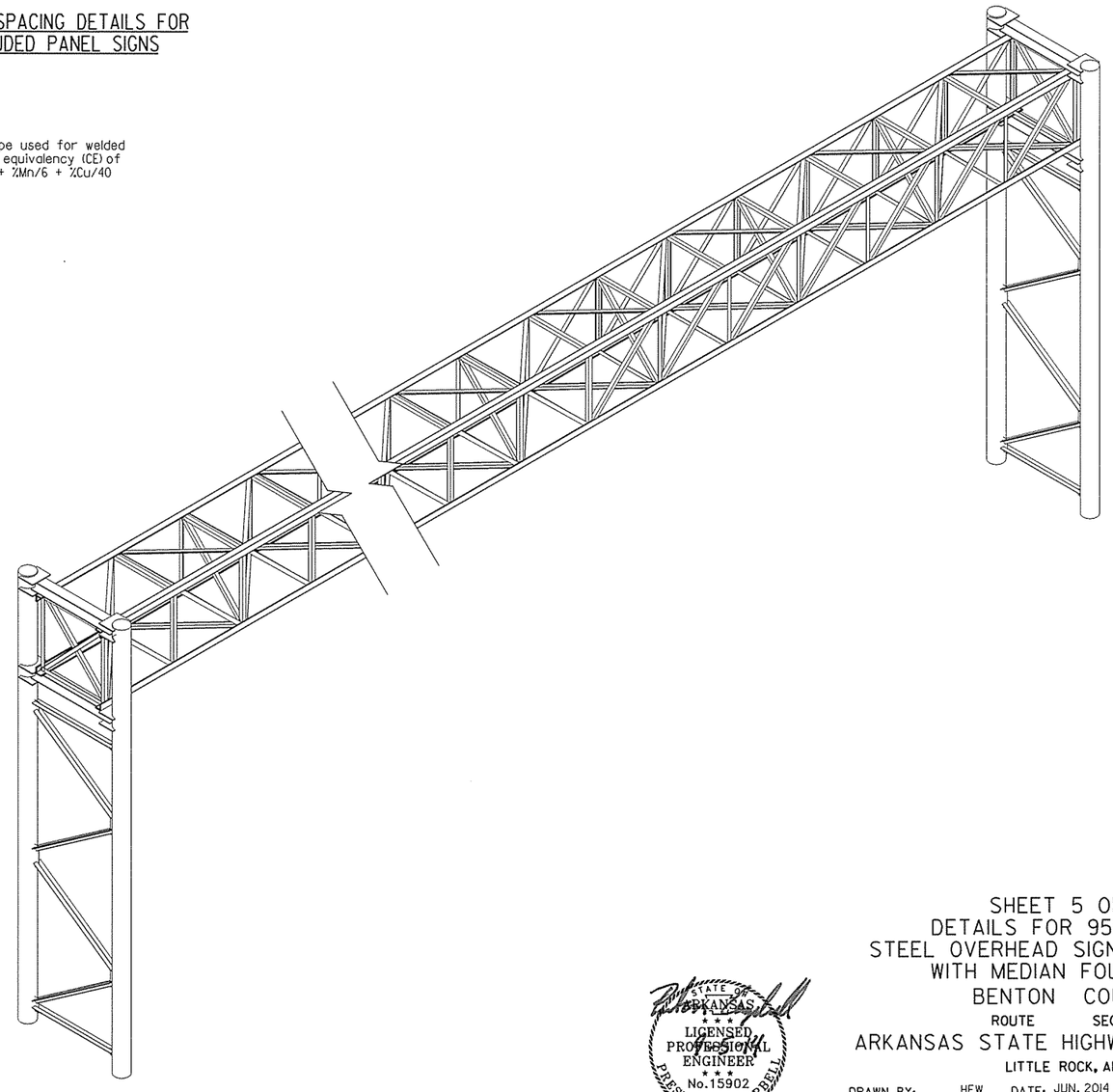



Note:
See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

| HANGER VARIABLES | | | |
|---|---|---|---|
| Max. Length of Sign = "L" | "n" Hangers | Cantilever Length "Cn" | Hanger Spacing "Sn" |
| 15'-0" | 2 Hangers | 0.21 x "L" | 0.58 x "L" |
| 30'-0" | 3 Hangers | 0.145 x "L" | 0.355 x "L" |
| 45'-0" | 4 Hangers | 0.107 x "L" | 0.262 x "L" |

(1) In addition to material requirements all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation: CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10



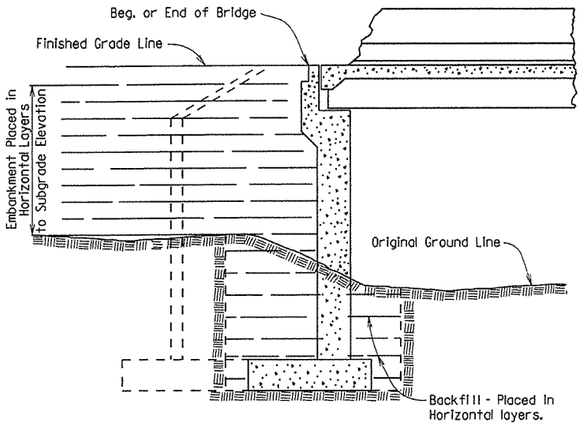
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15902
PRESTON C. CAMPBELL
BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS FOR 95' TO 105'
STEEL OVERHEAD SIGN STRUCTURES
WITH MEDIAN FOUNDATION
BENTON COUNTY
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

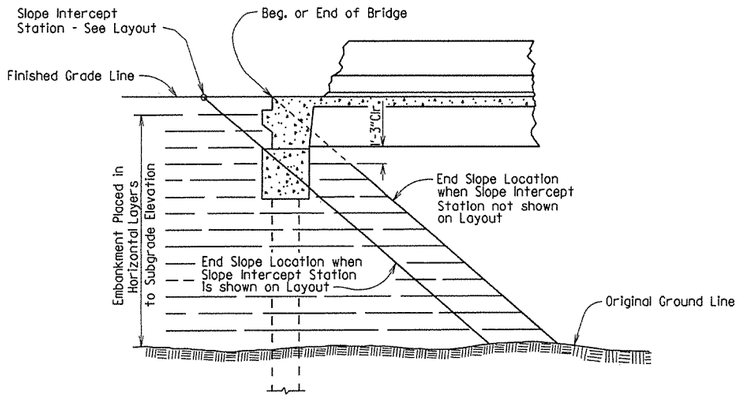
DRAWN BY: HEW DATE: JUN. 2014 FILENAME: BCA0907_T10.DGN
CHECKED BY: AJK DATE: JUN. 2014 SCALE: NOT TO SCALE
DESIGNED BY: PCC DATE: JUN. 2014
STR. NO. OH-049-04-01 DRAWING NO. 55468d

drgood 9/4/2014 10:29:03 AM
WORKSPACE: AHTD Bridge - AHTD Springdale Bypass\Drawings\BRG\Sign Structure\BCA0907xX_T10.dgn
\\OLITDCONLITProjects\2005\059M680
REVISED DATE:

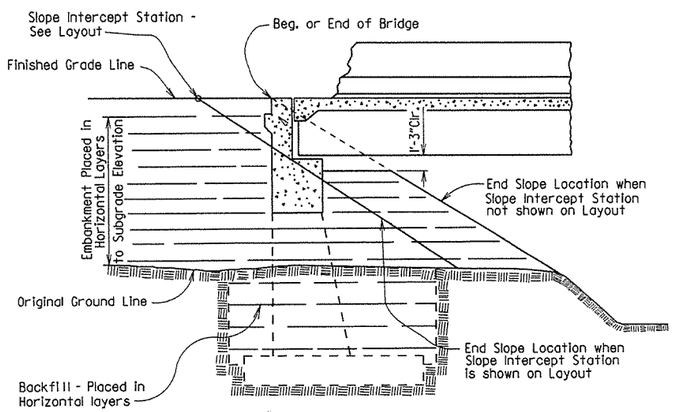
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 624 | |
| | | | | JOB NO. | | | | |
| | | | | ① | EMBANKMENT & BACKFILL | | 55000 | |



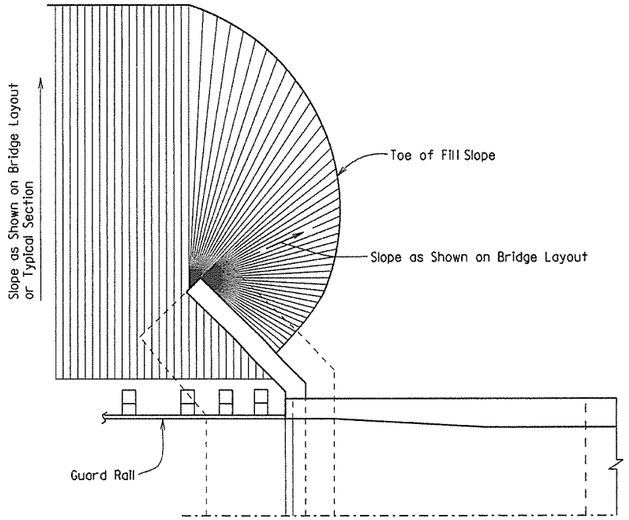

EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



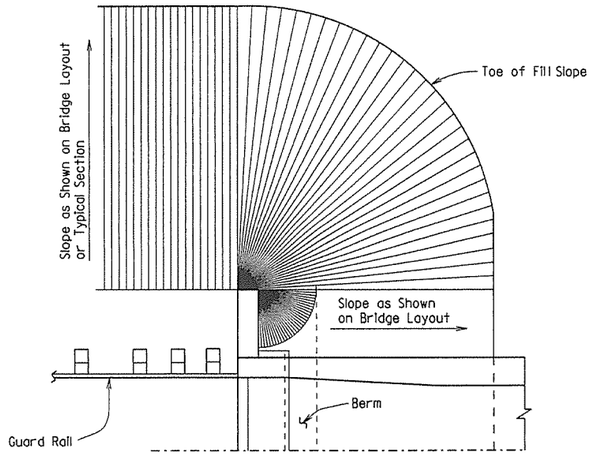

EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



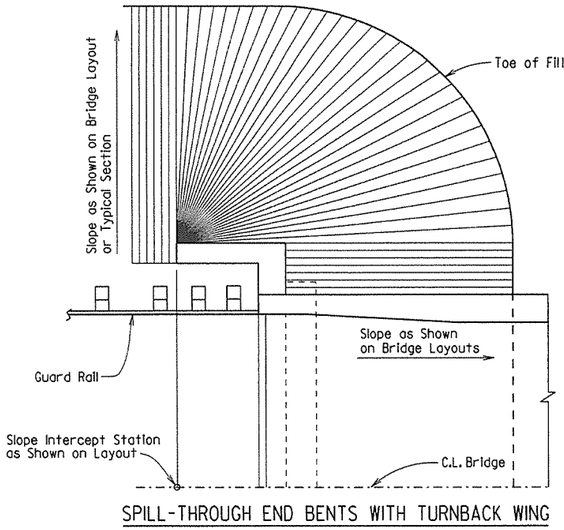

EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



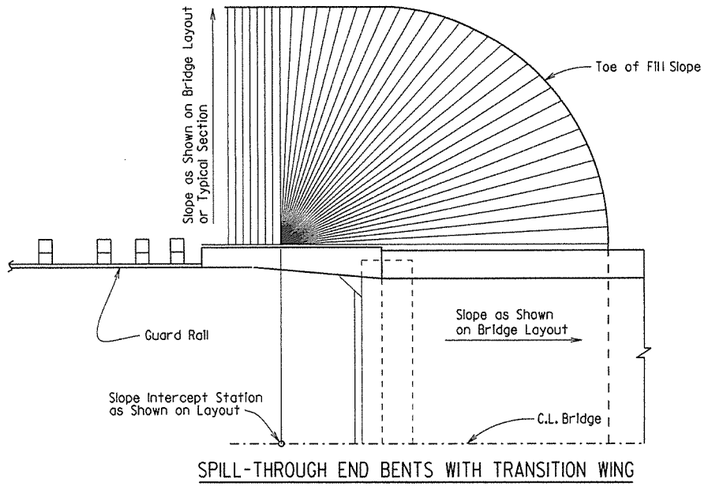

VERTICAL WALL ABUTMENTS




SPILL-THROUGH END BENTS WITH STUB WING




SPILL-THROUGH END BENTS WITH TURNBACK WING




SPILL-THROUGH END BENTS WITH TRANSITION WING

## METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

### GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

# STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

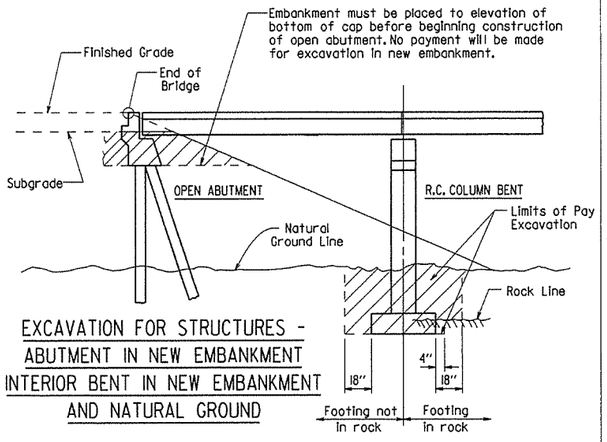
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

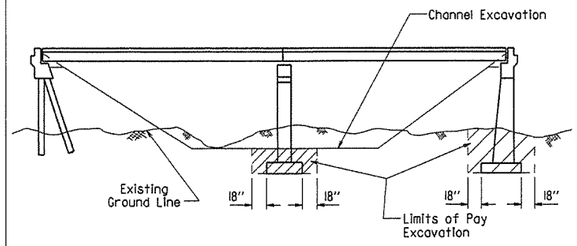
DESIGNED BY: STD. DATE: -

DRAWING NO. 55000

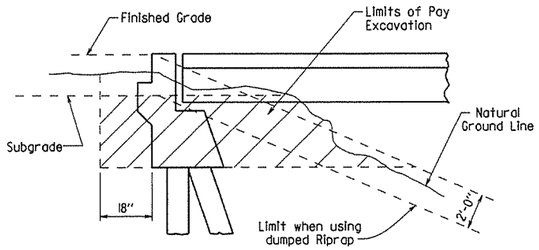
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 625 | |
| | | | | JOB NO. | | | | |
| | | | | (1) | RIPRAP & EXCAV. 55001 | | | |



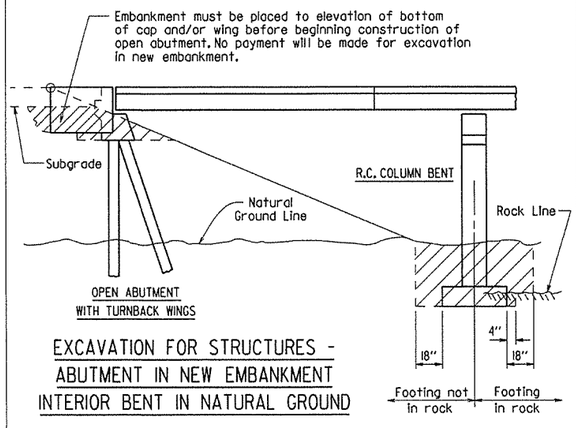

EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



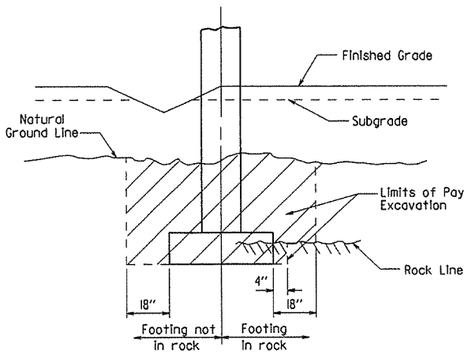

EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



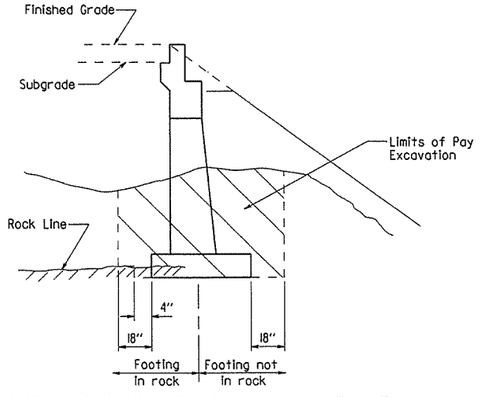

EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



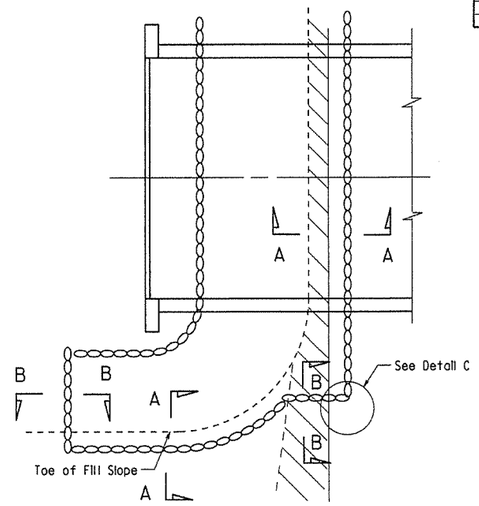

EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



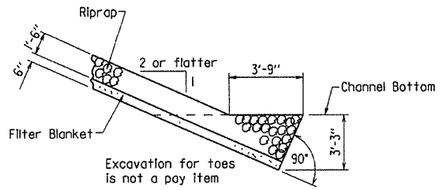

EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND




EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

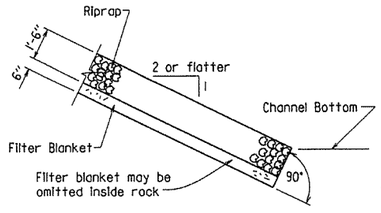



PLAN OF DUMPED RIPRAP




SECTION A-A

(Toe Excavation in Soil)



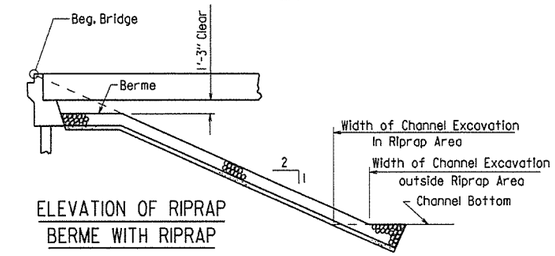

SECTION A-A

(Toe Excavation in Rock)

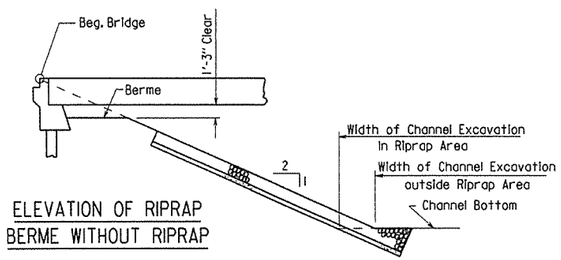
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

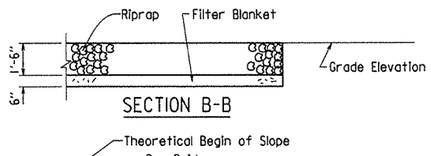
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



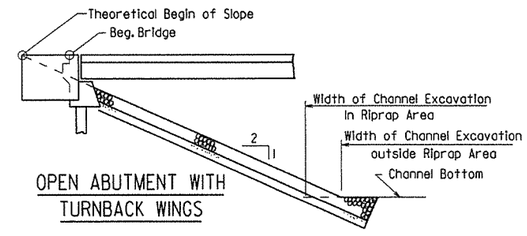

ELEVATION OF RIPRAP BERME WITH RIPRAP



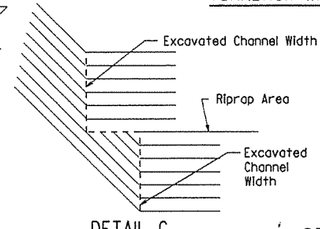

ELEVATION OF RIPRAP BERME WITHOUT RIPRAP




SECTION B-B




OPEN ABUTMENT WITH TURNBACK WINGS




DETAIL C

# STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b5500Ldgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

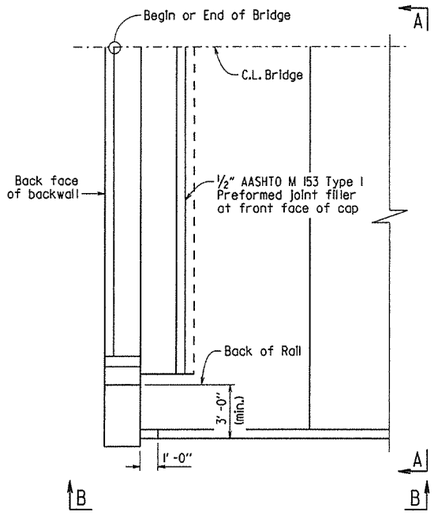
DESIGNED BY: STD. DATE:

DRAWING NO. 55001

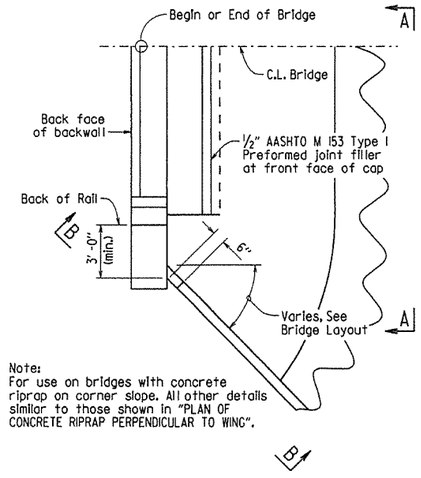
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 626 | |
| | | | | JOB NO. | | | | |

① CONCRETE RIPRAP 55002

Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



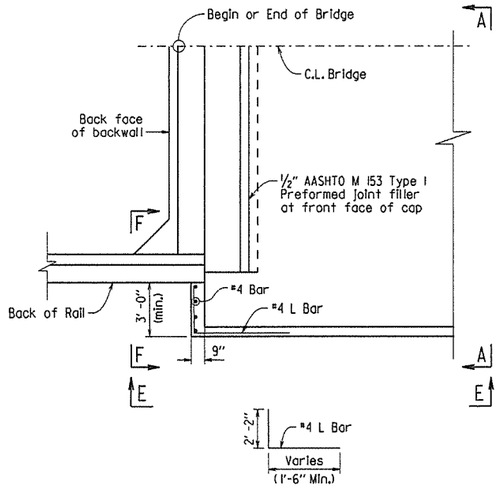

PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO WING
¼" = 1'-0"



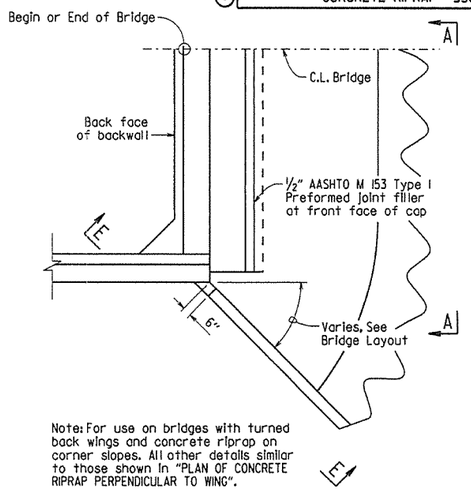

Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE TO WING
¼" = 1'-0"

Note:
For use on bridges with turned back wings. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".



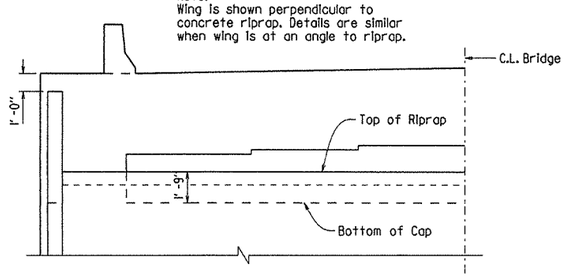

PLAN OF CONCRETE RIPRAP
PERPENDICULAR TO TURNED BACK WING
¼" = 1'-0"



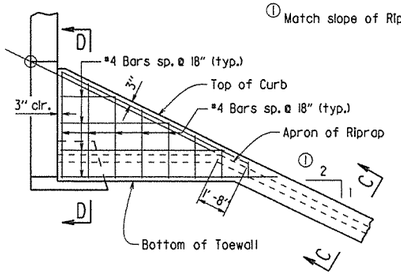

Note: For use on bridges with turned back wings and concrete riprap on corner slopes. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP
AT ANGLE FROM TURNED BACK WING
¼" = 1'-0"

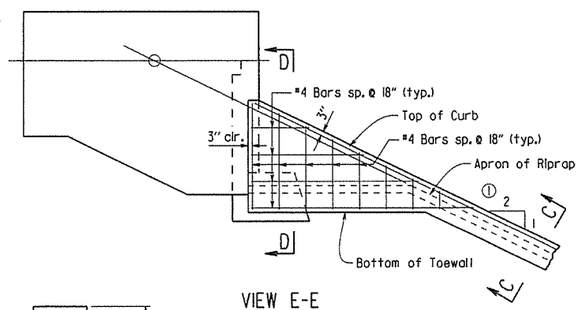
Note:
Wing is shown perpendicular to concrete riprap. Details are similar when wing is at an angle to riprap.



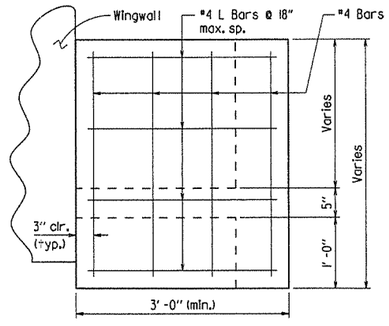

VIEW A-A
¼" = 1'-0"



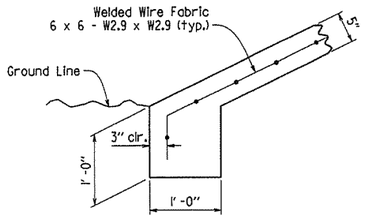

VIEW B-B
¼" = 1'-0"



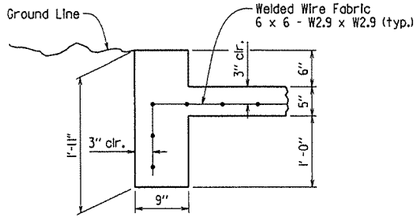

VIEW E-E
¼" = 1'-0"



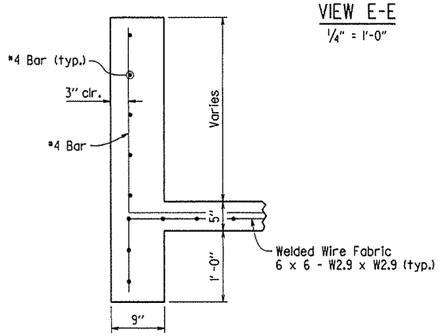

VIEW F-F
1" = 1'-0"




TOE OF CONCRETE RIPRAP
1" = 1'-0"




SECTION C-C
1" = 1'-0"




SECTION D-D
1" = 1'-0"

GENERAL NOTES

All concrete shall be Class A with a minimum compressive strength, f'c = 2,100 psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

# STANDARD DETAILS FOR CONCRETE RIPRAP

## ARKANSAS STATE HIGHWAY COMMISSION

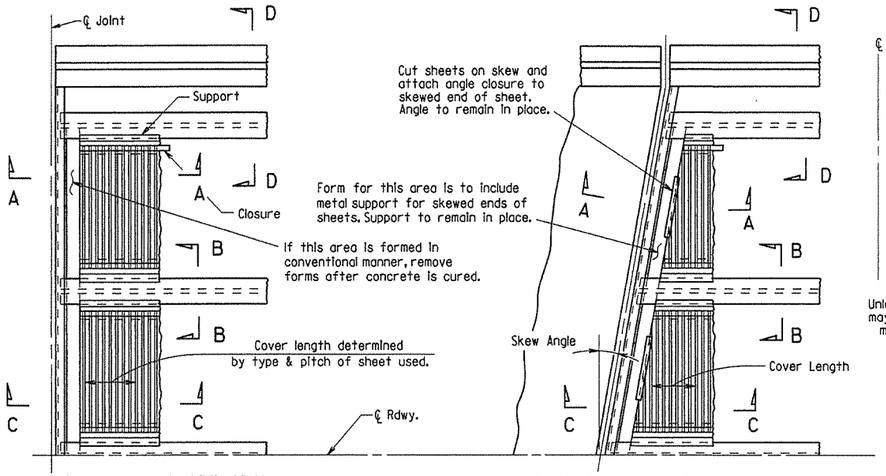
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 2/27/2014
CHECKED BY: BEF DATE: 2/27/2014
DESIGNED BY: Std. DATE: ---
FILENAME: b55002.dgn
SCALE: AS SHOWN

DRAWING NO. 55002

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 627 | |
| | | | | JOB NO. | | | | |

① BRIDGE DECK FORMS 55005



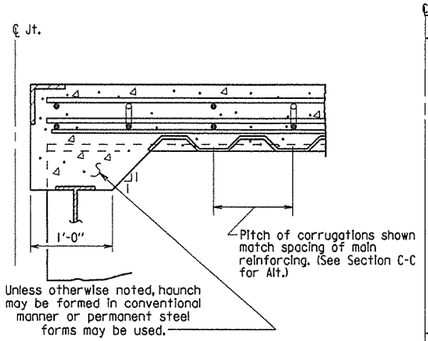

PART PLAN - SQUARE SPAN

3/8" = 1'-0"




PART PLAN - SKEWED SPAN

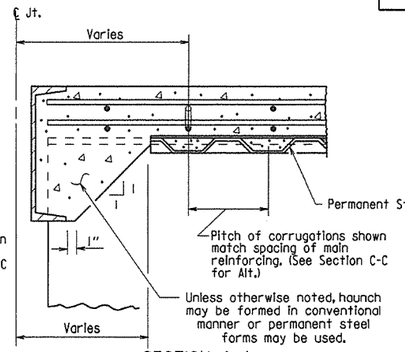
3/8" = 1'-0"




SECTION A-A

N.T.S.

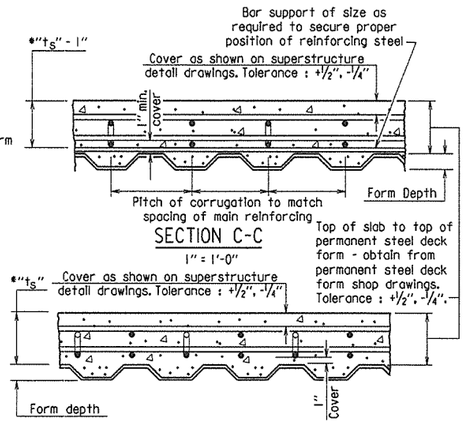
(Angle at end of span)




SECTION A-A

N.T.S.

(Channel at end of span)



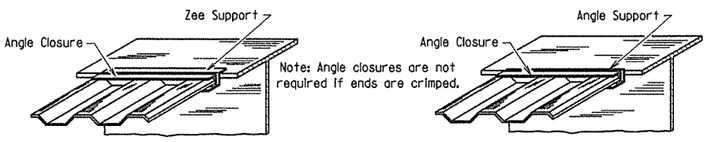

SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

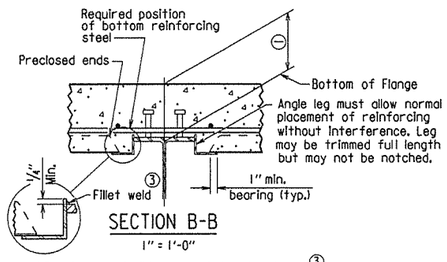
(Applicable when corrugations do not match spacing of main reinforcement)




SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*$t_s$ = slab thickness as shown on superstructure detail drawings.

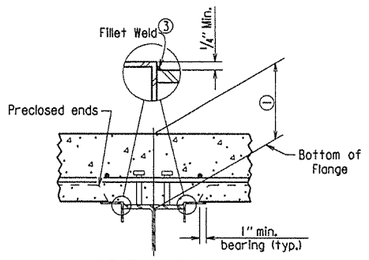



SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

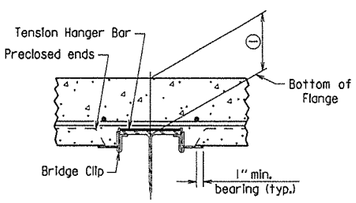
③ Minimum weld: ⅛" x 1' ℄ 18". More weld may be required; maximum length per weld = 1½" (typ.)




SECTION B-B

1" = 1'-0"

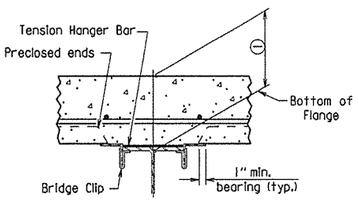
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)




SECTION B-B

1" = 1'-0"

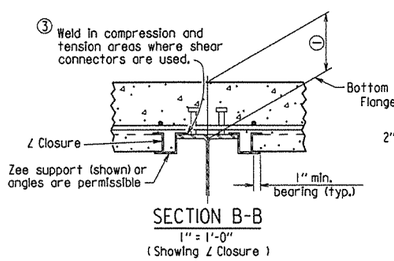
(Showing permissible support for tension flange where shear connectors are not used)




SECTION B-B

1" = 1'-0"

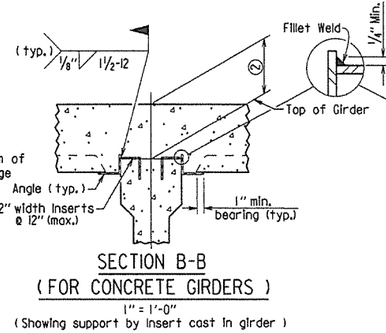
(Showing permissible support for tension flange where shear connectors are not used)




SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

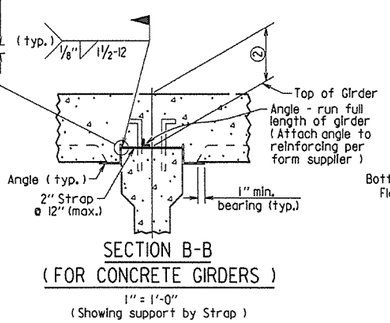



SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

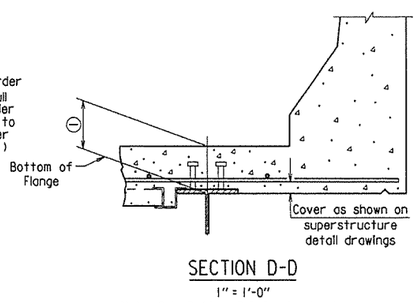



SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)




SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = $t_s$ + 1¾" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

# STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE

DESIGNED BY: STD. DATE: —

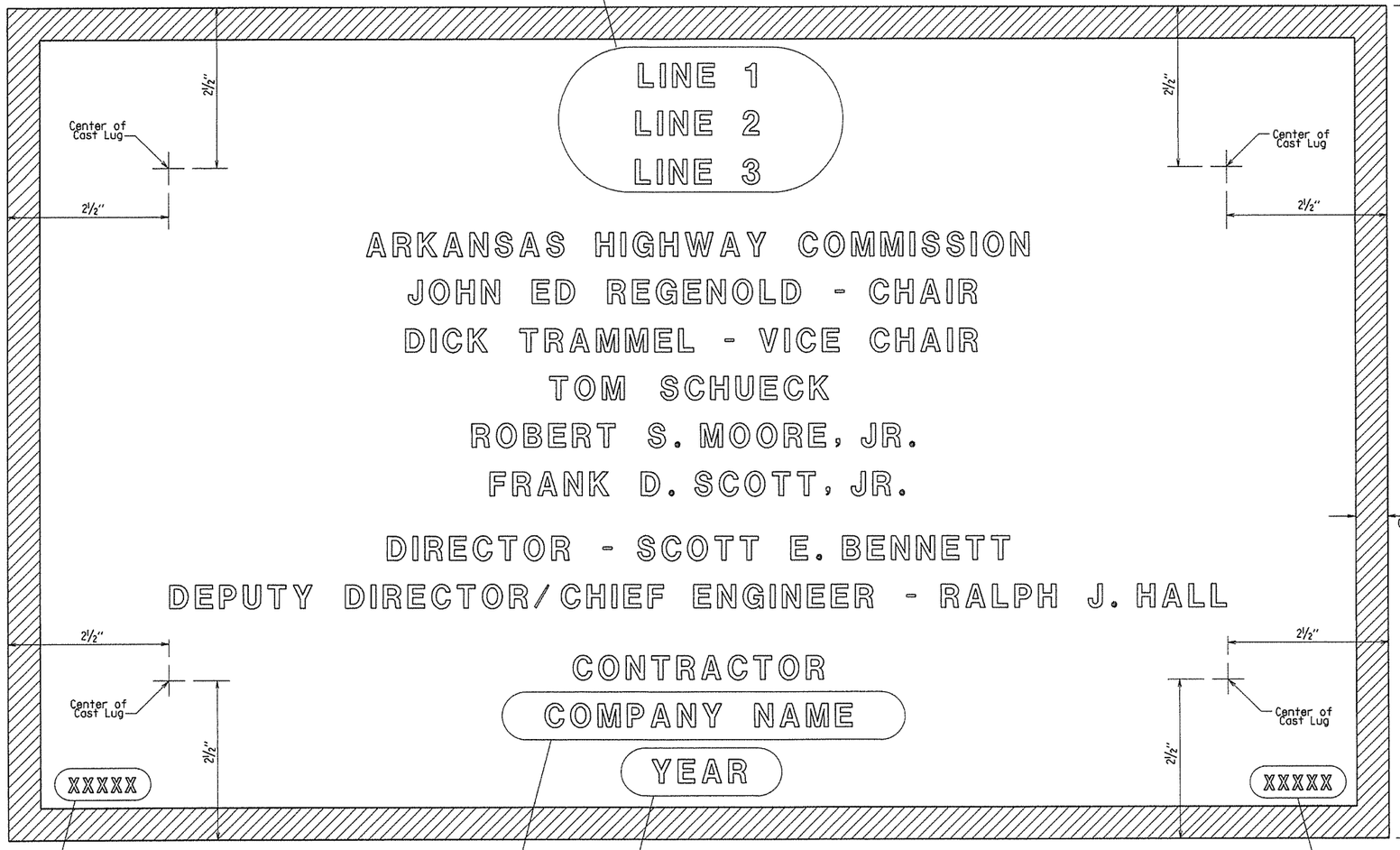
DRAWING NO. 55005

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 628 | |
| | | | | JOB NO. | | | | |

① TYPE D NAME PLATE 55010

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

| | Example 1 | Example 2 | Example 3 | Example 4 |
|---|---|---|---|---|
| Line 1 | Red River | Southern | Saline | |
| Line 2 | Relief | Railroad | River | Highway 5 |
| Line 3 | | Overpass | Relief | |



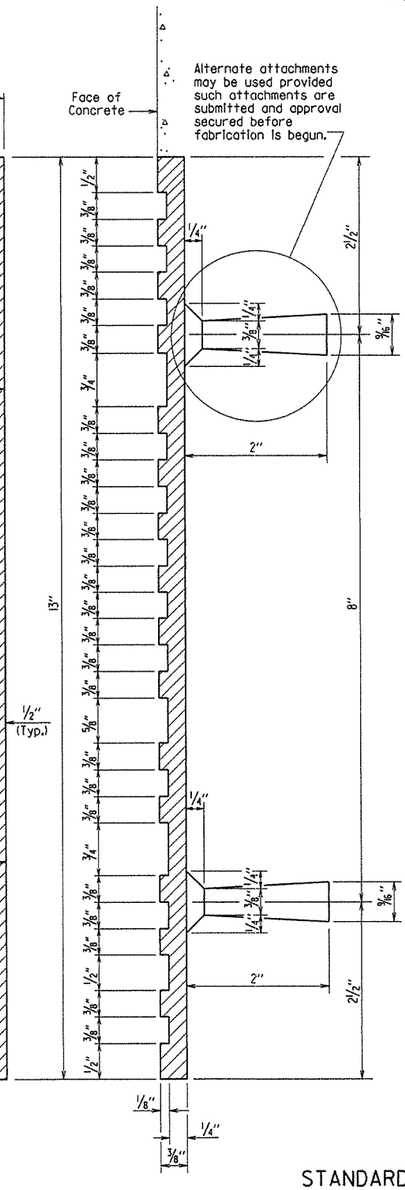

Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : AI234
05432

TYPICAL BRIDGE NAME PLATE




GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16"x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55010

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 62 | |
| | | | | JOB NO. | | | | |
| | | | | ① | STEEL H-PILES | | 55020 | |

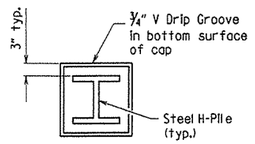
## GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

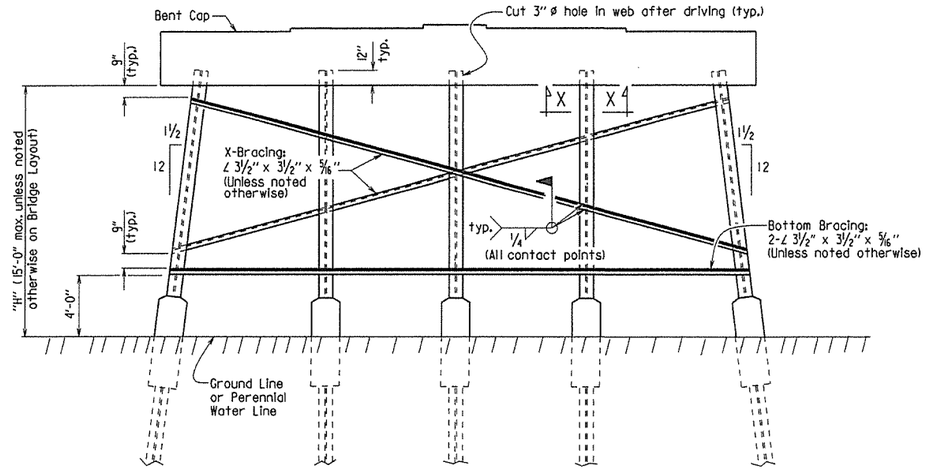
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".




VIEW X-X




Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

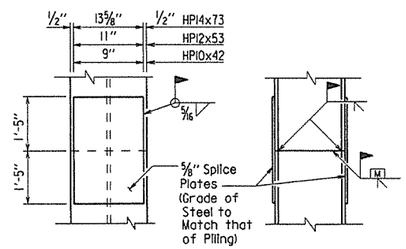
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

## TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)

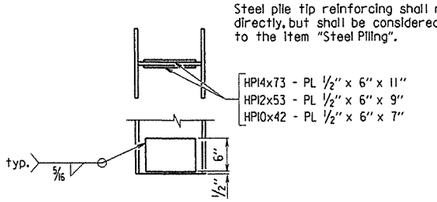



Note:
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".




REINFORCING DETAIL FOR STEEL H-PILE TIP

## GENERAL NOTES FOR H-PILE ENCASEMENTS:

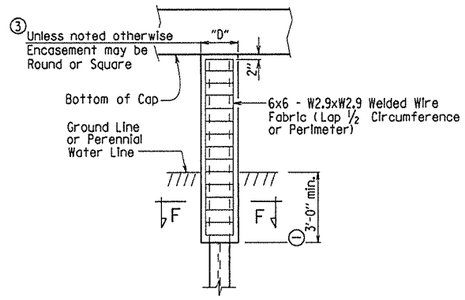
See Bridge Layout for additional notes and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

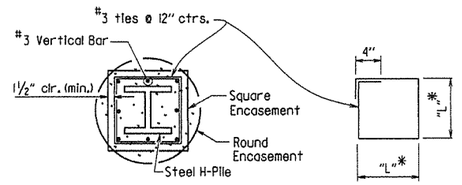
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".




PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

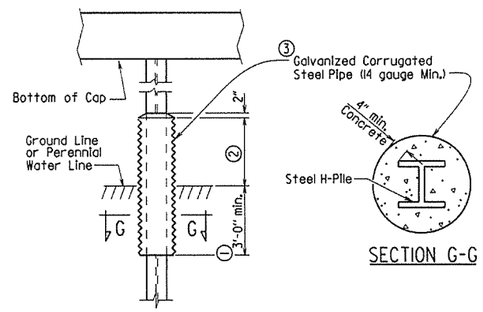



SECTION F-F

*Measured out-to-out of bar.

## TABLE OF VARIABLES FOR PILE ENCASEMENT

| Pile Size | "D" Square Encsmt. | "D" Round Encsmt. | "L"* |
|---|---|---|---|
| HP10x42 | 1'-7" | 2'-0" | 1'-4" |
| HP12x53 | 1'-8" | 2'-2" | 1'-5" |
| HP14x73 | 1'-11" | 2'-6" | 1'-8" |




SECTION G-G

⑤ ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

⑤ Alternate pile encasement may not be allowed. See Bridge Layout.

This document was originally issued and sealed by Carl J. Fuselier, PE No. 7510, on February 27, 2014. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER

BRIDGE ENGINEER

# STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

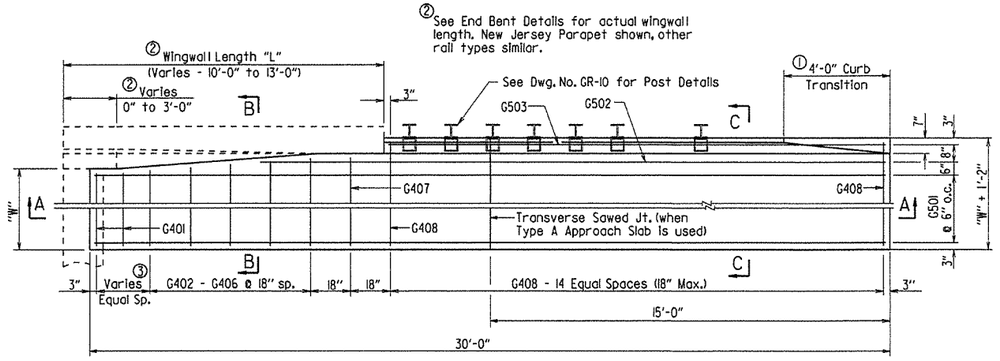
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

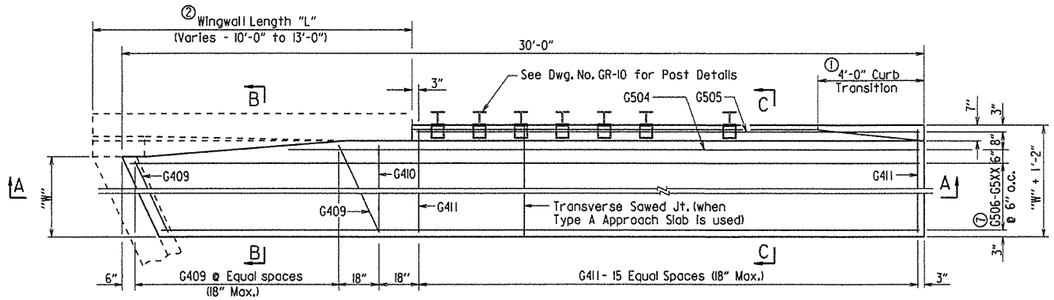
DRAWING NO. 55020

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 630 | |
| | | | | JOB NO. | | | | |
| | | | | ① | TYPE A GUTTERS | | 55030A | |

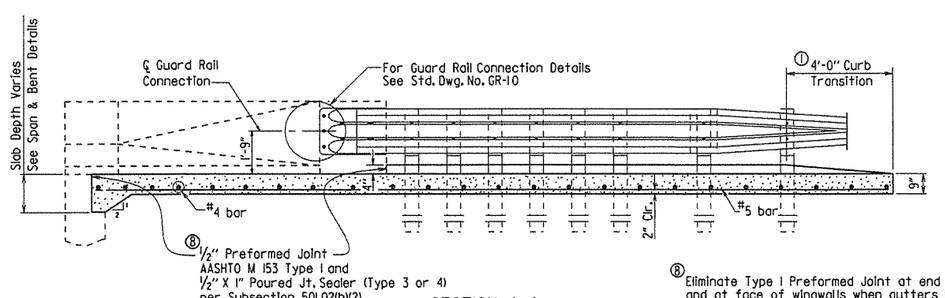



③ Number of G401 bars vary with wingwall length - See Bar List

HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE



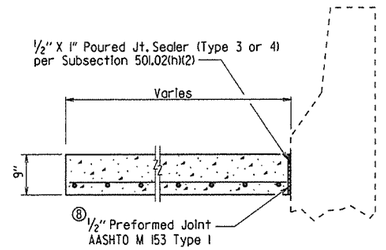

PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



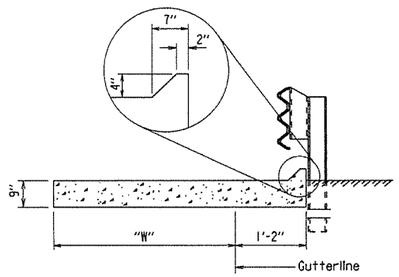

SECTION A-A

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.




SECTION B-B
N.T.S.




SECTION C-C
N.T.S.

Note:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

⑧ Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type A Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

## BAR LIST FOR ONE TYPE A GUTTER

| | Mark | No. Req'd, for Width "W" 3'-0" | 4'-0" | 6'-0" | 8'-0" | Length |
|---|---|---|---|---|---|---|
| Square Bridge | G401 | ④ | ④ | ④ | ④ | "W"- 4" |
| | G402-G406 | 1 each | 1 each | 1 each | 1 each | "W"-3" to "W"+2" |
| | G407 | 1 | 1 | 1 | 1 | "W"+3" |
| | G408 | 15 | 15 | 15 | 15 | "W"+ 10" |
| | G501 | 6 | 8 | 12 | 16 | 29'-8" |
| | G502 | 1 | 1 | 1 | 1 | (35'-5") - "L" |
| | G503 | 1 | 1 | 1 | 1 | 30'-8"-"L" |
| Skewed Bridge | G409 | ⑥ | ⑥ | ⑥ | ⑥ | ⑤ |
| | G410 | 1 | 1 | 1 | 1 | "W"+3" |
| | G411 | 16 | 16 | 16 | 16 | "W"+ 10" |
| | G504 | 1 | 1 | 1 | 1 | ⑤ |
| | G505 | 1 | 1 | 1 | 1 | ⑤ |
| | G506 - G5XX ⑦ | 1 each | 1 each | 1 each | 1 each | ⑤ |

④ 0 for "L" = 10'
1 for "L" = 11'
2 for "L" = 12'
2 for "L" = 13'

⑦ G511 for "W" = 3'
G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'

⑤ Bar Lengths vary with Skew and Wingwall Length.

⑥ No. Req'd. varies with Skew and Wingwall length.

## QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

| "W" Width (ft.) | Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|---|
| 3 | 285 | 3.40 |
| 4 | 360 | 4.25 |
| 6 | 515 | 5.90 |
| 8 | 665 | 7.55 |

Quantities are based on "L" = 10'-0".

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

# STANDARD DETAILS FOR TYPE A APPROACH GUTTERS

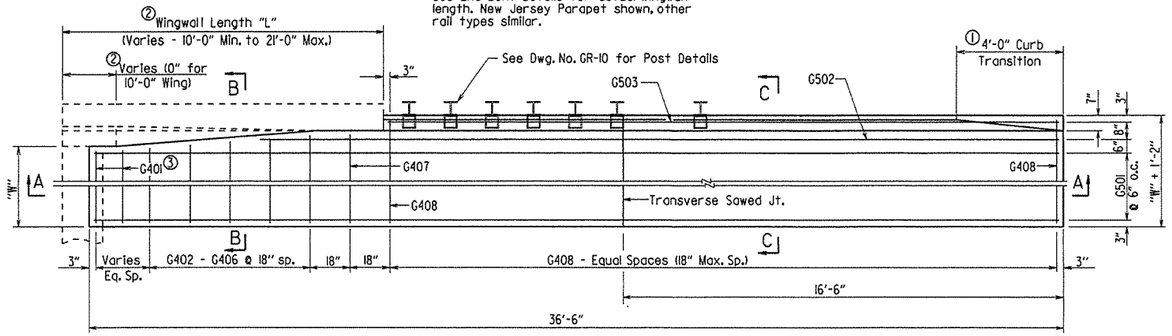
## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030a.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: 3/8" = 1'-0" or As Shown
DESIGNED BY: STD. DATE:

DRAWING NO. 55030A

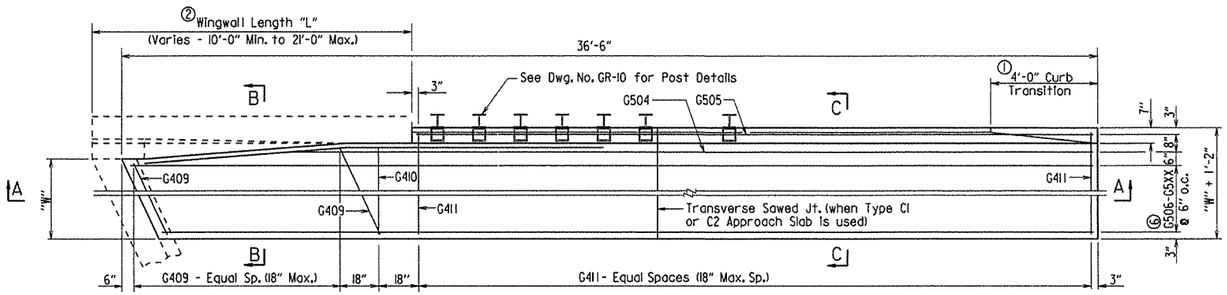
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 631 | |
| | | | | JOB NO. | | | | |
| | | | | ① | TYPE C GUTTERS | | 55030C | |

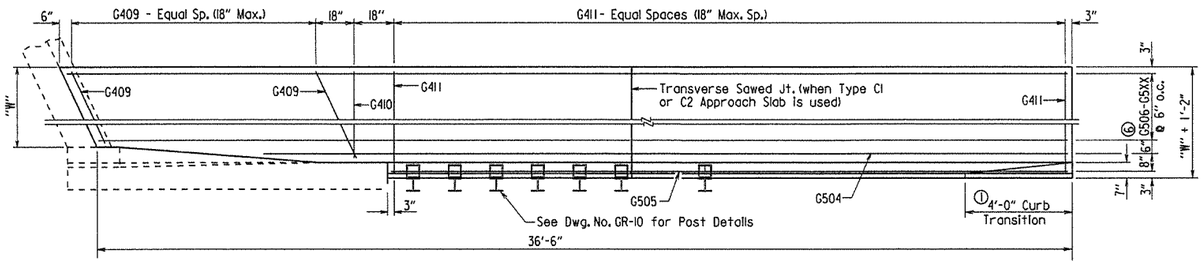



②See End Bent Details for actual wingwall length. New Jersey Parapet shown, other rail types similar.

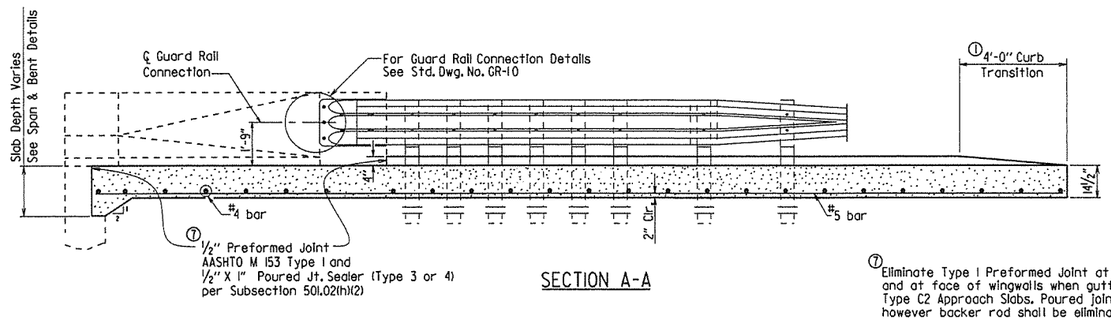
③Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.

HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE



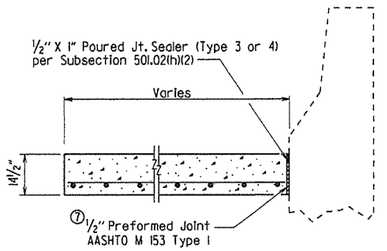

PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



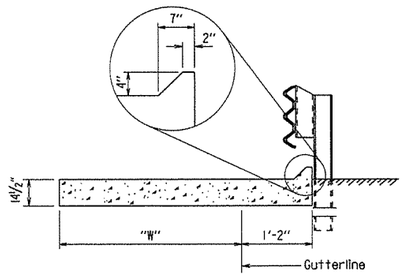

SECTION A-A

①Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.




SECTION B-B
N.T.S.




SECTION C-C
N.T.S.

Note:
All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

⑦Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

## BAR LIST FOR ONE TYPE C GUTTER

| | Mark | No. Req'd. for Width "W" 4'-0" | 6'-0" | 8'-0" | 10'-0" | Length |
|---|---|---|---|---|---|---|
| Square Bridge | G401 | ④ | ④ | ④ | ④ | "W"- 4" |
| | G402-G406 | 1 each | 1 each | 1 each | 1 each | "W"-3" to "W"+2" |
| | G407 | 1 | 1 | 1 | 1 | "W"+3" |
| | G408 | ④ | ④ | ④ | ④ | "W"+ 10" |
| | G501 | 8 | 12 | 16 | 20 | 36'-2" |
| | G502 | 1 | 1 | 1 | 1 | (4'-1(") - "L" |
| | G503 | 1 | 1 | 1 | 1 | (37'-2") - "L" |
| Skewed Bridge | G409 | ④ | ④ | ④ | ④ | ⑤ |
| | G410 | 1 | 1 | 1 | 1 | "W"+3" |
| | G411 | ④ | ④ | ④ | ④ | "W"+ 10" |
| | G504 | 1 | 1 | 1 | 1 | ⑤ |
| | G505 | 1 | 1 | 1 | 1 | ⑤ |
| | G506 - G5XX⑥ | 1 each | 1 each | 1 each | 1 each | ⑤ |

④No. Req'd. varies with Skew and Wingwall Length.

⑤Bar Lengths vary with Skew and Wingwall Length.

⑥G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'
G525 for "W" = 10'

## QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

| "W" Width (ft.) | Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|---|
| 4 | 445 | 8.30 |
| 6 | 630 | 11.55 |
| 8 | 810 | 14.80 |
| 10 | 995 | 18.10 |

Quantities are based on "L" = 10'-0".

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

# STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: 3/8" = 1'-0" or As Shown
DESIGNED BY: STD. DATE:

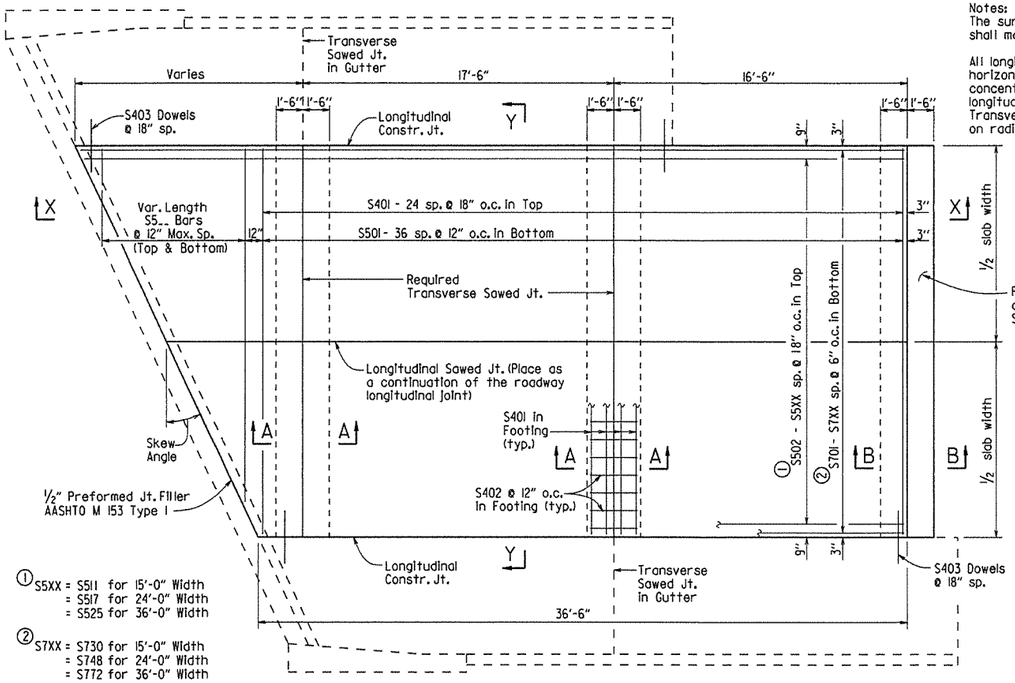
DRAWING NO. 55030C

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | 632 | |
| | | | | JOB NO. | | | | |

TYPE CI APPROACH SLAB 55040CI

Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

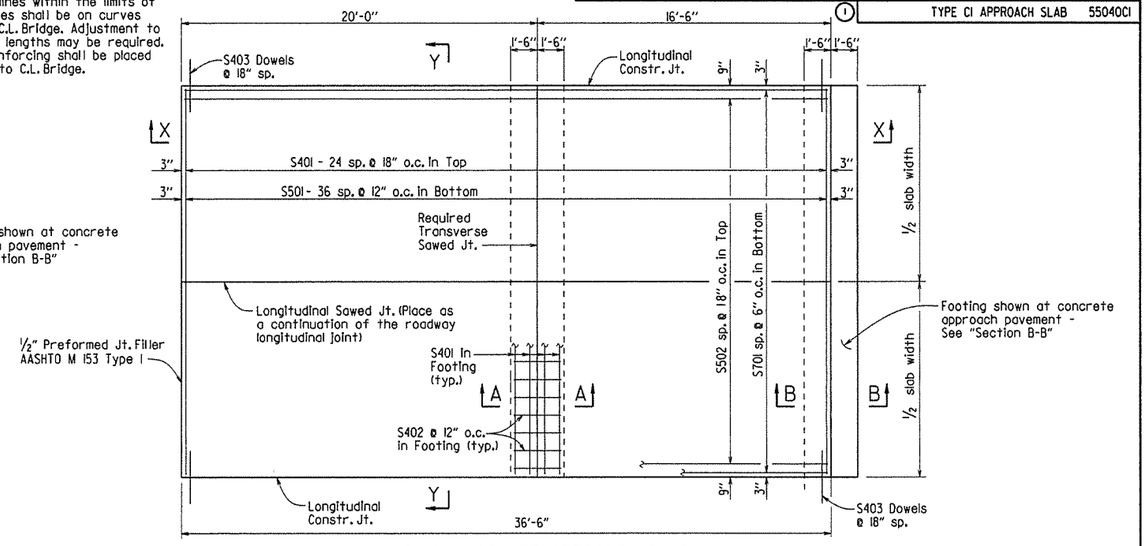



① S5XX = S511 for 15'-0" Width
= S517 for 24'-0" Width
= S525 for 36'-0" Width

② S7XX = S730 for 15'-0" Width
= S748 for 24'-0" Width
= S772 for 36'-0" Width

PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

1/4" = 1'-0"




PLAN - SQUARE APPROACH SLAB

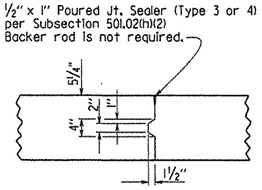
1/4" = 1'-0"

## BAR LIST

(Square & Skewed Approach Slabs)

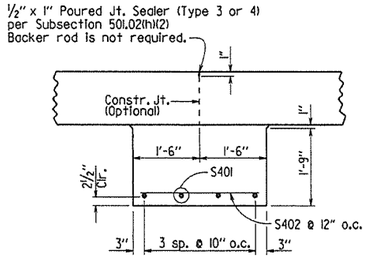
| | Mark | Square No. Req'd. | Square Length | Skewed No. Req'd. | Skewed Length |
|---|---|---|---|---|---|
| 15'-0" Slab Width | S401 | 33 | 14'-8" | 37 | 14'-8" |
| | S402 | 30 | 2'-8" | 45 | 2'-8" |
| | S403 | 50 | 3'-0" | * | 3'-0" |
| | S501 | 37 | 14'-8" | 37 | 14'-8" |
| | S502 | 10 | 36'-2" | — | — |
| | S502 - S511 | — | — | 1 Ea. | 36.1' + 0.75' (tan skew angle) to 36.1' + 14.25' (tan skew angle) |
| | S5.. | — | — | 2 Ea. | 14.7' - 0.75'/(tan skew angle) to 2'-0" Min. |
| | S701 | 30 | 36'-2" | — | — |
| | S701 - S730 | — | — | 1 Ea. | 36.1' + 0.25' (tan skew angle) to 36.1' + 14.75' (tan skew angle) |
| 24'-0" Slab Width | S401 | 33 | 23'-8" | 37 | 23'-8" |
| | S402 | 48 | 2'-8" | 72 | 2'-8" |
| | S403 | 50 | 3'-0" | * | 3'-0" |
| | S501 | 37 | 23'-8" | 37 | 23'-8" |
| | S502 | 16 | 36'-2" | — | — |
| | S502 - S517 | — | — | 1 Ea. | 36.1' + 0.75' (tan skew angle) to 36.1' + 23.25' (tan skew angle) |
| | S5.. | — | — | 2 Ea. | 23.7' - 0.75'/(tan skew angle) to 2'-0" Min. |
| | S701 | 48 | 36'-2" | — | — |
| | S701 - S748 | — | — | 1 Ea. | 36.1' + 0.25' (tan skew angle) to 36.1' + 23.75' (tan skew angle) |
| 36'-0" Slab Width | S401 | 33 | 35'-8" | 37 | 35'-8" |
| | S402 | 72 | 2'-8" | 108 | 2'-8" |
| | S403 | 50 | 3'-0" | * | 3'-0" |
| | S501 | 37 | 35'-8" | 37 | 35'-8" |
| | S502 | 24 | 36'-2" | — | — |
| | S502 - S525 | — | — | 1 Ea. | 36.1' + 0.75' (tan skew angle) to 36.1' + 35.25' (tan skew angle) |
| | S5.. | — | — | 2 Ea. | 35.7' - 0.75'/(tan skew angle) to 2'-0" Min. |
| | S701 | 72 | 36'-2" | — | — |
| | S701 - S772 | — | — | 1 Ea. | 36.1' + 0.25' (tan skew angle) to 36.1' + 35.75' (tan skew angle) |

* Varies with skew angle



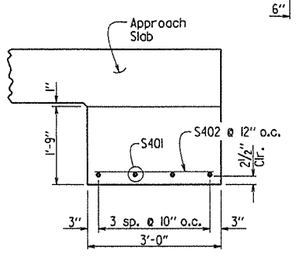

DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

3/4" = 1'-0"




SECTION A-A

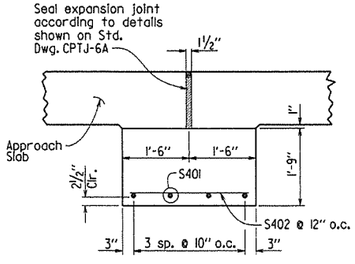
N.T.S.




SECTION B-B

AT ASPHALT APPROACH PAVEMENT

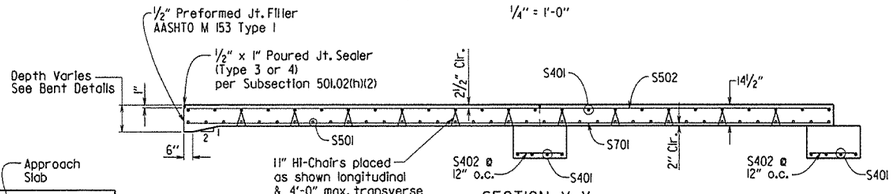
N.T.S.




SECTION B-B

AT CONCRETE APPROACH PAVEMENT

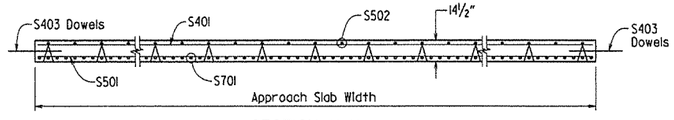
N.T.S.




SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" = 1'-0"




SECTION Y-Y

N.T.S.

## TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

(FOR INFORMATION ONLY)

| Slab Width | Reinforcing Steel (Lbs.) | Concrete (Cu. Yds.) |
|---|---|---|
| 15'-0" | 3640 | 30.75 |
| 24'-0" | 5775 | 49.15 |
| 36'-0" | 8620 | 73.75 |

GENERAL NOTES

This drawing shall be used for Approach Slabs in Seismic Performance Zone 1 and for the maximum skew angles shown below:

15'-0" Slab Width: Maximum Skew Angle = 50°
24'-0" Slab Width: Maximum Skew Angle = 40°
36'-0" Slab Width: Maximum Skew Angle = 30°

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

# STANDARD DETAILS FOR TYPE CI APPROACH SLAB

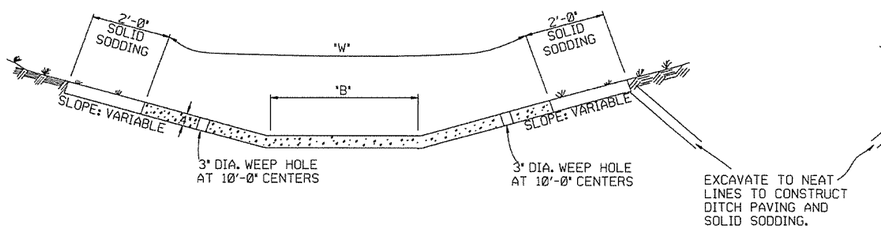
## ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040ci.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

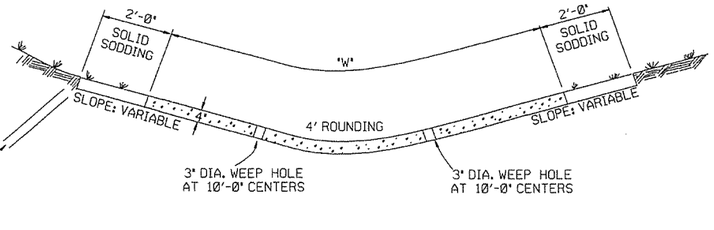
DRAWING NO. 55040CI

REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



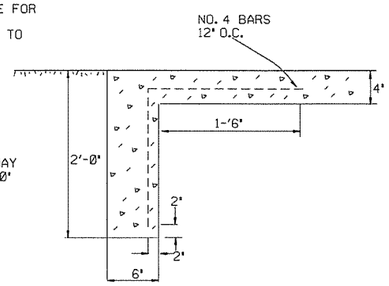

TYPE A

REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



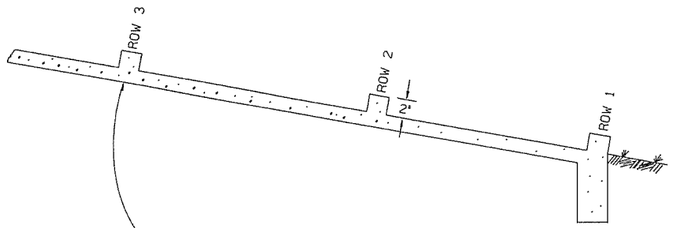

TYPE B

THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'



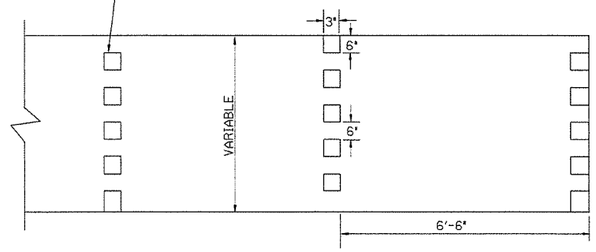

TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING




NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.




ENERGY DISSIPATORS
(NO SCALE)

GENERAL NOTES:

THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.

TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

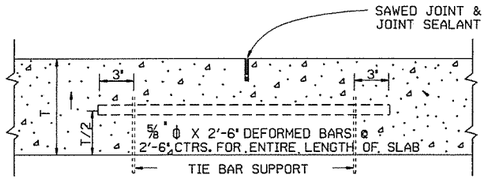
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

| DATE | REVISION | DATE FILM'D |
|---|---|---|
| 11-17-10 | ADDED GENERAL NOTE | |
| 6-2-94 | ADDED GENERAL NOTE ABOUT SOLID SODDING | |
| 11-30-8 | ELIMINATED MIN. ROWS OF ELEMENTS | 111-30-89 |
| 7-15-88 | REVISED DISSIPATOR NOTE | 653-7-15-88 |
| 4-3-87 | REVISED ENERGY DISSIPATOR | 671-4-3-87 |
| 1-9-87 | MODIFIED NOTE ON ENERGY DISS. | 532-1-9-87 |
| 11-3-86 | ADDED NOTE TO ENERGY DISS. | 599-12-1-86 |
| 11-1-84 | ENERGY DISSIPATOR DETAILS ADDED | 508-11-1-84 |
| 11-1-84 | EXCAVATION DETAILS ADDED TYPED A & B | |
| 10-2-72 | REVISED AND REDRAWN | 508-10-2-72 |

ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE DITCH PAVING

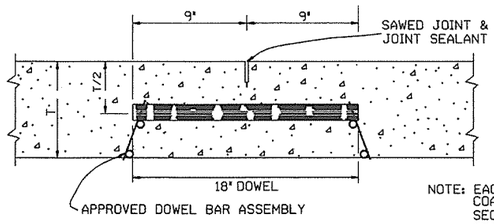
STANDARD DRAWING CDP-1




LONGITUDINAL JOINT

NOTE: THE TIE BAR SUPPORT SHOWN ABOVE MAY BE ELIMINATED IF OTHER APPROVED METHODS FOR PLACING AND SUPPORTING THE TIE BARS ARE PROVIDED.

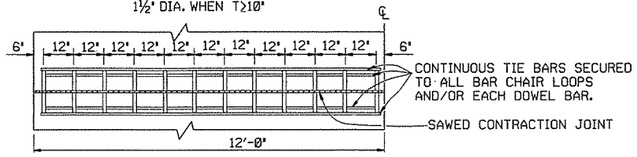
TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.




NOTE: EACH DOWEL TO BE COATED ACCORDING TO SECTION 502 OF THE STANDARD SPECIFICATIONS.

ROUND STEEL BAR DOWEL

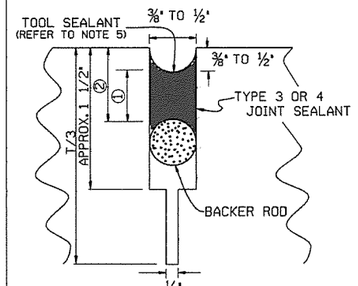
1¼" DIA. WHEN T<10"
1½" DIA. WHEN T≥10"



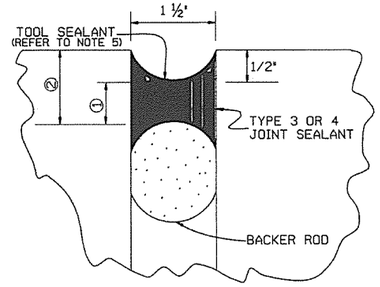

ONE-HALF 24' PAVEMENT
12 DOWELS
PLAN

NOTE: FOR 20' PAVEMENT USE 20 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 15' PAVEMENT USE 15 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR 26' PAVEMENT USE 26 DOWELS @ 12" CTRS. WITH 6" SPACING FROM C.L. AND EDGE OF SLAB TO FIRST BAR. FOR PAVEMENT WIDTHS OTHER THAN THOSE SHOWN ABOVE, USE DOWELS AT 12" CTRS. WITH 6" MAX. SPACING FROM C.L. TO FIRST BAR. DISTANCE FROM EDGE OF SLAB TO FIRST BAR SHALL BE ADJUSTED TO MAINTAIN 12" DOWEL BAR SPACING

CONTRACTION JOINT DETAILS




DETAIL OF SAWED CONTRACTION JOINT



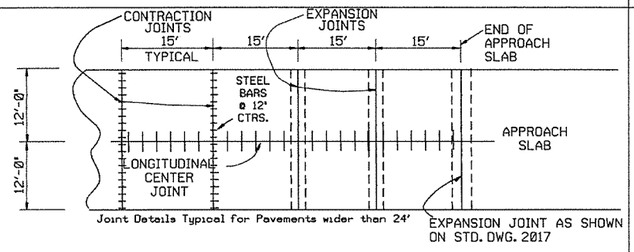

DETAIL OF EXPANSION JOINT

JOINT CONFIGURATION FOR
TYPE 3 OR 4 JOINT SEALANT

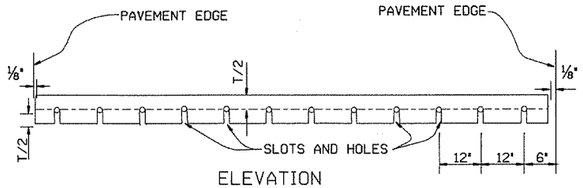
| JOINT WIDTH | SEALANT THICKNESS ① | BACKER ROD DIAMETER | BACKER ROD PLACEMENT DEPTH ② |
|---|---|---|---|
| INCHES | | | |
| ¼ | ¼ | ⅜ | ½ |
| ⅜ | ¼ | ½ | ½ |
| ½ | ¼ | ⅝ | ¼ |
| ⅝ | ⅜ | ¾ | ⅜ |
| ¾ | ⅜ | ⅞ | ⅜ |
| 1 ½ | ¾ | 2 | 1 ¼ |

JOINT CONFIGURATION FOR
TYPE 5 JOINT SEALANT

| JOINT WIDTH | SEALANT THICKNESS ① | BACKER ROD DIAMETER | BACKER ROD PLACEMENT DEPTH ② |
|---|---|---|---|
| INCHES | | | |
| ¼ | ½ | ¾ | ¾ |
| ⅜ | ¾ | 1 | 1 |

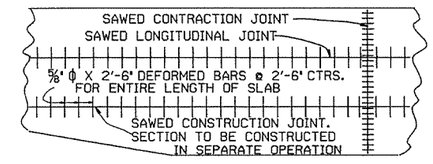


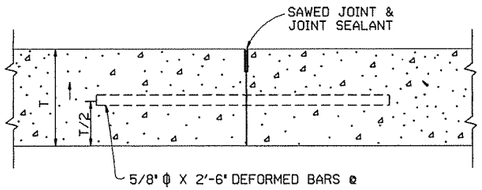

PLAN SHOWING EXPANSION JOINTS AT BRIDGE APPROACH SLABS




ELEVATION

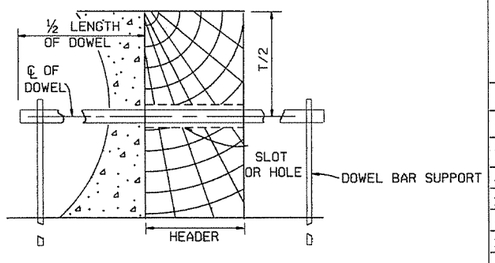
NOTE: ALL DOWEL BARS SHALL CONFORM TO THE DETAILS FOR CONTRACTION JOINTS.



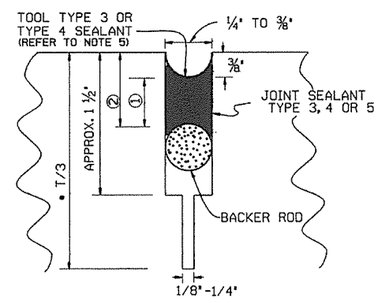

NOTE: TIE BARS SHALL BE 15" FROM TRANSVERSE JOINTS.

LONGITUDINAL CONSTRUCTION JOINT




SECTION

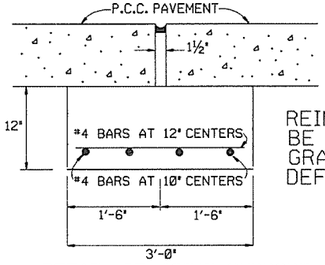
TRANSVERSE
CONSTRUCTION JOINT




*NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

DETAIL OF SAWED
LONGITUDINAL JOINT
AND LONGITUDINAL CONSTRUCTION JOINT

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 5-25-06 | ADDED GENERAL NOTE 7 | |
| 10-9-03 | REMOVED TIE BAR COATING & REVISED GENERAL NOTES | |
| 11-16-01 | ADDED TOOL SEALANT AND NOTE 5; REVISED NOTE 3 | |
| 4-26-96 | REVISED CONTRACTION JOINT NOTE | |
| 11- 3-94 | ADDED NOTE RE: REINF. BARS | |
| 4- 1-93 | REVISED DOWEL BARS & GEN. NOTES | 4- 1-93 |
| 10- 1-92 | REVISED DOWEL SPACING | 10- 1-92 |
| 8- 15-91 | ADDED SPAC FOR CONTR JTS & DEL KEYWAY | |
| 05-24-90 | REVISED TIE BAR, DOWEL & JOINT SIZE | |
| 01-25-90 | ADDED EXPANSION JOINT | 01-25-90 |
| 11-30-89 | CHANGED T/4+1 TO T/3+1 | 11-30-89 |
| 03-23-89 | ALTERED SAWED JOINT & ADDED NOTE | 512-03-23-89 |
| 07-15-88 | REVISED AND REDRAWN | 632-07-15-88 |




REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS.

DETAIL OF JOINT SUPPORT
FOR EXPANSION JOINTS

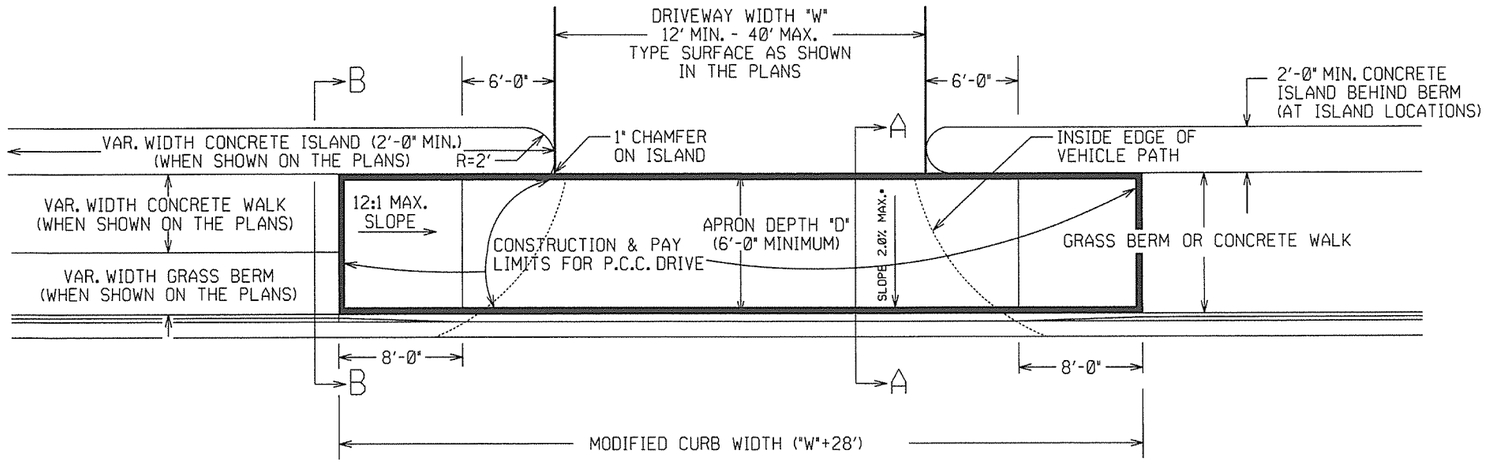
GENERAL NOTES

1. "T" DENOTES THICKNESS OF SLAB.
2. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR THE VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS ¼" WILL BE ALLOWED FOR THE TILT AND SKEW. DOWEL BARS SHALL BE FIELD COATED FOR A MINIMUM DISTANCE OF 2" GREATER THAN HALF THE LENGTH OF THE BAR WITH AN APPROVED GREASE AS A BOND BREAKER JUST PRIOR TO PLACEMENT OF CONCRETE.
3. THE EXPANSION JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S" OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE SPECIFIED IN THE PLANS. PAYMENT FOR ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.
4. CONTRACTION JOINTS SHALL BE CONSTRUCTED ON 15' CENTERS.
5. TOOLING NOT REQUIRED FOR SELF-LEVELING SILICONE.
6. UNLESS OTHERWISE SPECIFIED IN THE PLANS, CONCRETE SHOULDERS SHALL BE CONSTRUCTED ACCORDING TO THE DETAILS SHOWN HEREON. CONTRACTION JOINTS SHALL MATCH CONTRACTION JOINTS IN THE LANES.
7. TIE WIRES IN DOWEL BAR ASSEMBLIES SHALL NOT BE CUT PRIOR TO PLACEMENT OF PAVING CONCRETE.

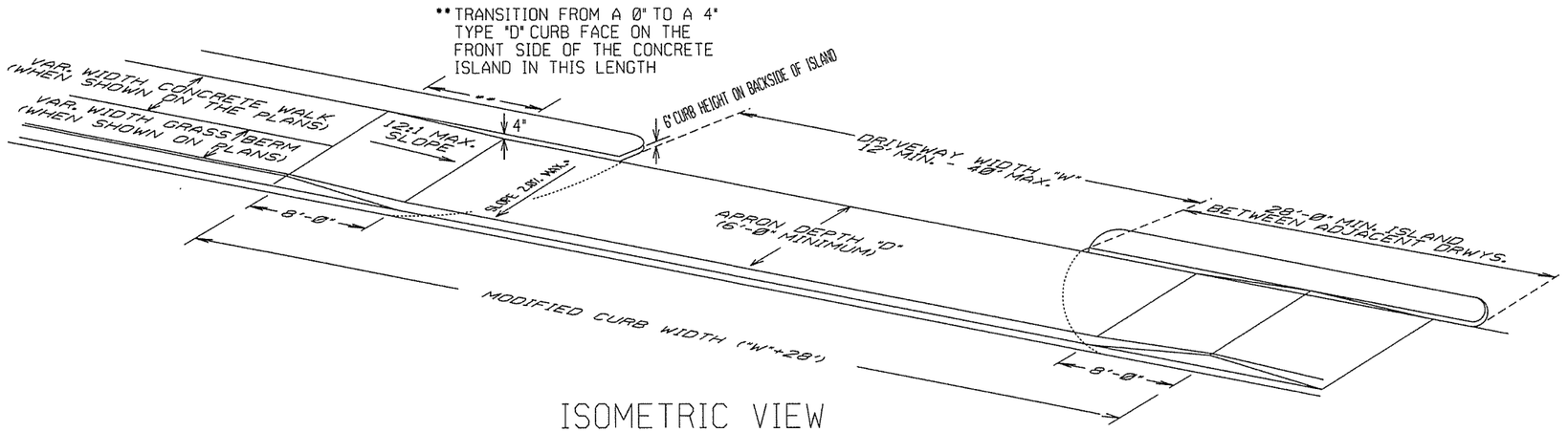
ARKANSAS STATE HIGHWAY COMMISSION

TRANSVERSE & LONGITUDINAL JOINTS
FOR CONCRETE PAVEMENT (NON-REINFORCED)

STANDARD DRAWING CPTJ - 6A

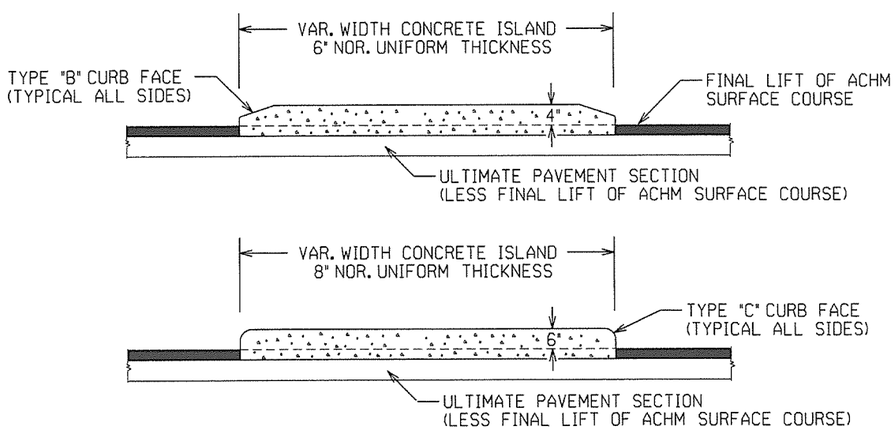



PLAN VIEW

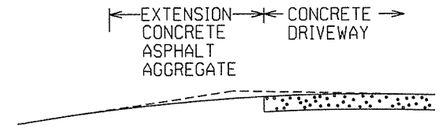



ISOMETRIC VIEW

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED. NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM "CONCRETE ISLAND".




CURBED ISLANDS FOR CHANNELIZATION




EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

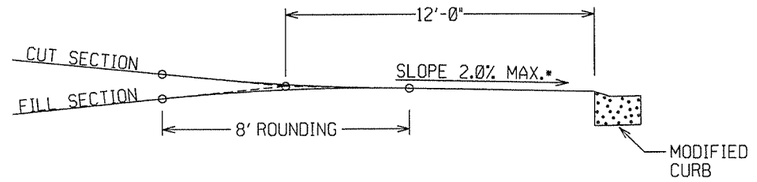
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

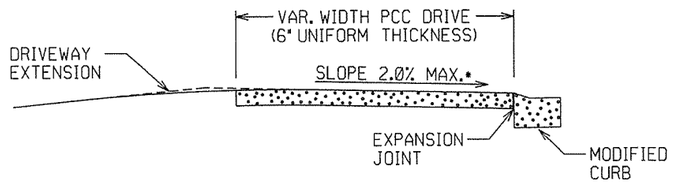
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

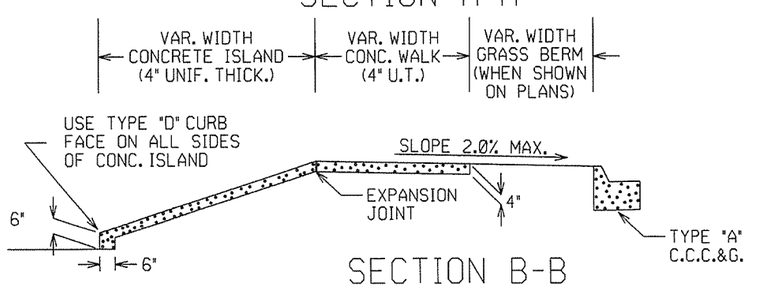



DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



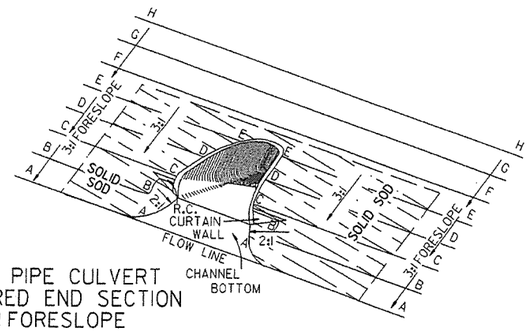

SECTION A-A



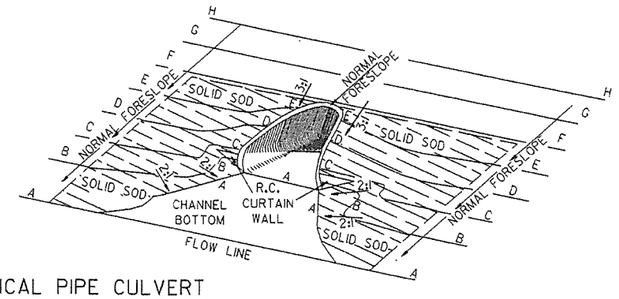

SECTION B-B
CURBED ISLAND BEHIND WALK

| DATE REV | DATE FILMED | DESCRIPTION |
|---|---|---|
| 2-27-14 | | REVISED PLAN & ISOMETRIC VIEW |
| 11-29-07 | | ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL |
| 11-10-05 | | REV. APRON SLOPE & DEPTH OF AGG. BASE. |
| 8-22-02 | | ADDED ISLAND DETAILS & NOTES |
| 3-30-00 | | REV. MOD. CURB WIDTH & TRANS. NOTE |
| 11-19-98 | | REVISED NOTES |
| 11-18-98 | | REDRAWN AND REISSUED |

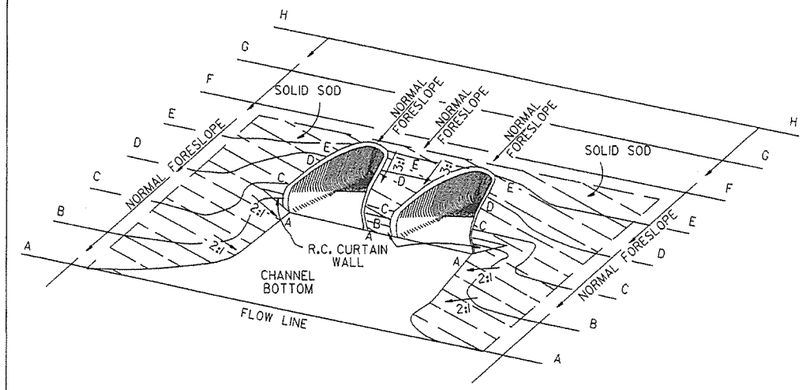
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



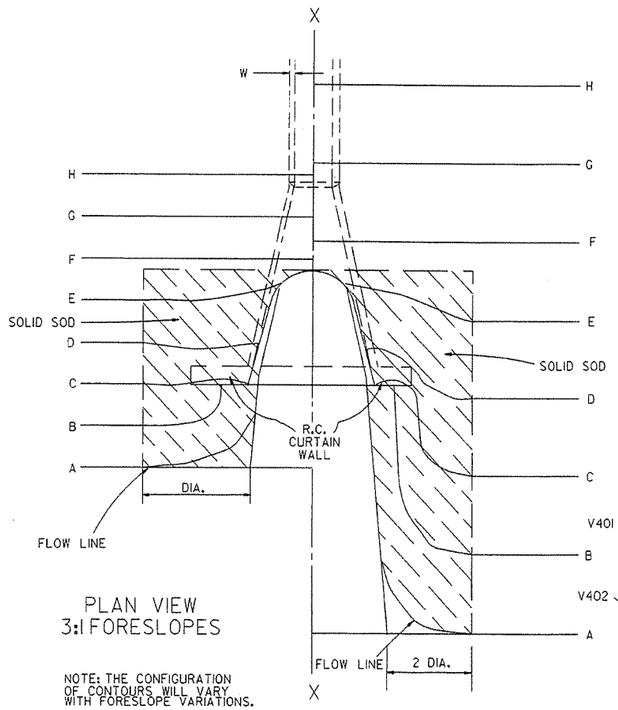

TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE




TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES




TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES




PLAN VIEW
3:1 FORESLOPES

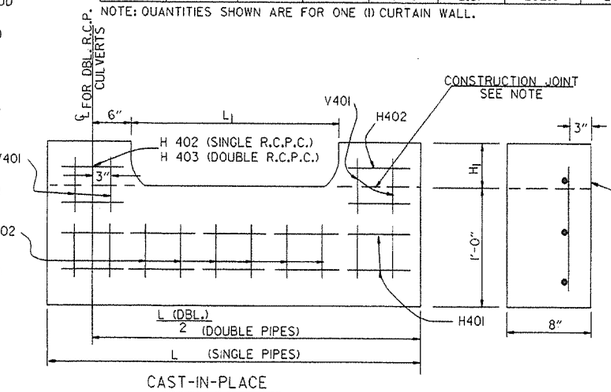
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

## R.C. CURTAIN WALL
## DIMENSIONS & QUANTITIES

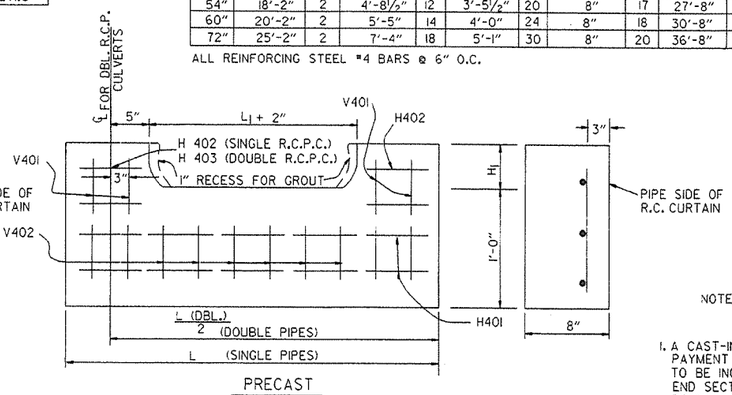
| PIPE DIA. | $H_1$ | $L_1$ | L | L (DBL.) / 2 | SINGLE R.C.P.C. CONC. CU. YDS. | SINGLE R.C.P.C. REINF. STEEL LBS. | DOUBLE R.C.P.C. CONC. CU. YDS. | DOUBLE R.C.P.C. REINF. STEEL LBS. |
|---|---|---|---|---|---|---|---|---|
| 18" | 1'-11½" | 3'-5" | 8'-0" | 6'-3" | 0.31 | 27.7 | 0.45 | 39.5 |
| 24" | 1'-0½" | 4'-6" | 9'-6" | 7'-6" | 0.37 | 33.4 | 0.53 | 48.0 |
| 30" | 1'-3½" | 5'-7" | 11'-0" | 9'-0" | 0.45 | 39.0 | 0.67 | 59.0 |
| 36" | 1'-7" | 6'-8" | 13'-0" | 10'-6" | 0.58 | 52.6 | 0.83 | 73.9 |
| 42" | 2'-1½" | 7'-3" | 15'-6" | 12'-0" | 0.82 | 77.1 | 1.10 | 100.7 |
| 48" | 2'-5" | 7'-10" | 17'-0" | 13'-0" | 0.98 | 94.9 | 1.27 | 120.4 |
| 54" | 2'-9½" | 8'-5" | 18'-6" | 14'-0" | 1.16 | 115.8 | 1.47 | 143.7 |
| 60" | 3'-4" | 9'-0" | 20'-6" | 15'-6" | 1.47 | 149.7 | 1.84 | 180.3 |
| 72" | 4'-5" | 10'-2" | 25'-6" | 18'-6" | 2.31 | 232.6 | 2.73 | 271.0 |

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.




CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.




PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

## REINFORCING STEEL SCHEDULE

| PIPE DIA. | SINGLE R.C. PIPE CULVERT H401 L | H401 NO. | H402 L | H402 NO. | V401 L | V401 NO. | V402 L | V402 NO. | DOUBLE R.C. PIPE CULVERT H401 L | H401 NO. | H402 L | H402 NO. | H403 L | H403 NO. | V401 L | V401 NO. | V402 L | V402 NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18" | 7'-8" | 2 | 1'-11½" | 4 | 1'-7½" | 8 | 8" | 8 | 12'-2" | 2 | 1'-11½" | 4 | 8" | 2 | 1'-7½" | 10 | 8" | 14 |
| 24" | 9'-2" | 2 | 2'-2" | 4 | 1'-8½" | 10 | 8" | 9 | 14'-8" | 2 | 2'-2" | 4 | 8" | 2 | 1'-8½" | 12 | 8" | 18 |
| 30" | 10'-8" | 2 | 2'-4½" | 4 | 1'-11½" | 10 | 8" | 12 | 17'-8" | 2 | 2'-4½" | 4 | 8" | 2 | 1'-11½" | 14 | 8" | 22 |
| 36" | 12'-8" | 2 | 2'-10" | 6 | 2'-3" | 12 | 8" | 14 | 20'-8" | 2 | 2'-10" | 6 | 8" | 3 | 2'-3" | 14 | 8" | 28 |
| 42" | 15'-2" | 2 | 3'-9½" | 8 | 2'-9½" | 16 | 8" | 15 | 23'-8" | 2 | 3'-9½" | 8 | 8" | 4 | 2'-9½" | 18 | 8" | 30 |
| 48" | 16'-8" | 2 | 4'-3" | 10 | 3'-1" | 18 | 8" | 16 | 25'-8" | 2 | 4'-3" | 10 | 8" | 5 | 3'-1" | 20 | 8" | 32 |
| 54" | 18'-2" | 2 | 4'-8½" | 12 | 3'-5½" | 20 | 8" | 17 | 27'-8" | 2 | 4'-9" | 12 | 8" | 6 | 3'-5½" | 22 | 8" | 34 |
| 60" | 20'-2" | 2 | 5'-5" | 14 | 4'-0" | 24 | 8" | 18 | 30'-8" | 2 | 5'-5" | 14 | 8" | 7 | 4'-0" | 26 | 8" | 36 |
| 72" | 25'-2" | 2 | 7'-4" | 18 | 5'-1" | 30 | 8" | 20 | 36'-8" | 2 | 7'-4" | 18 | 8" | 9 | 5'-1" | 33 | 8" | 40 |

ALL REINFORCING STEEL #4 BARS @ 6" O.C.

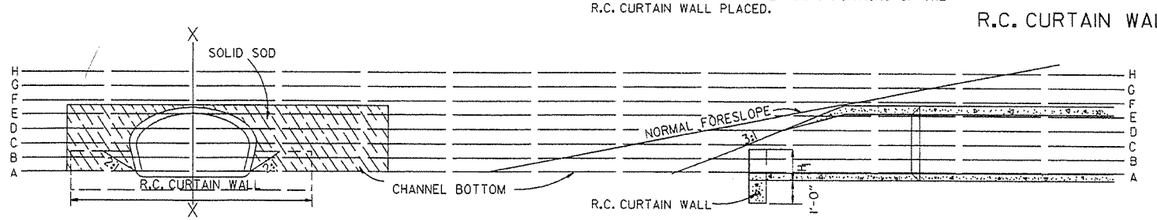
## SOLID SODDING

| PIPE DIA. | SINGLE R.C.P.C. 3:1 | 4:1 | 6:1 | DOUBLE R.C.P.C. 3:1 | 4:1 | 6:1 |
|---|---|---|---|---|---|---|
| | SQ. YDS. | | | SQ. YDS. | | |
| 18" | 5 | 7 | 12 | 6 | 8 | 13 |
| 24" | 8 | 12 | 19 | 9 | 13 | 20 |
| 30" | 13 | 18 | 29 | 14 | 19 | 30 |
| 36" | 17 | 26 | 41 | 18 | 28 | 43 |
| 42" | 23 | 35 | 55 | 25 | 37 | 57 |
| 48" | 29 | 46 | 68 | 31 | 48 | 70 |
| 54" | 35 | 57 | 85 | 37 | 59 | 87 |
| 60" | 45 | 62 | 104 | 48 | 65 | 107 |
| 72" | 64 | 92 | 156 | 67 | 95 | 159 |

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.




END VIEW

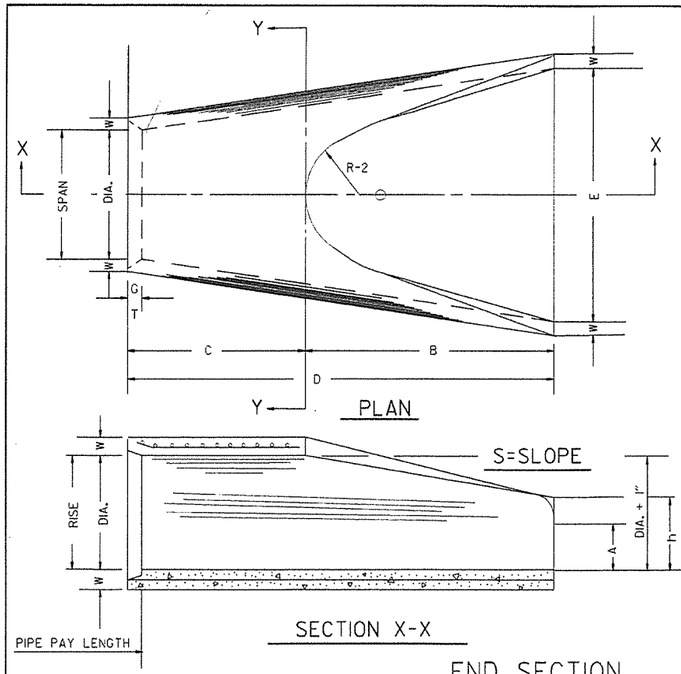
SECTIONAL VIEW "X-X"

| DATE | REVISION | FILMED |
|---|---|---|
| 10-18-96 | ADDED NOTE TO SOLID SODDING | 10-18-96 |
| 10-12-95 | CORRECTED SPELLING | |
| 11- 3-94 | ADDED GENERAL NOTE NO. 4 | |
| 8-15-91 | REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT. | |
| 3-2-81 | ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES | |
| 5-15-80 | ADDED PRECAST WALL & GENERAL NOTES | |
| 10-2-72 | REVISED AND REDRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

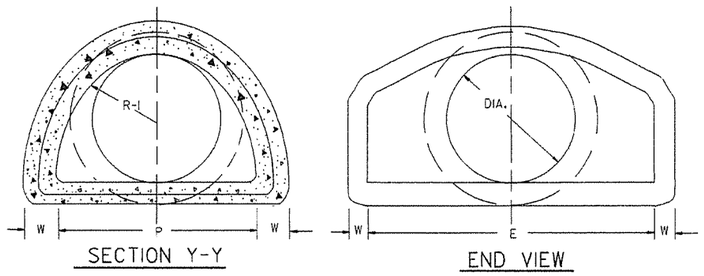
FLARED END SECTION

STANDARD DRAWING FES-1




## TABLE OF DIMENSIONS

| DIA. | WALL | A | B | C | D | E | S | DIA. ± 1" | P | R-1 | R-2 | G-T | WT. | h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18" | 2½" | 9" | 2'-3" | 3'-10" | 6'-1" | 3'-0" | 3:1 | 19" | 29" | 15½" | 12" | 2" | 1000 | 1'-0½" |
| 24" | 3" | 9½" | 3'-7½" | 2'-6" | 6'-1½" | 4'-0" | 3:1 | 25" | 33 3/16" | 16 11/16" | 14" | 2½" | 1600 | 1'-1½" |
| 30" | 3½" | 1'-0" | 4'-6" | 1'-7 3/4" | 6'-1¾" | 5'-0" | 3:1 | 31" | 37" | 18½" | 15" | 3¼" | 1940 | 1'-4 5/8" |
| 36" | 4" | 1'-3" | 5'-3" | 2'-10¾" | 8'-1¾" | 6'-0" | 3:1 | 37" | 47 13/16" | 24 5/16" | 20" | 3½" | 4100 | 1'-8" |
| 42" | 4½" | 1'-9" | 5'-3" | 2'-11" | 8'-2" | 6'-6" | 3:1 | 43" | 53⅛" | 27½" | 22" | 3½" | 5380 | 2'-2½" |
| 48" | 5" | 2'-0" | 6'-0" | 2'-2" | 8'-2" | 7'-0" | 3:1 | 49" | 56½" | 28½" | 22" | 3½" | 6550 | 2'-6" |
| 54" | 5½" | 2'-4" | 6'-6" | 1'-10" | 8'-4" | 7'-6" | 3:1 | 55" | 65½" | 33⅛" | 24" | 4" | 8750 | 2'-10½" |
| 60" | 6" | 2'-10" | 6'-6" | 1'-10" | 8'-4" | 8'-0" | 3:1 | 61" | 72½" | 36 11/16" | 24" | 4" | 9270 | 3'-5" |
| 72" | 7" | 3'-10" | 6'-6" | 1'-10" | 8'-4" | 9'-0" | 3:1 | 73" | 77 13/16" | 38 5/16" | 24" | 5" | 13250 | 4'-6" |



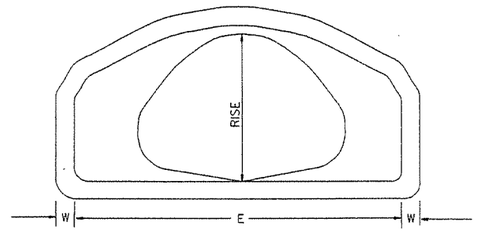

NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

# END SECTION
# FOR REINFORCED CONCRETE PIPE CULVERTS

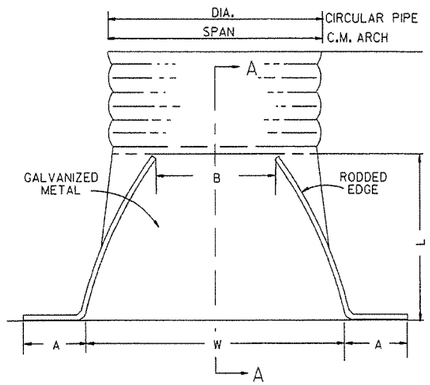
## ARCH PIPE

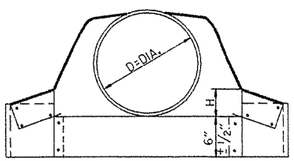
| EQUIV. DIA. | • SPAN | | • RISE | | W | A | B | C | D | E | P | R2 | G-T | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AASHTO M 206 | AHD NOMINAL | AASHTO M 206 | AHD NOMINAL | | | | | | | | | | |
| INCHES | | | | | | | | | | | | | | |
| 15 | 18 | 18 | 11 | 11 | 2" | 4" | 2'-0" | 4'-0" | 6'-0" | 3'-0" | 29" | 12" | 1½" | 2½:1 |
| 18 | 22 | 22 | 13½ | 14 | 2½" | 5" | 2'-0" | 4'-1" | 6'-1" | 3'-6" | 32⅛" | 13" | 2½" | 2½:1 |
| 21 | 26 | 26 | 15½ | 16 | 2¾" | 7" | 2'-3" | 3'-10" | 6'-1" | 4'-0" | 34⅛" | 14" | 2½" | 2½:1 |
| 24 | 28½ | 29 | 18 | 18 | 3" | 9" | 2'-3" | 3'-10" | 6'-1" | 5'-0" | 36 5/16" | 15" | 2½" | 2½:1 |
| 30 | 36¼ | 36 | 22½ | 23 | 3½" | 10" | 3'-1" | 3'-0½" | 6'-1½" | 6'-0" | 47 13/16" | 20" | 3" | 2½:1 |
| 36 | 43¾ | 44 | 26⅝ | 27 | 4" | 10½" | 4'-0" | 2'-11½" | 6'-1½" | 6'-6" | 54 5/16" | 22" | 3½" | 2½:1 |
| 42 | 51⅛ | 51 | 31 5/16 | 31 | 4½" | 11½" | 4'-7" | 1-10¼" | 6'-5¼" | 7'-2" | 59½" | 23" | 3¾" | 2½:1 |
| 48 | 58½ | 59 | 36 | 36 | 5" | 1'-3" | 5'-3" | 2'-10¾" | 8'-1¾" | 7'-10" | 70 5/16" | 24" | 4¼" | 2½:1 |
| 54 | 65 | 65 | 40 | 40 | 5½" | 1'-7" | 5'-3" | 2'-11" | 8'-2" | 8'-6" | 72 1/16" | 24" | 4¾" | 2¼:1 |
| 60 | 73 | 73 | 45 | 45 | 6" | 1'-10" | 5'-6" | 2'-8" | 8'-2" | 9'-0" | 77 13/16" | 24" | 5" | 2¼:1 |

• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.

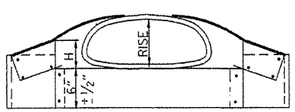



END VIEW
CONCRETE ARCH PIPE




CIRCULAR PIPE




C.M. ARCH PIPE

## CIRCULAR PIPE

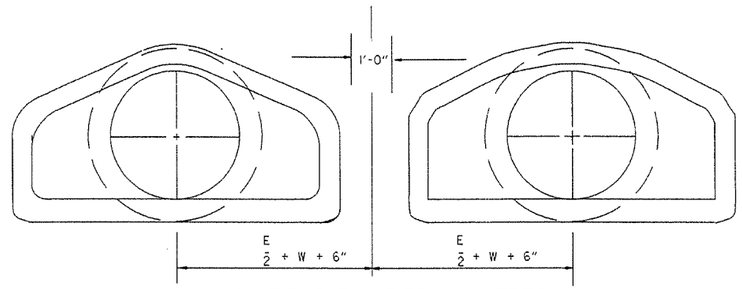
| D. DIA. | GAUGE | A 1" ± | B. MAX. | H 1" ± | L 1½" ± | W 2" ± | S |
|---|---|---|---|---|---|---|---|
| | | INCHES | | | | | |
| 12 | 16 | 6 | 6 | 6 | 21 | 24 | 2½:1 |
| 15 | 16 | 7 | 8 | 6 | 26 | 30 | 2½:1 |
| 18 | 16 | 8 | 10 | 6 | 31 | 36 | 2½:1 |
| 21 | 16 | 9 | 12 | 6 | 36 | 42 | 2½:1 |
| 24 | 16 | 10 | 13 | 6 | 41 | 48 | 2½:1 |
| 30 | 14 | 12 | 16 | 8 | 51 | 60 | 2½:1 |
| 36 | 14 | 14 | 19 | 9 | 60 | 72 | 2½:1 |
| 42 | 12 | 16 | 22 | 11 | 69 | 84 | 2½:1 |
| 48 | 12 | 18 | 27 | 12 | 78 | 90 | 2½:1 |
| 54 | 12 | 18 | 30 | 12 | 84 | 102 | 2:1 |
| 60 | 12 | 18 | 33 | 12 | 87 | 114 | 1¾:1 |
| 66 | 12 | 18 | 36 | 12 | 87 | 120 | 1½:1 |
| 72 | 12 | 18 | 39 | 12 | 87 | 126 | 1 1/3:1 |

## C.M. ARCH PIPE

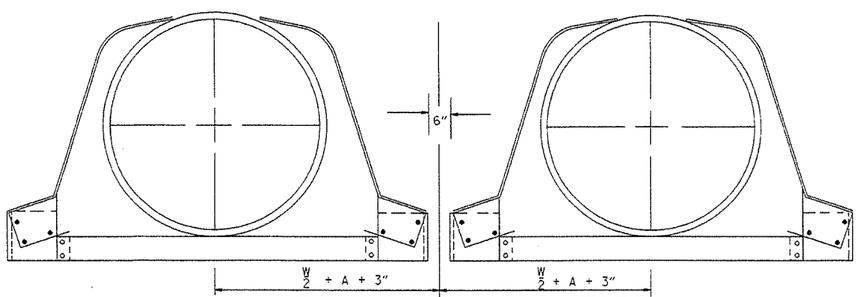
| EQUIV. DIA. | SPAN | RISE | A 1" ± | B MAX. | H 1" ± | L 1½" ± | W 2" ± | S | GAUGE |
|---|---|---|---|---|---|---|---|---|---|
| | INCHES | | | | | | | | |
| 15" | 17 | 13 | 7 | 9 | 6 | 19 | 30 | 2½:1 | 16 |
| 18" | 21 | 15 | 7 | 10 | 6 | 23 | 36 | 2½:1 | 16 |
| 21" | 24 | 18 | 8 | 12 | 6 | 28 | 42 | 2½:1 | 16 |
| 24" | 28 | 20 | 9 | 14 | 6 | 32 | 48 | 2½:1 | 16 |
| 30" | 35 | 24 | 10 | 16 | 6 | 39 | 60 | 2½:1 | 14 |
| 36" | 42 | 29 | 12 | 18 | 8 | 46 | 75 | 2½:1 | 14 |
| 42" | 49 | 33 | 13 | 21 | 9 | 53 | 85 | 2½:1 | 12 |
| 48" | 57 | 38 | 18 | 26 | 12 | 63 | 90 | 2½:1 | 12 |
| 54" | 64 | 43 | 18 | 30 | 12 | 70 | 102 | 2¼:1 | 12 |
| 60" | 71 | 47 | 18 | 33 | 12 | 77 | 114 | 2¼:1 | 12 |

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

# END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS




MULTIPLE R.C. PIPE CULVERTS




MULTIPLE C.M. PIPE CULVERTS

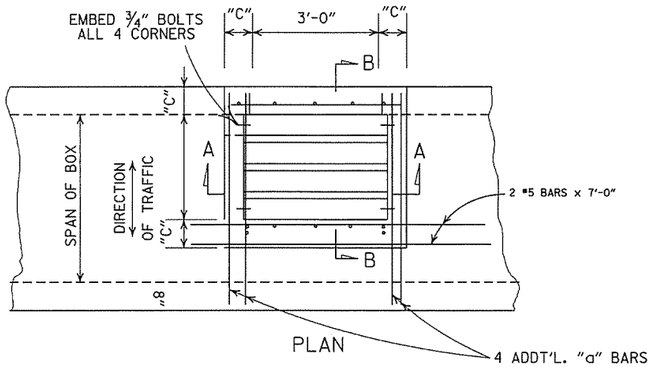
| DATE | REVISION | FILMED |
|---|---|---|
| 10-18-96 | REVISED ASTM REF. TO AASHTO | 10-18-96 |
| 5-15-80 | REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S. | 664-5-15-80 |
| 7-14-78 | C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES | 752-7-14-78 |
| 8-22-75 | ADDED MULTIPLE PIPE CULVERTS | 517-8-22-75 |
| 12-5-74 | REMOVED NOTE RE REINF. FOR R.C. F.E.S. | 500-12-5-74 |
| 5-24-73 | CMP END SECTION, SHOW PIPE PAY LENGTH | 627-5-24-73 |
| 10-2-72 | REVISED AND REDRAWN | 760-10-2-72 |

ARKANSAS STATE HIGHWAY COMMISION

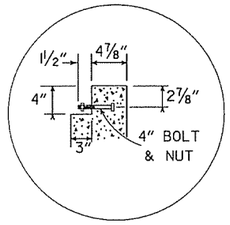
FLARED END SECTION

STANDARD DRAWING FES-2

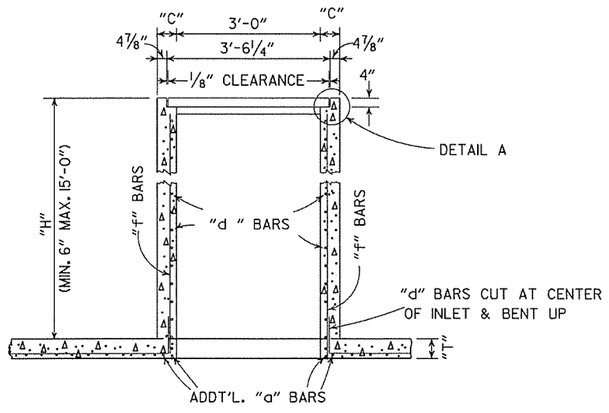
stdfes2.dgn



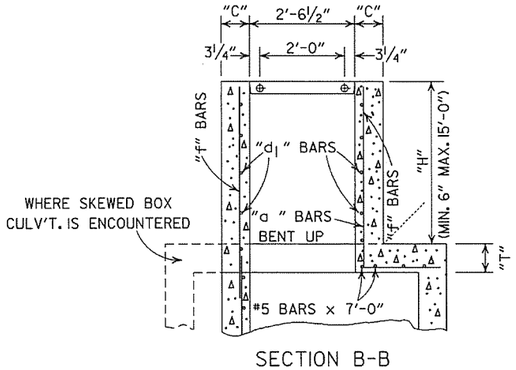

PLAN




DETAIL A




SECTION A-A

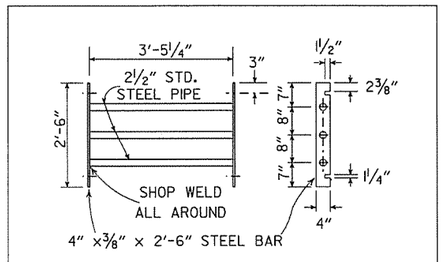



SECTION B-B

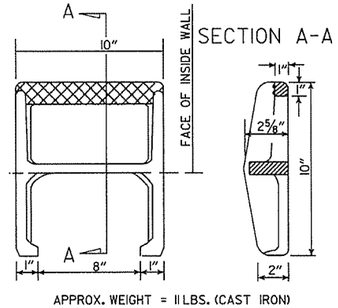
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

## DROP INLET TYPE "TM" FOR REINFORCED CONC. BOX CULVERTS




GRATE DETAIL




APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

## DETAIL OF STEP FOR DROP INLET

GENERAL NOTES:

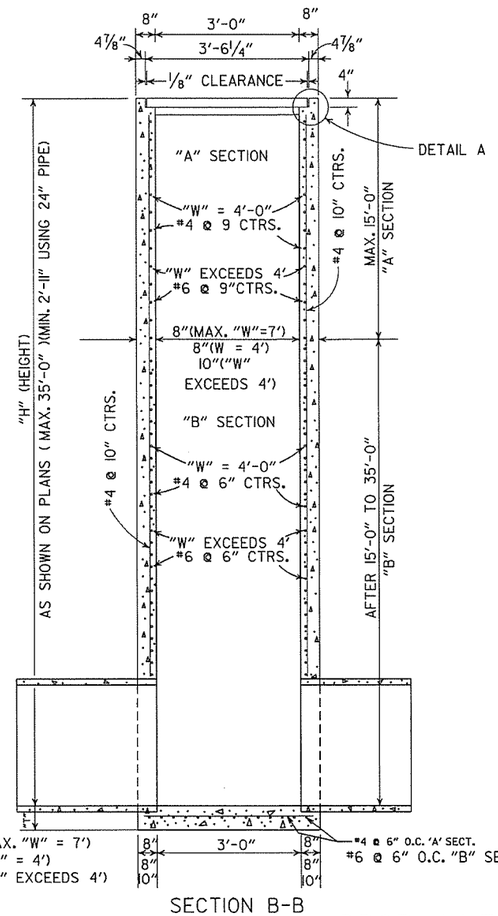
1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
4. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1½" COVER. LARGER SIZES TO HAVE 2" COVER.
6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

## TABLE OF "W" DIMENSIONS

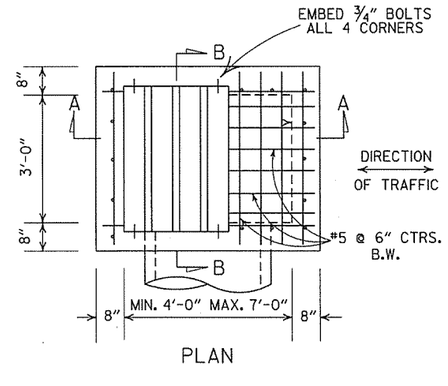
G38

| I.D. PIPE | SKEW OF CROSS DRAIN | | |
|---|---|---|---|
| | STRAIGHT | 30° | 45° |
| | "W" | "W" | "W" |
| 24" | 4'-0" | 4'-0" | 4'-0" |
| 30" | 4'-0" | 4'-0" | 4'-5" |
| 36" | 4'-0" | 4'-3" | 5'-3" |
| 42" | 4'-3" | 4'-11" | 6'-1" |
| 48" | 4'-10" | 5'-7" | 6'-11" |

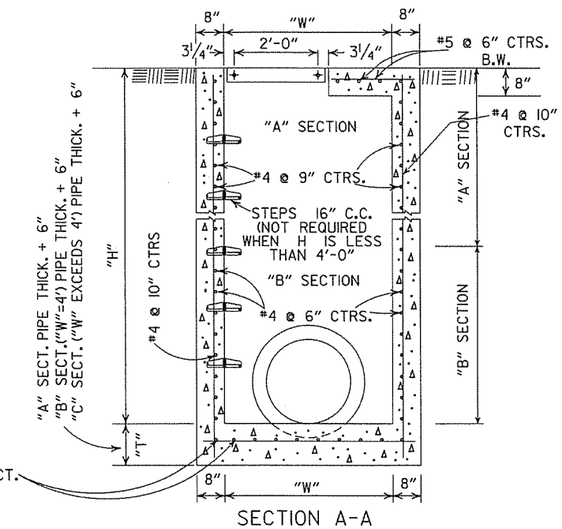
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.




SECTION B-B




PLAN




SECTION A-A

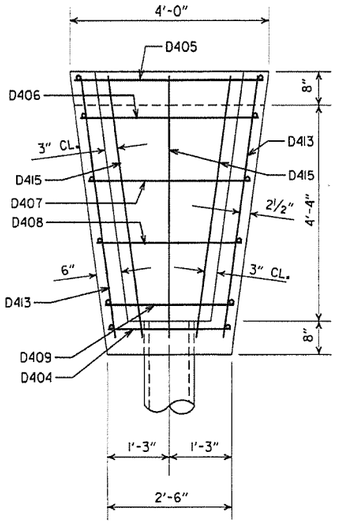
## DROP INLET( TYPE RM )

| | | |
|---|---|---|
| 8-22-02 | ADDED & REVISED DIMENSION TO SECTION A-A | |
| 1-12-00 | CORRECTED DIMENSION ON SECTION B-B | |
| 11-06-97 | ADDED DIMENSION TO SECTION A-A | |
| 10-18-96 | REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS | |
| 10-1-92 | ADDED DIRECTION OF TRAFFIC | 10-1-92 |
| 8-15-91 | ADDED NOTE ABOUT PAINTING OF GRATE | 8-15-91 |
| 11-30-89 | ALTERED DETAIL A | 11-30-89 |
| 7-15-88 | REVISED STEP DETAIL,TM & RM D.I. & GRATE DETAIL | 719-7-15-88 |
| 10-2-72 | REVISED AND REDRAWN | 542-10-2-72 |
| REVISED | | DATE FILMED |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLETS

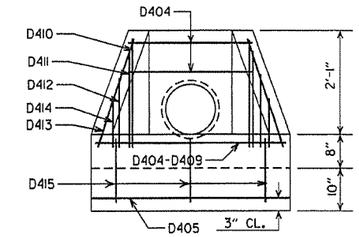
STANDARD DRAWING FPC-9D



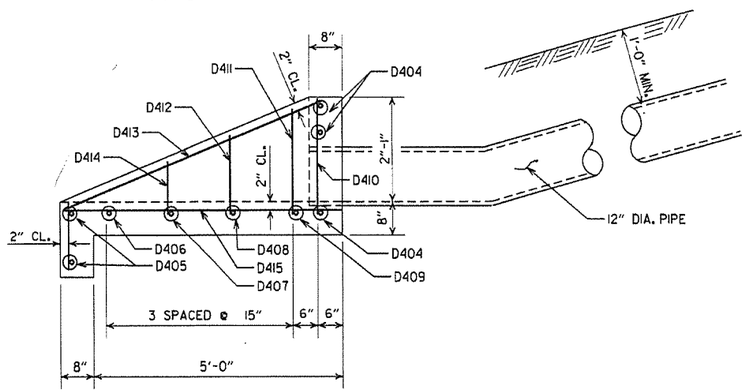

PLAN

## BAR LIST (CONCRETE SPILLWAY)

| MARK | NO. REQ'D. | LENGTH | BENDING DIAGRAM |
|---|---|---|---|
| D404 | 3 | 2'-2" | 5'-4", 1'-2", 2" P.D., D415 |
| D405 | 2 | 3'-8" | |
| D406 | 1 | 3'-5" | |
| D407 | 1 | 3'-1" | |
| D408 | 1 | 2'-9" | |
| D409 | 1 | 2'-5" | |
| D410 | 2 | 2'-5" | |
| D411 | 2 | 2'-2" | |
| D412 | 2 | 1'-9" | |
| D413 | 2 | 5'-6" | |
| D414 | 2 | 1'-2" | |
| D415 | 3 | 6'-5" | |

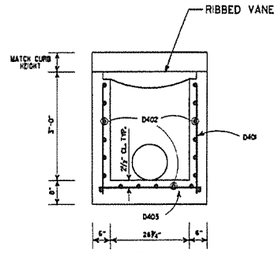



FRONT ELEVATION

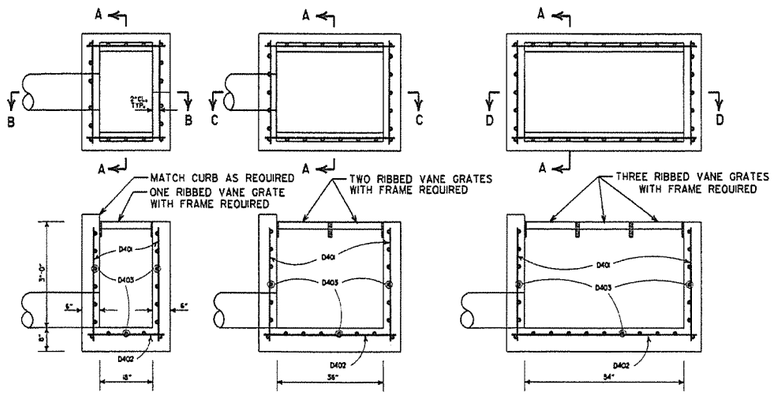



SIDE ELEVATION
CONCRETE SPILLWAY

# DETAILS OF CONCRETE SPILLWAY (TYPE A)




SECTION A-A




SECTION B-B
DETAILS OF DROP INLET
( TYPE N-1 )

SECTION C-C
DETAILS OF DROP INLET
( TYPE N-2 )

SECTION D-D
DETAILS OF DROP INLET
( TYPE N-3 )

## BAR LIST (DROP INLET)

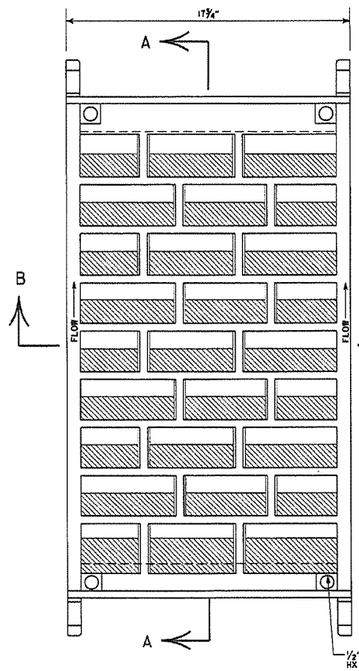
| MARK | TYPE N-1 | | TYPE N-2 | | TYPE N-3 | |
|---|---|---|---|---|---|---|
| | NO. REQ'D. | LENGTH | NO. REQ'D. | LENGTH | NO. REQ'D. | LENGTH |
| D401 | 20 | 3'-0" | 26 | 3'-0" | 32 | 3'-0" |
| D402 | 19 | 2'-2" | 19 | 3'-8" | 19 | 5'-2" |
| D403 | 17 | 2'-11" | 20 | 2'-11" | 23 | 2'-11" |
| | | | | | | |
| | | | | | | |

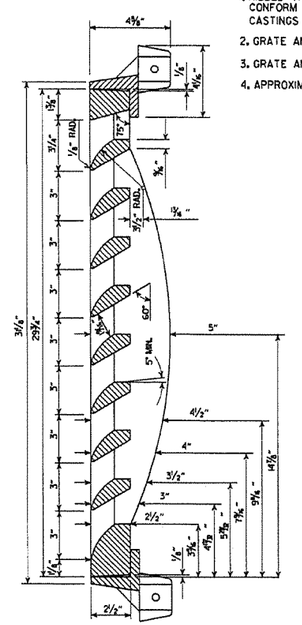
ALL BARS #4 @ 6" SPACING

# DETAILS OF DROP INLET

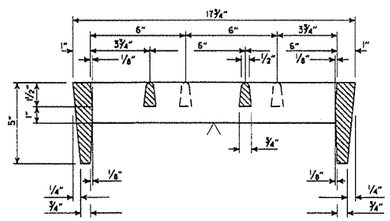
GENERAL NOTES ( GRATE & FRAME )

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

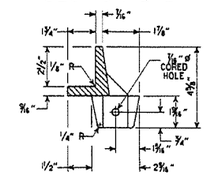



SECTION A-A




SECTION B-B




SECTION THRU FRAME

# DETAILS OF RIBBED VANE GRATE AND FRAME

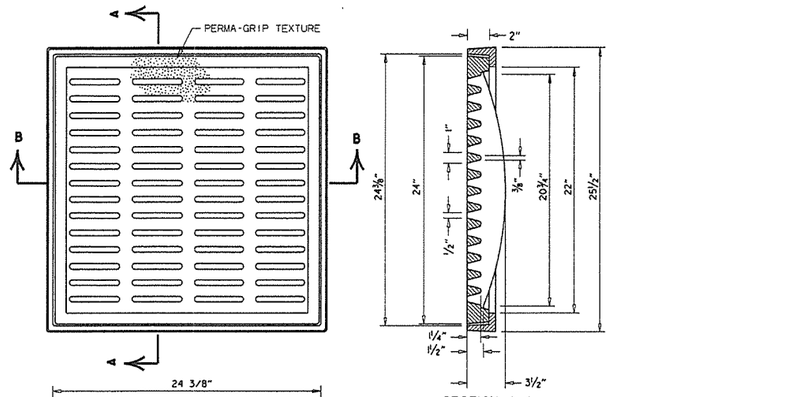
| DATE REVISED | DATE FILMED | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| 7-02-98 | 7-2-98 | REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1, REVISED GRATE |
| 10-18-96 | | REVISED ASTM REF. TO AASHTO |
| 8-15-91 | | ISSUED |

ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N

STDfpc9N.DGN



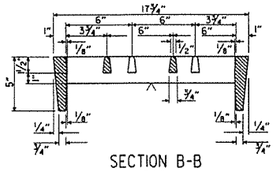

SECTION A-A

SECTION B-B

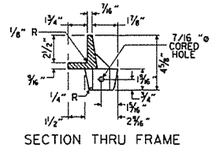
GENERAL NOTES ( PEDESTRIAN GRATE & FRAME )

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 211LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

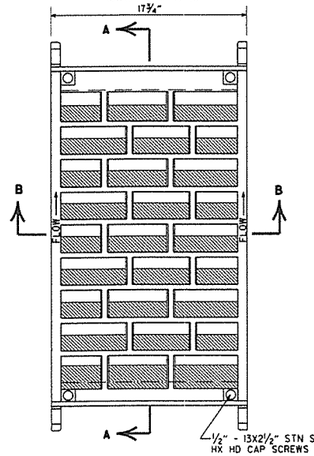
## DETAILS OF PEDESTRIAN GRATE AND FRAME

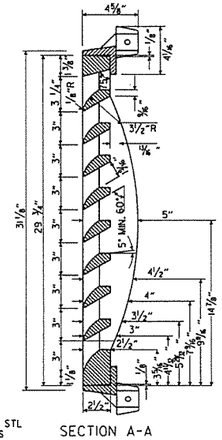



SECTION B-B




SECTION THRU FRAME



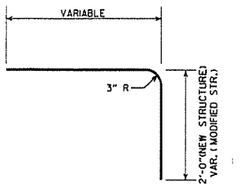




SECTION A-A

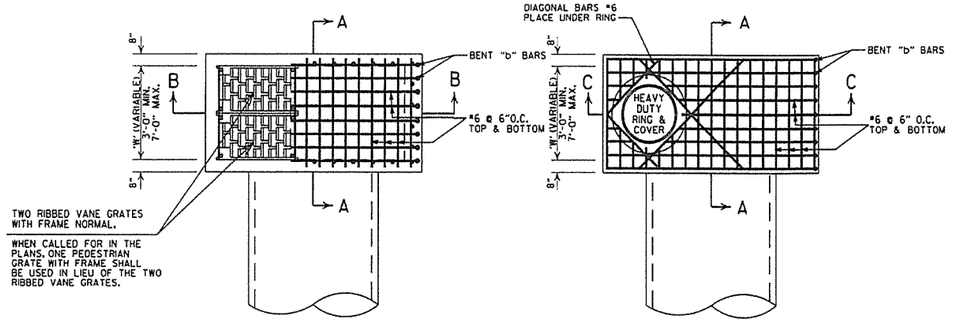
## DETAILS OF RIBBED VANE GRATE AND FRAME

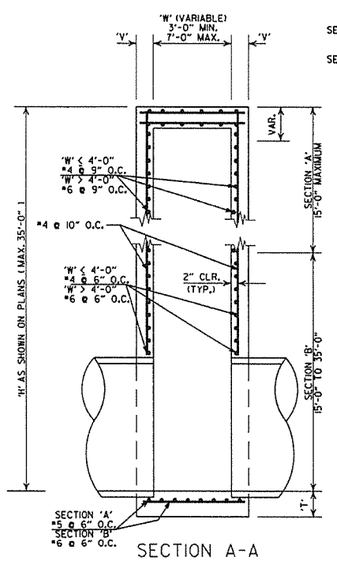
GENERAL NOTES ( RIBBED VANE GRATE & FRAME )

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

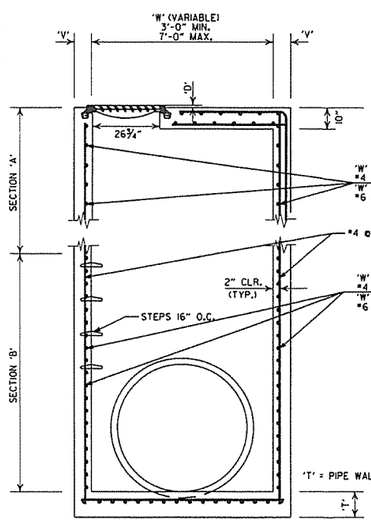



DETAIL OF BENT "b" BAR

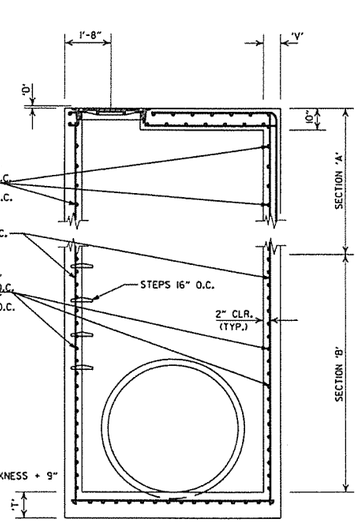



SECTION A-A

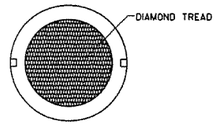



SECTION B-B

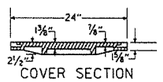



SECTION C-C

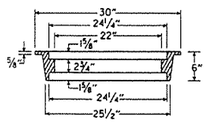
## DETAILS OF DROP INLET ( TYPE ST )




COVER FACE




COVER SECTION




RING SECTION

## HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

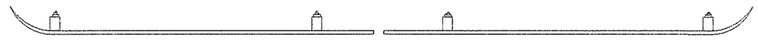
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

| DATE REVISED | DATE FILMED | DESCRIPTION |
|---|---|---|
| 7-26-12 | | REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS |
| 11-16-01 | | ADDED NOTE 4 |
| 1-12-00 | | REVISED HEAVY DUTY RING & COVER |
| 5-13-99 | | ADDED PEDESTRIAN FRAME & GRATE |
| 7-02-98 | | REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE |
| 10-18-96 | | REVISED ASTM REF. TO AASHTO |
| 10-1-92 | | REVISED & REISSUED |
| 8-15-91 | 8-15-91 | REVISED & REISSUED |

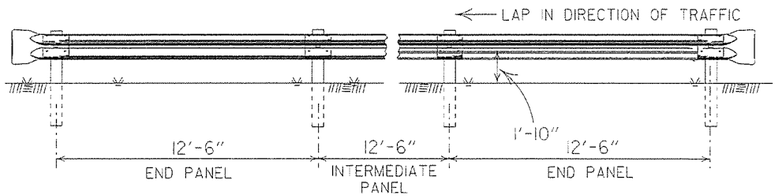
ARKANSAS STATE HIGHWAY COMMISSION

# DETAILS OF DROP INLET & JUNCTION BOX ( TYPE ST )

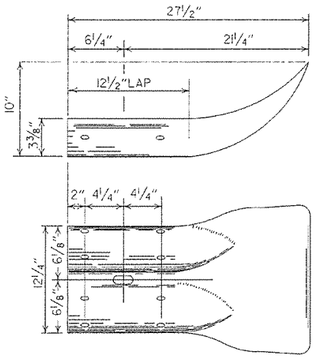
STANDARD DRAWING FPC-9S



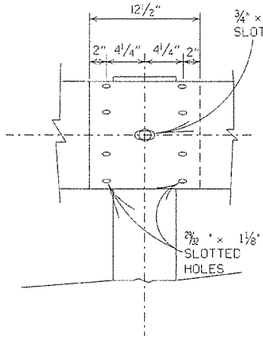
PLAN



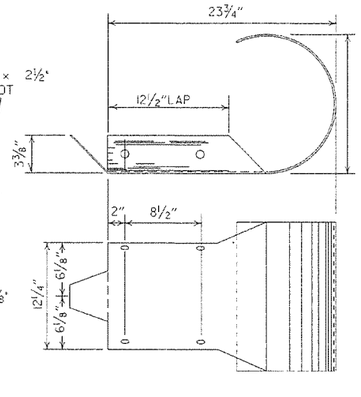

ELEVATION



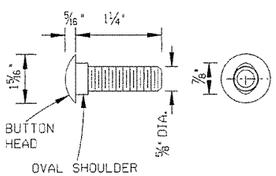

TERMINAL SECTION




RAIL SPLICE

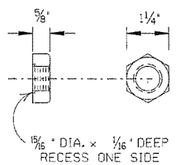



TERMINAL SECTION

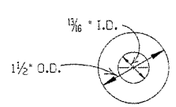



SPLICE BOLT

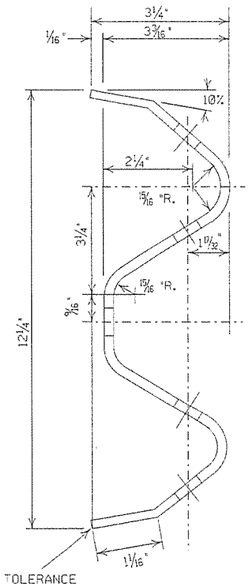
NOTE: POST BOLT SAME EXCEPT LENGTH.



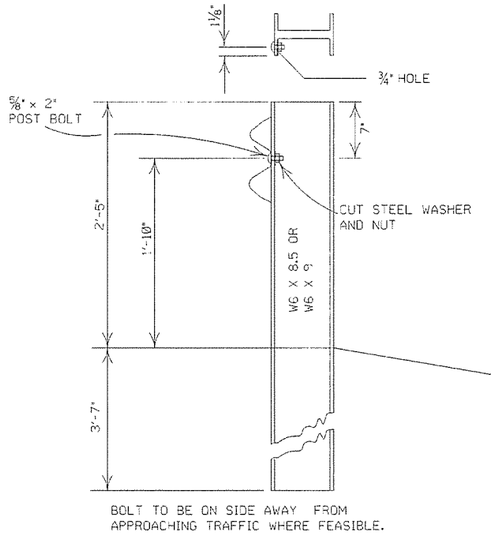

NUT




CUT STEEL WASHER

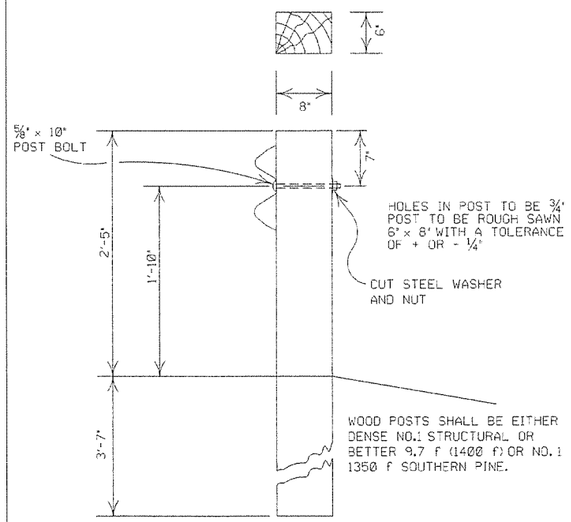



SECTION THRU RAIL




BOLT TO BE ON SIDE AWAY FROM APPROACHING TRAFFIC WHERE FEASIBLE.

STEEL POST




WOOD POST

DETAILS OF POST CONNECTIONS

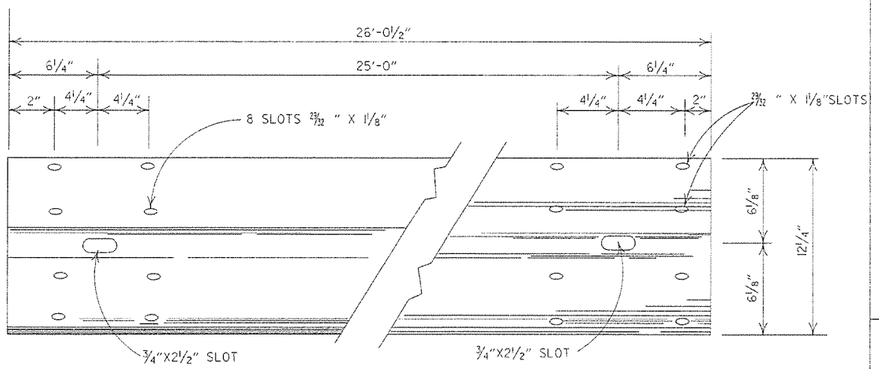
| DATE | REVISION | DATE FILM |
|---|---|---|
| 7-14-10 | RAISED HEIGHT OF GUARD RAIL 1" | |
| 8-22-02 | REVISED DIMENSION ON STEEL POST | |
| 11-16-01 | REVISED STEEL AND WOOD POST | |
| 8-12-98 | REMOVED CONCRETE POST | |
| 12-18-96 | CHANGED WOOD POST NOTE | 12-18-96 |
| 8-2-94 | ADDED ALTERNATE STEEL POST SIZE | |
| 8-5-93 | REVISED STEEL POSTS SIZE | 8-5-93 |
| 8-15-91 | DELETE STEEL PLATE WASHER & ADDED | 8-15-91 |
| | TYPE C TO TITLE | |
| 10-30-87 | REMOVED DET. PLCMNT. ON HWY. | 555-11-20-87 |
| 1-4-83 | GRADE FOR WOOD POSTS | 679-1-4-83 |
| 10-1-77 | HARDENED WASHER | 922-10-1-72 |
| 10-2-72 | REVISED & REDRAWN | 521-10-2-72 |

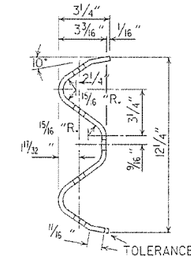
ARKANSAS STATE HIGHWAY COMMISSION

# GUARD RAIL DETAILS (TYPE C)

STREET / ROAD BARRICADE OR TEMPORARY INSTALLATION

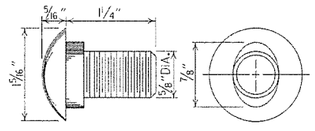
STANDARD DRAWING GR-7



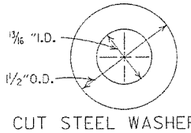




## DETAILS OF W-BEAM GUARD RAIL

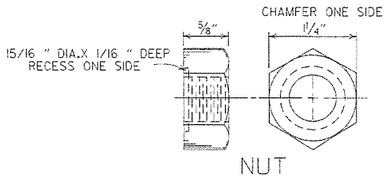
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



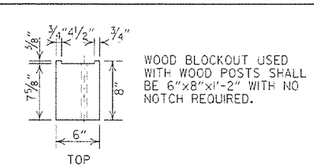

## SPLICE BOLT
## POST BOLT - SAME EXCEPT LENGTH




CUT STEEL WASHER

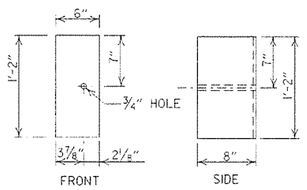



NUT

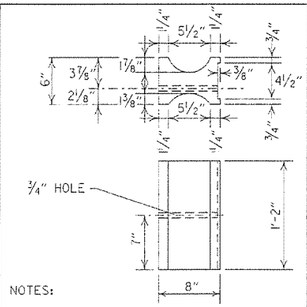



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

TOP




## WOOD BLOCKOUT (W-BEAM)

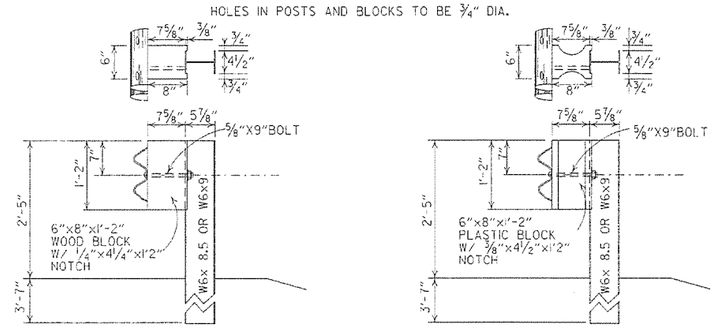



NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

## PLASTIC BLOCKOUT (W-BEAM)

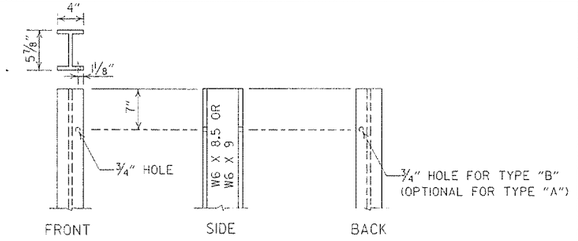
HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.



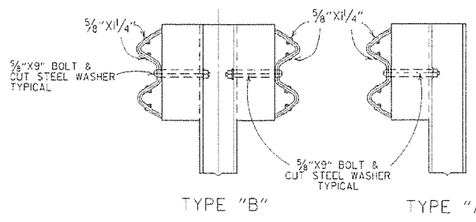

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

## DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



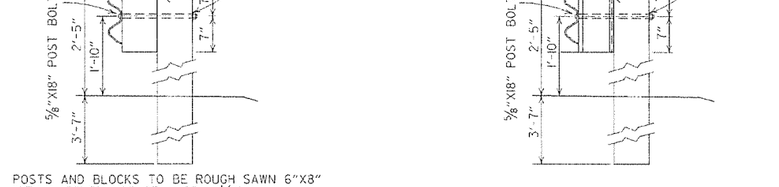

## STEEL POST




TYPE "B" TYPE "A"

## DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE ¾" DIA.




POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

## DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

### -GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

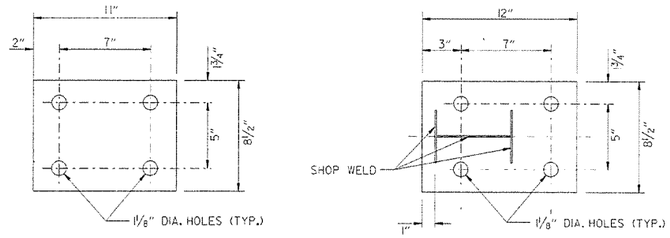
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

| DATE | REVISION | DATE FILM |
|---|---|---|
| 7-14-10 | RAISED HEIGHT OF GUARD RAIL 1" | |
| 01-15-09 | ADDED REFERENCE TO MASH | |
| 4-10-03 | REVISED GENERAL NOTES | |
| 8-22-02 | REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST | |
| 11-16-01 | REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS | |
| 3-30-00 | REMOVED GUARD RAIL AT BRIDGE ENDS | |
| 1-12-00 | ADDED PLASTIC BLOCKOUT | |
| 8-12-98 | REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES | |
| 4-3-97 | REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS | |
| 10-18-96 | REVISED WOOD POST NOTE | |
| 6-2-94 | ADDED ALT. STEEL POST SIZE | |
| 8-5-93 | REVISED STEEL POST SIZE | 8-5-93 |
| 10-1-92 | REDRAWN & REVISED | 10-1-92 |
| 8-15-91 | REVISED WASHER NOTE | 8-15-91 |
| 8-2-90 | REV. GEN. NOTE & DEPHT OF ANC. POST IN ROCK | 8-2-90 |
| 7-15-88 | REVISED SECTION 3 & GENERAL NOTES | |
| 3-4-88 | REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK | 780-3-4-88 |
| 10-30-87 | REVISED WOOD LINE POST DETAIL | 546-10-30-87 |
| 10-9-87 | REDRAWN & REVISED | 802-10-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

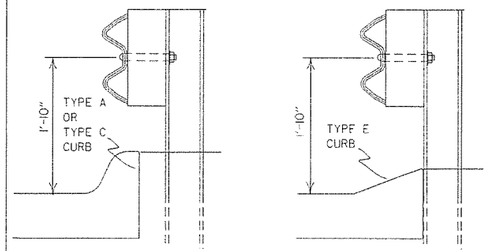
GUARD RAIL DETAILS

STANDARD DRAWING GR-8



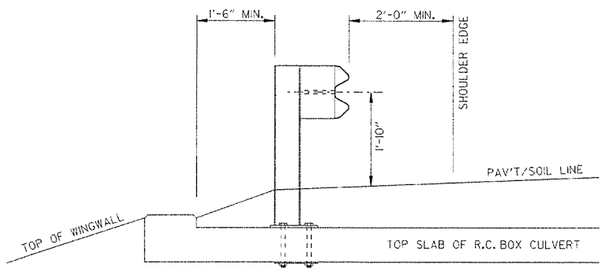

WASHER PLATE BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

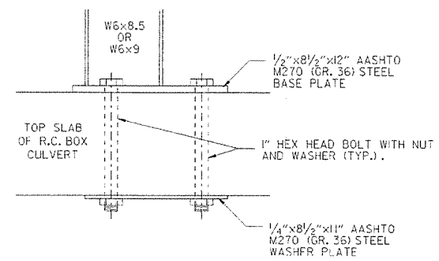



## DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

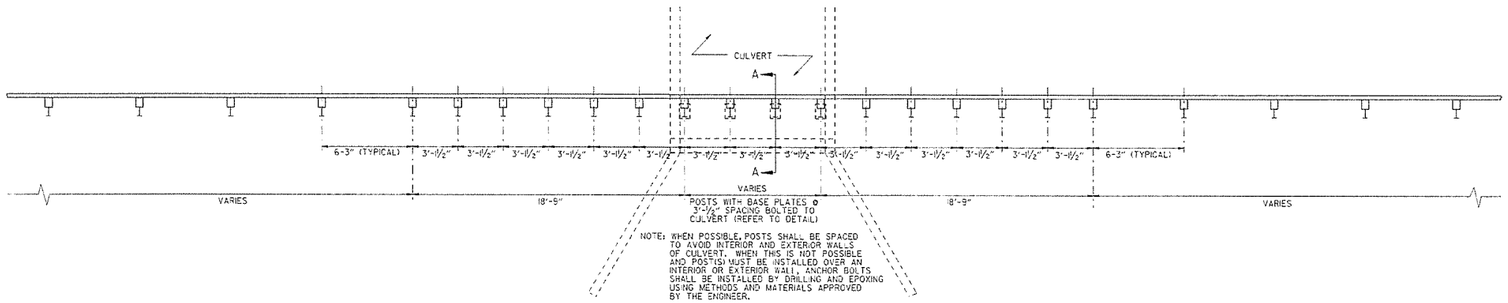
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CC-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.




SECTION A-A



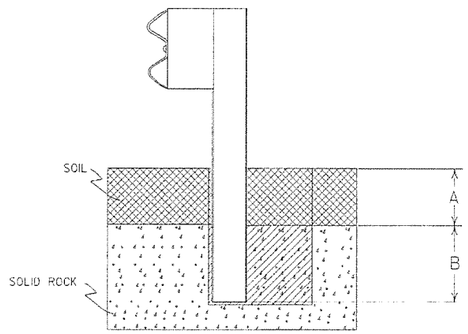

DETAIL OF CONNECTION



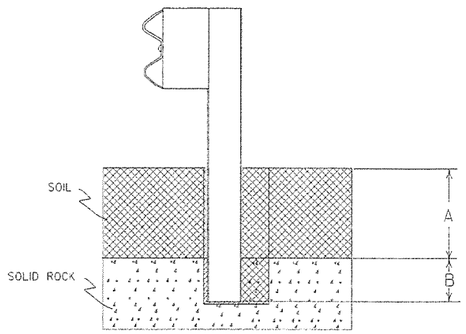

PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DWG. GR-8.

Case 1

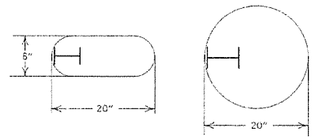


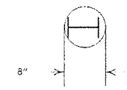

Case 2




Plan View Steel Posts

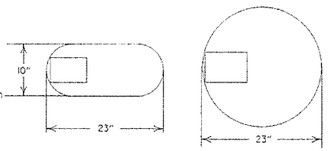
Either hole configuration acceptable

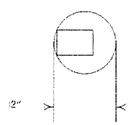



Plan View Wood Posts

Either hole configuration acceptable




Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

Zone A:
Backfill according to Section 617.03(a).

Zone B:
Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B:
Backfill according to Section 617.03(a).

## DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)

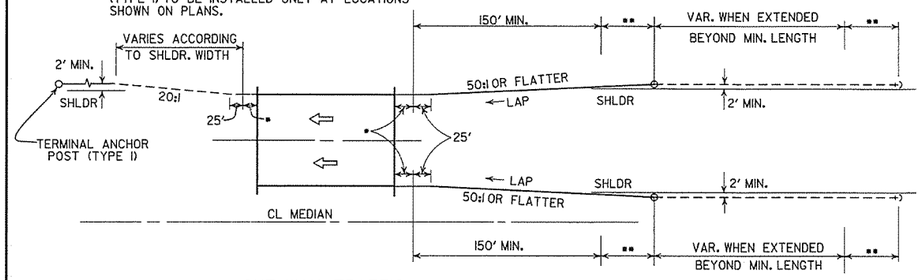
| DATE | REVISION | DATE FILM |
|---|---|---|
| 7-14-10 | RAISED HEIGHT OF GUARD RAIL 1" | |
| 4-12-07 | REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB | |
| 11-10-05 | ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION | |
| 11-18-04 | REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS | |
| 3-30-00 | REMOVED CONCRETE INSERT ANCHOR | |
| 8-12-98 | CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULVT. DELETED DET. OF STEEL LINE POST CONN.& ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK | |
| 4-3-96 | PLACED ARROWS AT CUT STEEL WASHERS | 4-3-96 |
| 10-18-96 | REV. ASTM REF. TO AASHTO | |
| 11-22-95 | ADDED OPTIONAL HOLES | |
| 6-2-94 | REVISED ALTERNATE POST SIZE | |
| 8-5-93 | REVISED STEEL POST SIZE | |
| 10-1-92 | REDRAWN & REVISED | 10-1-92 |
| 8-2-90 | DEL. WASHER ON ANCHOR ASSEMBLY | 8-2-90 |
| 7-15-88 | CONFORMED TO 1988 SPECS | |
| 3-4-88 | REVISED ANCHOR NOTE | |
| 10-30-87 | REVISED ANCHOR ASSEMBLY | 712-10-30-87 |
| 10-30-87 | REVISED PLACEMENT BEHIND CURB | 547-10-30-87 |
| 10-9-87 | REDRAWN & REVISED | 803-10-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

# GUARD RAIL DETAILS

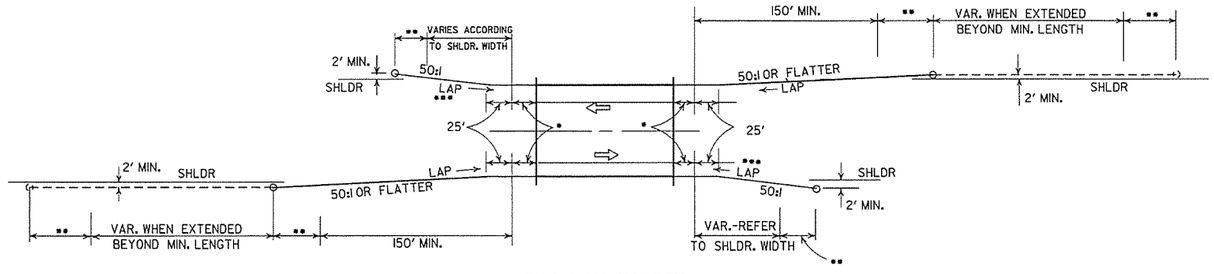
STANDARD DRAWING GR-8A

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.




ONE-WAY TRAFFIC

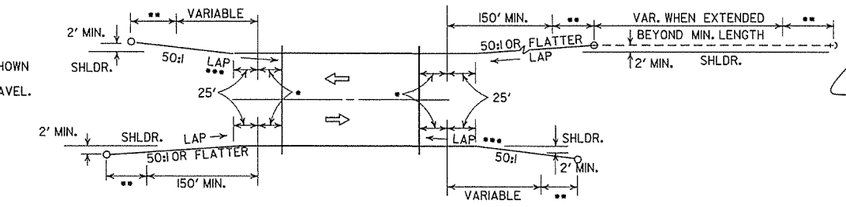
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.




TWO-WAY TRAFFIC

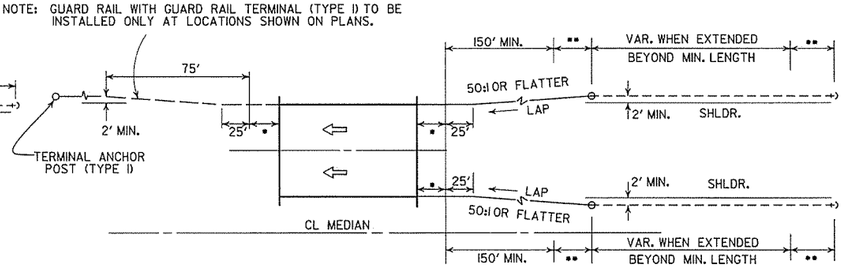
## METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.




TWO-WAY TRAFFIC

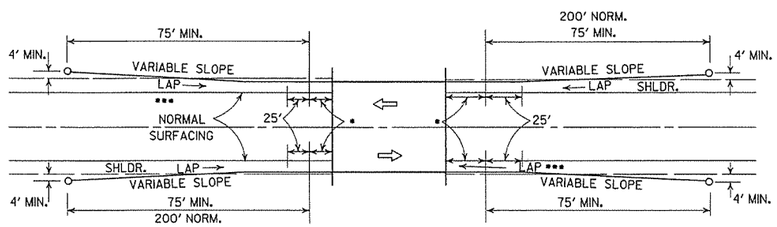
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.




ONE-WAY TRAFFIC

## METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.




## METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

LEGEND

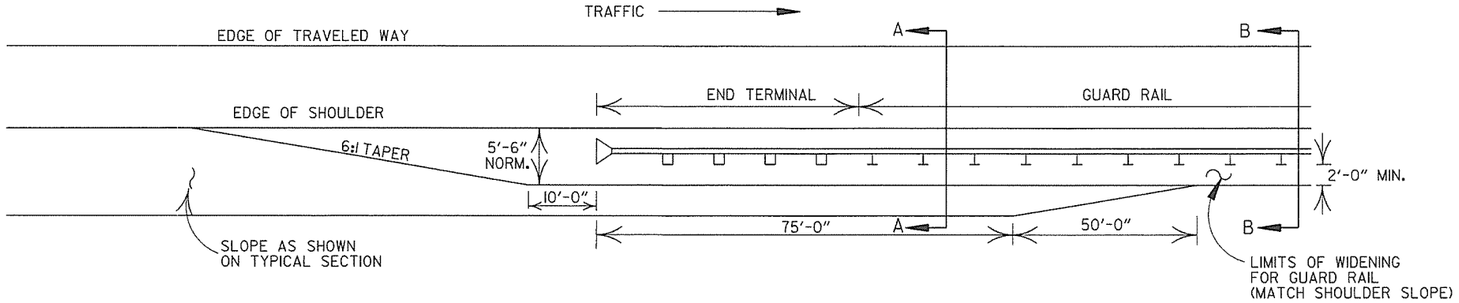
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

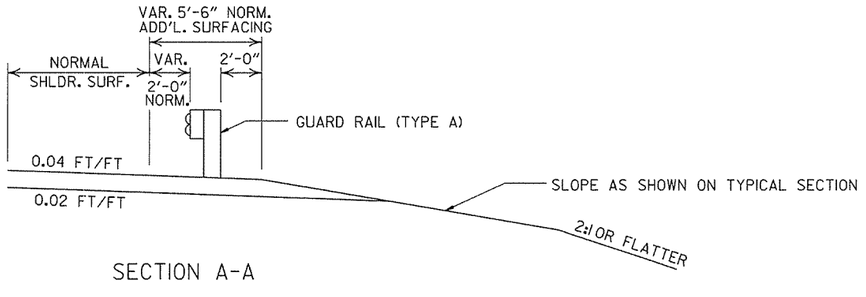
| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| 4-17-08 | REVISED LAYOUTS | |
| 11-10-05 | REMOVED GUARD RAIL NOTES AND DETAILS | |
| 11-16-01 | DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I) | |
| 1-12-00 | ADDED CONSTRUCTION NOTE | 1-12-00 |
| 6-26-97 | REVISED LAYOUT | |
| 10-1-92 | REDRAWN & REVISED | 10-1-92 |
| | ADDED NOTE | |
| 10-9-87 | REDRAWN & REVISED | |

ARKANSAS STATE HIGHWAY COMMISSION

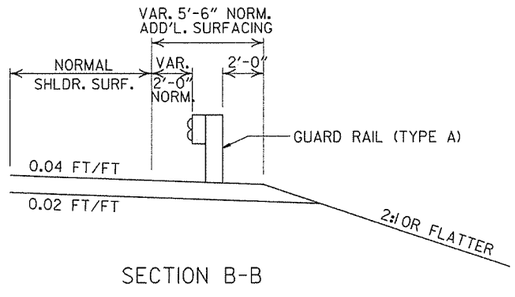
# GUARD RAIL DETAILS

STANDARD DRAWING GR-9



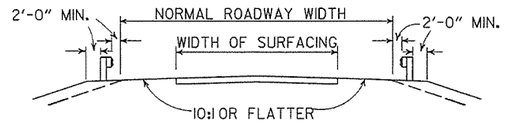

SECTION A-A



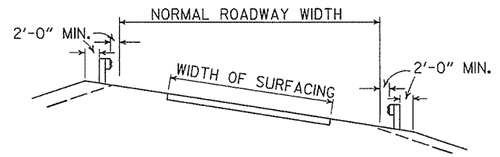

SECTION B-B

## DETAILS OF WIDENING FOR GUARD RAIL

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

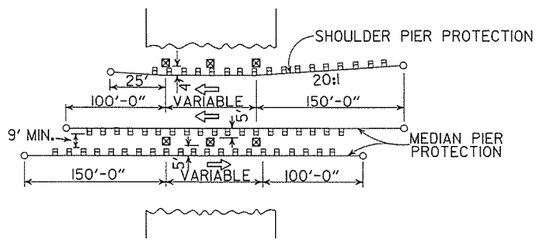



SECTION ON TANGENT




SECTION ON CURVE

## DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



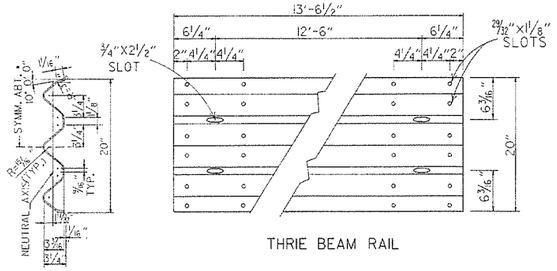

## METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

| DATE | REVISION | DATE FILM |
|---|---|---|
| 4-17-08 | MINOR REVISION | |
| 11-10-05 | DRAWN | |

ARKANSAS STATE HIGHWAY COMMISSION

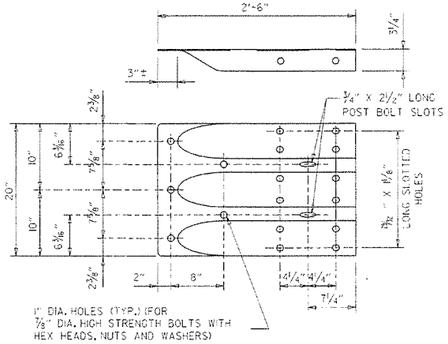
# GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



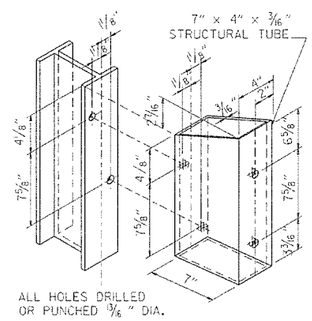

THRIE BEAM RAIL

SECTION THRU THRIE BEAM RAIL




1" DIA. HOLES (TYP.) (FOR ⅞" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

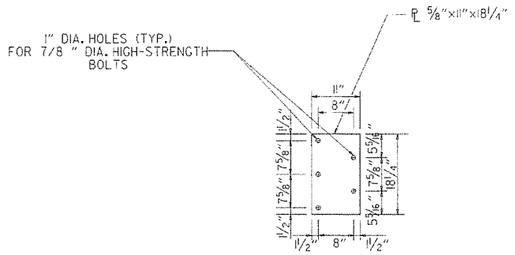
SPECIAL END SHOE




ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

ALL HOLES DRILLED OR PUNCHED ⅜" DIA.

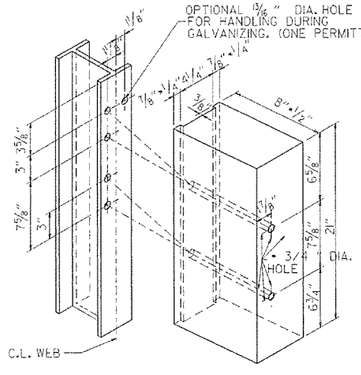
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL




NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.

CONNECTOR PLATE

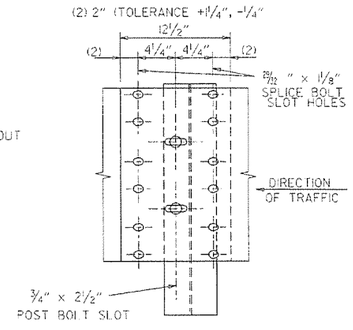
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



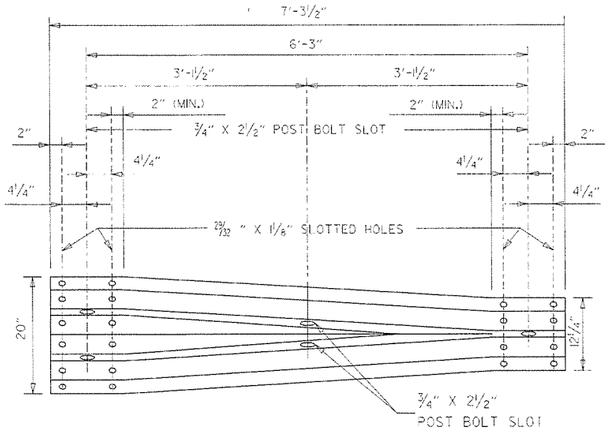

ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL
FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

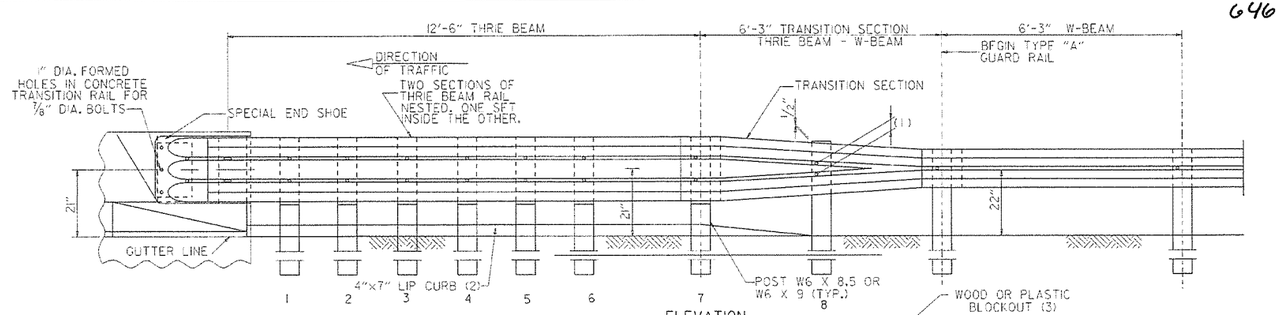
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.




THRIE BEAM RAIL SPLICE AT POST




TRANSITION SECTION




(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

## THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE II.

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-11.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 #) OR NO. 1 1350 f SOUTHERN PINE.

REFER TO STD. DRWG. GR-10A FOR POST DETAILS.

USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W BEAM POSTS FOR ENTIRE JOB.

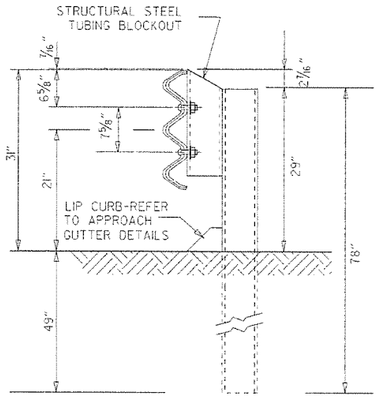
| DATE | REVISION | DATE FILM |
|---|---|---|
| 7-14-10 | RAISED HEIGHT OF W-BEAM 1" | |
| 11-29-07 | ADDED PLASTIC BLOCKOUTS | |
| 11-10-05 | ADDED NOTE FOR ATTACHING STEEL BLOCKOUT | |
| 11-18-04 | REVISED GENERAL NOTES | |
| 10-9-03 | REVISED GENERAL NOTES | |
| 4-10-03 | REVISED GENERAL NOTES | |
| 8-22-02 | REVISED NOTE (2) | |
| 6-29-00 | MOVED DIMENSION LINES | |
| 5-18-00 | ADDED NOTE | |
| 3-30-00 | DRAWN & ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

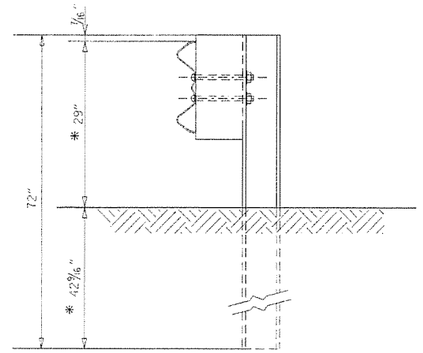
GUARD RAIL DETAILS

STANDARD DRAWING GR-10

6417

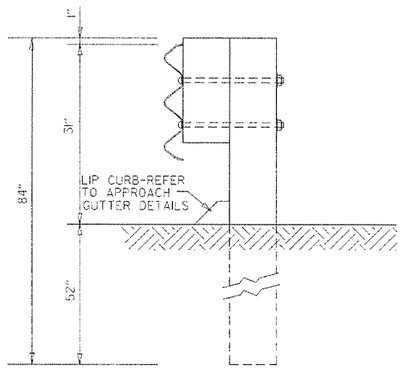



THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

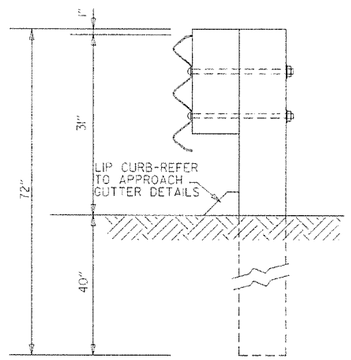



W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

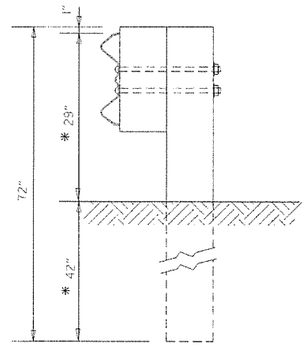
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.




THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6




THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7




W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

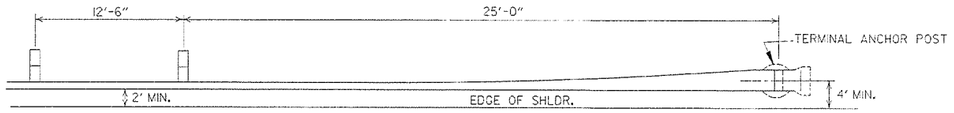
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

| DATE | REVISION | DATE FILM |
|---|---|---|
| 7-14-10 | REVISED POST 8 DIMENSIONS | |
| 11-29-07 | ADDED PLASTIC BLOCKOUTS | |
| 8-22-02 | REVISED LIP CURB NOTE | |
| 3-30-00 | DRAWN & ISSUED | |

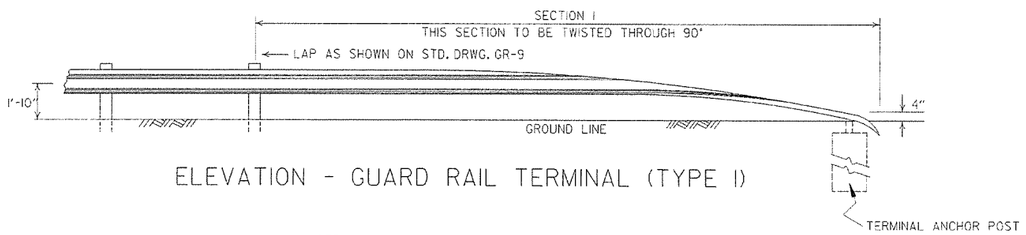
ARKANSAS STATE HIGHWAY COMMISSION

# GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

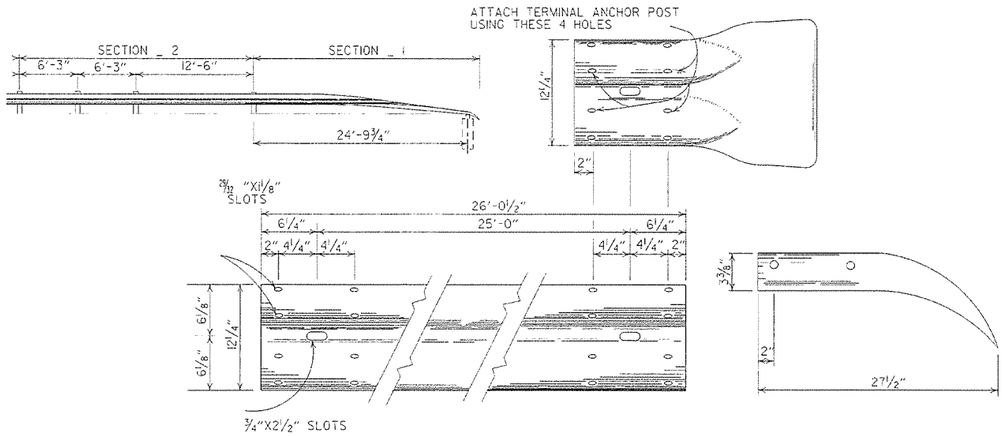



PLAN - GUARD RAIL TERMINAL (TYPE I)



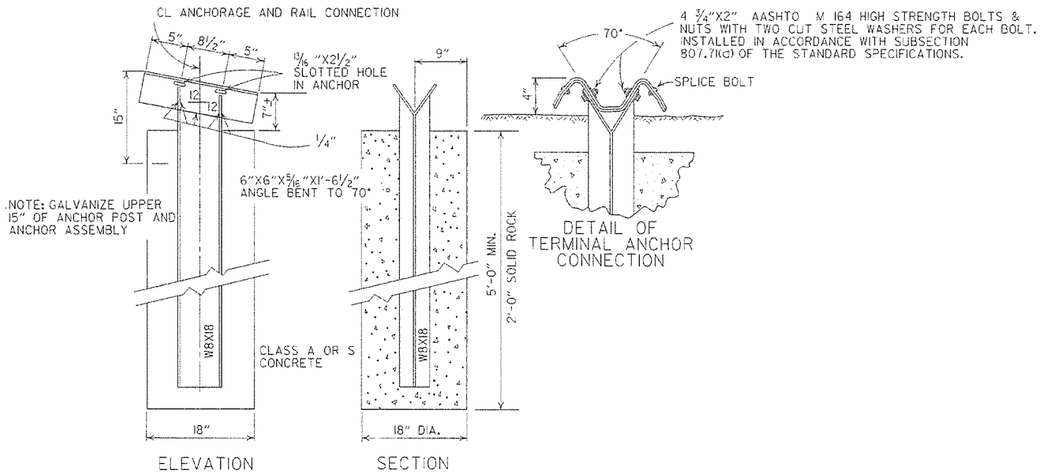

ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.




SECTION 1

TERMINAL SECTION




ELEVATION

SECTION

DETAIL OF TERMINAL ANCHOR CONNECTION

NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

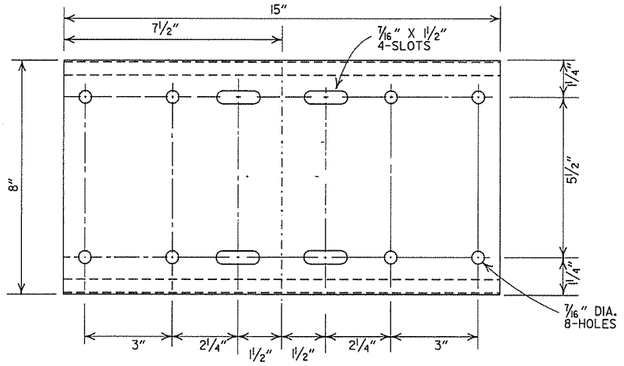
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

| DATE | REVISION | DATE FILM |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| 7-14-10 | RAISED HEIGHT OF GUARD RAIL 1" | |
| 6-26-97 | REVISED LAP NOTE | |
| 10-18-96 | REVISED ASTM REF. TO AASHTO | |
| 11-3-94 | DIMENSION TERMINAL DETAIL | |
| 11-11-92 | ADDED NOTE FOR PAYMENT | 11-11-92 |
| 10-1-92 | DRAWN & ISSUED | 10-1-92 |

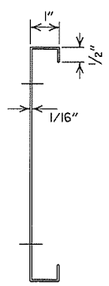
ARKANSAS STATE HIGHWAY COMMISSION

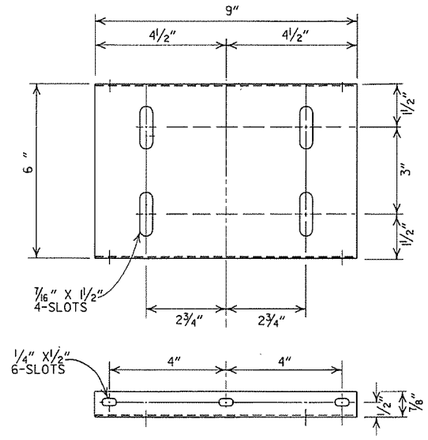
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1

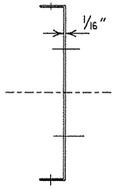


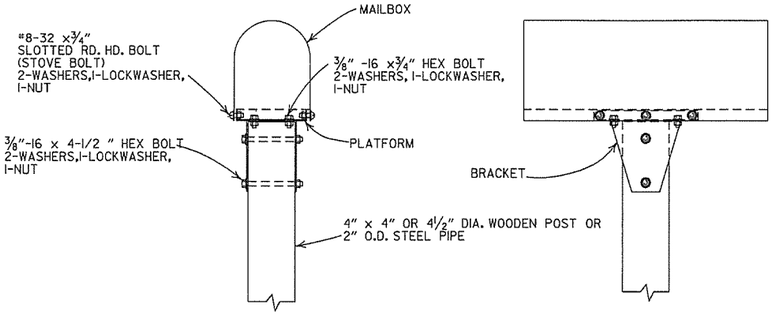

SHELF



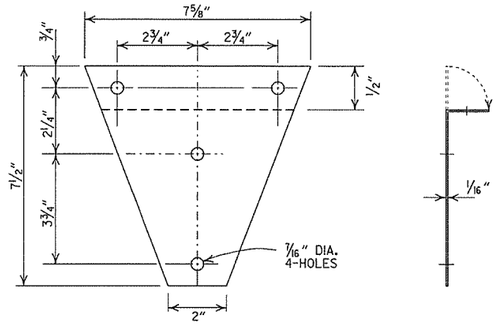




PLATFORM



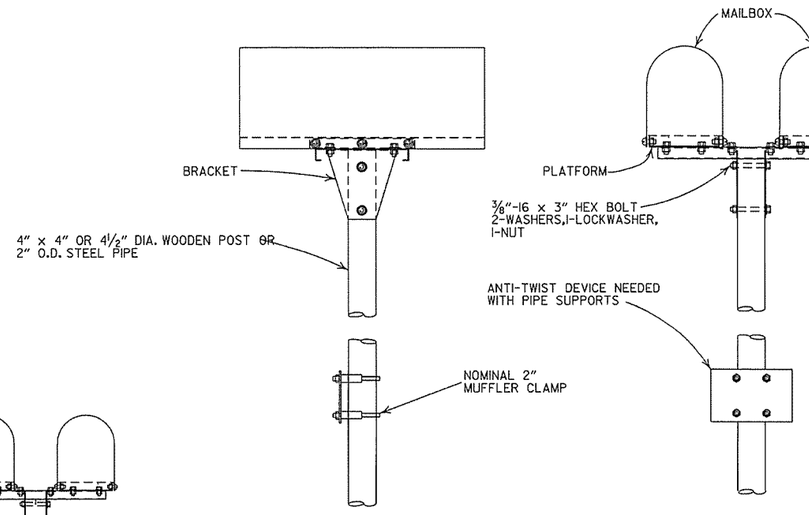

SINGLE INSTALLATION



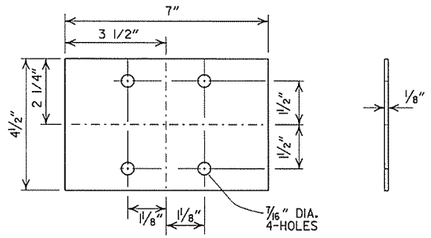

BRACKET

GENERAL NOTES

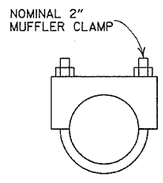
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X2½" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE AHTD QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



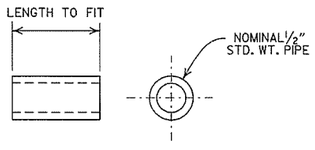

DOUBLE INSTALLATION



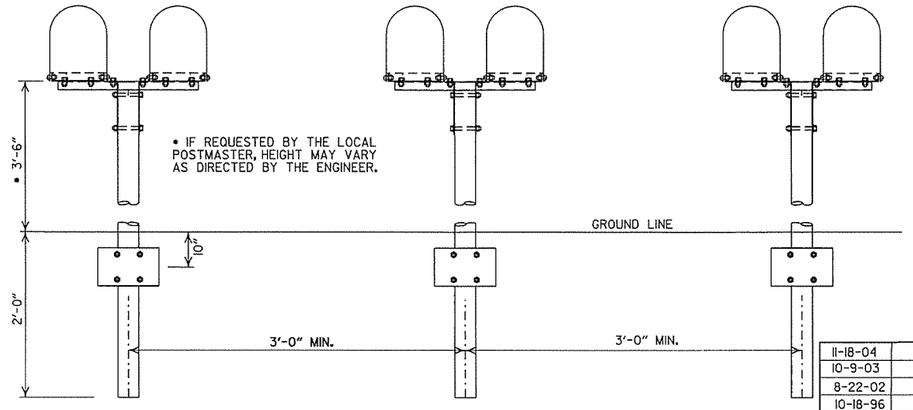

ANTI-TWIST PLATE




CLAMP




SPACER



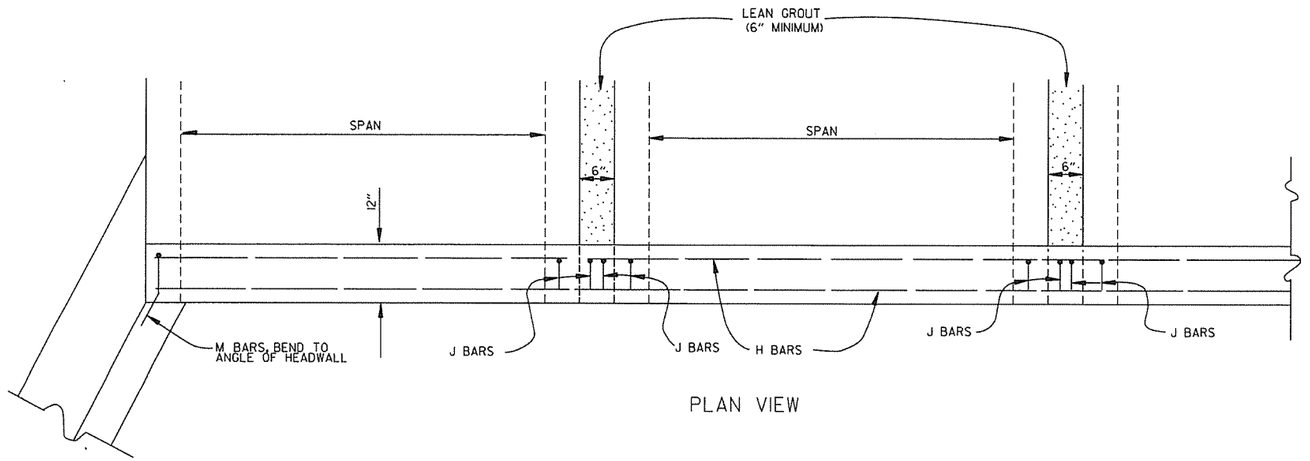

SPACING FOR MULTIPLE POST INSTALLATION

| DATE | FILMED | REVISION |
|---|---|---|
| 11-18-04 | | REVISED NOTES |
| 10-9-03 | | REVISED NOTE 6 |
| 8-22-02 | | REVISED NOTE 6 |
| 10-18-96 | | CORRECTED AASHTO |
| 10-1-92 | | CORRECTED SPELLING |
| 9-26-91 | | NEW PHONE NUMBER |
| 8-15-91 | | ADDED NOTE |
| 11-30-89 | | ADJUSTED HEIGHT & ADDED NOTE |
| 2-16-89 | | DELETED SLOTS FROM SHELF & PLTF |
| 11-17-88 | 10-1-92 | ADJUSTED DIMENSIONS OF STEEL POSTS |
| 7-15-88 | 20-7-15-88 | ISSUED |

ARKANSAS STATE HIGHWAY COMMISSION

# MAILBOX DETAILS

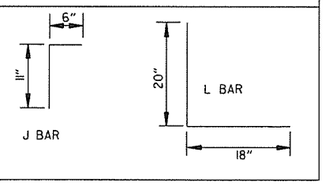
STANDARD DRAWING MB-1




PLAN VIEW

## BAR LIST

| BAR | NO. | SIZE | LENGTH | BAR BENDING DIAGRAM |
|---|---|---|---|---|
| H | 2 | #4 | • | |
| I | • | #4 | • | |
| J | • | #4 | 1'-5" | |
| L | • | #4 | 3'-2" | |
| M | • | #4 | 1'-8" | |




• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

### GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

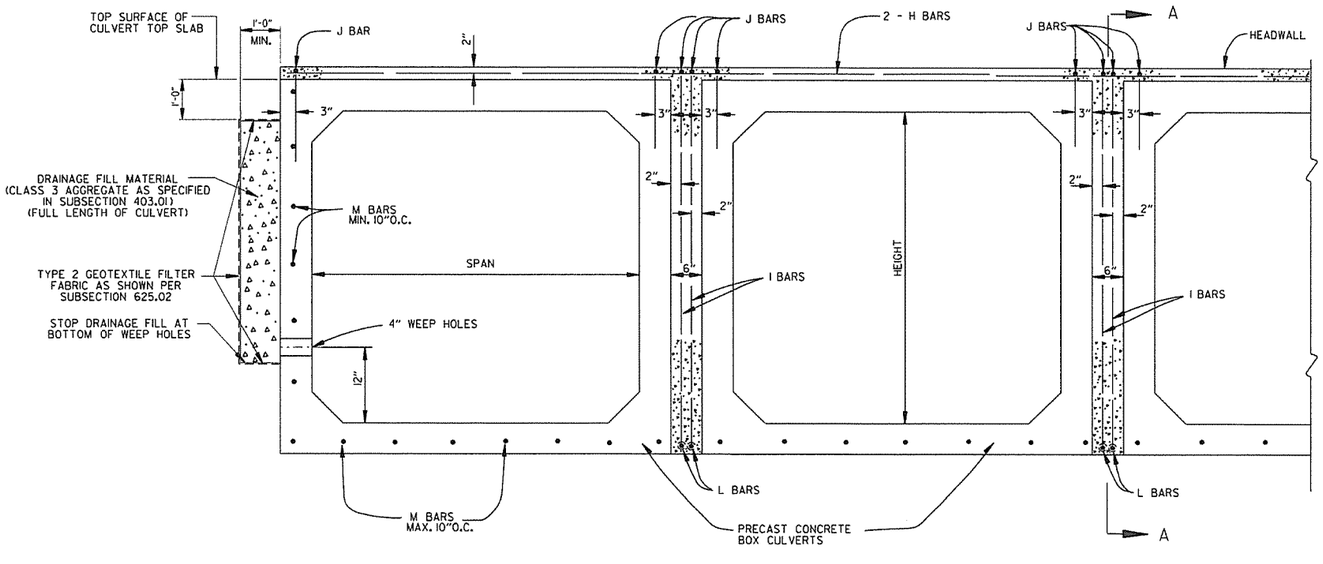
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

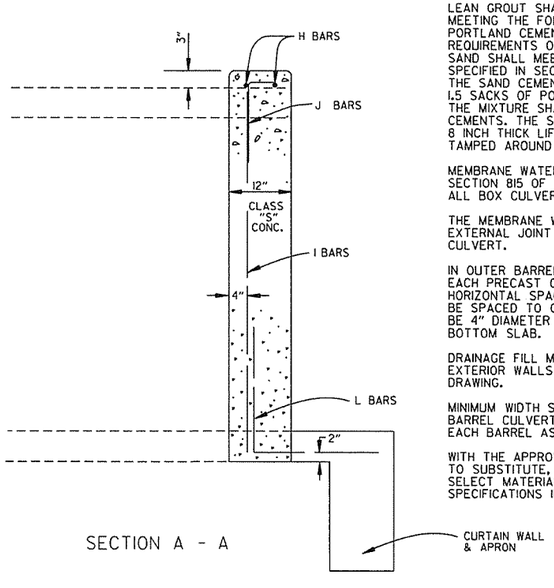
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.




END VIEW




SECTION A - A

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 12-15-11 | ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL | |
| 10-15-09 | ADDED GENERAL NOTE | |
| 11-10-05 | REVISED SPACING OF "M" BARS | |
| 4-10-03 | REVISED GENERAL NOTES | |
| 10-18-96 | CORRECTED AASHTO REF. | |
| 10-1-92 | ADDED NOTE FOR MEMBRANE WATERPROOFING | |
| 8-15-91 | ADDED NOTE FOR LEAN GROUT | |
| 11- 8-90 | REVISED FOR 1991 SPECS | |
| 11-30-89 | ISSUED; JABE | |

ARKANSAS STATE HIGHWAY COMMISSION

# PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

## REINFORCED CONCRETE ARCH PIPE DIMENSIONS

| EQUIV. DIA. | SPAN | | RISE | |
|---|---|---|---|---|
| | AASHTO M 206 | AHTD NOMINAL | AASHTO M 206 | AHTD NOMINAL |
| INCHES | INCHES | | | |
| 15 | 18 | 18 | 11 | 11 |
| 18 | 22 | 22 | 13½ | 14 |
| 21 | 26 | 26 | 15½ | 16 |
| 24 | 28½ | 29 | 18 | 18 |
| 30 | 36¼ | 36 | 22½ | 23 |
| 36 | 43⅜ | 44 | 26⅝ | 27 |
| 42 | 51⅛ | 51 | 31⅝ | 31 |
| 48 | 58½ | 59 | 36 | 36 |
| 54 | 65 | 65 | 40 | 40 |
| 60 | 73 | 73 | 45 | 45 |
| 72 | 88 | 88 | 54 | 54 |
| 84 | 102 | 102 | 62 | 62 |
| 90 | 115 | 115 | 72 | 72 |
| 96 | 122 | 122 | 77½ | 77 |
| 108 | 138 | 138 | 87⅛ | 87 |
| 120 | 154 | 154 | 96⅞ | 97 |
| 132 | 168¾ | 169 | 106½ | 107 |

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

## REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

| EQUIV. DIA. | AASHTO M 207 | |
|---|---|---|
| | SPAN | RISE |
| INCHES | INCHES | |
| 18 | 23 | 14 |
| 24 | 30 | 19 |
| 27 | 34 | 22 |
| 30 | 38 | 24 |
| 33 | 42 | 27 |
| 36 | 45 | 29 |
| 39 | 49 | 32 |
| 42 | 53 | 34 |
| 48 | 60 | 38 |
| 54 | 68 | 43 |
| 60 | 76 | 48 |
| 66 | 83 | 53 |
| 72 | 91 | 58 |
| 78 | 98 | 63 |
| 84 | 106 | 68 |

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

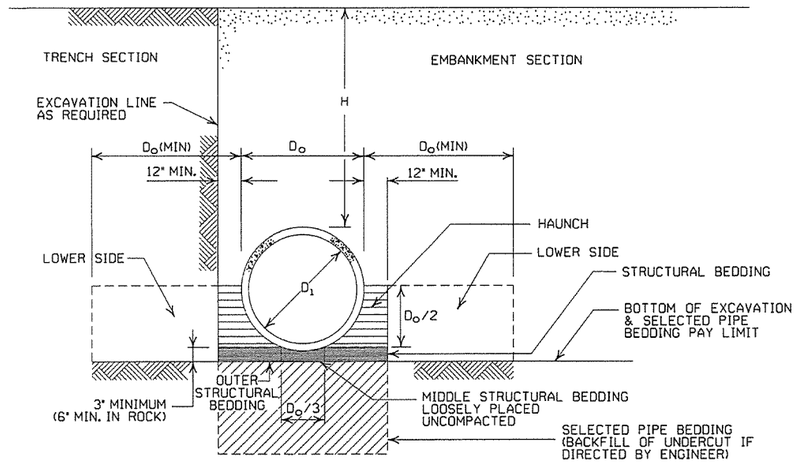
## - LEGEND -

$D_i$ = NORMAL INSIDE DIAMETER OF PIPE
$D_o$ = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

| INSTALLATION TYPE | MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING |
|---|---|
| TYPE 1 | AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7) |
| TYPE 2 | SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL* |
| TYPE 3** | AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL |

*SM-3 WILL NOT BE ALLOWED.

**MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.




## EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

## GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

## MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

| | CLASS OF PIPE | | | |
|---|---|---|---|---|
| | CLASS III | | CLASS IV | CLASS V |
| INSTALLATION TYPE | TYPE 1 OR 2 | TYPE 3 | ALL | ALL |
| PIPE ID (IN.) | FEET | | | |
| 12-15 | 2 | 2.5 | 2 | 1 |
| 18-24 | 2.5 | 3 | 2 | 1 |
| 27-33 | 3 | 4 | 2 | 1 |
| 36-42 | 3.5 | 5 | 2 | 1 |
| 48 | 4.5 | 5.5 | 2 | 1 |
| 54-60 | 5 | 7 | 2 | 1 |
| 66-78 | 6 | 8 | 2 | 1 |
| 84-108 | 7.5 | 8 | 2 | 1 |

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

## MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

| INSTALLATION TYPE | CLASS OF PIPE | | |
|---|---|---|---|
| | CLASS III | CLASS IV | CLASS V |
| | FEET | | |
| TYPE 1 | 21 | 32 | 50 |
| TYPE 2 | 16 | 25 | 39 |
| TYPE 3 | 12 | 20 | 30 |

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

## MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

| INSTALLATION TYPE | CLASS OF PIPE | |
|---|---|---|
| | CLASS III | CLASS IV |
| | FEET | |
| TYPE 2 OR TYPE 3 | 2.5 | 1.5 |

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

## MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

| INSTALLATION TYPE | CLASS OF PIPE | |
|---|---|---|
| | CLASS III | CLASS IV |
| | FEET | |
| TYPE 2 | 13 | 21 |
| TYPE 3 | 10 | 16 |

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECIFICATIONS | |
| 5-18-00 | REVISED TYPE 3 BEDDING & ADDED NOTE | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

## CORRUGATED STEEL PIPE (ROUND)

| PIPE DIAMETER (INCHES) | ① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET) | MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS (INCHES) | | | | |
|---|---|---|---|---|---|---|
| | | 0.064 | 0.079 | 0.109 | 0.138 | 0.168 |
| 2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | | | | |
| 12 | 1 | 84 | 91 | | | |
| 15 | 1 | 67 | 73 | | | |
| 18 | 1 | 56 | 61 | | | |
| 24 | 1 | 42 | 46 | 59 | | |
| 30 | 2 | 34 | 36 | 47 | | |
| 36 | 2 | | 30 | 39 | 41 | |
| 42 | 2 | | 43 | 67 | 70 | 73 |
| 48 | 2 | | 37 | 58 | 61 | 64 |
| ② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM | | | | | | |
| 36 | 1 | 48 | 60 | 88 | 111 | 118 |
| 42 | 1 | 41 | 51 | 72 | 90 | 102 |
| 48 | 1 | 36 | 45 | 64 | 77 | 85 |
| 54 | 2 | 32 | 40 | 59 | 71 | 79 |
| 60 | 2 | 29 | 36 | 53 | 64 | 71 |
| 66 | 2 | 26 | 33 | 47 | 58 | 64 |
| 72 | 2 | 24 | 30 | 44 | 53 | 59 |
| 78 | 2 | | 28 | 41 | 49 | 54 |
| 84 | 2 | | 26 | 38 | 45 | 51 |
| 90 | 2 | | 24 | 35 | 43 | 45 |
| 96 | 2 | | 22 | 33 | 40 | 44 |
| 102 | 2 | | | 31 | 38 | 42 |
| 108 | 2 | | | 30 | 35 | 39 |
| 114 | 2 | | | 28 | 34 | 37 |
| 120 | 2 | | | 27 | 32 | 35 |

## CORRUGATED ALUMINUM PIPE (ROUND)

| PIPE DIAMETER (INCHES) | ① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET) | MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET) METAL THICKNESS IN INCHES | | | | |
|---|---|---|---|---|---|---|
| | | 0.060 | 0.075 | 0.105 | 0.135 | 0.164 |
| | | 2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM | | | | |
| 12 | 1 | 45 | 45 | | | |
| 18 | 2 | 30 | 30 | 52 | | |
| 24 | 2 | 22 | 22 | 39 | 41 | |
| 30 | 2 | | 18 | 31 | 32 | 34 |
| 36 | 2.5 | | 15 | 26 | 27 | 28 |
| 42 | 2 | | | 43 | 43 | 44 |
| 48 | 2 | | | 40 | 41 | 43 |
| 54 | 2 | | | 35 | 37 | 38 |
| 60 | 2 | | | | 33 | 34 |
| 66 | 2 | | | | | 31 |
| 72 | 2 | | | | | 29 |

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

| INSTALLATION TYPE | MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 1 | AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) |
| TYPE 2 | SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③ |

③ SM-3 WILL NOT BE ALLOWED.

## EQUIVALENT METAL THICKNESSES AND GAUGES

| METAL THICKNESS IN INCHES | | | GAUGE NUMBER |
|---|---|---|---|
| STEEL | | | |
| ZINC COATED | UNCOATED | ALUMINUM | |
| 0.064 | 0.0598 | 0.060 | 16 |
| 0.079 | 0.0747 | 0.075 | 14 |
| 0.109 | 0.1046 | 0.105 | 12 |
| 0.138 | 0.1345 | 0.135 | 10 |
| 0.168 | 0.1644 | 0.164 | 8 |

## CORRUGATED METAL PIPE ARCHES

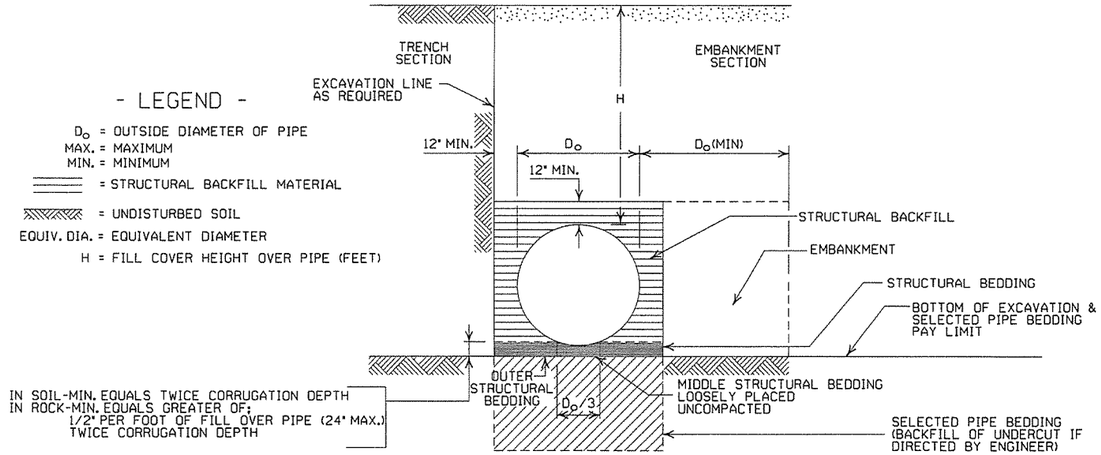
| EQUIV. DIA. (INCHES) | PIPE DIMENSION SPAN X RISE (INCHES) | MINUMUM CORNER RADIUS (INCHES) | STEEL MIN. THICKNESS REQUIRED INCHES | STEEL ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 | STEEL MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 | ALUMINUM MIN. THICKNESS REQUIRED INCHES | ALUMINUM ① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 | ALUMINUM MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1 |
|---|---|---|---|---|---|---|---|---|
| | | | 2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | 2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM | | |
| 15 | 17x13 | 3 | 0.064 | 2 | 15 | 0.060 | 2 | 15 |
| 18 | 21x15 | 3 | 0.064 | 2 | 15 | 0.060 | 2 | 15 |
| 21 | 24x18 | 3 | 0.064 | 2.25 | 15 | 0.060 | 2.25 | 15 |
| 24 | 28x20 | 3 | 0.064 | 2.5 | 15 | 0.075 | 2.5 | 15 |
| 30 | 35x24 | 3 | 0.079 | 3 | 12 | 0.075 | 3 | 12 |
| 36 | 42x29 | 3½ | 0.079 | 3 | 12 | 0.105 | 3 | 12 |
| 42 | 49x33 | 4 | 0.079 | 3 | 12 | 0.105 | 3 | 12 |
| 48 | 57x38 | 5 | 0.109 | 3 | 13 | 0.135 | 3 | 13 |
| 54 | 64x43 | 6 | 0.109 | 3 | 14 | 0.135 | 3 | 14 |
| 60 | 71x47 | 7 | 0.138 | 3 | 15 | 0.164 | 3 | 15 |
| 66 | 77x52 | 8 | 0.168 | 3 | 15 | | | |
| 72 | 83x57 | 9 | 0.168 | 3 | 15 | | | |
| ② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM | | | | | | | | |
| | | | | INSTALLATION TYPE 2 | INSTALLATION TYPE 1 | | | |
| 36 | 40x31 | 5 | 0.079 | 3 | 2 | 12 | 15 | |
| 42 | 46x36 | 6 | 0.079 | 3 | 2 | 13 | 15 | |
| 48 | 53x41 | 7 | 0.079 | 3 | 2 | 13 | 15 | |
| 54 | 60x46 | 8 | 0.079 | 3 | 2 | 13 | 15 | |
| 60 | 66x51 | 9 | 0.079 | 3 | 2 | 13 | 15 | |
| 66 | 73x55 | 12 | 0.079 | 3 | 2 | 15 | 15 | |
| 72 | 81x59 | 14 | 0.079 | 3 | 2 | 15 | 15 | |
| 78 | 87x63 | 14 | 0.079 | 3 | 2 | 15 | 15 | |
| 84 | 95x67 | 16 | 0.109 | 3 | 2 | 15 | 15 | |
| 90 | 103x71 | 16 | 0.109 | 3 | 2 | 15 | 15 | |
| 96 | 112x75 | 18 | 0.109 | 3 | 2 | 15 | 15 | |
| 102 | 117x79 | 18 | 0.109 | 3 | 2 | 15 | 15 | |
| 108 | 128x83 | 18 | 0.138 | 3 | 2 | 15 | 15 | |

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

$D_o$ = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)




## EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

## GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED FOR LRFD DESIGN SPECS | |
| 3-30-00 | REVISED INSTALLATIONS | |
| 11-06-97 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

| INSTALLATION TYPE | •• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 2 | •SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4) |

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

## MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---|---|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |
| 42" | 3'-6" |
| 48" | 4'-0" |

## MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

| PIPE DIAMETER | TRENCH WIDTH (FEET) | |
|---|---|---|
| | "H" < 10'-0" | "H" >OR= 10'-0" |
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |
| 42" | 7'-0" | 10'-6" |
| 48" | 8'-0" | 12'-0" |

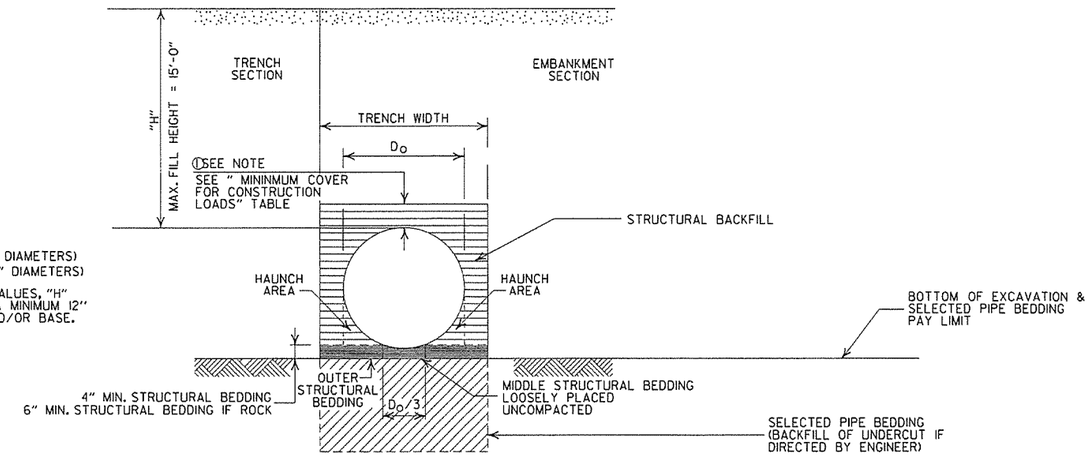
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

## MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | ② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS | | | |
|---|---|---|---|---|
| | 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-175.0 (KIPS) |
| 36" OR LESS | 2'-0" | 2'-6" | 3'-0" | 3'-0" |
| 42" OR GREATER | 3'-0" | 3'-0" | 3'-6" | 4'-0" |

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.




## TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

## GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

## - LEGEND -

H = FILL HEIGHT (FT.)
Ø = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REVISED GENERAL NOTES & MINIMUM COVER NOTE | |
| 11-17-10 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

| INSTALLATION TYPE | •• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING |
|---|---|
| TYPE 2 | •SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) |

• AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

## MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

| PIPE DIAMETER | TRENCH WIDTH (FEET) | |
|---|---|---|
| | "H" < 10'-0" | "H" >OR= 10'-0" |
| 18" | 4'-6" | 4'-6" |
| 24" | 5'-0" | 6'-0" |
| 30" | 5'-6" | 7'-6" |
| 36" | 6'-0" | 9'-0" |

## MULTIPLE INSTALLATION OF PVC PIPES

| PIPE DIAMETER | CLEAR DISTANCE BETWEEN PIPES |
|---|---|
| 18" | 1'-6" |
| 24" | 2'-0" |
| 30" | 2'-6" |
| 36" | 3'-0" |

## MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

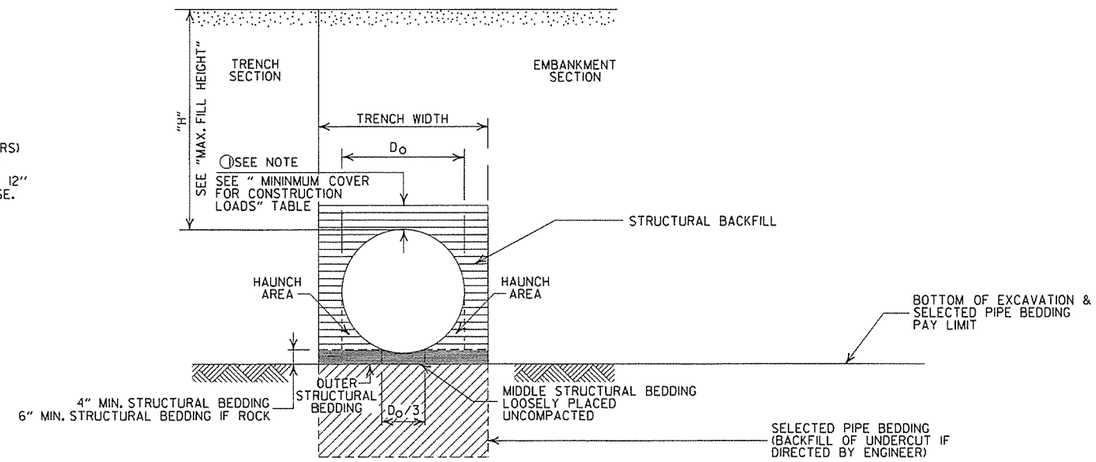
| PIPE DIAMETER | "H" |
|---|---|
| 18" | 45'-0" |
| 24" | 45'-0" |
| 30" | 40'-0" |
| 36" | 40'-0" |

① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

## MINIMUM COVER FOR CONSTRUCTION LOADS

| PIPE DIAMETER | ② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS | | | |
|---|---|---|---|---|
| | 18.0-50.0 (KIPS) | 50.0-75.0 (KIPS) | 75.0-110.0 (KIPS) | 110.0-175.0 (KIPS) |
| 18" THRU 36" | 2'-0" | 2'-6" | 3'-0" | 3'-0" |

②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.




## TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

## CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

## GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFROM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICIATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

## - LEGEND -

H = FILL HEIGHT (FT.)
$D_O$ = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 2-27-14 | REVISED GENERAL NOTE 1. | |
| 12-15-11 | REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL | |
| 11-17-10 | ISSUED | |

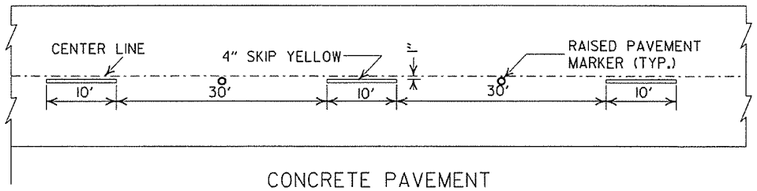
ARKANSAS STATE HIGHWAY COMMISSION

# PLASTIC PIPE CULVERT (PVC F949)

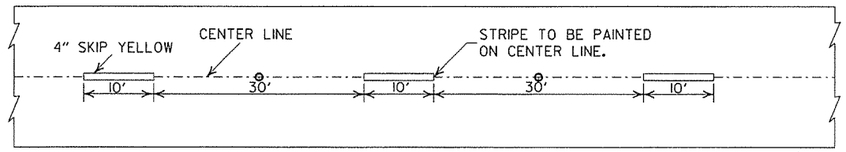
STANDARD DRAWING PCP-2

NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

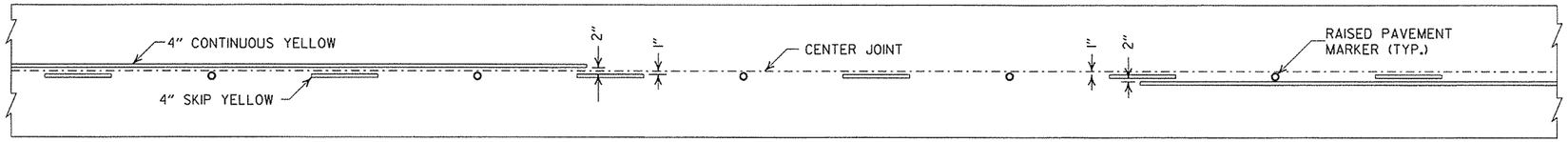



CONCRETE PAVEMENT

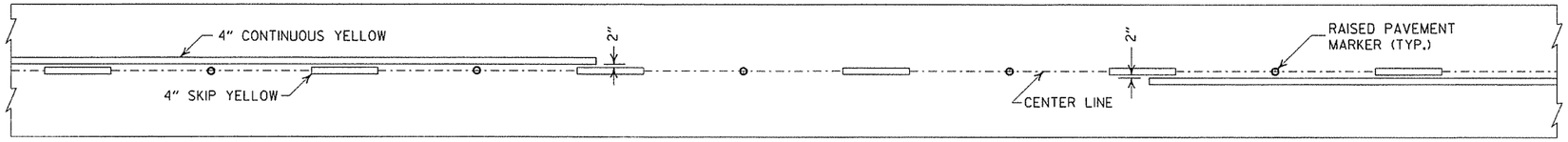



ASPHALT PAVEMENT

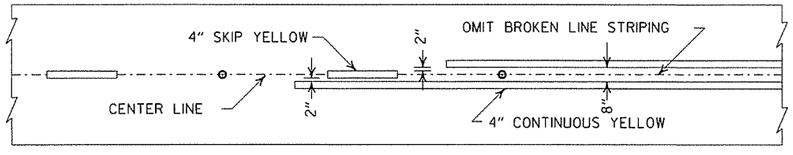
## BROKEN LINE STRIPING



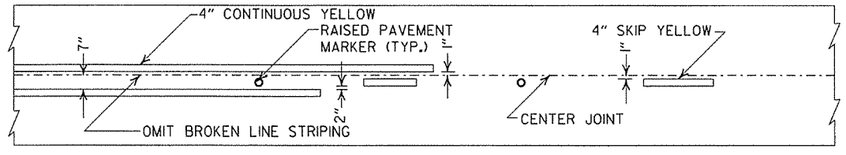

## SOLID LINE STRIPING ON CONCRETE PAVEMENT




## SOLID LINE STRIPING ON ASPHALT PAVEMENT

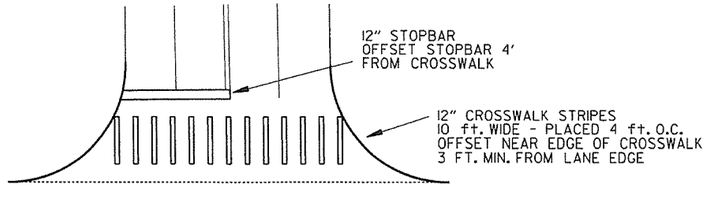



ASPHALT PAVEMENT

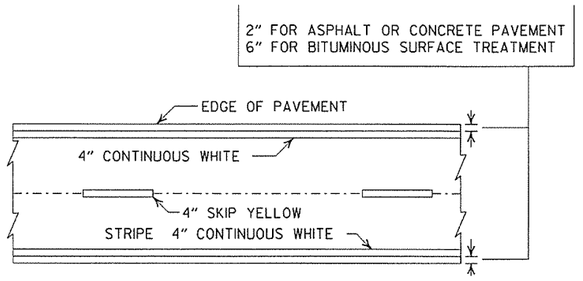



CONCRETE PAVEMENT

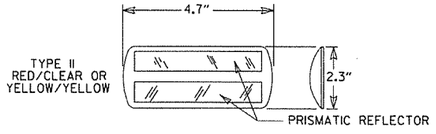
## STRIPING AT ADJACENT NO PASSING LANES



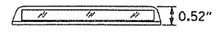

## CROSSWALK AND STOPBAR DETAILS




PAVEMENT EDGE LINE MARKING




NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.




DETAIL OF STANDARD RAISED PAVEMENT MARKERS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

| DATE | REVISION | FILMED |
|---|---|---|
| 9-12-13 | REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS | |
| 11-17-10 | REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS | |
| 11-18-04 | REVISED NOTE 2 & GENERAL NOTES | |
| 8-22-02 | ADDED CROSSWALK & STOPBAR DTLS. | |
| 7-02-98 | ADDED DETAILS OF STD. RAISED PAV'T. MARKERS | |
| 4-26-96 | REV. NOTES 3&4; ADDED R.P.M. | |
| 9-30-80 | DRAWN | 1-9-30-80 |

ARKANSAS STATE HIGHWAY COMMISSION

# PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

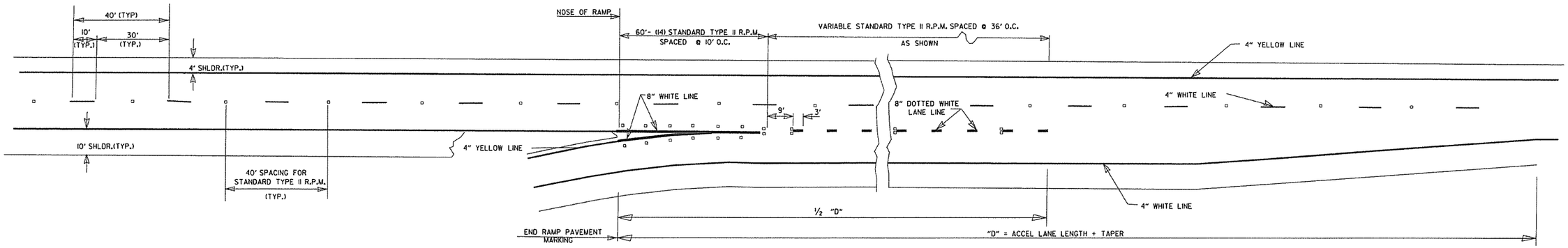
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

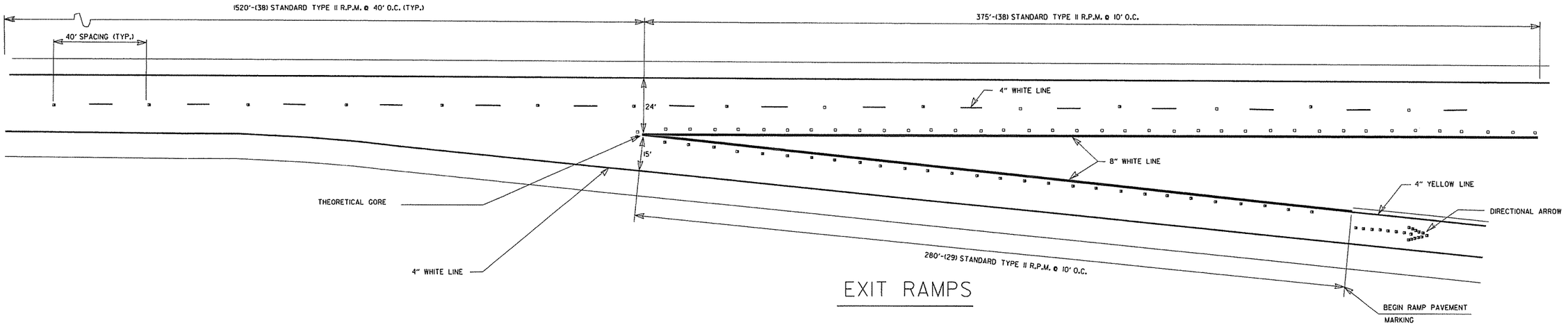
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

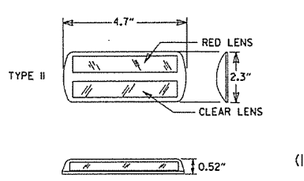
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH




## ENTRANCE RAMPS

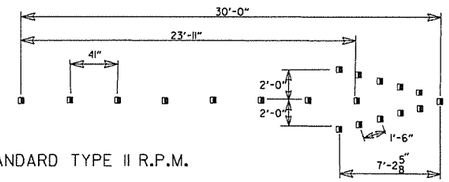



## EXIT RAMPS




DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.




(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTO QUALIFIED PRODUCTS LIST.

| DATE | REVISION | FILMED |
|---|---|---|
| 9-12-13 | REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS | |
| 7-26-12 | REVISED RPM NOTATION | |
| 12-15-11 | REVISED RPMs ACCORDING TO LATEST POLICY | |
| 11-17-10 | REMOVED PLOWABLE PAVEMENT MARKERS | |
| 6-3-10 | REVISED PER 2009 MUTCD | |
| 11-18-04 | REVISED NOTES | |
| 8-22-02 | ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS | |
| 5-18-00 | REMOVED HASHMARKS | |
| 7-02-98 | CHANGED TYPES TO ROMAN NUMERALS | |
| 4-26-96 | ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP | |
| 2-2-95 | PLACED IN USE | 2-2-95 |

ARKANSAS STATE HIGHWAY COMMISSION

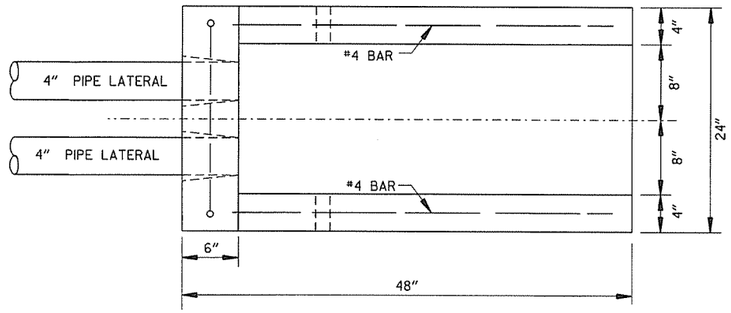
# PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2

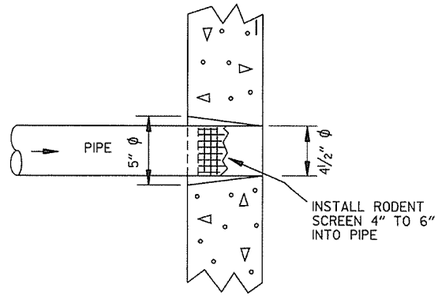
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

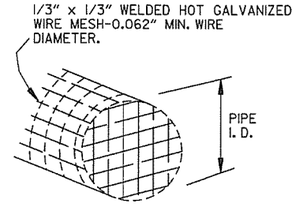
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



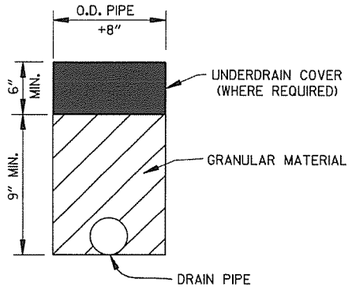

PLAN VIEW

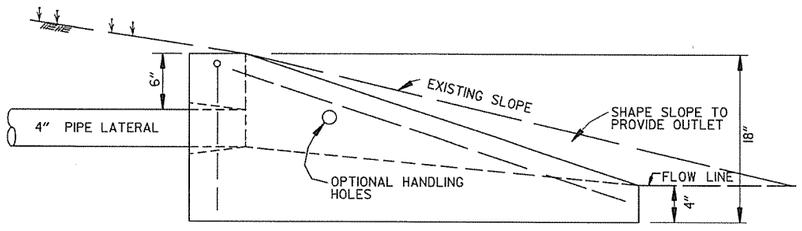



DETAIL OF HOLE FOR 4" PIPE

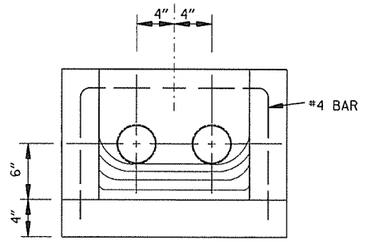



DETAIL OF RODENT SCREEN

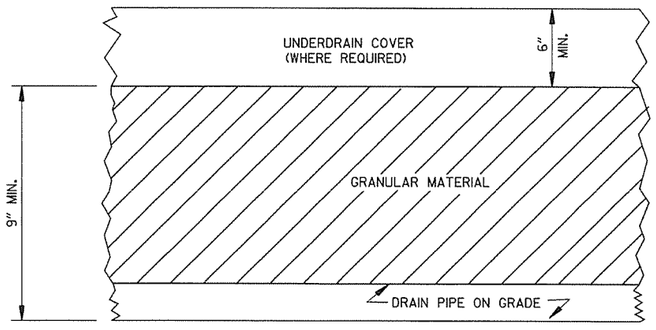



SIDE VIEW

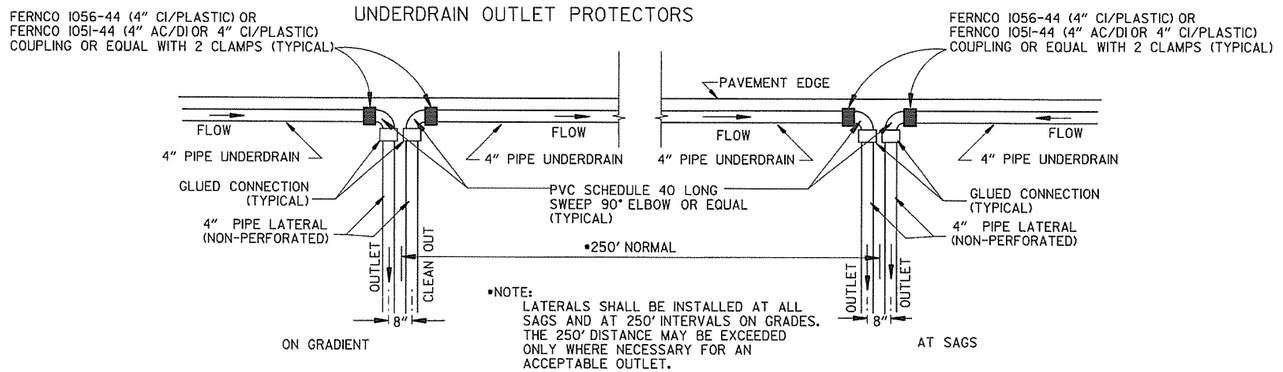



FRONT VIEW




DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS




DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 4-10-03 | REVISED NOTE 3 | |
| 1-12-00 | REVISED DETAIL OF UNDERDRAIN LATERALS | |
| 11-18-98 | REVISED NOTE | |
| 10-18-96 | REVISED MIN. DEPTH & GEOTEXTILE FABRIC | |
| 4-26-96 | ADDED LATERAL NOTE; 5½" TO 5" | |
| 11-22-95 | REVISED LATERALS | |
| 7-20-95 | REVISED LATERALS & ADDED NOTE | |
| 11- 3-94 | REVISED FOR DUAL LATERALS | 11- 3-94 |
| 10- 1-92 | SUBSTITUTED GEOTEXTILE | 10- 1-92 |
| 8-15-91 | ADDED POLYEDTHYLENE PIPE | 8-15-91 |
| 11- 8-90 | DELETED ALTERNATE NOTE | 11- 8-90 |
| 1-25-90 | ADDED 4" SNAP ADAPTER | 1-25-90 |
| 11-30-89 | DEL. (SUBGRADE); ADDED (WHERE REQUIRED) | 11-30-89 |
| 7-15-88 | ISSUED P.L.M. | 647-7-15-88 |

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

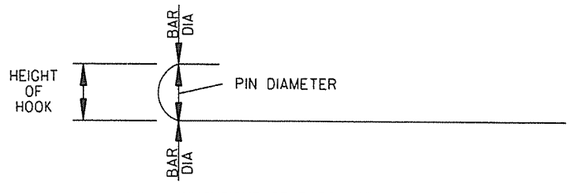
STANDARD DRAWING PU-1

7-20-95 INSTD.PUI

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

| BAR SIZE | PIN DIAMETER | HOOK EXTENSION "K" |
|---|---|---|
| 3 | 2¼" | 4" |
| 4 | 3 " | 4½" |
| 5 | 3¾" | 5" |
| 6 | 4½" | 6" |
| 7 | 5¼" | 7" |
| 8 | 6" | 8" |

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.




NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

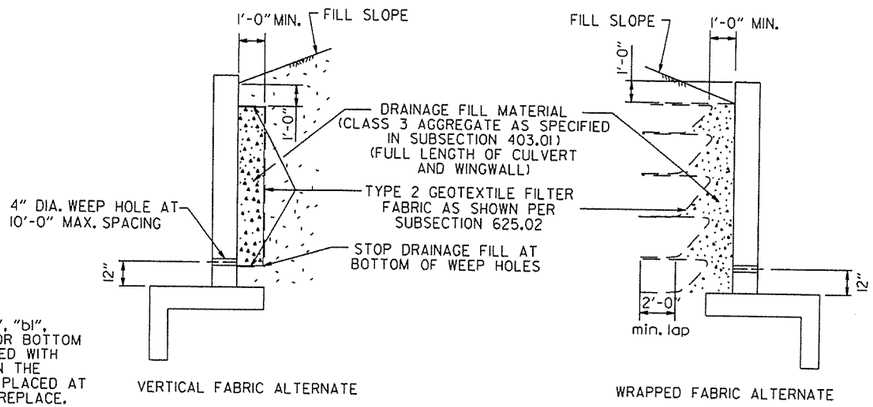
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

| BAR SIZE: "b", "b1", "b2" OR "b3" | LENGTH OF HOOKED BAR | LENGTH OF STRAIGHT BAR |
|---|---|---|
| #4 | L + 1' - 0" | SEE "c" BAR LENGTH |
| #5 | L + 1' - 2" | SEE "c" BAR LENGTH |
| #6 | L + 1' - 4" | SEE "c" BAR LENGTH |
| #7 | L + 1' - 8" | SEE "c" BAR LENGTH |
| #8 | L + 1' - 10" | SEE "c" BAR LENGTH |
| #9 | L + 2' - 6" | SEE "c" BAR LENGTH |

L = "OW" - 3 INCHES




WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

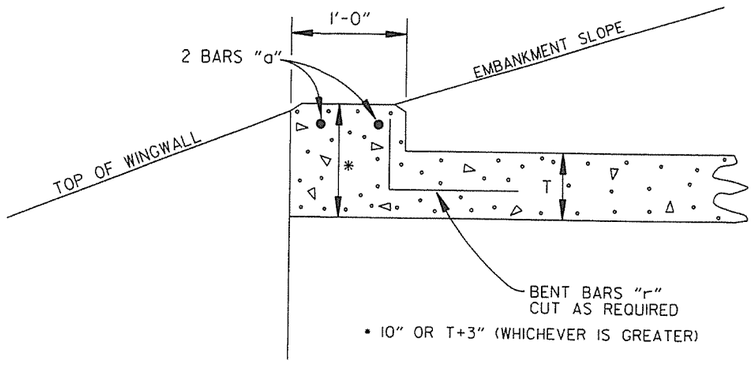
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.




NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

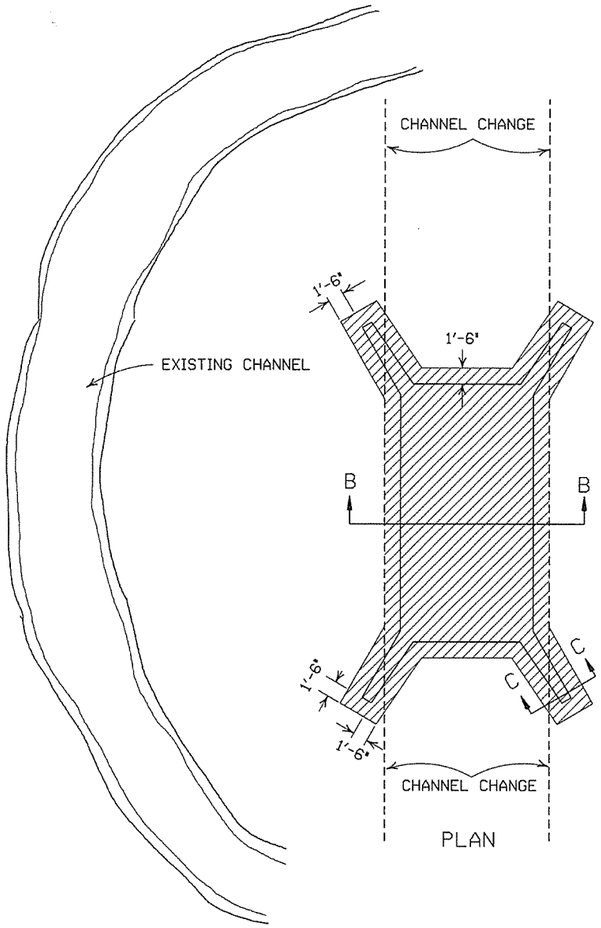
R.C. BOX CULVERT HEADWALL MODIFICATIONS

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 7/26/12 | REV. DRAINAGE FILL MATERIAL & DETAIL | |
| 12/15/11 | REQUIRE WEEP HOLES IN BOX CULVERT WALLS | |
| 5-25-06 | REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM | |
| 11-16-01 | ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES | |
| 10-18-96 | REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM | |
| 10-12-95 | MOVED SOLID SODDING DETAIL TO RCB-2 | |
| 6-2-94 | ADDED SOLID SODDING PLAN DETAIL | |
| 8-5-93 | REVISED PIN DIAMETER TO SPECS. | |
| 8-15-91 | DRAWN AND ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

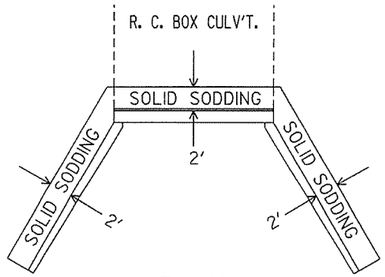
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1




PLAN

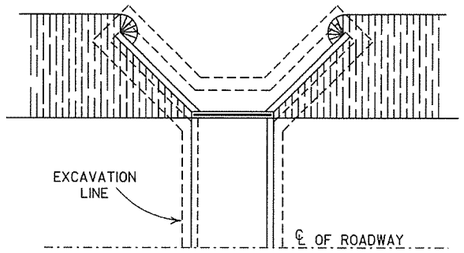
SOLID SODDING



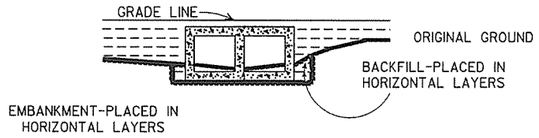

PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

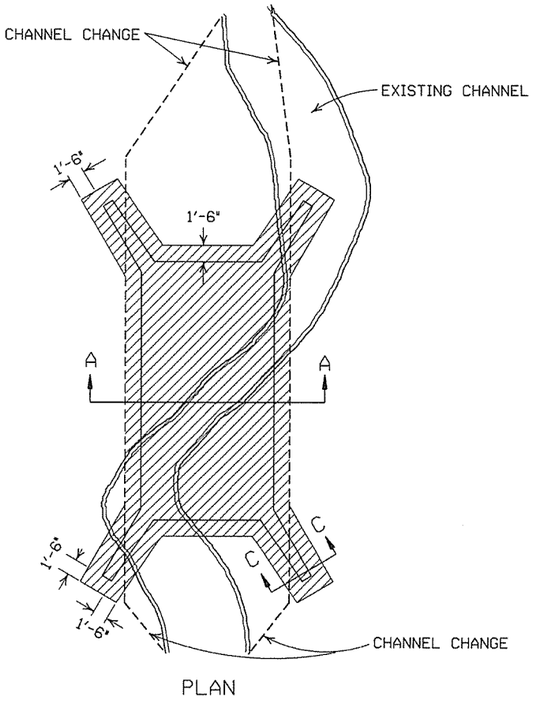



PLAN

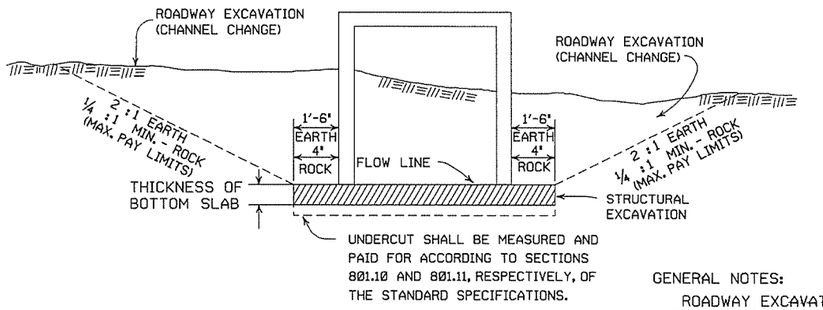



LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

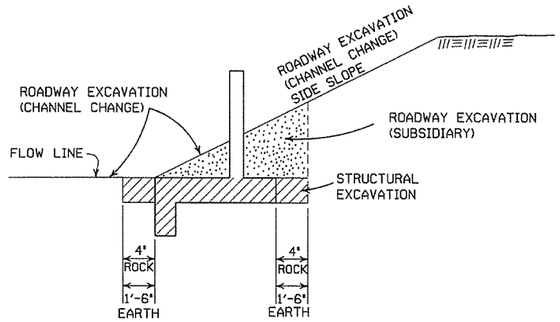



PLAN

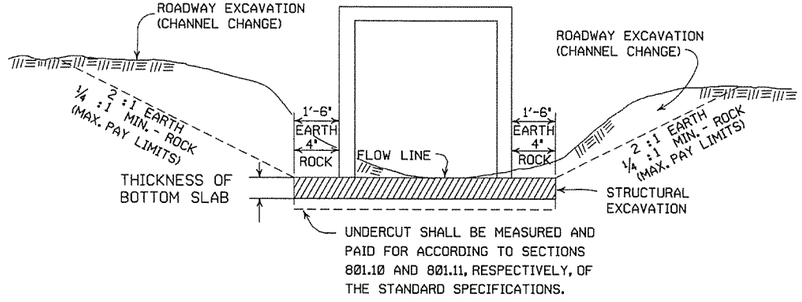



SECTION B-B

DETAILS FOR NEW CHANNELS




SECTION C-C




SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

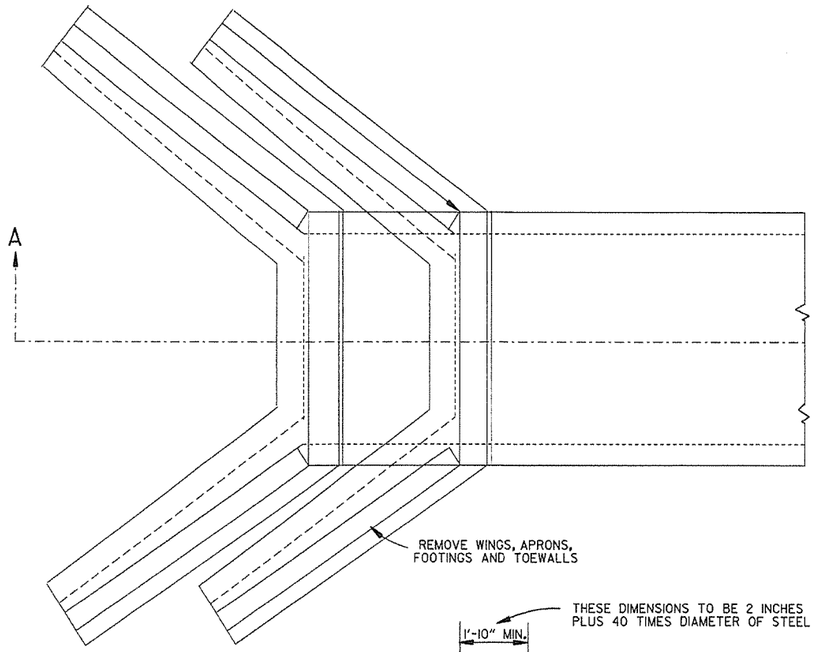
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

| DATE | REVISION | FILMED |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| 11-20-03 | REVISED SECTION A-A NOTE | |
| 8-22-02 | REVISED SECTION B-B NOTE | |
| 10-12-95 | COMBINED 1891B AND 1888A | |
| 1-4-83 | REVISED GENERAL NOTES | 674-1-4-83 |
| | AND ADDED MAXIMUM PAY | |
| | LIMIT NOTES. | |
| 2-2-76 | EXCAV. PAY LIMITS | 917-2-2-76 |
| 10-2-72 | REVISED AND REDRAWN | 564-10-16-72 |

ARKANSAS STATE HIGHWAY COMMISSION

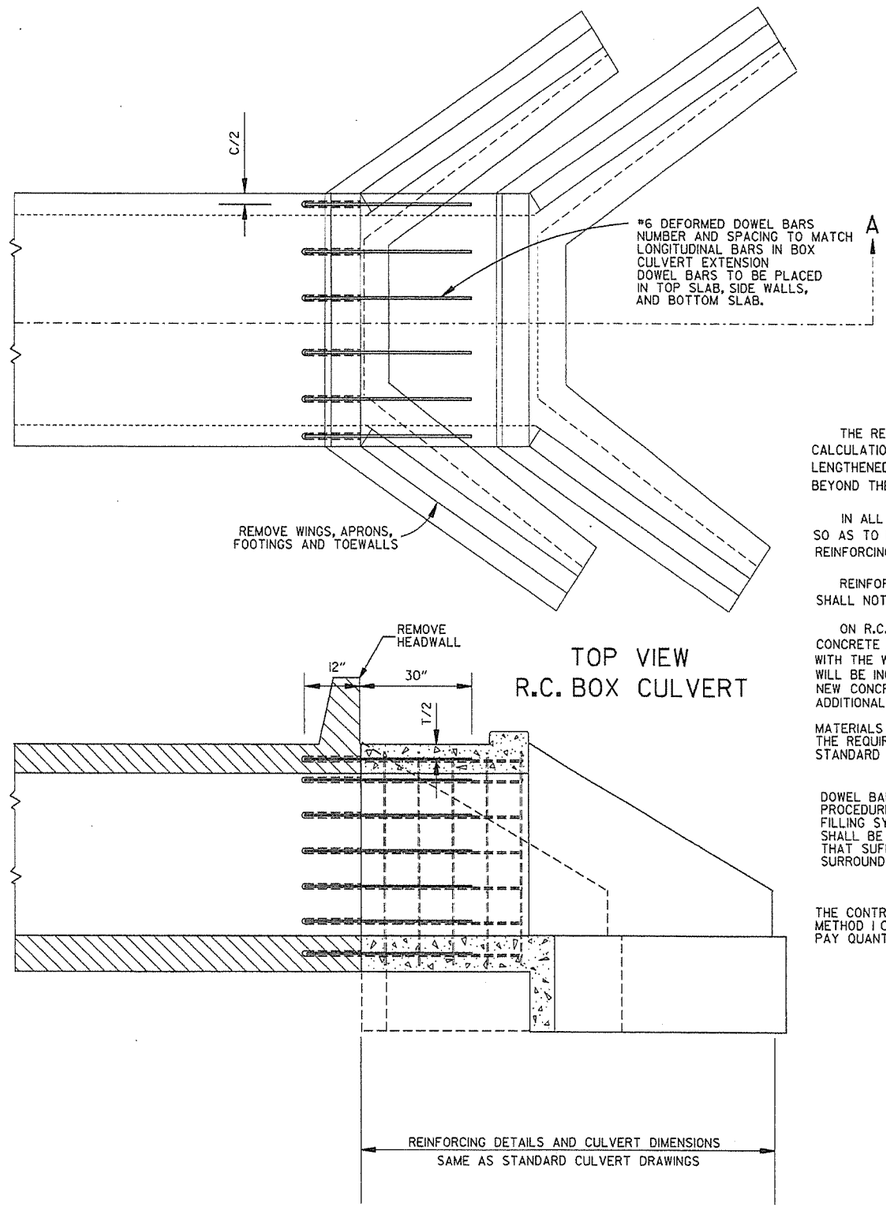
# EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

STANDARD DRAWING RCB-2




TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 1




TOP VIEW
R.C. BOX CULVERT

SECTION A-A
METHOD 2

GENERAL NOTES

| | USE FOR METHOD |
|---|---|
| THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED. | 1 |
| IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL. | 1 |
| REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION. | 1&2 |
| ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. | 1&2 |
| MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS. | 2 |
| DOWEL BARS SHALL BE INSTALLED AS FOLLOWS: THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER, THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER. AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES. | 2 |
| THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2, REGARDLESS OF WHICH METHOD IS USED, PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1. | 1&2 |

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

| DATE | REVISION | DATE FILM |
|---|---|---|
| 10-12-95 | CHANGED DRAWING # FROM 144-A | |
| 4-1-93 | ADDED GENERAL NOTE | |
| 10-1-92 | ADDED ALT. METHOD OF EXTENSION | |
| 11-30-89 | REDRAWN | |
| 1-4-83 | ELIMINATED CONCRETE CLASS | |
| 12-20-56 | RETRACED | |

ARKANSAS STATE HIGHWAY COMMISSION

METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

STANDARD DRAWING RCB-3

## SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

| DEGREE OF CURVE | 30 MPH e | 30 MPH Ls (FT) MINIMUM | 30 MPH Ls (FT) DESIRABLE | 40 MPH e | 40 MPH Ls (FT) MINIMUM | 40 MPH Ls (FT) DESIRABLE | 50 MPH e | 50 MPH Ls (FT) MINIMUM | 50 MPH Ls (FT) DESIRABLE | 55 MPH e | 55 MPH Ls (FT) MINIMUM | 55 MPH Ls (FT) DESIRABLE | 60 MPH e | 60 MPH Ls (FT) MINIMUM | 60 MPH Ls (FT) DESIRABLE | 65 MPH e | 65 MPH Ls (FT) MINIMUM | 65 MPH Ls (FT) DESIRABLE | 70 MPH e | 70 MPH Ls (FT) MINIMUM | 70 MPH Ls (FT) DESIRABLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° 15′ | N. C. | | | N. C. | | | N. C. | | | N. C. | | | N. C. | | | N. C. | | | N. C. | | |
| 0° 30′ | N. C. | | | N. C. | | | N. C. | | | N. C. | | | N. C. | | | N. C. | | | N. C. | | |
| 0° 45′ | N. C. | | | N. C. | | | R. C. | | | 0.022 | | | 0.023 | | | 0.025 | | | 0.028 | | |
| 1° 00′ | N. C. | | | N. C. | | | 0.021 | | | 0.026 | | | 0.030 | | | 0.033 | 250 | | 0.037 | 275 | |
| 1° 15′ | N. C. | | | R. C. | | | 0.026 | 200 | | 0.032 | 225 | | 0.037 | 250 | | 0.041 | | 350 | 0.046 | | 350 |
| 1° 30′ | N. C. | | | 0.021 | | | 0.031 | | | 0.037 | | | 0.043 | | | 0.048 | | | 0.054 | | |
| 1° 45′ | N. C. | | | 0.025 | | | 0.036 | | | 0.043 | | | 0.049 | | | 0.055 | | | 0.062 | | |
| 2° 00′ | R. C. | | | 0.028 | 175 | | 0.040 | | | 0.048 | | | 0.055 | | | 0.062 | | | 0.070 | | |
| 2° 15′ | R. C. | | | 0.031 | | | 0.045 | | 300 | 0.053 | | | 0.061 | | | 0.069 | 265 | | 0.078 | 300 | |
| 2° 30′ | 0.021 | | | 0.034 | | | 0.049 | | | 0.058 | | | 0.067 | | | 0.075 | 280 | | 0.085 | 315 | 400 |
| 2° 45′ | 0.023 | | | 0.037 | | | 0.053 | | | 0.063 | | | 0.072 | | | 0.081 | 300 | | 0.091 | 335 | |
| 3° 00′ | 0.025 | | | 0.040 | | | 0.057 | | | 0.067 | 230 | | 0.077 | 260 | | 0.087 | 315 | | 0.096 | 350 | |
| 3° 15′ | 0.027 | | | 0.043 | | | 0.061 | | | 0.072 | 245 | | 0.082 | 275 | | 0.090 | 325 | | 0.098 | 360 | 450 |
| 3° 30′ | 0.029 | | | 0.046 | | | 0.065 | 205 | | 0.076 | 255 | | 0.086 | 285 | | 0.095 | 340 | 400 | 0.100 | 360 | |
| 3° 45′ | 0.031 | | | 0.049 | | | 0.069 | 215 | | 0.080 | 265 | | 0.090 | 295 | | 0.097 | 345 | | | | |
| 4° 00′ | 0.033 | | | 0.051 | | | 0.072 | 225 | | 0.083 | 270 | | 0.093 | 305 | 400 | 0.099 | 350 | | | | |
| 4° 30′ | 0.037 | | | 0.056 | | | 0.078 | 240 | | 0.087 | 280 | | 0.096 | 315 | | | | | | | |
| 5° 00′ | 0.040 | | | 0.061 | | | 0.083 | 250 | | 0.091 | 295 | 400 | 0.098 | 320 | | | | | | | |
| 5° 30′ | 0.043 | | | 0.066 | 185 | | 0.088 | 260 | | 0.094 | 300 | | | | | | | | | | |
| 6° 00′ | 0.046 | | | 0.070 | 190 | | 0.092 | 270 | | 0.096 | 305 | | | | | | | | | | |
| 6° 30′ | 0.050 | | | 0.074 | 200 | | 0.095 | 280 | 350 | 0.100 | 315 | | | | | | | | | | |
| 7° 00′ | 0.053 | | | 0.078 | 210 | | 0.098 | 285 | | | | | | | | | | | | | |
| 7° 30′ | 0.056 | | | 0.081 | 215 | | 0.099 | 290 | | | | | | | | | | | | | |
| 8° 00′ | 0.058 | | | 0.084 | 220 | 300 | 0.100 | 290 | | | | | | | | | | | | | |
| 8° 30′ | 0.061 | | | 0.087 | 225 | | | | | | | | | | | | | | | | |
| 9° 00′ | 0.063 | | | 0.089 | 230 | | | | | | | | | | | | | | | | |
| 10° 00′ | 0.068 | 160 | | 0.094 | 235 | | | | | | | | | | | | | | | | |
| 11° 00′ | 0.072 | 170 | | 0.097 | 250 | | | | | | | | | | | | | | | | |
| 12° 00′ | 0.076 | 175 | | 0.099 | 250 | | | | | | | | | | | | | | | | |
| 13° 00′ | 0.080 | 180 | | 0.100 | 250 | | | | | | | | | | | | | | | | |
| 14° 00′ | 0.083 | 190 | | | | | | | | | | | | | | | | | | | |
| 15° 00′ | 0.086 | 195 | | | | | | | | | | | | | | | | | | | |
| 16° 00′ | 0.089 | 200 | | | | | | | | | | | | | | | | | | | |
| 17° 00′ | 0.091 | 200 | | | | | | | | | | | | | | | | | | | |
| 18° 00′ | 0.093 | 205 | | | | | | | | | | | | | | | | | | | |
| 19° 00′ | 0.095 | 210 | | | | | | | | | | | | | | | | | | | |
| 20° 00′ | 0.097 | 215 | 300 | | | | | | | | | | | | | | | | | | |
| 21° 00′ | 0.098 | 215 | | | | | | | | | | | | | | | | | | | |
| 22° 00′ | 0.099 | 215 | | | | | | | | | | | | | | | | | | | |
| 23° 00′ | 0.099 | 215 | | | | | | | | | | | | | | | | | | | |
| 24° 00′ | 0.100 | 220 | | | | | | | | | | | | | | | | | | | |

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 4° 15′ | D MAX = 3° 30′

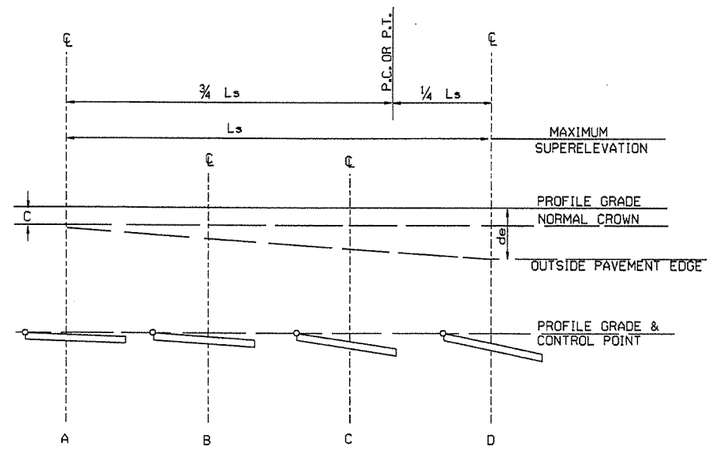
### GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%

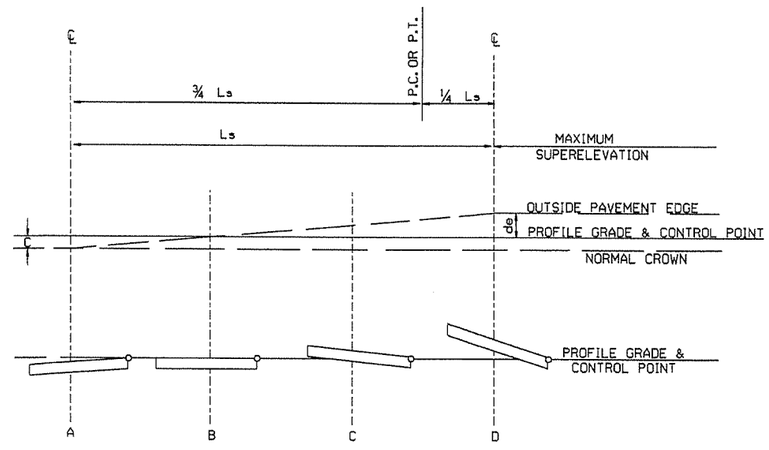
### ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
S - SUPERELEVATION
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT
e - MAXIMUM RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
C - NORMAL CROWN (FT.)




ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$




ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 01-09-87 | ISSUED | 578-1-15-87 |

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

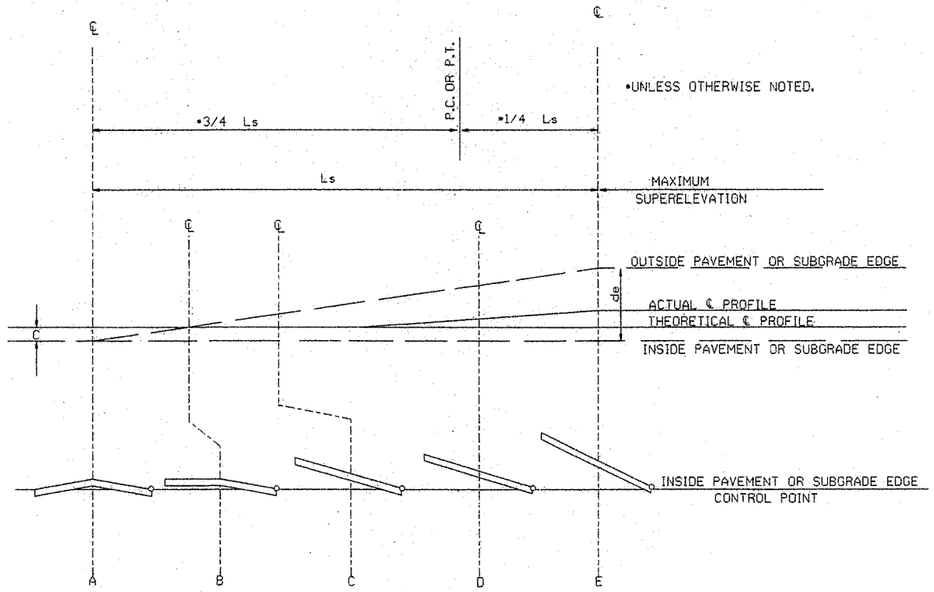
## SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

| DEGREE OF CURVE | 30 MPH e | 30 MPH Ls (FT) MINIMUM | 30 MPH Ls (FT) DESIRABLE | 40 MPH e | 40 MPH Ls (FT) MINIMUM | 40 MPH Ls (FT) DESIRABLE | 50 MPH e | 50 MPH Ls (FT) MINIMUM | 50 MPH Ls (FT) DESIRABLE | 55 MPH e | 55 MPH Ls (FT) MINIMUM | 55 MPH Ls (FT) DESIRABLE | 60 MPH e | 60 MPH Ls (FT) MINIMUM | 60 MPH Ls (FT) DESIRABLE | 70 MPH e | 70 MPH Ls (FT) MINIMUM | 70 MPH Ls (FT) DESIRABLE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° 15′ | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | |
| 0° 30′ | N.C. | | | N.C. | | | N.C. | | | N.C. | | | N.C. | | | 0.028 | | |
| 0° 45′ | N.C. | | | N.C. | | | R.C. | | | 0.022 | | | 0.023 | | | 0.037 | 275 | 300 |
| 1° 00′ | N.C. | | | N.C. | | | 0.021 | | | 0.026 | | | 0.030 | | | 0.046 | | |
| 1° 15′ | N.C. | | | R.C. | | | 0.026 | | | 0.032 | | | 0.037 | | | 0.054 | | |
| 1° 30′ | N.C. | | | 0.021 | | | 0.031 | 200 | | 0.037 | 225 | | 0.043 | 250 | | 0.062 | | |
| 1° 45′ | N.C. | | | 0.025 | | | 0.036 | | | 0.043 | | 300 | 0.049 | | 300 | 0.070 | | |
| 2° 00′ | R.C. | | | 0.028 | 175 | | 0.040 | | | 0.048 | | | 0.055 | | | 0.078 | 300 | |
| 2° 15′ | R.C. | | | 0.031 | | | 0.045 | | 250 | 0.053 | | | 0.061 | | | 0.085 | 315 | 350 |
| 2° 30′ | 0.021 | | | 0.034 | | | 0.049 | | | 0.058 | | | 0.067 | | | 0.091 | 335 | |
| 2° 45′ | 0.023 | | | 0.037 | | | 0.053 | | | 0.063 | | | 0.072 | | | 0.096 | 350 | 400 |
| 3° 00′ | 0.025 | | | 0.040 | | 200 | 0.057 | | | 0.067 | 230 | | 0.077 | 260 | | 0.098 | 360 | |
| 3° 15′ | 0.027 | 150 | | 0.043 | | | 0.061 | | | 0.072 | 245 | | 0.082 | 275 | | 0.100 | 360 | |
| 3° 30′ | 0.029 | | | 0.046 | | | 0.065 | 205 | | 0.076 | 255 | | 0.086 | 285 | | | | |
| 3° 45′ | 0.031 | | 200 | 0.049 | | | 0.069 | 215 | | 0.080 | 265 | | 0.090 | 295 | 350 | | | |
| 4° 00′ | 0.033 | | | 0.051 | | | 0.072 | 225 | | 0.083 | 270 | | 0.093 | 305 | | | | |
| 4° 30′ | 0.037 | | | 0.056 | | | 0.078 | 240 | | 0.087 | 280 | | 0.096 | 315 | | | | |
| 5° 00′ | 0.040 | | | 0.061 | | | 0.083 | 250 | | 0.091 | 295 | 350 | 0.098 | 320 | | | | |
| 5° 30′ | 0.043 | | | 0.066 | 185 | | 0.088 | 260 | | 0.094 | 300 | | | | | | | |
| 6° 00′ | 0.046 | | | 0.070 | 190 | | 0.092 | 270 | 300 | 0.096 | 305 | | | | | | | |
| 6° 30′ | 0.050 | | | 0.074 | 200 | | 0.095 | 280 | | 0.100 | 315 | | | | | | | |
| 7° 00′ | 0.053 | | | 0.078 | 210 | | 0.098 | 285 | | | | | | | | | | |
| 7° 30′ | 0.056 | | | 0.081 | 215 | | 0.099 | 290 | | | | | | | | | | |
| 8° 00′ | 0.058 | | | 0.084 | 220 | 250 | 0.100 | 290 | | | | | | | | | | |
| 8° 30′ | 0.061 | | | 0.087 | 225 | | | | | | | | | | | | | |
| 9° 00′ | 0.063 | | | 0.089 | 230 | | | | | | | | | | | | | |
| 10° 00′ | 0.068 | 160 | | 0.094 | 235 | | | | | | | | | | | | | |
| 11° 00′ | 0.072 | 170 | | 0.097 | 250 | | | | | | | | | | | | | |
| 12° 00′ | 0.076 | 175 | | 0.099 | 250 | | | | | | | | | | | | | |
| 13° 00′ | 0.080 | 180 | | 0.100 | 250 | | | | | | | | | | | | | |
| 14° 00′ | 0.083 | 190 | | | | | | | | | | | | | | | | |
| 15° 00′ | 0.086 | 195 | | | | | | | | | | | | | | | | |
| 16° 00′ | 0.089 | 200 | | | | | | | | | | | | | | | | |
| 17° 00′ | 0.091 | 200 | | | | | | | | | | | | | | | | |
| 18° 00′ | 0.093 | 205 | | | | | | | | | | | | | | | | |
| 19° 00′ | 0.095 | 210 | | | | | | | | | | | | | | | | |
| 20° 00′ | 0.097 | 215 | 250 | | | | | | | | | | | | | | | |
| 21° 00′ | 0.098 | 215 | | | | | | | | | | | | | | | | |
| 22° 00′ | 0.099 | 215 | | | | | | | | | | | | | | | | |
| 23° 00′ | 0.099 | 215 | | | | | | | | | | | | | | | | |
| 24° 00′ | 0.100 | 220 | | | | | | | | | | | | | | | | |

D MAX = 24° 45′ | D MAX = 13° 15′ | D MAX = 8° 15′ | D MAX = 6° 30′ | D MAX = 5° 15′ | D MAX = 3° 30′

ABBREVIATIONS

NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)




STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

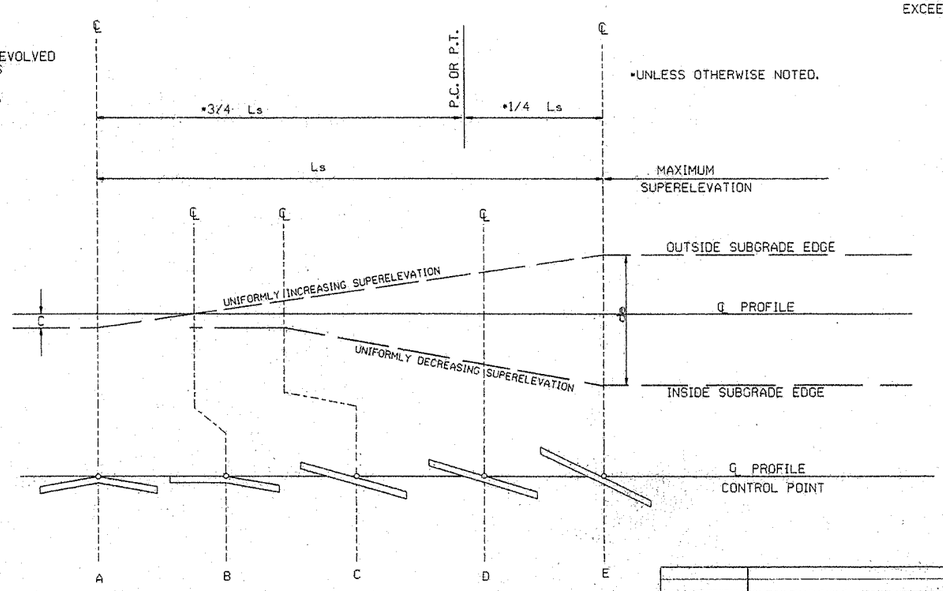
GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

3 LANE UNDIVIDED - - - - - +20%
4 LANE UNDIVIDED - - - - - +50%
5 LANE UNDIVIDED - - - - - +80%
6 LANE UNDIVIDED - - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.




STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 10-18-96 | ADDED FORMULA | 10-18-96 |
| 01-09-87 | ISSUED | 534-1-9-87 |

ARKANSAS STATE HIGHWAY COMMISSION

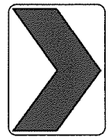
# TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

FILE STDSE2.DGN

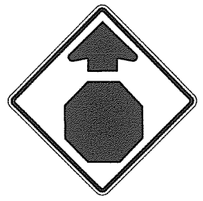
R1-1
30"X30"

W1-3
30"X30"
(LT. OR RT.)



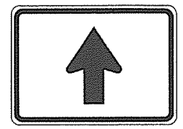
W1-8
18"X24"

W2-5
30"X30"

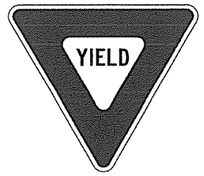


W3-1
36"X36"

W5-1
36"X36"

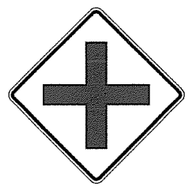


M6-3
21"X15"



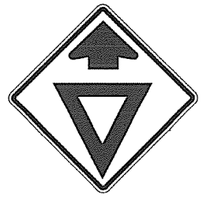

R1-2
36"X36"X36"

W1-4
30"X30"
(LT. or RT.)



W2-1
30"X30"

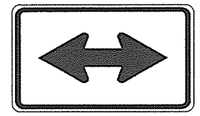
S1-1
36"X36"



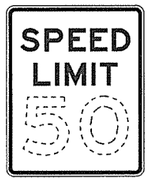
W3-2
36"X36"

County
Route Marker
M1-6
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.

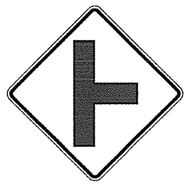


M6-4
21"X15"




R2-1
24"X30"

W1-5
30"X30"
(LT. or RT.)

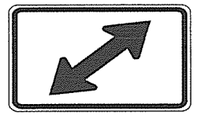


W2-2
30"X30"

W5-2
36"X36"

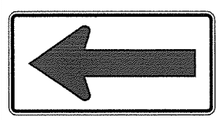
W8-3
36"X36"

R1-3P
18"X6"

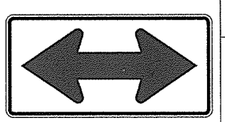


M6-5
21"X15"

W1-1
30"X30"
(LT. or RT.)



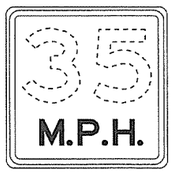
W1-6
48"X24"



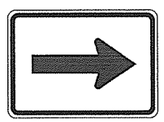
W1-7
48"X24"

W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

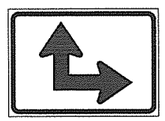



W13-1P
18"X18"

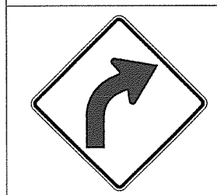


M6-1
21"X15"

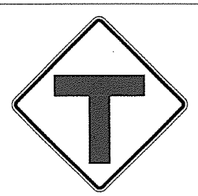
NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.



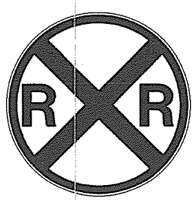
M6-6
21"X15"



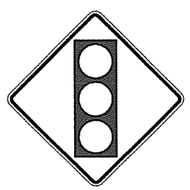
W1-2
30"X30"
(LT. or RT.)



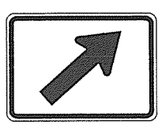
W2-4
30"X30"



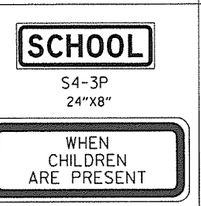

W10-1
36" DIAMETER



W3-3
36"X36"



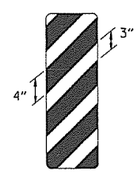
M6-2
21"X15"




S4-3P
24"X8"



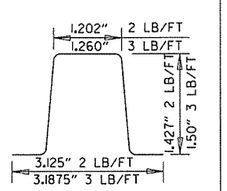

S4-2P
24"X10"



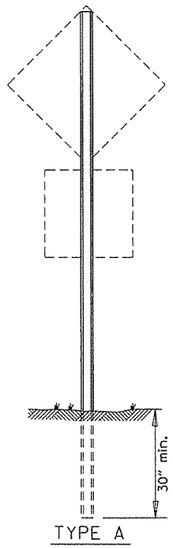

OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

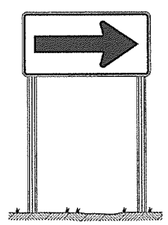



(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

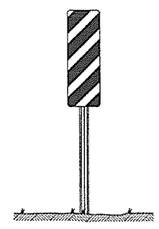



TYPE A

NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.



TYPE B



TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

## STANDARD HIGHWAY SIGNS

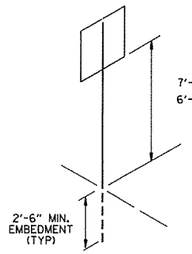
## SUPPORT ASSEMBLIES

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 9-12-13 | DELETED JOB NO. BLOCK; REVISED R1-3 TO R1-3P | |
| 4-17-08 | REVISED SIGN DESIGNATION - W3-1& W3-2 | |
| 4-10-03 | REVISED W5-2, W8-3, OM-3; ADDED W1-8 | |
| 1-5-81 | REDRAWN | 960-1-15-81 |
| 9-15-78 | ADDED W14-3 | 877-9-15-78 |
| 9-2-76 | POST WT. | 623-9-3-76 |
| 5-3-76 | STEEL POST WT. FROM 2"-3"; ADDED S4-2 & S4-3 | 504-5-3-76 |
| 8-12-74 | REV. HT. TYPE "C" ASSEMBLY | 500-8-21-74 |
| 12-21-72 | ADDED M6-2,3,4,5,6 | 500-12-21-72 |
| 12-1-72 | ISSUED | 562-12-1-72 |

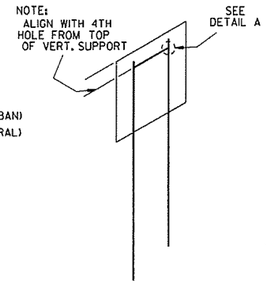
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

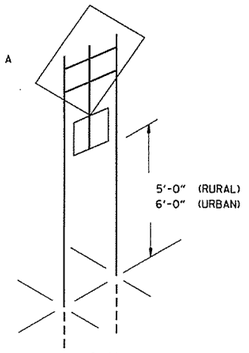
STANDARD DRAWING SHS-1



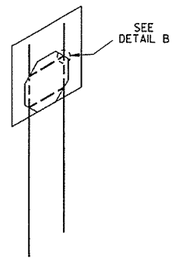
U-1



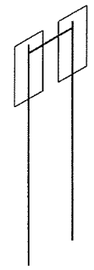
U-2

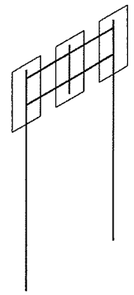


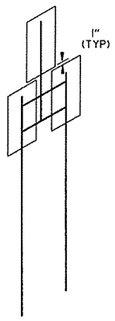
U-2 (A)



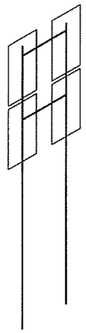
U-2 (B)

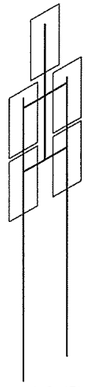

U-2 (1)

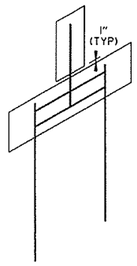

U-2 (2)



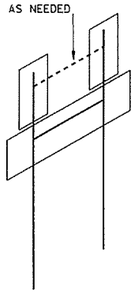
U-2 (3)


U-2 (4)

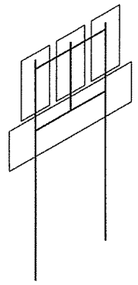

U-2 (5)

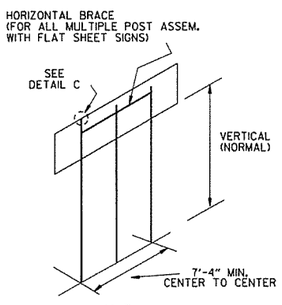


U-2 (6)

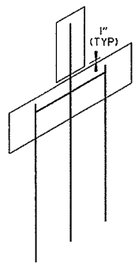


U-2 (7)

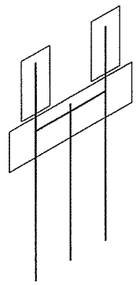

U-2 (8)

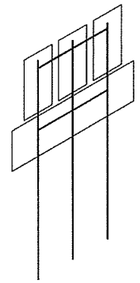


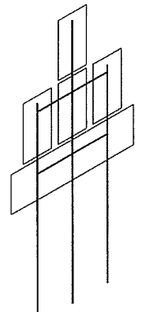
U-3

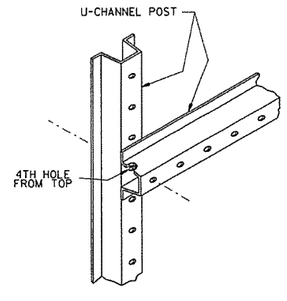


U-3 (1)

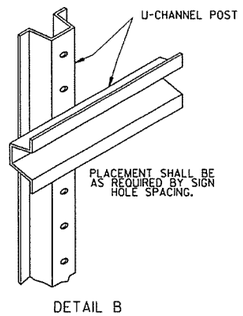

U-3 (2)


U-3 (3)

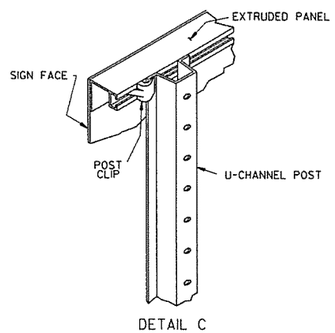

U-3 (4)



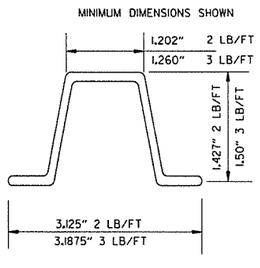
DETAIL A
SHOWING HORIZONTAL BRACE



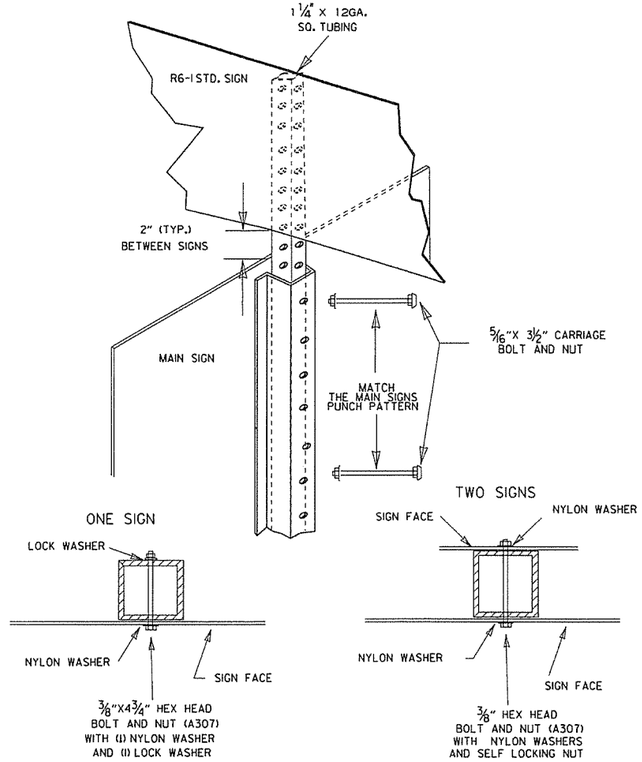
DETAIL B
SHOWING BACK-TO-BACK INSTALLATION



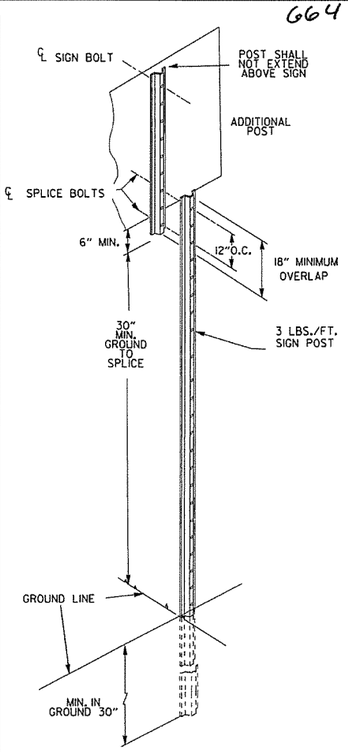
DETAIL C
SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



DETAIL C
U-CHANNEL POST



DETAIL E
R6-1 EXTENSION
FOR U-CHANNEL POST



DETAIL F
DETAIL OF SPLICES

NOTES:

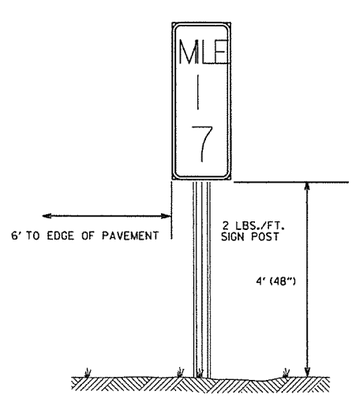
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL ( F ).

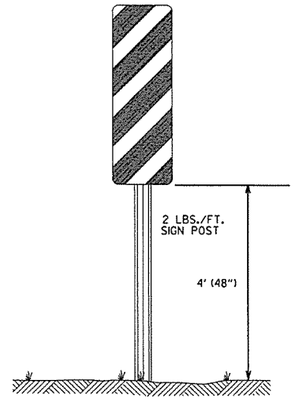
NORMAL INSTALLATIONS WILL REQUIRE $\frac{5}{16}$" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

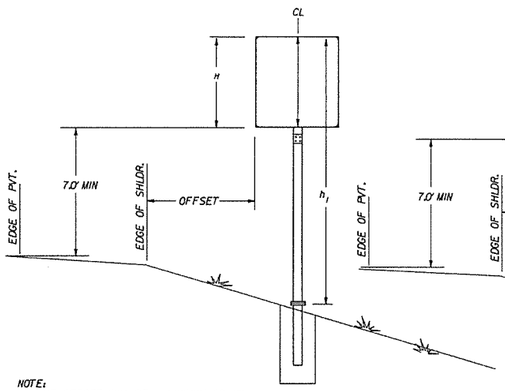
| DATE | REVISION | FILMED |
|---|---|---|
| | | |
| | | |
| 9-12-13 | REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS | |
| 10-9-03 | REMOVED ROUND POST & REVISED SPACING | |
| 10-12-95 | MOVED UPPER SPLICE | |
| 6-8-95 | REVISED SPLICE DETAIL | 6-8-95 |
| 2-2-95 | REDRAWN | 2-2-95 |

ARKANSAS STATE HIGHWAY COMMISSION

# U-CHANNEL POST ASSEMBLIES

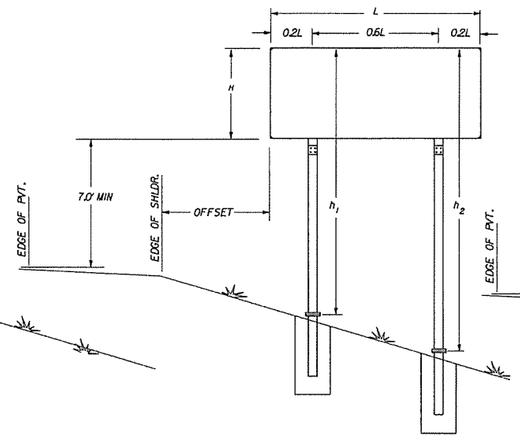
STANDARD DRAWING SHS-2

| POST SIZE | BASE CONNECTION DATA | | | | | | | | | | FUSE PLATE DATA | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BOLT SIZE | BOLT TORQUE (INCH/LBS) | A | B | C | D | E | $t_1$ | $t_2$ | W | R | F | G | J | K | M | $d_1$ | $d_2$ | $t_3$ | BOLT SIZE | WT. OF EACH FUSE PLATE LBS. |
| W 6X9 | 5/8" x 2 3/4" | 480"-680" | 5" | 2" | 1 1/4" | 2 3/4" | 1 1/16" | 3/4" | 1/2" | 1/4" | 11/32" | 4 1/4" | 2" | 4" | 2 1/4" | 1" | 9/16" | 3/4" | 1/4" | 1/2" x 1 1/2" | 1.01 |
| W 6X12 | | | | | | | | | | | | | | | | | | | | | |
| W 6X15 | | | | | | | | | | | | 5" | 2 1/2" | 6" | 3 1/2" | 1 1/2" | 11/16" | 1 1/4" | 3/8" | 5/8" x 2 1/4" | 2.51 |
| W 8X18 | 3/4" x 3 1/2" | 750"-1050" | 6" | 2 1/4" | 1 3/8" | 3 1/2" | 1 1/4" | 1" | 3/4" | 5/16" | 11/32" | 5" | 2 1/2" | 5 1/4" | 2 3/4" | 1 1/4" | 13/16" | 1 1/16" | 3/8" | 3/4" x 2 1/4" | 2.26 |
| W 8X21 | | | | | | | | | | | | 5 1/2" | 2 1/2" | 5 1/4" | 2 3/4" | 1 1/4" | 13/16" | 1" | 1/2" | 3/4" x 2 1/4" | 3.35 |
| W 10X22 | | | | | | | | | | | | 6" | 3" | 5 3/4" | 2 3/4" | 1 3/8" | 1 1/16" | 1 1/8" | 1/2" | 3/4" x 2 1/4" | 4.03 |
| W 10X26 | | | | | | | | | | | | | | | | | | | | | |
| W 12X26 | | | | | | | | | | | | 6" | 3" | 6 1/2" | 3 1/2" | 1 3/8" | 1 1/16" | 1 5/16" | 1/2" | 3/4" x 2 1/4" | 4.47 |

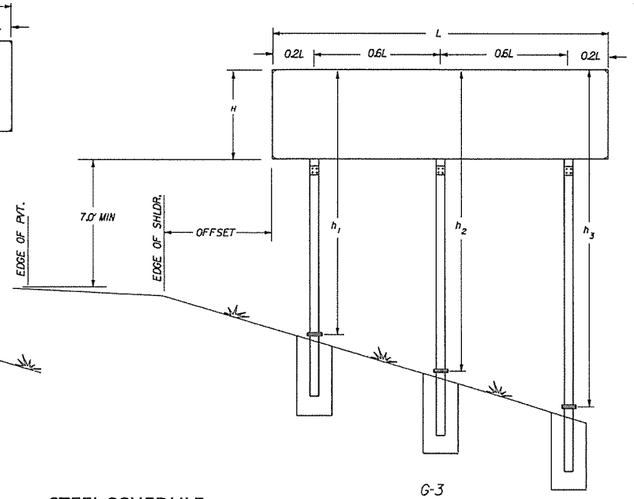



NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER

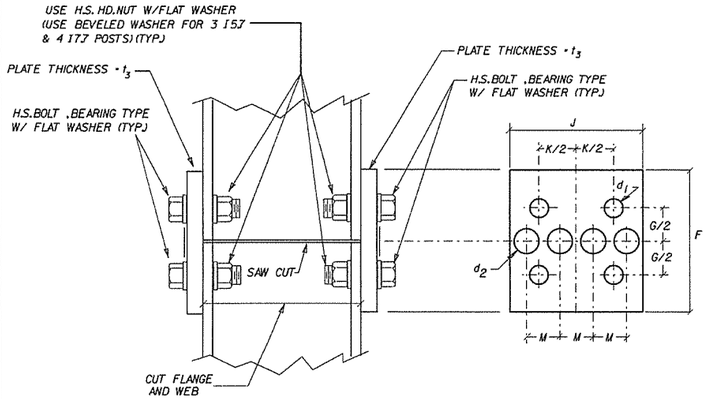
G-1




G-2



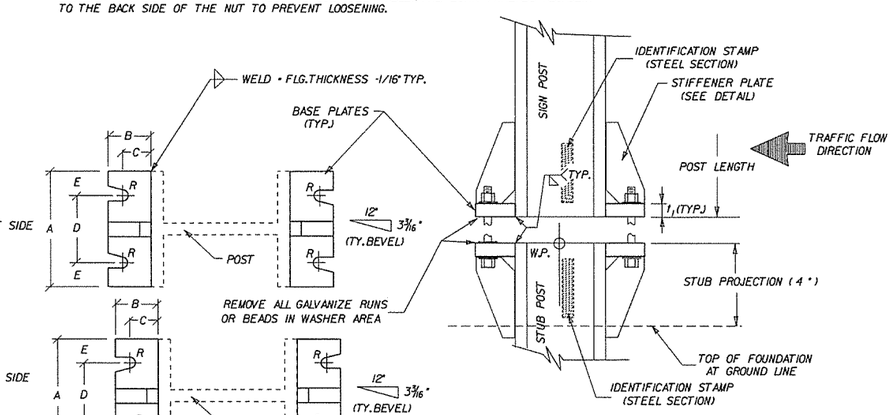

G-3



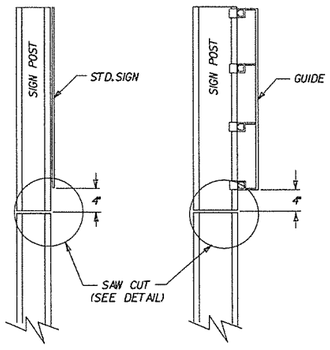

NOTE: USE H.S.HEX HEAD BOLTS, HEX HEAD NUTS AND BEVEL OR FLAT WASHERS (WHERE REQ.) UNDER NUTS. ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS, HOWEVER FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM-A36, ASTM-A441, ASTM-572 GRADE 50, OR ASTM-A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.

NOTE: SECTIONS SHOWN ARE FOR INSTALLATION ON THE RIGHT SHOULDER AND IN THE GORE. BOLT HOLES IN BASE PLATE ARE SLOTTED AND BEVELED AS SHOWN. USE H.S.BOLTS WITH HEX HD., HEX NUT AND THREE FLAT WASHERS FOR EACH BOLT. SEE TABLE FOR BOLT DIA. AND TORQUE.

NOTE: ASSEMBLE SIGN POST TO STUB POST USING THE BOLTS SPEC. IN THE TABLE AND AS SHOWN IN THE ELEVATION DETAILS. THERE SHALL BE THREE FLAT WASHERS ON EACH BOLT LOCATED AS SHOWN IN THE ELEVATIONS. USE A SHIM TO PLUMB THE SIGN POST, THEN TIGHTEN THE BOLTS USING A 12" TO 15" WRENCH UNTIL THE WASHERS AND SHIMS ARE SEATED AND THE BOLT THREADS ARE CLEAR, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE). THE BURR THREADS ADJACENT TO THE BACK SIDE OF THE NUT TO PREVENT LOOSENING.



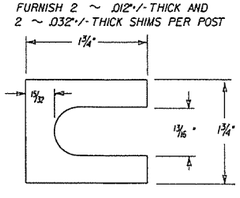

NOTE: BOLT HOLES, USED IN THE MOUNTING OF STANDARD SIGNS SHALL BE LOCATED IN THE FLANGE ADJACENT TO THE NEAR EDGE OF PAVEMENT FOR SINGLE POST ASSEMBLIES AND IN THE OUTSIDE FLANGES FOR MULTIPLE POST ASSEMBLIES.



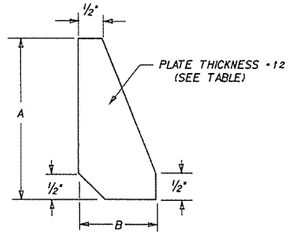

NOTE: POST SHALL BE SAW CUT AFTER GALVANIZING AND THE CUT SURFACE TREATED, AFTER PLATE IS INSTALLED AND ALL BOLTS FULLY TIGHTENED, WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPEC. O-G-93 (STICK ONLY).

STANDARD SIGNS GUIDE SIGNS

FUSE PLATE DETAILS




SHIM DETAIL

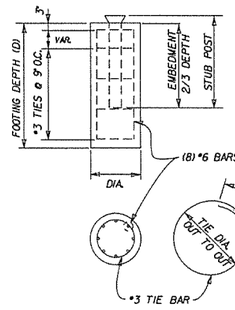



STIFFENER PLATE DETAIL

## STEEL SCHEDULE

| FOOTING DIAMETER | #3 TIE BARS DIAMETER | BAR LENGTH | POUNDS |
|---|---|---|---|
| INCHES | INCHES | FEET | |
| 18 | 12 | 4.39 | 1.65 |
| 24 | 18 | 5.96 | 2.24 |
| 30 | 24 | 7.53 | 2.83 |
| 36 | 30 | 9.1 | 3.42 |

| FOOTINIG DEPTH | #6 STRAIGHT BARS BAR LENGTH | NUMBER REQ'D. | POUNDS |
|---|---|---|---|
| FEET | FEET | | |
| 2.50 | 2.00 | 8 | 24.03 |
| 3.00 | 2.50 | 8 | 30.04 |
| 3.50 | 3.00 | 8 | 36.05 |
| 4.00 | 3.50 | 8 | 42.06 |
| 4.50 | 4.00 | 8 | 48.06 |
| 5.00 | 4.50 | 8 | 54.07 |
| 5.50 | 5.00 | 8 | 60.08 |
| 6.00 | 5.50 | 8 | 66.09 |
| 6.50 | 6.00 | 8 | 72.10 |
| 7.00 | 6.50 | 8 | 78.10 |
| 7.50 | 7.00 | 8 | 84.11 |
| 8.00 | 7.50 | 8 | 90.12 |




## FOOTING QUANTITIES

| FOOTINIG DEPTH | NUMBER TIE BARS REQ'D | 18" DIAMETER CLASS S CONCRETE | 18" DIAMETER REINF STEEL | 24" DIAMETER CLASS S CONCRETE | 24" DIAMETER REINF STEEL | 30" DIAMETER CLASS S CONCRETE | 30" DIAMETER REINF STEEL | 36" DIAMETER CLASS S CONCRETE | 36" DIAMETER REINF STEEL |
|---|---|---|---|---|---|---|---|---|---|
| FEET | | CU. YD. | (GRADE 60) | CU. YD. | (GRADE 60) | CU. YD. | (GRADE 60) | CU. YD. | (GRADE 60) |
| 2.50 | 4 | 0.16 | 31 | | | | | | |
| 3.00 | 4 | 0.20 | 37 | | | | | | |
| 3.50 | 5 | 0.23 | 44 | | | | | | |
| 4.00 | 6 | 0.26 | 52 | 0.47 | 56 | | | | |
| 4.50 | 6 | 0.29 | 58 | 0.52 | 62 | | | | |
| 5.00 | 7 | 0.33 | 66 | 0.58 | 70 | 0.91 | 74 | | |
| 5.50 | 8 | | | 0.64 | 78 | 1.00 | 83 | | |
| 6.00 | 8 | | | 0.70 | 84 | 1.09 | 89 | 1.57 | 93 |
| 6.50 | 9 | | | | | 1.18 | 98 | 1.70 | 103 |
| 7.00 | 10 | | | | | 1.27 | 106 | 1.83 | 112 |
| 7.50 | 10 | | | | | | | 1.96 | 118 |
| 8.00 | 11 | | | | | | | 2.09 | 128 |

GENERAL NOTES

TIGHTEN THE HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.

BASE PLATES AND STIFFENER PLATES SHALL BE OF THE SAME MATERIAL AS THE PRIMARY SUPPORT POSTS WHICH THEY ARE WELDED.

REFER TO THE PLANS FOR FOOTING DIMENSIONS.

EACH STUB POST AND SIGN POST SHALL HAVE A PERMANENT IDENTIFYING STAMP WHICH SPECIFIES THE STEEL SECTION USED. IF THE CONTRACTOR ELECTS TO SHIP THE STUB POST SEPARATE FROM THE SIGN POST A MATCH MARK SYSTEM WILL BE REQUIRED.

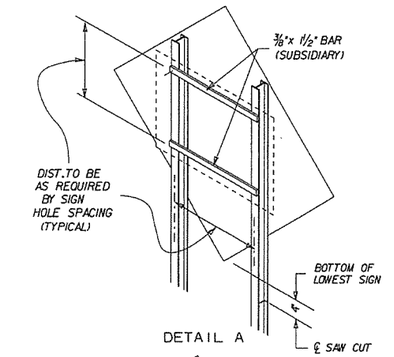
# SIGN POST AND STUB POST

| DATE | REVISION | FILMED |
|---|---|---|
| 9-12-13 | ISSUED | |

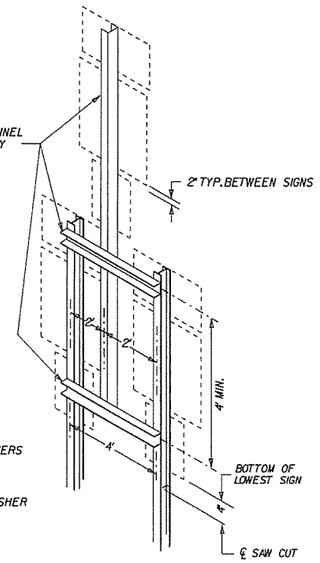
ARKANSAS STATE HIGHWAY COMMISSION

DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

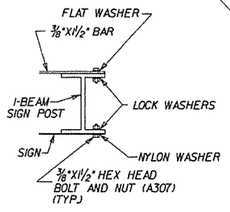
STANDARD DRAWING SHS-3



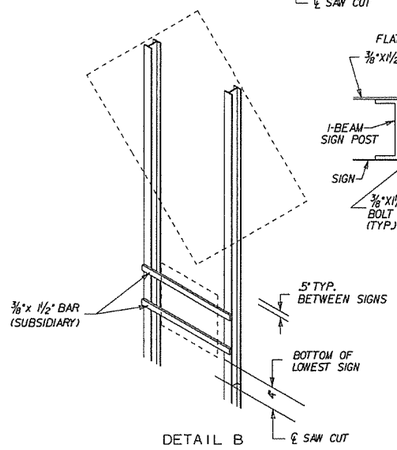

DETAIL A



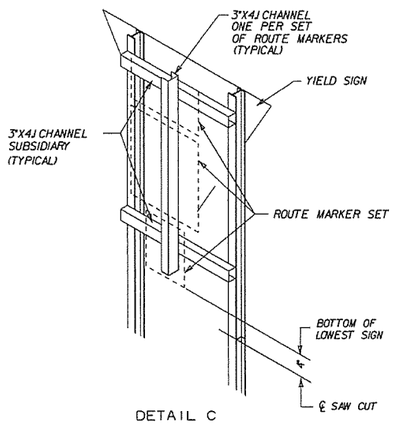

DETAIL D



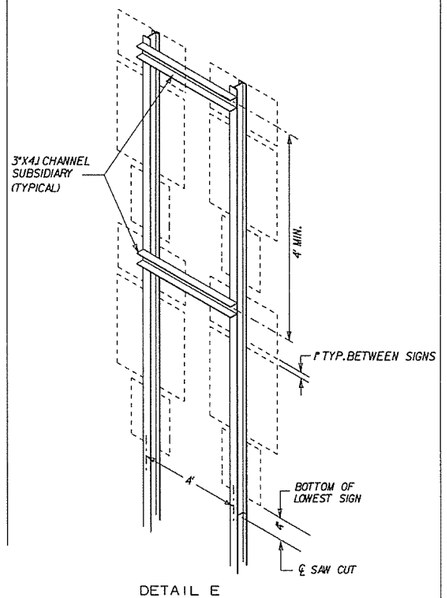

DETAIL F




DETAIL B




DETAIL C




DETAIL E

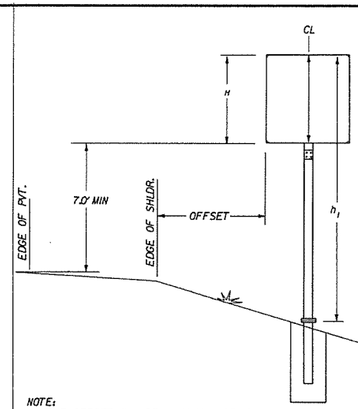
NOTE

ALL ADDITIONAL MOUNTING HARDWARE, BOLTS, NUTS, CHANNELS AND BAR STRAPS REQUIRED TO MOUNT SECONDARY SIGNS WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN SIGN SUPPORT SPECIFIED. PAYMENT WILL BE CONSIDERED SUBSIDIARY TO THE MAIN SUPPORT.

THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS MAY BE ASTM A-36.

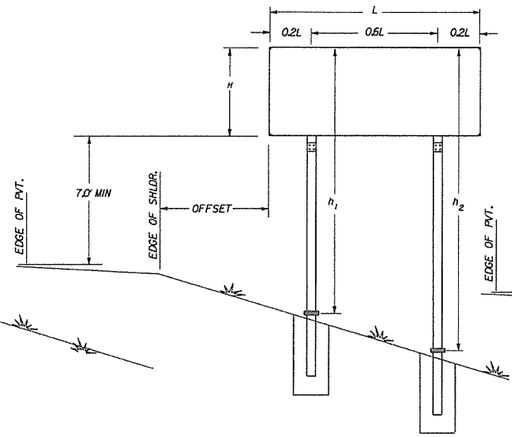
REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE 1/8" DIA. UNLESS OTHERWISE SHOWN.

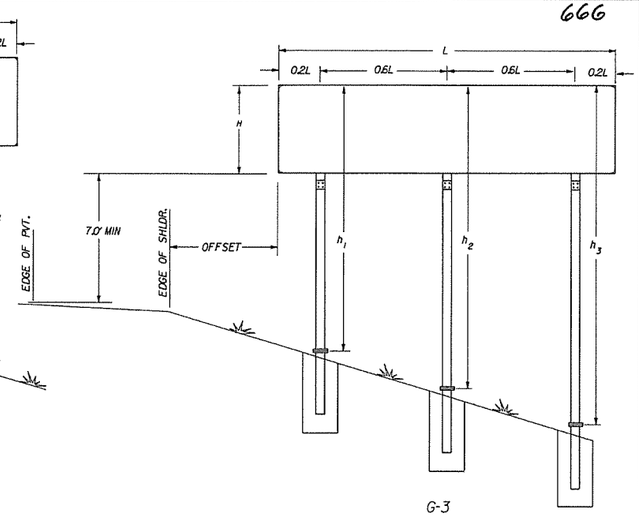



G-1

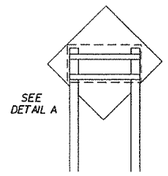
NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER.



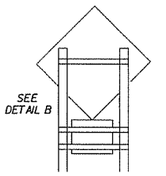

G-2



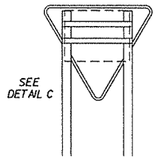

G-3



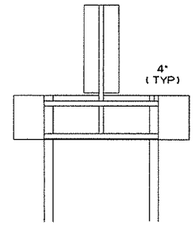

G2-1



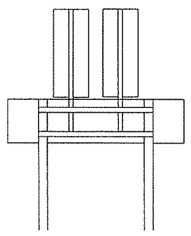

G2-2



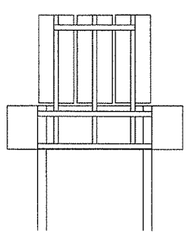

G2-3



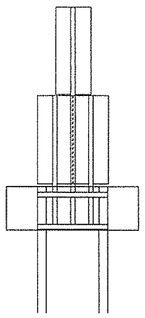

G2-4



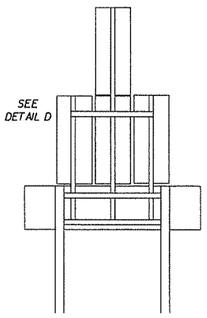
G2-5



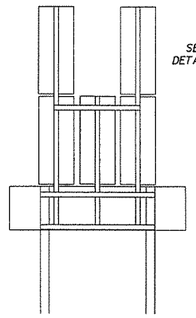
G2-6



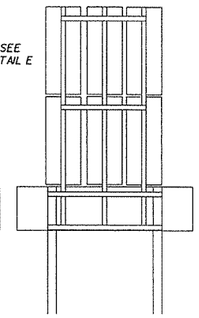
G2-7




G2-8



G2-9

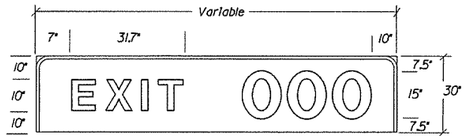



G2-10

| | | | |
|---|---|---|---|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS |
| 9-12-13 | ISSUED | | STANDARD DRAWING SHS-4 |
| DATE | REVISION | FILMED | |

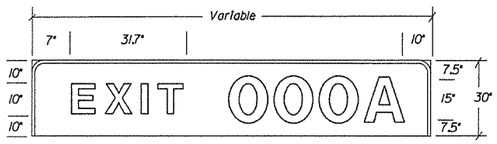
TYPICAL DETAIL

TYPE A



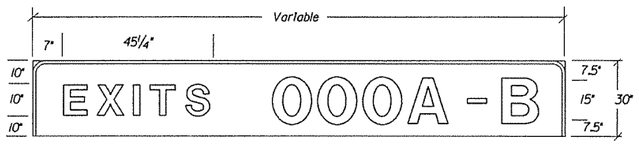

EXIT WITH 1 DIGIT 84"X30"=17.50 SF
EXIT WITH 2 DIGITS 96"X30"=20.0 SF
EXIT WITH 3 DIGITS 114"X30"=23.57 SF

TYPE B



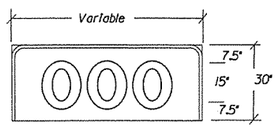

EXIT WITH 1 DIGIT PLUS "A"OR"B" 96"X30"=20.0 SF
EXIT WITH 2 DIGITS PLUS "A"OR"B" 114"X30"=23.57 SF
EXIT WITH 3 DIGITS PLUS "A"OR"B" 126"X30"=26.25 SF

TYPE C



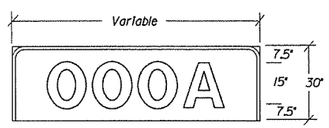

EXITS WITH 1 DIGIT PLUS "A"&"B" 132"X30"=27.50 SF
EXITS WITH 2 DIGITS PLUS "A"&"B" 150"X30"=31.25 SF
EXITS WITH 3 DIGITS PLUS "A"&"B" 168"X30"=35.00 SF

TYPE D




1 DIGIT 24"X30"=5.0 SF
2 DIGITS 42"X30"=8.75 SF
3 DIGITS 60"X30"=12.50 SF

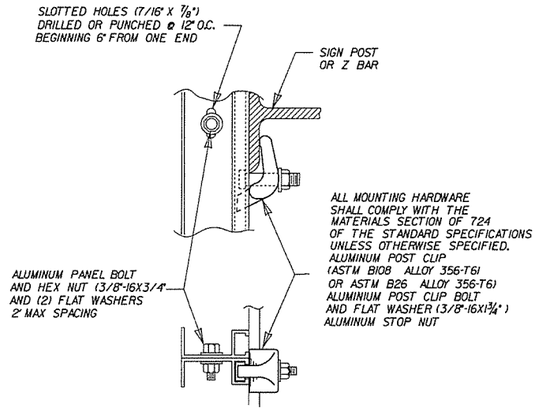
TYPE E

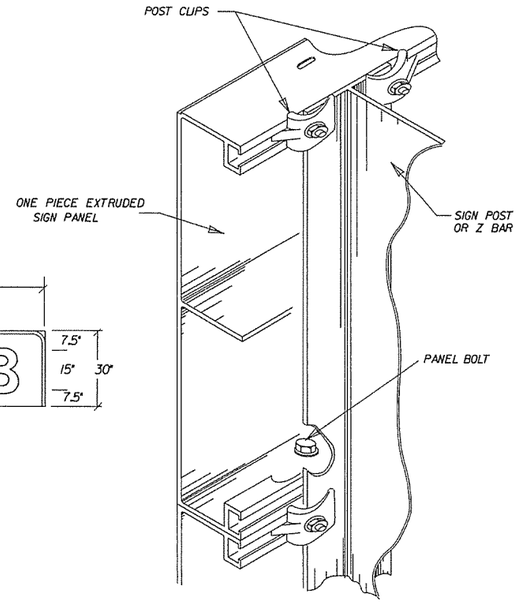



1 DIGIT PLUS "A"OR"B" 42"X30"=8.75 SF
2 DIGITS PLUS "A"OR"B" 60"X30"=12.50 SF
3 DIGITS PLUS "A"OR"B" 78"X30"=16.25 SF

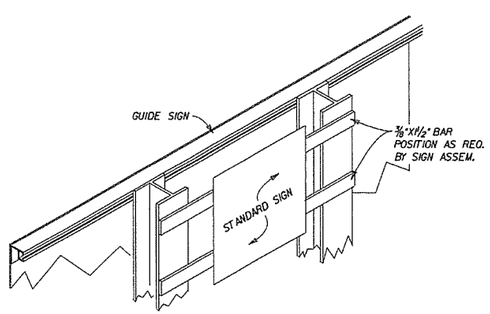
## EXIT PANEL DETAILS

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BORDERS. THE BACK GROUND COLOR WILL BE AS USE SPECIFIES. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED OR AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBSIDIARY TO THE ITEM "EXIT NUMBER PANEL".

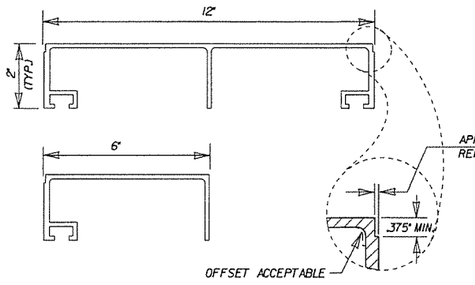


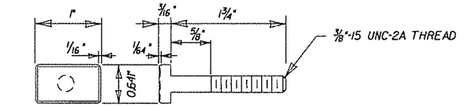

MOUNTING HARDWARE



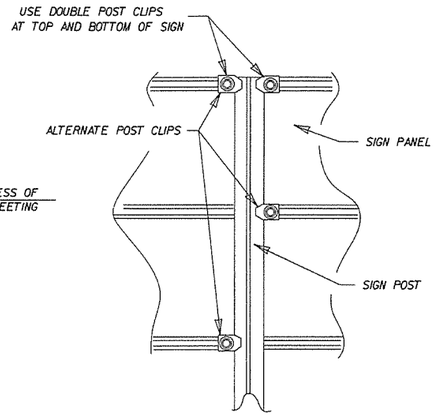

SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN



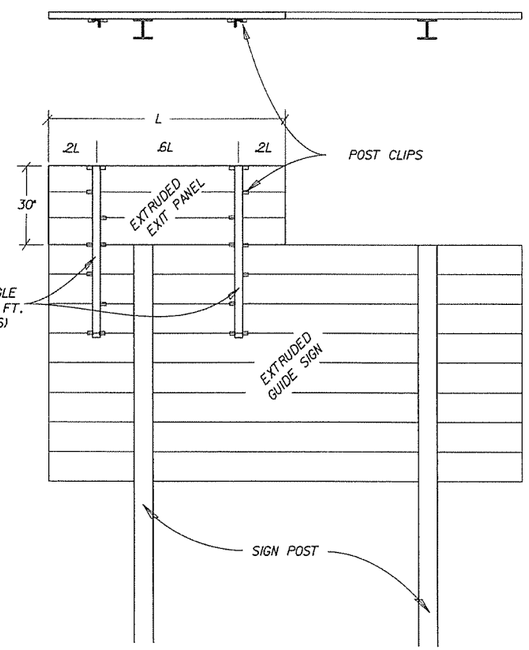

ONE PIECE EXTRUDED SIGN PANELS




POST CLIP BOLT



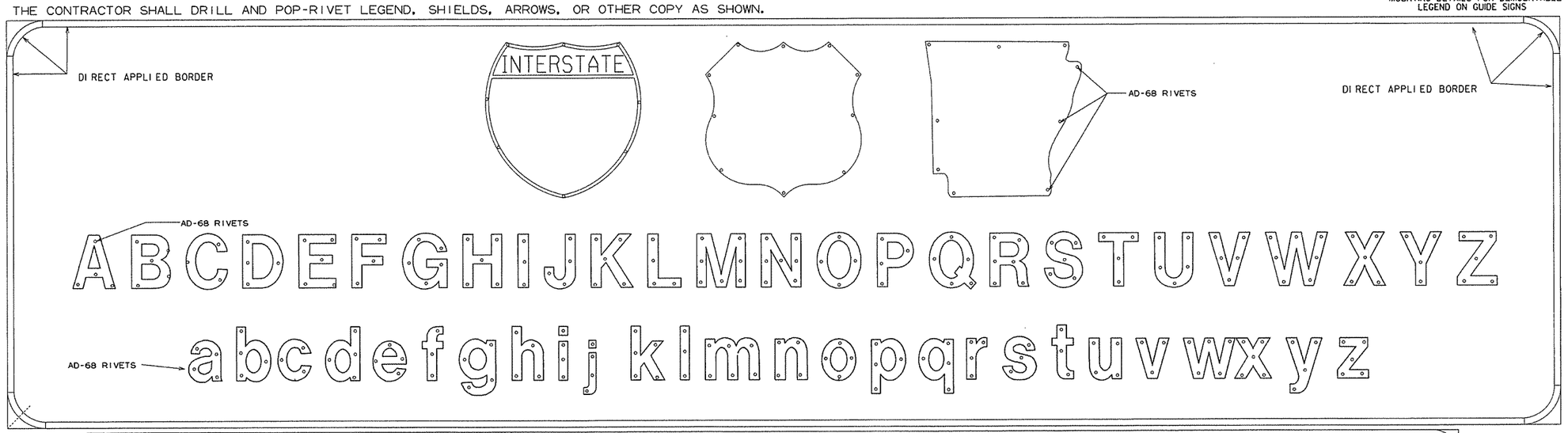

POST CLIP PLACEMENT

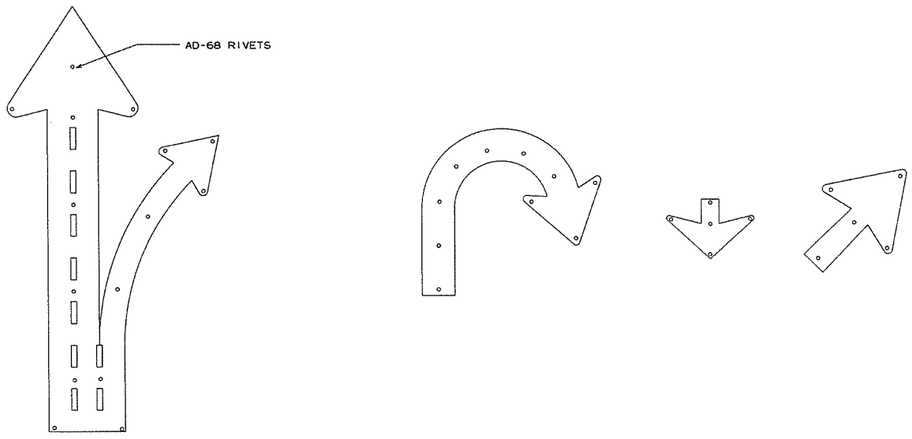



| | | | |
|---|---|---|---|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | DETAILS OF GUIDE SIGN PANELS |
| 9-12-13 DATE | ISSUED REVISION | FILMED | STANDARD DRAWING SHS-5 |

THE CONTRACTOR SHALL DRILL AND POP-RIVET LEGEND, SHIELDS, ARROWS, OR OTHER COPY AS SHOWN.

MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS




NOTES:

LEGEND ON GUIDE SIGNS ON THE MAIN LANES SHALL BE DEMOUNTABLE LEGEND.
LEGEND ON GUIDE SIGNS ON CROSS ROADS AND RAMPS SHALL BE DIRECT APPLIED.
THE DEMOUNTABLE AND DIRECT APPLIED LEGENDS SHALL BE TYPE IX SHEETING.

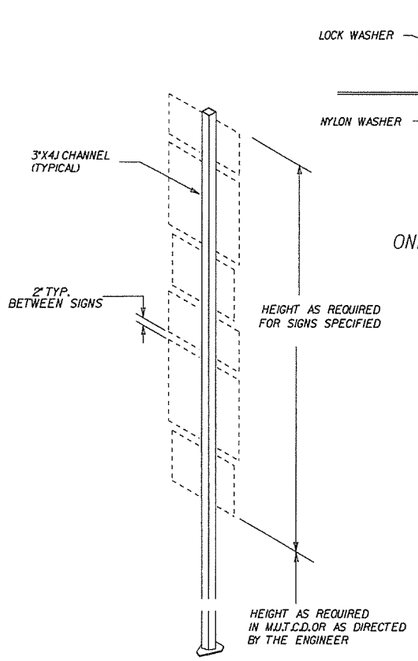
THE BACKGROUND ON ALL GUIDE SIGNS AND STANDARD SIGNS SHALL BE CONSTRUCTED USING TYPE III SHEETING.

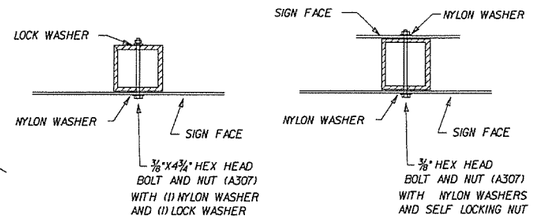
TYPE IX SHEETING FOR BORDER, LEGEND, SHIELDS, ARROWS, OR OTHER COPY SHALL BE ORIENTED VERTICALLY AS PER MANUFACTURERS' DATUM MARKS, ORIENTATION MARKS, OR OTHER RECOMMENDATIONS.

SIGN LEGEND, SHIELDS, ARROWS OR OTHER COPY SHALL BE APPLIED WITH RIVETS ONLY.

NO OTHER METHOD OF APPLYING CHARACTERS IS ALLOWED.

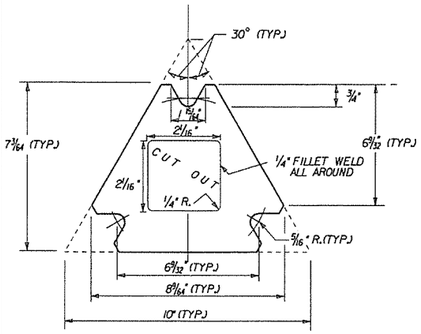
| | | | |
|---|---|---|---|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | MOUNTING DETAILS FOR DEMOUNTABLE LEGEND ON GUIDE SIGNS |
| 9-12-13 DATE | ISSUED REVISION | FILMED | STANDARD DRAWING SHS-6 |



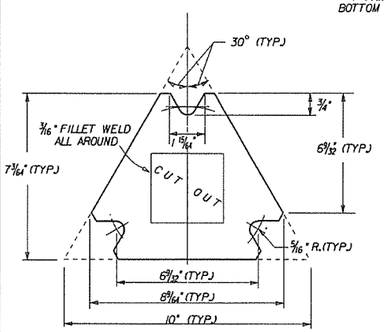




CHANNEL SHALL BE FULL LENGTH OF RECTANGULAR AND SQUARE SIGNS AND SHALL EXTEND 1½" BEYOND BOLT HOLES ON DIAMOND OR IRREGULAR SHAPED SIGNS.

## MOUNTING HARDWARE




## TOP PLATE



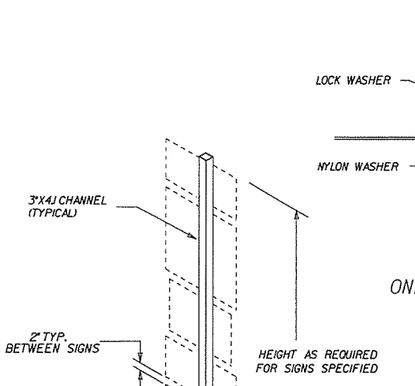

## BOTTOM PLATE

GENERAL NOTES:

THE TOP PLATE OF TRIANGULAR SLIP BASES SHALL HAVE THE SAME EXTERIOR DIMENSIONS AS THE BOTTOM PLATE.

INSIDE DIAMETER OF THE SIGN POST SHALL BE CUT THROUGH THE CENTER OF THE TOP PLATE WITH THE HOLE EDGE BEVELED AS SHOWN. THE BEVEL END SHALL BE TANGENT TO THE BOLT HOLE . ANY MISALIGNMENT SHALL BE REMOVED BY GRINDING . FACE OF BEVEL SHALL BE FINISHED TO A MINIMUM SMOOTHNESS OF 1-500 .

OTHER MASH COMPLIANT BREAKAWAY SIGN SUPPORTS THAT HAVE THE SAME TOP PLATE DIMENSIONS AND SUPPORT 2" X 2" SQUARE TUBE SIGN POSTS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.

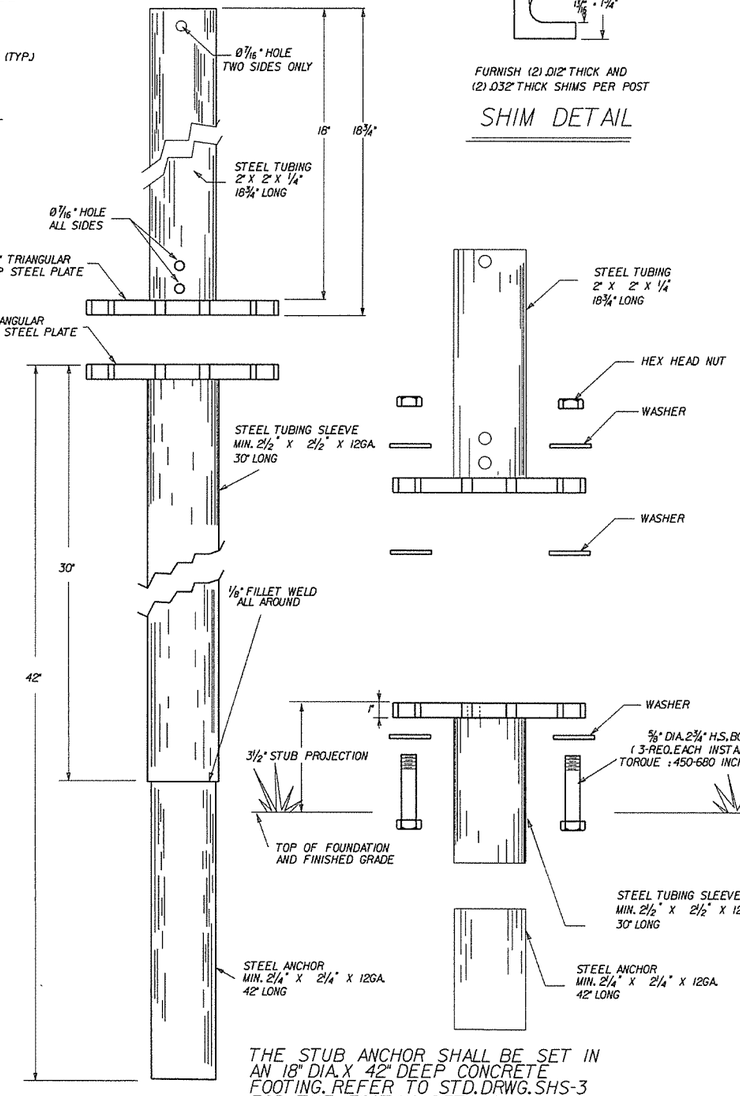



## TYPE-I

BASIS OF ESTIMATE
APPROX. 100 lbs STEEL




## R6-1 PLACEMENT



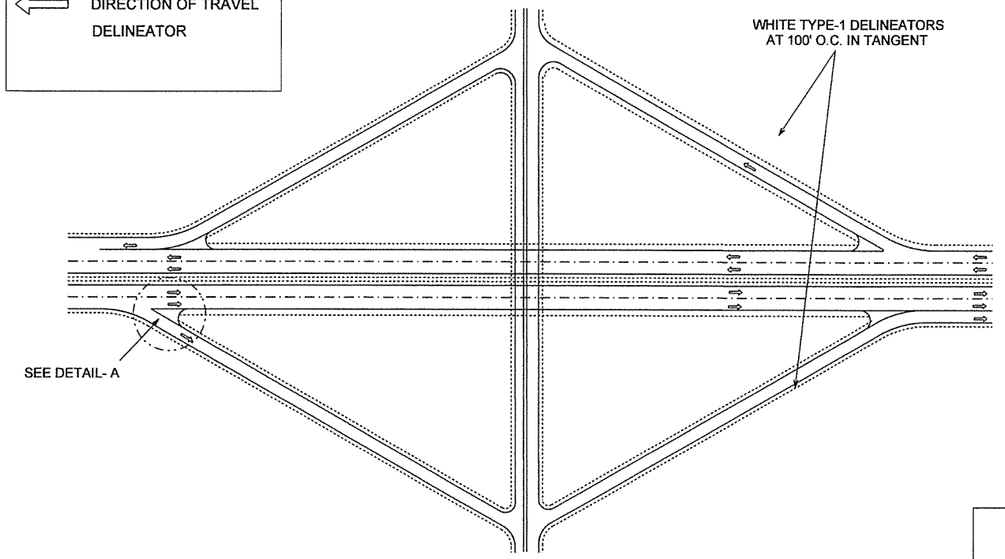

THE STUB ANCHOR SHALL BE SET IN AN 18" DIA. X 42" DEEP CONCRETE FOOTING. REFER TO STD. DRWG. SHS-3 FOR THE FOOTING DETAILS.

| | | | |
|---|---|---|---|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS |
| 9-12-13 | ISSUED | | STANDARD DRAWING SHS-7 |
| DATE | REVISION | FILMED | |

LEGEND

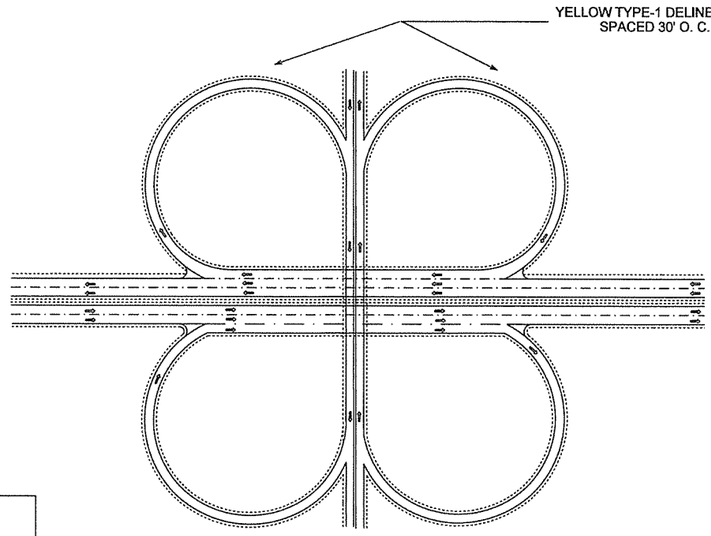
⇦ DIRECTION OF TRAVEL

DELINEATOR

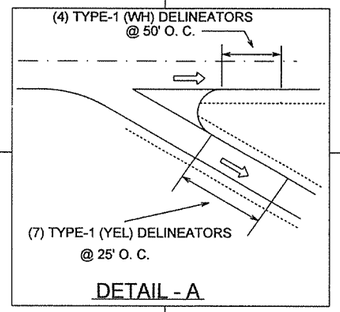



## TYPICAL DIAMOND INTERCHANGE (ALL RAMPS)

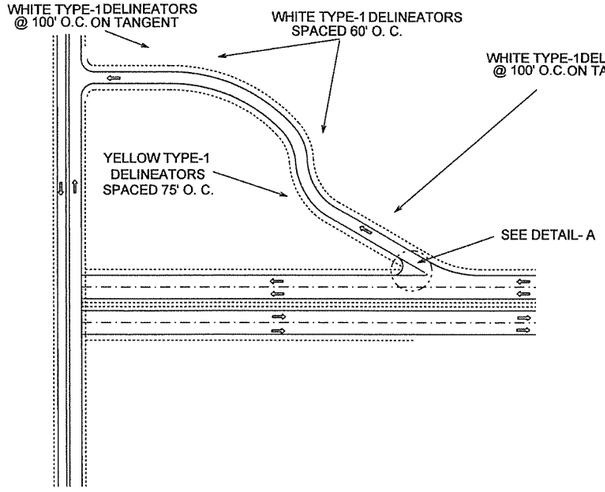
DELINEATORS PLACEMENT DETAIL




## TYPICAL CLOVERLEAF INTERCHANGE (ALL RAMPS)



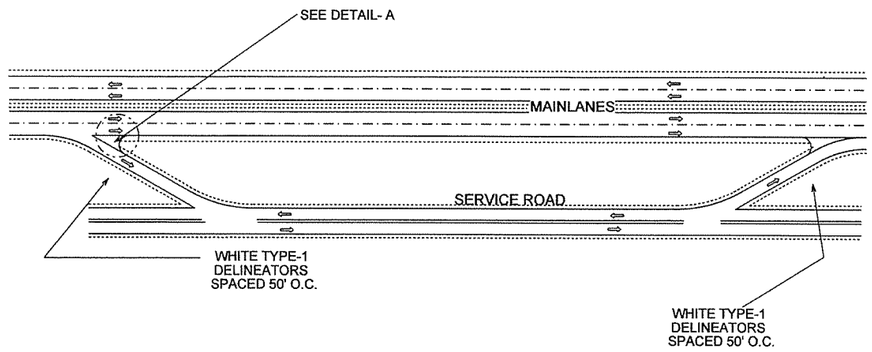

DETAIL - A




## MODIFIED DIAMOND INTERCHANGE

NOTE:

DELINEATORS SHALL ONLY BE INSTALLED AS SHOWN IN DETAIL-A IF RAISED PAVEMENT MARKERS ARE NOT PRESENT IN THE GORE OF THE OFF RAMPS.

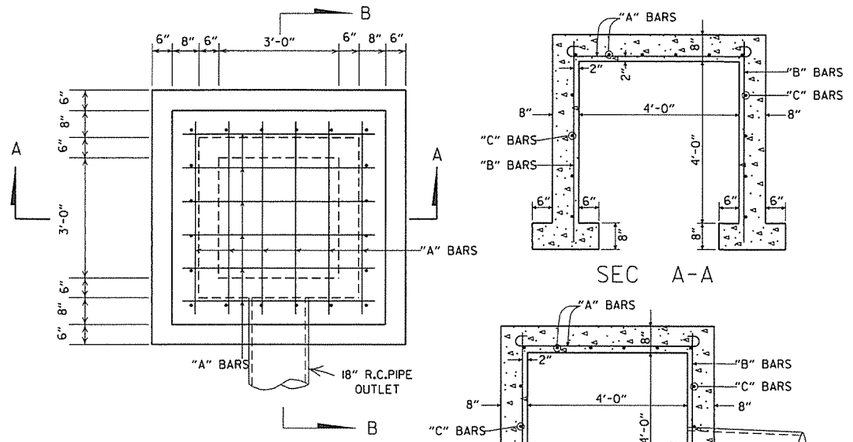



## TYPICAL SLIP RAMP

GUIDANCE:

DELINEATORS SHOULD BE MOUNTED ON SUITABLE SUPPORTS SO THAT THE TOP OF THE HIGHEST RETROREFLECTOR IS 1.2 M (4 FT) ABOVE THE NEAR ROADWAY EDGE. THEY SHOULD BE PLACED 0.6 TO 2.4 M (2 TO 8 FT) OUTSIDE THE OUTER EDGE OF THE SHOULDER, OR IF APPROPRIATE, IN LINE WITH THE ROADSIDE BARRIER THAT IS 2.4 M (8 FT) OR LESS OUTSIDE THE OUTER EDGE OF THE SHOULDER.

| | | | |
|---|---|---|---|
| | | | ARKANSAS STATE HIGHWAY COMMISSION |
| | | | TYPICAL DELINEATOR PLACEMENT ALONG THE INTERSTATE SYSTEM |
| 9-12-13 | ISSUED | | STANDARD DRAWING SHS-8 |
| DATE | REVISION | FILMED | |

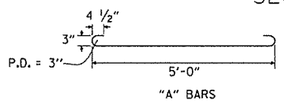



NOTE: MAX FILL HEIGHT ABOVE TOP OF BOX = 13'-0".

STEEL SCHEDULE

| BARS | NUMBER | LENGTH | SPACING |
|---|---|---|---|
| "A" | 12 | 6'-0" | 10" |
| "B" | 20 | 5'-0" | 10 ½" |
| "C" | 16 | 5'-0" | 12" |

ALL STEEL TO BE #4 BARS



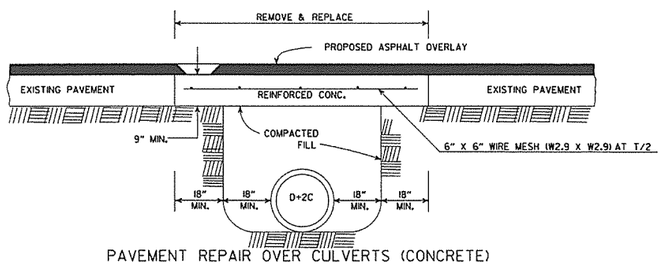

QUANTITIES

CONCRETE 3.31 CU. YDS.
REINFORCING STEEL 168 LB.

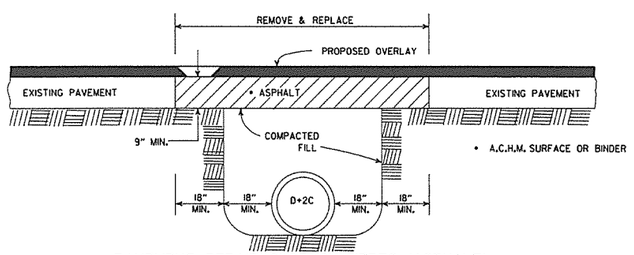
GENERAL NOTE:

THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

## REINFORCED CONCRETE SPRING BOX



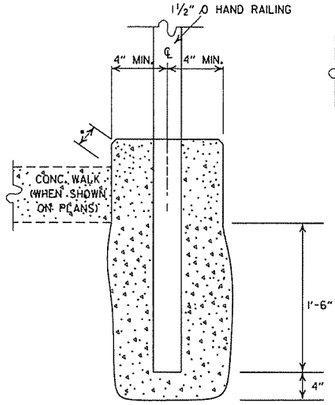

PAVEMENT REPAIR OVER CULVERTS (CONCRETE)



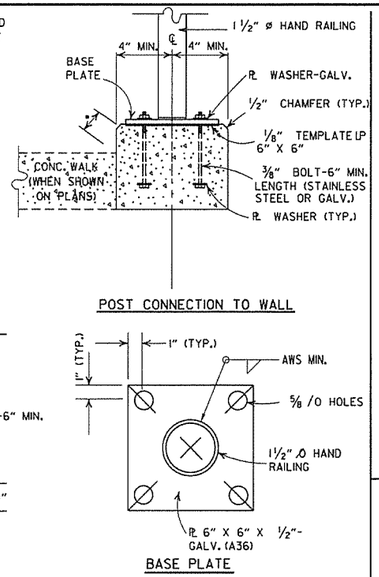

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

## DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS

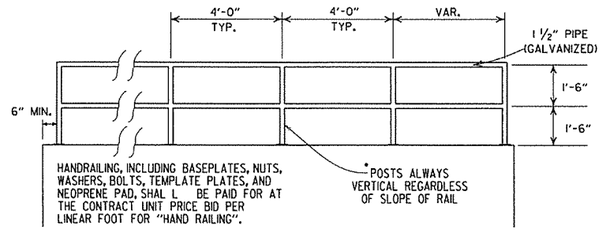
* A 2" MIN. HIGH CURB IS REQUIRED WHEN CONCRETE WALK IS ADJACENT TO THE HAND RAILING. PAYMENT FOR CURB SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR CONCRETE WALKS.



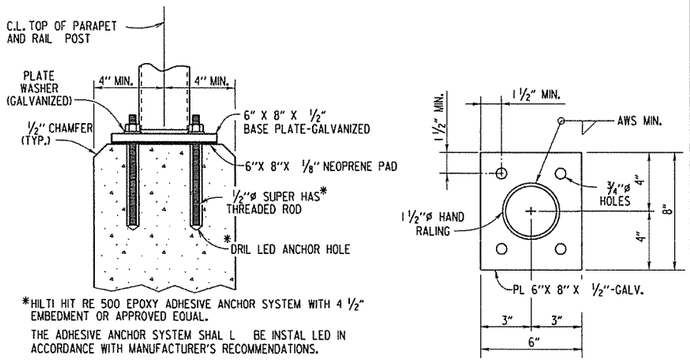

DETAIL OF HAND RAILING SET IN CONCRETE




## POST CONNECTION DETAILS

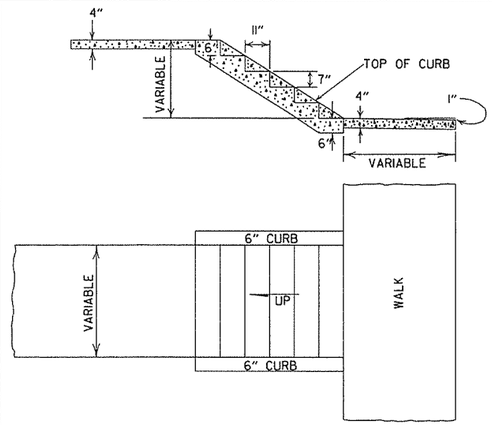



HAND RAILING SHALL CONFORM TO SECTION 633.




## DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)

## HAND RAILING DETAILS




GENERAL NOTES

1. RISE AND TREAD DIMENSIONS OF STEPS MAY BE VARIED AS DIRECTED BY THE ENGINEER, HOWEVER, TREAD WIDTHS SHALL BE 11" MIN. ALL STEPS IN A FLIGHT SHALL HAVE CONSISTENT TREAD & RISER DIMENSIONS.
2. 1" TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.

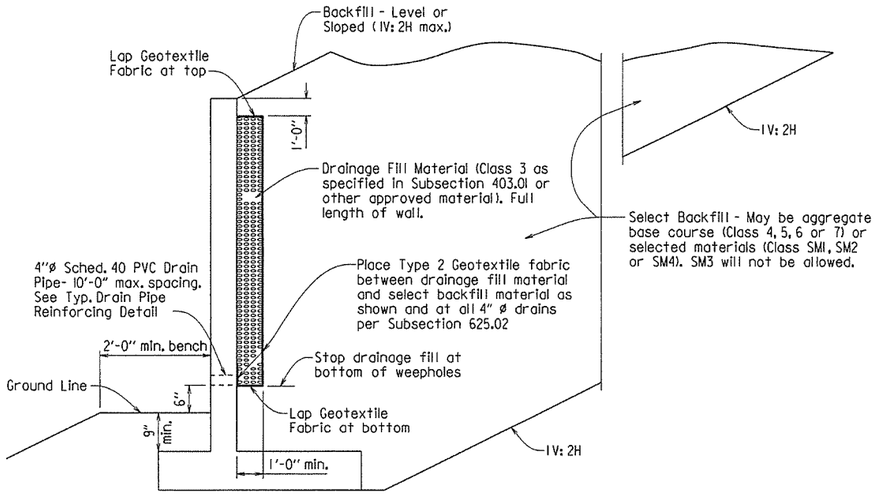
## DETAILS OF CONCRETE STEPS & WALKS

| DATE | REVISION | DATE FILMED |
|---|---|---|
| 9-12-13 | REVISED REINFORCED CONCRETE SPRING BOX | |
| 7-26-12 | REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS | |
| 4-17-08 | REV. JOINT & FOOTING STEP DETAILS | |
| 11-29-07 | REVISED RETAINING WALL DRAINAGE | |
| 5-25-06 | REVISED PVMT REPAIR OVER CULVERTS (CONC); REVISED REINFORCED CONC SPRING BOX | |
| 10-9-03 | REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS | |
| 4-10-03 | REVISED RETAINING WALL DRAWING | |
| 8-22-02 | ADDED HAND RAILING DETAIL | |
| 11-16-01 | REVISED PVMT REPAIR OVER CULVERTS (CONC); CORRECTED SPELLING IN GENERAL NOTES | |
| 11-18-98 | ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS | |
| 7-02-98 | ENLARGED PIPE | |
| 4-03-97 | ADDED NOTE TO STEEL BAR SCHED. | |
| 10-18-96 | CORRECTED SPELLING | |
| 4-26-96 | ADD WEEP HOLE; REV. JOINT SPACING IN RET. WALL | |
| 6-2-94 | CHANGED CONST. TO CONTRACTION JOINT | |
| 10-1-92 | CHANGED MESH FABRIC TO WIRE MESH | 10-1-92 |
| 8-15-91 | DELETED HDWL MODIFICATION DETAIL | 8-15-91 |
| 11-8-90 | DELETED COLD MIX FROM CULV'T. REPAIR | 11-8-90 |
| 11-30-89 | REV. RETAINING WALL STEEL SCHEDULE | 11-30-89 |
| 11-17-88 | V. BARS BEHIND ARROW | 665-11-17-88 |
| 7-15-88 | REV. PAVEMENT REPAIR ADDED HDWL. MODS, DEL. PIPE UNDERDRAINS | 649-7-15-88 |
| 11-1-84 | REV. TRENCH FOR PIPE UNDERDRAIN | 510-11-1-84 |
| 1-4-83 | ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE | 682-1-4-83 |
| 3-2-81 | SPELLING OF "UNDERDRAIN" | 721-3-2-81 |
| 4-20-79 | REV. UNDERDRAIN DET& PAVEMENT REPAIR | 674-4-20-79 |
| 2-2-76 | 12"MIN. GRAN. MAT'L. OVER PIPE | 919-2-2-76 |
| 4-10-75 | REM. SPECS. FOR GRAN. MAT'L. | 568-4-10-75-853 |
| 5-22-74 | GRANULAR MAT'L. TO BE SB-3 | 567-5-22-74-740 |
| 10-2-72 | REVISED AND REDRAWN | 564-10-16-72 |

ARKANSAS STATE HIGHWAY COMMISSION

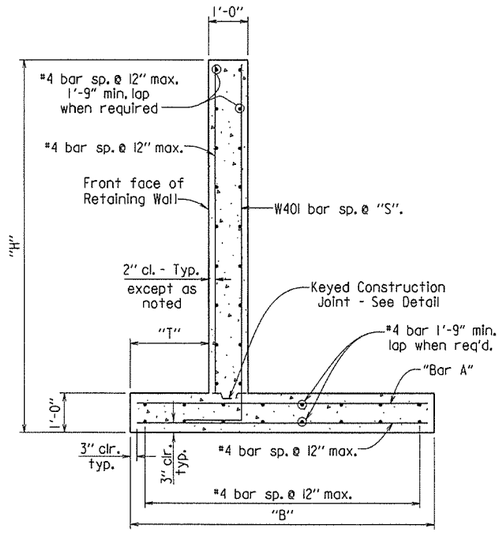
# DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI-1



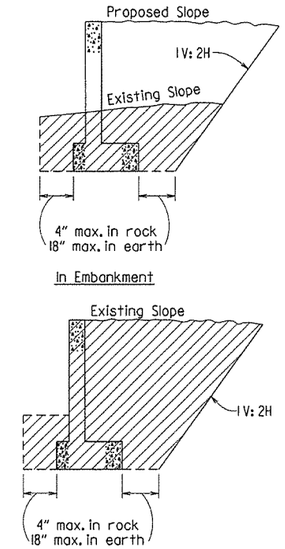

TYPICAL DRAINAGE & BACKFILL DETAILS

N.T.S




TYPICAL SECTION

N.T.S




NOTE: Hatched area denotes maximum limits of pay excavation.

DETAILS OF EXCAVATION

N.T.S

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas state Highway and Transportation Department Standard Specifications for Highway Construction (Current Edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012).

LIVE LOAD: Live Load Surcharge is not included in the design of these walls. Vehicular Live Load shall not be allowed within a distance equal to one-half the height of the wall.

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered ½". All concrete shall be Class S with a minimum 28 day compressive strength f'c = 3,500 psi. A Class 2 Surface finish shall be used on all surfaces of the concrete unless otherwise noted.

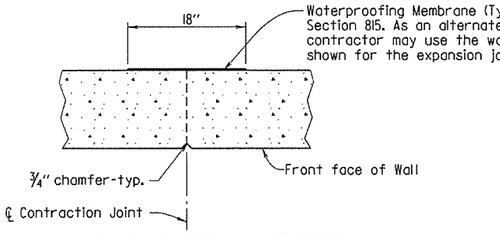
REINFORCING STEEL: All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

Foundations for footings shall be prepared in accordance with subsection 801.04. Backfill for retaining walls shall be in accordance with subsection 801.08.

Waterproof Membrane (Type C), waterstops, preformed joints, weep holes & geotextile fabric shall not be paid for directly, but shall be considered subsidiary to Class S Concrete.

Drainage fill material (Class 3) and select backfill shall be measured and paid for as Compacted Embankment.

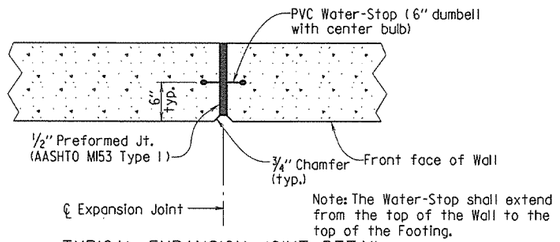
These details are not intended for use along streams or ditches without consideration for scour.




TYPICAL CONTRACTION JOINT DETAIL

N.T.S.

Note: 20'-0" Max. Spacing between Contraction Joints. Horizontal reinforcement shall be continuous through Contraction joints.

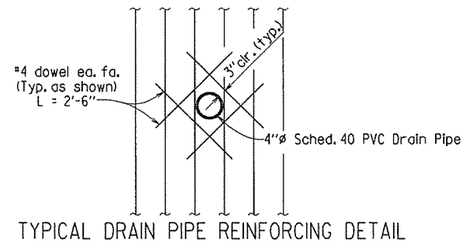



Note: The Water-Stop shall extend from the top of the Wall to the top of the Footing.

TYPICAL EXPANSION JOINT DETAIL

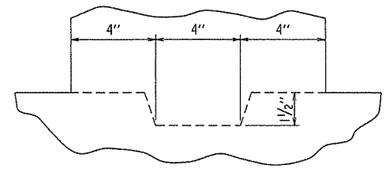
N.T.S.

Note: 60'-0" Max. Spacing between Expansion Joints. Horizontal reinforcing shall stop 2" from ℄ Expansion Joint.




TYPICAL DRAIN PIPE REINFORCING DETAIL

N.T.S




KEYED CONSTRUCTION JOINT DETAIL

N.T.S

SEISMIC ZONE: These walls have been designed for the following site adjusted peak ground accelerations ($A_S$):
Level Backfill - $A_S \leq .40g$
Sloped Backfill (1V: 2H max.) - $A_S \leq .30g$

TABLE OF RETAINING WALL VARIABLES

(LEVEL BACKFILL)

| "H" | "T" | "B" | "S" | "Bar A" Size @ Spacing |
|---|---|---|---|---|
| 3'-0" | 9" | 2'-6" | 12" | #4 @ 12" |
| 4'-0" | 9" | 3'-6" | 12" | #4 @ 12" |
| 5'-0" | 9" | 4'-0" | 12" | #4 @ 12" |
| 6'-0" | 9" | 4'-6" | 12" | #4 @ 12" |
| 7'-0" | 9" | 5'-6" | 12" | #4 @ 10" |
| 8'-0" | 9" | 6'-0" | 12" | #5 @ 10" |
| 9'-0" | 1'-0" | 7'-0" | 12" | #5 @ 6½" |

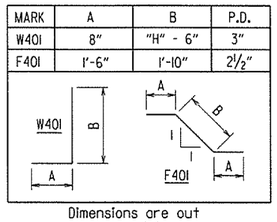
TABLE OF RETAINING WALL VARIABLES

(SLOPED BACKFILL) (1V: 2H MAX.)

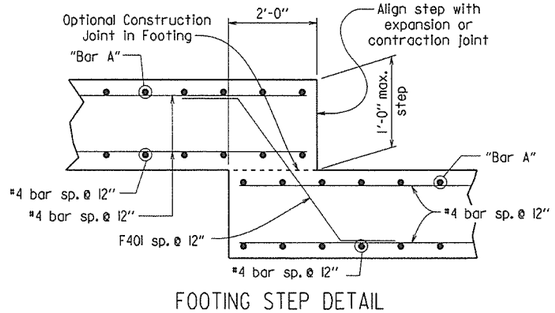
| "H" | "T" | "B" | "S" | "Bar A" Size @ Spacing |
|---|---|---|---|---|
| 3'-0" | 9" | 2'-6" | 12" | #4 @ 12" |
| 4'-0" | 9" | 3'-6" | 12" | #4 @ 12" |
| 5'-0" | 9" | 4'-6" | 12" | #4 @ 12" |
| 6'-0" | 9" | 5'-6" | 12" | #4 @ 6" |
| 7'-0" | 9" | 6'-6" | 12" | #5 @ 6½" |
| 8'-0" | 1'-6" | 8'-0" | 7½" | #6 @ 6" |
| 9'-0" | 1'-11" | 9'-6" | 5" | #8 @ 6" |

BENDING DIAGRAMS

| MARK | A | B | P.D. |
|---|---|---|---|
| W401 | 8" | "H" - 6" | 3" |
| F401 | 1'-6" | 1'-10" | 2½" |




Dimensions are out to out of bars.




FOOTING STEP DETAIL

N.T.S.

| DATE | REVISION | DATE FILMED |
|---|---|---|
| | | |
| | | |
| | | |
| 2-27-14 | REVISED GENERAL NOTES. | |
| 7-26-12 | DRAWING ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

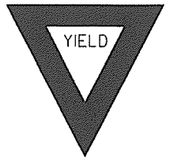
# REINFORCED CONCRETE RETAINING WALL (WITHOUT LIVE LOAD SURCHARGE)

STANDARD DRAWING SI - 2

R1-1

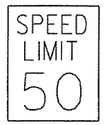
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2




STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1




STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

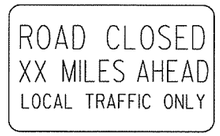
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

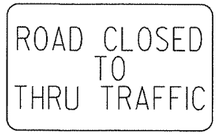
48"X30"

RII-3A




60"X30"

RII-4

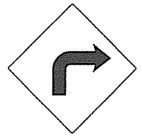



60"X30"

RSP-1

48"X30"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

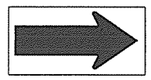
WI-3

STD. 48"X48"

WI-4

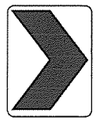
STD. 48"X48"

WI-6



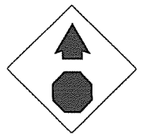
STD. 48"X24"
SPECIAL 60"X30"

WI-8



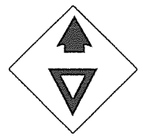
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



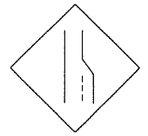
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

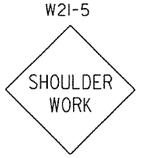
W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5




STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

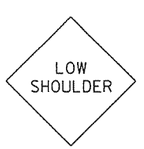
R56-1

STD. 18"X18"

W8-11

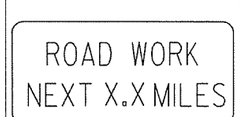
STD. 36"X36"
FWY. 48"X48"

W8-9



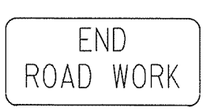

STD. 36"X36"
FWY. 48"X48"

G20-1



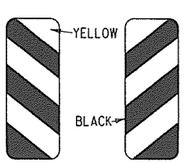

60"X24"

G20-2



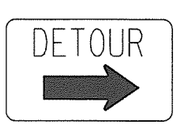

48"X24"

OM-3L OM-3R




12"X36"

M4-9




STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES *

WHEN WORKERS
ARE PRESENT **

36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

| | |
|---|---|
| 500 FT | ½ MILE |
| 1000 FT | ¾ MILE |
| 1500 FT | 1 MILE AHEAD |

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

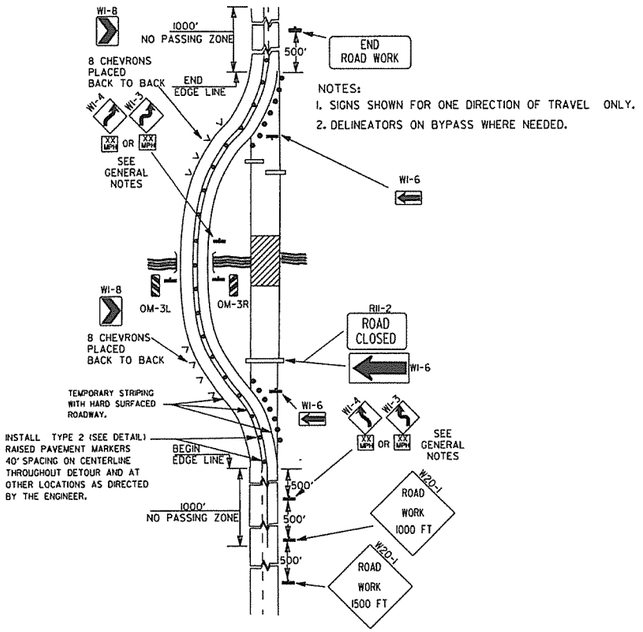
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

| DATE | REVISION | FILMED |
|---|---|---|
| 12-15-11 | REVISED W24-1 | |
| 11-17-10 | DELETED W8-9a & ADDED W8-9 | |
| 10-15-09 | ADDED REFERENCE TO MASH & ADDED SIGN W24-1 | |
| 4-17-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | REVISED NOTES | |
| 10-9-03 | REVISED NOTE 1 | |
| 11-16-01 | REVISED NOTE 7 | |
| 9-28-00 | REVISED NOTE | |
| 11-18-98 | ADDED NOTE | |
| 6-26-97 | REVISED NOTE 5 | |
| 4-03-97 | REVISED NOTE 5 | |
| 10-18-96 | ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7 | |
| 10-12-95 | ADDED R55-1 | |
| 6-8-95 | REVISED TO CORRECT SIGN ILLUSTRATIONS | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |

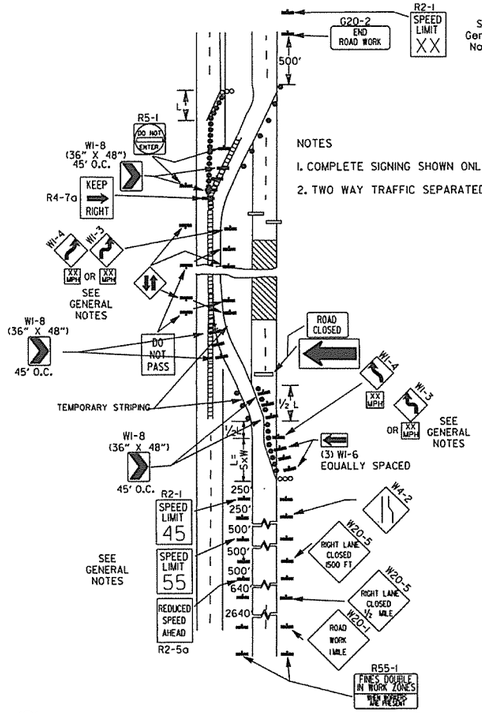
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

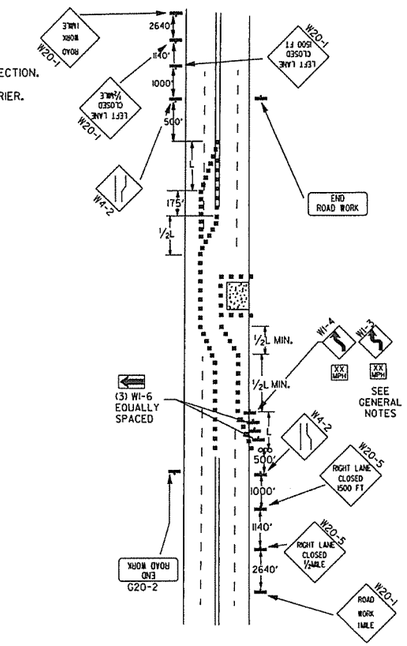
STANDARD DRAWING TC-1



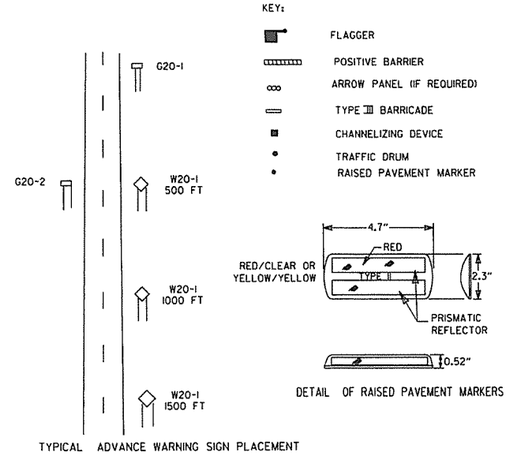

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



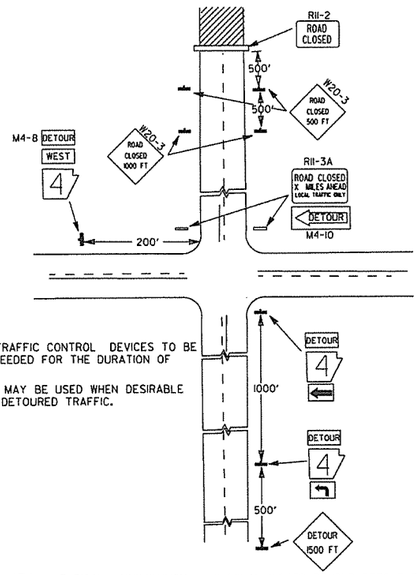

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.




(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

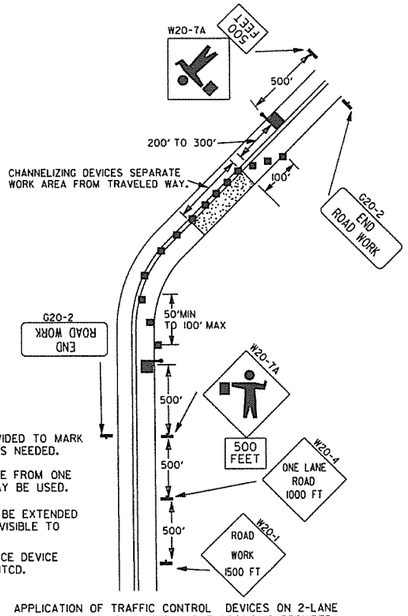



TYPICAL ADVANCE WARNING SIGN PLACEMENT



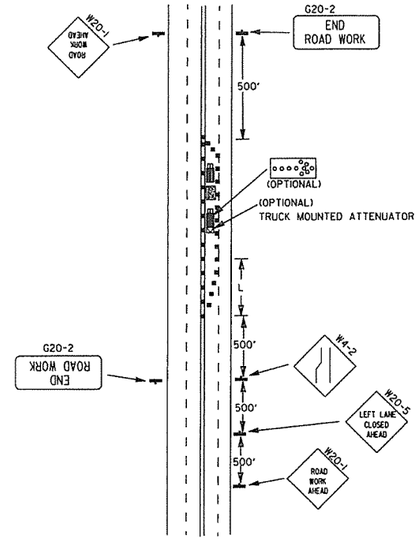

NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.




NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.




(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

L= MINIMUM LENGTH OF TAPER.

S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

W= WIDTH OF OFFSET.

GENERAL NOTES:

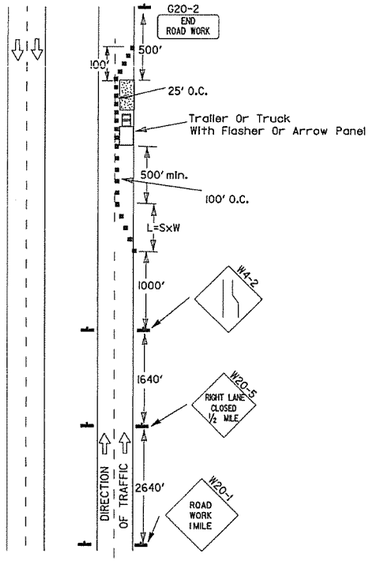
1. ADVISORY SPEED POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.

| DATE | REVISION | FILMED |
|---|---|---|
| 9-12-13 | REVISED DETAIL OF RAISED PAVEMENT MARKERS | |
| 3-8-10 | ADDED (AFAD) | |
| 11-20-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | ADDED GENERAL NOTE | |
| 10-18-96 | ADDED R55-1 | |
| 4-26-96 | CORRECTED (a) BEHIND G20-2 | |
| 6-8-95 | CORRECTED SIGN IDENT. ON W1-4A | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD, SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |

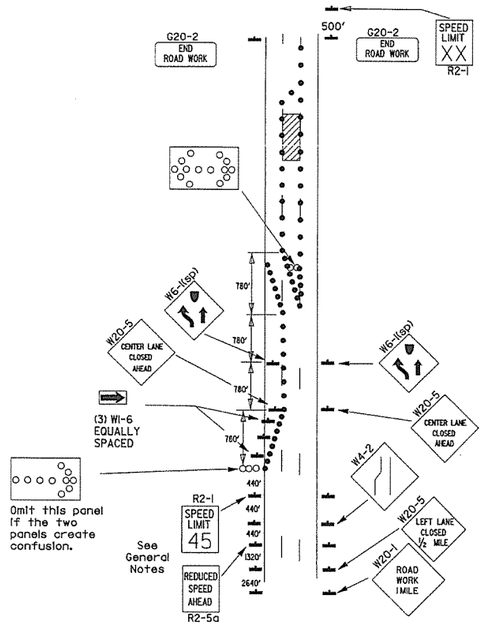
ARKANSAS STATE HIGHWAY COMMISSION

# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

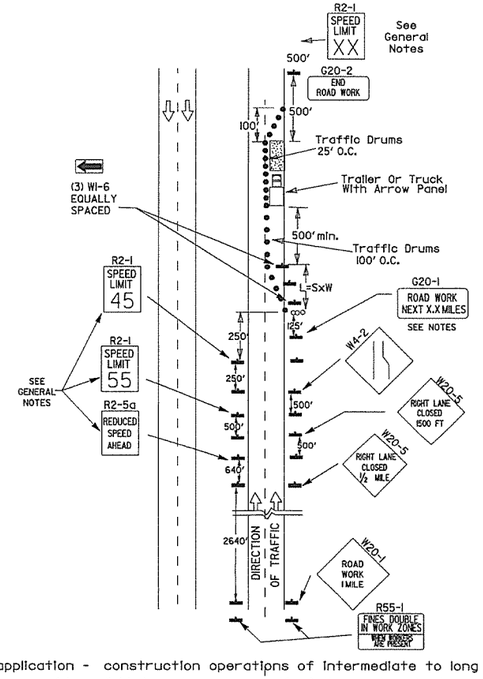
STANDARD DRAWING TC-2




(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.




(B) Typical application - 3-lane oneway roadway where center lane is closed.




(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

○○○ Arrow Panel (If Required)

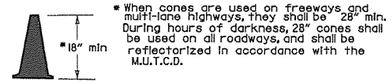
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

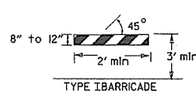
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

## Channelizing devices

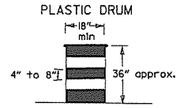


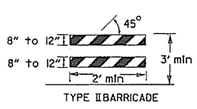

* When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be used on all roadways, and shall be reflectorized in accordance with the M.U.T.C.D.

CONES

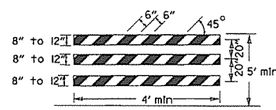



TYPE I BARRICADE



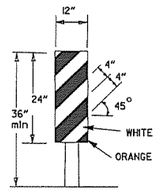




TYPE II BARRICADE



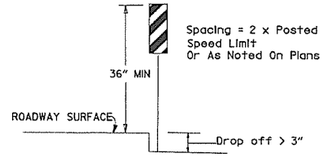

TYPE III BARRICADE

NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.




VERTICAL PANEL
VP-1R

VERTICAL PANEL PLACEMENT



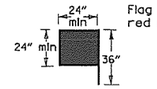

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

| VERTICAL DIFFERENTIAL | LOCATIONS | TRAFFIC CONTROL |
|---|---|---|
| 1" to 3" | Centerline, lane lines | W8-11 |
| 1" to 3" | Edge of shoulder | W8-9 |
| Greater than 3" | Lane lines | Standard lane closure required |
| Greater than 3" | Edge of traveled lane | *RSP-1 and vertical panels, drums or concrete barrier |
| Greater than 3" | Edge of shoulder | *Vertical panels, drums or concrete barrier |

* When shown on the plans concrete barrier will be used.

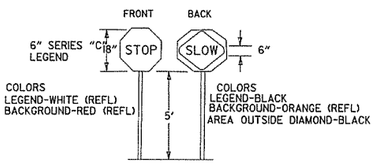
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

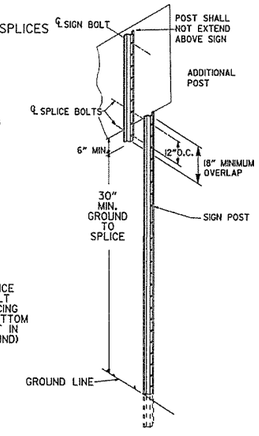



Flag shall be of good grade red material

STOP SLOW PADDLE



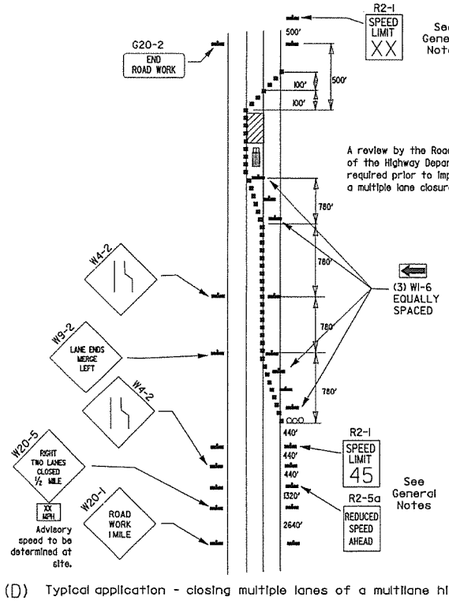

DETAIL OF SPLICES




NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.




(D) Typical application - closing multiple lanes of a multilane highway.

| DATE | REVISION | FILMED |
|---|---|---|
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 11-20-08 | REVISED SIGN DESIGNATIONS | |
| 11-18-04 | ADDED NOTE | |
| 10-1-98 | ADDED NOTE | |
| 4-03-97 | ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE | |
| 10-18-96 | ADDED R55-1 | |
| 10-12-95 | MOVED UPPER SPLICE | |
| 6-8-95 | REVISED SPLICE DETAIL, TEXT | 6-8-95 |
| 2-2-95 | REVISED PER PART VI, MUTCD, SEPT. 3, 1993 | |
| 8-15-91 | DRAWN AND PLACED IN USE | |

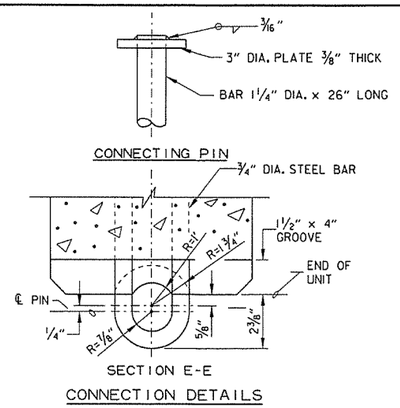
ARKANSAS STATE HIGHWAY COMMISSION

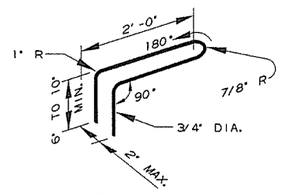
# STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

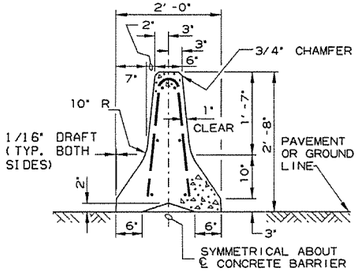
STANDARD DRAWING TC-3

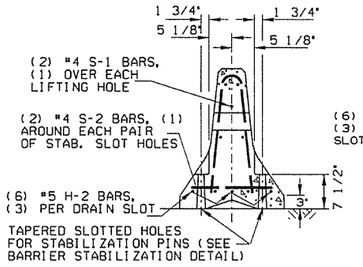
## REINFORCING BAR TABLE PER BARRIER UNIT

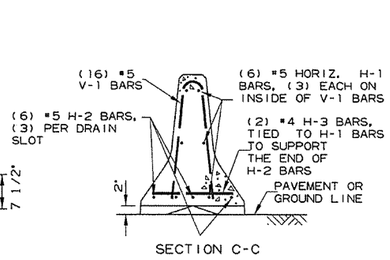
| MARK | LOCATION | BAR SIZE | (NO. BARS) | SKETCH |
|---|---|---|---|---|
| H-1 | HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS | #5 | (6) | 19'-3" |
| H-2 | CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY | #5 | (6) | 6'-6" |
| H-3 | TIED ABOVE H-1 BARS TO SUPPORT H-2. TIED TO V-1 | #4 | (2) | 1'-6" |
| S-1 | OVER LIFT HOLES | #4 | (2) | 2'-5", LIFTING HOLE, 90°, 3 3/8" R |
| S-2 | HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS | #4 | (2) | 1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP |
| V-1 | VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS | #5 | (16) | TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 9 1/2", 2'-1 3/8", 4 3/8" |

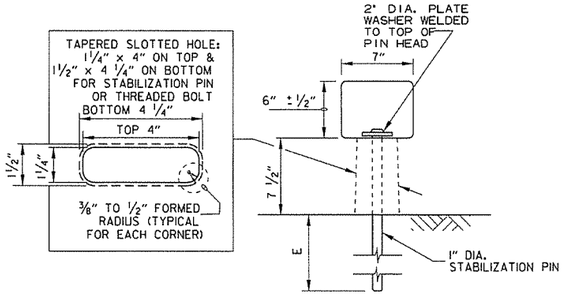


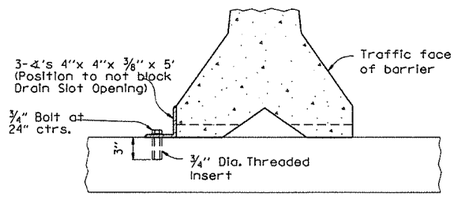



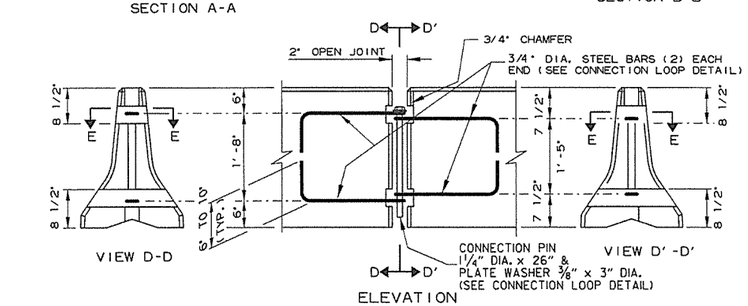

ROADWAY SECTION

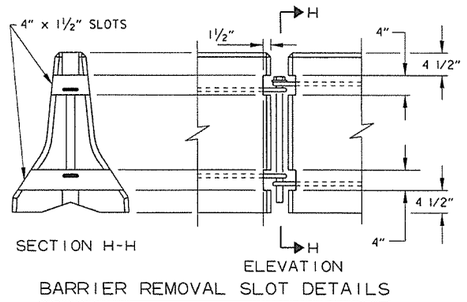
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas

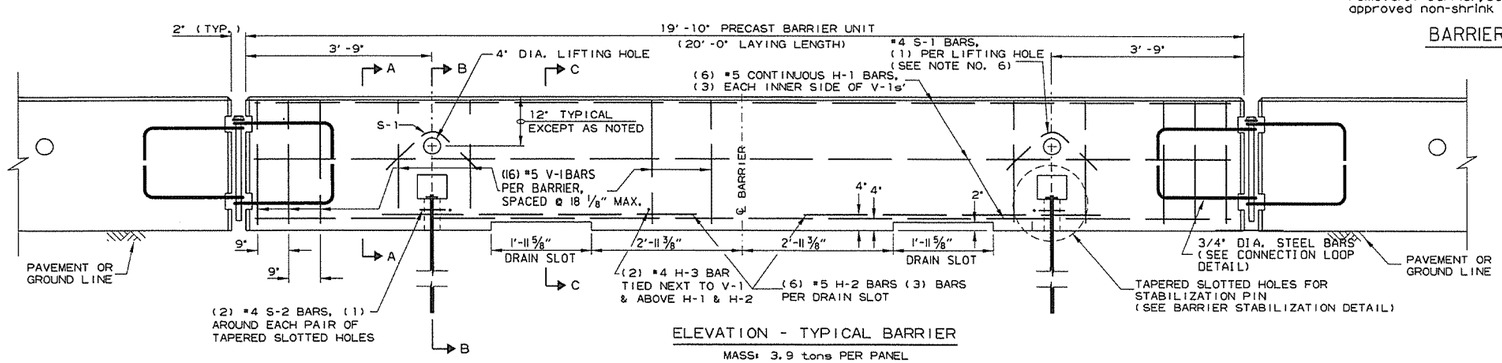



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the Inserts shall be filled with approved non-shrink epoxy.

BARRIER STABILIZATION DETAIL
BRIDGE DECKS




### General Notes

1. The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

2. Materials shall meet the following minimum requirements:
   Concrete: 2500 psi compressive strength at 28 days.
   Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
   Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
   Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

   In applications where barrier wall is within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers. Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices. Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

3. Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

4. Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

5. Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

6. A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

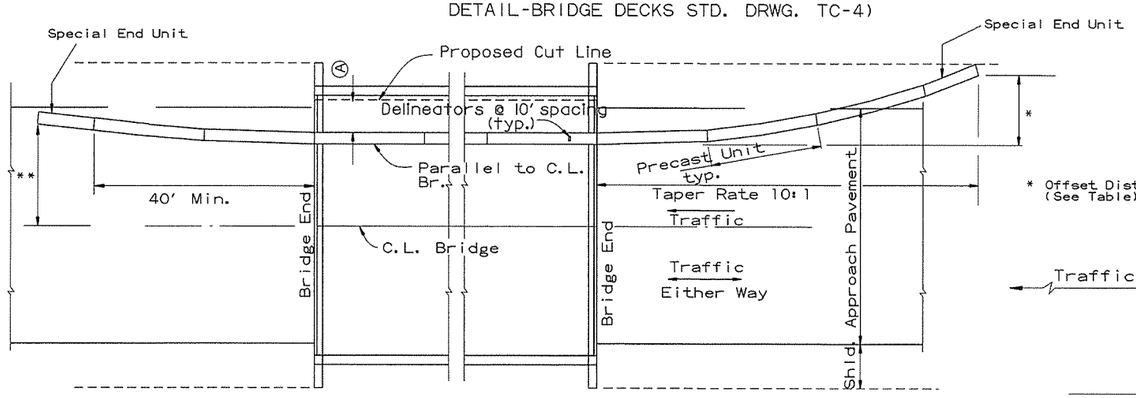
| DATE | REVISION | FILMED |
|---|---|---|
| 2-27-14 | REVISED BARRIER STABILIZATION DETAIL | |
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 8-5-09 | REV. NOTE 3 CONCERNING DRAIN SLOTS | |
| 11-29-07 | REVISED NOTE 3 | |
| 5-25-06 | DELETED GENERAL NOTE 7 | |
| 11-18-04 | REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS | |
| 4-10-03 | REVISED GENERAL NOTE 2 | |
| 8-22-02 | ISSUED NEW DRAWING | |

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

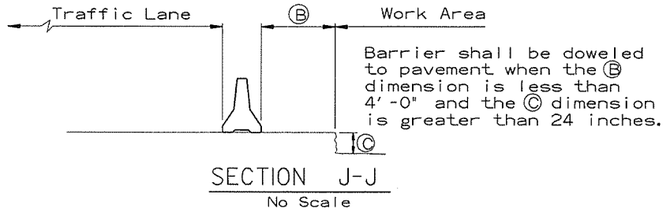
STANDARD DRAWING TC-4

Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)




BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

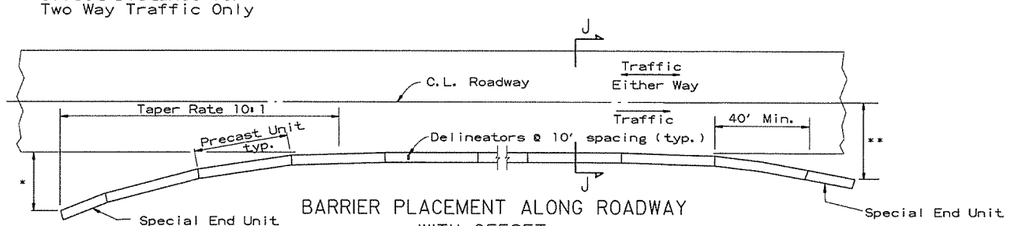



Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

** Offset Distance for Two Way Traffic Only




BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

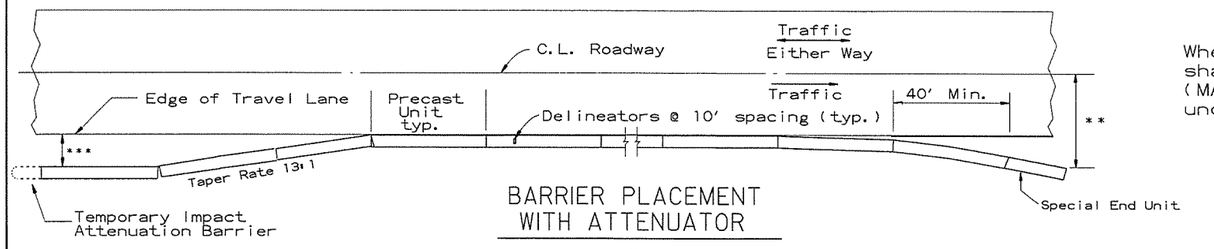
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

| Speed (MPH) | Offset Distance (FT.) |
|---|---|
| ≤ 45 | 12 |
| > 45 | 18 |

If offset distance is not attainable, then see "Barrier Placement With Attenuator" Detail shown below.

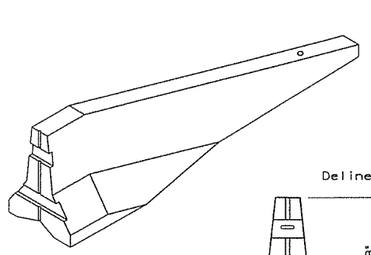


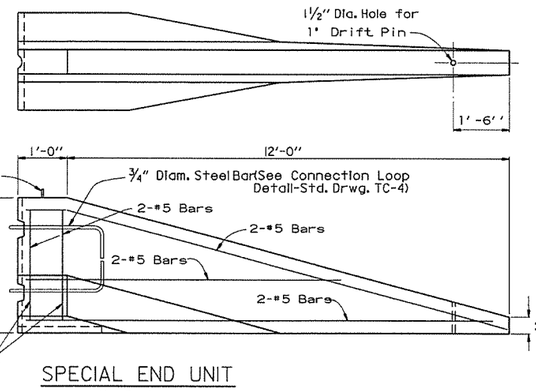

BARRIER PLACEMENT WITH ATTENUATOR

No Scale

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

** Offset Distance For Two Way Traffic Only






SPECIAL END UNIT

No Scale

## General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

| DATE | REVISION | FILMED |
|---|---|---|
| 10-15-09 | ADDED REFERENCE TO MASH | |
| 5-25-06 | REVISED BARRIER PLACEMENT | |
| 8-22-02 | ISSUED NEW DRAWING | |

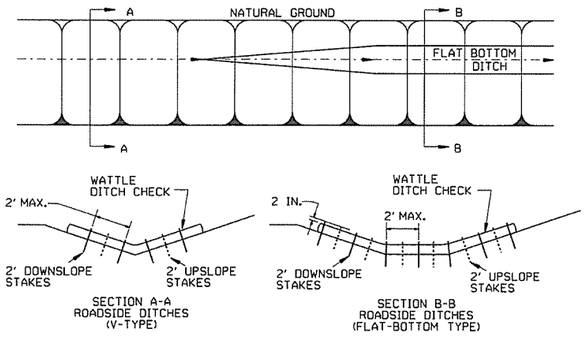
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

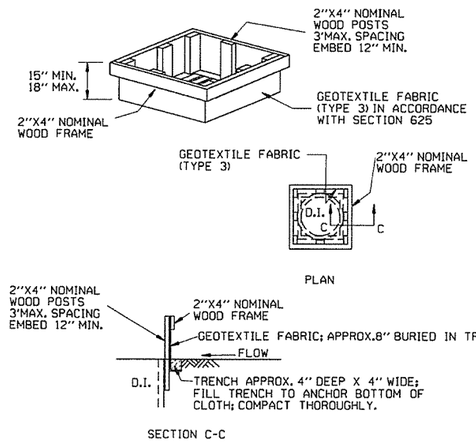
STANDARD DRAWING TC-5

GENERAL NOTES

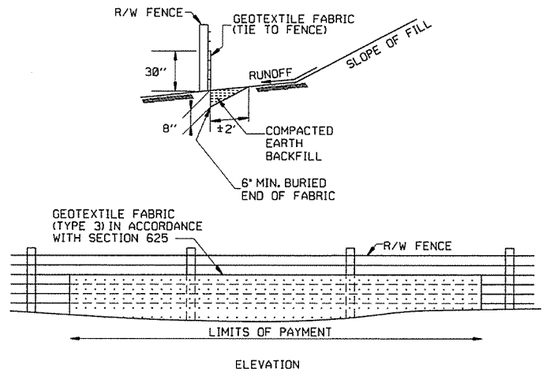
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.




WATTLE DITCH CHECK (E-1)




DROP INLET SILT FENCE (E-7)



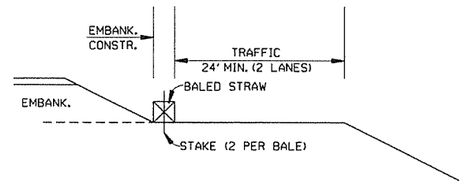

SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

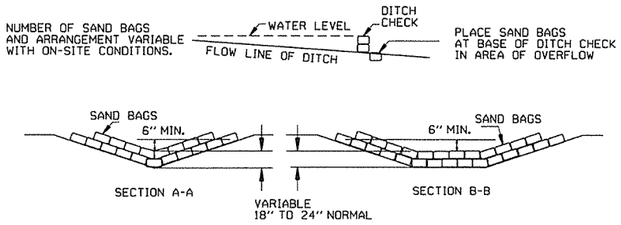
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

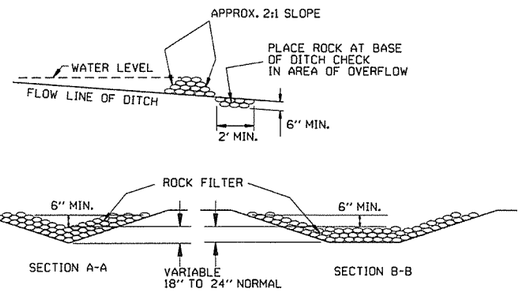
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



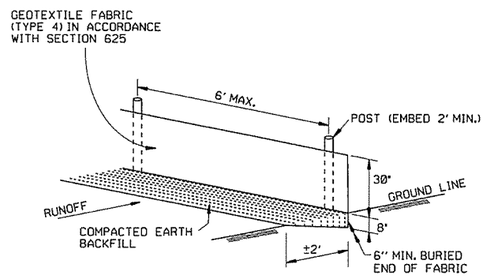

BALED STRAW FILTER BARRIER (E-2)




SAND BAG DITCH CHECK (E-5)




ROCK DITCH CHECK (E-6)




SILT FENCE (E-11)

GENERAL NOTES

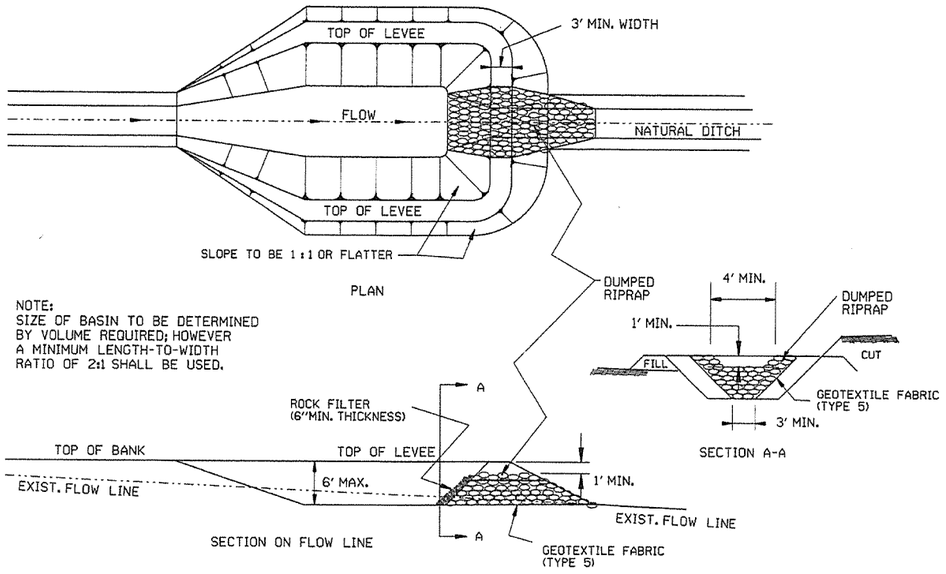
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

| DATE | REVISION | FILMED |
|---|---|---|
| 12-15-11 | DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK | |
| 11-18-98 | ADDED NOTES | |
| 7-02-98 | ADDED BALED STRAW FILTER BARRIER (E-2) | |
| 7-20-95 | REVISED SILT FENCE E-4 AND E-11 | 7-20-95 |
| 7-15-94 | REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC | |
| 6-2-94 | REVISED E-1,4,7 & 11; DELETED E-2 & 3 | 6-2-94 |
| 4-1-93 | REDRAWN | |
| 10-1-92 | REDRAWN | |
| 8-2-76 | ISSUED R.D.M. | 298-7-28-76 |

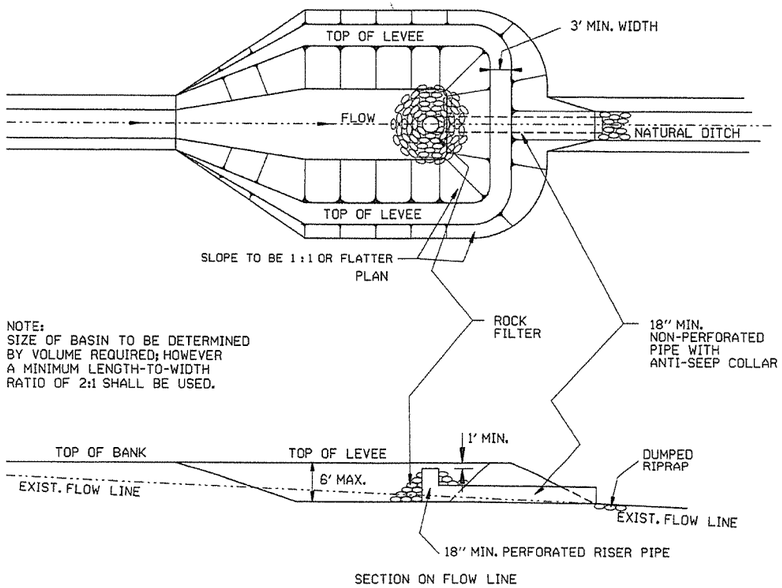
ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

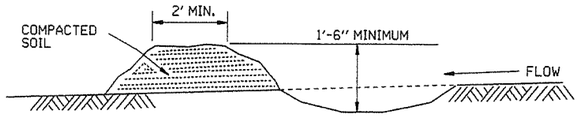
STANDARD DRAWING TEC-1



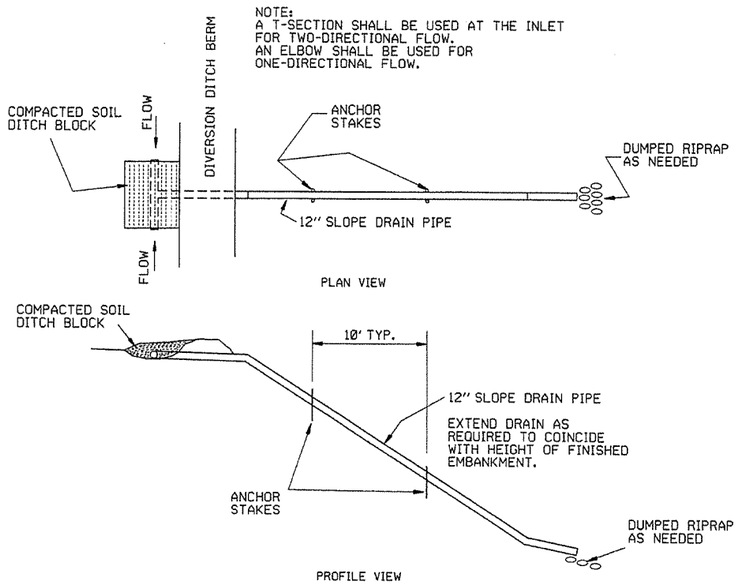

SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



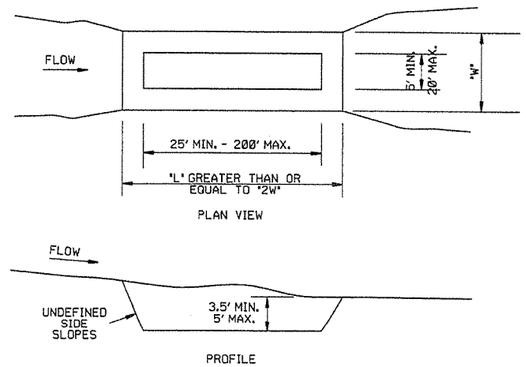

SEDIMENT BASIN WITH PIPE OUTLET (E-10)




DIVERSION DITCH (E-8)




SLOPE DRAIN (E-12)




SEDIMENT BASIN (E-14)

| DATE | REVISION | FILMED |
|---|---|---|
| 6-2-94 | Revised E-8 & E-12; Added E-14 & Deleted E-13 | |
| 4-1-93 | ISSUED | |

ARKANSAS STATE HIGHWAY COMMISSION

# TEMPORARY EROSION CONTROL DEVICES

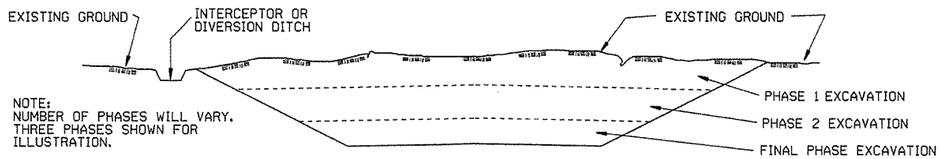
STANDARD DRAWING TEC-2

# CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

# EXCAVATION




GENERAL NOTE

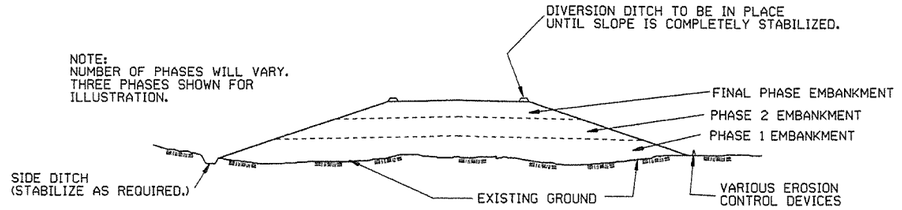
ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

# EMBANKMENT




GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

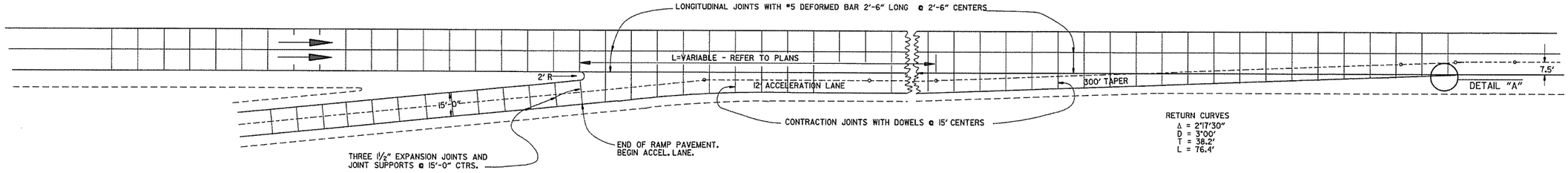
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

| DATE | REVISION | FILMED |
|---|---|---|
| 11-03-94 | CORRECTED SPELLING | |
| 6-2-94 | Drawn & Issued | 6-2-94 |

ARKANSAS STATE HIGHWAY COMMISSION

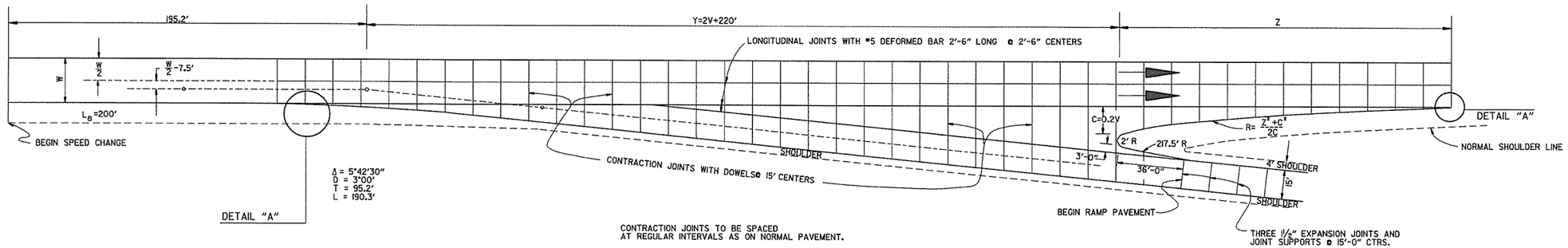
# TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3




## ENTRANCE RAMP

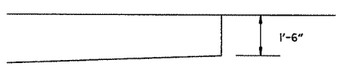
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



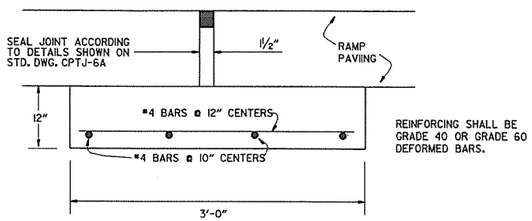

## EXIT RAMP

## EXIT RAMP

| DESIGN SPEED V | Y | NOSE OFFSET C | LENGTH NOSE TAPER Z | RETURN RADIUS R | ADDITIONAL SURFACING SQ. YDS. |
|---|---|---|---|---|---|
| 40 | 300.0 | 8.0 | 96.0 | 580.0 | 602.43 |
| 50 | 320.0 | 10.0 | 120.0 | 725.0 | 687.29 |
| 60 | 340.0 | 12.0 | 168.0 | 1182.0 | 790.55 |
| 70 | 360.0 | 14.0 | 210.0 | 1582.0 | 902.27 |
| | | | | | |




## DETAIL "A"




## DETAIL OF EXPANSION JOINT & JOINT SUPPORT

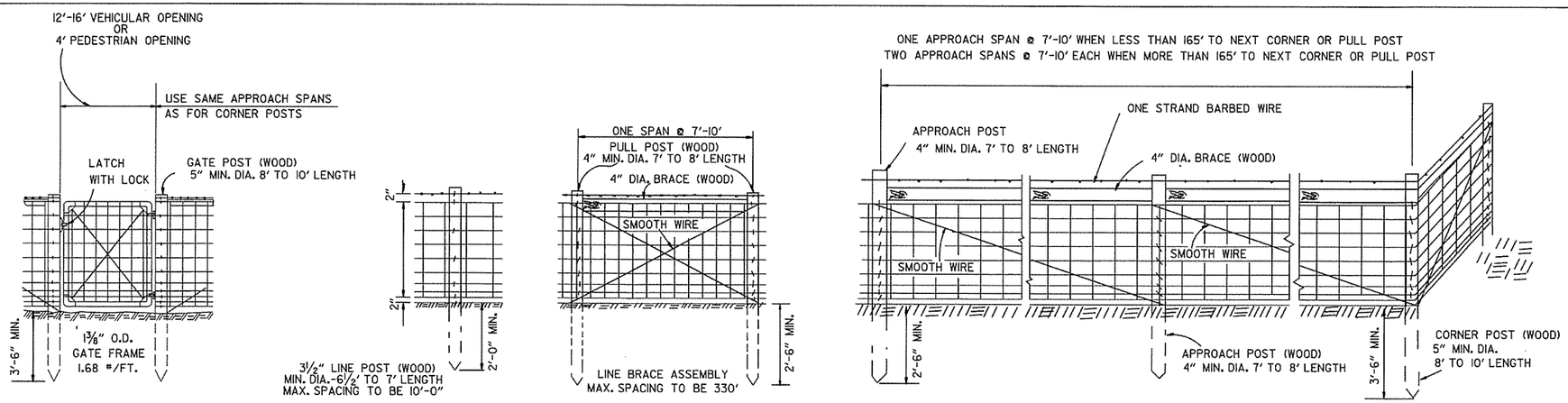
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

| DATE | REVISION | DATE FILM'D |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| 8-22-02 | DELETED NOTE | |
| 11-16-01 | CORRECTED SPELLING ON ENTRANCE RAMP NOTE | |
| 5-13-99 | ADDED, EDITED AND DELETED NOTES | |
| 11-03-94 | ADDED NOTE RE: REINF. BARS | |
| 10-1-92 | ADDED DETAIL A & OTHER MINOR CHANGES | 10-1-92 |
| 1-25-90 | REVISED EXPANSION JOINT | 1-25-90 |
| 7-15-88 | CONFORMED TO 1988 SPECIFICATIONS | 65C-7-15-88 |
| 3-2-81 | ISSUED | 511-10-2-72 |

ARKANSAS STATE HIGHWAY COMMISSION

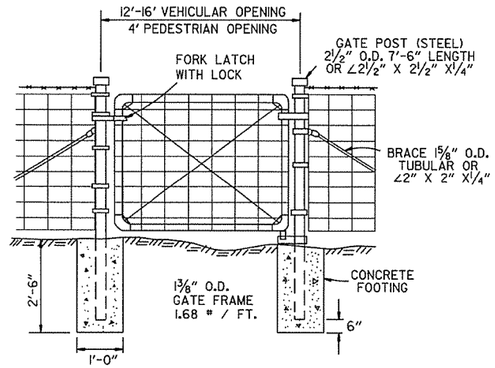
# DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

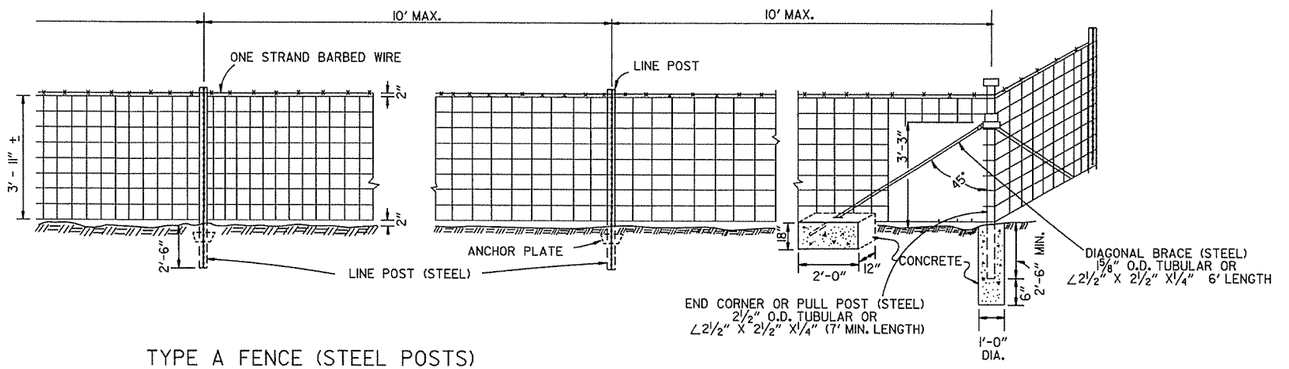
STANDARD DRAWING TR-1A



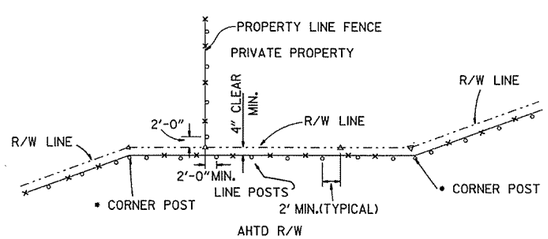

NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

## TYPE A FENCE (WOOD POSTS)




## TYPE A FENCE (STEEL POSTS)

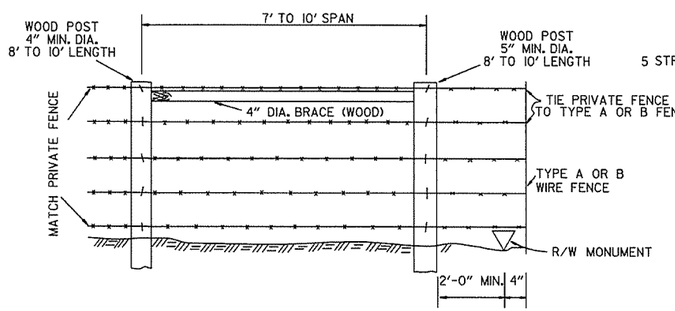



•NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

△ - R/W MONUMENTS

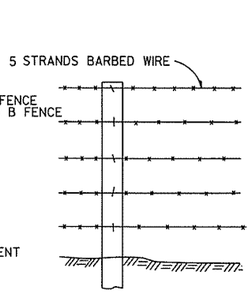
○ - FENCE POSTS

## RIGHT-OF-WAY FENCE LOCATION



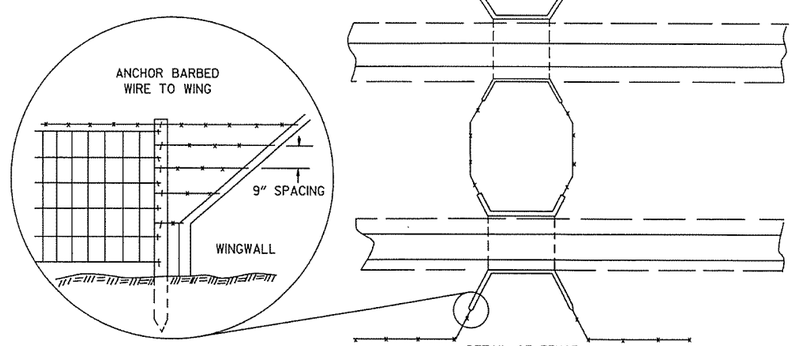

WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

## PRIVATE FENCE TERMINAL INSTALLATION




SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

## TYPE B FENCE




DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF WOOD LINE POSTS OF 7' LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

GATE HINGES AND LATCHES WITH LOCKS TO BE OF A TYPE APPROVED BY THE ENGINEER. DRIVEWAY GATES, EITHER SINGLE 12' OR 16' OR DOUBLE 6' TO 8' OPENINGS OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE FOR USE BY MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF BANK TO THE BRIDGE STRUCTURE, A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFIEICNT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO THE BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

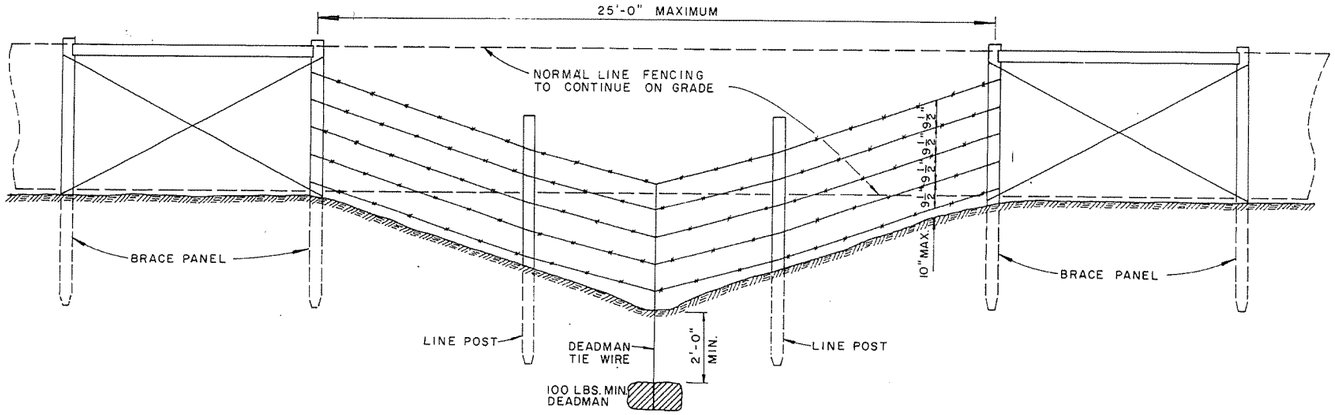
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

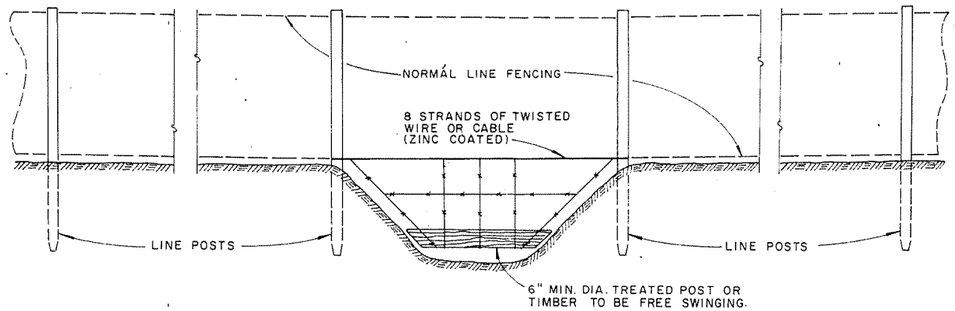
| DATE | REVISION | DATE FILMED |
|---|---|---|
| 8-22-02 | REVISED GENERAL NOTES | |
| 10-18-96 | REVISED ASTM REF. TO AASHTO | |
| 11-22-95 | REVISED R-O-W LOCATION DETAIL | |
| 6-2-94 | ADDED CORNER POST NOTE | 6-2-94 |
| 8-5-93 | REVISED R-O-W LOCATION DETAIL | 8-5-93 |
| 10-1-92 | ADDED STAPLE NOTE | |
| 8-2-90 | REV'D PULL POST LENGTH | |
| 11-30-89 | DELETED CLASS CONC. | |
| 7-15-88 | ADDED SPLICE NOTES | |
| 7-15-88 | ADDED HEIGHT DIMENSION | |
| 4-3-87 | REVISED VARIOUS NOTES | |
| | AND GENERAL NOTES | |
| 11-1-84 | MAX. POST SPACING | |
| 1-4-83 | MIN. DIA. LINE POST | |
| 10-2-72 | REVISED & REDRAWN | |

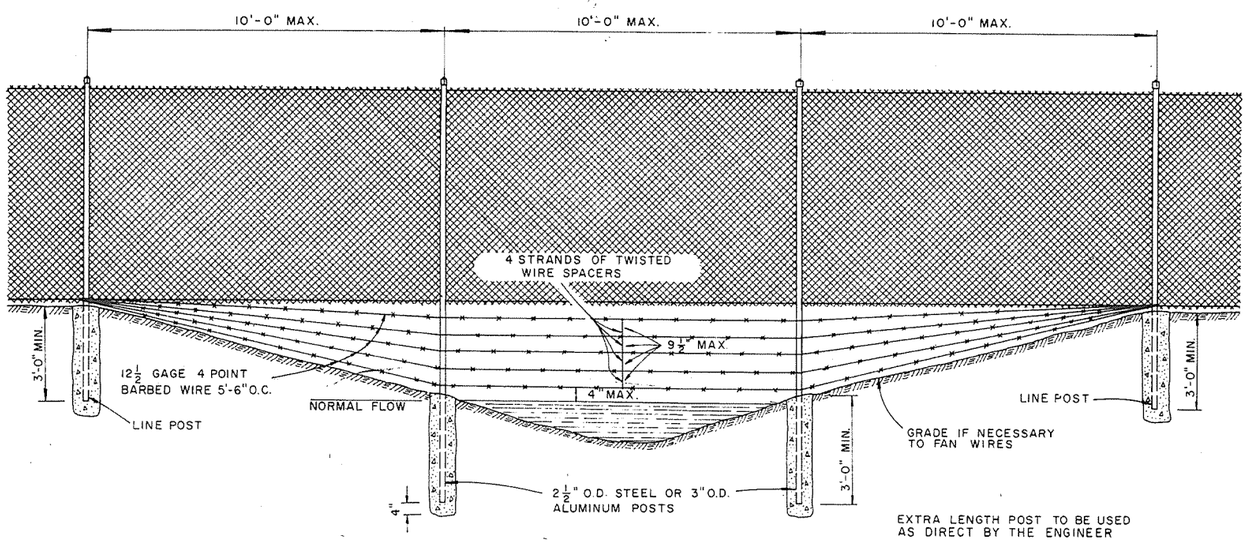
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1




GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

| DATE | REVISION | DATE FILMD. |
|---|---|---|
| 4-20-79 | REVISED TOP RAIL & TENSION WIRE | 676-4-20-79 |
| 10-2-72 | REVISED & REDRAWN | 529-10-2-72 |

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

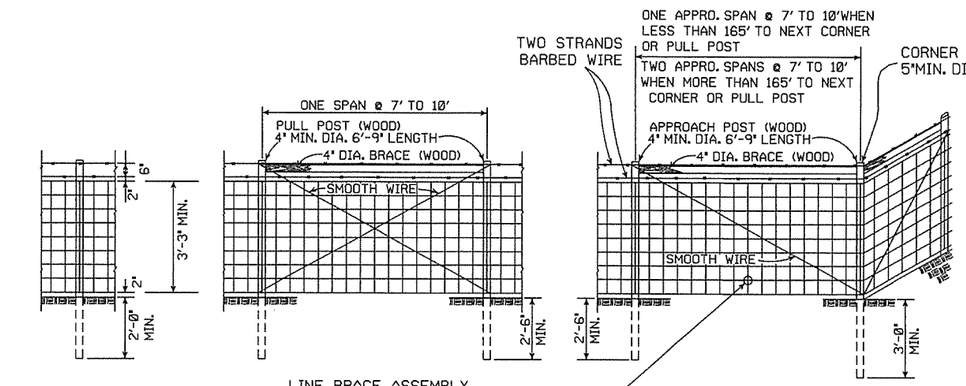
STANDARD DRAWING

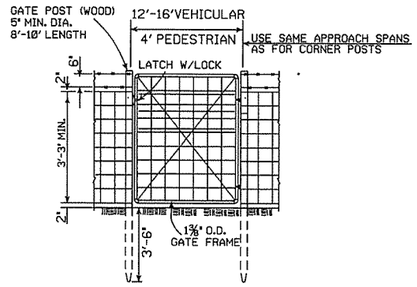
WF-2

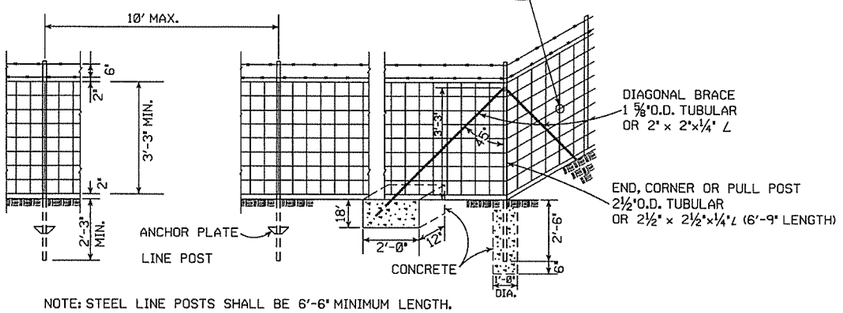


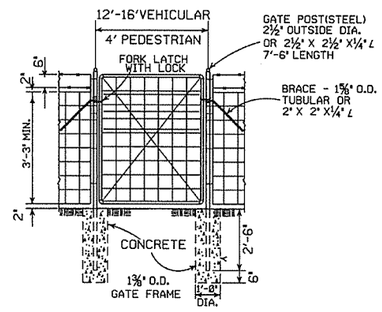
134—11-71—47001—PPASC.v

# TYPE C FENCE (WOOD POSTS)

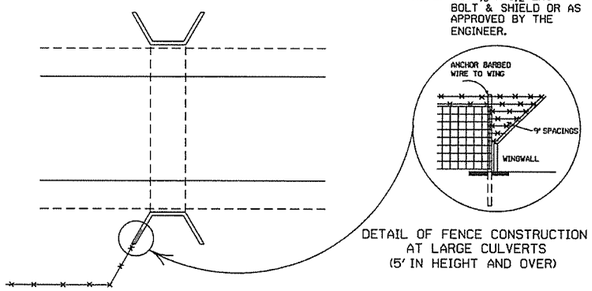



OTHER APPROVED TIES WILL BE PERMITTED




DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

GENERAL NOTES:

STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.
AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE - 1" TO +2".
TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

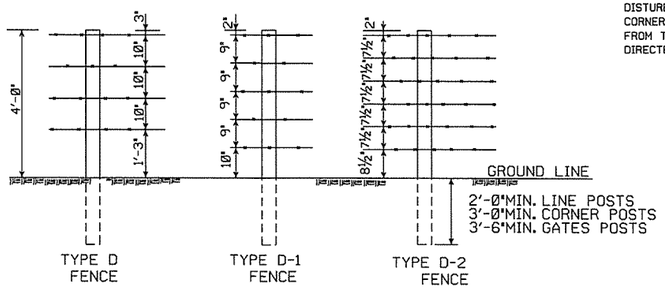
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

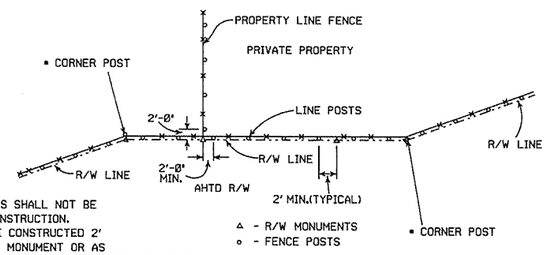
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

# TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

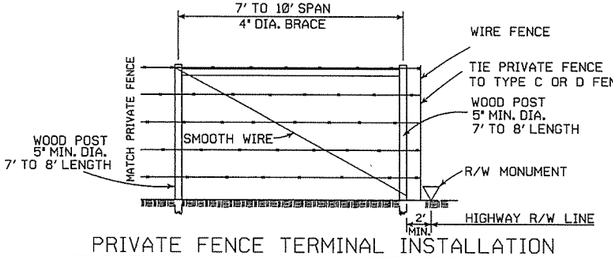



NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

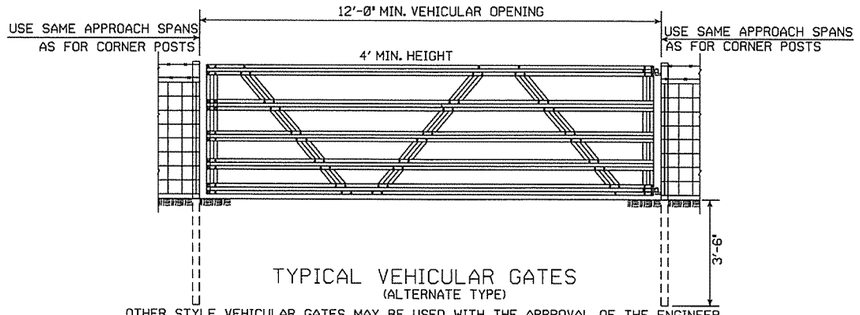



• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION




PRIVATE FENCE TERMINAL INSTALLATION
WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.




TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
THE METHOD OF SECURING GATE (LATCH AND/OR LOCK)SHALL MEET THE APPROVAL OF THE ENGINEER.

| DATE | REVISION | FILMED |
|---|---|---|
| 8-22-02 | REVISED GENERAL NOTES | |
| 10-18-96 | REVISED AASHTO | |
| 11-22-95 | REVISED R-O-W LOCATION DETAIL | |
| 6-2-94 | REVISED BARB WIRE AND ADDED CORNER POST NOTES | 6-2-94 |
| 8-5-93 | REVISED R/W INSTALLATION FENCE | 8-5-93 |
| 10-1-92 | ADDED STAPLE NOTE | 10-1-92 |
| 8-15-91 | ADDED TYPE D-2 FENCE | 8-15-91 |
| 11-30-89 | DELETED CLASS CONCRETE | 11-30-89 |
| 7-15-88 | ADDED SPLICE NOTE | 700-7-15-88 |
| 10-30-87 | GENERAL REVISIONS | 549-10-30-87 |
| 11-1-84 | MAX. POST SPACING MIN. WIRE GAUGE | 507-11-1-84 |
| 1-4-83 | MIN. DIA. LINE POST | 648-1-4-83 |
| 3-2-81 | TOLERANCE FOR POST LENGTH | 722-3-2-81 |
| 12-1-72 | ADDED D-1 & FENCE INSTALLATION | 564-12-1-72 |
| 10-2-72 | REVISED AND REDRAWN | 540-10-2-72 |

ARKANSAS STATE HIGHWAY COMMISSION

# WIRE FENCE TYPE C AND D

STANDARD DRAWING WF-4

RESHOT 3-5-93

16¢

| FED. ROAD No. | STATE | FED. AID PROJECT | FISCAL YEAR | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 6 | ARK. | | | 685 | |
| JOB No. | | | | | |

# BAR LIST FOR VARIOUS SECTIONS OF BARREL

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "a" bars STRAIGHT In Top and Bottom Slab of Barrel. 2 Add'l in Apron and Headwall. Each. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH |
|---|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #5 | 12" | 48 | 68 | 26'-5" |
| | | | | 6' | | | 48 | 68 | 26'-5" |
| | | | | 7' | | | 48 | 68 | 26'-8" |
| | | | | 8' | | | 48 | 68 | 26'-8" |
| | | | | 9' | | | 48 | 68 | 26'-8" |
| | | | | 10' | | | 48 | 68 | 27'-5" |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #6 | 11" | 52 | 74 | 32'-8" |
| | 3:1 = 14'-0" | | | 7' | | | 52 | 74 | 32'-8" |
| | | | | 8' | | | 52 | 74 | 32'-8" |
| | | | | 9' | | | 52 | 74 | 33'-1" |
| | | | | 10' | | | 52 | 74 | 33'-5" |
| | | | | 11' | | | 52 | 74 | 33'-7" |
| | | | | 12' | | | 52 | 74 | 33'-9" |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #6 | 11" | 24 | 34 | 26'-5" |
| | 3:1 = 14'-0" | | | 6' | | | 24 | 34 | 26'-5" |
| | | | | 7' | | | 24 | 34 | 26'-8" |
| | | | | 8' | | | 24 | 34 | 26'-8" |
| | | | | 9' | | | 24 | 34 | 27'-1" |
| | | | | 10' | | | 24 | 34 | 27'-5" |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #6 | 12" | | | 26'-5" |
| | | | | 7' | | | | | 26'-6" |
| | | | | 8' | | | | | 26'-10" |
| | | | | 9' | | | | | 27'-3" |
| | | | | 10' | | | | | 27'-7" |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #7 | 11" | | | 32'-8" |
| | | | | 7' | | | | | 32'-10" |
| | | | | 8' | | | | | 32'-11" |
| | | | | 9' | | | | | 33'-3" |
| | | | | 10' | | | | | 33'-7" |
| | | | | 11' | | | | | 33'-10" |
| | | | | 12' | | | | | 34'-2" |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #7 | 11" | | | 38'-9" |
| | | | | 7' | | | | | 38'-10" |
| | | | | 8' | | | | | 39'-0" |
| | | | | 9' | | | | | 39'-3" |
| | | | | 10' | | | | | 39'-5" |
| | | | | 11' | | | | | 39'-7" |
| | | | | 12' | | | | | 39'-9" |

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "b" bars STRAIGHT In Bottom of Top Slab bent up over Division Walls - hooked. Alternate with "a" and "c" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #6 | 12" | 22 | 32 | 28'-2" | 0'-5½" | 3'-10" | 6'-5" |
| | | | | 6' | | | 22 | 32 | 28'-2" | 0'-5½" | 3'-10" | 6'-5" |
| | | | | 7' | | | 22 | 32 | 28'-11" | 0'-5½" | 3'-10" | 6'-5" |
| | | | | 8' | | | 22 | 32 | 28'-5" | 0'-5" | 4'-0" | 6'-6" |
| | | | | 9' | | | 22 | 32 | 28'-11" | 0'-5" | 4'-1" | 6'-7" |
| | | | | 10' | | | 22 | 32 | 29'-1" | 0'-5" | 4'-2" | 6'-8" |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #6 | 11" | 24 | 35 | 32'-8" | 0'-6½" | 4'-9" | 7'-11½" |
| | 3:1 = 14'-0" | | | 7' | | | 24 | 35 | 32'-8" | 0'-6½" | 4'-9" | 7'-11½" |
| | | | | 8' | | | 24 | 35 | 32'-8" | 0'-6½" | 4'-10" | 8'-0" |
| | | | | 9' | | | 24 | 35 | 33'-1" | 0'-6½" | 4'-10" | 8'-1" |
| | | | | 10' | | | 24 | 35 | 33'-5" | 0'-6½" | 4'-11" | 8'-2" |
| | | | | 11' | | | 24 | 35 | 33'-7" | 0'-6½" | 4'-11" | 8'-3" |
| | | | | 12' | | | 24 | 35 | 33'-9" | 0'-6½" | 4'-11" | 8'-3" |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #6 | 11" | 11 | 16 | 26'-5" | 0'-6½" | 4'-4" | 7'-1½" |
| | 3:1 = 14'-0" | | | 6' | | | 11 | 16 | 26'-5" | 0'-6½" | 4'-4" | 7'-1½" |
| | | | | 7' | | | 11 | 16 | 26'-8" | 0'-6½" | 4'-4" | 7'-1½" |
| | | | | 8' | | | 11 | 16 | 26'-8" | 0'-6½" | 4'-4" | 7'-2" |
| | | | | 9' | | | 11 | 16 | 27'-1" | 0'-6½" | 4'-5" | 7'-2½" |
| | | | | 10' | | | 11 | 16 | 27'-5" | 0'-6½" | 4'-5" | 7'-3" |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #6 | 12" | | | 26'-5" | 0'-6½" | 3'-5" | 6'-5" |
| | | | | 7' | | | | | 26'-6" | 0'-7½" | 3'-5" | 6'-5½" |
| | | | | 8' | | | | | 26'-10" | 0'-7½" | 3'-6" | 6'-6" |
| | | | | 9' | | | | | 27'-3" | 0'-7½" | 3'-6" | 6'-6½" |
| | | | | 10' | | | | | 27'-7" | 0'-7½" | 3'-6" | 6'-7" |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #7 | 11" | | | 32'-8" | 0'-10" | 4'-2" | 8'-0" |
| | | | | 7' | | | | | 32'-10" | 0'-10" | 4'-2" | 8'-0½" |
| | | | | 8' | | | | | 32'-11" | 0'-10" | 4'-2" | 8'-1" |
| | | | | 9' | | | | | 33'-3" | 0'-10" | 4'-3" | 8'-1½" |
| | | | | 10' | | | | | 33'-7" | 0'-10" | 4'-3" | 8'-2" |
| | | | | 11' | | | | | 33'-10" | 0'-10" | 4'-3" | 8'-2½" |
| | | | | 12' | | | | | 34'-2" | 0'-10" | 4'-3" | 8'-3" |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #7 | 11" | | | 38'-9" | 0'-10½" | 4'-5" | 8'-7½" |
| | | | | 7' | | | | | 38'-10" | 0'-10½" | 4'-5" | 8'-8" |
| | | | | 8' | | | | | 39'-0" | 0'-10½" | 4'-5" | 8'-8½" |
| | | | | 9' | | | | | 39'-3" | 0'-10½" | 4'-5" | 8'-9" |
| | | | | 10' | | | | | 39'-5" | 0'-10½" | 4'-5" | 8'-9½" |
| | | | | 11' | | | | | 39'-7" | 0'-10½" | 4'-5" | 8'-10" |
| | | | | 12' | | | | | 39'-9" | 0'-10½" | 4'-5" | 8'-10½" |

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "b2" bars STRAIGHT In Top of Bottom Slab bent down under Division Walls - hooked. Alternate with "a" and "c" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #6 | 12" | 22 | 32 | 28'-2" | 0'-5½" | 3'-10" | 6'-5" |
| | | | | 6' | | | 22 | 32 | 28'-2" | 0'-5½" | 3'-10" | 6'-5" |
| | | | | 7' | | | 22 | 32 | 28'-11" | 0'-5½" | 3'-11" | 6'-5½" |
| | | | | 8' | | | 22 | 32 | 28'-5" | 0'-5" | 4'-0" | 6'-6" |
| | | | | 9' | | | 22 | 32 | 28'-10" | 0'-5" | 4'-1" | 6'-7" |
| | | | | 10' | | | 22 | 32 | 29'-1" | 0'-5" | 4'-2" | 6'-8" |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #7 | 11" | 24 | 35 | 32'-8" | 0'-6½" | 4'-10" | 7'-11½" |
| | 3:1 = 14'-0" | | | 7' | | | 24 | 35 | 32'-8" | 0'-6½" | 4'-10" | 7'-11½" |
| | | | | 8' | | | 24 | 35 | 32'-8" | 0'-6½" | 4'-10" | 8'-0" |
| | | | | 9' | | | 24 | 35 | 33'-1" | 0'-6½" | 4'-11" | 8'-0½" |
| | | | | 10' | | | 24 | 35 | 33'-5" | 0'-6½" | 4'-11" | 8'-1" |
| | | | | 11' | | | 24 | 35 | 33'-7" | 0'-6½" | 4'-11" | 8'-2" |
| | | | | 12' | | | 24 | 35 | 33'-9" | 0'-6½" | 4'-11" | 8'-2½" |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #7 | 11" | 11 | 16 | 26'-5" | 0'-6½" | 4'-12" | 8'-0" |
| | 3:1 = 14'-0" | | | 6' | | | 11 | 16 | 26'-5" | 0'-6½" | 4'-12" | 8'-0" |
| | | | | 7' | | | 11 | 16 | 26'-8" | 0'-6½" | 4'-12" | 8'-0½" |
| | | | | 8' | | | 11 | 16 | 26'-8" | 0'-6½" | 4'-12" | 8'-1" |
| | | | | 9' | | | 11 | 16 | 27'-1" | 0'-6½" | 4'-13" | 8'-1½" |
| | | | | 10' | | | 11 | 16 | 27'-5" | 0'-6½" | 4'-13" | 8'-2" |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #7 | 12" | | | 26'-5" | 0'-6½" | 3'-11" | 6'-5" |
| | | | | 7' | | | | | 26'-6" | 0'-7½" | 3'-11" | 6'-5½" |
| | | | | 8' | | | | | 26'-10" | 0'-7½" | 3'-11" | 6'-6" |
| | | | | 9' | | | | | 27'-3" | 0'-7½" | 3'-11" | 6'-6½" |
| | | | | 10' | | | | | 27'-7" | 0'-7½" | 3'-11" | 6'-7" |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #7 | 11" | | | 32'-8" | 0'-10" | 4'-11" | 8'-0" |
| | | | | 7' | | | | | 32'-10" | 0'-10" | 4'-11" | 8'-0½" |
| | | | | 8' | | | | | 32'-11" | 0'-10" | 4'-11" | 8'-1" |
| | | | | 9' | | | | | 33'-3" | 0'-10" | 4'-12" | 8'-1½" |
| | | | | 10' | | | | | 33'-7" | 0'-10" | 4'-12" | 8'-2" |
| | | | | 11' | | | | | 33'-10" | 0'-10" | 4'-12" | 8'-2½" |
| | | | | 12' | | | | | 34'-2" | 0'-10" | 4'-12" | 8'-3" |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #7 | 11" | | | 38'-9" | 0'-10½" | 4'-14" | 8'-7½" |
| | | | | 7' | | | | | 38'-10" | 0'-10½" | 4'-14" | 8'-8" |
| | | | | 8' | | | | | 39'-0" | 0'-10½" | 4'-14" | 8'-8½" |
| | | | | 9' | | | | | 39'-3" | 0'-10½" | 4'-14" | 8'-9" |
| | | | | 10' | | | | | 39'-5" | 0'-10½" | 4'-14" | 8'-9½" |
| | | | | 11' | | | | | 39'-7" | 0'-10½" | 4'-14" | 8'-10" |
| | | | | 12' | | | | | 39'-9" | 0'-10½" | 4'-14" | 8'-10½" |

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "c" bars STRAIGHT In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH |
|---|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #7 | 11" | 44 | 64 | 17'-6" |
| | | | | 6' | | | 44 | 64 | 17'-6" |
| | | | | 7' | | | 44 | 64 | 17'-8" |
| | | | | 8' | | | 44 | 64 | 17'-8" |
| | | | | 9' | | | 44 | 64 | 17'-10" |
| | | | | 10' | | | 44 | 64 | 18'-0" |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #7 | 11" | 24 | 35 | 20'-2" |
| | 3:1 = 14'-0" | | | 7' | | | 24 | 35 | 20'-3" |
| | | | | 8' | | | 24 | 35 | 20'-3" |
| | | | | 9' | | | 24 | 35 | 20'-4" |
| | | | | 10' | | | 24 | 35 | 20'-5" |
| | | | | 11' | | | 24 | 35 | 20'-5" |
| | | | | 12' | | | 24 | 35 | 20'-6" |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #7 | 11" | 11 | 16 | 22'-8" |
| | 3:1 = 14'-0" | | | 6' | | | 11 | 16 | 22'-8" |
| | | | | 7' | | | 11 | 16 | 22'-8" |
| | | | | 8' | | | 11 | 16 | 22'-8" |
| | | | | 9' | | | 11 | 16 | 22'-9" |
| | | | | 10' | | | 11 | 16 | 22'-10" |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #7 | 12" | | | 17'-6" |
| | | | | 7' | | | | | 17'-6" |
| | | | | 8' | | | | | 17'-8" |
| | | | | 9' | | | | | 17'-8" |
| | | | | 10' | | | | | 17'-10" |
| | | | | 11' | | | | | 18'-0" |
| | | | | 12' | | | | | 18'-0" |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #7 | 11" | | | 21'-8" |
| | | | | 7' | | | | | 21'-8" |
| | | | | 8' | | | | | 21'-8" |
| | | | | 9' | | | | | 21'-9" |
| | | | | 10' | | | | | 21'-10" |
| | | | | 11' | | | | | 22'-0" |
| | | | | 12' | | | | | 22'-0" |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #8 | 11" | | | 25'-8" |
| | | | | 7' | | | | | 25'-8" |
| | | | | 8' | | | | | 25'-8" |
| | | | | 9' | | | | | 25'-9" |
| | | | | 10' | | | | | 25'-10" |
| | | | | 11' | | | | | 26'-0" |
| | | | | 12' | | | | | 26'-0" |

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "d" bars STRAIGHT Longitudinal in Top Slab of Barrel SIZE | SPACING | NUMBER REQ'D | LENGTH |
|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #4 | 12" | 30 | |
| | | | | 6' | | | 36 | |
| | | | | 7' | | | 42 | |
| | | | | 8' | | | 48 | |
| | | | | 9' | | | 54 | |
| | | | | 10' | | | 60 | |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | 3:1 = 14'-0" | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #4 | 12" | 37 | |
| | 3:1 = 14'-0" | | | 6' | | | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "d2" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE | SPACING | NUMBER REQ'D | LENGTH |
|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #4 | 12" | 30 | |
| | | | | 6' | | | 36 | |
| | | | | 7' | | | 42 | |
| | | | | 8' | | | 48 | |
| | | | | 9' | | | 54 | |
| | | | | 10' | | | 60 | |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | 3:1 = 14'-0" | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #4 | 12" | 37 | |
| | 3:1 = 14'-0" | | | 6' | | | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #4 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |

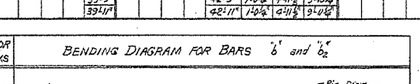
| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE | SPACING | NUMBER REQ'D | LENGTH |
|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #5 | 12" | 37 | |
| | | | | 6' | | | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #5 | 12" | 37 | |
| | 3:1 = 14'-0" | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #5 | 12" | 37 | |
| | 3:1 = 14'-0" | | | 6' | | | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #5 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #5 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #5 | 12" | 37 | |
| | | | | 7' | | | 37 | |
| | | | | 8' | | | 37 | |
| | | | | 9' | | | 37 | |
| | | | | 10' | | | 37 | |
| | | | | 11' | | | 37 | |
| | | | | 12' | | | 37 | |

| SECTION & BAR GROUP | LENGTHS OF SECTION | DEPTH OF COVER | CLEAR SPAN | CLEAR HEIGHT | "f" bars STRAIGHT Vertical in Sidewalls and Division Walls SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH |
|---|---|---|---|---|---|---|---|---|---|
| SECTION "A" & BAR GROUP "A" | 3:1 = 22'-0" 4:1 = 32'-0" | 0' TO 10'-0" | 3 @ 8 | 5' | #4 | 12" | 44 | 64 | 6'-8" |
| | | | | 6' | | | 44 | 64 | 7'-0" |
| | | | | 7' | | | 44 | 64 | 7'-2" |
| | | | | 8' | | | 44 | 64 | 7'-4" |
| | | | | 9' | | | 44 | 64 | 7'-6" |
| | | | | 10' | | | 44 | 64 | 7'-8" |
| SECTION "B" & BAR GROUP "B" | 4:1 = 14'-0" | 10'-0" TO 15'-0" | 3 @ 8 | 6' | #5 | 12" | 44 | 66 | 8'-10" |
| | 3:1 = 14'-0" | | | 7' | | | 44 | 66 | 9'-0" |
| | | | | 8' | | | 44 | 66 | 9'-2" |
| | | | | 9' | | | 44 | 66 | 9'-4" |
| | | | | 10' | | | 44 | 66 | 9'-6" |
| | | | | 11' | | | 44 | 66 | 9'-8" |
| | | | | 12' | | | 44 | 66 | 9'-10" |
| SECTION "C" & BAR GROUP "C" | 4:1 = 16'-0" | 15'-0" TO 20'-0" | 3 @ 8 | 5' | #5 | 12" | 44 | 66 | 10'-10" |
| | 3:1 = 14'-0" | | | 6' | | | 44 | 66 | 11'-0" |
| | | | | 7' | | | 44 | 66 | 11'-2" |
| | | | | 8' | | | 44 | 66 | 11'-4" |
| | | | | 9' | | | 44 | 66 | 11'-6" |
| | | | | 10' | | | 44 | 66 | 11'-8" |
| SECTION "D" & BAR GROUP "D" | Varies with Length of Barrel | 20'-0" TO 25'-0" | 3 @ 8 | 6' | #5 | 12" | 44 | 66 | 12'-10" |
| | | | | 7' | | | 44 | 66 | 13'-0" |
| | | | | 8' | | | 44 | 66 | 13'-2" |
| | | | | 9' | | | 44 | 66 | 13'-4" |
| | | | | 10' | | | 44 | 66 | 13'-6" |
| | | | | 11' | | | 44 | 66 | 13'-8" |
| | | | | 12' | | | 44 | 66 | 13'-10" |
| SECTION "E" & BAR GROUP "E" | Varies with Length of Barrel | 25'-0" TO 30'-0" | 3 @ 8 | 6' | #6 | 12" | 52 | 74 | 14'-10" |
| | | | | 7' | | | 52 | 74 | 15'-0" |
| | | | | 8' | | | 52 | 74 | 15'-2" |
| | | | | 9' | | | 52 | 74 | 15'-4" |
| | | | | 10' | | | 52 | 74 | 15'-6" |
| | | | | 11' | | | 52 | 74 | 15'-8" |
| | | | | 12' | | | 52 | 74 | 15'-10" |
| SECTION "F" & BAR GROUP "F" | Varies with Length of Barrel | 30'-0" TO 35'-0" | 3 @ 8 | 6' | #6 | 12" | 52 | 74 | 16'-10" |
| | | | | 7' | | | 52 | 74 | 17'-0" |
| | | | | 8' | | | 52 | 74 | 17'-2" |
| | | | | 9' | | | 52 | 74 | 17'-4" |
| | | | | 10' | | | 52 | 74 | 17'-6" |
| | | | | 11' | | | 52 | 74 | 17'-8" |
| | | | | 12' | | | 52 | 74 | 17'-10" |

NOTE:- Bars for each Section to be marked with the Section-letter, thus for Section B, the bars should be marked B1, B2, B3, B4, B5, B6, B7, and B8.

Designed by:- W.C.H. 8-7-62 Checked by:- EWS 8-10-62
Drawn by:- W.C.H. 8-15-62 Checked by:- EWS 8-20-62
Quantities by:- W.C.H. 8-17-62 Checked by:- EWS 8-20-62

## BENDING DIAGRAM FOR BARS "b" and "b2"




| BAR SIZE | PIN DIAM. | X | ADD FOR 2 HOOKS |
|---|---|---|---|
| #6 | 3" | 5" | 1'-1½" |
| #7 | 3½" | 5½" | 1'-3½" |
| #8 | 4" | 6½" | 1'-6" |

| DOWEL BARS FOR TWO HEADWALLS | S | SIZE | SPACING | No. REQ'D | LENGTH | X |
|---|---|---|---|---|---|---|
| | 8' | #4 | 12" | 57 | 2'-10" | 1'-5" |
| | 10' | #4 | 12" | 66 | 3'-0" | 1'-6" |
| | 12' | #4 | 12" | 78 | 3'-4" | 1'-8" |

Bars "X" Dowel bars in Headwalls.

NOTE:- Dimension are to centers of bars (6" and 12")

## GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters.
CONSTRUCTION JOINTS:- Construction joints between wing walls, sidewalls, division walls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

## DESIGN LIVE LOAD

H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-0" ctrs.

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/□"
Reinforcing Steel 20,000 #/□"

## LENGTH OF SECTIONS FOR SKEWED CULVERTS

| SKEW ANGLE | SEC. OF SKEW ANGLE | 3:1 SLOPES SECTIONS A | 3:1 SLOPES SECTIONS B, or C | 4:1 SLOPES SECTIONS A | 4:1 SLOPES SECTIONS B, or C |
|---|---|---|---|---|---|
| 0° | 1.0 | 22.0' | 11.0' | 32.0' | 16.0' |
| 15° | 1.0353 | 22.776' | 11.388' | 33.129' | 16.564' |
| 30° | 1.1547 | * | 12.702' | * | 18.475' |
| 45° | 1.4142 | * | 15.556' | * | 22.627' |

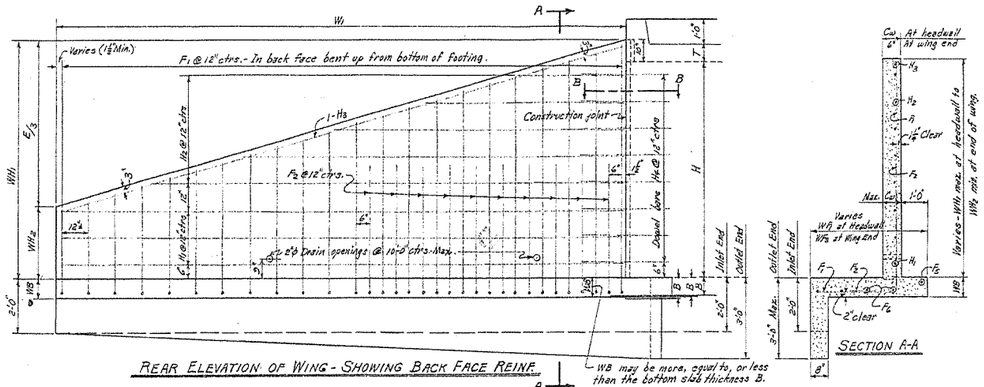
* Variable, see Drawings for Skewed Culverts.

## DIMENSIONS

BARREL DIMENSIONS

| MAX. DESIGN DEPTH OF COVER | CLEAR SPANS | CLEAR HEIGHT | SQ. FT. OPENING | OVERALL WIDTH | THICKNESS OF TOP SLAB | THICKNESS OF SIDEWALLS | THICKNESS OF DIVISION WALLS | THICKNESS OF BOTTOM SLAB | OVERALL HEIGHT |
|---|---|---|---|---|---|---|---|---|---|
| D | S | H | A | OW | T | C | M | B | OH |
| SECTION "A" - 10'-0" | 3 @ 8 | 5' | 180 | 26'-8" | 8½" | 7" | 9" | 9" | 6'-5½" |
| | | 6' | 144 | 26'-8" | | 7" | 9" | | 7'-5½" |
| | | 7' | 168 | 26'-11" | | 7½" | 10" | | 8'-5½" |
| | | 8' | 192 | 27'-2" | | 8" | 10" | | 9'-5½" |
| | | 9' | 216 | 27'-5" | | 9" | 11" | | 10'-5½" |
| | | 10' | 240 | 27'-8" | | 10" | 12" | | 11'-5½" |
| | 3 @ 9 | 5' | 180 | 32'-11" | 8½" | 7½" | 10" | 9" | 7'-0½" |
| | | 6' | 180 | 32'-11" | | 7½" | 10" | | 8'-0½" |
| | | 7' | 210 | 32'-11" | | 7½" | 10" | | 8'-6½" |
| | | 8' | 240 | 33'-2" | | 8" | 10" | | 9'-0½" |
| | | 9' | 270 | 33'-5" | | 9" | 11" | | 9'-6½" |
| | | 10' | 300 | 33'-8" | | 10" | 12" | | 10'-0½" |
| | | 11' | 330 | 33'-10" | | 11" | 12" | | 10'-6½" |
| | | 12' | 360 | 34'-0" | | 12" | 12" | | 11'-0½" |
| SECTION "B" - 15'-0" | 3 @ 8 | 6' | 216 | 39'-0" | 9½" | 8" | 10" | 10" | 7'-11½" |
| | | 7' | 252 | 39'-0" | | 8" | 10" | | 8'-5½" |
| | | 8' | 288 | 39'-0" | | 8" | 10" | | 8'-11½" |
| | | 9' | 324 | 39'-0" | | 8" | 10" | | 9'-5½" |
| | | 10' | 360 | 39'-0" | | 8" | 10" | | 9'-11½" |
| | | 11' | 396 | 39'-0" | | 8" | 10" | | 10'-5½" |
| | | 12' | 432 | 39'-0" | | 8" | 10" | | 10'-11½" |
| | 3 @ 9 | 5' | 180 | 38'-0" | 9½" | 8" | 10" | 10" | 8'-0½" |
| | | 6' | 180 | 38'-0" | | 8" | 10" | | 8'-6½" |
| | | 7' | 210 | 38'-0" | | 8" | 10" | | 9'-0½" |
| | | 8' | 240 | 38'-0" | | 8" | 10" | | 9'-6½" |
| | | 9' | 270 | 38'-0" | | 8" | 10" | | 10'-0½" |
| | | 10' | 300 | 38'-0" | | 8" | 10" | | 10'-6½" |
| | | 11' | 330 | 38'-0" | | 8" | 10" | | 11'-0½" |
| | | 12' | 360 | 38'-0" | | 8" | 10" | | 11'-6½" |
| SECTION "C" - 20'-0" | 3 @ 8 | 6' | 216 | 39'-0" | 10" | 8" | 10" | 10½" | 8'-0½" |
| | | 7' | 252 | 39'-0" | | 8" | 10" | | 8'-6½" |
| | | 8' | 288 | 39'-0" | | 8" | 10" | | 9'-0½" |
| | | 9' | 324 | 39'-0" | | 8" | 10" | | 9'-6½" |
| | | 10' | 360 | 39'-0" | | 8" | 10" | | 10'-0½" |
| | | 11' | 396 | 39'-0" | | 8" | 10" | | 10'-6½" |
| | | 12' | 432 | 39'-0" | | 8" | 10" | | 11'-0½" |
| | 3 @ 9 | 5' | 180 | 38'-0" | 10" | 8" | 10" |

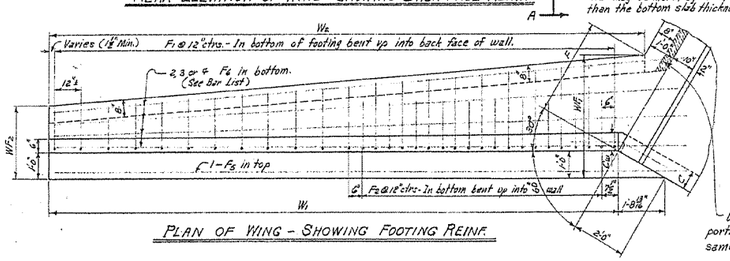
| FED. ROAD DIV. | STATE | FED. AID PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|
| 6 | ARK. | | 686 | |
| JOB NO. | | | | |



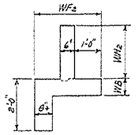

REAR ELEVATION OF WING - SHOWING BACK FACE REINF.




WB may be more, equal to, or less than the bottom slab thickness B.

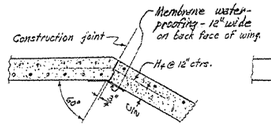



PLAN OF WING - SHOWING FOOTING REINF.

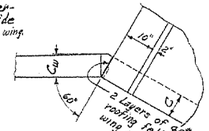



END VIEW OF WING

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.




SECTION B-B THRU CONSTRUCTION JOINT




DETAIL AT TOP OF WING

Note:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

## WING DIMENSIONS

| CLEAR HEIGHT OF BOX | THICKNESS OF WING FOOTING | THICKNESS OF WING AT HEADWALL = C | WINGWALL HEIGHTS AT HEADWALL | WINGWALL HEIGHTS AT END OF WING | WIDTHS OF WING FOOTINGS AT HEADWALL | WIDTHS OF WING FOOTINGS AT END OF WING | PERPENDICULAR FOOTING DIMENSION | PERPENDICULAR DIST. FROM H4W3 TO END OF WING | LENGTH OF WINGWALLS | INSIDE FLARING DIMENSION | * QUANTITY PER WING CLASS S CONCRETE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | INLET END | OUTLET END |
| H | WB | Cw | WH1 | WH2 | W6 | W5 | F | E | W1 | W2 | CU.YD. | CU.YD. |
| 2' | 7" | 6" | 2'-10" | 0'-8" | 2'-4" | 2'-0" | 0'-11⅞" | 6'-6" | 7'-6" | 7'-1½" | 0.889 | 0.996 |
| 3' | 7" | 6" | 3'-10" | 1'-0" | 2'-8" | 2'-1⅛" | 1'-3⅜" | 8'-6" | 9'-3⅝" | 9'-2½" | 1.338 | 1.466 |
| 4' | 7" | 6" | 4'-10" | 1'-4" | 3'-0" | 2'-3" | 1'-5" | 10'-6" | 12'-1⅝" | 12'-1⅝" | 1.666 | 2.027 |
| 5' | 7" | 6" | 5'-10" | 1'-8" | 3'-4" | 2'-4½" | 2'-1⅝" | 12'-6" | 14'-5⅞" | 14'-7⅛" | 2.478 | 2.668 |
| | | 7" | 5'-10" | 1'-8" | 3'-4" | 2'-4½" | 2'-1⅝" | 12'-6" | 14'-5⅞" | 14'-7⅛" | 2.582 | 2.772 |
| 6' | 8" | 7" | 6'-10" | 2'-0" | 3'-8" | 2'-6" | 2'-6¼" | 14'-6" | 16'-5" | 17'-1⅛" | 3.440 | 3.661 |
| | | 7⅛" | 6'-10" | 2'-0" | 3'-8" | 2'-6" | 2'-6¼" | 14'-6" | 16'-5" | 17'-1½" | 3.511 | 3.732 |
| | | 8" | 6'-10" | 2'-0" | 3'-8" | 2'-6" | 2'-6¼" | 14'-6" | 16'-5" | 17'-1⅝" | 3.582 | 3.803 |
| 7' | 8⅛" | 7⅛" | 7'-10" | 2'-4" | 4'-2" | 2'-7⅛" | 3'-1⅛" | 16'-6" | 18'-5" | 19'-0⅝" | 4.505 | 4.798 |
| | | 8" | 7'-10" | 2'-4" | 4'-2" | 2'-7⅛" | 3'-1⅛" | 16'-6" | 18'-5" | 19'-1⅛" | 4.597 | 4.851 |
| 8' | 9" | 8" | 8'-10" | 2'-8" | 4'-8" | 2'-9" | 3'-8" | 18'-6" | 21'-4⅝" | 22'-4" | 5.761 | 6.047 |

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

## APRON DIMENSION W3

W3 = (OW - 2F)

| CLEAR SPAN | CLEAR HEIGHT | 2 x FOOTING DIMENSION | SINGLE BARREL CULVERT | | DOUBLE BARREL CULVERT | | TRIPLE BARREL CULVERT | | QUADRUPLE BARREL CULVERT | | QUINTUPLE BARREL CULVERT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | H | 2F | OW | W3 | OW | W3 | OW | W3 | OW | W3 | OW | W3 |
| 4' | 2' | 1'-11½" | 5'-0" | 3'-0½" | 9'-8" | 7'-8½" | 14'-4" | 12'-4½" | 19'-0" | 17'-0½" | 23'-8" | 21'-8½" |
| | 3' | 2'-8⅝" | 5'-0" | 2'-3⅛" | 9'-8" | 6'-11⅝" | 14'-4" | 11'-7⅛" | 19'-0" | 16'-3½" | 23'-8" | 20'-11⅝" |
| | 4' | 3'-6" | 5'-0" | 1'-6" | 9'-8" | 6'-2" | 14'-4" | 10'-10" | 19'-0" | 15'-6" | 23'-8" | 20'-2" |
| | 5' | 4'-3⅜" | 5'-0" | 0'-8⅜" | 9'-8" | 5'-10⅜" | 14'-4" | 10'-0⅜" | 19'-0" | 14'-8½" | 23'-8" | 19'-8⅜" |
| | 6' | 5'-0⅛" | 5'-0" | 0'-1⅛" | 9'-11" | 4'-10⅛" | 14'-8" | 9'-7⅛" | 19'-5" | 14'-2⅛" | 24'-2" | 19'-1⅛" |
| 5' | 3' | 2'-8⅝" | 6'-0" | 3'-3⅛" | 11'-8" | 8'-11⅛" | 17'-4" | 14'-7⅛" | 23'-0" | 20'-3⅛" | 28'-8" | 25'-11⅛" |
| | 4' | 3'-6" | 6'-0" | 2'-6" | 11'-8" | 8'-2" | 17'-4" | 13'-10" | 23'-0" | 19'-6" | 28'-8" | 25'-2" |
| | 5' | 4'-3⅜" | 6'-0" | 1'-8⅜" | 11'-8" | 7'-10⅜" | 17'-4" | 13'-0⅜" | 23'-0" | 18'-8½" | 28'-8" | 24'-8⅜" |
| | 6' | 5'-0⅛" | 6'-2" | 1'-1⅛" | 11'-11" | 6'-10⅛" | 17'-8" | 12'-7⅛" | 23'-5" | 18'-2⅛" | 29'-2" | 24'-1⅛" |
| | 7' | 6'-2⅝" | 6'-3" | 0'-0⅝" | 12'-1" | 5'-10⅝" | 17'-11" | 11'-8⅝" | 23'-9" | 17'-1⅝" | 29'-7" | 23'-1⅝" |
| 6' | 3' | 2'-8⅝" | 7'-0" | 4'-3⅛" | 13'-8" | 10'-11⅛" | 20'-4" | 17'-7⅛" | 27'-0" | 23'-3⅛" | 33'-8" | 30'-11⅛" |
| | 4' | 3'-6" | 7'-0" | 3'-6" | 13'-8" | 10'-2" | 20'-4" | 16'-10" | 27'-0" | 23'-6" | 33'-8" | 30'-2" |
| | 5' | 4'-3⅜" | 7'-0" | 2'-8⅜" | 13'-9" | 9'-10⅜" | 20'-4" | 16'-0⅜" | 27'-0" | 22'-8½" | 33'-8" | 29'-8⅜" |
| | 6' | 5'-0⅛" | 7'-2" | 2'-1⅛" | 13'-11" | 9'-1⅛" | 20'-8" | 15'-7⅛" | 27'-5" | 22'-2⅛" | 34'-2" | 29'-1⅛" |
| | 7' | 6'-2⅝" | 7'-3" | 1'-0⅝" | 14'-1" | 7'-10⅝" | 20'-11" | 14'-8⅝" | 27'-9" | 21'-1⅝" | 34'-7" | 28'-1⅝" |
| | 8' | 7'-1" | 7'-4" | 0'-0" | 14'-2" | 6'-10" | 21'-0" | 13'-8" | 27'-10" | 20'-6" | 34'-8" | 27'-10" |
| 7' | 4' | 3'-6" | 8'-0" | 4'-6" | 15'-6" | 12'-2" | 23'-4" | 19'-10" | 31'-0" | 27'-6" | 38'-8" | 35'-2" |
| | 5' | 4'-3⅜" | 8'-0" | 3'-8⅜" | 15'-8" | 11'-10⅜" | 23'-4" | 19'-0⅜" | 31'-0" | 26'-8½" | 38'-8" | 34'-8⅜" |
| | 6' | 5'-0⅛" | 8'-2" | 3'-1⅛" | 15'-11" | 10'-10⅛" | 23'-8" | 18'-7⅛" | 31'-5" | 26'-2⅛" | 39'-2" | 34'-1⅛" |
| | 7' | 6'-2⅝" | 8'-3" | 2'-0⅝" | 16'-1" | 9'-10⅝" | 23'-11" | 17'-8⅝" | 31'-9" | 25'-1⅝" | 39'-7" | 33'-1⅝" |
| | 8' | 7'-1" | 8'-4" | 1'-0" | 16'-2" | 8'-10" | 24'-0" | 16'-8" | 31'-10" | 24'-6" | 39'-8" | 32'-4" |
| 8' | 4' | 3'-6" | 9'-0" | 5'-6" | 17'-6" | 14'-2" | 26'-10" | 22'-10" | 35'-0" | 31'-6" | 43'-8" | 40'-2" |
| | 5' | 4'-3⅜" | 9'-2" | 4'-8⅜" | 17'-11" | 13'-3⅜" | 26'-8" | 22'-0⅜" | 35'-5" | 31'-1⅜" | 44'-2" | 39'-10⅜" |
| | 6' | 5'-0⅛" | 9'-2" | 4'-1⅛" | 17'-11" | 12'-10⅛" | 26'-8" | 21'-2⅛" | 35'-5" | 30'-2⅛" | 44'-2" | 39'-1⅛" |
| | 7' | 6'-2⅝" | 9'-3" | 3'-0⅝" | 18'-1" | 11'-10⅝" | 26'-11" | 20'-3⅝" | 35'-9" | 29'-1⅝" | 44'-7" | 38'-1⅝" |
| | 8' | 7'-1" | 9'-4" | 2'-0" | 18'-2" | 10'-10" | 27'-0" | 19'-8" | 35'-10" | 28'-6" | 44'-8" | 37'-10" |
| 9' | 5' | 4'-3⅜" | 10'-2" | 5'-0⅜" | 19'-11" | 15'-7⅜" | 29'-8" | 25'-0⅜" | 39'-5" | 35'-1⅜" | 49'-2" | 44'-10⅜" |
| | 6' | 5'-0⅛" | 10'-3" | 5'-1⅛" | 20'-1" | 15'-0⅛" | 29'-11" | 24'-1⅛" | 39'-9" | 34'-2⅛" | 49'-7" | 44'-1⅛" |
| | 7' | 6'-2⅝" | 10'-3" | 4'-0⅝" | 20'-1" | 14'-0⅝" | 29'-11" | 23'-1⅝" | 39'-9" | 33'-1⅝" | 49'-7" | 43'-1⅝" |
| | 8' | 7'-1" | 10'-4" | 3'-0" | 20'-2" | 13'-0" | 30'-0" | 22'-8" | 39'-10" | 32'-6" | 49'-8" | 42'-4" |
| 10' | 5' | 4'-3⅜" | 11'-2" | 6'-0⅜" | 21'-11" | 17'-7⅜" | 32'-8" | 28'-4⅜" | 43'-5" | 39'-1⅜" | 54'-2" | 49'-10⅜" |
| | 6' | 5'-0⅛" | 11'-3" | 6'-2⅛" | 22'-1" | 17'-0⅛" | 32'-11" | 27'-10⅛" | 43'-9" | 38'-0⅛" | 54'-7" | 49'-1⅛" |
| | 7' | 6'-2⅝" | 11'-3" | 5'-0⅝" | 22'-1" | 15'-10⅝" | 32'-11" | 26'-6⅝" | 43'-9" | 37'-1⅝" | 54'-7" | 48'-1⅝" |
| | 8' | 7'-1" | 11'-4" | 4'-0" | 22'-2" | 14'-10" | 33'-0" | 25'-8" | 43'-10" | 36'-6" | 54'-8" | 47'-4" |
| 11' | 6' | 5'-0⅛" | 12'-4" | 7'-3⅛" | 24'-2" | 19'-1⅛" | 36'-0" | 30'-11⅛" | 47'-10" | 42'-9⅛" | | |
| | 7' | 6'-2⅝" | 12'-4" | 6'-1⅝" | 24'-2" | 17'-11⅝" | 36'-0" | 29'-9⅝" | 47'-10" | 41'-7⅝" | | |
| | 8' | 7'-1" | 12'-5" | 5'-0" | 24'-3" | 16'-10" | 36'-0" | 28'-8" | 47'-10" | 40'-6" | | |
| 12' | 6' | 5'-0⅛" | 13'-4" | 8'-3⅛" | 26'-2" | 21'-1⅛" | 39'-0" | 33'-11⅛" | 51'-10" | 46'-9⅛" | | |
| | 7' | 6'-2⅝" | 13'-4" | 7'-1⅝" | 26'-2" | 19'-11⅝" | 39'-0" | 32'-9⅝" | 51'-10" | 45'-7⅝" | | |
| | 8' | 7'-1" | 13'-4" | 6'-0" | 26'-2" | 18'-10" | 39'-0" | 31'-8" | 51'-10" | 44'-6" | | |

## QUANTITIES

| CLEAR SPAN | CLEAR HEIGHT | THICKNESS OF WING AT HEADWALL | THICKNESS OF WING FOOTING | REINFORCING ® STEEL - FOR 4 WINGS | CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | SINGLE BARREL CULVERT | DOUBLE BARREL CULVERT | TRIPLE BARREL CULVERT | QUADRUPLE BARREL CULVERT | QUINTUPLE BARREL CULVERT |
| S | H | Cw | WB | LB. | CU.YD. | CU.YD. | CU.YD. | CU.YD. | CU.YD. |
| 4' | 2' | 6" | 7" | 108.0 | 4.50 | 5.46 | 6.42 | 7.38 | 8.34 |
| | 3' | 6" | 7" | 164.9 | 6.26 | 7.21 | 8.17 | 9.13 | 10.09 |
| | 4' | 6" | 7" | 234.6 | 8.38 | 9.38 | 10.26 | 11.20 | 12.16 |
| | 5' | 6" | 7" | 357.8 | 10.72 | 11.68 | 12.64 | 13.60 | 14.56 |
| | 6' | 7" | 8" | 583.1 | 14.55 | 15.53 | 16.52 | 17.51 | 18.49 |
| 5' | 3' | 6" | 7" | 164.9 | 6.47 | 7.43 | 8.79 | 9.96 | 11.12 |
| | 4' | 6" | 7" | 234.6 | 8.54 | 9.70 | 10.87 | 10.03 | 13.20 |
| | 5' | 6" | 7" | 357.8 | 10.94 | 12.10 | 13.26 | 14.43 | 15.59 |
| | 6' | 7" | 8" | 583.1 | 14.77 | 15.96 | 17.15 | 18.34 | 19.54 |
| | 7' | 7⅛ | 8⅛ | 1134.6 | 18.94 | 20.15 | 21.37 | 22.59 | 23.80 |
| 6' | 3' | 6" | 7" | 164.9 | 6.68 | 8.06 | 9.42 | 10.80 | 12.18 |
| | 4' | 6" | 7" | 234.6 | 8.75 | 10.14 | 11.49 | 12.87 | 14.25 |
| | 5' | 6" | 7" | 357.8 | 11.15 | 12.53 | 13.89 | 15.27 | 16.65 |
| | 6' | 7" | 8" | 583.1 | 14.98 | 16.39 | 17.78 | 19.18 | 20.59 |
| | 7' | 7⅛ | 8⅛ | 1134.6 | 19.15 | 20.58 | 22.00 | 23.43 | 24.86 |
| | 8' | 8" | 9" | 1925.6 | 24.59 | 25.83 | 26.96 | 28.39 | 29.83 |
| 7' | 4' | 6" | 7" | 234.6 | 8.97 | 10.58 | 12.15 | 13.76 | 15.35 |
| | 5' | 6" | 7" | 357.8 | 11.36 | 12.97 | 14.54 | 16.15 | 17.75 |
| | 6' | 7" | 8" | 583.1 | 15.20 | 16.82 | 18.42 | 20.06 | 21.66 |
| | 7' | 7⅛ | 8⅛ | 1134.6 | 19.38 | 21.02 | 22.64 | 24.29 | 25.92 |
| | 8' | 8" | 9" | 1925.6 | 24.32 | 25.97 | 27.60 | 29.25 | 30.89 |
| 8' | 4' | 6" | 7" | 234.6 | 9.19 | 11.03 | 12.82 | 14.65 | 16.45 |
| | 5' | 7" | 7" | 357.8 | 12.03 | 13.89 | 15.70 | 17.55 | 19.36 |
| | 6' | 7" | 8" | 583.1 | 15.92 | 17.27 | 19.09 | 20.93 | 22.75 |
| | 7' | 7⅛ | 8⅛ | 1134.6 | 19.59 | 21.46 | 23.30 | 25.16 | 26.93 |
| | 8' | 8" | 9" | 1925.6 | 24.56 | 26.91 | 28.24 | 30.11 | 31.96 |
| 9' | 5' | 7" | 7" | 357.8 | 12.26 | 14.34 | 16.87 | 18.45 | 20.47 |
| | 6' | 7⅛ | 8" | 583.1 | 15.94 | 18.04 | 20.09 | 22.13 | 24.23 |
| | 7' | 7⅛ | 8⅛ | 1134.6 | 19.81 | 21.91 | 23.96 | 26.06 | 28.10 |
| | 8' | 8" | 9" | 1925.6 | 24.76 | 26.86 | 28.91 | 31.00 | 33.05 |
| 10' | 5' | 7" | 7" | 357.8 | 12.99 | 14.80 | 17.05 | 19.26 | 21.52 |
| | 6' | 7⅛ | 8" | 583.1 | 16.17 | 18.50 | 20.77 | 22.99 | 25.28 |
| | 7' | 7⅛ | 8⅛ | 1134.6 | 20.04 | 22.37 | 24.64 | 26.87 | 29.15 |
| | 8' | 8" | 9" | 1925.6 | 24.98 | 27.31 | 29.58 | 31.81 | 34.10 |
| 11' | 6' | 8" | 8" | 583.1 | 16.69 | 19.27 | 21.76 | 24.23 | |
| | 7' | 8" | 8⅛ | 1134.6 | 20.64 | 23.22 | 25.71 | 28.18 | |
| | 8' | 8" | 9" | 1925.6 | 25.19 | 27.77 | 30.27 | 32.74 | |
| 12' | 6' | 8" | 8" | 583.1 | 16.92 | 19.75 | 22.95 | 25.18 | |
| | 7' | 8" | 8⅛ | 1134.6 | 20.87 | 23.69 | 26.50 | 29.13 | |
| | 8' | 8" | 9" | 1925.6 | 25.42 | 28.25 | 30.96 | 33.69 | |

® For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"

Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

| SINGLES | DOUBLES | TRIPLES | QUADRUPLES | QUINTUPLES |
|---|---|---|---|---|
| R-100X-0 | R-200X-0 | R-300X-0 | R-400X-0 | R-500X-0 |
| R-100X-X1 | R-200X-X1 | R-300X-X1 | R-400X-X1 | R-500X-X1 |
| R-100X-X2 | R-200X-X2 | R-300X-X2 | R-400X-X2 | |
| | R-200X-X3 | R-300X-X3 | | |

CLASS S CONCRETE

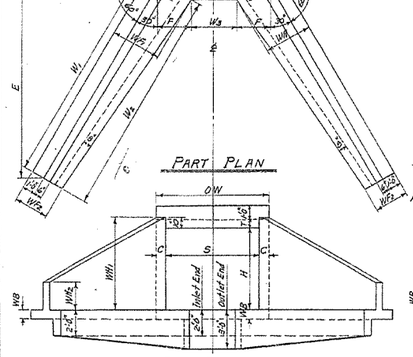
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

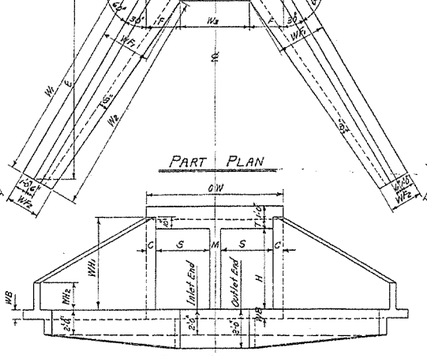
4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

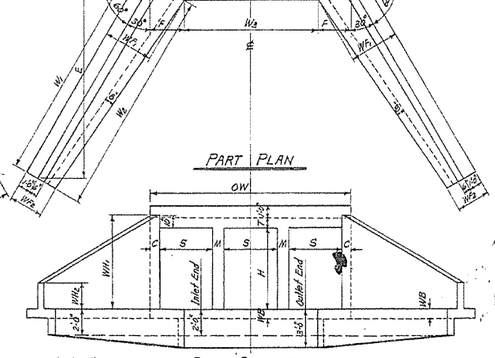
STANDARD DRAWING NO. W-X003-1




SINGLE BARREL CULVERT

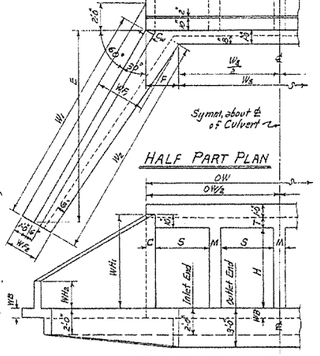



DOUBLE BARREL CULVERT

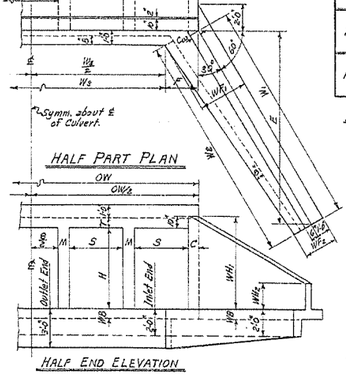



TRIPLE BARREL CULVERT

NOTE:- Plans and Elevations are not to scale.




QUADRUPLE BARREL CULVERT




QUINTUPLE BARREL CULVERT

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three moppings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

## BAR LIST FOR ONE WING - 4 REQUIRED

| CLEAR HEIGHT | F1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length. SIZE | SPACING | No. REQD | LENGTHS VARY MIN. | LENGTHS VARY MAX. | X MIN. | X MAX. | Y MIN. | Y MAX. |
|---|---|---|---|---|---|---|---|---|---|
| H | | | | | | | | | |
| 2' | #3 | 12" | 8 | 1'-6" | 3'-10" | 0'-8" | 1'-0" | 0'-11" | 2'-1" |
| 3' | #3 | 12" | 10 | 2'-2" | 5'-2" | 0'-10" | 1'-3" | 1'-5" | 4'-0" |
| 4' | #3 | 12" | 13 | 2'-9" | 6'-6" | 0'-11" | 1'-7" | 1'-6" | 5'-0" |
| 5' | #3 | 12" | 15 | 2'-11" | 7'-10" | 1'-1" | 1'-11" | 1'-11" | 6'-0" |
| 6' | #4 | 12" | 17 | 3'-6" | 9'-3" | 1'-2" | 2'-3" | 2'-5" | 7'-1" |
| 7' | #4 | 12" | 20 | 3'-9" | 10'-9" | 1'-3" | 2'-9" | 2'-7" | 8'-1" |
| 8' | #4 | 12" | 22 | 4'-6" | 12'-3" | 1'-5" | 3'-2" | 3'-0" | 9'-2" |

| CLEAR HEIGHT | F2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE | SPACING | No. REQD | LENGTH | X | Y |
|---|---|---|---|---|---|---|
| H | | | | | | |
| 2' | #3 | — | — | — | — | — |
| 3' | #3 | — | — | — | — | — |
| 4' | #3 | — | — | — | — | — |
| 5' | #3 | 12" | 4 | 3'-6" | 1'-1" | 2'-6" |
| 6' | #3 | 12" | 4 | 4'-6" | 1'-4" | 3'-3" |
| 7' | #4 | 12" | 7 | 5'-6" | 1'-7" | 4'-0" |
| 8' | #4 | 12" | 10 | 6'-6" | 1'-10" | 4'-9" |

| CLEAR HEIGHT | F3 Straight: Longitudinal in top of wing footing heel. SIZE | No. REQD | LENGTH |
|---|---|---|---|
| H | | | |
| 2' | #3 | 1 | 3'-8" |
| 3' | #3 | 1 | 12'-6" |
| 4' | #3 | 1 | 14'-9" |
| 5' | #3 | 1 | 16'-8" |
| 6' | #3 | 1 | 18'-6" |
| 7' | #4 | 1 | 21'-6" |
| 8' | #4 | 1 | 23'-8" |

| CLEAR HEIGHT | F4 Straight: Longitudinal in bottom of wing footing toe. SIZE | No. REQD | LENGTH |
|---|---|---|---|
| H | | | |
| 2' | #3 | 2 | 8'-6" |
| 3' | #3 | 2 | 11'-6" |
| 4' | #3 | 3 | 13'-6" |
| 5' | #3 | 3 | 16'-0" |
| 6' | #3 | 3 | 18'-6" |
| 7' | #4 | 2 | 21'-0" |
| 8' | #4 | 9 | 23'-9" |

| CLEAR HEIGHT | H1 Straight: Horizontal in back face of wing. One bar of each length. SIZE | SPACING | No. REQD | LENGTH |
|---|---|---|---|---|
| H | | | | |
| 2' | #3 | 12" | 1 | 7'-2" |
| 3' | #3 | 12" | 1 | 9'-6" |
| 4' | #3 | 12" | 1 | 11'-10" |
| 5' | #3 | 12" | 2 | 14'-2" |
| 6' | #3 | 12" | 2 | 16'-6" |
| 7' | #4 | 12" | 2 | 18'-9" |
| 8' | #4 | 12" | 3 | 21'-1" |

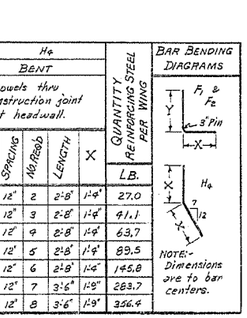
| CLEAR HEIGHT | H2 Straight: Horizontal in back face of wing. One bar of each length. SIZE | SPACING | No. REQD | LENGTHS VARY MAX. | LENGTHS VARY MIN. |
|---|---|---|---|---|---|
| H | | | | | |
| 2' | #3 | 12" | 1 | —— | 4'-0" |
| 3' | #3 | 12" | 2 | 7'-6" | 4'-0" |
| 4' | #3 | 12" | 3 | 10'-11" | 4'-0" |
| 5' | #3 | 12" | 3 | 10'-11" | 4'-0" |
| 6' | #3 | 12" | 4 | 14'-4" | 4'-0" |
| 7' | #3 | 12" | 5 | 17'-9" | 4'-0" |
| 8' | #4 | 12" | 5 | 17'-9" | 4'-6" |

| CLEAR HEIGHT | H3 Straight: In back face of wing at top - on slope. SIZE | No. REQD | LENGTH |
|---|---|---|---|
| H | | | |
| 2' | #3 | 1 | 7'-4" |
| 3' | #3 | 1 | 9'-9" |
| 4' | #3 | 1 | 12'-2" |
| 5' | #3 | 1 | 14'-7" |
| 6' | #3 | 1 | 17'-0" |
| 7' | #3 | 1 | 19'-5" |
| 8' | #4 | 1 | 21'-10" |

| CLEAR HEIGHT | H4 Bent: Dowels thru construction joint at headwall. SIZE | SPACING | No. REQD | LENGTH | X |
|---|---|---|---|---|---|
| H | | | | | |
| 2' | #3 | 12" | 2 | 2'-8" | 1'-9" |
| 3' | #3 | 12" | 3 | 2'-8" | 1'-6" |
| 4' | #3 | 12" | 4 | 2'-8" | 1'-9" |
| 5' | #3 | 12" | 5 | 2'-8" | 1'-9" |
| 6' | #3 | 12" | 6 | 2'-8" | 1'-6" |
| 7' | #3 | 12" | 7 | 3'-6" | 1'-9" |
| 8' | #3 | 12" | 8 | 3'-6" | 1'-9" |

| CLEAR HEIGHT | QUANTITY REINFORCING STEEL PER WING LB. |
|---|---|
| H | |
| 2' | 27.0 |
| 3' | 41.1 |
| 4' | 63.7 |
| 5' | 89.5 |
| 6' | 145.8 |
| 7' | 263.7 |
| 8' | 356.4 |

BAR BENDING DIAGRAMS




Designed By:- W.C.H. 6-20-62 Checked By:-
Drawn By:- W.C.H. 12-4-62. Checked By:- RHS - 1-9-63
Quantities By:- W.C.H. 12-14-62. Checked By:- RHS - 1-31-63
Reproduced By:- Revised By:- RHS - 3-25-63

REVISIONS:- Membrane added. 6-10-66 W.C.H.

MVI-88 (3)