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.		CA0904	1	636
				(2) HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S)				

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR STATE HIGHWAY

HWY. 71B-HWY. 72 SOUTH (BELLA VISTA BYPASS) (S)

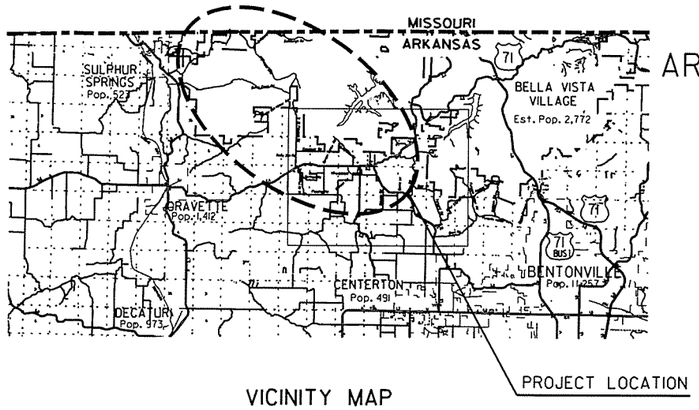
BENTON COUNTY

ROUTE 71 SECTION 19

FEDERAL AID PROJ.

ACNHPP-NCIIP-0004(49)

JOB CA0904



VICINITY MAP

BRIDGE DATA

(1) STA. 104+34.77 BRIDGE END
BRIDGE NO. 07273
240'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(114'-126')
242'- 5½" BRIDGE LENGTH
STA. 106+77.23 BRIDGE END

(2) STA. 929+44.65 BRIDGE END
BRIDGE NO. B7274
210'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(105'-105')
345'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(115'-115'-115')
557'- 8⅜" BRIDGE LENGTH
STA. 935+02.35 BRIDGE END

(3) STA. 17+12.27 BRIDGE END
BRIDGE NO. 07275
210'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(110'-100')
212'- 2" BRIDGE LENGTH
STA. 19+24.43 BRIDGE END

(4) STA. 999+60.84 BRIDGE END
BRIDGE NO. B7276
186'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
(54'-78'-54')
188'- 3⅞" BRIDGE LENGTH
STA. 1001+49.16 BRIDGE END

(5) STA. 1107+43.06 BRIDGE END
BRIDGE NO. 07277
55'-0" COMPOSITE W-BEAM UNIT
84'-0" COMPOSITE W-BEAM UNIT
55'-0" COMPOSITE W-BEAM UNIT
196'- 2" BRIDGE LENGTH
STA. 1109+39.23 BRIDGE END

(6) HWY. 71 RAMP 1
STA. 1113+87.94 BRIDGE END
BRIDGE NO. 07279
159'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (79'-6" - 79'-6")
170'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (85' - 85')
124'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (62' - 62')
455'- 1½" BRIDGE LENGTH
STA. 1118+43.06 BRIDGE END

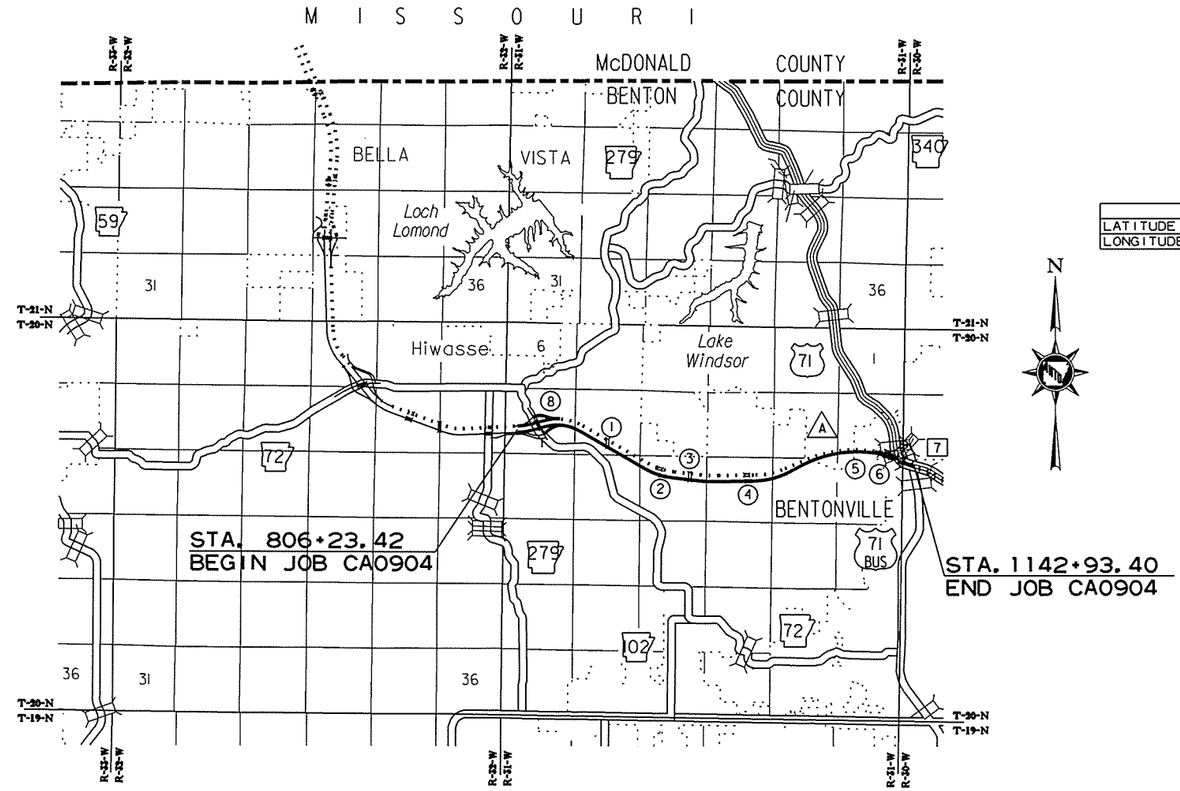
(8) HWY 72 (SOUTH) IN PLACE
STA. 114+08.88 BRIDGE END
BRIDGE NO. 07197
280'-0" CONT. COMP. PLATE GIRDER UNIT (140'-140')
52'-0" CLEAR ROADWAY
282'-3" BRIDGE LENGTH
STA. 116+91.12 BRIDGE END
(FOR INFORMATION ONLY)

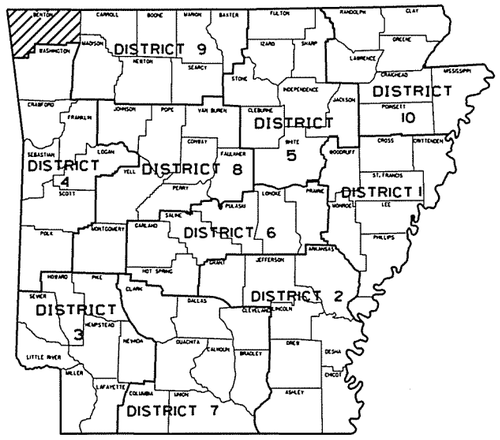
STRUCTURES OVER 20'-0" SPAN

[7] STA. 1133+76 - IN PLACE
SEXTUPLE 12 X 9 X 222 R.C. BOX CULVERT
WITH HEADWALL LT. & RT.
(45° LT. FWD. SKEW)
RETAIN AND EXTEND
266' LT. AND 25'-3" RT.
SPAN = 78'-0"
TO A COMPLETED LENGTH OF 528'

(A) EQUATION
1078+22.13 BACK =
1078+82.66 AHEAD

0 ½ 1 2 MILE
BAR SCALE





ARK. HWY. DIST. NO. 9

DESIGN TRAFFIC DATA

DESIGN YEAR	2014
2014 ADT	12000
2034 ADT	22000
2034 DHV	2420
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	20%
DESIGN SPEED	70 MPH

	BEGIN PROJECT	MID POINT OF PROJECT	END PROJECT
LATITUDE	N 36°25'28"	N 36°24'53"	N 36°24'48"
LONGITUDE	W 94°19'32"	W 94°17'32"	W 94°12'59"

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4215
RALPH J. HALL

Ralph J. Hall

DEPUTY DIRECTOR
AND CHIEF ENGINEER

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	33609.45	FEET	OR	6.366	MILES
NET . . ROADWAY	32134.14	.		6.087	MILES
NET . . BRIDGES	1475.31	.		0.279	MILES
NET . . PROJECT	33609.45	.		6.366	MILES

P.E. JOB 090224
NON-PART.

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.		CA0904	2	636

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STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

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8/2/2013

RCA0904.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.		CA0904	3	636

(2) INDEX OF SHEETS

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333	GUARD RAIL DETAILS		GR-8	7-14-10
334	GUARD RAIL DETAILS		GR-8A	7-14-10
335	GUARD RAIL DETAILS		GR-9	4-17-08
336	GUARD RAIL DETAILS		GR-9A	4-17-08
337	GUARD RAIL DETAILS		GR-10	7-14-10
338	GUARD RAIL DETAILS		GR-10A	7-14-10
339	CONCRETE BARRIER WALL (PIER PROTECTION TYPE A)		GR-11	7-14-10
340	GUARD RAIL DETAILS		GRT-1	7-14-10
341	IMPACT ATTENUATION BARRIERS		IB-1	10-15-09
342	MAILBOX DETAILS		MB-1	11-18-04
343	PRECAST CONCRETE BOX CULVERTS		PBC-1	12-15-11
344	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING		PCC-1	12-15-11
345	METAL PIPE CULVERT FILL HEIGHTS & BEDDING		PCM-1	12-15-11
346	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)		PCP-1	12-15-11
347	PLASTIC PIPE CULVERT (PVC F949)		PCP-2	12-15-11
348	PAVEMENT MARKING DETAILS		PM-1	9-12-13
349	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS		PM-2	9-12-13
350	DETAILS OF PIPE UNDERDRAIN		PU-1	4-10-03
351	REINFORCED CONCRETE BOX CULVERT DETAILS		RCB-1	7-26-12
352	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS		RCB-2	11-20-03
353	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS		RCB-3	10-12-95
354	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC		SE-1	1-09-87
355	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC		SE-2	10-18-96
356	STANDARD HIGHWAY SIGNS & SUPPORTS ASSEMBLIES		SHS-1	9-12-13
357	U-CHANNEL POST ASSEMBLIES		SHS-2	9-12-13
358	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	12-15-11
359	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	9-12-13
360	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10-15-09
361	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-4	10-15-09
362	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER		TC-5	10-15-09
363	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
364	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-02-94
365	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-03-94
366	TEMPORARY EROSION CONTROL DEVICES		TEC-4	7-26-12
367	DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)		TR-1A	8-22-02
368	WIRE FENCE TYPE A AND B		WF-1	8-22-02
369	WIRE FENCE WATER GAPS		WF-2	4-20-79
370	WIRE FENCE TYPE C AND D		WF-4	8-22-02
371	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X003-1	5-10-66
372	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X30	7-15-63
373	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X303-1	5-10-66
374	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X45	6-15-64
375	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS		W-X453-1	5-10-66
376	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-100X-X1	10-10-62
377	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-100X-X3	12-11-64
378	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-200X-X1	10-15-62
379	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-200X-X4	1-08-65
380	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-230X-1	1-28-64
381	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS		R-245X-1	8-12-64
382 - 636	CROSS SECTIONS			

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

8/2/2013

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2-13-14				6	ARK.			
2-19-14				JOB NO.		CA0904	4	636
2-21-14								

(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
2-21-14

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, 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 CA0904
FHWA-1273__	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__	SUPPLEMENT - WAGE RATE DETERMINATION
100-2_____	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1_____	BIDDING REQUIREMENTS AND CONDITIONS
103-1_____	DETERMINATION OF DBE PARTICIPATION
105-1_____	CONSTRUCTION CONTROL MARKINGS
105-2_____	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3_____	CONTROL OF WORK
107-1_____	WORKER VISIBILITY
108-1_____	LIQUIDATED DAMAGES
110-1_____	PROTECTION OF WATER QUALITY AND WETLANDS
303-1_____	AGGREGATE BASE COURSE
404-1_____	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2_____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1_____	MINERAL AGGREGATES
410-3_____	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
501-1_____	INSTALLATION OF TIE BARS
600-1_____	WATER FOR VEGETATION
603-1_____	MAINTENANCE OF TRAFFIC
604-1_____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2_____	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
606-2_____	PIPE CULVERTS
620-1_____	MULCH COVER
711-1_____	CONCRETE PULL BOX
718-2_____	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2_____	THERMOPLASTIC PAVEMENT MARKING MATERIAL
723-1_____	GENERAL REQUIREMENTS FOR SIGNS
804-1_____	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB CA0904_	APPROACH SLABS AND GUTTERS
JOB CA0904_	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB CA0904_	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB CA0904_	CAVE DISCOVERY
JOB CA0904_	CLEARING AND GRUBBING
JOB CA0904_	COMPACTED EMBANKMENT
JOB CA0904_	CONCRETE BARRIER WALL
JOB CA0904_	CONCRETE FOR STRUCTURES
JOB CA0904_	CONCRETE PULL BOX
JOB CA0904_	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB CA0904_	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
JOB CA0904_	COORDINATION OF WORK
JOB CA0904_	CULVERT CLEAN OUT
JOB CA0904_	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB CA0904_	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB CA0904_	ELECTRICAL CONDUCTORS-IN-CONDUIT, ALUMINUM
JOB CA0904_	EMPLOYMENT REPORTING
JOB CA0904_	EXPLORATORY HOLES
JOB CA0904_	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB CA0904_	HIGH PERFORMANCE PAVEMENT MARKING
JOB CA0904_	LRFD PRECAST REINFORCED CONCRETE BOX CULVERTS
JOB CA0904_	MANDATORY USE OF INTERNET BIDDING
JOB CA0904_	NESTING SITES OF MIGRATORY BIRDS
JOB CA0904_	PARTNERING REQUIREMENTS
JOB CA0904_	PLASTIC PIPE
JOB CA0904_	PROSECUTION AND PROGRESS
JOB CA0904_	REINFORCED CONCRETE PIPE CULVERTS (CLASS SPECIAL)
JOB CA0904_	RETAINING WALLS
JOB CA0904_	ROADWAY ILLUMINATION POLE
JOB CA0904_	ROCK DITCH LINER
JOB CA0904_	ROCK FILL
JOB CA0904_	SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS
JOB CA0904_	SEQUENCE OF CONSTRUCTION
JOB CA0904_	SERVICE POINT ASSEMBLY
JOB CA0904_	SILICONE JOINT SEALANT
JOB CA0904_	SITE USE (A + C METHOD)
JOB CA0904_	SOIL STABILIZATION
JOB CA0904_	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB CA0904_	STORM WATER POLLUTION PREVENTION PLAN
JOB CA0904_	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB CA0904_	TEMPORARY IMPACT ATTENUATION BARRIER
JOB CA0904_	TEXTURED COATING FINISH
JOB CA0904_	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE
JOB CA0904_	TRIANGULAR SILT DIKE
JOB CA0904_	UTILITY ADJUSTMENTS
JOB CA0904_	VALUE ENGINEERING
JOB CA0904_	WARM MIX ASPHALT
JOB CA0904_	WATTLES

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. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. 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.

8/2/2013

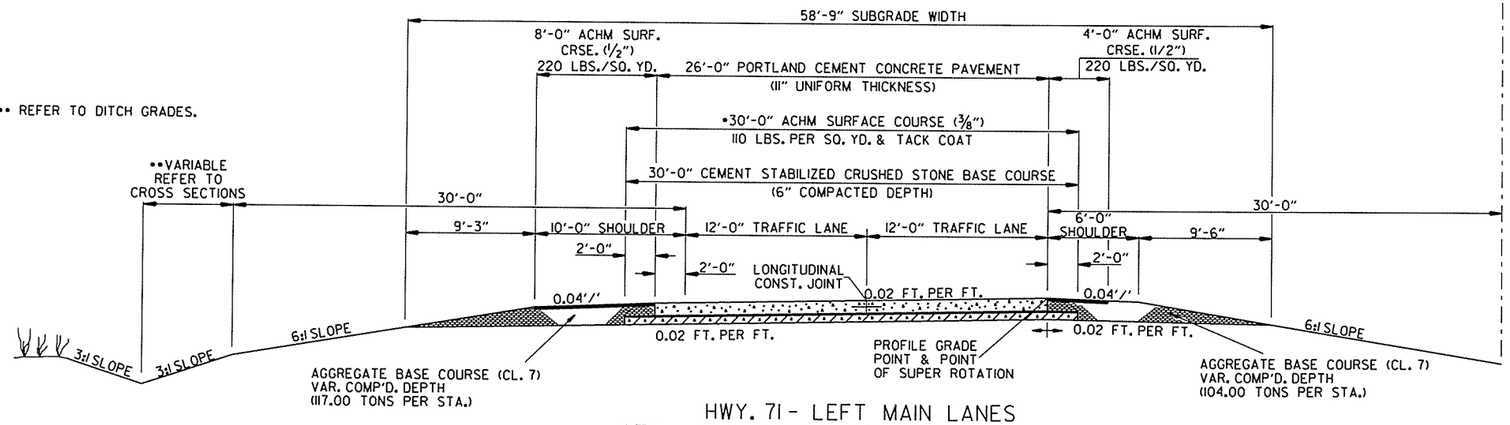
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GOVERNING SPECIFICATIONS AND GENERAL NOTES

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				6	ARK.			
				JOB NO.		CA0904	5	636

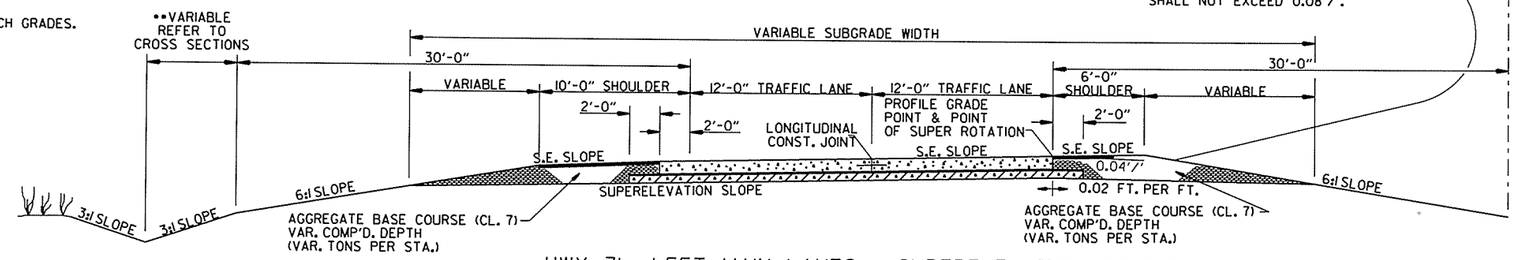
(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



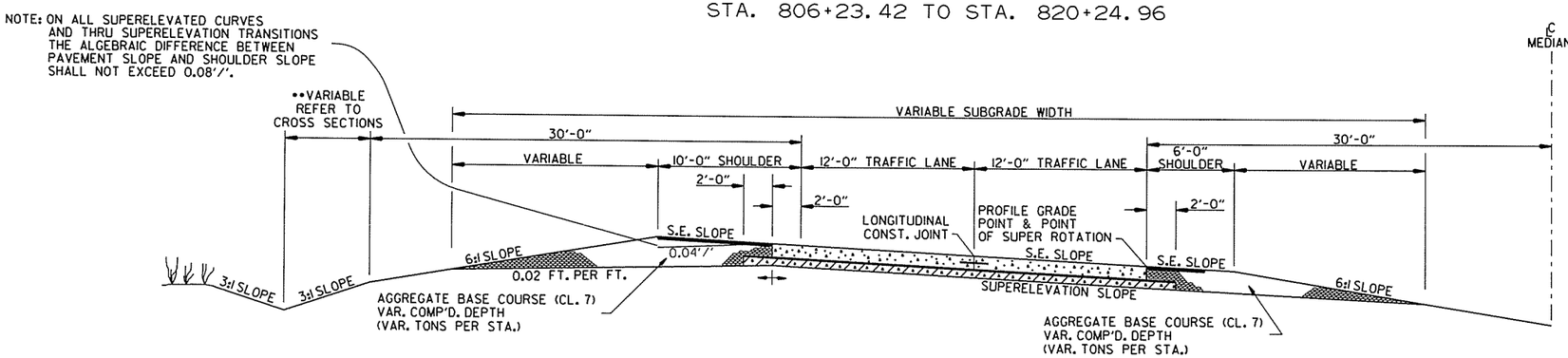
HWY. 71 - LEFT MAIN LANES
STA. 820+24.96 TO STA. 824+05.14

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



HWY. 71 - LEFT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO LEFT)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)
STA. 806+23.42 TO STA. 820+24.96

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



HWY. 71 - LEFT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO RIGHT)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)
STA. 824+05.14 TO STA. 842+26.71

NOTES:

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

•DENSITY REQUIREMENTS WAIVED.

1/16/2014

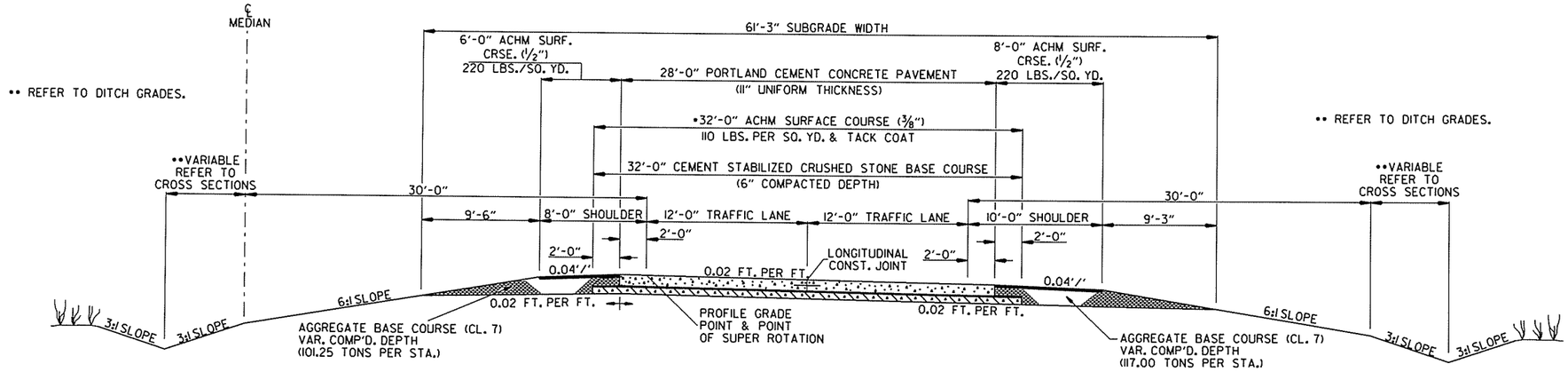
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TYPICAL SECTIONS OF IMPROVEMENT

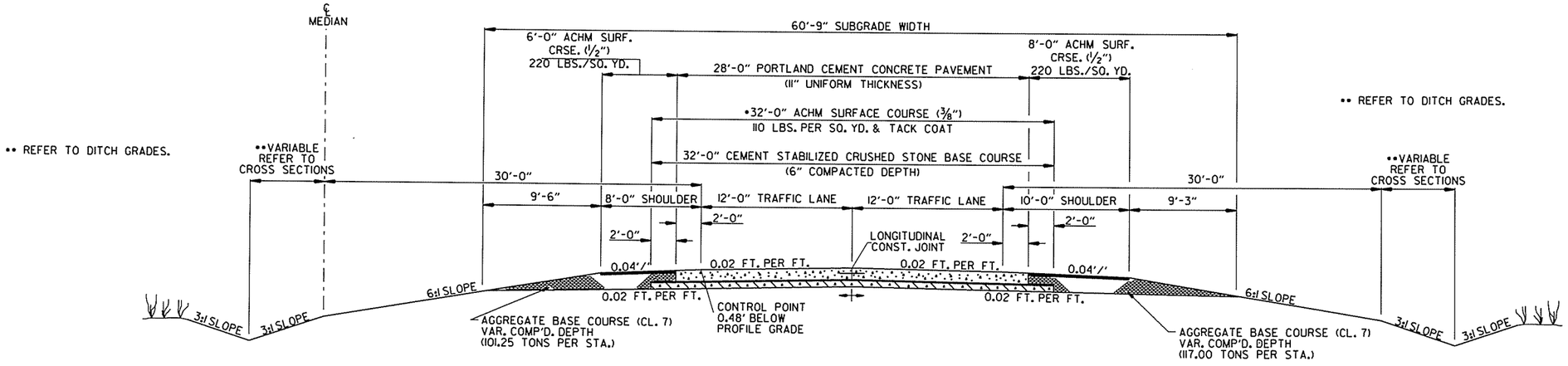
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				6	ARK.			
				JOB NO.		CA0904	6	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



HWY. 71 - RIGHT MAIN LANES - PLANE SECTION
STA. 820+24.96 TO STA. 824+05.14
STA. 996+48.00 TO STA. 1007+75.91



HWY. 71 - RIGHT MAIN LANES - NORMAL CROWN SECTION
STA. 859+95.68 TO STA. 915+13.17
STA. 944+05.95 TO STA. 996+48.00

NOTES:

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

•DENSITY REQUIREMENTS WAIVED.

1/16/2014

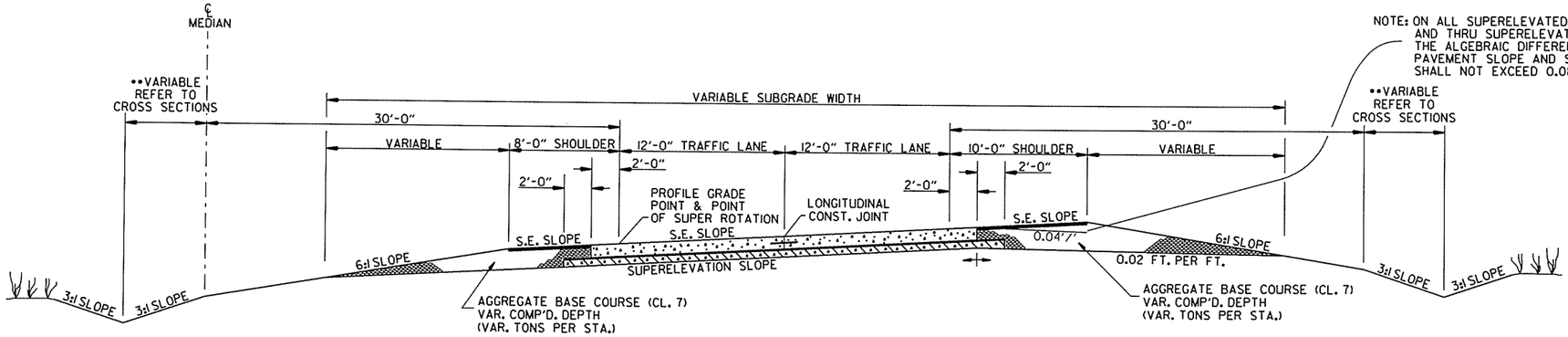
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TYPICAL SECTIONS OF IMPROVEMENT

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				JOB NO.		CA0904	7	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



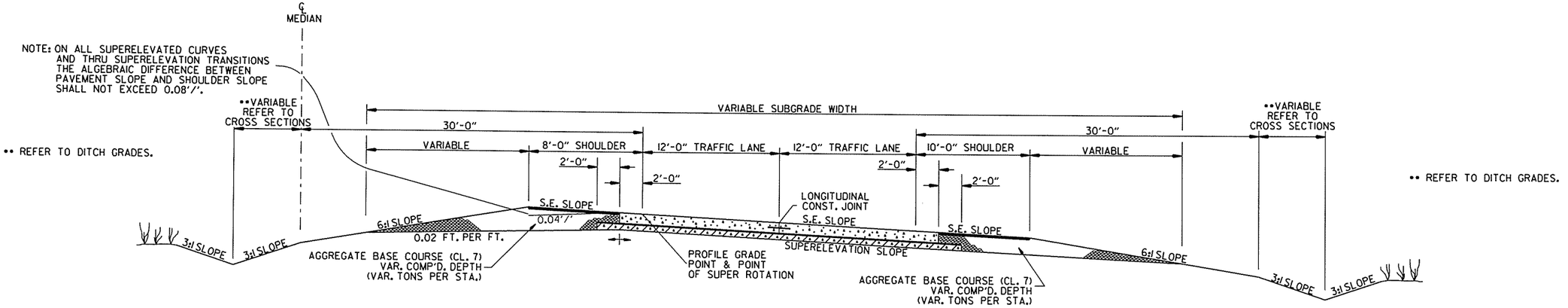
HWY. 71 - RIGHT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO LEFT)
(PAVEMENT SECTION IS SAME AS SHOWN ON SHEET #6)

STA. 808+81.65 TO STA. 820+24.96
STA. 915+13.17 TO STA. 944+05.95
STA. 1007+75.91 TO STA. 1010+38.41

NOTES:

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

•DENSITY REQUIREMENTS WAIVED.



HWY. 71 - RIGHT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO RIGHT)
(PAVEMENT SECTION IS SAME AS SHOWN ON SHEET #6)
STA. 824+05.14 TO STA. 859+95.68

1/16/2014

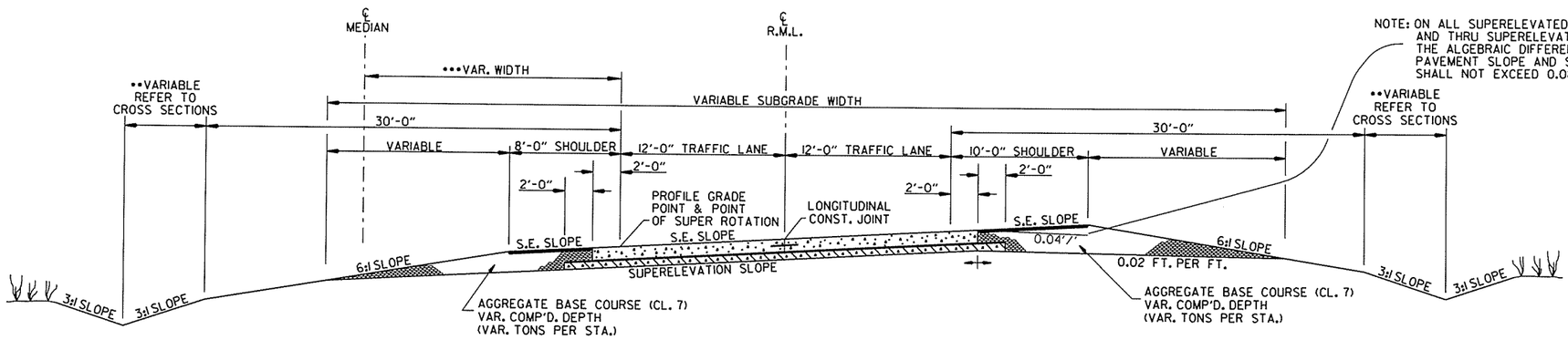
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TYPICAL SECTIONS OF IMPROVEMENT

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				JOB NO.		CA0904	8	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
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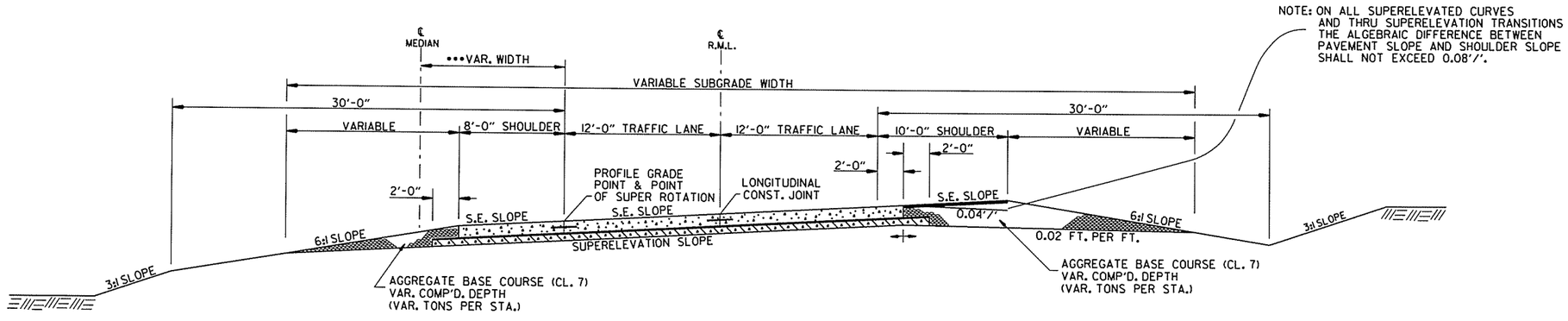
HWY. 71 - RIGHT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO LEFT)
(PAVEMENT SECTION IS SAME AS SHOWN ON SHEET #6)

STA. 1010+38.41 TO STA. 1020+72.00

NOTES:

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

•DENSITY REQUIREMENTS WAIVED.
•• REFER TO DITCH GRADES.
••• REFER TO RIGHT MAIN LANE ALIGNMENT.



HWY. 71 - RIGHT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO LEFT)
(PAVEMENT SECTION IS SAME AS ON SHEET #9)

STA. 1020+72.00 TO STA. 1032+79.18

1/16/2014

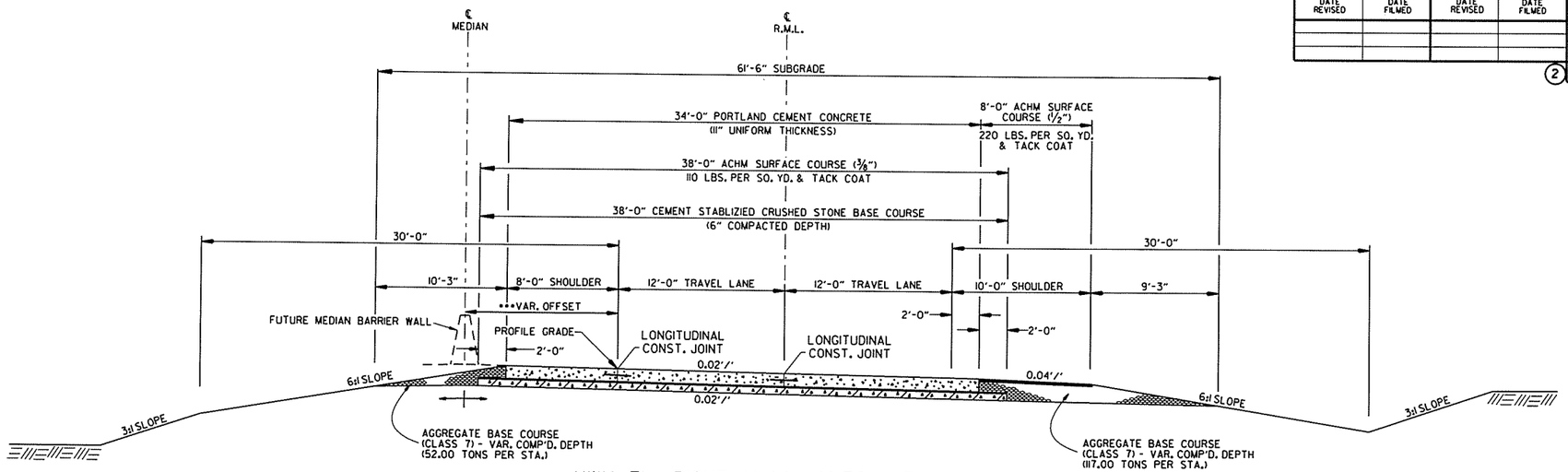
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TYPICAL SECTIONS OF IMPROVEMENT

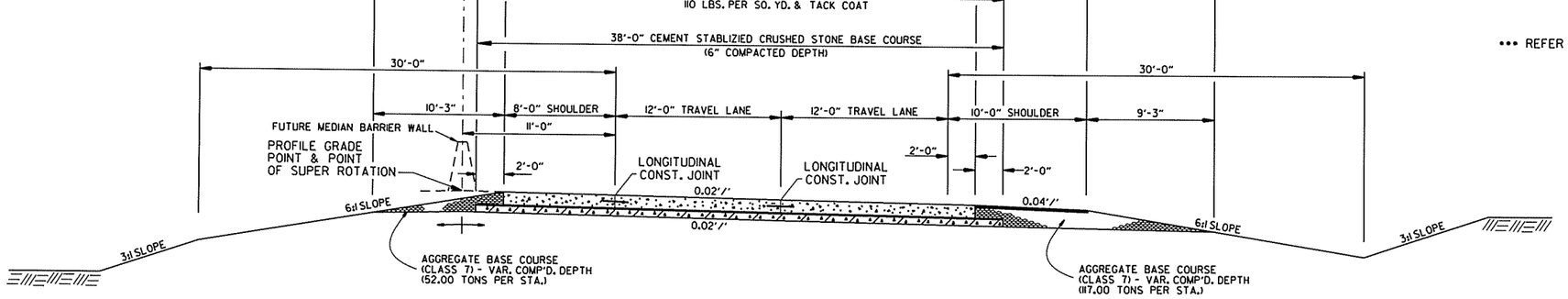
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				JOB NO.		CA0904	9	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

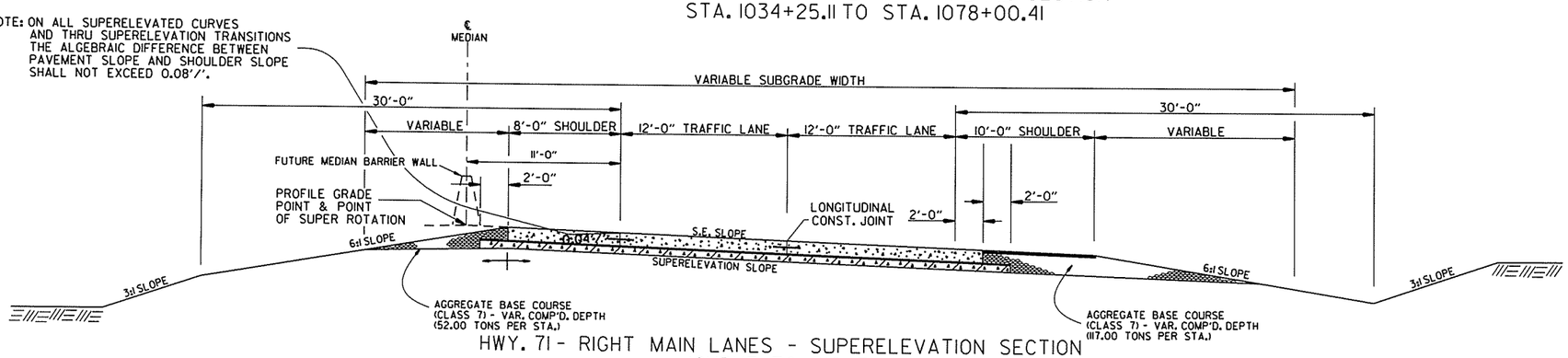


HWY. 71 - RIGHT MAIN LANES - PLANE SECTION
STA. 1032+79.18 TO STA. 1034+25.11



HWY. 71 - RIGHT MAIN LANES - PLANE SECTION
STA. 1034+25.11 TO STA. 1078+00.41

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



HWY. 71 - RIGHT MAIN LANES - SUPERELEVATION SECTION
(CURVE TO RIGHT)
STA. 1078+00.41 TO STA. 1078+22.13 BACK
STA. 1078+82.66 AHEAD TO STA. 1107+43.06
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

NOTES:

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

••• REFER TO RIGHT MAIN LANE ALIGNMENT.

1/16/2014

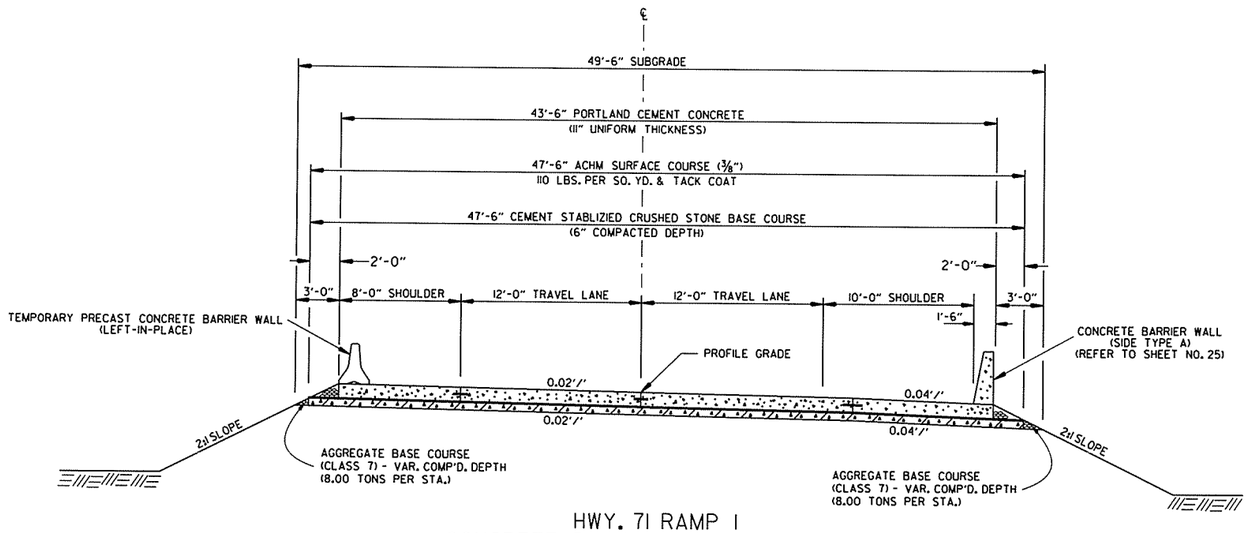
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TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0904	10	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



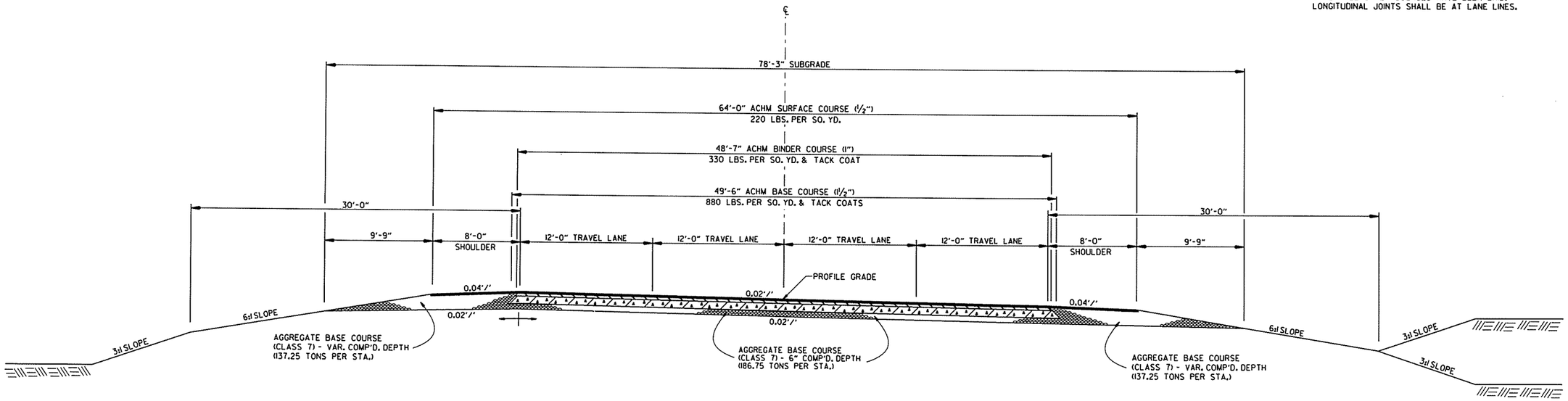
HWY. 71 RAMP I
CONCRETE PAVEMENT W/ SIDE WALL
STA. 1109+39.23 TO STA. 1113+87.94 B.E.

NOTES:

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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

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

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



HWY. 71 RAMP I
STA. 1118+43.06 B.E. TO STA. 1126+37.27

1/16/2014

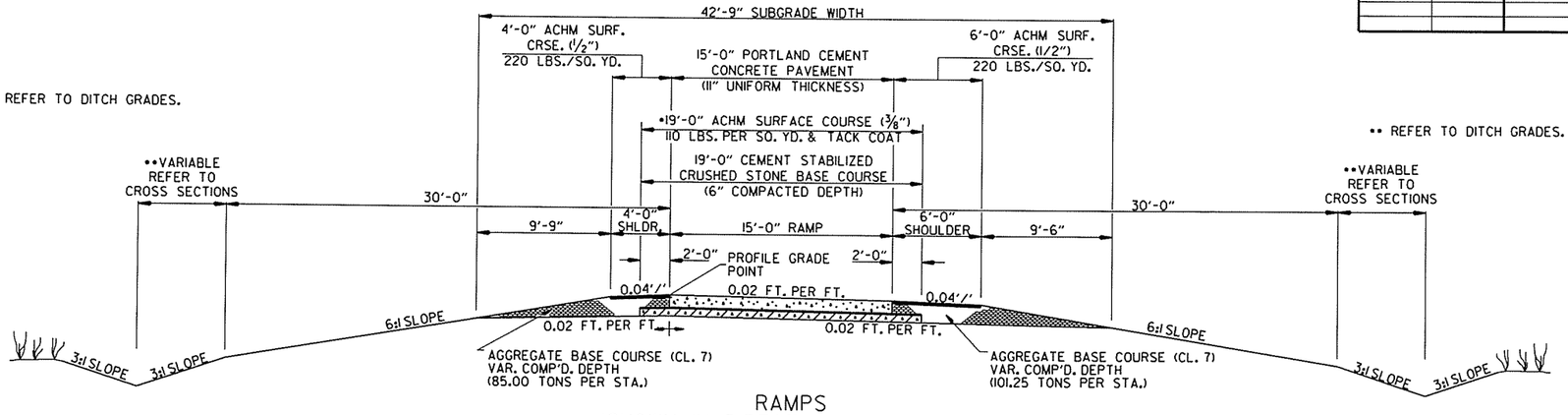
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TYPICAL SECTIONS OF IMPROVEMENT

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				6	ARK.			
				JOB NO.		CA0904	11	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

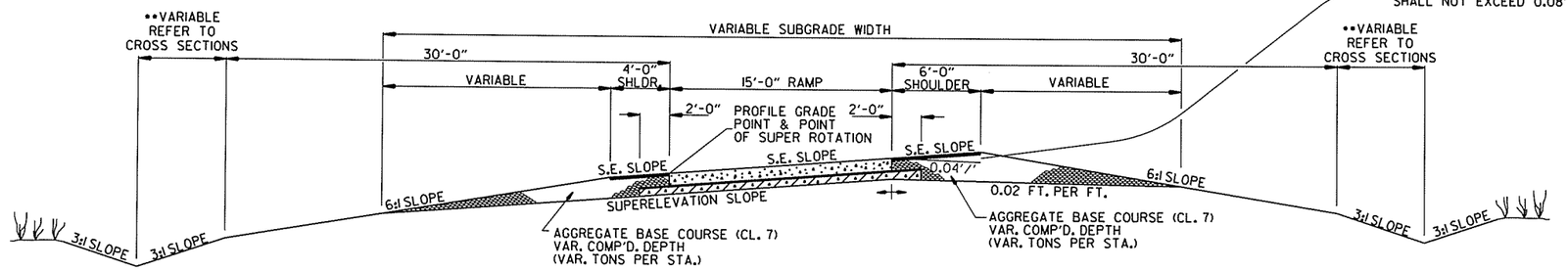
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



RAMPS
(SHOWN IN DIRECTION OF TRAFFIC)

HWY. 72 SOUTH - RAMP 2
STA. 823+41.78 TO STA. 824+92.26

HWY. 72 SOUTH - RAMP 3
STA. 818+58.66 TO STA. 820+01.61
STA. 827+12.86 TO STA. 830+60.45



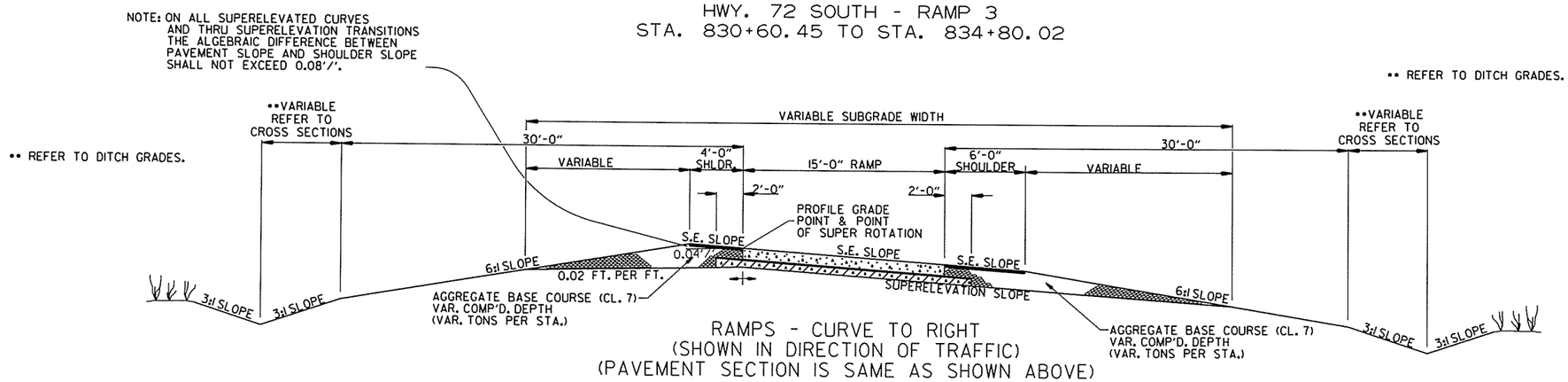
NOTES:

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•DENSITY REQUIREMENTS WAIVED.

RAMPS - CURVE TO LEFT
(SHOWN IN DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

HWY. 72 SOUTH - RAMP 3
STA. 830+60.45 TO STA. 834+80.02



RAMPS - CURVE TO RIGHT
(SHOWN IN DIRECTION OF TRAFFIC)
(PAVEMENT SECTION IS SAME AS SHOWN ABOVE)

HWY. 72 SOUTH - RAMP 2
STA. 824+92.26 TO STA. 841+46.05

HWY. 72 SOUTH - RAMP 3
STA. 820+01.61 TO STA. 827+12.86

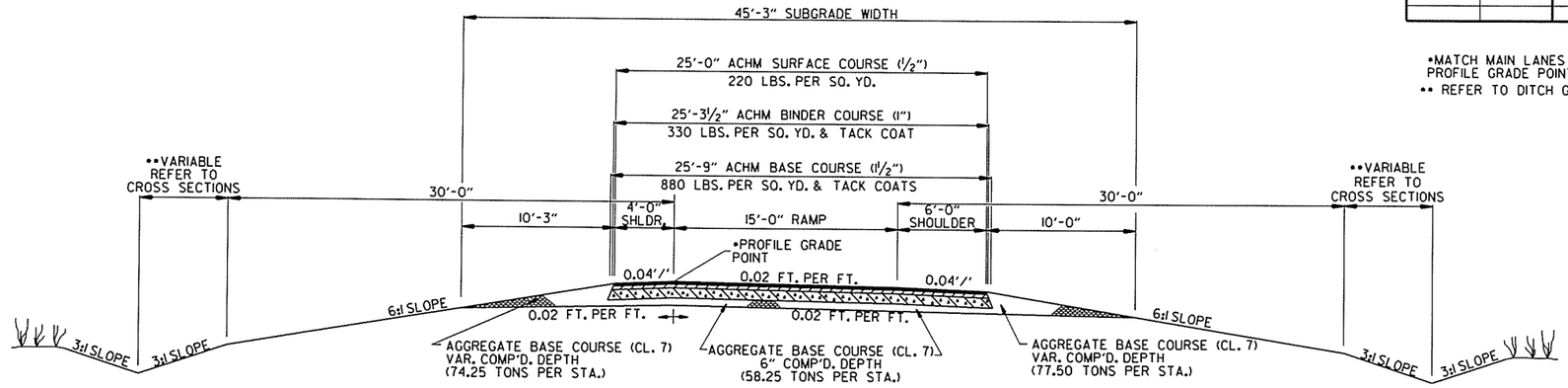
TYPICAL SECTIONS OF IMPROVEMENT

1/16/2014

RCA0904.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.		CA0904	12	636

(2) TYPICAL SECTIONS OF IMPROVEMENT



TEMPORARY RAMP AND CROSSOVER
(SHOWN IN DIRECTION OF TRAFFIC)

•MATCH MAIN LANES PROFILE GRADE POINT
•• REFER TO DITCH GRADES.



NOTES:

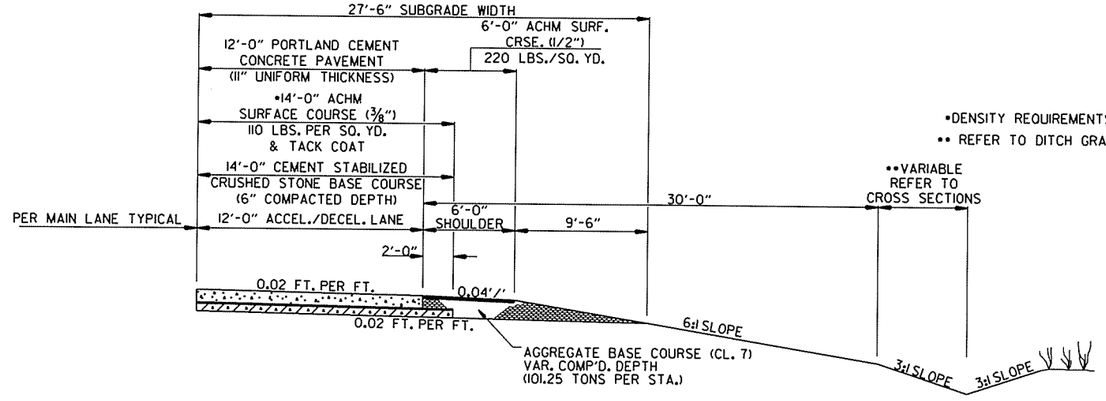
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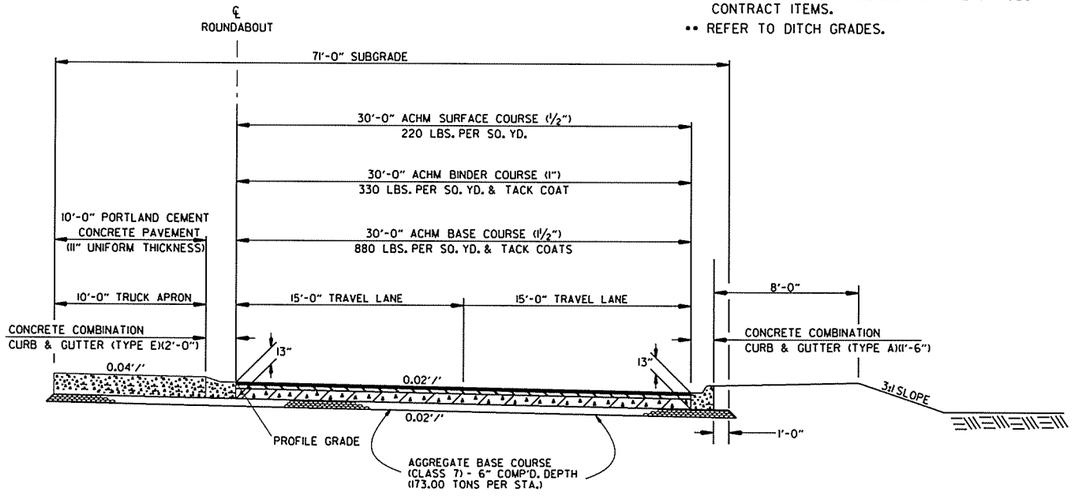
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•• REFER TO DITCH GRADES.

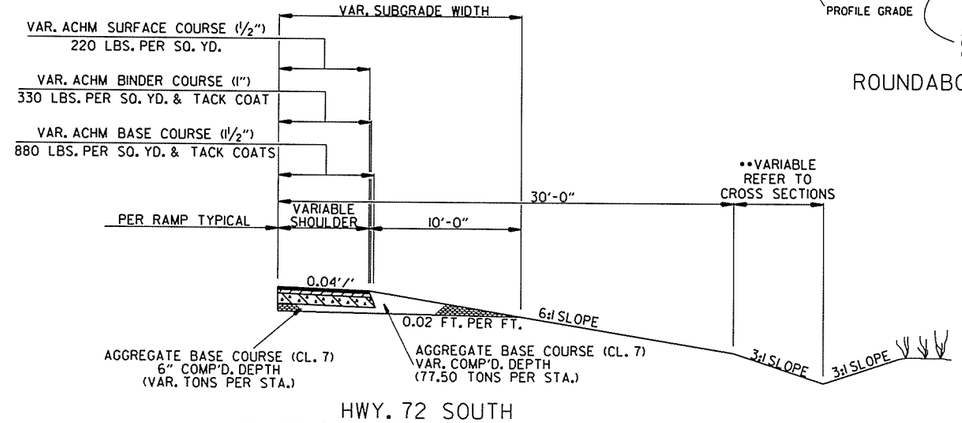


•DENSITY REQUIREMENTS WAIVED.
•• REFER TO DITCH GRADES.

ACCELERATION & DECELERATION LANE
(SHOWN IN DIRECTION OF TRAFFIC)



ROUNDABOUT



HWY. 72 SOUTH
RAMP SHOULDER IMPROVEMENTS

1/16/2014

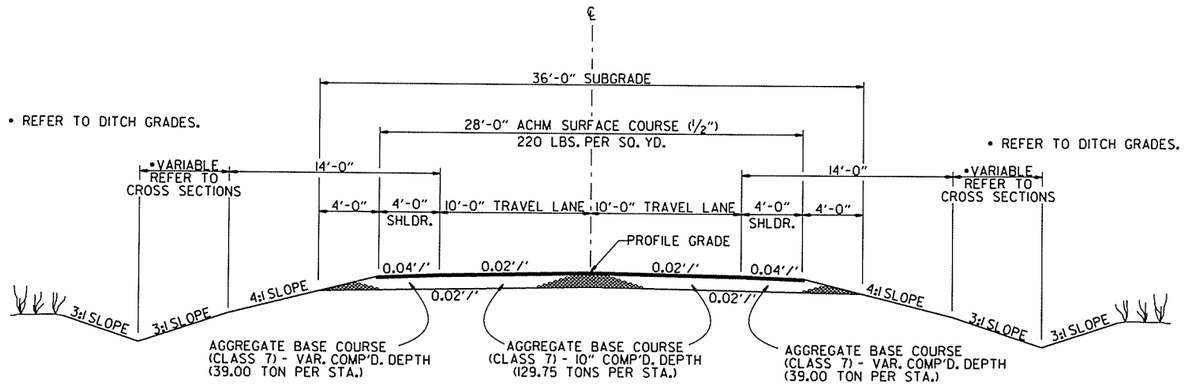
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TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0904	13	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



RELOCATED COUNTY ROAD 554, COUNTY ROAD 453,
BECKETT ROAD, AND COUNTY ROAD 49

CO. RD. 554
STA. 23+14.86 TO STA. 32+05.56
STA. 38+54.07 TO STA. 45+03.37

CO. RD. 453
STA. 102+00.00 TO STA. 113+00.00

BECKET ROAD
STA. 12+00.00 TO STA. 19+28.97

CO. RD. 49
STA. 15+95.69 TO STA. 21+53.37

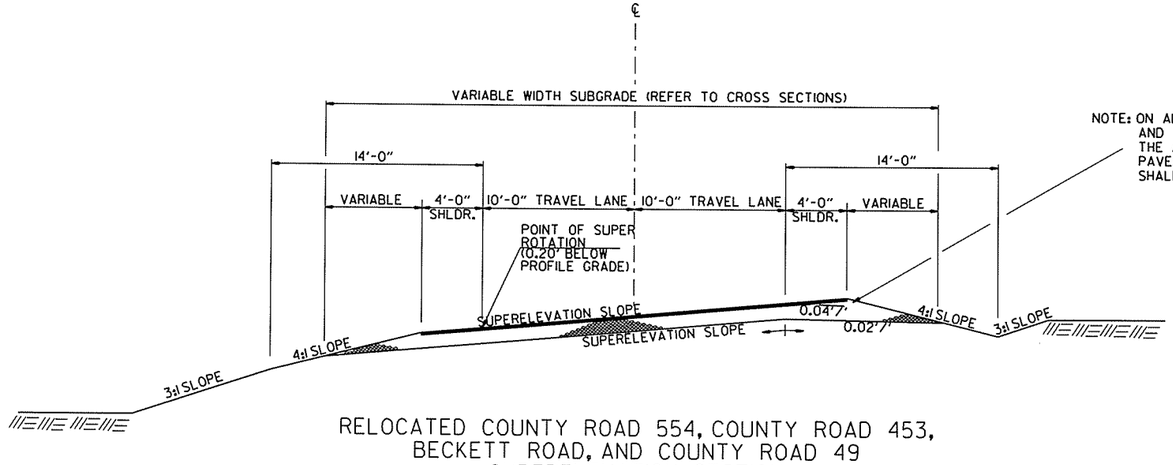
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RELOCATED COUNTY ROAD 554, COUNTY ROAD 453,
BECKETT ROAD, AND COUNTY ROAD 49
SUPERELEVATION SECTION

NOTE: REVOLVE SUPERELEVATION AROUND THE INSIDE PAVEMENT EDGE.

CO. RD. 554
STA. 10+00.00 TO STA. 23+14.86
STA. 32+05.56 TO STA. 38+54.07

CO. RD. 49
STA. 10+00.13 TO STA. 15+95.69
STA. 21+53.37 TO STA. 28+96.29

1/16/2014

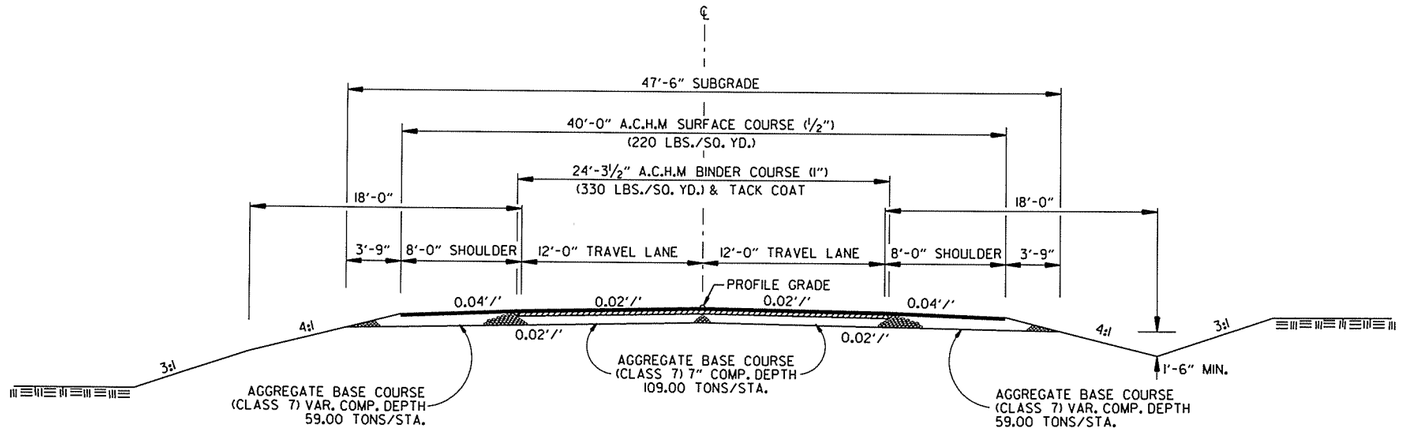
RCA0904.DGN

TYPICAL SECTIONS OF IMPROVEMENT

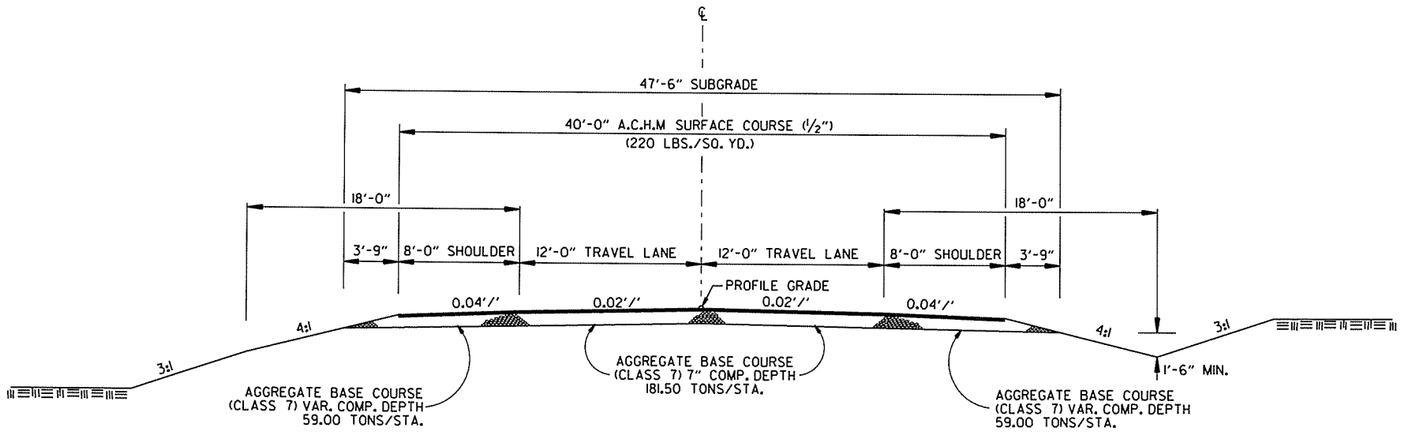
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				6	ARK.			
				JOB NO.		CA0904	14	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



COUNTY ROAD 39
STA. 15+54.43 TO STA. 28+91.84



MCKISSIC CREEK RD.
STA. 100+25.47 TO STA. 104+22.82

NOTES:

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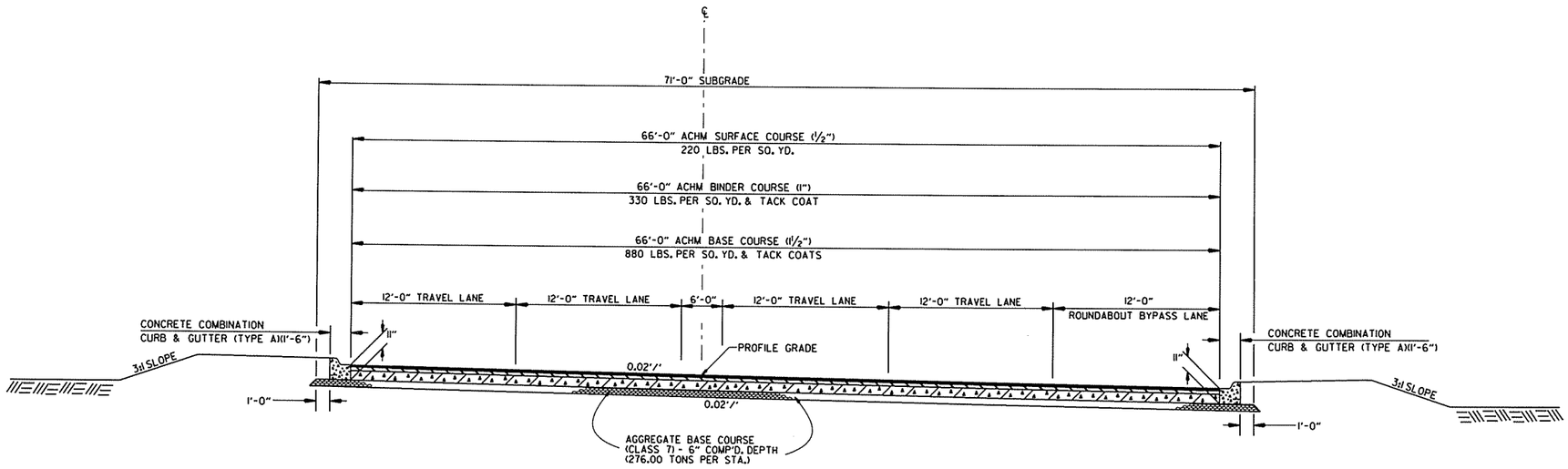
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TYPICAL SECTIONS OF IMPROVEMENT

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.		CA0904	15	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



HWY. 71 RAMP 1
STA. 1126+37.27 TO STA. 1132+26.30

NOTE:

1. 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 TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.
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1/16/2014

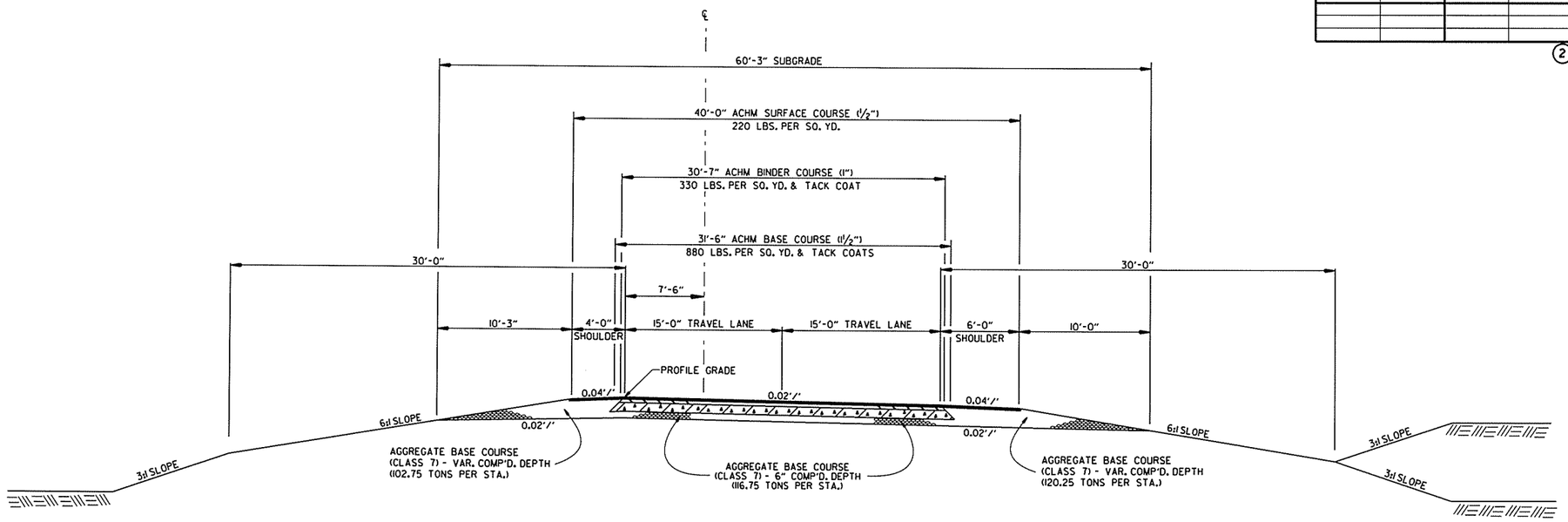
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TYPICAL SECTIONS OF IMPROVEMENT

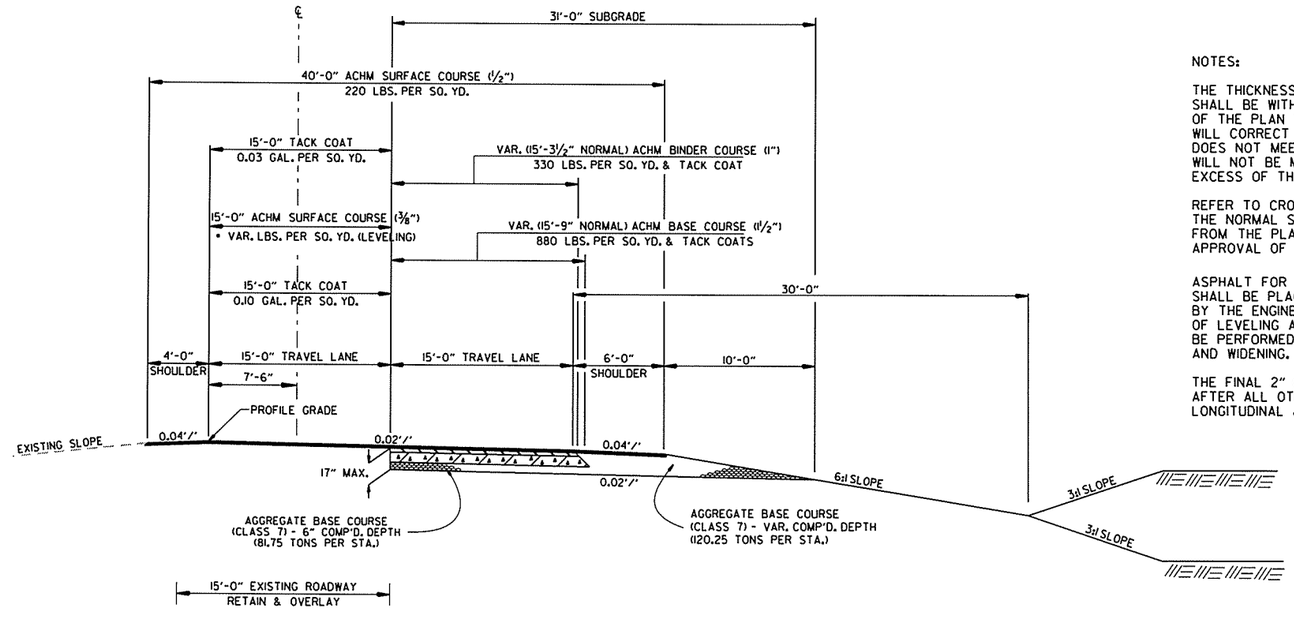
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				6	ARK.			
				JOB NO.		CA0904	16	636

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



HWY. 71 SB. RAMP REALIGNMENT
FULL DEPTH



NOTE: THE NOTCH AND WIDEING WILL HAVE VARIABLE WIDTHS

HWY. 71 SB. RAMP REALIGNMENT
NOTCH AND WIDEN

NOTES:

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• TO BE USED IF AND WHERE DIRECTED BY ENGINEER.

1/16/2014

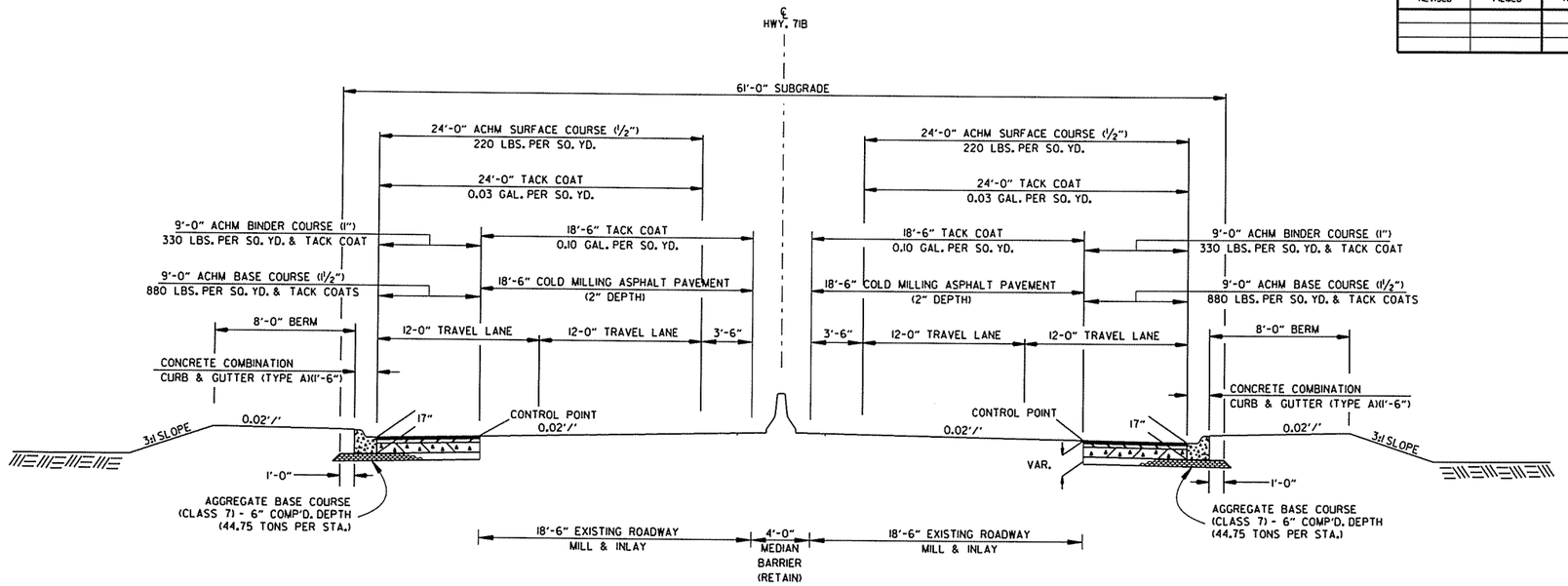
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TYPICAL SECTIONS OF IMPROVEMENT

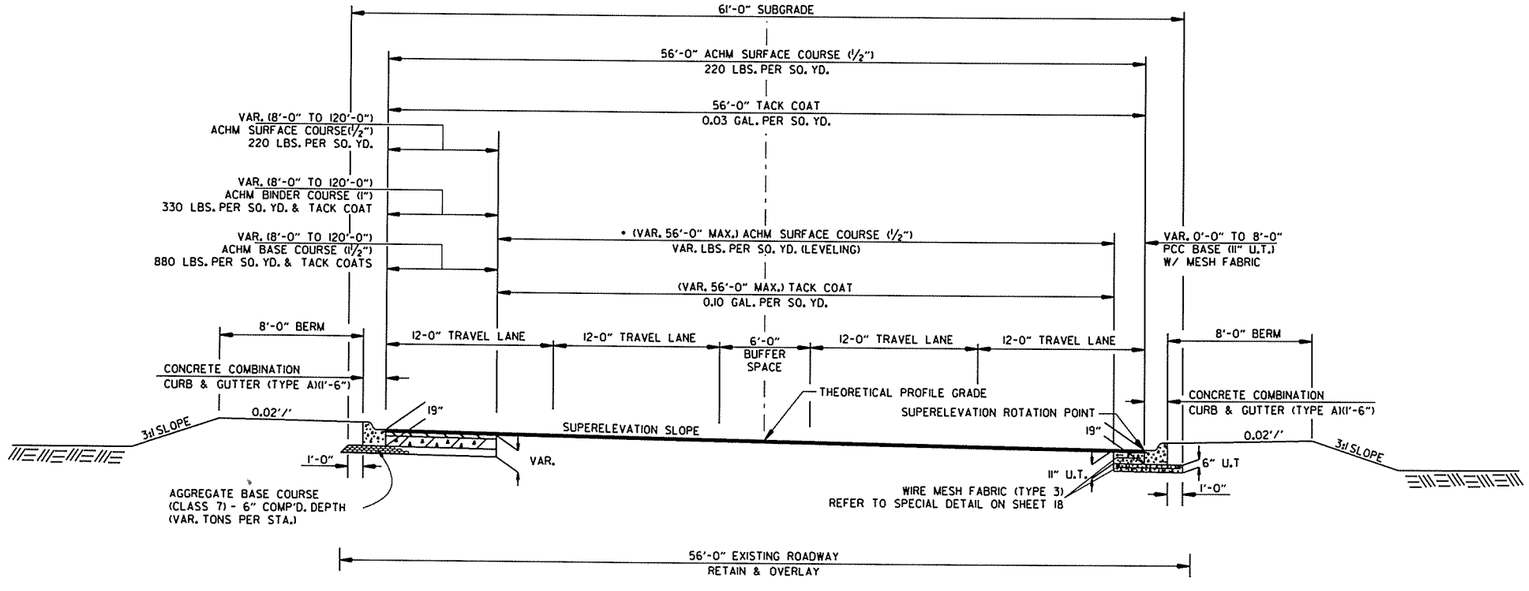
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(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



HWY. 71 NORTHBOUND
NOTCH & WIDENING
STA. 301+50.48 TO STA. 306+59.27



WALTON BLVD.
NOTCH & WIDENING
STA. 100+18.18 TO STA. 104+62.20

• TO BE USED IF AND WHERE DIRECTED BY ENGINEER.

NOTE:

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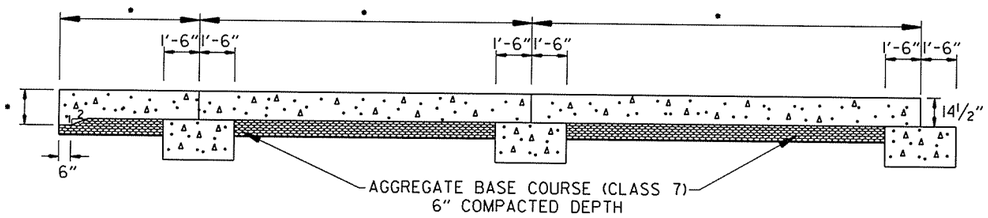
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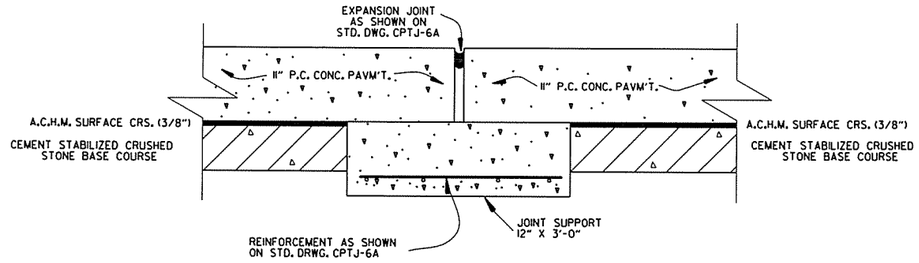
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

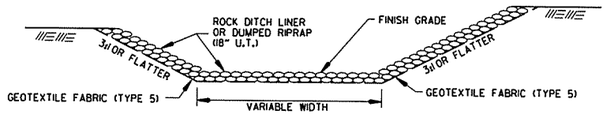


DETAIL OF TYPE SPECIAL APPROACH SLAB

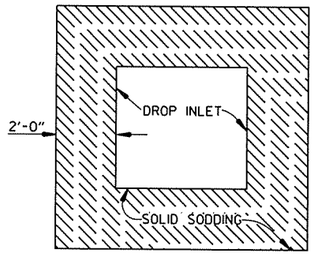
• REFER TO BRIDGE DRAWINGS



DETAILS OF JOINT SUPPORT

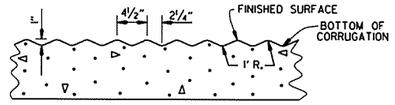


DETAILS OF ROCK DITCH LINER OR DUMPED RIPRAP

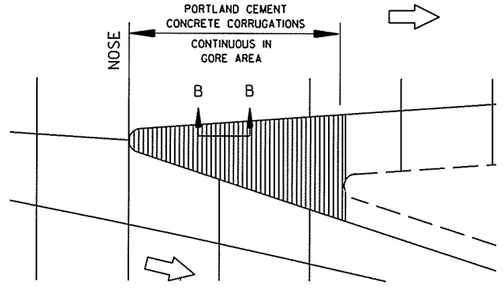


PLAN

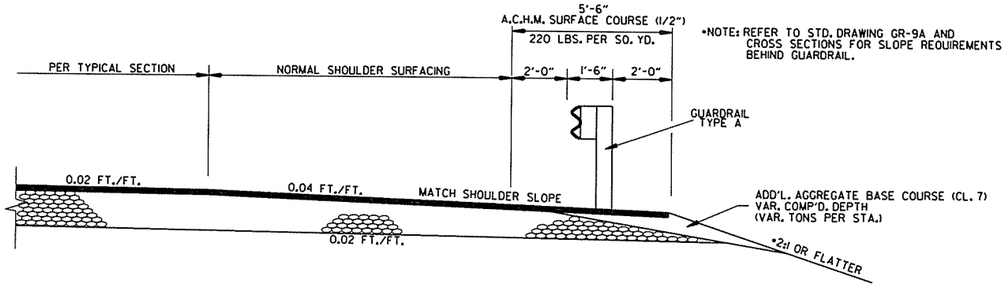
DETAIL OF SOLID SODDING AROUND DROP INLET



SECTION B-B

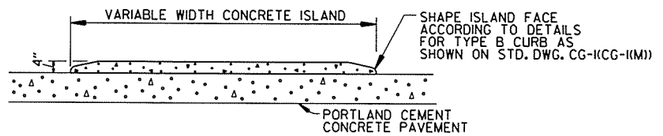


LAYOUT OF SHOULDER CORRUGATIONS IN EXIT GORE AREAS



SECTION DETAIL OF WIDENING FOR GUARDRAIL
CO. RD. 453 AND CO. RD. 49

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



DETAILS OF ISLAND ON P.C. CONCRETE PAVEMENT

8/2/2013

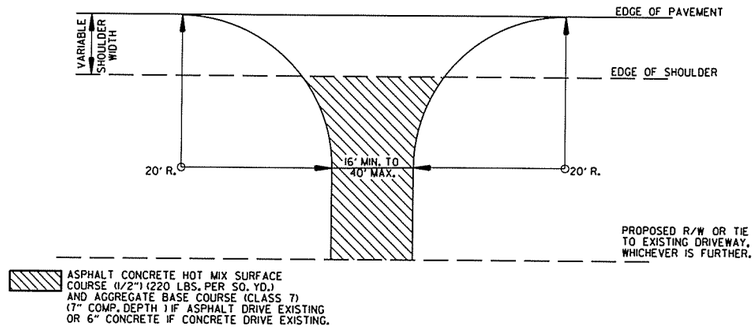
RCA0904.DGN

SPECIAL DETAILS

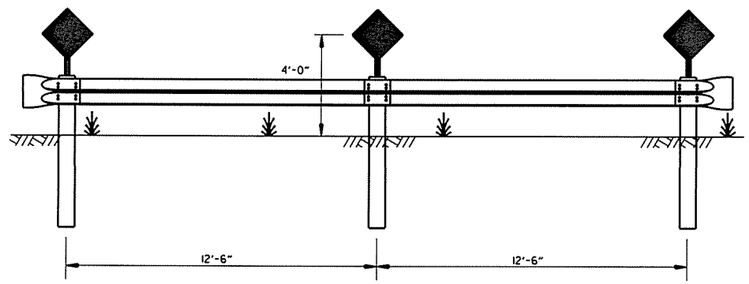
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				6	ARK.			
				JOB NO.		CA0904	19	636

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



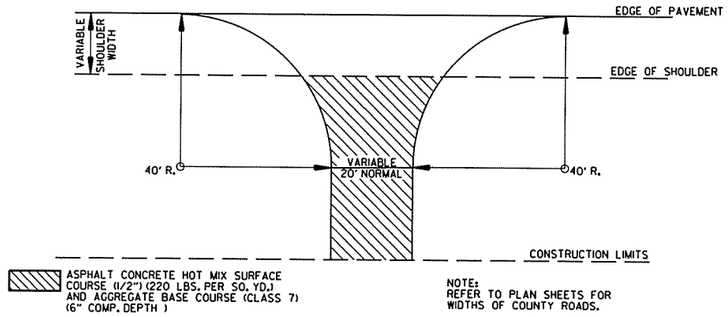
DETAIL FOR DRIVEWAY TURNOUTS



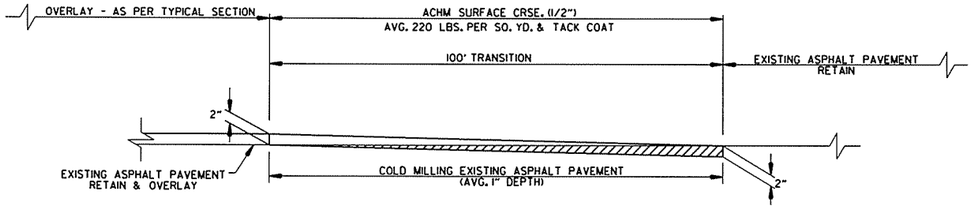
CONSTRUCT 25 LIN. FT. TYPE "C" GUARDRAIL WITH 3 RED DIAMOND REFLECTORS MOUNTED ON U-CHANNEL POSTS DIRECTLY BEHIND THE GUARDRAIL AT A HEIGHT OF 4'-0".

ROAD CLOSED DETAIL

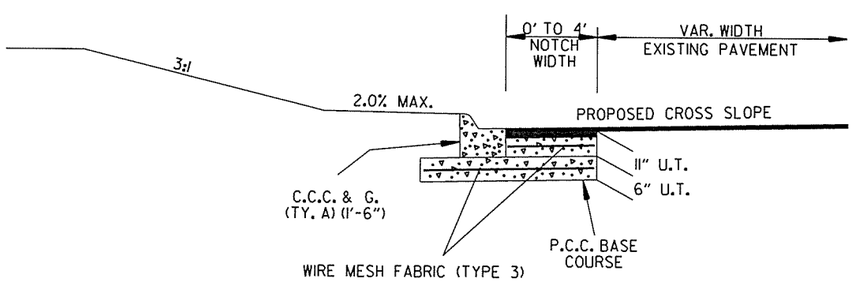
TO BE USED WHERE EXISTING ROADS WILL BE PERMANENTLY CLOSED. SEE PLAN SHEETS FOR LOCATIONS SEE STD. DWG. GR-7 FOR MORE DETAILS.



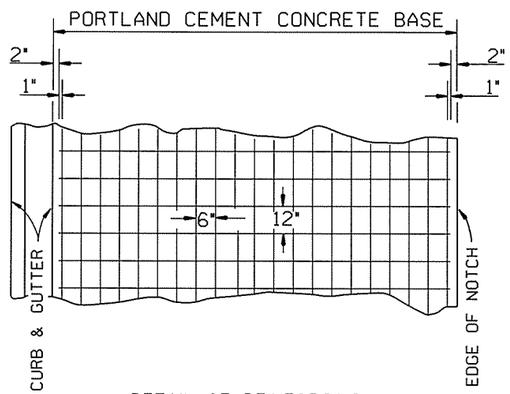
DETAIL FOR COUNTY ROAD TURNOUTS



PAVEMENT TRANSITION



DETAIL FOR P.C.C. BASE USED FOR NOTCH WIDTHS OF 0' TO 4' WIDE



DETAIL OF REINFORCING STEEL FOR CONCRETE BASE (MESH FABRIC TYPE 3)

6"X 12" MESH FABRIC (TYPE 3) (W5.5 x W2.9) = 4.26 LBS./SQ.YD.

NOTES:

1. LAP MESH FABRIC MIN. 12" LONGITUDINALLY AND MIN. 6" TRANSVERSELY.
2. MESH FABRIC IS NOT REQUIRED WHEN WIDTH OF PORTLAND CEMENT CONCRETE BASE IS LESS THAN 12".
3. MESH FABRIC (TYPE 3) WILL NOT BE PAID FOR DIRECTLY, BUT FULL COMPENSATION THEREFORE WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE BID PER SQ. YD. FOR PORTLAND CEMENT CONCRETE BASE (11" U.T.)

8/2/2013

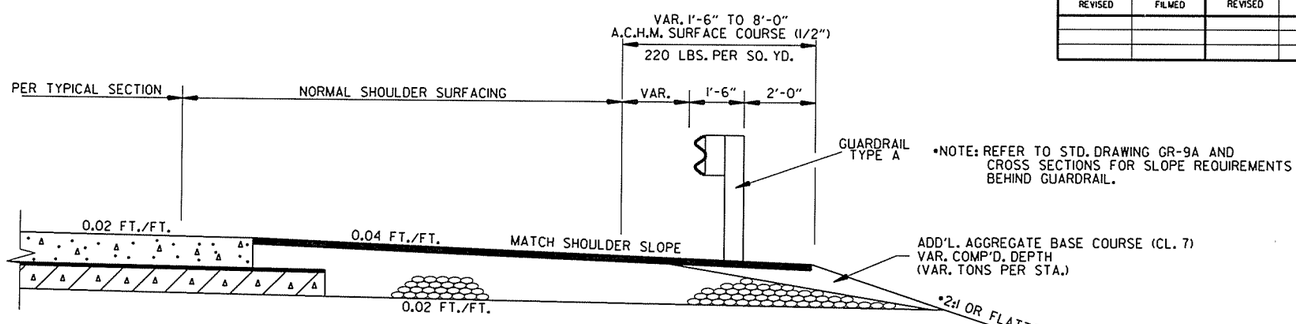
RCA0904.DGN

SPECIAL DETAILS

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				6	ARK.			
				JOB NO.		CA0904	20	636

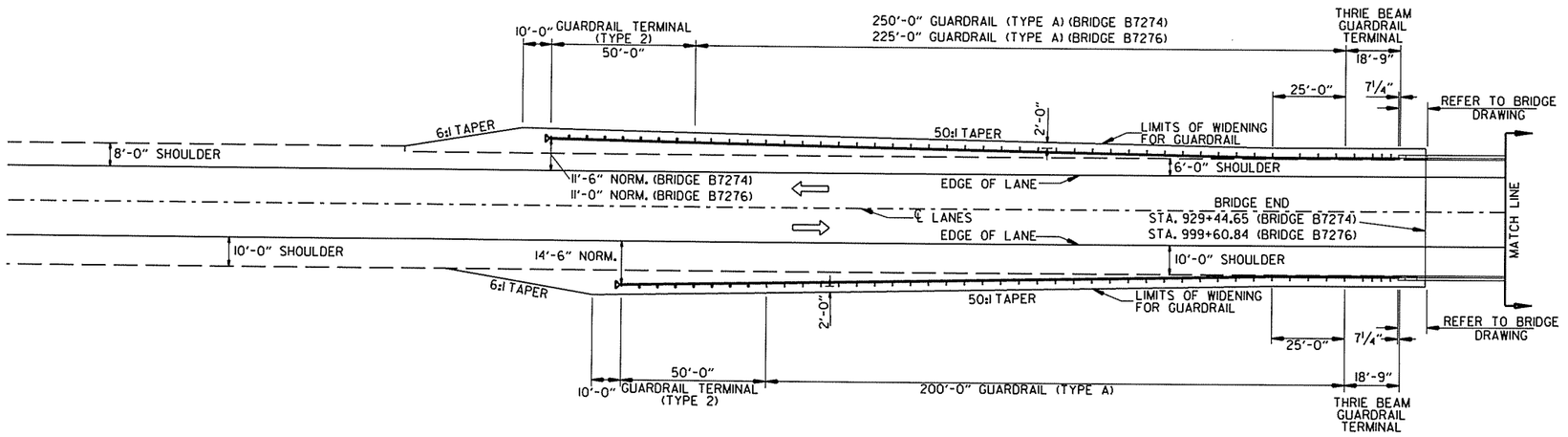
(2) SPECIAL DETAILS

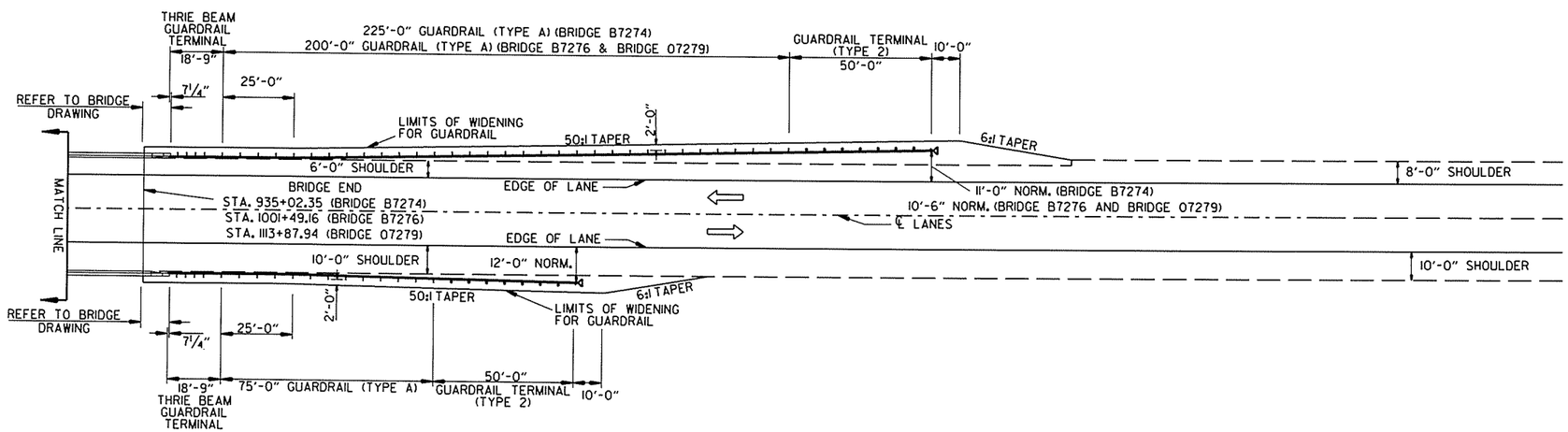
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



SECTION DETAIL OF WIDENING FOR GUARDRAIL
HWY. 71

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





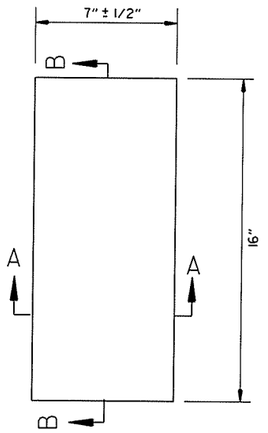
TYPICAL LAYOUT OF GUARDRAIL AT MAIN LANE BRIDGE ENDS

8/2/2013

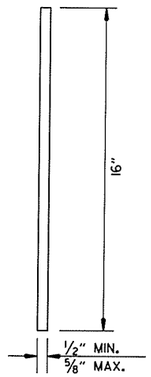
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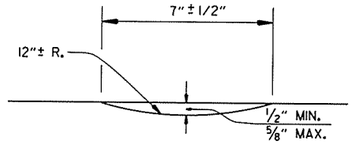
(2) SPECIAL DETAILS



PLAN

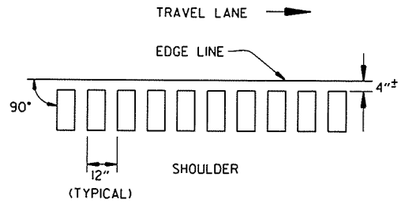


SECTION B-B



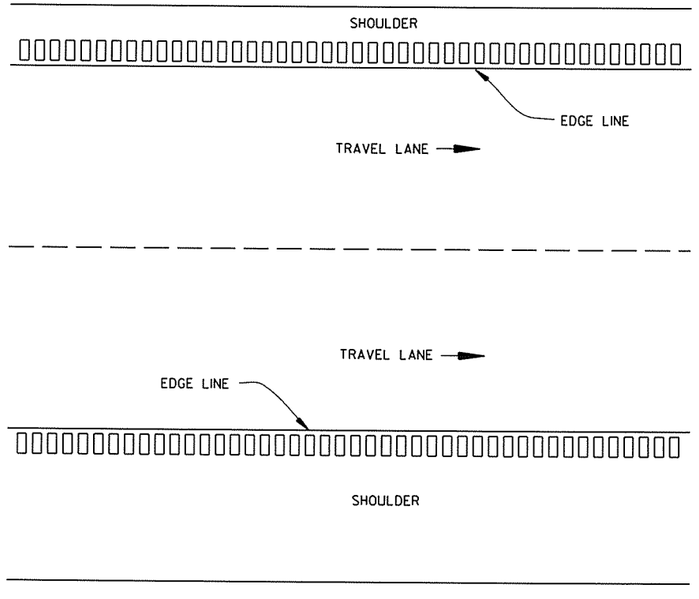
SECTION A-A

DETAILS OF RUMBLE STRIPS



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



PLAN VIEW

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.
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.

8/2/2013

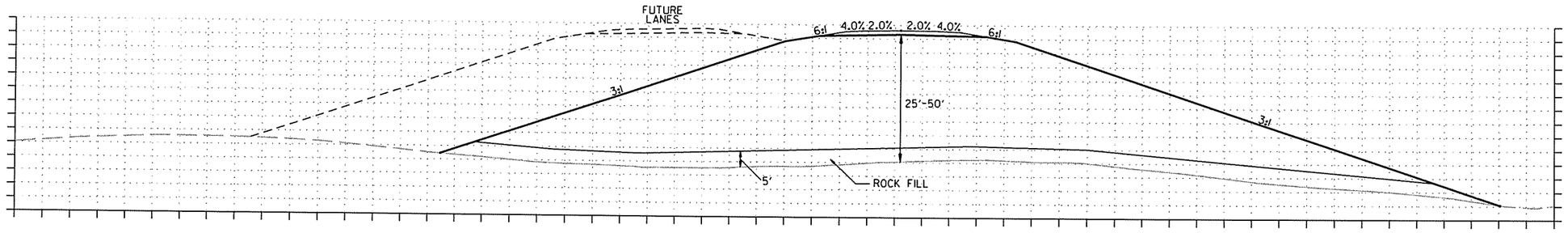
RCA0904.DGN

SPECIAL DETAILS

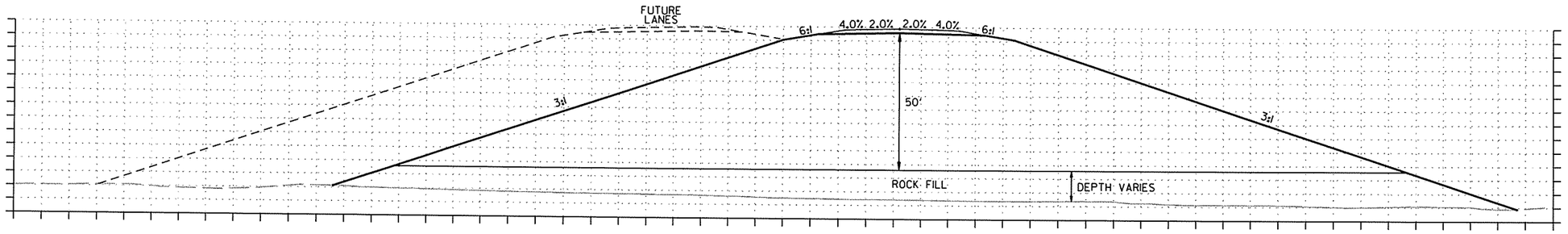
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				6	ARK.			
				JOB NO.		CA0904	22	636

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



TYPICAL PLACEMENT OF ROCK FILL FOR COMPACTED EMBANKMENT DEPTHS OF 25'-50'



TYPICAL PLACEMENT OF ROCK FILL FOR COMPACTED EMBANKMENT DEPTHS OF GREATER THAN 50'

NOTES:
FOR ALL COMPACTED EMBANKMENT DEPTHS GREATER THAN 25' BUT LESS THAN 50' THERE SHALL BE A 5' LAYER OF ROCK FILL ALONG THE EXISTING SURFACE.

FOR ALL COMPACTED EMBANKMENT DEPTHS GREATER THAN 50' THERE SHALL BE A ROCK FILL LAYER FROM 50' TO THE EXISTING SURFACE.

REFER TO "ROCK FILL" SPECIAL PROVISION FOR ADDITIONAL INFORMATION

8/2/2013

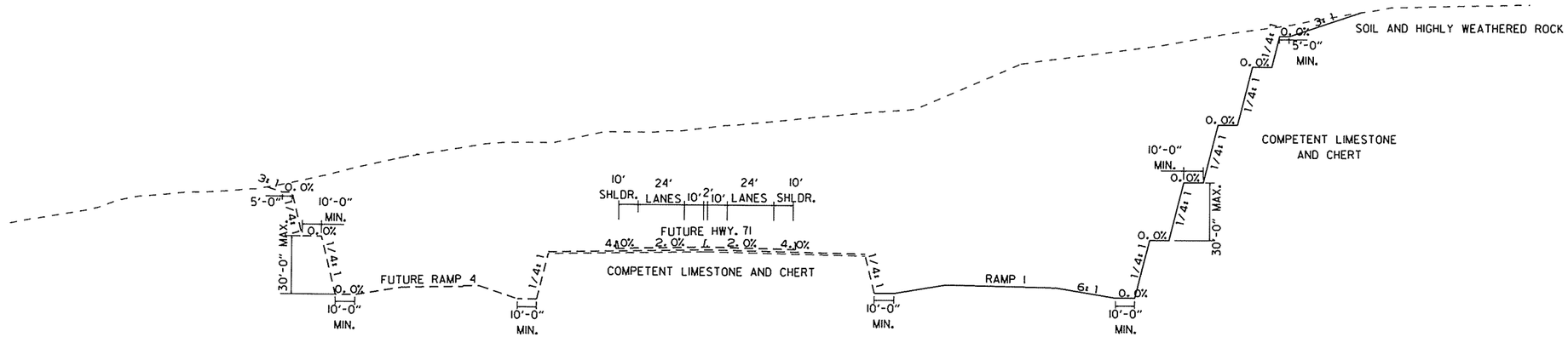
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SPECIAL DETAILS

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				JOB NO.		CA0904	23	636

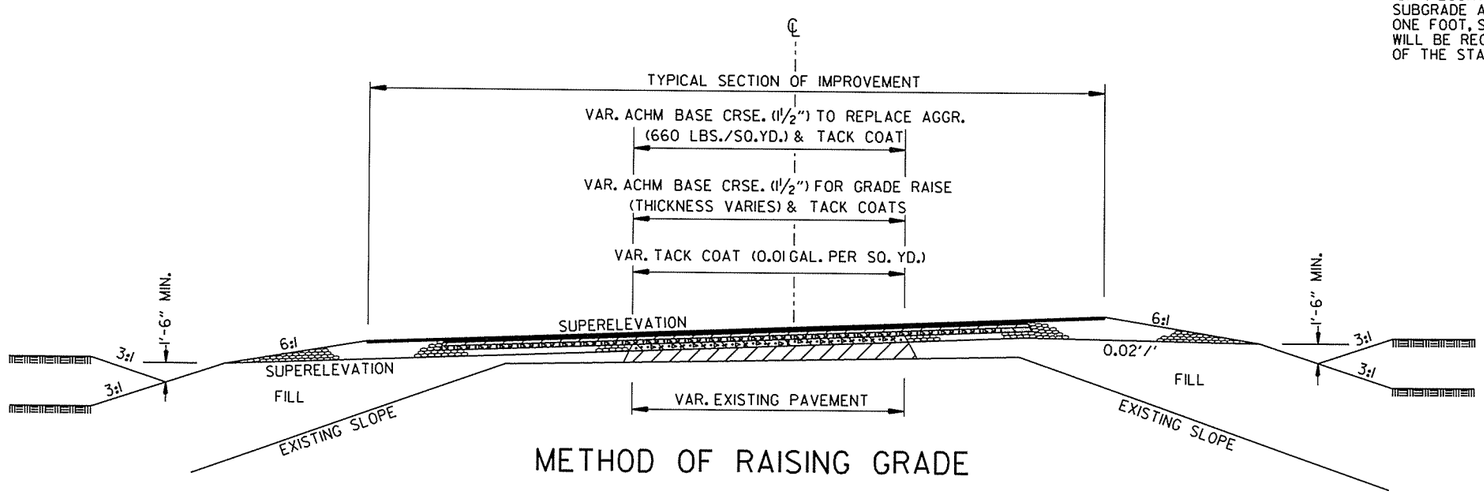
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



EXCAVATION DETAILS FOR ROCK CUT SECTION
HWY. 71 & RAMPS 1 & 4
HWY. 71 STA. 1121+00 TO STA. 1125+00

NOTES:
(1) THIS DETAIL TO BE USED ONLY IF AND WHERE DIRECTED BY THE ENGINEER.
(2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.
(3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.



METHOD OF RAISING GRADE

8/2/2013

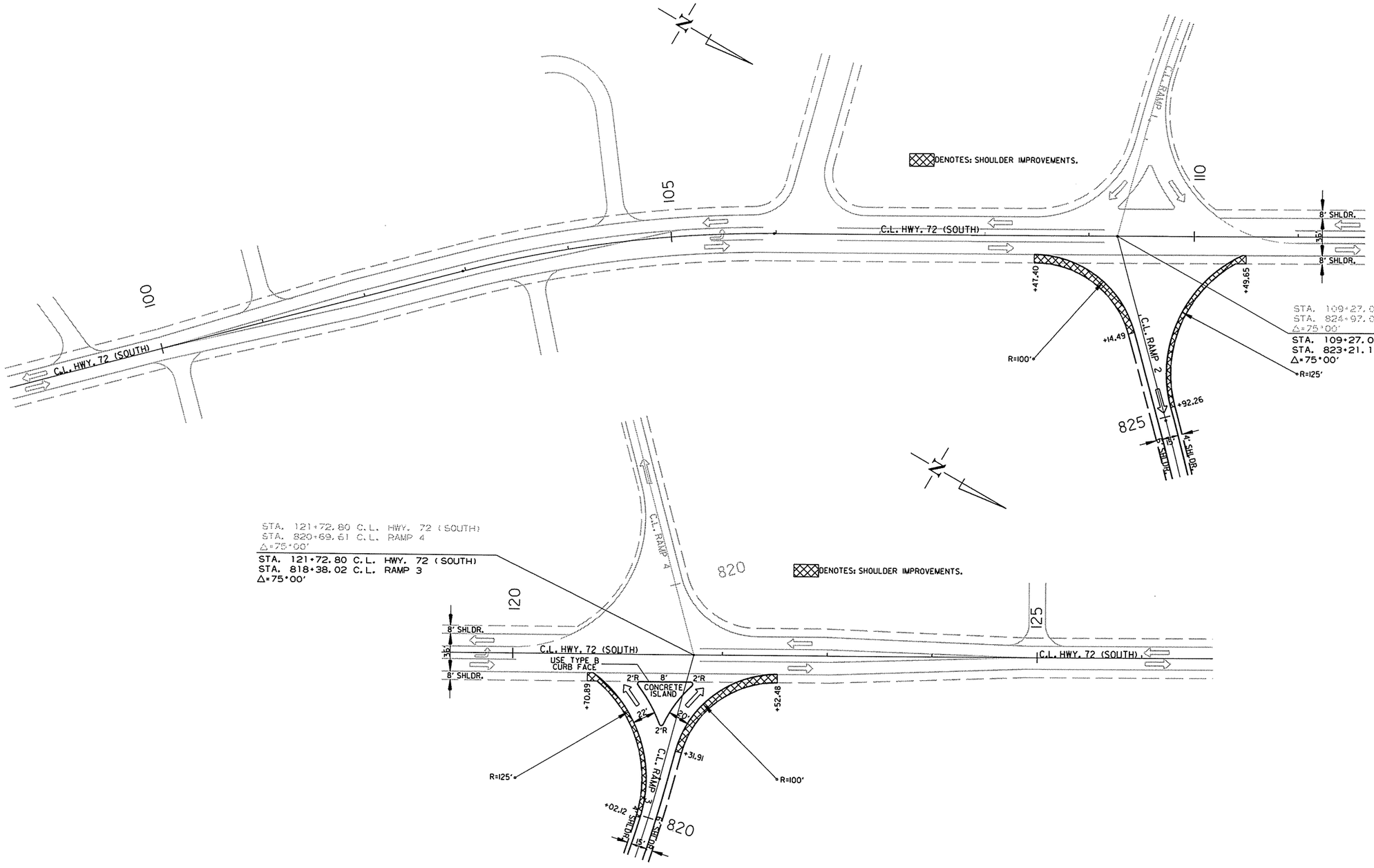
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SPECIAL DETAILS

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				6	ARK.			
				JOB NO.		CA0904	24	636

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



HWY. 72 (SOUTH) INTERSECTION DETAILS

8/2/2013

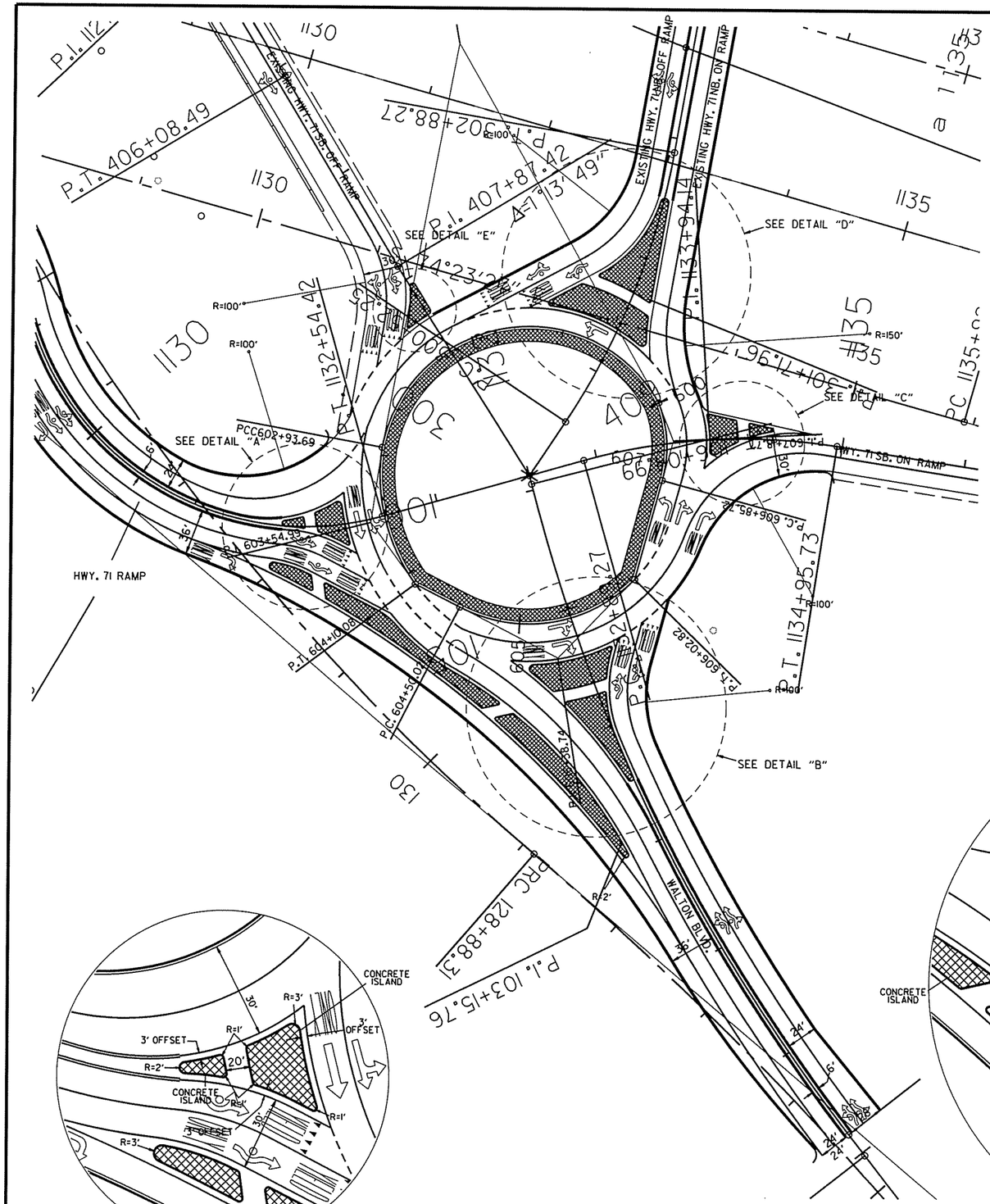
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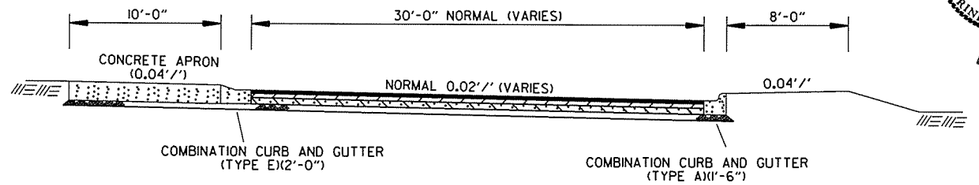
SPECIAL DETAILS

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				JOB NO.		CA0904	25	636

(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14





ROUNDABOUT TYPICAL SECTION

8/2/2013

RCA0904.DGN

SPECIAL DETAILS

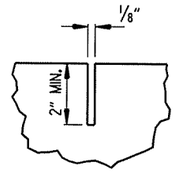
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(2) SPECIAL DETAILS

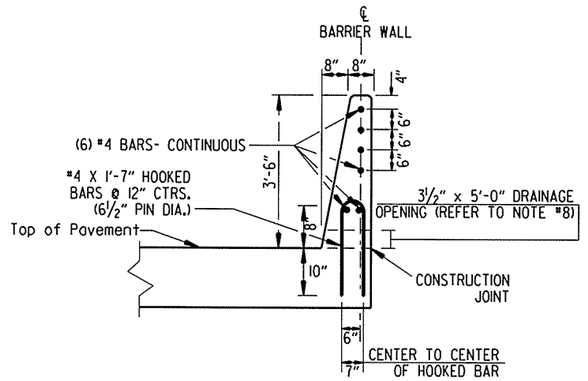
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

General Notes for Concrete Barrier Walls

1. ALL BARRIER WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 631 OF THE STANDARD SPECIFICATIONS, 2003 EDITION.
2. CONTRACTION JOINTS REQUIRED @ 15'-0" MAXIMUM SPACING FOR BARRIER TYPES MEDIAN A & B & SIDE A.
3. ALL CONTRACTION JOINTS TO BE FORMED IN FRESH CONCRETE ON TOP AND IN SIDES OF BARRIER WALL.
4. DOWEL BARS FOR BARRIER TYPES MEDIAN A & B & SIDE A WILL NOT BE REQUIRED IF BARRIER AND MINIMUM 4' WIDE BASE ARE CAST AS A COMPLETE UNIT.
5. ALL EXPOSED EDGES OF CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.
6. SPACING BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 400 FT FOR BARRIER TYPES MEDIAN A & B & SIDE A. EXPANSION JOINTS SHALL BE FORMED USING 1" PREFORMED JOINT FILLER. CONTINUOUS REINFORCEMENT SHALL BE CUT 2" CLEAR OF EXPANSION JOINTS.
8. DRAINAGE OPENINGS TO BE CONSTRUCTED EVERY 100' O.C. AND AT SAGS AND ADJACENT TO DROP INLETS. DOWEL BARS SHALL NOT BE PLACED WITHING 3" OF DRAINAGE OPENINGS.



CONTRACTION JOINT DETAIL



CONCRETE BARRIER WALL
(SIDE TYPE A)
CONCRETE PAVEMENT

MAINTAIN 3" CLEARANCE ON ALL FOOTING REINFORCEMENT AND 2" CLEARANCE ON ALL OTHER REINFORCEMENT.

8/2/2013

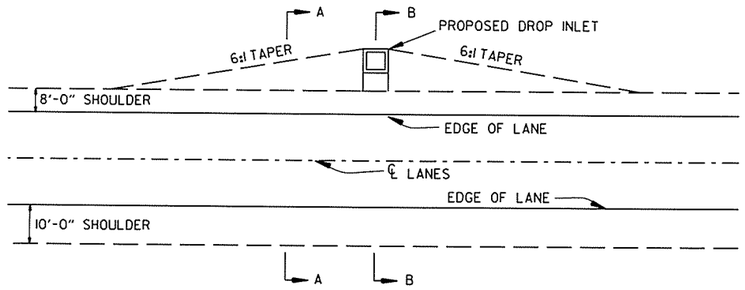
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SPECIAL DETAILS

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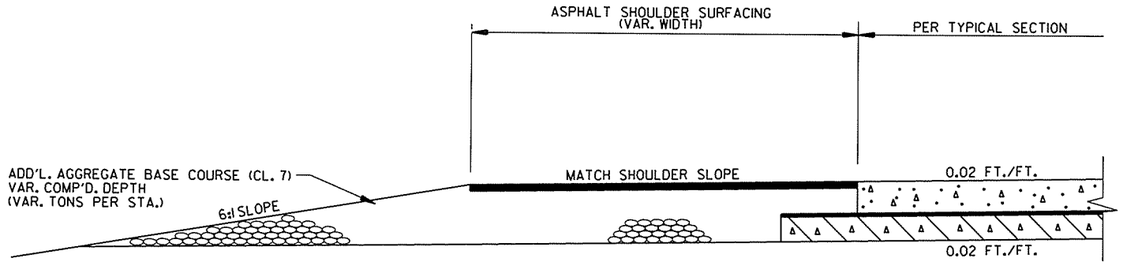
(2) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

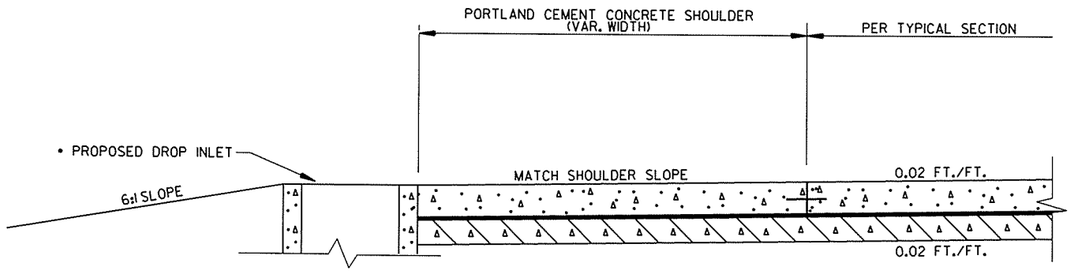


WIDENING FOR DROP INLETS UNDER FUTURE MEDIAN BARRIER WALL

NOTE: SEE PLANS FOR LOCATION OF DROP INLETS.



SECTION A-A



SECTION B-B

• NOTE: REFER TO STANDARD DRAWINGS FPC-9D & FPC-9N FOR ADDITIONAL INFORMATION.

8/2/2013

RCA0904.DGN

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
2-6-14				6	ARK.			
				JOB NO.		CA0904	27A	636
				①	SPECIAL DETAILS			

STATE OF ARKANSAS
CARL J. PUSELLER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/5/14
CARL J. PUSELLER

STA. 905+13
SINGLE 6' X 5' R.C. BOX CULVERT

MIDSECTION

NOTE: THE VALUES FOR THE VARIABLES AND QUANTITIES SHOWN FOR SECTION "H" ARE IN ADDITION TO THOSE SHOWN FOR SECTIONS "A" THRU "G" IN STANDARD DRAWINGS R-100X-XI AND R-100X-X3. SECTION "G" SHALL BE THE SAME LENGTH AS SECTION "F" ON THE STANDARD DRAWINGS.

BARREL DIMENSIONS							QUANTITIES			
SECTION	DEPTH OF COVER	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	CLASS S CONCRETE	REINFORCING STEEL		
							PER LIN. FT. OF BARREL	PER LIN. FT. OF BARREL	①PER LAP	APRON AND HEADWALL (OUTLET END ONLY)
"H"	40' to 70'	OW	T	C	B	OH	CU. YD.	LB.	LB.	LB.
		7'-9"	21"	10½"	21"	8'-6"	1.33	104.83	28.95	58.87

REINFORCING STEEL								
SECTION		"a" bars (STRAIGHT)	"b" bars (BENT)	"d" bars (STRAIGHT)	"d1" bars (STRAIGHT)	"e" bars (STRAIGHT)	"f" bars (STRAIGHT)
"H"	SIZE	#6	#6	#4	#4	#4	#5
	SPACING	9"	9"	12"	12"	12"	9"
	NO. REQ'D.	*	*	7	10	7	*
	LENGTH	7'-5"	8'-9"	*	*	*	8'-2"

* Varies with Length of Barrel

① MIDSECTION BAR LAP TABLE

# of Long. Laps Req'd.	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

WINGS @ OUTLET END

NOTE: WINGS AT OUTLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING W-X003-I AND SECTION "H" AT OUTLET. VARIABLES AND QUANTITIES SHOWN BELOW REPLACE VALUES SHOWN IN STANDARD DRAWING W-X003-I. CONCRETE QUANTITY PER WING DOES NOT INCLUDE HEADWALL OR THAT PORTION OF APRON OR TOEWALL FOR THE LENGTH W3.

WING DIMENSIONS & QUANTITIES - 3:1 SLOPES				
OVERALL WIDTH	APRON WIDTH	THICKNESS OF WING AT HDWL.= C	CLASS S CONCRETE PER WING	CLASS S CONCRETE 2 WINGS
			OUTLET END	HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS
OW	W_3	Cw	CU. YD.	CU. YD.
7'-9"	3'-5¾"	10½"	3.07	6.55

STA. 915+65
DOUBLE 6' X 5' R.C. BOX CULVERT

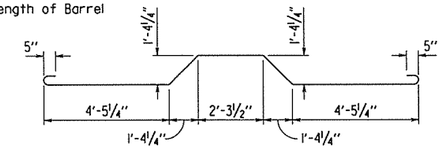
MIDSECTION

NOTE: THE VALUES FOR THE VARIABLES AND QUANTITIES SHOWN FOR SECTION "H" ARE IN ADDITION TO THOSE SHOWN FOR SECTIONS "A" THRU "G" IN STANDARD DRAWINGS R-230X-I, R-200X-XI, AND R-200X-X4. SECTION "G" SHALL BE THE SAME LENGTH AS SECTION "F" ON THE STANDARD DRAWINGS.

BARREL DIMENSIONS								QUANTITIES			
SECTION	DEPTH OF COVER	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF EXTERIOR WALLS	THICKNESS OF BOTTOM SLAB	THICKNESS OF INTERIOR WALL	OVERALL HEIGHT	CLASS S CONCRETE	REINFORCING STEEL		
								PER LIN. FT. OF BARREL	PER LIN. FT. OF BARREL	①PER LAP	APRON AND HEADWALL (OUTLET END ONLY)
"H"	40' to 60'	OW	T	C	B	M	OH	CU. YD.	LB.	LB.	LB.
		14'-3"	20½"	9½"	20½"	8"	8'-5"	2.22	230.97	89.07	81.44

REINFORCING STEEL									
SECTION		"a" bars (STRAIGHT)	"b" bars (BENT)	"b_2" bars (BENT)	"c" bars (STRAIGHT)	"d" bars (STRAIGHT)	"d_1" bars (STRAIGHT)	"e" bars (STRAIGHT)	"f" bars (STRAIGHT)
"H"	SIZE	#5	#5	#5	#6	#4	#4	#4	#4
	SPACING	10"	10"	10"	10"	12"	12"	12"	5"
	NO. REQ'D.	*	*	*	*	30	20	30	*
	LENGTH	13'-11"	16'-3"	16'-3"	13'-11"	*	*	*	8'-1"

* Varies with Length of Barrel



Bent "b" and "b_2" bars
Dimensions are out to out of bars
Pin Diam. = 3¾"

① MIDSECTION BAR LAP TABLE

# of Long. Laps Req'd.	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

WINGS @ OUTLET END

NOTE: WINGS AT OUTLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING W-X003-I AND SECTION "H" AT OUTLET. VARIABLES AND QUANTITIES SHOWN BELOW REPLACE VALUES SHOWN IN STANDARD DRAWING W-X003-I. CONCRETE QUANTITY PER WING DOES NOT INCLUDE HEADWALL OR THAT PORTION OF APRON OR TOEWALL FOR THE LENGTH W3.

WING DIMENSIONS & QUANTITIES - 3:1 SLOPES				
OVERALL WIDTH	APRON WIDTH	THICKNESS OF WING AT HDWL.= C	CLASS S CONCRETE PER WING	CLASS S CONCRETE 2 WINGS
			OUTLET END	HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS
OW	W_3	Cw	CU. YD.	CU. YD.
14'-3"	9'-11¾"	9½"	2.99	7.05

PRINT DATE: 2/5/2014

SHEET 1 OF 3
MODIFICATIONS TO STANDARD
R.C. BOX CULVERTS
SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
2-6-14				6	ARK.			
				JOB NO.		CA0904	27B	6336
				①		SPECIAL DETAILS		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSSELL
2/5/2014

STA. 982+70
DOUBLE 5' X 5' R.C. BOX CULVERT

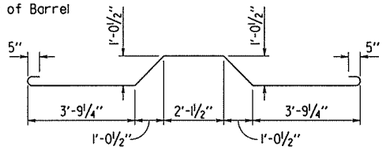
MIDSECTION

NOTE: THE VALUES FOR THE VARIABLES AND QUANTITIES SHOWN FOR SECTION "H" ARE IN ADDITION TO THOSE SHOWN FOR SECTIONS "A" THRU "G" IN STANDARD DRAWINGS R-245X-I AND R-200X-XI. SECTION "G" SHALL BE THE SAME LENGTH AS SECTION "F" ON THE STANDARD DRAWINGS.

BARREL DIMENSIONS								QUANTITIES			
SECTION	DEPTH OF COVER	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF EXTERIOR WALLS	THICKNESS OF BOTTOM SLAB	THICKNESS OF INTERIOR WALL	OVERALL HEIGHT	CLASS S CONCRETE	REINFORCING STEEL		
								PER LIN. FT. OF BARREL	PER LIN. FT. OF BARREL	①PER LAP	APRON AND HEADWALL (INLET END ONLY)
		OW	T	C	B	M	OH	CU. YD.	LB.	LB.	LB.
"H"	40' to 45'	12'-1"	16½"	8½"	16½"	8"	7'-9"	1.62	192.8	80.16	50.77

REINFORCING STEEL									
SECTION		"a" bars (STRAIGHT)	"b" bars (BENT)	"b_2" bars (BENT)	"c" bars (STRAIGHT)	"d" bars (STRAIGHT)	"d_1" bars (STRAIGHT)	"e" bars (STRAIGHT)	"f" bars (STRAIGHT)
"H"	SIZE	#4	#5	#5	#5	#4	#4	#4	#4
	SPACING	9"	9"	9"	9"	12"	12"	12"	4½"
	NO. REQ'D.	*	*	*	*	26	20	26	*
	LENGTH	11'-9"	13'-9"	13'-9"	11'-9"	*	*	*	7'-5"

* Varies with Length of Barrel



Bent "b" and "b_2" bars
Dimensions are out to out of bars
Pin Diam. = 3¾"

① MIDSECTION BAR LAP TABLE

# of Long. Laps Req'd.	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

WINGS @ INLET END

NOTE: WINGS AT INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING W-X003-I AND SECTION "H" AT INLET. VARIABLES AND QUANTITIES SHOWN BELOW REPLACE VALUES SHOWN IN STANDARD DRAWING W-X003-I. CONCRETE QUANTITY PER WING DOES NOT INCLUDE HEADWALL OR THAT PORTION OF APRON OR TOEWALL FOR THE LENGTH W3.

WING DIMENSIONS & QUANTITIES - 3:1 SLOPES				
OVERALL WIDTH	APRON WIDTH	THICKNESS OF WING AT HDWL.= C	CLASS S CONCRETE PER WING	CLASS S CONCRETE 2 WINGS
			INLET END	HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS
OW	W_3	Cw	CU. YD.	CU. YD.
12'-1"	7'-9¾"	8½"	2.71	6.04

STA. 993+98
SINGLE 5' X 5' R.C. BOX CULVERT

MIDSECTION

NOTE: THE VALUES FOR THE VARIABLES AND QUANTITIES SHOWN FOR SECTIONS "H" AND "I" ARE IN ADDITION TO THOSE SHOWN FOR SECTIONS "A" THRU "G" IN STANDARD DRAWINGS R-115X-XI AND R-100X-XI. SECTION "G" SHALL BE THE SAME LENGTH AS SECTION "F" ON THE STANDARD DRAWINGS.

BARREL DIMENSIONS							QUANTITIES			
SECTION	DEPTH OF COVER	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	CLASS S CONCRETE	REINFORCING STEEL		
							PER LIN. FT. OF BARREL	PER LIN. FT. OF BARREL	①PER LAP	APRON AND HEADWALL (INLET END ONLY)
		OW	T	C	B	OH	CU. YD.	LB.	LB.	LB.
"H"	40' to 60'	6'-6"	14½"	9"	14½"	7'-5"	0.86	90.47	26.72	48.74
"I"	60' to 80'	6'-11"	19½"	11½"	19½"	8'-3"	1.19	96.14	26.72	-

REINFORCING STEEL							
SECTION		"a" bars (STRAIGHT)	"b" bars (BENT)	"d" bars (STRAIGHT)	"d_1" bars (STRAIGHT)	"e" bars (STRAIGHT)	"f" bars (STRAIGHT)
"H" & "I"	SIZE	#6	#6	#4	#4	#4	#5
	SPACING	9"	9"	12"	12"	12"	9"
	NO. REQ'D.	*	*	6	10	6	*
"H"	LENGTH	6'-2"	7'-6"	*	*	*	7'-1"
"I"	LENGTH	6'-7"	7'-11"	*	*	*	7'-11"

* Varies with Length of Barrel

① MIDSECTION BAR LAP TABLE

# of Long. Laps Req'd.	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

WINGS @ INLET END

NOTE: WINGS AT INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING W-X003-I AND SECTION "H" AT INLET. VARIABLES AND QUANTITIES SHOWN BELOW REPLACE VALUES SHOWN IN STANDARD DRAWING W-X003-I. CONCRETE QUANTITY PER WING DOES NOT INCLUDE HEADWALL OR THAT PORTION OF APRON OR TOEWALL FOR THE LENGTH W3.

WING DIMENSIONS & QUANTITIES - 3:1 SLOPES				
OVERALL WIDTH	APRON WIDTH	THICKNESS OF WING AT HDWL.= C	CLASS S CONCRETE PER WING	CLASS S CONCRETE 2 WINGS
			INLET END	HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS
OW	W_3	Cw	CU. YD.	CU. YD.
6'-6"	2'-2¾"	9"	2.75	5.70

PRINT DATE: 2/5/2014

SHEET 2 OF 3
MODIFICATIONS TO STANDARD
R.C. BOX CULVERTS
SPECIAL DETAILS

LRFD

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-6-14				6	ARK.			
				JOB NO.		CA0904	STC	6336
				①	SPECIAL DETAILS			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. PUSSEPEL
2/5/14

STA. 1030+01 AND STA. 1042+57
DOUBLE 6' X 5' R.C. BOX CULVERTS

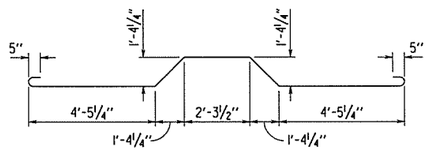
MIDSECTION

NOTE: THE VALUES FOR THE VARIABLES AND QUANTITIES SHOWN FOR SECTION "H" ARE IN ADDITION TO THOSE SHOWN FOR SECTIONS "A" THRU "G" IN STANDARD DRAWINGS R-230X-1, R-200X-X1, AND R-200X-X4. SECTION "G" SHALL BE THE SAME LENGTH AS SECTION "F" ON THE STANDARD DRAWINGS.

BARREL DIMENSIONS								QUANTITIES			
SECTION	DEPTH OF COVER	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF EXTERIOR WALLS	THICKNESS OF BOTTOM SLAB	THICKNESS OF INTERIOR WALL	OVERALL HEIGHT	CLASS S CONCRETE	REINFORCING STEEL		
								PER LIN. FT. OF BARREL	PER LIN. FT. OF BARREL	①PER LAP	APRON AND HEADWALL (OUTLET END ONLY)
"H"	40' to 60'	OW	T	C	B	M	OH	CU. YD.	LB.	LB.	LB.
		14'-3"	20½"	9½"	20½"	8"	8'-5"	2.22	230.97	89.07	81.44

REINFORCING STEEL									
SECTION		"a" bars (STRAIGHT)	"b" bars (BENT)	"b_2" bars (BENT)	"c" bars (STRAIGHT)	"d" bars (STRAIGHT)	"d_1" bars (STRAIGHT)	"e" bars (STRAIGHT)	"f" bars (STRAIGHT)
"H"	SIZE	#5	#5	#5	#6	#4	#4	#4	#4
	SPACING	10"	10"	10"	10"	12"	12"	12"	5"
	NO. REQ'D.	*	*	*	*	30	20	30	*
	LENGTH	13'-11"	16'-3"	16'-3"	13'-11"	*	*	*	8'-1"

* Varies with Length of Barrel



Bent "b" and "b_2" bars
Dimensions are out to out of bars
Pin Diam. = 3¾"

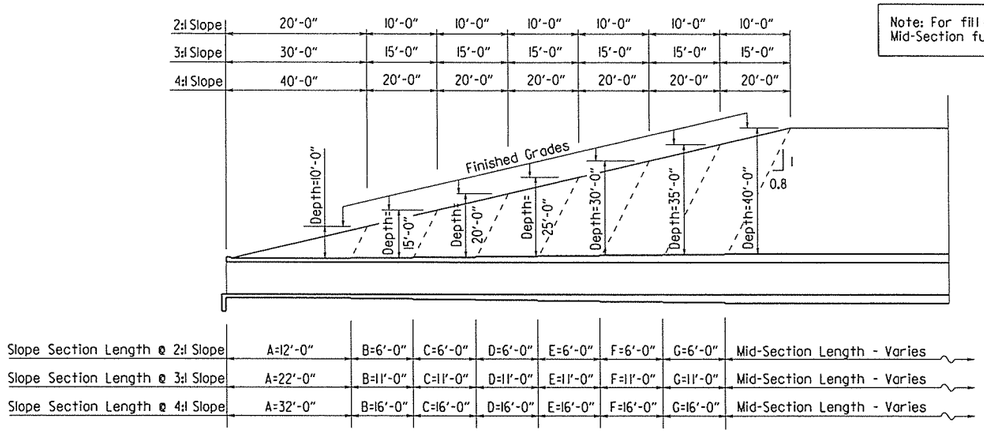
① MIDSECTION BAR LAP TABLE

# of Long. Laps Req'd.	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

PRINT DATE: 2/5/2014

SHEET 3 OF 3
MODIFICATIONS TO STANDARD
R.C. BOX CULVERTS
SPECIAL DETAILS

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	28	636
				①		SPECIAL DETAILS		

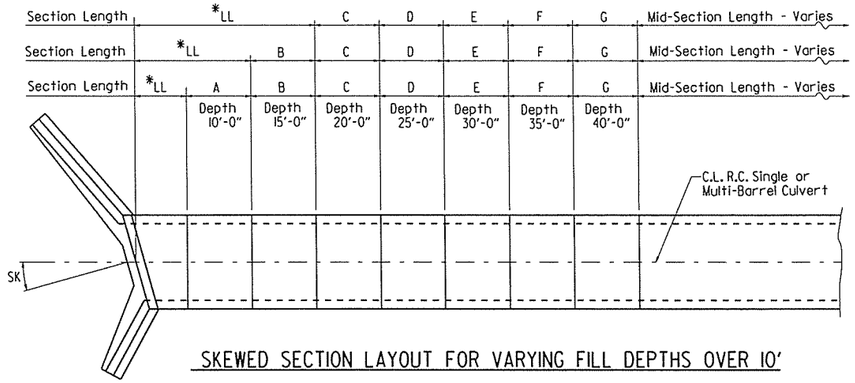


Note: For fill depths 10' and under, use Mid-Section full length of box culvert.

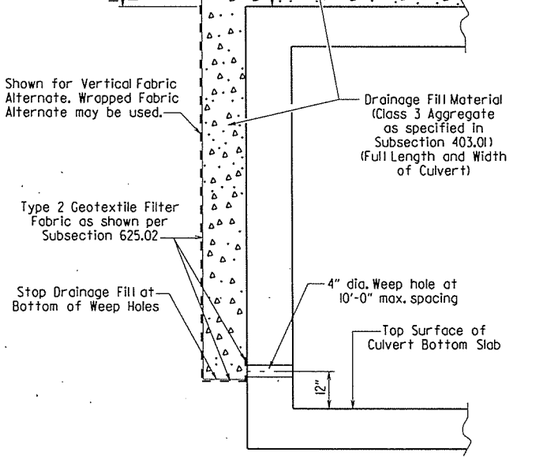
LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

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.

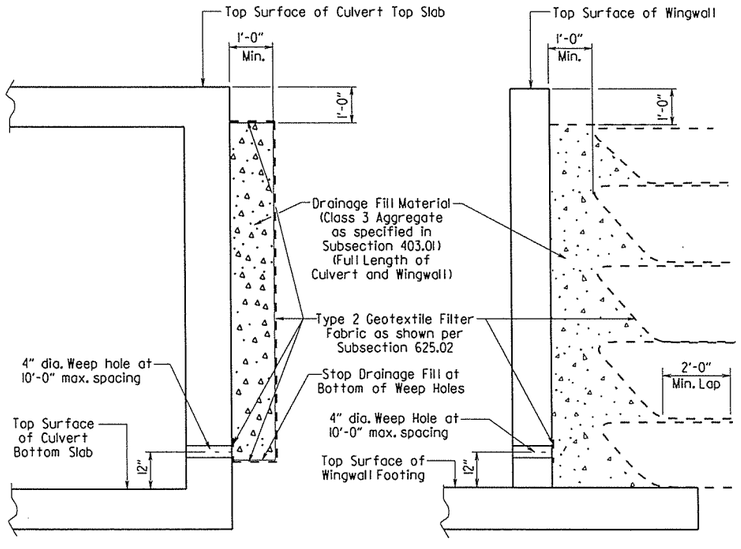


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



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

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11
CARL J. FUSELIER

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 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 the top slab of the box culvert serves as finished roadway surface, curing and finishing shall be in accordance with subsections 802.17 and 802.20 for bridge roadway surface and a tine finish shall be applied in accordance with subsection 802.19 for Class S Tined Bridge Roadway Surface Finish. Curing and finishing shall not be paid for directly, but shall be considered incidental to the item "Class S Concrete-Roadway". Class 1 Protective Surface Treatment shall be applied to the roadway surface and this work shall be paid for under the unit price bid for "Class 1 Protective Surface Treatment".

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". When the top slab of the box culvert serves as finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

GENERAL NOTES &
LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

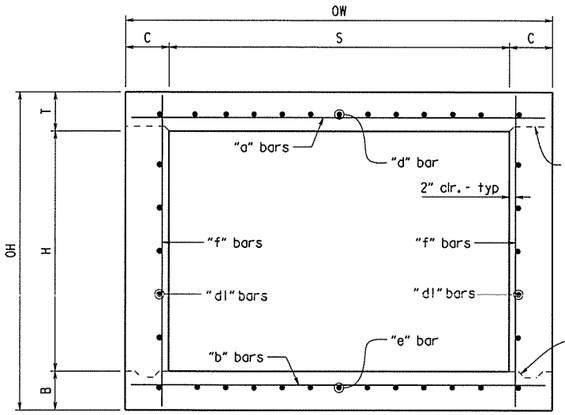
Culvert-General.dgn

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.		CA0904	29	636

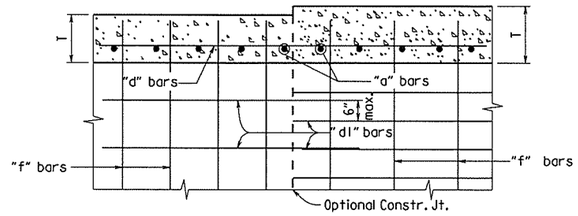
(1) SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
1/2/14

Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



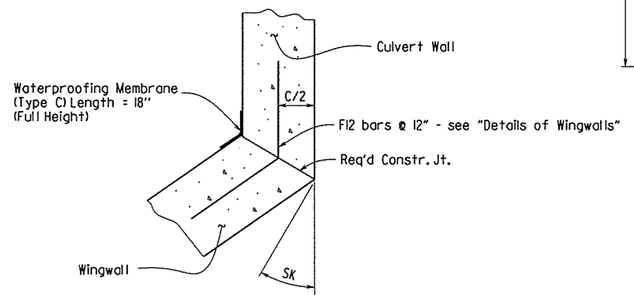
TYPICAL SECTION M-M



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

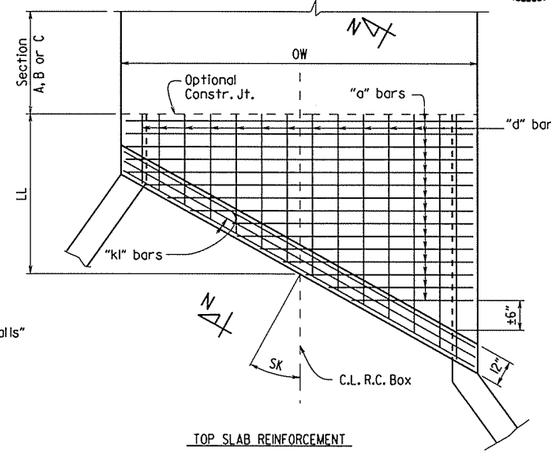
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

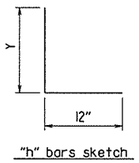


WINGWALL ATTACHMENT

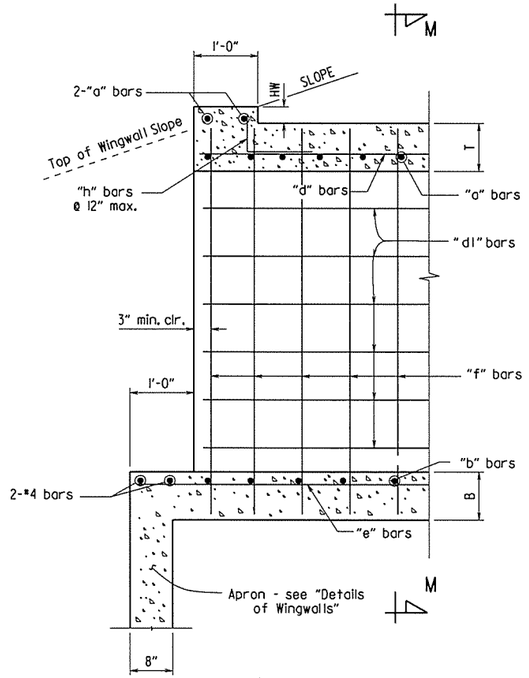
See "Details of Wingwalls" for additional information and wingwall details.



TOP SLAB REINFORCEMENT

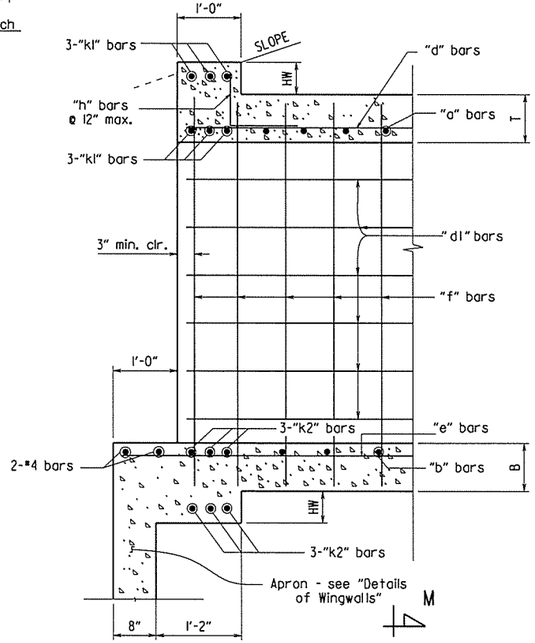


"h" bars sketch



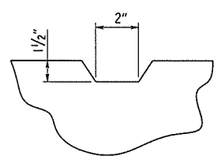
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



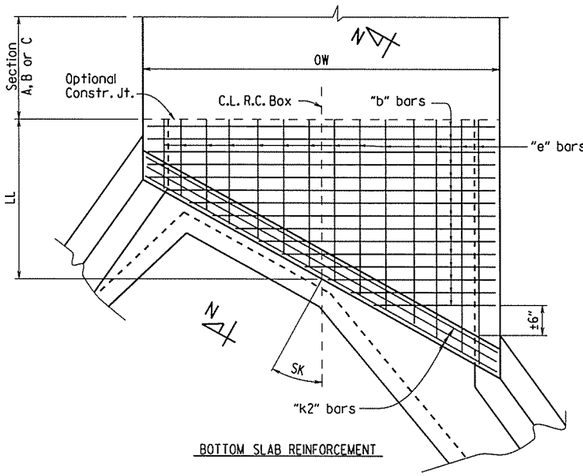
PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)



BOTTOM SLAB REINFORCEMENT

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

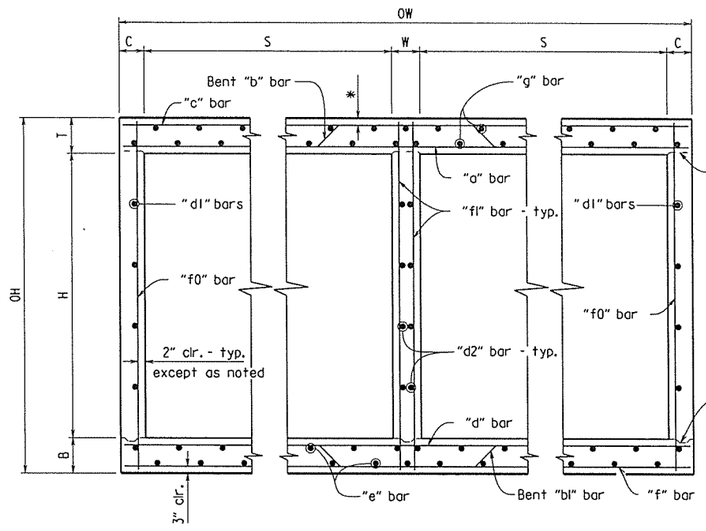
Culvert-General.dgn

DATE REVISED	DATE FILMED	REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	30	636

SPECIAL DETAILS

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

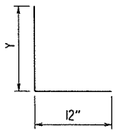
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



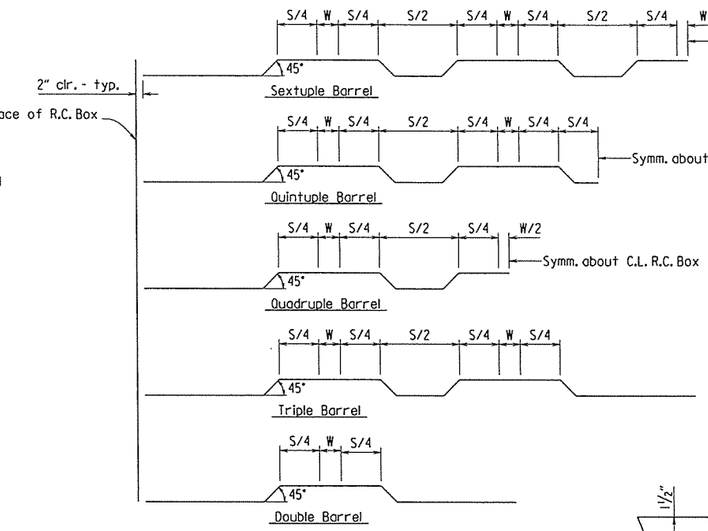
TYPICAL SECTION M-M

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

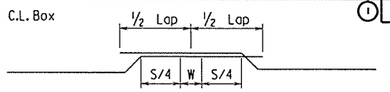
Bottom Slab
Straight "d" bars shall alternate with Bent "b1" bars in top.
Straight "f" bars shall alternate with Bent "b1" bars in bottom.



"h" bars sketch

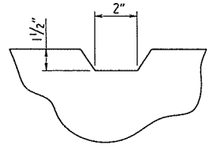


Bent "b" bars or Bent "b1" bars sketch

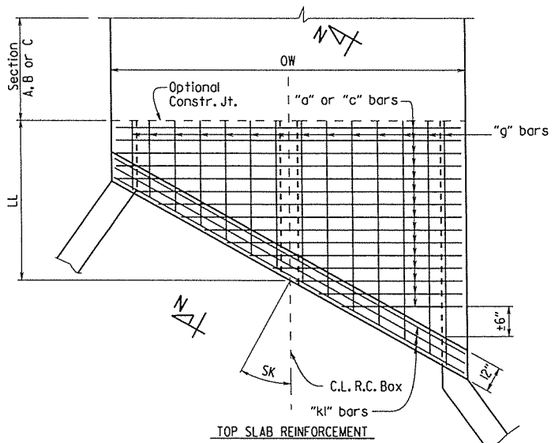


Optional Lap Detail
For Bent "b" bars and Bent "b1" bars

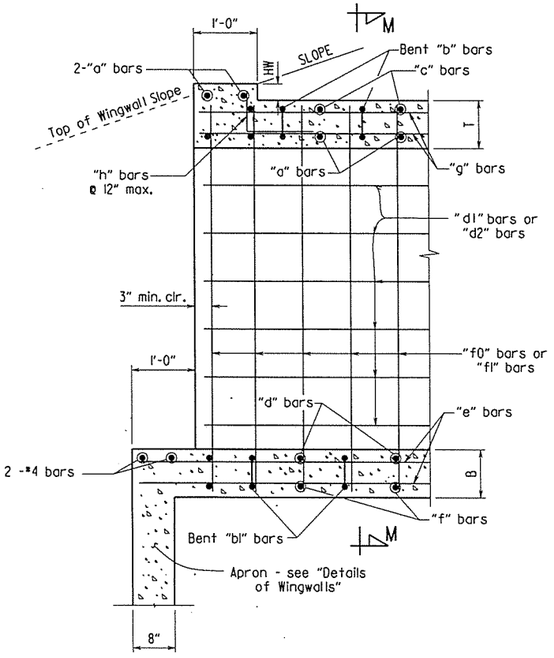
At the Contractor's option in lieu of providing Bent "b" or Bent "b1" bars, one bar top and bottom of equivalent size may be substituted for each bent bar. Payment for the reinforcing will be based on the weight of the "b" or "b1" bar.



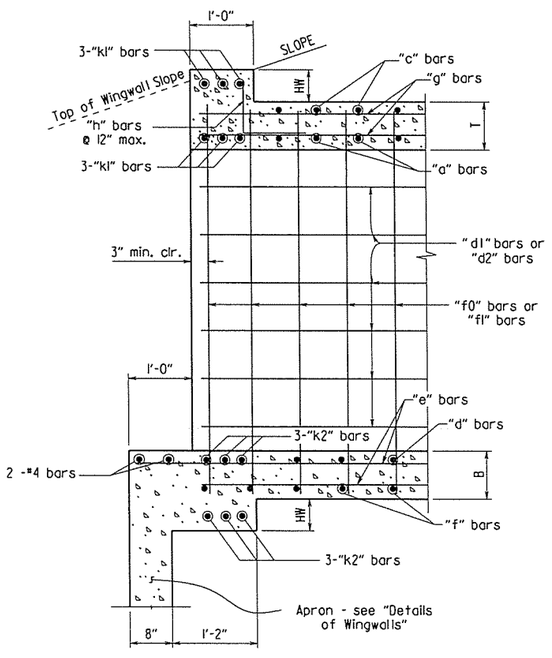
TYPICAL KEYWAY DETAIL
(All Construction Joints)



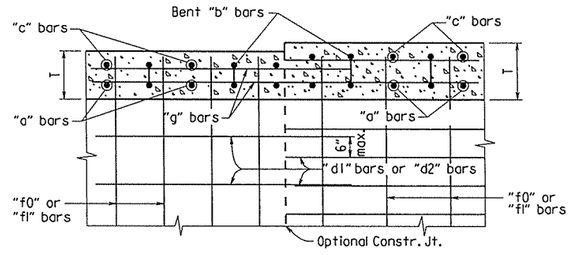
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



PART LONGITUDINAL SECTION
(Non-Skewed Ends)

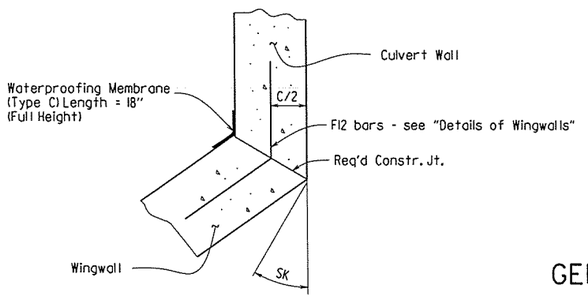


PART LONGITUDINAL SECTION N-N
(Skewed Ends)

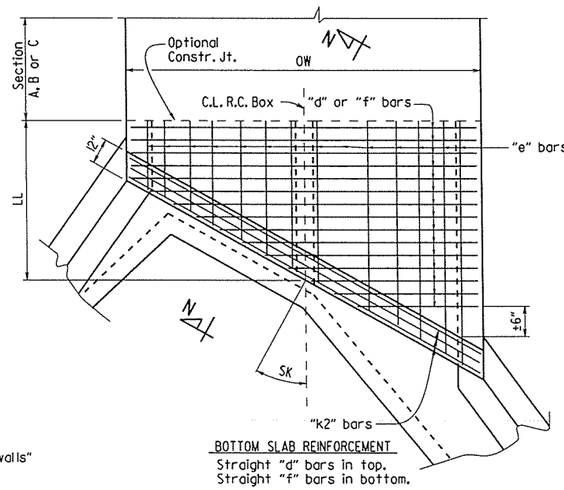


Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

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

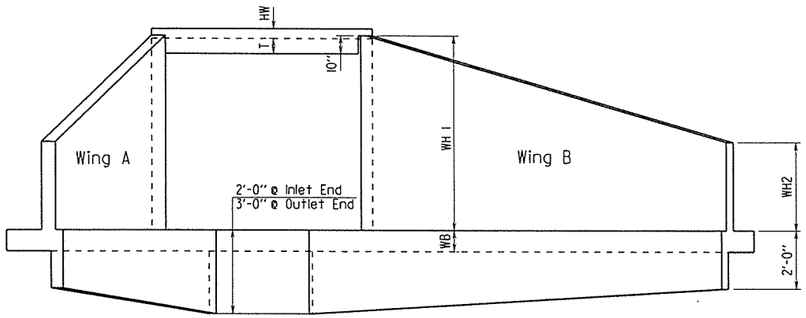
SPECIAL DETAILS

STATE OF ARKANSAS
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REGISTERED PROFESSIONAL ENGINEER
No. 7510
11/2/14

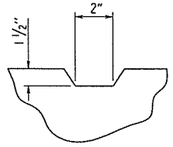
Culvert-General.dgn

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.		CA0904	31	636

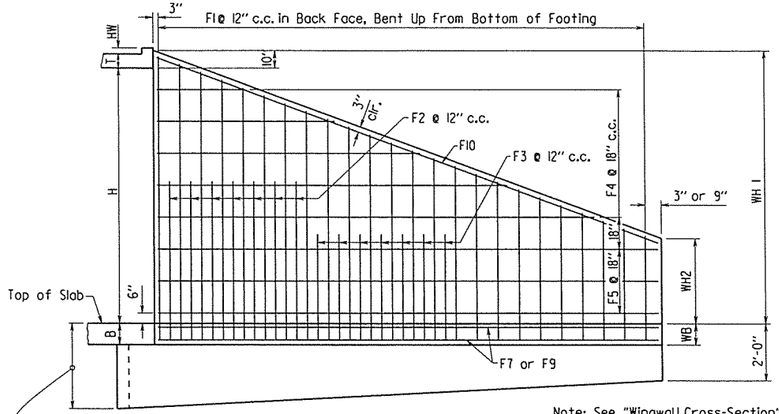
(1) SPECIAL DETAILS



END ELEVATION
Flared Wingwalls Shown

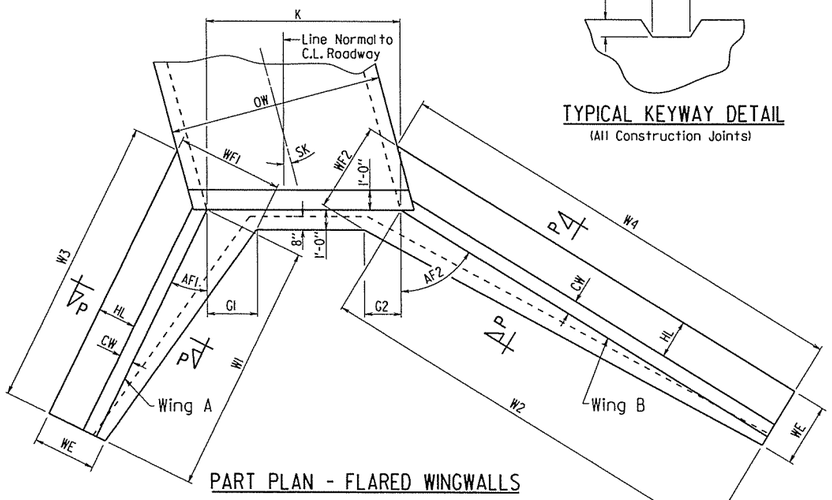


TYPICAL KEYWAY DETAIL
(All Construction Joints)

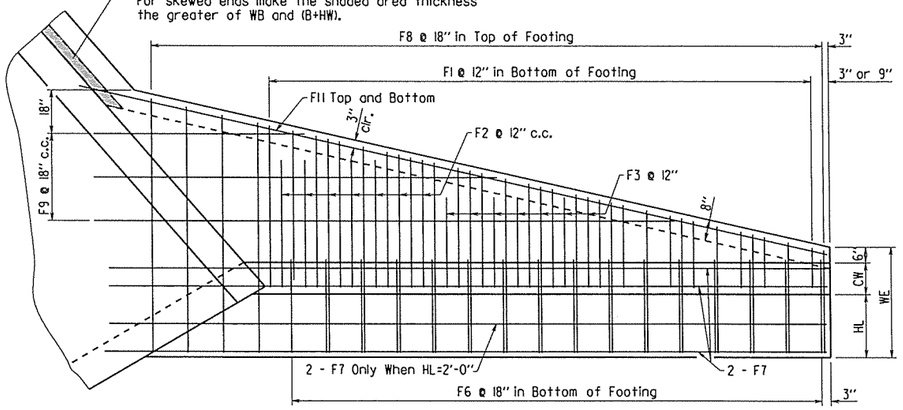


WINGWALL ELEVATION
Showing Back Face Reinforcement

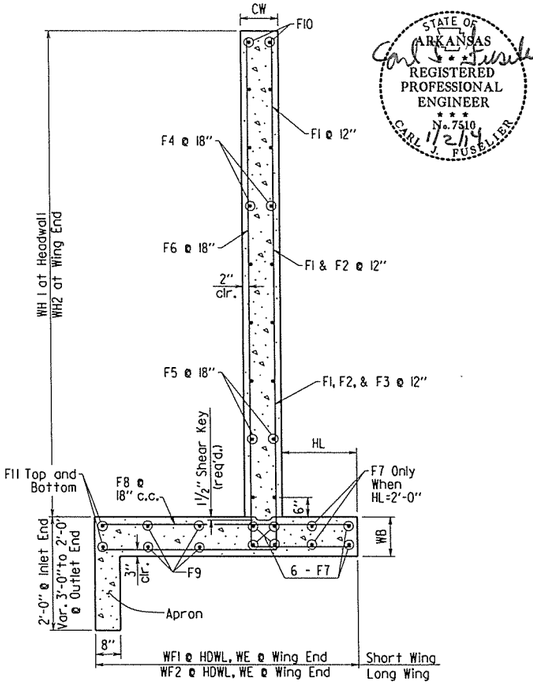
Note: See "Wingwall Cross-Section" for additional details and reinforcing



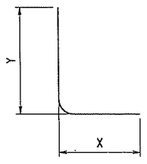
PART PLAN - FLARED WINGWALLS



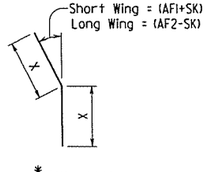
PLAN - FLARED WINGWALLS
Showing Footing Reinforcement



WINGWALL SECTION P-P

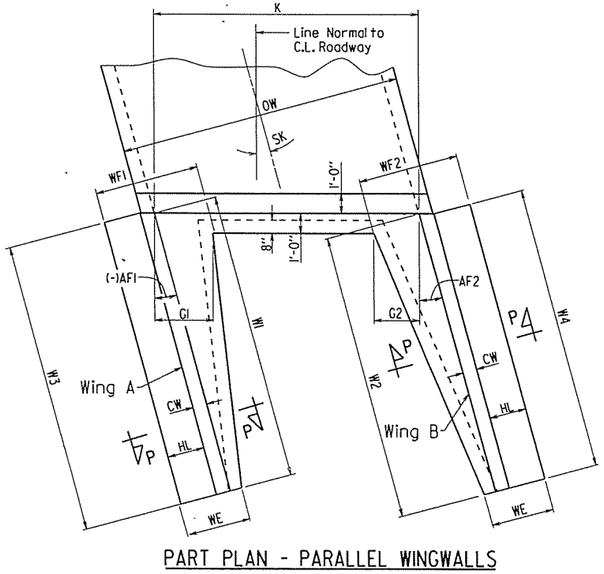


F1, F2, F3, & F6 BARS

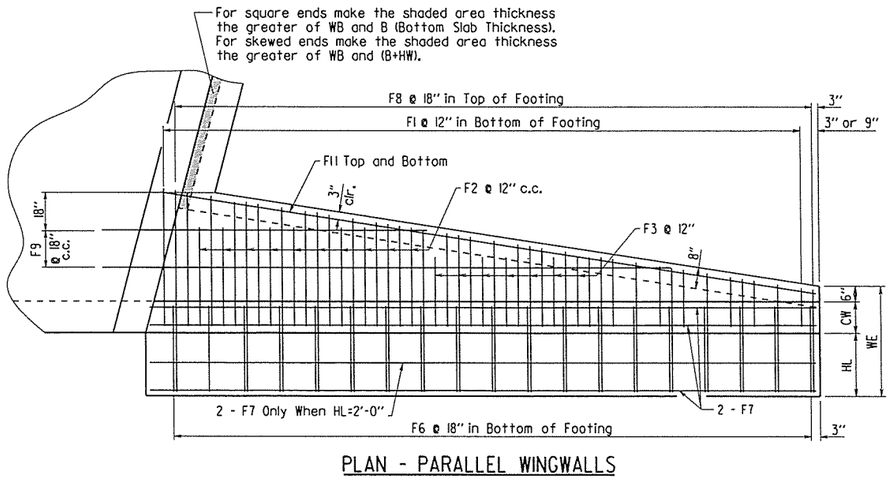


*F12 BAR

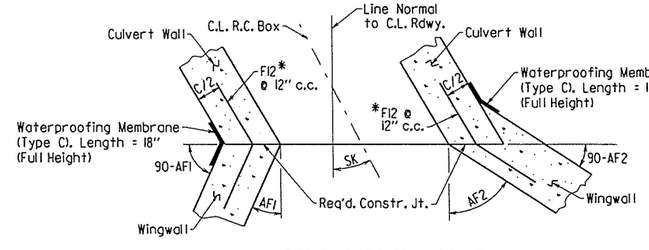
*F12 is a straight bar for parallel wingwalls



PART PLAN - PARALLEL WINGWALLS



PLAN - PARALLEL WINGWALLS
Showing Footing Reinforcement



CONSTRUCTION JOINTS
Flared Wingwalls Shown

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
1/2/14

Culvert-General.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.		CA0904	32	636

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	CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	INLET	INLET
64'-0"	9'-0"	0'-10"	0'-9"	0	3:1	64'- 0"	2'-0"	9'-10"	3'-0"	30	-	3'-3"	4'-10"	-	1'-10"	-	23'-6"	-	26'-11 1/8"	-	CU.YD	LBS.
																					13.32	783

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 Min	F1 Max	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	F4 Min	F4 Max	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 Min	F6 Max	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F8 Min	F8 Max	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 B	-	-	-	L	Min	-	-	-	-	L	-	-	-	-	L	-	-	Min	-		-	-	-	-	-	-	-	L	Min	-	-	-	-	-	-	-	Min	-		-	-	-	Min	-		-	-	-	L	-			
					Max	-													-										Max	-									-												
				X	Min	-				X	-				X	-			-									X	Min	-									-									X	-		
					Max	-													-										Max	-									-												
				Y	Min	-				Y	-				Y	-			-									Y	Min	-									-												
					Max	-													-										Max	-									-												
WING A	4	12	24	L	Min	4'-2"	4	12	11	L	6'-3"	-	-	-	L	-	4	18	8	Min	5'-7"	4	18	4	23'-2"	4	18	16	L	Min	5'-11"	4	8	27'-9"	4	18	16	L	Min	2'-9"	4	18	2	Min	24'-3"	4	2	23'-0"	4	2	25'-8"	6	12	9	L	3'-4"	783
					Max	12'-5"													Max										Max	12'-5"									Max												
				X	Min	0'-10"				X	1'-9"				X	-			Min	5'-7"								X	Min	2'-5"									Min	2'-9"				Min	24'-3"									X	1'-8"	
					Max	2'-5"													Max										Max	2'-5"									Max												
				Y	Min	3'-5"				Y	4'-7"				Y	-			Min	21'-0"								Y	Min	3'-7"									Min	4'-3"				Min	24'-3"											
					Max	10'-1"													Max										Max	10'-1"									Max												

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

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"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. FUSELIER
12/23/13

TABULAR DATA BY: CSL DATE: 12/20/2013
CHECKED BY: BEF DATE: 12/23/13

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 3 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF MULTI-BARREL R.C. BOX CULVERT',
SHEET 4 OF 4, "GENERAL DETAILS OF R.C. BOX CULVERT", 'DETAILS OF WINGWALLS', and
STANDARD DRAWINGS RCB-2, RCB-3.
For additional information and outlet sections, see Sheet 2 of 2.

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINF. STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINF. STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINF. STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINF. STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINF. STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINF. STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINF. STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINF. STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTHS VARY
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																																													
45	3:1	5	12	9	25'-3"	14	3.5	14	8	10	64'-0"	11'-4"	5	4.5	Max		160	7	6	Max		120	4	4	Max		180	4	5.5	Max		131	6	6	127	11'-0"	4	12	253	11'-0"	5	12	61	Max	5	12	61	Max	4	12	9	LONG	4	12	18	LONG
															62'-1"					62'-1"				62'-1"				62'-1"												63'-1"				63'-1"								63'-1"			50'-9"
															Min					Min				Min				Min												Min				Min							LONG				MID	
															2'-5"					2'-7"				2'-5"				2'-6"												2'-10"				2'-10"							SHORT			37'-11"	
															2'-3"	5				2'-3"	4			2'-3"	6			2'-3"	5											2'-3"	2	2'-3"		2'-3"	2	2'-3"	-	-			18	SHORT	
																																																						12'-3"	

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h Y	h NO. REQ'D
8	34'-2"	12	8	34'- 2"	12	4	2'-1"	1'-1"	63

EXTENSION OF SKEWED OUTLET SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL THK.	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. STEEL a SIZE	a SPACING	a LENGTHS VARY	a NO. REQ'D	TOP SLAB REINF. STEEL c SIZE	c SPACING	c LENGTHS VARY	c NO. REQ'D	BOTTOM SLAB REINF. STEEL d SIZE	d SPACING	d LENGTHS VARY	d NO. REQ'D	BOTTOM SLAB REINF. STEEL f SIZE	f SPACING	f LENGTHS VARY	f NO. REQ'D	SIDE WALL REINF. STEEL f0 SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINF. STEEL f1 SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL g SIZE	g SPACING	g NO. REQ'D	g LENGTHS VARY	BOTTOM SLAB DISTRIBUTION REINF. STEEL e SIZE	e SPACING	e NO. REQ'D	e LENGTHS VARY	SIDE WALL DISTRIBUTION REINF. STEEL d1 SIZE	d1 SPACING	d1 NO. REQ'D	d1 LENGTH	INTERIOR WALL DISTRIBUTION REINF. STEEL d2 SIZE	d2 SPACING	d2 NO. REQ'D	d2 LENGTHS VARY
SK	SL	D	S	H	LL	T	HW	B	C	W	OW	OH																																													
45	3:1	15	12	9	41'-0"	16	0	16	11	10	78'-0"	11'-8"	5	5	Max		181	7	5	Max		181	7	5.5	Max		165	7	5	Max		181	8	9	110	11'-4"	4	12	420	11'-4"	4	6.5	287	Max	4	6.5	287	Max	4	10	11	LONG	4	12	18	LONG
															77'-8"					77'-8"				77'-8"				77'-8"												79'-10"				79'-10"							79'-10"			66'-10"
															Min					Min				Min				Min												Min				Min							SHORT			MID	
															2'-6"					2'-6"				2'-6"				2'-6"												1'-10"				1'-10"							1'-10"			53'-10"
															77'-8"	5				77'-8"	5			77'-8"	5			77'-8"	5																										18	SHORT	
																																																						14'-10"	

k1 SIZE	k1 LENGTH	k1 NO. REQ'D	k2 SIZE	k2 LENGTH	k2 NO. REQ'D	h SIZE	h LENGTH	h Y	h NO. REQ'D
8	57'-3"	12	8	57'-3"	12	4	2'-3"	1'-3"	112

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	TOP SLAB THK.	BOTTOM SLAB THK	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	SECTION LENGTH (FT.)	TOP SLAB REINF. STEEL LENGTH = OW - 4" + BENDS a SIZE	a L	Bent b SIZE	Bent b L	c SIZE	c L	SPACING	NO. REQ'D	BOTTOM SLAB REINF. STEEL LENGTH = OW - 4" + BENDS d SIZE	d L	Bent b1 SIZE	Bent b1 L	f SIZE	f L	SPACING	NO. REQ'D	SIDE WALL REINF. STEEL "f0" LENGTH = OH - 4" SIZE	f0 SPACING	f0 NO. REQ'D	f0 LENGTH	INTERIOR WALL REINF. STEEL "f1" LENGTH = OH - 4" SIZE	f1 SPACING	f1 NO. REQ'D	f1 LENGTH	TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	g SPACING	g 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	INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	d2 SPACING	d2 NO. REQ'D
D	S	H	T	B	C	W	OW	OH	SL																																											
B	15	12	9	16.0	16.0	11.0	10	78'-0"	11'-8"	57.6667	4	77'-8"	8	80'-6"	4	77'-8"	15	46	4	77'-8"	7	80'-3"	7	77'-8"	10	69	8	9	152	11'-4"	4	12	570	11'-4"	4	6.5	287	4	6.5	287	4	10	22	4	12	90

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)	③ADTL. REINF. PER LONG. LAP LOCATION (S)	ADTL. REINF. FOR TRANS. LAP
CU. YDS. PER LIN. FT.	LBS. PER LIN. FT.	LBS.	LBS. PER LIN. FT.
9.70	1319	802	30

CLASS "S" CONCRETE (Includes HDWL)	①REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.
228.00	32550

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

CLASS "S" CONCRETE (Includes HDWL)	①REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.
397.85	83057

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.

SHEET 1 OF 2
DETAILS FOR EXTENSION OF R.C. BOX CULVERT
SEXTUPLE BARREL BOX CULVERT
Sta. 1133+76

SPECIAL DETAILS

Culvert-Sext.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.		CA0904	33	636

① SPECIAL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
N. 7510
CARL E. FUSELIER
12/23/13

TABULAR DATA BY: CSL DATE: 12/20/2013
CHECKED BY: BEF DATE: 12/23/13

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
77'-7"	9'-0"	0'-10"	0'-9"	45	4:1	107'-8 5/8"	2'-0"	9'-10"	3'-0"	0	60	3'-3"	4'-4 1/2"	5'-0 3/4"	1'-7 1/2"	2'-10 3/4"	27'-0"	54'-6"	28'-9"	62'-0 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
37.15	2605

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			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	12	27	X	Min	4'-3"	4	12	8	X	1'-8"	-	-	-	X	-	4	18	8	Min		4	18	4	26'-8"	4	18	18	X	Min	2'-5"	4	8	29'-7"	4	18	18	Min		4	18	2	Min		4	2	27'-4"	4	2	27'-10"	6	12	9	L	3'-4"	870
					Max	11'-0"																	6'-5"							Max	2'-5"							2'-9"				36'-7"										
					Min	0'-10"																	Max							Min	3'-8"							Max				Max									X	1'-8"
					Max	1'-0"																	24'-2"							Max	10'-1"							3'-10"				36'-7"										
				Y	Min	3'-6"				Y	3'-7"				Y	-												Y																											
					Max	10'-1"																																																
WING B	4	12	55	X	Min	4'-1"	4	12	24	X	1'-10"	-	-	-	X	-	4	18	8	Min		4	18	4	54'-2"	4	18	37	X	Min	2'-5"	4	8	62'-10"	4	18	38	Min		4	18	2	Min		4	2	54'-5"	4	2	59'-6"	6	12	9	L	3'-4"	1735
					Max	12'-8"																	13'-2"							Max	12'-6"							2'-9"				49'-5"										
					Min	0'-10"																	Max							Min	2'-5"							Max				Max									X	1'-8"
					Max	2'-7"																	49'-0"							Max	2'-5"							4'-6"				49'-5"										
				Y	Min	3'-4"				Y	4'-7"				Y	-												Y																											
					Max	10'-2"																																															

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"

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

OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL THK. | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINFORCING STEEL a SIZE | a SPACING | a LENGTHS VARY | a NO. REQ'D | TOP SLAB REINFORCING STEEL c SIZE | c SPACING | c LENGTHS VARY | c NO. REQ'D | BOTTOM SLAB REINFORCING STEEL d SIZE | d SPACING | d LENGTHS VARY | d NO. REQ'D | BOTTOM SLAB REINFORCING STEEL f SIZE | f SPACING | f LENGTHS VARY | f NO. REQ'D | SIDE WALL REINFORCING STEEL f0 SIZE | f0 SPACING | f0 NO. REQ'D | f0 LENGTH | INTERIOR WALL REINFORCING STEEL f1 SIZE | f1 SPACING | f1 NO. REQ'D | f1 LENGTH | TOP SLAB DISTRIBUTION REINFORCING STEEL g SIZE | g SPACING | g NO. REQ'D | g 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 | INTERIOR WALL DISTRIBUTION REINFORCING STEEL d2 SIZE | d2 SPACING | d2 NO. REQ'D | d2 LENGTHS VARY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

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.		CA0904	34	636

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

N

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

1/24/2014

RCA0904.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.		CA0904	35	636

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

POB 10+00.00
PC 11+42.42
PI 847+79.60
PI 846+84.86
PT 816+59.13
PC 21+78.58
PT 857+33.18
PT 857+63.56
PC 33+48.06
PT 857+63.56
PT 857+33.18
PT 816+59.13
PI 846+84.86
PI 847+79.60

S 58°21'48" E
S 87°26'40" E
N 07°30" E
2653 LIN.FT.
2505 LIN.FT.
584 LIN.FT.
220 LIN.FT.
213 LIN.FT.
2853 LIN.FT.
455 LIN.FT.
1367 LIN.FT.
3620 LIN.FT.
688 LIN.FT.

LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE
E-14 XX CU FT	= SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

1/24/2014

RCA0904.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.		CA0904	36	636

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

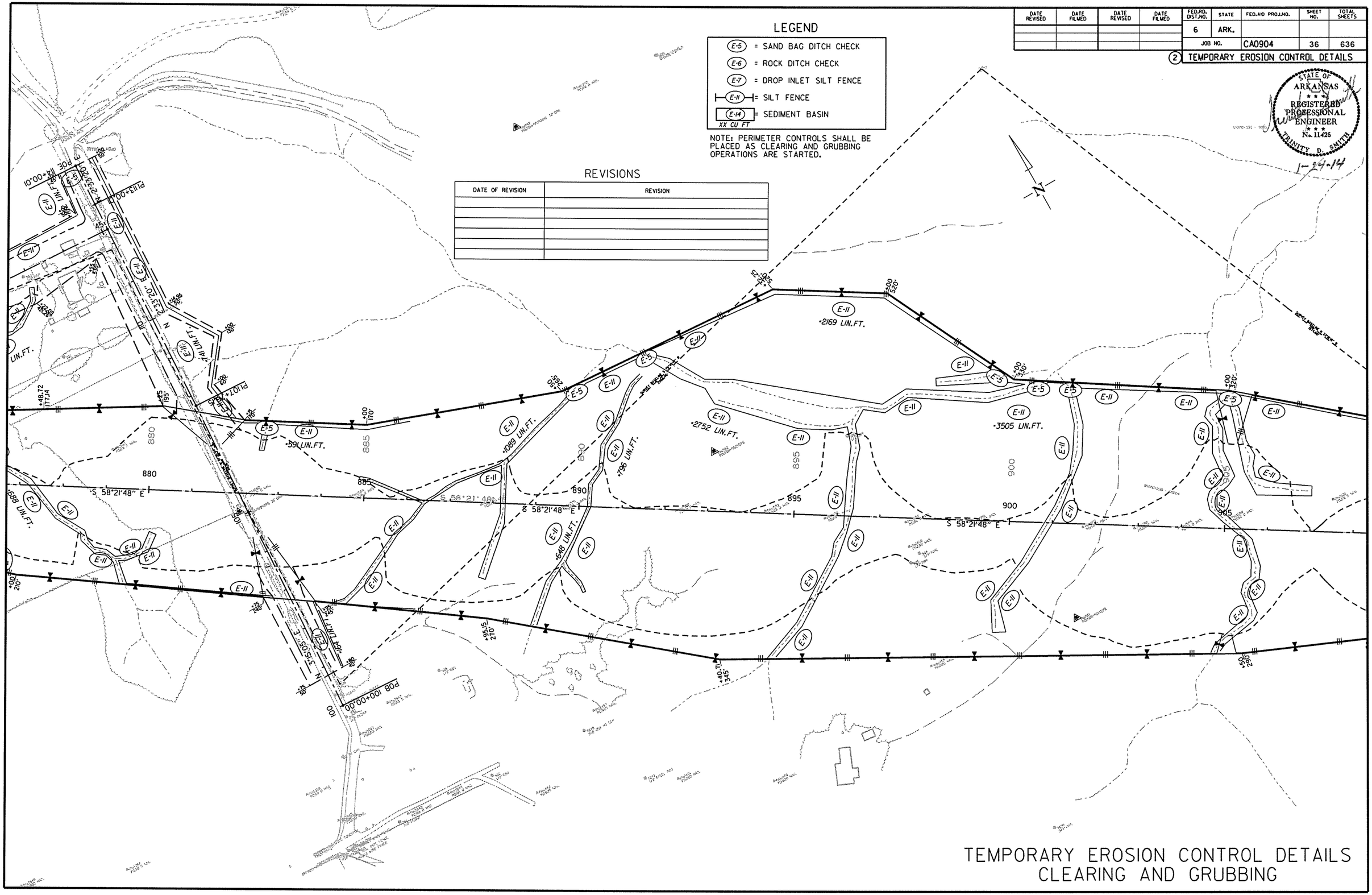
- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

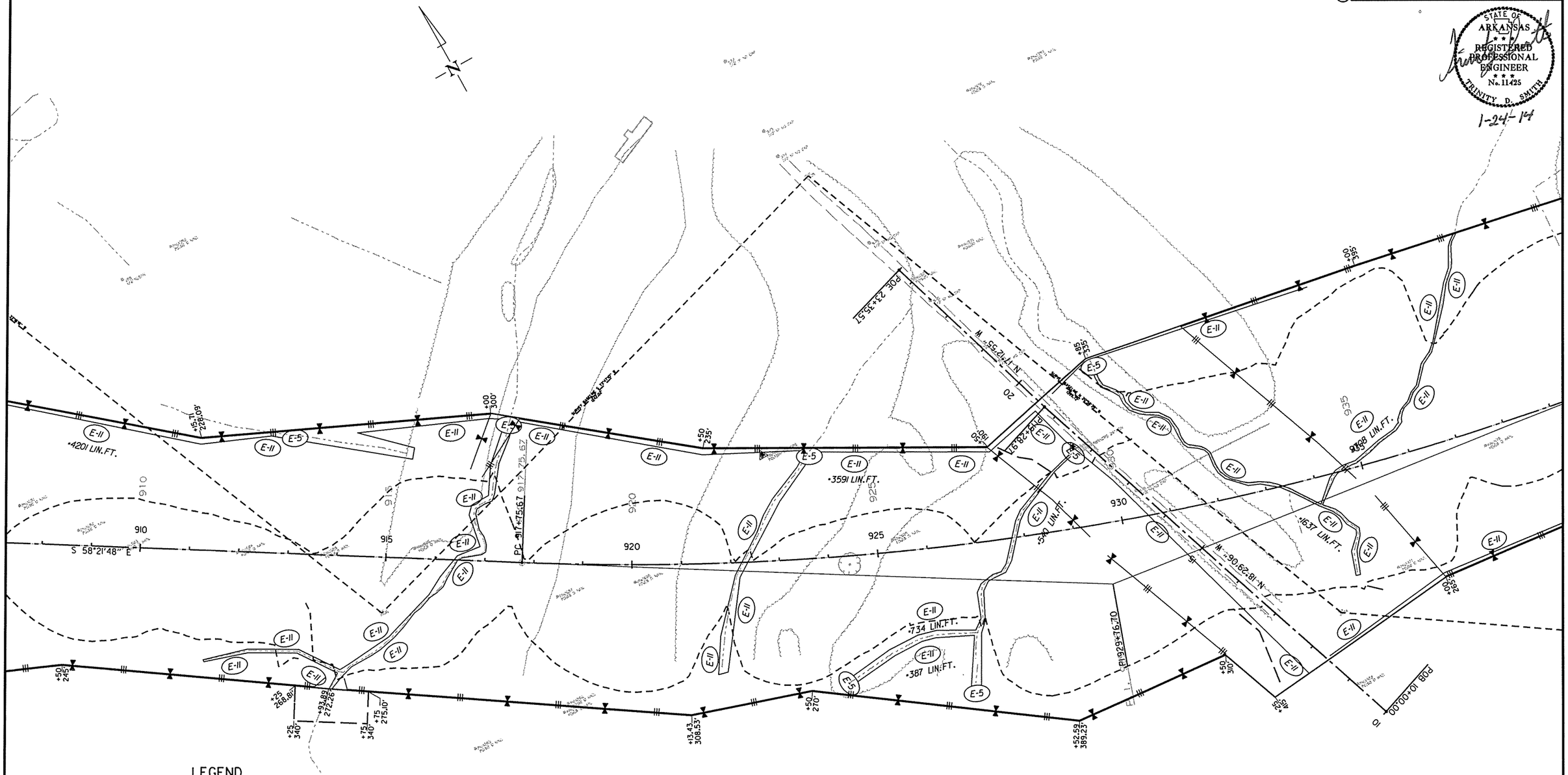
1/24/2014

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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.		CA0904	37	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

1/24/2014

RCA0904.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.		CA0904	38	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/24/2014

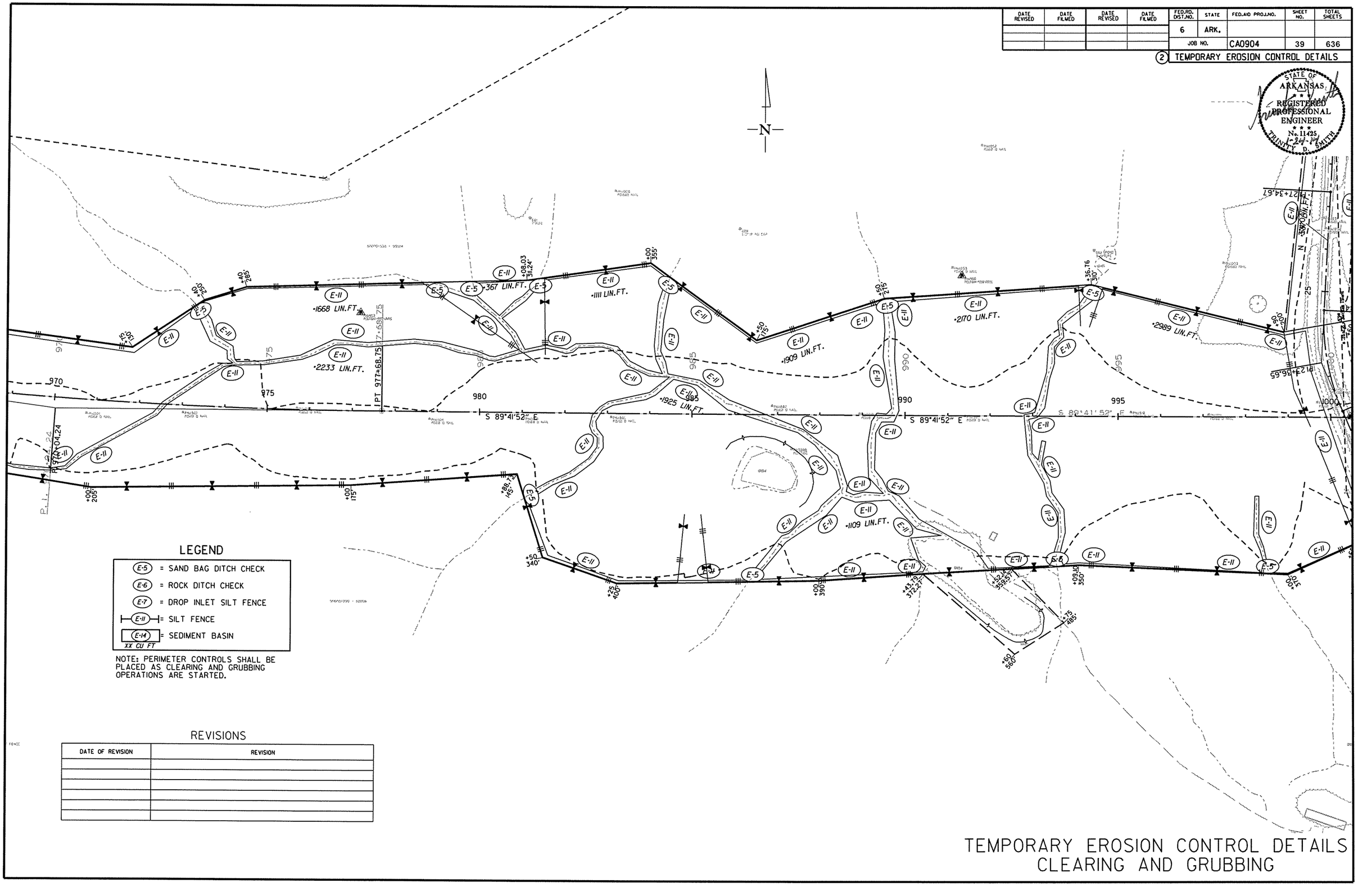
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TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0904	39	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11495
1-24-14
TRINITY D. SMITH



LEGEND

E-5	= SAND BAG DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE
E-14 XX CU FT	= SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/24/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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.		CA0904	40	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

N

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

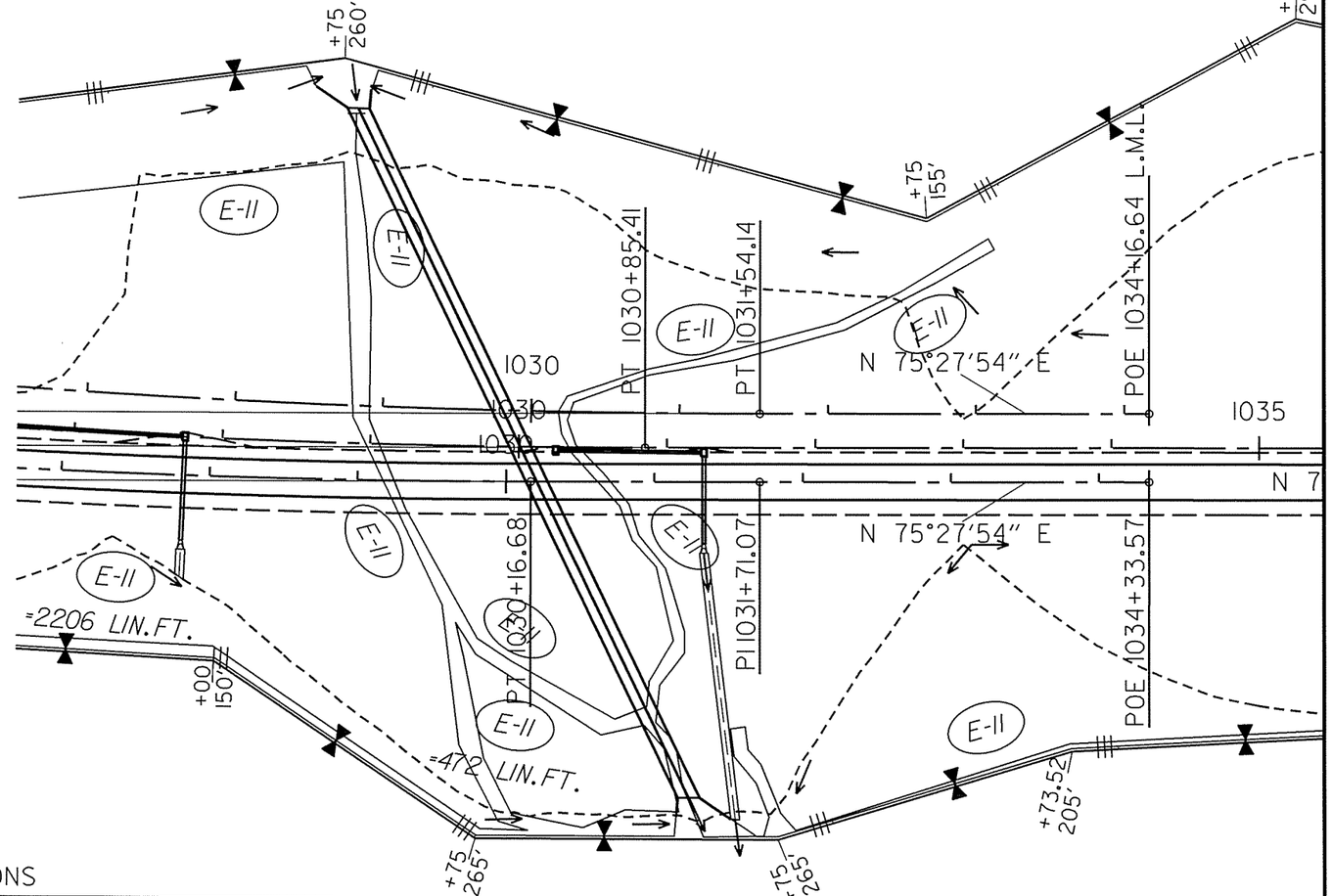
1/24/2014

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TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0904	41	636
				(2) TEMPORARY EROSION CONTROL DETIALS				

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

E-1	= WATTLE DITCH CHECK
E-6	= ROCK DITCH CHECK
E-7	= DROP INLET SILT FENCE
E-8	= DIVERSION DITCH
E-11	= SILT FENCE
E-12	= SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

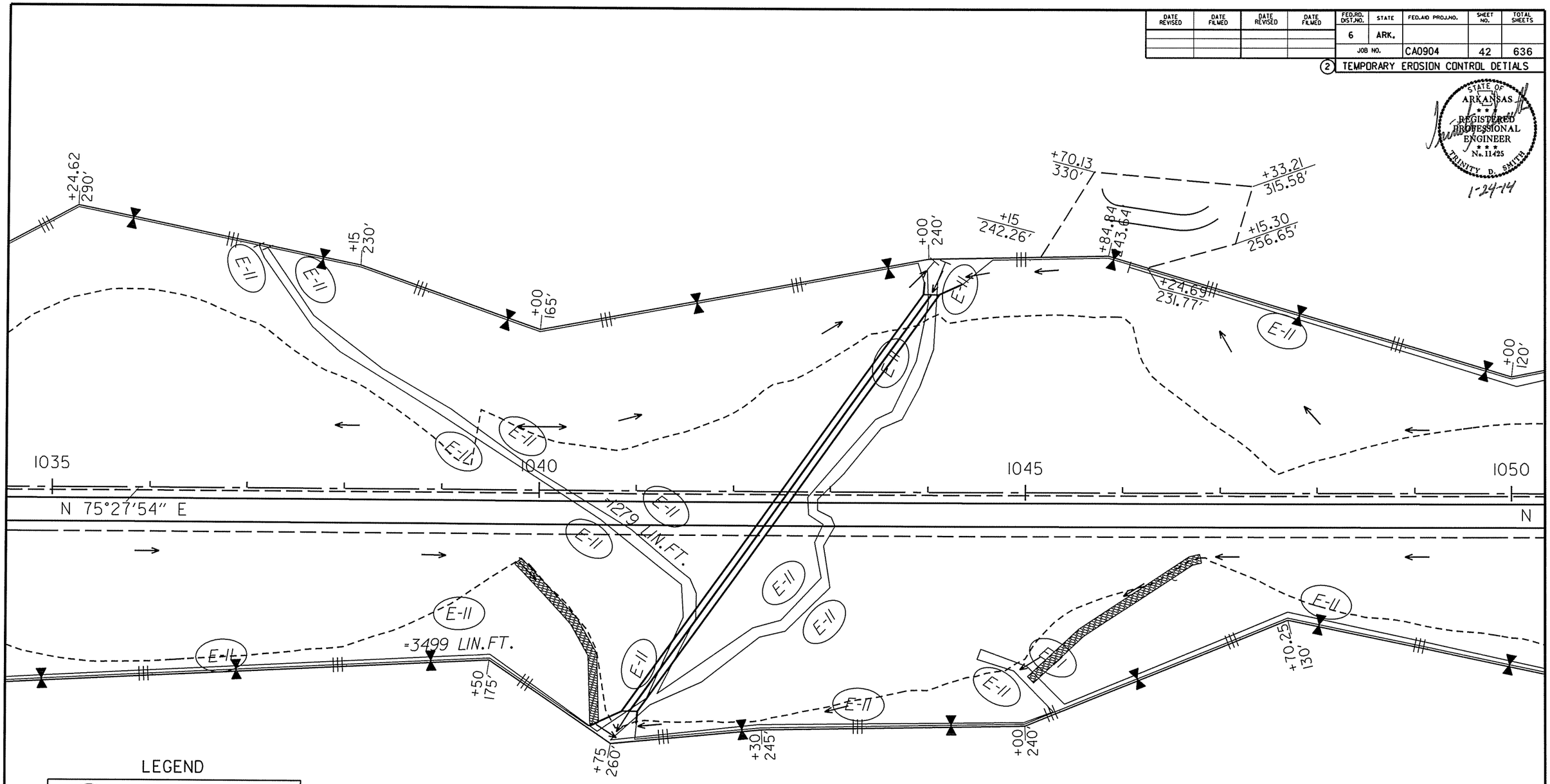
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TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0904	42	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0904	43	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

E-11 =3426 LIN.FT.

+00 120'

1050 1055 1060 1065

N 75°27'54" E

LEGEND

- (E-1) = WATTLE DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

+09 232

50' 0'

E-11 =3318 LIN.FT.

+28.7 220'

+25 135'

+59.4 152.6'

1065 1070 1075 1080

N 75°27'54" E

+75 115'

E-11 =7332 LIN.FT.

50' 25'

PC 1078+22.12
1078+22.13 BK. =
1078+82.66 AHD.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

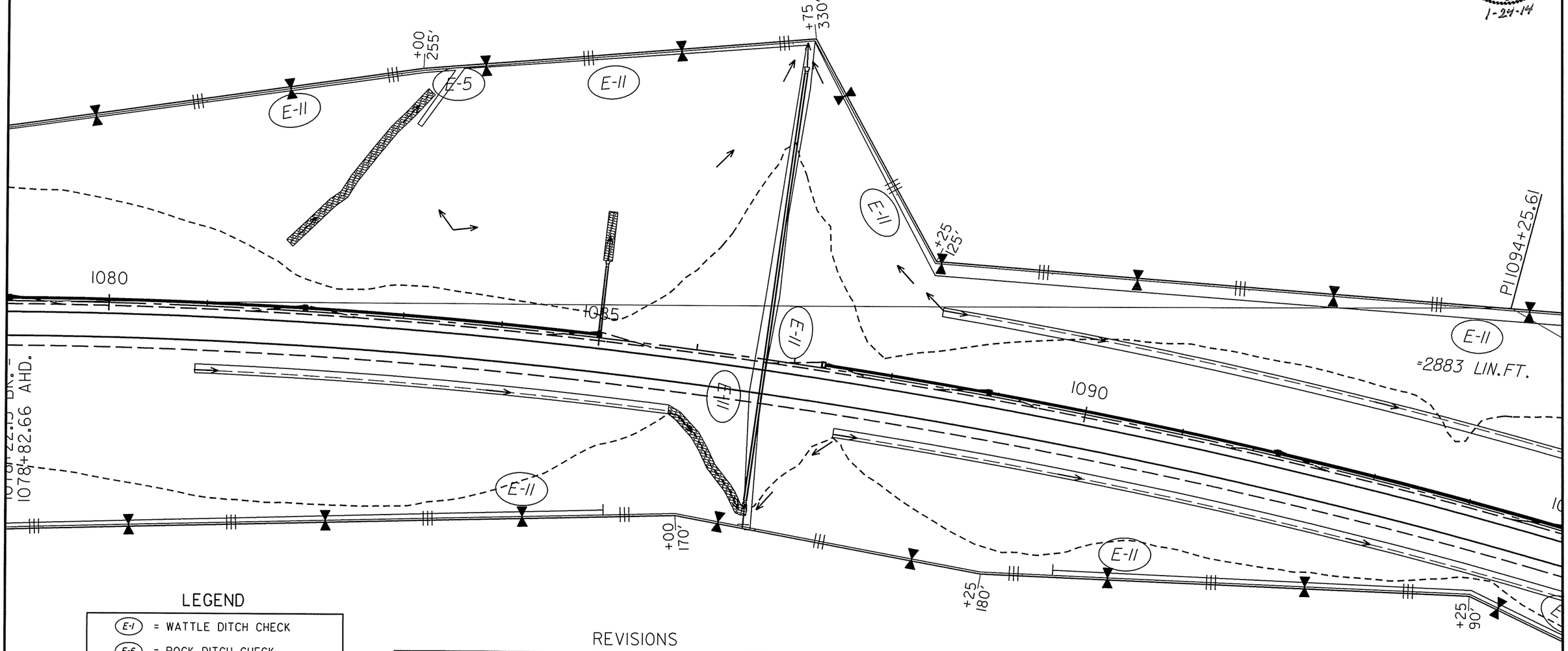
1/23/2014

RCA0904.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.		CA0904	44	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

- (E-1) = WATTLE DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

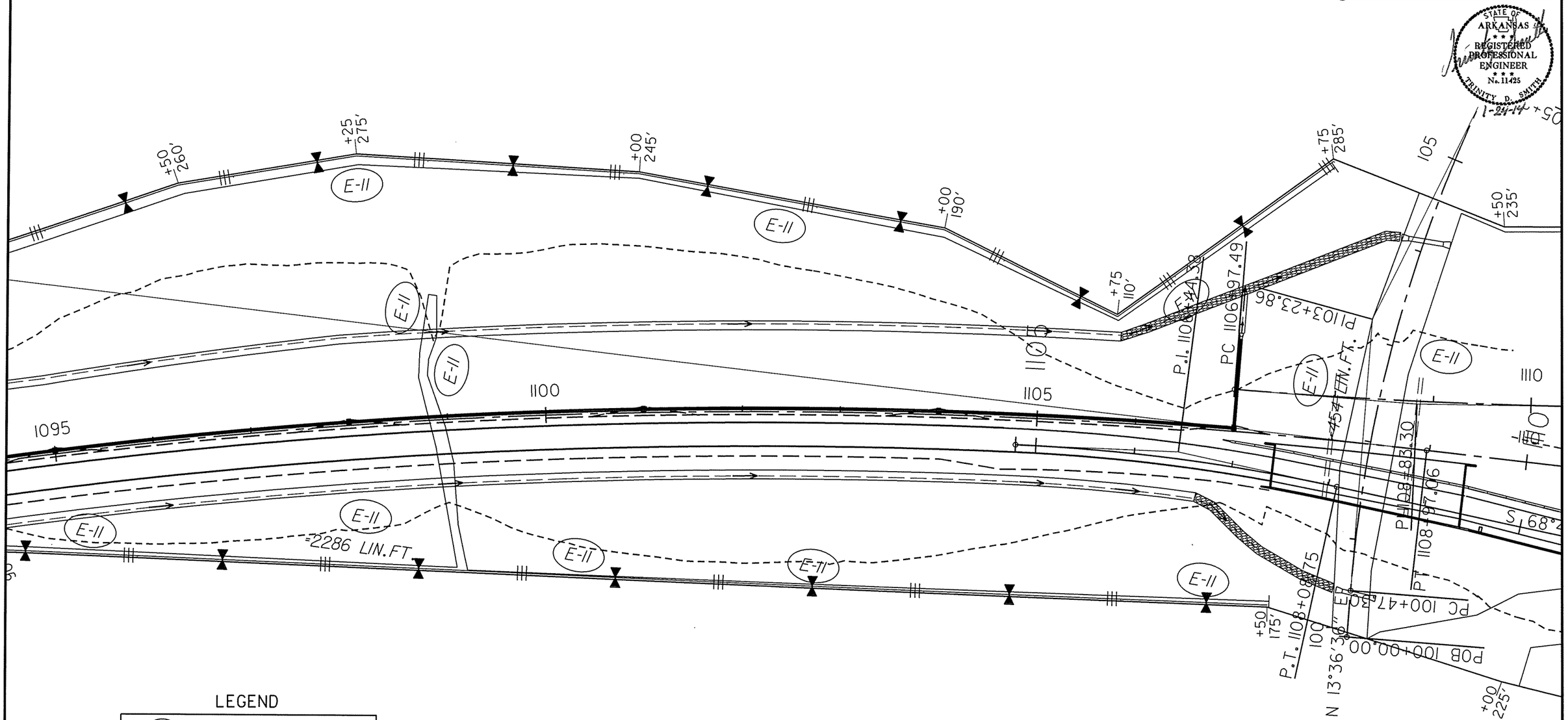
RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0904	45	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

1/23/2014

RCA0904.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.		CA0904	46	636

(2) TEMPORARY EROSION CONTROL DETIALS

LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

E-11 =2285 LIN.FT.

E-11 =616 LIN.FT.

E-11 =1006 LIN.FT.

E-11 =1081

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.		CA0904	47	636
				(2)	TEMPORARY EROSION CONTROL DETIALS			

LEGEND

- (E-1) = WATTLE DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

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TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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.		CA0904	48	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

1/23/2014

RCA0904.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.		CA0904	49	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

1/23/2014

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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.		CA0904	50	636

TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

1/23/2014

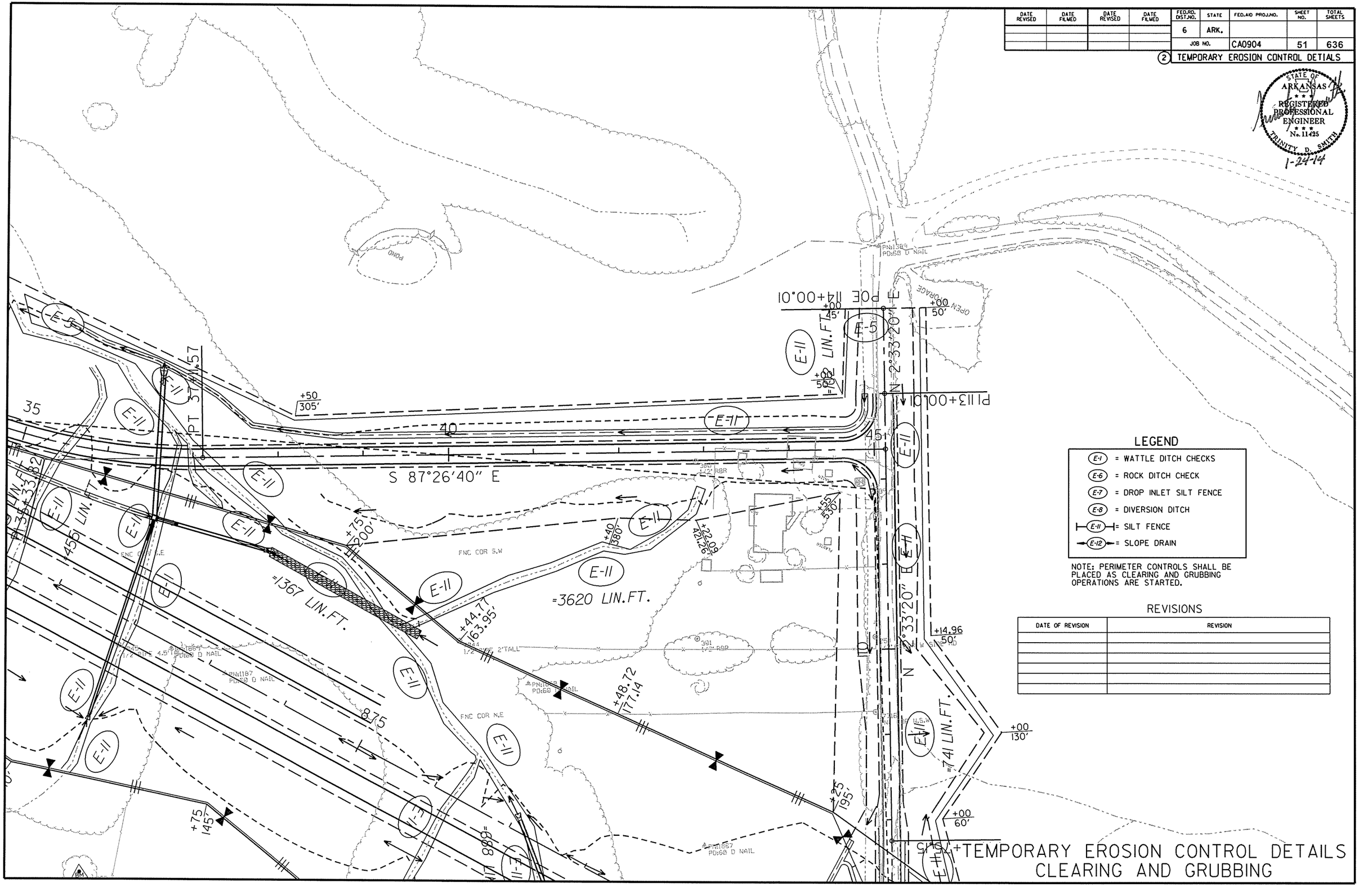
RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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.		CA0904	51	636

(2) TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14


E-5
E-11
PT 37+57
35
+50
305'
40
S 87°26'40" E
1135+33.82
455 LIN.FT.
FNC COR S.E
FNC COR S.W
FNC COR N.E
1367 LIN.FT.
875
+75
200'
+40
380'
+22.09
421.26'
E-11
3620 LIN.FT.
+44.77
463.95'
+48.72
717.14
+75
145'
668 LIN.FT.
FN:1389
PD:60 D NAIL
OPEN DRAINAGE
POE 114+00.01
+00
45'
E-5
E-11
102 LIN.FT.
+00
50'
N 2°33'20" E
PI 113+00.00
45'
E-11
E-11
+55
5.70'
E-11
+14.96
50'
N 2°33'20" E
741 LIN.FT.
+00
130'
+00
60'
E-11
E-11
+25
195'
E-11
E-11
E-11

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.		CA0904	52	636

2 TEMPORARY EROSION CONTROL DETIALS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

+52.59
389.23'

PI 929+76.70

+50
310'

+25
415'

+50
190'

925

930

540 LIN. FT.

359 LIN. FT.

734 LIN. FT.

PI 9+28.97

POE 23+35.57

POB 10+00.00

N 18°29'06" W

N 17°12'55" W

SURVEY BASELINE N 20°58'39" W
1399.72'

+85
335'

+00
265'

1637 LIN. FT.

9688 LIN. FT.

E-11

E-5

10

15

20

TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

1/23/2014

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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.		CA0904	53	636

TEMPORARY EROSION CONTROL DETIALS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

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TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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.		CA0904	54	636

(2) TEMPORARY EROSION CONTROL DETIALS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

1/23/2014

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TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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.		CA0904	55	636

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

SURVEY BASELINE S 23
179.56

P.C. 826+67.64

N 75°39'13" E

N 45°02'55" E

PI 835+28.20

SURVEY BASELINE S 23
834+63.45

S 88°07'30" E

PI 837+14.00

PC 837+49.08

PC 838+24.49

PI 841+98.98

S 86°49'48" E

PC 845+60.24

PT 845+60.24

PI 848+09.13

S 78°30'43" E

POE 847+89.94

PI 843+84.61

PI 846+84.86

PI 847+13.89

S 58°2

S 88°0

N 57°05'

70 LIN.FT.

53 LIN.FT.

97 LIN.FT.

23 LIN.FT.

134 LIN.FT.

104 LIN.FT.

746 LIN.FT.

114 LIN.FT.

410 LIN.FT.

79 LIN.FT.

321 LIN.FT.

+00 145'

+25 120'

+50 125'

+50 210'

+50 190'

+10 222.32'

+43.66

+05 265'

+34.78 137.06'

POINT BEGIN

POINT BEGIN

POINT BEGIN

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.		CA0904	56	636

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

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TEMPORARY EROSION CONTROL DETAILS
STAGE I

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.		CA0904	57	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS
STAGE I

1/23/2014

RCA0904.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.		CA0904	58	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

910 915 920 925 930 935 940

PC 917+75.67

E-11 .618 LIN.FT.

E-12 178 LIN.FT.

E-8 E-12 143 LIN.FT.

E-11 .587 LIN.FT.

E-11 .62 LIN.FT.

E-11 .215 LIN.FT.

E-11 LIN.FT.

P119+28.97

N 20°58'39" W

N 18°29'06" W

9436.70

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TEMPORARY EROSION CONTROL DETAILS
STAGE I

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.		CA0904	59	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINETT D. SMITH

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

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TEMPORARY EROSION CONTROL DETAILS STAGE 1

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.		CA0904	60	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

1" PIPE

WOODS - DECIDUOUS

+08.03
311.24'

+00
355'

+40
285'

+40
250'

+75
130'

970

975

980

985

BM
PN:957
PD:TBM-9

PT 977+68.75

977+68.75

E-11
511 LIN.FT.

E-12
68 LIN.FT.

E-6

E-8

PN:1901
PD:60 D NAIL

PN:1902
PD:60 D NAIL

PN:1904
PD:60 D NAIL

PN:1906
PD:60 D NAIL

S 89°41'52" E

P 970+04.24

E-11
747 LIN.FT.

+00
205'

+00
175'

E-11
159 LIN.FT.

E-1

+88.75
145'

+50
340'

+25
400'

E-11
2296 LIN.F

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS
STAGE I

1/23/2014

RCA0904.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.		CA0904	61	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11435
1-24-14
TRINITY D. SMITH

1/23/2014

RCA0904.DGN

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS STAGE I

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.		CA0904	62	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

POB 1010+38.41
PC 1010+38.41
PC 1010+07.41
PC 1011+75.87
PC 1011+59.47
PT 1030+16.68
PI 1020+33.11
PI 1021+09.63
PI 1021+70.57
S 89°41'52" E
N 75°27'54" E
N 23°31'58" W
PC 22+12.96
+00 460
+00 230
+00 235'
+00 180'
+00 175'
+00 100'
+00 150'
+00 150'
+07.14
+01.59
+09.63
+16.68

E-11 .229 LIN.FT.
E-11 .375 LIN.FT.
E-11 .352 LIN.FT.
E-11 .538 LIN.FT.
E-11 .241 LIN.FT.
E-11 .776 LIN.FT.
E-11 .952 LIN.FT.
E-12 65 LIN.FT.
E-12 94 LIN.FT.
E-12 113 LIN.FT.
E-11 .192 LIN.FT.
E-11 .185 LIN.FT.
E-11 .558 LIN.FT.
E-11 .721 LIN.FT.

1005 1010 1015 1020 1025 1030

PN:1611 PD:60 D NAIL
PN:1612 PD:60 D NAIL
PN:1613 PD:60 D NAIL
PN:1614 PD:60 D NAIL
PN:1615 PD:60 D NAIL
PN:1616 PD:60 D NAIL
PN:1617 PD:60 D NAIL
PN:1618 PD:60 D NAIL
PN:1619 PD:60 D NAIL
PN:1620 PD:60 D NAIL
PN:1621 PD:60 D NAIL
PN:1622 PD:60 D NAIL
PN:1623 PD:60 D NAIL
PN:954 PD:TBM-954\RRS
PU:1010+55\RRS
BM CPS INS 20 IN OAK

TEMPORARY EROSION CONTROL DETAILS STAGE I

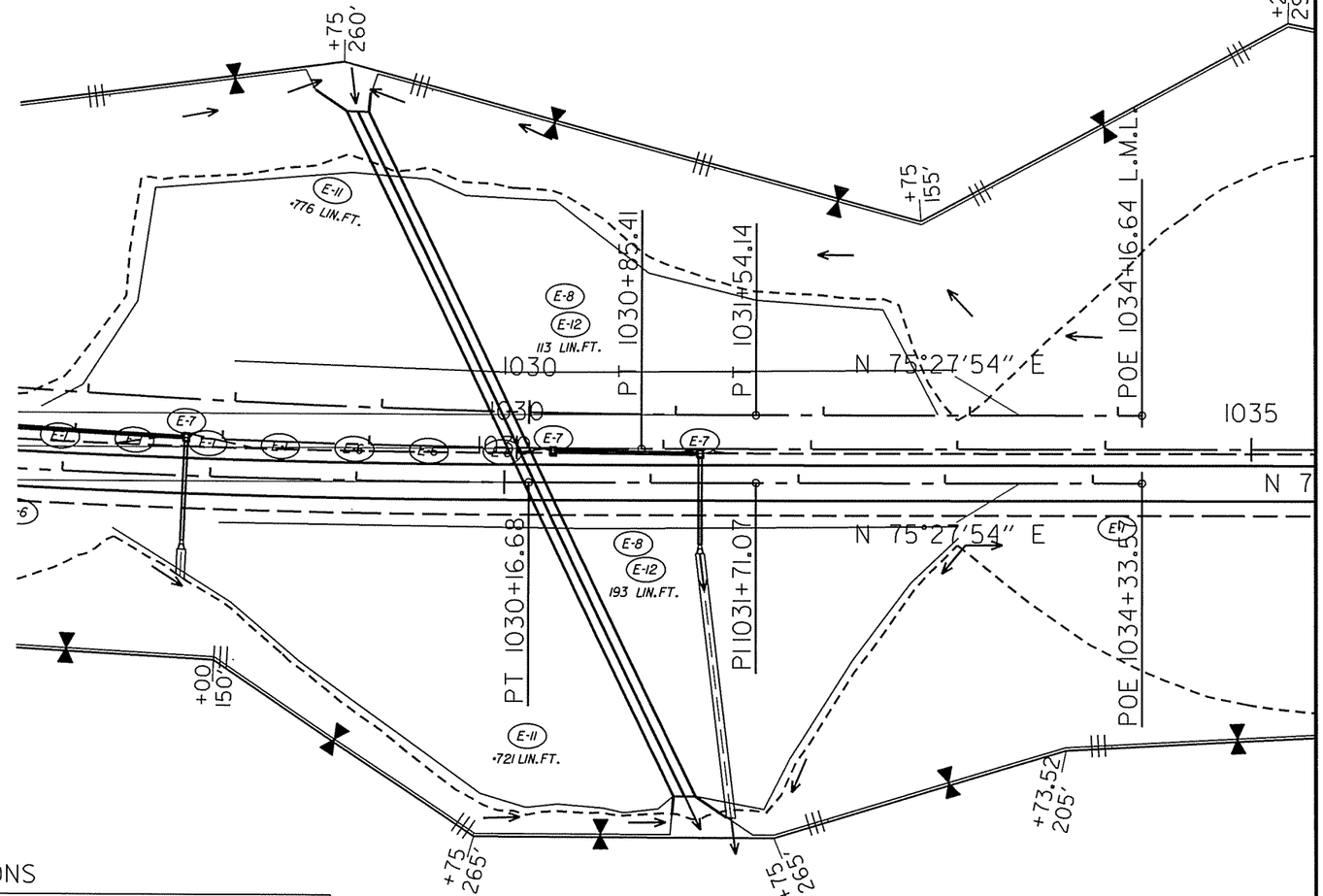
1/23/2014

RCA0904.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.		CA0904	63	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE I

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.		CA0904	64	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

+24.62 290'
+15 230'
+00 165'
+00 240'
+15 242.26'
+70.13 330'
+84.84 243.64'
+33.21 315.58'
+15.30 256.65'
+24.69 231.77'
+00 120'

E-11 -784 LIN.FT.
E-12 123 LIN.FT.
E-8

1035 1040 1045 1050

N 75°27'54" E

N

E-1 E-1
E-8 E-12 164 LIN.FT.
E-6 E-6 E-6 E-1 E-1 E-1 E-1

+50 175'
E-11 -860 LIN.FT.
+75 260'
+30 245'
+00 240'
+70.25 130'

LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE 1

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.		CA0904	65	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

LEGEND

- (E-1) = WATTLE DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

+00 120'
E-11 104 LIN.FT.
1050
1055
1060
1065
N 75°27'54" E
N 7
5' 0'
+09 232
+28.7 220'
+25 135'
+59. 52.6'
1065
1070
1075
1080
N 75°27'54" E
N 75°27'54" E
+75 115'
50 25'
5'
PC 1078+22.12
1078+22.13 BK. (E)
1078+82.66 AHD.

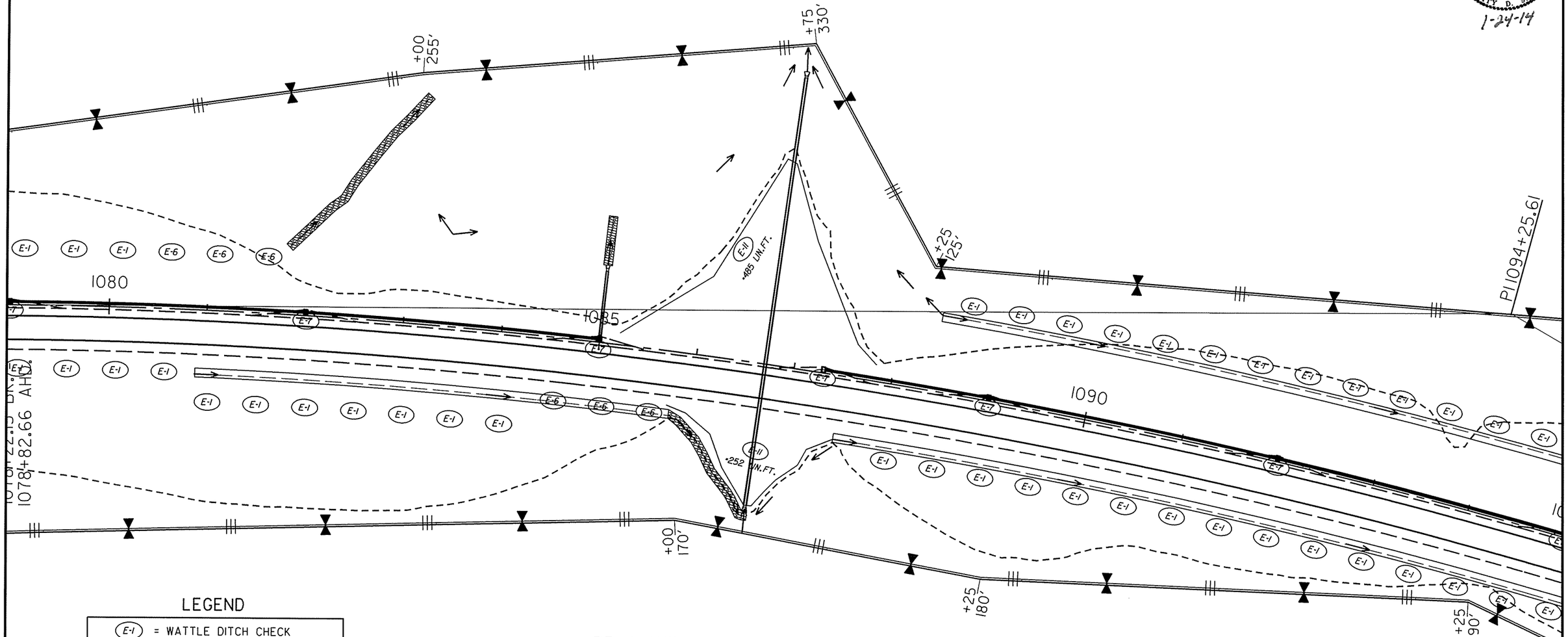
TEMPORARY EROSION CONTROL DETAILS
STAGE I

1/23/2014
RCA0904.DGN

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.		CA0904	66	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS STAGE 1

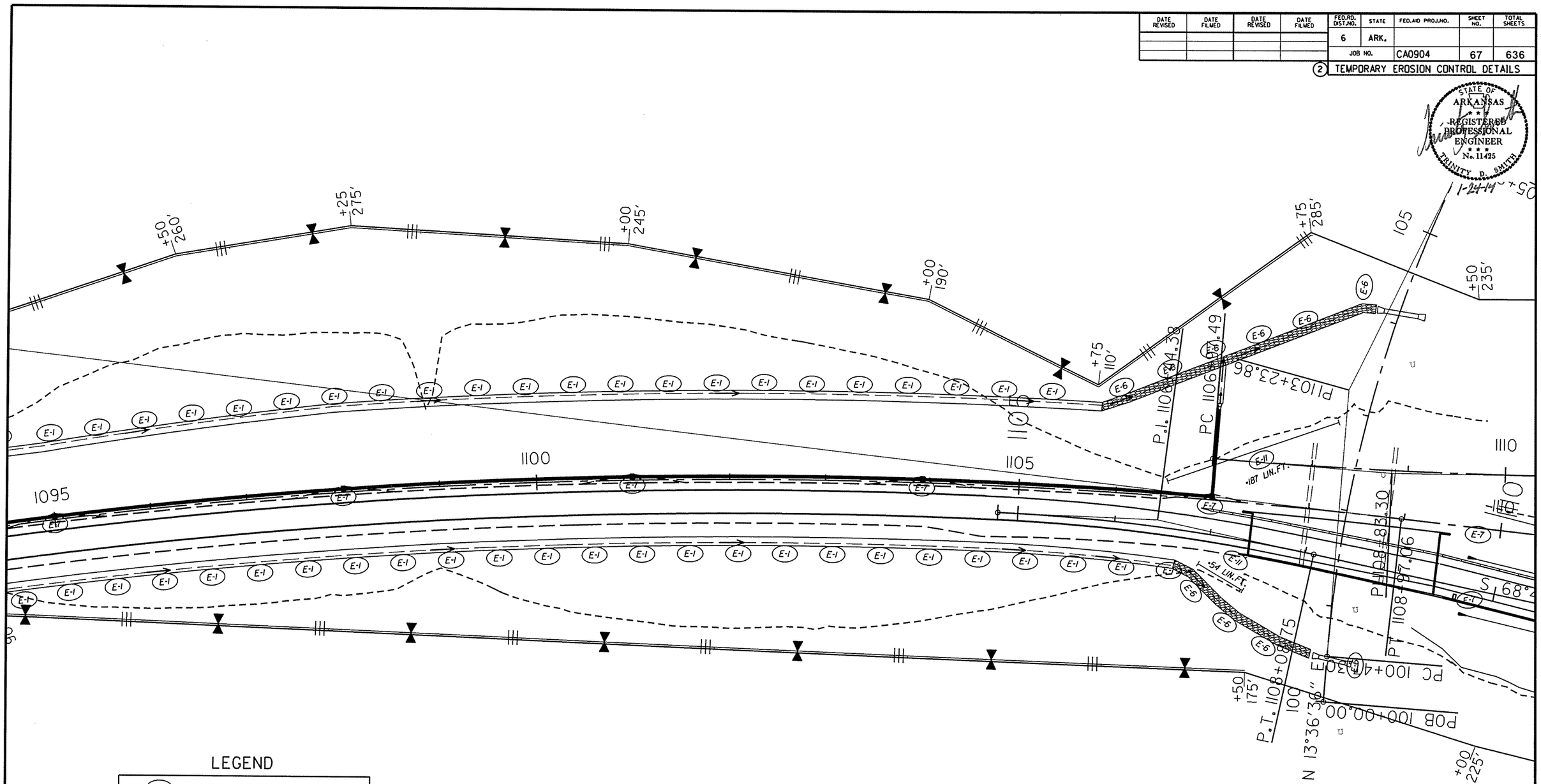
1/23/2014

RCA0904.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.		CA0904	67	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14


+50 260'
+25 275'
+00 245'
+00 190'
+75 110'
+75 285'
105
+50 235'
E-6
E-6
E-6

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.		CA0904	68	636

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

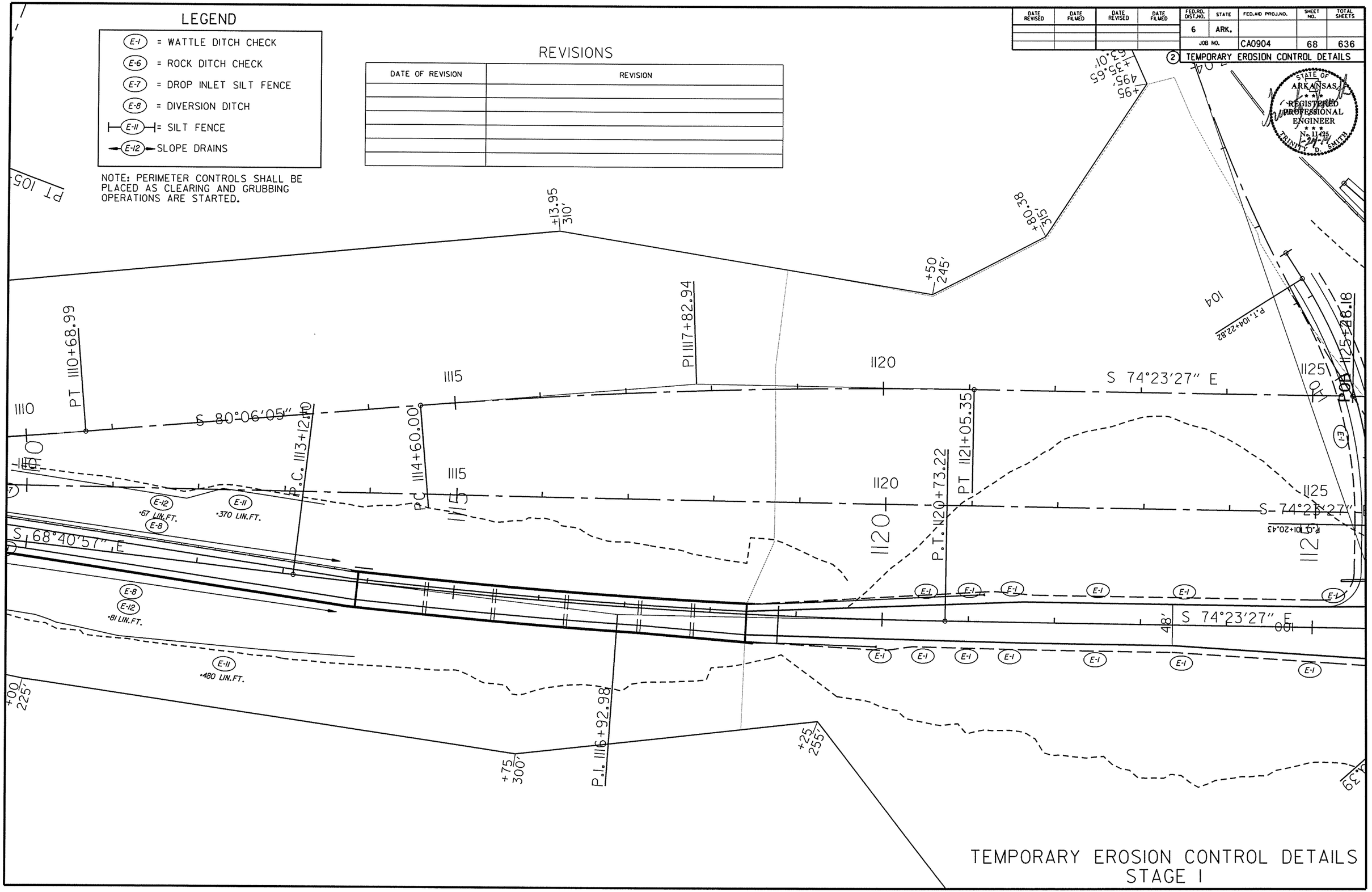
- (E-1) = WATTLE DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH



TEMPORARY EROSION CONTROL DETAILS
STAGE I

1/23/2014

RCA0904.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.		CA0904	69	636

2 TEMPORARY EROSION CONTROL DETAILS

LEGEND

- E-1 = WATTLE DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAINS

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11435
1-24-14
TRINITY D. SMITH

POB 1125+28.18
P.I. 102+76.02
P.C. 101+20.43
P.C. 403+95.47
P.I. 405+08.49
P.I. 112+72.88
P.T. 406+08.49
POB 1127+55.95
P.C. 1126+90.29
P.C. 1128+37.27
PRC 1128+82.34
P.C. 305+37.02
P.I. 306+55.73
P.I. 305+98.52
P.T. 302+88.27
P.I. 407+87.42
Δ=1°13'49"
P.I. 1133+94.14
P.C. 1132+92.28
P.I. 1139+18.53
PC 1136+57.80
PC 1135+92.28
P.I. 301+71.96
P.I. 1139+32.49
+45.81
230.63'
P.T. 1134+95.73
P.C. 1132+92.28
+50 485'
+50 580'
1+23.39
BEGIN EXIST. C of A
PRC

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE I

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.		CA0904	70	636

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I

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.		CA0904	71	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1/24/14
TRINITY D. SMITH

P.C. 826
PC 825+03.30
PC 832+09.92
PI 835+28.20
834+63.45
PC 837+14.03
PC 837+49.08
PC 838+24.
S 88°07'30" E
N 45°02'55" E
830
835
840
53 LIN.FT.
104 LIN.FT.
23 LIN.FT.
97 LIN.FT.
134 LIN.FT.
+55 630'
+05 490'
+45 590'
+40 525'
+00 390'
+95 225'
+20 275'
+43.66 223.55'
+10 222.32'
+35 420'
EDGE WOODS
EDGE STORAGE
EXISTING POWER POLE W/ WIRE
EXISTING POWER POLE W/ GUY WIRE
EXISTING POWER POLE W/ TRANSFORMER
EXISTING POWER POLE W/ GUY WIRE

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

TEMPORARY EROSION CONTROL DETAILS STAGE I

1/23/2014

RCA0904.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.		CA0904	72	636

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL DETAILS
STAGE I

1/23/2014

RCA0904.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.		CA0904	73	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

POE 114+00.01

N 2°33'20" E

POB 113+00.01

S 87°26'40" E

PT 37+11.57

P.I. 35+33.82

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

REVISIONS

DATE OF REVISION	REVISION

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS STAGE 1

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.		CA0904	74	636

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

POB 10+00.00

N 18°29'06" W

PI 9+29.16.70

+52.59
389.23'

+50
310'

+25
415'

+00
265'

+85
335'

+50
190'

PI 19+28.97

POE 23+35.57

N 17°12'55" W

SURVEY BASELINE N 20°58'39" W
1399.72'

925

930

935

245 LIN.FT.

375 LIN.FT.

TEMPORARY EROSION CONTROL DETAILS
STAGE I

RCA0904.DGN 1/23/2014

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.		CA0904	75	636

TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11435
1-24-14
TRINITY D. SMITH

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-1 = WATTLE DITCH CHECKS
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-8 = DIVERSION DITCH
- E-11 = SILT FENCE
- E-12 = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE I

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.		CA0904	76	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-1) = WATTLE DITCH CHECKS
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-8) = DIVERSION DITCH
- (E-11) = SILT FENCE
- (E-12) = SLOPE DRAIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

1/23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

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.		CA0904	77	636

2 TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

REVISIONS

DATE OF REVISION	REVISION

PI 13+00.00

PI 10+00.01

PI 14+00.01

PI 07+75.15

POB 100+00.00

N 2°33'20" E

N 3°15'05" E

S 58°21'48" E

885

880

105

1-23/2014

RCA0904.DGN

TEMPORARY EROSION CONTROL
STAGE 2

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.		CA0904	78	636

2 TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

P.C. 305+37.02
P.I. 405+01.84
S 74°23'27" E
P.C. 403+95.17
P.I. 1127+72.88
P.O.B. 1127+55.95
P.T. 406+08.49
P.I. 302+88.27
P.I. 407+87.42
Δ=1°13'49"
S 74°23'27" E
P.I. 1133+94.14
P.I. 301+71.96
P.C. 1132+54.42
P.C. 1135+92.28
P.C. 1136+57.80
P.I. 1139+18.53
P.I. 1141+77.82
P.C. 1141+01.72
P.T. 1142+71.90
P.I. 1139+82.49
P.T. 1134+95.73
P.C. 1132+
+45.81
230.63
+30.04
360.50
+75
200'
P.I. 1131+23.39
P.C. 128+88.31
P.I. 103+15.76
+81.12 BEGIN
588.24' EXIST. C of A
P.C. 100+18.18
1130
1135
1140
1142
#35
40
10
30
36'
27

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-5 = SAND BAG DITCH CHECK
- E-6 = ROCK DITCH CHECK
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE
- E-14 = SEDIMENT BASIN (XX CU FT)

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

TEMPORARY EROSION CONTROL STAGE 2

1/23/2014

RCA0904.DGN

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-6) = ROCK DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) XX CU FT = SEDIMENT BASIN

NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

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.		CA0904	79	636

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

TEMPORARY EROSION CONTROL
STAGE 3

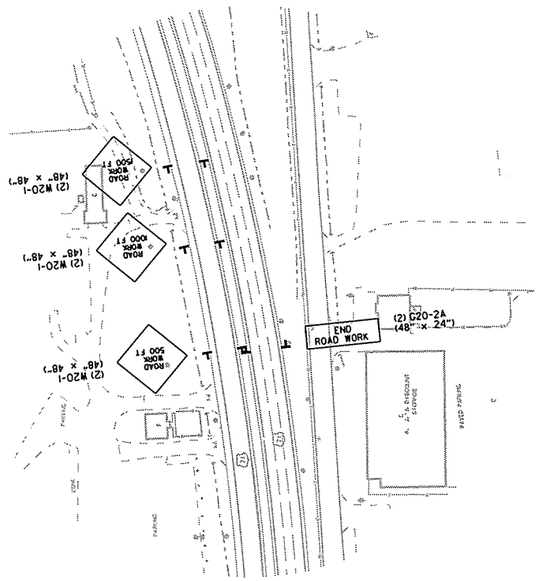
1/23/2014

RCA0904.DGN

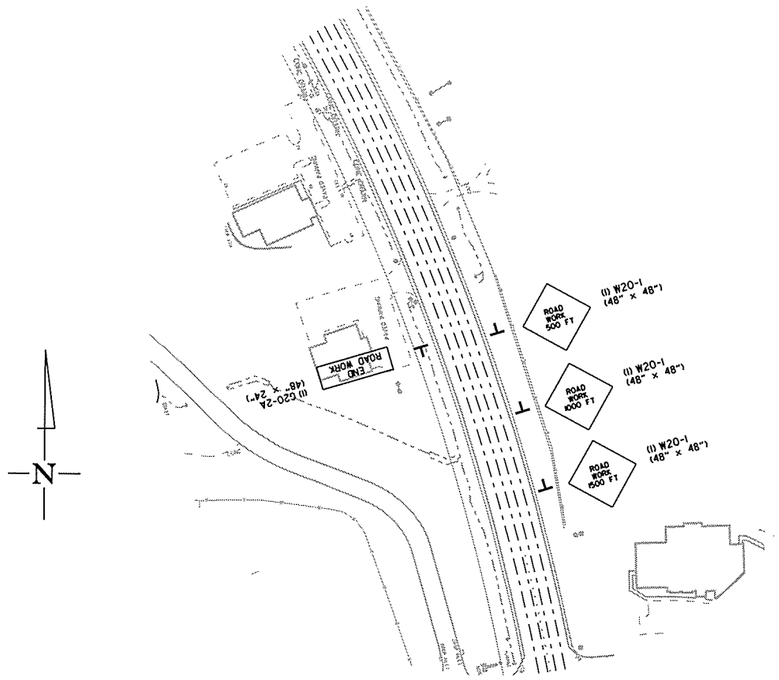
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				6	ARK.			
				JOB NO.		CA0904	80	636

(2) MAINTENANCE OF TRAFFIC DETAILS

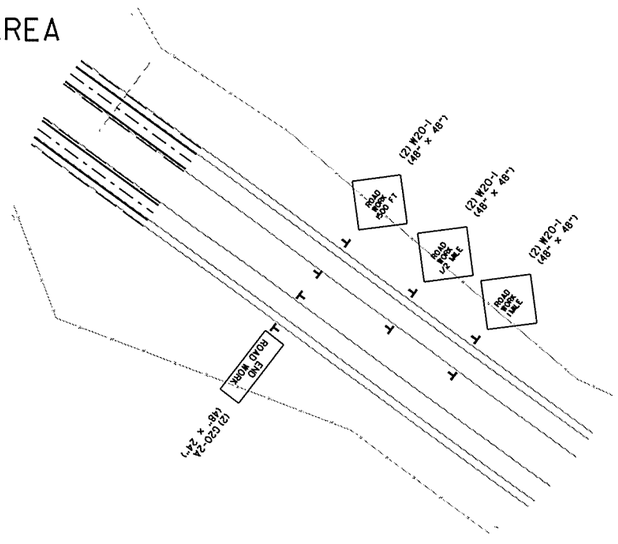
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



EXISTING HWY.71B
NORTH OF WORK AREA



EXISTING HWY.71B
SOUTH OF WORK AREA



EXISTING HWY.71
SOUTH OF WORK AREA

STAGE 1:
HWY. 71 - CONSTRUCT MAIN LANES, STRUCTURES & APPROACHES, AND RAMPS.
CO. RD. 554 - CONSTRUCT RELOCATED ALIGNMENT & CONNECTIONS TO EXISTING ROADWAY.
CO. RD. 49 - CONSTRUCT RELOCATED ALIGNMENT, STRUCTURES, AND APPROACHES & CONNECTIONS TO EXISTING ROADWAY.
BECKETT RD. - RECONSTRUCT UNDER TRAFFIC AND INSTALL PCCB FOR BRIDGE PIER CONSTRUCTION.
ARTHUR RD. - ADJUST GRADE UNDER TRAFFIC AND INSTALL PCCB FOR BRIDGE PIER CONSTRUCTION.
MCKISSIC CREEK RD. - CONSTRUCT RELOCATED ALIGNMENT & CONNECTIONS TO EXISTING ROADWAY.
PEACH ORCHARD RD. - INSTALL PRECAST BARRIER WALL FOR BRIDGE PIER CONSTRUCTION.
ROUNDABOUT - CONSTRUCT PROPOSED REALIGNMENT OF MCKISSIC CREEK RD.

STAGE 2:
CO. RD. 453 - CLOSE SOUTH OF STA. 111+00. DETOUR TRAFFIC VIA DEER RD. AND BECKETT RD.
CO. RD. 453 - CONSTRUCT OVERPASS STRUCTURES AND APPROACHES AT HWY 71.
CO. RD. 49 - SHIFT TRAFFIC TO NEW ALIGNMENT AND OBLITERATE OLD ROADWAY.
ROUNDABOUT - SHIFT TRAFFIC TO REALIGNED MCKISSIC CREEK ROAD. OBLITERATE EXISTING MCKISSIC CREEK ROAD. CONSTRUCT R.C. BOX CULVERT EXTENSION TO THE NORTH.

STAGE 3:
ROUNDABOUT - CONSTRUCT PROPOSED HWY. 71 SB OFF RAMP, HWY. 71B TO THE ROUNDABOUT.
MILL AND INLAY PORTIONS OF HWY. 71 NB. ON AND OFF RAMPS, AND HWY 71 SB. ON RAMP. SHIFT HWY. 71 SB. OFF RAMP TRAFFIC TO NEW LOCATION. CONSTRUCT CONCRETE APRON WITHIN ROUNDABOUT.
OBLITERATE EXISTING HWY. 71 SB. OFF RAMP.
PLACE FINAL SURFACE COURSE AND PERMANENT PAVEMENT STRIPING ON ALL ROADWAYS.

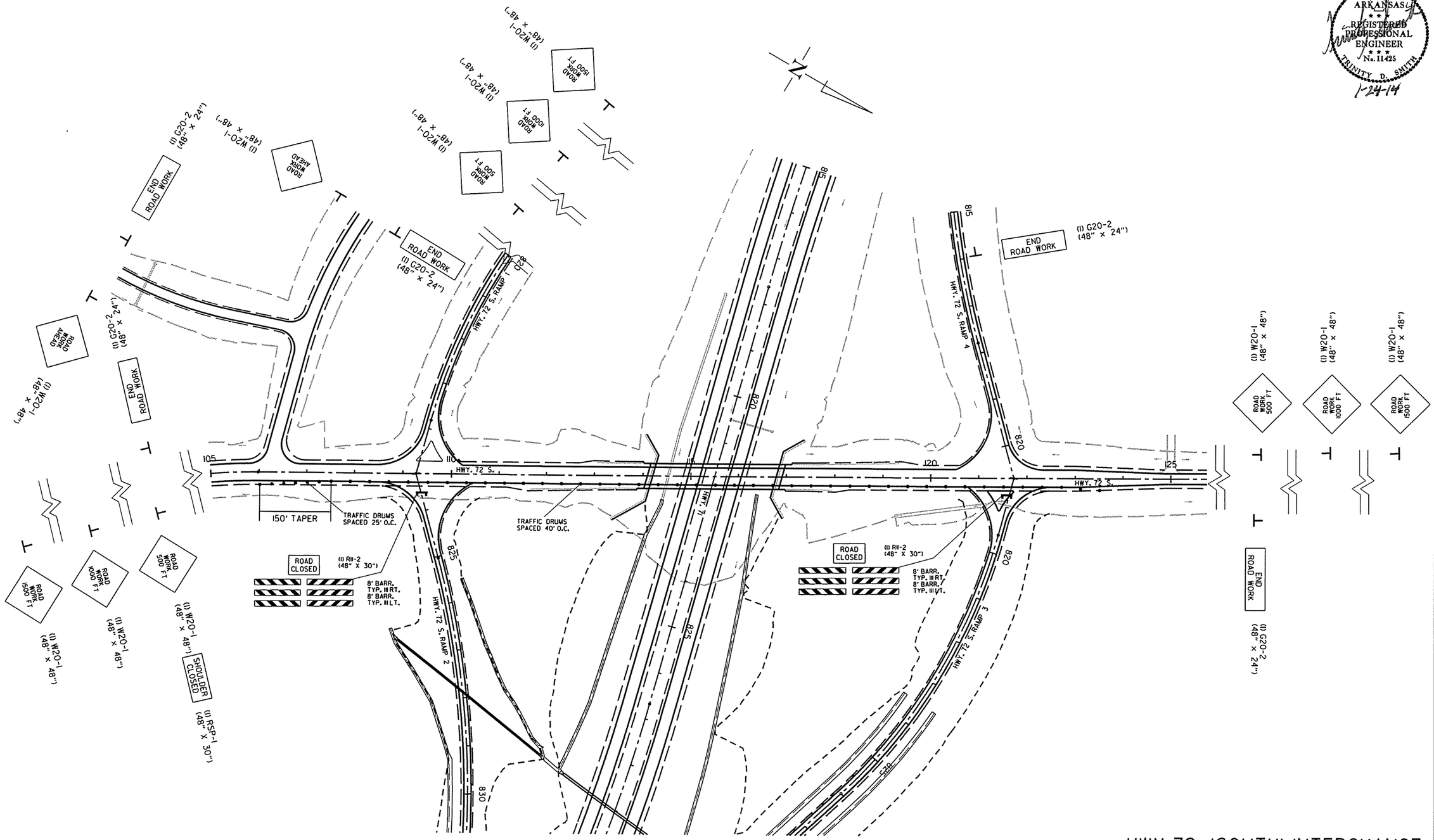
HWY. 71B INTERCHANGE
ADVANCE SIGNS ALL STAGES

1/1/2014
RCA0904.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.		CA0904	81	636

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



HWY.72 (SOUTH) INTERCHANGE
ALL STAGES
MAINTENANCE OF TRAFFIC

1/1/2014

RCA0904.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.		CA0904	82	636

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

SIGN AND BARRICADES TO BE LEFT IN PLACE AT COMPLETION OF JOB CA0904

ROAD CLOSED (1) R11-2 (48" X 30")

16' BARR. TYP. III RT.
16' BARR. TYP. III LT.

FURNISHING, INSTALLING, AND LEAVING IN PLACE PRECAST CONCRETE BARRIER = 906 LIN. FT. INCLUDES (2) SPECIAL END UNITS

+05 404.29'

+25 265'

+75 265'

+00 145'

SPECIAL END UNIT

10:1 TAPER 11.5'

+80 140' TAPER 25.5'

+20 SPECIAL END UNIT

+95 225'

+20 275'

+43.66 223.55'

+10 222.32'

+50 125'

+50 210'

835 840 845

HWY.72 (SOUTH) INTERCHANGE DEVICES LEFT IN PLACE MAINTENANCE OF TRAFFIC

1/1/2014

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				6	ARK.			
				JOB NO.		CA0904	83	636

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

NOTE:
RETAIN ADVANCE SIGNS THROUGH ALL STAGES.

(1) G20-2A (48" x 24")
END ROAD WORK

CO. RD. 554 \ BANKS LN.

(1) W20-1 (48" x 48") ROAD WORK 1500 FT
(1) W20-1 (48" x 48") ROAD WORK 1000 FT
(1) W20-1 (48" x 48") ROAD WORK 500 FT

35 TRAFFIC DRUMS
25' O.C.

ROAD CLOSED
(1) R11-2 (48" X 30")
8 ' BARR. TYP. III RT.
8 ' BARR. TYP. III LT.

CO. RD. 554 \ BANKS LN.

NOTE:
RETAIN ADVANCE SIGNS THROUGH ALL STAGES.

(1) W20-1 (48" x 48") ROAD WORK 500 FT
(1) W20-1 (48" x 48") ROAD WORK 1000 FT
(1) W20-1 (48" x 48") ROAD WORK 1500 FT

END ROAD WORK
(1) G20-2A (48" x 24")

STAGE 1
CONSTRUCT RELOCATED CO. RD. 554

STAGE 2
CLOSE CO. RD. 453 SOUTH OF STA. 111+00
DETOUR TRAFFIC VIA DEER DR. AND BECKETT RD.
CONSTRUCT OVERPASS OVER HWY. 71 MAIN LANES, AND APPROACHES.

STAGE 3
PLACE FINAL SURFACE AND FINAL STRIPING.

CO. RD. 554 & CO. RD. 453
STAGE I
MAINTENANCE OF TRAFFIC

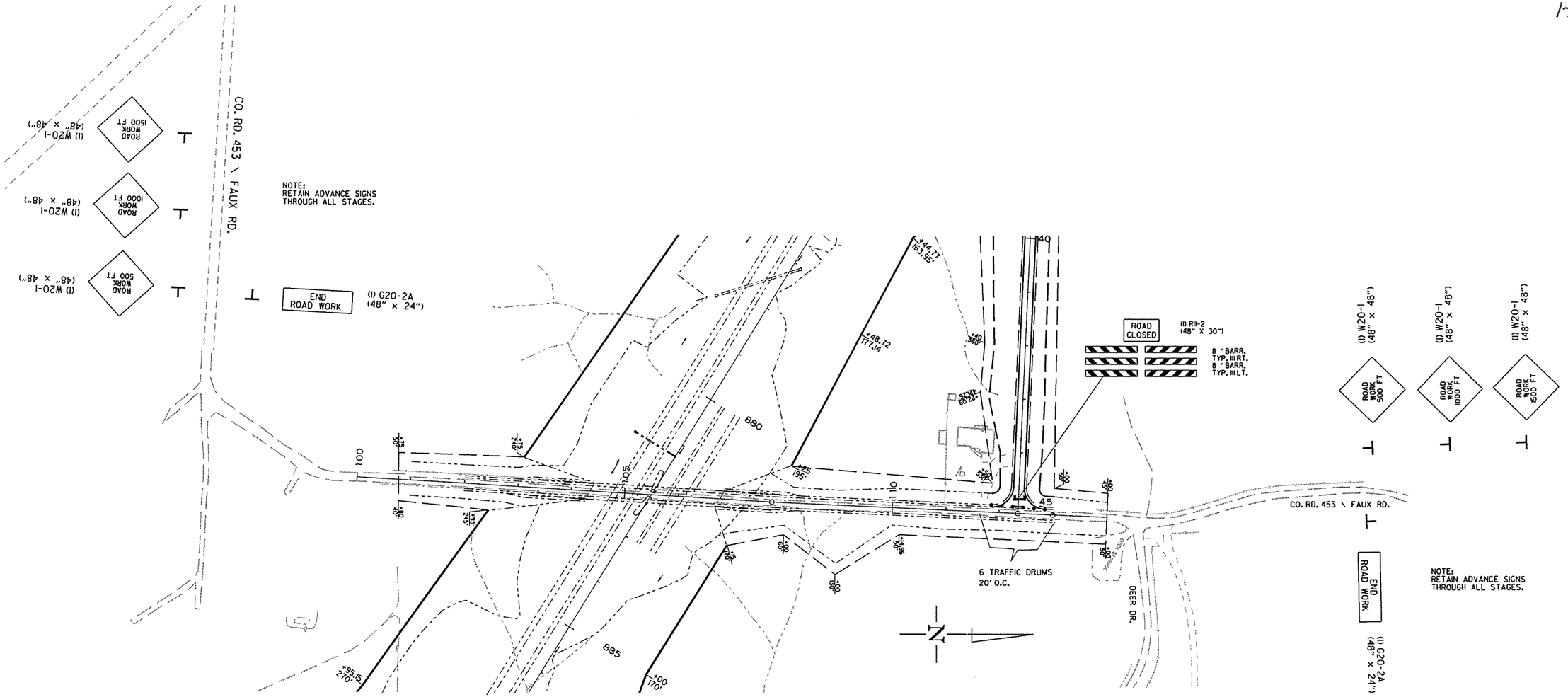
1/1/2014

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(2) MAINTENANCE OF TRAFFIC DETAILS

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STAGE 1
CONSTRUCT RELOCATED CO. RD. 554

STAGE 2
CLOSE CO. RD. 453 SOUTH OF STA. 111+00
DETOUR TRAFFIC VIA DEER DR. AND BECKETT RD.
CONSTRUCT OVERPASS OVER HWY. 71 MAIN LANES, AND APPROACHES.

STAGE 3
PLACE FINAL SURFACE AND FINAL STRIPING.

CONSTRUCTION PAVEMENT MARKINGS
RELOCATED CO. RD. 554

LT. & RT. EDGE LINES + DBL. CENTER LINE
STA.10+00 - STA. 45+03.37 = 13322 LIN.FT.

CO. RD. 554 & CO. RD. 453
STAGE 1
MAINTENANCE OF TRAFFIC

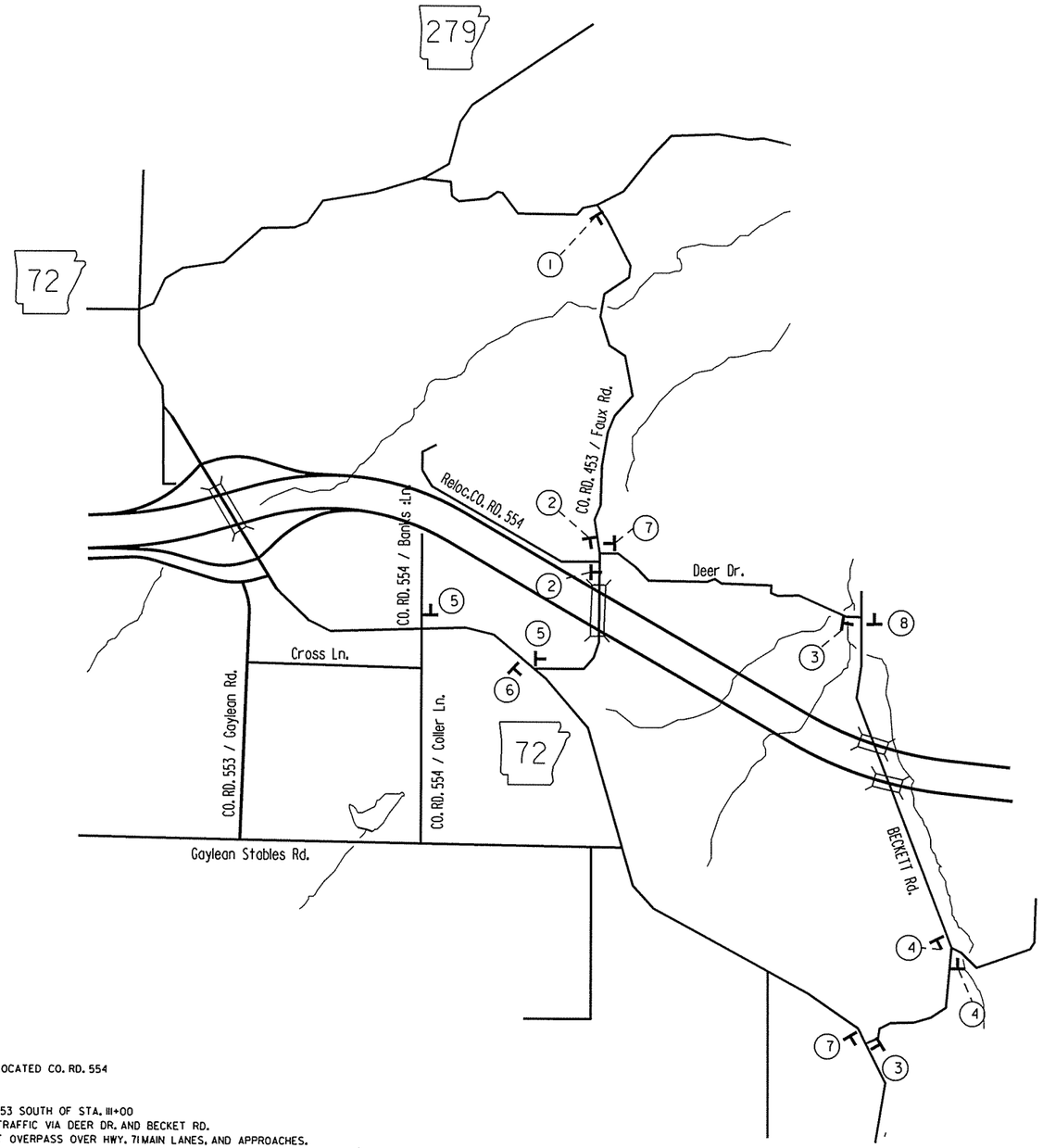
1/1/2014

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(2) MAINTENANCE OF TRAFFIC DETAILS

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(1) ROAD CLOSED 1.2 MILES AHEAD LOCAL TRAFFIC ONLY — (1) RII-3A (60" X 30")

(2) FAUX RD. — (1) D3 (36"x12")
SOUTH — (1) M3-3 (24"X12")
DETOUR — (1) M4-8 (24" X 12")
(1) M6-1 (21" X 15")

(3) FAUX RD. — (1) D3 (36"x12")
SOUTH — (1) M3-3 (24"X12")
DETOUR — (1) M4-8 (24" X 12")
(1) M6-1 (21" X 15")

(4) FAUX RD. — (1) D3 (36"x12")
SOUTH — (1) M3-3 (24"X12")
DETOUR — (1) M4-8 (24" X 12")
(1) M6-3 (21" X 15")

(5) ROAD CLOSED 0.25 MILES AHEAD LOCAL TRAFFIC ONLY — (1) RII-3A (60" X 30")

(6) FAUX RD. — (1) D3 (36"x12")
NORTH — (1) M3-1 (24"X12")
DETOUR — (1) M4-8 (24" X 12")
(1) M6-3 (21" X 15")

(7) FAUX RD. — (1) D3 (36"x12")
NORTH — (1) M3-1 (24"X12")
DETOUR — (1) M4-8 (24" X 12")
(1) M6-1 (21" X 15")

(8) FAUX RD. — (1) D3 (36"x12")
NORTH — (1) M3-1 (24"X12")
DETOUR — (1) M4-8 (24" X 12")
(1) M6-1 (21" X 15")

STAGE 1
CONSTRUCT RELOCATED CO. RD. 554

STAGE 2
CLOSE CO. RD. 453 SOUTH OF STA. 111+00
DETOUR TRAFFIC VIA DEER DR. AND BECKET RD.
CONSTRUCT OVERPASS OVER HWY. 71 MAIN LANES, AND APPROACHES.

STAGE 3
PLACE FINAL SURFACE AND FINAL STRIPING.

CO. RD. 554 & CO. RD. 453 STAGE 2 DETOUR MAINTENANCE OF TRAFFIC

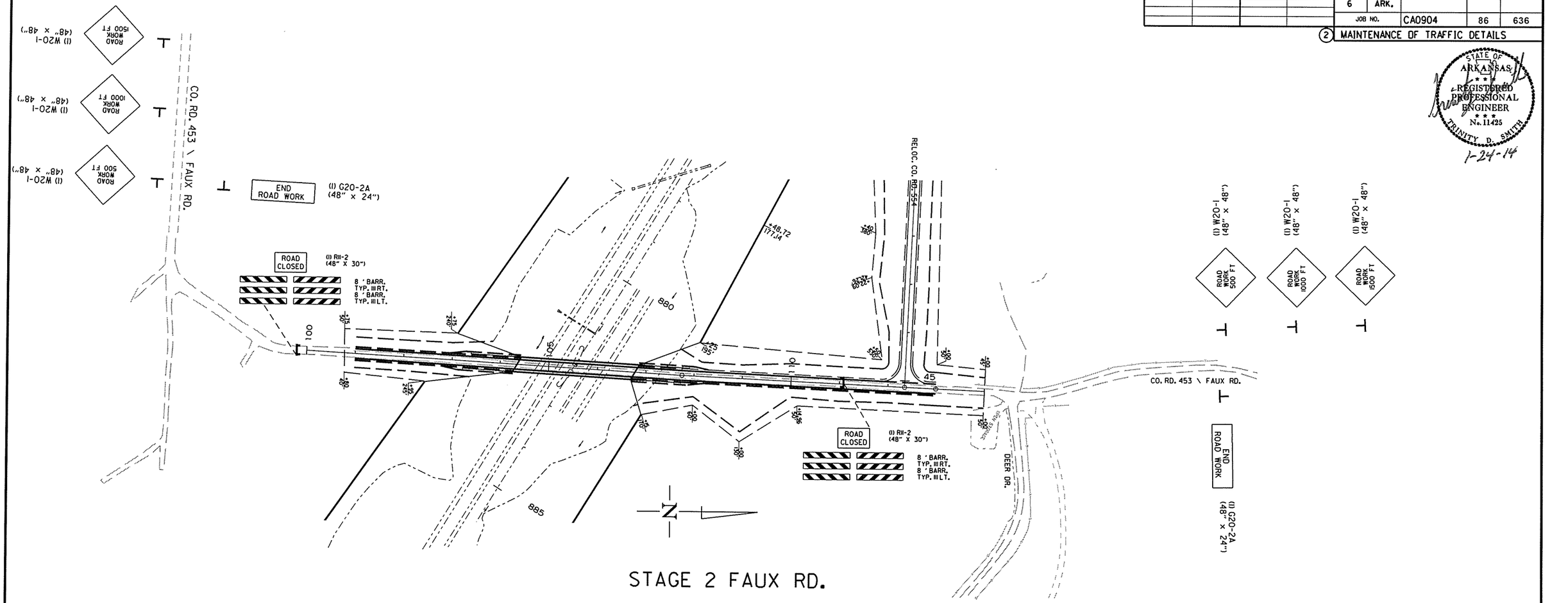
1/1/2014

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				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
1-24-14



STAGE 2 FAUX RD.

FINAL STRIPING

REFLECTORIZED PAINT PAVEMENT MARKINGS
LT. & RT. EDGE LINES, CO. RD. 554 = 7010 LIN.FT. 4" WHITE
DBL. CENTER LINE, CO. RD. 554 = 7010 LIN.FT. 4" YELLOW
LT. & RT. EDGE LINES, CO. RD. 453 ACHM SURFACE = 2115 LIN.FT. 4" YELLOW
DBL. CENTER LINE CO. RD. 453 ACHM SURFACE = 2115 LIN.FT. 4" YELLOW

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS
DBL CENTER LINE CO. RD. 453 OVERPASS = 485 LIN.FT. YELLOW

HIGH PERFORMANCE PAVEMENT MARKINGS
EDGELINES CO. RD. 453 OVERPASS = 485 LIN.FT. WHITE

STAGE 3 FINAL SURFACING AND STRIPING

STAGE 1
CONSTRUCT RELOCATED CO. RD. 554

STAGE 2
CLOSE CO. RD. 453 SOUTH OF STA. 111+00
DETOUR TRAFFIC VIA DEER DR. AND BECKET RD.
CONSTRUCT OVERPASS OVER HWY. 71 MAIN LANES, AND APPROACHES.

STAGE 3
PLACE FINAL SURFACE AND FINAL STRIPING.

CO. RD. 554 & CO. RD. 453 STAGE 2 & STAGE 3 MAINTENANCE OF TRAFFIC

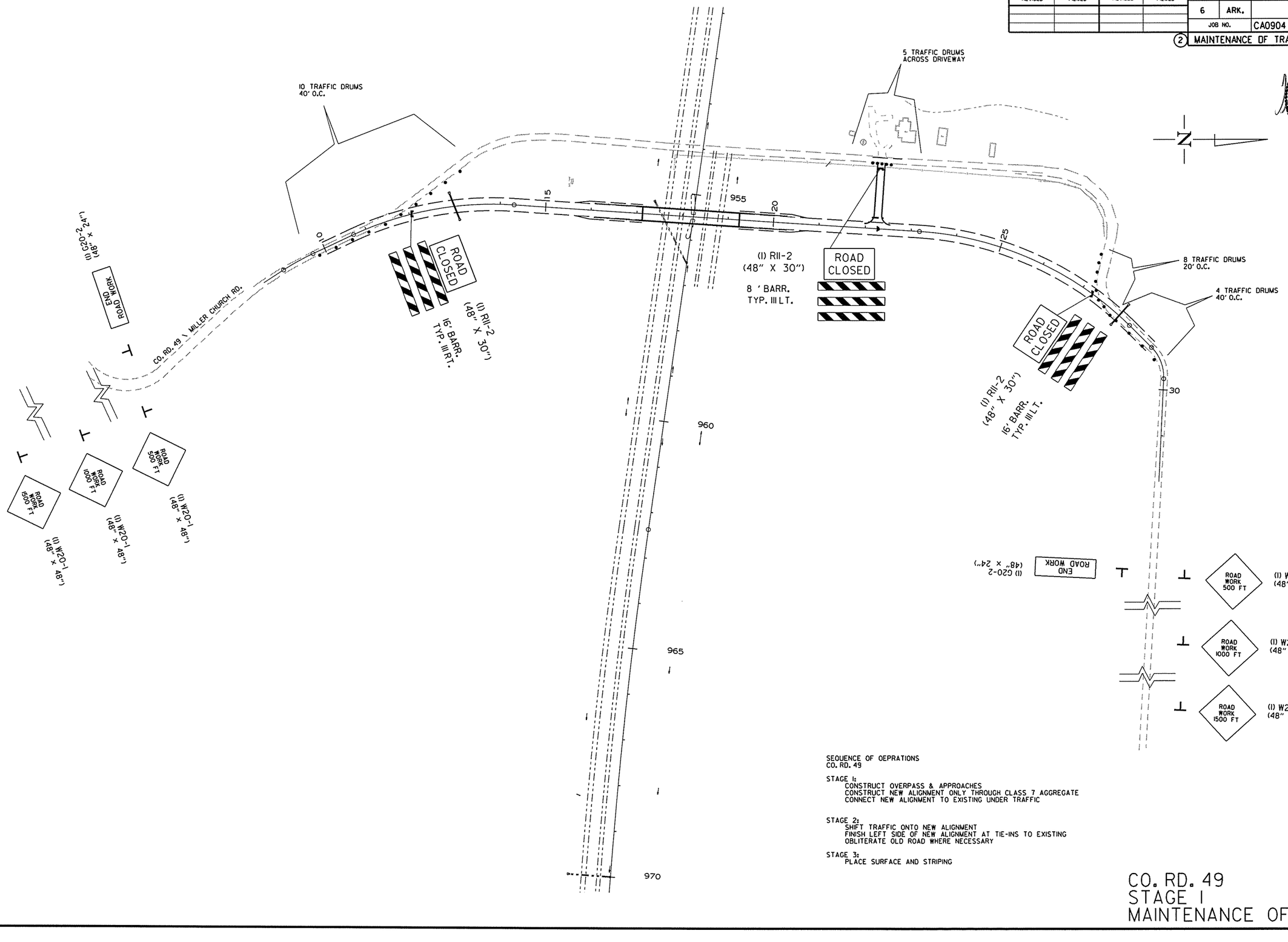
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				6	ARK.			
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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



SEQUENCE OF OEPRATIONS
CO. RD. 49

STAGE 1:
CONSTRUCT OVERPASS & APPROACHES
CONSTRUCT NEW ALIGNMENT ONLY THROUGH CLASS 7 AGGREGATE
CONNECT NEW ALIGNMENT TO EXISTING UNDER TRAFFIC

STAGE 2:
SHIFT TRAFFIC ONTO NEW ALIGNMENT
FINISH LEFT SIDE OF NEW ALIGNMENT AT TIE-INS TO EXISTING
OBLITERATE OLD ROAD WHERE NECESSARY

STAGE 3:
PLACE SURFACE AND STRIPING

CO. RD. 49 STAGE 1 MAINTENANCE OF TRAFFIC

RCA0904.DGN 1/1/2014

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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
1-24-14

(I) RII-2 (48" X 30")
(I) WI-6 (48" X 24")
8' BARR. TYP. III LT.
ROAD CLOSED
6 TRAFFIC DRUMS 15' O.C.
OBLITERATE
(I) RII-2 (48" X 30")
8' BARR. TYP. III LT.
ROAD CLOSED
OBLITERATE
(I) RII-2 (48" X 30")
8' BARR. TYP. III RT.
ROAD CLOSED
OBLITERATE
6 TRAFFIC DRUMS 15' O.C.
8 TRAFFIC DRUMS ACROSS ROAD TO BE OBLITERATED
(I) RII-2 (48" X 30")
(I) WI-6 (48" X 24")
8' BARR. TYP. III RT.
ROAD CLOSED
(I) C20-2 (48" x 24") ROAD WORK END
CO. RD. 49 \ MILLER CHURCH RD.
955
960
965
970
10
15
20
25
30

CONSTRUCTION PAVEMENT MARKINGS

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS
DBL. CENTER LINE ON BRIDGE, CO. RD. 49 = 424 LIN.FT. (YELLOW)
RT. & LT. EDGE LINES ON BRIDGE, CO. RD. 49 = 424 LIN.FT. (WHITE)

RAISED PAVEMENT MARKERS
TYPE II (YEL/YEL) 40' O.C.
ON BRIDGE CENTER LINE = 6 EACH

(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") ROAD WORK 500 FT
(I) C20-2 (48" x 24") ROAD WORK END

SEQUENCE OF OEPRATIONS
CO. RD. 49

STAGE 1:
CONSTRUCT OVERPASS & APPROACHES
CONSTRUCT NEW ALIGNMENT ONLY THROUGH CLASS 7 AGGREGATE
CONNECT NEW ALIGNMENT TO EXISTING UNDER TRAFFIC

STAGE 2:
SHIFT TRAFFIC ONTO NEW ALIGNMENT
FINISH LEFT SIDE OF NEW ALIGNMENT AT TIE-INS TO EXISTING
OBLITERATE OLD ROAD WHERE NECESSARY

STAGE 3:
PLACE SURFACE AND STRIPING

CO. RD. 49 STAGE 2 MAINTENANCE OF TRAFFIC

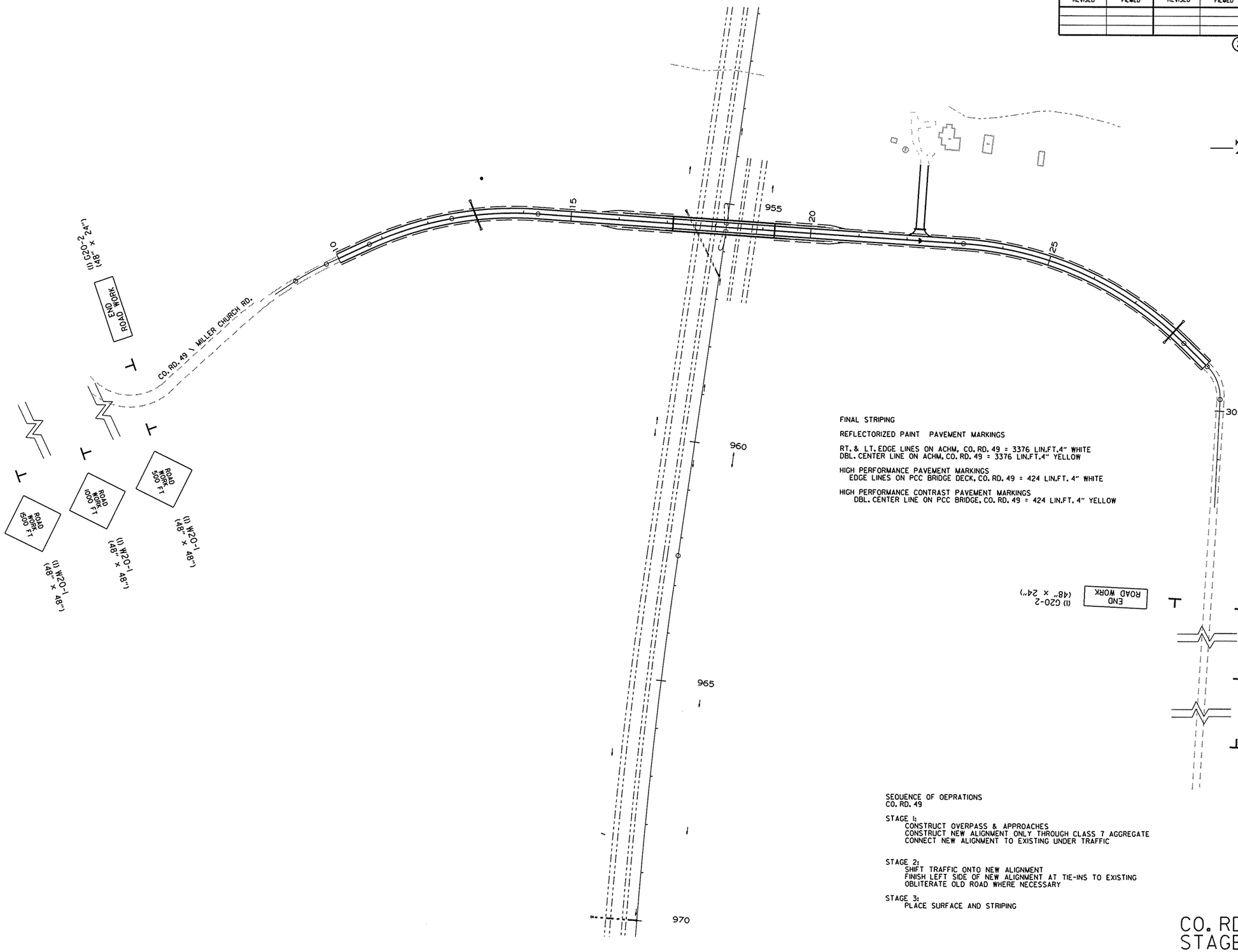
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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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FINAL STRIPING

REFLECTORIZED PAINT PAVEMENT MARKINGS

RT. & LT. EDGE LINES ON ACHM, CO. RD. 49 = 3376 LIN.FT.4" WHITE
DBL. CENTER LINE ON ACHM, CO. RD. 49 = 3376 LIN.FT.4" YELLOW

HIGH PERFORMANCE PAVEMENT MARKINGS
EDGE LINES ON PCC BRIDGE DECK, CO. RD. 49 = 424 LIN.FT. 4" WHITE

HIGH PERFORMANCE CONTRAST PAVEMENT MARKINGS
DBL. CENTER LINE ON PCC BRIDGE, CO. RD. 49 = 424 LIN.FT. 4" YELLOW

SEQUENCE OF OEPRATIONS
CO. RD. 49

STAGE 1:
CONSTRUCT OVERPASS & APPROACHES
CONSTRUCT NEW ALIGNMENT ONLY THROUGH CLASS 7 AGGREGATE
CONNECT NEW ALIGNMENT TO EXISTING UNDER TRAFFIC

STAGE 2:
SHIFT TRAFFIC ONTO NEW ALIGNMENT
FINISH LEFT SIDE OF NEW ALIGNMENT AT TIE-INS TO EXISTING
OBLITERATE OLD ROAD WHERE NECESSARY

STAGE 3:
PLACE SURFACE AND STRIPING

CO. RD. 49 STAGE 3 MAINTENANCE OF TRAFFIC

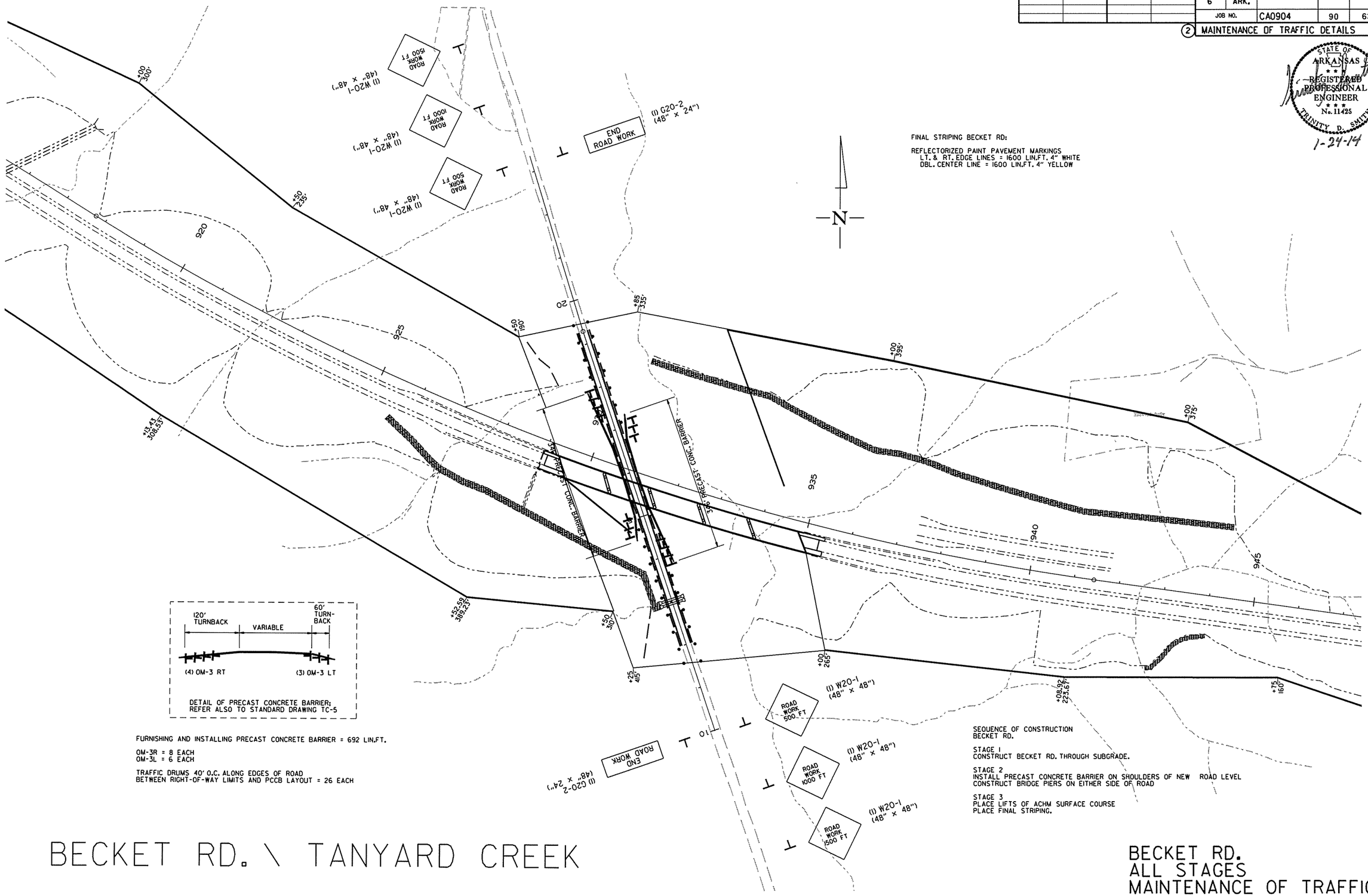
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(2) MAINTENANCE OF TRAFFIC DETAILS

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FINAL STRIPING BECKET RD:

REFLECTORIZED PAINT PAVEMENT MARKINGS
LT. & RT. EDGE LINES = 1600 LIN.FT. 4" WHITE
DBL. CENTER LINE = 1600 LIN.FT. 4" YELLOW

DETAIL OF PRECAST CONCRETE BARRIER:
REFER ALSO TO STANDARD DRAWING TC-5

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 692 LIN.FT.

OM-3R = 8 EACH
OM-3L = 6 EACH

TRAFFIC DRUMS 40' O.C. ALONG EDGES OF ROAD
BETWEEN RIGHT-OF-WAY LIMITS AND PCCB LAYOUT = 26 EACH

SEQUENCE OF CONSTRUCTION
BECKET RD.

STAGE 1
CONSTRUCT BECKET RD. THROUGH SUBGRADE.

STAGE 2
INSTALL PRECAST CONCRETE BARRIER ON SHOULDERS OF NEW ROAD LEVEL
CONSTRUCT BRIDGE PIERS ON EITHER SIDE OF ROAD

STAGE 3
PLACE LIFTS OF ACHM SURFACE COURSE
PLACE FINAL STRIPING.

BECKET RD. \ TANYARD CREEK

BECKET RD.
ALL STAGES
MAINTENANCE OF TRAFFIC

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(2) MAINTENANCE OF TRAFFIC DETAILS

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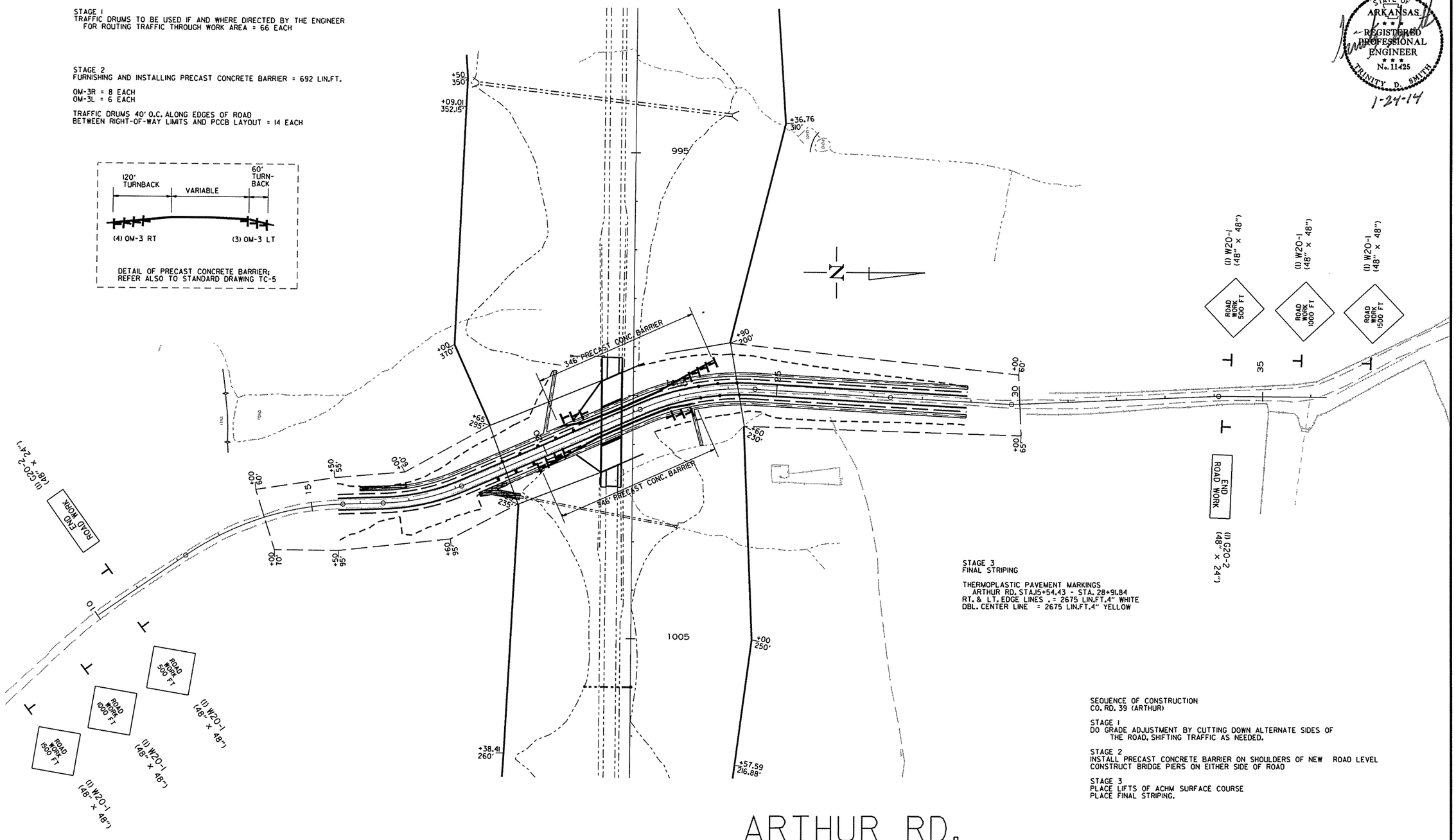
STAGE 1
TRAFFIC DRUMS TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER FOR ROUTING TRAFFIC THROUGH WORK AREA = 66 EACH

STAGE 2
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 692 LIN.FT.

OM-3R = 8 EACH
OM-3L = 6 EACH

TRAFFIC DRUMS 40' O.C. ALONG EDGES OF ROAD BETWEEN RIGHT-OF-WAY LIMITS AND PCCB LAYOUT = 14 EACH

DETAIL OF PRECAST CONCRETE BARRIER; REFER ALSO TO STANDARD DRAWING TC-5



STAGE 3
FINAL STRIPING

THERMOPLASTIC PAVEMENT MARKINGS
ARTHUR RD. STA.15+54.43 - STA. 28+91.84
RT. & LT. EDGE LINES .= 2675 LIN.FT.4" WHITE
DBL. CENTER LINE = 2675 LIN.FT.4" YELLOW

SEQUENCE OF CONSTRUCTION
CO. RD. 39 (ARTHUR)

STAGE 1
DO GRADE ADJUSTMENT BY CUTTING DOWN ALTERNATE SIDES OF THE ROAD, SHIFTING TRAFFIC AS NEEDED.

STAGE 2
INSTALL PRECAST CONCRETE BARRIER ON SHOULDERS OF NEW ROAD LEVEL
CONSTRUCT BRIDGE PIERS ON EITHER SIDE OF ROAD

STAGE 3
PLACE LIFTS OF ACHM SURFACE COURSE
PLACE FINAL STRIPING.

ARTHUR RD.

ARTHUR RD.
ALL STAGES
MAINTENANCE OF TRAFFIC

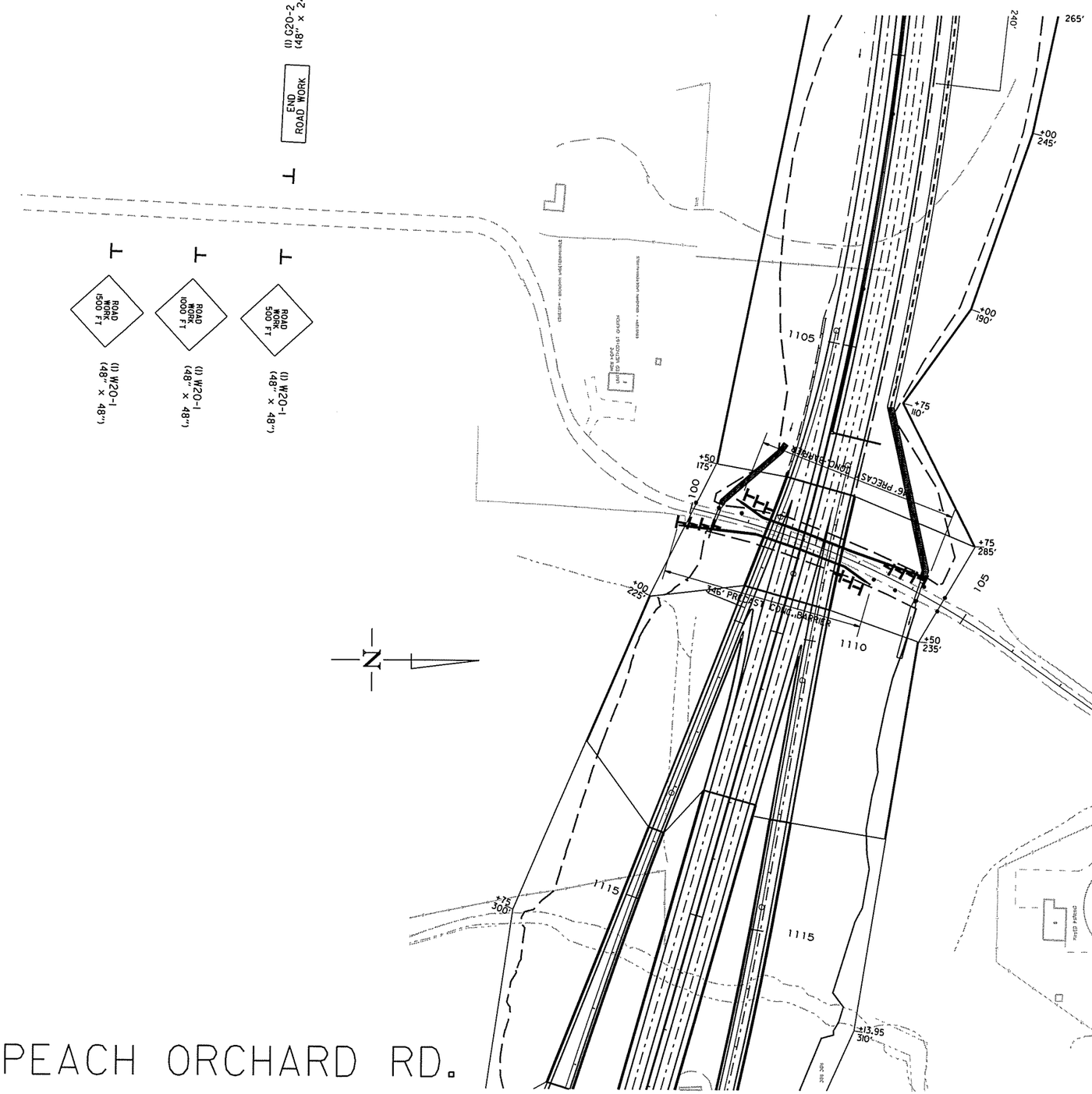
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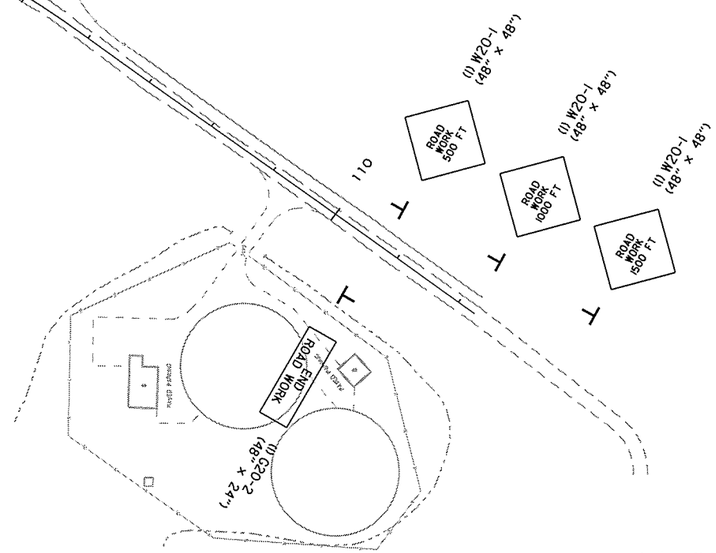
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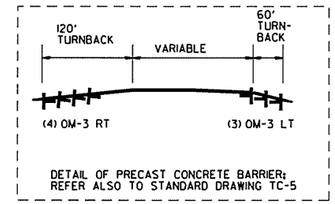
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(2) MAINTENANCE OF TRAFFIC DETAILS

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No. 11425
TRINITY D. SMITH
1-24-14







DETAIL OF PRECAST CONCRETE BARRIER; REFER ALSO TO STANDARD DRAWING TC-5

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 692 LIN.FT.

OM-3R = 8 EACH
OM-3L = 6 EACH

TRAFFIC DRUMS 40' O.C. ALONG EDGES OF ROAD BETWEEN RIGHT-OF-WAY LIMITS AND PCCB LAYOUT = 9 EACH

PEACH ORCHARD RD.

PEACH ORCHARD RD.
MAINTENANCE OF TRAFFIC
ALL STAGES

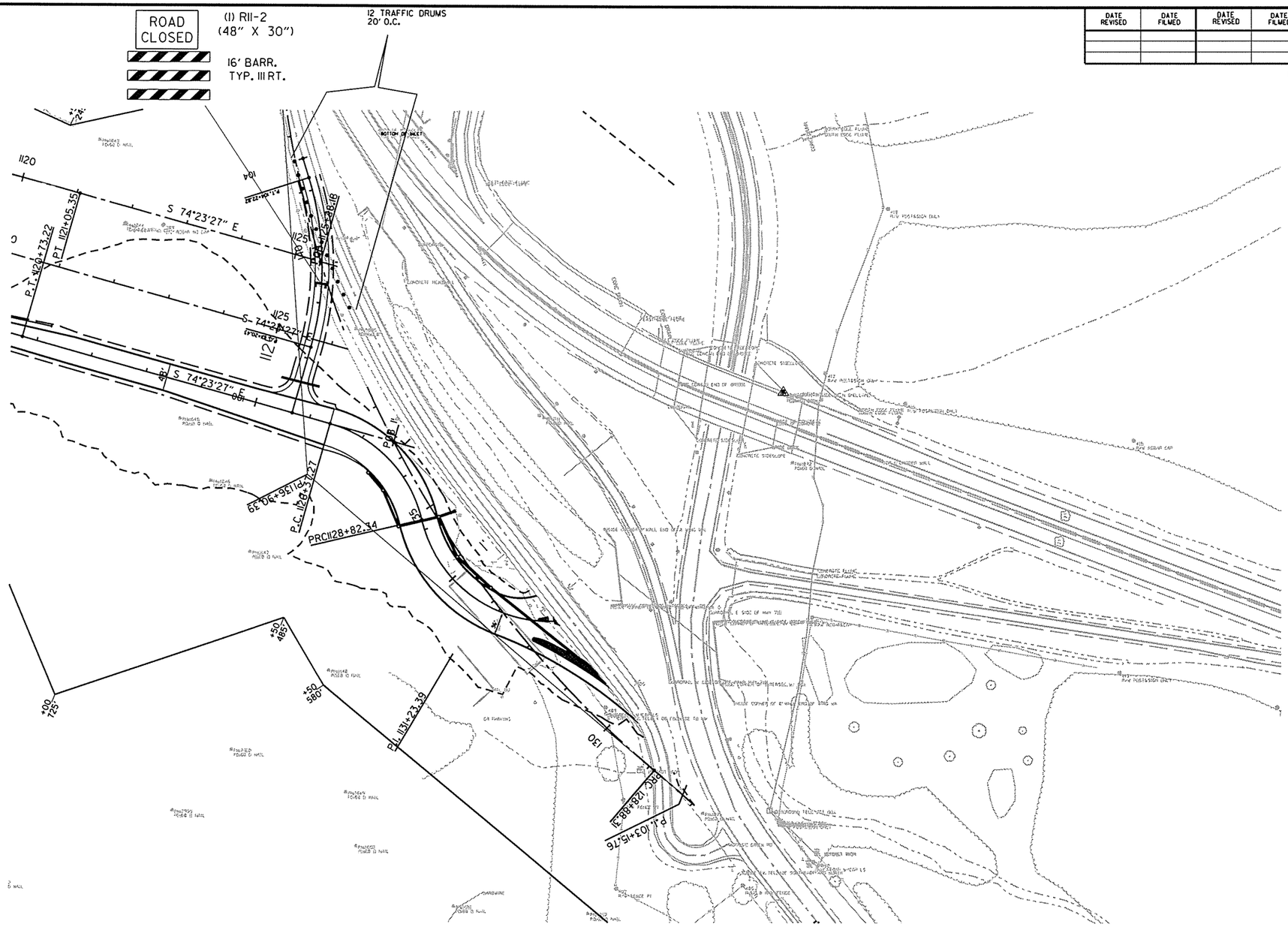
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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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TRINITY D. SMITH
1-24-14



N

STAGE 1:
ROUNDABOUT - CONSTRUCT PROPOSED REALIGNMENT OF MCKISSIC CREEK RD.

STAGE 2:
ROUNDABOUT - SHIFT TRAFFIC TO REALIGNED MCKISSIC CREEK ROAD. OBLITERATE EXISTING MCKISSIC CREEK ROAD. CONSTRUCT R.C. BOX CULVERT EXTENSION TO THE NORTH.

STAGE 3:
ROUNDABOUT - CONSTRUCT PROPOSED HWY. 71 SB OFF RAMP, HWY. 71B TO THE ROUNDABOUT, MILL AND INLAY PORTIONS OF HWY. 71 NB. ON AND OFF RAMPS, AND HWY 71 SB. ON RAMP. SHIFT HWY. 71 SB. OFF RAMP TRAFFIC TO NEW LOCATION. CONSTRUCT CONCRETE APRON WITHIN ROUNDABOUT. OBLITERATE EXISTING HWY. 71 SB. OFF RAMP.

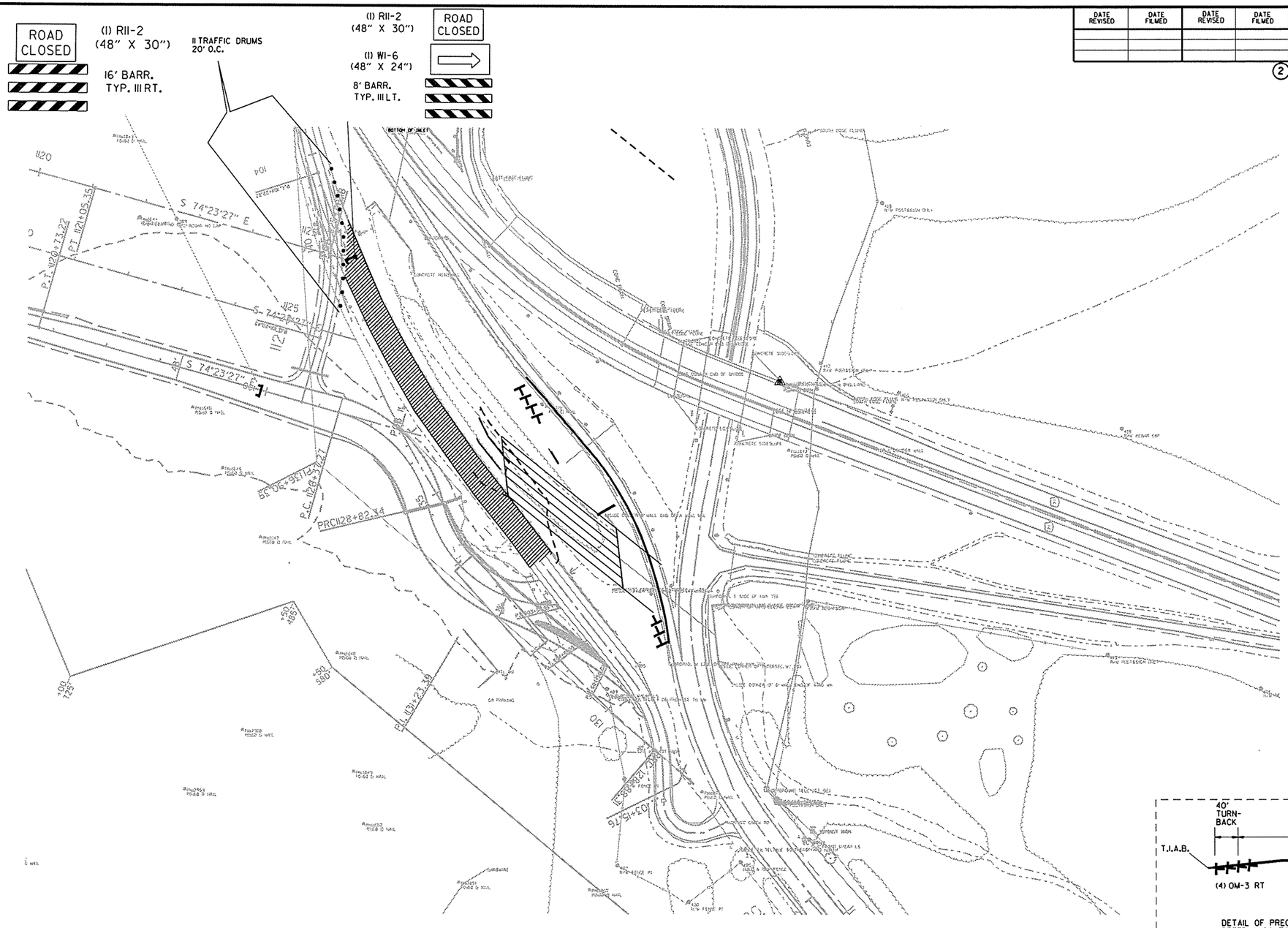
ROUNDABOUT CONSTRUCTION - STAGE 1 MAINTENANCE OF TRAFFIC

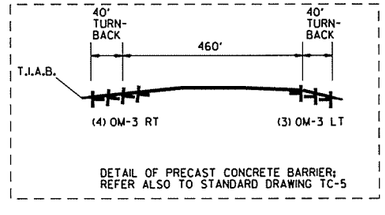
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(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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TRINITY D. SMITH
1-24-14





DETAIL OF PRECAST CONCRETE BARRIER; REFER ALSO TO STANDARD DRAWING TC-5

STAGE 1:
ROUNDABOUT - CONSTRUCT PROPOSED REALIGNMENT OF MCKISSIC CREEK RD.

STAGE 2:
ROUNDABOUT - SHIFT TRAFFIC TO REALIGNED MCKISSIC CREEK ROAD. OBLITERATE EXISTING MCKISSIC CREEK ROAD. CONSTRUCT R.C. BOX CULVERT EXTENSION TO THE NORTH.

STAGE 3:
ROUNDABOUT - CONSTRUCT PROPOSED HWY. 71SB OFF RAMP, HWY. 71B TO THE ROUNDABOUT, MILL AND INLAY PORTIONS OF HWY. 71NB. ON AND OFF RAMPS, AND HWY 71SB. ON RAMP. SHIFT HWY. 71SB. OFF RAMP TRAFFIC TO NEW LOCATION. CONSTRUCT CONCRETE APRON WITHIN ROUNDABOUT. OBLITERATE EXISTING HWY. 71SB. OFF RAMP.

FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 540 LIN.FT.

OM-3R = 4 EACH
OM-3L = 3 EACH

ROUNDABOUT CONSTRUCTION - STAGE 2 MAINTENANCE OF TRAFFIC

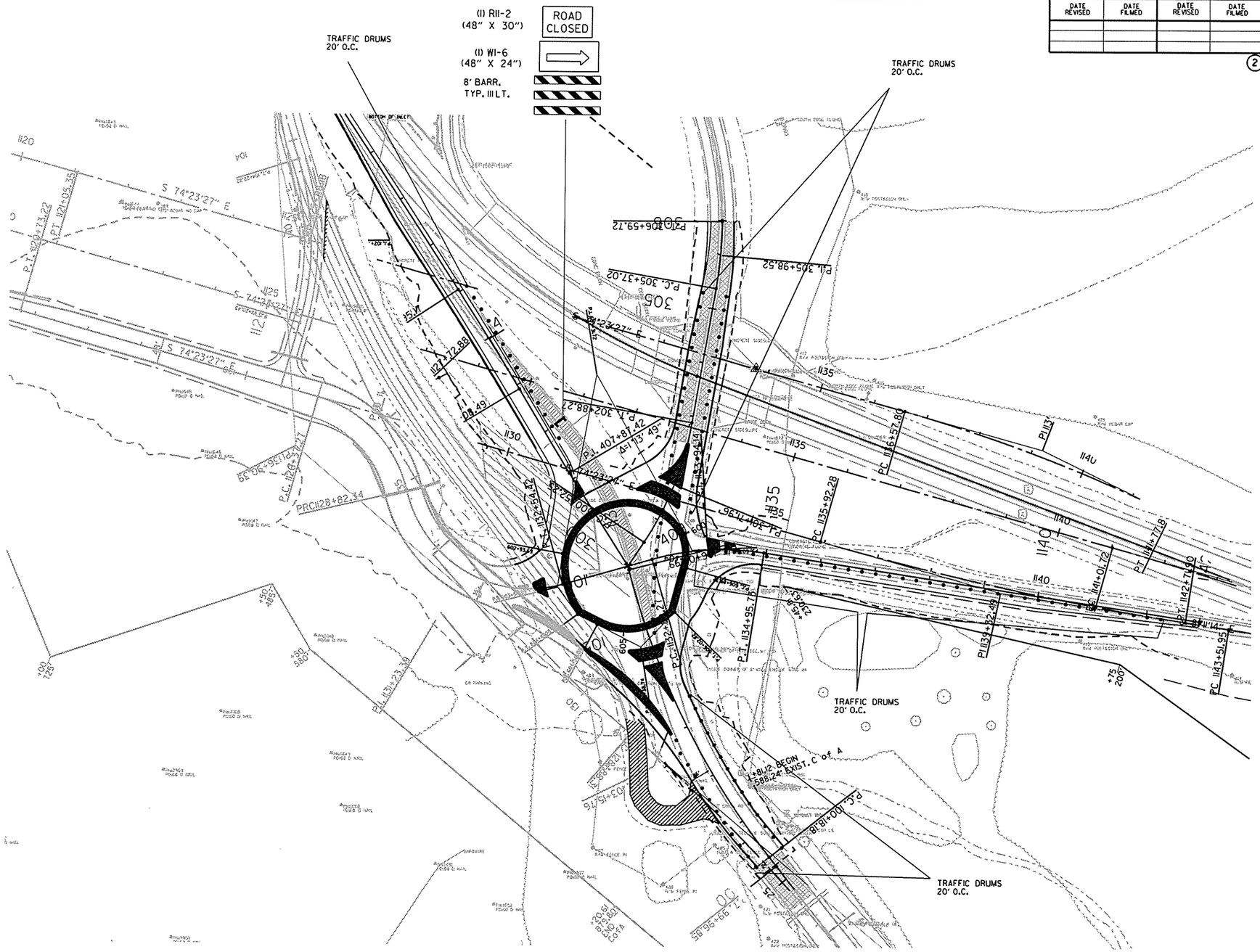
1/1/2014

RCA0904.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.		CA0904	95	636

(2) MAINTENANCE OF TRAFFIC DETAILS

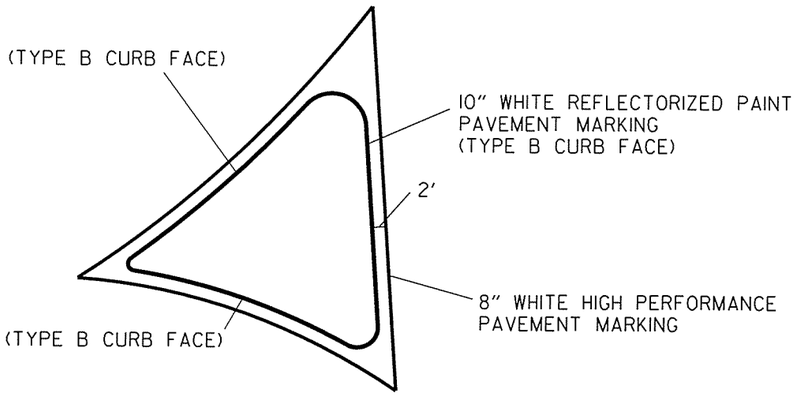
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



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.		CA0904	96	636

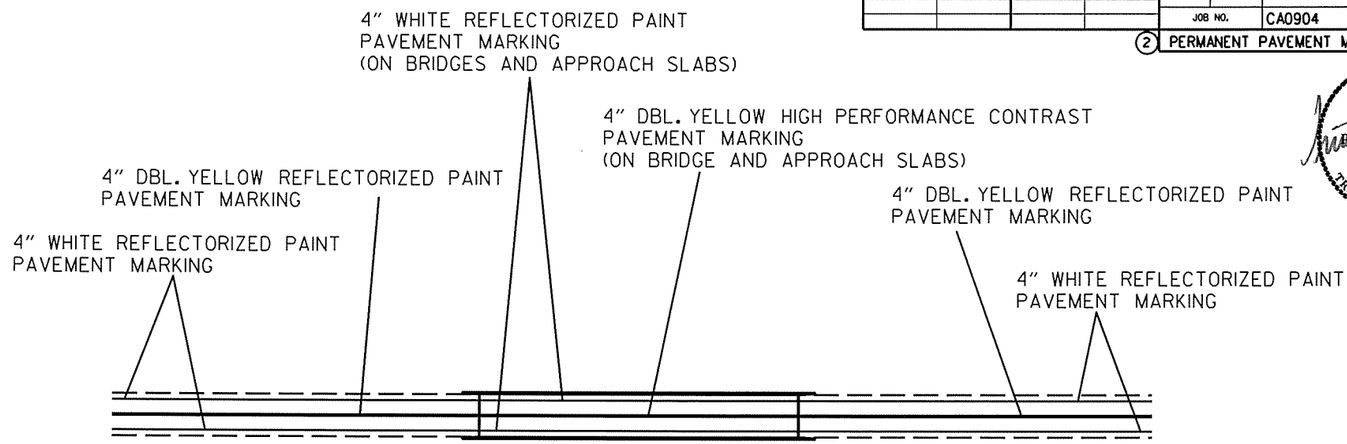
(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



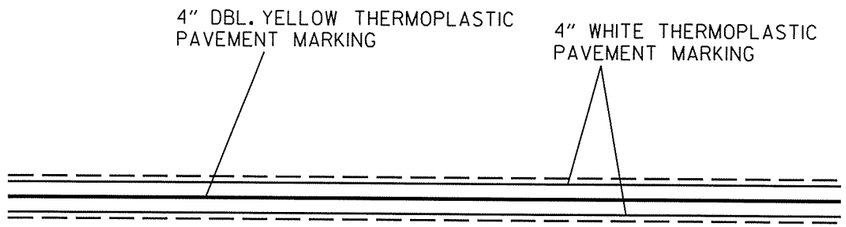
ISLAND STRIPING DETAIL

HWY. 72 (SOUTH) RAMP 3



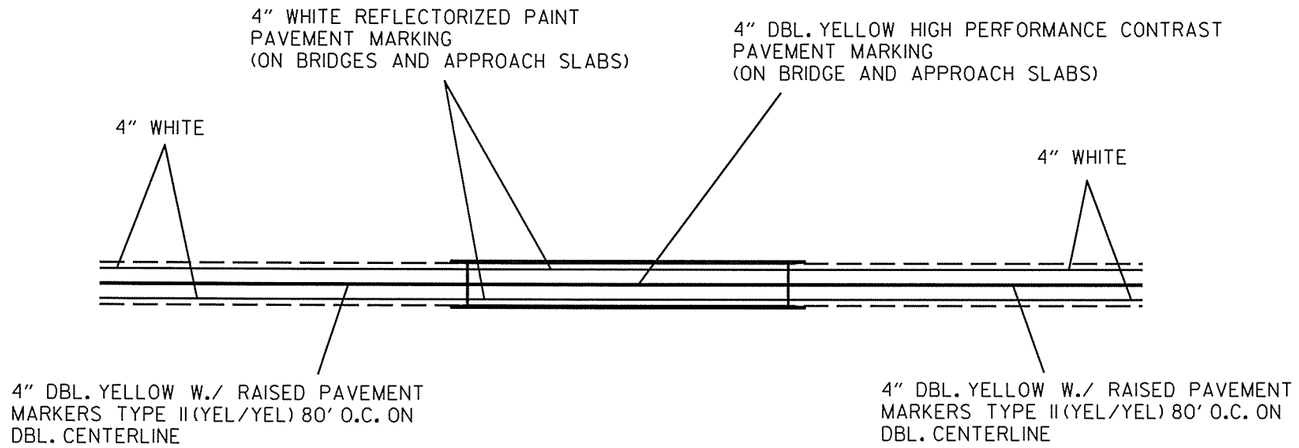
TYPICAL STRIPING DETAIL

CO. RD. 554 BECKETT ROAD
CO. RD. 453 CO. RD. 49



TYPICAL STRIPING DETAIL

ARTHUR ROAD (CO. RD. 39)



TYPICAL STRIPING DETAIL

HWY. 71 RIGHT MAIN LANES

1/23/2014

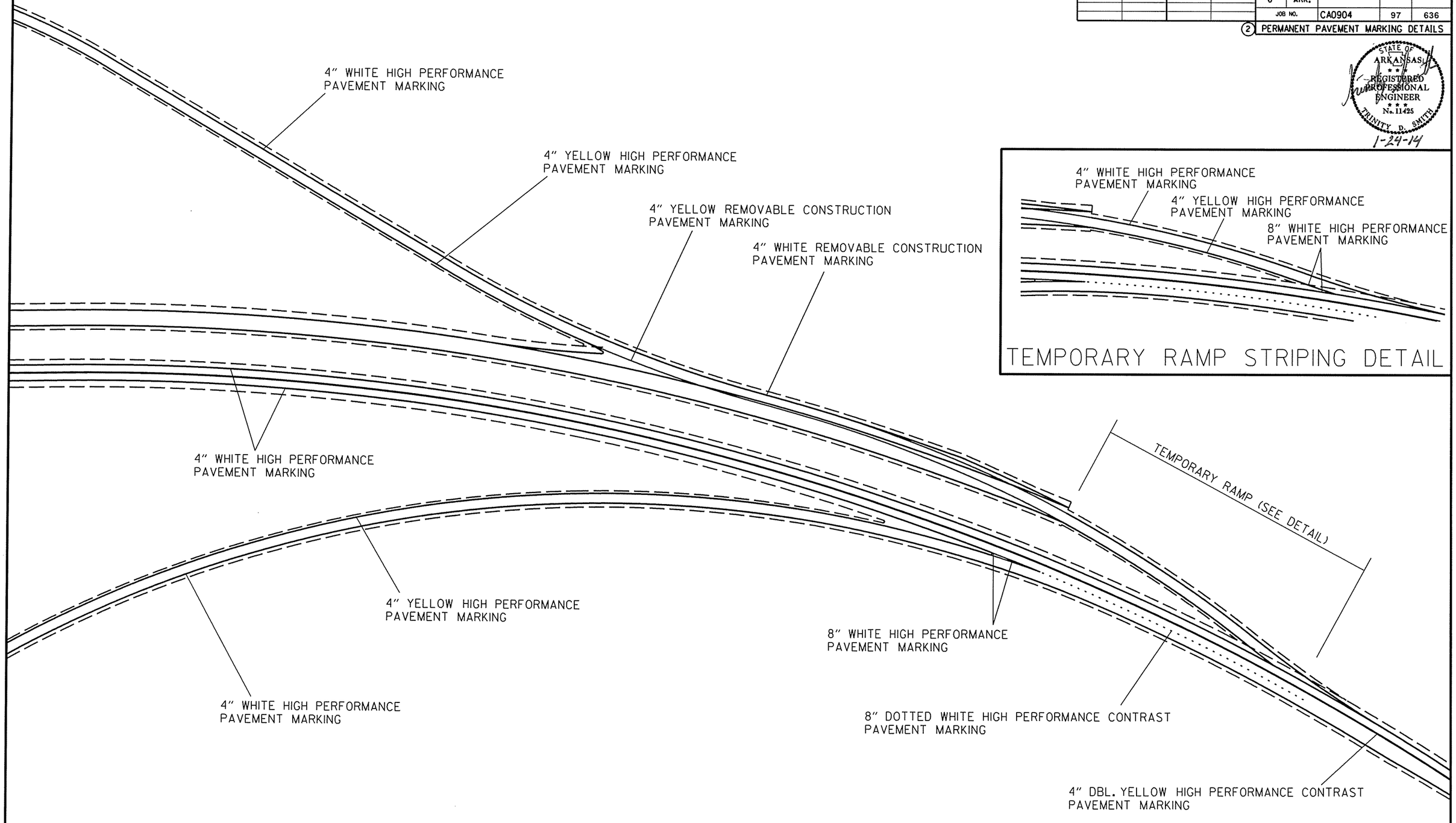
RCA0904.DGN

PERMANENT PAVEMENT MARKING 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.		CA0904	97	636

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



INTERCHANGE STRIPING DETAIL

TEMPORARY RAMP STRIPING DETAIL

1/23/2014

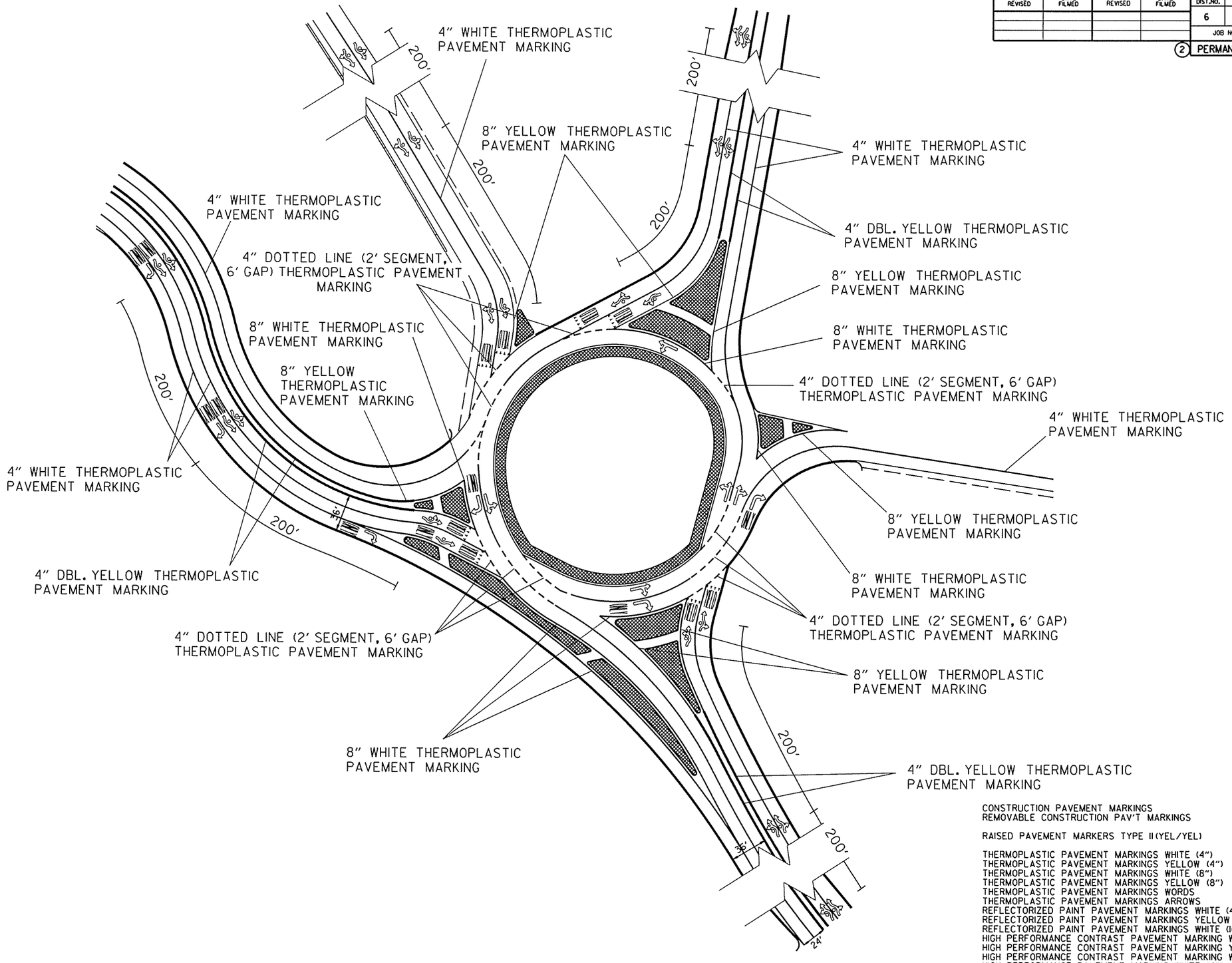
RCA0904.DGN

PERMANENT PAVEMENT MARKING 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.		CA0904	98	636

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-27-14



ROUNDABOUT STRIPING DETAIL

CONSTRUCTION PAVEMENT MARKINGS	13322 LIN. FT.
REMOVABLE CONSTRUCTION PAV'T MARKINGS	848 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)	424 EACH.
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")	9084 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")	9557 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS WHITE (8")	1393 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (8")	740 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS WORDS	8 LIN. FT.
THERMOPLASTIC PAVEMENT MARKINGS ARROWS	16 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (4")	14403 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS YELLOW (4")	9186 LIN. FT.
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (10").	196 LIN. FT.
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")	64544 LIN. FT.
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")	65206 LIN. FT.
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (8")	470 LIN. FT.
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")	588 LIN. FT.
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")	783 LIN. FT.

PERMANENT PAVEMENT MARKING DETAILS

1/27/2014

RCA0904.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.		CA0904	99	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	DETOUR	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)
											RIGHT	LEFT				
			LIN. FT. - EACH					NO.	SQ. FT.	EACH	LIN. FT.				EACH	
W20-1	ROAD WORK 1500 FT.	48"x48"	20	2		2	20	20	320.0							
W20-1	ROAD WORK 1000 FT.	48"x48"	18	2		2	18	18	288.0							
W20-1	ROAD WORK 500 FT.	48"x48"	18	2		2	18	18	288.0							
W20-1	ROAD WORK 1/2 MILE	48"x48"	2	2		2	2	2	32.0							
W20-1	ROAD WORK 1 MILE	48"x48"	2				2	2	32.0							
W20-1	ROAD WORK AHEAD	48"x48"	2				2	2	32.0							
G20-2	END ROAD WORK	48"x24"	22				22	22	176.0							
R11-2	ROAD CLOSED	48"x30"	8	8		1	8	8	80.0							
OM-3L	OBJECT MARKER	12"x36"	18	3			18	18	54.0							
OM-3R	OBJECT MARKER	12"x36"	24	4			24	24	72.0							
W1-6	LARGE ARROW	48"x24"		3		1	3	3	24.0							
R4-1	DO NOT PASS	24"x30"	2				2	2	10.0							
RSP-1	SHOULDER CLOSED	48"x30"	2				2	2	20.0							
R11-3A	ROAD CLOSED X.X MILES AHEAD/LOCAL TRAFFIC ONLY	60"x30"			2		2	2	25.0							
D3	FAUX RD.	36"x12"			6		6	6	18.0							
M3-1	NORTH	24"x12"			3		3	3	6.0							
M3-3	SOUTH	24"x12"			3		3	3	6.0							
M4-8	DETOUR	24"x12"			6		6	6	12.0							
M6-1	HORIZONTAL ARROW	21"x15"			4		4	4	8.8							
M6-3	VERTICAL ARROW	21"x15"			2		2	2	4.4							
	TRAFFIC DRUMS		176	31		118	176			176						
	TYPE III BARRICADE-RT. (8')		4	5		1	5				40					
	TYPE III BARRICADE-LT. (8')		5	4			5					40				
	TYPE III BARRICADE-RT. (16')		1	1			1				16					
	TYPE III BARRICADE-LT. (16')		1				1					16				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		2076				2076						2076			
	RELOCATING PRECAST CONCRETE BARRIER			540			540							540		
	TEMPORARY IMPACT ATTENUATION BARRIER			1			1								1	
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			1			1									1
TOTALS:								1508.2		176	56	56	2076	540	1	1

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKINGS						REFLECTORIZED PAINT PAVEMENT MARKINGS			HIGH PERFORMANCE CONTRAST PAVEMENT MARKING			HIGH PERFORMANCE PAVEMENT MARKING	
				TYPE II (YEL/YEL)	4"		8"		WORDS	ARROWS	4"		10"	4"		8"	4"	
					WHITE	YELLOW	WHITE	YELLOW			WHITE	YELLOW	WHITE	WHITE	YELLOW	WHITE	WHITE	YELLOW
	LIN. FT. - EACH	LIN. FT.	LIN. FT.	EACH	LIN. FT.				EACH		LIN. FT.			LIN. FT.			LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	13322	13322																
REMOVABLE CONSTRUCTION PAV'T MARKINGS	848		848															
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)	424			424														
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")	9084				9084													
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")	9557					9557												
THERMOPLASTIC PAVEMENT MARKINGS WHITE (8")	1393						1393											
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (8")	740							740										
THERMOPLASTIC PAVEMENT MARKINGS WORDS	8								8									
THERMOPLASTIC PAVEMENT MARKINGS ARROWS	16									16								
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (4")	14403										14403							
REFLECTORIZED PAINT PAVEMENT MARKINGS YELLOW (4")	9186											9186						
REFLECTORIZED PAINT PAVEMENT MARKINGS WHITE (10")	196												196					
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (4")	64544													64544				
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")	65206														65206			
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING WHITE (8")	470															470		
HIGH PERFORMANCE PAVEMENT MARKING WHITE (4")	588																588	
HIGH PERFORMANCE PAVEMENT MARKING YELLOW (4")	783																	783
TOTALS:		13322	848	424	9084	9557	1393	740	8	16	14403	9186	196	64544	65206	470	588	783

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

8/2/2013

RCA0904.DGN

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.		CA0904	100	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
821+00	847+00	HWY. 71 - MAIN LANES	26	26
849+00	855+00	HWY. 71 - MAIN LANES	6	6
858+00	919+00	HWY. 71 - MAIN LANES	61	61
921+00	959+00	HWY. 71 - MAIN LANES	38	38
962+00	965+00	HWY. 71 - MAIN LANES	3	3
967+00	1100+00	HWY. 71 - MAIN LANES	133	133
1115+00	1130+00	HWY. 71 - MAIN LANES	15	15
11+00	16+00	RELOCATED CO. RD. 554	5	5
20+00	22+00	RELOCATED CO. RD. 554	2	2
24+00	27+00	RELOCATED CO. RD. 554	3	3
30+00	39+00	RELOCATED CO. RD. 554	9	9
42+00	45+00	RELOCATED CO. RD. 554	3	3
101+00	103+00	CO. RD. 453	2	2
107+00	114+00	CO. RD. 453	7	7
10+00	14+00	CO. RD. 49	4	4
22+00	26+00	CO. RD. 49	4	4
27+00	28+00	CO. RD. 49	1	1
15+00	19+00	CO. RD. 39	4	4
24+00	29+00	CO. RD. 39	5	5
TOTALS:			331	331

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			5000.0	4444.4
TOTAL:				4444.4

NOTE: AVERAGE WIDTH = 8'-0"

*QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CONCRETE DITCH PAVING	FOUNDATIONS	BUILDINGS	SEPTIC SYSTEM
			SQ. YD.	SQ. YD.	EACH	EACH
839+78	839+87	HWY. 71 - RT.			1	
839+87	840+24	HWY. 71 - RT.			1	
857+40	858+10	HWY. 71 - LT.			1	
992+00	992+20	HWY. 71 - RT.			1	
819+03	819+28	HWY. 72S RAMP 3 - RT.	33			
1042+40		HWY. 71 - RT.			1	
1042+40		HWY. 71 - RT.				1
1045+15		HWY. 71 - RT.			1	
1045+15		HWY. 71 - RT.				1
1096+60		HWY. 71 - LT.		288		
1116+00		HWY. 71 - LT.			1	
1116+40		HWY. 71 - LT.			1	
TOTALS:			33	288	8	2

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
13+30	RELOCATED CO. RD. 554	1
TOTAL:		1

NOTE: QUANTITY SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

SIGNS AND DEVICES LEFT IN PLACE

SIGN NUMBER	DESCRIPTION	SIGN SIZE	MAXIMUM NUMBER REQUIRED	SIGNS LEFT IN PLACE		FURNISHING, INSTALLING, AND LEAVING IN PLACE PRECAST CONC. BARRIER	BARRICADES LEFT IN PLACE	
							RIGHT	LEFT
			LIN. FT. - EACH	NO.	SQ. FT.		LIN. FT.	
R11-2	ROAD CLOSED	48"x30"	1	1	10.0			
	FURNISHING, INSTALLING, AND LEAVING IN PLACE PRECAST CONCRETE BARRIER		2499			2499.0		
	TYPE III BARRICADE-RT. (16')		1	1			16	
	TYPE III BARRICADE-LT. (16')		1	1				16
TOTALS:					10.0	2499.0	16	16

NOTE: THIS IS A HIGH TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2003 EDITION.

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL													
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE 20"	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	DIVERSION DITCH	SLOPE DRAIN (E-12)		SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL	TRIANGULAR SILT DIKE
																	PIPE FOR SLOPE DRAINS	DUMPED RIPRAP				
											(E-1)	(E-5)	(E-6)	(E-7)	(E-11)	(E-8)			(E-14)			
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU.YD.	CU. YD.	LIN. FT.
ENTIRE	PROJECT	CLEARING AND GRUBBING											240		120492						4543	
ENTIRE	PROJECT	STAGE 1						492.06	492.06	10038.0	5679.0		729	775	23787	9958	3376	110			1784	
ENTIRE	PROJECT	STAGE 2						17.56	17.56	358.2	297.0		51								50	
ENTIRE	PROJECT	STAGE 3						1.16	1.16	23.7					425						16	
ENTIRE	PROJECT	HWY. 71	235.96	471.92	235.96	24067.9	235.96															
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			58.99	117.98	58.99	6017.0	58.99	127.70	127.70	2605.1	1494.0	1870	255	194	36176	2490	844	28	1000	1000	2683	1500
TOTALS:			294.95	589.90	294.95	30084.9	294.95	638.48	638.48	13025.0	7470.0	1870	1275	969	180880	12448	4220	138	1000	1000	9076	1500

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING.
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING.
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION
DROP INLET SILT FENCE.....25 LIN. FT./LOCATION

NOTE: THE TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION ON U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

*QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

8/2/2013

RCA0904.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2-19-14				6	ARK.			
				JOB NO.		CA0904	101	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
2-20-14

ROCK DITCH LINER, DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	LENGTH	WIDTH	ROCK DITCH LINER	DUMPED RIPRAP	DUMPED RIPRAP (GROUTED)	FILTER BLANKET
			LIN. FT.		TON	CU. YD.	CU. YD.	SQ. YD.
843+36	845+34	HWY. 71 - RT. OF R.M.L.	221	9	265			221
873+00	875+00	HWY. 71 - LT. OF L.M.L.	200	11	293			244
885+24	895+59	HWY. 71 - RT. OF R.M.L.	1058	11	1552			1293
910+50	913+84	HWY. 71 - RT. OF R.M.L.	378	9	454			378
925+49	932+40	HWY. 71 - RT. OF R.M.L.	757	14	1413			1178
930+55	944+33	HWY. 71 - LT. OF L.M.L.	1349	13	2338			1949
942+81	944+01	HWY. 71 - RT. OF R.M.L.	157	9	188			157
968+24	968+84	HWY. 71 - RT. OF R.M.L.	116	9	139			116
980+50	981+31	HWY. 71 - RT. OF R.M.L.	146	9	175			146
981+31	984+40	HWY. 71 - RT. OF R.M.L.	312	14	582			485
984+40	985+21	HWY. 71 - RT. OF R.M.L.	81	VAR.	256			213
985+21	990+43	HWY. 71 - RT. OF R.M.L.	529	24	1693			1411
1001+96	1002+10	HWY. 71 - RT. OF R.M.L.	67	12.67	113			94
1039+76	1040+63	HWY. 71 - RT. OF R.M.L.	195	9	234			195
1045+03	1046+81	HWY. 71 - RT. OF R.M.L.	217	9	260			217
1051+87	1053+00	HWY. 71 - LT. OF L.M.L.	130	9	156			130
1066+74	1067+14	HWY. 71 - RT. OF R.M.L.	50	9	60			50
1073+00	1074+23	HWY. 71 - LT. OF L.M.L.	182	9	218			182
1081+77	1083+13	HWY. 71 - LT. OF L.M.L.	213	9	256			213
1085+00		HWY. 71 - LT. OF L.M.L.	50	9	60			50
1085+79	1086+73	HWY. 71 - RT. OF R.M.L.	134	9	161			134
1105+76	1108+17	HWY. 71 - LT. OF L.M.L.	284	9	341			284
1106+66	1107+27	HWY. 71 - RT. OF R.M.L.	140	9	168			140
830+49	839+40	HWY. 72S RAMP 3 - LT.	868	15	1736			1447
16+00	17+00	CO. RD. 39 - LT.	96	9	115			96
18+40	19+00	CO. RD. 39 - RT.	60	9	72			60
* ENTIRE	PROJECT	TO BE USED IF AND WHERE			500	100	100	800
		DIRECTED BY THE ENGINEER						
TOTALS:					13798	100	100	11883

* QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

CULVERT CLEAN OUT

STATION	LOCATION	EACH
1133+76	HWY. 71	1
TOTAL:		1

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE A)	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.		SQ. YD.	M. GAL.
821+85	829+86	HWY. 71 - LT. OF L.M.L.	821.40	6		548	365	4.6
822+50	828+59	HWY. 71 - RT. OF R.M.L.	605.29	6		404	269	3.4
838+00		HWY. 71 - LT. OF L.M.L.	124.28	6		83	55	0.7
842+27	843+36	HWY. 71 - RT. OF R.M.L.	147.25	6		98	65	0.8
845+34	847+02	HWY. 71 - RT. OF R.M.L.	163.91	6		109	73	0.9
865+00		HWY. 71 - LT. OF CO. RD. 554	19.75	6		13	9	0.1
869+00	871+58	HWY. 71 - LT. OF L.M.L.	259.90	6		173	116	1.5
880+57	882+19	HWY. 71 - LT. OF L.M.L.	162.47	9		162	72	0.9
881+23	881+90	HWY. 71 - RT. OF R.M.L.	67.97	6		45	30	0.4
881+90	885+24	HWY. 71 - RT. OF R.M.L.	334.31	9		334	149	1.9
900+09	905+03	HWY. 71 - RT. OF R.M.L.	534.71	6		356	238	3.0
928+95		HWY. 71 - RT. OF R.M.L.	75.20	6		50	33	0.4
954+72	956+07	HWY. 71 - LT. OF L.M.L.	135.15	9		135	60	0.8
954+81	956+32	HWY. 71 - RT. OF R.M.L.	151.55	6		101	67	0.8
970+00		HWY. 71 - RT. OF R.M.L.	72.09	6		48	32	0.4
999+50	1000+81	HWY. 71 - RT. OF R.M.L.	133.45	6		89	59	0.7
1000+25	1001+00	HWY. 71 - LT. OF L.M.L.	78.15	6		52	35	0.4
1013+50		HWY. 71 - RT. OF R.M.L.	143.79	6		96	64	0.8
1027+75		HWY. 71 - RT. OF R.M.L.	20.00	6		13	9	0.1
1031+22	1031+49	HWY. 71 - RT. OF R.M.L.	183.00	6		122	81	1.0
1066+08	1066+96	HWY. 71 - LT. OF L.M.L.	89.00	6		59	40	0.5
1080+90	1085+79	HWY. 71 - RT. OF R.M.L.	489.00	9		489	217	2.7
1087+50	1106+66	HWY. 71 - RT. OF R.M.L.	1916.00	9		1916	852	10.7
1088+40	1105+80	HWY. 71 - LT. OF L.M.L.	1740.00	9		1740	773	9.7
1107+00		HWY. 71 - LT. OF L.M.L.	42.00	6		28	19	0.2
825+56	829+53	HWY. 72S RAMP 2 - LT.	459.94	6		307	204	2.6
826+30	829+20	HWY. 72S RAMP 2 - RT.	293.22	6		195	130	1.6
829+20	835+15	HWY. 72S RAMP 2 - RT.	581.28	9		581	258	3.3
831+00	835+15	HWY. 72S RAMP 2 - LT.	420.18	9		420	187	2.4
835+15	838+90	HWY. 72S RAMP 2 - RT.	411.58	6		274	183	2.3
835+15	836+02	HWY. 72S RAMP 2 - LT.	93.13	6		62	41	0.5
823+50	828+05	HWY. 72S RAMP 3 - RT.	446.60	9		447	198	2.5
823+50	829+05	HWY. 72S RAMP 3 - LT.	563.40	9		563	250	3.2
828+05	829+57	HWY. 72S RAMP 3 - RT.	165.35	6		110	73	0.9
829+05	830+49	HWY. 72S RAMP 3 - LT.	152.11	6		101	68	0.9
12+00	13+62	RELOCATED CO. RD. 554 - LT.	189.49	6		126	84	1.1
13+98	15+00	RELOCATED CO. RD. 554 - LT.	100.00	6		67	44	0.6
35+20	38+60	RELOCATED CO. RD. 554 - LT.	336.73	6		224	150	1.9
38+60	44+90	RELOCATED CO. RD. 554 - LT.	660.48	7		514	294	3.7
103+60	104+46	CO. RD. 453 - RT.	159.25	4		71	71	0.9
104+39	104+80	CO. RD. 453 - LT.	111.65	4		50	50	0.6
106+22	106+73	CO. RD. 453 - RT.	123.40	4		55	55	0.7
106+67	107+52	CO. RD. 453 - LT.	108.32	4		48	48	0.6
106+96	107+78	CO. RD. 453 - LT.	89.15	6		59	40	0.5
16+77	17+27	CO. RD. 49 - RT.	133.82	4		59	59	0.7
16+82	17+32	CO. RD. 49 - LT.	134.45	4		60	60	0.8
19+06	19+45	CO. RD. 49 - RT.	107.54	4		48	48	0.6
19+15	19+56	CO. RD. 49 - LT.	116.90	4		52	52	0.7
20+00	27+00	CO. RD. 49 - RT.	687.89	7		535	306	3.9
27+00	28+96	CO. RD. 49 - RT.	191.69	6		128	85	1.1
20+00	22+13	CO. RD. 49 - LT.	213.04	7		166	95	1.2
22+39	27+00	CO. RD. 49 - LT.	474.20	7		369	211	2.7
27+00	28+96	CO. RD. 49 - LT.	203.97	6		136	91	1.1
17+00	28+92	CO. RD. 39 - LT.	1198.16	7		932	533	6.7
19+00	28+92	CO. RD. 39 - RT.	977.85	7		761	435	5.5
*ENTIRE PROJECT		IF AND WHERE DIRECTED BY THE ENGINEE			1000	1000	500	6.3
TOTALS:					1000	15783	8685	109.5

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	ROCK FILL	* SOIL STABILIZATION	PRESLITTING
			CU. YD.			TON	SQ. YD.
821+85.00	1107+00.00	HWY. 71	2954631	1847643	473105		
1011+89.93	1020+72.00	HWY. 71 TEMP. CROSSOVER	511	13124			
1109+71.99	1132+56.30	HWY. 71 RAMP	490688	80281	47614		
823+41.78	841+46.05	HWY. 72S RAMP 2	16637	43013	5252		
818+58.66	834+80.02	HWY. 72S RAMP 3	98006	40364	8230		
838+24.49	848+09.13	HWY. 72S RAMP 3 TEMP. RAMP	1849	9797	1657		
10+00.00	45+03.37	RELOCATED CO. RD. 554	16797	125619	16830		
102+00.00	113+00.00	CO. RD. 453	2543	9671			
12+00.00	19+28.97	BECKETT RD.	16441	429			
10+00.00	28+96.29	CO. RD. 49	101301	6291			
15+54.43	28+91.84	CO. RD. 39	31156	766			
15+54.43	28+91.84	EXISTING HWY. 71 NB. RAMPS	866	627			
15+54.43	28+91.84	EXISTING HWY. 71 SB. EXIT RAMP	46	22063			
15+54.43	28+91.84	HWY. 71 SB. ENTRANCE RAMP	742	5096			
15+54.43	28+91.84	WALTON BLVD.	646	1182			
15+54.43	28+91.84	MCKISSIC CREEK RD.	103707	649			
		OBLITERATION OF EXISTING MCKISSIC CREEK RD.	6415				
		OBLITERATION OF EXISTING HWY. 71 SB. OFF-RAMP	1492				
932+31.00	934+39.00	CHANNEL CHANGE	1200	1150			
972+06.00		CONST. PIPE OUTLET	2360				
993+98.00		CONST. BOX OUTLET	3725				
1107+41.85	1108+32.27	ROADWAY EXCAVATION - BRIDGE NO. 07277	980				
ENTIRE	PROJECT	APPROACHES	855	325			
* ENTIRE	PROJECT	TO BE USED IF AND WHERE				500	8500
		DIRECTED BY THE ENGINEER					
TOTALS:			3853594	2208090	552688	500	8500

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

8/2/2013

RCA0904.DGN

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.		CA0904	102	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	GUARDRAIL (TYPE C)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)	STD. SIGN OM4-3 RED DIAMOND REFLECTORIZED END OF ROAD MARKER	CHANNEL POST SIGN SUPPORT (TYPE C)
			LIN. FT.		EACH			SQ. FT.	EACH
852+47.00	852+72.00	HWY. 71 - RT.		25				6.75	3
926+00.08	929+17.61	HWY. 71 - LT. OF R.M.L.	250		1	1			
926+79.79	929+45.44	HWY. 71 - RT. OF R.M.L.	200		1	1			
934+95.08	937+87.69	HWY. 71 - LT. OF R.M.L.	225		1	1			
935+22.73	936+64.85	HWY. 71 - RT. OF R.M.L.	75		1	1			
996+48.00	999+41.71	HWY. 71 - LT. OF R.M.L.	225		1	1			
996+90.78	999+59.50	HWY. 71 - RT. OF R.M.L.	200		1	1			
1001+50.50	1004+19.22	HWY. 71 - LT. OF R.M.L.	200		1	1			
1001+68.29	1003+12.03	HWY. 71 - RT. OF R.M.L.	75		1	1			
1118+43.06	1119+96.21	HWY. 71 - RT. OF R.M.L.	200		1	1			
1118+43.06	1121+21.21	HWY. 71 - RT. OF R.M.L.	75		1	1			
103+21.41	104+15.16	CO. RD. 453 - RT.	75		1		1		
103+36.30	104+30.05	CO. RD. 453 - LT.	75		1		1		
106+81.95	107+75.70	CO. RD. 453 - RT.	75		1		1		
106+96.84	107+90.59	CO. RD. 453 - LT.	75		1		1		
16+08.15	17+01.90	CO. RD. 49 - RT.	75		1		1		
16+08.15	17+01.90	CO. RD. 49 - LT.	75		1		1		
19+34.80	20+28.55	CO. RD. 49 - RT.	75		1		1		
19+34.80	20+28.55	CO. RD. 49 - LT.	75		1		1		
TOTALS:			2325	25	18	10	8	6.75	3

CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")	TYPE E-1 (2' 0")
			LIN. FT.	LIN. FT.
1126+37	1132+26	HWY. 71 RAMP 1 - LT.	589	
1126+37	1132+26	HWY. 71 RAMP 1 - RT.	589	
100+18	104+93	HWY. 71B - LT.	475	
100+18	104+81	HWY. 71B - RT.	463	
201+01	202+52	HWY. 71 SB. ENTRANCE	151	
300+78	306+60	HWY. 71 NB. - LT.	582	
301+14	306+60	HWY. 71 NB. - RT.	546	
600+00	607+50	ROUNDABOUT		750
TOTALS:			3395	750

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND
			SQ.YD.
818+85	HWY. 72S RAMP 3	B	122
1131+82	HWY. 71 RAMP - MEDIAN	A	11
1132+12	HWY. 71 RAMP - MEDIAN	A	62
104+56	HWY. 71/ WALTON BLVD.	A	430
104+00	WALTON BLVD. - MEDIAN	A	121
104+50	WALTON BLVD. - MEDIAN	A	140
301+50	EXISTING HWY. 71 NB. RAMP - MEDIAN	A	182
302+00	EXISTING HWY. 71 NB. RAMP - MEDIAN	A	180
301+50	HWY. 71 SB. ON RAMP	A	63
302+00	HWY. 71 SB. ONRAMP	A	12
408+20	EXISTING HWY. 71 SB. EXIT RAMP	A	37
TOTAL:			1360

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
ENTIRE PROJECT	3	3
TOTALS:	3	3

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
929+60	HWY. 71 - BRIDGE END	1
999+72	HWY. 71 - BRIDGE END	1
104+30	CO. RD. 453 - BRIDGE END	1
19+20	CO. RD. 49 - BRIDGE END	1
1107+44	HWY. 71 - BRIDGE END	1
1113+89	HWY. 71 RAMP 1 - BRIDGE END	1
1133+77	BOX CULVERT	1
TOTAL:		7

NOTE: SHOWN FOR INFORMATION ONLY. BENCH MARKS SHALL BE FURNISHED AND PLACED BY STATE FORCES.

CONCRETE BARRIER WALL

STATION	STATION	LOCATION	CONCRETE BARRIER WALL (SIDE TYPE A)	TEXTURED COATING FINISH	PIER PROTECTION (TYPE A)
			LIN. FT.	SQ. YD.	LIN. FT.
821+51	821+95	HWY. 71 - LT.			45
821+51	821+95	HWY. 71 - RT.			45
104+36	106+76	FAUX. RD.	480	414	
17+35	19+45	CO. RD. 49	420	362	
1109+49	1113+78	HWY. 71 - RAMP 1	429	370	
TOTALS:			1329	1146	90

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	WIRE FENCE (TYPE C)	WIRE FENCE (TYPE D)	* 16'-0" GATES
			LIN. FT.			EACH
820+83	881+32	HWY. 71 - LT. OF L.M.L.	6609			
881+66	905+02	HWY. 71 - LT. OF L.M.L.	2583			2
905+24	917+00	HWY. 71 - LT. OF L.M.L.	1391			1
916+88	929+31	HWY. 71 - LT. OF L.M.L.	1374			1
932+00	955+26	HWY. 71 - LT. OF L.M.L.	3069			
955+57	981+34	HWY. 71 - LT. OF L.M.L.	2703			2
981+53	994+12	HWY. 71 - LT. OF L.M.L.	1610			1
994+32	999+53	HWY. 71 - LT. OF L.M.L.	767			1
1000+60	1021+10	HWY. 71 - LT. OF L.M.L.	2447			
824+52	882+75	HWY. 71 - RT. OF R.M.L.	6103			1
882+80	905+02	HWY. 71 - RT. OF R.M.L.	2333			
905+24	913+87	HWY. 71 - RT. OF R.M.L.	906			1
914+24	931+51	HWY. 71 - RT. OF R.M.L.	2158			1
935+10	955+42	HWY. 71 - RT. OF R.M.L.	2449			2
955+73	984+84	HWY. 71 - RT. OF R.M.L.	3510			
985+23	993+49	HWY. 71 - RT. OF R.M.L.	977			1
993+70	1000+64	HWY. 71 - RT. OF R.M.L.	964			1
1001+57	1020+36	HWY. 71 - RT. OF R.M.L.	2031			1
9+00	12+63	RELOCATED CO. RD. 554 - LT.		388		
9+20	12+10	RELOCATED CO. RD. 554 - LT.			290	
13+98	15+89	RELOCATED CO. RD. 554 - LT.		186		
43+10	44+60	RELOCATED CO. RD. 554 - RT.			150	
100+75	103+60	CO. RD. 453 - LT.			370	
108+10	111+85	CO. RD. 453 - LT.			375	
113+00	114+00	CO. RD. 453 - LT.			32	
9+05	15+78	CO. RD. 49 - RT.		680		1
20+07	30+40	CO. RD. 49 - RT.		960		
24+35	30+00	CO. RD. 39 - RT.			620	
TOTALS:			43984	2214	1837	17

* DENOTES ALTERNATE BID ITEM.

IMPACT ATTENUATION BARRIER

STATION	LOCATION	TYPE A
		EACH
821+50.66	HWY. 71	1
821+95.16	HWY. 71	1
882+03.91	HWY. 71	1
882+13.91	HWY. 71	1
955+44.02	HWY. 71	1
955+54.02	HWY. 71	1
TOTAL:		6

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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.		CA0904	103	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER	APPROACH SLABS	REINFORCING STEEL RDWY. (GR 60)	AGGREGATE BASE CRS. (CLASS 7)	DROP INLET (TYPE N-2)	DROP INLET (TYPE N-3)	CONCRETE SPILLWAY (TYPE A)	12" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERT (16 GAUGE)
			CU. YD.	CU. YD.	POUND	TON	EACH			LIN. FT.
928+96.79	929+31.73	HWY. 71 - LT. OF R.M.L.	10.70		603			1		
928+96.95	929+53.86	HWY. 71 - RT. OF R.M.L.	28.60		1607					
929+05.90	929+42.13	HWY. 71 - R.M.L.		53.90	6008	27.1				
934+85.05	935+43.65	HWY. 71 - LT. OF R.M.L.	18.50		1031					
934+95.53	935+31.77	HWY. 71 - R.M.L.		53.90	6008	27.1				
935+07.37	935+43.50	HWY. 71 - RT. OF R.M.L.	17.70		1015					
999+21.79	999+67.58	HWY. 71 - RT. OF R.M.L.	22.76		1266			1	1	60
999+22.02	999+60.02	HWY. 71 - R.M.L.		55.00	5965	28.5				
999+22.04	999+53.34	HWY. 71 - LT. OF R.M.L.	9.66		535					
1001+41.53	1001+88.21	HWY. 71 - LT. OF R.M.L.	14.80		809					
1001+48.20	1001+86.20	HWY. 71 - R.M.L.		55.00	5965	28.5				
1001+55.77	1001+87.96	HWY. 71 - RT. OF R.M.L.	15.67		881					
1107+05.75	1107+43.06	HWY. 71 - RT. OF R.M.L.	8.25		623					
1107+05.75	1107+43.06	HWY. 71 - R.M.L.		81.10	9190	34.8				
1109+39.23	1109+60.22	HWY. 71 - R.M.L.		65.20	7490	42.7				
1109+39.23	1109+60.22	HWY. 71 - RT. OF R.M.L.	7.10		700					
1113+64.66	1113+87.94	HWY. 71 - LT. OF R.M.L.	5.40		530					
1113+64.66	1113+87.94	HWY. 71 - RT. OF R.M.L.	7.20		680					
1113+64.66	1113+87.94	HWY. 71 - R.M.L.		33.00	3790	21.5				
1118+43.06	1118+79.47	HWY. 71 - R.M.L.		69.86	8040	42.5				
1118+43.06	1118+79.47	HWY. 71 - LT. OF R.M.L.	5.40		530					
1118+43.06	1118+79.47	HWY. 71 - RT. OF R.M.L.	7.20		680					
103+94.42	104+29.55	CO. RD. 453 - RT.	4.52		404		1		1	30
104+09.31	104+40.18	CO. RD. 453 - LT.	4.52		404		1		1	30
106+71.82	107+02.69	CO. RD. 453 - RT.	4.52		404					
106+82.45	107+17.58	CO. RD. 453 - LT.	4.52		404					
16+82.30	17+12.30	CO. RD. 49 - RT.	4.15		361					
16+82.30	17+12.30	CO. RD. 49 - LT.	4.15		361					
19+24.40	19+54.40	CO. RD. 49 - RT.	4.15		361		1		1	40
19+24.40	19+54.40	CO. RD. 49 - LT.	4.15		361		1		1	40
TOTALS:			213.62	466.96	67006	252.7	4	2	5	200

RETAINING WALLS

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALL	TEXTURED COATING FINISH
			CU. YD.	CU. YD.	SQ. FT.	SQ. YD.
0+00	0+62	CO. RD. 453 - WALL A	323	558	990	78
0+62	1+22	CO. RD. 453 - WALL B	480	1169	1343	124
1+22	1+64	CO. RD. 453 - WALL C	170	297	627	49
0+00	0+62	CO. RD. 453 - WALL D	303	461	940	62
0+62	1+22	CO. RD. 453 - WALL E	545	1114	1278	110
1+22	1+64	CO. RD. 453 - WALL F	209	298	626	46
0+00	0+52	CO. RD. 49 - WALL A	307	476	787	60
0+52	1+02	CO. RD. 49 - WALL B	496	1156	1173	104
1+02	1+55	CO. RD. 49 - WALL C	236	415	750	62
0+00	0+45	CO. RD. 49 - WALL D	191	292	616	49
0+45	0+95	CO. RD. 49 - WALL E	367	818	979	90
0+95	1+32	CO. RD. 49 - WALL F	153	229	486	37
TOTALS:			3780	7283	10595	871

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	500
ENGINEER	
TOTAL:	500

NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

8/2/2013

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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.		CA0904	104	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	24"	36"	42"	48"	54"	36"X23"	51"X31"	(CLASS IV) 54"	(CLASS V) 24"	30"	36"	42"	48"	54"	(CLASS SPECIAL) 36"	42"	48"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	36"	42"	48"	54"	36"X23"	51"X31"	DROP INLETS TYPE MO	RM	ST	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.																		EACH									EACH				LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
829+03	HWY. 71 - 48" CROSS DRAIN														282										2														
833+00	HWY. 71 - RM DROP INLET IN MEDIAN		88																	1									1									58	0.73	FES-1, FES-2, PCC-1
838+00	HWY. 71 - RM DROP INLET IN MEDIAN		102																	1									1									8	0.10	FES-1, FES-2, FPC-9D, PCC-1
838+20	HWY. 71 - DBL. 42" CROSS DRAIN													1036										4													8	0.10	FES-1, FES-2, FPC-9D, PCC-1
842+27	HWY. 71 - RM DROP INLET IN MEDIAN		100																	1									1									50	0.63	FES-1, FES-2, PCC-1
842+84	HWY. 71 - DBL. 42" CROSS DRAIN													864										4													8	0.10	FES-1, FES-2, FPC-9D, PCC-1
847+00	HWY. 71 - RM DROP INLET IN MEDIAN		98																	1									1									50	0.63	FES-1, FES-2, PCC-1
851+11	HWY. 71 - 48" CROSS DRAIN														414										2													8	0.10	FES-1, FES-2, FPC-9D, PCC-1
856+00	HWY. 71 - RM DROP INLET IN MEDIAN		88																	1									1									58	0.73	FES-1, FES-2, PCC-1
861+30	HWY. 71 - DBL. 42" CROSS DRAIN																	1136						4													8	0.10	FES-1, FES-2, FPC-9D, PCC-1
865+00	HWY. 71 - RM DROP INLET IN MEDIAN		152																	1									1									50	0.63	FES-1, FES-2, PCC-1
871+62	HWY. 71 - RM DROP INLET IN MEDIAN				132							242				162					1		1		1				1									8	0.10	FES-1, FES-2, FPC-9D, PCC-1
877+23	HWY. 71 - 42" CROSS DRAIN				160																			2													71	0.89	FES-1, FES-2, FPC-9D, PCC-1
881+25	HWY. 71 - RM DROP INLET IN MEDIAN		86																	1									1									46	0.58	FES-1, FES-2, PCC-1
895+55	HWY. 71 - 48" CROSS DRAIN																	336							2													8	0.10	FES-1, FES-2, FPC-9D, PCC-1
905+13	HWY. 71 - 6'X5' R.C.B. CROSS DRAIN																															6	5	420	536.14	43988	115	58	0.73	FES-1, FES-2, PCC-1
915+65	HWY. 71 - DBL. 6'X5' R.C.B. CROSS DRAIN																															6	5	477	968.46	103246	199	24	0.30	RCB-1, RCB-2, R-230X-1, R-200X-X1, R-200X-X4, W-X30, W-X303-1, W-X003-1, SPECIAL DETAILS (SHEET NOS.
928+95	HWY. 71 - TYPE N-2 DROP INLET LT. OF R.M.L.	48																		1																	5	0.06	FES-1, FES-2, PCC-1
956+50	HWY. 71 - RM DROP INLET IN MEDIAN		150																	1									1									8	0.10	FES-1, FES-2, FPC-9D, PCC-1
970+00	HWY. 71 - RM DROP INLET IN MEDIAN		88																	1									1									8	0.10	FES-1, FES-2, FPC-9D, PCC-1
972+06	HWY. 71 - DBL. 42" CROSS DRAIN													600										4													50	0.63	FES-1, FES-2, PCC-1
982+70	HWY. 71 - DBL. 5'X5' R.C.B. CROSS DRAIN																															5	5	481	697.05	84047	157	24	0.30	RCB-1, RCB-2, R-245X-1, R-200X-X1, W-X45, W-X453-1, W-X003-1, SPECIAL DETAILS (SHEET NOS. 28-31)
989+84	HWY. 71 - 48" CROSS DRAIN																	482							2													58	0.73	FES-1, FES-2, PCC-1
993+98	HWY. 71 - 5'X5' R.C.B. CROSS DRAIN																															5	5	529	551.51	47070	115	18	0.23	RCB-1, RCB-2, R-100X-X1, W-X003-1, SPECIAL DETAILS (SHEET NOS. 28-31)
1002+51	HWY. 71 - 36" CROSS DRAIN												314									2															34	0.43	FES-1, FES-2, PCC-1
1006+00	HWY. 71 - RM DROP INLET IN MEDIAN		90																	1									1									8	0.10	FES-1, FES-2, FPC-9D, PCC-1
1013+50	HWY. 71 - RM DROP INLET IN MEDIAN		90																	1									1									8	0.10	FES-1, FES-2, FPC-9D, PCC-1
1016+32	HWY. 71 - 36" CROSS DRAIN																542						2															34	0.43	FES-1, FES-2, PCC-1
1020+90	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.										350									2										1								16	0.20	FES-1, FES-2, FPC-9S, PCC-1
1024+75	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	298																												1										FPC-9S, PCC-1
1027+75	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		68																	1										1								8	0.10	FES-1, FES-2, FPC-9S, PCC-1
1030+25	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	98																												1										FPC-9S, PCC-1
1031+01	HWY. 71 - DBL. 6'X5' R.C.B. CROSS DRAIN																															6	5	517	944.24	66780	215	24	0.30	RCB-1, RCB-2, R-230X-1, R-200X-X1, R-200X-X4, W-X30, W-X303-1, W-X003-1, SPECIAL DETAIL (SHEET NOS. 28-
1031+25	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		60																	1										1								8	0.10	FES-1, FES-2, FPC-9S, PCC-1
1042+57	HWY. 71 - DBL. 6'X5' R.C.B. CROSS DRAIN																															6	5	530	941.75	105776	220	24	0.30	RCB-1, RCB-2, R-230X-1, R-200X-X1, R-200X-X4, W-X30, W-X303-1, W-X003-1, SPECIAL DETAILS (SHEET NOS.
1079+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	298																												1										FPC-9S, PCC-1
1082+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	298																												1										FPC-9S, PCC-1
1085+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	16																		1										1								5	0.06	FES-1, FES-2, FPC-9S, PCC-1
1087+30	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	168																												1										FPC-9S, PCC-1
1089+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.	298																												1										FPC-9S, PCC-1
1092+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		298																											1										FPC-9S, PCC-1
1095+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		298																											1										FPC-9S, PCC-1
1098+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		298																											1										FPC-9S, PCC-1
1101+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		298																											1										FPC-9S, PCC-1
1104+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		298																											1										FPC-9S, PCC-1
1107+00	HWY. 71 - ST DROP INLET IN LT. OF R.M.L.		10																											1										FPC-9S, PCC-1
1108+35	HWY. 71 - RT. (UNDER PEACH ORCHARD RD.					28														1										1								8	0.10	FES-1, FES-2, FPC-9S, PCC-1
1108+70	HWY. 71 - LT. (UNDER PEACH ORCHARD RD.						36																		2													29	0.37	FES-1, FES-2, PCC-1
827+87	HWY. 72S RAMP 2 - 30" CROSS DRAIN																									2												35	0.44	FES-1, FES-2, PCC-1
836+00	HWY. 72S RAMP 2 - 24" CROSS DRAIN		86										380									2																26	0.33	FES-1, FES-2, PCC-1
830+31	HWY. 72S RAMP 3 - 54" CROSS DRAIN									210										2																	16	0.20	FES-1, FES-2, PCC-1
13+34	RELOCATED CO. RD. 554 - 24" CROSS DRAIN										234														2													70	0.88	FES-1, FES-2, PCC-1
13+00	BECKET RD. - DBL. 51"X31" CROSS DRAIN								88											2																	16	0.20	FES-1, FES-2, PCC-1
13+00	CO. RD. 49 - 36"X23" CROSS DRAIN							52																			4											50	0.63	FES-1, FES-2, PCC-1
28+00	CO. RD. 49 - 24" CROSS DRAIN		52																	2							2											26	0.33	FES-1, FES-2, PCC-1
1127+50	HWY. 71 RAMP - CONST. D.I. RT.	37																		2																	16	0.20	FES-1, FES-2, PCC-1
1128+00	HWY. 71 RAMP - CONST. D.I. RT.	65																											1										FPC-9E, FPC-9M, PCC-1
1128+84	HWY. 71 RAMP - CONST. D.I. RT.		70																										1										FPC-9E, FPC-9M, PCC-1
1128+84	HWY. 71 RAMP - CONST. D.I. LT.		58																										1										FPC-9E, FPC-9M, PCC-1
1129+74	HWY. 71 RAMP - CONST. D.I. LT.		73																	1									1										FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
1130+67	HWY. 71 RAMP - CONST. D.I. LT.		76																										1										FPC-9E, FPC-9M, PCC-1
1132+44	HWY. 71 RAMP - CONST. D.I. RT.		219																										1										FPC-9E, FPC-9M, PCC-1
101+60	WALTON BLVD. - CONST. D.I. RT.	62																											1										FPC-9E, FPC-9M, PCC-1
103+02	WALTON BLVD. - CONST. D.I. RT.			26																									1										FPC-9E, FPC-9M, PCC-1
103+02	WALTON BLVD. - EXTEND R.C. PIPE RT.			24																		1							1										FES-1, FES-2, FPC-9E, FPC-9M, PCC-1
103+70	WALTON BLVD. - CONST. D.I. RT.	135																																					PCC-1
302+19	EXIST. HWY. 71 NB. - CONST. D.I. RT.	57																											1										FPC-9E, FPC-9M, PCC-1
302+20	EXIST. HWY. 71 NB. - CONST. D.I. LT.	175																											1										FPC-9E, FPC-9M, PCC-1
302+84	EXIST. HWY. 71 NB. - CONST. D.I. RT.	65																											1										FPC-9E, FPC-9M, PCC-1
302+84	EXIST. HWY. 71 NB. - CONST. D.I. LT.	57																											1										FPC-9E, FPC-9M, PCC-1
304+76	EXIST. HWY. 71 NB. - CONST. D.I. RT.	188																											1										FPC-9E, FPC-9M, PCC-1
304+76	EXIST. HWY. 71 NB. - EXTEND R.C. PIPE LT.	2																											1										FPC-9E, FPC-9M, PCC-1
304+77	EXIST. HWY. 71 NB. - CONST. D.I. LT.	189																											1										FPC-9E, FPC-9M, PCC-1
1134+06	HWY. 71 SB. ON RAMP - CONST. D.I. RT.	44																											1										PCC-1
TOTALS:		2598	3394	50	292	28	36	52	88	210	584	622	314	2500	696	162	542	1136	818	2	23	3	5	19	10	5	2	4	17	12	16				4639.15	450907	1021	1171	14.73	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

8/2/2013

RCA0904.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.		CA0904	105	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CONCRETE BASE

STATION	STATION	LOCATION	LENGTH	PORTLAND CEMENT CONCRETE BASE		
				AVG. WID.	6" U.T.	11" U.T.
			FEET	FEET	SQ. YD.	SQ. YD.
100+18.00	104+62.20	WALTON BLVD. RT.	444.2	VAR.	272.9	186.6
304+35.00	306+59.00	EXISTING HWY. 71 NB. RAMP	224.0	VAR.	270.2	145.8
TOTALS:					543.1	332.4

STRUCTURES OVER 20' SPAN

STATION	DESCRIPTION	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL	
1133+76	HWY. 71 - SEXTUPLE 12'X9' R.C.B. CROSS DRAIN (45% LT. FWD. SW.) - RETAIN AND EXTEND 266' LT. & 25'-3" RT.	12	9	528	2667.10	348513	1080	24	0.30	RCB-1, RCB-2, RCB-3, SPECIAL DETAILS (SHEET NOS. 28-33)
TOTALS:					2667.10	348513	1080	24	0.30	

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

CONCRETE PAVEMENT

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		CEMENT STABILIZED CRUSHED STONE BASE COURSE (6" COMP'D. DEPTH)				ACHM SURFACE COURSE (3/8") 110 LBS. PER SQ. YD.			TACK COAT 0.03 GAL. PER SQ. YD.			PORTLAND CEMENT CONCRETE PAVEMENT	
				TON / STATION	TON	AVG. WID.	PROCESSING	CEMENT	AGGREGATE	AVG. WID.	SQ. YD.	PG 64-22	AVG. WID.	SQ. YD.	GAL.	AVG. WID.	11" U.T.
			FEET			FEET	SQ. YD.	TON	TON	FEET		TON	FEET			FEET	SQ. YD.
806+23.42	820+24.96	HWY. 71 LEFT MAIN LANES	1401.5			30.0	4671.7	98.1	1537.0	30.0	4671.7	256.9	26.0	4048.8	121.5	26.0	4048.8
820+24.96	824+05.14	HWY. 71 LEFT MAIN LANES	380.2			30.0	1267.3	26.6	416.9	30.0	1267.3	69.7	26.0	1098.4	33.0	26.0	1098.4
824+05.14	842+26.71	HWY. 71 LEFT MAIN LANES	1821.6			30.0	6072.0	127.5	1997.7	30.0	6072.0	334.0	26.0	5262.4	157.9	26.0	5262.4
808+81.65	820+24.96	HWY. 71 RIGHT MAIN LANES	1143.3			32.0	4065.1	85.4	1337.4	32.0	4065.1	223.6	28.0	3556.9	106.7	28.0	3556.9
820+24.96	824+05.14	HWY. 71 RIGHT MAIN LANES	380.2			32.0	1351.8	28.4	444.7	32.0	1351.8	74.3	28.0	1182.8	35.5	28.0	1182.8
824+05.14	859+95.68	HWY. 71 RIGHT MAIN LANES	3590.5			32.0	12766.2	268.1	4200.1	32.0	12766.2	702.1	28.0	11170.4	335.1	28.0	11170.4
859+95.68	915+13.17	HWY. 71 RIGHT MAIN LANES	5517.5			32.0	19617.8	412.0	6454.3	32.0	19617.8	1079.0	28.0	17165.6	515.0	28.0	17165.6
915+13.17	944+05.95	HWY. 71 RIGHT MAIN LANES	2892.8			32.0	10285.5	216.0	3383.9	32.0	10285.5	565.7	28.0	8999.8	270.0	28.0	8999.8
944+05.95	996+48.00	HWY. 71 RIGHT MAIN LANES	5242.1			32.0	18638.6	391.4	6132.1	32.0	18638.6	1025.1	28.0	16308.8	489.3	28.0	16308.8
996+48.00	1007+75.91	HWY. 71 RIGHT MAIN LANES	1127.9			32.0	4010.3	84.2	1319.4	32.0	4010.3	220.6	28.0	3509.0	105.3	28.0	3509.0
1007+75.91	1020+72.00	HWY. 71 RIGHT MAIN LANES	1296.1			32.0	4608.4	96.8	1516.2	32.0	4608.4	253.5	28.0	4032.3	121.0	28.0	4032.3
1020+72.00	1078+22.13	HWY. 71 RIGHT MAIN LANES	5750.1	169.0	9717.7	38.0	24278.2	509.8	7987.5	38.0	24278.2	1335.3	28.0	17889.2	536.7	34.0	21722.6
1078+82.66	1107+43.06	HWY. 71 RIGHT MAIN LANES	2860.4	169.0	4834.1	38.0	12077.2	253.6	3973.4	38.0	12077.2	664.2	34.0	10806.0	324.2	34.0	10806.0
1109+60.22	1113+64.66	HWY. 71 RIGHT MAIN LANES	404.4	16.0	64.7	47.5	2134.3	44.8	702.2	47.5	2134.3	117.4	43.5	1954.6	58.6	43.5	1954.6
600+00.00	607+49.65	ROUNDABOUT	749.7													10.0	833.0
823+41.78	824+92.26	HWY. 72S RAMP 2 - TURNOUT	150.5			VAR.	966.2	20.3	317.9	VAR.	966.2	53.1	VAR.	966.2	29.0	VAR.	884.1
824+92.26	841+46.05	HWY. 72S RAMP 2	1653.8			19.0	3491.4	73.3	1148.7	19.0	3491.4	192.0	19.0	3491.4	104.7	15.0	2756.3
818+58.66	820+01.00	HWY. 72S RAMP 3 - TURNOUT	142.3			VAR.	830.5	17.4	273.2	VAR.	830.5	45.7	VAR.	830.5	24.9	VAR.	754.4
820+01.00	834+44.02	HWY. 72S RAMP 3	1443.0			19.0	3046.3	64.0	1002.2	19.0	3046.3	167.5	19.0	3046.3	91.4	15.0	2405.0
100+18.00	104+62.20	WALTON BLVD. RT.	444.2														
304+35.00	306+59.00	EXISTING HWY. 71 NB. RAMP	224.0														
ENTIRE PROJECT		HWY. 71 - DROP INLET WIDENING		VAR.	2340.9	VAR.	27.2	0.6	8.9	VAR.	27.2	1.5	VAR.	27.2	0.8	VAR.	27.2
TOTALS:					16957.4		134206.0	2818.3	44153.7		134206.0	7381.2		115346.6	3460.6		118478.4

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (3/8").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

8/2/2013

RCA0904.DGN

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.		CA0904	106	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

PORTLAND CEMENT CONCRETE CORRUGATION

STATION	STATION	LOCATION	SQ. YDS.
834+54	834+85	HWY. 72S RAMP 3 GORE	38
TOTAL:			38

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
302+51	306+59	EXISTING HWY. 71 NB. ENTRANCE	24	687.00
302+51	306+59	EXISTING HWY. 71 NB. EXIT	24	705.00
TOTAL:				1392.00

NOTE: AVERAGE MILLING DEPTH 1".

JOINT SUPPORTS

STATION	LOCATION	AVG. WIDTH	CLASS S CONCRETE-ROADWAY
		FEET	CU. YD.
841+16.05	HWY. 72 (SOUTH) RAMP 2	15	1.67
841+31.05	HWY. 72 (SOUTH) RAMP 2	15	1.67
841+46.05	HWY. 72 (SOUTH) RAMP 2	15	1.67
834+14.02	HWY. 72 (SOUTH) RAMP 3	15	1.67
834+29.02	HWY. 72 (SOUTH) RAMP 3	15	1.67
834+44.02	HWY. 72 (SOUTH) RAMP 3	15	1.67
TOTAL:			10.02

RUMBLE STRIPS IN CONCRETE SHOULDERS

STATION	STATION	LOCATION	LIN.FT.
806+23	929+06	HWY. 71 - RT.	12283
935+39	999+97	HWY. 71 - RT.	6458
1001+86	1107+07	HWY. 71 - RT.	10521
1109+76	1113+51	HWY. 71 - RT.	375
806+23	929+06	HWY. 71 - LT.	12283
935+39	999+97	HWY. 71 - LT.	6458
1001+86	1107+07	HWY. 71 - LT.	10521
1109+76	1113+51	HWY. 71 - LT.	375
TOTAL:			59274

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	A.C.H.M. SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS		STANDARD DRAWINGS
							18"	24"	
			FEET	SQ. YD.	TON	TON	LIN. FT.		
11+15	LT.	RELOCATED CO. RD. 554	16	75.2	8.3	30.7	30		PCC-1, PCM-1, PCP-1, PCP-2
13+76	LT.	RELOCATED CO. RD. 554	16	102.4	11.3	41.8		40	PCC-1, PCM-1, PCP-1, PCP-2
15+90	LT.	RELOCATED CO. RD. 554	16	113.1	12.4	46.2			
22+25	LT.	CO. RD. 49	16	239.7	26.4	97.9		28	PCC-1, PCM-1, PCP-1, PCP-2
1125+67	LT.	HWY. 71 RAMP						28	PCC-1, PCM-1, PCP-1, PCP-2
* ENTIRE PROJECT TEMPORARY DRIVES						100.0			
TOTALS:				530.4	58.4	316.6	30	96	

BASIS OF ESTIMATE:
A.C.H.M. SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

* QUANTITY ESTIMATED
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
NOTE: FOR C.M. PIPE CULVERT INSTALLATIONS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			2000	9
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			2000	9

* NOTE: QUANTITIES ARE ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	LIN.FT.
1118+79	1126+37	HWY. 71 RAMP - RT.	758
1118+79	1125+16	HWY. 71 RAMP - LT.	637
1134+98	1142+99	EXISTING HWY. 71 SB. ON RAMP	801
TOTAL:			2196

* QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.
TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

8/2/2013

RCA0904.DGN

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.		CA0904	107	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				A.C.H.M. BASE COURSE (1 1/2")				A.C.H.M. BINDER COURSE (1")				A.C.H.M. SURFACE COURSE (1/2")				
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
HWY. 71 - LEFT MAIN LANES																						
806+23.42	842+26.71	HWY. 71 - L.M.L. - INSIDE SHOULDER	3603.3	104.00	3747.4													4.0	1601.5	220.0	176.2	
806+23.42	834+52.26	HWY. 71 - L.M.L. - OUTSIDE SHOULDER	2828.8	117.00	3309.7													10.0	3143.1	220.0	345.7	
834+52.26	834+84.64	HWY. 71 - L.M.L. - OUTSIDE SHOULDER GORE AREA	32.4	VAR.	38.5													VAR.	41.3	220.0	4.5	
834+53.80	842+26.71	HWY. 71 - L.M.L. - OUTSIDE SHOULDER DECEL. LANE	772.9	101.25	782.6													6.0	515.3	220.0	56.7	
824+05.14	827+55.14	HWY. 71 - L.M.L. - ADDITIONAL FOR SUPER. TRANSITION	350.0	61.80	216.3																	
827+55.14	842+26.71	HWY. 71 - L.M.L. - ADDITIONAL FOR SUPER.	1471.6	123.59	1818.8																	
HWY. 71 - RIGHT MAIN LANES																						
808+81.65	845+88.69	HWY. 71 - R.M.L. - INSIDE SHOULDER	3707.0	101.25	3753.3													6.0	2471.3	220.0	271.8	
847+37.64	928+96.81	HWY. 71 - R.M.L. - INSIDE SHOULDER	8159.2	101.25	8261.2													6.0	5439.5	220.0	598.3	
925+48.08	929+16.94	HWY. 71 - R.M.L. - INSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	368.9	VAR.	152.2													VAR.	163.1	220.0	17.9	
934+95.62	938+36.69	HWY. 71 - R.M.L. - INSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	341.1	VAR.	134.4													VAR.	144.0	220.0	15.8	
935+43.65	999+22.04	HWY. 71 - R.M.L. - INSIDE SHOULDER	6378.4	101.25	6458.1													6.0	4252.3	220.0	467.8	
995+99.00	999+41.10	HWY. 71 - R.M.L. - INSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	342.1	VAR.	132.0													VAR.	141.4	220.0	15.6	
1001+51.10	1004+65.22	HWY. 71 - R.M.L. - INSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	314.1	VAR.	114.9													VAR.	123.1	220.0	13.5	
1001+88.21	1012+93.27	HWY. 71 - R.M.L. - INSIDE SHOULDER	1105.1	101.25	1118.9													6.0	736.7	220.0	81.0	
1015+05.00	1020+72.00	HWY. 71 - R.M.L. - INSIDE SHOULDER	567.0	101.25	574.1													6.0	378.0	220.0	41.6	
1020+72.00	1078+22.13	HWY. 71 - R.M.L. - INSIDE SHOULDER	5750.1	52.00	2990.1																	
1078+82.66	1107+43.00	HWY. 71 - R.M.L. - INSIDE SHOULDER	2860.3	52.00	1487.4																	
1109+60.00	1113+64.66	HWY. 71 - R.M.L. - INSIDE SHOULDER	404.7	8.00	32.4																	
808+81.65	839+68.00	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	3086.4	117.00	3611.1													8.0	2743.5	220.0	301.8	
839+68.00	841+43.82	HWY. 71 - R.M.L. - OUTSIDE SHOULDER GORE AREA	175.8	VAR.	184.1													VAR.	197.3	220.0	21.7	
841+41.80	850+42.00	HWY. 71 - R.M.L. - OUTSIDE SHOULDER ACCEL. LANE	900.2	101.25	911.5													6.0	600.1	220.0	66.0	
850+42.00	928+96.95	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	7855.0	117.00	9190.4													8.0	6982.2	220.0	768.0	
926+21.79	929+44.74	HWY. 71 - R.M.L. - OUTSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	323.0	VAR.	172.5													VAR.	184.8	220.0	20.3	
935+23.33	937+07.85	HWY. 71 - R.M.L. - OUTSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	184.5	VAR.	75.1													VAR.	80.5	220.0	8.9	
935+43.50	999+21.79	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	6378.3	117.00	7462.6													8.0	5669.6	220.0	623.7	
996+32.78	999+58.90	HWY. 71 - R.M.L. - OUTSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	326.1	VAR.	173.5													VAR.	185.9	220.0	20.4	
1001+68.90	1003+45.03	HWY. 71 - R.M.L. - OUTSIDE SHOULDER ADDITIONAL FOR GUARDRAIL	176.1	VAR.	72.2													VAR.	77.4	220.0	8.5	
1001+87.96	1020+72.00	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	1884.0	117.00	2204.3													8.0	1674.7	220.0	184.2	
1020+72.00	1078+22.13	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	5750.1	117.00	6727.6																	
1078+82.66	1107+43.00	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	2860.3	117.00	3346.6																	
1109+60.00	1113+64.66	HWY. 71 - R.M.L. - OUTSIDE SHOULDER	404.7	8.00	32.4																	
824+05.14	827+55.14	HWY. 71 - R.M.L. - ADDITIONAL FOR SUPER. TRANSITION	350.0	49.93	174.8																	
827+55.14	856+45.68	HWY. 71 - R.M.L. - ADDITIONAL FOR SUPER.	2890.5	99.86	2886.5																	
856+45.68	859+95.68	HWY. 71 - R.M.L. - ADDITIONAL FOR SUPER. TRANSITION	350.0	49.93	174.8																	
HWY. 71 - RAMP 1																						
1118+43.06	1126+37.27	HWY. 71 - RAMP 1	794.2	VAR.	3729.6	VAR.	12498.0	0.03	374.9	VAR.	4166.0	880.0	1833.0	VAR.	4166.0	330.0	687.4	VAR.	5708.0	220.0		627.9
1126+37.27	1132+26.27	HWY. 71 - RAMP 1	589.0	VAR.	1967.0	VAR.	15504.0	0.03	465.1	VAR.	5168.0	880.0	2273.9	VAR.	5168.0	330.0	852.7	VAR.	5168.0	220.0		568.5
WALTON BLVD.																						
100+18.18	104+62.20	WALTON BLVD.	444.0	VAR.	1631.0	VAR.	4668.0	0.03	140.0	VAR.	1556.0	880.0	684.6	VAR.	1556.0	330.0	256.7	VAR.	4317.0	220.0		474.9
EXISTING HWY. 71 SOUTHBOUND - OFF RAMP																						
400+00.00	408+36.12	EXISTING HWY. 71 SB. OFF RAMP	836.1	VAR.	2532.0	VAR.	5721.0	0.03	171.6	VAR.	1907.0	880.0	839.1	VAR.	1907.0	330.0	314.7	VAR.	3714.0	220.0		408.5
EXISTING HWY. 71 NORTHBOUND																						
301+50.48	306+59.72		509.2	VAR.	779.0	VAR.	5829.0	0.03	174.9	VAR.	1943.0	880.0	854.9	VAR.	1943.0	330.0	320.6	VAR.	2705.0	220.0		297.6
EXISTING HWY. 71 SOUTHBOUND - ON RAMP																						
1133+91.36	1142+71.90	EXISTING HWY. 71 SB. ON RAMP	880.5	VAR.	1517.9	VAR.	3934.5	0.03	118.0	VAR.	1311.5	880.0	577.1	VAR.	1311.5	330.0	216.4	VAR.	3347.0	220.0		368.2
1133+91.36	1135+00.00	EXISTING HWY. 71 SB ON RAMP - METHOD OF RAISING GRADE	108.6			VAR.	410.6	0.03	12.3	VAR.	205.3	VAR.	90.3									
1135+00.00	1136+70.00	EXISTING HWY. 71 SB ON RAMP - METHOD OF RAISING GRADE	170.0			VAR.	253.5	0.03	7.6	VAR.	253.5	VAR.	111.5									
MC KISSIC CREEK RD.																						
100+25.70	104+22.82	MC KISSIC CREED RD. - RELOCATION	397.1	VAR.	1189.4													40.0	1764.9	220.0	194.1	
ROUNDABOUT																						
600+00.00	607+49.56	ROUNDABOUT	749.6	VAR.	1235.1	VAR.	7588.2	0.03	227.6	VAR.	2529.4	880.0	1112.9	VAR.	2529.4	330.0	417.4	VAR.	2529.4	220.0		278.2
HWY. 71 - TEMPORARY CROSSOVER																						
1013+85.42	1020+72.00	HWY. 71 TEMPORARY CROSSOVER	686.6	210.00	1441.9	76.8	5859.0	0.03	175.8	25.8	1968.3	880.0	866.1	25.3	1930.1	330.0	318.5	25.0	1907.2	220.0		209.8
HWY. 72 (SOUTH) RAMP 2																						
823+69.00	824+92.28	HWY. 72S RAMP 2 - LT. SHOULDER	173.9	77.50	134.8	13.3	257.0	0.03	7.7	4.8	92.7	880.0	40.8	4.3	83.1	330.0	13.7	4.0	77.3	220.0		8.5
824+92.28	840+65.00	HWY. 72S RAMP 2 - LT. SHOULDER	1582.1	85.00	1344.8													4.0	703.2	220.0	77.4	
823+21.13	824+14.49	HWY. 72S RAMP 2 - RT. SHOULDER	120.5	77.50	93.4	19.3	258.4	0.03	7.8	6.8	91.0	880.0	40.0	6.3	84.4	330.0	13.9	6.0	80.3	220.0		8.8
824+14.49	841+46.05	HWY. 72S RAMP 2 - RT. SHOULDER	1726.5	101.25	1748.1													6.0	1151.0	220.0	126.6	
824+92.26	826+92.26	HWY. 72S RAMP 2 - ADDITIONAL FOR SUPER. TRANSITION	200.0	35.63	71.3																	
826+92.26	841+21.05	HWY. 72S RAMP 2 - ADDITIONAL FOR SUPER.	1428.8	71.25	1018.0																	
841+21.05	841+46.05	HWY. 72S RAMP 2 - ADDITIONAL FOR SUPER. TRANSITION	25.0	35.63	8.9																	
SUBTOTALS:					**92964.5**		**62781.2**		**1883.3**		**21191.7**		**9324.2**		**20678.5**		**3412.0**		**70718.9**		**4528.0**	**3250.9**

8/2/2013

RCA0904.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.		CA0904	108	636

(2) QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

BASE AND SURFACING (CONTINUED)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				A.C.H.M. BASE COURSE (1 1/2")				A.C.H.M. BINDER COURSE (1")				A.C.H.M. SURFACE COURSE (1/2")				
				TON / STATION	TON	AVG. WID.	SQ.YD.	GALLONS / SQ.YD.	GALLON	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
HWY. 72 (SOUTH) RAMP 3																						
818+38.00	819+31.38	HWY. 72S RAMP 3 - LT. SHOULDER	120.4	77.50	93.3	19.3	258.2	0.03	7.7	6.8	91.0	880.0	40.0	6.3	84.3	330.0	13.9	6.0	80.3	220.0		8.8
819+31.38	834+44.02	HWY. 72S RAMP 3 - LT. SHOULDER	1516.6	101.25	1535.6													6.0	1011.1	220.0	111.2	
818+80.00	820+01.61	HWY. 72S RAMP 3 - RT. SHOULDER	154.8	77.50	120.0	13.3	228.8	0.03	6.9	4.8	82.6	880.0	36.3	4.3	74.0	330.0	12.2	4.0	68.8	220.0		7.6
820+01.61	834+44.02	HWY. 72S RAMP 3 - RT. SHOULDER	1440.2	85.00	1224.2													4.0	640.1	220.0	70.4	
820+01.61	820+51.61	HWY. 72S RAMP 3 - ADDITIONAL FOR SUPER. TRANSITION	50.0	53.38	26.7																	
820+51.61	825+62.86	HWY. 72S RAMP 3 - ADDITIONAL FOR SUPER.	511.3	106.75	545.8																	
825+62.86	827+12.86	HWY. 72S RAMP 3 - ADDITIONAL FOR SUPER. TRANSITION	150.0	53.38	80.1																	
830+60.45	832+60.45	HWY. 72S RAMP 3 - ADDITIONAL FOR SUPER. TRANSITION	200.0	35.63	71.3																	
832+60.45	834+44.02	HWY. 72S RAMP 3 - ADDITIONAL FOR SUPER.	183.6	71.25	130.8																	
HWY. 72 (SOUTH) RAMP 3 TEMPORARY RAMP																						
842+21.82	846+71.06	HWY. 72S RAMP 3 TEMPORARY RAMP	449.2	210.00	943.3	76.8	3833.2	0.03	115.0	25.8	1287.7	880.0	566.6	25.3	1262.8	330.0	208.4	25.0	1247.8	220.0		137.3
RELOCATED CO. RD. 554																						
10+00.00	45+03.37	RELOCATED CO. RD. 554	3503.4	207.75	7278.3																	
10+00.00	11+90.00	RELOCATED CO. RD. 554 - ADDITIONAL FOR SUPER. TRANSITION	190.0	12.38	23.5													28.0	10899.5	220.0	1198.9	
11+90.00	21+24.86	RELOCATED CO. RD. 554 - ADDITIONAL FOR SUPER.	934.9	24.75	231.4																	
21+24.86	23+14.86	RELOCATED CO. RD. 554 - ADDITIONAL FOR SUPER. TRANSITION	190.0	12.38	23.5																	
32+05.56	33+95.56	RELOCATED CO. RD. 554 - ADDITIONAL FOR SUPER. TRANSITION	190.0	12.38	23.5																	
33+95.56	36+64.07	RELOCATED CO. RD. 554 - ADDITIONAL FOR SUPER.	268.5	24.75	66.5																	
36+64.07	38+54.07	RELOCATED CO. RD. 554 - ADDITIONAL FOR SUPER. TRANSITION	190.0	12.38	23.5																	
44+63.37	45+03.37	RELOCATED CO. RD. 554 - ADDITIONAL FOR TURNOUT	40.0	VAR.	44.5													VAR.	76.3	220.0	8.4	
CO. RD. 453																						
102+00.00	104+34.77	CO. RD. 453	234.8	207.75	487.8													28.0	730.5	220.0	80.4	
102+78.41	104+14.56	CO. RD. 453 - ADDITIONAL FOR GUARDRAIL - RT.	136.2	35.75	42.8													5.5	73.2	220.0	8.1	
102+93.30	104+29.44	CO. RD. 453 - ADDITIONAL FOR GUARDRAIL - LT.	136.1	35.75	42.8													5.5	73.1	220.0	8.0	
106+77.23	113+00.00	CO. RD. 453	622.8	207.75	1293.9													28.0	1937.6	220.0	213.1	
106+82.56	108+18.70	CO. RD. 453 - ADDITIONAL FOR GUARDRAIL - RT.	136.1	35.75	42.8													5.5	73.1	220.0	8.0	
106+97.44	108+33.59	CO. RD. 453 - ADDITIONAL FOR GUARDRAIL - LT.	136.2	35.75	42.8													5.5	73.2	220.0	8.1	
BECKETT RD.																						
12+00.00	19+28.97	BECKETT RD.	729.0	207.75	1514.5													28.0	2268.0	220.0	249.5	
CO. RD. 49																						
10+00.00	17+12.27	CO. RD. 49	712.3	207.75	1479.8													28.0	2216.0	220.0	243.8	
10+00.13	12+20.13	CO. RD. 49 - ADDITIONAL FOR SUPER. TRANSITION	220.0	15.00	33.0																	
12+20.13	13+75.69	CO. RD. 49 - ADDITIONAL FOR SUPER.	155.6	30.00	46.7																	
13+75.69	15+95.69	CO. RD. 49 - ADDITIONAL FOR SUPER. TRANSITION	220.0	15.00	33.0																	
15+65.15	17+01.30	CO. RD. 49 - ADDITIONAL FOR GUARDRAIL - RT.	136.2	35.75	42.8													5.5	73.2	220.0	8.1	
15+65.15	17+01.30	CO. RD. 49 - ADDITIONAL FOR GUARDRAIL - LT.	136.2	35.75	42.8													5.5	73.2	220.0	8.1	
19+24.43	28+96.29	CO. RD. 49	971.9	207.75	2019.1													28.0	3023.7	220.0	332.6	
19+35.40	20+71.55	CO. RD. 49 - ADDITIONAL FOR GUARDRAIL - RT.	136.2	35.75	42.8													5.5	73.2	220.0	8.1	
19+35.40	20+71.55	CO. RD. 49 - ADDITIONAL FOR GUARDRAIL - LT.	136.2	35.75	42.8													5.5	73.2	220.0	8.1	
21+53.37	23+73.37	CO. RD. 49 - ADDITIONAL FOR SUPER. TRANSITION	220.0	15.00	33.0																	
23+73.37	26+76.29	CO. RD. 49 - ADDITIONAL FOR SUPER.	302.9	30.00	90.9																	
26+76.29	28+96.29	CO. RD. 49 - ADDITIONAL FOR SUPER. TRANSITION	220.0	15.00	33.0																	
CO. RD. 39																						
15+54.43	28+91.84	CO. RD. 39	1337.4	227.00	3035.9	24.3	3611.0	0.03	108.3					24.3	3611.0	330.0		40.0	5944.0	220.0	653.8	
ADDITIONAL FOR WIDENING																						
ENTIRE PROJECT		HWY. 71 - DROP INLET WIDENING																VAR.	1509.0	220.0	166.0	
SUBTOTALS:					22928.8		7931.2		237.9		1461.3		642.9		5032.1		234.5		32238.1		3392.7	153.7
TOTALS:					115893.3		70712.4		2121.2		22653.0		9967.1		25710.6		3646.5		102957.0		7920.7	3404.6

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.5% MIN. AGGR.....4.5% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER

MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22

8/2/2013

RCA0904.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.		CA0904	109	636

① 07273, B7274, - QUANTITIES - 53425
07275, B7276
07277, 07279

SCHEDULE OF BRIDGE QUANTITIES - JOB CA0904

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE / ITEM NO. / ITEM / UNIT	801 UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE CU. YD.	SP & 802 CLASS S CONCRETE-BRIDGE CU. YD.	SP & 802 CLASS S(AE) CONCRETE-BRIDGE CU. YD.	803 CLASS 2 PROTECTIVE SURFACE TREATMENT SQ. YD.	SS & 804 REINFORCING STEEL-BRIDGE (GRADE 60) LB.	SS & 804 EPOXY COATED REINFORCING STEEL (GRADE 60) LB.	805 ① STEEL ② PILING (HP 12X53) LIN. FT.	805 ① PREBORING LIN. FT.	SP & 807 STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50W) LB.	SP & 807 STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50W) LB.	808 ELASTOMERIC BEARINGS CU. IN.	812 BRIDGE NAME PLATE (TYPE D) EACH	816 FILTER BLANKET SQ. YD.	816 DUMPED RIPRAP CU. YD.	816 CONCRETE RIPRAP CU. YD.	SP JOB CA0904 SILICONE JOINT SEALANT LIN. FT.	SP JOB CA0904 TEXTURED COATING FINISH SQ. YD.	SP JOB CA0904 EXPLORATORY HOLES ① LIN. FT.
07273	X771	COUNTY ROAD 453	BENT 1		37.60		3.5	4,066		280			600	3,240.0				14		53	
			BENT 2	61	70.26			10,948		240	66			4,900.0						98	100
			BENT 3		37.64		3.5	4,066		310			600	3,510.0				14		53	
			240' CONT. PLATE GIRDER UNIT			238.50	746.1	57,650					233,250		1				70	524	
TOTALS FOR BRIDGE NO. 07273				61	145.50	238.50	753.1	76,730	0	830	66	0	234,450	11,650.0	1	0	0	28	70	728	100
B7274	X471	COUNTY ROAD 49	BENT 1	61	56.05		5.5	5,555		370			1,005	4,987.5				365		64	
			BENT 2	225	170.27			21,055		288	132			4,950.0						189	80
			BENT 3	157	179.73			21,312		288	132			9,975.0						242	80
			BENT 4	351	204.16			25,573						4,950.0						249	
			BENT 5	237	204.27			25,560						9,529.0						218	
			BENT 6		56.62		5.5	5,555		472			1,005	4,987.5						64	
			210' CONT. PLATE GIRDER UNIT			270.55	933.3		65,780				249,490		1				104	475	
			345' CONT. PLATE GIRDER UNIT			442.25	1,533.3		110,250				425,820						52	782	
TOTALS FOR BRIDGE NO. B7274				1,031	871.10	712.80	2,477.6	104,610	176,030	1,418	264	0	677,320	39,379.0	1	0	0	365	156	2,283	160
07275	X771	COUNTY ROAD 49	BENT 1		30.00		3.1	3,275		120	32		525	2,656.0				16		46	
			BENT 2	71	74.90			11,360		120				3,281.0						91	
			BENT 3		29.90		3.1	3,275		120			525	2,475.0				14		46	
			210' CONT. PLATE GIRDER UNIT			207.50	652.8	49,410					185,240		1				62	459	
TOTALS FOR BRIDGE NO. 07275				71	134.80	207.50	659.0	67,320	0	360	32	0	186,290	8,412.0	1	0	0	30	62	642	0
B7276	X271	COUNTY ROAD 39	BENT 1		39.37		4.9	3,893		190		827		2,136.5				107		48	
			BENT 2	145	91.45			16,761		192	152			2,396.0						124	
			BENT 3	165	93.29			17,283		192	128			2,396.0						124	
			BENT 4		39.49		4.9	3,893		240	210	827		2,136.5						48	
			186' CONT. W-BEAM UNIT			236.40	826.7		60,860			180,576			1				94	422	
TOTALS FOR BRIDGE NO. B7276				310	263.60	236.40	836.5	41,830	60,860	814	490	182,230		9,065.0	1	0	0	107	94	766	0
TOTALS FOR SHEET 1 OF 2				1,473	1,415.00	1,395.20	4,726.2	290,490	236,890	3,422	852	182,230	1,098,060	68,506.0	4	0	0	530	382	4,419	260

① The quantities shown for steel piling, preboring, and exploratory holes are for estimating and bidding purposes only. Actual quantities for preboring and exploratory holes, if any, and for steel piling will be determined in the field.

② These steel piles are required to have special pile tips which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 12x53)". All piling shall be AASHTO M270, Grade 50.

AILEEN SCHUBEL
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2
SCHEDULE OF BRIDGE QUANTITIES
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS) (S)
BENTON COUNTY
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 12/03/13
CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: ___ DATE: ___
FILENAME: bca0904_q2.dgn
SCALE: NO SCALE

BRIDGE NO. 07273, B7274, 07275, B7276, 07277, 07279

DRAWING NO. 53425

PRINT DATE: 12/11/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	110	636

(1) 07273, B7274 - QUANTITIES - 53425A
07275, B7276,
07277, 07279

SCHEDULE OF BRIDGE QUANTITIES - JOB CA0904

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	801	SP & 802	SP & 802	803	SS & 804	SS & 804	805	805	SP & 807	SP & 807	808	812	816	816	816	SP JOB CA0904	SP JOB CA0904	SP JOB CA0904
			ITEM / UNIT		UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	(1) STEEL (2) PILING (HP 12X53)	(1) PREBORING	STRUCTURAL STEEL IN BEAM SPANS (M270-GR. 50W)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR. 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	CONCRETE RIPRAP	SILICONE JOINT SEALANT	TEXTURED COATING FINISH	EXPLORATORY HOLES (1)
					CU. YD.	CU. YD.	CU. YD.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	LB.	CU. IN.	EACH	SQ. YD.	CU. YD.	CU. YD.	LIN. FT.	SQ. YD.	LIN. FT.
07277	X271	PEACH ORCHARD ROAD	BENT NO. 1			32.88		5.1	3,350		300		1,085		1,322.0		1,346	701		45	8	
			BENT NO. 2		317	119.17			21,555		450		860		3,643.0					52	143	
			BENT NO. 3		144	118.91			22,280		990		945		4,083.0					61	166	
			BENT NO. 4			43.24		7.2	3,705		540		1,577		1,762.0					66	11	
			55'-0" SIMPLE COMP. W-BEAM UNIT				75.15	295.1		18,352			60,370			1					40	
			84'-0" SIMPLE COMP. W-BEAM UNIT				127.70	510.2		31,703			146,753								61	
			55'-0" SIMPLE COMP. W-BEAM UNIT				93.85	376.5		22,425			80,000								40	
TOTALS FOR BRIDGE NO. 07277					461	314.20	296.70	1,194.1	50,890	72,480	2,280	0	291,590	0	10,810	1	1,346	701	0	224	469	0
07279	X071	RAMP 1 OVER MCKISIC CREEK	BENT NO. 1 & 7			67.40		9.2	7,176		317		1,718		2,510.2						52	
			BENT NO. 3 & 5		271	169.70			24,784						5,412.3							
			BENT NO. 2, 4 & 6		419	265.40			38,890						6,208.5							
			159'-0" CONT. COMP. W-BEAM UNIT				202.00	706.6		49,737			177,485			1				64	351	
			170'-0" CONT. COMP. W-BEAM UNIT				216.30	755.3		53,114			212,775							43	369	
			124'-0" CONT. COMP. W-BEAM UNIT				161.90	615.7		44,599			123,982							68	274	
TOTALS FOR BRIDGE NO. 07279					690	502.50	580.20	2,086.8	70,850	147,450	317	0	515,960	0	14,131.0	1	0	0	0	175	1,046	0
TOTALS FROM SHEET 1 OF 2					1,473	1,415.00	1,395.20	4,726.2	290,490	236,890	3,422	852	182,230	1,098,060	68,506.0	4	0	0	530	382	4,419	260
TOTALS FOR JOB NO. CA0904					(3) 2,624	2,231.70	2,272.10	8,007.1	412,230	456,820	6,019	852	989,780	1,098,060	93,447.0	6	1,346	701	530	781	5,934	260

(1) The quantities shown for steel piling, preboring, and exploratory holes are for estimating and bidding purposes only. Actual quantities for preboring and exploratory holes, if any, and for steel piling will be determined in the field.

(2) These steel piles are required to have special pile tips which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 12x53)". All piling shall be AASHTO M270, Grade 50.

(3) Includes approx. 290 cu. yds. of rock excavation.

JIM TRIBO
DESIGN SECTION SUPERVISOR

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2
SCHEDULE OF BRIDGE QUANTITIES
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS) (S)
BENTON COUNTY
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 12/03/13
CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: - DATE: ---
FILENAME: bca0904_q2.dgn
SCALE: NO SCALE

BRIDGE NO. 07273, B7274, 07275, B7276, 07277, 07279

DRAWING NO. 53425A

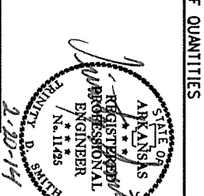
PRINT DATE: 12/9/2013

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	331	STATION
SP & 201	GRUBBING	331	STATION
202	REMOVAL AND DISPOSAL OF FOUNDATIONS	288	SQ. YD.
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	1	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING	33	SQ. YD.
202	REMOVAL AND DISPOSAL OF BUILDINGS	8	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM	2	EACH
210	UNCLASSIFIED EXCAVATION	3857374	CU. YD.
SP	SELECT GRANULAR BACKFILL	7283	CU. YD.
210	PRESPLITTING	8500	SQ. YD.
SP & 210	COMPACTED EMBANKMENT	2208090	CU. YD.
SP & 210	ROCK FILL	552688	CU. YD.
SP & 210	SOIL STABILIZATION	500	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	133420	TON
308	AGGREGATE IN CEMENT STABILIZED CRUSHED STONE BASE COURSE	44154	TON
308	CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE	2818	TON
308	PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE	134206	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)	543	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (11" UNIFORM THICKNESS)	332	SQ. YD.
401	TACK COAT	5582	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	9548	TON
SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")	419	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	3483	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")	164	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (3/8")	6968	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	10691	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (3/8")	413	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	444	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	191	TON
412	COLD MILLING ASPHALT PAVEMENT	1392	SQ. YD.
SS & 501	PORTLAND CEMENT CONCRETE PAVEMENT (11" UNIFORM THICKNESS)	118478	SQ. YD.
SP & 504	APPROACH SLABS	466.96	CU. YD.
SP & 504	APPROACH GUTTERS	213.62	CU. YD.
506	PORTLAND CEMENT CONCRETE CORRUGATIONS	38	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
602	FURNISHING FIELD LABORATORY	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	1508	SQ. FT.
SP, SS, & 604	SIGNS LEFT IN PLACE	10	SQ. FT.
SS & 604	BARRICADES	112	LIN. FT.
SP, SS, & 604	BARRICADES LEFT IN PLACE	32	LIN. FT.
SS & 604	TRAFFIC DRUMS	176	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	2076	LIN. FT.
SP, SS, & 604	FURNISHING, INSTALLING AND LEAVING IN PLACE PRECAST CONCRETE BARRIER	2499	LIN. FT.
SS & 604	RELOCATING PRECAST CONCRETE BARRIER	540	LIN. FT.
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	13322	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	848	LIN. FT.
605	CONCRETE DITCH PAVING (TYPE A)	1000	SQ. YD.
605	CONCRETE DITCH PAVING (TYPE B)	15783	SQ. YD.
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	2598	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	3394	LIN. FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	584	LIN. FT.
SS & 606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	622	LIN. FT.
SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	50	LIN. FT.
SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	314	LIN. FT.
SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	292	LIN. FT.
SS & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	2500	LIN. FT.
SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	28	LIN. FT.
SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	696	LIN. FT.
SS & 606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	36	LIN. FT.
SS & 606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	210	LIN. FT.
SS & 606	54" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)	162	LIN. FT.
SP, SS, & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS SPECIAL)	542	LIN. FT.
SP, SS, & 606	42" REINFORCED CONCRETE PIPE CULVERTS (CLASS SPECIAL)	1136	LIN. FT.
SP, SS, & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS SPECIAL)	818	LIN. FT.
606	12" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	200	LIN. FT.
SS & 606	36" X 23" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	52	LIN. FT.
SS & 606	51" X 31" REINFORCED CONCRETE ARCH PIPE CULVERTS (CLASS III)	88	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN	30	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	96	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	23	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	3	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	5	EACH
606	42" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	19	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	10	EACH
606	54" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	5	EACH
606	36" X 23" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS	2	EACH
606	51" X 31" FLARED END SECTIONS FOR REINFORCED CONCRETE ARCH PIPE CULVERTS	4	EACH
606	SELECTED PIPE BEDDING	500	CU. YD.
609	DROP INLETS (TYPE N2)	4	EACH
609	DROP INLETS (TYPE N3)	2	EACH
609	DROP INLETS (TYPE MO)	17	EACH
609	DROP INLETS (TYPE RM)	12	EACH
609	DROP INLETS (TYPE ST)	16	EACH
611	UNDERDRAIN OUTLET PROTECTORS	9	EACH
611	4" PIPE UNDERDRAINS	2000	LIN. FT.
614	CONCRETE SPILLWAY (TYPE A)	5	EACH
SS & 617	GUARDRAIL (TYPE A)	2325	LIN. FT.
SS & 617	GUARDRAIL (TYPE C)	25	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)	8	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	10	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL	18	EACH
619	WIRE FENCE (TYPE A)	43984	LIN. FT.
619	WIRE FENCE (TYPE C)	2214	LIN. FT.
619	WIRE FENCE (TYPE D)	1837	LIN. FT.
* 619	16' STEEL GATES (ALTERNATE NO. 1)	17	EACH
* 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	17	EACH
620	LIME	590	TON
620	SEEDING	294.95	ACRE
SS & 620	MULCH COVER	933.43	ACRE
SS & 620	WATER	43234.4	M.GAL.
621	TEMPORARY SEEDING	638.48	ACRE
621	SILT FENCE	180880	LIN. FT.
621	SAND BAG DITCH CHECKS	1870	BAG
621	DIVERSION DITCH	12448	LIN. FT.
621	DROP INLET SILT FENCE	969	LIN. FT.
621	SEDIMENT BASIN	1000	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	1000	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	9076	CU. YD.
621	PIPE FOR SLOPE DRAINS	4220	LIN. FT.
621	ROCK DITCH CHECKS	1275	CU. YD.
SP & 621	ROCK DITCH LINER	13798	TON
SP	WATTLE (20")	7470	LIN. FT.
SP	TRIANGULAR SILT DIKE	1500	LIN. FT.
623	SECOND SEEDING APPLICATION	294.95	ACRE
624	SOLID SODDING	9880	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	4444	SQ. YD.

* DENOTES ALTERNATE BID ITEMS

SUMMARY OF QUANTITIES



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2-19-14				6	ARK.	CA0904	111	636

(2) SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
631	CONCRETE BARRIER WALL (PIER PROTECTION TYPE A)		90	LIN. FT.
SP & 631	CONCRETE BARRIER WALL (SIDE TYPE A)		1329	LIN. FT.
632	CONCRETE ISLAND		1360	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")		3395	LIN. FT.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE E-1) (2'-0")		750	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		3	EACH
637	MAILBOX SUPPORTS (SINGLE)		3	EACH
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		2196	LIN. FT.
642	RUMBLE STRIPS IN PORTLAND CEMENT CONCRETE SHOULDERS		59274	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)		3295	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)		1723	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/12 A.W.G.)		1723	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT, ALUMINUM (2C/4 A.W.G.)		3820	LIN. FT.
710	NON-METALLIC CONDUIT (2")		3122	LIN. FT.
710	NON-METALLIC CONDUIT (3")		224	LIN. FT.
SP, SS, & 711	CONCRETE PULL BOX (TYPE 1 HD)		21	EACH
SP, SS, & 711	CONCRETE PULL BOX (TYPE 2 HD)		4	EACH
SP	ROADWAY ILLUMINATION POLE (250 WATT COBRA HEAD, T-BASE, 28')		1	EACH
SP	ROADWAY ILLUMINATION POLE (250-WATT COBRA HEAD, T-BASE, 36')		19	EACH
SP	ROADWAY ILLUMINATION POLE (400-WATT COBRA HEAD, T-BASE, 40')		3	EACH
SP	SERVICE POINT ASSEMBLY (1 CIRCUIT)		1	EACH
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")		14403	LIN. FT.
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")		196	LIN. FT.
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		9186	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")		9084	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")		1393	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")		9557	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (8")		740	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING (WORDS)		8	EACH
SS & 719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)		16	EACH
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	588	LIN. FT.
* SP	HIGH PERFORMANCE MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	588	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	783	LIN. FT.
* SP	HIGH PERFORMANCE MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	783	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (4")	(ALTERNATE NO. 1)	64544	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (4")	(ALTERNATE NO. 2)	64544	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	(ALTERNATE NO. 1)	65206	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	(ALTERNATE NO. 2)	65206	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING WHITE (8")	(ALTERNATE NO. 1)	470	LIN. FT.
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE WHITE (8")	(ALTERNATE NO. 2)	470	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		424	EACH
SS & 726	STANDARD SIGN		7	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE C)		3	EACH
SS & 731	IMPACT ATTENUATION BARRIER (TYPE A)		6	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		1021	CU. YD.
SP & 802	CLASS S CONCRETE-ROADWAY		4649.17	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		517913	POUND
816	FILTER BLANKET		11883	SQ. YD.
816	DUMPED RIPRAP		238	CU. YD.
816	DUMPED RIPRAP (GROUTED)		100	CU. YD.
SP	CULVERT CLEAN OUT		1	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER		1	EACH
SP	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		1	EACH
SP	TEXTURED COATING FINISH		2017	SQ. YD.
SP	RETAINING WALL		10595	SQ. FT.
	STRUCTURES OVER 20' SPAN			
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		1080	CU. YD.
SP & 802	CLASS S CONCRETE-ROADWAY		2667.10	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		348513	POUND
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE		2624	CU. YD.
SP & 802	CLASS S CONCRETE-BRIDGE		2231.70	CU. YD.
SP & 802	CLASS S(AE) CONCRETE-BRIDGE		2272.10	CU. YD.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT		8007.1	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		412230	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		456820	POUND
805	STEEL PILING (HP 12X53)		6019	LIN. FT.
805	PREBORING		852	LIN. FT.
SP & 807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR50W)		989780	POUND
SP & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)		1098060	POUND
808	ELASTOMERIC BEARINGS		93447.0	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)		6	EACH
816	FILTER BLANKET		1346	SQ. YD.
816	DUMPED RIPRAP		701	CU. YD.
816	CONCRETE RIPRAP		530	CU. YD.
SP	SILICONE JOINT SEALANT		781	LIN. FT.
SP	TEXTURED COATING FINISH		5934	SQ. YD.
SP	EXPLORATORY HOLES		260	LIN. FT.

* DENOTES ALTERNATE BID ITEMS

REVISIONS

DATE	REVISION	SHEET NUMBER
2/6/2014	ADDED SPECIAL DETAILS FOR MODIFICATIONS TO STANDARD R.C. BOX CULVERTS	27A, 27B, 27C, & 112
2/7/2014	REVISED RETAINING WALL	112 & 181
2/13/2014	ADDED "SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS", "CAVE DISCOVERY", AND "NESTING SITES OF MIGRATORY BIRDS" SPECIAL PROVISIONS	4 & 112
2/19/2014	ADDED "CULVERT CLEANOUT" SPECIAL PROVISION, ADDED QUANTITY FOR CULVERT CLEANOUT, REVISED QUANTITIES OF "COMPACTED EMBANKMENT" AND "ROCK FILL", AND REVISED CROSS SECTIONS FOR HWY. 71 RAMP 1 FROM STATION 1110+00 TO STATION 1119+00	4, 101, 111, 112, 541, 542, & 543
2/21/2014	DELETED SP "ASPHALT CONCRETE HOT MIX SURFACE COURSE SURFACE TOLERANCE AND INCENTIVE PAYMENTS"	4,112

STATE OF ARKANSAS
TIMOTHY D. SMITH
REGISTERED PROFESSIONAL ENGINEER
No. 11425
2-21-14

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
2-6-14		2-19-14	
2-7-14		2-21-14	
2-13-14			

(2) SUMMARY OF QUANTITIES AND REVISIONS

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		112	636
JOB NO.	CA0904			

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.		CA0904	113	636

(2) SOIL LOG

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

SOIL LOG

Boring No.	Northing	Easting	Station	Location	Depth	Moisture	Atterberg Limits			Sieve Analysis (percent passing)						pH	Conductivity	Unit Weight		Unconfined	AASHTO
				Hwy. 71	(feet)	Content (%)	LL	PL	PI	3/4"	3/8"	No. 4	No. 10	No. 40	No. 200		(mm/cm)	In-situ	Dry	(psi)	Classification
AC-149	768480.888	628512.988	810+00.00	C.L.	7-15.0	23.5	42	21	21	100	98	93	86	75	67	5.4	353				A-7-6(12)
					7-15											4.01	362.0				
AC-152	768541.531	628908.283	814+00.00	C.L.	10-20.0	26.4				100	97	89	79	61	29						A-2
AC-155	768629.482	629298.414	818+00.00	C.L.	7-17.5	28.0	52	24	28	100	95	87	78	65	57	5.6	85				A-7-6(13)
					7	35.2	67	28	39												
					8.5	33.6															
					2-7	25.9	56	25	31												
AC-156	768513.224	629328.149	818+00.00	120' RT.	3-7	18.4															
					7-11	35.4															
					16.5-22	4.0															
					22-30.0	4.9	43	22	21												
AC-158	768808.821	630579.449	831+00.00	120' RT.	5-10.0	18.2				100	95	84	75	60	33						A-2
AC-159	768580.982	630610.907	831+00.00	350' RT.	10-15.0	12.7	39	24	15	99	97	93	84	70	59	5.7	331				A-6(7)
					7-8.5	20.5	46	21	25									113.3	94		
AC-163	768928.327	632180.579	847+00.00	120' LT.	0-2.5	24.5	27	19	8												
AC-164	768697.786	632113.867	847+00.00	120' RT.	5.5-10.0	24.8															
					15-20.0	27.7	47	25	22												
AC-165	768752.460	632337.798	849+00.00	C.L.	3-10.0	24.9	35	18	17												
AC-168	768359.516	632915.097	856+00.00	120' RT.	12.6-16.0	26.1															
					5-25.0	23.8	37	21	16	100	95	88	78	60	35						A-2-6(1)
AC-169	768360.900	633145.914	858+00.00	C.L.	2-5.0	35.5	34	18	16												
AC-171	767993.730	633741.889	865+00.00	C.L.	6-10.0	21.5	40	22	18												
AC-173	767786.657	633849.224	867+00.00	120' RT.	0-3.0	21.7															
					3-5.0	25.3															
					10-15.0	28.6															
					15-20.0	28.5															
					20-25.0	29.2															
					25-30	33.4	40	22	18												
AC-174	767783.918	634082.446	869+00.00	C.L.	6-10	27.2	53	26	27												
AC-177	767419.486	634445.199	874+00.00	120' RT.	10-20.0	20.7	43	21	22	100	99	96	89	78	68						A-7-6(13)
					7-7.8	24.8	58	24	34									106.3	85.2		
AC-178	767312.351	634878.376	878+25.00	16' LT.	5-10.0	22.4				96	92	84	75	62	46						
					25-30.0	31.1				100	100	96	88	70	50						
AC-188	766422.881	636062.844	893+00.00	120' RT.	1.0-30.0	28.9	39	20	19	100	93	87	78	66	55						A-6(8)
AC-197	765734.991	637636.950	910+01.00	120' LT.	0-2.0	21.0															
					5-10.0	27.5	32	22	10												
					20-25.0	30.5															
AC-203	765217.140	638485.698	920+00.00	120' LT.	5-10.0	30.2	42	22	20												
					35-40.0	34.0															
AC-208	764845.992	638964.015	926+00.00	C.L.	5.5-45.0	20.5	28	22	6	100	96	90	74	58	48	6.4					A-4(1)
AC-210	764487.933	640107.054	938+00.00	C.L.	20-25.0	10.0															
AC-220	764228.544	641888.088	956+00.00	C.L.	0-15.0	15.2	47	21	26	98	91	82	74	64	55						
AC-226	764119.911	642680.661	964+00.00	1' LT.	5-32.0	28.3	53	23	30												
AC-241	764015.669	646776.797	1005+00.00	C.L.	15-15.5	51.2															
					35-40.0															4460	
					65-70.0															2550	
					2-25	14.9	45	22	23	100	94	86	76	63	53						A-7-6(9)
AC-250	764008.815	648076.779	1017+98.11	31.35' RT.	10-11.5	55.1	90	37	53												
					5-35.0	26.6	43	24	19	100	97	94	79	63	54						A-7-6(8)

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS 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.

8/2/2013

RCA0904.DGN

SURVEY CONTROL COORDINATES

Project Name: s090115.alg
Date: 1/18/2013
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	765243.0310	659149.0342	-99999.000	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 1
2	766021.5710	657252.2630	1058.857	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 2
3	765374.8500	656848.5160	1078.988	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 3
4	765342.4798	653154.8084	1307.483	CTL	½" Rebar with 2" Aluminum Cap stamped pnt 4
5	764793.5733	652416.1255	1307.682	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 5
6	762298.6155	648313.6803	1173.759	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 6
7	765320.4670	646405.9210	1327.501	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 7
8	764452.8350	641683.3570	1357.172	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 8
9	762947.6970	641636.4200	1360.475	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 9
10	767060.9330	635104.9620	1358.510	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 10
11	766953.7110	632541.9600	1348.844	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 11
12	768230.7820	629720.9530	1351.105	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 12
13	768766.7110	629505.2030	1350.654	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 13
14	769492.4200	629119.2610	1346.675	TV	5/8" Rebar with 2" Aluminum Cap stamped pnt 14
15	769141.7689	625659.3342	1310.133	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 15
16	768517.4050	625638.7080	1288.742	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 16
17	767657.9540	625631.4530	1310.690	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 17
18	768639.6263	621694.3216	1310.979	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 18
19	769389.4440	619085.2960	1258.824	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 19
20	769761.7820	619136.2090	1246.340	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 20
21	770228.5630	619158.9300	1270.617	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 21
22	770126.8920	617833.3077	1283.926	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 22
23	769589.0416	617682.3011	1264.645	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 23
24	772346.1900	614936.3530	1321.911	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 24
25	772643.2268	615661.5929	1316.108	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 25
26	773665.7120	613995.1170	1312.174	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 26
27	773709.2240	613435.3180	1315.957	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 27
28	784314.8260	613657.6890	1288.756	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 28
29	784257.4140	614349.4000	1290.284	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 29
30	787885.3081	613878.7190	1190.002	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 30
31	788522.6973	614353.3326	1170.499	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 31
32	789450.4720	614105.0350	1148.343	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 32
33	789130.0840	613488.8340	1160.796	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 33
34	788699.2580	612778.9990	1177.660	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 34
35	795883.7910	614972.9240	1225.576	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 35
36	795641.3459	614523.1822	1184.815	CTL	5/8" Rebar with 2" Aluminum Cap stamped pnt 36
60	767773.2178	658397.3004	1039.461	CTL	BENTONVILLE 6
100	765719.9707	658553.4099	1040.603	GPS	RBR ALUM CAP
101	767671.3151	658321.5856	1045.705	GPS	GPS 040026 RBR ALUM CAP
102	762642.8185	646936.0332	1187.918	GPS	GPS BENTONVILLE 16
103	765838.7183	646137.8955	1328.145	GPS	RBR CAP
104	762882.4788	641970.6565	1358.373	GPS	RBR CAP
105	766861.5720	633463.3150	1340.623	GPS	CAP/REBAR GPS
106	766933.0190	631786.5840	1360.065	GPS	CAP/REBAR LT BANK
107	768130.5150	621673.8670	1323.561	GPS	CAP REBAR GPS 040102A
108	769452.0390	621908.0420	1305.742	GPS	ADS GPS 040102
109	771646.3140	613416.6920	1320.461	GPS	RBR\CAP GPS
110	770791.9291	612006.5264	1311.174	GPS	NGS POINT N 34 RESET 1987
111	782824.2570	614663.3580	1275.761	GPS	RBR CAP
112	784639.0704	614554.0001	1293.249	GPS	GPS 040031
113	795801.5310	615492.6250	1246.871	GPS	040032 GPS
114	801935.4869	610517.8416	1031.533	GPS	DISK SET IN CONC "G"
115	801302.3117	609377.5329	1010.898	GPS	DISK SET IN CONC "F"
125	760550.6169	653739.9348	1092.631	GPS	ADS 105 REBAR CAP +/- 2 FEET
126	767773.2178	658397.3004	1039.465	GPS	BENTONVILLE 6-2000 BRASS CAP
500	793132.5671	624285.7262	1337.205	GPS	HIWASSII TRI STA.
501	804309.8870	637544.2282	1210.627	NGS	NGS POINT HOLLAND
502	771207.2919	614376.5146	1309.052	NGS	NGS POINT GRAVETTE
503	771924.2819	625917.8305	1332.494	NGS	NGS POINT M 34
504	770736.3043	612155.5790	1311.677	NGS	NGS POINT N 34 RESET
505	791863.0997	588158.2788	899.611	NGS	NGS POINT C 124
506	795250.6760	586200.8994	885.628	NGS	NGS POINT D 124
508	767414.3888	603163.2667	1325.447	NGS	NGS POINT P 34
509	801995.3987	583511.7981	862.981	NGS	NGS POINT A 108
510	777603.4846	587964.9313	1084.689	NGS	NGS POINT A 124
511	768974.5043	593226.9412	1231.198	NGS	NGS POINT Q 34
512	819289.2751	587783.5298	827.466	BM	NGS POINT C 108
514	769344.8803	590538.1159	1219.765	NGS	NGS POINT R 34
515	832233.3560	631165.1065	1236.874	NGS	NGS POINT MCDONALD RESET
516	777773.2401	583197.8640	1286.087	NGS	NGS POINT WILLS RESET
517	813971.1153	582017.5544	827.357	NGS	NGS POINT B 108
518	829453.7370	593994.2360	846.127	NGS	NGS POINT D 108
519	768046.8610	589851.6709	1198.695	NGS	NGS POINT Y 31
520	768046.8610	589851.6709	1200.719	NGS	NGS POINT Z 31
521	774427.1287	650695.0755	1322.176	NGS	NGS POINT BELLA
523	775106.1418	578665.4740	1233.600	NGS	NGS POINT Y 34
524	836939.9015	594017.1590	856.419	NGS	NGS POINT E 108
525	756614.8438	638806.5095	1383.855	NGS	NGS POINT RICE
526	843318.6002	611830.9649	1190.942	NGS	NGS POINT ANDERSON
527	750436.5215	612944.7087	1354.459	NGS	NGS POINT POND
528	838253.6207	586727.7519	1151.572	NGS	NGS POINT LEIBE
529	772066.5115	570903.6802	1261.507	NGS	NGS POINT T 34
530	755963.1617	583579.0969	1027.258	NGS	NGS POINT A 213
700	765206.9642	655741.7740	1171.485	HPT	HPT-700\RBR CAP
701	764607.3939	662491.7156	1192.125	HPT	HPT-701\N END PRO TANK
702	763464.3331	662099.7398	1196.727	HPT	HPT-702\RBR CAP
704	764406.8764	660317.4519	1122.854	HPT	HPT-704\CPS
705	764367.3616	659087.3454	1051.445	HPT	HPT-705\CPS
706	766571.9132	658753.7644	1034.136	HPT	HPT-706\CPS
707	767630.8562	657574.7037	1136.412	HPT	HPT 707 FE COR
708	768004.0171	658169.7900	1037.758	HPT	HPT-708\NAIL
709	768165.3457	658796.3842	1032.030	HPT	HPT-709\CPS
710	765722.3617	658362.2285	1039.331	HPT	HPT-710\CTR MH
711	765634.3369	660318.0969	1221.643	HPT	HPT-711
712	761118.4779	660158.8033	1089.612	HPT	HPT-712\CPS
713	761612.1965	661254.7262	1136.056	HPT	HPT-713
714	765904.0112	657172.2549	1055.937	HPT	HPT-714\NAIL
715	764716.1156	656422.4660	1113.153	HPT	HPT-715\NAIL
716	765254.0270	654423.1908	1260.206	HPT	HPT-716 RBR CAP
717	766523.2584	654886.2094	1188.858	HPT	HPT-717\NAIL
718	765400.1696	652501.7593	1312.772	HPT	HPT-718\RBR CAP
719	764219.9070	652384.9386	1293.621	HPT	HPT-719\RBR CAP
720	762867.5469	650963.5227	1278.371	HPT	HPT 720 NDC
721	762983.8685	650254.8197	1152.461	HPT	HPT 721 REBAR CAP=ADS 040111
722	763525.4350	650335.7255	1166.388	HPT	HPT-722\RBR CAP
723	764388.4885	650649.5746	1184.230	HPT	HPT-723 NBC
724	762731.3232	648293.8863	1223.025	HPT	HPT-724\RBR CAP
725	763092.5572	648331.9682	1270.008	HPT	HPT-725\RBR CAP
726	763686.1855	648368.6201	1211.474	HPT	HPT-726\NAIL
727	763205.9659	646568.9013	1237.543	HPT	HPT-727 HPT CPS
728	763844.7861	646313.2160	1293.883	HPT	HPT-728 HPT REBAR CAP
729	764659.9857	646290.6691	1319.580	HPT	HPT-729 REBAR CAP
730	763032.9314	645514.5763	1265.440	HPT	HPT-1730\NAIL
731	764576.8850	643909.0199	1304.367	HPT	HPT-731
732	763456.3192	641966.6235	1345.831	HPT	HPT-732\RBR CAP
733	764858.5372	641710.7402	1337.193	HPT	HPT-733\RBR CAP
734	764316.1007	639629.5552	1215.176	HPT	CAP/REBAR BRIAR THICKET
735	765623.0510	639128.4526	1193.217	HPT	CAP/REBAR EDGE OF FIELD
736	765276.2490	637935.8360	1219.721	HPT	HPT 736 NBC TARGET
737	767103.0997	637186.4082	1285.042	HPT	HPT-737
738	766594.6162	635183.4839	1355.376	HPT	CAP/REBAR RT EDGE D.ROAD
739	767735.3359	635215.0348	1361.768	HPT	CAP/REBAR LT EDGE D.ROAD
740	767502.4236	632538.9925	1344.117	HPT	CAP/REBAR LT EDGE D.ROAD
741	768104.0668	632811.4897	1330.318	HPT	NAIL BASE PP\741
742	768495.8187	632879.1575	1324.007	HPT	HPT-742\NAIL BASE PP
743	769550.6337	632678.1131	1319.110	HPT	HPT-743\NW COR FOUNDATION
744	768257.3194	631421.2447	1336.328	HPT	HPT-744\BASE TREE
745	769872.3738	630438.4855	1335.142	HPT	BASE PP\NAIL
746	768532.8276	628615.0258	1346.051	HPT	BASE EASTRN GATE POST\NBC
748	768048.8200	625673.3252	1297.966	HPT	BASE CP\NAIL
749	769635.9955	625688.8002	1313.180	HPT	BASE SN\NAIL
753	767439.8998	621591.7819	1316.685	HPT	N SD WESTERN GATE POST\NBC
754	768094.7999	621897.8650	1323.229	HPT	N SD WESTERN GATE PST\NBC
755	769065.1261	621631.4328	1303.223	HPT	BASE S SD MAPLE TR\NAIL
756	768608.1094	619421.4941	1297.367	HPT	NBC 756 FE POST
757	768873.9946	620009.8194	1288.835	HPT	NBC 757 FE POST
758	770066.0482	619777.9521	1253.163	HPT	NBC 758 FE POST
759	769720.7232	616868.5444	1277.857	HPT	NBC 759 BASE OF PP
760	770240.8457	617477.6007	1288.811	HPT	NBC 760 FE POST
761	770917.3248	617834.0327	1292.534	HPT	NBC 761 BASE OF PP
762	771042.6264	614495.2992	1312.026	HPT	NBC 762 CENTER LINE END OF EB
763	772040.8576	614405.5085	1319.537	HPT	TOMBSTONE NBC 763
764	772438.2704	615062.7406	1321.531	HPT	END OF TAR SEAM 764 CPS
765	772941.0690	616076.5767	1314.354	HPT	NBC 765 SMALL CEDAR
766	773698.9248	613709.1145	1312.496	HPT	GATE POST 766 NBC
767	774834.9085	615081.2956	1298.463	HPT	CLOTHES LINE POST NBC 767
768	775646.8332	612981.5576	1285.544	HPT	SOUTH EDGE FE COR. 768 NBC
769	775845.5757	612250.3137	1289.836	HPT	NBC 769 GATE POST
770	776529.0607	613615.0808	1276.231	HPT	NBC 770 BRACE POST
771	777920.1277	614126.4343	1267.375	HPT	FE POST 771 NBC
772	777814.9000	612894.2868	1226.448	HPT	772 NBC STEEL POST
773	777707.5893	612025.9983	1255.889	HPT	CENT RD 773 NBC
774	780604.8530	614050.7375	1250.396	HPT	GATE POST 774 NBC
775	780565.8551	613422.4473	1259.326	HPT	FE POST 775 NBC
776	780392.6816	612474.4910	1267.524	HPT	END OF LOG 776 NBC
777	782705.6570	613848.8781	1242.113	HPT	GATE POST 777 NBC
778	783124.9688	612432.5602	1291.611	HPT	CEDAR BUSH 778 NBC
779	785614.7446	613892.2970	1269.174	HPT	779 NBC FE POST
780	785907.4238	612385.3763	1298.419	HPT	NAIL BASE BRACE POST
781	788147.2424	614616.5079	1157.017	HPT	8 SPIKE ELEV BY 3-WIRE
782	789213.1463	613471.0262	1174.590	HPT	NAIL BASE SM CEDAR
783	788730.8077	612759.4492	1177.205	HPT	NAIL
784	784346.3823	613150.8071	1300.436	HPT	NAIL BASE E SD SN
785	789997.7351	614298.2388	1139.279	HPT	HPT 785 X/Y +/- 5000 FEET
786	791628.8224	613430.4753	1191.027	HPT	END OF FALLEN TREE
787	791215.1146	614824.2383	1098.587	HPT	HPT 787 ELEV BY 3WIRE
788	793096.7472	614856.5652	1134.967	HPT	CPS BASE MB
789	795883.4502	615101.8045	1229.689	HPT	NAIL BASE SM BUSH
790	799928.7926	611825.5169	1216.363	HPT	NAIL END FALLEN TREE
793	796187.2923	612265.7856	1060.676	HPT	NAIL END GRADER ROW
794	796997.7150	611998.2454	1043.272	HPT	8 SPK X/Y +/- 2500 FEET
799	770909.6148	615208.6072	1283.710	HPT	NBC 799 BASE OF PP
800	795734.5066	613035.8044	1091.341	HPT	MO TARG. A\RBR IN CONC.
801	796017.9848	613977.1697	1207.169	HPT	MO TARG. AA\NAIL
802	797249.9403	613718.2005	1060.100	HPT	MO TARG. B\NAIL
803	797286.7432	612561.9948	1046.953	HPT	MO TARG. C\RBR IN CONC.
804	796401.2567	611475.4469	1080.283	HPT	MO TARG. D
805	798668.1192	610295.1063	1024.682	HPT	MO TARG. E
806	801795.2933	611412.0471	1188.977	HPT	MO TARG. H* SPIKE
900	764880.5131	659342.9617	1081.320	BM	AHTD DISK
901	766097.8036	658598.1118	1043.540	BM	AHTD DISK SW COR. BR WR X/Y +- 500 FT
902	765101.1515	656593.5795	1114.039	BM	TBM-902\CH SQ BASE CH
903	761695.0872	655377.8640	1099.544	BM	TBM-903\CPS PP
904	761197.8176	652598.1290	1110.903	BM	TBM 904 CPS INS PP X/Y +/- 500 FT
905	762164.9489	650444.0232	1129.157	BM	TBM-905 CPS 10IN. SYCAMORE
906	764022.1645	646322.4300	1299.254	BM	906 BM CPS INS 20 IN OAK
907	765661.3638	643949.8308	1321.695	BM	907 TBM CPS INS PP
908	764173.6081	641672.5753	1357.528	BM	TBM-908\CPS PP GUY
909	764880.6881	639324.2841	1213.787	BM	TBM-909\CPS 24" ASH
910	767060.4918	635176.9129	1359.433	BM	TBM-910\CPS 36" OAK
911	767008.3170	632584.9384	1349.486	BM	TBM-911\CPS CP
912	768139.6417	632601.2683	1297.094	BM	TBM-911\CPS CP
913	768862.8457	629464.1513	1350.481	BM	TBM-913\CPS CP
914	763538.5979	650337.8655	1168.114	BM	TBM-914 CPS INS PP
915	765501.0323	652377.8836	1315.897	BM	TBM-915\CH SQ CONC OF MH
916	771904.3410	627718.2163	1352.740	BM	TBM-916\CH SQ CA
917	771842.2031	625828.2908	1334.333	BM	TBM-917\CH SQ CA
918	772021.6926	622822.9584	1304.856	BM	TBM-918 CH SQ IN TB BASE
919	772211.0631	619193.9138	1295.083	BM	TBM-919 10IN. CHERRY CPS
920	771997.7867	614398.2385	1319.075	BM	CPS PP X/Y +/- 500 FEET

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.		CA0904	114	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

RCA0904.DGN 8/2/2013

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.		CA0904	115	636

(2) SURVEY CONTROL DETAILS

921	770791.9291	612006.5264	1311.174	BM	NGS POINT N 34 RESET 1987
922	769401.8461	622591.9950	1315.158	BM	TBM-922\CPS PP
923	775480.3297	614106.0364	1305.300	BM	TBM-923\CPS PP
924	777344.5924	614207.5071	1283.929	BM	TBM-924\CPS PP
925	780871.5112	614402.8975	1254.579	BM	TBM-925\CPS PP
926	782940.1903	613862.8781	1247.631	BM	CPS 7IN WALNUT
927	784202.1547	614420.7965	1289.865	BM	TBM-927\CH SQ SW CHURCH
928	786390.6514	615070.4996	1293.514	BM	TBM-928\CPS CP-GUY
929	789459.7876	614158.0912	1149.660	BM	CPS 10IN WALNUT\TBM-929
930	791760.2560	614576.3600	1115.637	BM	TBM-930\CPS SYCAMORE
931	793740.4073	614792.7234	1111.367	BM	TBM-931\CPS PP-GUY
932	768483.4668	625690.7891	1285.109	BM	TBM-932\CPS CP
933	794397.7225	611698.2463	1038.745	BM	CAP IN ROCK X/Y +/- 1000 FEET
934	796590.5832	611768.9981	1042.298	BM	TBM-934\CH CUT ROCK
935	798719.7511	610400.5130	1093.836	BM	NGS POINT 1342 CWA 1935
936	794975.1947	613093.4352	1067.124	BM	TBM-936\CPS
940	769740.6606	619250.1256	1247.991	BM	CPS IN WEST FACE 28" WALNUT +-116' EAST
941	784309.1863	612840.1946	1304.328	BM	CPS IN NORTH FACE 12"WILD CHERRY 225+-W
942	796162.4186	612374.1809	1067.892	BM	RR SPIKE N FACE 20"WALNUT
943	789109.4320	613641.6495	1159.799	BM	RR SPIKE E FACE 28"SYCAMORE
944	772566.0544	615379.8994	1316.024	BM	RR SPIKE N EP HWY 72
945	769069.2809	621687.4009	1306.296	BM	RR SPIKE E FACE PP
946	765584.0468	656947.2780	1068.591	BM	RR SPIKE SOUTH SIDE PP
947	765157.4281	657634.0178	1041.694	BM	RR SPIKE SOUTH SIDE 12"ELM
948	763726.0423	659820.5932	1053.792	BM	RR SPIKE WEST FACE 12"SYCAMORE
949	764050.4002	660682.0890	1226.175	BM	RR SPIKE SOUTH SIDE HICKORY
950	765619.1956	655727.2959	1199.407	BM	TBM-950\RRS
951	765557.0060	654561.5333	1224.007	BM	TBM-951<D
952	764593.2683	651413.8259	1294.555	BM	TBM-952\RRS
953	764242.3950	649541.0666	1221.390	BM	TBM-953\RRS
954	764298.5735	648455.7792	1278.117	BM	TBM-954\RRS
955	764202.2167	647273.0918	1309.726	BM	TBM-955\RRS
956	764354.9084	645410.0537	1290.688	BM	TBM-956\RRS
957	764263.7230	643995.4320	1253.775	BM	TBM-957\RRS
958	764291.5815	643035.3963	1319.636	BM	TBM-958\CPS
959	764680.5378	640466.2856	1318.684	BM	TBM-959\CPS
960	765177.7418	638767.3380	1274.284	BM	TBM-960\CPS
961	765887.5569	636746.5025	1314.923	BM	TBM-961\CPS
962	766639.9375	636206.6278	1299.751	BM	TBM-962\CPS
963	767340.6825	634257.1678	1346.333	BM	TBM-963\CPS
964	768082.6494	633550.0495	1313.559	BM	TBM-964\CPS
965	769005.2765	631950.8520	1311.863	BM	TBM-965\CPS
966	768766.7951	630709.3577	1329.851	BM	TBM-966\CPS
968	768294.8157	628639.3763	1340.044	BM	TBM-968\CPS
969	768534.3190	627032.8383	1328.309	BM	TBM-969\CPS
971	768069.7131	624331.0565	1302.076	BM	TBM-971\CPS
972	768199.2213	622976.4369	1292.954	BM	TBM-972\CPS
974	769425.6141	620402.2895	1294.593	BM	TBM-974\CPS
976	769782.9765	618612.4311	1260.819	BM	TBM-976\CPS
977	770947.5852	616596.4680	1272.370	BM	TBM-977\CPS
978	771712.7399	616060.0623	1297.314	BM	TBM-978\CPS
979	773804.9658	614710.8815	1307.039	BM	TBM-979\CPS
980	774737.4859	613920.6122	1292.974	BM	TBM-980\CPS
981	776711.2844	613095.1092	1276.580	BM	TBM-981\CPS
982	779015.8807	612319.4892	1254.573	BM	TBM-982\CPS
983	780356.5650	612380.5422	1268.452	BM	TBM-983\CPS
984	781672.1461	612972.5543	1274.536	BM	TBM-984\CPS
985	783119.6873	612659.4284	1294.723	BM	TBM-985\CPS
986	784966.2990	613153.8718	1306.394	BM	TBM-986\CPS
987	787021.3970	613347.7711	1213.072	BM	TBM-987\CPS
988	788057.3619	613062.6700	1273.505	BM	TBM-988\CPS
989	790096.5322	613688.3663	1231.293	BM	TBM-989\CPS
990	791374.8756	613768.5914	1243.869	BM	TBM-990\CPS
991	792619.7429	613670.9522	1209.850	BM	TBM-991\CPS
992	793900.8366	613414.7211	1153.976	BM	TBM-992\CPS
993	771597.7878	618498.2268	1283.083	BM	TBM 993\CPS FE COR X/Y +/- 2500 FEET
994	761881.2707	640408.6329	1277.072	BM	TBM-994\CPS 10" SYCAMORE
995	766971.1341	639152.7785	1176.900	BM	TBM-995 CPS CROSSTIE
996	767485.4536	637711.0907	1304.098	BM	TBM-996\NAIL PP
997	767522.8035	636175.9811	1342.973	BM	TBM-997\NAIL 12" OAK
998	762272.1246	648267.6284	1175.633	BM	TBM-998 CPS PP
999	788400.4757	614463.0863	1174.927	BM	TBM-999*CLC 1968

Note - Rebar and Cap - Standard -" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 1.000002867 HAS BEEN USED TO COMPUTE THE ABOVE LISTED GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GROUND COORDINATES ARE PROJECTED FROM AR. STATE PLANE GRID COORDINATES BY SCALING ALL X,Y
COORDINATE VALUES WITH THE INVERSE (1/X) OF THE COMBINED AJUSTMENT FACTOR (CAF) ABOUT X=0,Y=0.

GRID COORDINATES ARE STORED UNDER FILE NAME. s090115gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 ELEVATIONS FOR POINTS 1-36,60, 100-115, AND 900-999 WERE ESTABLISHED
BY 3-WIRE LEVEL TECHNIQUES FROM NGS BENCHMARKS.

POSITIONAL ACCURACY:

HORIZONTAL-GPS(POINTS 100-115): 1.0 CM 10 PPM, PRIMARY CONTROL(POINTS 1-36,60): 2.0 CM 20 PPM

VERTICAL-POSITIONAL ACCURACY IS THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS:
CONVERGENCE ANGLE: 1 22 56.8916 LEFT AT PN:109
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

LT: LG:

GRID NORTHING: 771648.52631 GRID EASTING: 613418.450666

GROUND NORTHING: 771646.3140 GROUND EASTING: 613416.6920

HWY. 71

POINT NO.	TYPE	STATION	NORTHING	EASTING
8071	POB	103+39.0000	826496.8400	609425.2380
8072	PC	109+76.3636	825936.7454	609729.4195
8073	PT	142+59.9095	822760.6646	609944.7916
8074	PC	193+90.4209	817962.8561	608127.3261
8075	PT	221+84.2666	815215.9410	607800.8440
8076	PC	319+25.9410	805550.8950	609020.3131
8077	PT	347+39.5200	802830.4325	609709.9660
8078	PC	439+46.9148	794249.5972	613048.4364
8079	PT	476+11.8318	790650.9074	613523.2125
8080	PC	532+98.1396	784998.1577	612906.3526
8081	PT	546+44.0376	783654.7122	612839.1652
8082	PC	614+33.4989	776865.5111	612898.6145
8083	PT	639+30.4606	774549.6093	613706.4072
8084	PC	677+67.2881	771524.3398	616066.2779
8085	PT	698+05.2800	770319.1193	617679.7386
8086	PC	744+93.3601	768602.9116	622042.3899
8087	PT	760+14.5154	768338.8109	623530.2557
8088	PC	804+62.1453	768443.0783	627976.6632
8089	PT	817+62.4618	768620.1806	629262.0476
8090	PC	826+67.6417	768844.4708	630138.9995
8091	PT	857+33.1778	768395.9498	633089.0230
8092	PC	917+75.6674	765226.4877	638233.5532
8093	PT	941+43.4533	764430.2158	640445.5714
8094	PC	962+37.4378	764140.2844	642519.3870
8095	PT	977+68.7543	764030.0708	644045.5900
8096	PC	1011+07.1388	764012.4679	647383.9281
8097	PT	1030+85.4123	764256.8635	649341.4816
8098	PC	1078+22.1244	765445.6375	653926.5943
8099	PT	1108+97.0604	765417.7055	656906.2240
8100	PC	1141+01.7214	764555.4172	659992.6962
8042	PT	1161+15.7844	763687.1384	661798.5044
8101	POE	1184+82.0599	762304.6510	663718.9180

HWY. 71 L.M.L.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8514	POB	1010+38.4074	764054.8297	647315.4210
8515	PC	1011+75.8665	764054.1049	647452.8782
8517	PT	1031+54.1399	764298.5005	649410.4317
8518	POE	1034+16.6448	764364.3814	649664.5350

HWY. 71 R.M.L.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8519	PC	1010+38.4074	763970.8309	647314.9781
8521	PT	1030+16.6809	764215.2265	649272.5316
8522	PI	1031+71.0667	764253.9728	649421.9763
8523	POE	1034+33.5716	764319.8537	649676.0796

HWY. 72 (SOUTH)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8001	POB	98+50.0000	767342.8030	630633.7340
8353	PC	102+97.2661	767659.0679	630317.4691
8355	PT	105+98.2356	767897.2346	630134.8774
8356	PC	129+09.3050	769899.6563	628981.0364
8358	PT	130+79.3369	770037.9060	628882.5055

HWY. 72 (SOUTH) RAMP 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8367	POB	823+21.1338	768182.1184	629970.7209
8368	PC	825+03.2963	768310.8177	630099.6381
8370	PT	843+84.6124	768830.7995	631829.3409
8371	POE	843+89.9389	768829.7387	631834.5607

HWY. 72 (SOUTH) RAMP 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8372	POB	818+38.0174	769261.5170	629348.7468
8373	PC	819+60.8230	769293.2011	629467.3947
8375	PT	825+99.8262	769281.9336	630098.0501
8376	PC	832+09.9158	769103.5746	630681.4859
8378	PT	837+14.0339	769021.1588	631177.3393
8379	PC	837+49.0802	769020.0120	631212.3669
8380	PT	857+63.5648	768445.7563	633119.7080

RELOC. CO. RD. 554

POINT NO.	TYPE	STATION	NORTHING	EASTING
8392	POB	10+00.0000	769552.1031	632640.6030
8393	PC	11+42.4247	769409.9339	632632.0758
8395	PT	21+72.3560	768539.7410	633084.4040
8396	PC	33+48.0576	767923.0512	634085.3875
8398	PT	37+11.5706	767817.3312	634429.1205
8399	POE	45+13.3693	767781.5811	635230.1219

CO. RD. 453

POINT NO.	TYPE	STATION	NORTHING	EASTING
8388	POB	100+00.0000	766548.2901	635165.6527
8389	PI	107+75.1515	767322.1937	635209.6186
8390	PI	113+00.0055	767846.5258	635233.0205
8391	POE	114+00.0055	767946.4263	635237.4792

BECKETT ROAD

POINT NO.	TYPE	STATION	NORTHING	EASTING
8400	POB	10+00.0000	764096.0400	639608.6710
8401	PI	19+28.9727	764977.0841	639314.1347
8402	POE	23+35.5708	765365.4667	639193.7977

CO. RD. 49

POINT NO.	TYPE	STATION	NORTHING	EASTING
8403	POB	8+47.5891	763298.0950	641985.8330
8404	PC	8+99.1086	763341.0286	641957.3555
8406	PT	9+72.1021	763404.5814	641921.5837
8407	PI	10+00.0000	763429.8260	641909.7090
8408	PC	10+70.6630	763493.7682	641879.6316
8410	PT	14+30.5569	763843.5845	641812.9272
8411	PC	23+18.2395	764729.5155	641868.6646
8413	PT	28+31.6631	765188.0826	642074.1460
8414	PI	28+96.1611	765233.9484	642119.4926
8415	PC	29+00.0179	765236.6910	642122.2042
8417	PT	29+75.7276	765263.3017	642190.7148
8418	POE	32+00.0000	765252.0638	642414.7054

CO. RD. 39 (ARTHUR ROAD)

POINT NO.	TYPE	STATION	NORTHING	EASTING
8500	POB	10+00.0000	762920.0800	646737.1042
8501	PC	12+19.8886	763100.4600	646611.3503
8503	PT	15+64.2677	763422.6915	646503.9094
8504	PC	16+47.0518	763505.4253	646501.0247
8506	PT	18+12.7127	763666.0424	646464.6370
8507	PC	22+12.9570	764032.9990	646304.8297
8509	PT	24+55.8405	764269.9032	646262.3139
8510	PI	27+34.6733	764548.3055	646277.8028
8511	PI	29+83.5037	764796.7517	646291.6251
8512	PI	34+09.3657	765222.2445	646273.8962
8513	POE	36+33.0499	765445.9216	646275.6867

HWY. 72 (SOUTH) RAMP 3 TEMP. RAMP

POINT NO.	TYPE	STATION	NORTHING	EASTING
8600	POB	838+24.4900	769016.1550	631299.9202
8601	PC	838+24.4901	769016.1550	631299.9204
8603	PT	845+60.2428	768836.7073	632008.7707
8604	PC	845+60.2449	768836.7064	632008.7725
8606	PT	848+09.1283	768745.5179	632240.1597

HWY. 71 TEMP. CROSSOVER

POINT NO.	TYPE	STATION	NORTHING	EASTING
8607	PC	1011+89.9300	763976.0907	647470.2496
8609	PRC	1015+48.4649	764015.0100	647826.1365
8611	PT	1020+72.0045	764096.8930	648343.0488

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

8/2/2013

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SURVEY CONTROL DETAILS

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.		CA0904	116	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

ULT. HWY. 71B RAMP 1

POINT NO.	TYPE	STATION	NORTHING	EASTING
8524	PC	1104+79.19	765488.4176	656494.5822
8526	PT	1108+08.75	765395.6266	656810.3884
8527	PC	1113+12.10	765212.6412	657279.2995
8529	PT	1120+73.22	764971.6993	658000.9352
8530	POE	1127+53.61	764788.6236	658656.2356

ULT. HWY. 71B RAMP 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8530	POB	1127+55.95	764788.6236	658656.2356
8531	PC	1135+92.28	764563.5898	659461.7210
8533	PT	1142+71.90	764419.9254	660125.5775
8534	PC	1143+51.95	764407.6610	660204.6826
8536	PT	1148+16.72	764281.5466	660650.8237

ULT. HWY. 71B RAMP 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8537	POB	1125+28.16	765105.4317	658525.6983
8538	PC	1136+57.80	764801.4746	659613.6813
8540	PT	1141+77.82	764616.9869	660099.1111
8541	PC	1145+54.69	764451.7244	660437.8069
8543	PT	1147+01.45	764392.4930	660572.0518

ULT. HWY. 71B RAMP 4

POINT NO.	TYPE	STATION	NORTHING	EASTING
8544	PC	1106+97.49	765509.3508	656723.1279
8546	PT	1110+68.99	765433.6738	657086.7680
8547	PC	1114+60.00	765366.4570	657471.9613
8549	PT	1121+05.35	765224.0477	658101.1244
8537	POE	1125+46.18	765105.4317	658525.6983

ULT. HWY. 71B

POINT NO.	TYPE	STATION	NORTHING	EASTING
8550	POB	100+00.00	761626.4974	660137.8820
8551	PC	104+28.15	762054.6251	660133.3221
8553	PRC	128+88.31	764212.6579	659117.2876
8555	PT	144+07.04	765530.1059	658445.0780
8556	PC	159+27.46	767046.3492	658332.3661
8558	PT	171+88.44	768255.2175	658002.0000

ROUNDABOUT

POINT NO.	TYPE	STATION	NORTHING	EASTING
8650	PC	607+49.56	764576.9666	659215.1913
8652	PCC	602+93.69	764539.1379	658992.6973
8654	PT	604+10.08	764429.1277	659020.6173
8655	PC	604+50.02	764410.9543	659056.1779
8656	PT	606+02.82	764434.2807	659196.9437
8657	PC	606+85.72	764514.2984	659218.6200
8650	PT	607+49.56	764576.9666	659215.1913

HWY. 71 RAMP

POINT NO.	TYPE	STATION	NORTHING	EASTING
8524	PC	1104+79.19	765488.4176	656494.5822
8526	PT	1108+08.75	765395.6266	656810.3884
8527	PC	1113+12.10	765212.6412	657279.2995
8529	PT	1120+73.22	764971.6993	658000.9352
8683	PC	1126+37.27	764819.9276	658544.1864
8685	PRC	1128+82.34	764651.4833	658706.0923
8687	PT	1132+54.42	764483.5001	658993.3992
8659	POE	1133+76.70	764517.2686	659110.9284

EXISTING HWY. 71 NB.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8659	POB	300+00.00	764517.2686	659110.9284
8660	PC	300+52.25	764560.8799	659139.7052
8662	PT	302+88.27	764778.7514	659226.0448
8663	PC	305+37.02	765023.8546	659268.4550
8665	PT	306+59.72	765145.9640	659278.9414
8666	POE	306+61.52	765147.7618	659278.9414

HWY. 71 SB. ON-RAMP

POINT NO.	TYPE	STATION	NORTHING	EASTING
8659	POB	1132+43.68	764517.2686	659110.9284
8667	PC	1132+89.27	764529.8603	659154.7531
8669	PT	1134+95.73	764542.8769	659359.1895
8670	POE	1142+97.09	764421.0521	660151.2344

EXISTING HWY. 71 SB. OFF-RAMP

POINT NO.	TYPE	STATION	NORTHING	EASTING
8671	POB	400+00.00	765348.1784	658579.0691
8672	PC	403+95.17	765018.3568	658796.7343
8674	PT	406+08.49	764838.1715	658910.8901
8675	PI	407+87.42	764685.2607	659003.8233
8659	POE	409+86.65	764517.2686	659110.9284

WALTON BLVD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8676	POB	96+76.14	763717.0442	659580.1320
8677	PC	96+93.02	763730.5832	659570.0543
8679	PT	99+96.85	763971.8735	659385.4295
8680	PC	100+18.18	763988.6446	659372.2409
8682	PT	106+04.99	764510.3827	659112.7360
8659	POE	106+12.11	764517.2686	659110.9284

MCKISSIC CREEK RD.

POINT NO.	TYPE	STATION	NORTHING	EASTING
8700	POB	100+00.00	764838.7047	658476.9754
8701	PC	101+20.43	764954.6888	658509.3787
8703	PT	104+22.82	765252.8094	658504.0567
8704	POE	104+58.27	765286.5896	658493.3056

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

BEGIN JOB CA0904
BEGIN SURFACING
LT. LANES
STA. 806+23.42

BEGIN SURFACING
RT. LANES
STA. 808+81.65

C.L. HWY. 71

SURVEY BASELINE

SURVEY BASELINE S 80°39'24" W
2981.25'

N 88°39'24" E
4447.63'

PC 804+62.15

PI 811+15.11

PN:932
PD:TBM-932\CPS CP

PN:989
PD:TBM-989\CPS

PN:968
PD:TBM-968\CPS

C.L. MEDIAN
PI = 811+15.11
Δ = 13°00'11" LT.
D = 1°00'00"
T = 652.96'
L = 1300.32'
PC = 804+62.15
PT = 817+62.46
Ls = 350'
e = 0.037'/'

RAMP 3
PI = 834+63.45
Δ = 15°07'25" LT.
D = 3°00'00"
T = 253.53'
L = 504.12'
PC = 832+09.92
PT = 837+14.03
e = 0.057'/'
Ls = 200'

C.L. RAMP 3
PI = 847+79.60
Δ = 29°45'41" RT.
D = 1°28'39"
T = 1030.52'
L = 2014.48'
PC = 837+49.08
PT = 857+63.56
e = 0.000'/'
Ls = 000'

C.L. HWY. 72 (SOUTH) RAMP 3

C.L. HWY. 71

N 29°57'50" W
2310.07'

PN:913
PD:TBM-913\CPS CP

C.L. MEDIAN
PI = 842+88.35
Δ = 45°58'59" RT.
D = 1°30'00"
T = 1620.71'
L = 3065.54'
PC = 826+67.64
PT = 857+33.18
Ls = 350'
e = 0.054'/'

PC 826+67.64

PT 817+62.46

N 75°39'13" E
905.18'

BEGIN GRADING & STRUCTURES
LT. & RT. LANES
STA. 823+50

C.L. MEDIAN
PI = 811+15.11
Δ = 13°00'11" LT.
D = 1°00'00"
T = 652.96'
L = 1300.32'
PC = 804+62.15
PT = 817+62.46
Ls = 350'
e = 0.037'/'

SURVEY BASELINE N 84°23'34" W
2819.71'

C.L. HWY. 72 (SOUTH)

N 45°02'55" E
182.16'

PC 825+03.30

PI 835+28.20

PC 837+49.08

PI 837+14.03

PT 837+14.03

PI 837+63.45

PC 838+24.49

PT 837+49.08

POB 838+24.49

PI 841+96.98

PT 843+84.61

POE 843+89.94

C.L. HWY. 72 (SOUTH) RAMP 2

C.L. HWY. 72 (SOUTH) RAMP 3 TEMP. RAMP

PN:966
PD:TBM-966\CPS

RAMP 2
PI = 835+28.20
Δ = 56°26'22" RT.
D = 3°00'00"
T = 1024.90'
L = 1881.32'
PC = 825+03.30
PT = 843+84.61
e = 0.057'/'
Ls = 200'

C.L. RAMP 3 TEMP. RAMP
PI = 841+96.98
Δ = 22°04'21" RT.
D = 3°00'00"
T = 372.49'
L = 735.75'
PC = 838+24.49
PT = 845+60.24

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SURVEY CONTROL DETAILS

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SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
1-24-14

C.L. HWY. 72 (SOUTH)
PI = 129+94.59
Δ = 11°03'07" LT.
D = 6°30'00"
T = 85.28'
L = 170.03'
PC = 129+09.31
PT = 130+79.34

RAMP 3
PI = 822+88.87
Δ = 31°57'01" RT.
D = 5°00'00"
T = 328.05'
L = 639.00'
PC = 819+60.82
PT = 825+99.83
e = 0.040'/'
Ls = 150'

RAMP 3
PI = 834+63.45
Δ = 15°07'25" LT.
D = 3°00'00"
T = 253.53'
L = 504.12'
PC = 832+09.92
PT = 837+14.03
e = 0.057'/'
Ls = 200'

C.L. MEDIAN
PI = 842+88.35
Δ = 45°58'59" RT.
D = 1°30'00"
T = 1620.71'
L = 3065.54'
PC = 826+67.64
PT = 857+33.18
Ls = 350'
e = 0.054'/'

RAMP 2
PI = 835+28.20
Δ = 56°26'22" RT.
D = 3°00'00"
T = 1024.90'
L = 1881.32'
PC = 825+03.30
PT = 843+84.61
e = 0.057'/'
Ls = 200'

C.L. MEDIAN
PI = 811+15.11
Δ = 13°00'11" LT.
D = 1°00'00"
T = 652.96'
L = 1300.32'
PC = 804+62.15
PT = 817+62.46
Ls = 350'
e = 0.037'/'

C.L. HWY. 72 (SOUTH)
PI = 104+48.62
Δ = 15°02'55" RT.
D = 5°00'00"
T = 151.36'
L = 300.97'
PC = 102+97.27
PT = 105+98.24

C.L. HWY. 72 (SOUTH) RAMP 3
C.L. HWY. 72 (SOUTH)
C.L. HWY. 72 (SOUTH) RAMP 2
C.L. HWY. 71
SURVEY BASELINE
SURVEY BASELINE N 64°23'34" W 2815.71'

PNI966 PDITBM-966\CPS
PNI913 PDITBM-913\CPS

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SURVEY CONTROL DETAILS

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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
1-24-14

BEGIN CONST. CO. RD. 554
STA. 10+00.00

POB 10+00.00

S 3°25'57" W
142.42'

PC 11+42.42

C.L. RELOC. CO. RD. 554

RELOCATED CO. RD. 554
PI = 17+13.89
Δ = 61°47'45" LT.
D = 6°00'00"
T = 571.47'
L = 1029.93'
PC = 11+42.42
PT = 21+72.36
e = 0.070'/'
Ls = 190'

PT 21+72.36

C.L. MEDIAN
PI = 842+88.35
Δ = 45°58'59" RT.
D = 1°30'00"
T = 1620.71'
L = 3065.54'
PC = 826+67.64
PT = 857+33.18
Ls = 350'
e = 0.054'/'

C.L. RAMP 3 TEMP. RAMP
PI = 841+96.98
Δ = 22°04'21" RT.
D = 3°00'00"
T = 372.49'
L = 735.75'
PC = 838+24.49
PT = 845+60.24

RAMP 3
PI = 834+63.45
Δ = 15°07'25" LT.
D = 3°00'00"
T = 253.53'
L = 504.12'
PC = 832+09.92
PT = 837+14.03
e = 0.057'/'
Ls = 200'

RAMP 3
PI = 847+79.60
Δ = 29°45'41" RT.
D = 1°28'39"
T = 1030.52'
L = 2014.48'
PC = 837+49.08
PT = 857+63.56
NO SUPER

C.L. HWY. 72 (SOUTH) RAMP 3

PI 842+88.35

PI 841+96.98

PI 847+79.60

PT 837+14.03

PC 837+49.08

POB 838+24.49

PI 834+63.45

S 88°07'30" E
35.05'

S 86°49'48" E

S 64°45'27" E

S 78°30'43" E
5.33'

PN965
PD:TBM-965\CPS

PI 848+09.13

PT 845+60.24
PC 845+60.24

PT 843+84.61
POE 843+89.94

PI 846+84.86

S 72°13'27" E

PI 817+13.89

RAMP 2
PI = 835+28.20
Δ = 56°26'22" RT.
D = 3°00'00"
T = 1024.90'
L = 1881.32'
PC = 825+03.30
PT = 843+84.61
e = 0.057'/'
Ls = 200'

C.L. HWY. 72 (SOUTH) RAMP 2

C.L. HWY. 72 (SOUTH)
RAMP 3 TEMP. RAMP

C.L. RAMP 3 TEMP. RAMP
PI = 846+84.86
Δ = 7°27'59" LT.
D = 3°00'00"
T = 124.62'
L = 248.88'
PC = 845+60.24
PT = 848+09.13

C.L. HWY. 71

PT 857+33.18
PT 857+63.56

S 58°21'48" E
1175.70'

S 58°21'48" E
6042.49'

PN912
PD:TBM-911\CPS CP

PN964
PD:TBM-964\CPS

SURVEY BASELINE

SURVEY BASELINE N 82°09'57" W
3829.53'

N

8/2/2013

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SURVEY CONTROL DETAILS

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				6	ARK.			
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(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
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No. 11425
TRINITY D. SMITH
1-24-14

RELOCATED CO. RD. 554
PI = 35+33.82
Δ = 29°04'52" LT.
D = 8°00'00"
T = 185.76'
L = 363.51'
PC = 33+48.06
PT = 37+11.57
e = 0.070'/'
Ls = 190'

PC 33+48.06
8396
35
PT 37+11.57
8398
PI 35+33.82
870
40
S 87°26'40" E
801.80'
C.L. RELOC. CO. RD. 554
POE 45+13.37
45
8399
738
END CONST. CO. RD. 554
STA. 45+03.37
POE 114+00.01
8391
N 2°33'20" E
100.00'
8390
Δ = 0°00'00" RT.
PI 113+00.01
END CONST. CO. RD. 453
STA. 113+00.00
110
N 2°33'20" E
524.85'
875
S 58°21'48" E
6042.49'
Δ = 0°41'45" LT.
PI 107+75.15
8389
C.L. HWY. 71
880
105
PN:910
PD:TBM-910\CPS 36" OAK
N 3°15'05" E
775.15'
885
C.L. CO. RD. 453
BEGIN CONST. CO. RD. 453
STA. 102+00.00
100
8388
POB 100+00.00
890
S 58°21'48" E
6042.49'
895
900
PN:983
PD:TBM-983\CPS
PN:997
PD:TBM-997\NAIL 12" OAK
SURVEY BASELINE
SURVEY BASELINE N 72°13'07" W
2010.27'
PN:962
PD:TBM-962\CPS

N

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		CA0904	121	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

PN-9915
PD:TBM-9915WAIL PP

PN-9911
PD:TBM-9911CPS

PN-9912
PD:TBM-9912CPS

PN-9913
PD:TBM-9913CPS 24"

PN-9914
PD:TBM-9914CPS

LST

SURVEY BASELINE N 52°41'19" W
2441.74'

SURVEY BASELINE

LST

END CONST. BECKETT
STA. 19+28.97

8402

POE 23+35.57

N 17°12'55" W
406.60'

C.L. BECKETT

20

8401

Δ = 1°16'11" LT.

PI 19+28.97

900 905 910 915 920 925 930

C.L. HWY. 71

S 58°21'48" E
6042.49'

PC 917+75.67

8092

PI 928+75.70

C.L. MEDIAN
PI = 929+76.70
Δ = 23°40'40.3" LT.
D = 1°00'00"
T = 1201.03'
L = 2367.79'
PC = 917+75.67
PT = 941+43.45
Ls = 350'
e = 0.037'/'

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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.		CA0904	122	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

SURVEY BASELINE N 73°30'29" W
2693.08'

SURVEY BASELINE

CO. RD. 49
PI = 25+86.54
Δ = 41°04'26" RT.
D = 8°00'00"
T = 268.30'
L = 513.42'
PC = 23+18.24
PT = 28+31.66
e = 0.084'/'
Ls = 220'

PC 23+18.24
PT 28+31.66
PI 25+86.54
8411
25

C.L. CO. RD. 49

PC 23+35.57
8402
N 11°12'55" W
406.60'
20
Δ = 1°16'11" LT.
PI 19+28.97
8401
END CONST. BECKET
STA. 19+28.97

PN:909
PD:TBM-909\CPS 24" ASH

PN:959
PD:TBM-959\CPS

PN:908
PD:TBM-908\CPS PP GUY

C.L. MEDIAN
PI = 929+76.70
Δ = 23°40'40.3" LT.
D = 1°00'00"
T = 1201.03'
L = 2367.79'
PC = 917+75.67
PT = 941+43.45
Ls = 350'
e = 0.037'/'

PI 929+76.70
15
N 18°29'05" W
926.97'
C.L. BECKETT
BEGIN CONST. BECKET
STA. 12+00.00
10
8400
POB 10+00.00

PT 941+43.45
8093
S 82°02'29" E
2093.98'
C.L. HWY. 71

N 3°36'00" E
887.68'
20
15
8410
PT 14+30.56

CO. RD. 49
PI = 12+54.49
Δ = 28°47'29" RT.
D = 8°00'00"
T = 183.83'
L = 359.89'
PC = 10+70.66
PT = 14+30.56
e = 0.084'/'
Ls = 220'
PI 12+54.49

930 935 940 945 950 955

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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.		CA0904	123	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CO. RD. 49
PI = 12+54.49
Δ = 28°47'29" RT.
D = 8°00'00"
T = 183.83'
L = 359.89'
PC = 10+70.66
PT = 14+30.56
e = 0.084'/'
Ls = 220'

CO. RD. 49
PI = 25+86.54
Δ = 41°04'26" RT.
D = 8°00'00"
T = 268.30'
L = 513.42'
PC = 23+18.24
PT = 28+31.66
e = 0.084'/'
Ls = 220'

CO. RD. 49
PI = 29+40.28
Δ = 48°11'54" RT.
D = 63°39'43"
T = 40.26'
L = 75.71'
PC = 29+00.02
PT = 29+75.73

CO. RD. 49
PI = 9+35.67
Δ = 8°21'52" RT.
D = 11°27'33"
T = 36.56'
L = 72.99'
PC = 8+99.11
PT = 9+72.10

C.L. MEDIAN
PI = 970+04.24
Δ = 7°39'23.7" LT.
D = 0°30'00"
T = 766.80'
L = 1531.32'
PC = 962+37.44
PT = 977+68.75
NO SUPERELEVATION

N 3°36'00" E
887.68'

S 82°02'29" E
2093.98'

SURVEY BASELINE N 82°41'55" W
2216.25'

N 44°40'26" E
64.50'

S 87°07'40" E
224.27'

N 25°11'30" W
70.66'

N 25°11'30" W
27.90'

N 33°33'22" W
51.52'

Δ = 0°00'00" RT.

950 955 960 965 970

20 25 30 15

PI 12+54.49
PI 14+30.56
PC 10+70.66
PT 9+72.10
PC 8+99.11
PC 23+18.24
PT 28+31.66
PI 25+86.54
PI 28+96.16
PI 29+40.28
PT 29+75.73
POE 32+00.00
PC 962+37.44
PI 970+04.24

8410 8411 8412 8413 8414 8415 8416 8417 8418
8408 8407 8406 8404 8403 8094

C.L. HWY. 71
C.L. CO. RD. 49
SURVEY BASELINE
731

END CONST. CO. RD. 49
STA. 28+96.29

BEGIN CONST. CO. RD. 49
STA. 10+00.13

PN=586
PO:TBM-980 XCPS FP CUV

PN=589
PO:TBM-958 XCPS

Found Aluminum Cap

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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.		CA0904	124	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

PN:907
PD:907 TBM CPS INS PP

N

SURVEY BASELINE

PN:956
PD:TBM-956\RRS

PN:957
PD:TBM-957\RRS

C.L. MEDIAN
PI = 970+04.24
Δ = 7°39'23.7" LT.
D = 0°30'00"
T = 766.80'
L = 1531.32'
PC = 962+37.44
PT = 977+68.75
NO SUPERELEVATION

PT 977+68.75

975 980 985 990 995 1000

8095

S 89°41'52" E
3338.38'

SURVEY BASELINE N 73°03'51" W
2513.19'

S 89°41'52" E
3338.38'

C.L. HWY. 71

CO. RD. 39
PI = 23+36.65
Δ = 26°43'02" RT.
D = 11°00'00"
T = 123.69'
L = 242.88'
PC = 22+12.96
PT = 24+55.84
NO SUPERELEVATION

PC 22+12.96

PN:908
PD:908 BM CPS INS 20 IN OAK

N 23°31'58" W
400.24'

20

C.L. CO. RD. 39

P.O.E. 36+33.05

8513

N 0°27'31" E
223.68'

35

8512

P.O.B. 34+09.37

Δ = 1°55'38" RT.

N 2°23'09" W
425.86'

Δ = 0°37'55" LT.

30

P.I. 29+83.50

8511

N 3°11'04" E
248.83'

8510

P.I. 27+34.67

N 3°11'04" E
278.83'

25

8509

P.I. 24+55.84

P.I. 23+36.65

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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.		CA0904	125	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CO. RD. 39
PI = 23+36.65
Δ = 26°43' 02" RT.
D = 11°00' 00"
T = 123.69'
L = 242.88'
PC = 22+12.96
PT = 24+55.84
NO SUPERELEVATION

CO. RD. 39
PI = 17+30.87
Δ = 21°32' 09" LT.
D = 13°00' 00"
T = 83.82'
L = 165.66'
PC = 16+47.05
PT = 18+12.71
NO SUPERELEVATION

CO. RD. 39
PI = 13+96.97
Δ = 32°53' 09" RT.
D = 9°32' 57"
T = 177.08'
L = 344.38'
PC = 12+19.89
PT = 15+64.27
NO SUPERELEVATION

BEGIN CONST. CO. RD. 39
STA. 15+54.43

END CONST. CO. RD. 39
STA. 28+91.84

C.L. CO. RD. 39

C.L. HWY. 71

SURVEY BASELINE

S 89°41'52" E
3338.38'

N 23°31'58" W
400.24'

N 3°11'04" E
278.83'

N 3°11'04" E
248.83'

N 2°23'09" W
425.86'

N 0°27'31" E
223.68'

N 34°52'58" W
219.89'

N 1°59'49" W
82.78'

S 89°41'52" E
3338.38'

S 89°41'52" E
137.46'

PI 23+36.65
PI 27+34.67
Δ = 0°00' 00" LT.
PI 29+83.50
Δ = 0°37' 55" LT.
PI 34+09.37
Δ = 1°55' 38" RT.
PI 13+56.97
PI 17+30.87
PI 18+12.71
PT 24+55.84
PC 22+12.96
PC 16+47.05
PT 15+64.27
PC 12+19.89
POE 36+33.05
POB 10+00.00
PC 1010+38.41
PC 1011+07.14
POB 1010+38.41

8500 8501 8503 8504 8506 8507 8509 8510 8511 8512 8513 8514 8519

10 15 20 25 30 35

595 1001 1005 1010

PIN:926 PD:1986 BM CPS INS 28 IN OAK

PIN:555 PD:1984 BENTONVILLE 18

PIN:555 PD:1984 BENTONVILLE 19

PIN:555 PD:1984 CAP

PIN:555 PD:1984 \RRS

PIN:555 PD:1984 \RRS

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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.		CA0904	126	636

(2) SURVEY CONTROL DETAILS

C.L. HWY. 71 TEMP. CROSSOVER
PI = 1013+69.73
Δ = 10°45'22" LT.
D = 3°00'00"
T = 179.80'
L = 358.53'
PC = 1011+89.93
PT = 1015+48.46

C.L. HWY. 71 TEMP. CROSSOVER
PI = 1018+10.42
Δ = 5°14'07" RT.
D = 1°00'00"
T = 261.95'
L = 523.54'
PC = 1015+48.46
PT = 1020+72.00

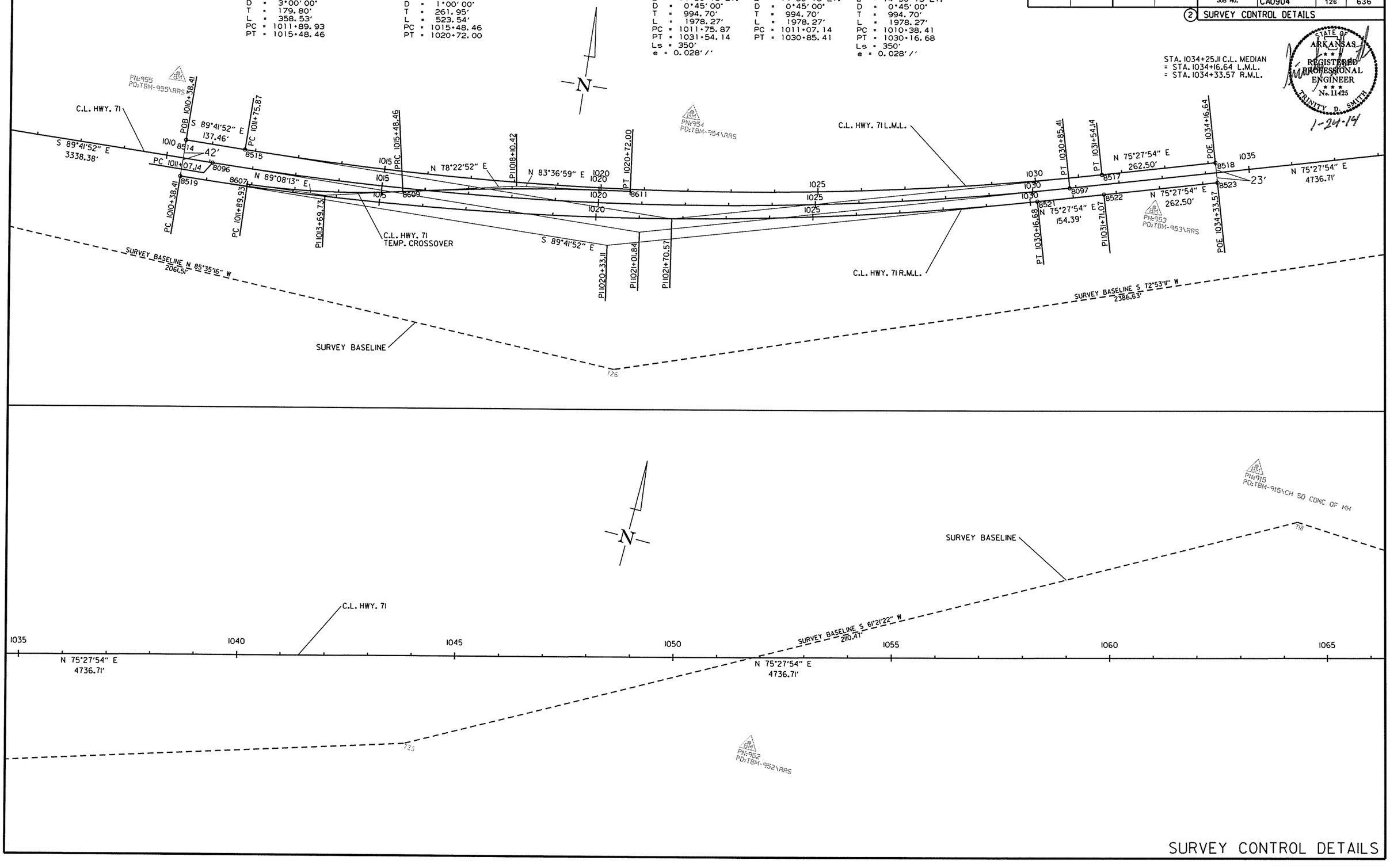
C.L. L.M.L.
PI = 1021+70.57
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1011+75.87
PT = 1031+54.14
Ls = 350'
e = 0.028'/'

C.L. MEDIAN
PI = 1021+01.84
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1011+07.14
PT = 1030+85.41

C.L. R.M.L.
PI = 1020+33.11
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1010+38.41
PT = 1030+16.68
Ls = 350'
e = 0.028'/'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

STA. 1034+25.11 C.L. MEDIAN
= STA. 1034+16.64 L.M.L.
= STA. 1034+33.57 R.M.L.



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SURVEY CONTROL DETAILS

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.		CA0904	127	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

PN:951
PD:TBM

N

518
523
1035
1040
1045
C.L. HWY. 71
1050
1055
1060
1065
N 75°27'54" E
4736.71'
SURVEY BASELINE S 61°21'22" W
2110.47'
N 75°27'54" E
4736.71'
123
PN:952
PD:TBM-952\RRS

CH SQ CONC OF MH
118
1065
1070
1075
8098
1080
1085
1090
1095
N 75°27'54" E
4736.71'
PC 1078+22.12
1078+22.13 BK. = L
1078+82.66 AHD.
SURVEY BASELINE N 86°35'15" W
3245.77'
PN:951
PD:TBM-951\600
C.L. HWY. 71
PI 1094+25.61

N

HWY. 71 MAIN LANES
PI = 1094+25.61
Δ = 30°08'39"RT.
D = 1°00'00"
T = 1542.96'
L = 3014.41'
PC = 1078+22.12
PT = 1108+97.06
Ls = 450'
eMAX = 0.037'/'

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SURVEY CONTROL DETAILS

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.		CA0904	128	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

HWY. 71 MAIN LANES
PI = 1094+25.61
Δ = 30°08'39"RT.
D = 1°00'00"
T = 1542.96'
L = 3014.41'
PC = 1078+22.12
PT = 1108+97.06
Ls = 450'
eMAX = 0.037'/'

ULT. HWY. 71B RAMP 4
PI = 1108+83.30
Δ = 3°42'54"LT.
D = 1°00'00"
T = 185.81'
L = 371.50'
PC = 1106+97.49
PT = 1110+68.99

ULT. HWY. 71B RAMP 4
PI = 1117+82.94
Δ = 5°42'38"RT.
D = 0°53'06"
T = 322.94'
L = 645.35'
PC = 1114+60.00
PT = 1121+05.35

STA. 1106+97.50 HWY. 71
= STA. 1106+97.49 ULTIMATE HWY. 71B RAMP 3

STA. 1104+79.20 HWY. 71
= STA. 1104+79.20 ULTIMATE HWY. 71B RAMP 1

HWY. 71 RAMP / ULT. HWY. 71B RAMP 1

HWY. 71 RAMP / ULT. HWY. 71B RAMP 1
PI = 1106+44.38
Δ = 9°53'13"RT.
D = 3°00'00"
T = 165.19'
L = 329.56'
PC = 1104+79.19
PT = 1108+08.75
NO SUPER

HWY. 71 RAMP / ULT. HWY. 71B RAMP 1
PI = 1116+92.98
Δ = 5°42'30"LT.
D = 0°45'00"
T = 380.87'
L = 761.11'
PC = 1113+12.10
PT = 1120+73.22
NO SUPER

PN 958 PD:TBM-958\ARS
PN 945 PDRR SPIKE SOUTH SIDE PP
PN 947 PDRR SPIKE SOUTH SIDE 12"ELM
PN 902 PD:TBM-902\CH SD BASE CH

C.L. HWY. 71

BASELINE S 79°39'35" W 2858.05'

S 80°06'05" E 391.01'

S 68°40'57" E 503.35'

S 74°23'27" E 3204.66'

S 74°23'27" E 680.39'

S 74°23'27" E 440.83'

N15°36'33"E 120.43'

P.C. 101+20.43

P.O.E. 1125+

P.O.E. 1136+90.39

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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.		CA0904	129	636

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

ROUNDABOUT
PI = 603+31.72
Δ = 140°13'30"LT.
D = 47°44'47"
T = 331.72'
L = 293.69'
PC = 600+00.00
PCC = 602+93.69

ROUNDABOUT
PI = 605+38.74
Δ = 72°57'26" T.
D = 47°44'47"
T = 88.73'
L = 152.80'
PC = 604+50.02
PT = 606+02.82

ROUNDABOUT
PI = 603+54.99
Δ = 44°27'36"LT.
D = 38°11'50"
T = 61.31'
L = 116.40'
PCC = 602+93.69
PT = 604+10.08

ROUNDABOUT
PI = 607+18.77
Δ = 36°34'41"LT.
D = 57°17'45"
T = 33.05'
L = 63.84'
PC = 606+85.72
PT = 607+49.56

EXISTING HWY. 71 NB.
PI = 305+98.52
Δ = 9°49'00"LT.
D = 8°00'00"
T = 61.50'
L = 122.71'
PC = 305+37.02
PT = 306+59.72

EXISTING HWY. 71 NB.
PI = 301+71.96
Δ = 23°36'07"LT.
D = 10°00'00"
T = 119.71'
L = 236.02'
PC = 300+52.25
PT = 302+88.27

ULT. HWY. 71B RAMP 3
PI = 1139+18.53
Δ = 10°24'01"RT.
D = 2°00'00"
T = 260.73'
L = 520.02'
PC = 1136+57.80
PT = 1141+77.82

ULT. HWY. 71B RAMP 3
PI = 1146+28.11
Δ = 4°24'11"LT.
D = 3°00'00"
T = 73.42'
L = 146.77'
PC = 1145+54.69
PT = 1147+01.45

HWY. 71 MAIN LANES
PI = 1151+19.25
Δ = 20°08'26"RT.
D = 1°00'00"
T = 1017.53'
L = 2014.06'
PC = 1141+01.72
PT = 1161+15.78

ULT. HWY. 71B
PI = 136+90.39
Δ = 45°33'43"RT.
D = 3°00'00"
T = 802.09'
L = 1518.73'
PRC = 128+88.31
PT = 144+07.04

HWY. 71 RAMP / ULT. HWY. 71B RAMP 1

HWY. 71 RAMP
PI = 1127+72.88
Δ = 61°02'58"RT.
D = 24°54'40"
T = 135.61'
L = 245.07'
PC = 1126+37.27
PRC = 1128+82.34
NO SUPER

HWY. 71 RAMP
PI = 1131+23.39
Δ = 92°41'20"LT.
D = 24°54'40"
T = 241.06'
L = 372.08'
PRC = 1128+82.34
PT = 1132+54.42
NO SUPER

HWY. 71 SB. ON-RAMP
PI = 1133+94.14
Δ = 24°46'29"RT.
D = 12°00'00"
T = 104.87'
L = 206.46'
PC = 1132+89.27
PT = 1134+95.73
NO SUPER

ULT. HWY. 71B RAMP 2
PI = 1139+32.49
Δ = 6°47'46"LT.
D = 1°00'00"
T = 340.21'
L = 679.22'
PC = 1135+92.28
PT = 1142+71.90

ULT. HWY. 71B RAMP 2
PI = 1145+85.49
Δ = 13°56'35"RT.
D = 3°00'00"
T = 233.54
L = 464.77
PC = 1143+51.95
PT = 1148+16.72

WALTON BLVD.
PI = 103+15.76
Δ = 23°28'20"RT.
D = 4°00'00"
T = 297.58'
L = 586.81'
PC = 100+18.18
PT = 106+04.99
NO SUPER

WALTON BLVD.
PI = 98+44.94
Δ = 1°31'09"LT.
D = 0°30'00"
T = 151.92'
L = 303.83'
PC = 96+93.02
PT = 99+96.85
NO SUPER

ULT. HWY. 71B
PI = 117+39.85
Δ = 49°12'11"LT.
D = 2°00'00"
T = 1311.70'
L = 2460.15'
PC = 104+28.15
PRC = 128+88.31

ULT. HWY. 71B
PI = 1125+46.18
Δ = 74°23'27"RT.
D = 3°00'00"
T = 431.27'
L = 780.39'
PC = 1121+14.91
PT = 1129+95.30

ULT. HWY. 71B RAMP 4
PI = 1125+28.16
Δ = 74°23'27"LT.
D = 3°00'00"
T = 431.27'
L = 780.39'
PC = 1121+14.91
PT = 1129+95.30

EXISTING HWY. 71 SB. OFF-RAMP

EXISTING HWY. 71 NB.

ULT. HWY. 71B RAMP 3

C.L. HWY. 71

C.L. HWY. 71

WALTON BLVD.

SURVEY BASELINE N 57°32'30" W 4202.90'

HWY. 71 SB. ON-RAMP

ULT. HWY. 71B RAMP 2

MCKISSIC CREEK RD.

PN:948 PDNR

PN:948 PDNR SPIKE WEST FACE 12"SYCAMORE

PN:949 PDNR

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SURVEY CONTROL DETAILS

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				6	ARK.			
				JOB NO.		CA0904	130	636

PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

C.L. MEDIAN
PI = 811+15.11
Δ = 13°00'11"LT.
D = 1°00'00"
T = 652.96'
L = 1300.32'
PC = 804+62.15
PT = 817+62.46
Ls = 350'
e = 0.037'/'

BEGIN JOB CA0904
BEGIN SURFACING
LT. LANES
STA. 806+23.42

HWY.72 (NORTH)
STA. 48+78.81 - STA. 51+13.22 - IN PLACE
234'-5" x 52'-0" BRIDGE. 232'-0" CONTINOUS
COMPOSITE PLATE GIRDER UNIT, SPANS OF 120'-112'
RETAIN

STA. 821+72.91 HWY. 71 C.L.
= STA. 115+49.99 HWY. 72 (SOUTH) C.L.
Δ=105°36'18"

IMPACT ATTENUATION BARRIER (TYPE A)
STA. 821+50.66 C.L. MEDIAN HWY. 71 = 1 EACH
STA. 821+95.16 C.L. MEDIAN HWY. 71 = 1 EACH

CONCRETE BARRIER WALL (PIER PROTECTION TYPE A)
STA. 821+50.66 LT. TO STA. 821+95.16 LT. C.L. MEDIAN HWY. 71 = 45 LIN. FT.
STA. 821+50.66 RT. TO STA. 821+95.16 RT. C.L. MEDIAN HWY. 71 = 45 LIN. FT.

BEGIN SURFACING
RT. LANES
STA. 808+81.65

BEGIN GRADING & STRUCTURES
LT. & RT. LANES
STA. 823+50

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
821+85	829+86	LT.	6'	548
822+50	828+59	RT.	6'	404

HWY. 71

STA. 801+99.65 BEGIN SUPERELEVATION L.M.L. (-0.020'/')
STA. 805+49.65 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 816+74.96 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 820+24.96 END SUPERELEVATION L.M.L. (-0.020'/')

STA. 798+49.65 BEGIN TRANSITION R.M.L. (N.C.)
STA. 801+99.65 BEGIN SUPERELEVATION R.M.L. (-0.020'/')
STA. 805+49.65 MAX. SUPERELEVATION R.M.L. (0.037'/')
STA. 816+74.96 MAX. SUPERELEVATION R.M.L. (0.037'/')
STA. 820+24.96 END SUPERELEVATION R.M.L. (-0.020'/')

BEGIN JOB CA0904
STA. 806+23.42

P.V.C. 800+00.00
ELEV. 1333.59

P.V.I. 815+00.00
ELEV. 1345.15

0.77%
T. DT. GR. -1.02%
LT. DT. GR. -0.80%
1.98%
RT. DT. GR. -0.40%
LT. DT. GR. -1.03%
RT. DT. GR. -7.53%
LT. DT. GR. -5.54%
RT. DT. GR. -3.00%
LT. DT. GR. -3.27%

808+76.40
1332.21
813+00.00
1322.90
821+00.00
1321.34
820+50.00
1321.91
821+85.00
1320.52
822+60.00
1320.70
823+30.00
1315.43
823+95.00
1308.89

K=1089.21
VC=3000'
e=-10.33'

BM: 916 TBM-916\CH SQ CA
3466.37 LT. OF STA. 802+84.913
ELEVATION = 1352.7400

BM: 968 TBM-968\CPS
200.49 RT. OF STA. 811+00.2361
ELEVATION = 1340.0436

BM: 913 TBM-913\CPS CP
185.02 LT. OF STA. 820+18.3917
ELEVATION = 1350.4810

1370 1360 1350 1340 1330 1320 1310 1300 1290 1280

795+00 800+00 805+00 810+00 815+00 820+00 825+00

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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.		CA0904	131	636

2 PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SO. YDS.
838+00		LT.	6'	83
842+27	843+36	RT.	6'	98
845+34	847+02	RT.	6'	109

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SO. YDS.
843+36	845+34	RT.	9'	266	221

STA. 838+20 CONSTRUCT
DBL. 42" X 518' R.C. PIPE CULV'T. (CL. V)
(25° LT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 1 BEDDING)
Q50=1550cfs, D.A.=32Ac.

STA. 842+84 CONSTRUCT
DBL. 42" X 432' R.C. PIPE CULV'T. (CL. V)
(17° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 1 BEDDING)
Q50=176cfs, D.A.=40Ac.

C.L. RAMP 3
PI = 847+79.60
Δ = 29°45'41" RT.
D = 1°28'39"
T = 1030.52'
L = 2014.48'
PC = 837+49.08
PT = 857+63.56
e = 0.000'/'
Ls = 000'

STA. 842+26.71 CL MEDIAN
END L.M.L. GRADING AND SURFACING

RAMP 3
RAMP 2
BANKS LN.
RELOC. CO. RD. 554
HWY. 71

STA. 833+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 88' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)

STA. 829+03 CONSTRUCT
48" X 282' R.C. PIPE CULV'T. (CL V)
(17° LT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 3 BEDDING)
Q50=104cfs, D.A.=20Ac.

STA. 838+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 102' R.C. PIPE OUTLET (CL. III)
FES ON LT.
(USE TYPE 3 BEDDING)

C.L. MEDIAN
PI = 842+88.35
Δ = 45°58'59" RT.
D = 1°30'00"
T = 1620.71'
L = 3065.54'
PC = 826+67.64
PT = 857+33.18
Ls = 350'
e = 0.054'/'

STA. 842+27 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 100' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)

STA. 847+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 98' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)

STA. 851+11 CONSTRUCT
48" X 414' R.C. PIPE CULV'T. (CL. V)
(33° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 2 BEDDING)
Q50=127cfs, D.A.=28Ac.

GUARDRAIL (TYPE C)
STA. 852+50 TO STA. 852+75 RT. OF CONST. C.L. = 25 L/N. FT.

STA. 824+05.14 BEGIN SUPERELEVATION L.M.L. (-0.020'/')
STA. 827+55.14 MAX. SUPERELEVATION L.M.L. (0.054'/')
STA. 856+45.68 MAX. SUPERELEVATION L.M.L. (0.054'/')
STA. 859+95.68 END SUPERELEVATION L.M.L. (-0.020'/')

STA. 824+05.14 BEGIN SUPERELEVATION R.M.L. (-0.020'/')
STA. 827+55.14 MAX. SUPERELEVATION R.M.L. (-0.054'/')
STA. 856+45.68 MAX. SUPERELEVATION R.M.L. (-0.054'/')
STA. 859+95.68 END SUPERELEVATION R.M.L. (-0.020'/')
STA. 863+45.68 END TRANSITION R.M.L. (N.C.)

C.L.	RAMP 3 TEMP. RAMP	C.L.	RAMP 3 TEMP. RAMP
PI =	841+96.98	PI =	846+84.86
Δ =	22°04'21" RT.	Δ =	7°27'59" LT.
D =	3°00'00"	D =	3°00'00"
T =	372.49'	T =	124.62'
L =	735.75'	L =	248.88'
PC =	838+24.49	PC =	845+60.24
PT =	845+60.24	PT =	848+09.13

K=1089.21
VC=3000'
e=-10.33'

1.98%

830+50.00
1309.18

RT. DT. GR. -3.00%
LT. DT. GR. -3.27%
RT. DT. GR. -5.88%
RT. DT. GR. -2.75%
RT. DT. GR. -0.46%
LT. DT. GR. 2.25%

821+00.00
1304.33
828+58.00
1294.98
829+49.00
1294.75
830+11.00
1292.15
833+00.00
1302.30
836+77.10
1301.04

TOP D. I. 1306.75
F.L. D. I. 1303.25
F.L. OUTLET 1302.39
F.L. INLET 1294.79
F.L. OUTLET 1290.96

TOP D. I. 1301.28
F.L. D. I. 1297.78
F.L. OUTLET 1296.77

K=618.73
VC=2000'
e=8.08'

P.V.I. 840+00.00
ELEV. 1295.55

TOP D. I. 1299.80
F.L. D. I. 1296.30
F.L. OUTLET 1294.61

835+15.36
1261.64

F.L. INLET 1271.96
F.L. OUTLET 1250.67
LT. DT. GR. -2.20%
839+23.33
1251.83

F.L. INLET 1263.68
F.L. OUTLET 1249.27

TOP D. I. 1301.60
F.L. D. I. 1298.10
F.L. OUTLET 1296.53
RT. DT. GR. 3.40%
RT. DT. GR. 1.91%
845+32.00
1290.68
847+00.00
1296.39
P.V.I. 850+00.00
ELEV. 1308.04
850+00.00
1302.11
F.L. INLET 1278.93
F.L. OUTLET 1268.80
1.25%
853+45.00
1306.83
RT. DT. GR. 0.30%

BM: 966 TBM-966\CPS
177.32 RT. OF STA. 832+28.9483
ELEVATION = 1329.8508

BM: 965 TBM-965\CPS
137.47 LT. OF STA. 844+66.1997
ELEVATION = 1311.8625

BM: 912 TBM-911\CPS CP
462.29 RT. OF STA. 854+13.3061
ELEVATION = 1297.0940

1330 1320 1310 1300 1290 1280 1270 1260 1250 1240

825+00 830+00 835+00 840+00 845+00 850+00 855+00

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				6	ARK.			
				JOB NO.		CA0904	132	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

C.L. RAMP 3
PI = 847+79.60
Δ = 29°45'41" RT.
D = 1°28'39"
T = 1030.52'
L = 2014.48'
PC = 837+49.08
PT = 857+63.56
e = 0.000'/'
Ls = 000'

STA. 861+30 CONSTRUCT
DBL. 42" X 568' R.C. PIPE CULV'T. (CL. SPECIAL)
(22° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE I BEDDING)
Q50=173cfs, D.A.=37Ac.

STA. 865+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 152' R.C. PIPE OUTLET (CL. III)
F.E.S. ON LT.
(USE TYPE 3 BEDDING)
DITCH PAVE OUTLET SLOPE ON LT.
CONCRETE DITCH PAVING (TYPE A) = 14 SQ. YD.

STA. 871+61.60 CONSTRUCT
TYPE RM DROP INLET 121.39' LT.
6'-6" X 5'-0" X H=12'-2"
W/ 30" X 242' R.C. PIPE INLET (CL. V)
(10° RT. FWD SKEW)
42" X 132" R.C. STUB INLET (CL. III)
54" X 162' R.C. PIPE OUTLET CL. V)
F.E.S. ON INLETS AND OUTLET
(USE TYPE 3 BEDDING)
Q50=23cfs, D.A.=9Ac.

STA. 877+23 CONSTRUCT
42" X 160' R.C. PIPE CULV'T. (CL. III)
(49° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 3 BEDDING)
Q50=91cfs, D.A.=24Ac.

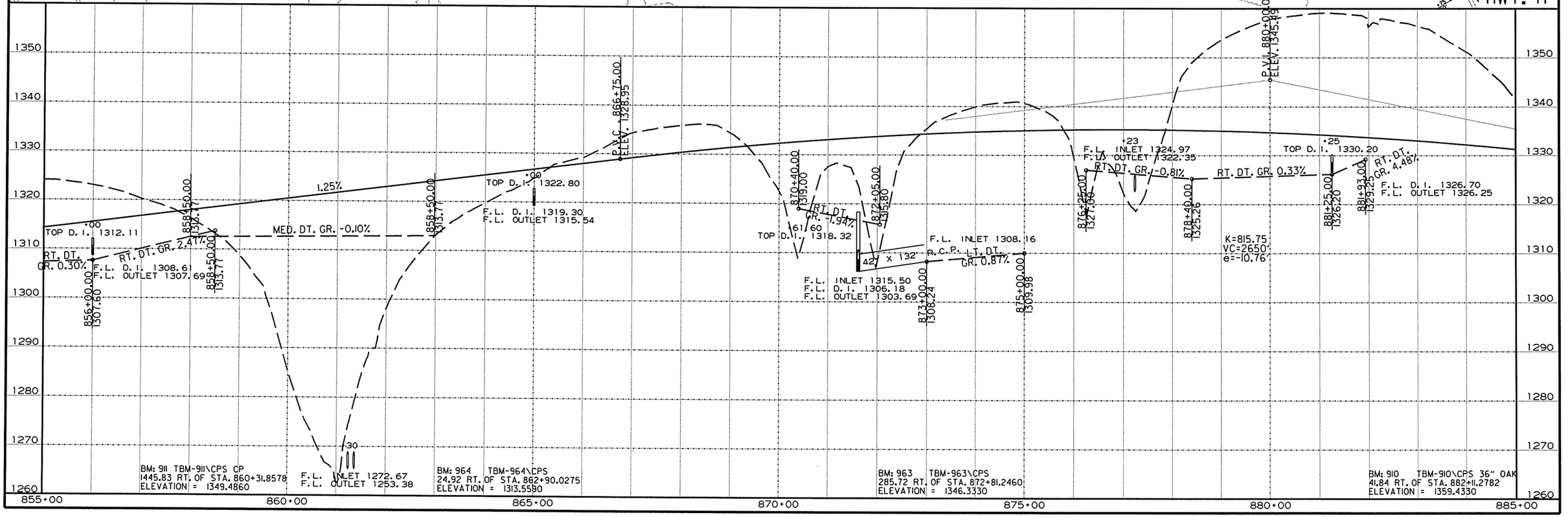
PC 2+72.36
S 58°21'48" E
RELOC. CO. RD. 554
PC 33+48.06
S 87°26'40" E
STA. 874+99.99 CL MEDIAN
END L.M.L. GRADING
STA. 882+08.91 HWY. 71 C.L.
= STA. 105+49.95 CO. RD. 453 C.L.
Δ=118°23'08"
PI 107+78.15
16'-0" GATE
16'-0" GATE
PT 185+33.38
PC 63+63.56
STA. 869+00.00 CL MEDIAN
BEGIN L.M.L. GRADING
STA. 856+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 88' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)
ROCK DITCH LINER
IMPACT ATTENUATION BARRIER (TYPE A)
STA. 882+03.91 C.L. MEDIAN HWY. 71 = 1 EACH
STA. 882+13.91 C.L. MEDIAN HWY. 71 = 1 EACH
STA. 881+25 CONSTRUCT
TYPE 'RM' DROP INLET IN MEDIAN
4'-0" x 3'-0" x H = 3'-6" W/
24" x 86' R.C. PIPE OUTLET (CL. III)
F.E.S. ON RT.
(USE TYPE 3 BEDDING)
HWY. 71

C.L. MEDIAN
PI = 842+88.35
Δ = 45°58'59" RT.
D = 1°30'00"
T = 1620.71'
L = 3065.54'
PC = 826+67.64
PT = 857+33.18
Ls = 350'
e = 0.054'/'

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
865+00		LT.	6'	13
869+00	871+58	LT.	6'	173
880+57	882+19	LT.	9'	162
881+23	881+90	RT.	6'	45
881+90	885+24	RT.	9'	334

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
873+00	875+00	LT.	11'	293	244



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				6	ARK.			
				JOB NO.		CA0904	133	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
885+24	895+59	RT.	11'	1551	1293
910+50	913+84	RT.	9'	453	378

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
900+09	905+03	RT.	6'	356

STA. 895+55 CONSTRUCT
48" X 336' R.C. PIPE CULV'T. (CL. SPECIAL)
FES LT. & RT.
(USE TYPE I BEDDING)
Q50=98cfs, D.A.=27Ac.

STA. 905+13 CONSTRUCT
6' X 5' X 420' R.C. BOX CULV'T
Q50=260cfs, D.A.=75Ac.

16'-0" GATE

TRIBUTARY TO TANYARD CREEK

HWY. 71

TRIBUTARY TO TANYARD CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1240.0

TRIBUTARY TO TANYARD CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1218.0

K=815.75
VC=2650'
e=-10.76'

RT. DT. GR. -2.16%
RT. DT. GR. -4.73%
-2.00%
RT. DT. GR. -9.69%
RT. DT. GR. -18.00%
RT. DT. GR. -18.72%
RT. DT. GR. -13.00%

885+53.00 1314.81
889+68.00 1303.38
893+25.00 P.V.T. ELEV. 1318.99
895+55.00 1275.64
900+26.00 1292.59
902+40.00 1271.85
904+40.00 1235.85
910+50.00 1279.99
912+00.00 1251.90
913+30.00 1235.00

F.L. INLET 1274.85
F.L. OUTLET 1252.78

F.L. INLET 1235.95
F.L. OUTLET 1223.71

BM: 997 TBM-997\NAIL 12" OAK
875.81 LT. OF STA. 888+19.3814
ELEVATION = 1342.9730

BM: 962 TBM-962\CPS
140.22 LT. OF STA. 893+08.5627
ELEVATION = 1299.7510

BM: 996 TBM-996\NAIL PP
1649.22 LT. OF STA. 901+45.9533
ELEVATION = 1304.0980

BM: 961 TBM-961\CPS
217.17 RT. OF STA. 901+62.8536
ELEVATION = 1314.9230

885+00 890+00 895+00 900+00 904+00 905+00 910+00 915+00

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				6	ARK.			
				JOB NO.		CA0904	134	636

(2) PLAN AND PROFILE SHEETS

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
925+49	932+40	RT.	14'	1413	1177
930+55	944+33	LT.	13'	2338	1949
942+81	944+01	RT.	9'	188	157

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
928+95		RT.	6'	50

C.L. MEDIAN
PI = 929+76.70
Δ = 23°40'40.3" LT.
D = 1°00'00"
T = 1201.03'
L = 2367.79'
PC = 917+75.67
PT = 941+43.45
Ls = 350'
e = 0.037'/'

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

TANYARD CREEK

16'-0" GATE

STA. 928+95.19 CONSTRUCT TYPE N-2 DROP INLET LT. OF R.M.L. 4'-6" X 2'-2¾" X H=3'-0" W/ 18" X 48' R.C. PIPE OUTLET (CL. III) FES ON RT. (USE TYPE 3 BEDDING)

STA. 930+84.05 HWY. 71 C.L. = STA. 16+08.12 BECKET C.L. Δ=127°02'16"

STA. 937+40.00 CL MEDIAN BEGIN L.M.L. GRADING

STA. 941+79.99 CL MEDIAN END L.M.L. GRADING

STA. 915+65 CONSTRUCT DBL. 6' X 5' X 477' R.C. BOX CULV'T (32° LT. FWD. SKEW) Q50=560cfs, D.A.=168Ac.

INSTALLATION OF GUARDRAIL

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
926+00.08	929+17.61	R.M.L. - LT.	250 LIN. FT.	1EA.	1EA.
926+79.79	929+45.44	R.M.L. - RT.	200 LIN. FT.	1EA.	1EA.
934+95.08	937+87.69	R.M.L. - LT.	225 LIN. FT.	1EA.	1EA.
935+22.73	936+64.85	R.M.L. - RT.	75 LIN. FT.	1EA.	1EA.

BECKET RD.

BRIDGE B7274
STA. 929+44.65 - STA. 935+02.35 CONSTRUCT
557'-8½" x 40'-0" BRIDGE.
210'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (105', 105' SPANS)
345'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (115', 115', 115' SPANS)

HWY. 71

STA. 915+13.17 BEGIN SUPERELEVATION L.M.L. (-0.020'/')
STA. 918+63.17 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 940+55.95 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 944+05.95 END SUPERELEVATION L.M.L. (-0.020'/')

STA. 911+63.17 BEGIN TRANSITION R.M.L. (N.C.)
STA. 915+13.17 BEGIN SUPERELEVATION R.M.L. (-0.020'/')
STA. 918+63.17 MAX. SUPERELEVATION R.M.L. (0.037'/')
STA. 940+55.95 MAX. SUPERELEVATION R.M.L. (0.037'/')
STA. 944+05.95 END SUPERELEVATION R.M.L. (-0.020'/')
STA. 947+55.95 END TRANSITION R.M.L. (N.C.)

K=350.91
VC=1930'
e=13.27'

K=554.53
VC=3050'
e=-20.97'

-2.00%

P.V.C. 919+68.64
ELEV. 1266.12

B.E. STA. 929+44.65

B.E. STA. 935+02.35

P.V.I. 938+98.64
ELEV. 1280.60

3.50%

P.V.C. 939+75.00
ELEV. 1283.27

925+50.00
1256.28

RT. DT. GR. -12.18%

928+95.00
1238.62

RT. DT. GR. -4.25%

P.V.I. 929+33.64
ELEV. 1246.82

CONSTRUCT 210'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT AND 345'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE NO. B7274
40'-0" CLEAR ROADWAY

932+40.00
1219.46

933+40.00
1204.50

930+55.00
1202.00

LT. DT. GR. 0.88%

LT. DT. GR. 9.61%

936+00.00
1229.50

937+15.00
1234.96

LT. DT. GR. 4.75%

941+00.00
1262.55

LT. DT. GR. 7.17%

944+33.00
1269.21

LT. DT. GR. 2.00%

TANYARD CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1208.0

F.L. INLET 1216.59
F.L. OUTLET 1208.31

BM: 995 TBM-995 CPS CROSSTIE
1967.54 LT. OF STA. 916+43.1711
ELEVATION = 1176.9000

BM: 960 TBM-960\CPS
217.54 LT. OF STA. 922+75.2745
ELEVATION = 1274.2840

BM: 909 TBM-909\CPS 24" ASH
165.85 LT. OF STA. 929+26.5017
ELEVATION = 1213.7870

BM: 959 TBM-959\CPS
250.76 LT. OF STA. 941+28.6612
ELEVATION = 1318.6840

BM: 994 TBM-994\CPS 10" SYCAMORE
2529.51 RT. OF STA. 944+59.7954
ELEVATION = 1277.0720

1290 1280 1270 1260 1250 1240 1230 1220 1210 1200

915+00 920+00 925+00 930+00 935+00 940+00 945+00

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				6	ARK.			
				JOB NO.		CA0904	135	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-29-13

STA. 956+50 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 150' R.C. PIPE OUTLET (CL. III)
(55° LT. FWD. SKEW)
FES ON RT.
(USE TYPE 3 BEDDING)

STA. 970+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 88' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)

STA. 972+06 CONSTRUCT
DBL. 42" X 300' R.C. PIPE CULV'T. (CL. V)
(35° LT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 2 BEDDING)
Q50=150cfs, D.A.=37Ac.
CONST. OUTLET = 2360 CU. YD. UNCLASS. EXCAV.

16'-0" GATE

STA. 955+49.01 HWY. 71 C.L.
= STA. 18+23.35 CO. RD. 49 C.L.
Δ=94°21'31"

STA. 954+00.00 CL MEDIAN
BEGIN L.M.L. GRADING

STA. 956+99.99 CL MEDIAN
END L.M.L. GRADING

S 82°02'29" E

PC 962+37.44

PI 970+04.24

16'-0" GATE

CO. RD. 49
MILLER CHURCH RD.

IMPACT ATTENUATION BARRIER (TYPE A)
STA. 955+44.02 C.L. MEDIAN HWY. 71 = 1 EACH
STA. 955+54.02 C.L. MEDIAN HWY. 71 = 1 EACH

ROCK DITCH LINER

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
954+72	956+07	LT.	9'	135
954+81	956+32	RT.	6'	101
970+00		RT.	6'	48

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
968+24	968+84	RT.	9'	139	116

C.L. MEDIAN
PI = 970+04.24
Δ = 7°39'23.7" LT.
D = 0°30'00"
T = 766.80'
L = 1531.32'
PC = 962+37.44
PT = 977+68.75
NO SUPERELEVATION

HWY. 71

P.V.I. 955+00.00
ELEV. 1336.64

950+00.00
1305.50

955+19.09
1308.55

TOP D.I. 1312.47

957+00.00
1312.64

RT. DT. GR. 0.59%

RT. DT. GR. 2.26%

F.L. D.I. 1308.97
F.L. OUTLET 1308.57

K=554.53
VC=3050'
e=-20.97'

TOP D.I. 1302.67

-2.00%

F.L. D.I. 1299.17
F.L. OUTLET 1298.30

P.V.I. 970+25.00
ELEV. 1306.14

BM: 908 TBM-908\CPS PP GUY
84.25 RT. OF STA. 953+94.1685
ELEVATION = 1357.5280

BM: 958 TBM-958\CPS
210.6 LT. OF STA. 967+36.8625
ELEVATION = 1319.6360

F.L. INLET 1271.19
F.L. OUTLET 1262.81

1350 1340 1330 1320 1310 1300 1290 1280 1270 1260

945+00 950+00 955+00 960+00 965+00 970+00 975+00

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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.		CA0904	136	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

C.L. MEDIAN
PI = 970+04.24
Δ = 7°39'23.7" LT.
D = 0°30'00"
T = 766.80'
L = 1531.32'
PC = 962+37.44
PT = 977+68.75
NO SUPERELEVATION

PT 977+68.75

16'-0" GATE

TRIBUTARY TO MCKISIC CREEK

STA. 993+98 CONSTRUCT
5' X 5' X 529' R.C. BOX CULV'T.
(6° 43' LT. FWD. SKEW)
Q50=224cfs, D.A.=48Ac.
CONST. OUTLET = 3725 CU. YD. UNCLASS. EXCAV.

16'-0" GATE

TRIBUTARY TO MCKISIC CREEK

16'-0" GATE

PI 24+55.41

PI 24+06.65

PC 22+12.96

1005

S 89°41'52" E

S 89°41'52" E

S 89°41'52" E

BRIDGE B7276
STA. 999+60.84 - STA. 1001+49.16 CONSTRUCT
188'-3⅛" x 40'-0" BRIDGE.
186'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
(54', 78', 54' SPANS)

16'-0" GATE

STA. 1000+34.50 HWY. 71 C.L.
= STA. 21+96.73 CO. RD. 39 C.L.
Δ=13°50'06"

PI 23+39.58

PI 18+12.71

PI 17+37.87

PC 16+47.05

PI 15+64.27

HWY. 71

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
980+50	981+31	RT.	9'	175	146
981+31	984+40	RT.	14'	583	486
984+40	985+21	RT.	VAR.	256	213
985+21	990+43	RT.	24'	1692	1410
1001+96	1002+10	RT.	12.67'	113	94

INSTALLATION OF GUARDRAIL

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
996+48.00	999+41.71	R.M.L. - LT.	225 LIN. FT.	1 EA.	1 EA.
996+90.78	999+59.50	R.M.L. - RT.	200 LIN. FT.	1 EA.	1 EA.
1001+50.50	1004+19.22	R.M.L. - LT.	200 LIN. FT.	1 EA.	1 EA.
1001+68.29	1003+12.03	R.M.L. - RT.	75 LIN. FT.	1 EA.	1 EA.

STA. 982+70 CONSTRUCT
DBL. 5' X 5' X 481' R.C. BOX CULV'T
(45° RT. FWD. SKEW)
Q50=450cfs, D.A.=129Ac.

STA. 989+84 CONSTRUCT
48" X 482' R.C. PIPE CULV'T. (CL. SPECIAL)
(9° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 1 BEDDING)
Q50=125cfs, D.A.=25Ac.

STA. 1002+51 CONSTRUCT
36" X 314' R.C. PIPE CULV'T. (CL. V)
(10° LT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 1 BEDDING)
Q50=35cfs, D.A.=9Ac.

16'-0" GATE

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
999+50	1000+81	RT.	6'	89
1000+25	1001+00	LT.	6'	52

TRIBUTARY TO MCKISIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1246.0

TRIBUTARY TO MCKISIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1237.0

STA. 992+98.00 BEGIN TRANSITION R.M.L. (N.C.)
STA. 996+48.00 END TRANSITION R.M.L. (-0.020'/')

-2.00%

K=225.34
VC=800'
e=3.55'

1.55%

P.V.C. 976+00.00
ELEV. 1294.64

P.V.I. 980+00.00
ELEV. 1286.64

P.V.T. 984+00.00
ELEV. 1292.84

P.V.C. 995+00.00
ELEV. 1309.89

P.V.C. 995+00.00
ELEV. 1309.89

B.E. STA. 999+60.84

B.E. STA. 1001+49.16

P.V.I. 1005+00.00
ELEV. 1325.39

981+50.00
1252.75

RT. DT. GR. -3.86%

.70

F.L. INLET 1243.35
F.L. OUTLET 1238.54

985+10.00
1238.27

RT. DT. GR. -3.71%

.84

F.L. INLET 1236.69
F.L. OUTLET 1219.57

990+30.00
1219.00

.98

F.L. INLET 1233.30
F.L. OUTLET 1217.46

CONSTRUCT 186'-0" CONTINUOUS COMPOSITE W-BEAM UNIT
BRIDGE NO. B7276
40'-0" CLEAR ROADWAY

K=396.04
VC=2000'
e=-12.63'

999+43.00
1282.74

RT. DT. GR. -4.93%

1000+83.00
1275.84

1000+20.00
1283.82

LT. DT. GR. -2.77%

.51

1001+68.00
1279.72

F.L. INLET 1279.10
F.L. OUTLET 1260.50

BM: 907 907 TBM CPS INS PP
1630.2 LT. OF STA. 976+47.0837
ELEVATION = 1321.6950

BM: 957 TBM-957\RRS
233.27 LT. OF STA. 977+16.2970
ELEVATION = 1253.7750

BM: 956 TBM-956\RRS
332.03 LT. OF STA. 991+31.4862
ELEVATION = 1290.6880

BM: 906 906 BM CPS INS 20 IN OAK
4.1 LT. OF STA. 1000+45.6043
ELEVATION = 1299.2540

1300 1290 1280 1270 1260 1250 1240 1230 1220 1210

1340 1330 1320 1310 1300 1290 1280 1270 1260 1250

975+00 980+00 985+00 990+00 995+00 1000+00 1005+00

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				6	ARK.			
				JOB NO.		CA0904	137	636

(2) PLAN AND PROFILE SHEETS

C.L. HWY. 71 TEMP. CROSSOVER
PI = 1013+69.73
Δ = 10°45'22" LT.
D = 3°00'00"
T = 179.80'
L = 358.53'
PC = 1011+89.93
PT = 1015+48.46

C.L. HWY. 71 TEMP. CROSSOVER
PI = 1018+10.42
Δ = 5°14'07" RT.
D = 1°00'00"
T = 261.95'
L = 523.54'
PC = 1015+48.46
PT = 1020+72.00

C.L. L.M.L.
PI = 1021+70.57
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1011+75.87
PT = 1031+54.14
Ls = 350'
e = 0.028'/'

C.L. MEDIAN
PI = 1021+01.84
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1011+07.14
PT = 1030+85.41

C.L. R.M.L.
PI = 1020+33.11
Δ = 14°50'13" LT.
D = 0°45'00"
T = 994.70'
L = 1978.27'
PC = 1010+38.41
PT = 1030+16.68
Ls = 350'
e = 0.028'/'

C.L. MEDIAN
STA. 1016+32 CONSTRUCT
36' X 542' R.C. PIPE OUTLET (CL. SPECIAL)
(45° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE 1 BEDDING)
Q50=55cfs, D.A. =14Ac.

C.L. MEDIAN
STA. 1020+90.70 CONSTRUCT
TYPE ST DROP INLET 6'-11" LT. OF C.L. MEDIAN
4'-6" X 3'-0" X H=34'-0"
W/ 24" X 140' R.C. PIPE INLET (CL. V)
(10° RT. FWD. SKEW)
24" X 210' R.C. PIPE OUTLET (CL. V)
(10° RT. FWD. SKEW)
FES LT. & RT.
(USE 3 VANE GRATES)
(USE TYPE 2 BEDDING)
Q50=13cfs, D.A. =3Ac.

C.L. MEDIAN
STA. 1030+01 CONSTRUCT
DBL. 6' X 5' X 517' R.C. BOX CULV'T.
(26° 17' RT. FWD. SKEW)
Q50=490cfs, D.A. =168Ac.

C.L. MEDIAN
STA. 1024+75 CONSTRUCT
TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN
4'-6" X 3'-0" X H=5'-6"
W/ 18" X 298' R.C. PIPE OUTLET (CL. III)
TO D.I. STA. 1027+75
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

C.L. MEDIAN
STA. 1030+25 CONSTRUCT
TYPE ST DROP INLET 2'-3" RT. C.L. MEDIAN
4'-6" X 3'-0" X H=5'-0"
W/ 18" X 98' R.C. PIPE OUTLET (CL. III)
CONNECT TO DROP INLET AT STA. 1031+25
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

C.L. MEDIAN
STA. 1031+25 CONSTRUCT
TYPE ST DROP INLET 3'-2" RT. C.L. MEDIAN
4'-6" X 3'-0" X H=5'-3"
W/ 24" X 60' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

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CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
1013+50		RT.	6'	95.86
1027+75		RT.	6'	13.33
1031+22	1031+49	RT.	6'	122.00

C.L. MEDIAN
STA. 1006+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 90' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)

C.L. MEDIAN
STA. 1013+50 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 90' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE TYPE 3 BEDDING)
UNCLASSIFIED EXCAVATION = 5 CU. YD.

C.L. MEDIAN
STA. 1027+75 CONSTRUCT
TYPE ST DROP INLET 0'-3" LT. C.L. MEDIAN
4'-6" X 3'-0" X H=4'-6"
W/ 24" X 68' R.C. PIPE OUTLET (CL. III)
FES ON RT.
(USE 3 VANE GRATES)
(USE TYPE 3 BEDDING)

STA. 1034+25.11 C.L. MEDIAN
= STA. 1034+16.64 L.M.L.
= STA. 1034+33.57 R.M.L.

HWY. 71

STA. 1007+75.91 BEGIN SUPERELEVATION R.M.L. (-0.020'/')
STA. 1011+25.91 MAX. SUPERELEVATION R.M.L. (0.028'/')
STA. 1029+29.18 MAX SUPERELEVATION R.M.L. (0.028'/')
STA. 1032+79.18 END SUPERELEVATION R.M.L. (-0.020'/')

P.V.T. 1005+00.00
ELEV. 1325.39

TOP D.I. 1308.01
F.L. D.I. 1304.51
F.L. OUTLET 1303.17

K=396.04
VC=2000'
e=-12.63'

TOP D.I. 1292.03
F.L. D.I. 1288.53
F.L. OUTLET 1287.19

P.V.T. 1005+00.00
ELEV. 1290.39

P.V.T. 1015+00.00
ELEV. 1290.39

RT. DT. GR. -0.46%

1014+40.00
1251.99

RT. DT. GR. -0.46%

1017+00.00
1250.80

-3.50%

TOP D.I. 1269.30

F.L. INLET 1241.43
F.L. OUTLET 1217.13

F.L. INLET 1240.56
F.L. D.I. 1235.30
F.L. OUTLET 1220.94

TOP D.I. 1256.27
F.L. D.I. 1250.77

P.V.T. 1028+00.00
ELEV. 1244.89

TOP D.I. 1246.11

-3.50%

18" X 298' @ 3.0%

F.L. INLET 1241.86
F.L. OUTLET 1241.61
F.L. OUTLET 1240.26

TOP D.I. 1238.07

TOP D.I. 1235.47

18" X 98' @ 2.68%

F.L. D.I. 1233.07

F.L. INLET 1230.47
F.L. OUTLET 1230.22
F.L. OUTLET 1229.03

K=279.55
VC=1800'
e=14.49'

LT. DT. GR. 0.20%

1033+06.00
1222.10

F.L. INLET 1179.55
F.L. OUTLET 1169.53

BM: 955 TBM-955\RRS
189.16 LT. OF STA. 1009+95.3035
ELEVATION = 1309.7261

BM: 998 TBM-998 CPS PP
1778.08 RT. OF STA. 1018+32.5150
ELEVATION = 1175.6330

BM: 954 TBM-954\RRS
214.21 LT. OF STA. 1022+12.1933
ELEVATION = 1278.1170

BM: 953 TBM-953\RRS
64.1 RT. OF STA. 1032+74.9783
ELEVATION = 1221.3899

1005+00 1010+00 1015+00 1020+00 1025+00 1030+00 1035+00

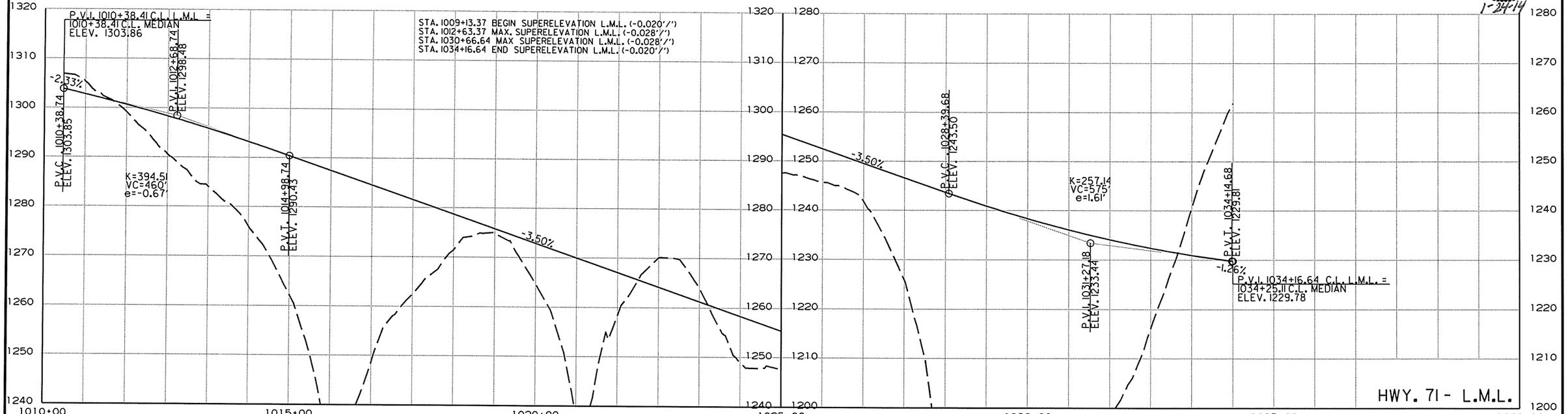
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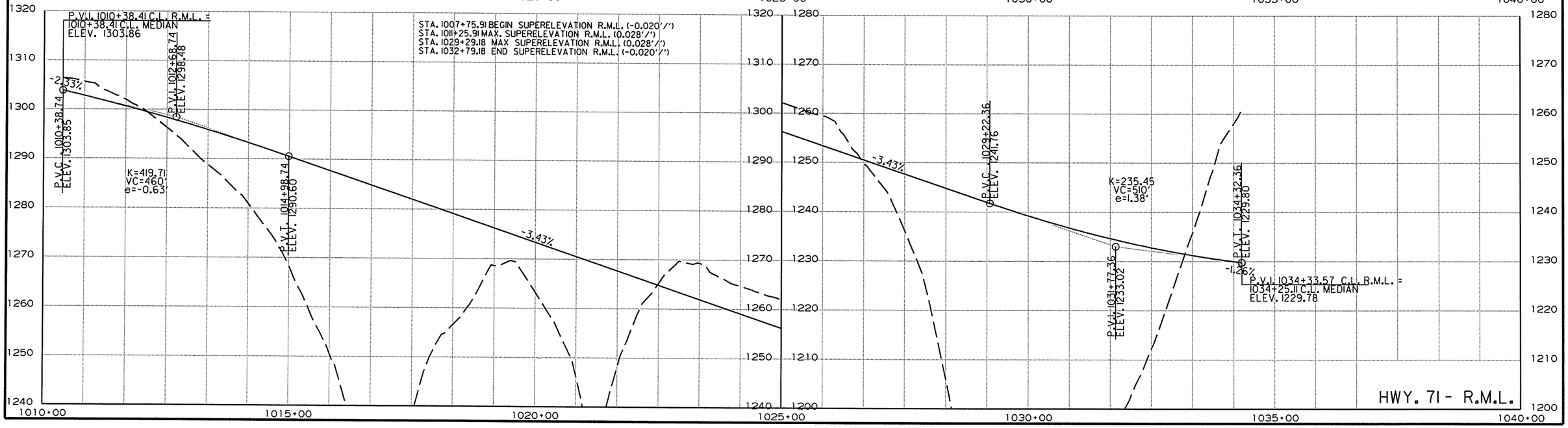
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				6	ARK.			
				JOB NO.		CA0904	138	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14





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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

STA. 1042+57 CONSTRUCT
DBL. 6' X 5' X 530' R.C. BOX CULV'T
(35° 38' LT. FWD. SKEW)
Q50=570cfs, D.A.=195Ac.

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	SQ. YDS.
1039+79	1040+63	RT.	9'	195.00
1045+03	1046+81	RT.	9'	217.00
1051+87	1053+00	LT.	9'	130.00

N

N 75°27'54" E

HWY. 71

McMILLAN RD.

K 279.55
VC=1800'
e=14.49'

P.V.C. = 1046+00.00
ELEV. = 1239.84
P.V.T. = 1048+17.13
ELEV. = 1240.34

K 574.62
VC=4000'
e=-34.81'

BM 905 - CPS IN 10" SYCAMORE
2301.67' RT. C.L. MEDIAN
STA. 1036+27.66
ELEV. 1129.1570

BM 914 - CPS IN POWER POLE
945.34' RT. C.L. MEDIAN
STA. 1038+69.64
ELEV. 1168.1140

F.L. INLET 1178.98
F.L. OUTLET 1165.93

BM 952 - RRS
194.46' RT. C.L. MEDIAN
STA. 1051+75.86
ELEV. 1294.5553

BM 904 - CPS IN PP
3778.46' RT. C.L. MEDIAN
STA. 1054+70.10
ELEV. 1110.9030

BM 915 - CH SQ CONC MH
442.3' LT. C.L. MEDIAN
STA. 1063+36.88
ELEV. 1315.8970

1/23/2014
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				6	ARK.			
				JOB NO.		CA0904	140	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

STA. 1079+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0"X 4'-6" X H=3'-0" W/ 18" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1082+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1082+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0"X 4'-6" X H=4'-2" W/ 18" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1085+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1085+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0"X 4'-6" X H=3'-11" W/ 18" X 16' R.C. PIPE OUTLET (CL. III) FES ON LT. (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

HWY. 71 MAIN LANES
PI = 1094+25.61
Δ = 30°08'39"RT.
D = 1°00'00"
T = 1542.96'
L = 3014.41'
PC = 1078+22.12 BK. - 1078+82.66 AHD.
PT = 1108+97.06
Ls = 450'
eMAX = 0.037'/'

PI 1094+25.61

PC 1078+22.12 BK. = 1078+82.66 AHD.

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	SQ. YDS.
1066+74	1067+14	RT.	9'	50.00
1073+00	1074+23	LT.	9'	182.00
1081+77	1083+13	LT.	9'	213.00
1085+00		LT.	9'	50.00
1085+79	1086+73	RT.	9'	134.00

TRIBUTARY TO McKISSIC CREEK

STA. 1066+85 CONSTRUCT 24" X 162' R.C. PIPE CULV'T. (CL. III) (14' 10' RT. FWD. SKEW) FES LT. & RT. (USE TYPE 3 BEDDING) Q50=16cfs, D.A.=4Ac.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
1066+08	1066+96	LT.	6'	59.33
1080+90	1085+79	RT.	9'	489.00
1087+50	1106+66	RT.	9'	1916.00
1088+40	1105+80	LT.	9'	1740.00

STA. 1086+70 CONSTRUCT 30" X 442' R.C. PIPE CULV'T. (CL. SPECIAL) FES LT. & RT. (USE TYPE ? BEDDING) Q50 = 32cfs, D.A. = 9Ac.

STA. 1087+30 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0"X 4'-6" X H=3'-6" W/ 18" X 168' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1089+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1089+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0"X 4'-6" X H=3'-6" W/ 18" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1092+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1092+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0"X 4'-6" X H=3'-6" W/ 24" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1095+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

HWY. 71

TRIBUTARY TO McKISSIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A 5 cfs STREAM. THE STREAM BANK ELEVATIONS ARE 1257.0

STA. 1074+84.62 BEGIN SUPERELEVATION L.M.L. (0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 1112+34.56 END SUPERELEVATION L.M.L. (0.020'/')

STA. 1078+00.41 BEGIN SUPERELEVATION R.M.L. (-0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION R.M.L. (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION R.M.L. (-0.037'/')
STA. 1109+18.77 END SUPERELEVATION R.M.L. (-0.020'/')

P.V.I. 1066+17.13 ELEV. 1299.12

F.L. INLET 1256.84
F.L. OUTLET 1248.64

K 574.62 VC=4000' e=-34.81'

1078+22.12 / 1245.18 — TOP D.

1078+82.66 / 1245.18

F.L. D. I. 1241.71

F.L. D. I. 1231.77

F.L. D. I. 1221.67
F.L. OUTLET 1220.33

P.V.C. 1087+50.01 ELEV. 1215.78

TOP D. I. 1216.61

F.L. D. I. 1212.11

TOP D. I. 1209.60

P.V.T. 1086+77.66 ELEV. 1218.67

F.L. INLET 1206.26
F.L. D. I. 1206.10

TOP D. I. 1196.16

P.V.C. 1094+00.01 ELEV. 1189.62

F.L. INLET 1192.83
F.L. D. I. 1192.66

K 657.36 VC=1300' e=-3.21'

TOP D. I. 1181.36

F.L. INLET 1178.02
F.L. D. I. 1177.86

F.L. INLET 1184.43
F.L. OUTLET 1141.24

BM 951 - 60D
15.3' RT. C.L. MEDIAN
STA. 1085+28.31
ELEV. 1224.0067

BM 903 - CPS IN POWER POLE
3933.88' RT. C.L. MEDIAN
STA. 1093+78.64
ELEV. 1099.5440

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				6	ARK.			
				JOB NO.		CA0904	141	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

STA. 1098+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0" X 4'-6" X H=3'-6" W/ 24" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1101+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1101+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0" X 4'-6" X H=3'-6" W/ 24" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1104+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1104+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0" X 4'-6" X H=3'-6" W/ 24" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1107+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1107+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0" X 4'-6" X H=3'-6" W/ 24" X 10' R.C. PIPE OUTLET (CL. III) FES ON LT. (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1108+70 LT. SIDE UNDER PEACH ORCHARD RD. CONSTRUCT 54" X 36" R.C. PIPE CULV'T (CL. III) W/ FES LT & RT (USE TYPE 3 BEDDING)

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1114+40 - STATION 1118+75

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
1107+00		LT.	6'	28.00

HWY. 71 MAIN LANES
PI = 1094+25.61
Δ = 30°08'39"RT.
D = 1°00'00"
T = 1542.96'
L = 3014.41'
PC = 1078+22.12
PT = 1108+97.06
Ls = 450'
eMAX = 0.037'/'

HWY. 71 RAMP I
PI = 1106+44.38
Δ = 9°53'13"RT.
D = 3°00'00"
T = 165.19'
L = 329.56'
PC = 1104+79.19
PT = 1108+08.75
NO SUPER

HWY. 71 RAMP I
PI = 1116+92.98
Δ = 5°42'30"LT.
D = 0°45'00"
T = 380.87'
L = 761.11'
PC = 1113+12.10
PT = 1120+73.22
NO SUPER

FUTURE
STA. 1124+70.81 - STA. 1127+68.19 CONSTRUCT 297'-4¼" X 93'-2" OUT-TO-OUT BRIDGE NO. 07281 SIMPLE COMPOSITE PLATE GIRDER SPAN

FUTURE
STA. 1113+77.94 - STA. 1118+72.56 CONSTRUCT 494'-7½" X 93'-3" OUT-TO-OUT BRIDGE NO. 07278 260' & 155' CONT. COMP. W-BEAM UNITS AND 77'-6" SIMPLE COMP. W-BEAM SPAN.

STA. 1095+00 CONSTRUCT TYPE ST DROP INLET 3'-3" LT. C.L. MEDIAN 3'-0" X 4'-6" X H=3'-6" W/ 24" X 298' R.C. PIPE OUTLET (CL. III) CONNECT TO DROP INLET AT STA. 1098+00 (USE 3 VANE GRATES) (USE TYPE 3 BEDDING)

STA. 1108+35 RT. SIDE UNDER PEACH ORCHARD RD. CONSTRUCT 48" X 28" R.C. PIPE CULV'T (CL. III) W/ FES LT & RT (USE TYPE 3 BEDDING)

STA. 1107+43 CONSTRUCT TYPE N3 DROP INLET ON RT. W 12' X 72' OUTLET & CONC. SPILLWAY (TYPE A)

STA. 1107+43.06 BRIDGE END
BRIDGE NO. 07277
55'-0" COMPOSITE W-BEAM UNIT
84'-0" COMPOSITE W-BEAM UNIT
55'-0" COMPOSITE W-BEAM UNIT
196'-2" BRIDGE LENGTH
STA. 1109+39.23 BRIDGE END

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	SQ. YDS.
1105+76	1108+17	LT.	9'	284.00
1106+66	1108+27	RT.	9'	140.00

McKISIC CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 1037.0.

STA. 1074+84.62 BEGIN SUPERELEVATION L.M.L. (0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION L.M.L. (-0.037'/')
STA. 1112+34.56 END SUPERELEVATION L.M.L. (0.020'/')

STA. 1078+00.41 BEGIN SUPERELEVATION R.M.L. (-0.020'/')
STA. 1079+95.15 MAX. SUPERELEVATION R.M.L. (-0.037'/')
STA. 1107+84.56 MAX. SUPERELEVATION R.M.L. (-0.037'/')
STA. 1109+18.77 END SUPERELEVATION R.M.L. (-0.020'/')

TOP D. I. 1181.36
F.L. INLET 1178.02
F.L. D. I. 1177.85
24"X298' @5.37%
TOP D. I. 1165.18
F.L. INLET 1161.85
F.L. D. I. 1161.68
24"X298' @5.62%
K 657.36
VC=1300'
e=-3.21'
TOP D. I. 1147.66
-6.00%
F.L. INLET 1144.33
F.L. D. I. 1144.16
24"X298' @5.20%
TOP D. I. 1129.91
F.L. INLET 1126.57
F.L. D. I. 1126.41
24"X298' @5.27%
P.V.T. 1100+50.01
ELEV. 1150.01
P.V.C. 1102+63.72
ELEV. 1139.44
TOP D. I. 1114.37
F.L. INLET 1110.71
F.L. D. I. 1110.54
F.L. OUTLET 1107.89
FUTURE C.L. MEDIAN
K 341.19
VC=2900'
e=30.81'
FUTURE C.L. MEDIAN
P.V.T. 1117+10.72
ELEV. 1049.44
FUTURE C.L. MEDIAN

BM 950 - RRS
1.67' LT. C.L. MEDIAN
STA. 1096+99.03
ELEV. 1199.4066

BM 902 - CH SQ BASE CH
384.64' RT. C.L. MEDIAN
STA. 1106+65.52
ELEV. 1114.0390

BM 946 - RR SPIKE IN PP
171.26' LT. C.L. MEDIAN
STA. 1108+91.99
ELEV. 1068.5910

BM 947 - RR SPIKE IN 12" ELM
54.85' RT. C.L. MEDIAN
STA. 1116+68.05
ELEV. 1041.6840

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HWY. 71

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-27-14

EXISTING HWY. 71SB. OFF RAMP
EXISTING HWY. 71NB. RAMP
EXISTING HWY. 71SB. ON RAMP
HWY. 71RAMP I
HWY. 71B/ WALTON BLVD.
HWY. 71
LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00
TRIBUTARY TO SUGAR CREEK
FUTURE C.L. MEDIAN

TRIBUTARY TO SUGAR CREEK - FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS. THE STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 1037.0.

K 341.19
VC=2900'
e=30.81'
2.50%

K 266.57
VC=400'
e=0.75'
4.00%

K 812.43
VC=400'
e=0.25'
3.81%

BM 900 - AHTD DISK #040024 BRIDGE A
138.28' LT. C.L. MEDIAN
STA. 1133+88.47
ELEV. 1081.3200

BM 948 - RR SPIKE IN 12" SYCAMORE
844.76' RT. C.L. MEDIAN
STA. 1141+69.06
ELEV. 1053.7920

BM 949 - RR SPIKE IN HICKORY
242.29' RT. C.L. MEDIAN
STA. 1149+39.88
ELEV. 1226.1750

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

STA. 1128+84 - CONSTRUCT
D.I. ON LT. WITH
24" x 58' R.C. PIPE OUTLET
WITH F.E.S. LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 7' 6"

STA. 1129+74 - CONSTRUCT
D.I. ON LT. WITH
24" x 73' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 1128+84 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 7' 2"

STA. 1130+67 - CONSTRUCT
D.I. ON LT. WITH
24" x 76' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 1129+74 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 7' 2"

HWY. 71 RAMP I
PI = 1106+44.38
Δ = 9°53'13"RT.
D = 3°00'00"
T = 165.19'
L = 329.56'
PC = 1104+79.19
PT = 1108+08.75
NO SUPER

HWY. 71 RAMP I
PI = 1116+92.98
Δ = 5°42'30"LT.
D = 0°45'00"
T = 380.87'
L = 761.11'
PC = 1113+12.10
PT = 1120+73.22
NO SUPER

STA. 1113+87.94 BRIDGE END
BRIDGE NO. 07279
159'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (79'-6" - 79'-6")
170'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (85' - 85')
124'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (62' - 62')
455'- 1½" BRIDGE LENGTH
STA. 1118+43.06 BRIDGE END

INSTALLATION OF GUARDRAIL

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
1118+43.06	1119+96.21	R.M.L. - LT.	200 LIN. FT.	1EA.	1EA.
1118+43.06	1121+21.21	R.M.L. - RT.	75 LIN. FT.	1EA.	1EA.

FURNISHING, INSTALLING, AND LEAVING IN PLACE
PRECAST CONCRETE BARRIER = 693 LIN.FT.

DENOTES OBLITERATION OF EXISTING ROADWAY

DENOTES COLD MILLING AND INLAY OPERATIONS

STA. 1127+50 - CONSTRUCT
D.I. ON RT. WITH
18" x 37' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 1128+00 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 9"

STA. 1128+00 - CONSTRUCT
D.I. ON RT. WITH
18" x 65' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 1128+84 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 6' 0"

STA. 1128+84 - CONSTRUCT
D.I. ON RT. WITH
24" x 70' R.C. PIPE OUTLET
CONNECT TO DROP INLET @ STA. 1128+84 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 6' 10"

STA. 1132+44 - CONSTRUCT
D.I. ON RT. WITH
24" x 219' R.C. PIPE OUTLET
CONNECT TO DROP INLET @ STA. 1130+67 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 9' 3"

STA. 1133+76 - IN PLACE
SEXTUPLE 12 X 9 X 222 R.C. BOX CULVERT
WITH HEADWALL LT. & RT.
(45° LT. FWD. SKEW)
RETAIN AND EXTEND
266' LT. AND 25'-3" RT.
TO A COMPLETED LENGTH OF 528'

HWY. 71 RAMP 1

1/24/2014

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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

STA. 1127+59.80 BEGIN TRANSITION (-0.020'/')
STA. 1128+82.34 END/BEGIN TRANSITION (N.C.)
STA. 1130+68.38 MAX. SUPERELEVATION (0.020'/')
STA. 1132+26.30 END SUPERELEVATION (N.C.)

LT.

1109+71.99 1100.84
P.G. GRADE ALONG INSIDE PAVEMENT EDGE
-3.94%
BR. END STA. 1113+87.94
1116+55.61 1073.93
BR. END STA. 1118+43.06
K=258.26 VC=500' e=1.21'
1121+55.61 1059.09
-2.00%
2:1
STA. 1119+05.61 ELEV. = 1067.23 (ALONG INSIDE PAVEMENT EDGE)
1119+05.61 1064.09
1115+00
1120+00
1116+55.61 1073.78
K=258.18 VC=500' e=1.21'
-3.94%
1121+55.61 1058.94
STA. 1118+43.06 ELEV. = 1067.08 (ALONG C.L.)
1119+05.61 1063.94
P.G. ALONG CENTERLINE
-2.00%
1125+99.25 1050.07
K=88.74 VC=200' e=0.56'
1126+99.25 1048.07
1127+99.25 1048.32
STA. 1128+84 TOP ELEV.=1049.12 F.L. ELEV.=1041.64
1129+81.92 1048.79
STA. 1129+74 TOP ELEV.=1049.04 F.L. ELEV.=1041.86
STA. 1130+67 TOP ELEV.=1049.27 F.L. ELEV.=1042.09
K=114.55 VC=200' e=0.44'
0.25%
2.00%
1130+81.92 1049.04
1131+81.92 1051.04
1132+56.30 1052.53
STA. 1132+56.30 HWY. 71 RAMP I = STA. 603+49.18 ROUNDABOUT ELEV. = 1052.53
STA. 1133+76 F.L. (RT.) INLET=1036.38 F.L. (LT.) OUTLET=1034.18
24"x 73' @ 0.30%
24"x 76' @ 0.30%
24"x 219' @ 0.30%

1105+00 1110+00 1115+00 1120+00 1125+00 1130+00 1135+00
1180 1160 1140 1120 1100 1080 1060 1040 1020

HWY. 71 RAMP

RT.

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

1109+71.99 1100.84
P.G. GRADE ALONG INSIDE PAVEMENT EDGE
-3.94%
BR. END STA. 1113+87.94
1116+55.61 1073.93
BR. END STA. 1118+43.06
K=258.26 VC=500' e=1.21'
1121+55.61 1059.09
-2.00%
2:1
STA. 1119+05.61 ELEV. = 1067.23 (ALONG INSIDE PAVEMENT EDGE)
1119+05.61 1064.09
1115+00
1120+00
1116+55.61 1073.78
K=258.18 VC=500' e=1.21'
-3.94%
1121+55.61 1058.94
STA. 1118+43.06 ELEV. = 1067.08 (ALONG C.L.)
1119+05.61 1063.94
P.G. ALONG CENTERLINE
-2.00%
1125+99.25 1050.07
K=88.74 VC=200' e=0.56'
1126+99.25 1048.07
1127+99.25 1048.32
STA. 1127+50 TOP ELEV.=1048.04 F.L. ELEV.=1042.30
STA. 1128+00 TOP ELEV.=1048.23 F.L. ELEV.=1042.19
STA. 1128+84 TOP ELEV.=1048.87 F.L. ELEV.=1042.00
1129+81.92 1048.79
K=114.55 VC=200' e=0.44'
0.25%
2.00%
1130+81.92 1049.04
1131+81.92 1051.04
1132+26.30 1052.53
1132+56.30 1052.53
STA. 1132+56.30 HWY. 71 RAMP I = STA. 603+49.18 ROUNDABOUT ELEV. = 1052.53
STA. 1132+84 TOP ELEV.=1051.99 F.L. ELEV.=1042.75
STA. 1133+76 F.L. (RT.) INLET=1036.38 F.L. (LT.) OUTLET=1034.18
18"x 37' @ 0.30%
18"x 65' @ 0.30%
24"x 219' @ 0.30%

1105+00 1110+00 1115+00 1120+00 1125+00 1130+00 1135+00
1180 1160 1140 1120 1100 1080 1060 1040 1020

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				JOB NO.		CA0904	145	636

(2) PLAN AND PROFILE SHEETS

DENOTES OBLITERATION OF EXISTING ROADWAY

DENOTES COLD MILLING AND INLAY OPERATIONS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

STA. 1142+97.09
END JOB CA0904

STA. 600+00.00 ROUNDABOUT
= STA. 607+49.56 ROUNDABOUT

ROUNDABOUT
PI = 603+31.72
Δ = 140°13'30"LT.
D = 47°44'47"
T = 331.72'
L = 293.69'
PC = 600+00.00
PCC = 602+93.69

ROUNDABOUT
PI = 605+38.74
Δ = 72°57'26" T.
D = 47°44'47"
T = 88.73'
L = 152.80'
PC = 604+50.02
PT = 606+02.82

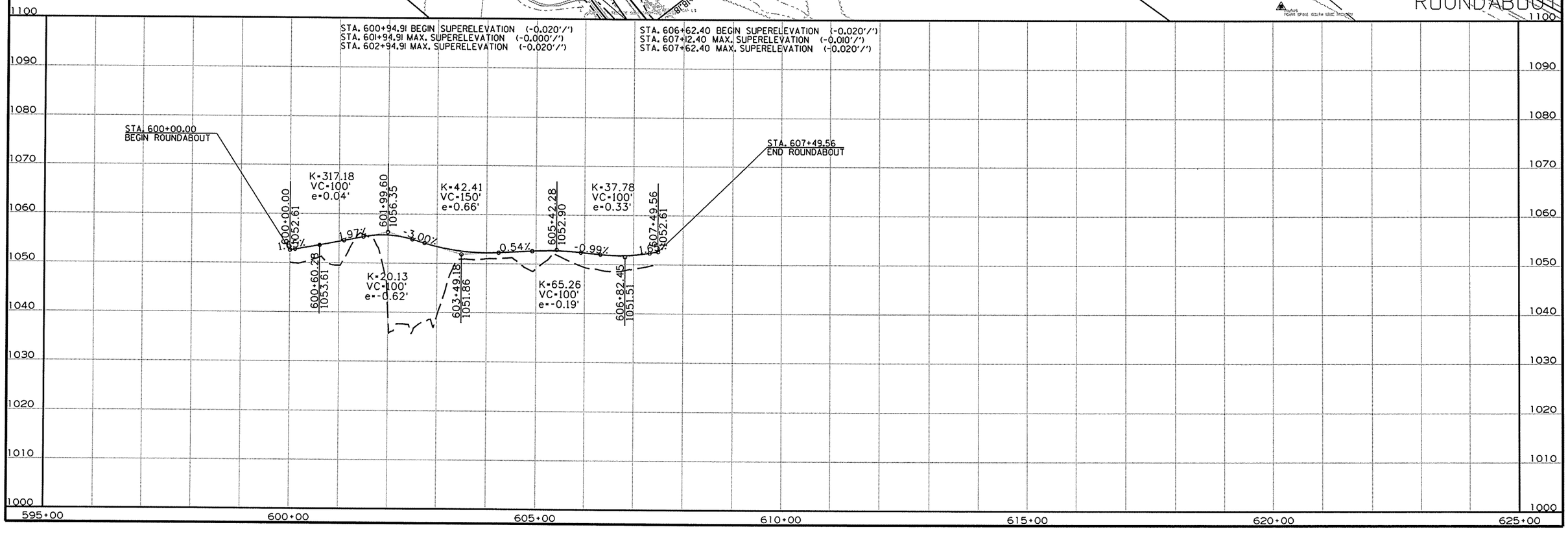
ROUNDABOUT
PI = 603+54.99
Δ = 44°27'36"LT.
D = 38°11'50"
T = 61.31'
L = 116.40'
PCC = 602+93.69
PT = 604+10.08

ROUNDABOUT
PI = 607+18.77
Δ = 36°34'41"LT.
D = 57°17'45"
T = 33.05'
L = 63.84'
PC = 606+85.72
PT = 607+49.56

ROUNDABOUT

STA. 600+94.91 BEGIN SUPERELEVATION (-0.020'/')
STA. 601+94.91 MAX. SUPERELEVATION (-0.000'/')
STA. 602+94.91 MAX. SUPERELEVATION (-0.020'/')

STA. 606+62.40 BEGIN SUPERELEVATION (-0.020'/')
STA. 607+12.40 MAX. SUPERELEVATION (-0.010'/')
STA. 607+62.40 MAX. SUPERELEVATION (-0.020'/')



12/27/2013

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DENOTES OBLITERATION OF EXISTING ROADWAY

DENOTES COLD MILLING AND INLAY OPERATIONS

(1) RT. TURNOUT PAV'T. EDGE
P.C. = 100+18.18 (WALTON BLVD.)
P.T. = 102+10.50 (WALTON BLVD.)
D = 6° 22' 57"
D = 12° 34' 54" RT.
L = 197.13'
T = 98.96'

(2) RT. TURNOUT PAV'T. EDGE
P.C. = 102+10.50 (WALTON BLVD.)
P.T. = 1131+07.58 (HWY. 71 RAMP)
D = 7° 16' 16"
D = 37° 53' 14" LT.
L = 521.07'
T = 270.46'

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

STA. 1142+97.09
END JOB CA0904

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

STA. 101+60 - CONSTRUCT
D.I. ON RT. WITH
18" x 135' PIPE OUTLET
CONNECT TO D.I. @ STA. 103+02
TY C = 4' x 4'
TY MO = 4' I.D.
H = 8' 0"

STA. 103+02 - IN PLACE
36" x 124' R.C. PIPE CULV'T.
WITH F.E.S. LT. & RT.
REMOVE 24' RT. AND CONNECT TO
D.I. @ STA. 103+02
USE 2' R.C. PIPE CULV'T.

STA. 103+02 - CONSTRUCT
D.I. ON RT. WITH
36" x 26' R.C. PIPE OUTLET
WITH F.E.S. RT.
TY C = 4' x 4'
TY MO = 5' I.D.
H = 8' 2"

STA. 103+70 - CONSTRUCT
D.I. ON RT. WITH
18" x 62' PIPE OUTLET
CONNECT TO D.I. @ STA. 103+02
TY C = 4' x 4'
TY MO = 4' I.D.
H = 7' 10"

STA. 1134+06 - CONSTRUCT
D.I. ON RT. WITH
18" x 44' PIPE OUTLET
CONNECT TO EXISTING R.C. BOX
TY C = 4' x 4'
TY MO = 4' I.D.
H = 8' 0"

WALTON BLVD.

HWY. 71 SB. ON-RAMP

STA. 100+07.52 BEGIN SUPERELEVATION (0.000'/')
STA. 100+96.36 MAX. SUPERELEVATION (0.034'/')
STA. 103+11.58 MAX. SUPERELEVATION (0.034'/')
STA. 104+62.60 MAX. SUPERELEVATION (0.020'/')

STA. 100+18.18
BEGIN WALTON BLVD.

STA. 104+92.64
END WALTON BLVD.

STA. 1133+58.09
BEGIN HWY. 71 SB
ON-RAMP

STA. 1136+72.95
END HWY. 71 SB
ON-RAMP

STA. 1142+97.09
END JOB CA0904

STA. 101+60
TOP ELEV.=1052.48
F.L. ELEV.=1044.44

STA. 103+02
TOP ELEV.=1052.18
F.L. ELEV.=1044.03

STA. 103+70
TOP ELEV.=1052.07
F.L. ELEV.=1044.22

STA. 1134+06
TOP ELEV.=1051.41
F.L. ELEV.=1043.41

100+18.18 1052.86
102+95.00 1052.27
104+45.00 1052.11
104+62.64 1052.11
104+92.64 1052.71
103+70.00 1052.11
1133+58.09 1052.09
1133+88.09 1051.79
1133+97.95 1051.89
1135+35.45 1053.23
1136+72.95 1064.09

-0.21%
K=703.64
VC=150'
e=0.04'
-0.00%
18"x 135' @ 0.30%
18"x 62' @ 0.30%
-2.38%
K=39.74
VC=275'
e=2.38'
2.90%

95+00 100+00 105+00 108+00 1130+00 1135+00 1140+00 1145+00

1000 1020 1040 1060 1080 1100 1120 1140 1160 1180

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				6	ARK.			
				JOB NO.		CA0904	147	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

DENOTES OBLITERATION OF EXISTING ROADWAY

DENOTES COLD MILLING AND INLAY OPERATIONS

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

FURNISHING, INSTALLING, AND LEAVING IN PLACE
PRECAST CONCRETE BARRIER = 900 LIN.FT.

EXISTING HWY. 71 SB. OFF RAMP
PI = 405+01.84
Δ = 2°07'59"RT.
D = 1°00'00"
T = 106.67'
L = 213.32'
PC = 403+95.17
PT = 406+08.49

STA. 304+77 - CONSTRUCT
D.I. ON LT. WITH
18" x 189' PIPE OUTLET
CONNECT TO DROP INLET STA. 302+84 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 2"

STA. 302+84 - CONSTRUCT
D.I. ON LT. WITH
18" x 57' PIPE OUTLET
CONNECT TO DROP INLET @ STA. 302+20 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 8"

STA. 302+20 - CONSTRUCT
D.I. ON LT. WITH
18" x 175' PIPE OUTLET
CONNECT TO R.C. BOX CULVERT
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 6"

STA. 302+84 - CONSTRUCT
D.I. ON RT. WITH
18" x 65' PIPE OUTLET
CONNECT TO DROP INLET
@ STA. 302+19 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 0"

STA. 304+76 - CONSTRUCT
D.I. ON RT. WITH
18" x 188' PIPE OUTLET
CONNECT TO DROP INLET
@ STA. 302+84 RT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 5' 0"

STA. 304+76 - IN PLACE
D.I. IN MEDIAN WITH
18" x 36' R.C. PIPE OUTLET
WITH F.E.S. LT.
REMOVE 10' AND CONNECT TO
D.I. @ STA. 304+76
USE 2' R.C. PIPE CULV'T.

STA. 302+19 - CONSTRUCT
D.I. ON RT. WITH
18" x 57' PIPE OUTLET
CONNECT TO D.I. @ STA. 302+20 LT.
TY C = 4' x 4'
TY MO = 4' I.D.
H = 4' 6"

EXIST. HWY. 71 NB.

EXIST. HWY. 71 SB. OFF-RAMP

STA. 301+20.48
BEGIN EXIST. HWY. 71
NB OFF-RAMP

STA. 306+61.52
END EXIST. HWY. 71
NB OFF-RAMP

STA. 401+37.20
BEGIN EXIST. HWY. 71
SB OFF-RAMP

STA. 408+66.12
END EXIST. HWY. 71
SB OFF-RAMP

L.M.L.

R.M.L.

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				6	ARK.			
				JOB NO.		CA0904	148	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-14
TRINITY D. SMITH

HWY. 72 (SOUTH) RAMP 2

S 72°43'20" E
820
PI 820+68.22
N 75°02'55" E
823+81.74
110
N 29
C. 826+68.68
STA. 823+21.13 HWY. 72 (SOUTH) RAMP 2 C.L.
= STA. 109+27.03 HWY. 72 (SOUTH) C.L.
Δ=75°00'00"
STA. 827+87 CONSTRUCT
30" X 380' R.C. PIPE CULV'T. (CL. V)
(45° LT. FWD. SKEW)
WITH FES LT. & RT.
(USE TYPE 2 BEDDING)
Q50 = 37cfs, D.A. = 66Ac.
RAMP 2
PI = 835+28.20
Δ = 56°26'22" RT.
D = 3°00'00"
T = 1024.90'
L = 1881.32'
PC = 825+03.30
PT = 843+84.61
e = 0.057'/'
Ls = 200'
N 45°02'55" E
830
825
4'
15'
6'
PC 825+03.30
+00 390'
+40 525'
+45 590'
+55 630'
FOR INTERSECTION DETAILS REFER TO SHEET XX
BEGIN C/A

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
825+56	829+53	LT.	6'	307
826+30	829+20	RT.	6'	195
829+20	835+15	RT.	9'	561
831+00	835+15	LT.	9'	420

STA. 823+41.78 7.50' LT. OF HWY. 72 (SOUTH) RAMP 2 C.L. =
STA. 109+39.62 18.00' RT. OF HWY. 72 (SOUTH) C.L.
ELEV. 1358.16

BEGIN CONST. RAMP 2
STA. 823+41.78

-2.36%

P.V.C. 826+78.41
ELEV. 1350.23

STA. 824+92.26 BEGIN SUPERELEVATION (-0.020'/')
STA. 826+92.26 MAX. SUPERELEVATION (-0.057'/')
STA. 841+21.05 MAX. SUPERELEVATION (-0.057'/')
STA. 841+46.05 MATCH M.L. SUPERELEVATION (-0.054'/')

P.V.I. 828+78.41
ELEV. 1345.52

K=149.25
VC=400'
e=-1.34'

-5.04%

P.V.T. 830+78.41
ELEV. 1335.45

+87

F.L. INLET 1316.45
F.L. OUTLET 1297.19

BM: 913 TBM-913\CPS CP
839.65 LT. OF STA. 824+43.5716
ELEVATION = 1350.4810

BM: 966 TBM-966\CPS
43.2 LT. OF STA. 832+59.9182
ELEVATION = 1329.8508

1355 1350 1345 1340 1335 1330 1325 1320 1315 1310

818+00 819+00 820+00 821+00 822+00 823+00 824+00 825+00 826+00 827+00 828+00 829+00 830+00 831+00 832+00 833+00

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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

HWY. 72 (SOUTH) RAMP 2

RAMP 2
PI = 835+28.20
Δ = 56°26'22" RT.
D = 3°00'00"
T = 1024.90'
L = 1881.32'
PC = 825+03.30
PT = 843+84.61
e = 0.057'/'
Ls = 200'

STA. 836+00 CONCTRUCT
24" X 86' R.C. PIPE CULV'T. (CL. III)
USE TYPE 3 BEDDING
Q 50 = 18cfs, D.A. = 3Ac.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
835+15	838+90	RT.	6'	274
835+15	836+02	LT.	6'	62

STA. 824+92.26 BEGIN SUPERELEVATION (-0.020'/')
STA. 826+92.26 MAX. SUPERELEVATION (-0.057'/')
STA. 841+21.05 MAX. SUPERELEVATION (-0.057'/')
STA. 841+46.05 MATCH M.L. SUPERELEVATION (-0.054'/')

-5.04%
P.V.C. 834+99.09
ELEV. 1314.26
835+00.00
1310.11
LT. DITCH GRADE -9.07%
835+00.00
1309.02
RT. DITCH GRADE -8.92%
K=96.87
VC=475'
e=2.91'
836+00.00
1301.04
836+40.00
1301.67
LT. DITCH GRADE 1.57%
F.L. INLET 1300.96
F.L. OUTLET 1300.18
836+00.00
1300.10
RT. DITCH GRADE -32.36%
836+87.00
1271.95
837+30.00
1274.10
RT. DITCH GRADE 5.00%
P.V.I. 837+36.59
ELEV. 1302.30
P.V.T. 839+74.09
ELEV. 1301.99
-0.13%
838+90.00
1296.15
RT. DITCH GRADE 0.20%
841+20.00
1296.60

END CONST. RAMP 2
STA. 841+46.05

STA. 841+46.05 | 7.50' LT. OF HWY. 72 (SOUTH) RAMP 2 C.L. =
STA. 841+41.80 | 58.00' RT. OF HWY. 71 C.L.
ELEV. 1301.76

1325 1320 1315 1310 1305 1300 1295 1290 1285 1280

833+00 834+00 835+00 836+00 837+00 838+00 839+00 840+00 841+00 842+00 843+00 844+00 845+00 846+00 847+00 848+00

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				6	ARK.			
				JOB NO.		CA0904	150	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

FOR INTERSECTION DETAILS
REFER TO SHEET XX

RAMP 3
PI = 822+88.87
Δ = 31°57'01" RT.
D = 5°00'00"
T = 328.05'
L = 639.00'
PC = 819+60.82
PT = 825+99.83
e = 0.040'/'
Ls = 150'

N 75°02'55" E
S 73°00'05" E
PI 822+88.87
PC 819+60.82
PT 825+99.83
820
825
6'
15'
4'

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
823+50	828+05	RT.	9'	447
823+50	829+05	LT.	9'	563
828+05	829+57	RT.	6'	110

STA. 818+38.02 HWY. 72 (SOUTH) RAMP 3 C.L.
= STA. 121+72.80 HWY. 72 (SOUTH) C.L.
=75°00'00"

HWY. 72 (SOUTH) RAMP 3

STA. 820+01.61 BEGIN SUPERELEVATION (0.020'/')
STA. 820+51.61 MAX. SUPERELEVATION (0.040'/')
STA. 825+62.86 MAX. SUPERELEVATION (0.040'/')
STA. 827+12.86 END SUPERELEVATION (-0.020'/')

BEGIN CONST. RAMP 3
STA. 818+58.66

STA. 818+58.66 7.50' RT. OF HWY. 72 (SOUTH) RAMP 3 C.L. =
STA. 121+60.22 18.00' RT. OF HWY. 72 (SOUTH) C.L.
ELEV. 1345.77

-2.20%
-3.35%

P.V.C. 821+74.47
ELEV. 1338.83
P.V.I. 822+99.47
ELEV. 1336.08
P.V.T. 824+24.47
ELEV. 1331.90
P.V.C. 826+75.97
ELEV. 1323.47

K=217.05
VC=250'
e=-0.36'

K=180.07
VC=350'
e=0.85'

BM: 913 TBM-913\CPS CP
414.95 RT. OF STA. 818+46.6570
ELEVATION = 1350.4810

1355 1350 1345 1340 1335 1330 1325 1320 1315 1310

813+00 814+00 815+00 816+00 817+00 818+00 819+00 820+00 821+00 822+00 823+00 824+00 825+00 826+00 827+00 828+00

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				6	ARK.			
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(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
829+05	830+49	LT.	6'	101

STA. 830+31 CONSTRUCT
54" X 210' R.C. PIPE CULV'T. (CL. IV)
(35° LT. FWD. SKEW)
WITH FES LT. & RT.
USE TYPE 2 BEDDING
Q50 = 160cfs, D.A. = 33Ac.

RAMP 3
PI = 834+63.45
Δ = 15°07'25" LT.
D = 3°00'00"
T = 253.53'
L = 504.12'
PC = 832+09.92
PT = 837+14.03
e = 0.057'/'
Ls = 200'

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
830+49	839+40	LT.	15'	1736	1446

RAMP 3
PI = 847+79.60
Δ = 29°45'41" RT.
D = 1°28'39"
T = 1030.52'
L = 2014.48'
PC = 837+49.08
PT = 857+63.56
e = 0.000'/'
Ls = 000'

N 75°39'13" E

S 86°49'48" E

S 88°07'30" E

HWY. 72 (SOUTH) RAMP 3

STA. 830+60.45 BEGIN SUPERELEVATION (-0.020'/')
STA. 832+60.45 MAX. SUPERELEVATION (-0.057'/')
STA. 834+55.66 MAX. SUPERELEVATION (-0.057'/')
STA. 837+90.66 MATCH M.L. SUPERELEVATION (0.054'/')

END CONST. RAMP 3
STA. 834+80.02

STA. 834+80.02 7.50' RT. OF HWY. 72 (SOUTH) RAMP 3 C.L. =
STA. 834+84.64 74.70' LT. OF HWY. 71 C.L.
ELEV. 1308.76

C.L. RAMP 3 TEMP. RAMP
PI = 841+96.98
Δ = 22°04'21" RT.
D = 3°00'00"
T = 372.49'
L = 735.75'
PC = 838+24.49
PT = 845+60.24

C.L. RAMP 3 TEMP. RAMP
PI = 846+84.86
Δ = 7°27'59" LT.
D = 3°00'00"
T = 124.62'
L = 248.88'
PC = 845+60.24
PT = 848+09.13

K=180.07
VC=350'
e=0.85'

828+00.00 1315.30 P.V.I. 828+50.97 ELEV. 1317.61 RT. DITCH GRADE -15.50%
829+00.00 1312.82 LT. DITCH GRADE -12.04%
829+60.00 1290.50 RT. DITCH GRADE 1.50%
830+10.00 1291.25 +3.1
831+02.00 1288.50 LT. DITCH GRADE -7.35%
831+75.00 1283.13
P.V.T. 830+25.97 ELEV. 1315.15 -1.41%
832+00.00 1281.20 LT. DITCH GRADE -5.15%
833+00.00 1275.45 LT. DITCH GRADE -8.77%
834+50.00 1262.30
834+80.02 1261.64 LT. DITCH GRADE -2.20%

F.L. INLET 1290.38
F.L. OUTLET 1288.76

BM: 966 TBM-966\CPS
317.43 RT. OF STA. 833+17.2526
ELEVATION = 1329.8508

BM: 965 TBM-965\CPS
78.97 LT. OF STA. 844+77.1826
ELEVATION = 1311.8625

828+00 829+00 830+00 831+00 832+00 833+00 834+00 835+00 836+00 837+00 838+00 839+00 840+00 841+00 842+00 843+00

1325 1320 1315 1310 1305 1300 1295 1290 1285 1280 1275 1270 1265 1310

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				6	ARK.			
				JOB NO.		CA0904	152	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

STA. 11+15 INSTALL
18" X 30" PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. =25 CU. YD. COMP'D. EMBANK.
5 CU. YD. UNCLASS. EXCAV.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
12+00	13+62	LT.	6'	126
13+98	15+00	LT.	6'	67

STA. 13+76 INSTALL
24" X 40" PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. =125 CU. YD. COMP'D. EMBANK.

STA. 13+34 CONSTRUCT
24" X 234' R.C. PIPE CULV'T. (CL. V)
(11° RT. FWD. SKEW)
WITH F.E.S. LT. & RT.
USE TYPE 2 BEDDING
Q50 = 35cfs. D.A. = 4Ac.

STA. 15+90 CONSTRUCT
DRY RAMP ON LT.
CONSTR. APPR. =55 CU. YD. COMP'D. EMBANK.
10 CU. YD. UNCLASS. EXCAV.

RELOCATED CO. RD. 554
PI = 17+13.89
Δ = 61°47'45" LT.
D = 6°00'00"
T = 571.47'
L = 1029.93'
PC = 11+42.42
PT = 21+72.36
e = 0.070'/'
Ls = 190'

POB 10+00.00
PC 11+42.42
PT 21+72.36

S 58°21'48" E

RELOCATED COUNTY ROAD 554

STA. 10+00.00 BEGIN SUPERELEVATION (N.C.)
STA. 11+90.00 MAX. SUPERELEVATION (0.070'/')
STA. 21+24.86 MAX. SUPERELEVATION (0.070'/')
STA. 23+14.86 END SUPERELEVATION (N.C.)

BEGIN CONST. CO. RD. 554
STA. 10+00.00

P.V.I. 10+00.00
ELEV. 1316.68

-0.55%

P.V.C. 16+32.41
ELEV. 1313.21

K=400.55
VC=700'
e=1.53%

L.T. DITCH GRADE -0.20%

18+50.00
1309.62

P.V.I. 19+82.41
ELEV. 1311.28

20+85.00
1309.15

1.20%

P.V.T. 23+32.41
ELEV. 1315.41

BM: 966 TBM-966\CPS
1980.09 RT. OF STA. 13+91.5696
ELEVATION = 1329.8508

F.L. INLET 1290.15
F.L. OUTLET 1289.73

BM: 965 TBM-965\CPS
716.04 RT. OF STA. 13+99.6729
ELEVATION = 1311.8625

BM: 912 TBM-911\CPS CP
607.11 RT. OF STA. 20+48.8434
ELEVATION = 1297.0940

1335 1330 1325 1320 1315 1310 1305 1300 1295 1290

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 24+00 25+00

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				6	ARK.			
				JOB NO.		CA0904	153	636

(2) PLAN AND PROFILE SHEETS

HWY. 71 MAIN LANES
STA. 861+30 CONSTRUCT
DBL. 42" X 568' R.C. PIPE CULV'T. (CL. ?)
(22° RT. FWD. SKEW)
FES LT. & RT.
(USE TYPE ? BEDDING)
050=173cfs, D.A.=37Ac.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
35+20	38+60	LT.	6'	224
38+60	44+90	LT.	7'	514

HWY. 71 MAIN LANES
STA. 865+00 CONSTRUCT
TYPE RM DROP INLET IN MEDIAN
4'-0" X 3'-0" X H=3'-6"
W/ 24" X 152' R.C. PIPE OUTLET (CL. III)
F.E.S. ON LT.
(USE TYPE 3 BEDDING)
DITCH PAVE OUTLET SLOPE ON LT.
CONCRETE DITCH PAVING (TYPE A) = 14 SQ. YD.

RELOCATED CO. RD. 554
PI = 35+33.82
Δ = 29°04'52" LT.
D = 8°00'00"
T = 185.76'
L = 363.51'
PC = 33+48.06
PT = 37+11.57
e = 0.070'/'
Ls = 190'

HWY. 71 MAIN LANES
STA. 871+61.60 CONSTRUCT
TYPE RM DROP INLET 121.39' LT.
6'-6" X 5'-0" X H=12'-2"
W/ 30" X 242' R.C. PIPE INLET (CL. V)
(10° RT. FWD SKEW)
42" X 130' R.C. STUB INLET (CL. III)
54" X 162' R.C. PIPE OUTLET CL. V)
(USE TYPE 3 BEDDING)
050=23cfs, D.A.=9Ac.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

+55 340'
+90 210'
+90 280'
+80 195'
+50 305'
+75 200'
+29.54 100'
+57.82 110.23'
25
30
35
860
865
870
E
4'
10'
S 58°21'48" E
S 87°26'40" E
PC 33+48.06
PT 37+11.57
P.I. 35+33.82

RELOCATED COUNTY ROAD 554

STA. 32+05.56 BEGIN SUPERELEVATION (N.C.)
STA. 33+85.56 MAX. SUPERELEVATION (0.070'/')
STA. 36+64.07 MAX. SUPERELEVATION (0.070'/')
STA. 38+54.07 END SUPERELEVATION (N.C.)

K=219.25
VC=450'
e=1.15'

P.V.C. 32+92.79
ELEV. 1326.97

P.V.I. 35+17.79
ELEV. 1329.67

P.V.T. 37+42.79
ELEV. 1336.98

1.20%
3.25%

HWY. 71
+30
F.L. INLET 1272.62
F.L. OUTLET 1253.34

F.L. D.I. 1318.30
F.L. OUTLET 1315.54

HWY. 71
61.60
TOP D.I. 1318.32

42" X 130' RCP

F.L. INLET (30") 1315.50
F.L. INLET (42") 1308.16
F.L. D.I. 1305.18
F.L. OUTLET 1303.70

BM: 911 TBM-911\CPS CP
1565.83 RT. OF STA. 25+50.3913
ELEVATION = 1349.4860

BM: 964 TBM-964\CPS
144.92 RT. OF STA. 28+08.5609
ELEVATION = 1313.5590

BM: 963 TBM-963\CPS
493.25 RT. OF STA. 36+22.1998
ELEVATION = 1346.3330

1345 1340 1335 1330 1325 1320 1315 1310 1305 1300

25+00 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

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				6	ARK.			
				JOB NO.		CA0904	154	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
35+20	38+60	LT.	6'	224
38+60	44+90	LT.	7'	514

P.O.E. 114+00.01

+00 45'

+00 50'

R=40'

P.I. 113+00.01

STA. 45+13.37 RELOC. CO. RD. 554 C.L.
= STA. 112+35.00 CO. RD. 453 C.L.
Δ=90°00'00"

N 2°33'20" E

Δ 90°00'

4'

40'

10'

4'

S 87°26'40" E

+55 53.07'

R=40'

+22.06 421.26'

+40 380'

N 2°33'20" E

+14.96 50'

+00 130'

+75 200'

+44.77 163.95'

72

RELOCATED COUNTY ROAD 554

END CONST. CO. RD. 554
STA. 45+03.37

STA. 45+03.37 RELOCATED COUNTY ROAD 554 =
STA. 112+35.00 10.00' LT. OF COUNTY ROAD 453
ELEV. 1361.70

3.25%

BM: 910 TBM-910\CPS 36" OAK
722.74 RT. OF STA. 44+92.3647
ELEVATION = 1359.4330

1375 1370 1365 1360 1355 1350 1345 1340 1335 1330

40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00

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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.		CA0904	155	636

(2) PLAN AND PROFILE SHEETS

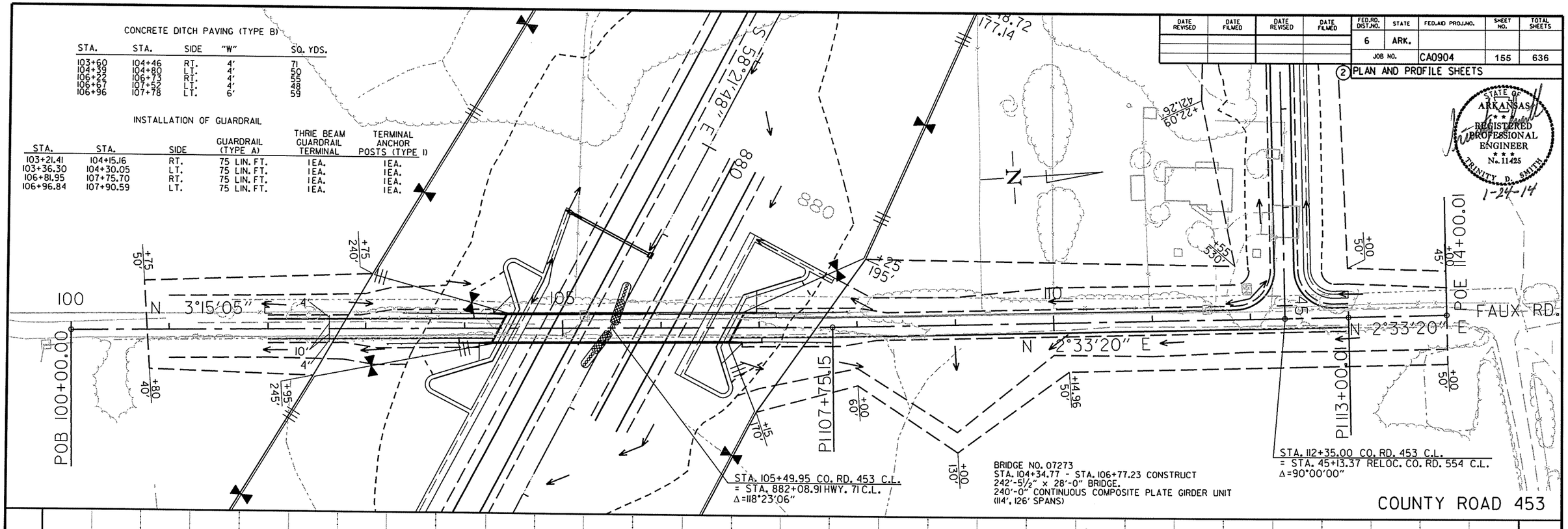
CONCRETE DITCH PAVING (TYPE B)

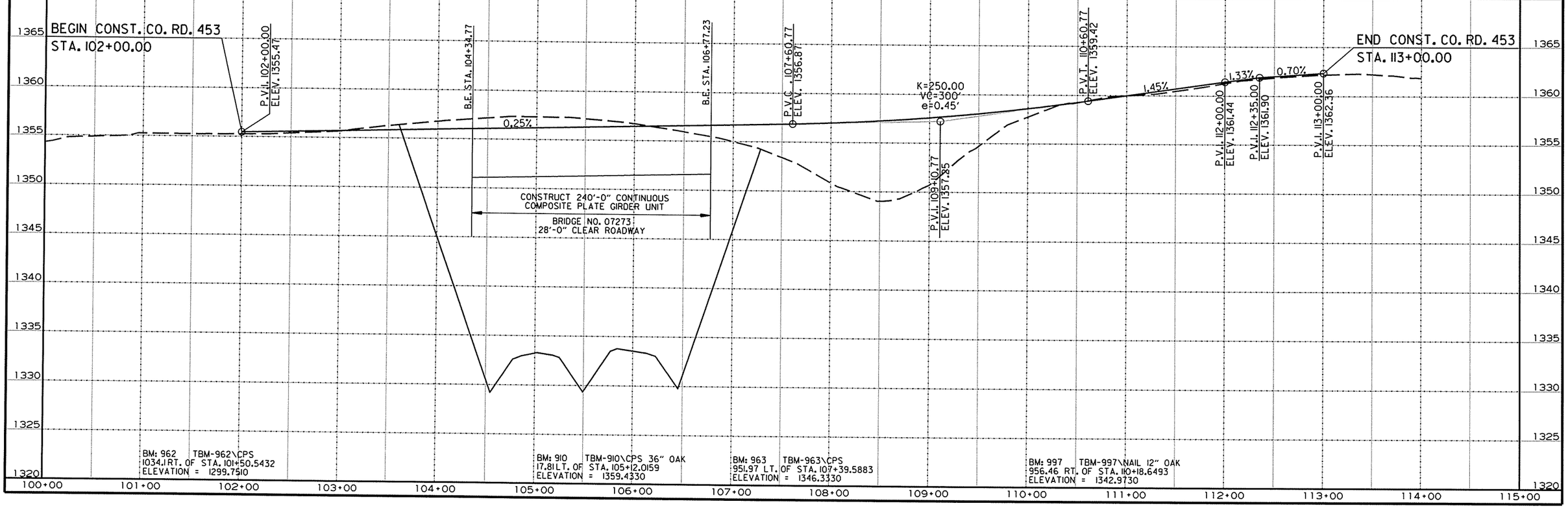
STA.	STA.	SIDE	"W"	SQ. YDS.
103+60	104+46	RT.	4'	71
104+39	104+80	LT.	4'	50
106+22	106+73	RT.	4'	55
106+67	107+52	LT.	4'	48
106+96	107+78	LT.	6'	59

INSTALLATION OF GUARDRAIL

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POSTS (TYPE I)
103+21.41	104+15.16	RT.	75 LIN. FT.	1 EA.	1 EA.
103+36.30	104+30.05	LT.	75 LIN. FT.	1 EA.	1 EA.
106+81.95	107+75.70	RT.	75 LIN. FT.	1 EA.	1 EA.
106+96.84	107+90.59	LT.	75 LIN. FT.	1 EA.	1 EA.

STATE OF ARKANSAS
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TRINITY P. SMITH
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				6	ARK.			
				JOB NO.		CA0904	156	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

STA. 13+00 - CONSTRUCT
DBL. 51" x 31" x 44' R.C. ARCH PIPE
CULV'T. (CL. III)
WITH F.E.S. LT. & RT.
USE TYPE 3 BEDDING
050 = 192 cfs; DA = 44 ac
USE 88' R.C. ARCH PIPE CULV'T. (CL. III)

PI 929+16.70

+25
415'

+50
310'

+50
190'

930

PI 19+28.97

POE 23+35.57

10

15

20

POB 10+00.00

4'
10'
4'

N 18°29'06" W

N 17°12'55" W

STA. 16+08.12 BECKETT C.L.
= STA. 930+84.05 HWY. 71 C.L.
Δ=127°02'16"

+85
335'

BECKETT ROAD

BEGIN CONST. BECKETT
STA. 12+00.00

+00

F.L. INLET 1215.46
F.L. OUTLET 1214.58

END CONST. BECKETT
STA. 19+28.97

BM: 959 TBM-959\CPS
998.69 RT. OF STA. 12+82.4300
ELEVATION = 1318.6840

BM: 909 TBM-909\CPS 24" ASH
20.94 LT. OF STA. 18+34.3322
ELEVATION = 1213.7870

BM: 960 TBM-960\CPS
462.91 LT. OF STA. 22+82.4713
ELEVATION = 1274.2840

1245 1240 1235 1230 1225 1220 1215 1210 1205 1200

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 24+00 25+00

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				6	ARK.			
				JOB NO.	CA0904		157	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

INSTALLATION OF GUARDRAIL

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POSTS (TYPE I)
16+08.15	17+01.90	RT.	75 LIN. FT.	1EA.	1EA.
16+08.15	17+01.90	LT.	75 LIN. FT.	1EA.	1EA.
19+34.80	20+28.55	RT.	75 LIN. FT.	1EA.	1EA.
19+34.80	20+28.55	LT.	75 LIN. FT.	1EA.	1EA.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
16+77	17+27	RT.	4'	59
16+82	17+32	LT.	4'	60
19+06	19+45	RT.	4'	48
19+15	19+56	LT.	4'	52

STA. 13+00 CONSTRUCT
36" X 23" X 52' R.C. ARCH PIPE CULV'T. (CL. III)
(15° RT. FWD. SKEW)
WITH F.E.S. LT. & RT.
USE TYPE 3 BEDDING
050 = 35cfs, D.A. = 4Ac.

MILLER CHURCH RD.
N 33°33'22" W
POB 8+47.95
PC 8+99.11
PT 9+72.10
P10+00.00
PC 10+70.66
PI 9+35.69
PI 12+54.49
PT 14+30.56
N 25°11'30" W
N 3°36'00" E
10'
4'
15'
110'
+00
+55
+96
+17.11
+65.24
+50.42
259.42'
+70
255'

CO. RD. 49
PI = 12+54.49
Δ = 28°47'29" RT.
D = 8°00'00"
T = 183.83'
L = 359.89'
PC = 10+70.66
PT = 14+30.56
e = 0.084'/'
Ls = 220'

BRIDGE NO. 07275
STA. 17+12.27 - STA. 19+24.43 CONSTRUCT
212'-2" x 28'-0" BRIDGE.
210'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(110', 100' SPANS)

955
20
+20
190'

STA. 18+23.35 CO. RD. 49 C.L.
= STA. 955+49.01 HWY. 7 C.L.
Δ=94°21'31"

COUNTY ROAD 49

STA. 10+00.13 BEGIN SUPERELEVATION (N.C.)
STA. 12+20.13 MAX. SUPERELEVATION (0.084'/')
STA. 13+75.69 MAX. SUPERELEVATION (0.084'/')
STA. 15+95.69 END SUPERELEVATION (N.C.)

1365 1360 1355 1350 1345 1340 1335 1330 1325 1320

BEGIN CONST. CO. RD. 49
STA. 10+00.13

P.V.I. 10+00.13
ELEV. 1338.49

P.V.C. 11+20.66
ELEV. 1337.70

-0.66%

K=212.77
VC=300'
e=0.53'

P.V.I. 12+70.66
ELEV. 1336.71

+00

F.L. INLET 1332.44 RT.
F.L. OUTLET 1332.06 LT.

P.V.T. 14+20.66
ELEV. 1337.83

0.75%

P.V.C. 15+64.43
ELEV. 1338.91

B.E. STA. 17+12.27

K=138.30
VC=650'
e=-3.82'

CONSTRUCT 210'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
BRIDGE NO. 07275
28'-0" CLEAR ROADWAY

P.V.I. 18+89.43
ELEV. 1341.35

B.E. STA. 19+24.43

BM: 908 TBM-908\CPS PP GUY
160.8 LT. OF STA. 17+51.1166
ELEVATION = 1357.5280

BM: 958 TBM-958\CPS
1191.93 RT. OF STA. 19+54.4284
ELEVATION = 1319.6360

5+00 6+00 7+00 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

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				6	ARK.			
				JOB NO.		CA0904	158	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

CO. RD. 49
PI = 25+86.54
Δ = 41°04'26" RT.
D = 8°00'00"
T = 268.30'
L = 513.42'
PC = 23+18.24
PT = 28+31.66
e = 0.084'/'
Ls = 220'

STA. 28+00 CONSTRUCT
24" X 52' R.C. PIPE CULV'T. (CL. III)
WITH F.E.S. LT. & RT.
USE TYPE 3 BEDDING
Q50 = 9cfs, D.A. = 1Ac.

STA. 22+25 INSTALL
24" X 26' PIPE CULV'T.
LT. SIDE DRAIN
CONSTR. APPR. = 60 CU. YD. COMP'D EMBANK.
420 CU. YD. UNCLASS. EXCAV.

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
20+00	27+00	RT.	7'	535
27+00	28+96	RT.	6'	128
20+00	22+13	LT.	7'	166
22+39	27+00	LT.	7'	369
27+00	28+96	LT.	6'	136

COUNTY ROAD 49

STA. 21+53.37 BEGIN SUPERELEVATION (N.C.)
STA. 23+73.37 MAX. SUPERELEVATION (0.084'/')
STA. 26+76.29 MAX. SUPERELEVATION (0.084'/')
STA. 28+96.29 END SUPERELEVATION (N.C.)

K=138.30
VC=650'
e=3.82'

P.V.T. 22+14.43
ELEV. 1328.51

-3.95%

P.V.C. 24+81.68
ELEV. 1317.96

K=64.52
VC=400'
e=3.10'

P.V.I. 26+81.68
ELEV. 1310.06

P.V.T. 28+81.68
ELEV. 1314.56

P.V.I. 28+96.29
ELEV. 1314.88

2.25%

END CONST. CO. RD. 49
STA. 28+96.29

F.L. INLET 1307.84 RT.
F.L. OUTLET 1306.79 LT.

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				6	ARK.			
				JOB NO.		CA0904	159	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
1-24-13
TRINITY D. SMITH

ROCK DITCH LINER

STA.	STA.	SIDE	"W"	ROCK DITCH LINER TON	FILTER BLANKET SQ. YDS.
16+00	17+00	LT.	9'	116	96
18+40	19+00	RT.	9'	72	60

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
17+00	28+92	LT.	7'	932
19+00	28+92	RT.	7'	761

CO. RD. 39
PI = 13+96.97
Δ = 32°53'09" RT.
D = 9°32'57"
T = 177.08'
L = 344.38'
PC = 12+19.89
PT = 15+64.27
NO SUPERELEVATION

CO. RD. 39
PI = 17+30.87
Δ = 21°32'09" LT.
D = 13°00'00"
T = 83.82'
L = 165.66'
PC = 16+47.05
PT = 18+12.71
NO SUPERELEVATION

CO. RD. 39
PI = 23+36.65
Δ = 26°43'02" RT.
D = 11°00'00"
T = 123.69'
L = 242.88'
PC = 22+12.96
PT = 24+55.84
NO SUPERELEVATION

POB 10+00.00
N 34°52'58" W
PUNKIN HOLLOW RD.
PC 12+96.89
PI 13+96.97
N 1°59'49" W
PC 16+47.05
PT 15+64.27
PT 18+12.71
PI 17+30.87
N 23°31'58" W
PC 22+12.96
PI 23+
STA. 21+96.73 CO. RD. 39 C.L.
= STA. 1000+34.50 HWY.71 C.L.
Δ=113°50'06"
COUNTY ROAD 39

BEGIN CONST. CO. RD. 39
STA. 15+54.43

P.V.I. 15+54.43
ELEV. 1251.88
5.65%
P.V.C. 16+28.37
ELEV. 1256.06
K=439.23
VC=200'
e=0.11'
P.V.I. 17+28.37
ELEV. 1261.71
6.10%
P.V.T. 18+28.37
ELEV. 1267.81

BM: 955 TBM-955\RRS
955.3 RT. OF STA. 19+81.4989
ELEVATION = 1309.7261

BM: 906 906 BM CPS INS 20 IN OAK
11.8' RT. OF STA. 21+95.9962
ELEVATION = 1299.2540

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				6	ARK.			
				JOB NO.		CA0904	160	636

(2) PLAN AND PROFILE SHEETS

CO. RD. 39
PI = 23+36.65
Δ = 26°43'02" RT.
D = 11°00'00"
T = 123.69'
L = 242.88'
PC = 22+12.96
PT = 24+55.84
NO SUPERELEVATION

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	"W"	SQ. YDS.
17+00	28+92	LT.	7'	932
19+00	28+92	RT.	7'	761

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

PI 23+36.65
+90
200'
25
N 3°11'04" E
PI 27+34.67
PI 29+83.50
+00
60'
+60
230'
PT 24+55.84
8'
12'
8'
N 3°11'04" E
+00
65'
PUNKIN HOLLOW

COUNTY ROAD 39

END CONST. CO. RD. 39
STA. 28+91.84

P.V.I. 26+85.32
ELEV. 1320.12
P.V.I. 28+91.84
ELEV. 1319.91
-0.10%
P.V.C. 24+97.82
ELEV. 1308.68
K=60.42
VC=375'
e=-2.91'
P.V.T. 28+72.82
ELEV. 1319.93
6.10%

BM: 956 TBM-956\RRS
855.67 LT. OF STA. 24+93.3722
ELEVATION = 1290.6880

335 330 325 320 315 310 305 300 295 290 285

23+00 24+00 25+00 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

1335 1330 1325 1320 1315 1310 1305 1300 1295 1290 1285

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				6	ARK.			
				JOB NO.		CA0904	161	636

(2) PLAN AND PROFILE SHEETS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

MC KISSIC CREEK RD.

P.C. 1128+37.27
PRC 1128+82.34
P.C. 1127+55.95
P.I. 1131+23.39
P.T. 1124+10.05
P.I. 1127+72.89
P.I. 1126+44.49
P.I. 1125+28.18
P.I. 1123+84.29
P.I. 1122+23.84
P.I. 1121+23.22
P.I. 1120+10.84
P.I. 1119+00.84
P.I. 1117+90.84
P.I. 1116+80.84
P.I. 1115+70.84
P.I. 1114+60.84
P.I. 1113+50.84
P.I. 1112+40.84
P.I. 1111+30.84
P.I. 1110+20.84
P.I. 1109+10.84
P.I. 1108+00.84
P.I. 1106+90.84
P.I. 1105+80.84
P.I. 1104+70.84
P.I. 1103+60.84
P.I. 1102+50.84
P.I. 1101+40.84
P.I. 1100+30.84
P.I. 1099+20.84
P.I. 1098+10.84
P.I. 1097+00.84
P.I. 1095+90.84
P.I. 1094+80.84
P.I. 1093+70.84
P.I. 1092+60.84
P.I. 1091+50.84
P.I. 1090+40.84
P.I. 1089+30.84
P.I. 1088+20.84
P.I. 1087+10.84
P.I. 1086+00.84
P.I. 1084+90.84
P.I. 1083+80.84
P.I. 1082+70.84
P.I. 1081+60.84
P.I. 1080+50.84
P.I. 1079+40.84
P.I. 1078+30.84
P.I. 1077+20.84
P.I. 1076+10.84
P.I. 1075+00.84
P.I. 1073+90.84
P.I. 1072+80.84
P.I. 1071+70.84
P.I. 1070+60.84
P.I. 1069+50.84
P.I. 1068+40.84
P.I. 1067+30.84
P.I. 1066+20.84
P.I. 1065+10.84
P.I. 1064+00.84
P.I. 1062+90.84
P.I. 1061+80.84
P.I. 1060+70.84
P.I. 1059+60.84
P.I. 1058+50.84
P.I. 1057+40.84
P.I. 1056+30.84
P.I. 1055+20.84
P.I. 1054+10.84
P.I. 1053+00.84
P.I. 1051+90.84
P.I. 1050+80.84
P.I. 1049+70.84
P.I. 1048+60.84
P.I. 1047+50.84
P.I. 1046+40.84
P.I. 1045+30.84
P.I. 1044+20.84
P.I. 1043+10.84
P.I. 1042+00.84
P.I. 1040+90.84
P.I. 1039+80.84
P.I. 1038+70.84
P.I. 1037+60.84
P.I. 1036+50.84
P.I. 1035+40.84
P.I. 1034+30.84
P.I. 1033+20.84
P.I. 1032+10.84
P.I. 1031+00.84
P.I. 1029+90.84
P.I. 1028+80.84
P.I. 1027+70.84
P.I. 1026+60.84
P.I. 1025+50.84
P.I. 1024+40.84
P.I. 1023+30.84
P.I. 1022+20.84
P.I. 1021+10.84
P.I. 1020+00.84
P.I. 1018+90.84
P.I. 1017+80.84
P.I. 1016+70.84
P.I. 1015+60.84
P.I. 1014+50.84
P.I. 1013+40.84
P.I. 1012+30.84
P.I. 1011+20.84
P.I. 1010+10.84
P.I. 1009+00.84
P.I. 1007+90.84
P.I. 1006+80.84
P.I. 1005+70.84
P.I. 1004+60.84
P.I. 1003+50.84
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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.		CA0904	162	636

2 ROUNDABOUT LAYOUT

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14

LIMITS OF SPECIAL FLOOD HAZARD AREA
STATION 1129+00 - STATION 1135+00

ROUNDABOUT	ROUNDABOUT	ROUNDABOUT	ROUNDABOUT
PI = 603+31.72	PI = 605+38.74	PI = 603+54.99	PI = 607+18.77
Δ = 140°13'30"LT.	Δ = 72°57'26" T.	Δ = 44°27'36"LT.	Δ = 36°34'41"LT.
D = 47°44'47"	D = 47°44'47"	D = 38°11'50"	D = 57°17'45"
T = 331.72'	T = 88.73'	T = 61.31'	T = 33.05'
L = 293.69'	L = 152.80'	L = 116.40'	L = 63.84'
PC = 600+00.00	PC = 604+50.02	PCC = 602+93.69	PC = 606+85.72
PCC = 602+93.69	PT = 606+02.82	PT = 604+10.08	PT = 607+49.56

12/27/2013

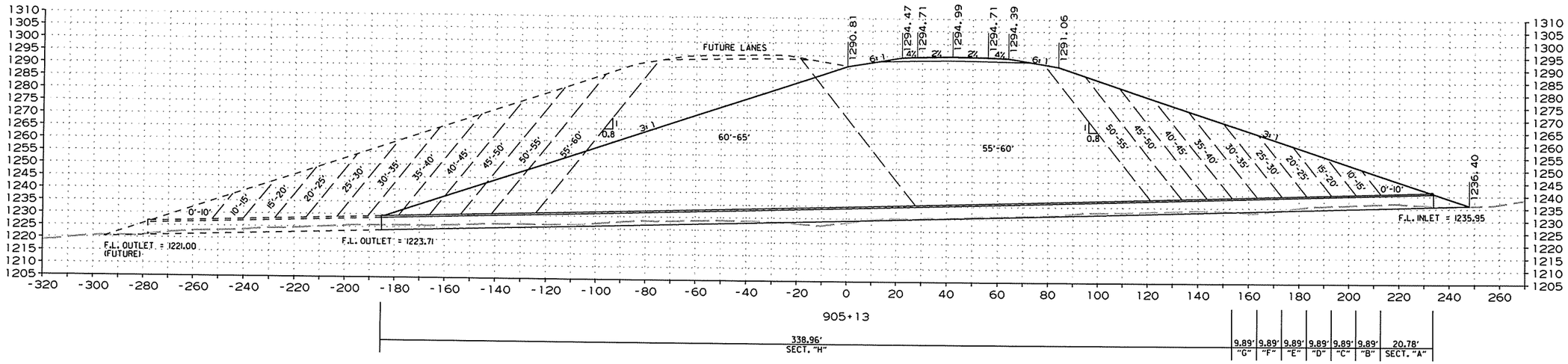
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ROUNDABOUT LAYOUT

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.		CA0904	163	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 905+13 CONSTRUCT
6' X 5' X 420' R.C. BOX CULV'T
Q50=260cfs, D.A.=75Ac.

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY						UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS						
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	46.48	0.509	23.66	61.66	2865.96	1	20.04	20.04	2886.00	10.74		
SECTION "B"	9.89	0.536	5.30	66.63	658.97				658.97	2.28		
SECTION "C"	9.89	0.563	5.57	72.06	712.67				712.67	2.28		
SECTION "D"	9.89	0.616	6.09	76.21	753.72	1	20.04	20.04	773.76	2.28		
SECTION "E"	9.89	0.669	6.62	83.78	828.58				828.58	2.28		
SECTION "F"	9.89	0.724	7.16	91.60	905.92				905.92	2.28		
SECTION "G"	9.89	0.779	7.70	98.15	970.70	1	23.38	23.38	994.08	2.28		
SECTION "H"	338.96	1.330	450.82	104.83	35533.18	8	28.95	231.60	35764.78	78.30		
HEADWALLS & APRONS (INLET)					46.65				46.65		2	0.03
HEADWALLS & APRONS (OUTLET)					58.87				58.87		2	0.03
WINGS (INLET)			** 10.53		178.90				178.90		7	0.09
WINGS (OUTLET)			** 12.69		178.90				178.90		7	0.08
V.I.										6.02		
V.O.										6.45		
TOTALS			536.14		43693.02			295.06	43988.08	115.19	18	0.23

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
** INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS

STANDARD DRAWINGS: RCB-1, RCB-2, R-100X-X1, R-100X-X3, W-X003-1, SPECIAL DETAIL (SHEET NO. X)

1/3/2014

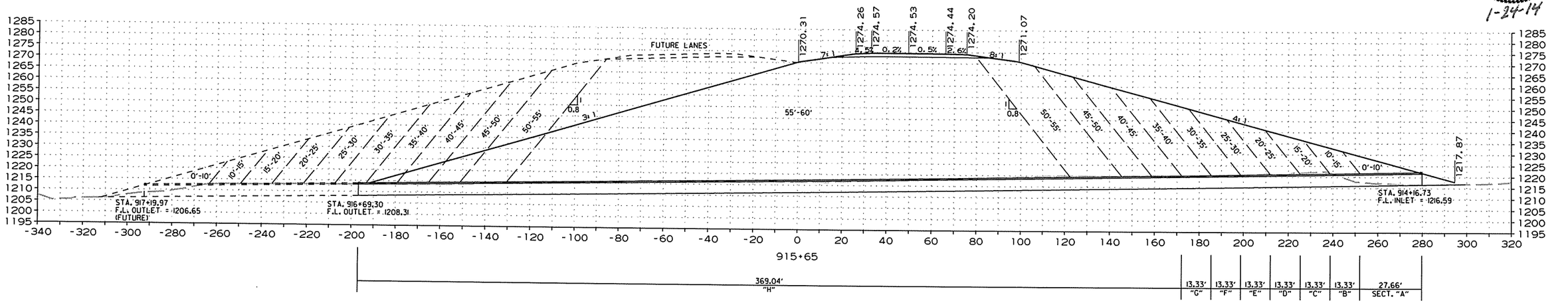
RCA0904.DGN

HWY. 71 - STA. 905+13
CULVERT DIAGRAM

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.		CA0904	164	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 915+65 CONSTRUCT
DBL. 6' X 5' X 477' R.C. BOX CULV'T
(32° LT. FWD. SKEW)
Q50=560cfs, D.A.=168Ac.

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY						UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS						
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	27.66	0.941	26.03	129.98	*** 3595.29				3595.29	10.68		
SECTION "B"	13.33	1.005	13.40	128.35	1710.91	1	46.76	46.76	1757.67	5.15		
SECTION "C"	13.33	1.068	14.24	149.57	1993.77				1993.77	5.15		
SECTION "D"	13.33	1.152	15.36	158.19	2108.67	1	46.76	46.76	2155.43	5.15		
SECTION "E"	13.33	1.236	16.48	168.46	2245.57				2245.57	5.15		
SECTION "F"	13.33	1.321	17.61	180.40	2404.73				2404.73	5.15		
SECTION "G"	13.33	1.397	18.62	188.82	2516.97	1	46.76	46.76	2563.73	5.15		
SECTION "H"	369.04	2.220	819.27	230.97	85237.17	9	89.07	801.63	86038.80	142.45		
HEADWALLS & APRONS (INLET)					—						4	0.05
HEADWALLS & APRONS (OUTLET)					81.44				81.44		4	0.05
WINGS (INLET)			** 14.42		230.00				230.00		9	0.11
WINGS (OUTLET)			** 13.03		178.90				178.90		7	0.09
V.I.										7.43		
V.O.										7.21		
TOTALS			968.46		102303.42			941.91	103245.33	198.67	24	0.30

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
** INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS
*** INCLUDES: BARREL, APRON, HEADWALL, AND ONE LAP

STANDARD DRAWINGS: RCB-1, RCB-2, R-230X-1, R-200X-1, R-200X-X4, W-X30, W-X303-1, W-X003-1, SPECIAL DETAIL (SHEET NO. X)

1/3/2014

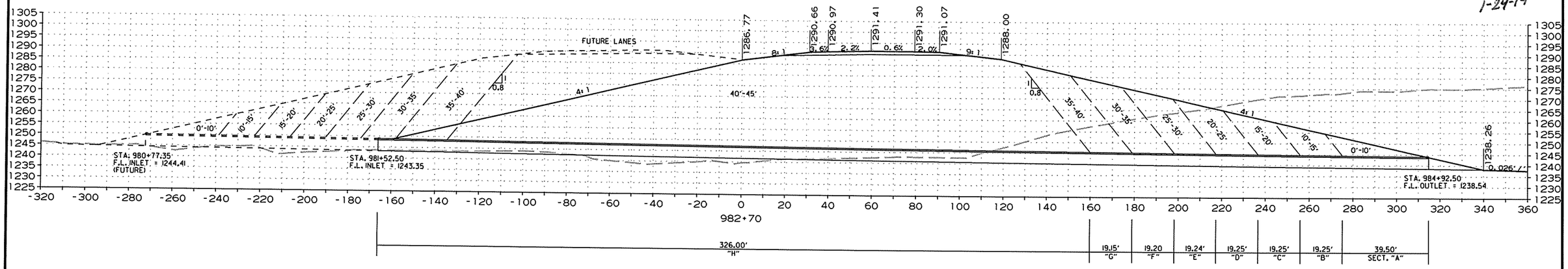
RCA0904.DGN

HWY. 71 - STA. 915+65
CULVERT DIAGRAM

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.		CA0904	165	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 982+70 CONSTRUCT
DBL. 5' X 5' X 481' R.C. BOX CULV'T
(45° RT. FWD. SKEW)
Q50=450cfs. D.A.=129Ac.

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY						UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS						
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	39.50	0.777	30.69	114.96	*** 4541.01				4541.01	11.61		
SECTION "B"	19.25	0.831	16.00	108.71	2092.67	1	43.42	43.42	2136.09	5.66		
SECTION "C"	19.25	0.885	17.04	118.18	2274.97				2274.97	5.66		
SECTION "D"	19.25	0.931	17.92	130.9	2519.83				2519.83	5.66		
SECTION "E"	19.24	1.005	19.34	140.27	2698.79	1	43.42	43.42	2742.21	5.66		
SECTION "F"	19.20	1.052	20.20	147.79	2837.57				2837.57	5.64		
SECTION "G"	19.15	1.109	21.24	156.47	2996.40	1	43.42	43.42	3039.82	5.63		
SECTION "H"	326.00	1.620	528.12	192.8	62852.80	8	80.16	641.28	63494.08	95.84		
HEADWALLS & APRONS (INLET)					50.77				50.77		3	0.04
HEADWALLS & APRONS (OUTLET)					—						5	0.06
WINGS (INLET)			** 11.46		178.90				178.90		7	0.09
WINGS (OUTLET)			** 15.04		231.50				231.50		9	0.11
V.I.										6.43		
V.O.										8.25		
TOTALS			697.05		83275.21			771.54	84046.75	156.04	24	0.30

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
** INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS
*** INCLUDES: BARREL, APRON, HEADWALL, AND ONE LAP

STANDARD DRAWINGS: RCB-1, RCB-2, R-245X-1, R-200X-X1, W-X45, W-X453-1, W-X003-1, SPECIAL DETAIL (SHEET NO. X)

1/3/2014

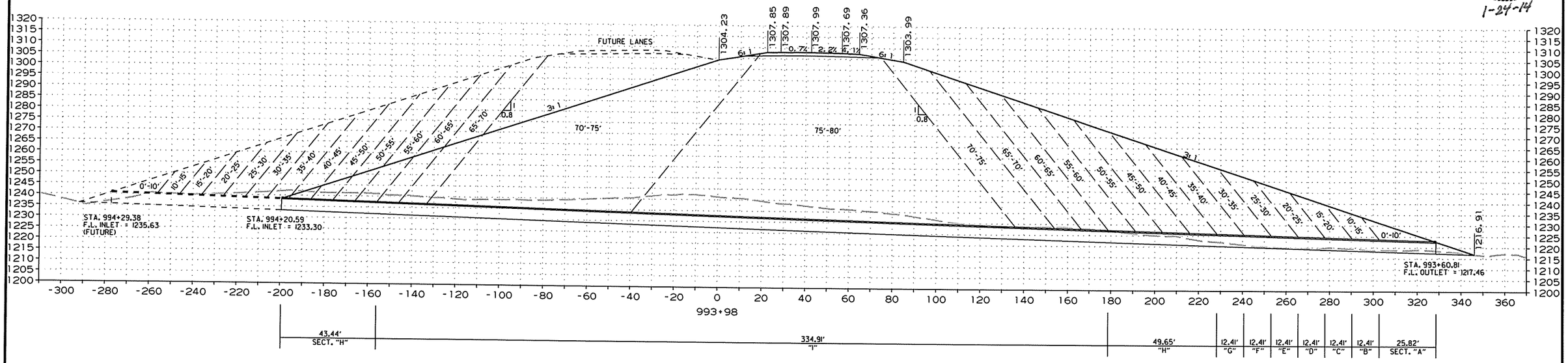
RCA0904.DGN

HWY. 71 - STA. 982+70
CULVERT DIAGRAM

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.		CA0904	166	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 993+98 CONSTRUCT
5' X 5' X 529' R.C. BOX CULV'T.
(6° 30' LT. FWD. SKEW)
Q50=224cfs, D.A.=48Ac.

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY						UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS						
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	25.82	0.444	11.46	48.5	1252.27	1	18.37	18.37	1270.64	5.01		
SECTION "B"	12.41	0.444	5.51	55.12	684.04				684.04	2.41		
SECTION "C"	12.41	0.468	5.81	58.92	731.20	1	18.37	18.37	749.57	2.41		
SECTION "D"	12.41	0.501	6.22	61.61	764.58				764.58	2.41		
SECTION "E"	12.41	0.549	6.81	66.77	828.62	1	18.37	18.37	846.99	2.41		
SECTION "F"	12.41	0.588	7.30	71.65	889.18				889.18	2.41		
SECTION "G"	12.41	0.628	7.79	76.56	950.11				950.11	2.41		
SECTION "H"	93.09	0.860	80.06	90.47	8421.85	3	26.72	80.16	8502.01	18.06		
SECTION "I"	334.91	1.190	398.54	96.14	32198.25	8	26.72	213.76	32412.01	64.97		
HEADWALLS & APRONS (INLET)					48.74						2	0.03
HEADWALLS & APRONS (OUTLET)					39.69						2	0.03
WINGS (INLET)			** 11.20		178.90						7	0.09
WINGS (OUTLET)			** 10.81		178.90						7	0.08
V.I.										5.93		
V.O.										6.33		
TOTALS			551.51		47166.33			349.03	47069.13	114.76	18	0.23

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
** INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS

STANDARD DRAWINGS: RCB-1, RCB-2, R-100X-X1, W-X003-1, SPECIAL DETAIL (SHEET NO. X)

1/3/2014

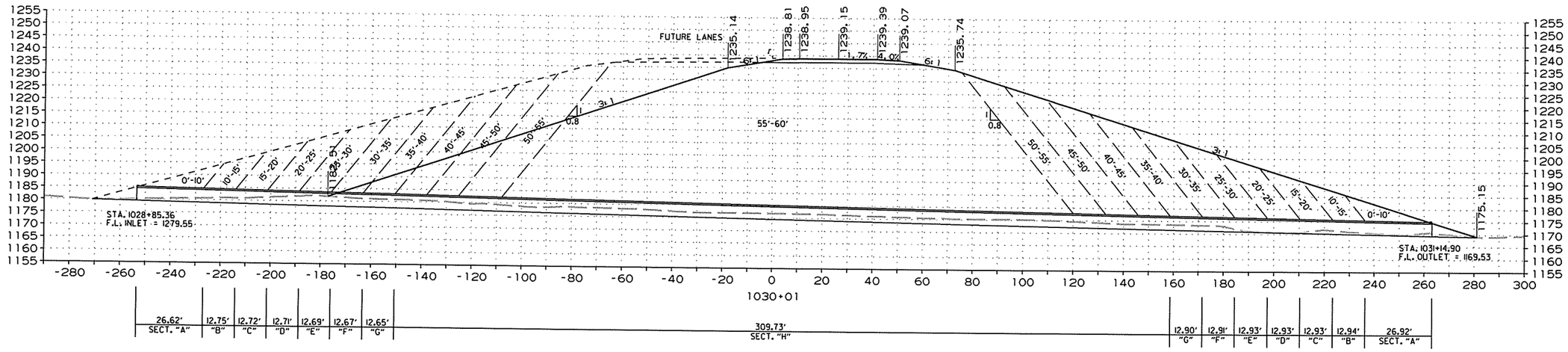
RCA0904.DGN

HWY. 71 - STA. 993+98
CULVERT DIAGRAM

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.		CA0904	167	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 1030+01 CONSTRUCT
DBL. 6' X 5' X 517' R.C. BOX CULV'T.
(26° 17' RT. FWD. SKEW)
Q50=490cfs, D.A. =168Ac.

STA. 1030+01

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY						UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS						
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	22.00		23.90		** 3320.00				3320.00	8.49		
SECTION "A"	4.62	0.941	4.35	121.81	562.76				562.76	1.78		
SECTION "B"	12.75	1.005	12.81	128.35	1636.46				1636.46	4.92		
SECTION "C"	12.72	1.068	13.58	149.57	1902.53				1902.53	4.91		
SECTION "D"	12.71	1.152	14.64	158.19	2010.59	1	46.76	46.76	2057.35	4.91		
SECTION "E"	12.69	1.236	15.68	168.46	2137.76				2137.76	4.90		
SECTION "F"	12.67	1.321	16.74	188.40	2387.03	1	46.76	46.76	2433.79	4.89		
SECTION "G"	12.65	1.397	17.67	188.82	2388.57				2388.57	4.88		
SECTION "H"	309.73	2.220	687.60	104.83	32469.00	8	89.07	712.56	33181.56	119.56		
SECTION "G"	12.90	1.397	18.02	188.82	2435.78				2435.78	4.98		
SECTION "F"	12.91	1.321	17.05	188.40	2432.24	1	46.76	46.76	2479.00	4.98		
SECTION "E"	12.93	1.236	15.98	168.46	2178.19				2178.19	4.99		
SECTION "D"	12.93	1.152	14.90	158.19	2045.40	1	46.76	46.76	2092.16	4.99		
SECTION "C"	12.93	1.068	13.81	149.57	1933.94				1933.94	4.99		
SECTION "B"	12.94	1.005	13.00	128.35	1660.85				1660.85	4.99		
SECTION "A"	4.92	0.941	4.63	121.81	599.31				599.31	1.90		
SECTION "A"	22.00		23.90		** 3320.00				3320.00	8.49		
* HEADWALLS , WINGWALLS & APRONS			15.98		460.00				460.00		24	0.30
V.I.										7.43		
V.O.										8.17		
TOTALS			944.24		65880.41			899.6	66780.01	215.15	24	0.30

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
* INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS
** INCLUDES: BARREL, APRON, HEADWALL, AND ONE LAP

STANDARD DRAWINGS: RCB-1, RCB-2, R-200X-X1, R-200X-X4, R-230X-1, W-X30, W-X303-1, SPECIAL DETAIL (SHEET NO. X)

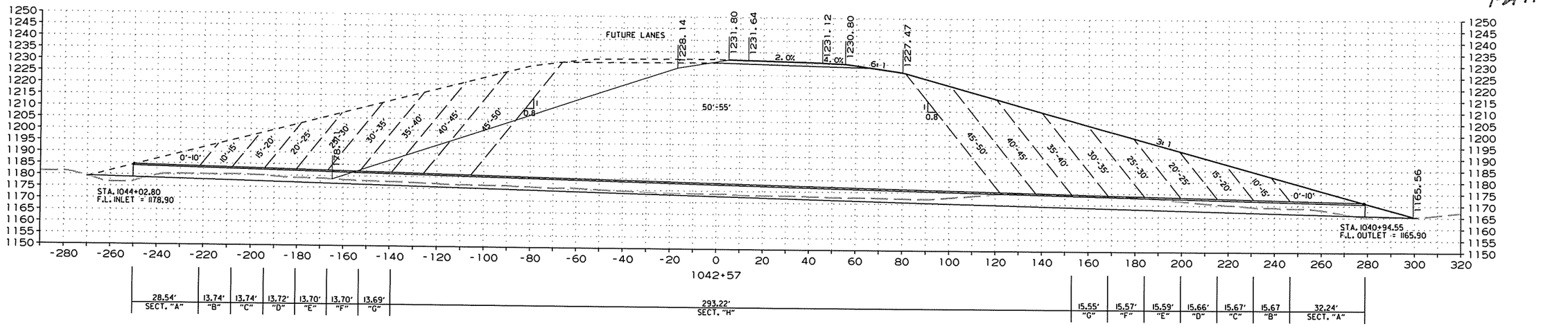
RCA0904.DGN 1/3/2014

CULVERT DIAGRAM

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.		CA0904	168	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 1042+57 CONSTRUCT
DBL. 6' X 5' X 530' R.C. BOX CULV'T
(35° 38' LT. FWD. SKEW)
Q50=570cfs, D.A.=195Ac.

STA. 1042+57

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY						UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS						
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	22.00		23.90		** 3320.00				3320.00	8.49		
SECTION "A"	6.54	0.941	6.15	121.81	796.64				796.64	2.52		
SECTION "B"	13.74	1.005	13.81	128.35	1763.53				1763.53	5.30		
SECTION "C"	13.74	1.068	14.67	149.57	2055.09				2055.09	5.30		
SECTION "D"	13.72	1.152	15.81	158.19	2170.37	1	46.76	46.76	2217.13	5.30		
SECTION "E"	13.70	1.236	16.93	168.46	2307.90				2307.90	5.29		
SECTION "F"	13.70	1.321	18.10	180.40	2471.48	1	46.76	46.76	2518.24	5.29		
SECTION "G"	13.69	1.397	19.12	188.82	2584.95				2584.95	5.28		
SECTION "H"	293.22	2.220	650.95	230.97	67725.02	7	89.07	623.49	68348.51	113.18		
SECTION "G"	15.55	1.397	21.72	188.82	2936.15				2936.15	6.00		
SECTION "F"	15.57	1.321	20.57	180.4	2808.83	1	46.76	46.76	2855.59	6.01		
SECTION "E"	15.59	1.236	19.27	168.46	2626.29				2626.29	6.02		
SECTION "D"	15.66	1.152	18.04	158.19	2477.26	1	46.76	46.76	2524.02	6.04		
SECTION "C"	15.67	1.068	16.74	149.57	2343.76				2343.76	6.05		
SECTION "B"	15.67	1.050	16.45	128.35	2011.24				2011.24	6.05		
SECTION "A"	10.24	0.941	9.64	121.81	1247.33				1247.33	3.95		
SECTION "A"	22.00		23.90		** 3320.00				3320.00	8.49		
* HEADWALLS , WINGWALLS & APRONS			15.98		460.00						24	0.30
V.I.										7.43		
V.O.										8.17		
TOTALS			941.75		105425.84			810.53	105776.37	220.16	24	0.30

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
* INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS
** INCLUDES: BARREL, APRON, HEADWALL, AND ONE LAP

STANDARD DRAWINGS: RCB-1, RCB-2, R-230X-1, R-200X-1, R-200X-X4, W-X30, W-X303-1, SPECIAL DETAIL (SHEET NO. X)

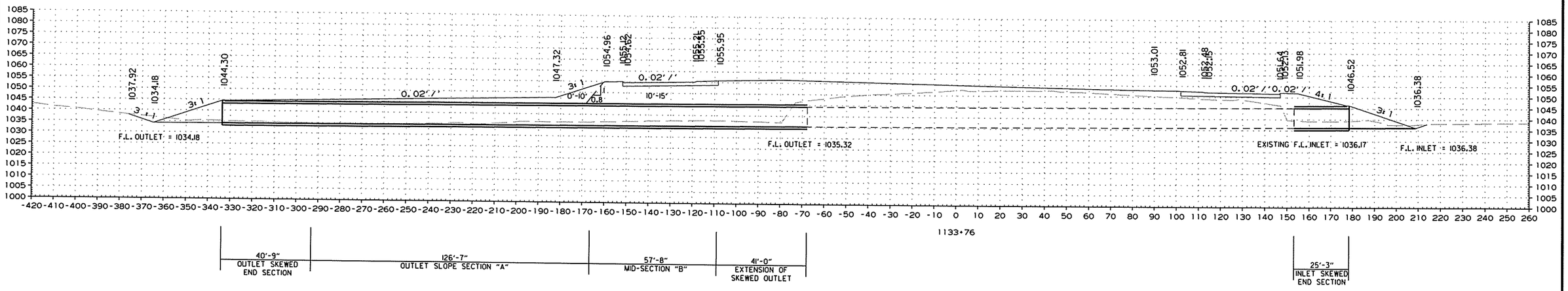
RCA0904.DGN 1/3/2014

CULVERT DIAGRAM

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.		CA0904	169	636

(2) CULVERT DIAGRAMS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11425
TRINITY D. SMITH
1-24-14



STA. 1133+76 - SEXTUPLE 12 X 9 X 222
R. C. BOX CULVERT
WITH HEADWALL LT. & RT.
(45° LT. FWD. SKEW)
RETAIN AND EXTEND
266' LT. AND 25'-3" RT.
TO A COMPLETED LENGHT OF 528'

STA. 1133+76

DESCRIPTION	LENGTH	CLASS "S" CONCRETE - ROADWAY		REINFORCING STEEL (GR. 60) - ROADWAY								UNCLASSIFIED EXCAVATION FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER
						BAR LAPS			ADD'L. FOR TRANS. LAP					
	LIN.FT.	CU.YD. / L.F.	CU. YD.	LBS. / L.F.	LBS.	EACH	LBS./LAP	LBS.	LBS./LIN.FT.	LBS.	TOTAL LBS.	CU. YD.	SQ.YD.	M.GAL.
SECTION "A"	126.58	8.53	1079.73	704	89112.32	4	827.00	3308.00	6.00	759.48	93179.80			
SECTION "B"	57.67	9.7	559.40	1319	76066.73	1	802.00	802.00	30.00	1730.10	78598.83			
OUTLET SKEWED END SECTION	40.75		351.62		57742.00						57742.00	1049.65		
EXTENSION OF SKEWED OUTLET	41.00		397.85		83057.00						83057.00			
INLET SKEWED END SECTION	25.25		228.00		32550.00						32550.00			
* HEADWALLS , WINGWALLS & APRONS			50.47		3388.00						3388.00		24	0.30
V.I.												5.62		
V.O.												24.42		
TOTALS			**2667.10**		**341916.05**			**4110**	**36**	**2489.58**	**348513**	**1079.69**	**24**	**0.30**

BASIS OF ESTIMATE:
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
* INCLUDES: HEADWALLS, WINGWALLS, FOOTINGS, TOE WALLS, AND APRONS

STANDARD DRAWINGS: RCB-1, RCB-2, R-200X-X1, R-200X-X4, R-230X-1, W-X30, W-X303-1, SPECIAL DETAIL (SHEET NO. X)

1/3/2014

RCA0904.DGN

CULVERT DIAGRAM

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.		CA0904	120	636
				(2)	ILLUMINATION SHEET			

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITIES TOTAL	UNIT
710	NON-METALLIC CONDUIT (2")	3122	LIN. FT.
710	NON-METALLIC CONDUIT (3")	224	LIN. FT.
SP, SS & 711	CONCRETE PULL BOX (TYPE 1 HD)	21	EACH
SP, SS & 711	CONCRETE PULL BOX (TYPE 2 HD)	4	EACH
SP	ROADWAY ILLUMINATION POLE (250 WATT COBRA HEAD, T-BASE, 28')	1	EACH
SP	ROADWAY ILLUMINATION POLE (250 WATT COBRA HEAD, T-BASE, 36')	19	EACH
SP	ROADWAY ILLUMINATION POLE (400 WATT COBRA HEAD, T-BASE, 40')	3	EACH
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/8 A.W.G., EGC)	3295	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT, ALUMINUM (2C/4 A.W.G.)	3820	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/12 A.W.G.)	1723	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/12 A.W.G., EGC)	1723	LIN. FT.
SP	SERVICE POINT ASSEMBLY (1 CIRCUIT)	1	EACH

⊕ ..... ROADWAY ILLUMINATION POLE (250 WATT COBRA HEAD, T-BASE, 36')

◇ ..... ROADWAY ILLUMINATION POLE (250 WATT COBRA HEAD, T-BASE, 28')

✦ ..... ROADWAY ILLUMINATION POLE (400 WATT COBRA HEAD, T-BASE, 40')

● ..... SERVICE POINT ASSEMBLY

▨ ..... TYPE 1 HD PULL BOX

2 ..... TYPE 2 HD PULL BOX

——— ..... NON-METALLIC CONDUIT (2")

═══ ..... NON-METALLIC CONDUIT (3")

GENERAL NOTES:

1. COBRA HEAD ROADWAY ILLUMINATION POLES SHALL HAVE FIXTURES OPERATING ON 240 VOLTS AC. (REFER TO DETAIL SHEETS).

2. AFTER INSTALLATION, THE ILLUMINATION ASSEMBLIES SHALL RECEIVE SPOT GALVANIZING REPAIR IN ACCORDANCE WITH SECTION 714 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003, IF DAMAGED.

3. UNDERGROUND CONDUIT SHALL HAVE 24" OF COVER (MINIMUM).

4. UNDERGROUND CONDUIT INSTALLED UNDER PAVED SURFACES SHALL BE INSTALLED BY A PUSHING OR BORING METHOD OR AS DIRECTED BY ENGINEER. PVC OR HDPE CONDUIT SHALL BE USED. PVC CONDUIT SHALL BE MARKED "DIR. BORING" OR "DIRECTIONAL BORING" AS PER NFPA 70 (NEC) REQUIREMENTS.

5. ALL ELECTRICAL SPLICES SHALL BE INSTALLED USING "HOMAC FLOOD-SEAL RXL AND FLOOD-SEAL Y-TAP DISCONNECT SERIES" ENCAPSULATING SPLICE KITS OR APPROVED EQUIVALENT. SPLICES SHALL BE UL LISTED FOR SUBMERSIBLE INSTALLATIONS AND SHALL BE RATED FOR COPPER AND ALUMINUM USE.

6. POLE LOCATION MAY BE MODIFIED, IF AND WHERE DIRECTED BY THE ENGINEER TO OBTAIN PROPER CLEARANCE FROM POWER LINES.

7. COBRA HEAD ROADWAY ILLUMINATION POLES SHALL BE SUPPLIED WITH EITHER 250 OR 400 WATT, AS MARKED ON PLAN SHEET, H.P.S. COBRA HEAD FIXTURES WITH AN ANSI/IES TYPE FULL-CUTOFF/FLAT GLASS CLEAR TEMPERED/TYPE III MEDIUM LIGHT DISTRIBUTION PATTERN. PHOTOMETRICS SHALL BE EQUIVALENT TO IES DATA FILES G250HPOOLWFXXX.IES AND G400HPOOLWFXXX.IES OR APPROVED EQUAL.

8. ALL UNDERGROUND CONDUIT SHALL BE 2" UNLESS OTHERWISE NOTED.

9. CONTRACTOR SHALL CONTACT LOCAL ELECTRIC UTLITIY TO VERIFY SERVICE POINT LOCATION. SERVICE DISCONNECTS AND DISTRIBUTION CABINETS ON SERVICE POINTS SHALL BE INSTALLED AT A HEIGHT REQUIRED BY LOCAL ELECTRIC UTILITY.

10. LUMINAIRE POLES WITH TRANSFORMER BASES SHALL BE PLACED 14 FEET FROM THE EDGE LINE

11. THE CONTRACTOR SHALL PERFORM A 48 HOUR BURN TEST COORDINATED WITH THE JOB ENGINEER.

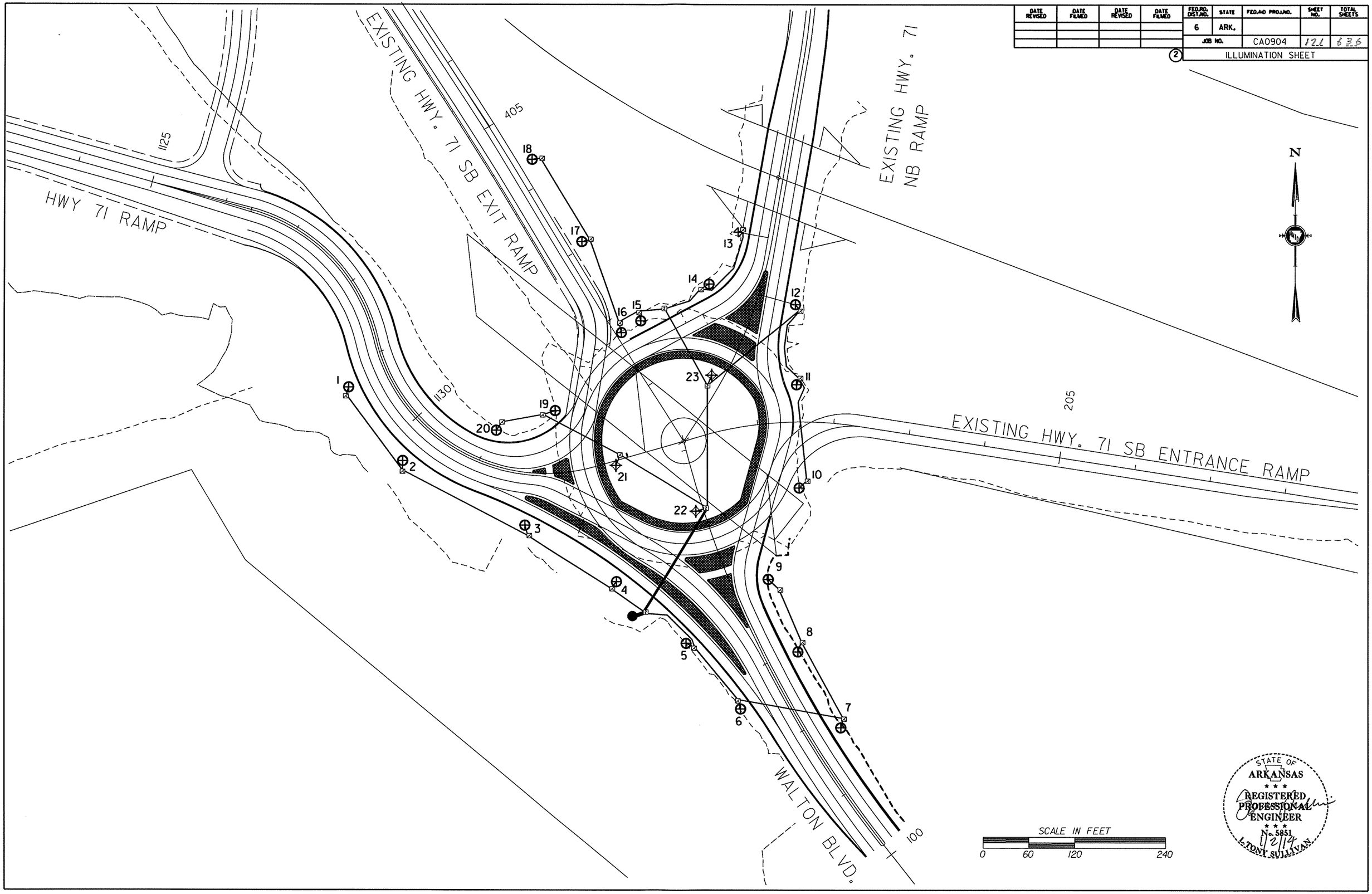
12. A #8 A.W.G. COPPER ELECTRICAL GROUND CONDUCTOR (EGC) SHALL BE PULLED FROM THE SERVICE POINT ASSEMBLY TO EACH POLE PULLBOX IN SERIES. A SOLID BARE #12 A.W.G. EGC WILL BE INSTALLED BETWEEN THE Y-DISCONNECT AND THE POLE GROUND LUG. A SOLID #10 COPPER CONDUCTOR WILL BE INSTALLED BETWEEN THE POLE GROUND LUG AND THE GROUND ROD.

13. 2C/#12 AWG UF CONDUCTORS WILL BE INSTALLED BETWEEN LUMINAIRE HEAD AND Y-TYPE FUSED DISCONNECT. A 10 AMP FUSE SHALL BE USED WITH THE ENERGIZED LEGS. THE EGC Y-TAP SHALL BE NON-FUSED.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
L. TONY SULLIVAN

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.		CA0904	12.1	636

(2) ILLUMINATION SHEET



STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
L. TONY SULLIVAN

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.		CA0904	172	636

(2) ILLUMINATION SHEET

SCALE IN FEET

0 30 60 120

NOTE: ORIENTATION FOUND ON LUMINAIRE SCHEDULE DIAGRAM

405

405+66.39

406+92.80

1129+23.88

1130

1131+9.28

N

9°

38°

289'

221'

63°

250°

283°

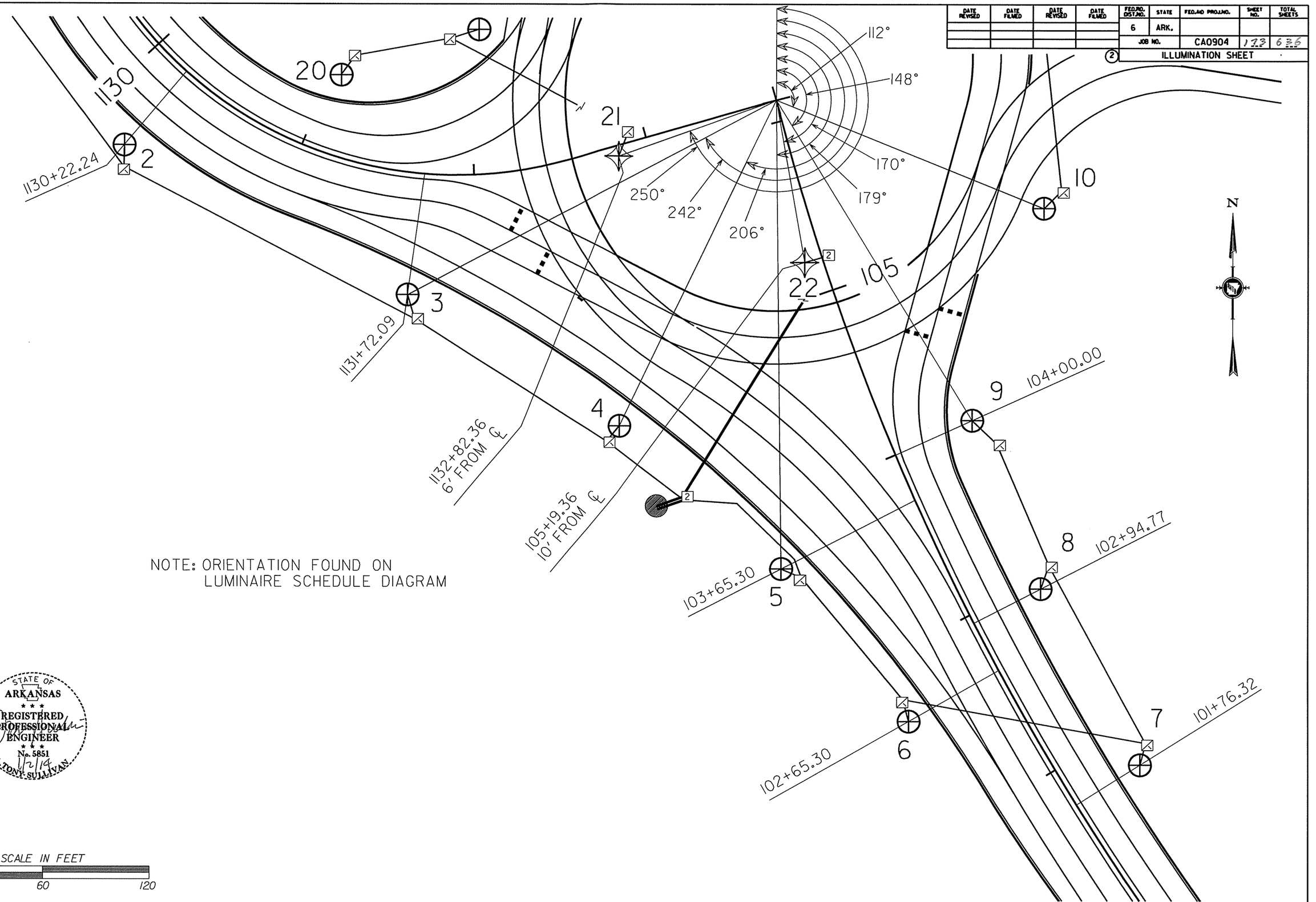
330°

340°

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
L. TONY SULLIVAN

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.		CA0904	123	636

(2) ILLUMINATION SHEET



NOTE: ORIENTATION FOUND ON LUMINAIRE SCHEDULE DIAGRAM

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
L. TONY SULLIVAN

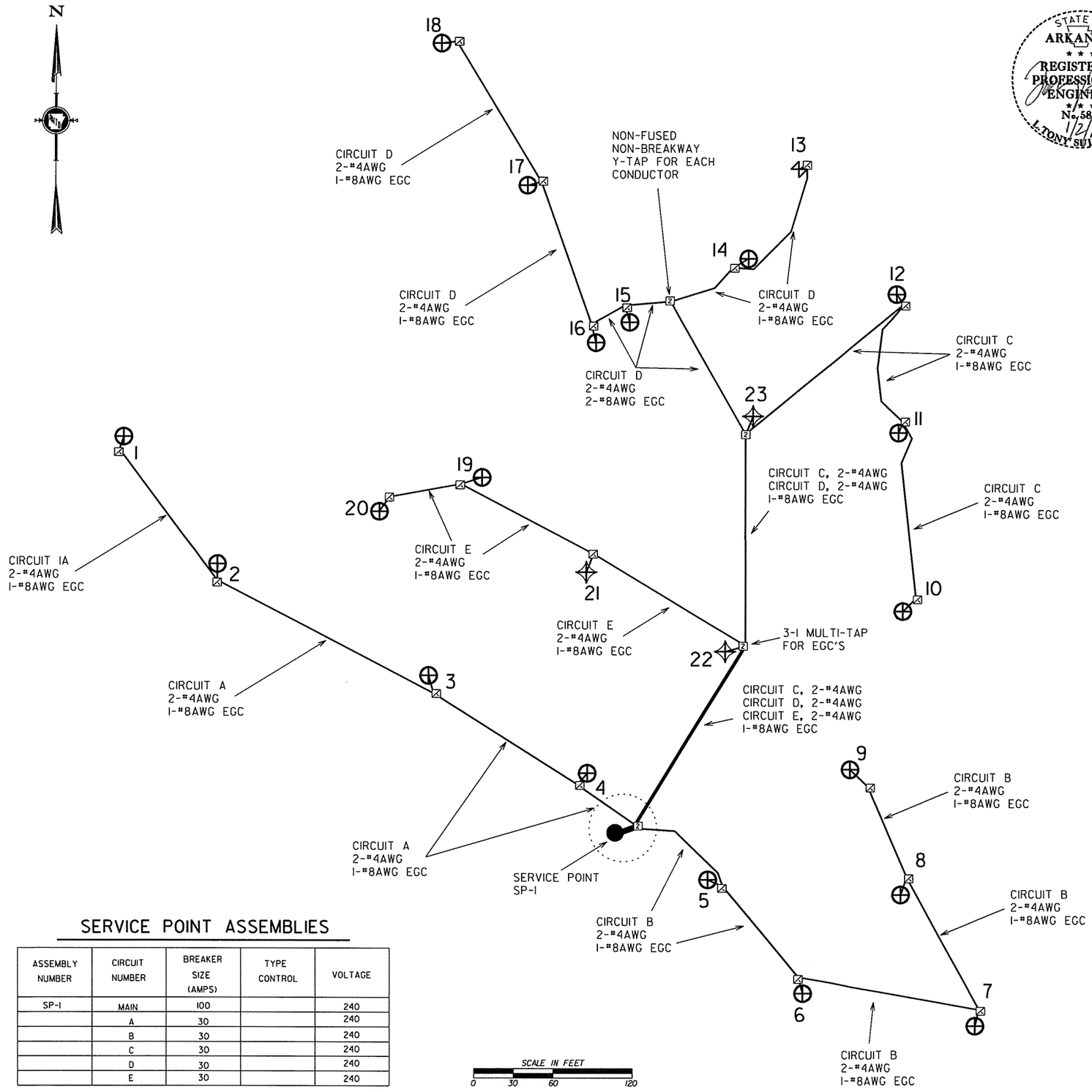
SCALE IN FEET

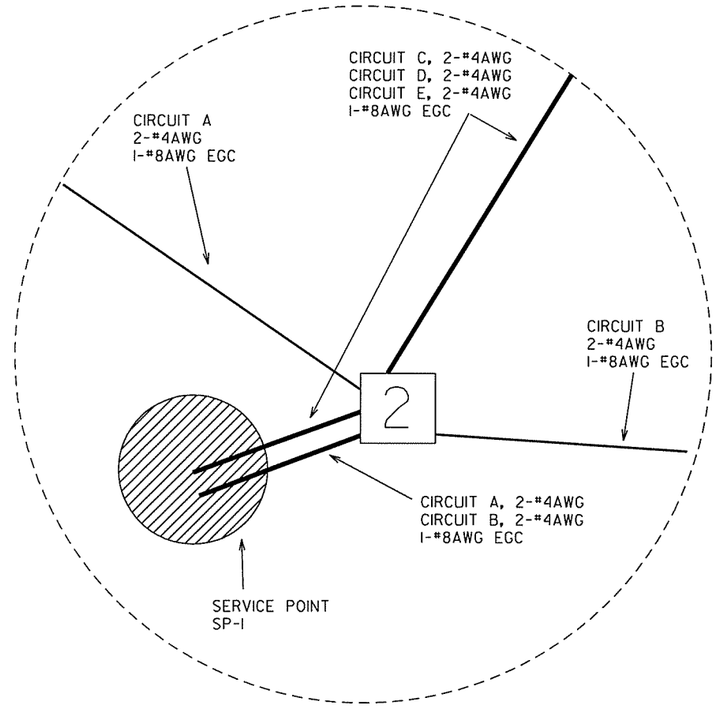
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	124	636

(2) ILLUMINATION SHEET

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
J. TONY SULLIVAN





SERVICE POINT

SERVICE POINT ASSEMBLIES

ASSEMBLY NUMBER	CIRCUIT NUMBER	BREAKER SIZE (AMPS)	TYPE CONTROL	VOLTAGE
SP-1	MAIN	100		240
	A	30		240
	B	30		240
	C	30		240
	D	30		240
	E	30		240

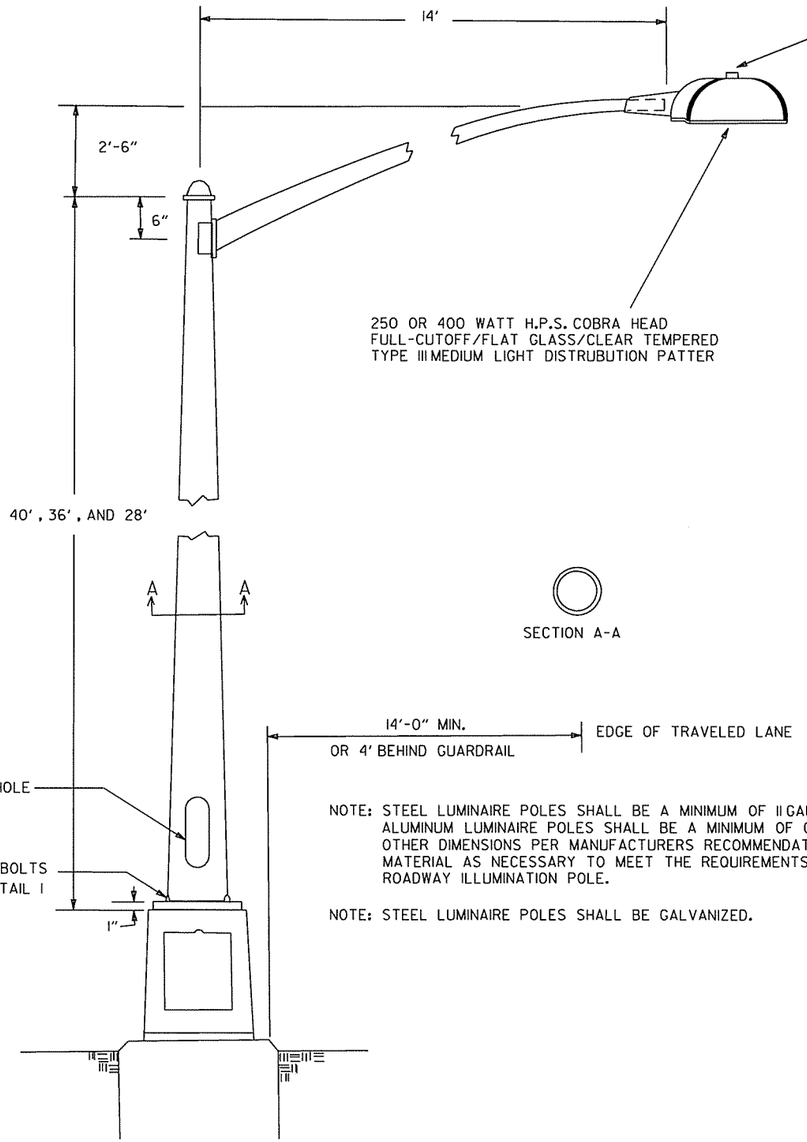
LUMINAIRE SCHEDULE

LUMINIARE NUMBER	CIRCUIT NUMBER	POLE HEIGHT	LUMINAIRE ORIENTATION	WATTAGE	TYPE CONTROL
1	A	36	67 DEGREES	250	PHOTO
2	A	36	42 DEGREES	250	PHOTO
3	A	36	28 DEGREES	250	PHOTO
4	A	36	30 DEGREES	250	PHOTO
5	B	36	45 DEGREES	250	PHOTO
6	B	36	48 DEGREES	250	PHOTO
7	B	36	236 DEGREES	250	PHOTO
8	B	36	239 DEGREES	250	PHOTO
9	B	36	275 DEGREES	250	PHOTO
10	C	36	302 DEGREES	250	PHOTO
11	C	36	260 DEGREES	250	PHOTO
12	C	36	280 DEGREES	250	PHOTO
13	D	28	104 DEGREES	250	PHOTO
14	D	36	144 DEGREES	250	PHOTO
15	D	36	153 DEGREES	250	PHOTO
16	D	36	276 DEGREES	250	PHOTO
17	D	36	245 DEGREES	250	PHOTO
18	D	36	240 DEGREES	250	PHOTO
19	E	36	121 DEGREES	250	PHOTO
20	E	36	190 DEGREES	250	PHOTO
21	E	40	251 DEGREES	400	PHOTO
22	E	40	167 DEGREES	400	PHOTO
23	C	40	26 DEGREES	400	PHOTO

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.		CA0904	175	638

(2) ILLUMINATION DETAILS

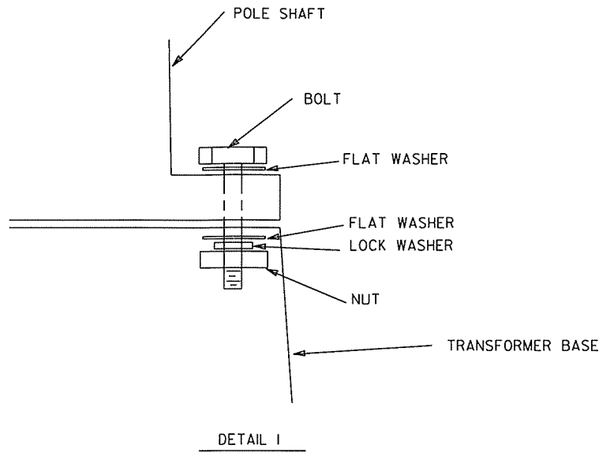
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
L. TONY SULLIVAN



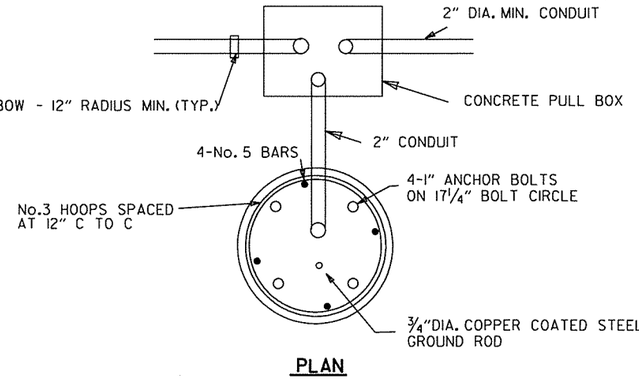
NOTE: STEEL LUMINAIRE POLES SHALL BE A MINIMUM OF 11 GAUGE. ALUMINUM LUMINAIRE POLES SHALL BE A MINIMUM OF 0.188" THICK. OTHER DIMENSIONS PER MANUFACTURERS RECOMMENDATION FOR BOTH MATERIAL AS NECESSARY TO MEET THE REQUIREMENTS OF THE SP - ROADWAY ILLUMINATION POLE.

NOTE: STEEL LUMINAIRE POLES SHALL BE GALVANIZED.

COBRA HEAD LUMINAIRE WITH BREAKAWAY TRANSFORMER BASE

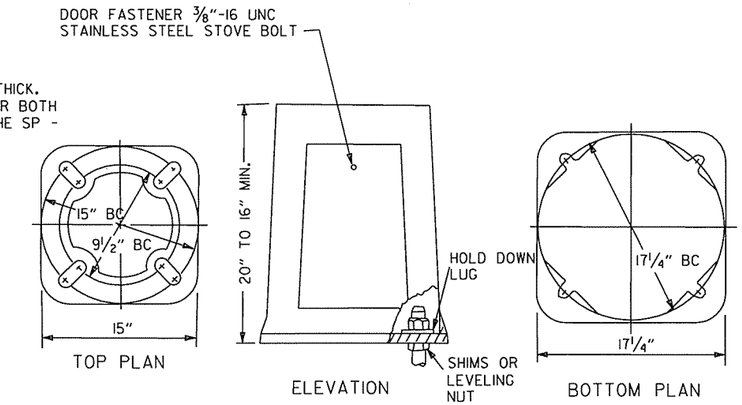


DETAIL I



PLAN

PLAN
N.T.S.

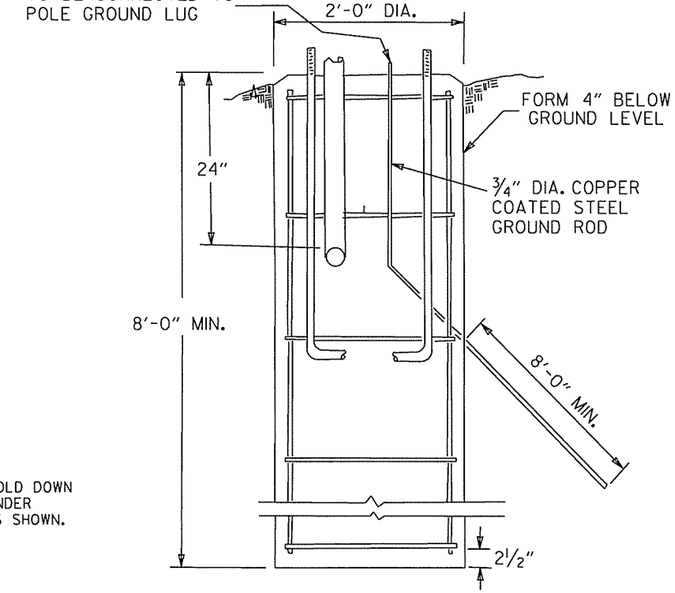


NOTE: DOOR OPENING APPROX. 7" x 8" x 10.5"
TOP AND BOTTOM BOLT HOLES WILL ACCOMMODATE MINIMUM 1" DIA. BOLTS
MATERIAL SHALL CONFORM TO COMMERCIAL DESIGNATION: A356-T6 ALLOY.

4 - HOT DIP GALVANIZED HOLD DOWN LUGS PROVIDED FOR USE UNDER ANCHOR BOLT HEX NUTS AS SHOWN.

TYPICAL BREAKAWAY TRANSFORMER BASE

NOTE: CONTRACTOR MAY SUBSTITUTE A "SLIP TYPE" BREAKAWAY BASE IN LIEU OF THE "BREAKAWAY TRANSFORMER BASE" SHOWN IN THIS DETAIL. THE SLIP BASE PROVIDED SHALL MEET BREAKAWAY CRITERIA OUTLINED IN AASHTO'S STANDARD SPECIFICATIONS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, EDITION OF 2003 AND MUST BE APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION. IN addition, STRUCTURAL DESIGN MUST CONFORM TO AASHTO REQUIREMENTS FOR AN 90 M.P.H. WIND ZONE AND BE CERTIFIED AS SO BY A REGISTERED ENGINEER REPRESENTING THE MANUFACTURER.

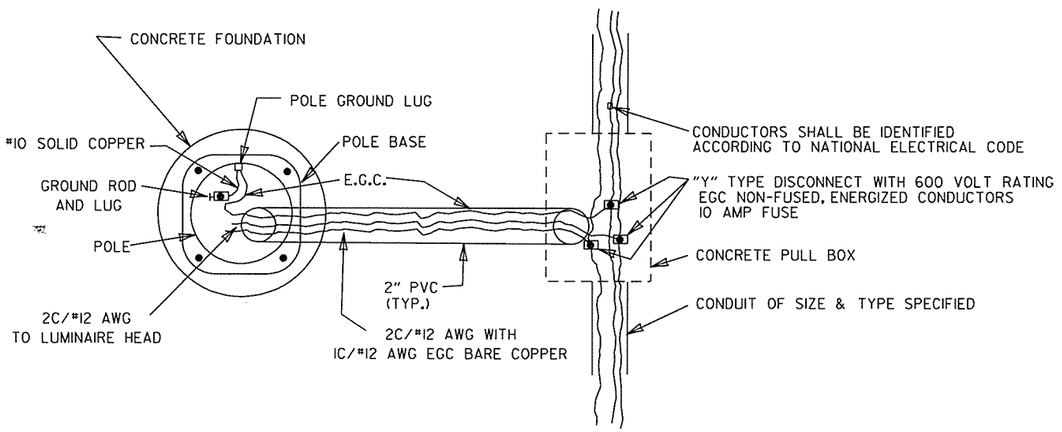


CONCRETE BASE
N.T.S.

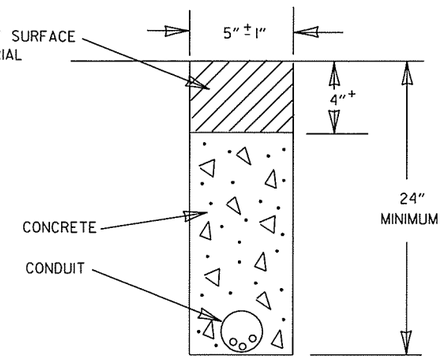
NOTE: TOP OF FOUNDATION SHALL BE FLUSH WITH LOCAL GROUND SURFACE.

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POLE FOUNDATION/PULL BOX LUMINAIRE WIRING DETAIL

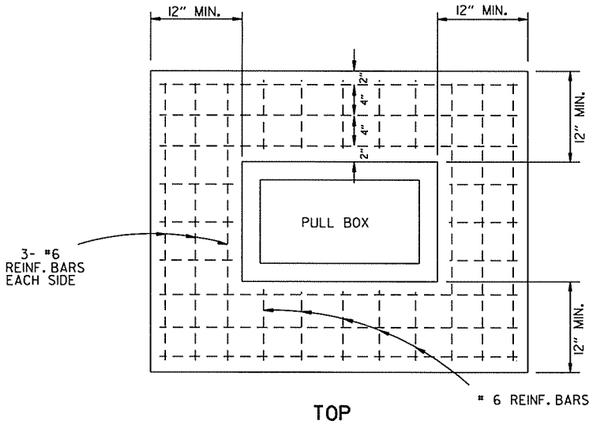


ROADWAY TRENCHING DETAIL

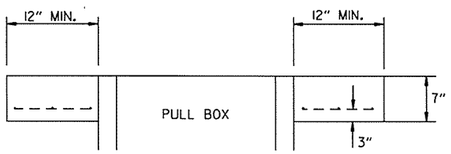


NOTE: TRENCH SHALL BE SAW CUT AT SURFACE OF ROADWAY.

NOTE:
ALL REINFORCING BARS TO BE GRADE 60



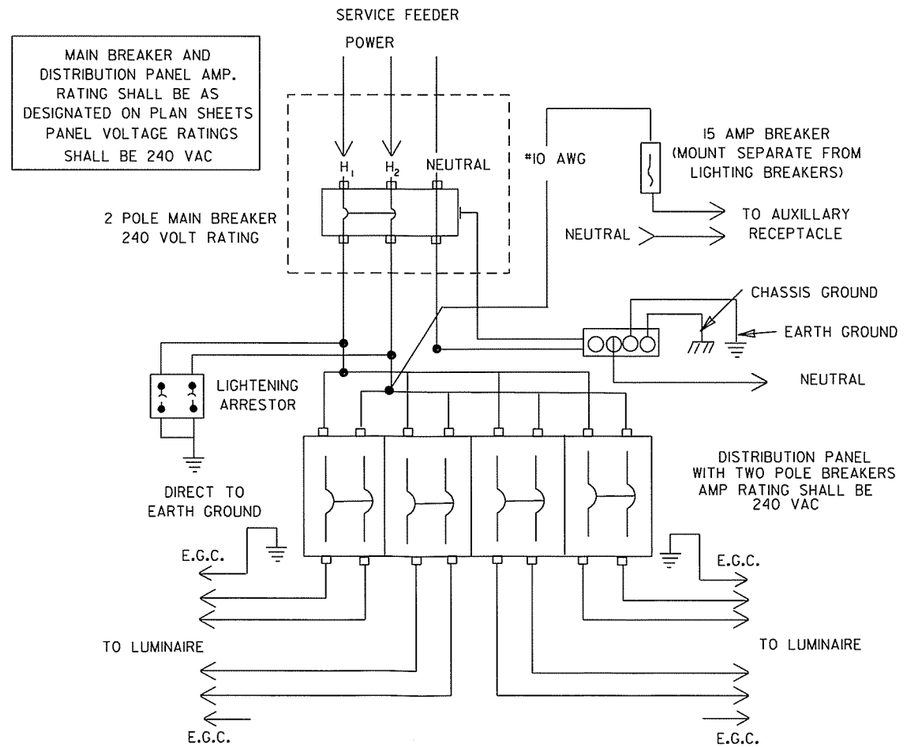
TOP



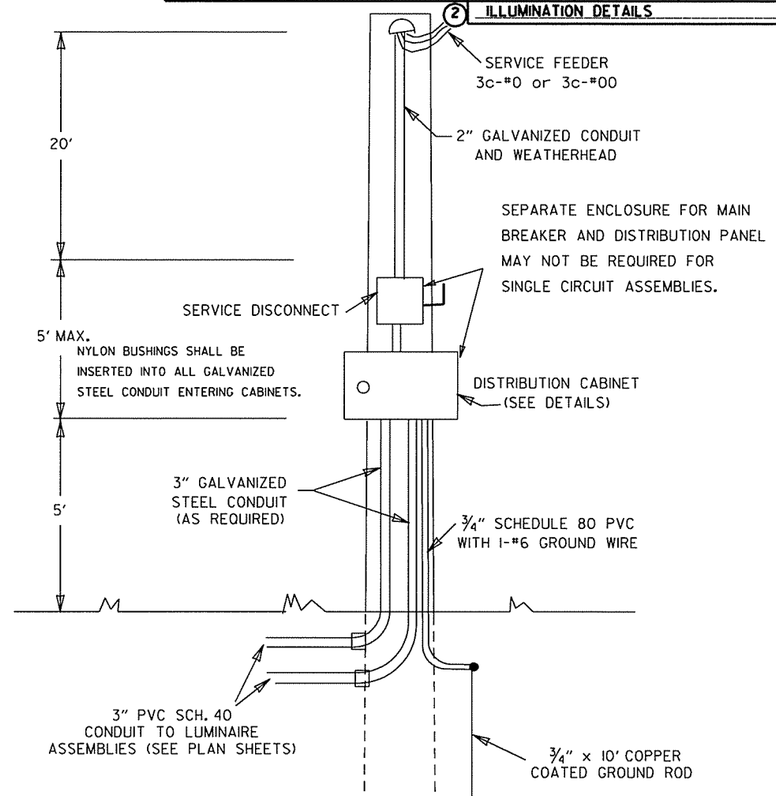
ELEVATION

DETAILS OF CONCRETE APRON FOR TYPE "HD" PULL BOX

TYPICAL DISTRIBUTION CABINET WIRING DIAGRAM



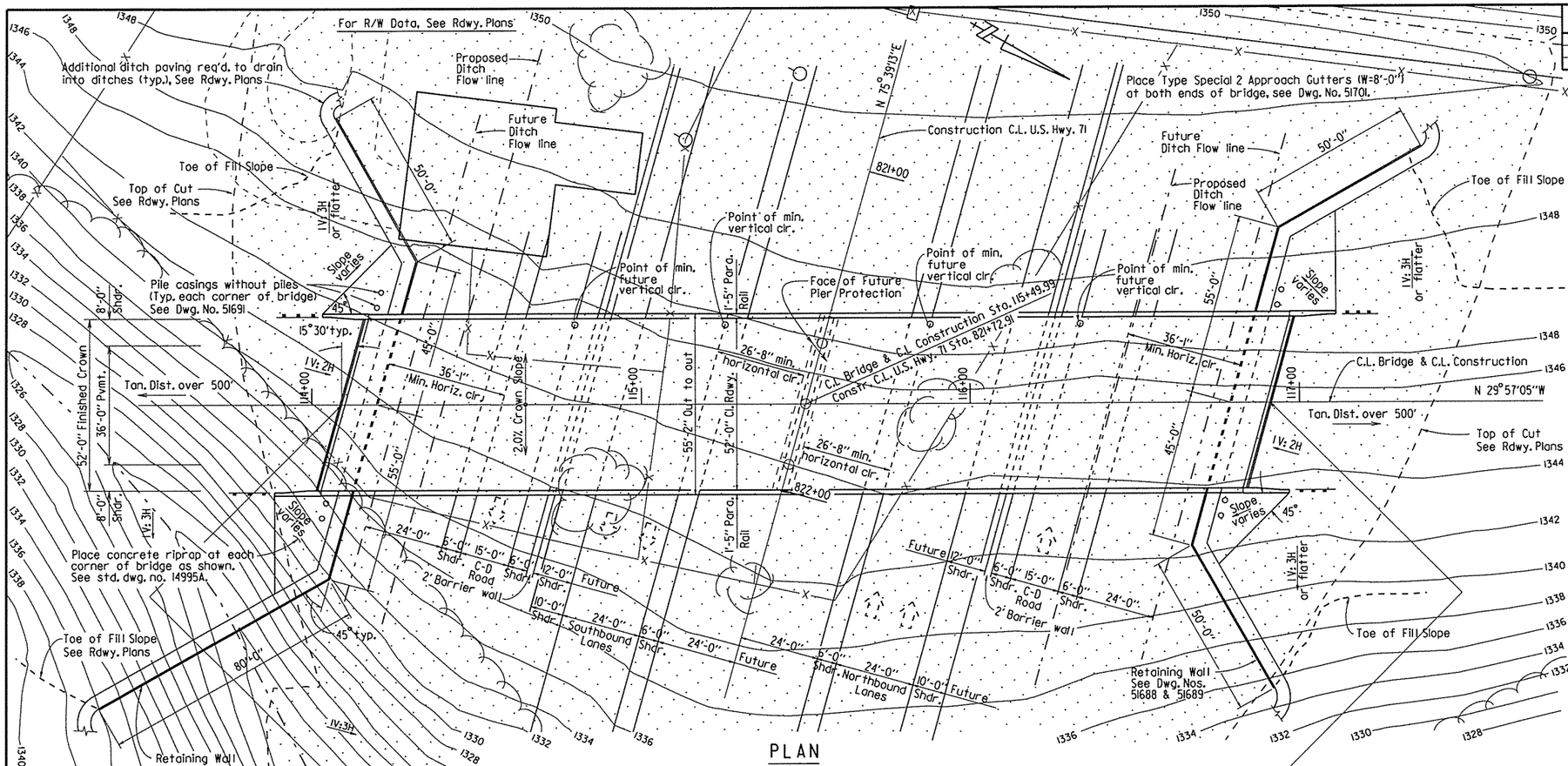
ILLUMINATION DETAILS



LUMINAIRE SERVICE POINT ASSEMBLY

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 5851
1/2/14
L. TONY SULLIVAN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	177	636
				07197		LAYOUT		52514



GENERAL NOTES

BENCH MARK: CPS in Combination Pole, 185' Lt. of C. L. Median Hwy. 71, Sta. 820+18.36, Elev. 1350.48.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted, Section and subsection refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition (2004) with 2005 and 2006 interim revisions.

LIVE LOADING: HL93
SEISMIC PERFORMANCE ZONE: 1

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 M53, Gr. 60)	fy = 60,000 psi.
Structural Steel(AASHTO M270, Gr. 50W)	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.

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 and into material designated as hard limestone on the boring legend. 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.

PILE CASINGS FOR DRIVEN PILES: Pile casings are required for all piling in Bents 1 & 3. Casings shall be installed prior to or during embankment construction and shall extend from top of leveling pad to bottom of cap. Pile casing material shall be of 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 the bottom of cap is in place. After driving is completed, the pile casing shall be backfilled with 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)."

PILE CASINGS WITHOUT PILES: Additional pile casings will be required in Bents 1 & 3 in accordance with Dwg. No. 51691 to provide for future widening. These casings shall be installed during embankment construction and shall extend from top of leveling pad to approx. one foot below the finished surface of concrete riprap. 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 will be considered subsidiary to the item "Steel Piling (HP12X53)".

FOOTINGS: The top of the footings at Bent 2 shall be set a minimum of 2 feet below the excavated ditch. Foundations for footings shall be prepared in accordance with subsection 801.04.

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four turned back sections of the retaining walls in accordance with Dwg. No. 51646.

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 the face and top of the concrete parapet rail.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge and retaining wall surfaces as specified in Job SP "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.

DETAIL DRAWINGS:	DRAWING NOS.
Retaining Walls	51688 & 51689
End Bents	51690 - 51692
Interior Bent	51693
280' Continuous Plate Girder Unit	51694 - 51699
Elastomeric Bearings	51700
Type Special 2 Approach Gutters	51701
Steel Piling	14995A

FOR INFORMATION ONLY

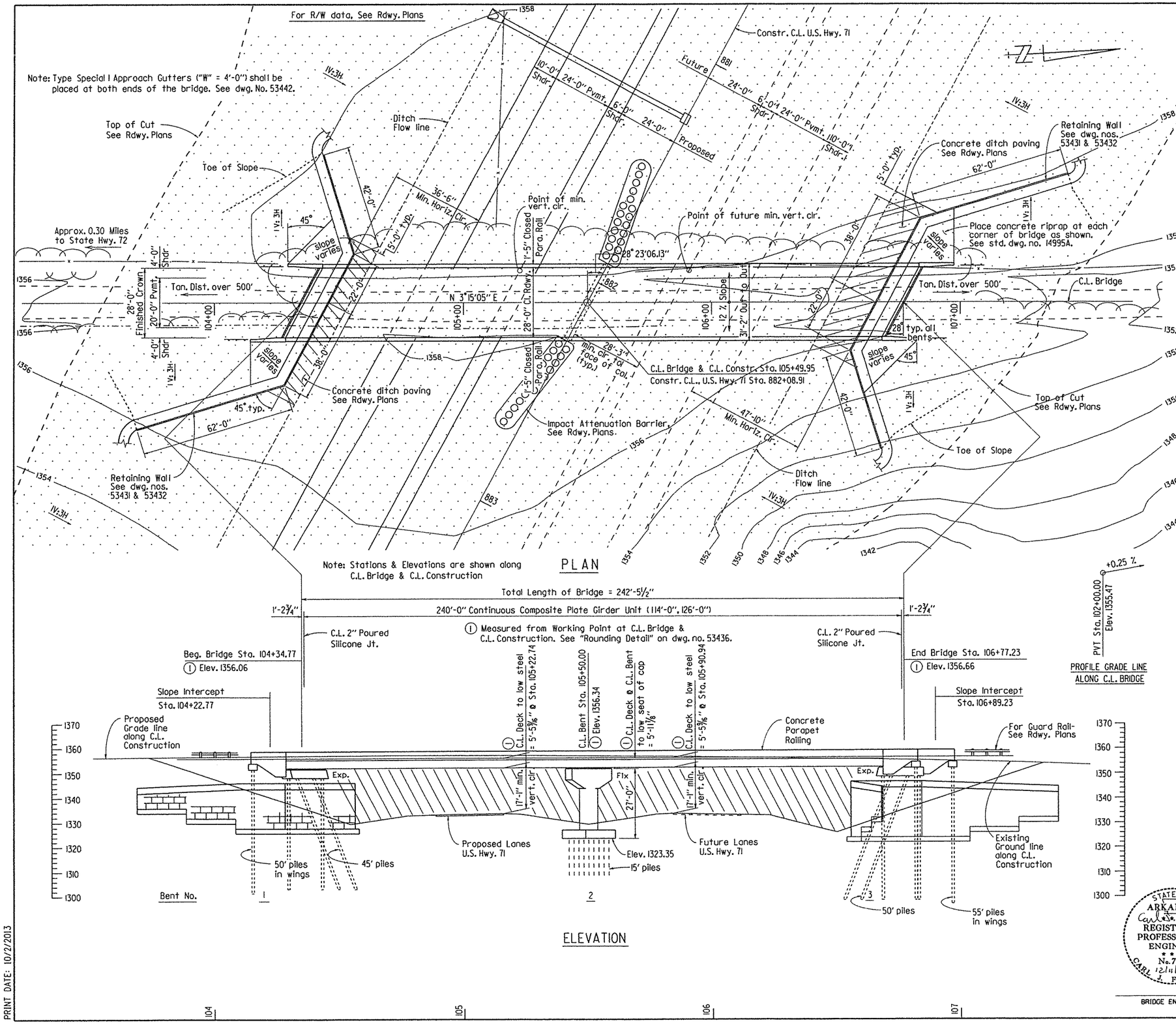
LAYOUT OF BRIDGE
HWY. 72 (SOUTH) OVER U.S. HWY. 71
HWY. 72 SOUTH - HWY. 72 NORTH
(BELLA VISTA BYPASS) (F)
BENTON COUNTY
ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 10-10-06 FILENAME: bca0904_72Slay.dgn
CHECKED BY: DATE: SCALE: 1" = 20'
DESIGNED BY: DATE:

BRIDGE NO. 07197 DRAWING NO. 52514

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	178	636
				07273		LAYOUT		53426



GENERAL NOTES:

BENCH MARK: CPS in 36" Oak, 41.88' Rt. of Constr. C. L. Hwy. 71, Sta. 882+11.27, Elev. 1359.43

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted, Section and subsection refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 interim revisions.

LIVE LOADING: HL93 SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi.
Class S Concrete (substructure)	f'c = 3,500 psi.
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi.
Structural Steel (AASHTO M270, Gr. 50W)	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.

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at Bent 2 in accordance with Job SP, "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.

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 and into material designated as hard limestone on the boring legend. 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.

Pile casings are required for all piling in Bents 1 and 3. Casings shall be installed prior to or during embankment construction and shall extend from top of leveling pad to bottom of cap or wing pile footing. Pile casing material shall be of 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 (HP 12x53)".

Minimum penetration for all piling at Bents 1 and 3 shall be 8' below natural ground. Minimum penetration for all piling at Bent 2 shall be 8' below bottom of footing.

PREBORING: Preboring is required for all piling in Bent 2 if exploratory holes indicate that the depth to rock is less than 8' below the bottom of footing plan elevation. Preboring shall be to a minimum 3' depth into material designated as hard 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 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".

FOOTINGS: The footing at Bent 2 shall have a minimum cover above top of footing of 2'-0". Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled according to subsection 801.08.

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four turned back sections of the retaining walls in accordance with Dwg. No. 53430.

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 the face and top of the concrete parapet rail.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge and retaining wall surfaces as specified in Job SP "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.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

DETAIL DRAWINGS:

	DRWG NOS.
Retaining Walls	53428 & 53429
End Bents	53431-53433
Interior Bent	53434
Elastomeric Bearings	53435
240' Cont. Plate Girder Unit	53436-53441
Steel Piling	14995A
Type Special I Approach Gutters	53442

STATE OF ARKANSAS
Carl E. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL E. FUSSELIER
BRIDGE ENGINEER

SHEET 1 OF 2

LAYOUT OF BRIDGE
CR 453 (FAUX ROAD) OVER U.S. HWY. 71 HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S)
BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

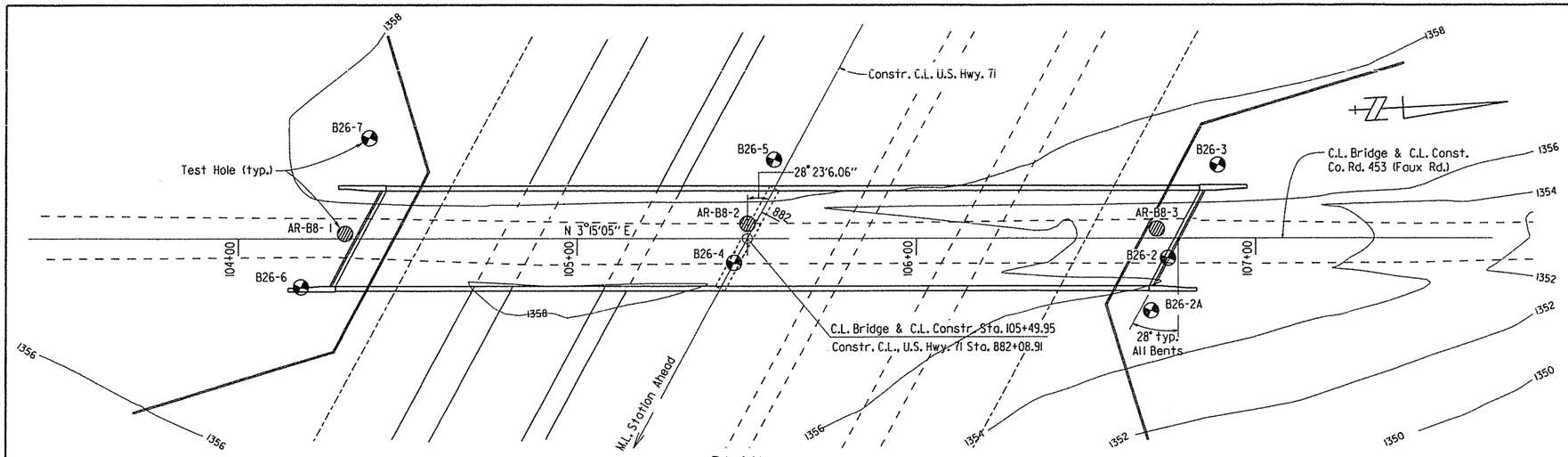
LITTLE ROCK, ARK.

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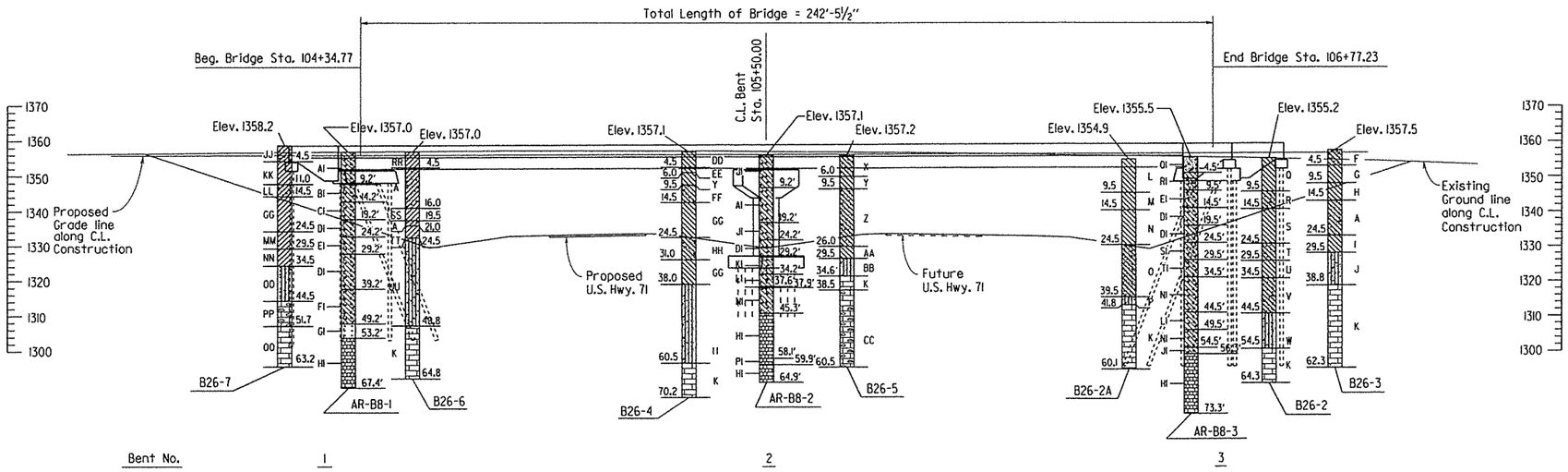
BRIDGE NO. 07273 DRAWING NO. 53426

PRINT DATE: 10/2/2013

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				6	ARK.			
				JOB NO.		CA0904	179	636
				1	07273	LAYOUT	53427	



PLAN



ELEVATION

NOTE: Retaining Walls not shown in Elevation for clarity.

B26-7 — 112' Rt. of C.L. Median, U.S. Hwy. 71 Sta. 882+36

5.0- 6.0 N=40
10.0- 11.0 N=39
15.0- 16.0 N=38
20.0- 21.0 N=34
25.0- 26.0 N=18
30.0- 31.0 N=13
35.0- 36.0 N=36
40.0- 41.0 N=57
44.5- 44.6 N=50

AR-B8-1 — 105' Rt. of C.L. Median, U.S. Hwy. 71 Sta. 882+64

4.7- 5.4, N=87(9")
9.7- 10.7, N=30
14.7- 15.7, N=38
19.7- 20.7, N=21
24.7- 25.7, N=34
29.7- 30.7, N=23
34.7- 35.7, N=16
39.7- 40.7, N=17
44.7- 45.7, N=14
49.7- 50.7, N=15

B26-6 — 109' Rt. of C.L. Median, U.S. Hwy. 71 Sta. 882+84

5.0- 5.9 N=91
10.0- 11.0 N=93
15.0- 16.0 N=69
20.0- 21.0 N=35
25.0- 25.5 N=50
30.0- 31.0 N=33
35.0- 36.0 N=9
40.0- 41.0 N=17
45.0- 46.0 N=15
49.5- 49.7 N=50

B26-4 — C.L. Median U.S. Hwy. 71 Sta. 882+17

5.0- 6.0 N=78
10.0- 11.0 N=35
15.0- 16.0 N=29
20.0- 21.0 N=35
25.0- 26.0 N=30
30.0- 31.0 N=13
35.0- 36.0 N=11
40.0- 41.0 N=4
45.0- 46.0 N=8
50.0- 51.0 N=16
55.0- 56.0 N=8
60.0- 60.7 N=62

AR-B8-2 — 2' Lt. of C.L. Median, U.S. Hwy. Sta. 882+05

4.7- 4.9, N=60(3")
9.7- 10.7, N=42
14.7- 15.7, N=72
19.7- 20.7, N=55
24.7- 25.7, N=23
29.7- 30.7, N=15
34.7- 35.7, N=3
39.7- 40.7, N=7

B26-5 — 4' Rt. of C.L. Median, U.S. Hwy. 71 Sta. 881+85

5.0- 6.0 N=47
10.0- 11.0 N=53
15.0- 16.0 N=44
20.0- 21.0 N=45
25.0- 26.0 N=38
30.0- 31.0 N=41
34.5- 34.6 N=50

B26-2A — 115' Lt. of C.L. Median, U.S. Hwy. 71 Sta. 881+71

40.0- 41.0 N=9
41.7- 41.8 N=50

AR-B8-3 — 105' Lt. of C.L. Median, U.S. Hwy. Sta. 881+49

5.0- 6.0, N=70
10.0- 11.0, N=42
15.0- 16.0, N=24
20.0- 21.0, N=16
25.0- 26.0, N=6
30.0- 31.0, N=2
35.0- 36.0, N=5
40.0- 41.0, N=7
45.0- 46.0, N=4
50.0- 51.0, N=9
55.0- 55.6, N=90(7")

B26-2 — 112' Lt. of C.L. Median, U.S. Hwy. 71 Sta. 881+55

5.0- 6.0 N=40
10.0- 11.0 N=81
15.0- 16.0 N=21
20.0- 21.0 N=11
25.0- 26.0 N=9
30.0- 31.0 N=3
35.0- 36.0 N=9
40.0- 41.0 N=6
45.0- 46.0 N=1
50.0- 51.0 N=4
54.2- 54.3 N=50

B26-3 — 112' Lt. of C.L. Median, U.S. Hwy. 71 Sta. 881+24

5.0- 6.0 N=25
10.0- 11.0 N=57
15.0- 15.2 N=50
20.0- 21.0 N=60
25.0- 26.0 N=29
30.0- 31.0 N=20
35.0- 36.0 N=42
38.8- 38.8 N=50

Note: Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.

BORING LEGEND

Note: Materials designated AI - TI refer to borings AR-B8-1, AR-B8-2, and AR-B8-3, obtained from AHTD Materials Division report dated March 2, 2007.

AI-Moist, Hard to Very Hard, Reddish Brown Gravelly (Chert Fragments) Clay
BI-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
CI-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay
DI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
EI-Moist, Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
FI-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments)
GI-Soft, Gray Chert
HI-Hard, Gray Cherty Limestone
JI-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
KI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
LI-Moist, Very Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
MI-Hard, Gray Chert
NI-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
PI-Hard, Gray Fractured Cherty Limestone
QI-Moist, Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments)
RI-Moist, Very Hard, Reddish Brown Gravelly (Chert Fragments) Clay
SI-Moist, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
TI-Moist, Soft, Reddish Brown Gravelly (Chert Fragments) Clay

Note: Materials designated A - UU refer to borings B26-1 - B26-7, and B26-2A, obtained from Geotechnical Investigation report by others dated January 2003.

A LEAN CLAYEY GRAVEL, reddish brown, dense, dry (GC)
F LEAN CLAYEY GRAVEL, some cobbles reddish brown (GC)
G FAT CLAY, some chert gravel and sand reddish brown, stiff, dry (CH)
H LEAN CLAY, some chert gravel and sand reddish brown, stiff, dry (CL)
I LEAN CLAY, some chert gravel, few sand reddish brown, medium, dense, moist (CL)
J SILTY GRAVEL, trace to some sand, trace clay brown, dense, dry (GM)
K LIMESTONE, stratified, chert seams light gray, fine to very fine grained, thin to medium bedded, fresh, hard to very hard
L LEAN CLAY, some chert gravel reddish brown, moist (CL)
M FAT CLAY, some gravel, few cobbles reddish brown, moist (CH)
N LEAN CLAY, little chert gravel and sand, trace cobbles reddish brown, moist (CL)
O SANDY LEAN CLAY, trace to little chert gravel, trace cobbles reddish brown, wet (CL)
P SILTY GRAVEL, brown, dry (GM)
Q LEAN CLAY, some chert gravel reddish brown, stiff, moist (CL)
R LEAN CLAYEY GRAVEL, little sand reddish brown, dense, dry (GC)
S FAT CLAY, some chert gravel reddish brown, stiff, moist (CH)
T LEAN CLAYEY GRAVEL, little sand reddish brown, medium dense, dry (GC)
U FAT CLAY, some chert gravel and sand reddish brown, stiff, moist (CH)
V LEAN CLAYEY GRAVEL, little sand reddish brown, medium dense to loose, moist (GC)
W SILTY GRAVEL, trace to some sand, trace clay brown, loose, moist to wet (GM)
X LEAN CLAYEY GRAVEL, some cobbles reddish brown, dense, moist (GC)
Y FAT CLAY, some chert gravel, some sand red (CH)
Z LEAN AND FAT CLAYEY GRAVEL reddish brown and red, dense, dry to moist (GC)
AA FAT CLAY, some chert gravel, little sand red (CH)
BB SILTY GRAVEL, trace to some sand, trace clay light gray, dense, dry (GM)
CC CHERT, stratified, limestone seams white, very fine grained, thin to medium bedded, fresh, very hard
DD LEAN CLAY, some sand and chert gravel reddish brown (CL)
EE LEAN CLAY, some chert gravel, some sand red, stiff, dry (CL)
FF FAT CLAYEY GRAVEL red, dense, dry (GC)
GG FAT CLAY, some chert gravel, little sand red, stiff, moist (CH)
HH LEAN CLAYEY GRAVEL reddish brown, dense to medium dense, moist(GC)
II SILTY GRAVEL, trace to some sand, trace clay brown, loose to medium dense, moist (GM)
JJ LEAN CLAYEY GRAVEL, reddish brown (GC)
KK LEAN CLAY, some chert gravel, some sand reddish brown, stiff (CL)
LL LEAN CLAYEY GRAVEL, some sand reddish brown (GC)
MM LEAN CLAY, some chert gravel, some sand reddish brown, stiff, moist (CL)
NN FAT CLAY, some chert gravel, some sand red, stiff, moist (CH)
OO SILTY GRAVEL, trace to some sand, trace clay light gray, dense, moist to wet (GM)
PP CHERT, stratified, limestone seams, light gray to white, fine grained, thin to medium bedded, fresh, very hard
QQ LIMESTONE, stratified, chert seams light gray, medium to fine grained, thin to medium bedded, fresh, hard to very hard
RR LEAN CLAY, some chert gravel, some sand reddish brown (CL)
SS FAT CLAY, some chert gravel, some sand red, moist (CH)
TT LEAN CLAY, little sand and gravel reddish brown (CL)
UU SILTY GRAVEL, trace to some sand, trace clay light gray, dense to medium dense, moist to dry (GM)

SHEET 2 OF 2

LAYOUT OF BRIDGE
CR 453 (FAUX ROAD) OVER U.S. HWY. 71
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS) (S)
BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS — CARL L. FUSELIER — REGISTERED PROFESSIONAL ENGINEER — No. 7510 — 12/11/13

BRIDGE ENGINEER

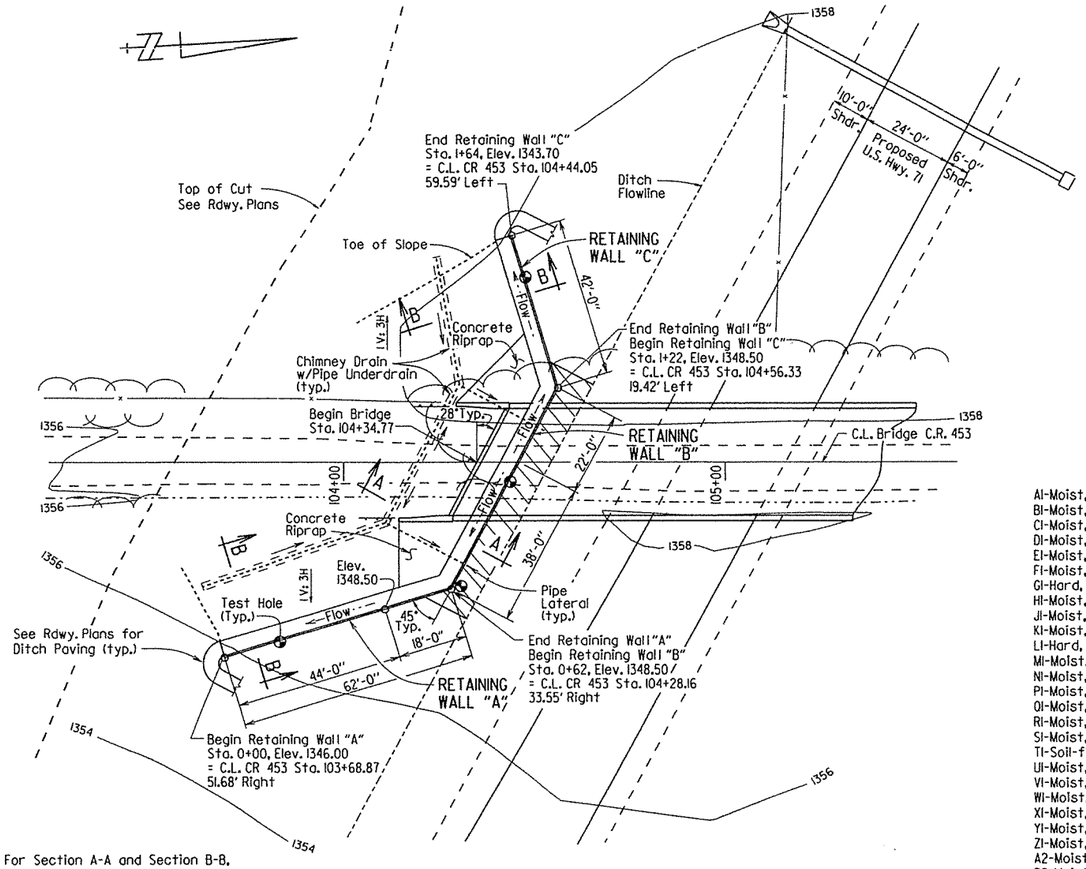
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PRINT DATE: 10/2/2013

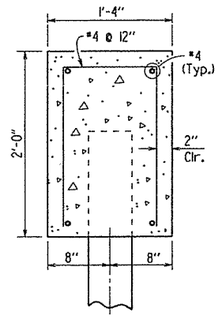
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				6	ARK.			
				JOB NO.		CA0904	180	636
				(1) 07273		RETAINING WALLS		53428



Note: For Section A-A and Section B-B.
See Dwg. No. 53429.

PLAN - SOUTH RETAINING WALL @ COUNTY ROAD 453



COPING DETAIL
No Scale

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."

All exposed surfaces of the concrete coping shall be given a Class 3 Textured Coating Finish in accordance with Job SP "Textured Coating Finish".

Precast coping may be substituted for cast-in-place coping shown.

BORING LEGEND

A1-Moist, Very Hard, Reddish Brown Gravelly (Chert Fragments) Clay
B1-Moist, Very Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Cobbles
C1-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
D1-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
E1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
F1-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
G1-Hard, Gray Cherty Limestone
H1-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay
J1-Moist, Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
K1-Moist, Loose, Brown and Gray Gravel (Chert Fragments) with Sand and some Clay
L1-Hard, Gray Cherty Limestone
M1-Moist, Very Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
N1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
P1-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
Q1-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
R1-Moist, Stiff to Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
S1-Moist, Hard, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
T1-Soil-filled Cavity (45.1' to 46.9')
U1-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
V1-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
W1-Moist, Very Stiff to Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
X1-Moist, Medium Dense, Brown and Gray Gravel (Chert Fragments) with Sand
Y1-Moist, Very Soft, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
Z1-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
A2-Moist, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
B2-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)

Notes: For additional borings in vicinity of retaining walls, See Dwg. No. 53427.

Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.

TABLE OF QUANTITIES
(FOR INFORMATION ONLY)

LOCATION / ITEM / UNIT	ITEM NO.	210	SP CA0904	SP CA0904	SP CA0904
	ITEM	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALL	(1) TEXTURED COATING FINISH
	UNIT	CU. YD.	CU. YD.	SQ. FT.	SQ. YD.
WALL A: STA. 0+00 TO STA. 0+62		323	558	990	78
WALL B: STA. 0+62 TO STA. 1+22		480	1169	1343	124
WALL C: STA. 1+22 TO STA. 1+64		170	297	627	49
WALL D: STA. 0+00 TO STA. 0+62		303	461	940	62
WALL E: STA. 0+62 TO STA. 1+22		545	1114	1278	110
WALL F: STA. 1+22 TO STA. 1+64		209	298	626	46
TOTALS		2030	3897	5804	469

(1) Exposed surfaces of coping & wall.

NOTES FOR UNDERCUTTING & BACKFILL:

Large scale undercut is not anticipated. However, due to the irregular bedrock surface and the tendency for the gravelly clay and clayey gravel in the low areas of the bedrock surface to stay saturated, some isolated undercut is anticipated. If soft or unstable material is encountered beneath the retaining wall and reinforcement zone, it shall be removed and backfilled with Select Granular Backfill. Depth and area of any required undercutting shall be as determined by the Engineer.

Any excavation and backfill required for undercutting shall be paid for as "Unclassified Excavation" and "Select Granular Backfill" in accordance with Job SP "Retaining Walls".

GENERAL NOTES

Design Specifications: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012) with 2013 Interims.

Retaining Wall Stations are measured along outside vertical face of wall. Elevations shown are profile grade for top of wall. Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Reinforcement placement and details for retaining walls may be affected by end bent construction and proposed roadway drainage structures. See End Bent drawings for pile locations and wingwall details. See Roadway Plans for locations and details of drainage structures.

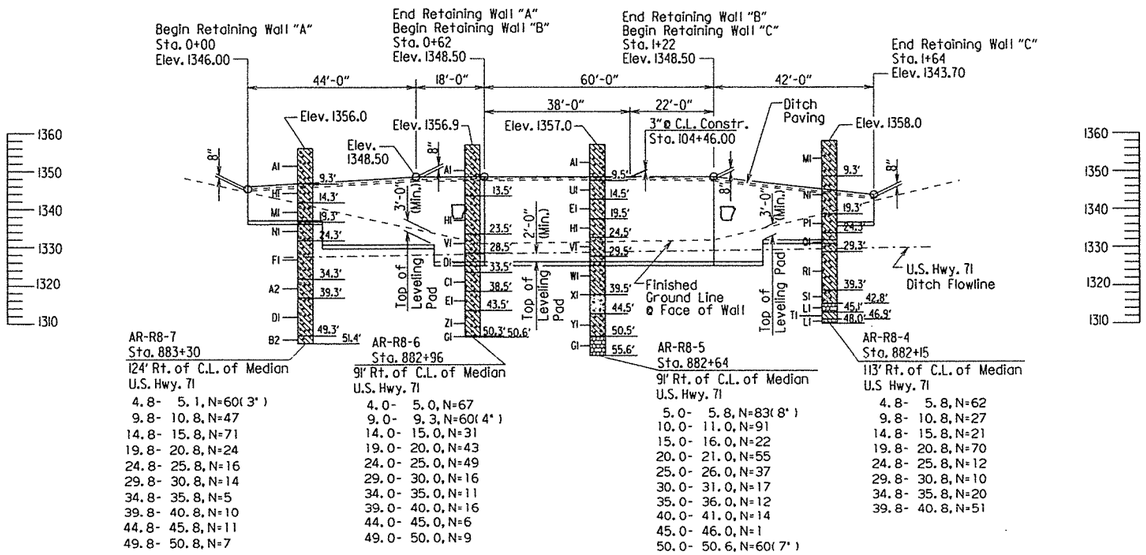
For ditch paving, See Standard Dwg. No. CDP-1.

Preformed joint filler, joint sealer, polystyrene board, and pipe underdrains will not be paid for directly, but will be considered subsidiary to the item "Retaining Wall".

A Class 3 Textured Coating Finish shall be applied to retaining wall surfaces as specified in Job SP "Textured Coating Finish" and in accordance with subsection 802.19(b)(3).

State of Arkansas Form Inserts shall be placed on each turned back section of retaining wall in accordance with Dwg. No. 53430.

See Job SP "Retaining Walls" for additional information.



ELEVATION - SOUTH RETAINING WALL @ COUNTY ROAD 453

STATE OF ARKANSAS
Carl L. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. FUSELIER
7/16/13

BRIDGE ENGINEER

SHEET 1 OF 2

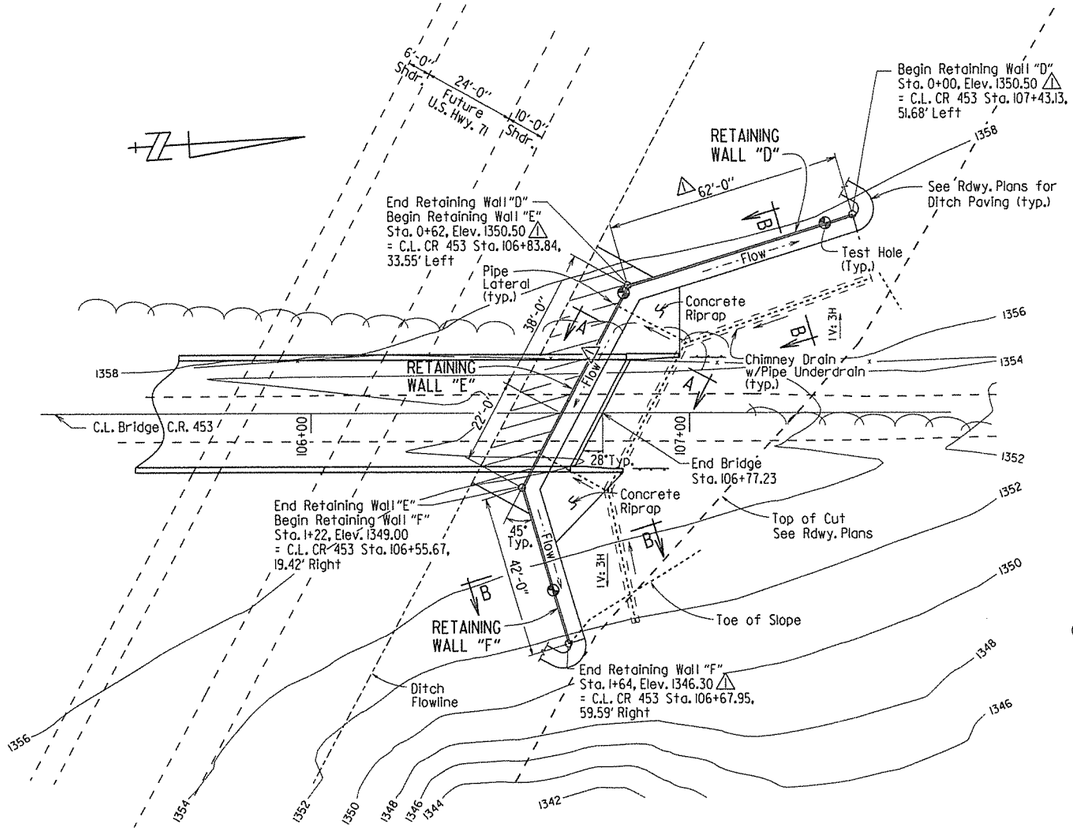
LAYOUT OF RETAINING WALLS
CR 453 (FAUX ROAD)
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JAC DATE: 7/9/13
DESIGNED BY: AMS DATE: 4/07
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BRIDGE NO. 07273 DRAWING NO. 53428

PRINT DATE: 7/3/2013

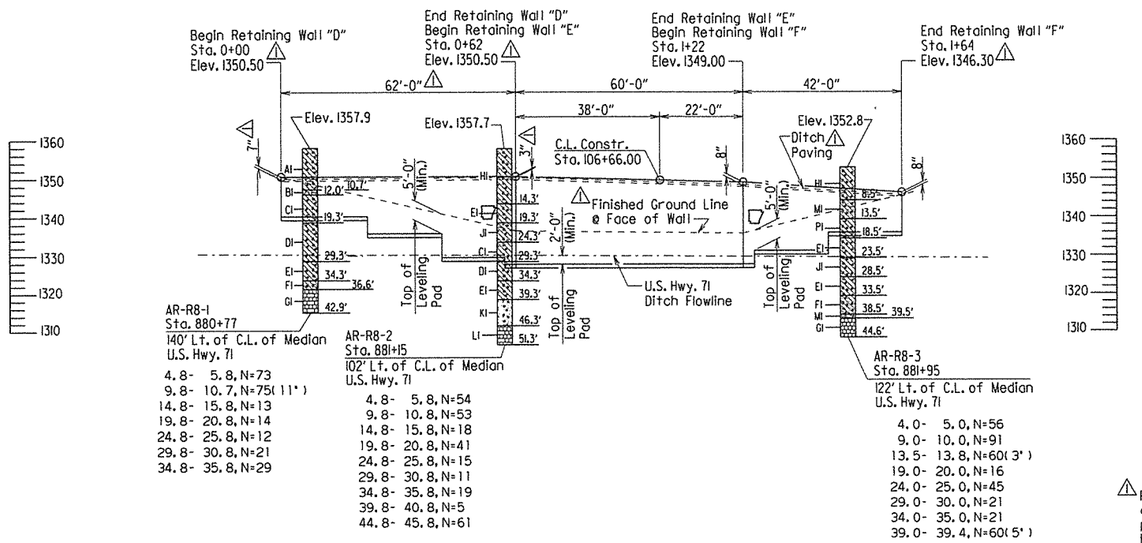
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2-7-14				6	ARK.			
				JOB NO.		CA0904	181	636
				①	07273	RETAINING WALLS		53429



PLAN - NORTH RETAINING WALL @ COUNTY ROAD 453

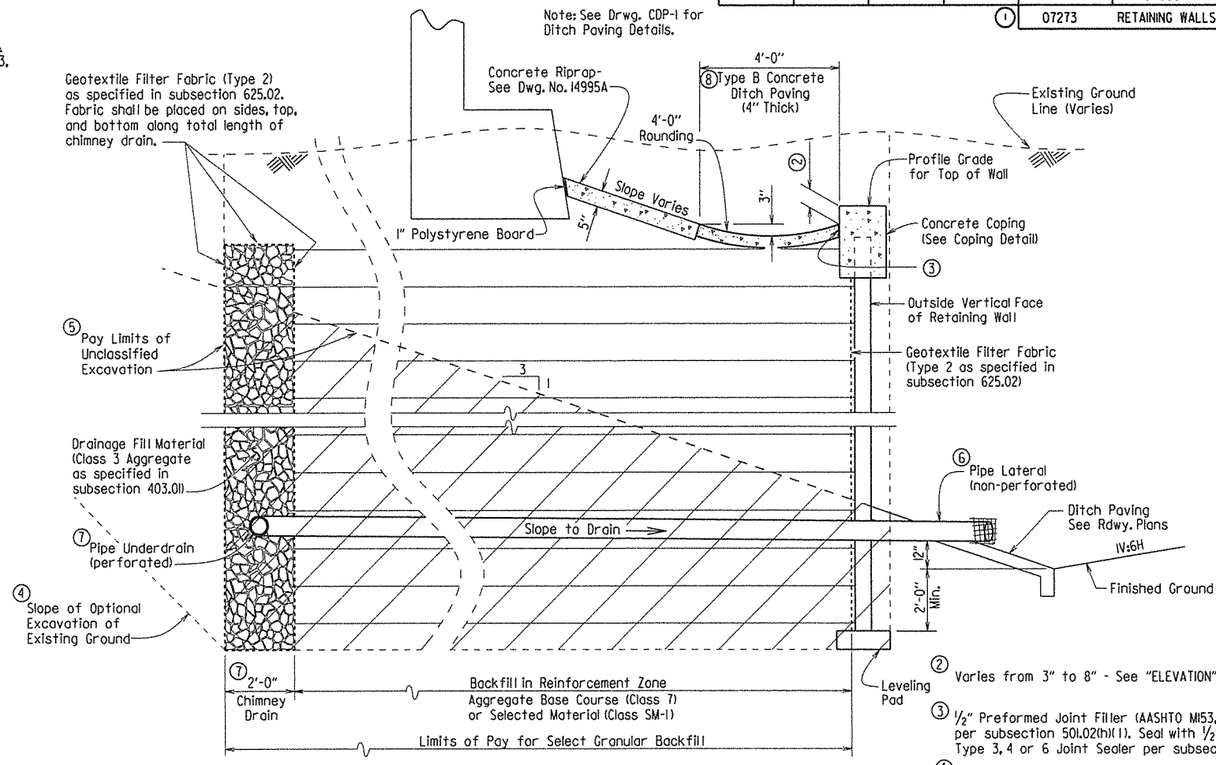
Notes: For Boring Legend and Coping Detail, See Dwg. No. 53428.
For additional borings in vicinity of retaining wall, see Dwg. No. 53427.

Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.

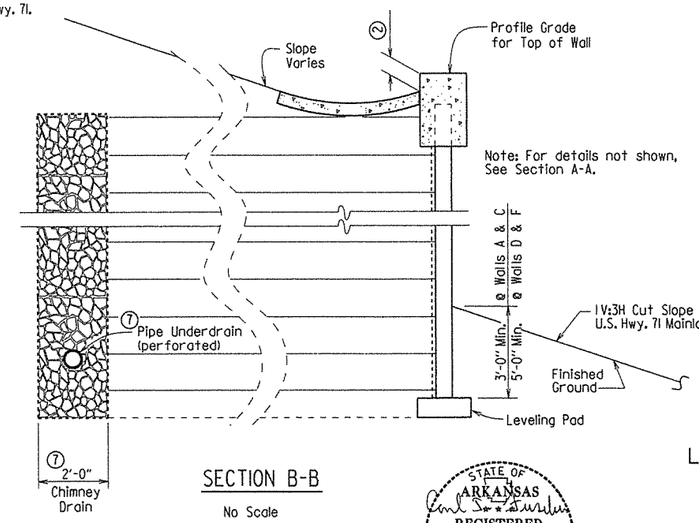


ELEVATION - NORTH RETAINING WALL @ COUNTY ROAD 453

Note: See Drwg. CDP-1 for Ditch Paving Details.



SECTION A-A
No Scale



SECTION B-B
No Scale

⚠ Revised to correct top of wall elevations, location of ditch paving, and plotted locations of proposed ditch paving and finished ground line at face of wall.
By: AMS Date: 2/7/14

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
2/7/14
CARL J. FUSELIER
BRIDGE ENGINEER

② Varies from 3" to 8" - See "ELEVATION"

③ ½" Preformed Joint Filler (AASHTO M153, Type 1) per subsection 501.02(h)(1). Seal with ½" x 1" Type 3, 4 or 6 Joint Sealer per subsection 501.02(h)(2).

④ The Contractor has the option of using a cut slope or shoring to maintain stability of the cut. Any excavation beyond the limits of the reinforcement zone and chimney drains or any shoring used will not be paid for directly, but shall be considered incidental to the Item "Retaining Wall". See Job SP "Retaining Walls" for additional information.

⑤ Excavation below the 1V:3H cut slope and within the reinforcement zone and for the leveling pad and chimney drains will be paid for as Unclassified Excavation in accordance with the Job SP "Retaining Walls".

⑥ 4" Pipe Lateral (non-perforated) with rodent screen in accordance with Section 611 and Std. Dwg. PU-1. Lateral underdrains shall be placed near each end of Walls "B" and "E". This work and material are to be considered subsidiary to the item "Retaining Wall" and will not be paid for directly.

⑦ Chimney Drains shall be constructed immediately behind the reinforcement zone and shall extend from the bottom of excavation to the top of the reinforcement zone. 4" Pipe Underdrains (perforated) shall be placed in chimney drains to collect seepage water in accordance with Section 611 and Std. Dwg. PU-1.

⑧ Weepholes shall be eliminated.

SHEET 2 OF 2

LAYOUT OF RETAINING WALLS CR 453 (FAUX ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

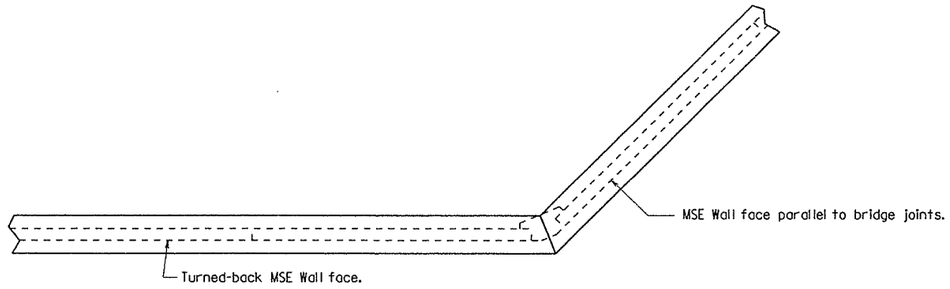
LITTLE ROCK, ARK.

DRAWN BY: AMS DATE: 1/19/07 FILENAME: bCA0904c_msewall.dgn
CHECKED BY: JPC DATE: 7/9/13 SCALE: 1" = 20'
DESIGNED BY: AMS DATE: 1/07

BRIDGE NO. 07273 DRAWING NO. 53429

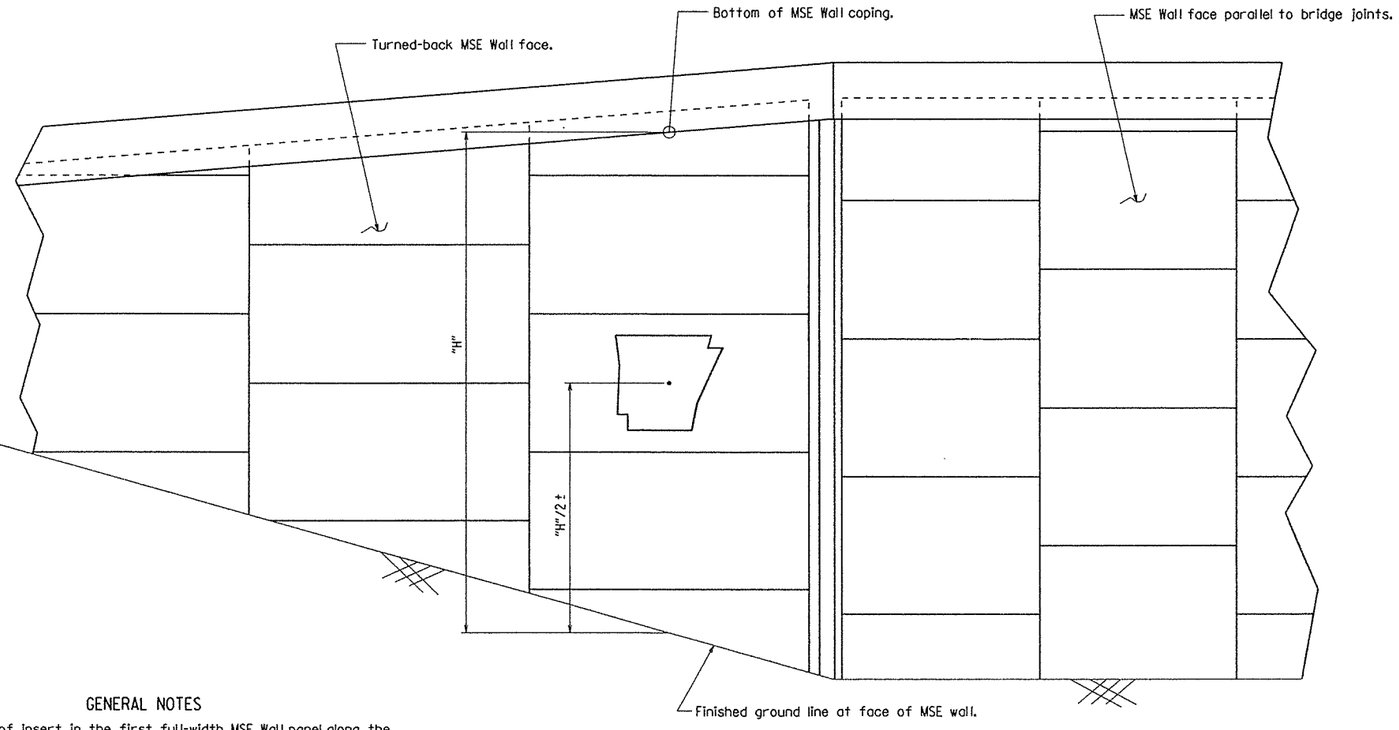
PRINT DATE: 2/7/2014

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				6	ARK.			
				JOB NO.		CA0904	182	636
				①	07273, 07275	FORM INSERT		53430



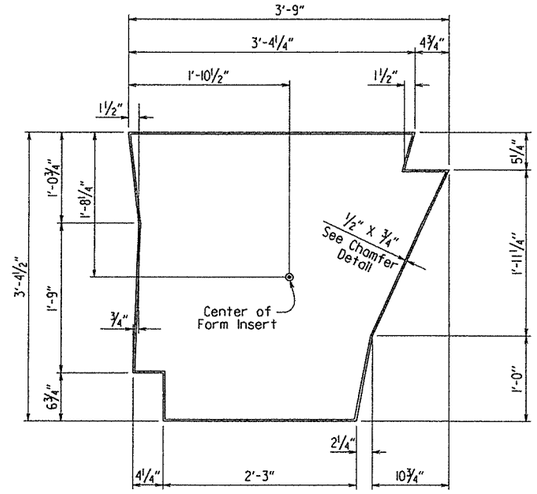
PLAN OF MSE WALLS

3/8" = 1'-0"



ELEVATION OF MSE WALLS

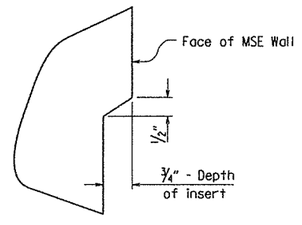
3/8" = 1'-0"



NOTE: See Bridge Layouts for locations of form insert.

FORM INSERT DETAILS AT MSE WALL

No Scale



CHAMFER DETAIL

No Scale

GENERAL NOTES

Place center of insert in the first full-width MSE Wall panel along the turned-back wall face at the approximate height shown.

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 "Retaining Wall".

The form insert shall be approved by the Engineer before its use.

Paint walls and insets with a Class 3 Textured Coating Finish as specified in SpecialProvision "Textured Coating Finish" and in accordance with subsection 802.19(b)(3).

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/4/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF STATE OF ARKANSAS FORM INSERT

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 8-22-07 FILENAME: bCA0904_Insert.dgn

CHECKED BY: AMS DATE: 7/13 SCALE: as noted

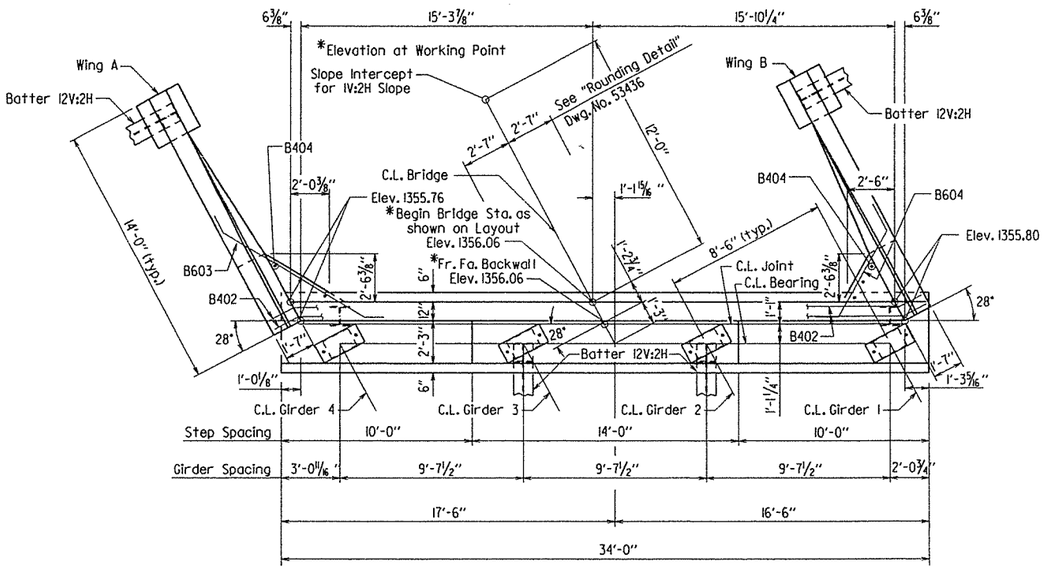
DESIGNED BY: STD DATE: —

BRIDGE NO. 07273, 07275 DRAWING NO. 53430

PRINT DATE: 7/3/2013

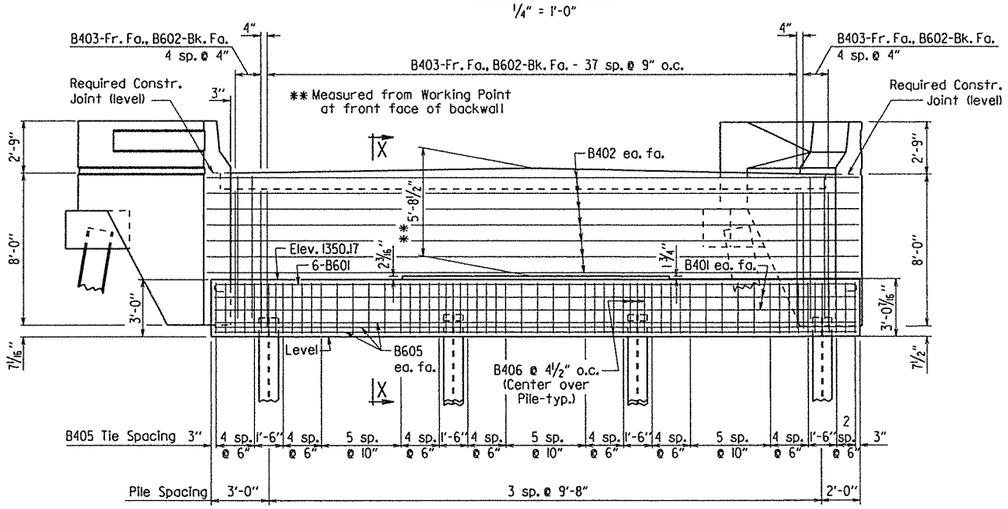
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	183	636
				(1) 07273		END BENTS	53431	

For details of wings, see Dwg. No. 53433.



PLAN OF BENT 1

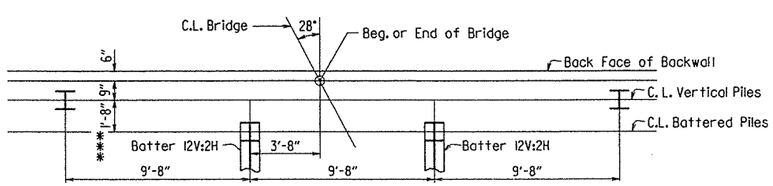
1/4" = 1'-0"



ELEVATION OF BENT 1

Looking Back

1/4" = 1'-0"



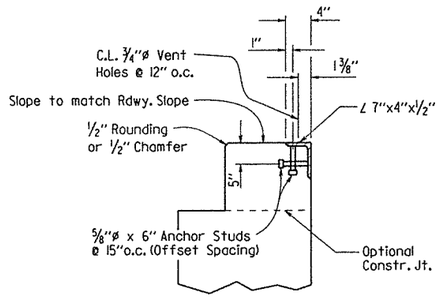
LAYOUT OF PILES

No Scale

***Measured along bottom of cap

NOTE: Class 2 Protective Surface Treatment shall be applied to the top of the backwall.

Textured Coating Finish shall be applied to all areas as specified in Job SP "Textured Coating Finish".

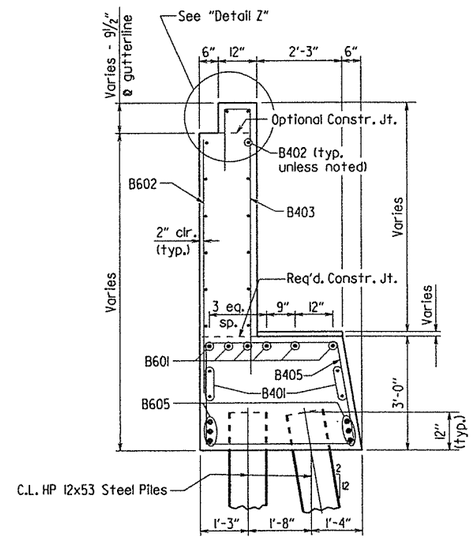


NOTE: For additional joint details, see Dwg. No. 53440.

DETAIL Z

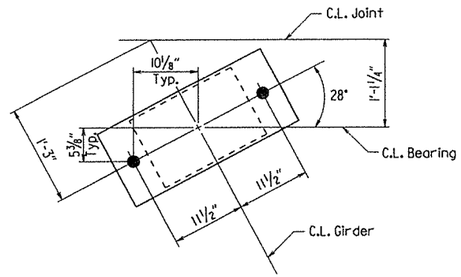
No Scale

NOTE: Concrete shall be hand packed under the joint armor in the backwall.



SECTION X-X

1/2" = 1'-0"



For details of elastomeric bearings, see Dwg. No. 53435.

TYPICAL ANCHOR BOLT LAYOUT @ BENT 1

No Scale

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 Dwg. No. 53440, "Expansion Device Installation at End Bents", for additional information.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
7/16/13

BRIDGE ENGINEER

SHEET 1 OF 3

DETAILS OF BENTS 1 AND 3

CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PJT DATE: 6-07 FILENAME: bCA0904x8_bl.dgn

CHECKED BY: KWY DATE: 7/15/13 SCALE: as noted

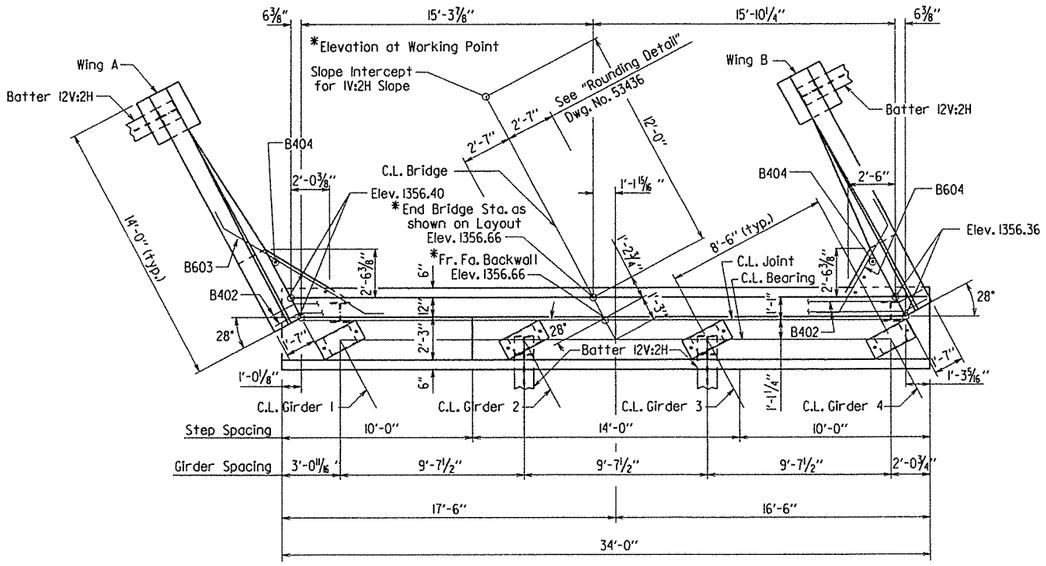
DESIGNED BY: PJT DATE: 5-07

BRIDGE NO. 07273 DRAWING NO. 53431

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	184	636
				①	07273	END BENTS	53432	

For details of wings, see Dwg. No. 53433.



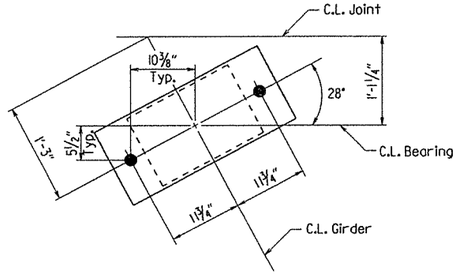
PLAN OF BENT 3

1/4" = 1'-0"

NOTE: Class 2 Protective Surface Treatment shall be applied to the top of the backwall.

Textured Coating Finish shall be applied to all areas as specified in Job SP "Textured Coating Finish".

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 Dwg. No. 53440, "Expansion Device Installation at End Bents", for additional information.



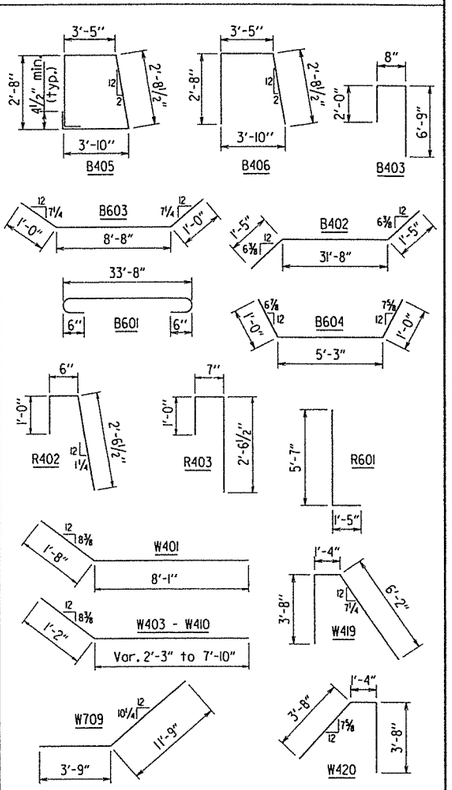
For details of elastomeric bearings, see Dwg. No. 53435.

TYPICAL ANCHOR BOLT LAYOUT @ BENT 3

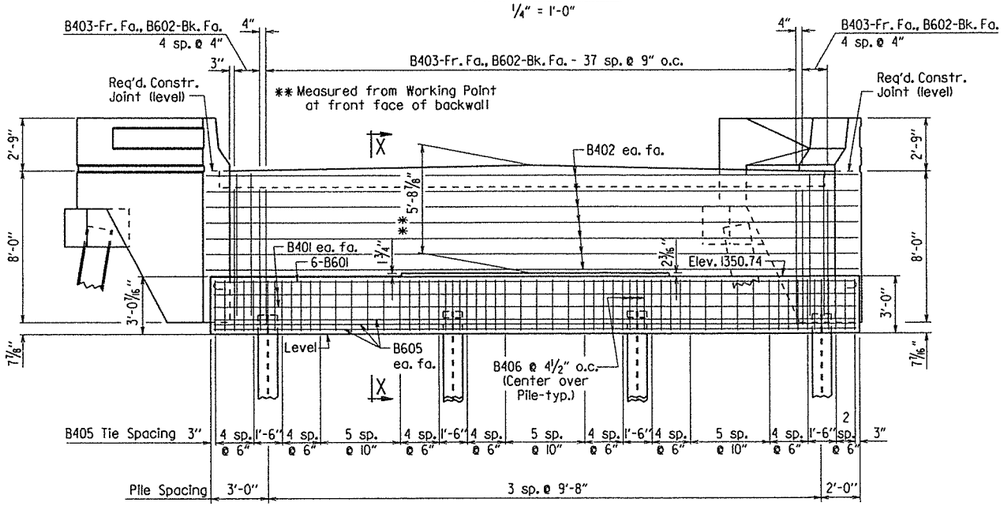
No Scale

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	4	33'-8"	Str.	
B402	14	34'-6"	2"	
B403	48	9'-3"	2"	
B404	6	6'-11"	Str.	
B405	50	13'-0"	2"	
B406	12	8'-8"	2"	
B601	6	35'-0"	4½"	
B602	48	6'-3"	Str.	
B603	7	10'-8"	4½"	
B604	7	7'-3"	4½"	
B605	6	33'-8"	Str.	
R401	12	13'-8"	Str.	
R402	16	3'-11"	2"	
R403	8	4'-0"	2"	
R601	16	6'-10"	4½"	
R602	6	5'-0"	Str.	
W401	8	9'-9"	2"	
W402	8	10'-5"	Str.	
W403-W410	2 each	Var. 3'-5" to 9'-0"	2"	
W411-W418	2 each	Var. 4'-6" to 10'-2"	Str.	
W419	3	11'-0"	2"	
W420	3	8'-6"	2"	
W701	12	13'-8"	Str.	
W702	4	10'-5"	Str.	
W703	4	9'-6"	Str.	
W704	4	8'-6"	Str.	
W705	4	7'-7"	Str.	
W706	4	7'-0"	Str.	
W707	4	5'-11"	Str.	
W708	4	4'-11"	Str.	
W709	4	15'-6"	5¼"	
F601	10	2'-2"	Str.	



Dimensions are out to out of bars.



ELEVATION OF BENT 3

Looking Ahead

1/4" = 1'-0"

For pile layout and "Section X-X", see Dwg. No. 53431.

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

All piling shall be Grade 50.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be placed to avoid damage.

For additional information, see Layout.

STATE OF ARKANSAS
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No. 7510
7/16/13
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SHEET 2 OF 3

DETAILS OF BENTS 1 AND 3

CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PJT DATE: 6-07 FILENAME: bCA0904x8_bl.dgn

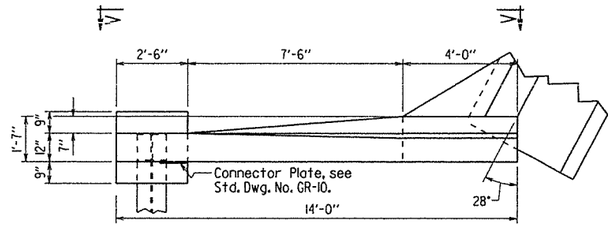
CHECKED BY: KWY DATE: 7/15/13 SCALE: as noted

DESIGNED BY: PJT DATE: 5/07

BRIDGE NO. 07273 DRAWING NO. 53432

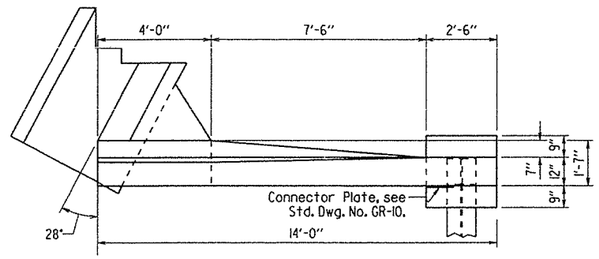
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	185	636
				(1) 07273		END BENTS	53433	



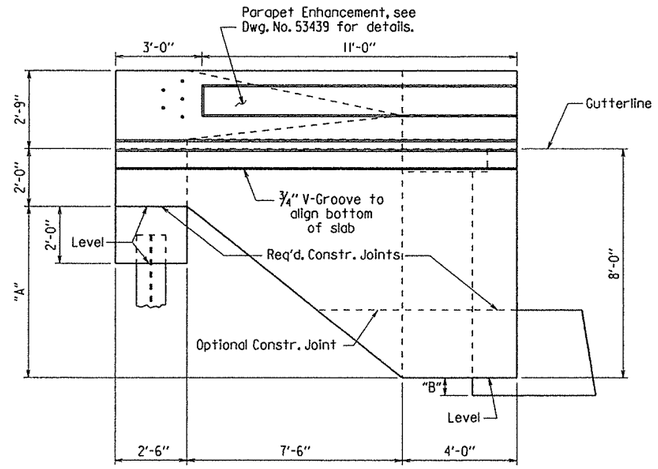
PLAN OF WING A

3/8" = 1'-0"



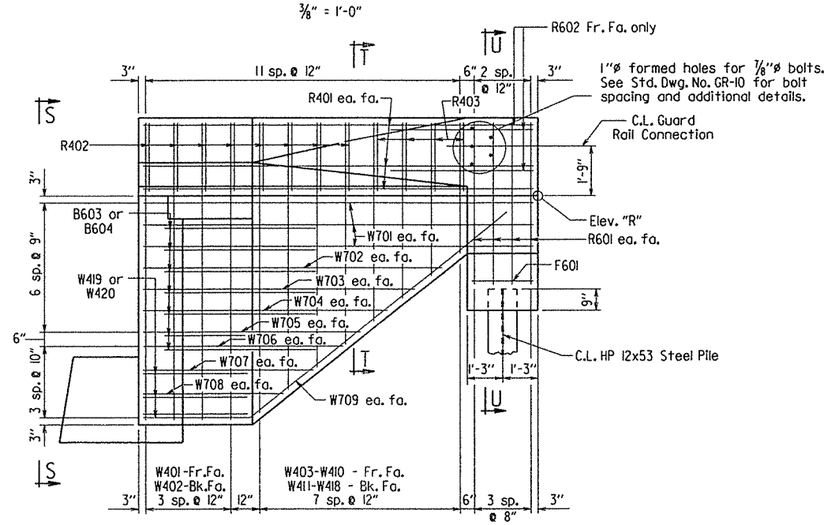
PLAN OF WING B

3/8" = 1'-0"



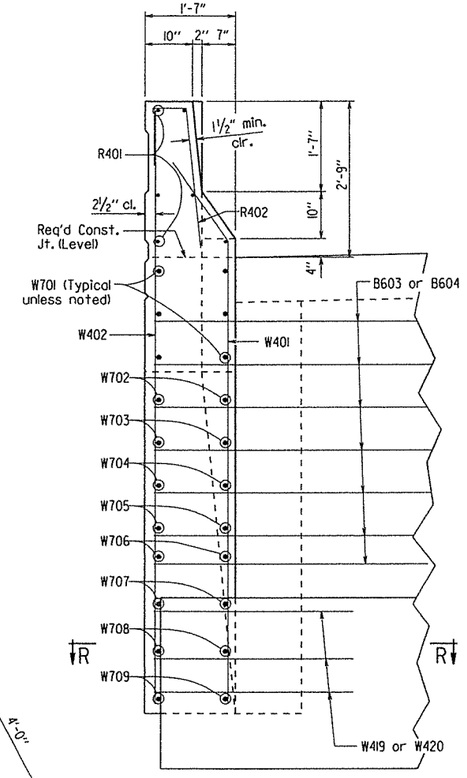
VIEW W-W

3/8" = 1'-0"



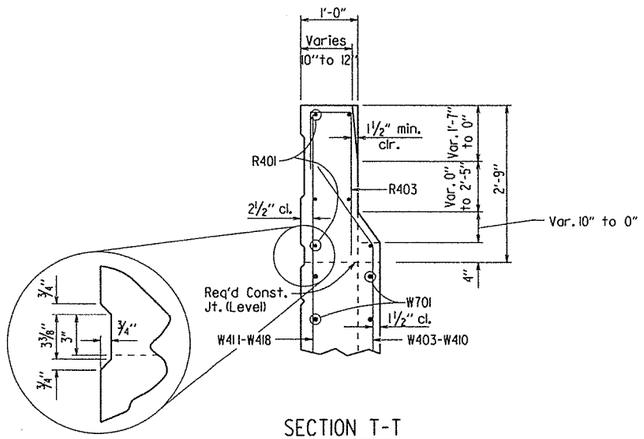
VIEW V-V

3/8" = 1'-0"



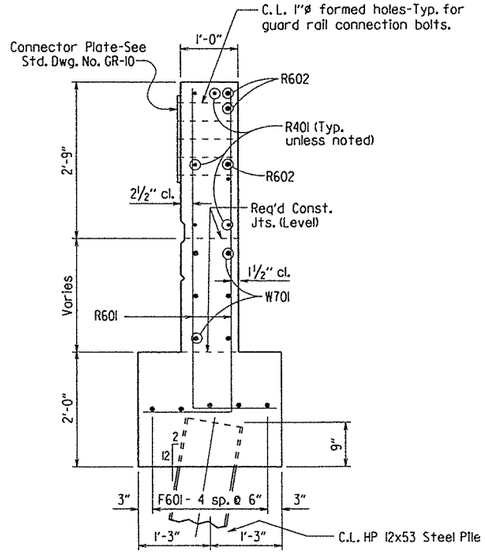
VIEW S-S

3/4" = 1'-0"



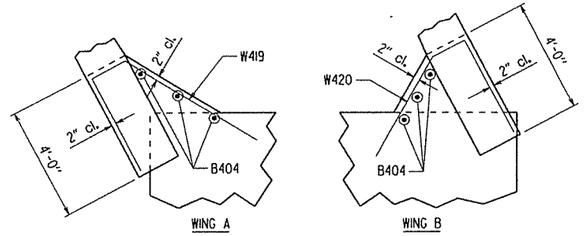
SECTION T-T

3/4" = 1'-0"



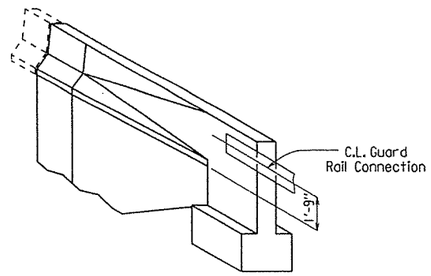
SECTION U-U

3/4" = 1'-0"



SECTION R-R

3/8" = 1'-0"



THREE DIMENSIONAL VIEW OF RAIL

No Scale

TABLE OF VARIABLES

Bent	Wing	"A"	"B"	Elev. 'R'
1	A	5'-11 9/16"	7 1/16"	1355.73
	B	5'-11 9/16"	7 1/2"	1355.76
3	A	6'-0 7/16"	7 7/8"	1356.43
	B	6'-0 7/16"	7 1/16"	1356.40

STATE OF ARKANSAS
Carl J. Fusellier
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No. 7510
7/16/13
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SHEET 3 OF 3

DETAILS OF BENTS 1 AND 3

CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: PJT DATE: 6-07 FILENAME: bCA0904x8_b1.dgn

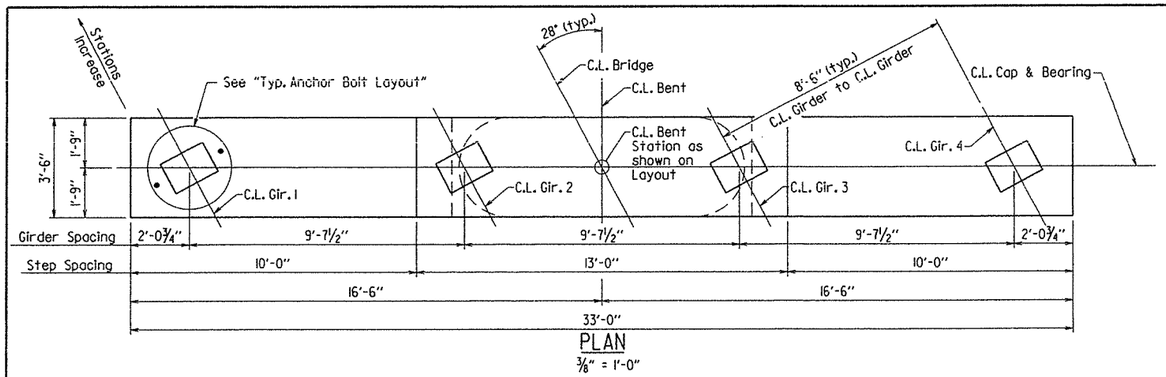
CHECKED BY: KWY DATE: 7/16/13 SCALE: as noted

DESIGNED BY: PJT DATE: 5-07

BRIDGE NO. 07273 DRAWING NO. 53433

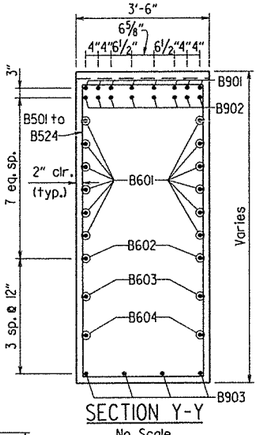
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	186	636
				① 07273		BENT 2	53434	



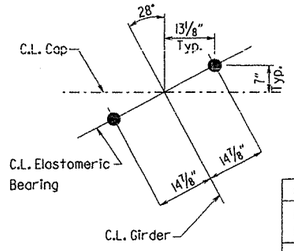
PLAN

3/8" = 1'-0"



SECTION Y-Y

No Scale



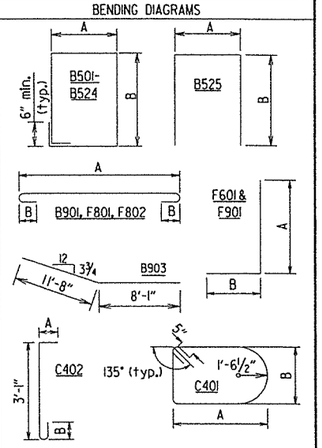
TYPICAL ANCHOR BOLT LAYOUT

No Scale

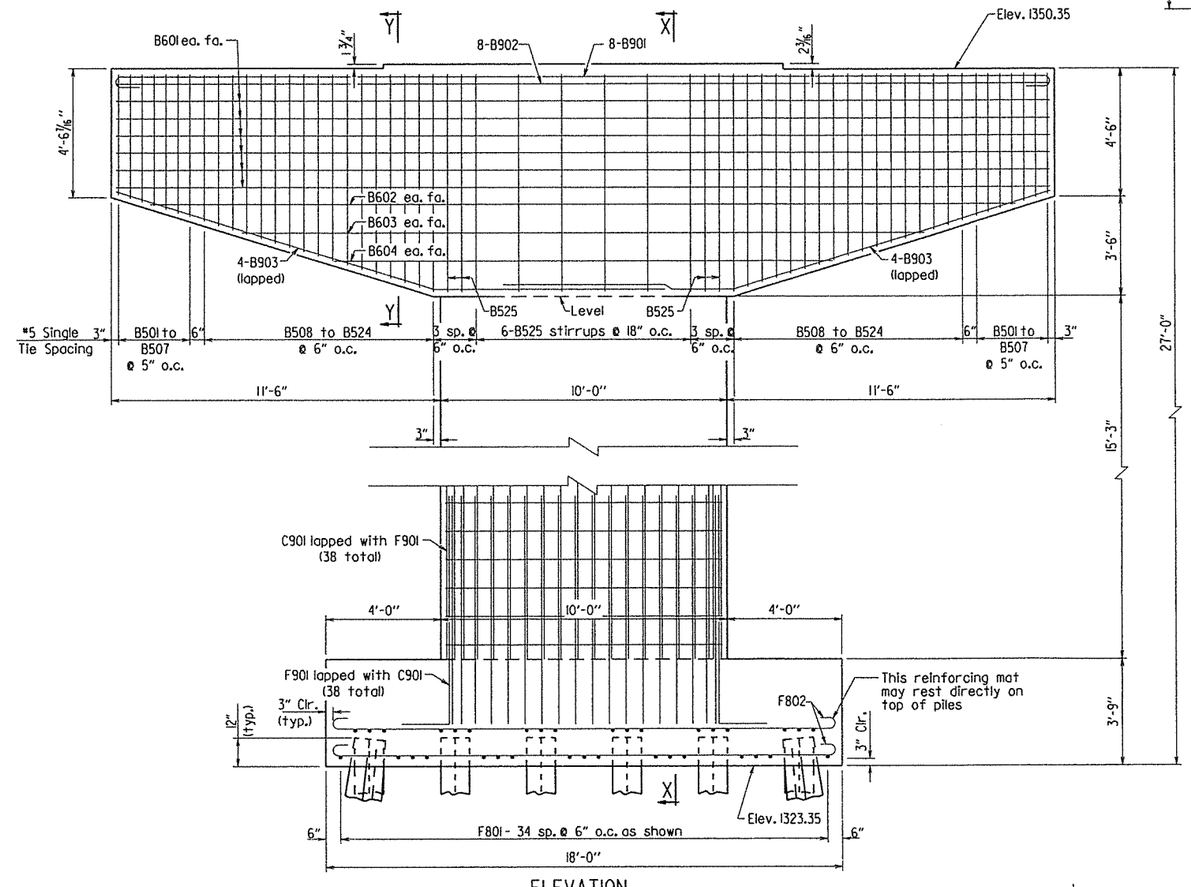
BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B501-B507	2 ea.	15'-4" to 16'-10"	3'-2"	4'-3" to 5'-0"	2½"
B508-B524	2 ea.	17'-2" to 22'-2"	3'-2"	5'-2" to 7'-8"	2½"
B525	10	18'-4"	3'-2"	7'-8"	2½"
B601	12	32'-8"			Str.
B602	2	30'-4"			Str.
B603	2	23'-11"			Str.
B604	2	17'-6"			Str.
B901	8	35'-2"	32'-8"	10"	9"
B902	8	32'-8"			Str.
B903	8	19'-9"			9"
C401	46	16'-11"	5'-9"	3'-1"	3"
C402	46	4'-2"	8"	4½"	3"
C901	38	22'-1"			Str.
F601	4	4'-10"	2'-6"	2'-6"	4½"
F801	35	10'-4"	8'-6"	8"	6"
F802	17	19'-4"	17'-6"	8"	6"
F901	38	9'-9"	8'-4"	1'-8"	9"

BENDING DIAGRAMS



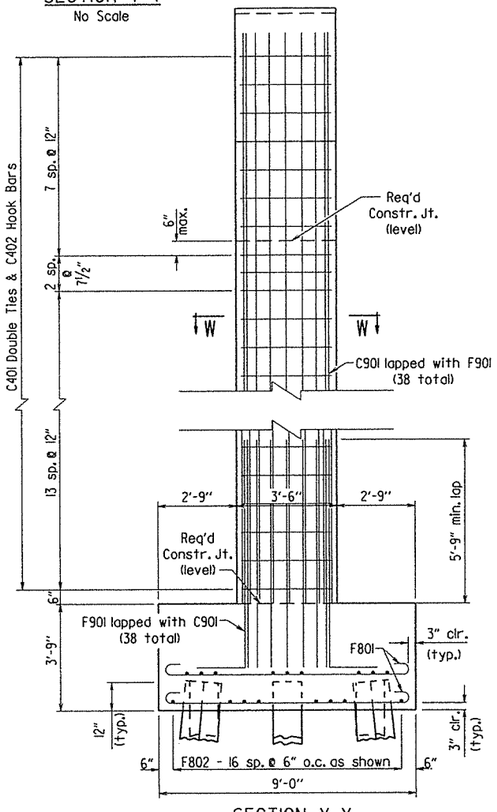
(Dimensions are out to out of bars.)



ELEVATION

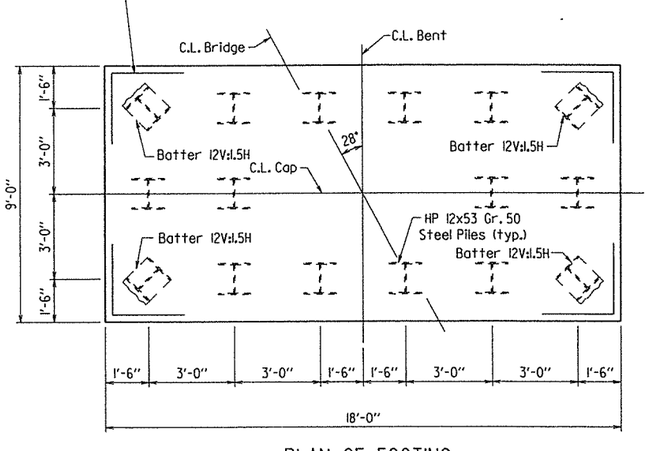
(Looking Ahead)

3/8" = 1'-0"



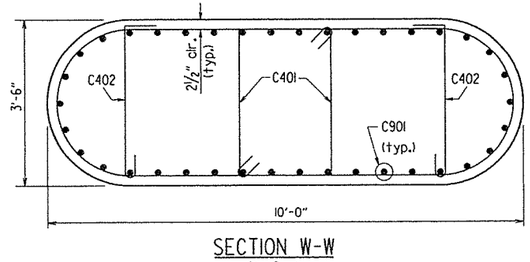
SECTION X-X

3/8" = 1'-0"



PLAN OF FOOTING

3/8" = 1'-0"



SECTION W-W

No Scale

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

All piling shall be Grade 50.

For additional information, see Layout.

For Details of Elastomeric Bearings, see Dwg. No. 53435.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/4/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF BENT 2
CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 6-26-07 FILENAME: bCA0904x8_b2.dgn

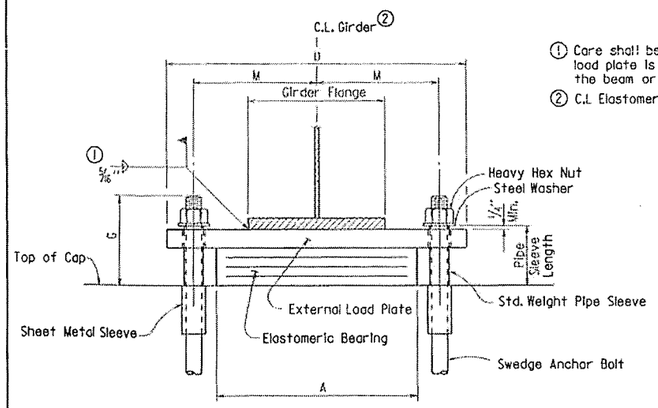
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DESIGNED BY: PJT DATE: 5-07

BRIDGE NO. 07273 DRAWING NO. 53434

PRINT DATE: 7/3/2013

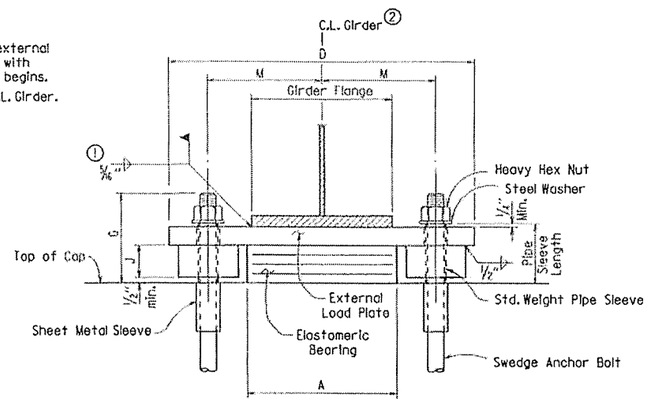
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				6	ARK.			
				JOB NO.		CA0904	187	636
				① 07273		ELASTOMERIC BEARINGS		53435



FRONT VIEW AT BENTS 1 & 3

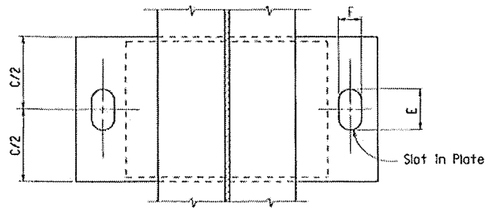
① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② C.L Elastomeric pad shall be aligned with C.L. Girder.

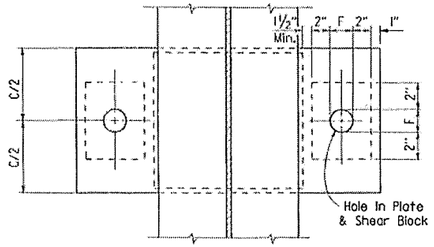


FRONT VIEW AT BENT 2

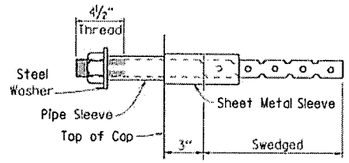
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load 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.



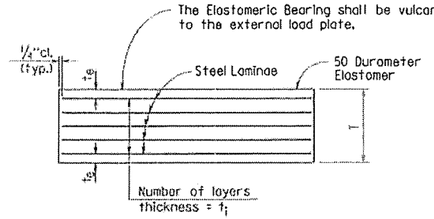
PLAN VIEW AT BENTS 1 & 3



PLAN VIEW AT BENT 2



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

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 OPL 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, (M 270, Gr. 50W)".

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".

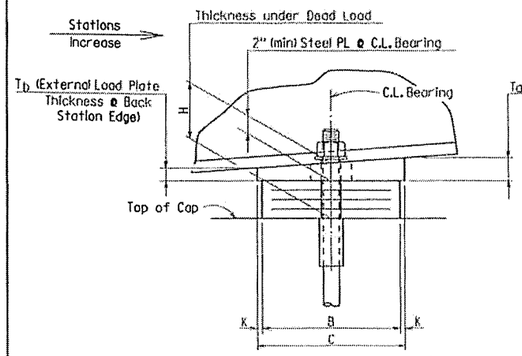
External load plates and shear blocks shall conform to AASHTO M 270, Grade 50W and will not be paid for separately, but will be included in the unit price bid for "Elastomeric Bearings". Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates with or without shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) 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 807.84(e) for unpainted Grade 50W steel.

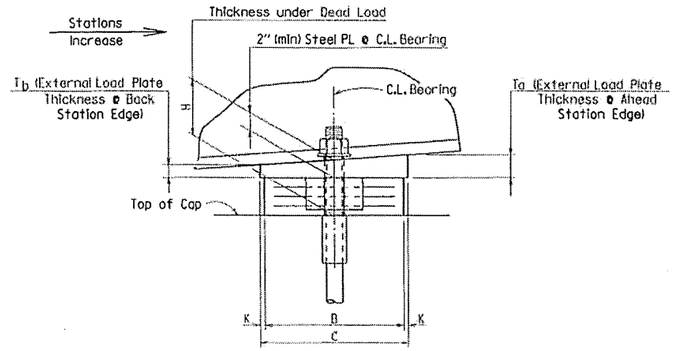
Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

Bearings shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.



SIDE VIEW AT BENTS 1 & 3



SIDE VIEW AT BENT 2

TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	ELASTOMERIC PAD: H	ELASTOMERIC PAD: A	ELASTOMERIC PAD: B	ELASTOMERIC PAD: N	ELASTOMERIC PAD: t_1	ELASTOMERIC PAD: t_e	ELASTOMERIC PAD: NO. & THICKNESS OF STEEL LAMINAE	ELASTOMERIC PAD: T	EXTERNAL LOAD PLATE: C	EXTERNAL LOAD PLATE: D	EXTERNAL LOAD PLATE: E	EXTERNAL LOAD PLATE: F	EXTERNAL LOAD PLATE: J	EXTERNAL LOAD PLATE: K	EXTERNAL LOAD PLATE: M	EXTERNAL LOAD PLATE: T_a	EXTERNAL LOAD PLATE: T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	ANCHOR BOLT: GRADE	ANCHOR BOLT: PIPE SLEEVE SIZE (ø x L)	ANCHOR BOLT: SHEET METAL SLEEVE SIZE (ø x L)	ANCHOR BOLT: STEEL WASHER SIZE (O.D.)
07273	1	1,3,4	Exp.	4	141	8 3/4"	5 5/16"	18"	12"	5	1/2"	5/16"	6 @ 12ga.	3 3/4"	13"	29"	4 5/8"	2 5/8"	NA	1/2"	11 1/2"	2.01"	1.99"	1 3/4"ø x 31"	55	2"ø x 6"	4"ø x 12"	3 5/8"
	1	2	Exp.	4	141	8 3/4"	5 11/16"	18"	12"	5	1/2"	5/16"	6 @ 12ga.	3 3/4"	13"	29"	4 5/8"	2 5/8"	NA	1/2"	11 1/2"	2.15"	2.13"	1 3/4"ø x 31"	55	2"ø x 6"	4"ø x 12"	3 5/8"
	2	1,3,4	Fix.	4	422	9 1/2"	6 5/16"	20"	14"	6	1/2"	5/16"	7 @ 12ga.	4 3/8"	15"	38 1/2"	NA	2 5/8"	3 11/16"	1/2"	14 7/8"	2.02"	1.98	1 3/4"ø x 31"	55	2"ø x 6 1/2"	4"ø x 12"	3 5/8"
	2	2	Fix.	4	422	9 1/2"	6 5/16"	20"	14"	6	1/2"	5/16"	7 @ 12ga.	4 3/8"	15"	38 1/2"	NA	2 5/8"	3 11/16"	1/2"	14 7/8"	2.16"	2.12"	1 3/4"ø x 31"	55	2"ø x 6 1/2"	4"ø x 12"	3 5/8"
	3	1,3,4	Exp.	4	165	9"	5 11/16"	18"	13"	5	1/2"	5/16"	6 @ 12ga.	3 3/4"	14"	30"	5 1/4"	3 1/8"	NA	1/2"	11 3/4"	2.02"	1.98	2"ø x 32"	55	2 1/2"ø x 6"	4"ø x 12"	3 3/4"
	3	2	Exp.	4	165	9"	5 11/16"	18"	13"	5	1/2"	5/16"	6 @ 12ga.	3 3/4"	14"	30"	5 1/4"	3 1/8"	NA	1/2"	11 3/4"	2.16"	2.12"	2"ø x 32"	55	2 1/2"ø x 6"	4"ø x 12"	3 3/4"

PRINT DATE: 7/3/2013

STATE OF ARKANSAS
Carl L. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL L. FUSELIER

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

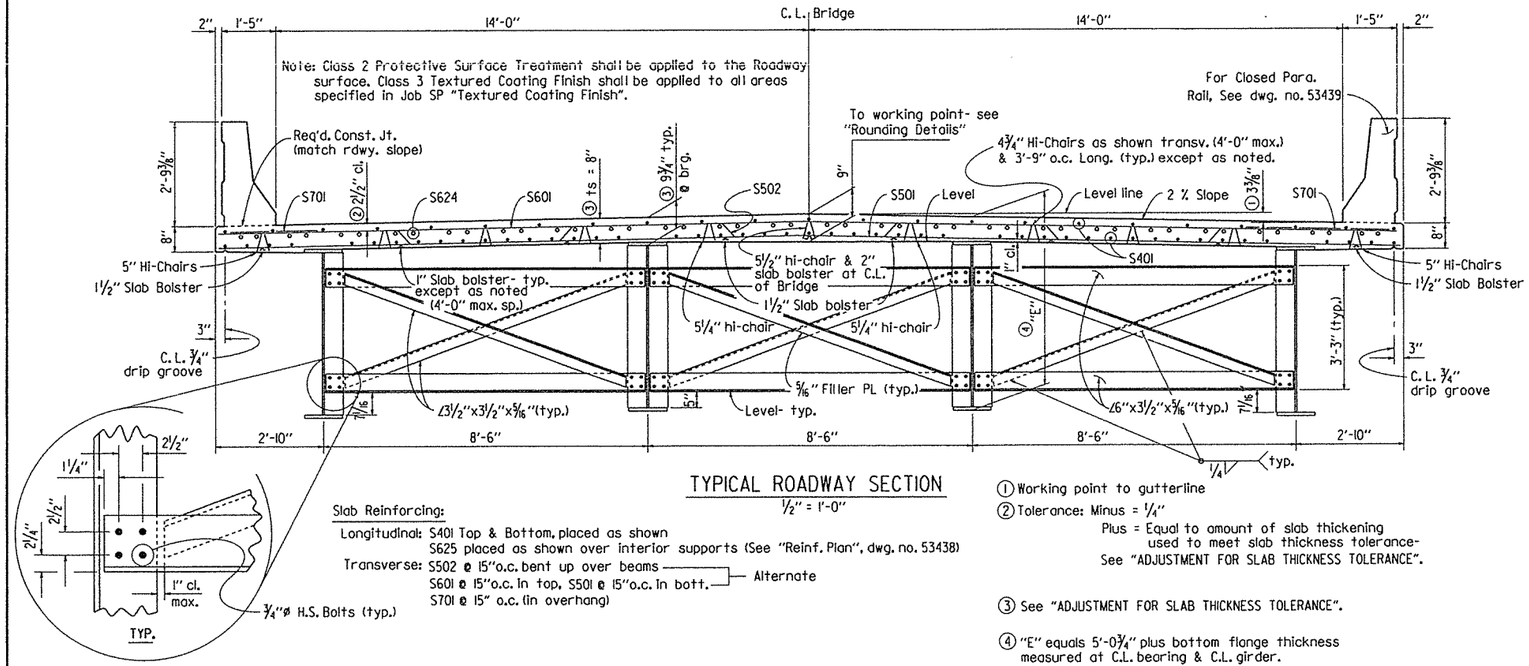
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CHECKED BY: KWY DATE: 3/6/08 SCALE: NONE

DESIGNED BY: CLF DATE: 4/07

BRIDGE NO. 07273 DRAWING NO. 53435

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	188	636
				①	07273	240' CONT. UNIT	53436	



TYPICAL ROADWAY SECTION

½" = 1'-0"

Slab Reinforcing:

Longitudinal: S401 Top & Bottom, placed as shown
S625 placed as shown over interior supports (See "Reinf. Plan", dwg. no. 53438)

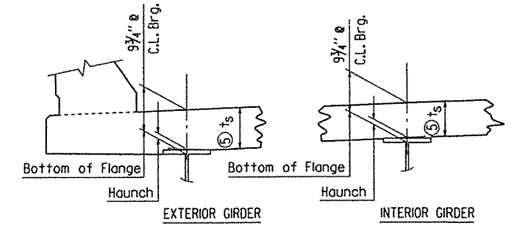
Transverse: S502 @ 15"o.c. bent up over beams — Alternate
S601 @ 15"o.c. in top, S501 @ 15"o.c. in bott.
S701 @ 15" o.c. (in overhang)

① Working point to gutterline

② Tolerance: Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance- See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

③ See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".

④ "E" equals 5'-0¾" plus bottom flange thickness measured at C.L. bearing & C.L. girder.



⑤ Tolerance when removable deck forming is used is + ½" , - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Notes:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

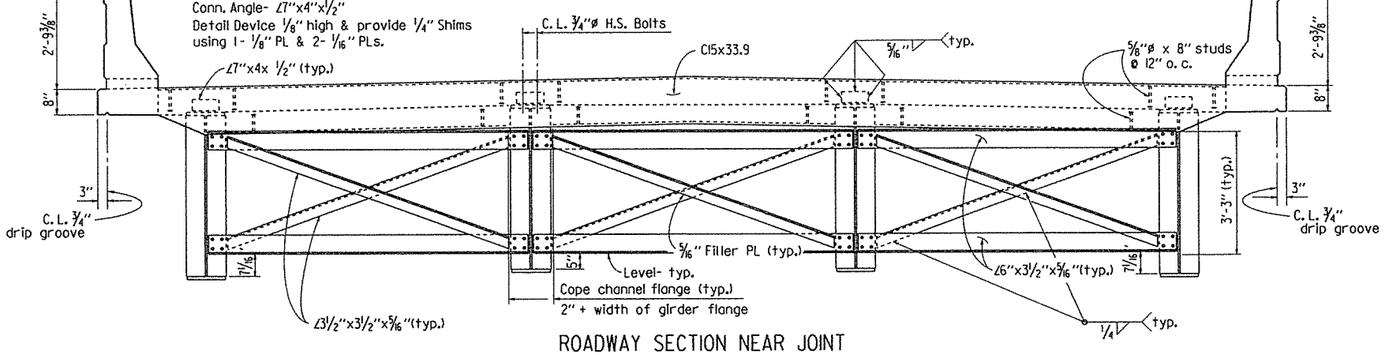
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

N.T.S.

Note: t_s = slab thickness as shown in TYPICAL ROADWAY SECTION

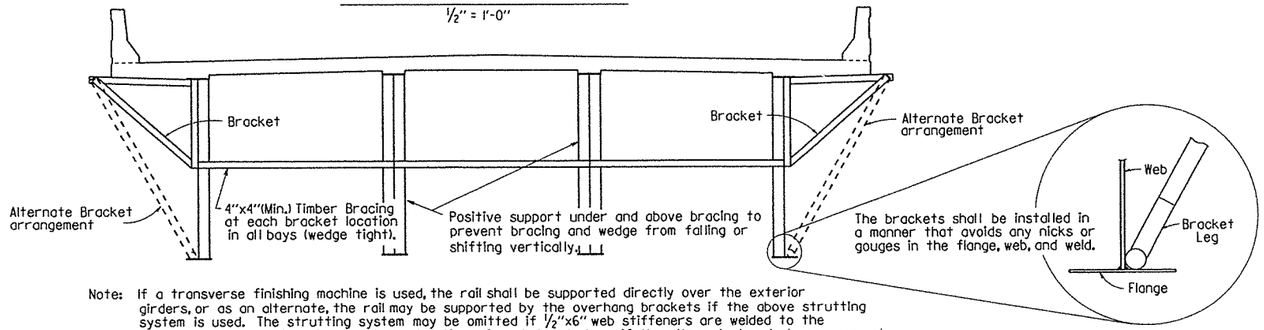
Expansion Device :
Rdwy. Channel- C15x33.9
Conn. Angle- L7"x4"x½"
Detail Device ⅛" high & provide ¼" Shims using 1- ⅛" PL & 2- 1/16" PLs.

For details of Poured Silicone Jt., see dwg. No. 53440.



ROADWAY SECTION NEAR JOINT

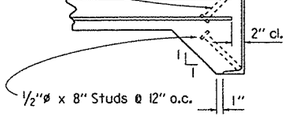
½" = 1'-0"



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"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 details for cross frame connection plates shown on Drawing No. 53441. 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. 50W)".

SCREED RAIL SUPPORT

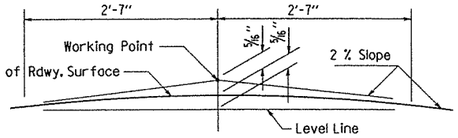
N.T.S.



Note: As an alternate to 5/8"ø studs, ½"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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING

N.T.S.



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

N.T.S.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/6/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 6

DETAILS OF 240'-0" CONTINUOUS PLATE GIRDER UNIT

CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

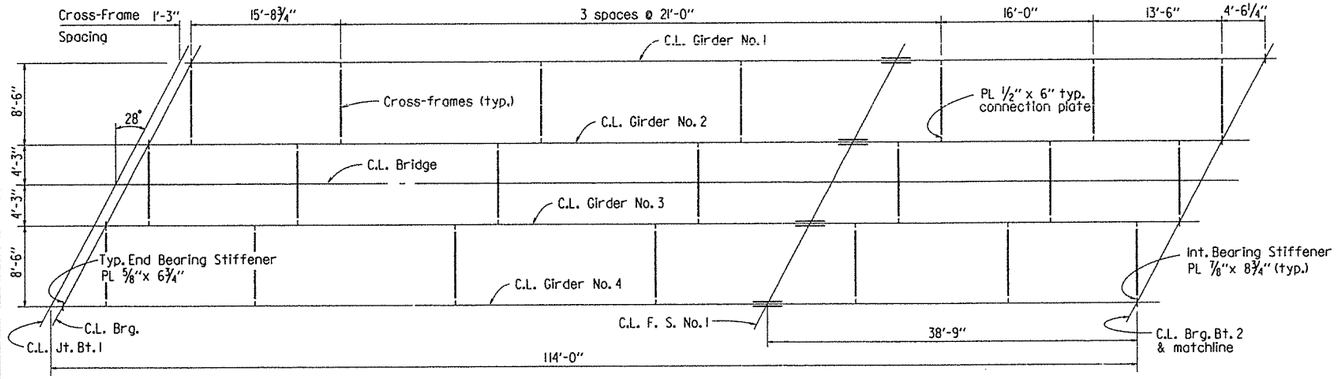
LITTLE ROCK, ARK.

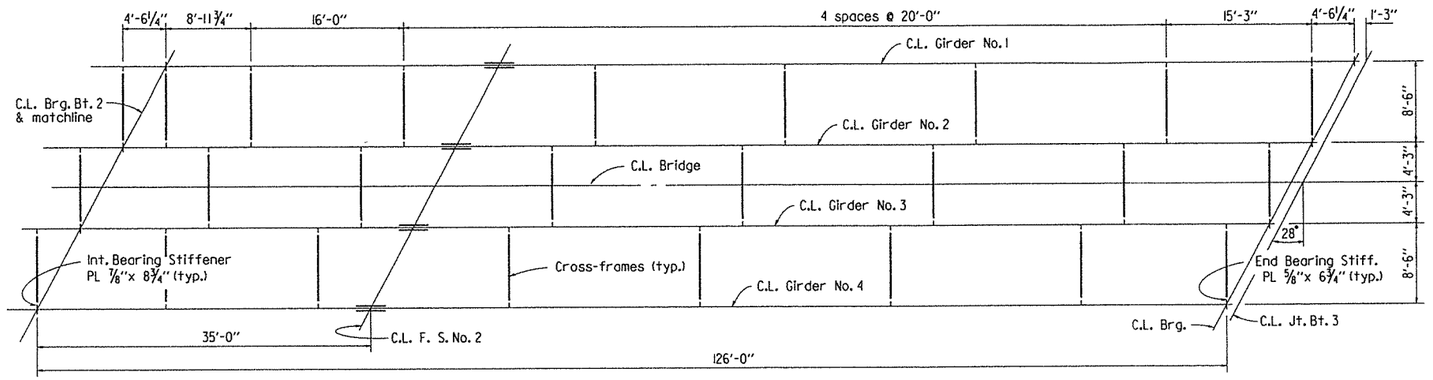
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DESIGNED BY: SAP	DATE: 4/07		

BRIDGE NO. 07273 DRAWING NO. 53436

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	189	636
				① 07273		240' CONT. UNIT	53437	

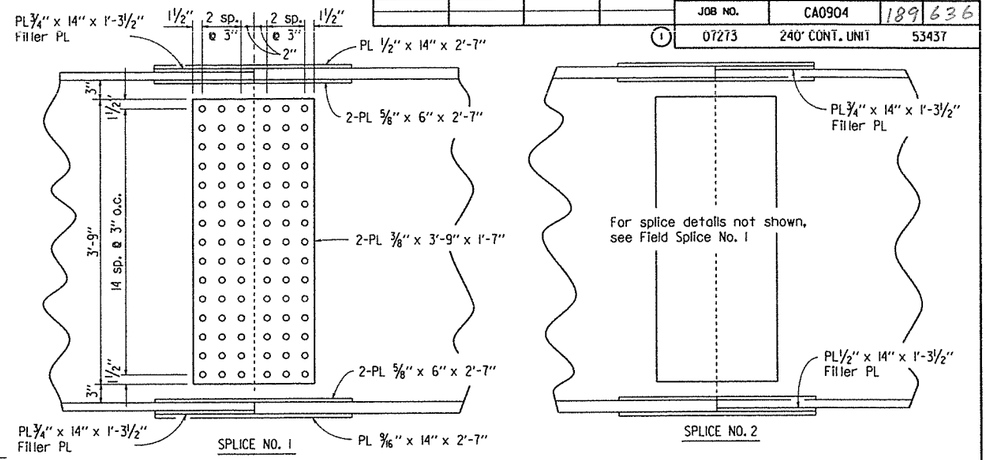


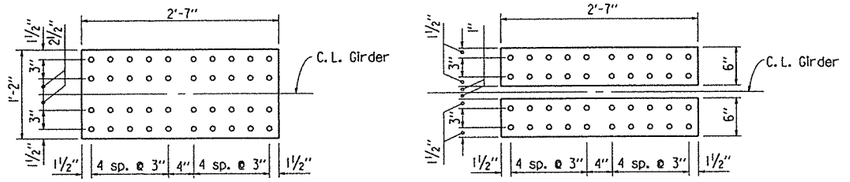


FRAMING PLAN

1/8" = 1'-0"

Note: All web and flange plates shall be AASHTO M270, Gr. 50W steel.





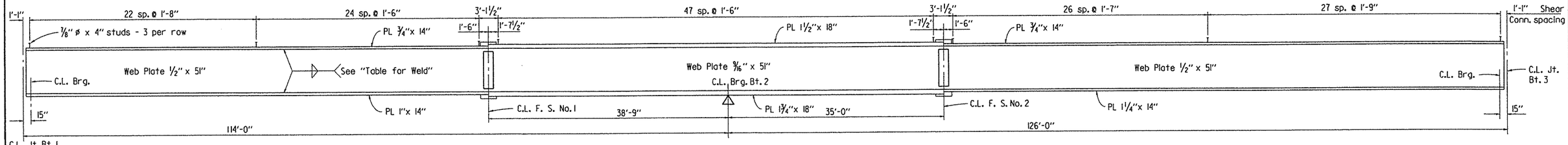
TOP & BOTTOM FLANGE PL

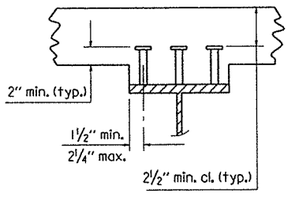
TYPICAL FIELD SPLICE DETAILS

1" = 1'-0"

All field splice bolts shall be ⅞"ø Hi-str. bolts
All holes for splice bolts shall be 15/16"ø
All field splice plates shall be AASHTO M270 Gr. 50W steel.

Note: 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.





Stud Shear Connectors shown shall be ⅞"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. 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 measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

NTS

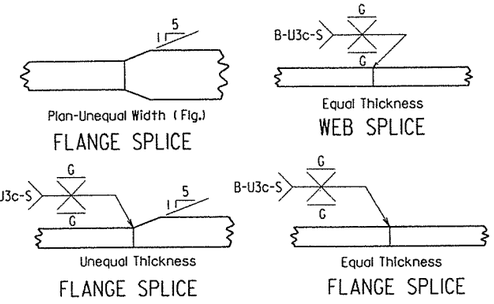
TABLE FOR WELD

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"	

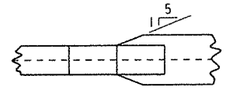
NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

TYP. GIRDER ELEVATION

N.T.S.



DETAILS OF WELDED SPLICES



FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS

STATE OF ARKANSAS
Carl I. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL I. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 6

DETAILS OF 240'-0" CONTINUOUS PLATE GIRDER UNIT

CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

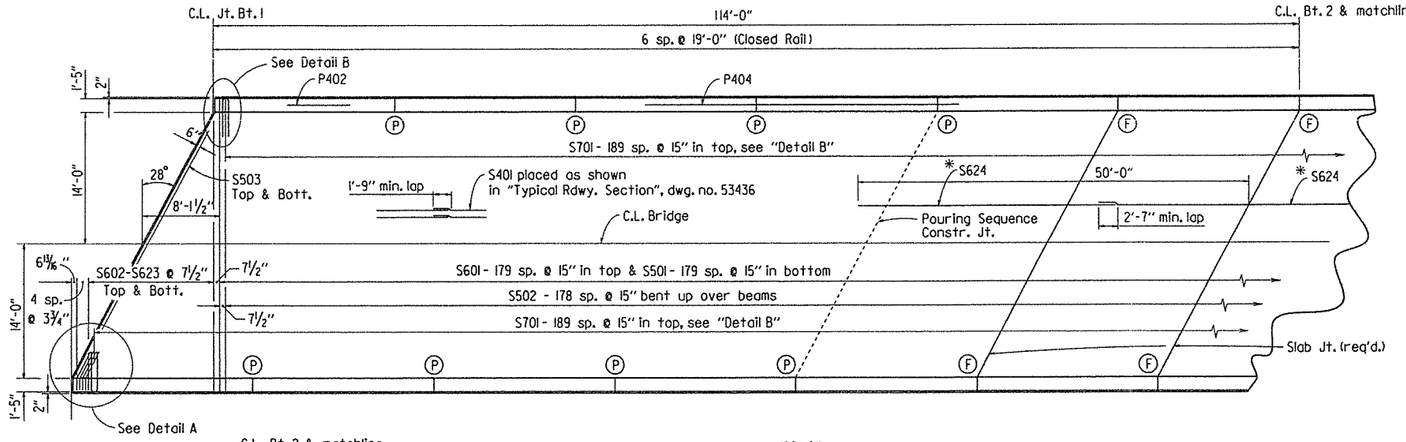
LITTLE ROCK, ARK.

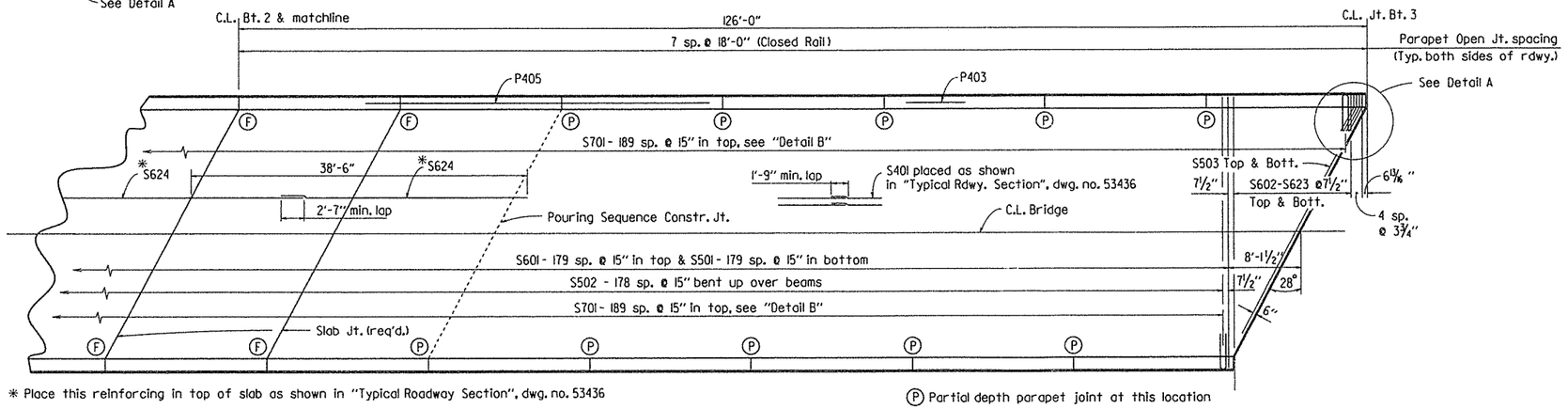
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CHECKED BY: KWY DATE: 7/15/13 SCALE: As Shown
DESIGNED BY: SWP DATE: 4/07

BRIDGE NO. 07273 DRAWING NO. 53437

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	190	636
				(1) 07273		240' CONT. UNIT	53438	





* Place this reinforcing in top of slab as shown in "Typical Roadway Section", dwg. no. 53436

Note: Required slab joints and pouring sequence construction joints shall align with parapet joints at gutterline.

Ⓟ Partial depth parapet joint at this location

Ⓕ Full depth parapet joint at this location

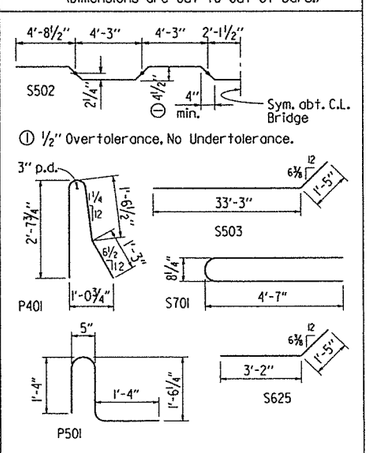
REINFORCING PLAN

1/8" = 1'-0"

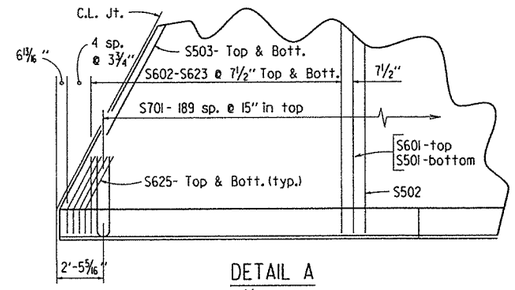
BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
S401	490	35'-9"	Str.
S501	180	30'-10"	Str.
S502	179	31'-4"	3"
S503	4	34'-8"	3"
S601	180	30'-10"	Str.
S602-S623	4 ea.	4'-3" to 28'-11"	Str.
S624	132	31'-3"	Str.
S625	16	4'-7"	4½"
S701	380	9'-6"	6½"
P401	960	5'-6"	2"
P402	44	18'-7"	Str.
P403	50	17'-7"	Str.
P404	24	32'-10"	Str.
P405	24	37'-2"	Str.
P501	960	4'-2"	3¾"

Bending Diagrams (Dimensions are out to out of bars.)

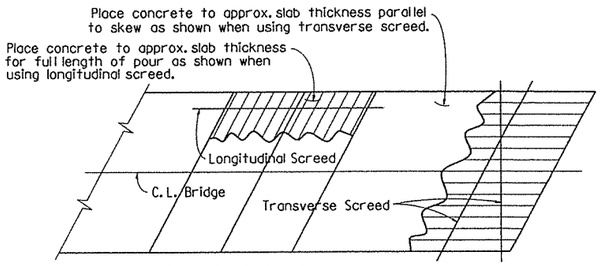


Note: At the Contractor's option, two straight #5 bars, top and bottom, may be substituted for bar S502. Payment will be based on weight of S502.



DETAIL A

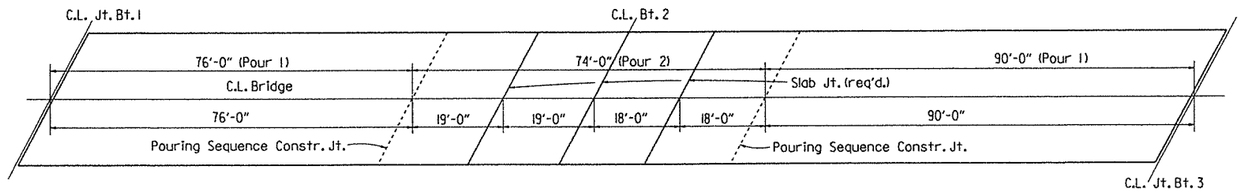
1/4" = 1'-0"



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

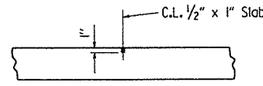
N.T.S.



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 between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. 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.

SLAB POURING SEQUENCE

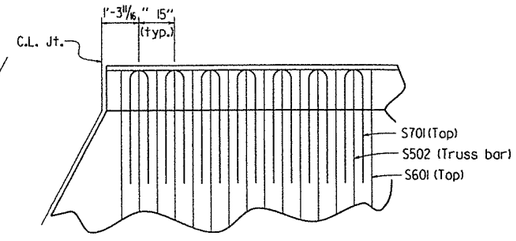
NTS



Use Type 3, 4, or 6 Joint Sealer. See subsections 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 and shall align with open joints at the front face of the parapet. 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. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

NTS



DETAIL B

⅜" = 1'-0"

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 3 OF 6

DETAILS OF 240'-0" CONTINUOUS PLATE GIRDER UNIT CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-16-07 FILENAME: bCA0904x8_sl.dgn

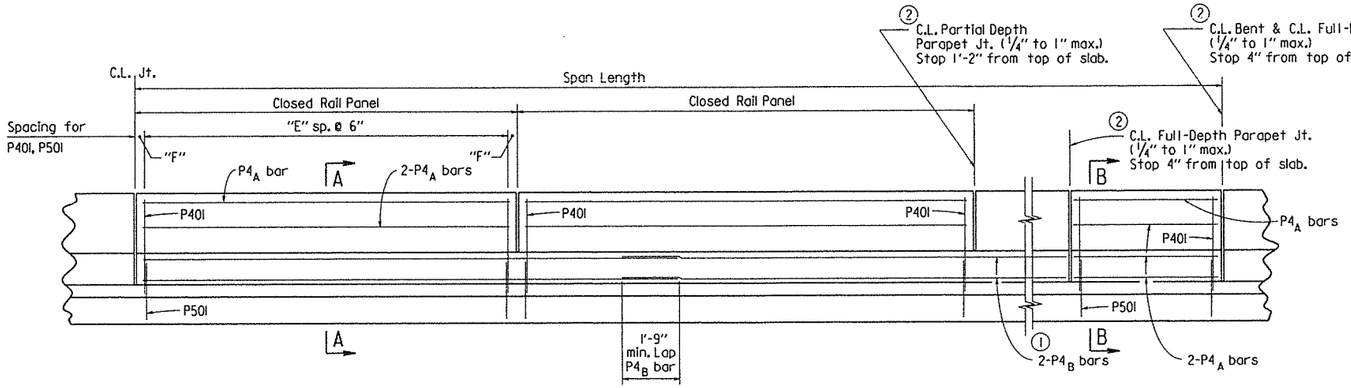
CHECKED BY: KWY DATE: 7/16/13 SCALE: As shown

DESIGNED BY: SWP DATE: 4/07

BRIDGE NO. 07273 DRAWING NO. 53438

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	19	636
				(1) 07273		240' CONT. UNIT		53439



ELEVATION - CONCRETE PARAPET RAIL

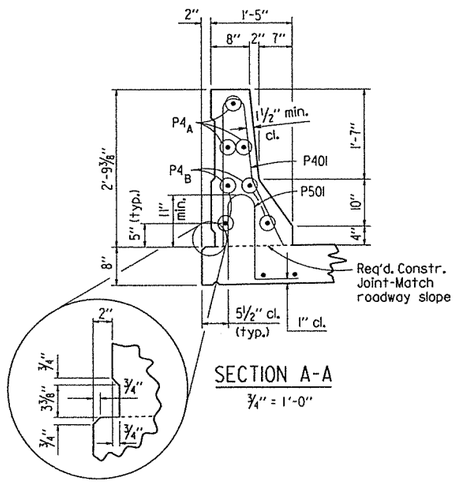
1/2" = 1'-0"

TABLE OF VARIABLES

Span Length	Closed Rail Panel	"E"	"F"	$P4_A$ bar	$P4_B$ bar
114'-0"	19'-0"	37	3"	P402	P404
126'-0"	18'-0"	35	3"	P403	P405

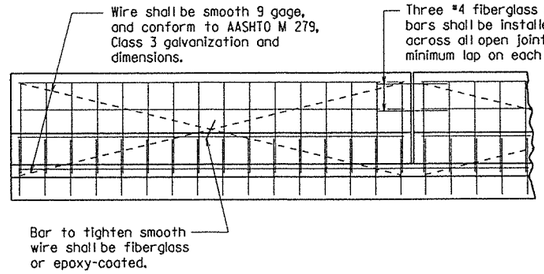
① Bar to be continuous between full depth parapet jts.

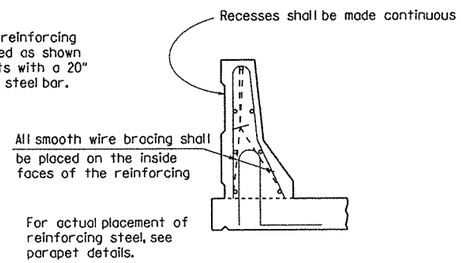
② For location of full and partial depth parapet joints, see dwg. no. 53438.



SECTION A-A

3/4" = 1'-0"



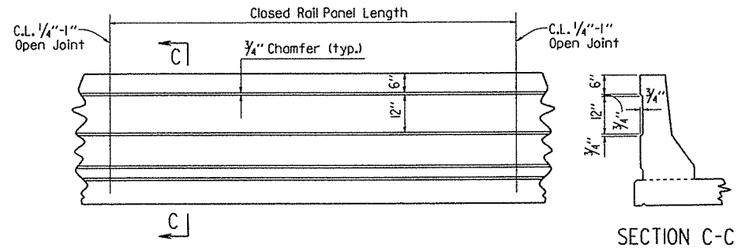


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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. Exposed surfaces shall be given a Class 3, Textured Coating Finish. See Job SP "Textured Coating Finish".

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

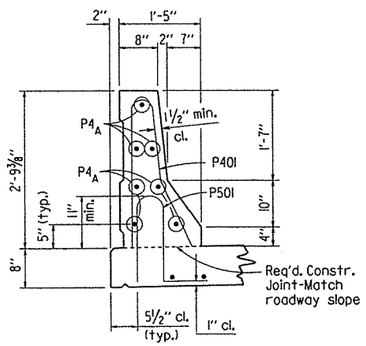
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SECTION C-C

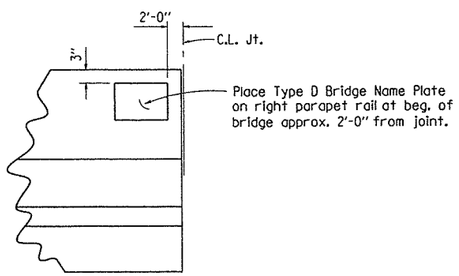
DETAILS OF PARAPET ENHANCEMENT

No Scale



SECTION B-B

3/4" = 1'-0"



VIEW SHOWING LOCATION OF NAME PLATE

NTS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 4 OF 6

DETAILS OF 240'-0" CONTINUOUS PLATE GIRDER UNIT

CR 453 (FAUX ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-16-07 FILENAME: bCA0904x8_sl.dgn

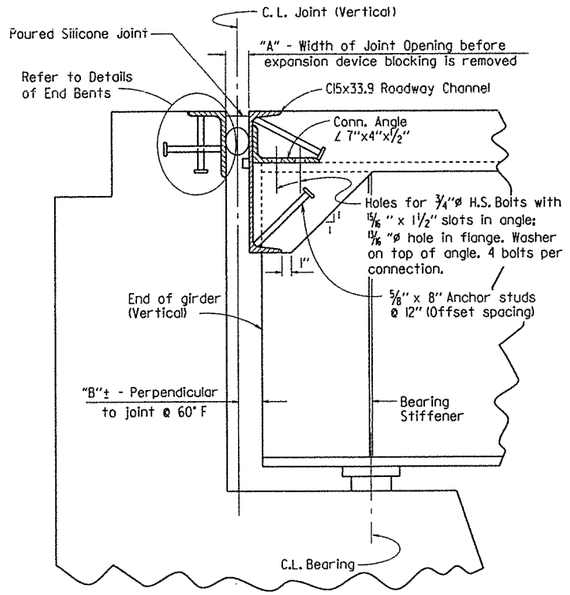
CHECKED BY: KWY DATE: 7/15/13 SCALE: As shown

DESIGNED BY: SAF DATE: 4/07

BRIDGE NO. 07273 DRAWING NO. 53439

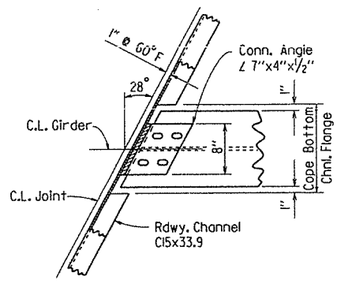
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	192	636
				(1) 07273		240' CONT. UNIT	53440	

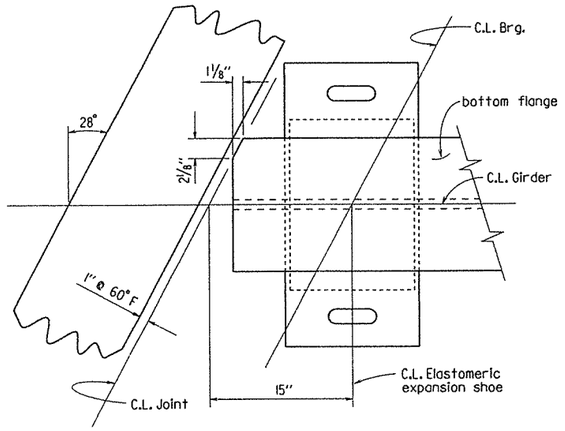


Note: Section taken perpendicular to C.L. Joint

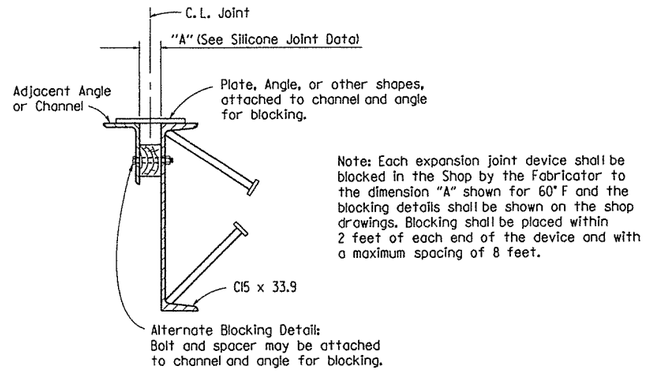
SECTION THRU JOINT AT END BENT



CHANNEL CONNECTION DETAIL



PLAN OF BEARING AT END BENTS



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" 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.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

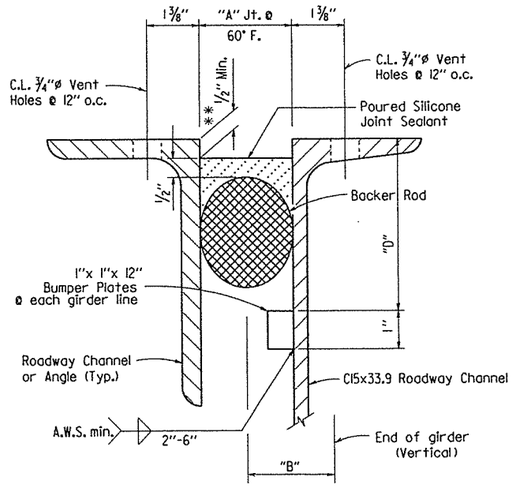
EXPANSION DEVICE INSTALLATION AT END BENTS:

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 girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, 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.

**Recess depth as recommended by the sealant Manufacturer.



DETAIL OF POURED SILICONE JOINT

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 flanges in the backwall and in the span.

SILICONE JOINT DATA

"A" Width Perpendicular to Joint at 24 Hour Average Temperature* Of:			"B" Perpendicular to Joint at 60°F	"D"
40°F	60°F	80°F		
2 3/16"	2"	1 13/16"	± 2 1/4"	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.

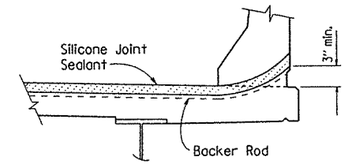
The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

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 that 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.



JOINT SEAL PLACEMENT AT CURB

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
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7/16/13
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BRIDGE ENGINEER

SHEET 5 OF 6

DETAILS OF 240'-0" CONTINUOUS PLATE GIRDER UNIT

CR 453 (FAUX ROAD)
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-17-07
CHECKED BY: KWY DATE: 7/15/13
DESIGNED BY: EAP DATE: 4/07
FILENAME: bCA0904x8_sl.dgn
SCALE: No Scale

BRIDGE NO. 07273 DRAWING NO. 53440

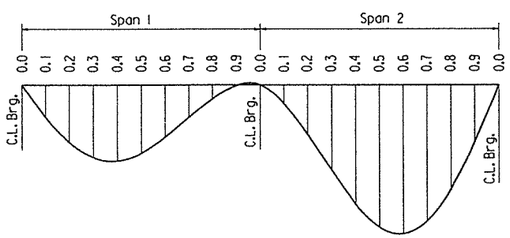
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	193	636
				①	07273	240' CONT. UNIT		53441

TABLE OF DEAD LOAD DEFLECTIONS-INCHES

Span	Point of Deflection	Structural Steel		Structural Steel +Slab		Str. Steel +Slab+Rail	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0	0	0	0	0	0	0
	0.1	0.134	0.125	0.755	0.637	0.822	0.708
	0.2	0.243	0.227	1.365	1.152	1.488	1.281
	0.3	0.311	0.290	1.734	1.463	1.891	1.628
	0.4	0.329	0.308	1.820	1.536	1.987	1.711
	0.5	0.300	0.281	1.634	1.380	1.786	1.540
	0.6	0.233	0.218	1.241	1.049	1.360	1.173
	0.7	0.146	0.138	0.758	0.642	0.833	0.720
	0.8	0.064	0.061	0.313	0.265	0.346	0.299
	0.9	0.007	0.006	0.015	0.013	0.018	0.016
2	0	0	0	0	0	0	0
	0.1	0.076	0.071	0.430	0.363	0.469	0.404
	0.2	0.209	0.196	1.176	0.993	1.282	1.105
	0.3	0.365	0.341	2.049	1.730	2.232	1.923
	0.4	0.509	0.476	2.869	2.421	3.122	2.688
	0.5	0.607	0.567	3.430	2.894	3.729	3.210
	0.6	0.635	0.592	3.590	3.030	3.900	3.357
	0.7	0.580	0.541	3.284	2.771	3.566	3.069
	0.8	0.444	0.414	2.517	2.124	2.732	2.351
	0.9	0.242	0.225	1.370	1.156	1.487	1.279
	0	0	0	0	0	0	0

Note: Camber for Dead Load Deflection ± 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing Negative sign (-) indicates point above chord.



DEAD LOAD DEFLECTION DIAGRAM
No Scale

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 Interim Revisions.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Grade 60 AASHTO M31 or M322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	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 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. 14991 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 :
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports. 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 "Reinforcing Steel - Bridge".

STRUCTURAL STEEL :
All structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36 unless otherwise noted.

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. Payment will be based on the basis of shapes shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Girder web and flange plates and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05.

All girders shall be blocked in their true position in the shop in groups as specified in subsection 807.54(b)(2). 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 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 diaphram. All girder dimensions are based on a temperature of 60 degrees F. A tolerance of 1/4" +/- 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 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.

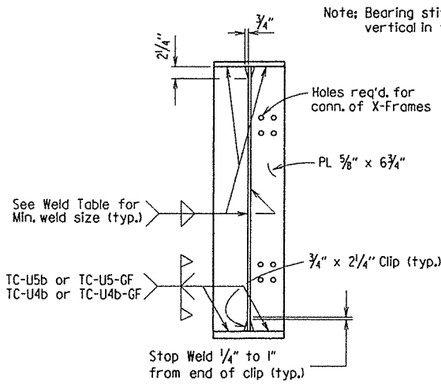
Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment for welds for these splices will be made.

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.

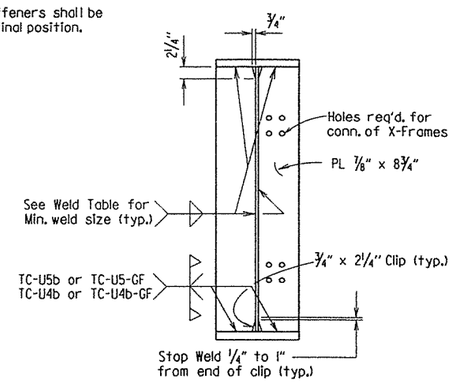
Field connections shall be bolted with high-strength bolts and shall be 3/4" ø bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges. Holes for 3/4" ø high-strength bolts may be 5/8" ø if a washer is supplied for use under both the nut and head of the bolt.

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.

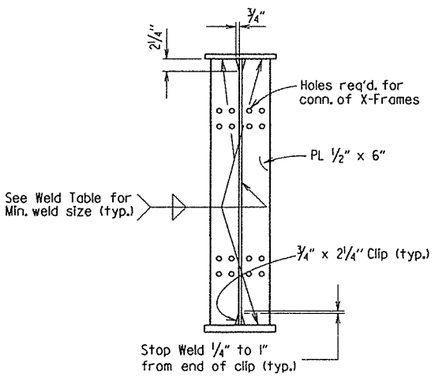
Note; Bearing stiffeners shall be vertical in final position.



END BEARING STIFFENER DETAIL
N.T.S.



INT. BEARING STIFFENER DETAIL
N.T.S.



CROSS FRAME CONNECTION DETAIL
N.T.S.

STATE OF ARKANSAS
Carl J. Puseliер
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. PUSELIER

BRIDGE ENGINEER

SHEET 6 OF 6

DETAILS OF 240'-0" CONTINUOUS PLATE GIRDER UNIT

CR 453 (FAUX ROAD)
ROUTE SEC.

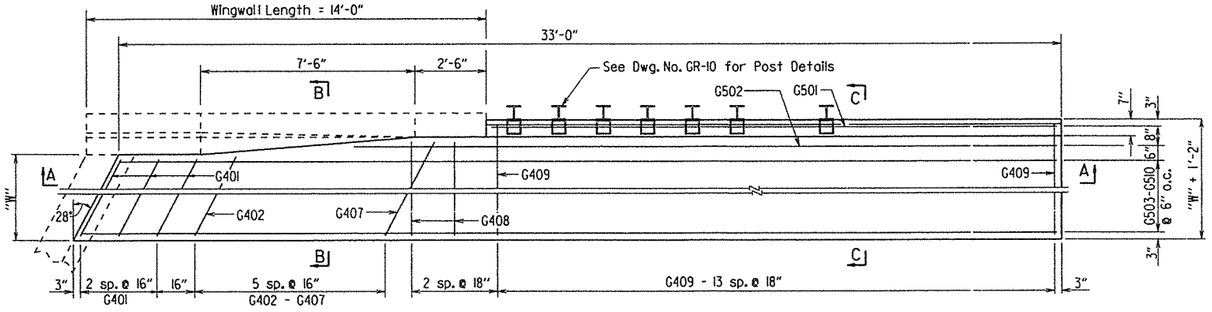
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

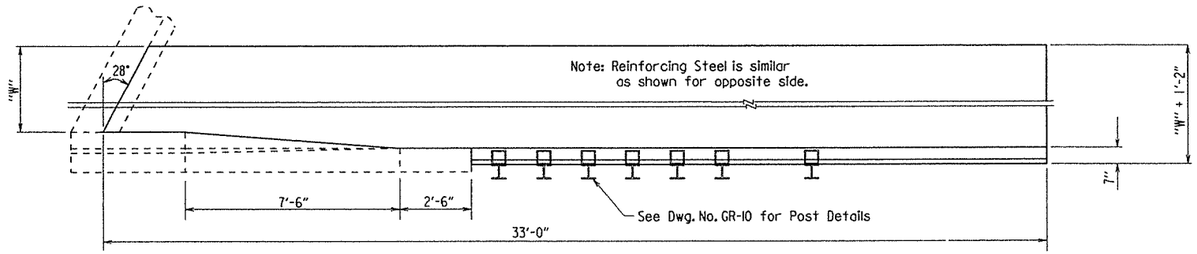
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BRIDGE NO. 07273 DRAWING NO. 53441

PRINT DATE: 7/3/2013

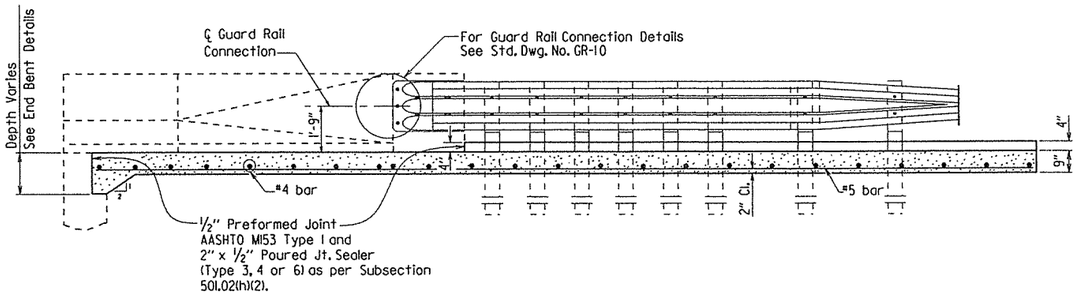
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				JOB NO.		CA0904	194	636
				①	07273	TYPE SPECIAL I GUTTERS		53442



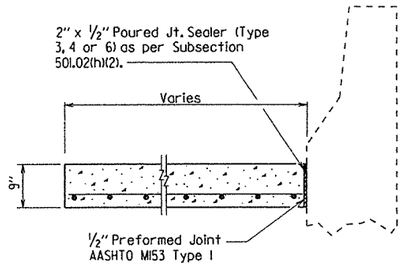


PLAN OF TYPE SPECIAL I APPROACH GUTTERS

"W" = 4'-0"

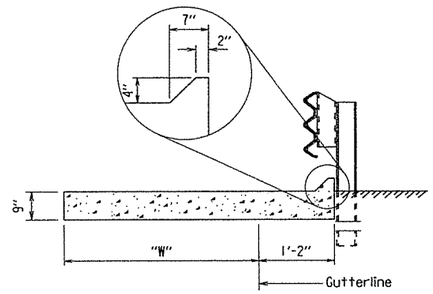


SECTION A - A



SECTION B - B

N.T.S.



SECTION C - C

N.T.S.

BAR LIST FOR ONE TYPE SPECIAL I GUTTER

Mark	No. Req'd, "W" = 4'-0"	Length
G401	3	4'-2"
G402-G407	1 each	4'-3" to 4'-9"
G408	2	4'-3"
G409	14	4'-10"
G501	1	19'-9"
G502	1	24'-7"
G503-G510	1 each	32'-9" to 34'-7"

QUANTITIES FOR ONE TYPE SPECIAL I GUTTER

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	404	4.52

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

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 of the Standard Specifications.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL I APPROACH GUTTERS CR 453 (FAUX RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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CHECKED BY: AWS DATE: 7/13 SCALE: 3/8" = 1'-0"

DESIGNED BY: STD. DATE: —

BRIDGE NO. 07273 DRAWING NO. 53442

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	195	636
				(1) B7274		LAYOUT	53443	

For R/W Data, see Rdwy. Plans

For Soil Borings, See Drwg. No. 53446.

CL Beckett Road (CR 49)

Ditch Flowline (& Toe of Slope)

Top of Cut

Toe of Fill

Pt. of Intersection
Constr. C.L. Hwy. 71 Sta. 930+84.05
CL Beckett Road Sta. 16+08.12

N 18°29'06"W 17+50

Tanyard Creek

Note: Use Type Special 2 Approach Slab and Gutters (W= 6'-0" & 10'-0") at both ends of bridge.

Toe of Rock Fill

C.L. Future Br. 'A'

Radial Line

37°02'16"

Toe of Rdwy. Embankment

Constr. C.L. U.S. Hwy. 71

Profile Grade Line (Bridge 'B')

CL Lanes

Radial Line

35° (typ. of C.L. Jt.)

70°

1V:2H or flatter

41'-0" min. clr.

15+00

Para. Rail

C.L. Proposed Br. 'B'

40'-0" Clr. Roadway

3.7% Slope

16'-5" min. clr.

43'-2" out-to-out

Approx. 2.1 miles to State Hwy. 72

20°

Pt. of Min. Vertical Clearance

Concrete Riprap (Bent 1 only) For Details, see Std. Drwg. No. 14995A.

CL Proposed Channel Relocation See Drwg. No. 53445 for Details and Quantities.

Aggregate Base Course (Class 7), see "Detail A" & "Layout of Bridge A Future Piling" on Dwg. No. 53444.

PLAN

Note: Stations, Dimensions, and Elevations shown in Elevation View are along CL Bridge 'B'. Stations along CL Bridge are set according to "Layout of Bridge Centerlines and Stationing" - see Drwg. No. 53444. Bents are skewed from radial lines as shown.

(1) Dimensions are taken from CL Bridge at CL Bent to Low Seat of Cap

(3) Radial to Constr. C.L. Sta. 934+97.00

Total Length of Bridge = 557'-8 3/8"

1'-4 3/16" | 210'-0" Cont. Comp. Plate Girder Unit (105'-105') | 345'-0" Cont. Comp. Plate Girder Unit (115'-115'-115') | 1'-4 3/16"

(2) Radial to Constr. C.L. Sta. 929+33.65

Slope Intercept Sta. 929+44.65

Beg. Br. Sta. 929+44.65 Elev. 1260.68

CL 2 1/2" Poured Silicone Jt.

CL Bent Sta. 930+51 Elev. 1261.65

CL Bridge to Low Steel @ 210' Unit = 6'-1 3/8"

CL Bent Sta. 931+56 Elev. 1262.92

Concrete Parapet Railing

CL Bent Sta. 932+71 Elev. 1264.68

CL Bridge to Low Steel @ 345' Unit = 6'-1 3/8"

CL Bent Sta. 933+86 Elev. 1266.82

End Br. Sta. 935+02.35 Elev. 1269.36

Slope Intercept Sta. 935+13.35

Guardrail - see Rdwy. Plans

6'-8 5/8" | 6'-9 1/2" | 6'-9 5/8" | 7'-0 1/2"

Exp. | Fix | Exp. | Exp. | Fix | Exp. | Exp.

45' Piles | 50' Piles | 58' Piles | 62' Piles | 12' Piles

Proposed Concrete Riprap

Elev. 1209.93 | Elev. 1204.63 | Elev. 1195.88 | Elev. 1197.78

CL Beckett Road

39'-0" min. vert. clr.

45'-0" | 62'-0" | 62'-0"

Tanyard Creek (after relocation)

Rock Fill - see Job SP "Rock Fill" & "Detail A" on Drwg. No. 53444.

Proposed Gradeline along CL Bridge

Existing Ground Line along CL Bridge

Bent No. 1 2 3 4 5 6

ELEVATION

Horizontal Curve along Constr. C.L. of U.S. Hwy. 71:
(Stations referred to are Constr. C.L. U.S. Hwy. 71 Stations)

P.I. Sta. 929+76.70
△ = 23°40'40.3" Left
D = 1°00'00"
T = 1201.03'
L = 2367.79'

Horizontal Curve along CL Bridge 'B':
(Stations referred to are CL Bridge 'B' Stations)

P.C. Sta. 917+67.80
P.I. Sta. 929+78.06
P.T. Sta. 941+53.77
△ = 23°40'40.3" Left
D = 0°59'32.6"
T = 1210.26'
L = 2385.97'
R = 5773.58'
e = 0.037 '/'

L = 1930'
-2.015% | 3.483%
PVI Sta. 929+34.66
PVI Elev. 1246.82

BRIDGE 'B' VERTICAL CURVE DATA ALONG PROFILE GRADE LINE

This vertical curve is to be used in construction of Bridge 'B' only. Stations are CL Bridge 'B' Stations.

Notes for Bridge 'B':

See General Notes on Drwg. No. 53444.

DETAIL DRAWINGS:	DRWG NOS.
End Bents	53447-53450
Intermediate Bents	53451-53454
Elastomeric Bearings	53464 & 53467
Common Details of Plate Girder Units	53455-53461
210' Cont. Plate Girder Unit	53462 & 53463
345' Cont. Plate Girder Unit	53465 & 53466
Steel Piling	14995A
Type Special 2 Approach Gutters	53469
Type Special 2 Approach Slab	53468

SHEET 1 OF 4

LAYOUT OF BRIDGE B OVER CR49 (BECKETT ROAD) & TANYARD CREEK HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S) BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER
BRIDGE ENGINEER

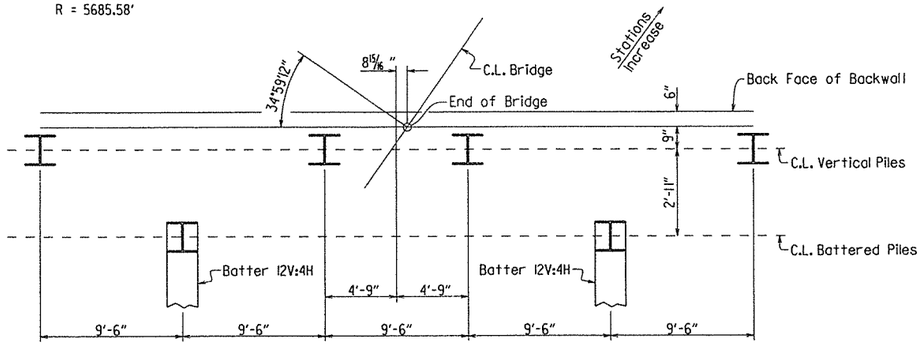
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BRIDGE NO. B7274 DRAWING NO. 53443

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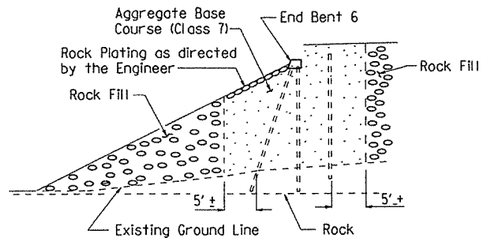
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				6	ARK.			
				JOB NO.		CA0904	196	636
				(1) B7274		LAYOUT		53444

Horizontal Curve along CL Bridge 'A':
(Stations referred to are CL Bridge 'A' Stations)
P.C. Sta. 917+83.54
P.I. Sta. 929+75.35
P.T. Sta. 941+33.14
△ = 23°40'40.3" Left
D = 1°00'27.9"
T = 1191.81'
L = 2349.60'
R = 5685.58'



LAYOUT OF BRIDGE A FUTURE PILING
(PILES NOT IN THIS CONTRACT)
No Scale

Note: Battered Piling in Wings are not shown.



Where rock fill is used 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 "Rock Fill".

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 Bent 6 of Bridge B7274. 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".

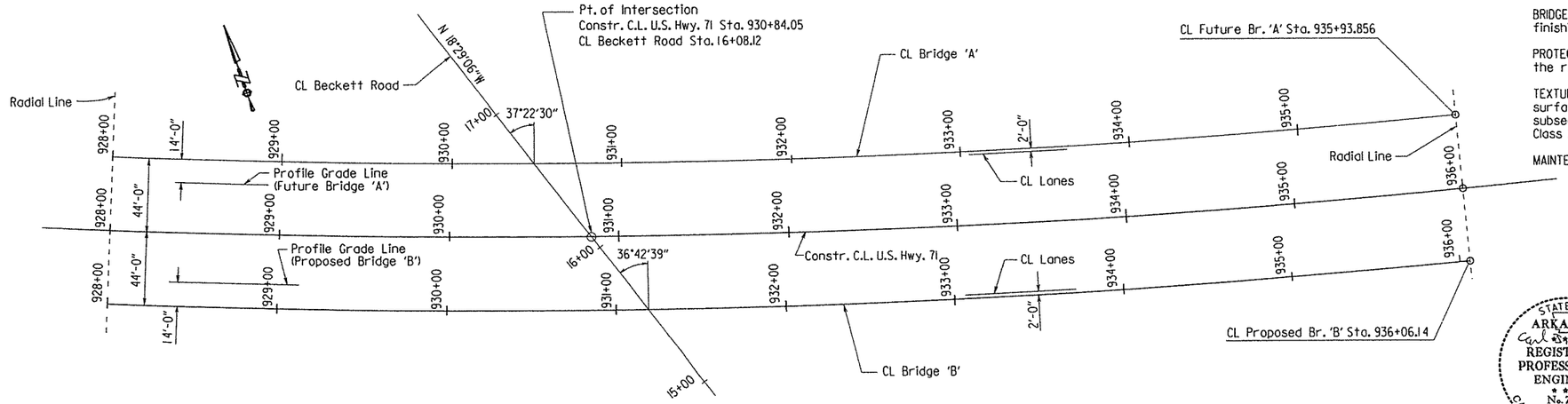
DETAIL A
(Shown Normal to End Bent 6)
Not to Scale

Note: Detail A is applicable to Bridges A & B @ End Bent 6.

METHOD OF ESTABLISHING BRIDGE CENTERLINES:

CL Bridges are concentric to the Constr. C.L. U.S. Hwy. 71. Bridge Centerlines are only for use in Bridge Construction.

Sta. 928+00 of CL Bridge 'A' and Sta. 928+00 of CL Bridge 'B' are defined as being 44', measured radially, on each side of Constr. C.L. U.S. Hwy. 71 Sta. 928+00, as shown in the sketch below.



LAYOUT OF BRIDGE CENTERLINES AND STATIONING

GENERAL NOTES

BENCH MARK: Cotton-picker Spike in 24" ø Ash Tree, 165.82' Left of Constr. C.L. Sta. 929+26.49, Elev. 1213.79.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted, Section and subsection refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 interim revisions.

LIVE LOADING: HL93
SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4000 psi.
Class S Concrete (substructure)	f'c = 3,500 psi.
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi.
Structural Steel (AASHTO M270, Gr. 50W)	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.

EXPLORATORY HOLES: The Contractor shall drill exploratory holes at both footing locations in Bents 2 and 3 in accordance with Job SP "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.

STEEL PILING: All piling shall be HP 12x53 (Grade 55) and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons per pile and into material designated as hard cherty limestone on the boring legend. Piles in end bents 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.

Minimum penetration for all piling at end bents shall be 8' below natural ground. Minimum penetration for all piling at intermediate bents shall be 8' below bottom of footing.

PREBORING: Preboring is required for all piling in Bents 2 and 3 if exploratory holes indicate that the depth to rock is less than 8' below bottom of footing plan elevation. Preboring shall be to a minimum 3' depth into material designated as Chert or Hard Cherty 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 hole 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".

FOOTINGS: The top of the footings at Bent 2 shall be set a minimum of 2 feet below the bottom of the concrete riprap end slope. The top of footings at Bents 3 and 5 shall be set a minimum of 2' below the natural ground line. The top of footings at Bent 4 shall be set a minimum of 2' below the bottom of the channel of relocated Tanyard Creek. In addition, all spread footings shall be set a minimum of 2' into rock. Rock excavations, where required, 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 spread footings shall be poured directly against excavated surfaces of rock. Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled in accordance with subsection 801.08.

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 the face and top of the concrete parapet rail.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Job SP "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.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

SHEET 2 OF 4

LAYOUT OF BRIDGE B OVER CR49 (BECKETT ROAD) & TANYARD CREEK HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S) BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

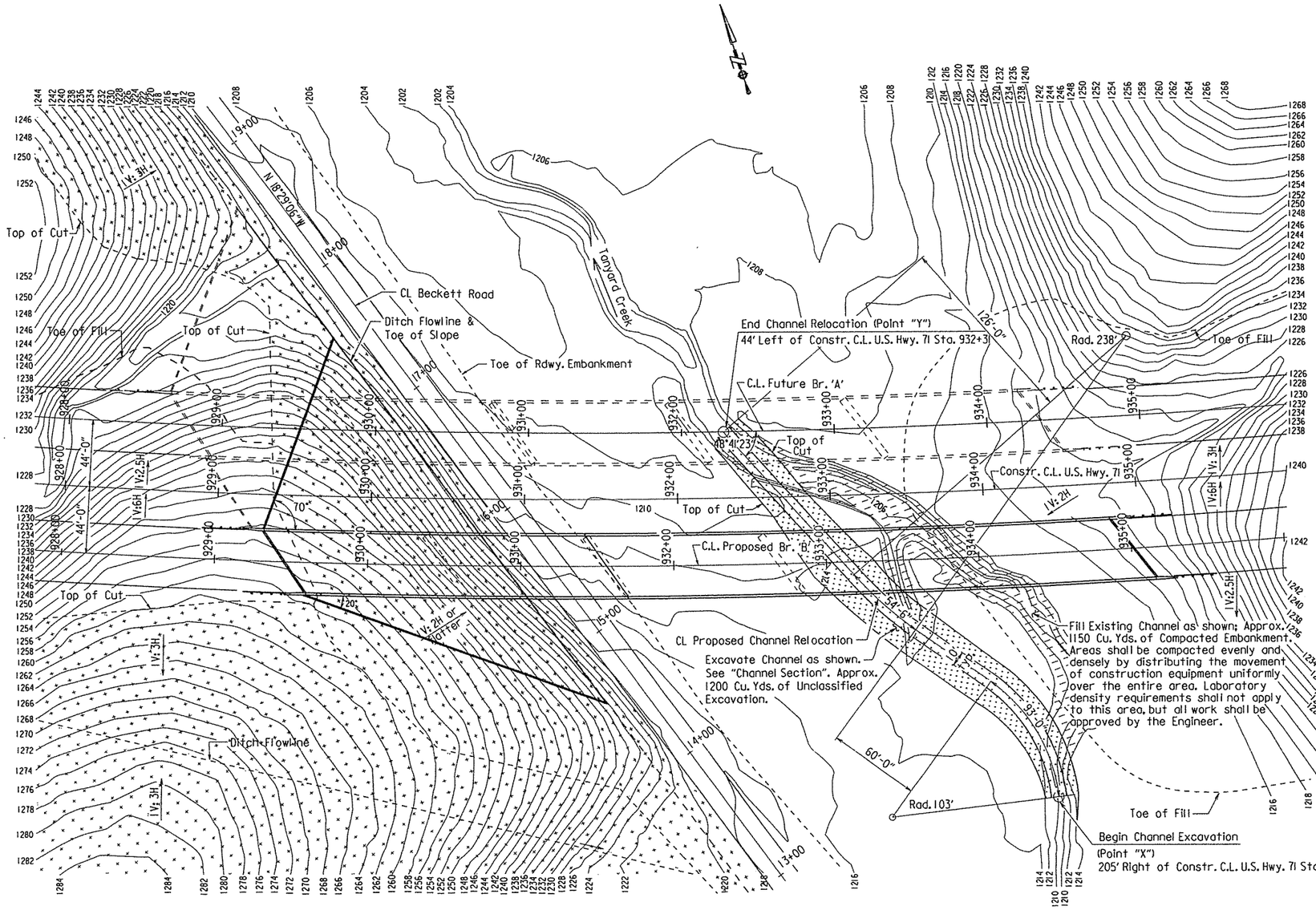
STATE OF ARKANSAS
Carl J. Puseller
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. PUSELLER
BRIDGE ENGINEER

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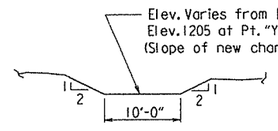
BRIDGE NOS. B7274 DRAWING NO. 53444

PRINT DATE: 10/2/2013

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				6	ARK.			
				JOB NO.		CA0904	197	636
				(1) B7274		LAYOUT		53445



LOCATION SKETCH



CHANNEL SECTION
NTS

SHEET 3 OF 4

LAYOUT OF BRIDGE B OVER
CR49 (BECKETT ROAD) & TANYARD CREEK
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS) (S)
BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION
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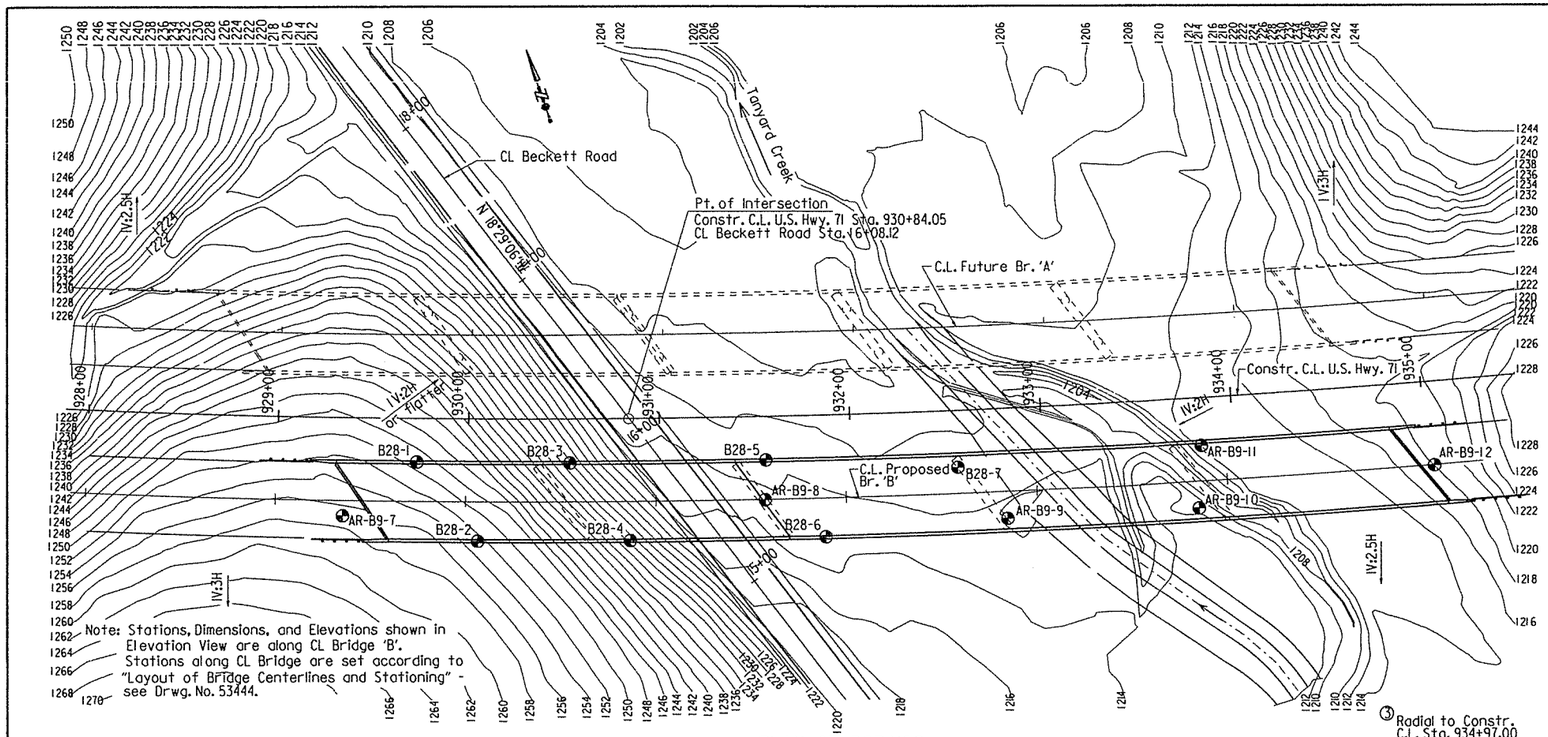
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BRIDGE NOS. B7274

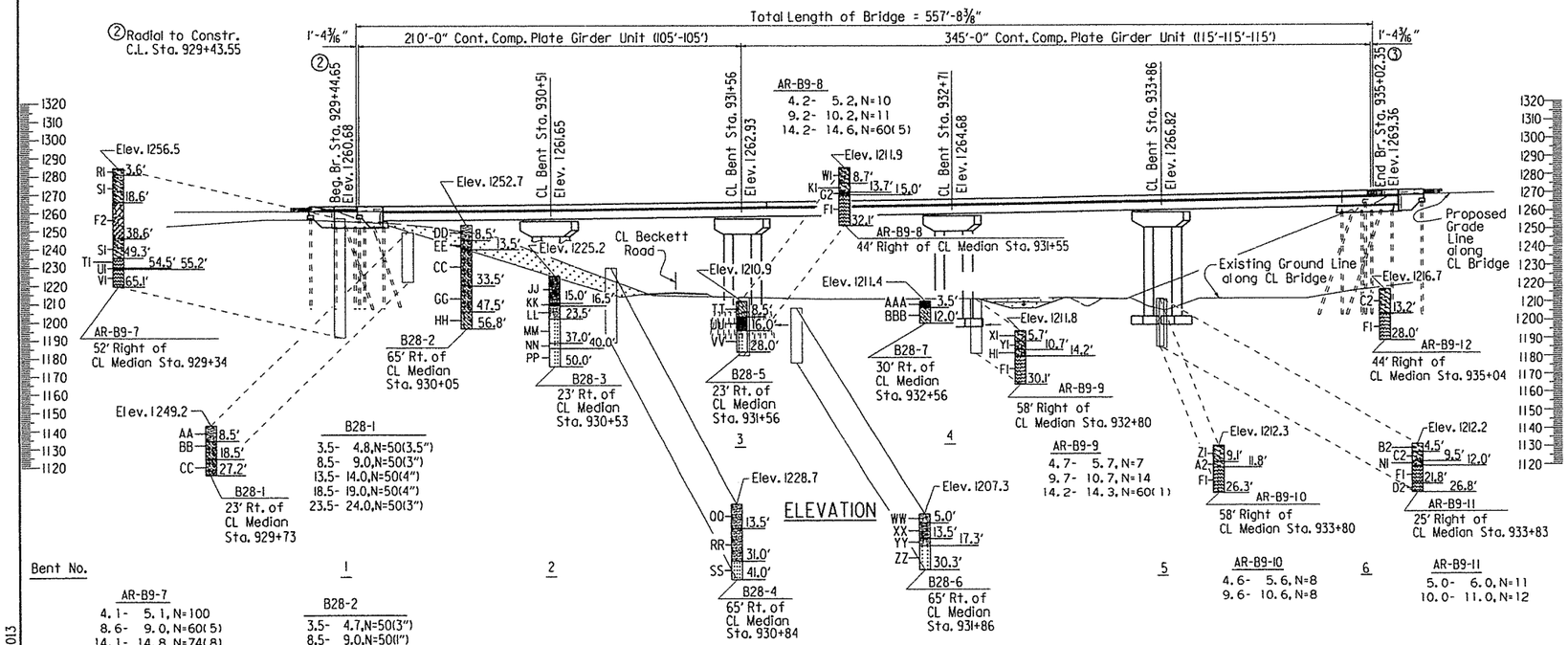
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				6	ARK.			
				JOB NO.		CA0904	198	636
				① B7274		LAYOUT		53446



PLAN OF BORINGS



ELEVATION

Note: Reference to CL Median in Boring Information = Constr. C.L. U.S. Hwy. 71

BORING LEGEND

Note: Materials designated A1 thru G2 refer to borings for Bridge "A" (AR-B9-1 thru AR-B9-6) and Bridge "B" (AR-B9-7 thru AR-B9-12), obtained from AHTD Materials Division report dated January 23, 2008.

A1-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with some Cobbles
B1-Hard, Gray Fractured Cherty Limestone with some Cherty Clay
C1-Hard, Gray Cherty Limestone
D1-Wet, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
E1-Wet, Stiff, Reddish Brown Sandy Clay with Gravel (Chert Fragments)
F1-Hard, Gray Cherty Limestone
G1-Moist to Wet, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
H1-Wet, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand and some Cobbles
J1-Wet, Loose, Reddish Brown Clayey Sand with Gravel (Chert Fragments)
K1-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
L1-Wet, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
M1-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
N1-Wet, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
P1-Wet, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
Q1-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Cobbles
R1-Moist, Medium Stiff, Brown Clay with Sandstone and Shale Fragments
S1-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
T1-Hard, Gray Fractured Cherty Limestone with some Cherty Clay
U1-Cavity (54.5' to 55.2')
V1-Hard, Gray Cherty Limestone
W1-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
X1-Moist, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
Y1-Wet, Medium Stiff to Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
Z1-Moist, Medium Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay
A2-Wet, Medium Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay
B2-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Cobbles
C2-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
D2-Hard, Gray Fractured Cherty Limestone
E2-Wet, Very Dense, Brown and Gray Clayey Gravel (Chert Fragments)
F2-Moist, Very Dense, Gray Clayey Gravel (Chery Fragments)
G2-Wet, Very Dense, Reddish Brown Sand with Gravel (Chert Fragments) and some Clay

Note: Materials designated as AA thru BBB refer to borings B28-1 thru B28-7, obtained from Geotechnical Investigation Report by others dated February 2004.

AA-GRAVELLY FAT CLAY, white, light brown and red, very stiff, dry to moist
BB-SANDY GRAVEL, few cobbles, with chert seams, white and dark brown, very dense, dry to moist
CC-SANDY GRAVEL, few cobbles, white and red, very dense, moist to wet
DD-FAT CLAY, some gravel, few cobbles, reddish brown and white, very stiff, dry to moist
EE-SANDY GRAVEL, trace cobbles, white and brown, very dense, moist to wet
FF-SANDY GRAVEL, few chert seams, white, brown and red, very dense, moist to wet
GG-SANDY GRAVEL, some cobbles, white and light brown, very dense, wet
HH-CHERT, stratified, trace to few limestone seams, white, light gray and gray, very fine grained, thin bedded, slightly weathered, hard, solid
JJ-GRAVEL, little clay, light brown and white, medium dense to very dense, dry
KK-GRAVEL/HIGHLY FRACTURED CHERT SEAM, white, very dense, dry
LL-SANDY GRAVEL, some clay, little chert seams, yellowish brown and white, dense, moist to wet, (vertical joints from 19 to 21ft.)
MM-CHERT, some clay seams, stratified, white and light gray, very fine grained, very thin bedded, highly weathered, moderately hard, highly fractured
NN-CHERT, stratified, trace limestone seams, light gray to gray, very fine grained, very thin bedded, highly weathered, hard, solid
PP-CHERT, stratified, trace limestone seams, trace shale laminations, white, light gray to dark gray, very fine grained, thin bedded, fresh, hard, solid
QQ-SANDY GRAVEL, some clay, white, yellowish brown and dark brown, dense to very dense, dry to moist
RR-SANDY GRAVEL, trace clay, white, yellowish brown and dark brown, very dense, dry to moist
SS-CHERT, stratified, trace shale laminations, white, light gray to dark gray, very fine grained, medium bedded, fresh, hard, solid
TT-LEAN CLAY, some gravel, reddish brown and white, stiff, moist
UU-GRAVEL, some clay, reddish brown, white and brown, loose to medium dense, wet
VV-CHERT, stratified, trace limestone seams and shale laminations, white and light gray, fine grained, medium to thick bedded, fresh, hard, solid
WW-SANDY GRAVEL, trace clay, white and light brown, medium dense, wet
XX-FAT CLAY, little gravel, reddish brown and white, firm, wet
YY-SANDY GRAVEL, reddish brown, white and light brown, medium dense, wet
ZZ-CHERT, stratified, trace limestone seams and shale laminations, white and light gray, fine grained, medium bedded, weathered becoming slightly weathered with depth, hard, solid
AAA-GRAVEL, little clay, light brown, medium dense, dry
BBB-GRAVEL, some clay, red, medium dense, moist

SHEET 4 OF 4

LAYOUT OF BRIDGE B OVER CR49 (BECKETT ROAD) & TANYARD CREEK HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S) BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
BRIDGE ENGINEER

DRAWN BY: JAC DATE: 3-1-07 FILENAME: bCA0904b9_11.dgn
CHECKED BY: ANS DATE: 7/15/13 SCALE: 1"=40'-0"
DESIGNED BY: JAC DATE: 1/2007

BRIDGE NO. B7274 DRAWING NO. 53446

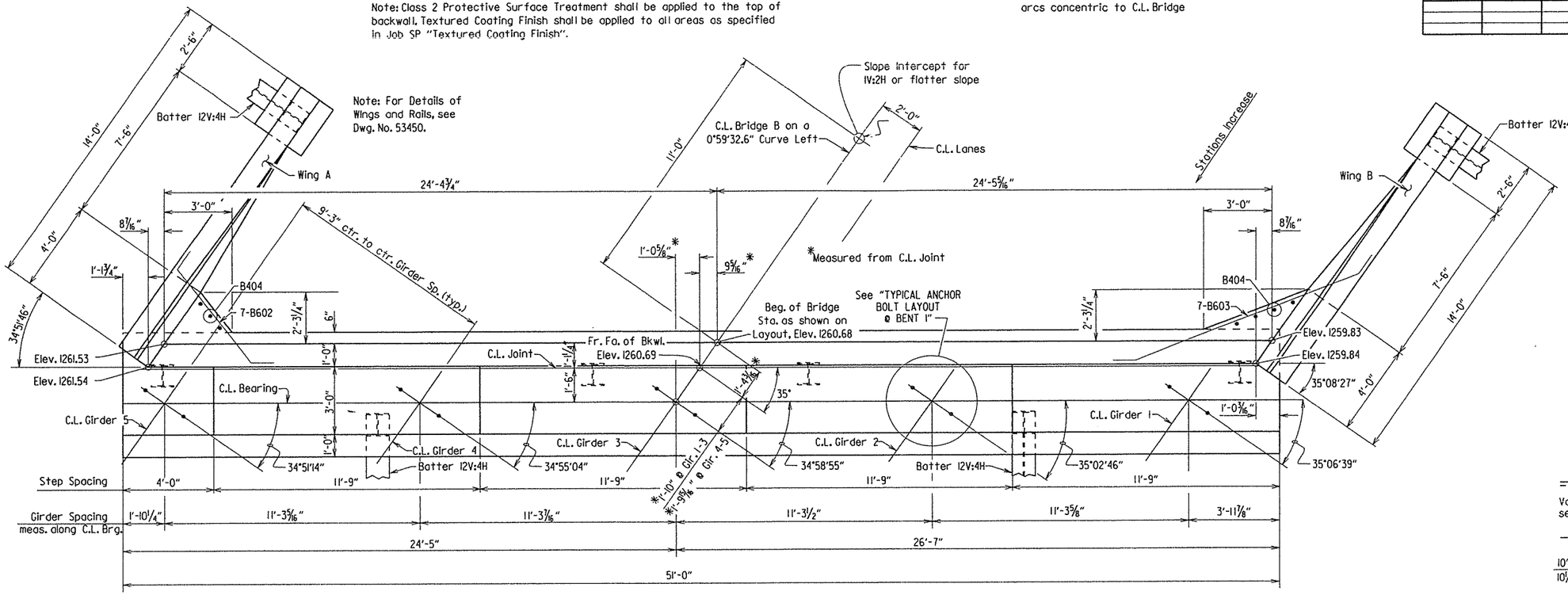
PRINT DATE: 10/2/2013

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				6	ARK.			
				JOB NO.		CA0904	199	636
				(1) B7274		End Bents		53447

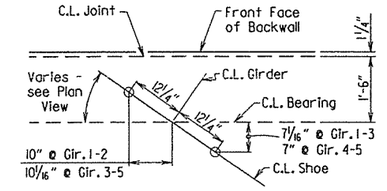
Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall. Textured Coating Finish shall be applied to all areas as specified in Job SP "Textured Coating Finish".

Note: Wings are constructed on arcs concentric to C.L. Bridge

Note: For Details of Wings and Rails, see Dwg. No. 53450.



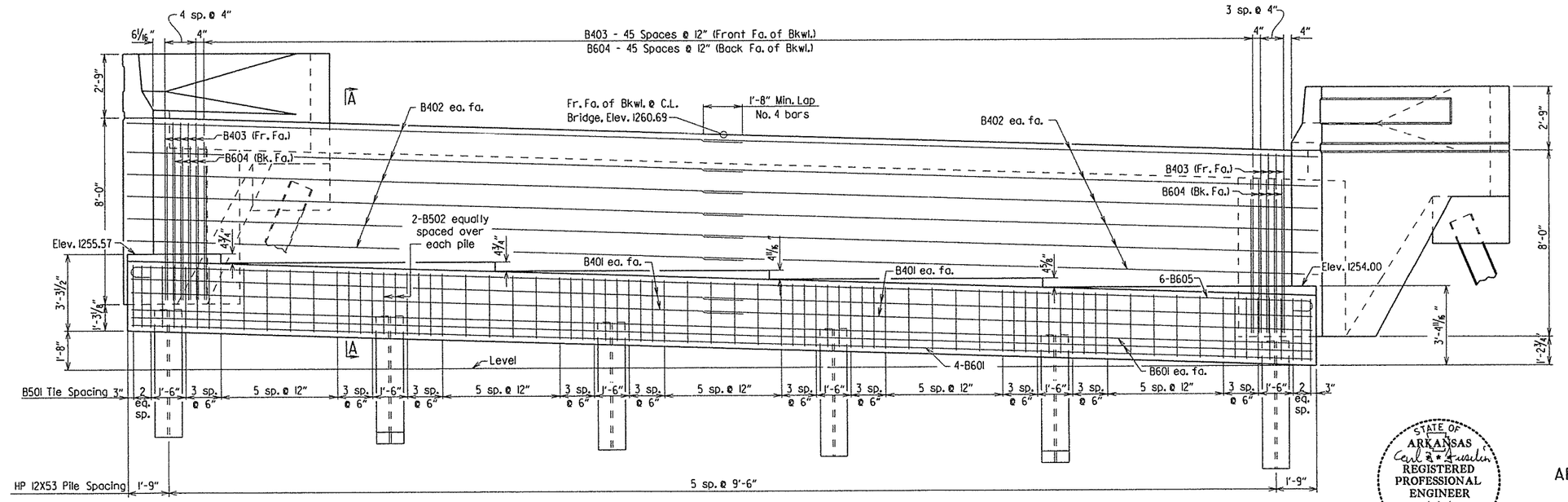
PLAN - END BENT NO. 1



For Details of Elastomeric Bearings, see Dwg. No. 53464.

TYPICAL ANCHOR BOLT LAYOUT @ BENT 1

No Scale



ELEVATION OF BENT NO. 1
(LOOKING BACK)

Note: For General Notes, Section A-A, and Bar List, see Dwg. No. 53449.

SHEET 1 OF 4

DETAILS OF BENTS 1 AND 6
CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
Carl I. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/14/13
CARL I. FUSSELIER
BRIDGE ENGINEER

DRAWN BY: JYP DATE: 7/06/07
CHECKED BY: AMS DATE: 7/13
DESIGNED BY: JAC DATE: 6/2007
FILENAME: bCA0904b9_bl.dgn
SCALE: ⅜" = 1'-0" or as noted

BRIDGE NO. B7274 DRAWING NO. 53447

PRINT DATE: 7/8/2013

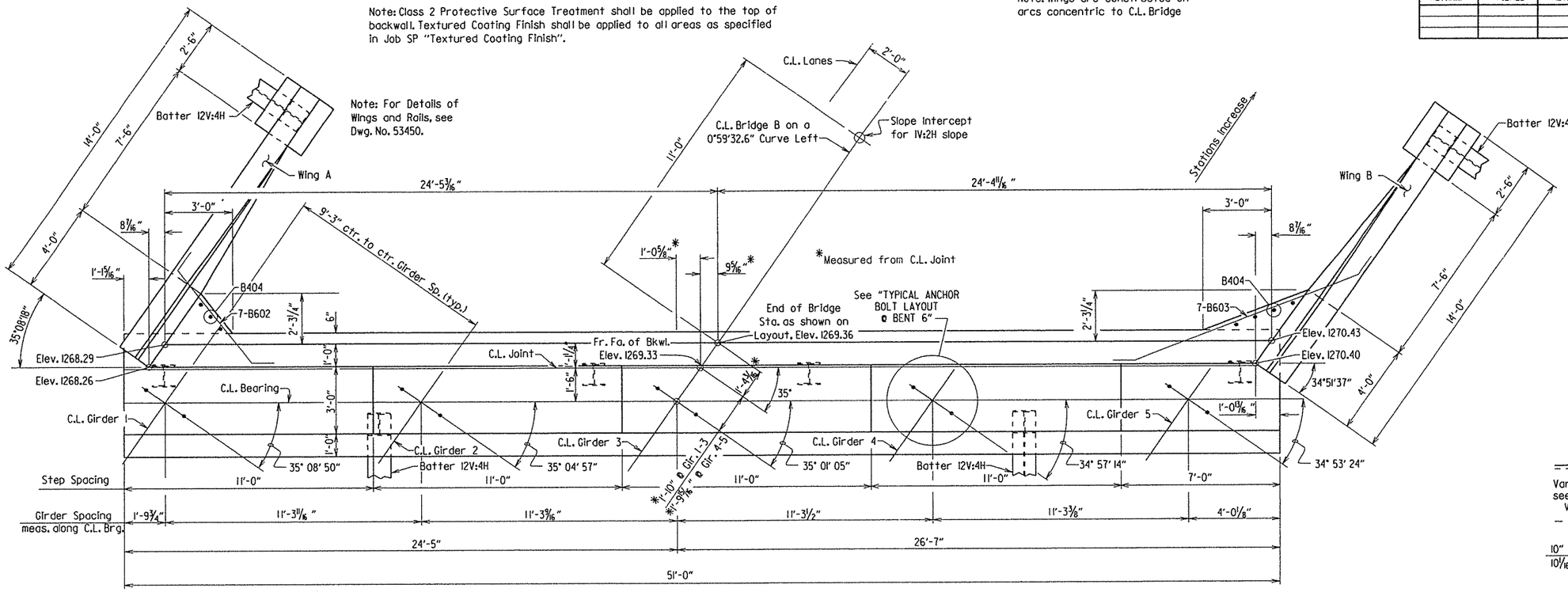
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	200	636
(1) B7274		End Bents		53448

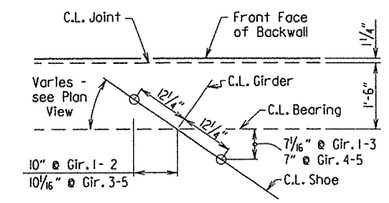
Note: Class 2 Protective Surface Treatment shall be applied to the top of backwall. Textured Coating Finish shall be applied to all areas as specified in Job SP "Textured Coating Finish".

Note: Wings are constructed on arcs concentric to C.L. Bridge

Note: For Details of Wings and Rails, see Dwg. No. 53450.



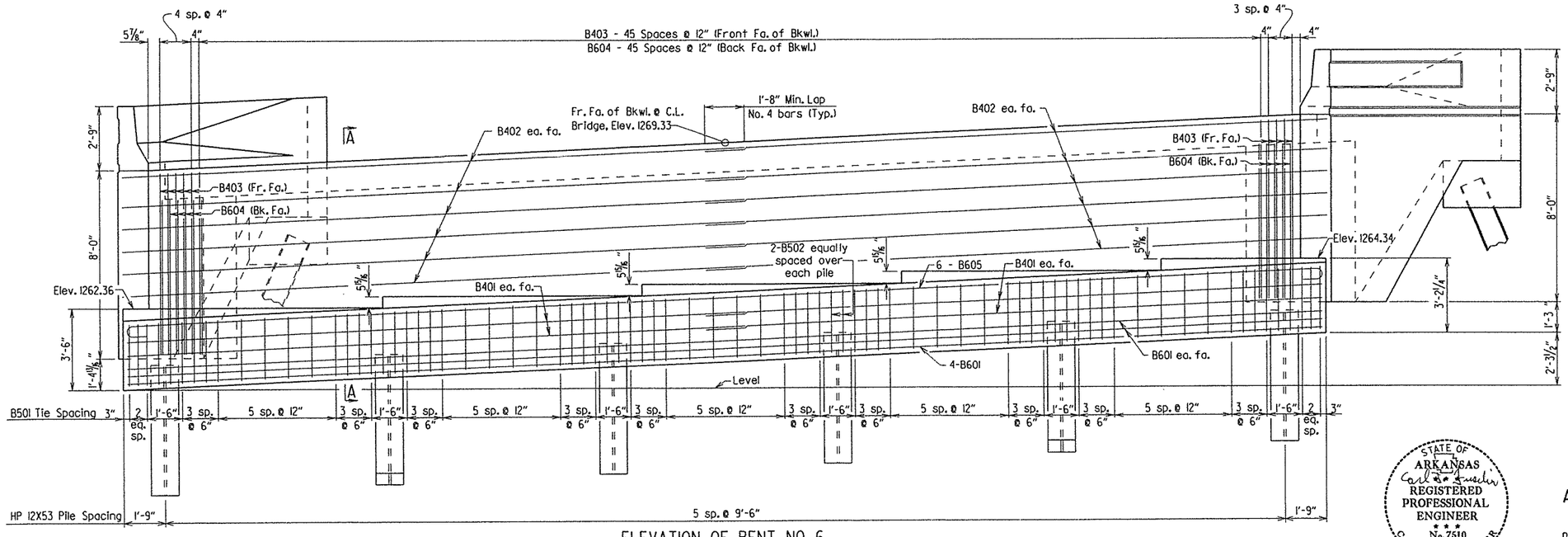
PLAN OF BENT NO. 6



For Details of Elastomeric Bearings, see Dwg. No. 53467.

TYPICAL ANCHOR BOLT LAYOUT @ BENT 6

No Scale



ELEVATION OF BENT NO. 6
(LOOKING AHEAD)

Note: For General Notes, Section A-A, and Bar List, see Dwg. No. 53449.

SHEET 2 OF 4
DETAILS OF BENTS 1 AND 6
CR 49 (BECKETT ROAD)

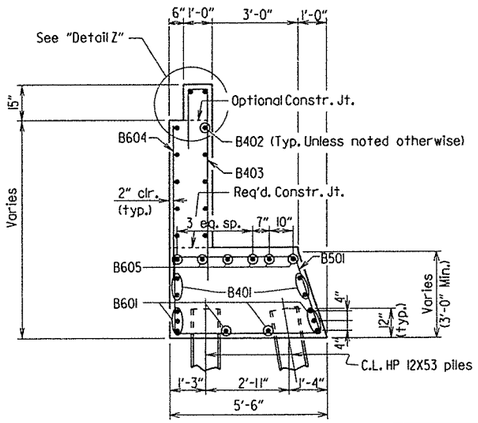
STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
BRIDGE ENGINEER

ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 7/06/07 FILENAME: bCA0904b9_bl.dgn
CHECKED BY: AMS DATE: 7/13 SCALE: 3/8" = 1'-0" or as noted
DESIGNED BY: JAC DATE: 6/2007
BRIDGE NO. B7274 DRAWING NO. 53448

PRINT DATE: 7/8/2013

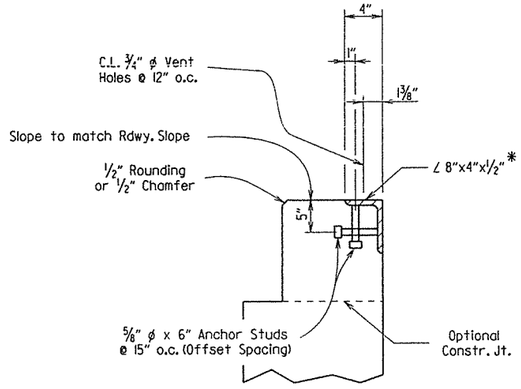
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				6	ARK.			
				JOB NO.		CA0904	201	636
				(1) B7274		End Bents		53449



SECTION A-A

3/8" = 1'-0"

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 "EXPANSION DEVICE INSTALLATION AT END BENTS" on Dwg. No. 53458 for additional information.



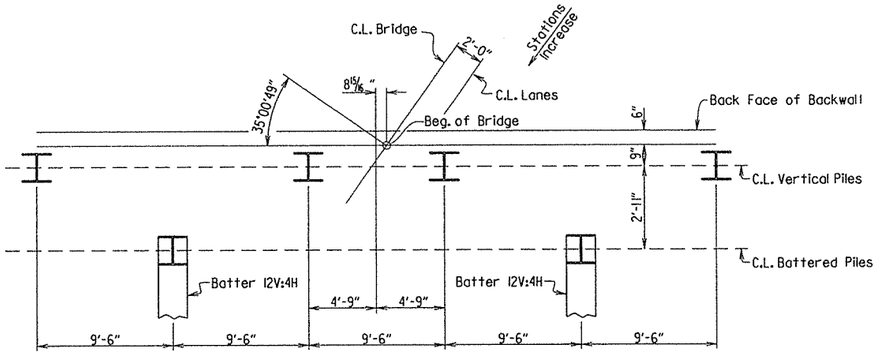
DETAIL Z

No Scale

NOTE: Concrete shall be hand packed under the joint armor in the backwall.

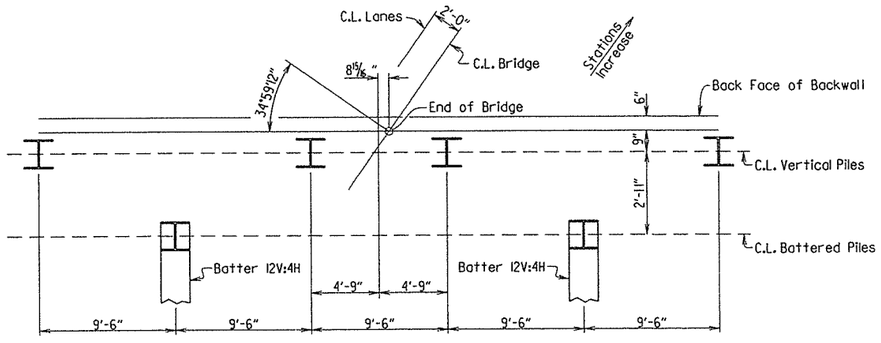
NOTE: For additional joint details, see Dwg. No. 53458.

* The profile of the backwall angle shall be established based upon the vertical curve in conjunction with the skew.



LAYOUT OF PILES (FOR BENT 1)

No Scale



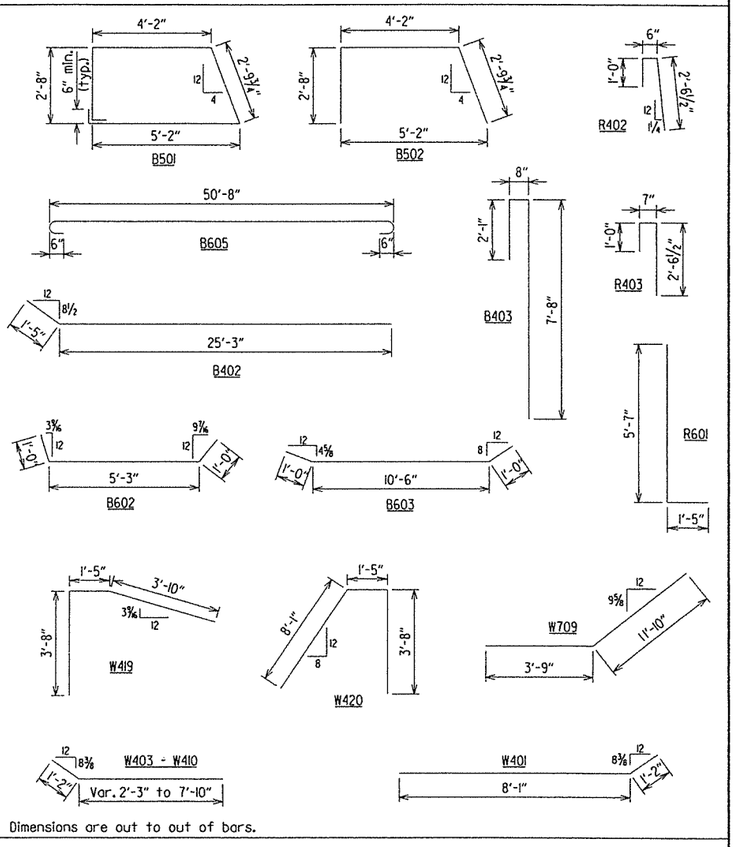
LAYOUT OF PILES (FOR BENT 6)

No Scale

BAR LIST (PER END BENT)

MARK	NO. REQ'D.	LENGTH	P.D.
B401	8	26'-2"	Str.
B402	24	26'-8"	2"
B403	56	10'-3"	2"
B404	7	6'-0"	Str.
B501	66	15'-4"	2 1/2"
B502	12	9'-5"	2 1/2"
B601	8	50'-8"	Str.
B602	7	7'-3"	4 1/2"
B603	7	12'-6"	4 1/2"
B604	55	6'-7"	Str.
B605	6	52'-0"	4 1/2"
R401	12	13'-8"	Str.
R402	16	3'-11"	2"
R403	8	4'-0"	2"
R601	16	6'-10"	4 1/2"
R602	6	5'-0"	Str.
W401	8	9'-3"	2"
W402	8	10'-5"	Str.
W403 - W410	2 each	Var. 3'-5" to 9'-0"	2"
W411 - W418	2 each	Var. 4'-6" to 10'-2"	Str.
W419	3	8'-9"	2"
W420	3	13'-0"	2"
W701	12	13'-8"	Str.
W702	4	10'-5"	Str.
W703	4	9'-6"	Str.
W704	4	8'-7"	Str.
W705	4	7'-8"	Str.
W706	4	6'-8"	Str.
W707	4	5'-9"	Str.
W708	4	4'-10"	Str.
W709	4	15'-7"	5 1/4"

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 = 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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Structural steel in end bents shall be AASHTO M 270, Grade 50W and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see Layout, Dwg. Nos. 53443-53446.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
CARL J. FUSELIER

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SHEET 3 OF 4

DETAILS OF BENTS 1 AND 6

CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 7/16/07 FILENAME: bCA0904b9_bl.dgn

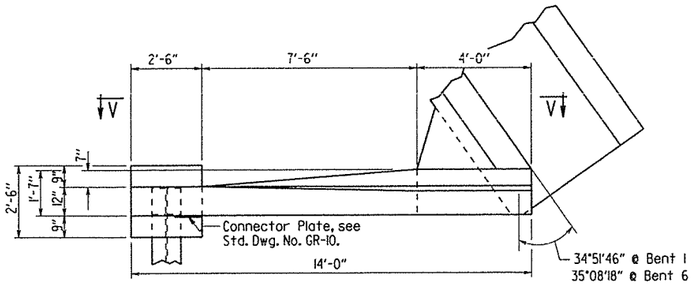
CHECKED BY: AMS DATE: 7/13 SCALE: as noted

DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53449

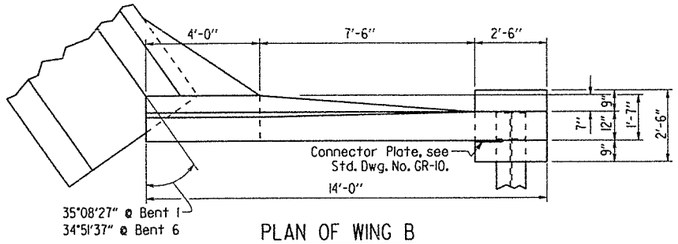
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	202	636
				① B7274		End Bents		53450



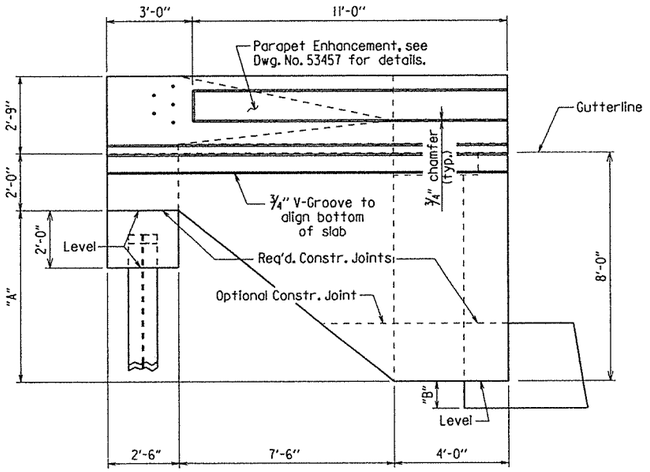
PLAN OF WING A

3/8" = 1'-0"



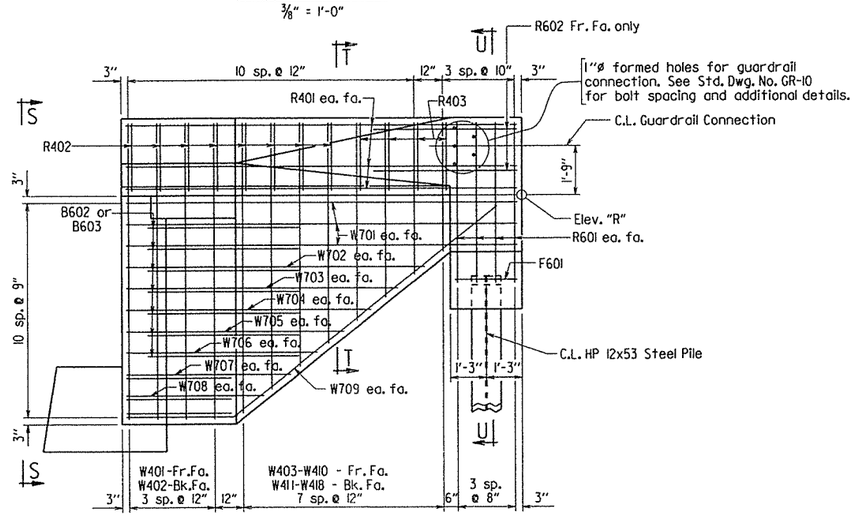
PLAN OF WING B

3/8" = 1'-0"



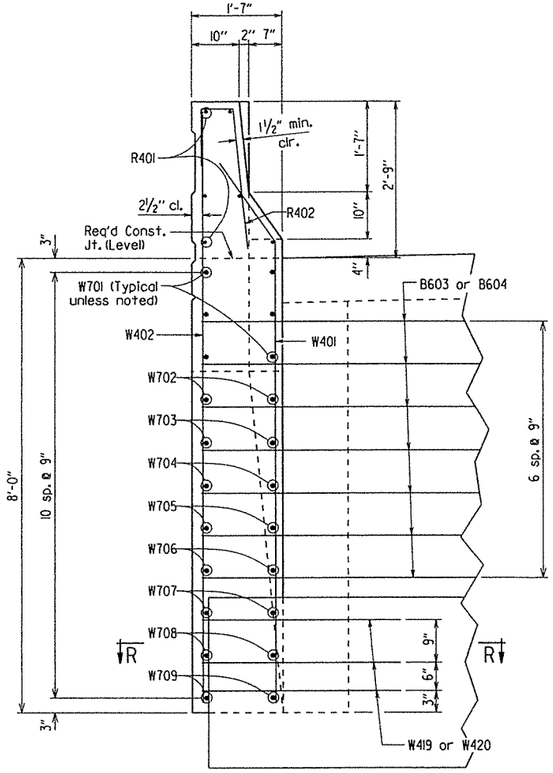
VIEW W-W

3/8" = 1'-0"



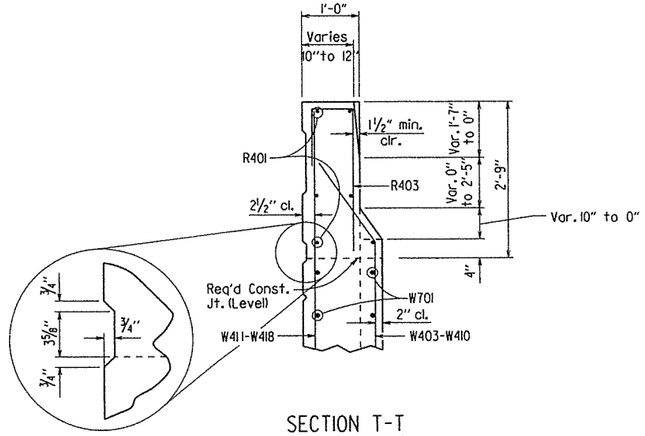
VIEW V-V

3/8" = 1'-0"



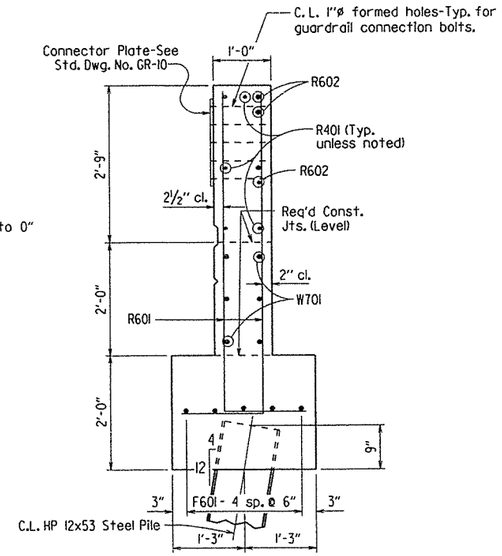
VIEW S-S

3/4" = 1'-0"



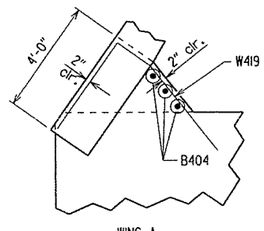
SECTION T-T

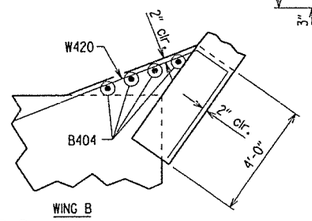
3/4" = 1'-0"



SECTION U-U

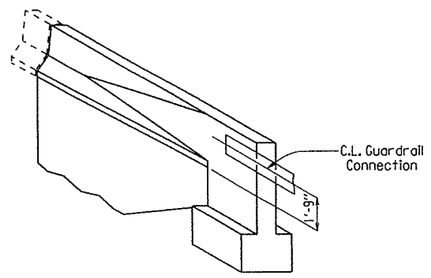
3/4" = 1'-0"





SECTION R-R

3/8" = 1'-0"



THREE DIMENSIONAL VIEW OF RAIL

No Scale

TABLE OF VARIABLES

	Bent	Wing	"A"	"B"	Elev. 'R'
BRIDGE B	1	A	5'-10 5/8"	1'-3 1/8"	1261.43
		B	5'-10 11/16"	1'-2 3/4"	1259.74
	6	A	6'-3 5/16"	1'-4 1/16"	1268.59
		B	6'-4"	1'-3"	1270.74

STATE OF ARKANSAS
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7/16/13
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SHEET 4 OF 4
DETAILS OF BENTS 1 AND 6
CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 7/16/07 FILENAME: bCA0904b9_bl.dgn

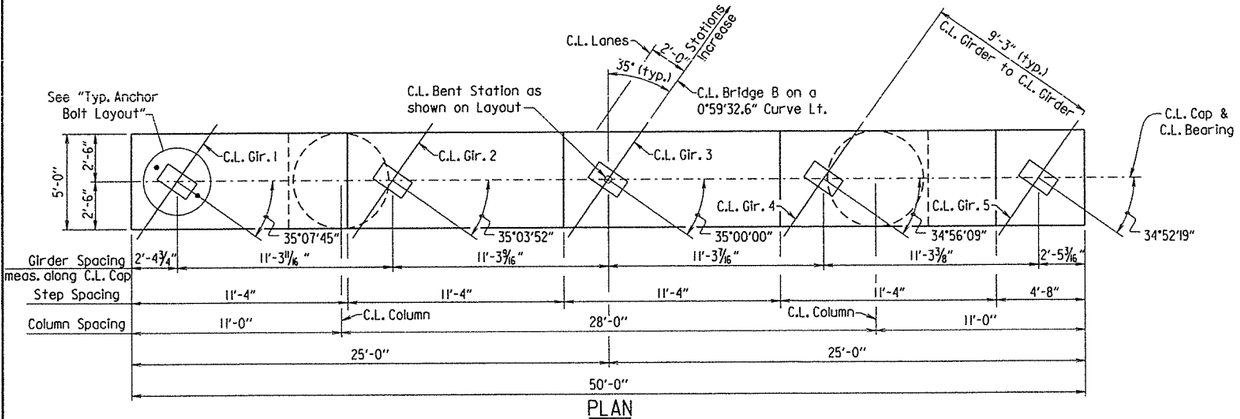
CHECKED BY: AMS DATE: 7/16/13 SCALE: as noted

DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53450

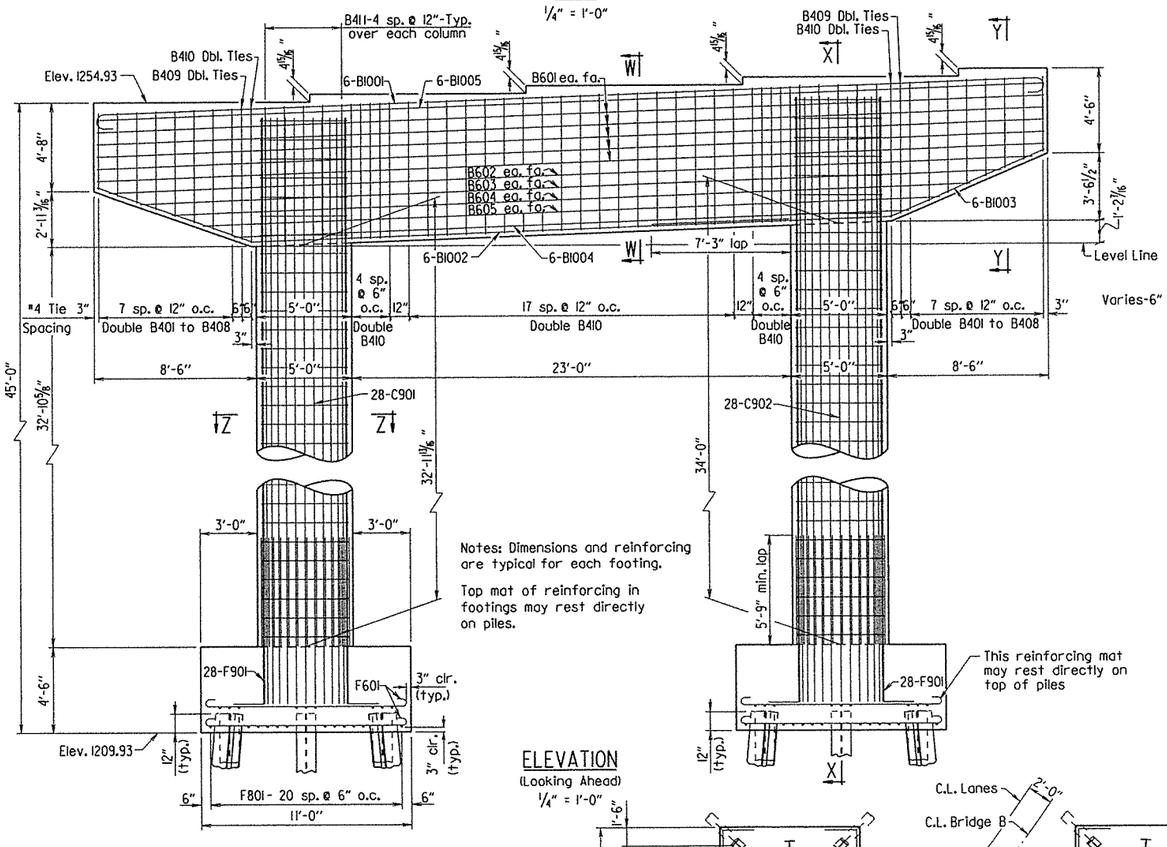
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	203	636
				(1) B7274		INT. BENT		53451



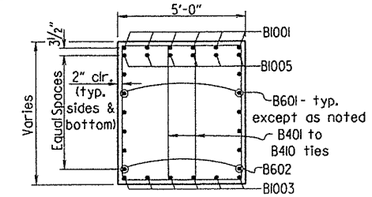
PLAN

1/4" = 1'-0"



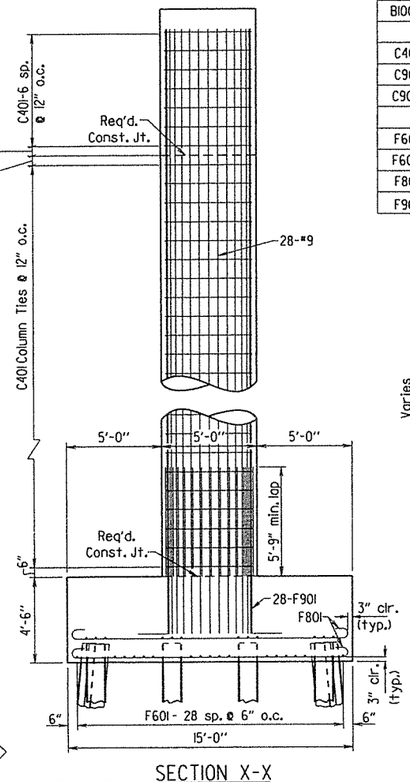
Notes: Dimensions and reinforcing are typical for each footing.

Top mat of reinforcing in footings may rest directly on piles.



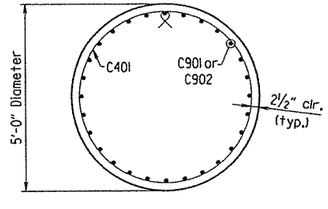
SECTION Y-Y

No Scale



SECTION X-X

1/4" = 1'-0"



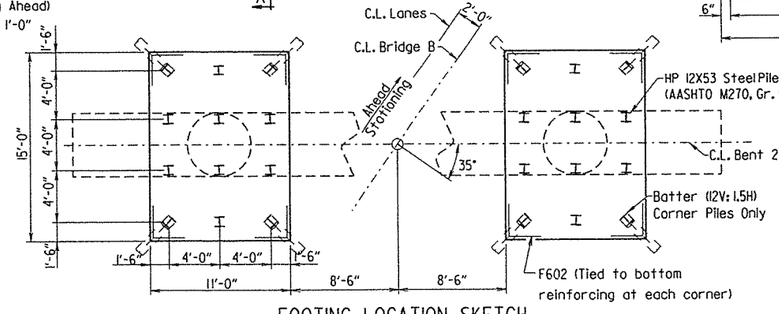
SECTION Z-Z

½" = 1'-0"

ELEVATION

(Looking Ahead)

1/4" = 1'-0"

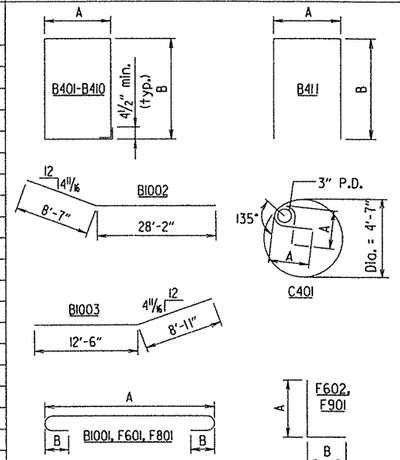


FOOTING LOCATION SKETCH

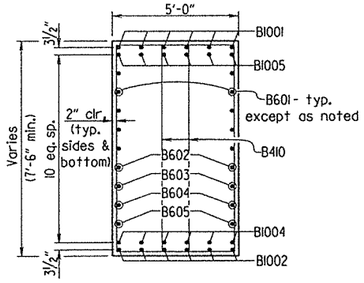
No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.	BENDING DIAGRAMS
B401-B408	4 ea.	14'-3" to 19'-9"	2'-10½"	4'-6" to 6'-9"	2"	
B409	4	20'-1"	2'-10½"	6'-11"	2"	
B410	60	20'-7"	2'-10½"	7'-2"	2"	
B411	10	19'-10"	4'-8"	7'-2"	2"	
B601	10	49'-8"			Str.	
B602	2	48'-6"			Str.	
B603	2	45'-3"			Str.	
B604	2	42'-0"			Str.	
B605	2	38'-9"			Str.	
B1001	6	52'-6"	49'-8"	1½"	10"	
B1002	6	36'-9"			10"	
B1003	6	21'-5"			10"	
B1004	6	35'-5"			Str.	
B1005	6	49'-8"			Str.	
C401	81	15'-5½"	5"		3"	
C901	28	39'-6"			Str.	
C902	28	40'-6"			Str.	
F601	58	11'-10"	10'-6"	6"	4½"	
F602	8	4'-10"	2'-6"	2'-6"	4½"	
F801	42	16'-4"	14'-6"	8"	6"	
F901	56	10'-5"	9'-1"	1'-7"	9"	

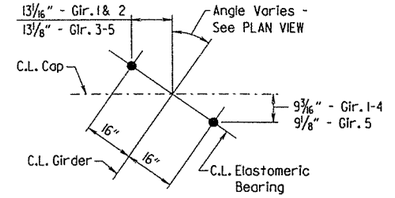


Dimensions are out to out of bars.



SECTION W-W

No Scale



For Details of Elastomeric Bearings, see Dwg. No. 53464.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

GENERAL NOTES

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
7/10/12
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF BENT 2
CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 9-6-07 FILENAME: bCA0904b9_b2.dgn

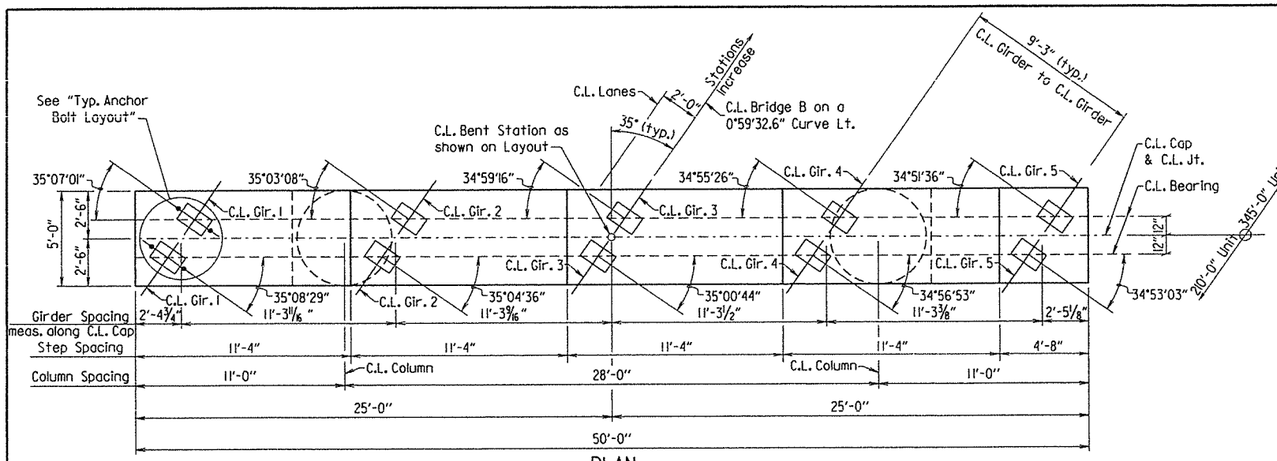
CHECKED BY: AMS DATE: 1/09 SCALE: as noted

DESIGNED BY: JAC DATE: 7/2007

BRIDGE NO. B7274 DRAWING NO. 53451

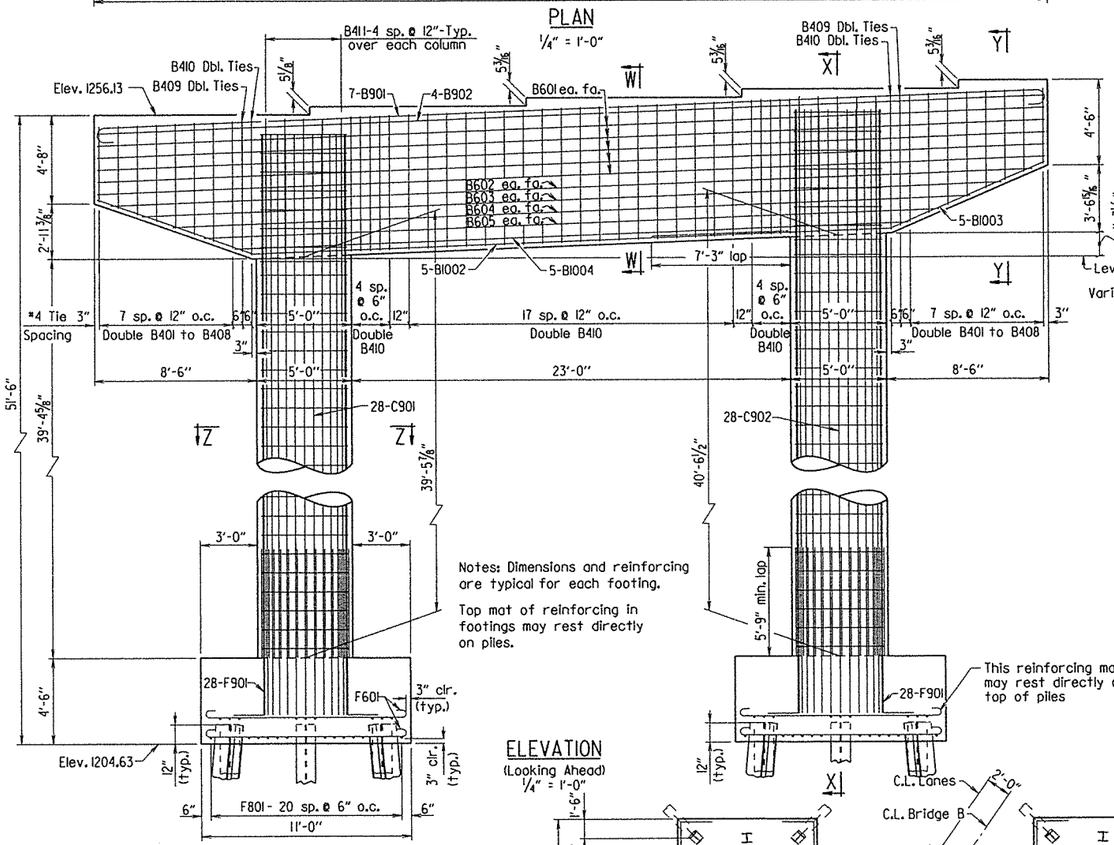
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	204	636
				(1) B7274		INT. BENT		53452



PLAN

1/4" = 1'-0"

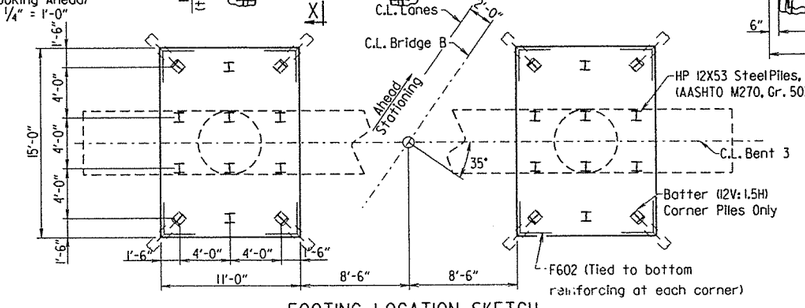


Notes: Dimensions and reinforcing are typical for each footing.

Top mat of reinforcing in footings may rest directly on piles.

ELEVATION

(Looking Ahead)
1/4" = 1'-0"

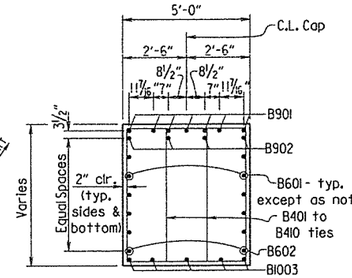


FOOTING LOCATION SKETCH

No Scale

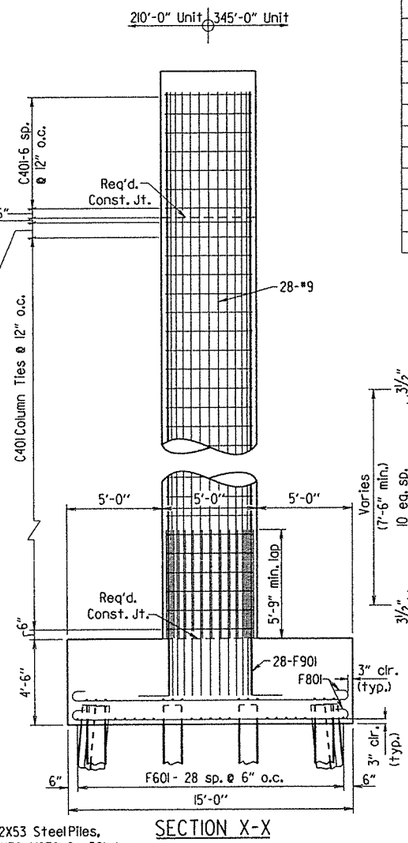
SECTION Z-Z

½" = 1'-0"



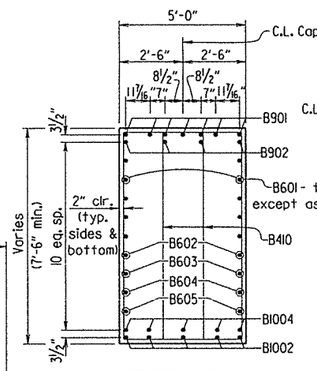
SECTION Y-Y

No Scale



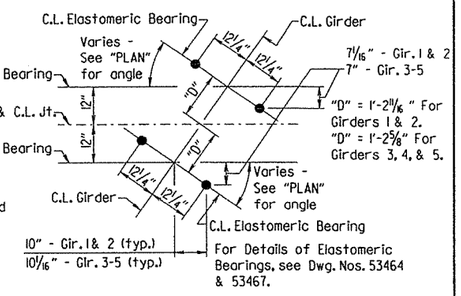
SECTION X-X

1/4" = 1'-0"



SECTION W-W

No Scale



For Details of Elastomeric Bearings, see Dwg. Nos. 53464 & 53467.

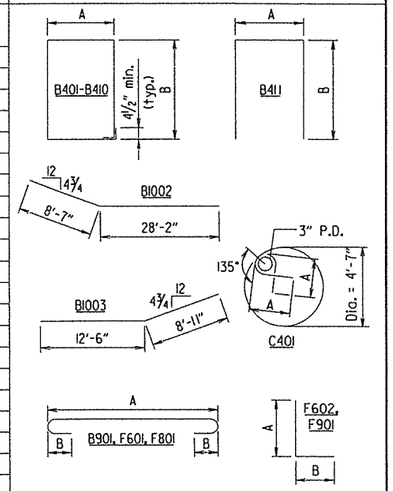
TYPICAL ANCHOR BOLT LAYOUT

No Scale

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401-B408	4 ea.	14'-3" to 19'-9"	2'-10½"	4'-0" to 6'-9"	2"
B409	4	20'-1"	2'-10½"	6'-11"	2"
B410	60	20'-7"	2'-10½"	7'-2"	2"
B411	10	19'-10"	4'-8"	7'-2"	2"
B601	10	49'-8"			Str.
B602	2	48'-4"			Str.
B603	2	45'-1½"			Str.
B604	2	41'-11"			Str.
B605	2	38'-8"			Str.
B901	7	52'-2"	49'-8"	10"	9"
B902	4	49'-8"			Str.
B1002	5	36'-9"			10"
B1003	5	21'-5"			10"
B1004	5	35'-5"			Str.
C401	95	15'-5½"	5"		3"
C901	28	46'-0"			Str.
C902	28	47'-0"			Str.
F601	58	11'-10"	10'-6"	6"	4½"
F602	8	4'-10"	2'-6"	2'-6"	4½"
F801	42	16'-4"	14'-6"	8"	6"
F901	56	10'-5"	9'-1"	1'-7"	9"

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 = 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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF BENT 3
CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

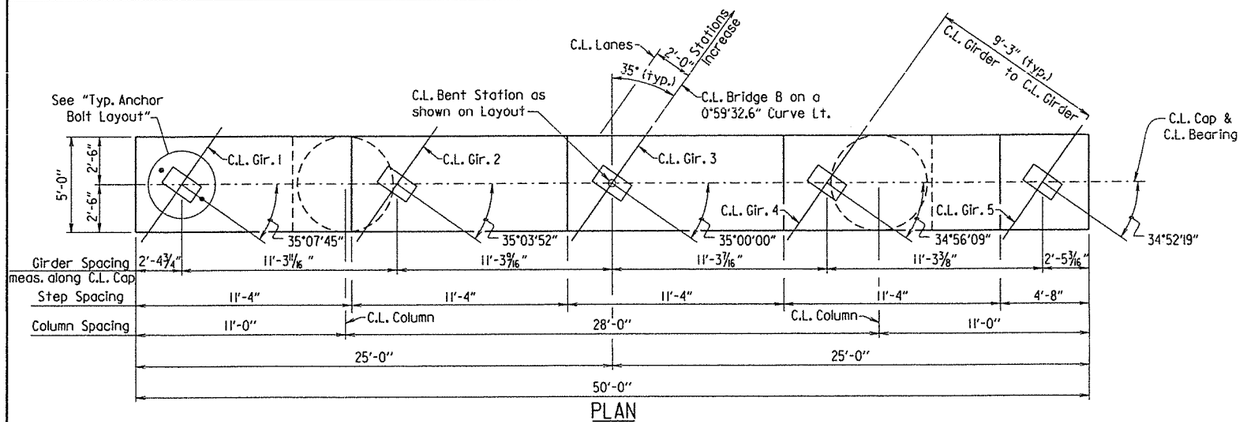
LITTLE ROCK, ARK.

DRAWN BY: JYP	DATE: 9-10-07	FILENAME:	bCA0904b9_b2.dgn
CHECKED BY: AMS	DATE: 1/09	SCALE:	as noted
DESIGNED BY: JAC	DATE: 1/2007		

BRIDGE NO. B7274 DRAWING NO. 53452

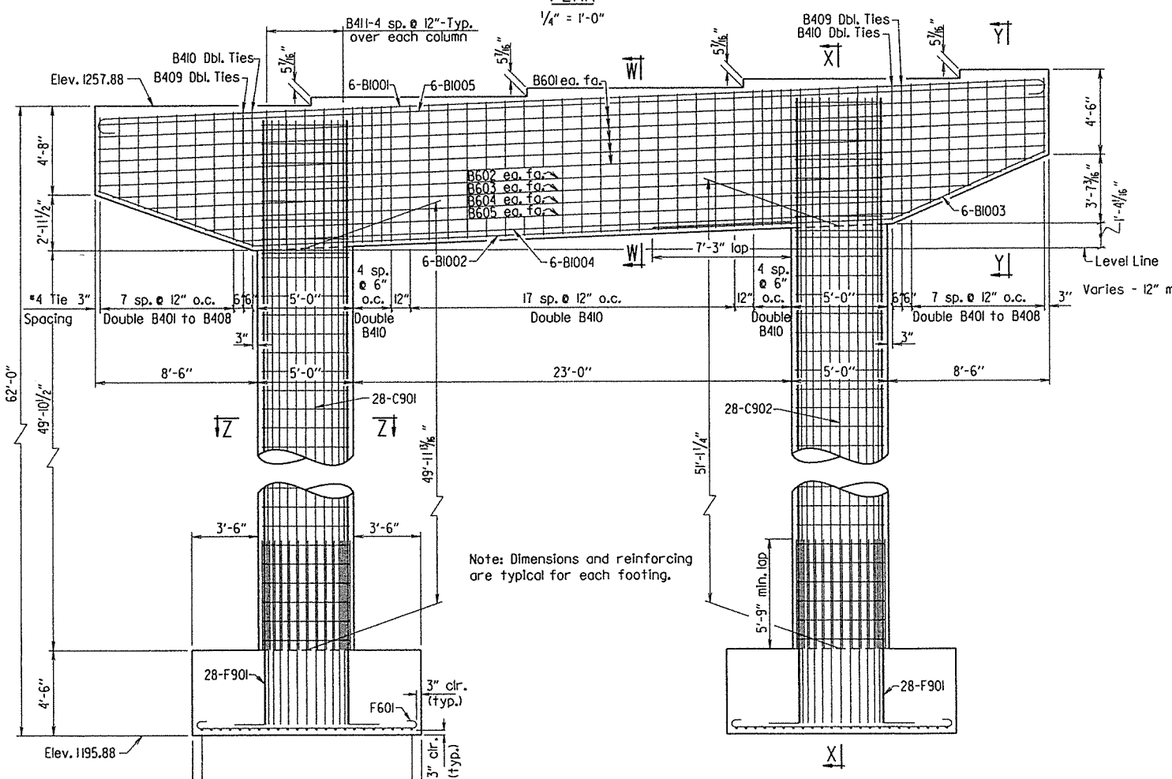
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	205	636
				(1) B7274		INT. BENT		53453



PLAN

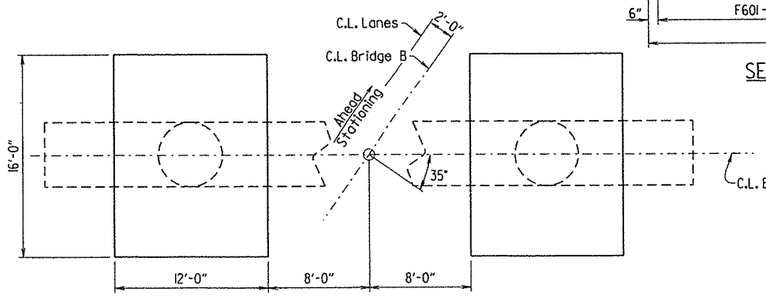
¼" = 1'-0"



ELEVATION

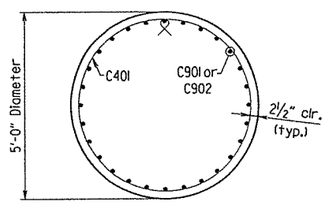
(Looking Ahead)

¼" = 1'-0"



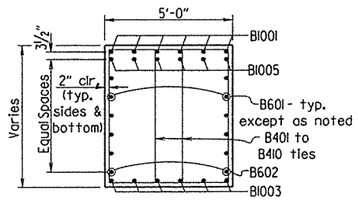
FOOTING LOCATION SKETCH

No Scale



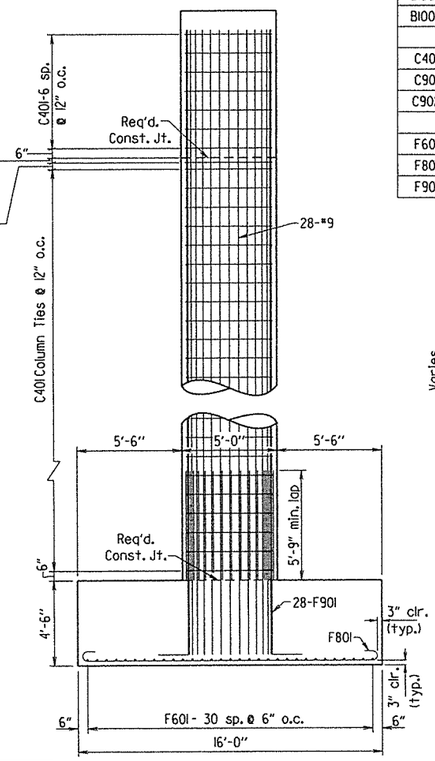
SECTION Z-Z

½" = 1'-0"



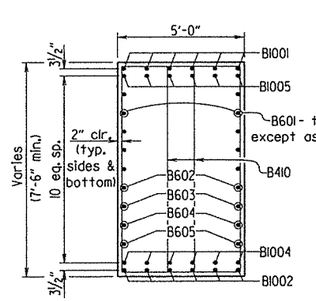
SECTION Y-Y

No Scale



SECTION X-X

¼" = 1'-0"



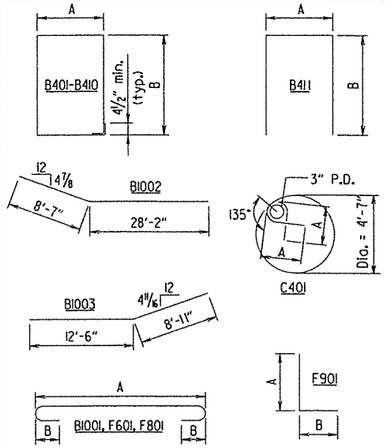
SECTION W-W

No Scale

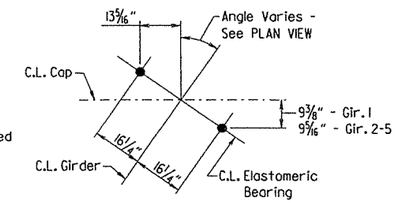
BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401-B408	4 ea.	14'-3" to 19'-9"	2'-10½"	4'-0" to 6'-9"	2"
B409	4	20'-1"	2'-10½"	6'-11"	2"
B410	60	20'-7"	2'-10½"	7'-2"	2"
B411	10	19'-10"	4'-8"	7'-2"	2"
B601	10	49'-8"			Str.
B602	2	48'-6"			Str.
B603	2	45'-3"			Str.
B604	2	42'-0"			Str.
B605	2	38'-9"			Str.
B1001	6	52'-6"	49'-8"	1½"	10"
B1002	6	36'-9"			10"
B1003	6	21'-5"			10"
B1004	6	35'-5"			Str.
B1005	6	49'-8"			Str.
C401	117	15'-5½"	5"		3"
C901	28	56'-6"			Str.
C902	28	57'-6"			Str.
F601	62	12'-10"	11'-6"	6"	4½"
F801	46	17'-4"	15'-6"	8"	6"
F901	56	13'-1"	11'-9"	1'-7"	9"

BENDING DIAGRAMS



Dimensions are out to out of bars



For Details of Elastomeric Bearings, see Dwg. No. 53467.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

GENERAL NOTES

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER
BRIDGE ENGINEER

DETAILS OF BENT 4
CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

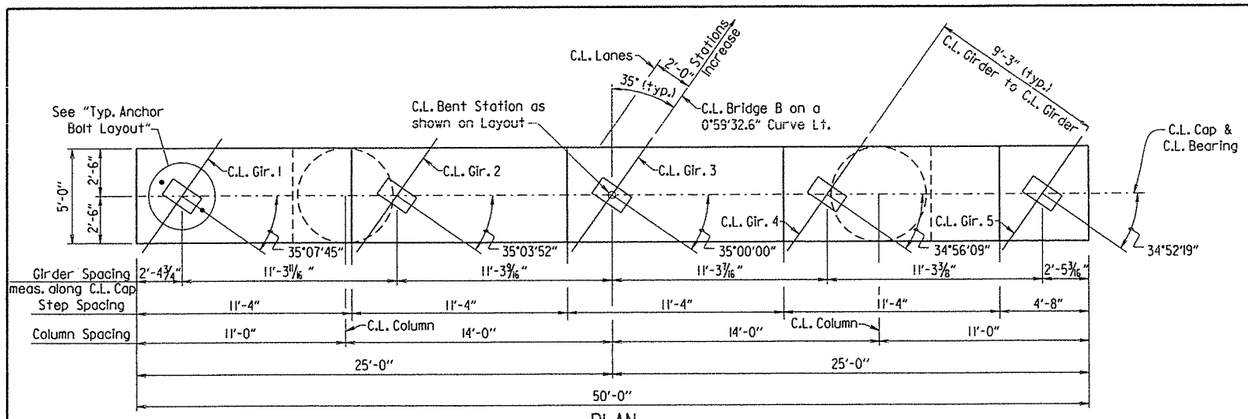
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 9-11-07 FILENAME: bCA0904b9_b2.dgn
CHECKED BY: AMS DATE: 1/09 SCALE: as noted
DESIGNED BY: JAC DATE: 7/2007

BRIDGE NO. B7274 DRAWING NO. 53453

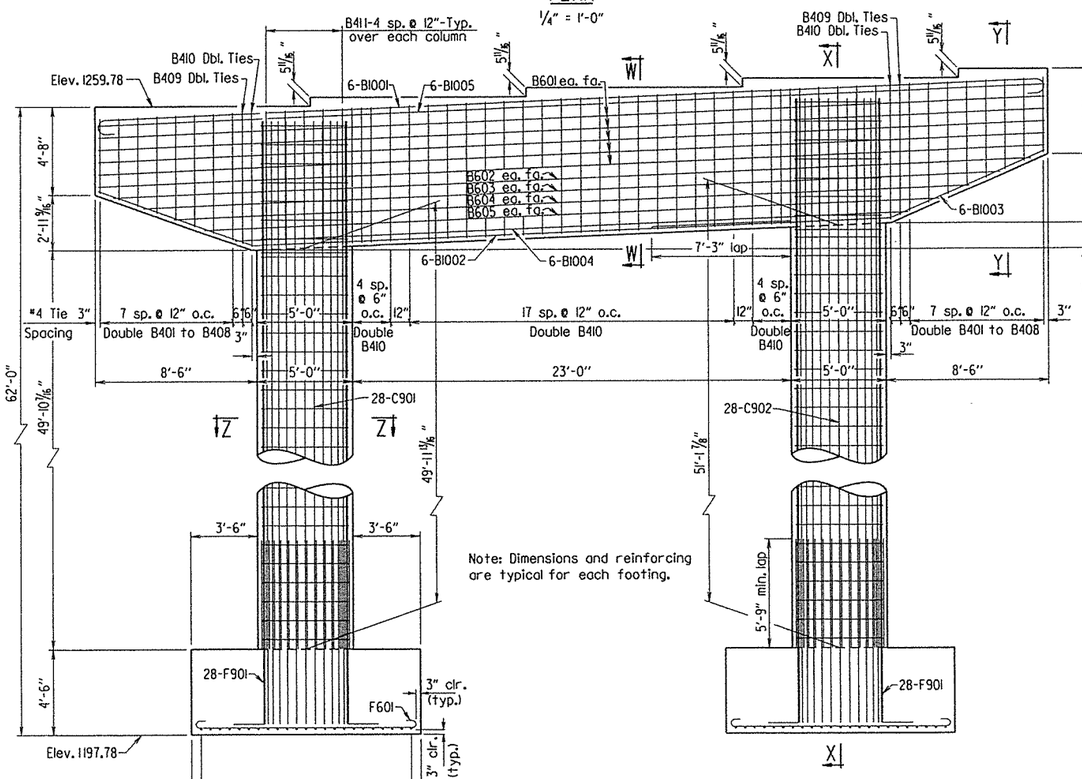
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	206	636
				(1) B7274		INT. BENT		53454



PLAN

¼" = 1'-0"

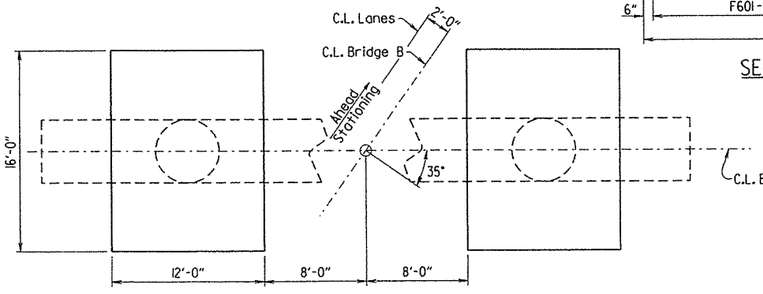


Note: Dimensions and reinforcing are typical for each footing.

ELEVATION

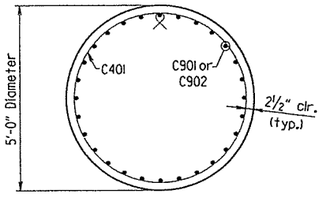
(Looking Ahead)

¼" = 1'-0"



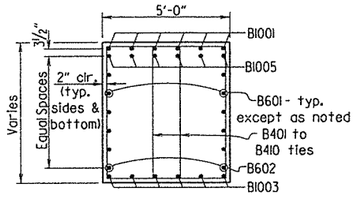
FOOTING LOCATION SKETCH

No Scale



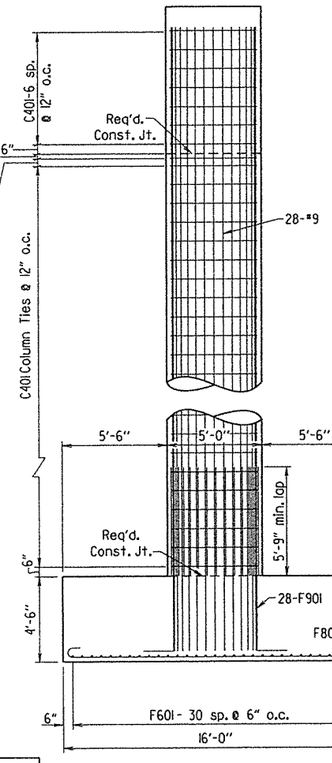
SECTION Z-Z

½" = 1'-0"



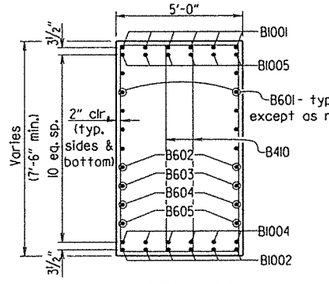
SECTION Y-Y

No Scale



SECTION X-X

¼" = 1'-0"



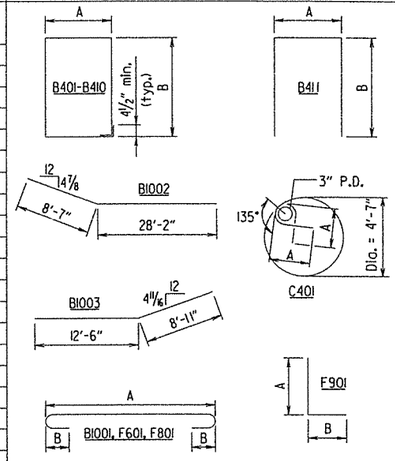
SECTION W-W

No Scale

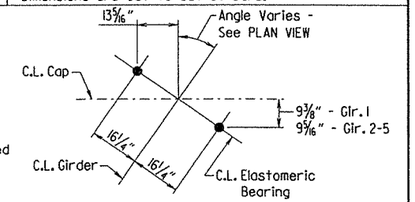
BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401-B408	4 ea.	14'-3" to 19'-9"	2'-10½"	4'-0" to 6'-9"	2"
B409	4	20'-1"	2'-10½"	6'-11"	2"
B410	60	20'-7"	2'-10½"	7'-2"	2"
B411	10	19'-10"	4'-8"	7'-2"	2"
B601	10	49'-8"			Str.
B602	2	48'-6"			Str.
B603	2	45'-3"			Str.
B604	2	42'-0"			Str.
B605	2	38'-9"			Str.
B1001	6	52'-6"	49'-8"	1½"	10"
B1002	6	36'-9"			10"
B1003	6	21'-5"			10"
B1004	6	35'-5"			Str.
B1005	6	49'-8"			Str.
C401	117	15'-5½"	5"		3"
C901	28	56'-4"			Str.
C902	28	57'-6"			Str.
F601	62	12'-10"	11'-6"	6"	4½"
F801	46	17'-4"	15'-6"	8"	6"
F901	56	13'-1"	11'-9"	1'-7"	9"

BENDING DIAGRAMS



Dimensions are out to out of bars.



For Details of Elastomeric Bearings, see Dwg. No. 53467.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

GENERAL NOTES

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
Carl L. Puselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL L. PUSELIER

BRIDGE ENGINEER

DETAILS OF BENT 5
CR 49 (BECKETT ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 9-11-07 FILENAME: bCA0904b9_b2.dgn

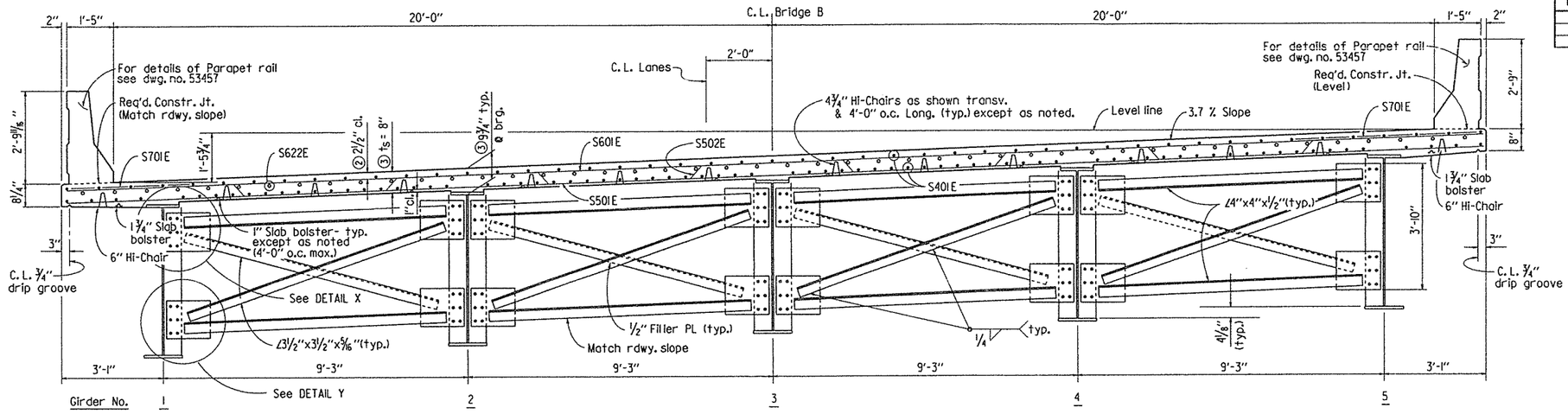
CHECKED BY: AMS DATE: 1/09 SCALE: as noted

DESIGNED BY: JAC DATE: 7/2007

BRIDGE NO. B7274 DRAWING NO. 53454

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	207	636
				(1) B7274		COMMON DET.		53455



Slab Reinforcing:
Longitudinal: S401E Top & Bottom
S622E placed as shown over interior supports (See Reinf. Plan)
Transverse: S501E @ 15"o.c. in bottom, S502E @ 15"o.c. bent up over girders
S601E @ 15"o.c. in top,
S701E @ 15"o.c. in top of overhang

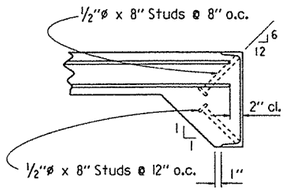
TYP. ROADWAY SECTION

(Looking Ahead)
½" = 1'-0"

(2) Tolerance: Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance-
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

(3) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

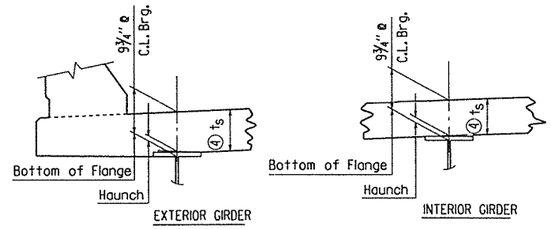
Note: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas specified in Job SP "Textured Coating Finish".



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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

NTS



t_s = slab thickness as shown in "Typical Roadway Section"

(4) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Notes:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

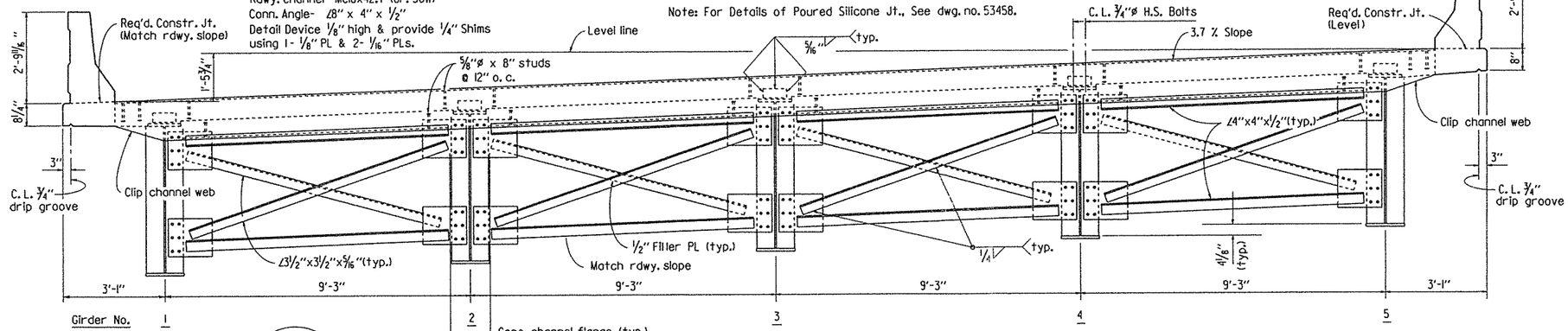
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 1499I for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

NTS

Expansion Device :
Rdwy. Channel- MC18x42.7 (Gr. 50W)
Conn. Angle- L8" x 4" x ½"
Detail Device ⅛" high & provide ¼" Shims using 1- ⅛" PL & 2- 1/16" PLs.

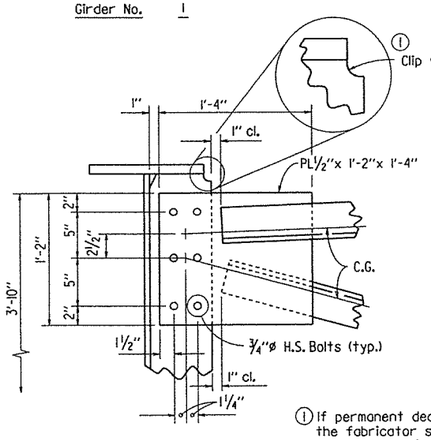
Note: For Details of Poured Silicone Jt., See dwg. no. 53458.



Cope channel flange (typ.)
2" + width of girder flange

SECTION NEAR JOINT

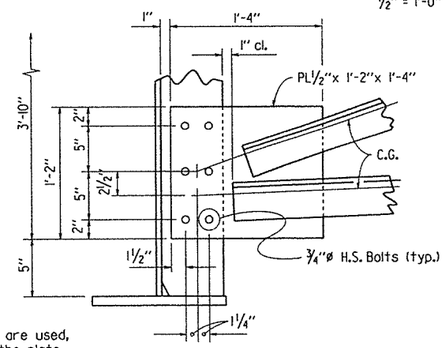
(Looking Ahead)
½" = 1'-0"



DETAIL X

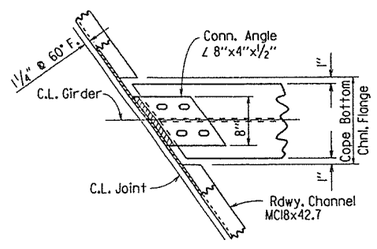
1½" = 1'-0"

(1) If permanent deck forms are used, the fabricator shall clip the plate as necessary to accomodate the support angle.



DETAIL Y

1½" = 1'-0"



CHANNEL CONNECTION DETAIL

NTS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 7

COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

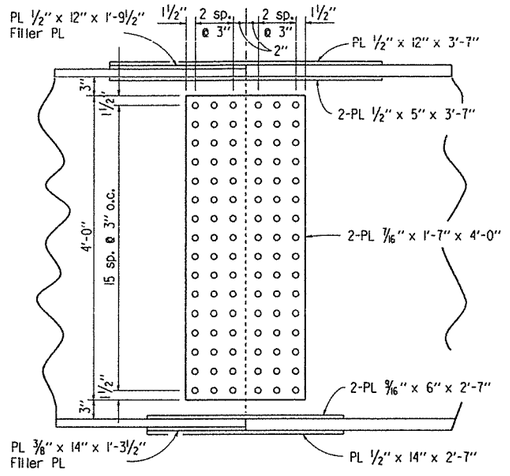
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 7-10-07 FILENAME: bCA0904b9_sl.dgn
CHECKED BY: AMS DATE: 9/11/07 SCALE: As shown
DESIGNED BY: JAC DATE: 6/2007
BRIDGE NO. B7274 DRAWING NO. 53455

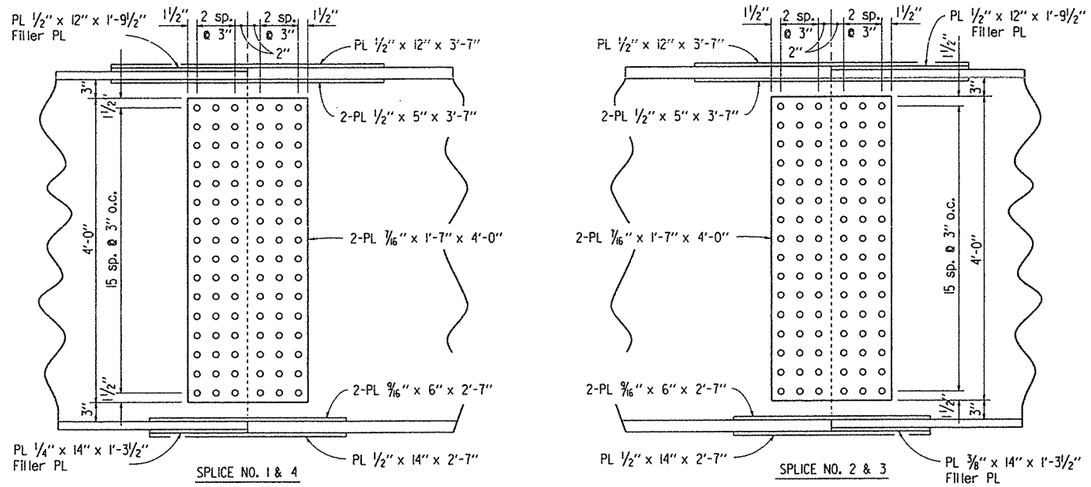
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	208	636
				(1) B7274		COMMON DET.		53456



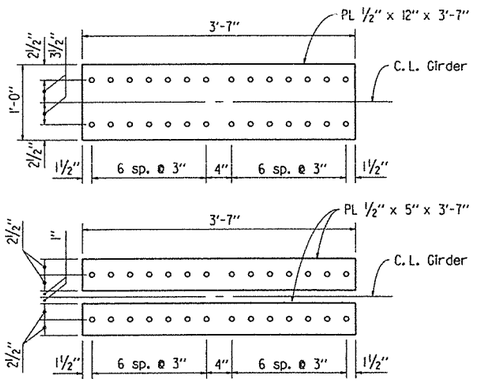
TYPICAL FIELD SPLICE DETAILS (210' UNIT)

1" = 1'-0"

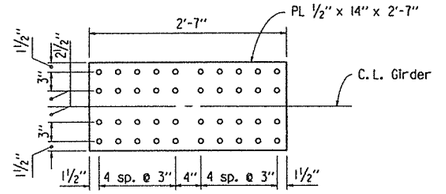


FIELD SPLICE DETAILS (345' UNIT)

1" = 1'-0"



TOP FLANGE SPLICE PLATES



BOTTOM FLANGE SPLICE PLATES

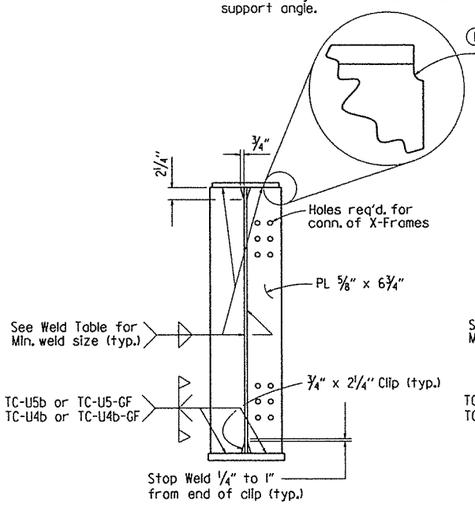
TYPICAL FLANGE SPLICE DETAILS (210' & 345' UNITS)

1" = 1'-0"

All field splice bolts shall be ⅞"ø Hi-str. bolts
All holes for splice bolts shall be 15/16 "ø
All field splice plates shall be AASHTO M270 Gr. 50W steel.

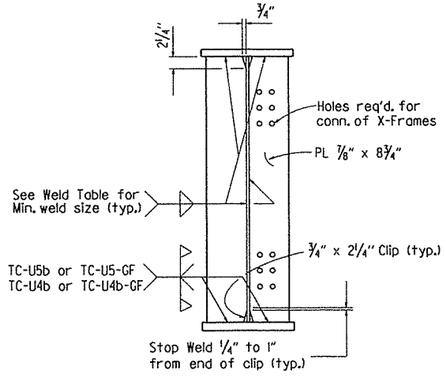
Note: Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

(1) If permanent deck forms are used, the fabricator shall clip the plate as necessary to accomodate the support angle.



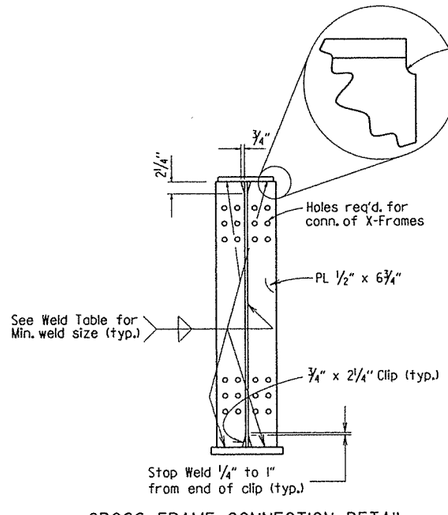
END BEARING STIFFENER DETAIL

N.T.S.



INT. BEARING STIFFENER DETAIL

N.T.S.



CROSS FRAME CONNECTION DETAIL

N.T.S.

(1) If permanent deck forms are used, the fabricator shall clip the plate as necessary to accomodate the support angle.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 7
COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

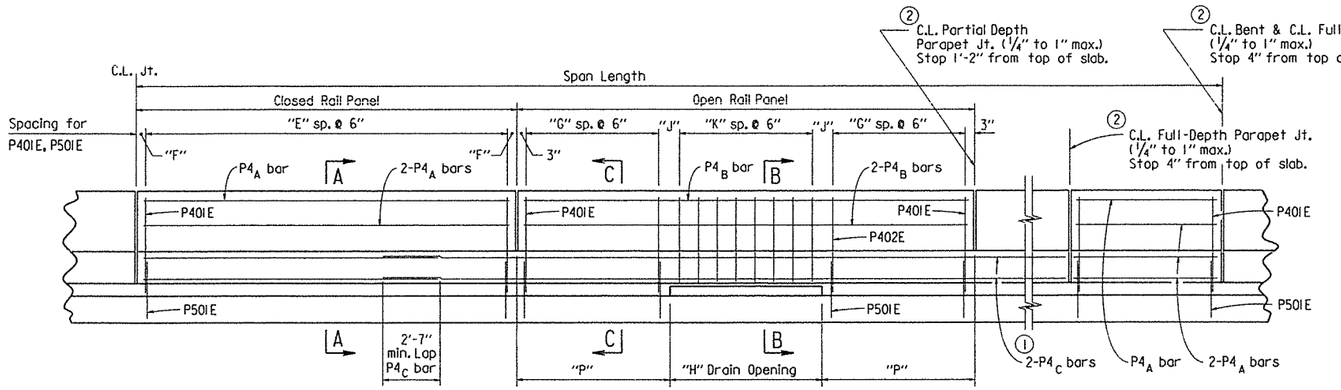
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 7-10-07 FILENAME: bCA0904b9_sl.dgn
CHECKED BY: ARS DATE: 9/11/07 SCALE: As shown
DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53456

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	209	636
				(1) B7274		COMMON DET.		53457



ELEVATION - CONCRETE PARAPET RAIL

1/2" = 1'-0"

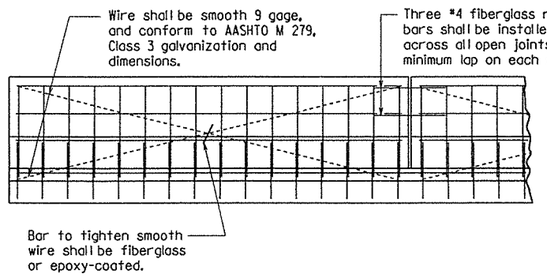
(1) Bar to be continuous between full depth parapet jts.

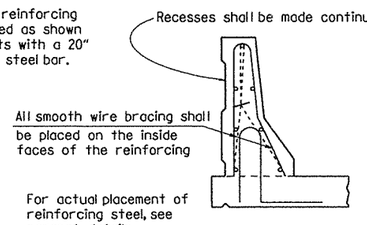
(2) For location of full and partial depth parapet joints, see dwg. nos. 53463 & 53466.

TABLE OF VARIABLES

	(3) Span	Closed Rail Panel	"E"	"F"	$P4_A$ bar	Open Rail Panel	"G"	"H"	"J"	"K"	"P"	$P4_B$ bar	$P4_C$ bar
210' Unit	104'-7 5/8"	14'-11 3/8"	28	5 11/16"	P403E	14'-11 3/8"	9	4'-0"	11 11/16"	7	5'-5 11/16"	P403E	P404E
	105'-4 3/8"	15'-0 5/8"	29	3 5/16"	P403E								P404E
345' Unit	114'-7 1/4"	14'-3 7/8"	27	4 15/16"	P403E	14'-3 7/8"	9	4'-0"	7 5/16"	7	5'-1 15/16"	P403E	P404E, P405E
	115'-4 3/4"	14'-5 1/8"	27	5 9/16"	P403E								P406E, P407E

(3) Measured along gutterlines.



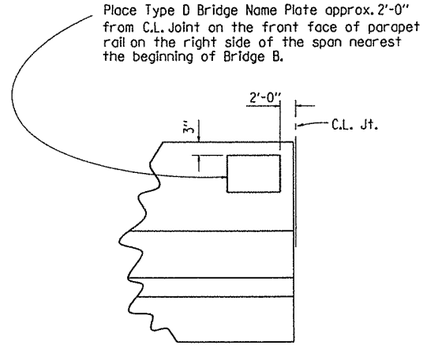


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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. Exposed surfaces shall be given a Class 3, Textured Coating Finish. See Job SP "Textured Coating Finish".

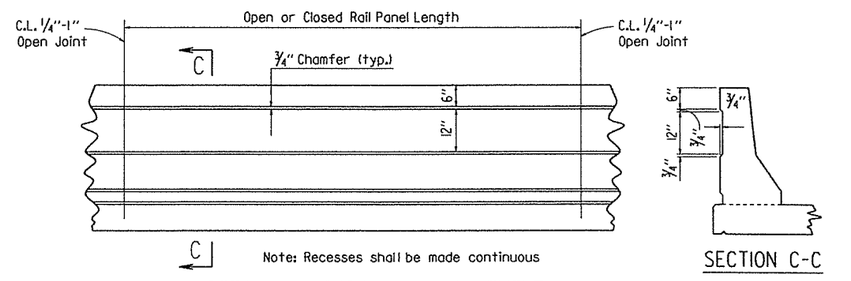
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

NTS



VIEW SHOWING LOCATION OF NAME PLATE

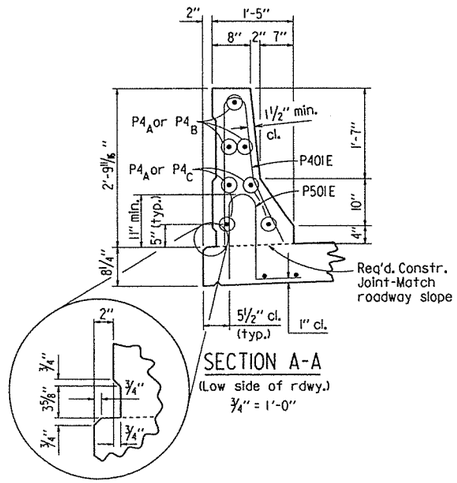
NTS



SECTION C-C

DETAILS OF PARAPET ENHANCEMENT

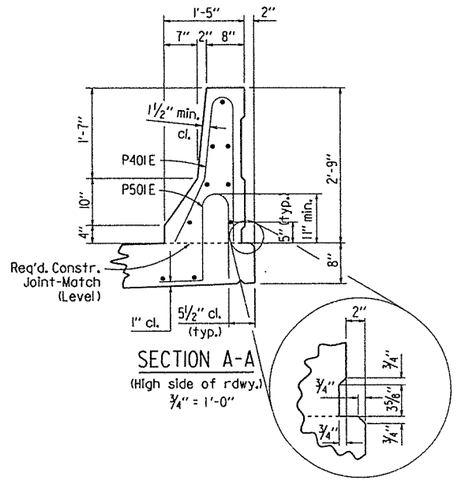
NTS



SECTION A-A

(Low side of rdwy.)

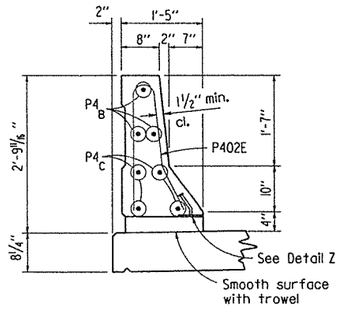
3/4" = 1'-0"



SECTION A-A

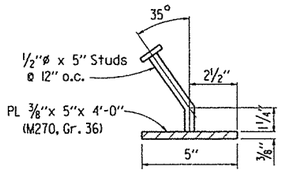
(High side of rdwy.)

3/4" = 1'-0"



SECTION B-B

3/4" = 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 PL Girder Spans (M270, Gr. 50W).

The surfaces of the 3/8" Plates which will not be in contact with concrete shall be painted 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 PL Girder Spans (M270, Gr. 50W).

DETAIL Z

NTS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 3 OF 7

COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-24-07 FILENAME: bCA0904b9_sl.dgn

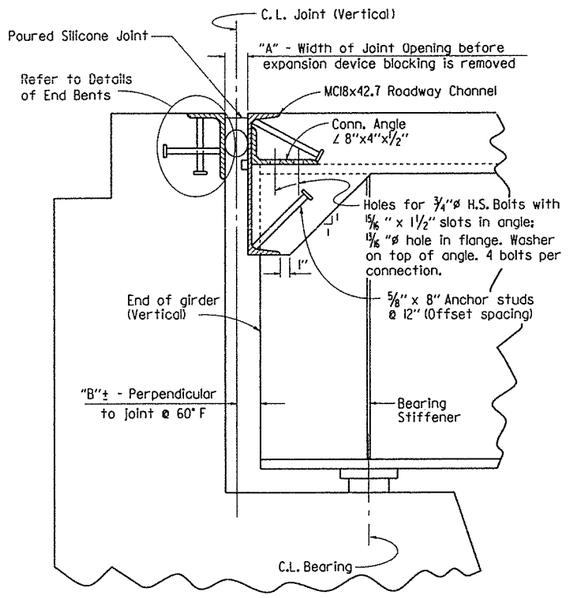
CHECKED BY: AMS DATE: 9/11/07 SCALE: As shown

DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53457

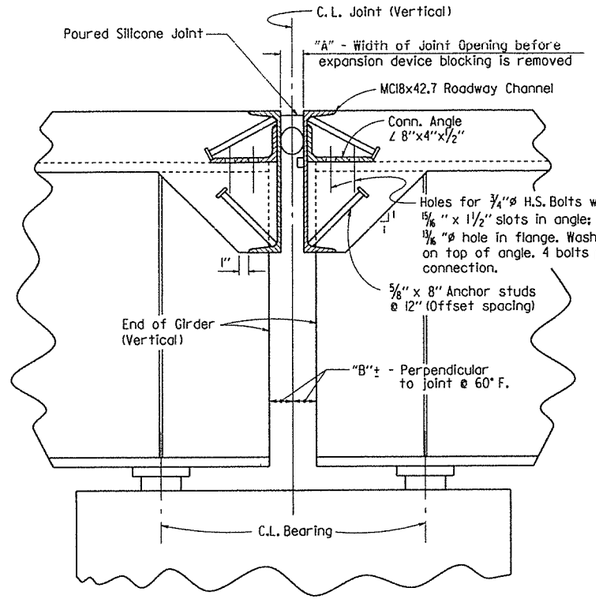
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	210	636
				(1) B7274		COMMON DET.		53458



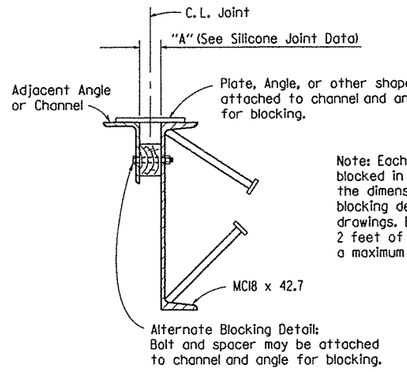
Note: Section taken perpendicular to C.L. Joint

SECTION THRU JOINT AT END BENT



Note: Section taken perpendicular to C.L. Joint

SECTION THRU JOINT AT INTERIOR BENT



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" 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.

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 pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.

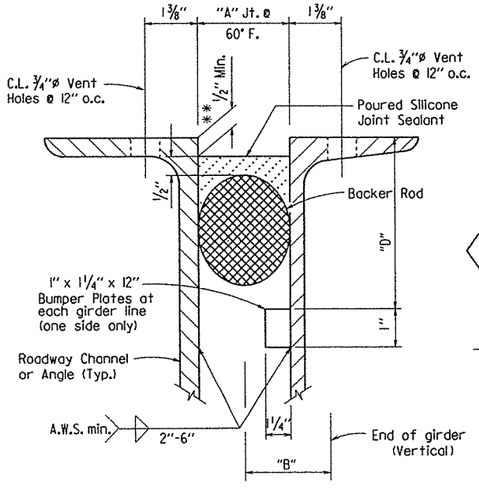
2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

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.

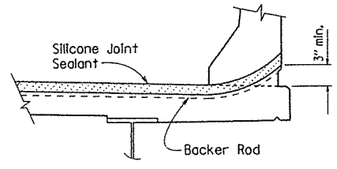
Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

** Recess depth as recommended by the sealant Manufacturer.

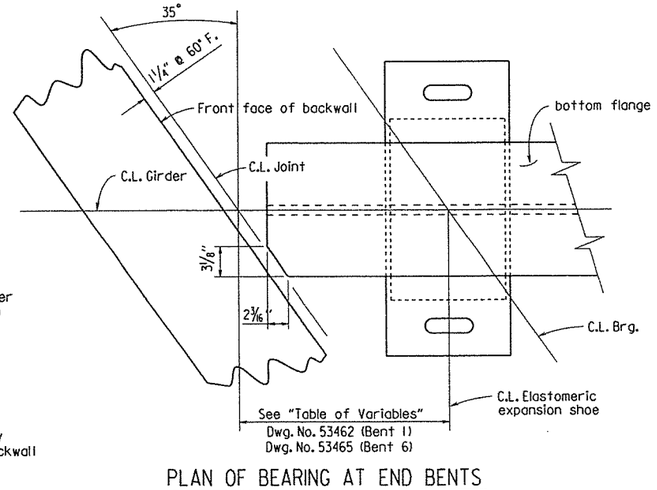


DETAIL OF POURED SILICONE JOINT

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 flanges in the backwall and in the span.



JOINT SEAL PLACEMENT AT CURB



PLAN OF BEARING AT END BENTS

SILICONE JOINT DATA

Bent No.	"A" Width Perpendicular to Joint at 24 Hour Average Temperature* Of:			"B" Perpendicular to Joint at 60°F	"D"
	40°F	60°F	80°F		
1	2 11/16"	2½"	2 5/16"	2½" ±	5"
3	2 13/16"	2½"	2 3/16"	2½" ±	5"
6	2¾"	2½"	2¼"	2½" ±	5"

* 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° 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 that 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
CARL J. PUSELLER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
BRIDGE ENGINEER

SHEET 4 OF 7

COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-27-07 FILENAME: bCA0904b9_sl.dgn
CHECKED BY: AMS DATE: 9/11/07 SCALE: No Scale
DESIGNED BY: JAC DATE: 6/2007

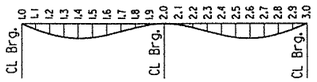
BRIDGE NO. B7274 DRAWING NO. 53458

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	211	636
				(1) B7274		COMMON DET.		53459

TABLE OF DEFLECTIONS-INCHES

Span	Point of Deflection	Girder 1 Structural Steel	Girder 1 Structural Steel+Slab	Girder 1 Str. Steel+Slab+Rail
1	1.0	0	0	0
	1.1	0.089	0.528	0.596
	1.2	0.163	0.968	1.094
	1.3	0.214	1.268	1.434
	1.4	0.232	1.373	1.554
	1.5	0.219	1.293	1.466
	1.6	0.181	1.061	1.205
	1.7	0.124	0.722	0.822
	1.8	0.067	0.387	0.441
	1.9	0.019	0.112	0.127
2	2.0	0	0	0
	2.1	0.018	0.103	0.119
	2.2	0.064	0.365	0.419
	2.3	0.125	0.722	0.825
	2.4	0.180	1.052	1.199
	2.5	0.222	1.303	1.481
	2.6	0.235	1.386	1.573
	2.7	0.217	1.285	1.456
	2.8	0.167	0.995	1.126
	2.9	0.091	0.542	0.613
	3.0	0	0	0

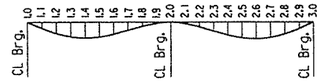


DEAD LOAD DEFLECTION DIAGRAM

Girder 1

TABLE OF DEFLECTIONS-INCHES

Span	Point of Deflection	Girders 2, 3, 4, Structural Steel	Girders 2, 3, 4, Structural Steel+Slab	Girders 2, 3, 4, Str. Steel+Slab+Rail
1	1.0	0	0	0
	1.1	0.093	0.625	0.647
	1.2	0.172	1.151	1.192
	1.3	0.223	1.494	1.547
	1.4	0.241	1.615	1.673
	1.5	0.227	1.515	1.569
	1.6	0.185	1.232	1.277
	1.7	0.126	0.834	0.864
	1.8	0.067	0.435	0.451
	1.9	0.020	0.129	0.134
2	2.0	0	0	0
	2.1	0.022	0.142	0.147
	2.2	0.073	0.480	0.498
	2.3	0.137	0.904	0.938
	2.4	0.198	1.315	1.364
	2.5	0.241	1.608	1.667
	2.6	0.254	1.704	1.767
	2.7	0.234	1.572	1.629
	2.8	0.180	1.211	1.255
	2.9	0.099	0.666	0.690
	3.0	0	0	0

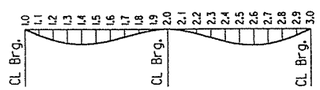


DEAD LOAD DEFLECTION DIAGRAM

Girders 2, 3, 4,

TABLE OF DEFLECTIONS-INCHES

Span	Point of Deflection	Girder 5 Structural Steel	Girder 5 Structural Steel+Slab	Girder 5 Str. Steel+Slab+Rail
1	1.0	0	0	0
	1.1	0.092	0.549	0.621
	1.2	0.167	1.000	1.133
	1.3	0.218	1.297	1.471
	1.4	0.236	1.400	1.590
	1.5	0.222	1.310	1.490
	1.6	0.181	1.064	1.213
	1.7	0.123	0.715	0.818
	1.8	0.065	0.374	0.430
	1.9	0.020	0.115	0.133
2	2.0	0	0	0
	2.1	0.023	0.132	0.150
	2.2	0.073	0.426	0.484
	2.3	0.137	0.807	0.917
	2.4	0.198	1.168	1.325
	2.5	0.241	1.433	1.622
	2.6	0.255	1.518	1.716
	2.7	0.234	1.402	1.583
	2.8	0.181	1.085	1.224
	2.9	0.100	0.601	0.678
	3.0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

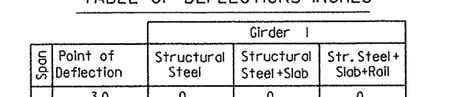
Girder 5

210'-0" UNIT

NOTE: Camber for Dead Load Deflection plus Vertical Curve +/- 1/4" tolerance. Deflections shown are along C.L. Girder from the plane perpendicular to the web extending from centerline bearing to centerline bearing. Vertical Curve correction not included. Negative sign (-) indicates point above chord.

TABLE OF DEFLECTIONS-INCHES

Span	Point of Deflection	Girder 1 Structural Steel	Girder 1 Structural Steel+Slab	Girder 1 Str. Steel+Slab+Rail
3	3.0	0	0	0
	3.1	0.166	0.969	1.079
	3.2	0.311	1.809	2.016
	3.3	0.412	2.396	2.671
	3.4	0.461	2.676	2.984
	3.5	0.456	2.641	2.945
	3.6	0.400	2.309	2.574
	3.7	0.305	1.760	1.961
	3.8	0.191	1.098	1.222
	3.9	0.082	0.473	0.524
4	4.0	0	0	0
	4.1	-0.037	-0.225	-0.239
	4.2	-0.043	-0.276	-0.280
	4.3	-0.031	-0.214	-0.194
	4.4	-0.018	-0.143	-0.104
	4.5	-0.010	-0.099	-0.051
	4.6	-0.015	-0.127	-0.086
	4.7	-0.028	-0.200	-0.178
	4.8	-0.039	-0.250	-0.250
	4.9	-0.033	-0.205	-0.216
5	5.0	0	0	0
	5.1	0.078	0.450	0.497
	5.2	0.182	1.044	1.160
	5.3	0.290	1.669	1.859
	5.4	0.388	2.238	2.495
	5.5	0.444	2.564	2.859
	5.6	0.451	2.611	2.912
	5.7	0.403	2.339	2.608
	5.8	0.305	1.771	1.975
	5.9	0.165	0.963	1.073
	6.0	0	0	0

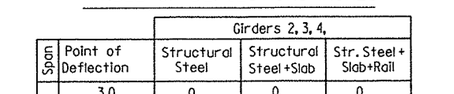


DEAD LOAD DEFLECTION DIAGRAM

Girder 1

TABLE OF DEFLECTIONS-INCHES

Span	Point of Deflection	Girders 2, 3, 4, Structural Steel	Girders 2, 3, 4, Structural Steel+Slab	Girders 2, 3, 4, Str. Steel+Slab+Rail
3	3.0	0	0	0
	3.1	0.179	1.164	1.211
	3.2	0.333	2.168	2.256
	3.3	0.442	2.873	2.989
	3.4	0.496	3.218	3.349
	3.5	0.490	3.175	3.305
	3.6	0.430	2.777	2.892
	3.7	0.328	2.114	2.204
	3.8	0.208	1.334	1.392
	3.9	0.089	0.571	0.596
4	4.0	0	0	0
	4.1	-0.041	-0.271	-0.286
	4.2	-0.048	-0.323	-0.343
	4.3	-0.039	-0.264	-0.286
	4.4	-0.026	-0.175	-0.197
	4.5	-0.020	-0.135	-0.155
	4.6	-0.025	-0.172	-0.193
	4.7	-0.039	-0.260	-0.282
	4.8	-0.047	-0.317	-0.338
	4.9	-0.040	-0.266	-0.280
5	5.0	0	0	0
	5.1	0.087	0.562	0.587
	5.2	0.201	1.296	1.352
	5.3	0.322	2.076	2.165
	5.4	0.423	2.736	2.849
	5.5	0.482	3.125	3.254
	5.6	0.487	3.167	3.296
	5.7	0.436	2.834	2.949
	5.8	0.329	2.139	2.226
	5.9	0.177	1.155	1.202
	6.0	0	0	0

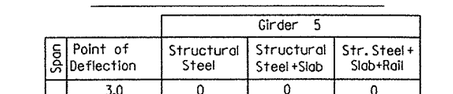


DEAD LOAD DEFLECTION DIAGRAM

Girders 2, 3, 4,

TABLE OF DEFLECTIONS-INCHES

Span	Point of Deflection	Girder 5 Structural Steel	Girder 5 Structural Steel+Slab	Girder 5 Str. Steel+Slab+Rail
3	3.0	0	0	0
	3.1	0.180	1.053	1.174
	3.2	0.332	1.937	2.159
	3.3	0.440	2.564	2.858
	3.4	0.494	2.870	3.198
	3.5	0.488	2.829	3.152
	3.6	0.427	2.472	2.753
	3.7	0.327	1.887	2.100
	3.8	0.209	1.203	1.336
	3.9	0.091	0.522	0.577
4	4.0	0	0	0
	4.1	-0.043	-0.261	-0.278
	4.2	-0.051	-0.319	-0.325
	4.3	-0.042	-0.279	-0.263
	4.4	-0.030	-0.214	-0.179
	4.5	-0.024	-0.179	-0.137
	4.6	-0.028	-0.207	-0.172
	4.7	-0.041	-0.276	-0.261
	4.8	-0.048	-0.307	-0.312
	4.9	-0.040	-0.246	-0.262
5	5.0	0	0	0
	5.1	0.087	0.504	0.558
	5.2	0.201	1.164	1.294
	5.3	0.319	1.847	2.057
	5.4	0.419	2.436	2.714
	5.5	0.477	2.779	3.097
	5.6	0.483	2.819	3.142
	5.7	0.433	2.529	2.818
	5.8	0.327	1.912	2.130
	5.9	0.178	1.046	1.165
	6.0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

Girder 5

345'-0" UNIT

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/6/12
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 5 OF 7
COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-27-07 FILENAME: bCA0904b9_sl.dgn

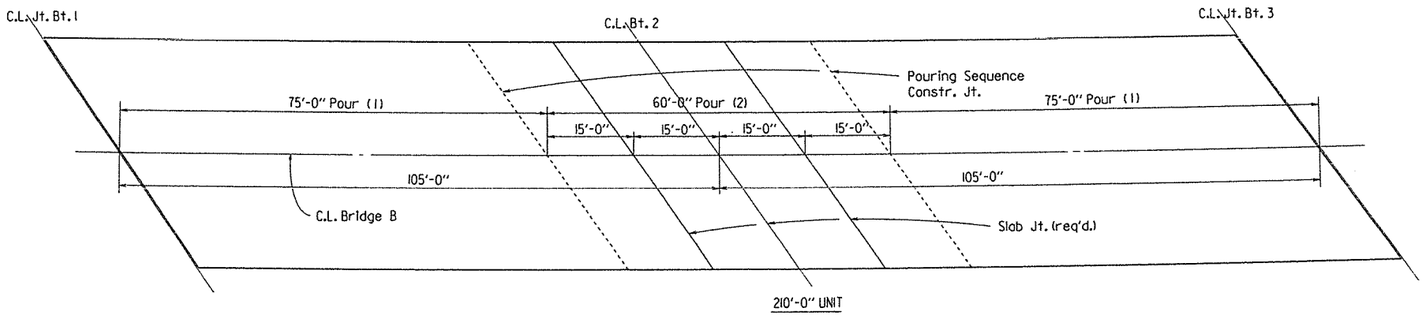
CHECKED BY: AHS DATE: 9/11/07 SCALE: As Shown

DESIGNED BY: JAC DATE: 6/2007

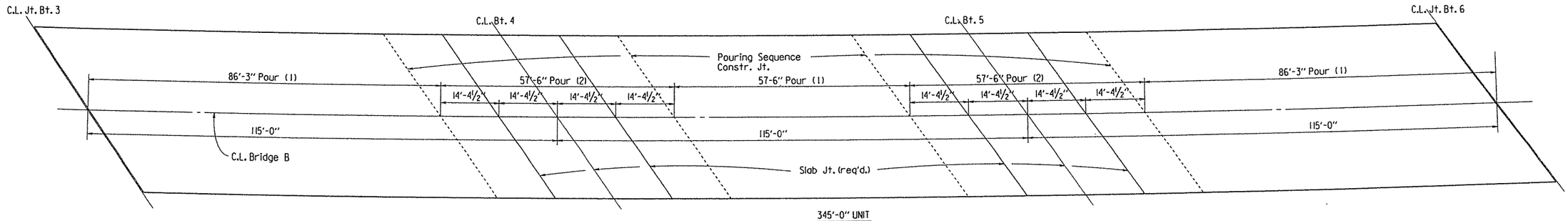
BRIDGE NO. B7274 DRAWING NO. 53459

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	2/2	636
				(1) B7274		COMMON DET.		53460



210'-0" UNIT

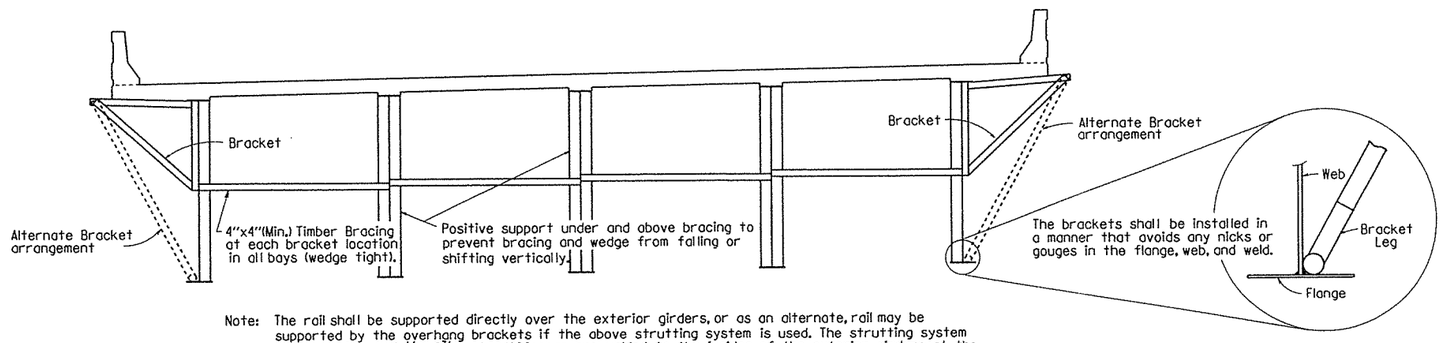


345'-0" UNIT

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 between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. 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 sequences as shown.

SLAB POURING SEQUENCES

NTS



Note: The rail shall be supported directly over the exterior girders, or as an alternate, rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if ½"x6¾" 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 details for cross frame connection plates shown on a drawing no. 53456. 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. 50W)".

SCREED RAIL SUPPORT

N.T.S.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/9/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 6 OF 7
COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-28-07 FILENAME: bCA0904b9_sl.dgn
CHECKED BY: AHS DATE: 9/11/07 SCALE: ⅛" = 1'-0" or as shown
DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53460

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	213	636
				(1) B7274		COMMON DET.		53461

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (Third Edition with 2006 Interim Revisions).

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	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. 14991 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.

Use of a longitudinal screed is prohibited.

REINFORCING STEEL :
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports. 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, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36 unless otherwise noted.

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. Payment will be based on the basis of shapes shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Girder web and flange plates, field splice plates, cross frames, and connection plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05.

All girders shall be blocked in their true position in the shop as specified in subsection 807.54(b)(2). The camber, length 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 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.

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. 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 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.

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.

STATE OF ARKANSAS
Carl L. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL L. FUSELIER

BRIDGE ENGINEER

SHEET 7 OF 7

COMMON DETAILS OF CONTINUOUS PLATE GIRDER UNITS CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

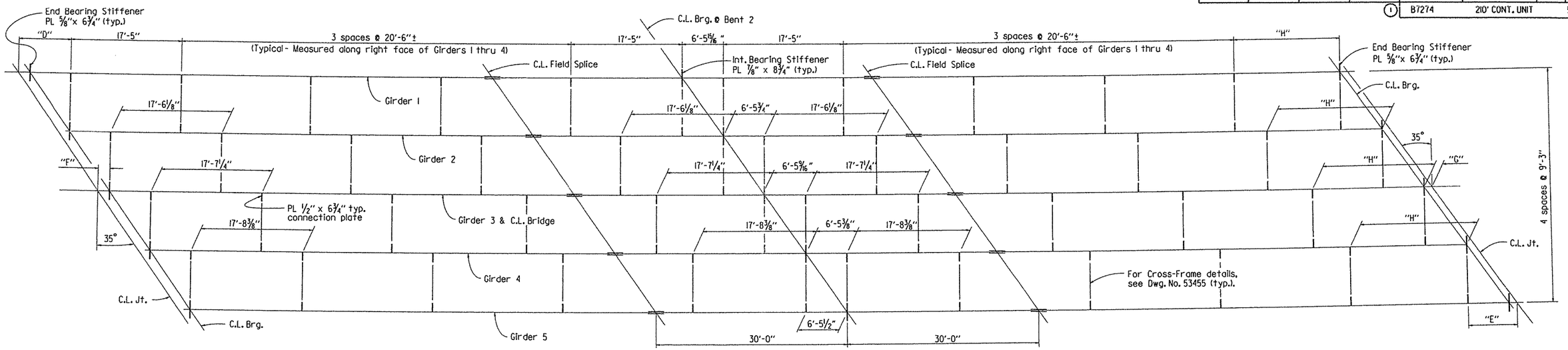
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DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53461

PRINT DATE: 7/8/2013

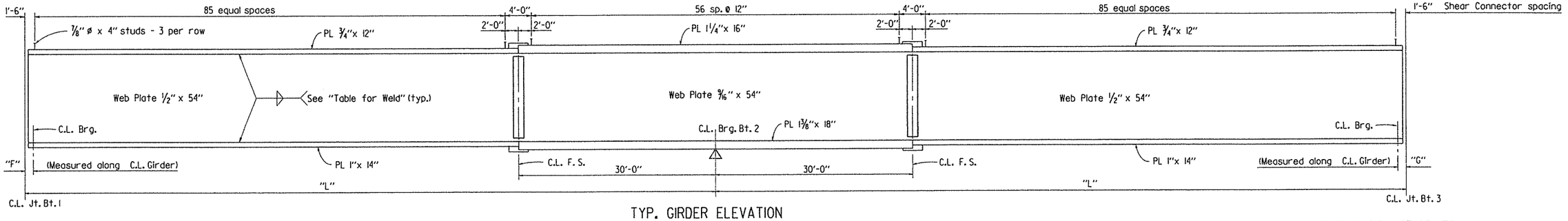
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				6	ARK.			
				JOB NO.		CA0904	214	636
				(1) B7274		210' CONT. UNIT		53462

Note: Girders are curved and are concentric to C.L. Bridge.
Cross-Frames are on radial lines.



FRAMING PLAN

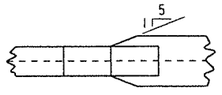
1/8" = 1'-0"



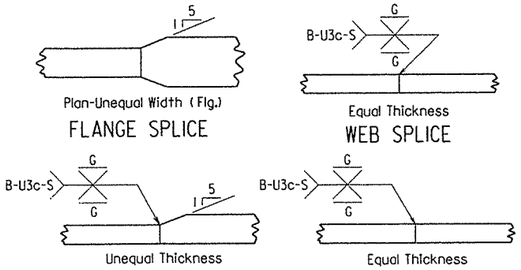
TYP. GIRDER ELEVATION

N.T.S.

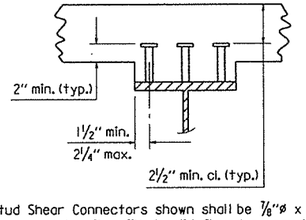
Note: All web and flange plates shall be AASHTO M270, Gr. 50W steel.



FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



DETAILS OF WELDED SPLICES



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 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

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.

For Details of Typical Roadway Section, see dwg. no. 53455
For Details of Pouring Sequence, see dwg. no. 53460
For Details of Field Splices, see dwg. no. 53456
For Details of Parapets, see dwg. no. 53457
For Details of Dead Load Deflections, see dwg. no. 53459
For Details of Silicone Jt., see dwg. no. 53458
For General Notes, see dwg. no. 53461

TABLE OF VARIABLES

Girder	"L"	"D"	"E"	"F"	"G"	"H"
1	104'-7 15/16"	8'-3 7/8"	—	1'-10"	1'-2 11/16"	18'-0 5/16"
2	104'-10"	8'-3 11/16"	7'-8 3/4"	1'-10"	1'-2 11/16"	18'-1 7/16"
3	105'-0"	8'-3 1/2"	7'-8 9/16"	1'-10"	1'-2 5/8"	18'-2 1/2"
4	105'-2"	8'-3 5/16"	7'-8 3/8"	1'-9 15/16"	1'-2 5/8"	18'-3 5/8"
5	105'-4 1/16"	—	7'-8 3/8"	1'-9 15/16"	1'-2 5/8"	—

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
7/16/13
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SHEET 1 OF 3

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 7-17-07 FILENAME: bCA0904b9_sl.dgn
CHECKED BY: AMS DATE: 9/14/07 SCALE: As shown
DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53462

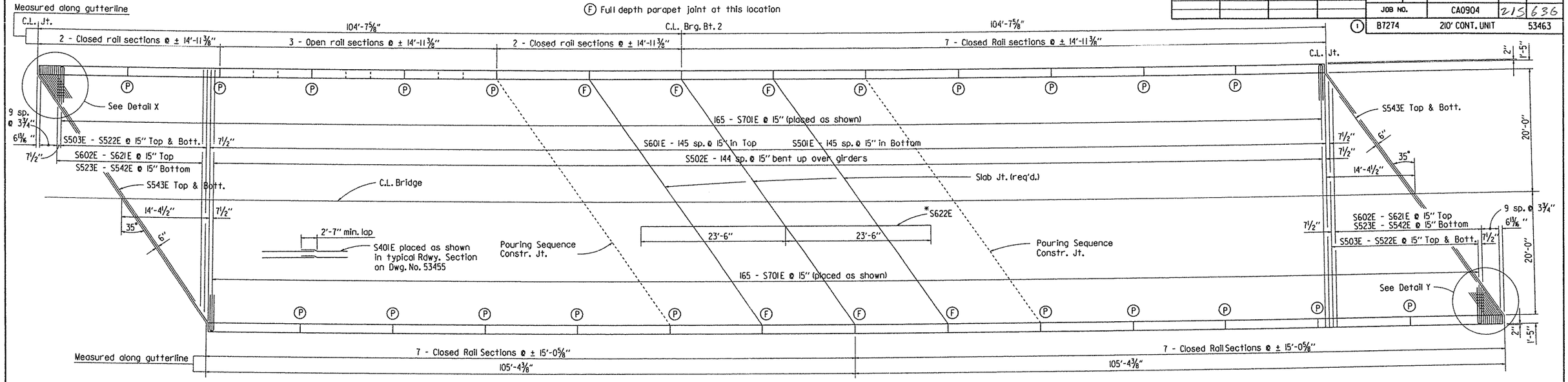
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	215	636
(1) B7274		210' CONT. UNIT		53463

(P) Partial depth parapet joint at this location

(F) Full depth parapet joint at this location



Note: Required slab joints and Pouring Sequence Joints shall align with open joints in parapet rail at the gutterline.

* Place this reinforcing in top of slab as shown in Typical Roadway Section on Dwg. No. 53455.

PLAN OF REINFORCING

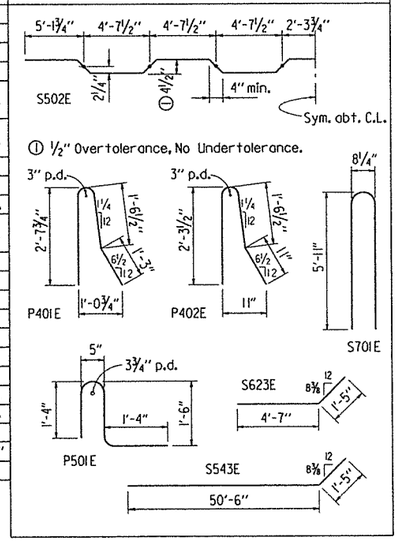
1/8" = 1'-0"

Note: All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Bridge. All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Bridge.

BAR LIST

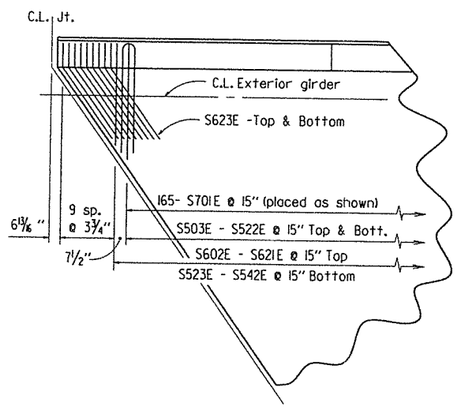
Mark	No. Req'd.	Length	Pin Dia.
S401E	738	37'-3"	Str.
S501E	146	42'-10"	Str.
S502E	145	43'-6"	3"
S503E-S522E	4 ea.	6'-10" to 40'-9"	Str.
S523E-S542E	2 ea.	5'-11" to 39'-10"	Str.
S543E	4	51'-11"	3"
S601E	146	42'-10"	Str.
S602E-S621E	2 ea.	5'-11" to 39'-10"	Str.
S622E	46	47'-0"	Str.
S623E	36	6'-0"	4½"
S701E	330	12'-3"	6½"
P401E	799	5'-6"	2"
P402E	24	4'-10"	2"
P403E	100	14'-7"	Str.
P404E	48	31'-9"	Str.
P501E	799	4'-3"	2½"

Bending Diagrams (Dimensions are out to out of bars.)



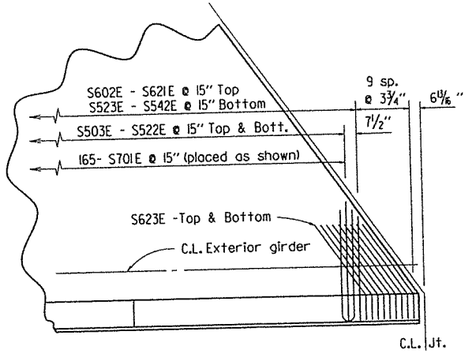
Note: Bars with "E" designation shall be epoxy coated.

Note: At the Contractor's option, two straight epoxy coated #5 bars, top and bottom, may be substituted for bar S502E. Payment will be based on weight of S502E.



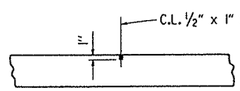
DETAIL X

1/4" = 1'-0"



DETAIL Y

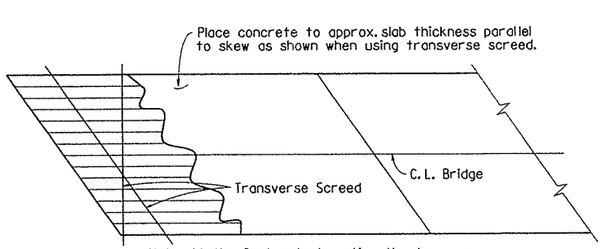
1/4" = 1'-0"



Use Type 3, 4, or 6 Joint Sealer. See subsections 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 and shall align with open joints at the front face of the parapet. 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. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

NTS



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

NTS

STATE OF ARKANSAS
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No. 7510
7/16/13
CARL J. PUSELIER

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SHEET 2 OF 3
DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-16-07 FILENAME: bCA0904b9_sl.dgn

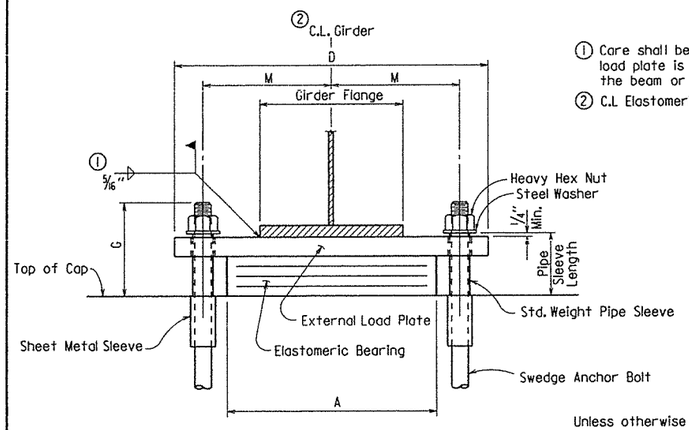
CHECKED BY: AMS DATE: 9/14/07 SCALE: 1/8" = 1'-0" or as shown

DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53463

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	216	636
				(1) B7274		210' CONT. UNIT	53464	

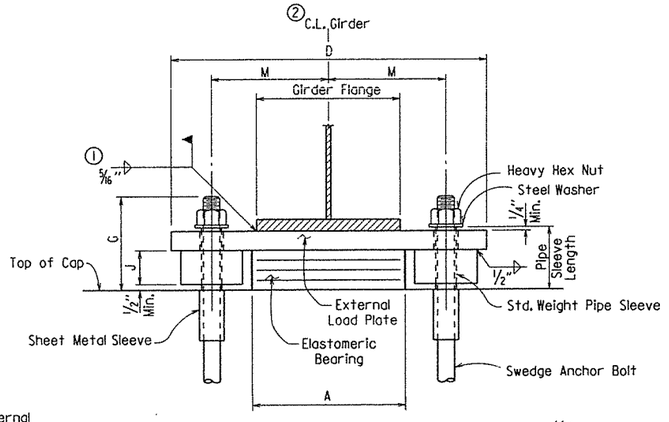


FRONT VIEW AT BENTS 1 & 3

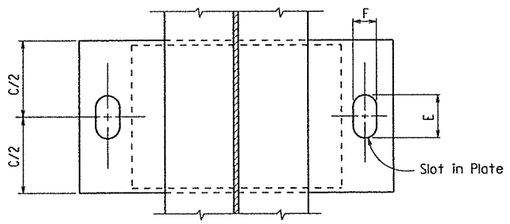
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

(2) C.L Elastomeric pad shall be aligned with C.L. Girder.

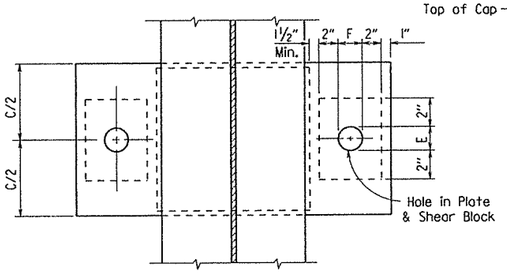
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load 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.



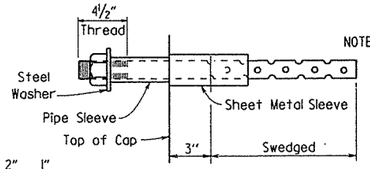
FRONT VIEW AT BENT 2



PLAN VIEW AT BENTS 1 & 3



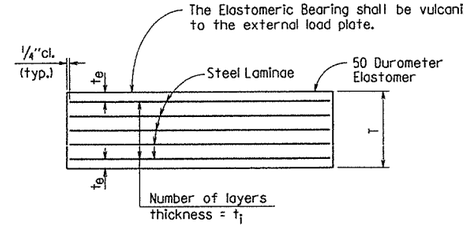
PLAN VIEW AT BENT 2



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, (M 270, Gr. 50W)".

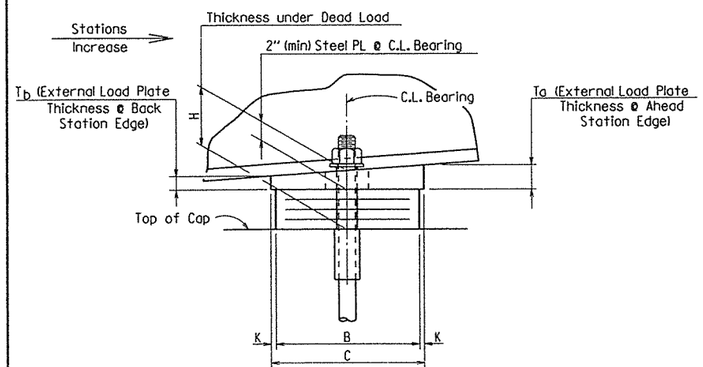


t_e = thickness of elastomer cover on top and bottom of pad

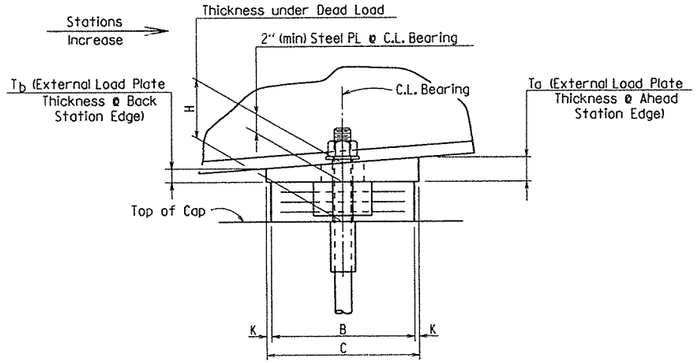
t_i = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



SIDE VIEW AT BENTS 1 & 3



SIDE VIEW AT BENT 2

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 M 270, Grade 50W and will not be paid for separately, but will be included in the unit price bid for "Elastomeric Bearings". Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates with and without shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) 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 807.84(e) for unpainted Grade 50W 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 (M270, Gr. 50W)".

Bearings shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	ELASTOMERIC PAD: H	ELASTOMERIC PAD: A	ELASTOMERIC PAD: B	ELASTOMERIC PAD: N	ELASTOMERIC PAD: t_i	ELASTOMERIC PAD: t_e	ELASTOMERIC PAD: NO. & THICKNESS OF STEEL LAMINAE	ELASTOMERIC PAD: T	EXTERNAL LOAD PLATE: C	EXTERNAL LOAD PLATE: D	EXTERNAL LOAD PLATE: E	EXTERNAL LOAD PLATE: F	EXTERNAL LOAD PLATE: J	EXTERNAL LOAD PLATE: K	EXTERNAL LOAD PLATE: M	EXTERNAL LOAD PLATE: T_a	EXTERNAL LOAD PLATE: T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	ANCHOR BOLT: GRADE	ANCHOR BOLT: PIPE SLEEVE SIZE (ø x L)	ANCHOR BOLT: SHEET METAL SLEEVE SIZE (ø x L)	ANCHOR BOLT: STEEL WASHER SIZE (O.D.)
B7274	1	All	Exp.	5	144	9 5/8"	6 5/16"	19"	12"	6	1/2"	5/16"	7 @ 12ga.	4 3/8"	13"	31"	5"	3 1/8"	N/A	1/2"	12 1/4"	2.05"	1.95"	2"ø x 32"	55	2 1/2"ø x 6 5/8"	4"ø x 12"	3 3/4"
	2	All	Fix.	5	381	8 3/4"	5 5/8"	22"	12"	5	1/2"	5/16"	6 @ 12ga.	3 3/4"	13"	40 5/8"	2 5/8"	2 5/8"	3"	1/2"	16"	2.07"	1.93"	1 3/4"ø x 30"	55	2"ø x 6"	4"ø x 12"	3 3/8"
	3 back	All	Exp.	5	144	9 5/8"	6 5/16"	19"	12"	6	1/2"	5/16"	7 @ 12ga.	4 3/8"	13"	31"	5"	3 1/8"	N/A	1/2"	12 1/4"	2.09"	1.91"	2"ø x 32"	55	2 1/2"ø x 6 5/8"	4"ø x 12"	3 3/4"

PRINT DATE: 7/8/2013

STATE OF ARKANSAS
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No. 7510
7/10/13
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BRIDGE ENGINEER

SHEET 3 OF 3

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 5-2-07 FILENAME: bCA0904b9_sl.dgn

CHECKED BY: AMS DATE: 7-14-07 SCALE: NONE

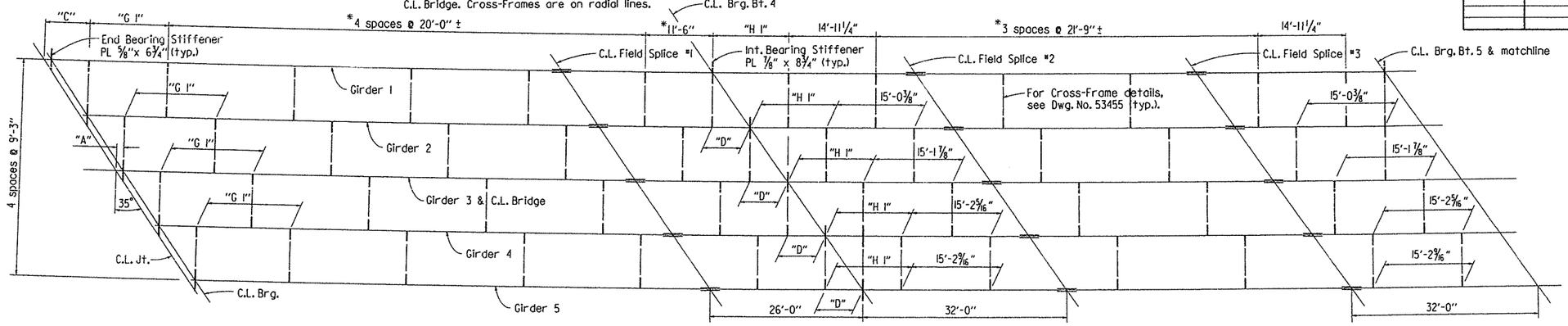
DESIGNED BY: JAC DATE: 4/07

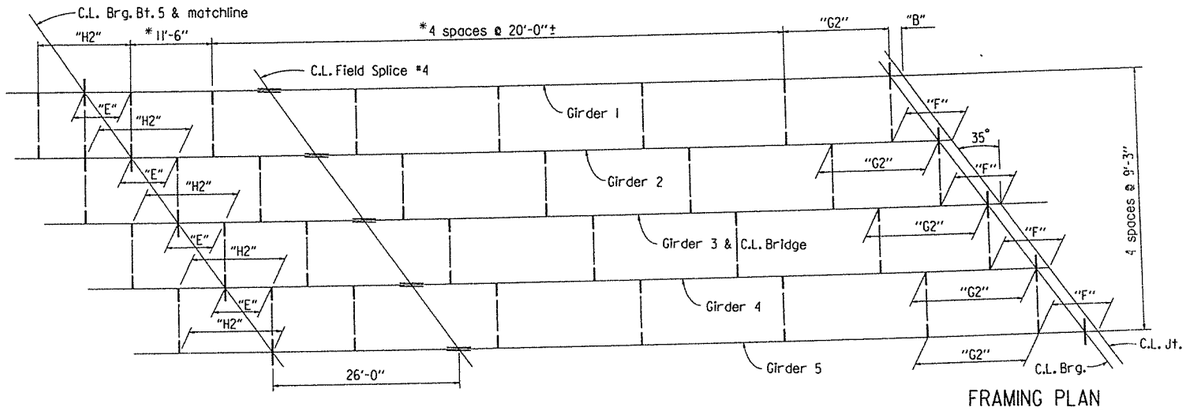
BRIDGE NO. B7274 DRAWING NO. 53464

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	2 17	636
				(1) B7274		345' CONT. UNIT		53465

Note: Girders are curved and are concentric to C.L. Bridge. Cross-Frames are on radial lines.

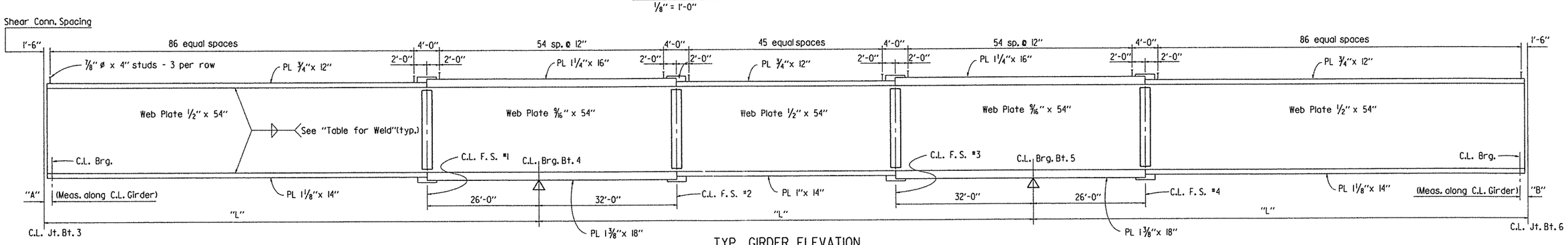
*Measured along right face of Girders 1thru 4





FRAMING PLAN

⅛" = 1'-0"



TYP. GIRDER ELEVATION

N.T.S.

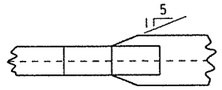
Stud Shear Connectors shown shall be ⅞"ø x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the ⅞"ø studs shown, at the ratio of 1.361 -¾"ø studs in place of one ⅞"ø stud. ⅞"ø studs will be used as basis for measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

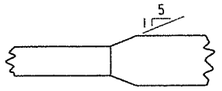
NTS

TABLE OF VARIABLES

Girder	"L"	"A"	"B"	"C"	"D"	"E"	"F"	"G 1"	"G2"	"H 1"	"H2"
1	114'-7⅜"	1'-2 11/16"	1'-10"	7'-8⅜"	—	6'-5 15/16"	—	15'-5"	14'-9⅝"	13'-0"	13'-0"
2	114'-9⅜"	1'-2 11/16"	1'-10"	7'-8⅜"	6'-6 1/16"	6'-5¾"	8'-4⅛"	15'-7 1/16"	15'-0 1/16"	13'-0"	12'-11⅜"
3	115'-0"	1'-2⅝"	1'-10"	7'-8⅜"	6'-5⅞"	6'-5⅝"	8'-3⅝"	15'-9⅛"	15'-2⅛"	12'-10⅜"	13'-0"
4	115'-2⅜"	1'-2⅝"	1'-9⅝"	7'-8"	6'-5 11/16"	6'-5⅜"	8'-3⅛"	16'-0¼"	15'-4⅞"	13'-0"	13'-0"
5	115'-4⅞"	1'-2⅝"	1'-9⅝"	—	6'-5½"	—	8'-3½"	16'-0½"	15'-5⅜"	13'-0¼"	13'-0¼"

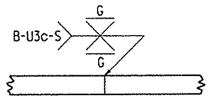


FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



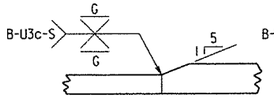
Plan-Unequal Width (Flg.)

FLANGE SPLICE



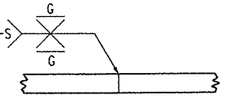
Equal Thickness

WEB SPLICE



Unequal Thickness

FLANGE SPLICE



Equal Thickness

FLANGE SPLICE

DETAILS OF WELDED SPLICES

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.

For Details of Typical Roadway Section, see dwg. no. 53435
For Details of Pouring Sequence, see dwg. no. 53460
For Details of Field Splices, see dwg. no. 53456
For Details of Parapets, see dwg. no. 53457
For Details of Dead Load Deflections, see dwg. no. 53459
For Details of Silicone Jt., see dwg. no. 53458
For General Notes, see dwg. no. 53461

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/4/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 3

DETAILS OF 345'-0" CONTINUOUS PLATE GIRDER UNIT CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-1-07 FILENAME: bCA0904b9_sl.dgn
CHECKED BY: AHS DATE: 9/20/07 SCALE: As shown
DESIGNED BY: J.A.C. DATE: 6/2007

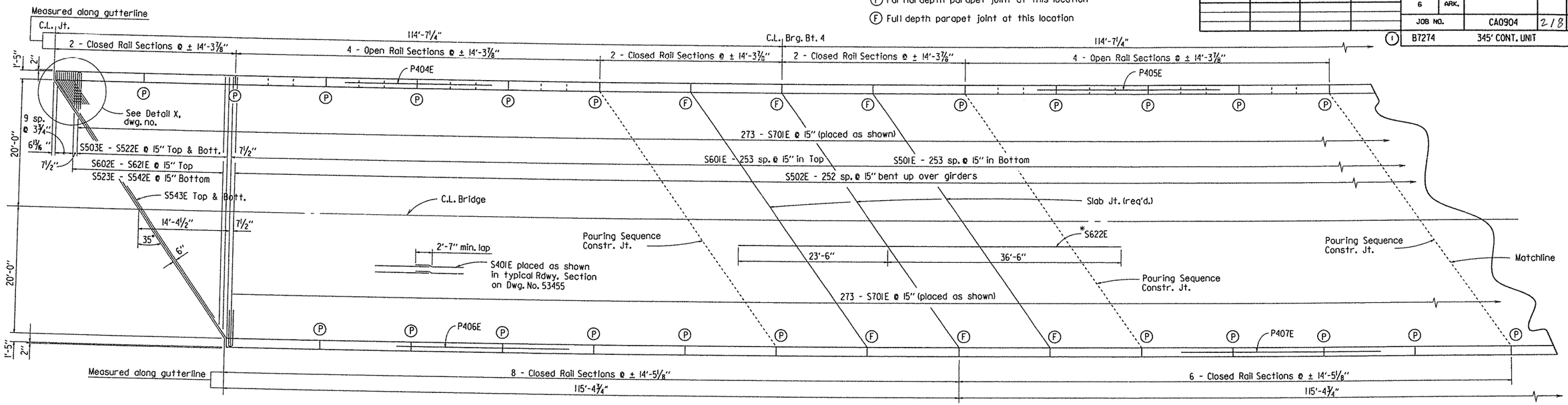
BRIDGE NO. B7274 DRAWING NO. 53465

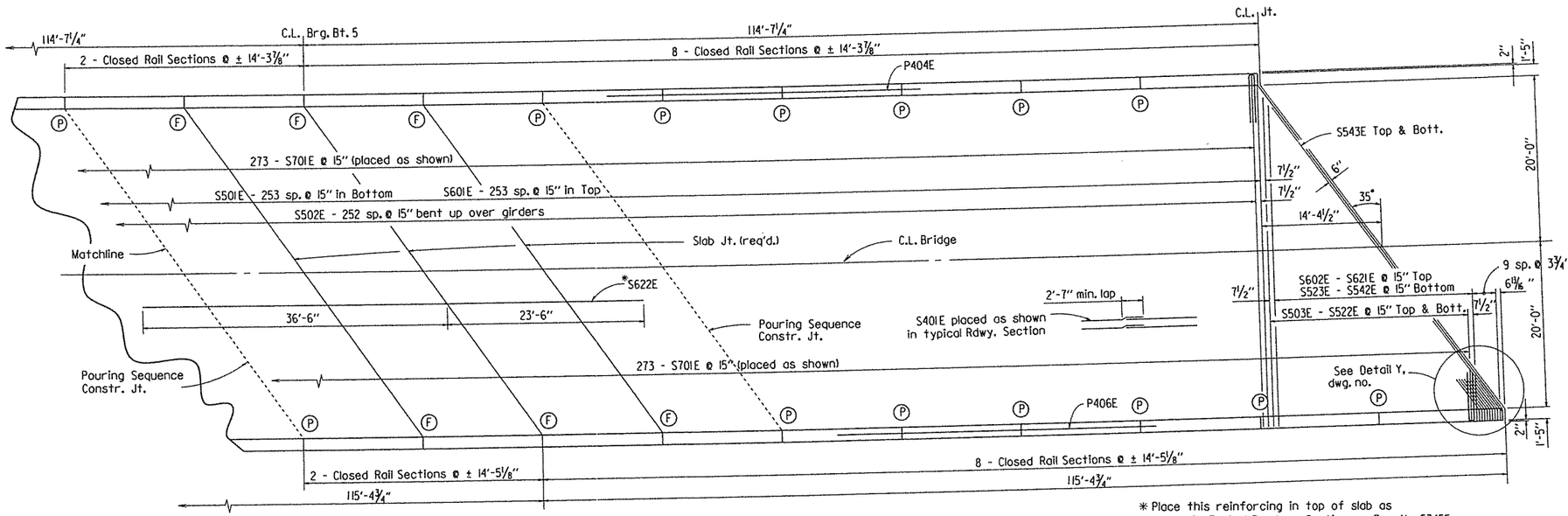
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	2 / 8	6 3 6
				① B7274		345' CONT. UNIT		53466

Ⓟ Partial depth parapet joint at this location

Ⓕ Full depth parapet joint at this location





PLAN OF REINFORCING

⅛" = 1'-0"

* Place this reinforcing in top of slab as shown in Typical Roadway Section on Dwg. No. 53455.

Note: All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C. L. Bridge. All transverse reinforcing steel shall be placed on radial lines and shall be measured along C. L. Bridge.

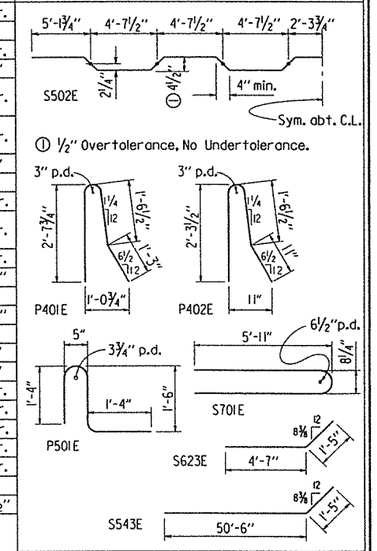
Note: Required slab joints and Pouring Sequence Joints shall align with open joints in parapet rail at the gutterline.

Note: For Details of Slab Joint & Concrete Placement Procedure, see dwg. no. 53463.

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
S401E	1230	37'-0"	Str.
S501E	254	42'-10"	Str.
S502E	253	43'-6"	3"
S503E-S522E	4 ea.	6'-10" to 40'-9"	Str.
S523E-S542E	2 ea.	5'-11" to 39'-10"	Str.
S543E	4	51'-11"	3"
S601E	254	42'-10"	Str.
S602E-S621E	2 ea.	5'-11" to 39'-10"	Str.
S622E	92	60'-0"	Str.
S623E	36	6'-0"	4½"
S701E	546	12'-3"	6½"
P401E	1280	5'-6"	2"
P402E	64	4'-10"	2"
P403E	176	14'-0"	Str.
P404E	24	35'-5"	Str.
P405E	12	30'-7"	Str.
P406E	24	35'-5"	Str.
P407E	12	30'-7"	Str.
P501E	1280	4'-3"	2½"

Bending Diagrams (Dimensions are out to out of bars.)



Note: Bars with "E" designation shall be epoxy coated.

Note: At the Contractor's option, two straight epoxy coated #5 bars, top and bottom, may be substituted for bar S502E. Payment will be based on weight of S502E.

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SHEET 2 OF 3

DETAILS OF 345'-0" CONTINUOUS PLATE GIRDER UNIT CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 8-23-07 FILENAME: bCA0904b9_sl.dgn

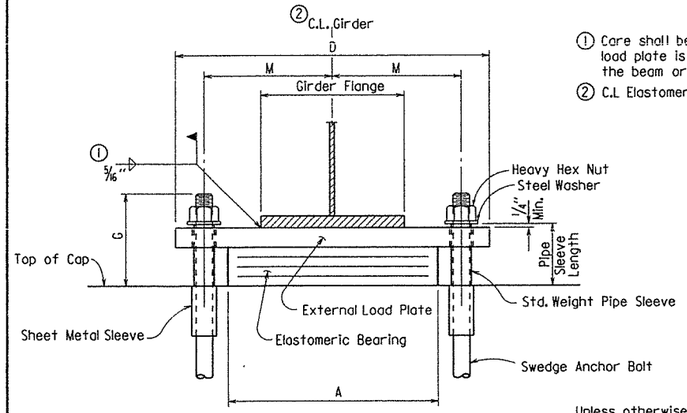
CHECKED BY: AMS DATE: 9/20/07 SCALE: ⅛" = 1'-0" or as shown

DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53466

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	219	636
				(1) B7274		345' CONT. UNIT		53467

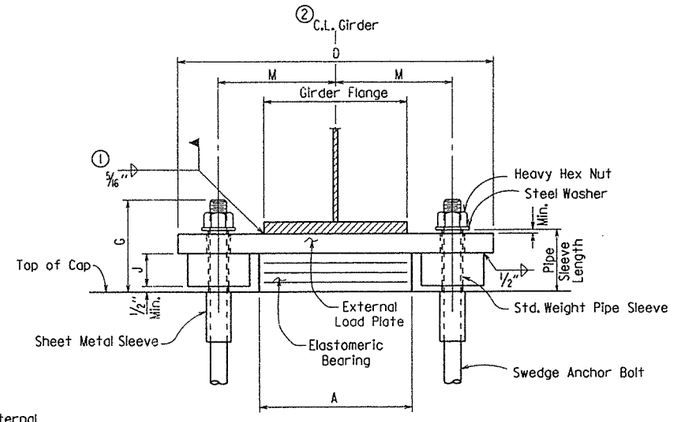


FRONT VIEW AT BENTS 3 & 6

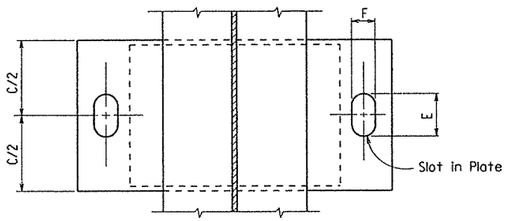
① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② C.L Elastomeric pad shall be aligned with C.L. Girder.

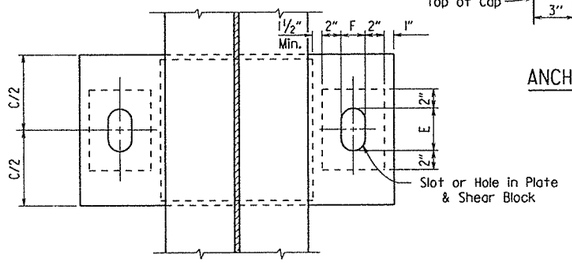
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load 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.



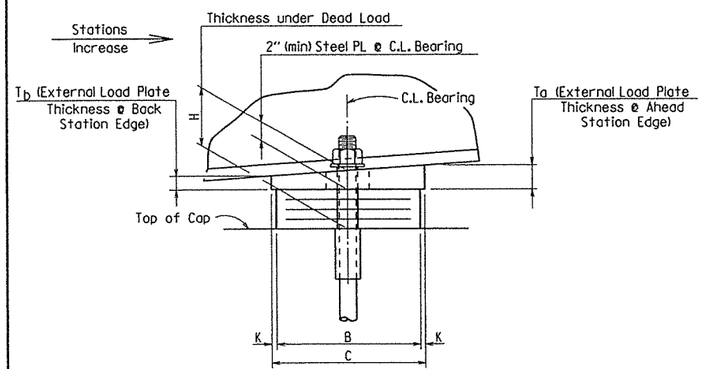
FRONT VIEW AT BENTS 4 & 5



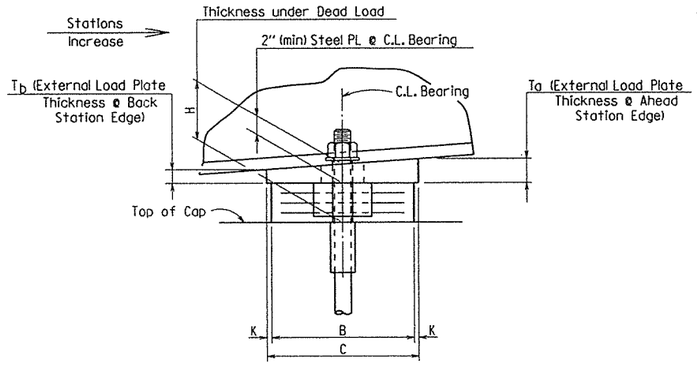
PLAN VIEW AT BENTS 3 & 6



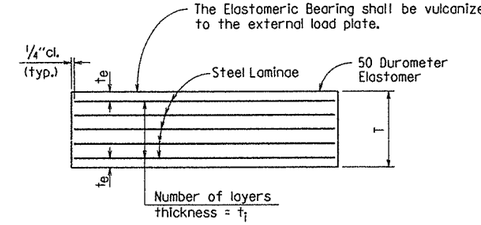
PLAN VIEW AT BENTS 4 & 5



SIDE VIEW AT BENTS 3 & 6



SIDE VIEW AT BENTS 4 & 5

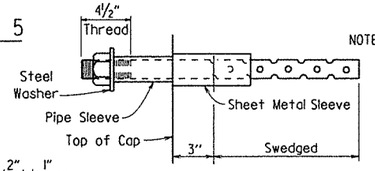


t_e = thickness of elastomer cover on top and bottom of pad

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, (M 270, Gr. 50W)".

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 M 270, Grade 50W and will not be paid for separately, but will be included in the unit price bid for "Elastomeric Bearings". Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates with and without shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) 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 807.84(e) for unpainted Grade 50W 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 (M270, Gr. 50W)".

Bearings shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

BRIDGE NO.	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 LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT: ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
B7274	3 and	All	Exp.	5	158	9 9/16"	6 9/16"	19"	12"	6	1/2"	5/16"	7 @ 12ga.	4 3/8"	13"	31"	5 1/2"	3 1/8"	NA	1/2"	12 1/4"	2.34"	2.16"	2"ø x 32"	55	2 1/2"ø x 6 11/16"	4"ø x 12"	3 3/4"
	4	All	Fix.	5	375	9"	5 5/8"	22"	12"	5	1/2"	5/16"	6 @ 12ga.	3 3/4"	13"	41 5/8"	3 1/8"	3 1/8"	3"	1/2"	16 1/4"	2.11"	1.89"	2"ø x 32"	55	2 1/2"ø x 6"	4"ø x 12"	3 3/4"
	5	All	Exp.	5	368	11 1/2"	8"	22"	14"	9	1/2"	5/16"	10 @ 12ga.	6 3/16"	15"	41 5/8"	5"	3 1/16"	4"	1/2"	16 1/4"	2.14"	1.86"	2 1/4"ø x 38"	55	2 1/2"ø x 8 1/4"	4"ø x 12"	4"
	6	All	Exp.	5	158	9 5/8"	6 5/16"	19"	12"	6	1/2"	5/16"	7 @ 12ga.	4 3/8"	13"	31"	6 1/2"	3 1/8"	NA	1/2"	12 1/4"	2.15"	1.85"	2"ø x 32"	55	2 1/2"ø x 6 5/8"	4"ø x 12"	3 3/4"

PRINT DATE: 7/15/2013

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SHEET 3 OF 3
DETAILS OF 345'-0" CONTINUOUS PLATE GIRDER UNIT
CR 49 (BECKETT ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

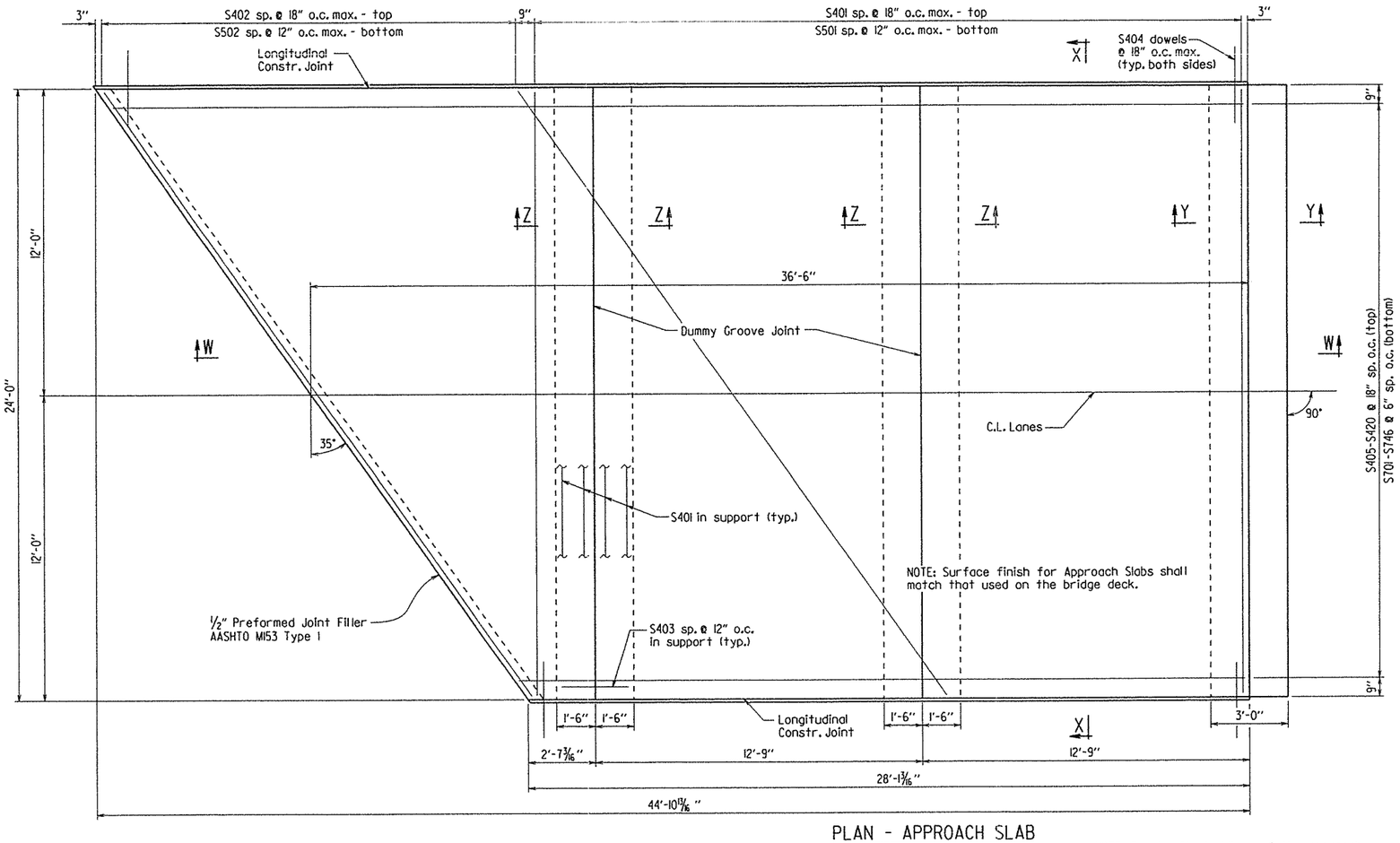
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CHECKED BY: AMS DATE: 9/20/07 SCALE: NONE

DESIGNED BY: JAC DATE: 6/2007

BRIDGE NO. B7274 DRAWING NO. 53467

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	220	636
				(1) B7274		APPROACH SLABS		53468

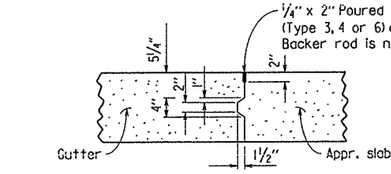


PLAN - APPROACH SLAB

3/8" = 1'-0"

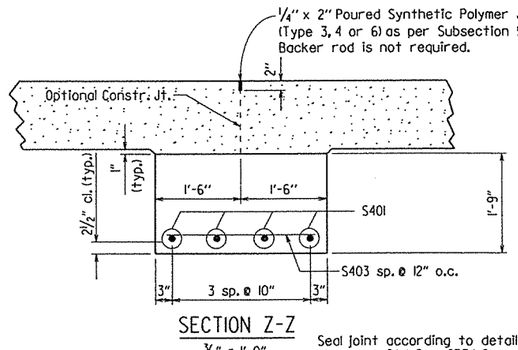
NOTE: Surface finish for Approach Slabs shall match that used on the bridge deck.

NOTE: The longitudinal lines of the approach slabs shall be constructed on curves concentric with C.L. Bridge.



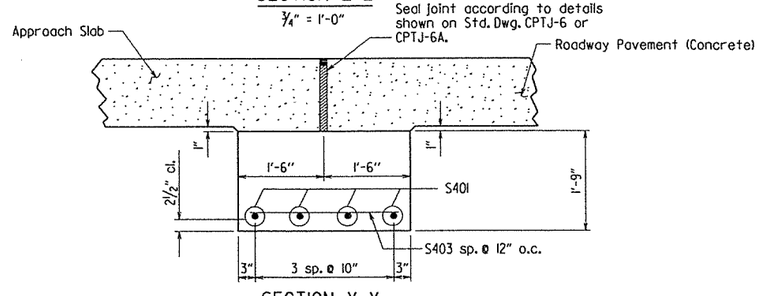
DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

3/4" = 1'-0"



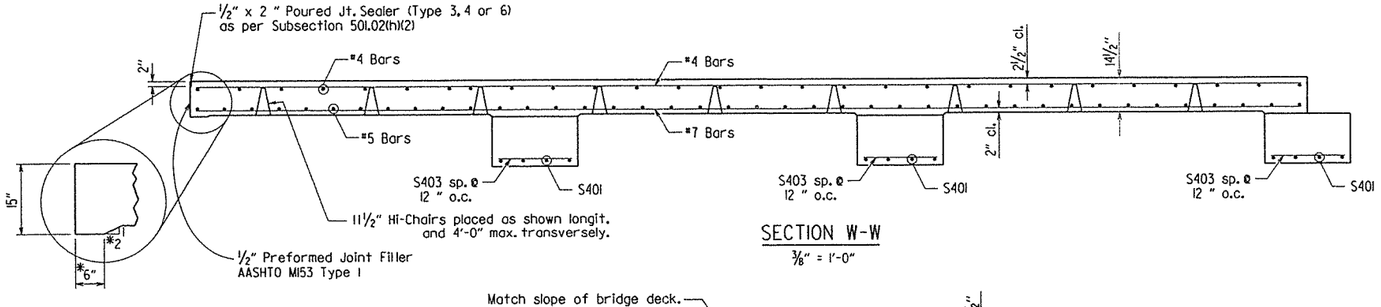
SECTION Z-Z

3/4" = 1'-0"



SECTION Y-Y

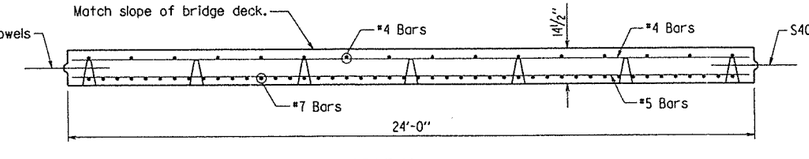
3/4" = 1'-0"



SECTION W-W

3/8" = 1'-0"

*Measured perpendicular to bridge backwall.



SECTION X-X

3/8" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length
S401	32	23'-8"
S402	12	28'-11"
S403	72	2'-8"
S404	50	3'-0"
S405 to S420	1 ea.	28'-3" to 44'-0"
S501	29	23'-8"
S502	18	28'-11"
S701 to S746	1 ea.	28'-3" to 44'-0"

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 2 APPROACH SLAB

Reinforcing Steel	Concrete (Cu. Yds.)
6007.6	53.9

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DETAILS OF TYPE SPECIAL 2 APPROACH SLAB

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 2-21-07 FILENAME: bCA0904b9_as.dgn

CHECKED BY: AHS DATE: 7/13 SCALE: as noted

DESIGNED BY: SED. DATE: —

BRIDGE NO. B7274 DRAWING NO. 53468

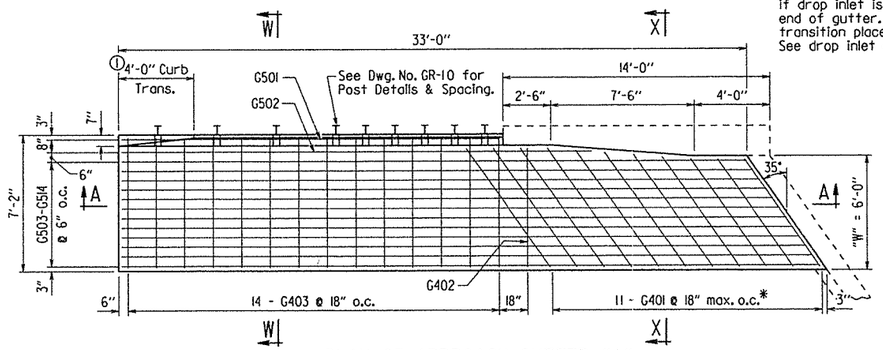
PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	22	636
				① B7274		APPROACH GUTTERS		53469

NOTE: The longitudinal lines of the approach gutters shall be constructed on curves concentric with C.L. Bridge.

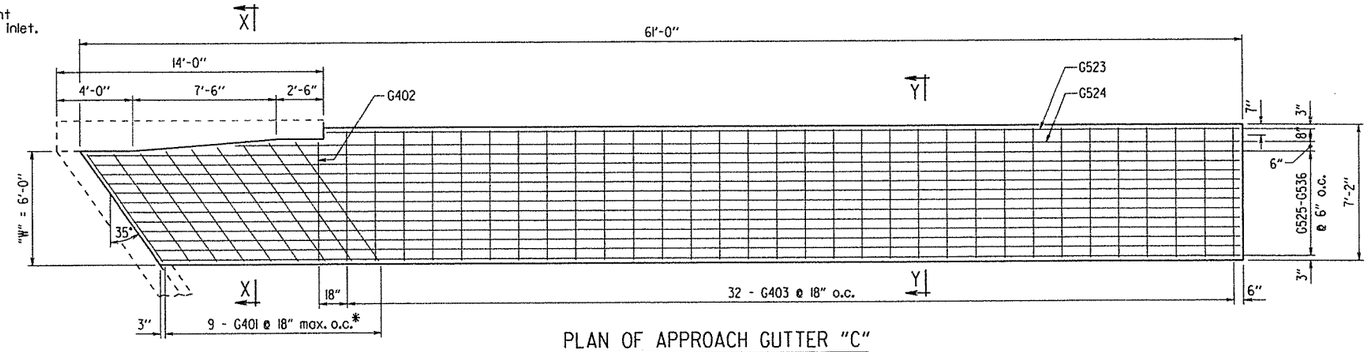
① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

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.



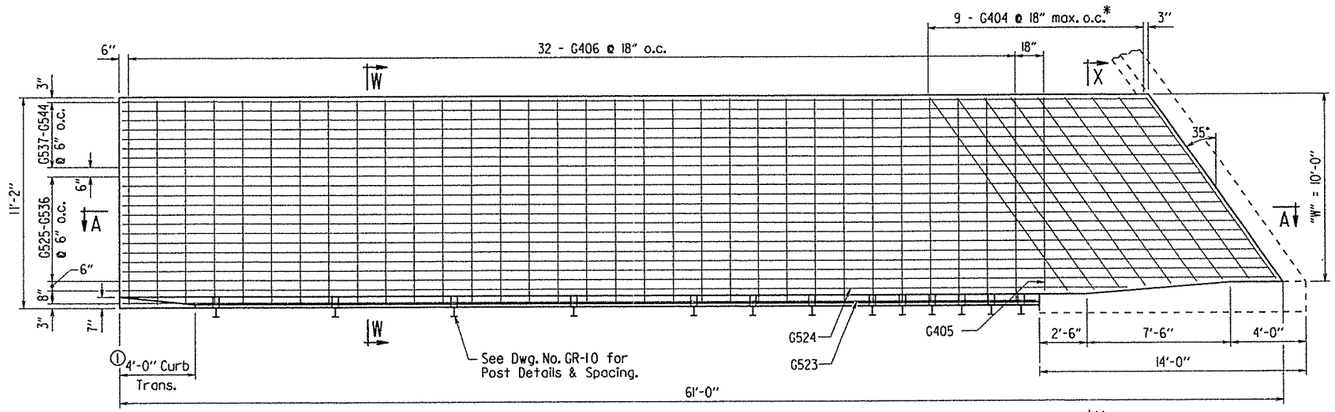
PLAN OF APPROACH GUTTER "A"

1/4" = 1'-0"



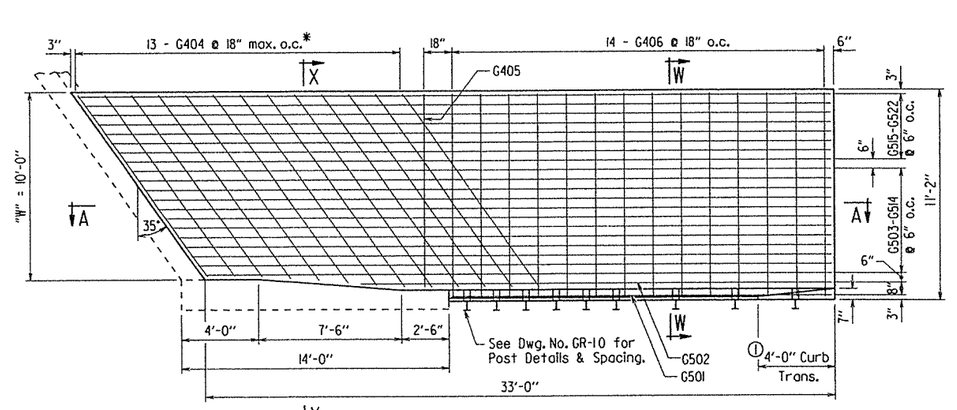
PLAN OF APPROACH GUTTER "C"

1/4" = 1'-0"



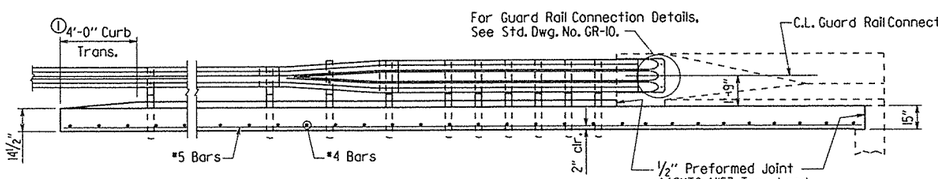
PLAN OF APPROACH GUTTER "B"

1/4" = 1'-0"



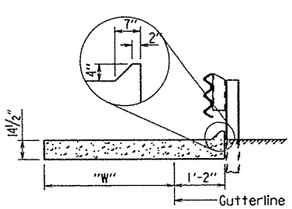
PLAN OF APPROACH GUTTER "D"

1/4" = 1'-0"



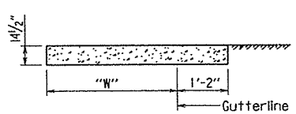
SECTION A-A

No Scale



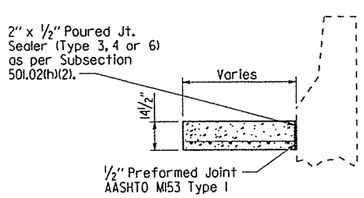
SECTION W-W

No Scale



SECTION Y-Y

No Scale



SECTION X-X

No Scale

BAR LIST

FOR ONE EACH OF GUTTERS A, B, C, AND D

Mark	No. Req'd.	Length
G401	20	*
G402	2	6'-3"
G403	46	6'-10"
G404	22	*
G405	2	10'-3"
G406	46	10'-10"
G501	2	19'-10"
G502	2	24'-8"
G503 to G514	2 ea.	32'-10" to 36'-8"
G515 to G522	1 ea.	37'-0" to 39'-5"
G523	2	47'-10"
G524	2	52'-8"
G525 to G536	2 ea.	56'-7" to 60'-5"
G537 to G544	1 ea.	53'-9" to 56'-3"

* Bar lengths vary due to rail transition. Provide 2" cover minimum at ends.

TABLE OF QUANTITIES FOR TYPE SPECIAL 2 APPROACH GUTTERS

Approach Gutter	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
"A"	603.0	10.7
"B"	1607.1	28.6
"C"	1030.7	18.5
"D"	1014.5	17.7

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

STATE OF ARKANSAS
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REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 2 APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KWY DATE: 3-1-07 FILENAME: bCA0904b9_ag.dgn

CHECKED BY: AMS DATE: 7/13 SCALE: as noted

DESIGNED BY: STD DATE: —

BRIDGE NO. B7274 DRAWING NO. 53469

PRINT DATE: 7/8/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	222	636
				① 07275		Layout	53470	

For R/W Data, See Rdwy. Plans.

Place Type Special 3 Approach Gutters (W=4'-0") at both ends of bridge. See Dwg. No. 53484.

Top of Cut, See Rdwy. Plans.

Intersection of Cut Slope

Ditch Flow Line

Proposed 10'-0" Shldr.

24'-0" Lanes

6'-0" Shldr.

30'-0"

S82°02'29"E

10'-0" Future Shldr.

Constr. C.L. U.S. Hwy. 71

Power Pole

Toe of Slope

Place Concrete Riprap at each corner of bridge as shown. See Dwg. No. 14995A

27'-1" Min. Clear.

35'-5" Min. Clearance

955+00

Ret. Wall, See Dwg. Nos. 53472 & 53473.

Concrete Ditch Paving, See Rdwy. Plans

Constr. C.L. U.S. Hwy. 71, Sta. 955+49.01 = C.L. Co. Rd. 49, Sta. 18+23.35

Tang. Dist. = 281.71'

Test Hole (typ.)

C.L. Bridge

Point of Min. Vert. Clearance

Point of Future Min. Vert. Clr.

N 03°36'00"E

Tang. Dist. = 393.81'

Concrete Ditch Paving, See Rdwy. Plans

Impact Attenuation Barrier See Rdwy. Plans.

956+00

44'-1" Min. Clearance

27'-1" Min. Clear.

See Rdwy. Plans for Ditch Paving (typ).

Ret. Wall, See Dwg. Nos. 53472 & 53473

Toe of Fill Slope

Top of Cut, See Rdwy. Plans.

Intersection of Cut Slope

Top of Cut, See Rdwy. Plans.

Toe of Slope

Top of Cut

POND

LEVEE

ABOVE GROUND POOL

GATE

PLAN

Total Length of Bridge = 212'-2"

210'-0" Cont. Comp. Plate Girder Unit (110', 100')

1'-1"

C.L. 2" Poured Silicone Joint

① Measured from Working Point at C.L. Bridge. See "Rounding Detail" on dwg. no. 53478.

Slope Intercept Sta. 17+01.27, Elev. 1339.26 ①

Beg. Br. Sta. 17+12.27 ① Elev. 1339.23

① C.L. Deck to Low Steel = 5'-1 1/8" @ Sta. 17+92.29

① Top of Deck @ C.L. Constr. to Low Seat Cap = 5'-7 7/8"

C.L. Bent Sta. 18+23.35 ① Elev. 1338.43

① C.L. Deck to Low Steel = 5'-2 7/8" @ Sta. 18+52.47

End Br. Sta. 19+24.43 ① Elev. 1336.92

Slope Intercept Sta. 19+35.43, Elev. 1336.72 ①

Concrete Parapet Rail

Existing Ground Line along C.L. Constr.

Proposed Grade Line along C.L. Constr.

Guard Rail-See Rdwy. Plans.

Exp.

Fix.

17'-5" min. cl.

27'-3"

16'-9" min. cl.

Proposed Lanes U.S. Hwy. 71

Future Lanes U.S. Hwy. 71

Elev. 1305.55

30' Piles

10' Piles

Bent No. ① ② ③

ELEVATION

P.V.I. Sta. 18+89.30 Elev. 1341.35

0.75 % -3.95 %

650' V.C.

VERTICAL CURVE DATA

(Profile Grade is Located along C.L. Construction.)

STATE OF ARKANSAS Carl J. Fuselier REGISTERED PROFESSIONAL ENGINEER No. 7510 12/11/13 CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2

LAYOUT OF BRIDGE

CR 49 (MILLER CHURCH RD.) OVER U.S. HWY. 71

HWY. 71B - HWY. 72 SOUTH

(BELLA VISTA BYPASS) (S)

BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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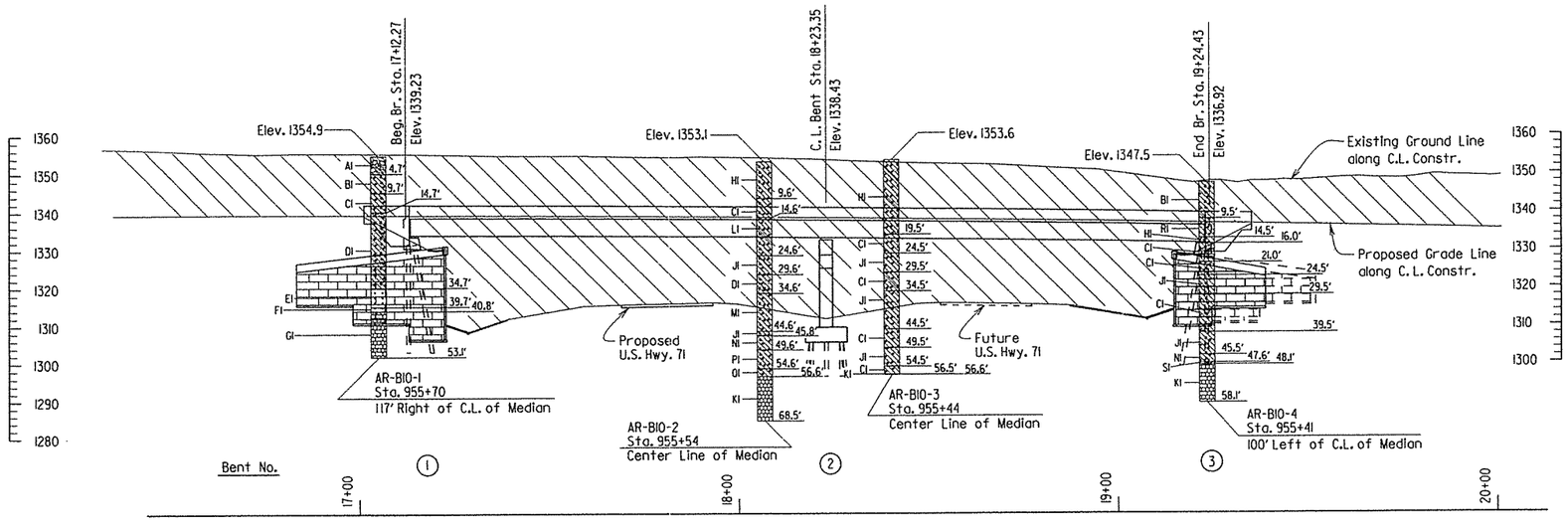
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DESIGNED BY: DBM DATE: 10/06

BRIDGE NO. 07275 DRAWING NO. 53470

PRINT DATE: 10/2/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	223	636
				07275		Layout		53471



SOIL BORING ELEVATION

BORING LEGEND

AI-Moist, Stiff, Reddish Brown Gravely (Chert Fragments) Clay with Sand and Chert Cobbles
BI-Moist, Very Hard, Reddish Brown Gravely (Chert Fragments) Clay
CI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
DI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
EI-Soft, Gray Weathered Chert with some Sand
FI-Hard, Gray Weathered Chert
GI-Hard, Gray Cherty Limestone
HI-Moist, Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
JI-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
KI-Hard, Gray Cherty Limestone
LI-Moist, Stiff, Reddish Brown Gravely (Chert Fragments) Clay
MI-Moist, Loose to Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
NI-Wet, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
PI-Wet, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
QI-Wet, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
RI-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
SI-Hard, Gray Chert

"N" VALUES

AR-BIO-1
Sta. 955+70 -
117' Right of C.L. of Median

5.2-	6.2, N=73
10.2-	11.2, N=54
15.2-	16.2, N=26
20.2-	21.2, N=18
25.2-	26.2, N=29
30.2-	31.2, N=19
35.2-	36.2, N=29
40.2-	40.3, N=60(1")

AR-BIO-2
Sta. 955+44 -
C.L. of Median

5.0-	6.0, N=48
10.0-	11.0, N=34
15.0-	16.0, N=39
20.0-	21.0, N=20
25.0-	26.0, N=9
30.0-	31.0, N=21
35.0-	36.0, N=8
40.0-	41.0, N=7
45.0-	46.0, N=12
50.0-	51.0, N=6
55.0-	56.0, N=17
56.5-	56.6, N=60(1")

AR-BIO-3
Sta. 955+54 -
C.L. of Median

5.1-	6.1, N=50
10.1-	11.1, N=16
15.1-	16.1, N=13
25.1-	26.1, N=9
30.1-	31.1, N=17
35.1-	36.1, N=8
40.1-	41.1, N=17
45.1-	46.1, N=5
50.1-	51.1, N=14
55.1-	55.3, N=60(2")

AR-BIO-4
Sta. 955+41 -
100' Left of C.L. of Median

5.0-	5.1, N=60(1")
10.0-	11.0, N=97
15.0-	16.0, N=32
20.0-	21.0, N=11
25.0-	26.0, N=7
30.0-	31.0, N=14
35.0-	36.0, N=11
40.0-	41.0, N=9
45.0-	46.0, N=8

Note: Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.

GENERAL NOTES

BENCH MARK: CPS in Power Pole, 160.82' Lt. of C.L. Construction Sta. 17+51.08, Elev. = 1357.53.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted, Section and subsection refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 interim revisions.

LIVE LOADING: HL93
SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi.
Class S Concrete (substructure)	f'c = 3,500 psi.
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi.
Structural Steel (AASHTO M270, Gr. 50W)	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.

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 and into material designated as hard limestone on the boring legend. 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.

Minimum penetration for all piling at Bents 1 and 3 shall be 8' below natural ground. Minimum penetration for all piling at Bent 2 shall be 8' below bottom of footing.

Pile casings are required for all piling in Bents 1 and 3. Casings shall be installed prior to or during embankment construction and shall extend from top of leveling pad to bottom of cap. Pile casing material shall be of 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 preboring (where required) and through the open casings after the embankment to bottom of cap is in place. After driving is completed, the pile casing shall be backfilled with 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 (HP 12X53)".

PREBORING: Preboring is required for all piling in Bent 1 after excavation to the top of leveling pad is complete to achieve the minimum penetration and to a minimum 3' depth into material designated as hard 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".

FOOTINGS: The footing at Bent 2 shall have a minimum cover above top of footing of 2'-0". Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled according to subsection 801.08.

FORM INSERT: State of Arkansas Form Inserts shall be placed on all four turned back sections of retaining walls in accordance with Dwg. No. 53430.

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 the face and top of the concrete parapet rail.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge and retaining wall surfaces as specified in Job SP "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.

DETAIL DRAWINGS:	DRAWING NOS.
Retaining Walls	53472 & 53473
End Bents	53474 & 53475
Interior Bent	53476
Elastomeric Bearings	53477
210' Cont. Plate Girder Unit	53478-53483
Steel Piling	14995A
Type Special 3 Approach Gutters	53484

SHEET 2 OF 2

LAYOUT OF BRIDGE
CR 49 (MILLER CHURCH RD.) OVER U.S. HWY. 71
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS) (S)
BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

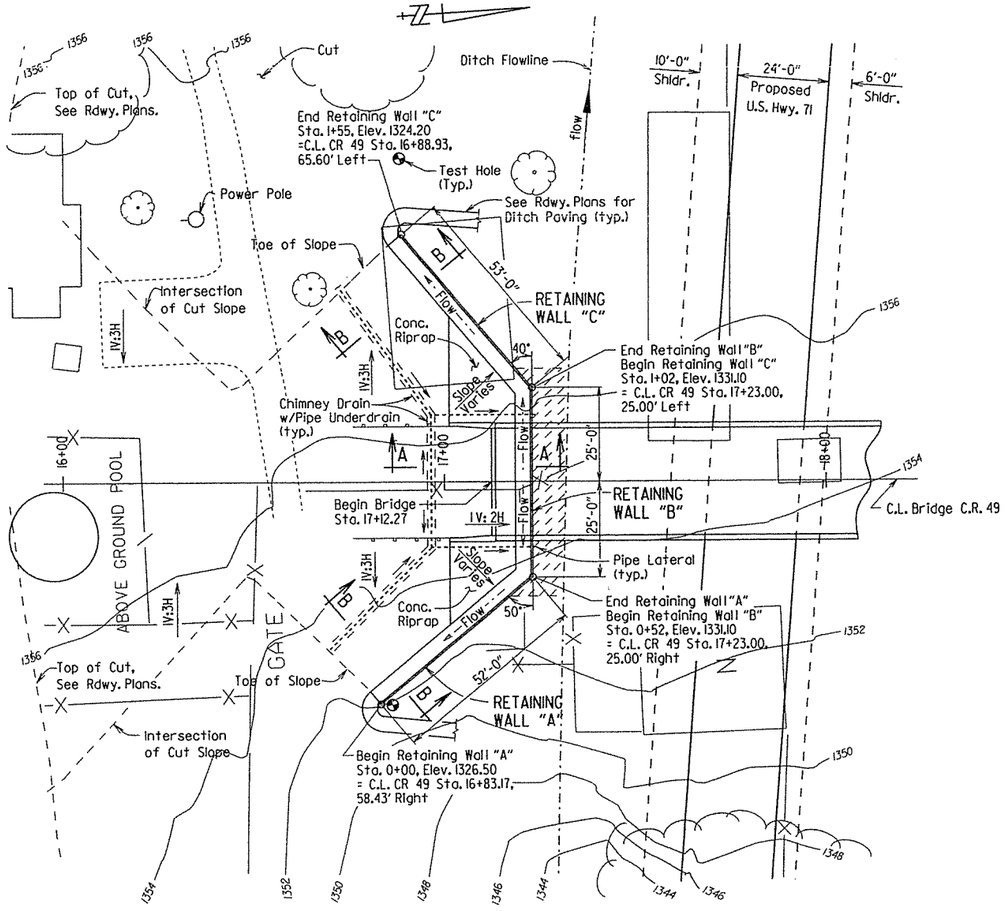
STATE OF ARKANSAS
Carl L. Puseller
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL L. PUSELLER
BRIDGE ENGINEER

DRAWN BY: dgm DATE: 11-07-06 FILENAME: bCA0904x10_11.dgn
CHECKED BY: AMS DATE: 7/15/13 SCALE: 1" = 20'-0"
DESIGNED BY: DGM DATE: 10/06

BRIDGE NO. 07275 DRAWING NO. 53471

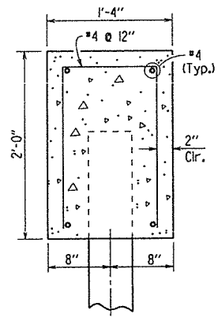
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				6	ARK.			
				JOB NO.		CA0904	224	636
				①	07275	RETAINING WALLS		53472



Note: For Section A-A and Section B-B, See Dwg. No. 53473.

PLAN - SOUTH RETAINING WALL @ COUNTY ROAD 49



COPING DETAIL
No Scale

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".

All exposed surfaces of the concrete coping shall be given a Class 3 Textured Coating Finish in accordance with Job SP "Textured Coating Finish".

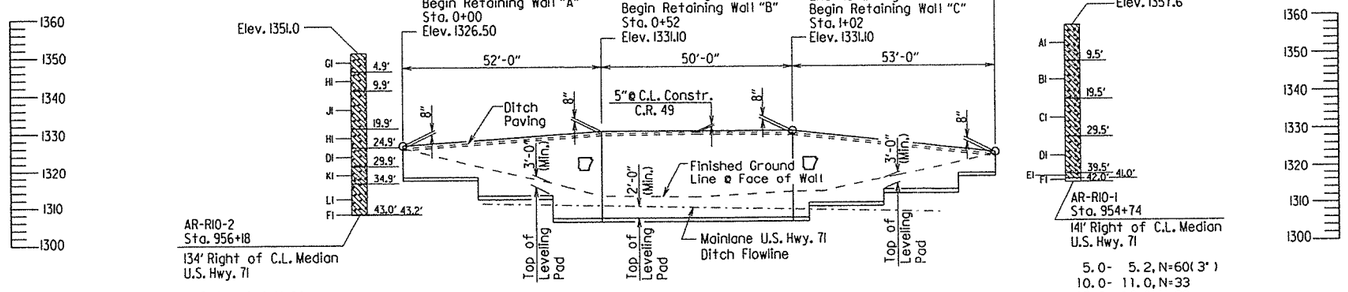
Precast coping may be substituted for cast-in-place coping shown.

BORING LEGEND

AI-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
BI-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
CI-Moist, Stiff to Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
DI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
EI-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
FI-Hard, Gray Chert
GI-Moist, Very Hard, Reddish Brown Gravelly (Chert Fragments) Clay
HI-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
JI-Moist, Very Stiff to Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
KI-Moist, Very Dense, Gray Clayey Gravel (Chert Fragments) with Sand
LI-Moist, Medium Dense to Loose, Gray Clayey Gravel (Chert Fragments)
MI-Moist, Very Stiff, Reddish Brown Sandy Clay
NI-Moist, Dense, Reddish Brown Sand with Clay Seams and Gravel (Chert Fragments)
PI-Moist, Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
QI-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments)
RI-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
SI-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay
TI-Soft, Gray Weathered Chert
UI-Hard, Gray Weathered Chert

Notes: For additional boring logs in vicinity of retaining wall, See Dwg. No. 53471.

Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.



5.4- 6.4, N=81
10.4- 11.4, N=26
15.4- 16.4, N=13
20.4- 21.4, N=63
25.4- 26.4, N=20
30.4- 31.4, N=60
35.4- 36.4, N=17
40.4- 41.4, N=9

5.0- 5.2, N=60(3")
10.0- 11.0, N=33
15.0- 16.0, N=39
20.0- 21.0, N=15
25.0- 26.0, N=17
30.0- 31.0, N=11
35.0- 36.0, N=22
40.0- 41.0, N=8

ELEVATION - SOUTH RETAINING WALL @ COUNTY ROAD 49

TABLE OF QUANTITIES

(FOR INFORMATION ONLY)

LOCATION / ITEM NO.	210	SP CA0904	SP CA0904	SP CA0904
ITEM	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALL	① TEXTURED COATING FINISH
UNIT	CU. YD.	CU. YD.	SQ. FT.	SQ. YD.
WALL A: STA. 0+00 TO STA. 0+52	307	476	787	60
WALL B: STA. 0+52 TO STA. 1+02	496	1156	1173	104
WALL C: STA. 1+02 TO STA. 1+55	236	415	750	62
WALL D: STA. 0+00 TO STA. 0+45	191	292	616	49
WALL E: STA. 0+45 TO STA. 0+95	367	818	979	90
WALL F: STA. 0+95 TO STA. 1+32	153	229	486	37
TOTALS	1750	3386	4791	402

① Exposed surfaces of coping & wall

NOTES FOR UNDERCUTTING & BACKFILL:

Large scale undercut is not anticipated. However, due to the irregular bedrock surface and the tendency for the gravelly clay and clayey gravel in the low areas of the bedrock surface to stay saturated, some isolated undercut is anticipated. If soft or unstable material is encountered beneath the retaining wall and reinforcement zone, it shall be removed and backfilled with Select Granular Backfill. Depth and length of any required undercutting shall be as determined by the Engineer.

Any excavation and backfill required for undercutting shall be paid for as "Unclassified Excavation" and "Select Granular Backfill" in accordance with Job SP "Retaining Walls".

GENERAL NOTES:

Design Specifications: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012) with 2013 Interims.

Retaining Wall Stations are measured along outside vertical face of wall. Elevations shown are profile grade for top of wall. Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Reinforcement placement and details for retaining walls may be affected by end bent construction and proposed roadway drainage structures. See End Bent drawings for pile locations and wingwall details. See Roadway Plans for locations and details of drainage structures.

For ditch paving, See Standard Dwg. No. CDP-1.

Preformed joint filler, joint sealer, polystyrene board, and pipe underdrains will not be paid for directly, but will be considered subsidiary to the item "Retaining Wall".

A Class 3 Textured Coating Finish shall be applied to retaining wall surfaces as specified in Job SP "Textured Coating Finish" and in accordance with subsection 802.19(b)(3).

State of Arkansas Form Inserts shall be placed on each turned back section of retaining wall in accordance with Dwg. No. 53430.

See Job SP "Retaining Walls" for additional information.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/1/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2

LAYOUT OF RETAINING WALLS CR 49 (MILLER CHURCH RD.)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

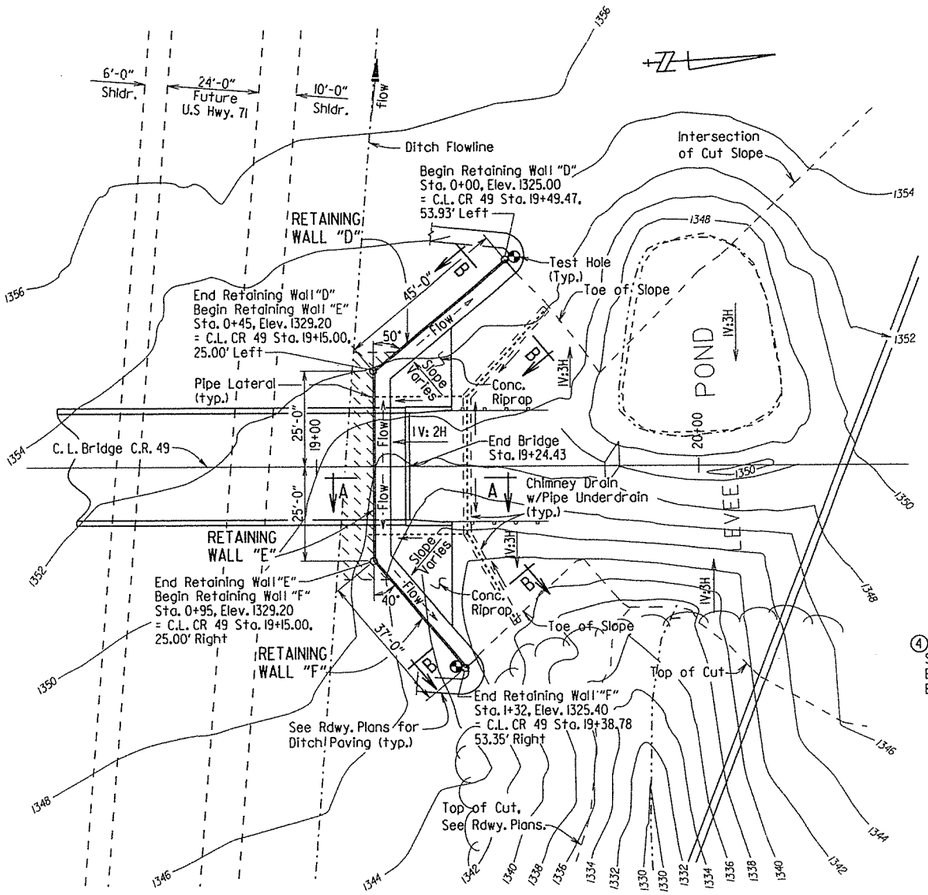
LITTLE ROCK, ARK.

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DESIGNED BY: D.G.H. DATE: 10/06

BRIDGE NO. 07275 DRAWING NO. 53472

PRINT DATE: 7/3/2013

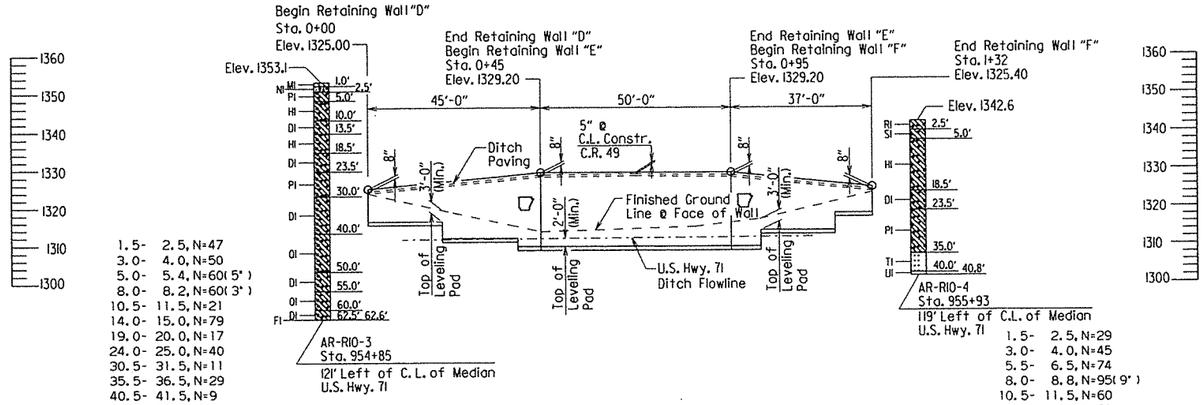
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				6	ARK.			
				JOB NO.		CA0904	223	636
				(1) 07275		RETAINING WALLS		53473



PLAN - NORTH RETAINING WALL @ COUNTY ROAD 49

Notes: For Boring Legend, See Dwg. No. 53472. For additional borings in vicinity of retaining wall, see Dwg. No. 53471.

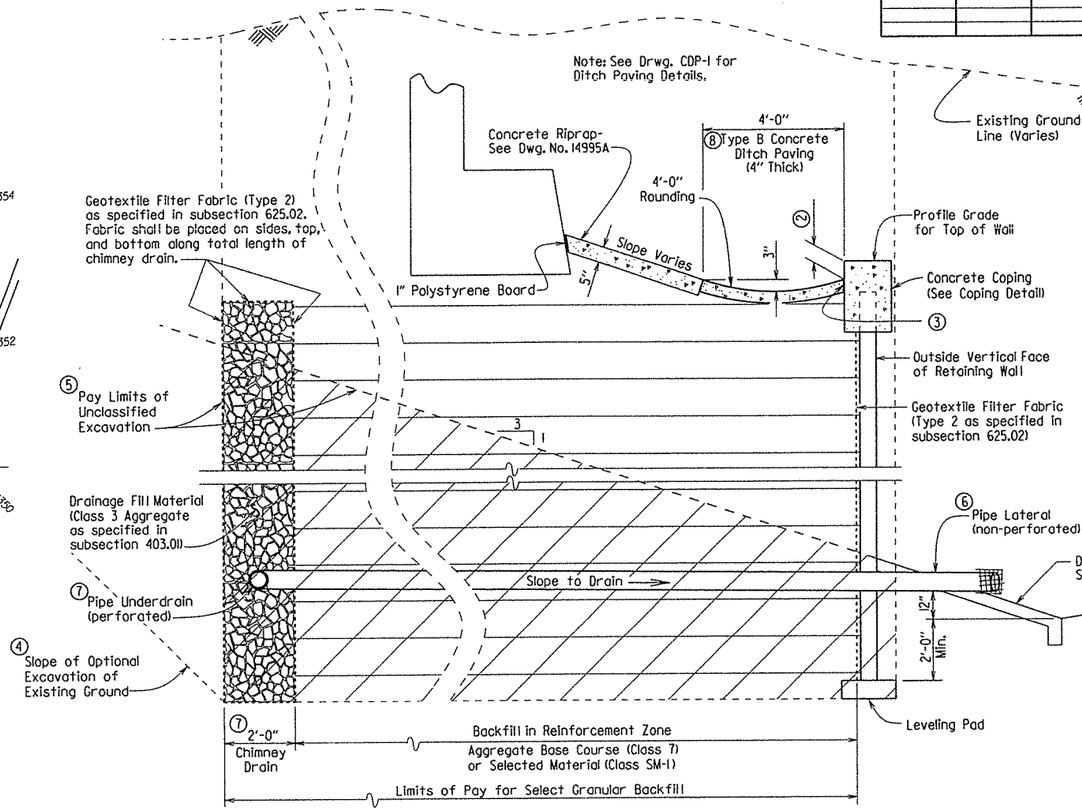
Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.



1.5- 2.5, N=47
3.0- 4.0, N=50
5.0- 5.4, N=60(5")
8.0- 8.2, N=60(3")
10.5- 11.5, N=21
14.0- 15.0, N=79
19.0- 20.0, N=17
24.0- 25.0, N=40
30.5- 31.5, N=11
35.5- 36.5, N=29
40.5- 41.5, N=9
45.5- 46.5, N=9
50.5- 51.5, N=15
55.5- 56.5, N=5
60.5- 61.5, N=25

1.5- 2.5, N=29
3.0- 4.0, N=45
5.5- 6.5, N=74
8.0- 8.8, N=95(9")
10.5- 11.5, N=60
14.0- 15.0, N=51
19.0- 20.0, N=13
24.0- 25.0, N=49
35.5- 36.5, N=14
40.5- 40.8, N=60(3")

ELEVATION - NORTH RETAINING WALL @ COUNTY ROAD 49



(1) Varies from 5" to 8" - See "ELEVATION"

(3) ½" Preformed Joint Filler (AASHTO M153, Type 1) per subsection 501.02(h)(1). Seal with ½" x 1" Type 3, 4 or 6 Joint Sealer per subsection 501.02(h)(2).

(4) The Contractor has the option of using a cut slope or shoring to maintain stability of the cut. Any excavation beyond the limits of the reinforcement zone and chimney drains or any shoring used will not be paid for directly, but shall be considered incidental to the item "Retaining Wall". See Job SP "Retaining Walls" for additional information.

(5) Excavation below the 1V:3H cut slope and within the reinforcement zone and for the leveling pad and chimney drains will be paid for as Unclassified Excavation in accordance with the Job SP "Retaining Walls".

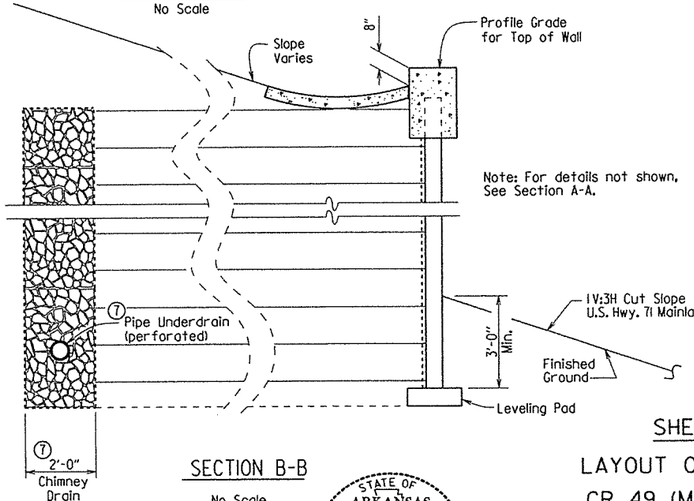
(6) 4" Pipe Lateral (non-perforated) with rodent screen in accordance with Section 611 and Std. Dwg. PU-1. Lateral underdrains shall be placed near each end of Walls "B" and "E". This work and material are to be considered subsidiary to the item "Retaining Wall" and will not be paid for directly.

(7) Chimney Drains shall be constructed immediately behind the reinforcement zone and shall extend from the bottom of excavation to the top of the reinforcement zone. 4" Pipe Underdrains (perforated) shall be placed in chimney drains to collect seepage water in accordance with Section 611 and Std. Dwg. PU-1.

(8) Weepholes shall be eliminated.

SECTION A-A

No Scale



SECTION B-B

No Scale

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2

LAYOUT OF RETAINING WALLS CR 49 (MILLER CHURCH RD.)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

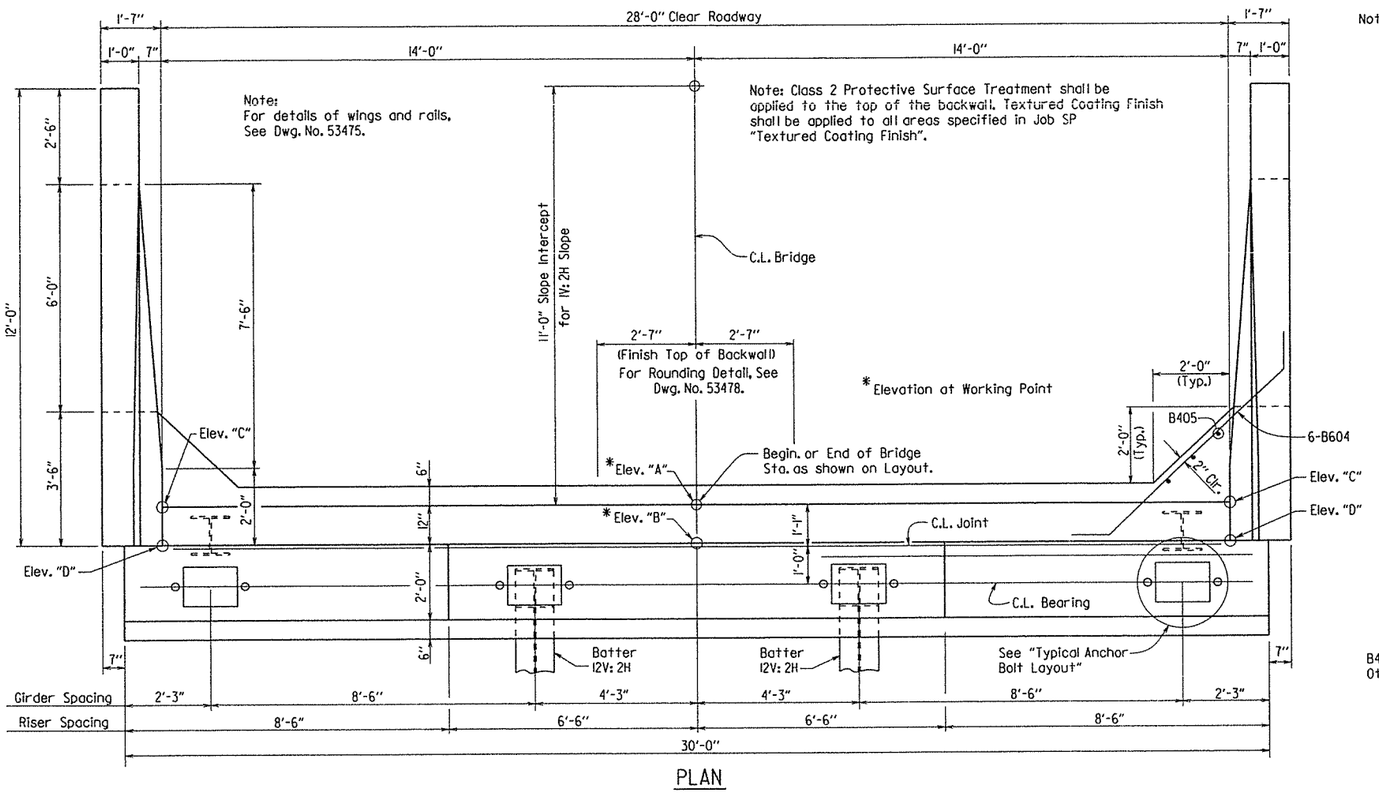
LITTLE ROCK, ARK.

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CHECKED BY: J.A.C. DATE: 1-14-08 SCALE: 1" = 20'
DESIGNED BY: D.G.M. DATE: 10/06 or As Noted

BRIDGE NO. 07275 DRAWING NO. 53473

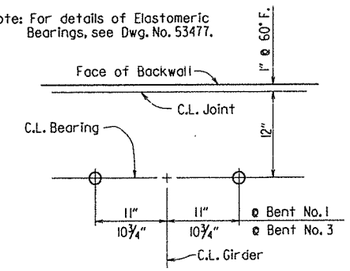
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	226	636
				(1) 07275		END BENT		53474



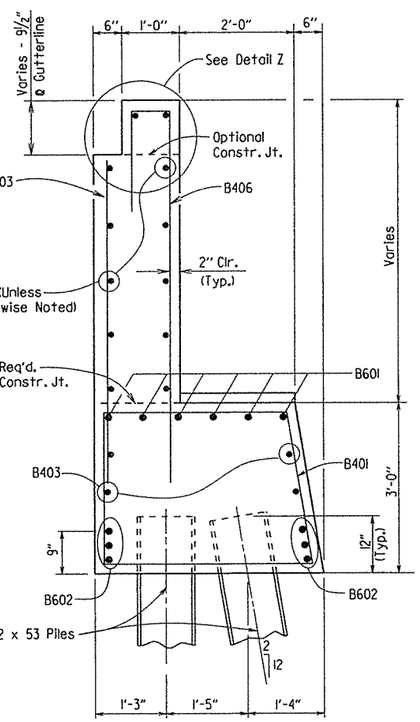
PLAN

Note: For details of Elastomeric Bearings, see Dwg. No. 53477.



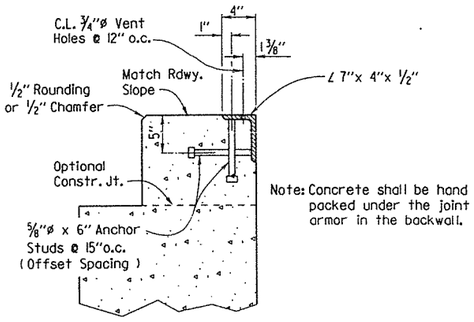
TYPICAL ANCHOR BOLT LAYOUT

No Scale



SECTION A-A

¾" = 1'-0"



Note: Concrete shall be hand packed under the joint armor in the backwall.

Note: For Additional Joint Details, See Dwg. No. 53482.

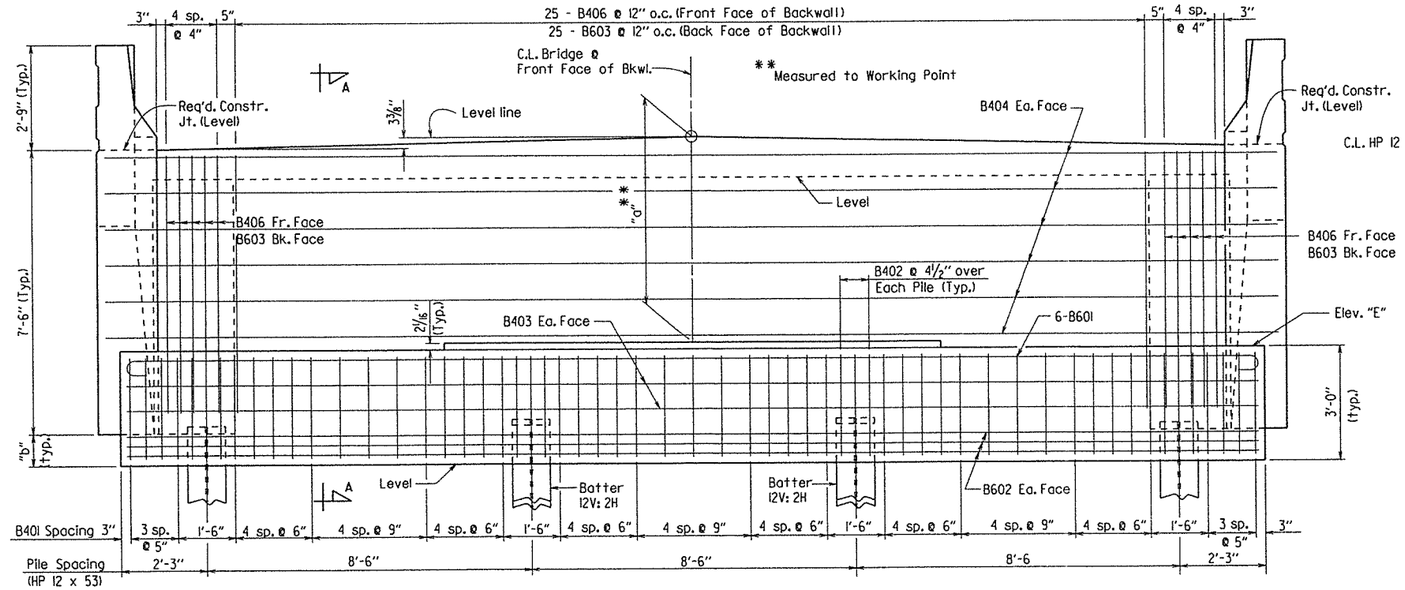
DETAIL Z

No Scale

Note: The backwall above the required construction joint shall not be placed until the girders are in place. Backwall may be placed prior to placing adjacent concrete deck only if the optional backwall construction joint is used. See "EXPANSION DEVICE INSTALLATION AT END BENTS" on Dwg. No. 53482 for additional information.

TABLE OF VARIABLES

Variable	End Bent No. 1	End Bent No. 3
"a"	5'-5⅛"	5'-4⅞"
"b"	9⅞"	9⅛"
Elev. "A"	1339.23	1336.92
Elev. "B"	1333.23	1336.94
Elev. "C"	1338.95	1336.64
Elev. "D"	1338.95	1336.66
Elev. "E"	1333.63	1331.40



ELEVATION

END BENT NO. 1 LOOKING BACK
END BENT NO. 3 LOOKING AHEAD

GENERAL NOTES

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with milltest reports.

All piling shall be Grade 50.

All structural steel shall be AASHTO M270, Gr. 50W. Structural steel in backwall shall be paid for as "Structural Steel in Plate Girder Spans (M270-Gr. 50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see Layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/1/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2

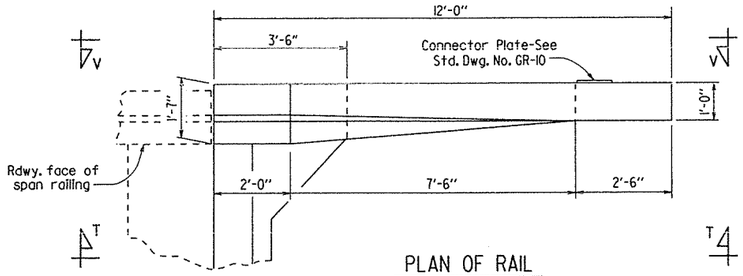
DETAILS OF BENTS 1 AND 3
CR 49 (MILLER CHURCH RD.)
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: Kwy	DATE: 7/12/13	SCALE:	½" = 1'-0" or As Noted
DESIGNED BY: Kwy	DATE: 2-07		

BRIDGE NO. 07275 DRAWING NO. 53474

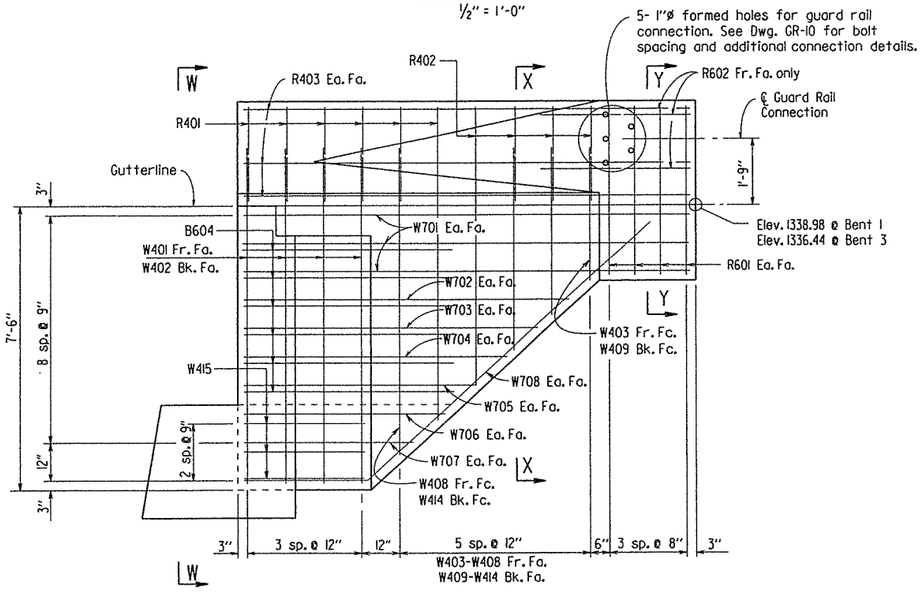
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	22	36
				(1) 07275		END BENT		53475



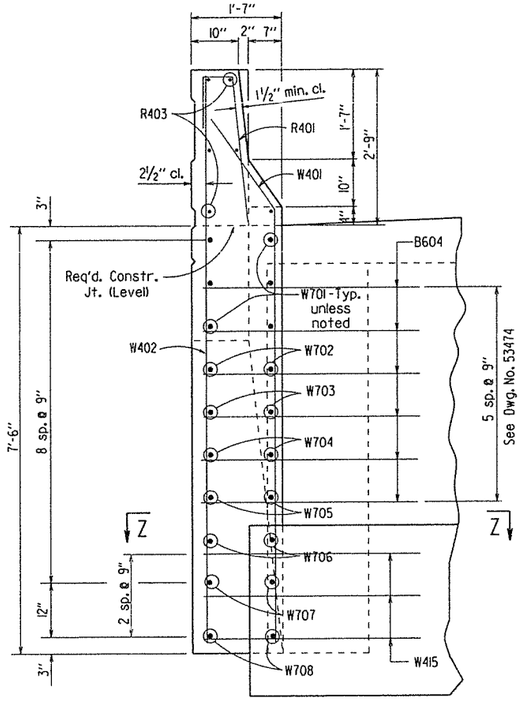
PLAN OF RAIL

½" = 1'-0"



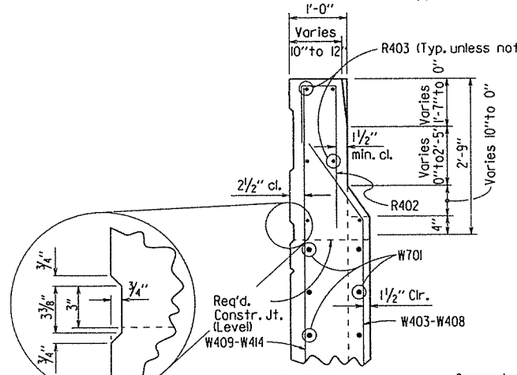
VIEW T-T

½"= 1'-0"



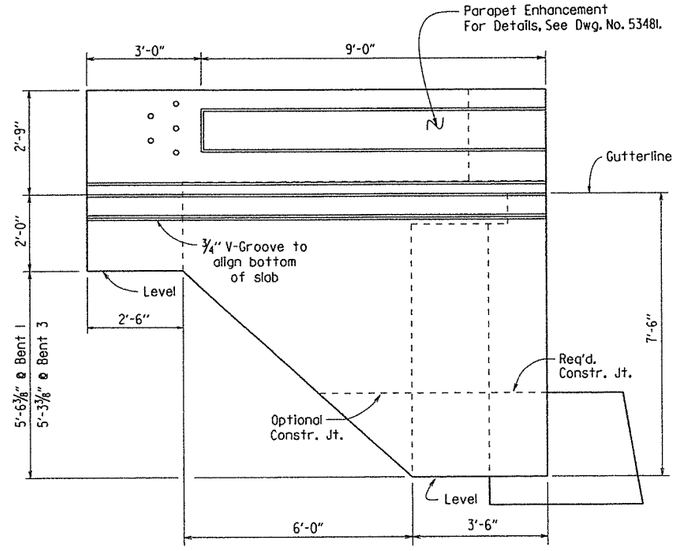
VIEW W-W

¾" = 1'-0"



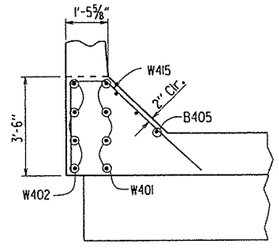
SECTION X-X

¾" = 1'-0"



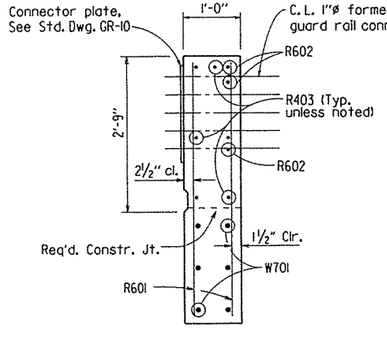
VIEW V-V

½"= 1'-0"



SECTION Z-Z

⅜" = 1'-0"



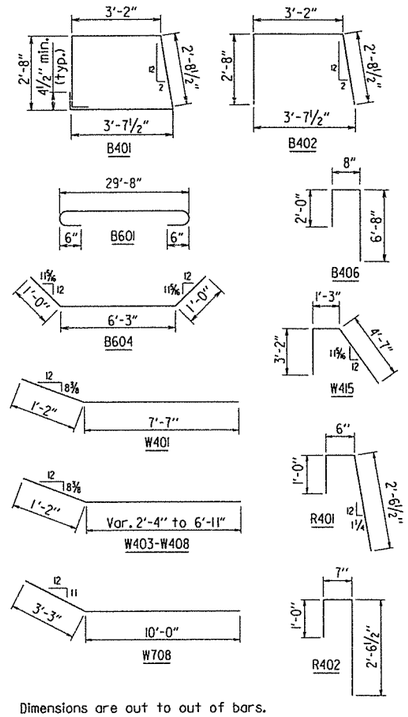
SECTION Y-Y

¾"= 1'-0"

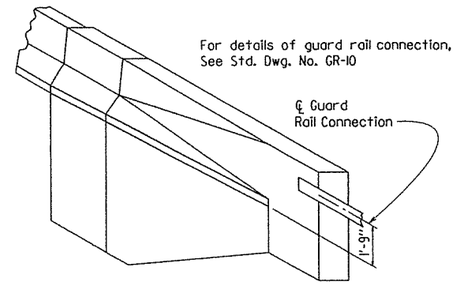
BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	47	12'-6"	2"
B402	12	8'-4"	2"
B403	4	29'-8"	Str.
B404	12	30'-10"	Str.
B405	6	6'-4"	Str.
B406	35	9'-2"	2"
B601	6	31'-0"	4½"
B602	6	29'-8"	Str.
B603	35	5'-10"	Str.
B604	12	8'-3"	4½"
R401	12	3'-11"	2"
R402	8	4'-0"	2"
R403	12	11'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	8	8'-9"	2"
W402	8	9'-11"	Str.
W403-W408	2 each	Var. 3'-6" to 8'-1"	2"
W409-W414	2 each	Var. 4'-7" to 9'-2"	Str.
W415	6	8'-11"	2"
W701	12	11'-8"	Str.
W702	4	8'-6"	Str.
W703	4	7'-8"	Str.
W704	4	6'-10"	Str.
W705	4	6'-1"	Str.
W706	4	5'-3"	Str.
W707	4	4'-5"	Str.
W708	4	13'-3"	5¼"

BENDING DIAGRAMS



Dimensions are out to out of bars.



THREE DIMENSIONAL VIEW OF RAIL

No Scale

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2

DETAILS OF BENTS 1 AND 3

CR 49 (MILLER CHURCH RD.)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

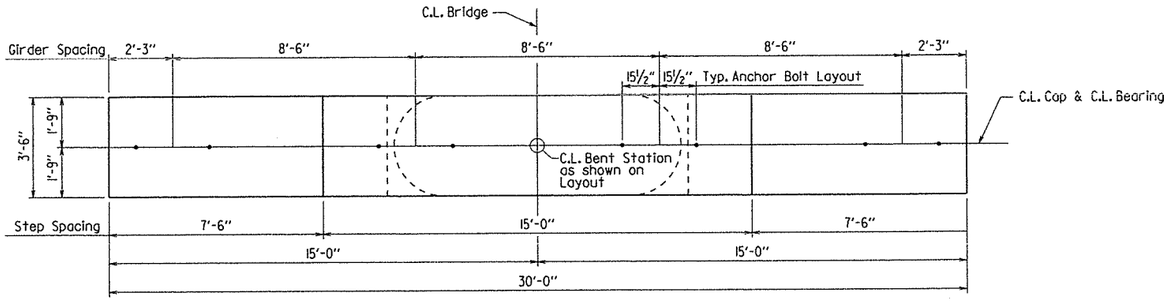
LITTLE ROCK, ARK.

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CHECKED BY: KWY	DATE: 7/10/13	SCALE:	As Noted
DESIGNED BY: KWY	DATE: 2/07		

BRIDGE NO. 07275 DRAWING NO. 53475

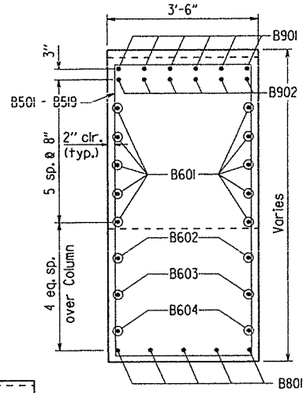
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				6	ARK.			
				JOB NO.		CA0904	22B	636
				① 07275		BENT 2		53476



PLAN

⅜" = 1'-0"

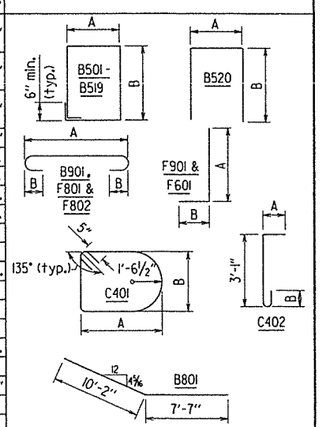


SECTION Y-Y

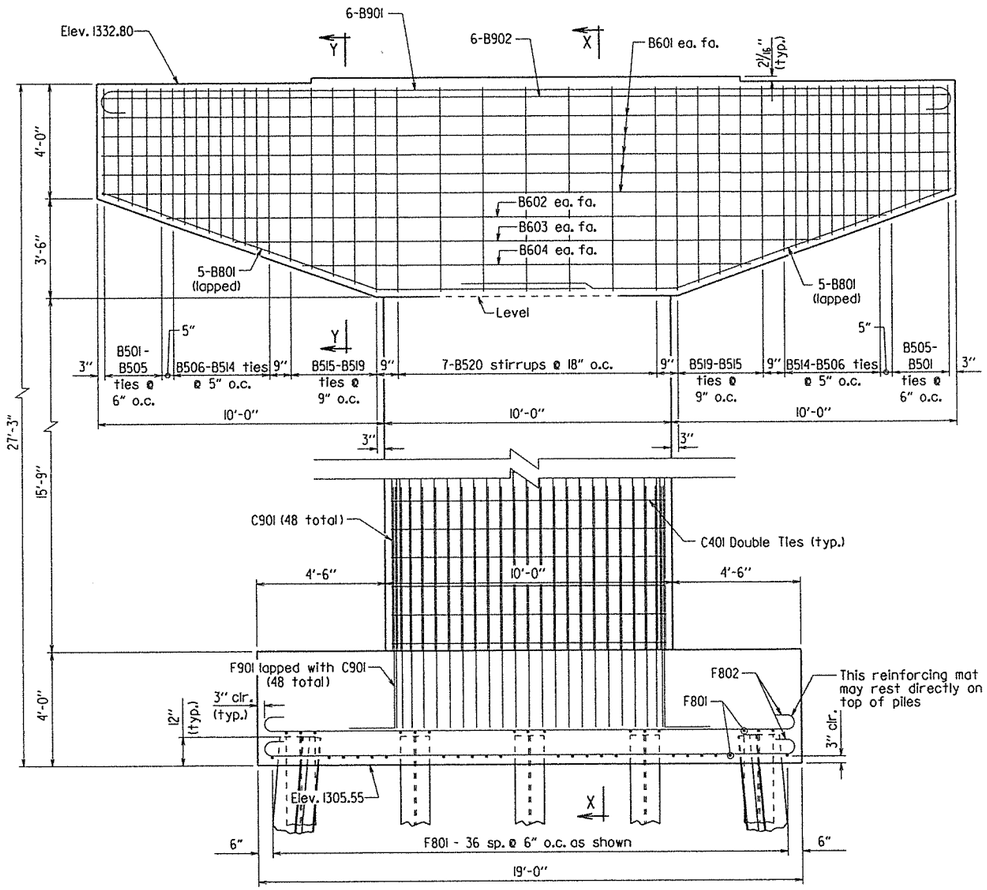
No Scale

BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.	Bending Diagrams
B501 - B505	2 ea.	14'-4" to 15'-8"	3'-2"	3'-9" to 4'-5"	2½"	
B506 - B514	2 ea.	16'-0" to 18'-6"	3'-2"	4'-7" to 5'-10"	2½"	
B515 - B519	2 ea.	19'-0" to 21'-2"	3'-2"	6'-1" to 7'-2"	2½"	
B520	7	17'-4"	3'-2"	7'-2"	2½"	
B601	10	29'-8"			Str.	
B602	2	25'-1"			Str.	
B603	2	20'-5"			Str.	
B604	2	15'-8"			Str.	
B801	10	17'-9"			6"	
B901	6	32'-2"	29'-8"	10"	9"	
B902	6	29'-8"			Str.	
C401	44	17'-1"	5'-10"	3'-1"	3"	
C402	44	4'-2"	8"	4½"	3"	
C901	48	21'-6"			Str.	
F601	4	4'-10"	2'-6"	2'-6"	4½"	
F801	37	12'-4"	10'-6"	8"	6"	
F802	21	20'-4"	18'-6"	8"	6"	
F901	48	10'-2"	8'-8"	1'-8"	9"	

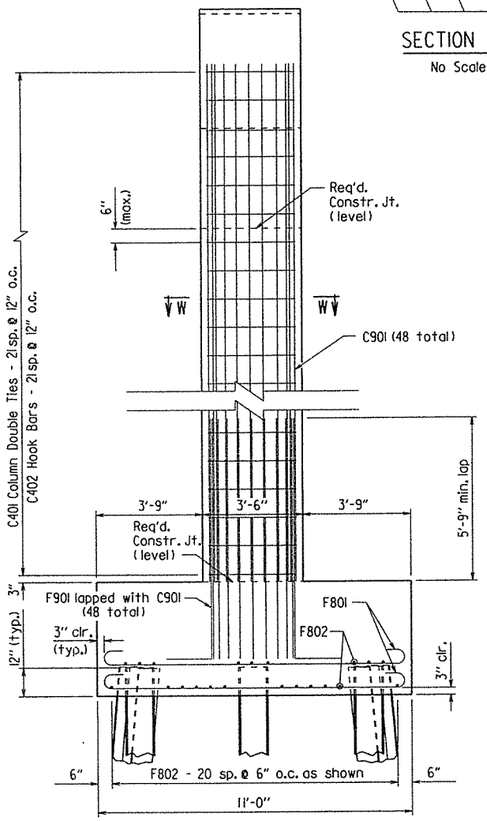


(Dimensions are out to out of bars.)



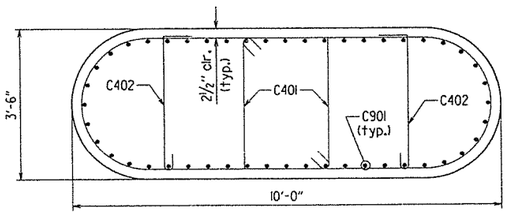
ELEVATION

⅜" = 1'-0"



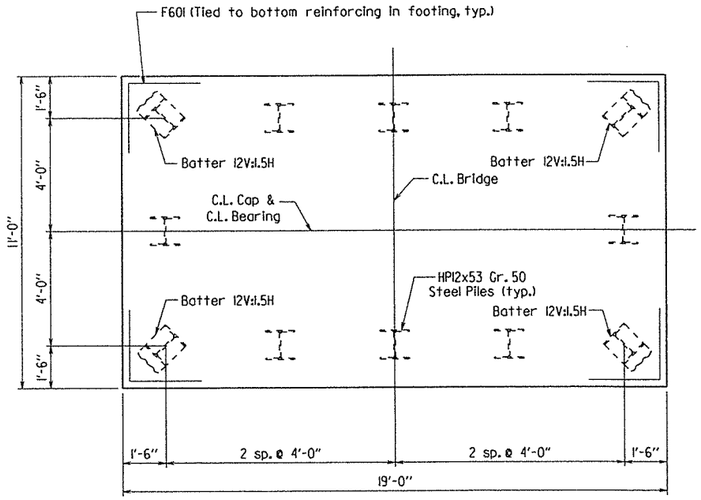
SECTION X-X

⅜" = 1'-0"



SECTION W-W

No Scale



PLAN OF FOOTING

⅜" = 1'-0"

GENERAL NOTES

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

All piling shall be Grade 50.

For additional information, see Layout.

For Details of Elastomeric Bearings, see Dwg. No. 53477.

PRINT DATE: 7/3/2013

STATE OF ARKANSAS
CARL J. PUSELLIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13

BRIDGE ENGINEER

DETAILS OF BENT 2
CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

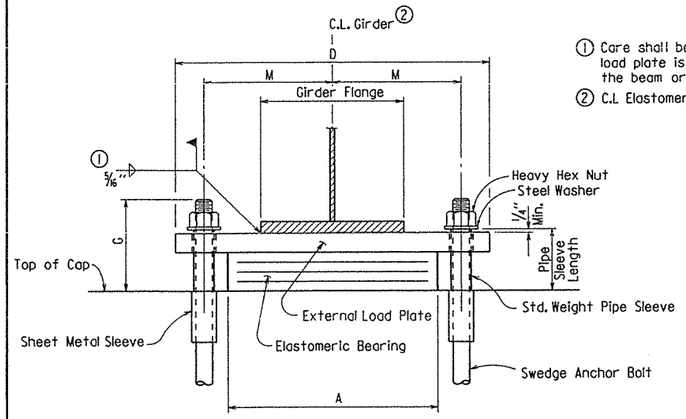
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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DESIGNED BY: KWY DATE: 2/07

BRIDGE NO. 07275 DRAWING NO. 53476

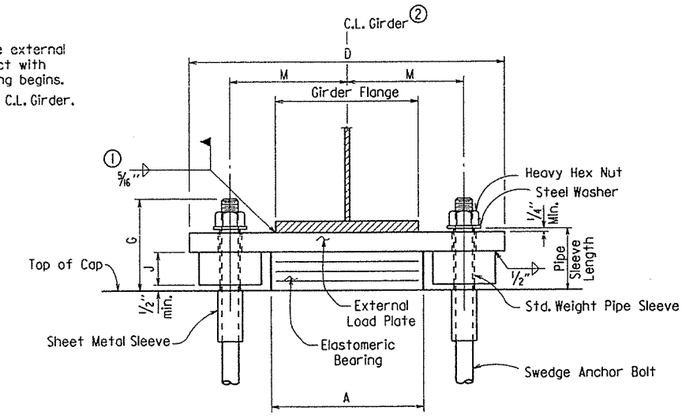
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				6	ARK.			
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				①	07275	ELASTOMERIC BEARINGS		53477



FRONT VIEW AT BENTS 1 & 3

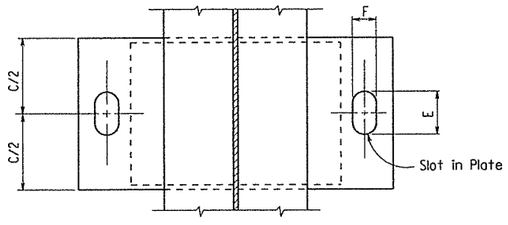
① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

② C.L Elastomeric pad shall be aligned with C.L. Girder.

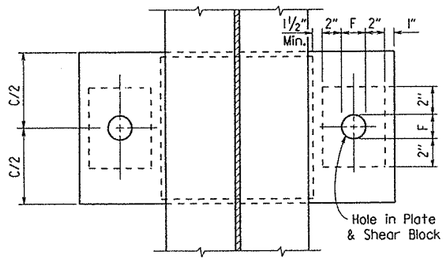


FRONT VIEW AT BENT 2

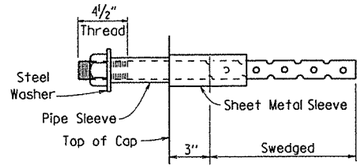
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load 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.



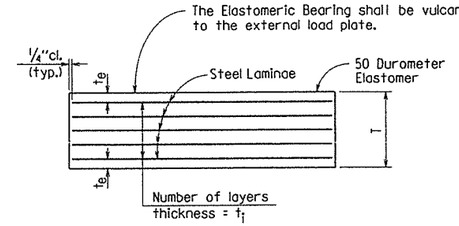
PLAN VIEW AT BENTS 1 & 3



PLAN VIEW AT BENT 2



ANCHOR BOLT DETAIL



t_e = thickness of elastomer cover on top and bottom of pad

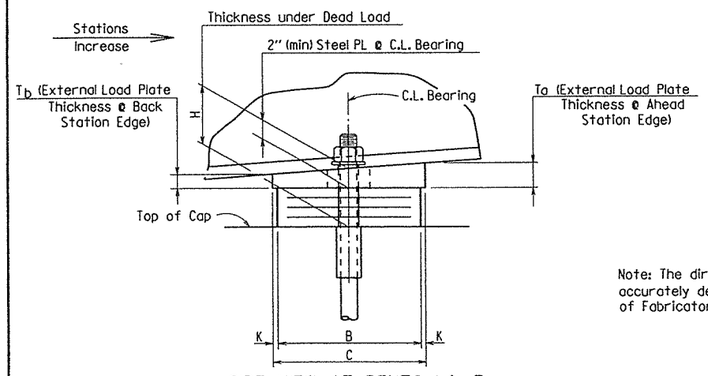
t_i = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

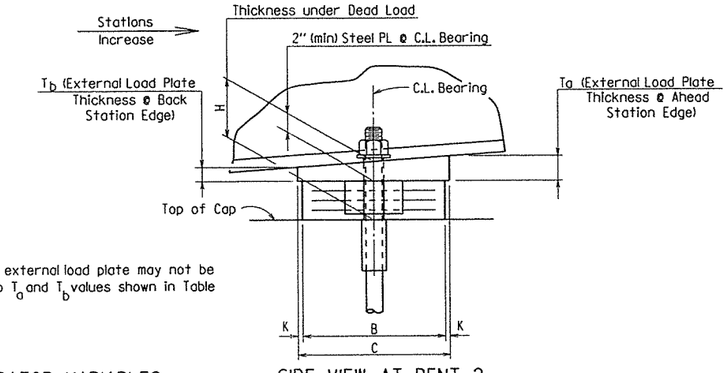
NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

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, (M 270, Gr. 50W)".



SIDE VIEW AT BENTS 1 & 3

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in Table of Fabricator Variables.



SIDE VIEW AT BENT 2

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 M 270, Grade 50W and will not be paid for separately, but will be included in the unit price bid for "Elastomeric Bearings". Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates with or without shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) 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 807.84(e) for unpainted Grade 50W 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 (M270, Gr. 50W)".

Bearings shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

BRIDGE NO.	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 LAMINAE	T	EXTERNAL LOAD PLATE 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.)
07275	1	All	Exp.	4	142	8 1/4"	5 1/8"	17"	12 1/2"	4	1/2"	5/16"	5 @ 12ga.	3 1/8"	13 1/2"	28"	4 1/2"	2 5/8"	NA	1/2"	11"	1.98	2.02	1 3/4"ø x 30"	55	2"ø x 5 1/2"	4"ø x 12"	3 3/8"
	2	All	Fix.	4	372	8 1/4"	5 1/16"	21"	12 1/2"	4	1/2"	5/16"	5 @ 12ga.	3 1/8"	13 1/2"	40"	-	2 5/8"	2 1/2"	1/2"	15 1/2"	1.92	2.08	1 3/4"ø x 30"	55	2"ø x 5 1/2"	4"ø x 12"	3 3/8"
	3	All	Exp.	4	128	8 1/4"	5 1/8"	16 1/2"	12"	4	1/2"	5/16"	5 @ 12ga.	3 1/8"	13"	27 1/2"	4 3/8"	2 5/8"	NA	1/2"	10 3/4"	1.88	2.12	1 3/4"ø x 30"	55	2"ø x 5 1/2"	4"ø x 12"	3 3/8"

PRINT DATE: 7/3/2013

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

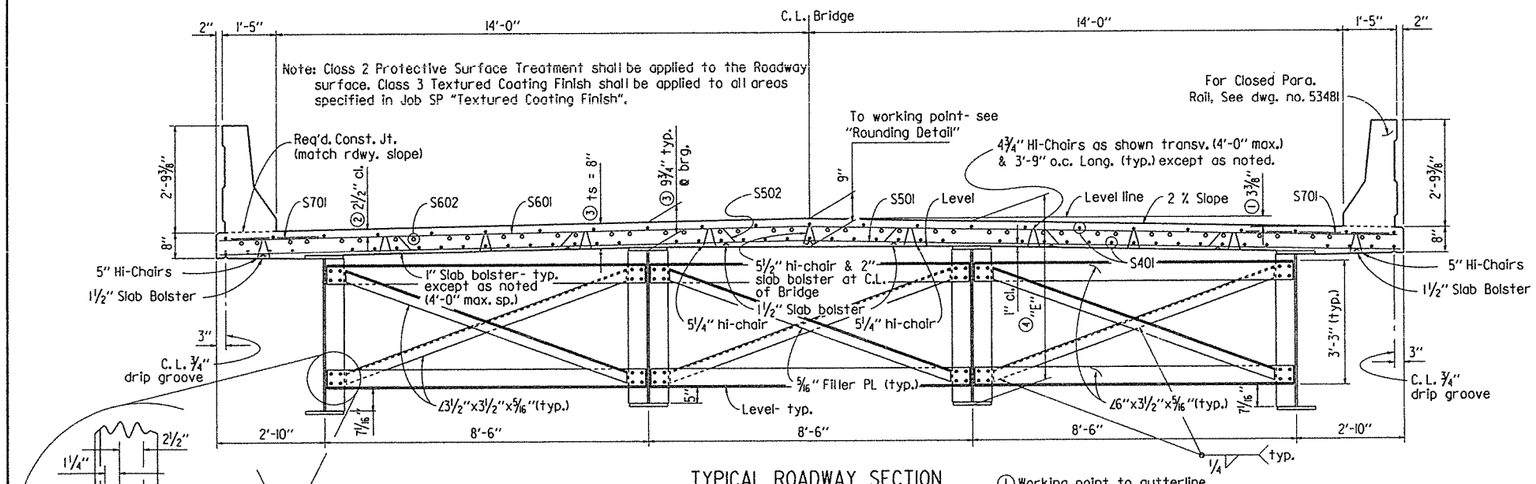
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CHECKED BY: KWY DATE: 7/10/13 SCALE: NONE

DESIGNED BY: KWY DATE: 1/07

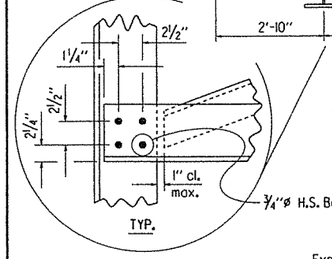
BRIDGE NO. 07275 DRAWING NO. 53477

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	230	636
				(1) 07275		210' CONT. UNIT		53478



TYPICAL ROADWAY SECTION

½" = 1'-0"



Slab Reinforcing:

Longitudinal: S401 Top & Bottom placed as shown
S602 placed as shown over interior supports (See Reinf. Plan, dwg. no. 53480)

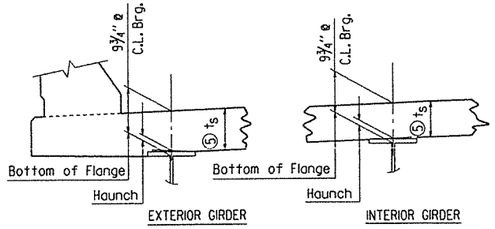
Transverse: S502 @ 15"o.c. bent up over beams — Alternate
S601 @ 15"o.c. in top, S501 @ 15"o.c. in bott.
S701 @ 15" o.c. (in overhang)

① Working point to gutterline

② Tolerance: Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance- See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

③ See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

④ "E" equals 4'-9¾" plus bottom flange thickness measured at C.L. bearing & C.L. girder.



⑤ Tolerance when removable deck forming is used is + ½" . - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Notes:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

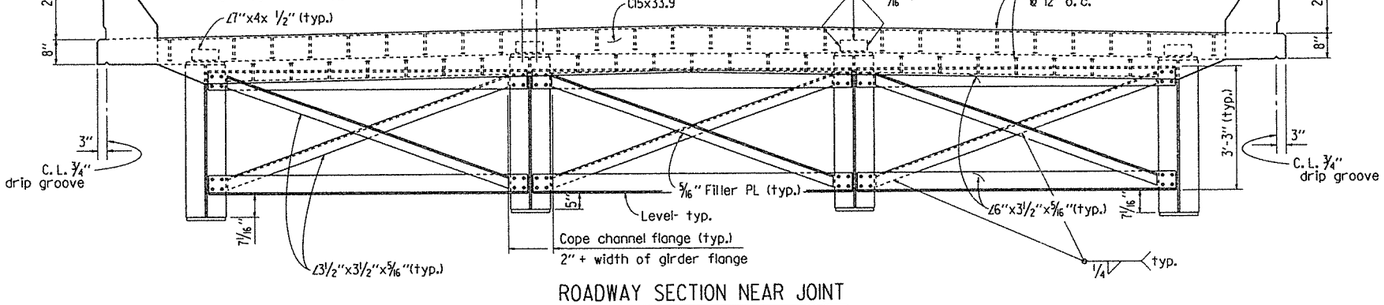
N.T.S.

Note: t_s = slab thickness as shown in "TYPICAL ROADWAY SECTION"

Expansion Device :

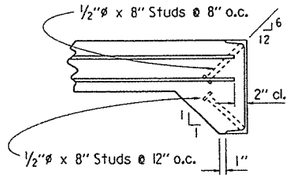
Rdwy. Channel- C15x33.9
Conn. Angle- L7"x4"x½"
Detail Device ⅛" high & provide ¼" Shims using 1- ⅛" PL & 2- 1/16" PLs.

For details of Poured Silicone Jt., see dwg. no. 53482



ROADWAY SECTION NEAR JOINT

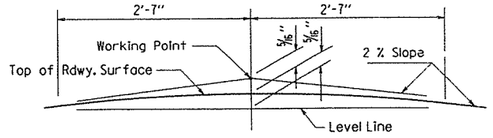
½" = 1'-0"



Note: As an alternate to 5/8"ø studs, ½"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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING

N.T.S.



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

N.T.S.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER 7/16/13

BRIDGE ENGINEER

SHEET 1 OF 6

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (MILLER CHURCH RD.)
ROUTE SEC.

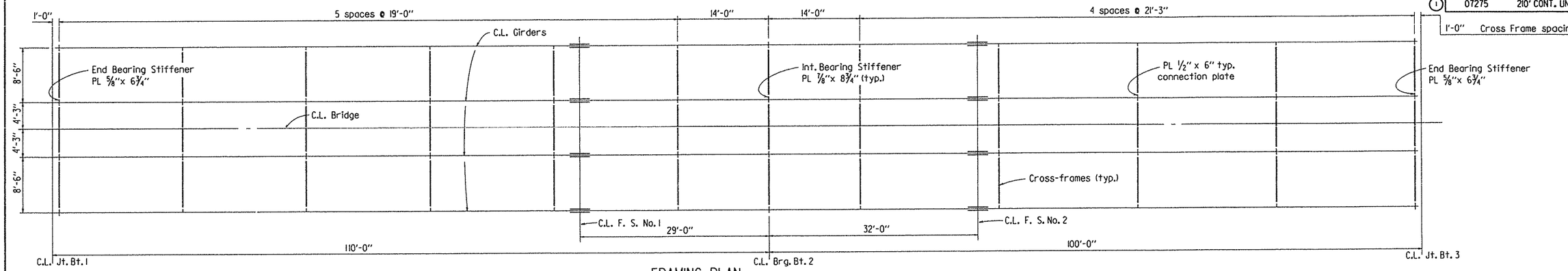
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 1-9-07 FILENAME: bCA0904x10_sl.dgn
CHECKED BY: KWY DATE: 7/9/13 SCALE: As shown
DESIGNED BY: KWY DATE: 1/07

BRIDGE NO. 07275 DRAWING NO. 53478

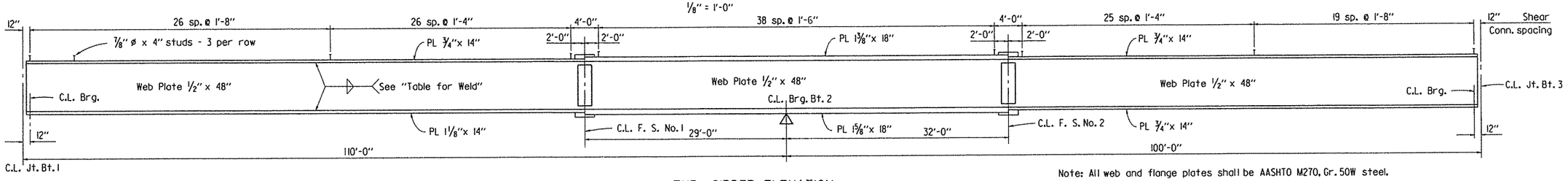
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	23	636
				(1) 07275		210' CONT. UNIT	53479	



FRAMING PLAN

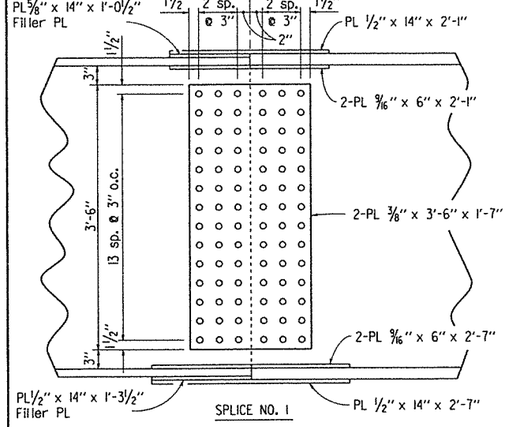
1/8" = 1'-0"



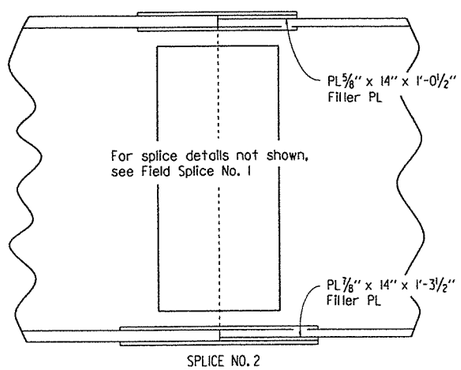
TYP. GIRDER ELEVATION

N.T.S.

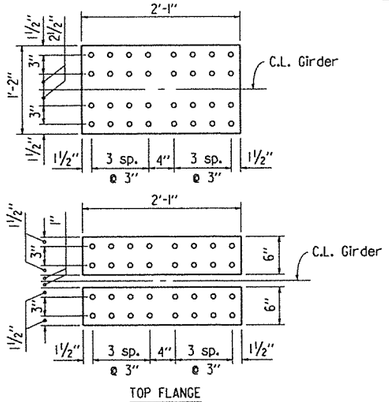
Note: All web and flange plates shall be AASHTO M270, Gr. 50W steel.



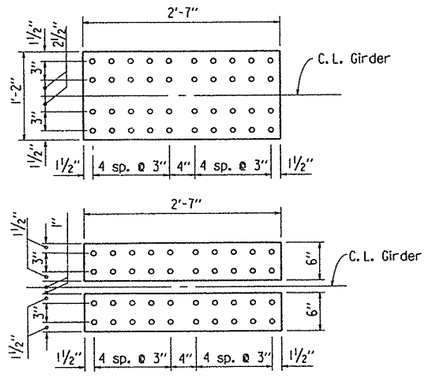
SPLICE NO. 1



SPLICE NO. 2



TOP FLANGE



BOTTOM FLANGE

TYPICAL FIELD SPLICE DETAILS

1" = 1'-0"

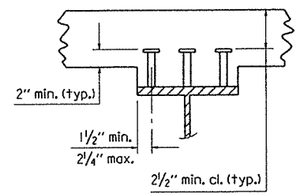
All field splice bolts shall be 7/8"ø Hi-str. bolts
All holes for splice bolts shall be 15/16"ø
All field splice plates shall be AASHTO M270 Gr. 50W steel.

Note: 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.

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"	

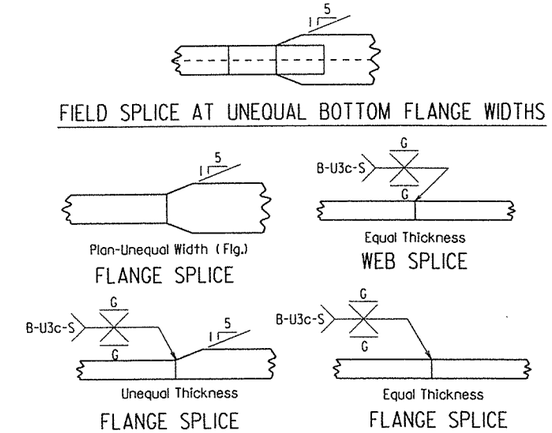
NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



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 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

N.T.S.



DETAILS OF WELDED SPLICES

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/1/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 6

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 2-20-07 FILENAME: bCA0904x10_sl.dgn

CHECKED BY: KWH DATE: 7/10/13 SCALE: As Shown

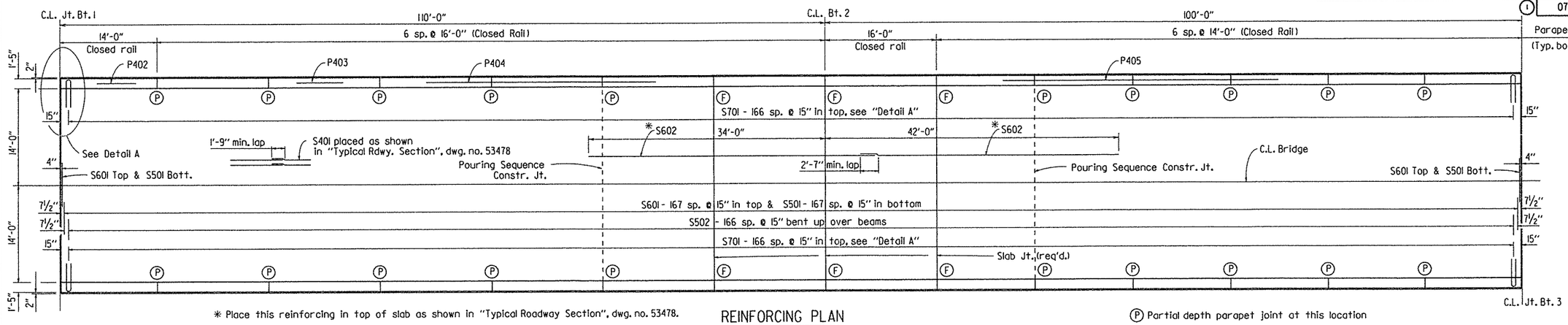
DESIGNED BY: KWH DATE: 11-07

BRIDGE NO. 07275 DRAWING NO. 53479

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	232	636
(1) 07275		210' CONT. UNIT		53480



* Place this reinforcing in top of slab as shown in "Typical Roadway Section", dwg. no. 53478.

Note: Required slab joints and pouring sequence construction joints shall align with parapet joints at gutterline.

REINFORCING PLAN

1/8" = 1'-0"

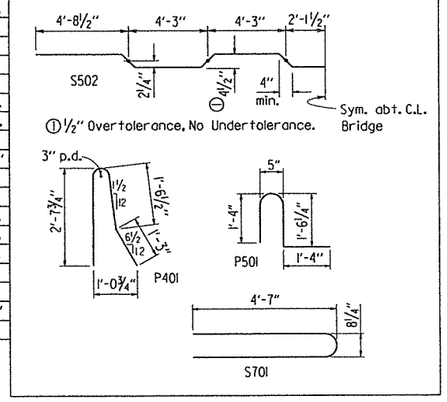
(P) Partial depth parapet joint at this location

(F) Full depth parapet joint at this location

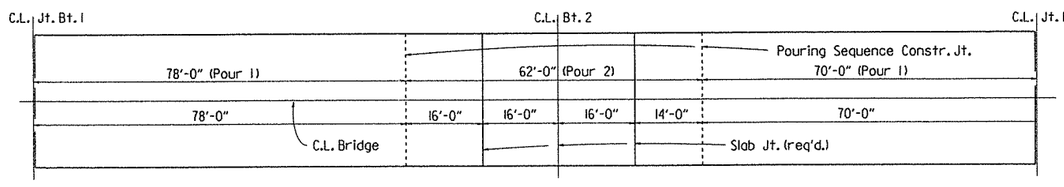
BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
S401	420	36'-5"	Str.
S501	170	30'-10"	Str.
S502	167	31'-4"	3"
S601	170	30'-10"	Str.
S602	88	39'-4"	Str.
S701	334	9'-6"	6½"
P401	840	5'-6"	2"
P402	42	13'-7"	Str.
P403	58	15'-7"	Str.
P404	24	32'-6"	Str.
P405	24	29'-2"	Str.
P501	840	4'-2"	3¾"

Bending Diagrams (Dimensions are out to out of bars.)



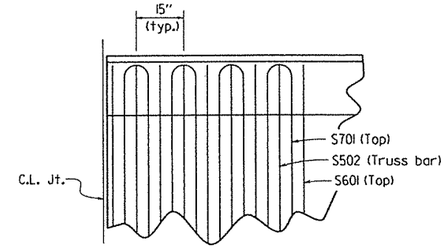
Note: At the Contractor's option, two straight #5 bars, top and bottom, may be substituted for bar S502. Payment will be based on weight of S502.



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 between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. 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.

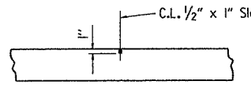
SLAB POURING SEQUENCE

N.T.S.



DETAIL A

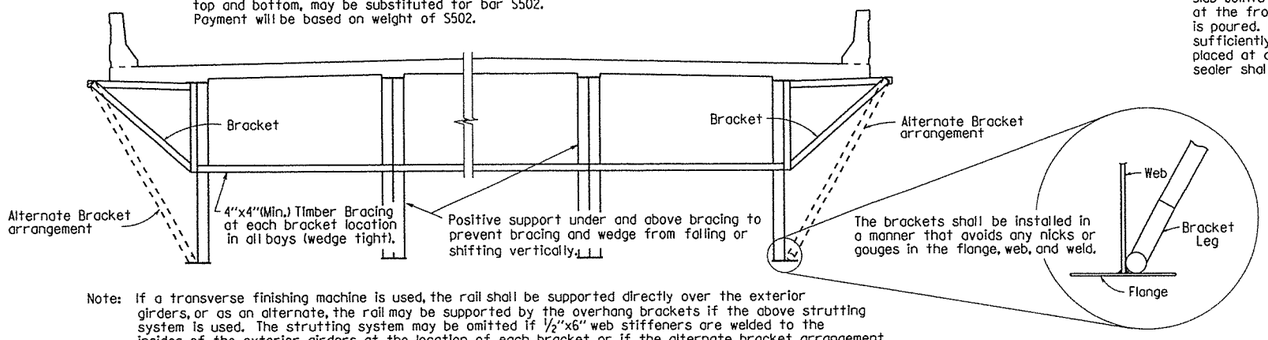
½" = 1'-0"



Use Type 3, 4, or 6 Joint Sealer. See subsections 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 and shall align with open joints at the front face of the parapet. 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. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

NTS



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"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 details for cross frame connection plates shown on Drawing No. 53483. 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. 50W)".

SCREED RAIL SUPPORT

N.T.S.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 3 OF 6

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

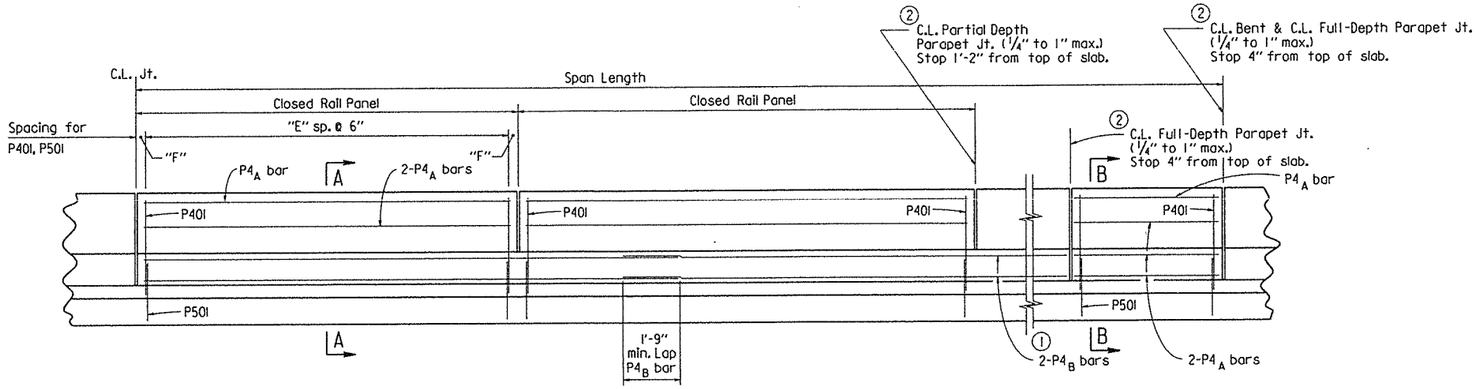
LITTLE ROCK, ARK.

DRAWN BY: LM	DATE: 2-26-07	FILENAME:	bCA0904x10_sl.dgn
CHECKED BY: KWS	DATE: 7/16/13	SCALE:	As shown
DESIGNED BY: KWS	DATE: 1/07		

BRIDGE NO. 07275 DRAWING NO. 53480

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	233	636
				(1) 07275		210' CONT. UNIT	53481	



ELEVATION - CONCRETE PARAPET RAIL

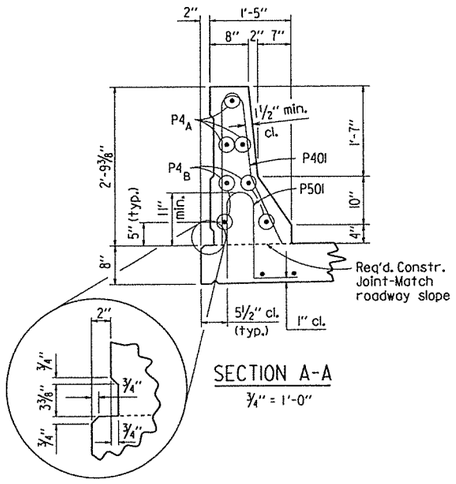
1/2" = 1'-0"

(1) Bar to be continuous between full depth parapet jts.

(2) For location of full and partial depth parapet joints, see dwg. no. 53480.

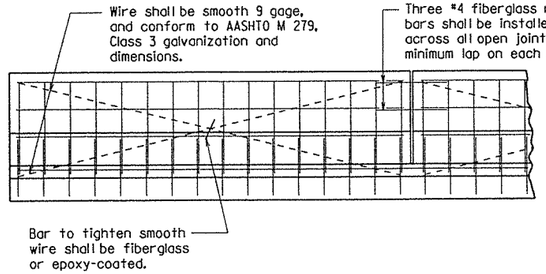
TABLE OF VARIABLES

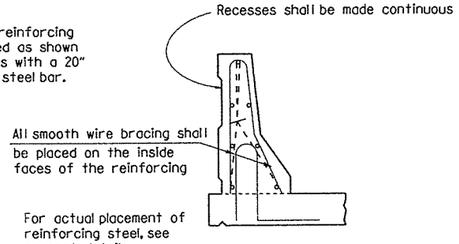
Span Length	Closed Rail Panel	"E"	"F"	$P4_A$ bar	$P4_B$ bar
110'-0"	14'-0"	27	3"	P402	P404
	16'-0"	31	3"	P403	
100'-0"	16'-0"	31	3"	P403	P405
	14'-0"	27	3"	P402	



SECTION A-A

3/4" = 1'-0"



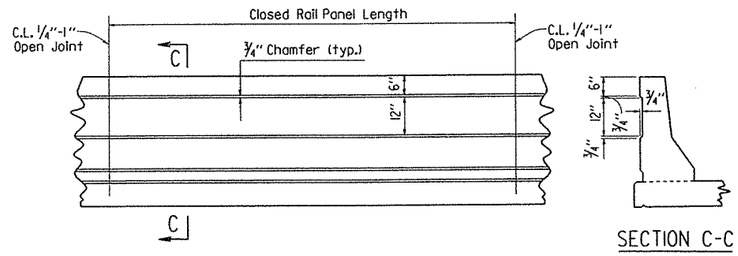


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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. Exposed surfaces shall be given a Class 3, Textured Coating Finish. See Job SP "Textured Coating Finish".

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

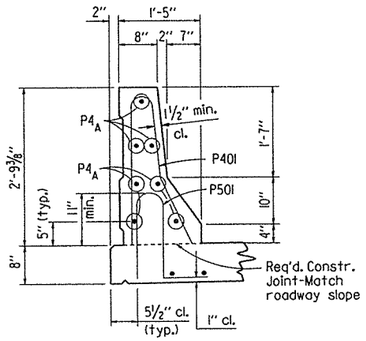
No Scale



SECTION C-C

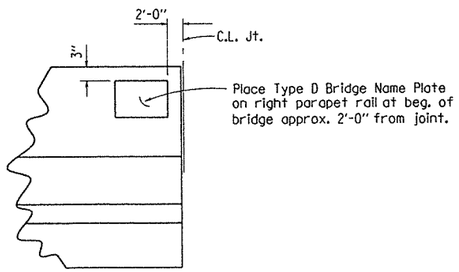
DETAILS OF PARAPET ENHANCEMENT

No Scale



SECTION B-B

3/4" = 1'-0"



VIEW SHOWING LOCATION OF NAME PLATE

NTS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/1/12
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 4 OF 6

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 3-4-07 FILENAME: bCA0904x10_sl.dgn

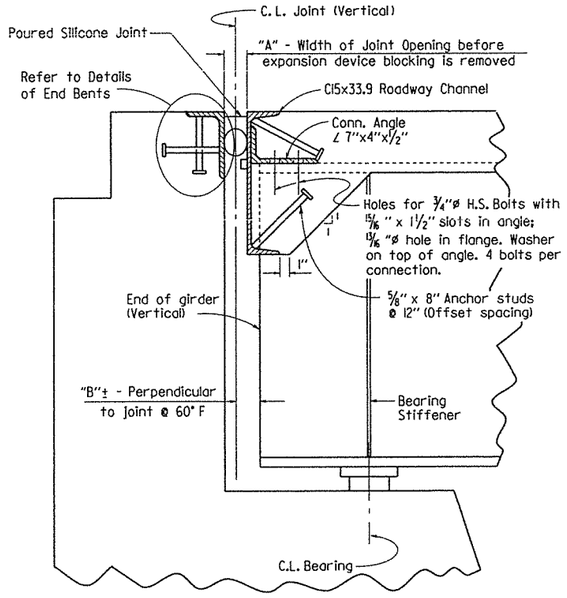
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DESIGNED BY: KWY DATE: 1/07

BRIDGE NO. 07275 DRAWING NO. 53481

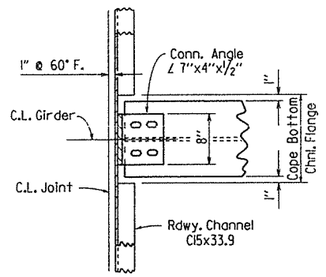
PRINT DATE: 7/3/2013

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				6	ARK.			
				JOB NO.		CA0904	234	636
				(1) 07275		210' CONT. UNIT	53482	

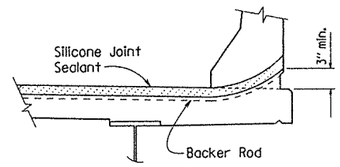


Note: Section taken perpendicular to C.L. Joint

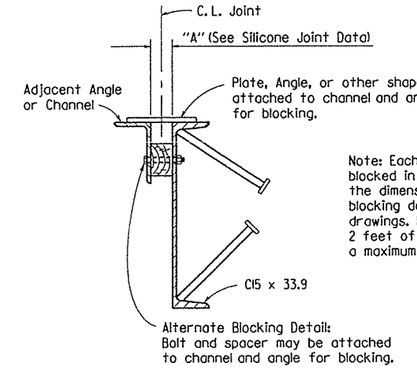
SECTION THRU JOINT AT END BENT



CHANNEL CONNECTION DETAIL



JOINT SEAL PLACEMENT AT CURB



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" 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.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

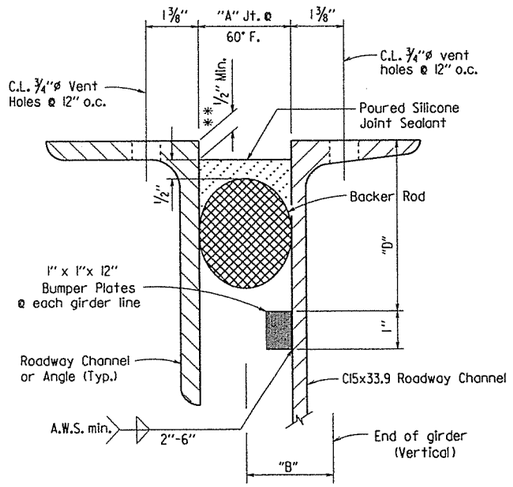
EXPANSION DEVICE INSTALLATION AT END BENTS:

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 girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, 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.

** Recess depth as recommended by the sealant Manufacturer.



DETAIL OF POURED SILICONE JOINT

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 flanges in the backwall and in the span.

SILICONE JOINT DATA

"A" Width Perpendicular to Joint at 24 Hour Average Temperature* Of:			"B" Perpendicular to Joint at 60°F	"D"
40°F	60°F	80°F		
2 3/16"	2"	1 13/16"	2 1/4" ±	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° 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 that 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
Carl J. Puselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. PUSELIER

BRIDGE ENGINEER

SHEET 5 OF 6

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (MILLER CHURCH RD.)
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 3-12-07
CHECKED BY: KWY DATE: 7/10/13
DESIGNED BY: KWY DATE: 1/07
FILENAME: bCA0904x10_sl.dgn
SCALE: No Scale

BRIDGE NO. 07275 DRAWING NO. 53482

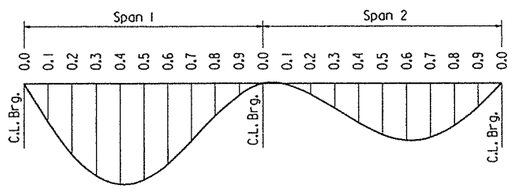
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	235	636
				(1) 07275		210' CONT. UNIT	53483	

TABLE OF DEAD LOAD DEFLECTIONS-INCHES

Span	Point of Deflection	Structural Steel		Structural Steel+Slab		Str. Steel +Slab+Rail	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0	0	0	0	0	0	0
	0.1	0.159	0.148	0.936	0.775	1.016	0.859
	0.2	0.293	0.272	1.718	1.423	1.865	1.578
	0.3	0.383	0.356	2.241	1.857	2.433	2.060
	0.4	0.419	0.390	2.450	2.030	2.662	2.253
	0.5	0.402	0.374	2.339	1.938	2.543	2.153
	0.6	0.338	0.314	1.953	1.619	2.125	1.800
	0.7	0.242	0.226	1.391	1.153	1.515	1.284
	0.8	0.139	0.130	0.792	0.657	0.863	0.732
	0.9	0.051	0.047	0.284	0.236	0.309	0.263
2	0	0	0	0	0	0	0
	0.1	0.004	0.004	0.029	0.024	0.033	0.028
	0.2	0.043	0.040	0.260	0.215	0.287	0.243
	0.3	0.099	0.092	0.595	0.492	0.654	0.554
	0.4	0.157	0.146	0.955	0.789	1.047	0.886
	0.5	0.203	0.188	1.246	1.029	1.364	1.152
	0.6	0.224	0.207	1.380	1.140	1.508	1.275
	0.7	0.211	0.195	1.311	1.083	1.432	1.210
	0.8	0.165	0.153	1.030	0.851	1.124	0.950
	0.9	0.091	0.084	0.569	0.470	0.621	0.524
	0	0	0	0	0	0	0

Note: Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.



DEAD LOAD DEFLECTION DIAGRAM

No Scale

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 Interim Revisions.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Grade 60, AASHTO M31 or M322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	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 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. 14991 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 :
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports. 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 "Reinforcing Steel - Bridge".

STRUCTURAL STEEL :
All structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36 unless otherwise noted.

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. Payment will be based on the basis of shapes shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Girder web and flange plates and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05.

All girders shall be blocked in their true position in the shop in groups as specified in subsection 807.54(b)(2). 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 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 1/4" +/- 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 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.

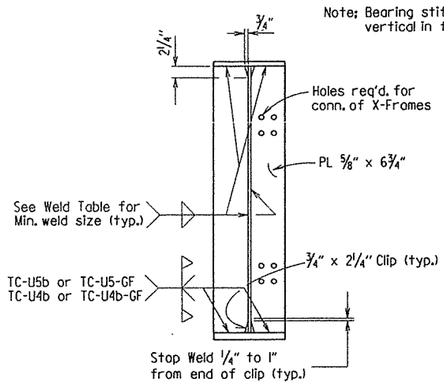
Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment for welds for these splices will be made.

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 connections shall be bolted with high-strength bolts and shall be 3/4" 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 3/4" 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.

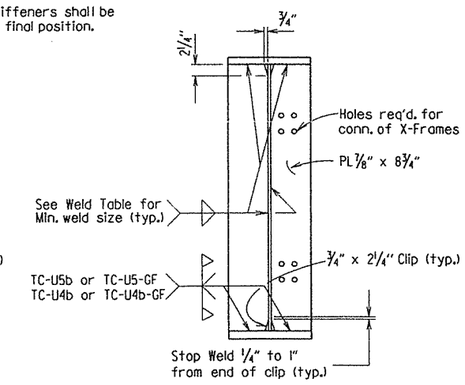
Cross-Frames shall be installed as girders are erected. All bolts in cross-frames and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck.

Note: Bearing stiffeners shall be vertical in final position.



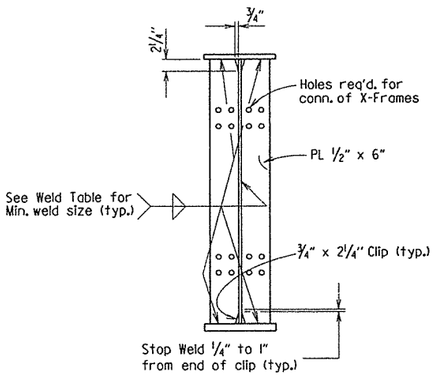
END BEARING STIFFENER DETAIL

N.T.S.



INT. BEARING STIFFENER DETAIL

N.T.S.



CROSS FRAME CONNECTION DETAIL

N.T.S.

STATE OF ARKANSAS
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SHEET 6 OF 6

DETAILS OF 210'-0" CONTINUOUS PLATE GIRDER UNIT

CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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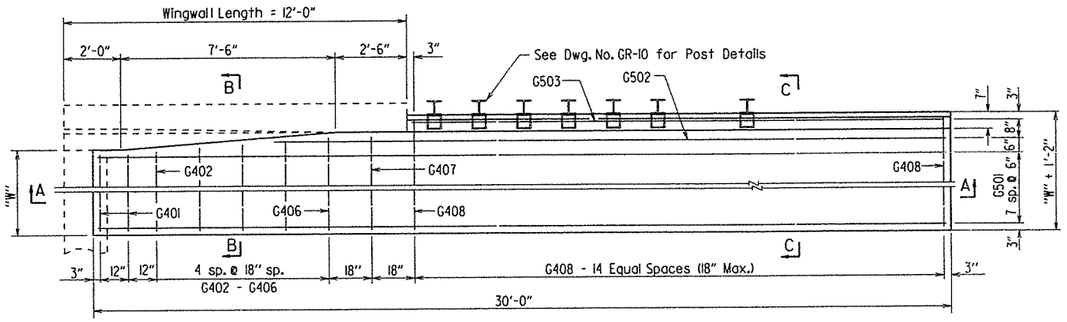
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DESIGNED BY: KWY DATE: 1/07

BRIDGE NO. 07275 DRAWING NO. 53483

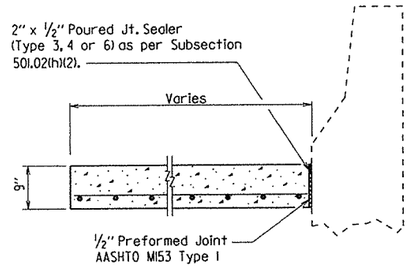
PRINT DATE: 7/3/2013

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4-10-2003				6	ARK.			
				JOB NO.		CA0904	236	636
				(1) 07275		TYPE SPECIAL 3 GUTTERS		53484



HALF PLAN OF TYPE SPECIAL 3 APPROACH GUTTERS

"W" = 4'-0"



SECTION B - B

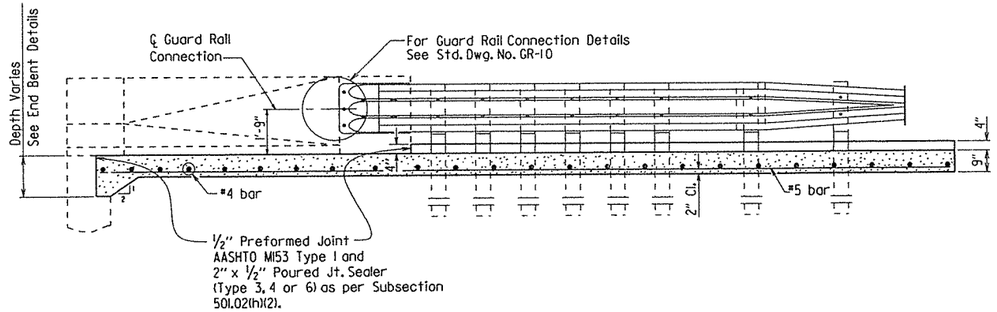
N.T.S.

BAR LIST FOR ONE TYPE SPECIAL 3 GUTTER

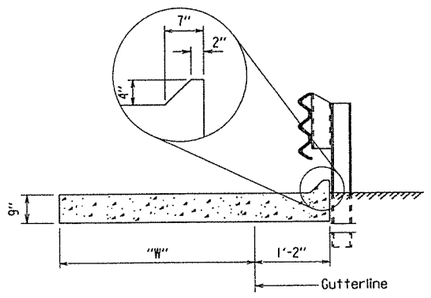
Mark	No. Req'd. "W" = 4'-0"	Length
G401	2	3'-8"
G402-G406	1 each	3'-9" to 4'-3"
G407	1	4'-3"
G408	15	4'-10"
G501	8	29'-8"
G502	1	23'-5"
G503	1	18'-8"

QUANTITIES FOR ONE TYPE SPECIAL 3 GUTTER

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	361	4.15



SECTION A - A



SECTION C - C

N.T.S.

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

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 of the Standard Specifications.

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DETAILS OF TYPE SPECIAL 3 APPROACH GUTTERS CR 49 (MILLER CHURCH RD.)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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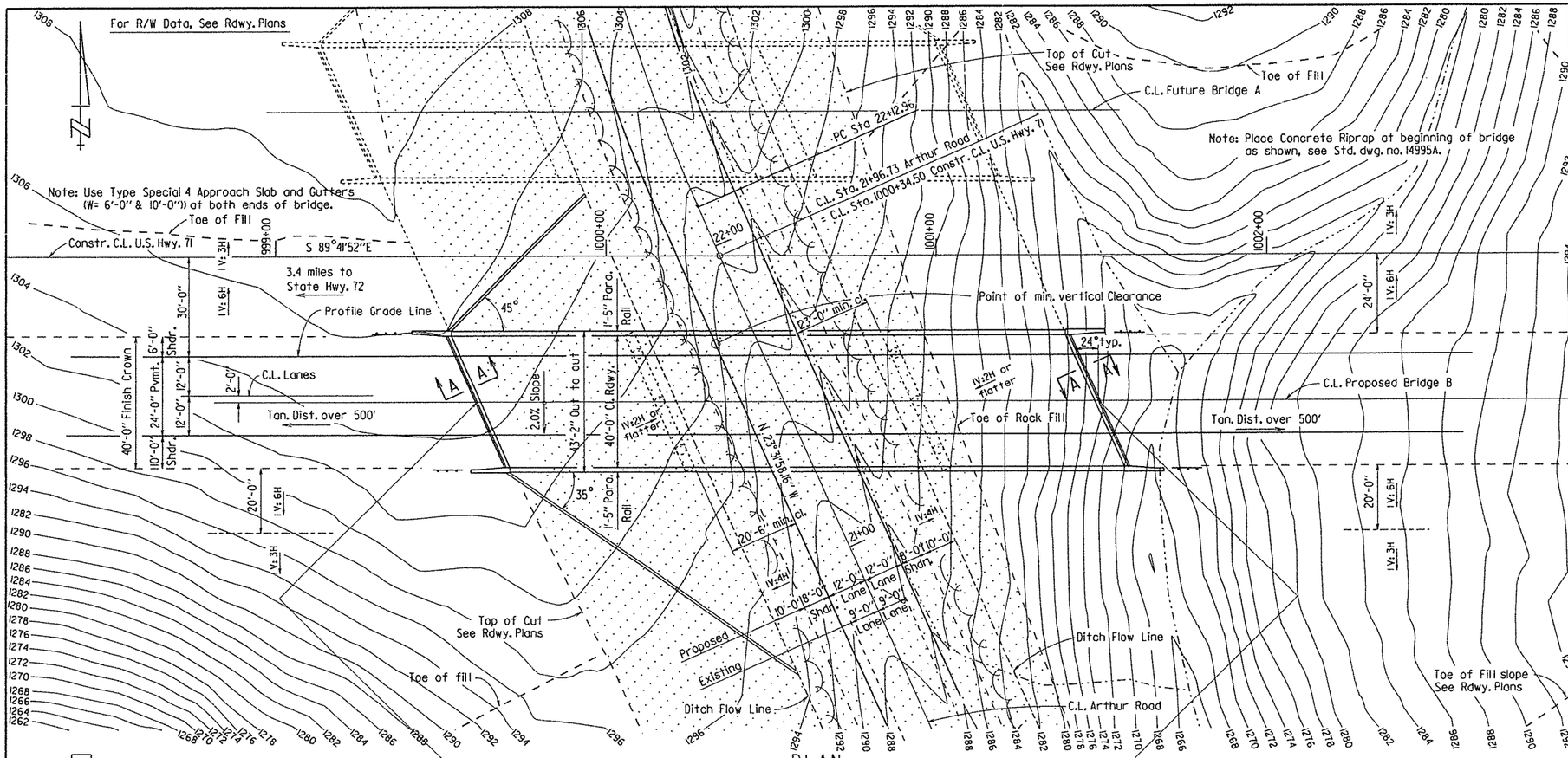
CHECKED BY: AMS DATE: 7/1/13 SCALE: 3/8" = 1'-0"

DESIGNED BY: STD. DATE: —

BRIDGE NO. 07275 DRAWING NO. 53484

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	237	636
				(1) B7276		LAYOUT	53485	



GENERAL NOTES

BENCH MARK: CPS in 20" Oak Tree 4.10' Lt. of Constr. C.L. U.S. Hwy. 71, Sta. 1000+45.60, Elev. 1299.25.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted, Section and subsection refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 interim revisions.

LIVE LOADING: HL93
SEISMIC PERFORMANCE ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4000 psi.
Class S Concrete (substructure)	f'c = 3,500 psi.
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi.
Structural Steel (AASHTO M270, Gr. 50W)	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.

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 and into material designated as hard cherty limestone on the boring legend. Piles in end bents 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.

Minimum penetration for all piling at Bents 1 and 4 shall be 8' below natural ground. Minimum penetration for all piling at Bents 2 and 3 shall be 8' below bottom of footing.

PREBORING: Preboring is required for all piling in Bents 2, 3 and 4 to achieve the minimum penetration and to a minimum 3' depth into material designated as hard cherty 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".

FOOTINGS: The footings at Bent 2 and 3 shall have a minimum cover above top of footings of 2'-0". Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled according to subsection 801.08.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in subsection 802.19 for Class S Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Job Special Provision "Textured Coating Finish" and in accordance with subsection 802.19(b)(3). Textured Coating Finish shall not applied on surfaces where Class 2 Protective Surface Treatment is applied.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

DETAIL DRAWINGS:	DRWG NOS.
End Bents	53487 & 53488, 53491 & 53492
Interior Bents	53489 & 53490
Elastomeric Bearings	53493
186' Cont. W-Beam Unit	53494-53499
Steel Piling	14995A
Type Special 4 Approach Slab	53500
Type Special 4 Approach Gutters	53501

STATE OF ARKANSAS
CARL J. PUSELLER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE B
OVER CR 39 (ARTHUR ROAD)
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS) (S)
BENTON COUNTY

ROUTE 71 SEC. 19

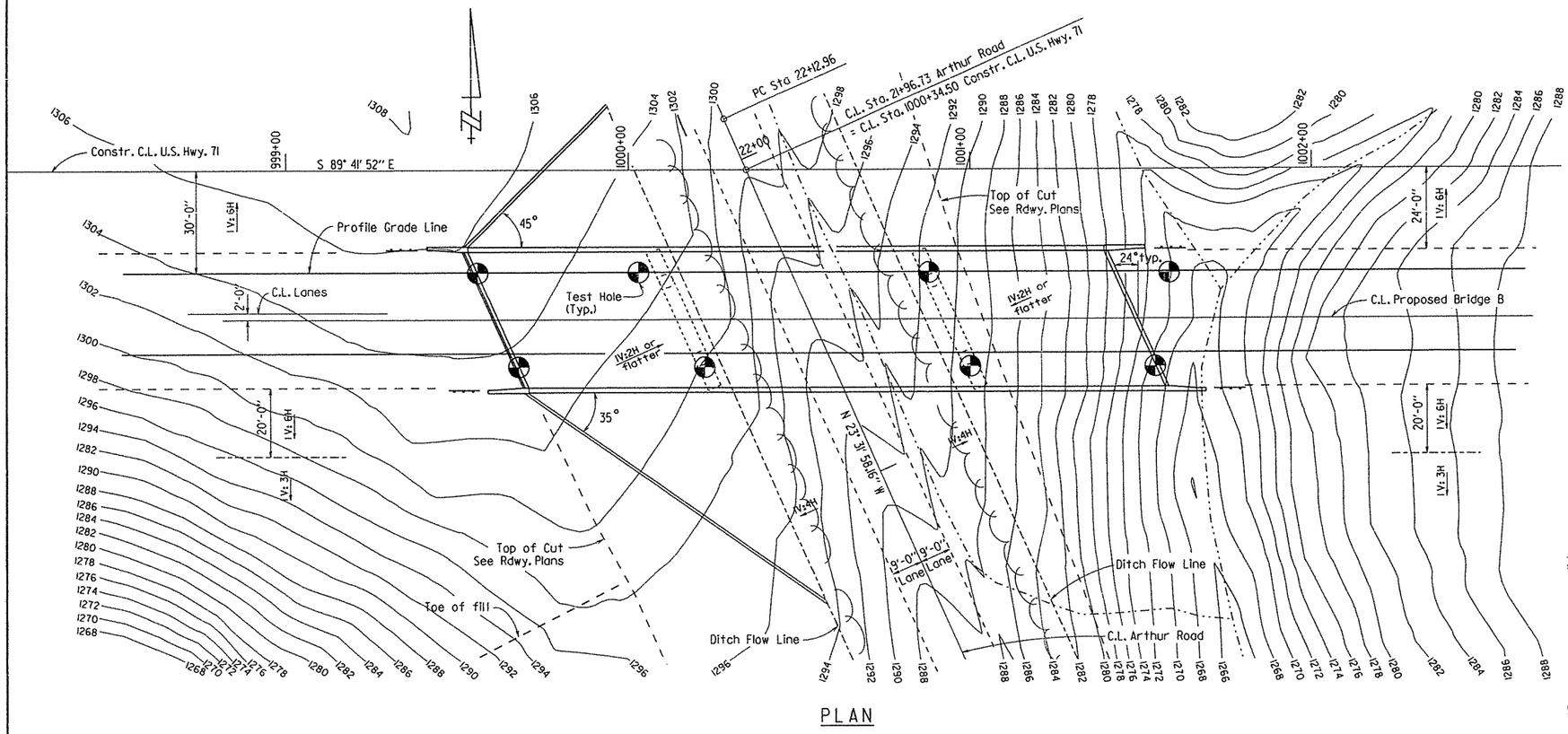
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 1-19-07 FILENAME: bCA0904bll_ll.dgn
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DESIGNED BY: SWP DATE: 12/06

BRIDGE NO. B7276 DRAWING NO. 53485

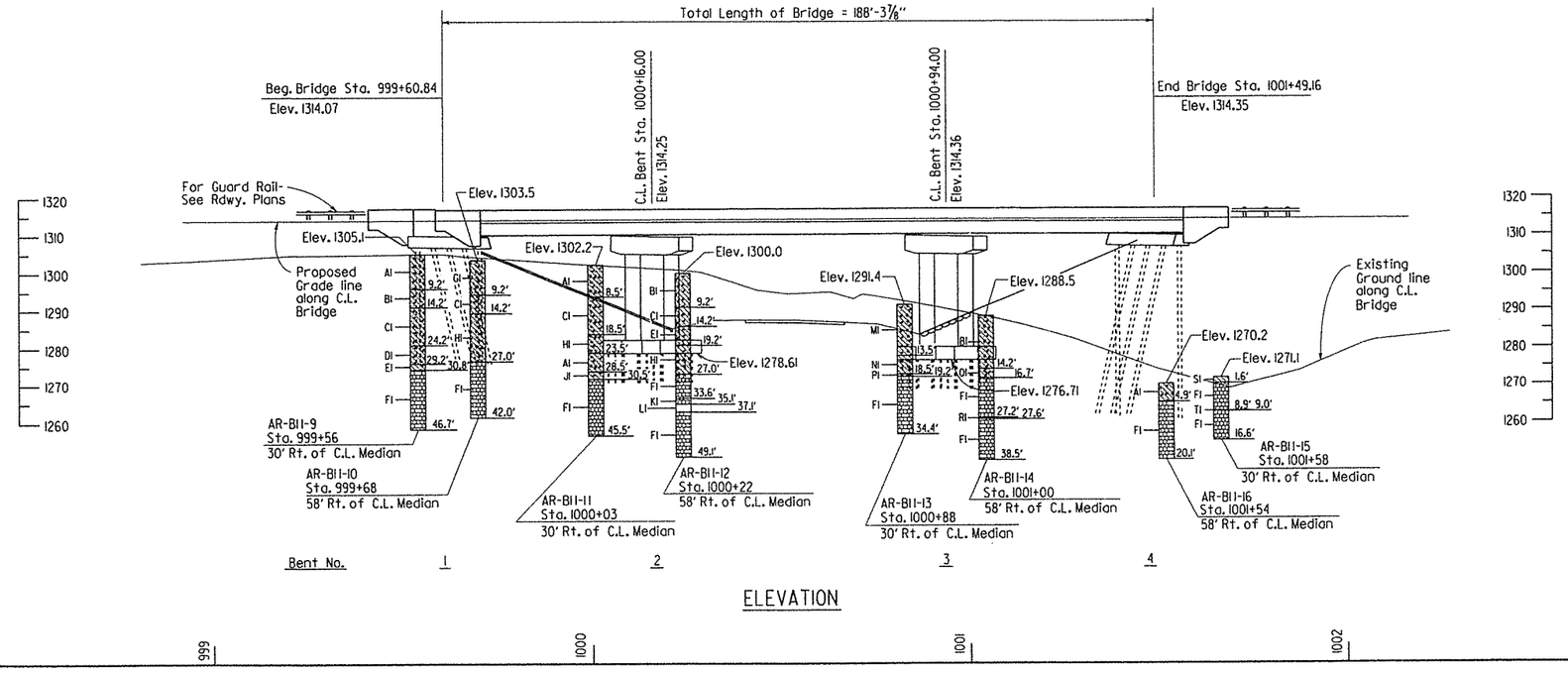
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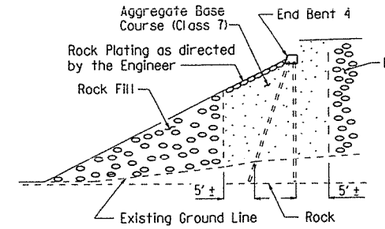


PLAN

Note: Reference to C.L. Median in Boring Information = Constr. C.L. U.S. Hwy. 71.



ELEVATION



Where rock fill is used 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 "Rock Fill".

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 Bent 4 of Bridge B7276. 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

(Shown Normal to End Bent 4)
Not to Scale

"N" VALUES

AR-BII-9
Sta. 999+56 -
30' Rt. of C.L. Median
4.7- 5.7, N=64
9.7- 10.7, N=22
14.7- 15.7, N=38
19.7- 20.7, N=41
24.7- 25.7, N=41
29.7- 30.7, N=12

AR-BII-10
Sta. 999+68 -
58' Rt. of C.L. Median
4.7- 5.7, N=66
9.7- 10.7, N=35
14.7- 15.7, N=21
19.7- 20.7, N=13
24.7- 25.7, N=22

AR-BII-11
Sta. 1000+03 -
30' Rt. of C.L. Median
4.0- 5.0, N=67
9.0- 10.0, N=53
14.0- 15.0, N=34
19.0- 20.0, N=17
24.0- 25.0, N=41
29.0- 30.0, N=2

AR-BII-12
Sta. 1000+22 -
58' Rt. of C.L. Median
4.7- 5.7, N=28
9.7- 10.7, N=52
14.7- 15.7, N=13
19.7- 20.7, N=11
24.7- 25.7, N=13

AR-BII-13
Sta. 1000+88 -
30' Rt. of C.L. Median
3.5- 3.7, N=60 (2')
9.0- 10.0, N=56
14.0- 15.0, N=16
19.0- 19.2, N=60 (2')

AR-BII-14
Sta. 1001+00 -
58' Rt. of C.L. Median
4.7- 5.7, N=25
9.7- 10.7, N=17
14.7- 15.7, N=25

AR-BII-16
Sta. 1001+54 -
58' Rt. of C.L. Median
4.5- 4.8, N=60 (4')

BORING LEGEND

AI-Moist, Very Hard, Reddish Brown Gravely (Chert Fragments) Clay with Sand
BI-Moist, Very Stiff, Reddish Brown Gravely (Chert Fragments) Clay with Sand
CI-Moist, Hard, Reddish Brown Gravely (Chert Fragments) Clay with Sand
DI-Moist, Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
EI-Moist, Stiff, Reddish Brown Gravely (Chert Fragments) Clay with Sand
FI-Hard, Gray Cherty Limestone
GI-Moist, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
HI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
JI-Wet, Soft, Reddish Brown Gravely (Chert Fragments) Clay with Sand
KI-Hard, Gray Cherty Limestone with Thin Cavities
LI-Cavity (35.1' - 37.1')
MI-Moist, Very Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
NI-Moist to Wet, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
PI-Wet, Very Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
QI-Moist, Medium Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
RI-Soil-filled Cavity (27.2' to 27.6')
SI-Moist, Stiff, Brown Clay with Sand
TI-Soil-filled Cavity (8.9' to 9.0')

SHEET 2 OF 2

LAYOUT OF BRIDGE B OVER CR 39 (ARTHUR ROAD) HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S) BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13

BRIDGE ENGINEER

DRAWN BY: AMS. DATE: 8-21-07
CHECKED BY: AMS DATE: 7/15/13
DESIGNED BY: SWP DATE: 12/06
FILENAME: bCA0904bII_II.dgn
SCALE: 1" = 20'

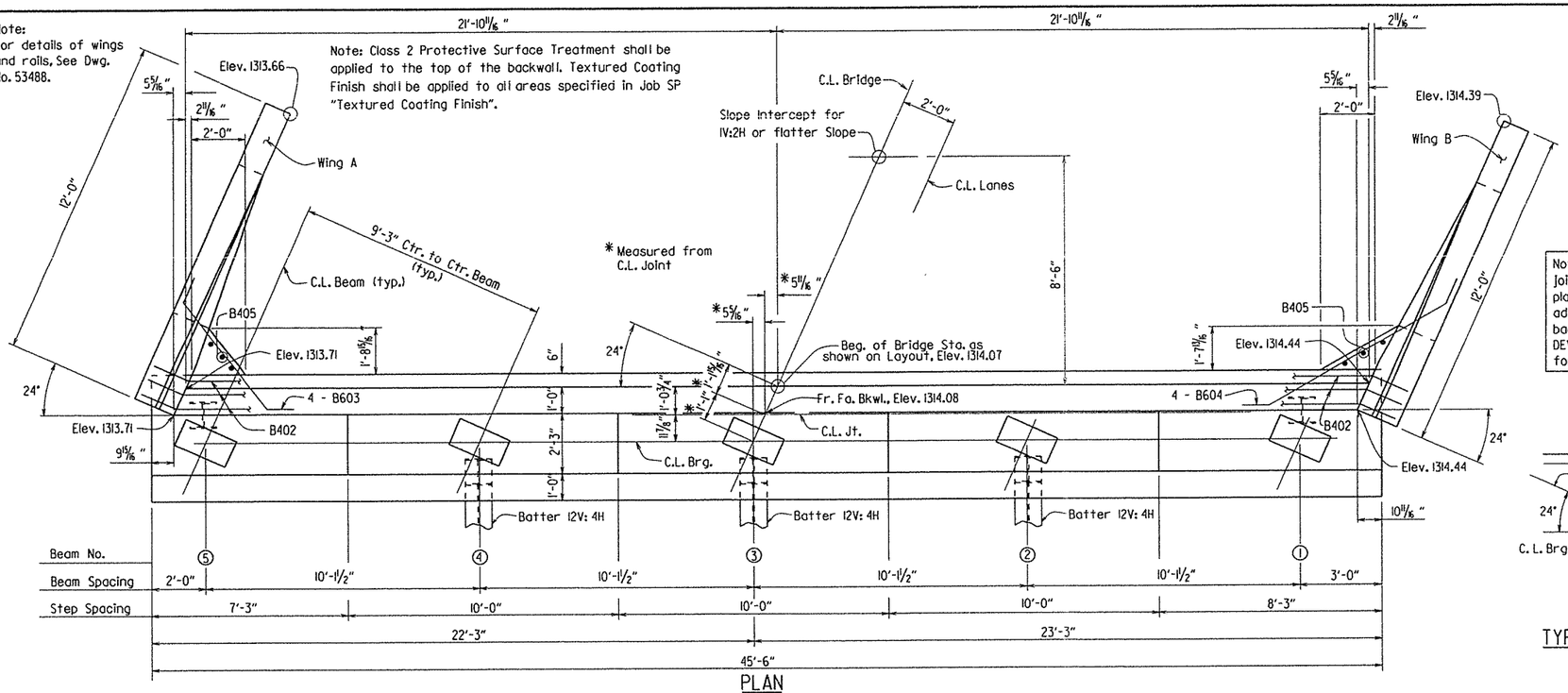
BRIDGE NO. B7276 DRAWING NO. 53486

PRINT DATE: 10/2/2013

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				JOB NO.		CA0904	239	636
				(1) B7276		BENT DTLS.		53487

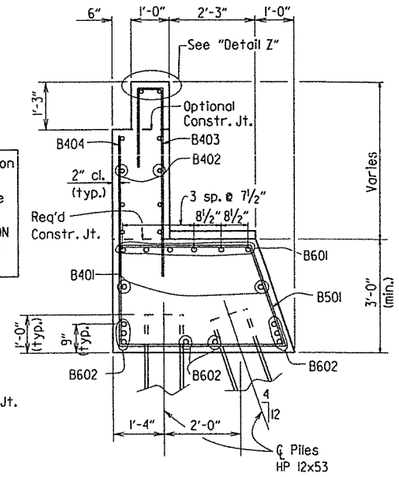
Note:
For details of wings and rails, See Dwg. No. 53488.

Note: Class 2 Protective Surface Treatment shall be applied to the top of the backwall. Textured Coating Finish shall be applied to all areas specified in Job SP "Textured Coating Finish".

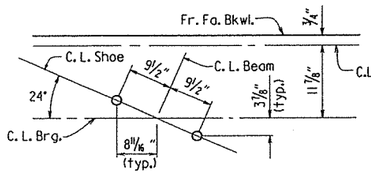


PLAN

Note: 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 "EXPANSION DEVICE INSTALLATION AT END BENTS" on Dwg. No. 53498 for additional information.

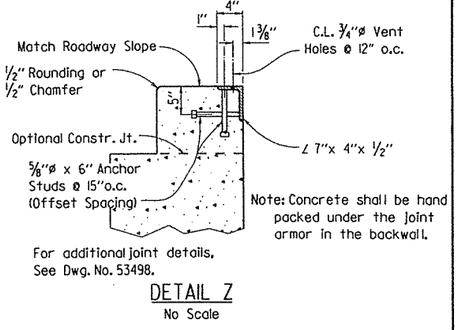


SECTION A-A
1/2" = 1'-0"



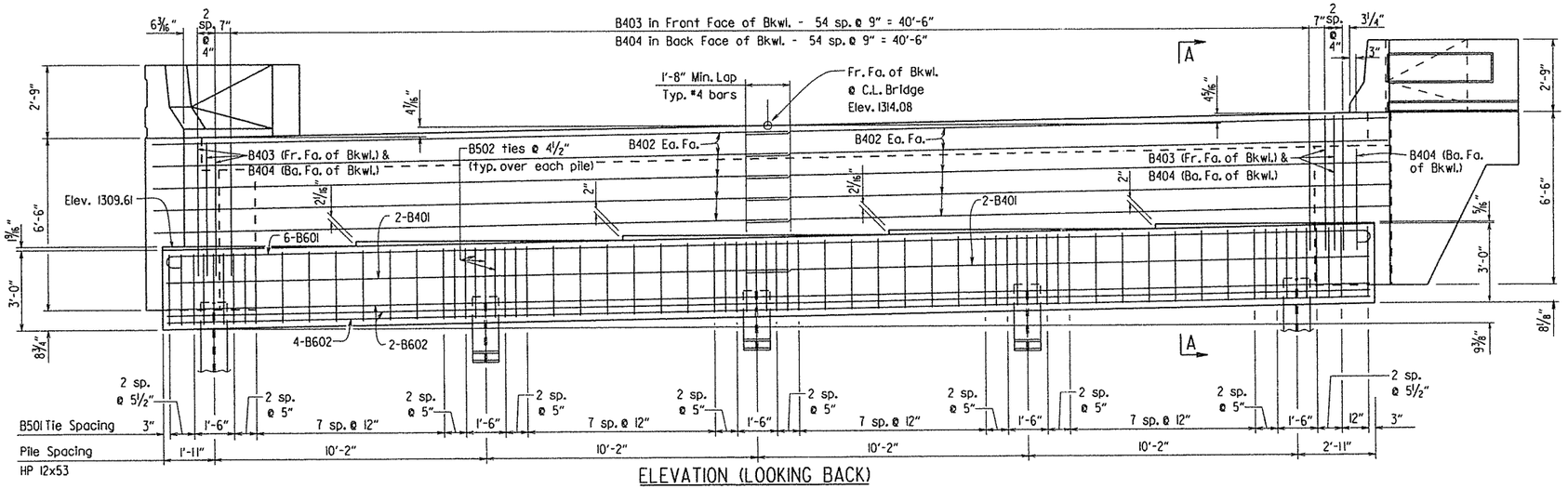
For Dtls. of Elastomeric Exp. Bearings, See Dwg. No. 53493

TYPICAL ANCHOR BOLT LAYOUT
No Scale

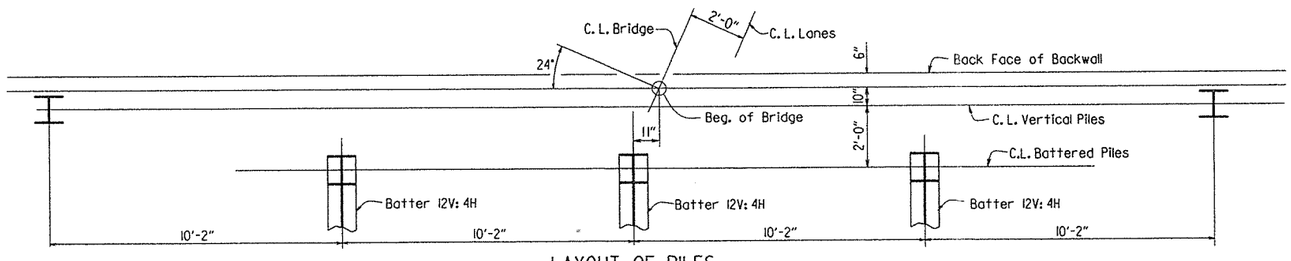


For additional joint details, See Dwg. No. 53498.

DETAIL Z
No Scale



ELEVATION (LOOKING BACK)



LAYOUT OF PILES

GENERAL NOTES:

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be placed to avoid damage.

For additional information, see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2

DETAILS OF BENT 1
CR 39 (ARTHUR ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

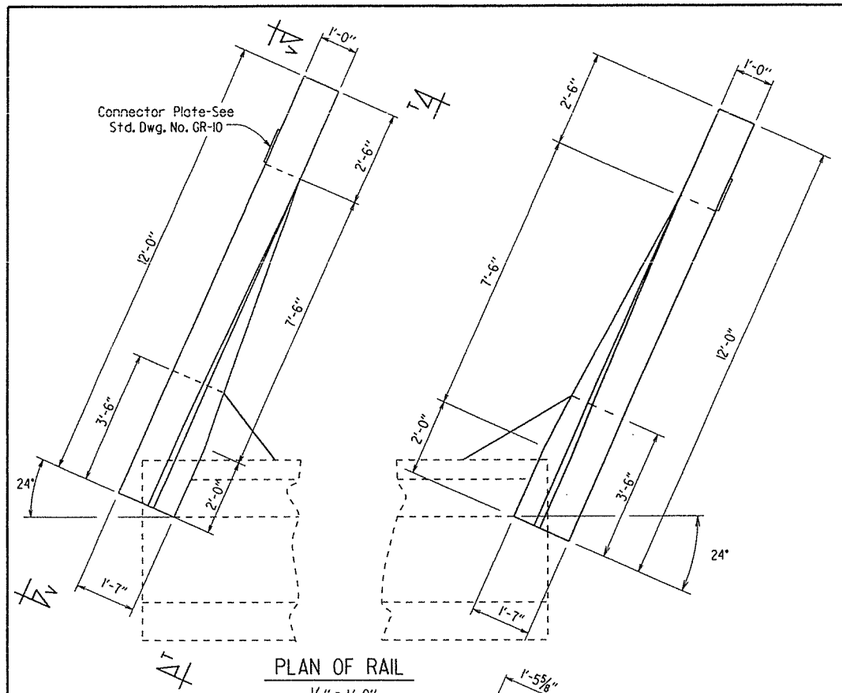
LITTLE ROCK, ARK.

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CHECKED BY: AMS DATE: 7/13 SCALE: 3/8" = 1'-0" or As Noted
DESIGNED BY: DGM DATE: 1/07

BRIDGE NO. B7276 DRAWING NO. 53487

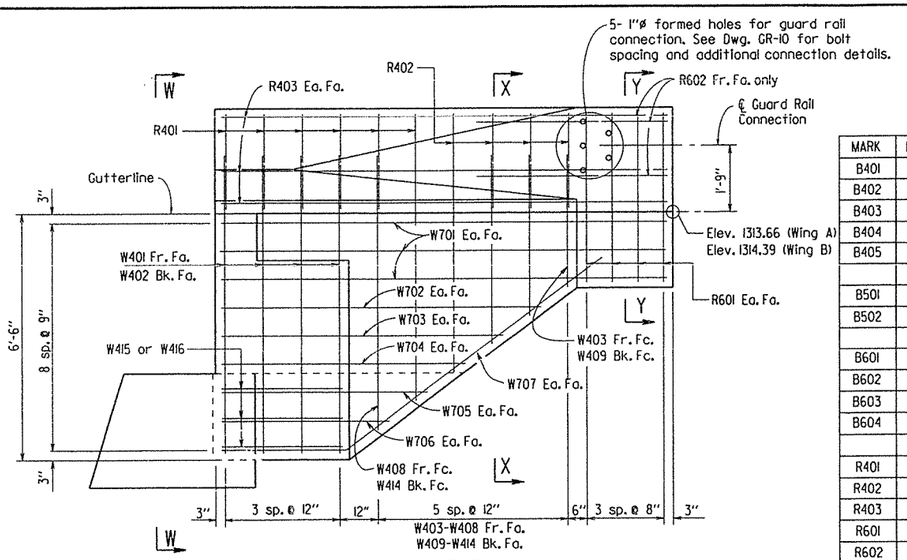
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				6	ARK.			
				JOB NO.		CA0904	240	636
				① B7276		End Bent	53488	



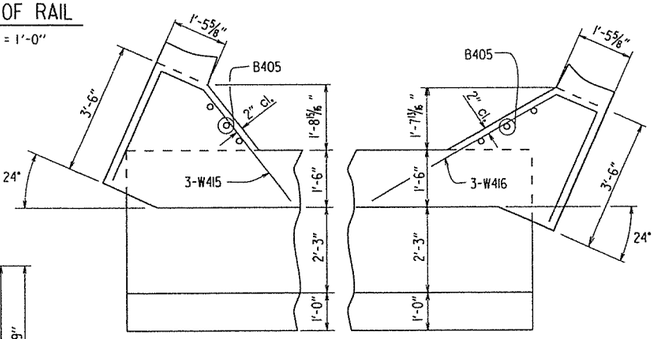
PLAN OF RAIL

½" = 1'-0"



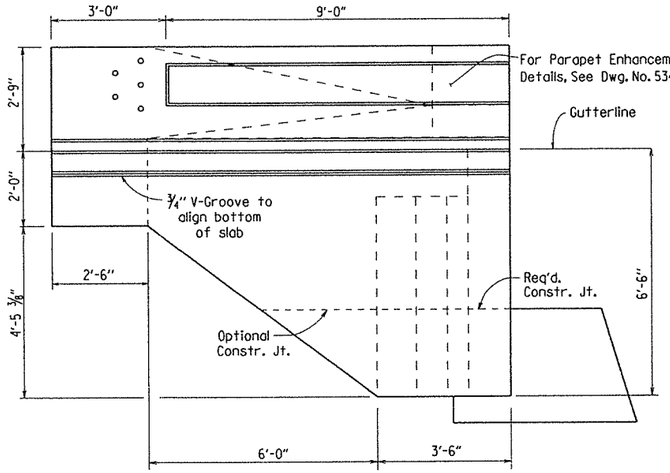
VIEW T-T

½" = 1'-0"



SECTION Z-Z

½" = 1'-0"



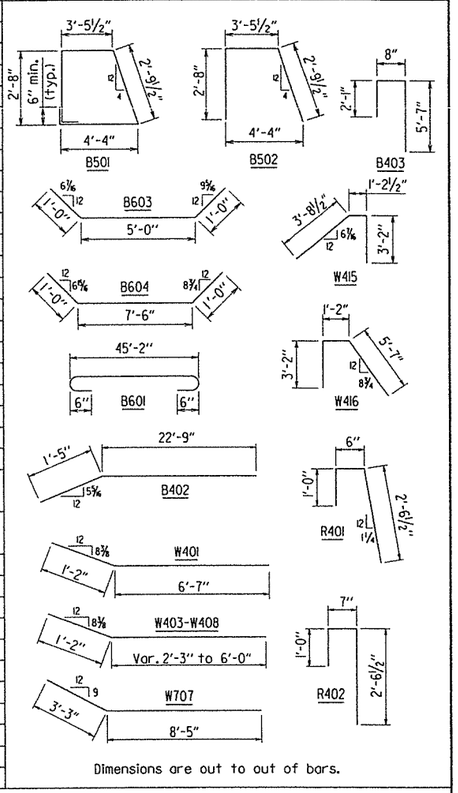
VIEW V-V

½" = 1'-0"

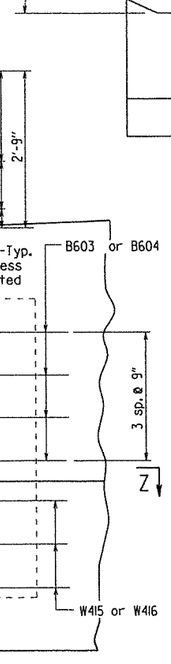
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	23'-5"	Str.
B402	10	24'-2"	2"
B403	61	8'-2"	4½"
B404	62	4'-2"	Str.
B405	6	4'-11"	Str.
B501	55	13'-9"	2½"
B502	15	8'-9"	2½"
B601	6	46'-6"	4½"
B602	8	45'-2"	Str.
B603	4	7'-0"	4½"
B604	4	9'-6"	4½"
R401	12	3'-11"	2"
R402	8	4'-0"	2"
R403	12	11'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	8	7'-9"	2"
W402	8	8'-11"	Str.
W403-W408	2 each	Var. 3'-5" to 7'-2"	2"
W409-W414	2 each	Var. 4'-7" to 8'-3"	Str.
W415	3	8'-0"	2"
W416	3	9'-10"	2"
W701	12	11'-8"	Str.
W702	4	8'-4"	Str.
W703	4	7'-4"	Str.
W704	4	6'-4"	Str.
W705	4	5'-4"	Str.
W706	4	4'-4"	Str.
W707	4	11'-8"	5¼"

BENDING DIAGRAMS

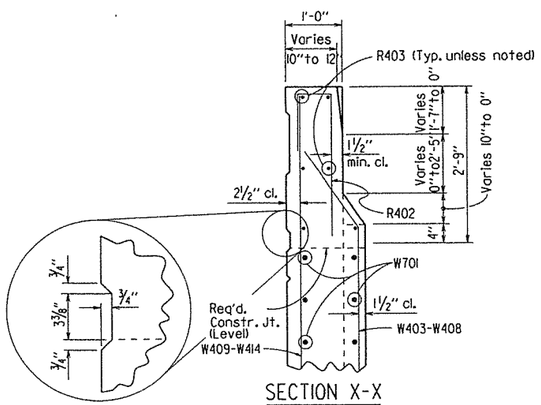


Dimensions are out to out of bars.



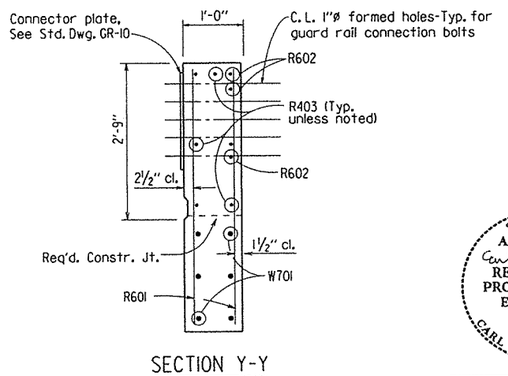
VIEW W-W

¾" = 1'-0"



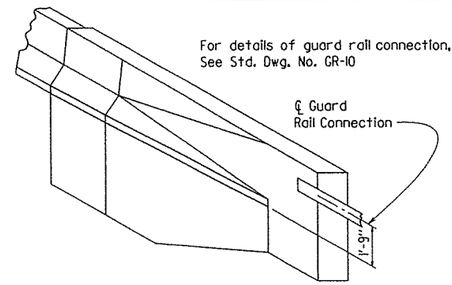
SECTION X-X

¾" = 1'-0"



SECTION Y-Y

¾" = 1'-0"



THREE DIMENSIONAL VIEW OF RAIL

No Scale

STATE OF ARKANSAS
Carl L. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/4/13
CARL L. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2

DETAILS OF BENT 1
CR 39 (ARTHUR ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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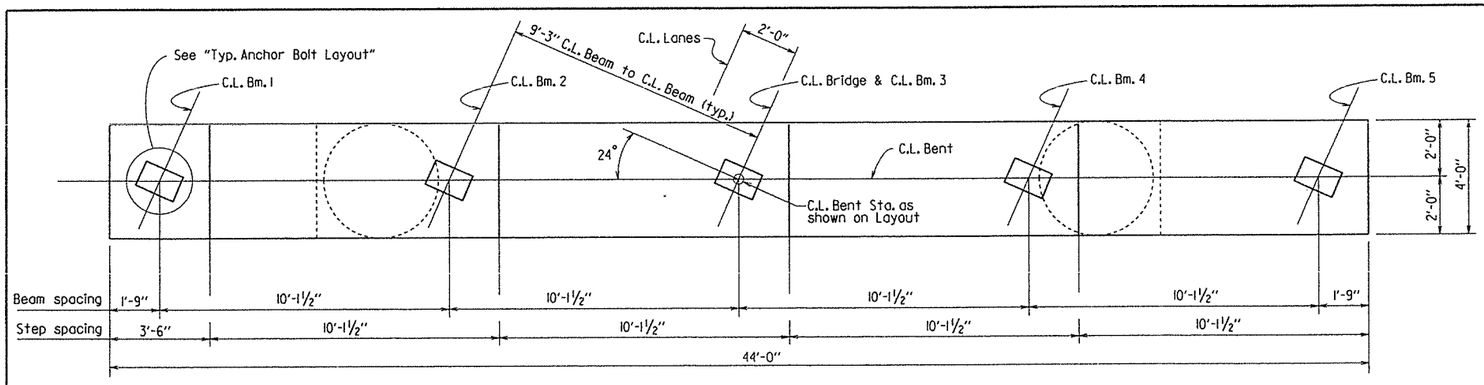
CHECKED BY: AMS DATE: 7/13 SCALE: As Noted

DESIGNED BY: DGM DATE: 1107

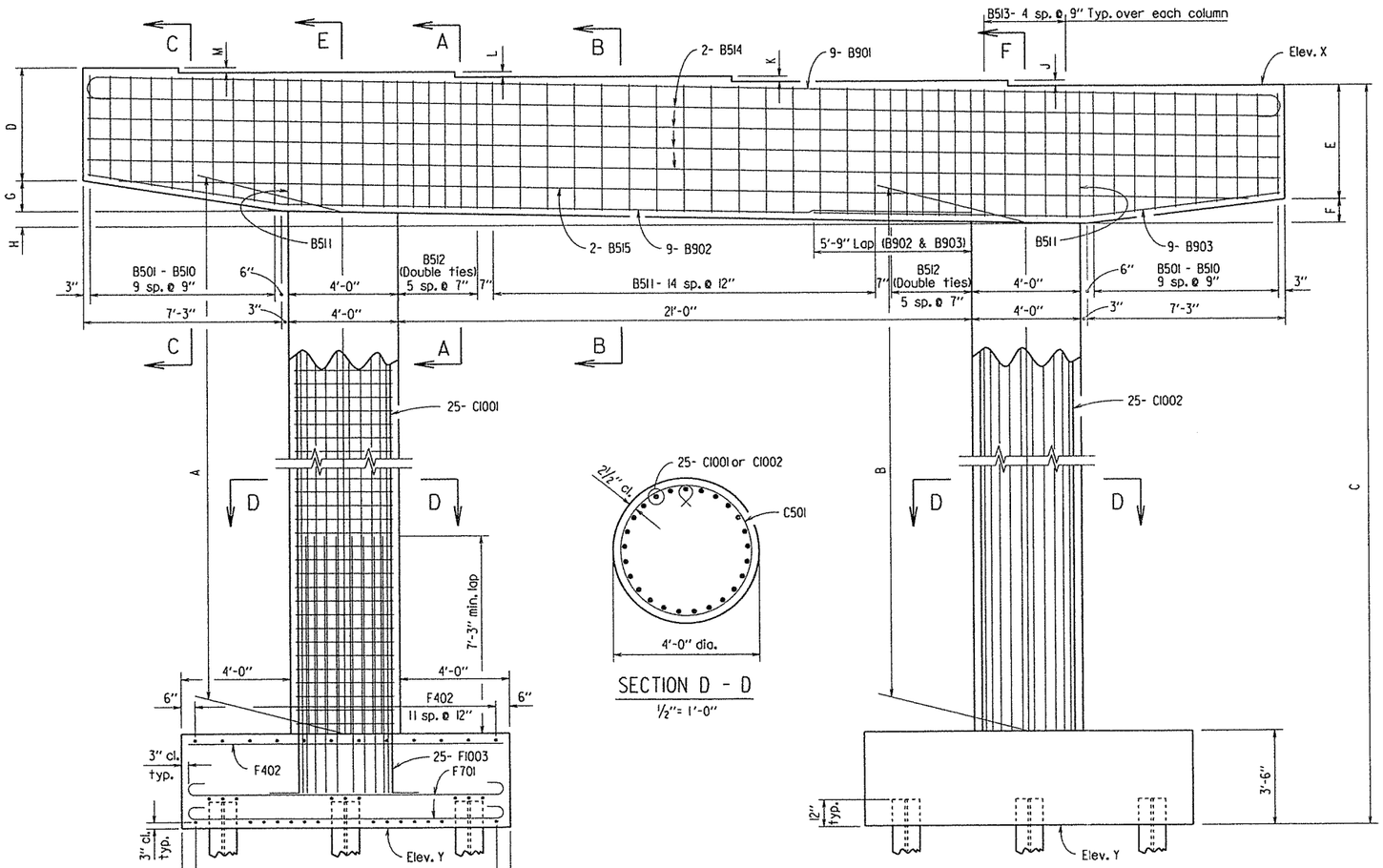
BRIDGE NO. B7276 DRAWING NO. 53488

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	241	636
				(1) B7276		int. Bent	53489	



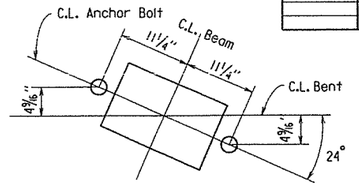
PLAN



SECTION D - D
½"= 1'-0"

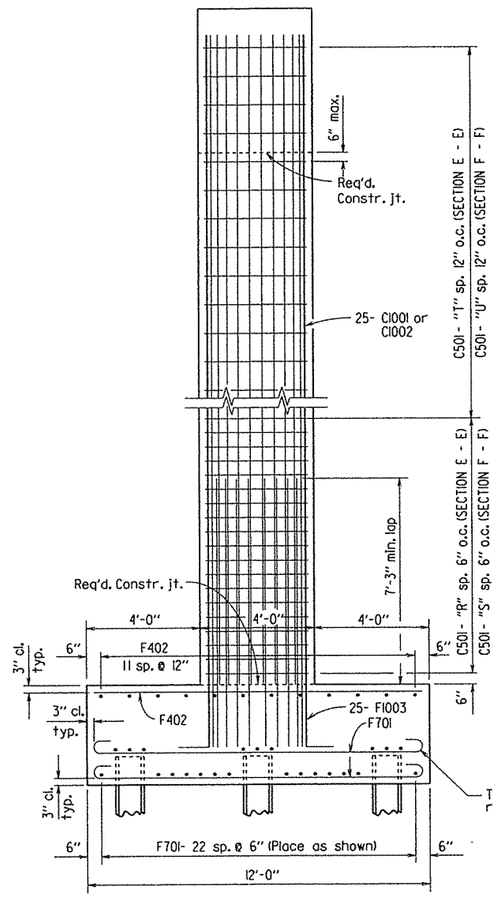
Note: Dimensions and reinforcing are typical for each footing.

ELEVATION
(Looking Forward)



For Details of Elastomeric Bearings, see Dwg. No. 53493.

TYP. ANCHOR BOLT LAYOUT
1"= 1'-0"



SECTION E - E or F - F

BAR LIST - PER BENT

Mark	No. Req'd.	Length	A	B	Pin Dia.
C1001	25	"N"			Str.
C1002	25	"P"			Str.
F1003	50	11'-3"	9'-8"	1-10"	10"
B901	9	46'-2"	43'-8"	10"	9"
B902	9	32'-5"			9"
B903	9	17'-2"			9"
F701	92	13'-2"	11'-6"	7"	5¼"
F601	8	4'-10"	2'-6"	2'-6"	4½"
B501-B510	2 ea.	15'-2" to 17'-0"	3'-8"	3'-8" to 4'-7"	2½"
B511	17	17'-2"	3'-8"	4'-8"	2½"
B512	24	14'-11"	2'-6½"	4'-8"	2½"
B513	10	12'-10"	3'-8"	4'-8"	2½"
B514	8	43'-8"			Str.
B515	2	41'-4"			Str.
C501	"V"	12'-7"			3¾"
F402	48	11'-6"			Str.

Bending Diagrams
(Dimensions are out to out of bars.)

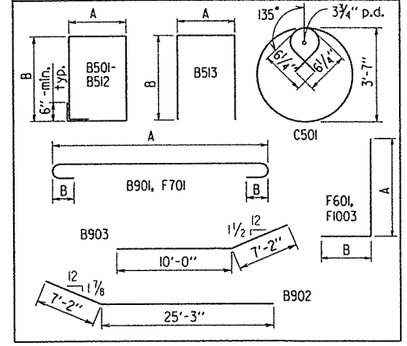


TABLE OF VARIABLES

Bent No.	Elev. X	Elev. Y	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V
2	1309.86	1278.61	23'-2"	22'-8¾"	31'-3"	4'-1⅞"	4'-2¼"	10½"	1'-1½"	6⅜"	2⅛"	2⅛"	2⅛"	2⅛"	27'-6"	27'-1"	25	24	14	14	79
3	1309.96	1276.71	25'-2¼"	24'-8⅞"	33'-3"	4'-1⅞"	4'-2⅜"	10⅞"	1'-1⅝"	6⅜"	2⅜"	2⅜"	2⅜"	2⅜"	29'-6"	29'-1"	27	28	15	14	86

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2

DETAILS OF BENTS 2 AND 3
CR 39 (ARTHUR ROAD)

ROUTE SEC.

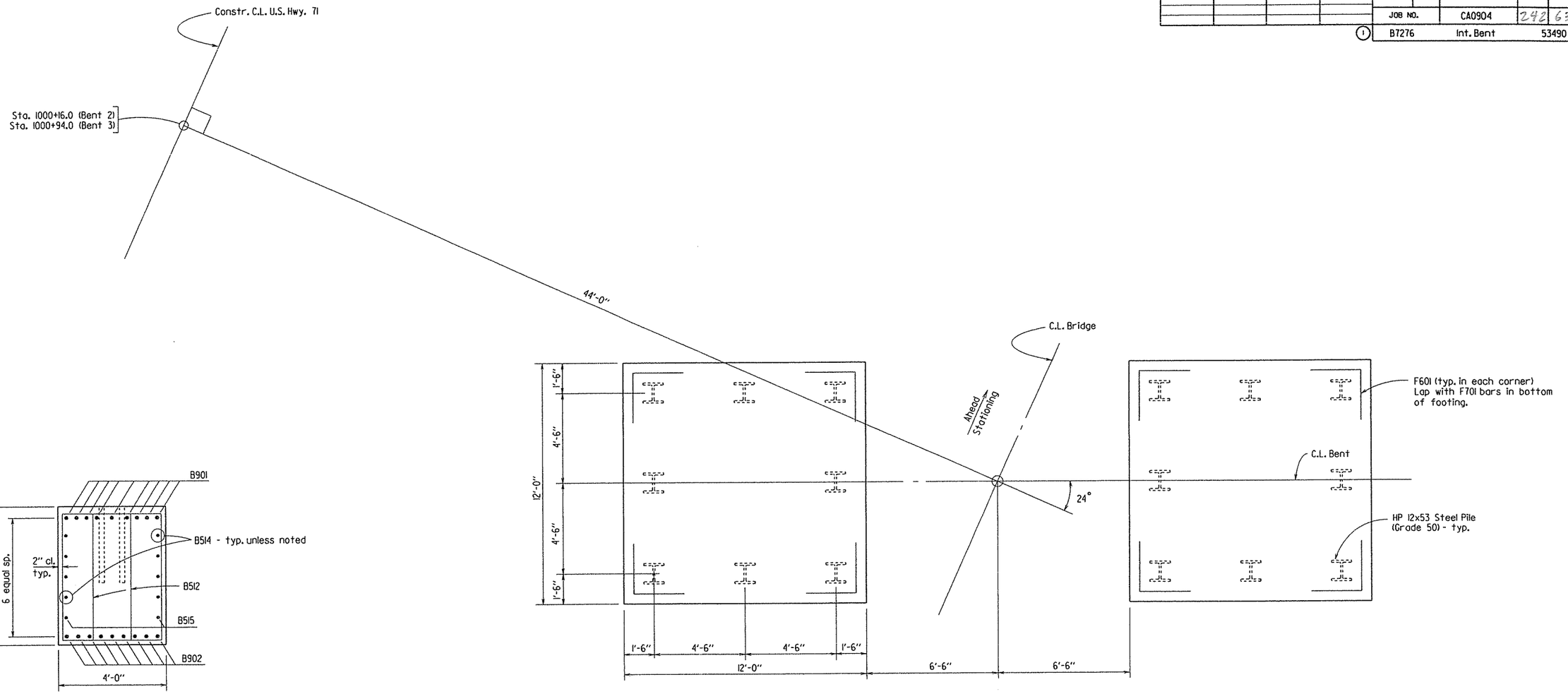
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: AMS DATE: 7/24/07
DESIGNED BY: DCM DATE: 5/07
FILENAME: bCA0904b11_b2.dgn
SCALE: ⅜" = 1'-0" or as shown

BRIDGE NO. B7276 DRAWING NO. 53489

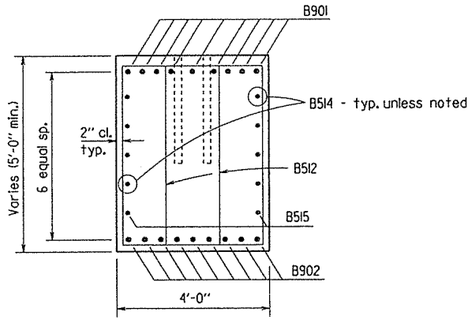
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				6	ARK.			
				JOB NO.		CA0904	242	636
				(1) B7276		Int. Bent		53490



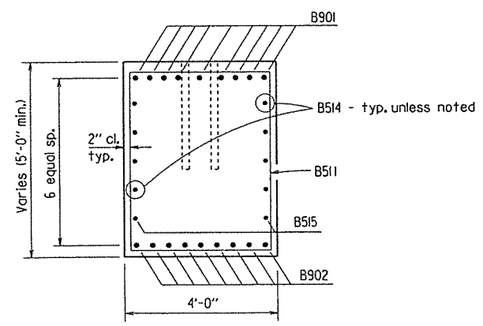
FOOTING LOCATION SKETCH

3/8"= 1'-0"



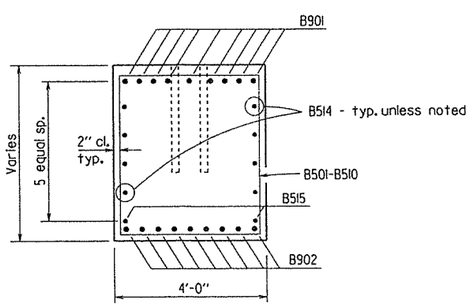
SECTION A - A

1/2"= 1'-0"



SECTION B - B

1/2"= 1'-0"



SECTION C - C

1/2"= 1'-0"

GENERAL NOTES

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/24/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2

DETAILS OF BENTS 2 AND 3
CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 6-7-07 FILENAME: bCA0904bll_b2.dgn

CHECKED BY: AMS DATE: 7/24/07 SCALE: 3/8" = 1'-0" or as shown

DESIGNED BY: Den DATE: 5/07

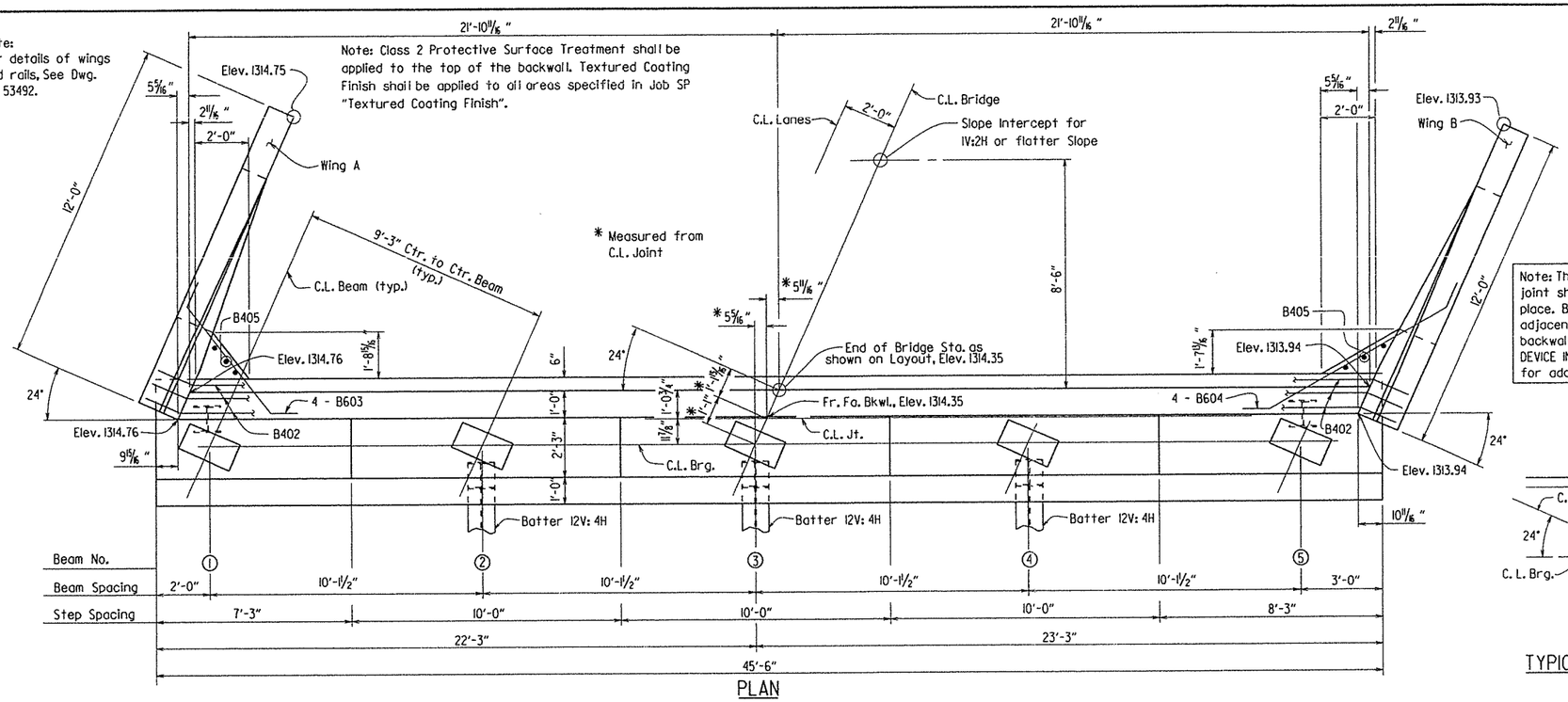
BRIDGE NO. B7276 DRAWING NO. 53490

PRINT DATE: 7/3/2013

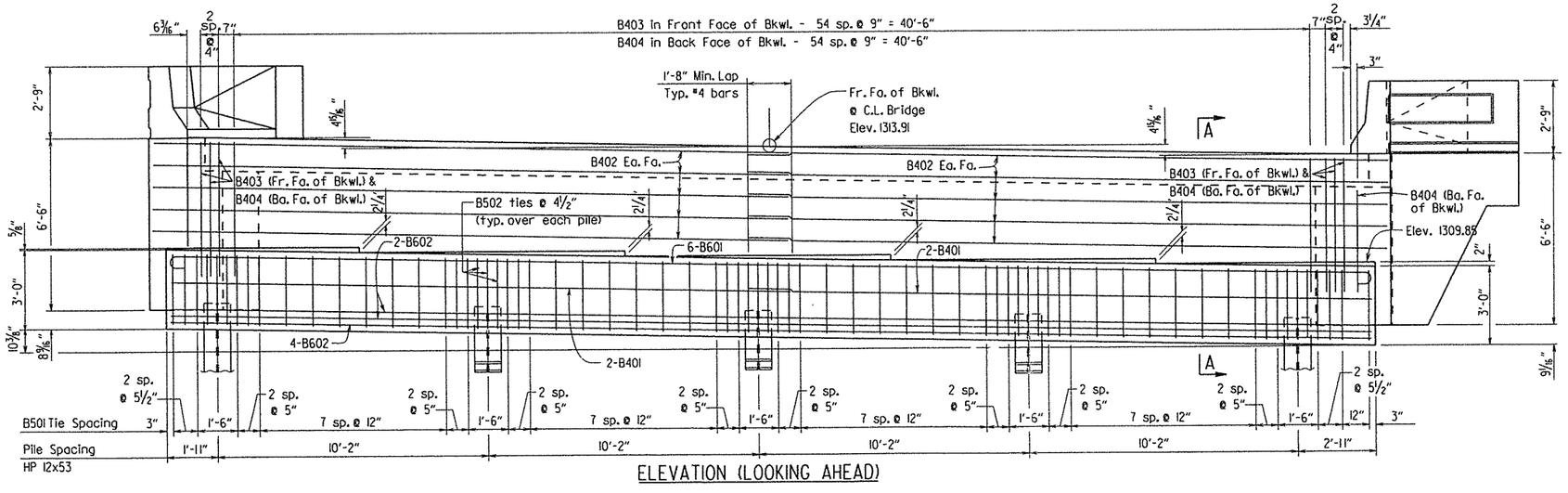
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				6	ARK.			
				JOB NO.		CA0904	243	636
				(1) B7276		BENT DTLS.		53491

Note:
For details of wings and rails, See Dwg. No. 53492.

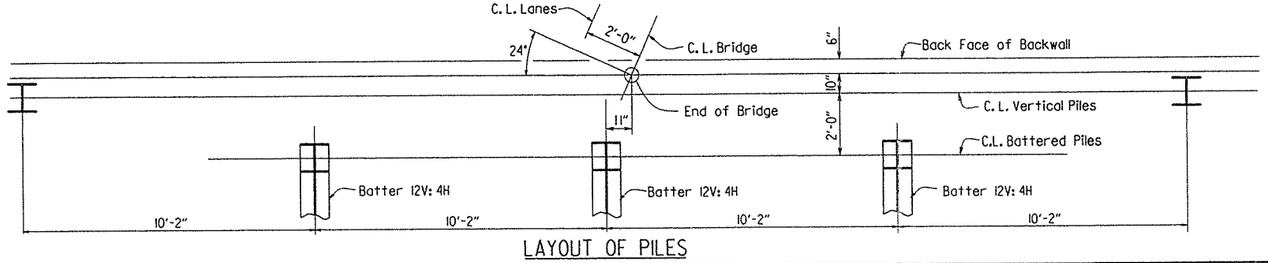
Note: Class 2 Protective Surface Treatment shall be applied to the top of the backwall. Textured Coating Finish shall be applied to all areas specified in Job SP "Textured Coating Finish".



PLAN

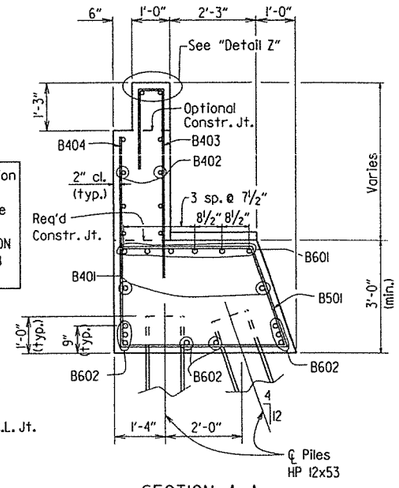


ELEVATION (LOOKING AHEAD)

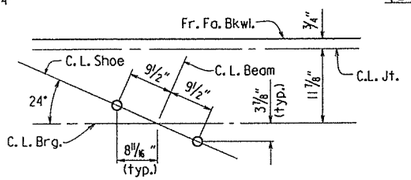


LAYOUT OF PILES

Note: 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 "EXPANSION DEVICE INSTALLATION AT END BENTS" on Dwg. No. 53498 for additional information.

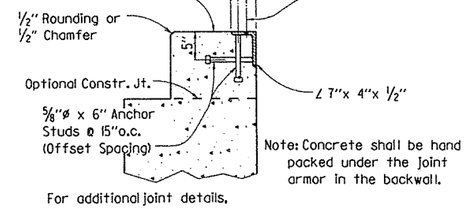


SECTION A-A
1/2" = 1'-0"



For Dtls. of Elastomeric Exp. Bearings, See Dwg. No. 53493.

TYPICAL ANCHOR BOLT LAYOUT
No Scale



Note: Concrete shall be hand packed under the joint armor in the backwall.

For additional joint details, See Dwg. No. 53498.

DETAIL Z
No Scale

GENERAL NOTES:

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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be placed to avoid damage.

For additional information, see layout.

STATE OF ARKANSAS
Carl Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL FUSSELIER 7/16/13
BRIDGE ENGINEER

SHEET 1 OF 2

DETAILS OF BENT 4
CR 39 (ARTHUR ROAD)

ROUTE 71 SEC. 19

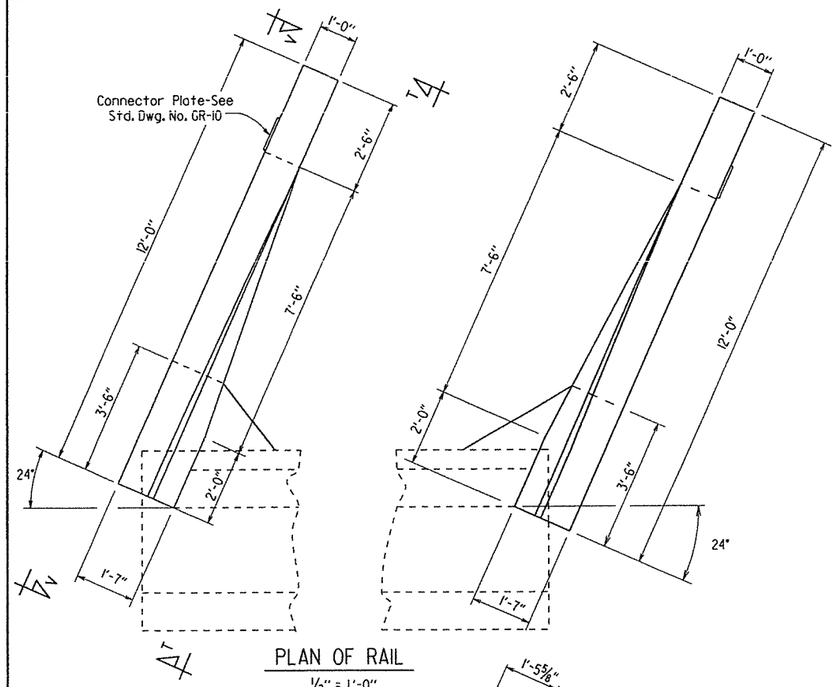
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: AMS	DATE: 7/13	SCALE: 3/8" = 1'-0"	
DESIGNED BY: DGM	DATE: 1/07	or As Noted	

BRIDGE NO. B7276 DRAWING NO. 53491

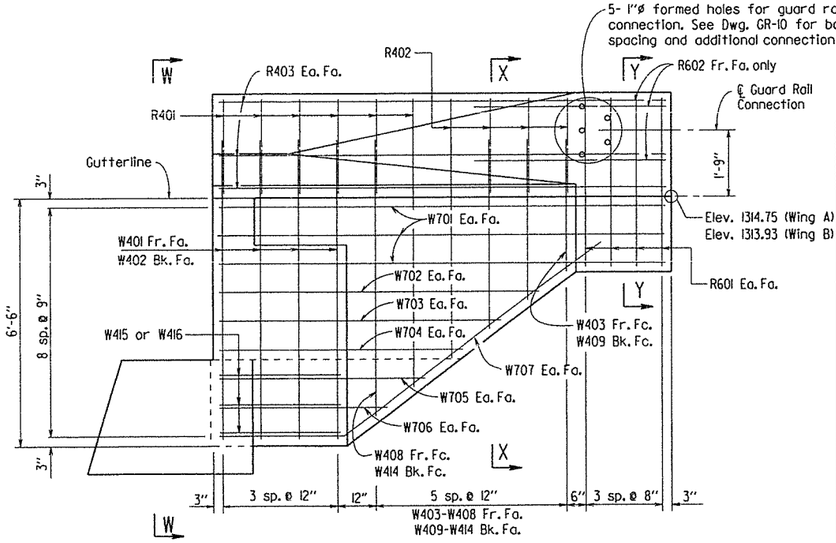
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	244	636
				(1) B7276		End Bent		53492



PLAN OF RAIL

½" = 1'-0"



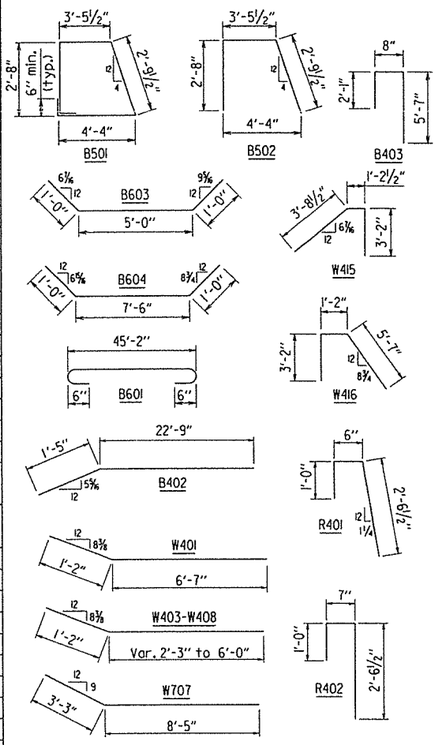
VIEW T-T

½" = 1'-0"

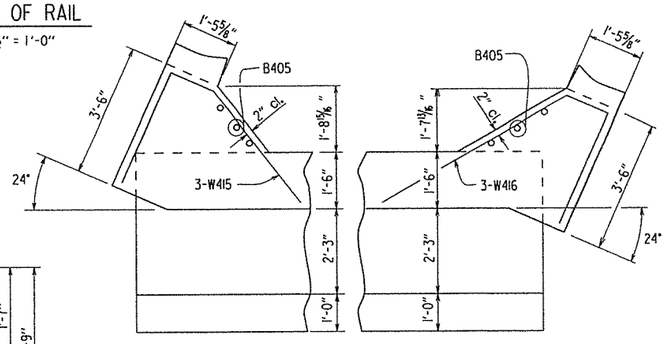
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	23'-5"	Str.
B402	10	24'-2"	2"
B403	61	8'-2"	4½"
B404	62	4'-2"	Str.
B405	6	4'-11"	Str.
B501	55	13'-9"	2½"
B502	15	8'-9"	2½"
B601	6	46'-6"	4½"
B602	8	45'-2"	Str.
B603	4	7'-0"	4½"
B604	4	9'-6"	4½"
R401	12	3'-11"	2"
R402	8	4'-0"	2"
R403	12	11'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	8	7'-9"	2"
W402	8	8'-11"	Str.
W403-W408	2 each	Var. 3'-5" to 7'-2"	2"
W409-W414	2 each	Var. 4'-7" to 8'-3"	Str.
W415	3	8'-0"	2"
W416	3	9'-10"	2"
W701	12	11'-8"	Str.
W702	4	8'-4"	Str.
W703	4	7'-4"	Str.
W704	4	6'-4"	Str.
W705	4	5'-4"	Str.
W706	4	4'-4"	Str.
W707	4	11'-8"	5¼"

BENDING DIAGRAMS

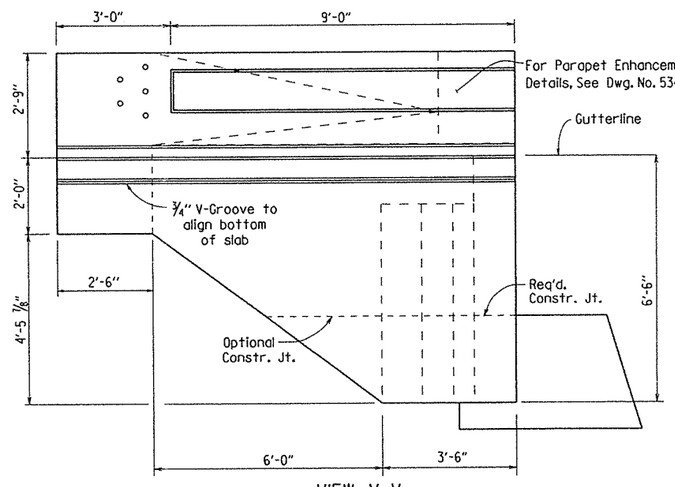


Dimensions are out to out of bars.



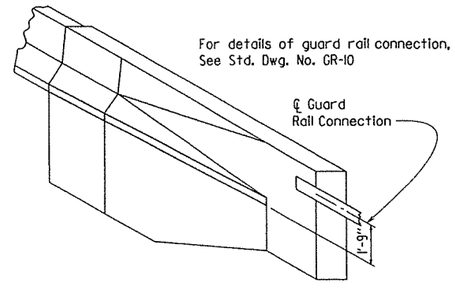
SECTION Z-Z

½" = 1'-0"



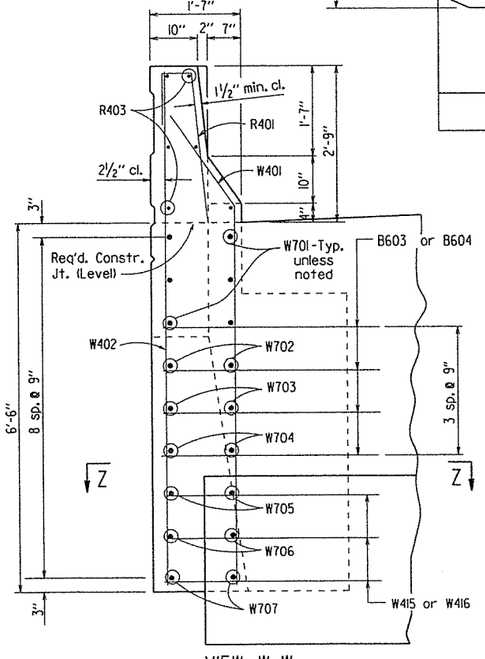
VIEW V-V

½" = 1'-0"



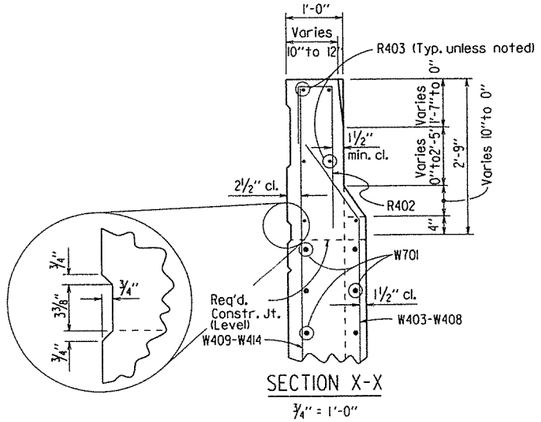
THREE DIMENSIONAL VIEW OF RAIL

No Scale



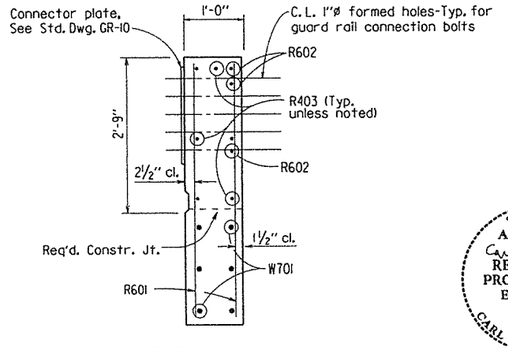
VIEW W-W

¾" = 1'-0"



SECTION X-X

¾" = 1'-0"



SECTION Y-Y

¾" = 1'-0"

STATE OF ARKANSAS
Carl Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2

DETAILS OF BENT 4
CR 39 (ARTHUR ROAD)

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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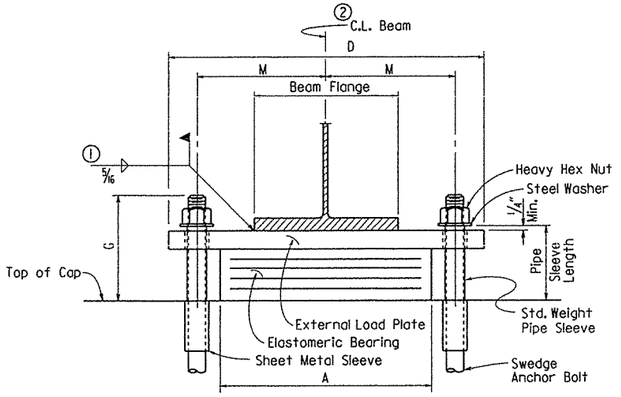
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DESIGNED BY: DGM DATE: 1107

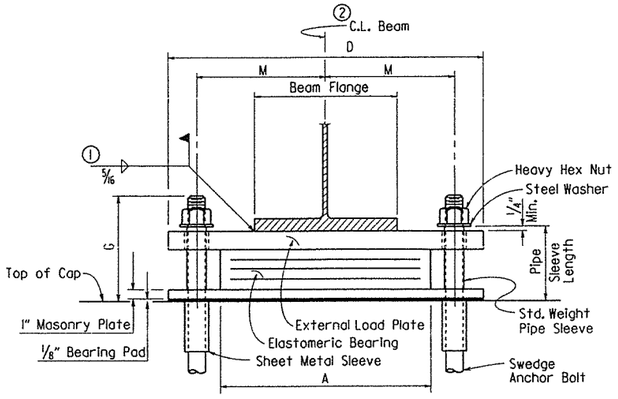
BRIDGE NO. B7276 DRAWING NO. 53492

PRINT DATE: 7/3/2013

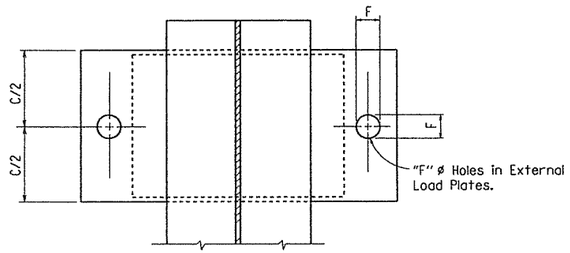
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	245	636
				① B7276		Elastomeric Bearing		53493



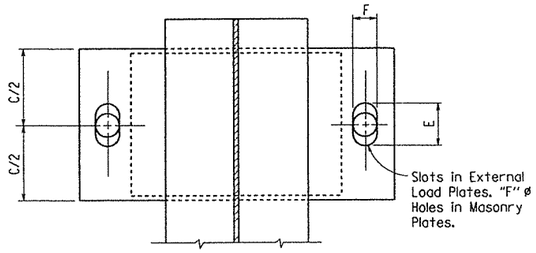
FRONT VIEW - AT BENT NOS. 2 & 3



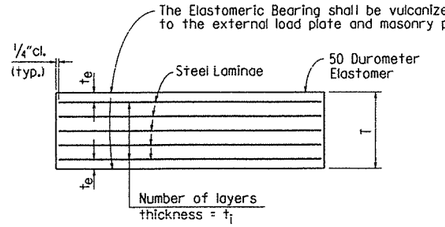
FRONT VIEW - AT BENT NOS. 1 & 4



PLAN VIEW - AT BENT NOS. 2 & 3



PLAN VIEW - AT BENT NOS. 1 & 4



t_e = thickness of elastomer cover on top and bottom of pad

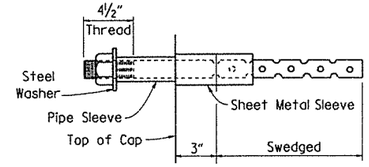
t_i = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

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. Beam.



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 OPL 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 Beam Spans, (M 270, Gr. 50W)".

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."

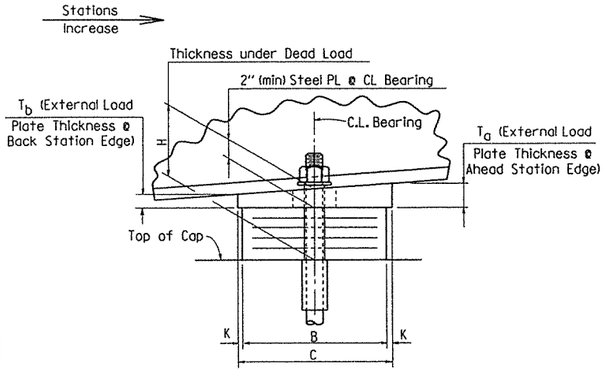
External load plates and masonry plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates and masonry plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces 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 807.84(e) for unpainted Grade 50W steel.

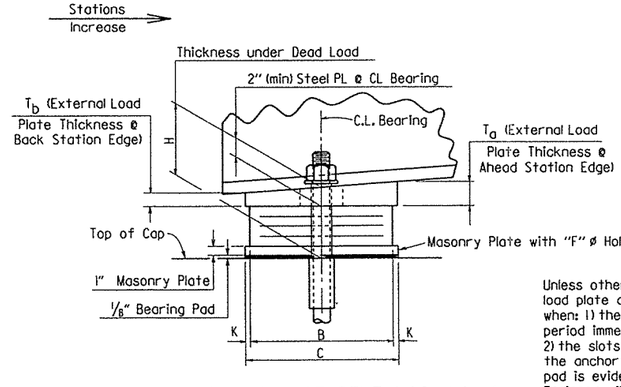
Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 50W)". External load plates, masonry plates, and 1/8" bearing pads will not be measured or paid for separately but will be considered included in the unit bid price for "Elastomeric Bearings".

Bearings with masonry plates shall be seated in accordance with subsection 807.66. Bearings without masonry plates shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.



SIDE VIEW - AT BENT NOS. 2 & 3



SIDE VIEW - AT BENT NOS. 1 & 4

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.

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in "Table For External Load PL Thickness".

TABLE FOR EXTERNAL LOAD PL THICKNESS

Bent	Beam	T_a	T_b
1	1-5	2.02"	1.98"
4	1&2	2"	2"
4	3 - 5	1.99"	2.01"
2	1-5	2.01"	1.99"
3	1-5	2"	2"

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	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 LAMINAE	T	EXTERNAL LOAD PLATE 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.)
B7276	1&4	All	Exp.	5	100	8⅜"	5⅝"	14½"	11½"	3	½"	5/16"	4 @ 12ga.	2⅜"	12½"	24½"	3¾"	2¼"	½"	9½"	See TABLE		1½"øx25"	55	1½"øx 5⅞"	3"øx 6"	3"
	2&3	All	Fix	5	226	8"	4½"	17"	11"	3	½"	5/16"	4 @ 12ga.	2⅜"	12"	29"	–	3⅛"	½"	11¼"	See TABLE		2¼"øx34"	55	2½"øx 4¾"	4"øx 12"	4"

*Maximum Design Load = Service I Limit State

** The dimension "E" does not apply to masonry plates - See "SIDE VIEW - At BENT NO. 1 or 4

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-4-07 FILENAME: bCA0904b11_el.dgn

CHECKED BY: AHS DATE: 7/17/07 SCALE: 1½" = 1'-0"

DESIGNED BY: DGM DATE: 2/07

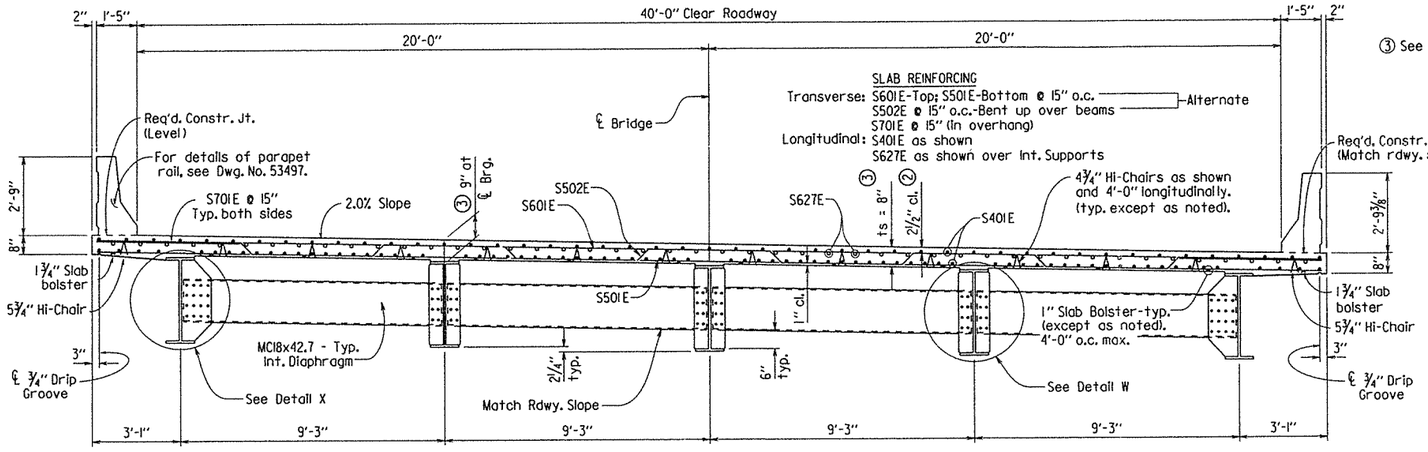
BRIDGE NO. B7276 DRAWING NO. 53493

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	246	636
				(1) B7276		186' CONT. UNIT	53494	

NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas specified in Job SP "Textured Coating Finish".

NOTE: At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

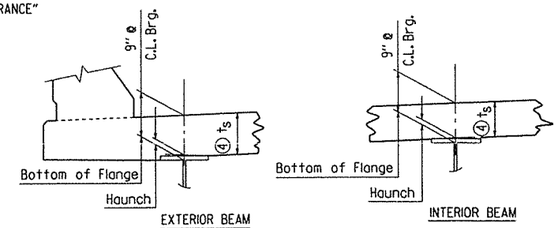


TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

② Tolerance: Minus = ¼"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance-
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"

③ See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"



t_s = slab thickness as shown in "Typical Roadway Section"

④ Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Notes:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain tolerances.

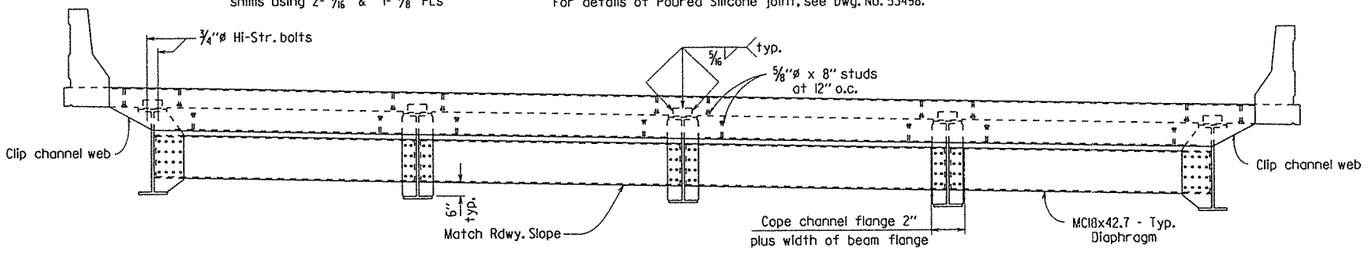
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

NTS

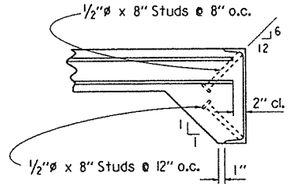
Expansion Device:
Rdwy. Channel - MC18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of Poured Silicone joint, see Dwg. No. 53498.



SECTION THRU JOINT

Looking Ahead
⅜" = 1'-0"



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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

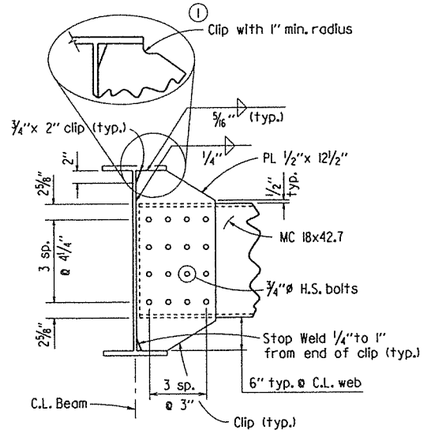
NTS

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"	

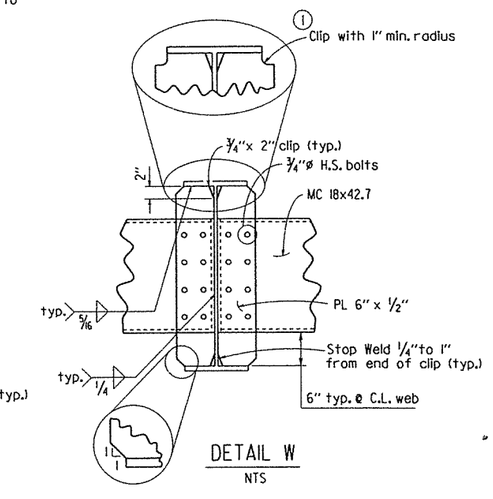
Note: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

① If permanent steel bridge deck forms are used, the Fabricator shall clip plate as necessary to accomodate the deck form supports.



DETAIL X

NTS



DETAIL W

NTS

STATE OF ARKANSAS
Carl S. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL S. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 6
DETAILS OF 186' CONTINUOUS W-BEAM UNIT CR 39 (ARTHUR ROAD)

ROUTE SEC.

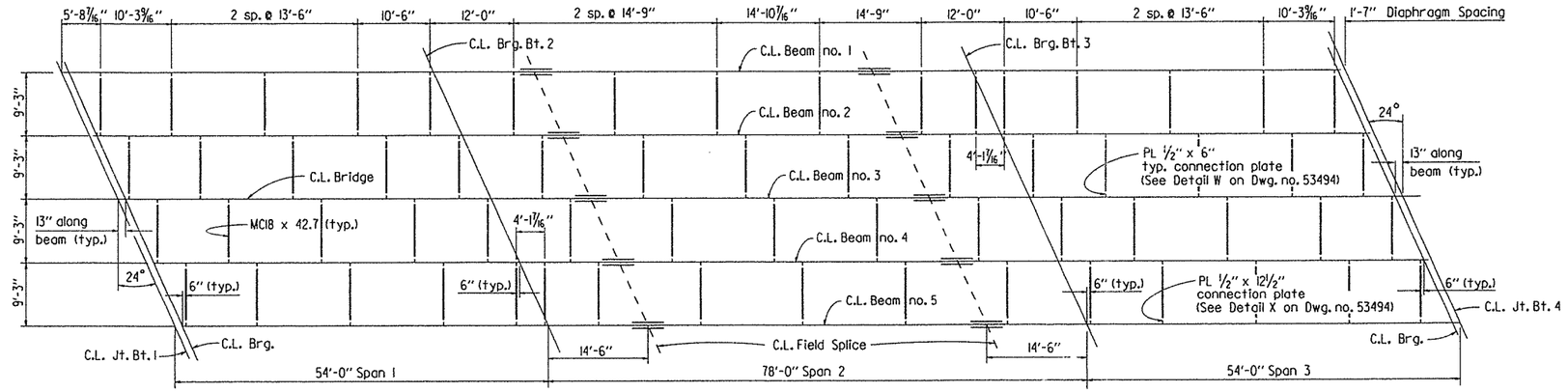
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 3-20-07 FILENAME: bCA0904b11_sl.dgn
CHECKED BY: AMS DATE: 7/17/07 SCALE: AS NOTED
DESIGNED BY: OGH DATE: 2/07

BRIDGE NO. B7276 DRAWING NO. 53494

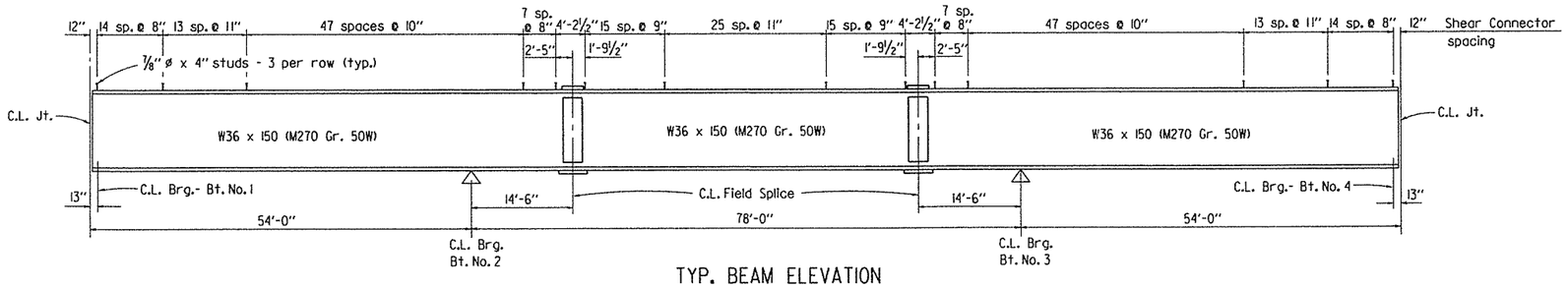
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	247	636
				(1) B7276		186' CONT. UNIT	53495	



FRAMING PLAN

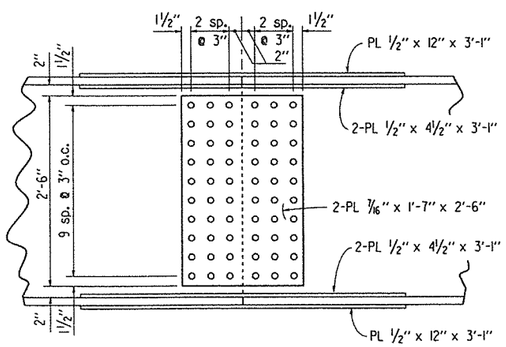
1/8" = 1'-0"



TYP. BEAM ELEVATION

NTS

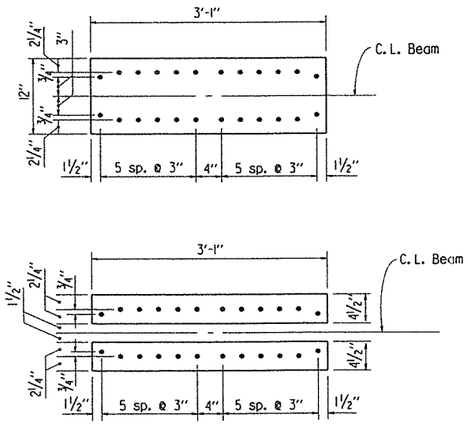
All field splice bolts shall be 7/8"ø Hi-str. bolts
All holes for splice bolts shall be 15/16 "ø
All field splice plates shall be AASHTO M270 Gr. 50W steel.



DETAIL OF FIELD SPLICE

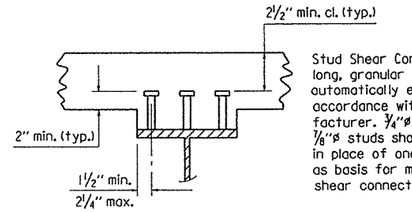
1"= 1'-0"

Note: 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.



FLANGE SPLICE PLATES (TOP & BOTT.)

1"= 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 beam 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 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

NTS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF
186' CONTINUOUS W-BEAM UNIT
CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

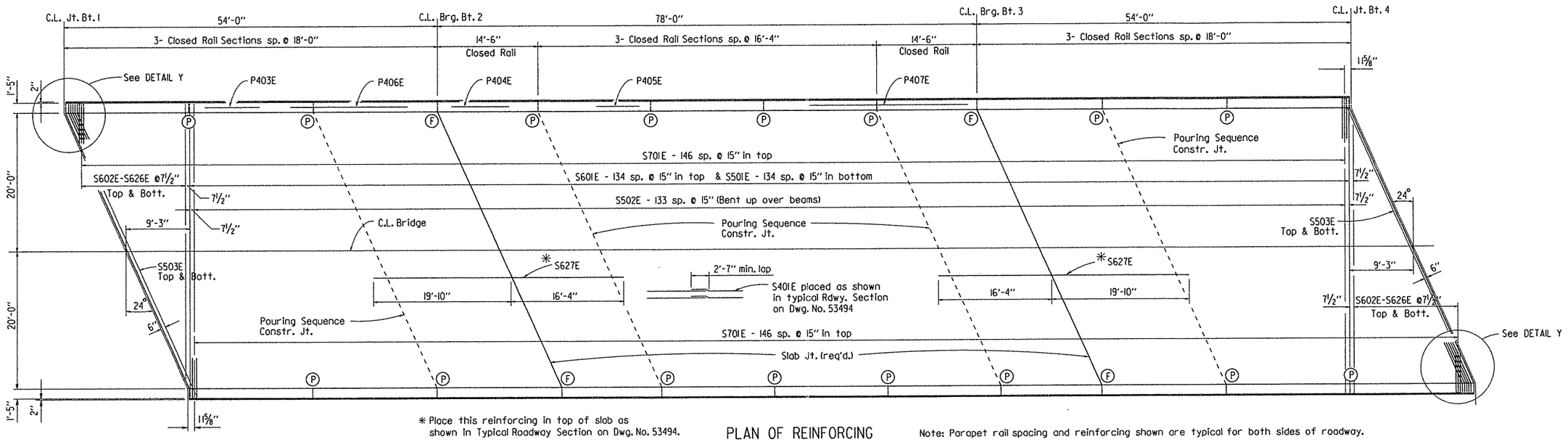
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 3-20-07 FILENAME: bCA0904b11_sl.dgn
CHECKED BY: AMS DATE: 7/12/07 SCALE: 3/32 " = 1'-0" or as shown
DESIGNED BY: DGM DATE: 2/07

BRIDGE NO. B7276 DRAWING NO. 53495

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	248	636
				(1) B7276		186' CONT. UNIT	53496	



* Place this reinforcing in top of slab as shown in Typical Roadway Section on Dwg. No. 53494.

Ⓟ Partial depth parapet joint at this location

Ⓕ Full depth parapet joint at this location

PLAN OF REINFORCING

1/8" = 1'-0"

Note: Parapet rail spacing and reinforcing shown are typical for both sides of roadway.

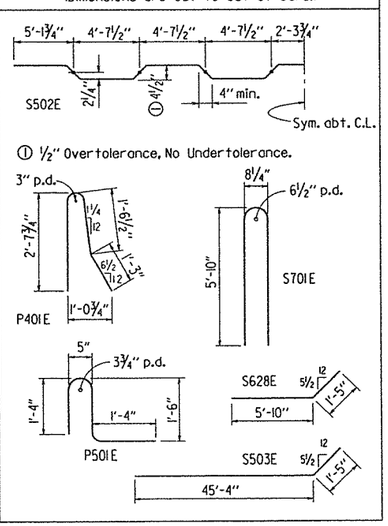
Note: Required slab joints and Pouring Sequence Joints shall align with open joints in parapet rail at the gutterline.

Note: For Slab Pouring Sequence, see dwg. no. 53499.

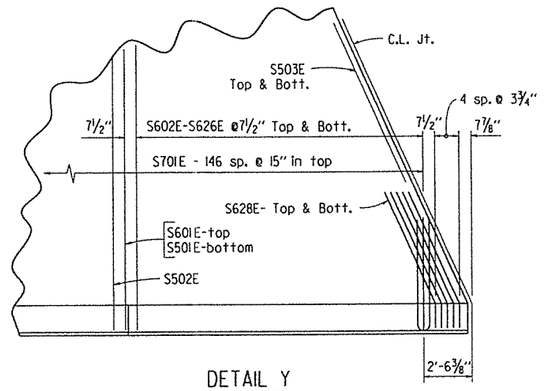
BAR LIST

Mark	No. Req'd.	Length	Pin Dia.
S401E	615	39'-3"	Str.
S501E	135	42'-10"	Str.
S502E	134	43'-6"	3"
S503E	4	46'-9"	3"
S601E	135	42'-10"	Str.
S602E-S626E	4 ea.	6'-6" to 40'-2"	Str.
S627E	92	36'-2"	Str.
S628E	20	7'-3"	4½"
S701E	294	12'-1"	6½"
P401E	740	5'-6"	3"
P403E	36	17'-7"	Str.
P404E	12	14'-1"	Str.
P405E	18	15'-11"	Str.
P406E	32	28'-2"	Str.
P407E	16	40'-2"	Str.
P501E	740	4'-3"	3¾"

Bending Diagrams (Dimensions are out to out of bars.)

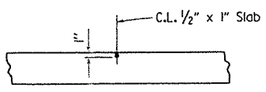


Note: Bars with "E" designation shall be epoxy coated.



DETAIL Y

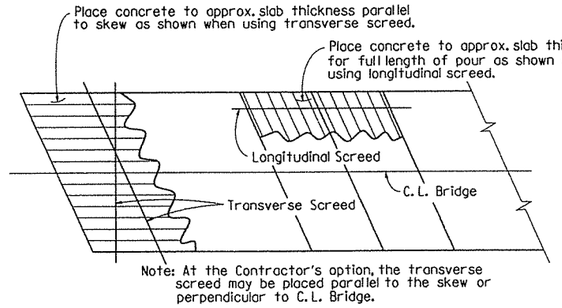
1/4" = 1'-0"



Use Type 3, 4, or 6 Joint Sealer. See subsections 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 and shall align with open joints at the front face of the parapet. 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. The joint sealer shall extend across the deck from gutterline to gutterline.

SLAB JOINT DETAIL

NTS



CONCRETE PLACEMENT PROCEDURE

NTS

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/6/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF
186' CONTINUOUS W-BEAM UNIT
CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 3-20-07 FILENAME: bCA0904bll_sl.dgn

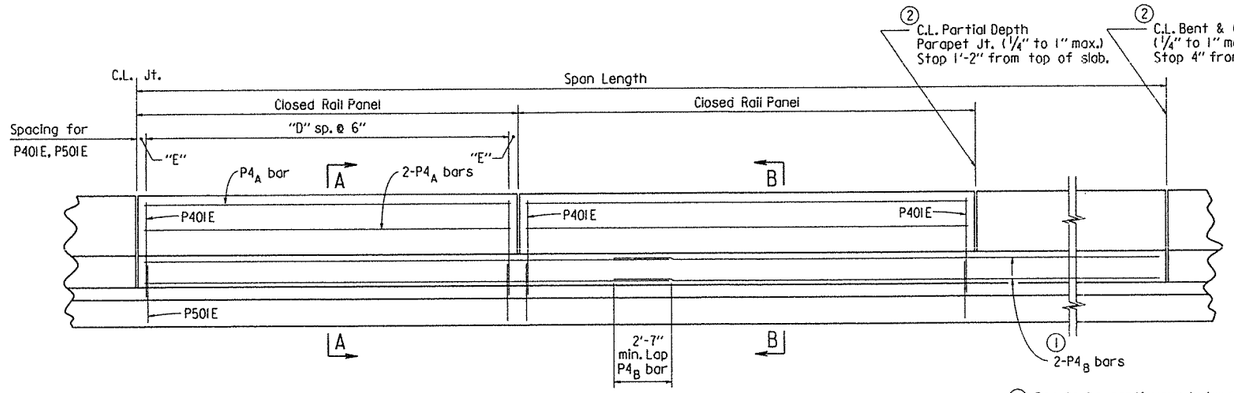
CHECKED BY: AMS DATE: 7/19/07 SCALE: ½" = 1'-0" or as shown

DESIGNED BY: DGM DATE: 2/07

BRIDGE NO. B7276 DRAWING NO. 53496

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	249	636
				① B7276		186' CONT. UNIT	53497	



ELEVATION - CONCRETE PARAPET RAIL

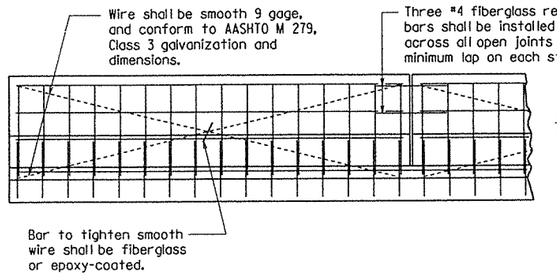
1/2" = 1'-0"

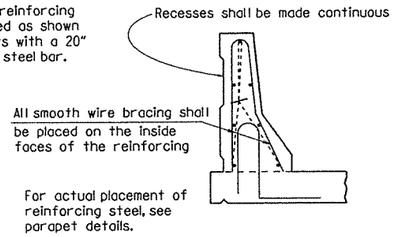
① Bar to be continuous between full depth parapet jts.

② For location of full and partial depth parapet joints, see dwg. no. 53496.

TABLE OF VARIABLES

Span Length	$P4_B$ bar	Closed Rail Panel	"D"	"E"	$P4_A$ bar
54'-0"	P406E	18'-0"	35	3"	P403E
78'-0"	P407E	14'-6"	28	3"	P404E
		16'-4"	31	5"	P405E



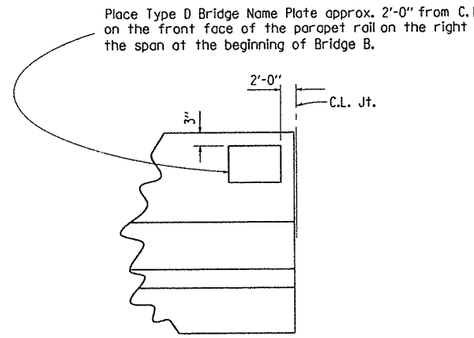


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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. Exposed surfaces shall be given a Class 3, Textured Coating Finish. See Job SP "Textured Coating Finish".

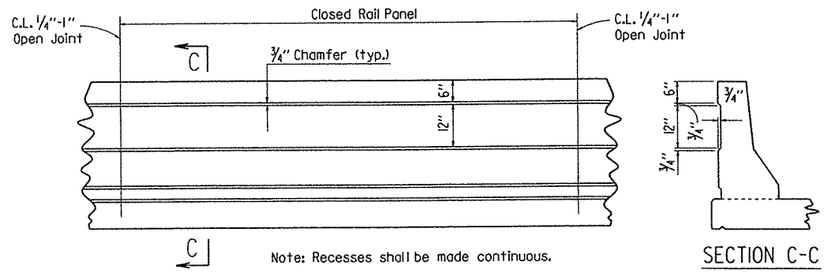
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

NTS



VIEW SHOWING LOCATION OF NAME PLATE

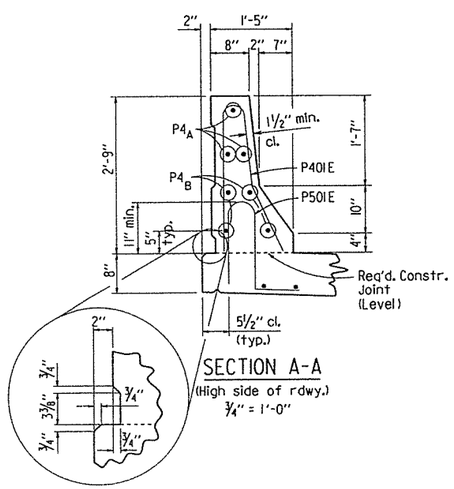
NTS



SECTION C-C

DETAILS OF PARAPET ENHANCEMENT

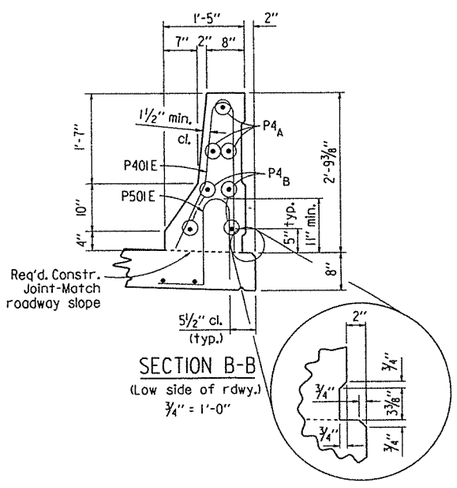
NTS



SECTION A-A

(High side of rdwy.)

3/4" = 1'-0"



SECTION B-B

(Low side of rdwy.)

3/4" = 1'-0"

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/6/13

BRIDGE ENGINEER

SHEET 4 OF 6

DETAILS OF

186' CONTINUOUS W-BEAM UNIT

CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-2-07 FILENAME: bCA0904b11_sl.dgn

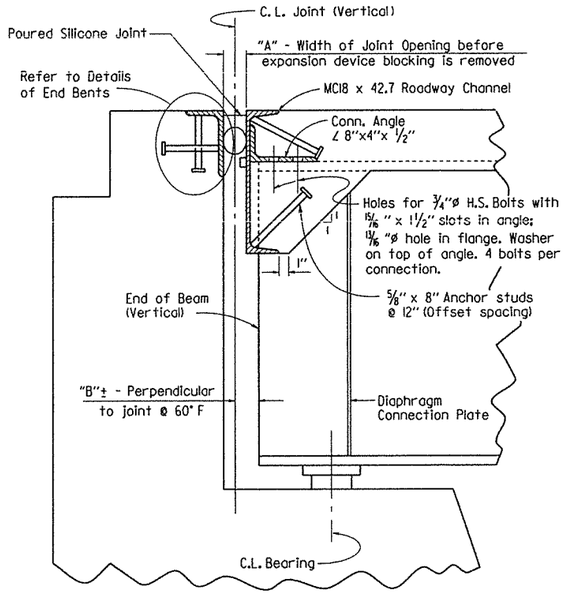
CHECKED BY: AMS DATE: 7/19/07 SCALE: As shown

DESIGNED BY: DGM DATE: 2/07

BRIDGE NO. B7276 DRAWING NO. 53497

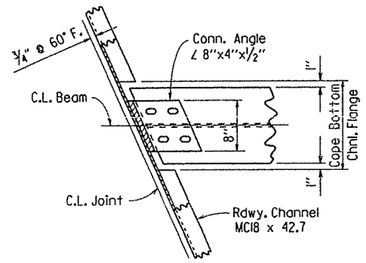
PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	250	636
				(1) B7276		186' CONT. UNIT	53498	

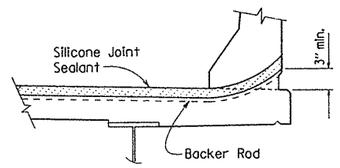


Note: Section taken perpendicular to C.L. Joint

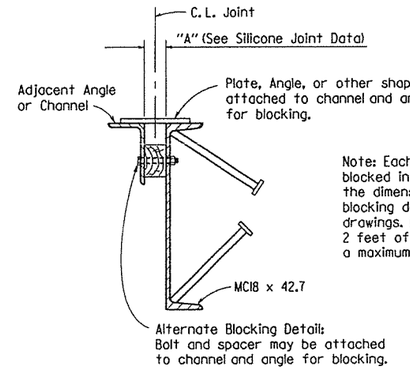
SECTION THRU JOINT AT END BENT



CHANNEL CONNECTION DETAIL



JOINT SEAL PLACEMENT AT CURB



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" 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.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

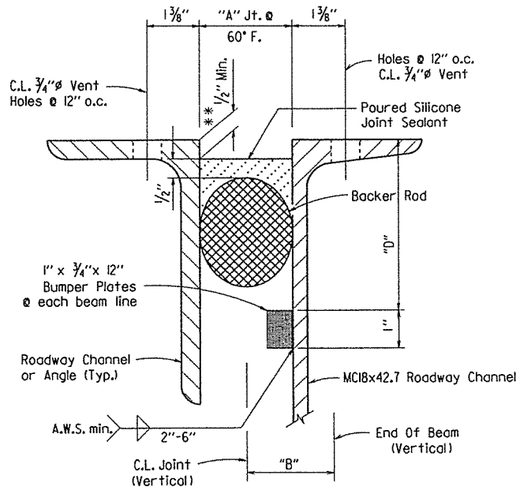
EXPANSION DEVICE INSTALLATION AT END BENTS:

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 pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, 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.

** Recess depth as recommended by the sealant Manufacturer.



DETAIL OF POURED SILICONE JOINT

Note: Concrete shall be hand packed under the joint armor, in the backwall and in the span.

SILICONE JOINT DATA

"A" Width Perpendicular to Joint at 24 Hour Average Temperature* Of:			"B" Perpendicular to Joint at 60°F	"D"
40°F	60°F	80°F		
1 5/8"	1 1/2"	1 3/8"	2"±	4"

* 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° 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 that 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
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/10/13
CARL J. FUSELIER
BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF
186' CONTINUOUS W-BEAM UNIT
CR 39 (ARTHUR ROAD)
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-3-07 FILENAME: bCA0904bll_sl.dgn
CHECKED BY: AMS DATE: 7/19/07 SCALE: No Scale
DESIGNED BY: DGM DATE: 2/07
BRIDGE NO. B7276 DRAWING NO. 53498

PRINT DATE: 7/3/2013

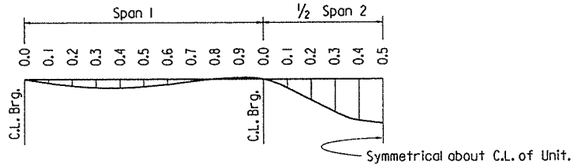
TABLE OF DEAD LOAD DEFLECTIONS-INCHES

Span	Point of Deflection	Structural Steel		Structural Steel+Slab		Str. Steel +Slab+Rail	
		Ext. Bms.	Int. Bms.	Ext. Bms.	Int. Bms.	Ext. Bms.	Int. Bms.
1	0	0	0	0	0	0	0
	0.1	0.012	0.014	0.075	0.091	0.081	0.097
	0.2	0.022	0.024	0.135	0.164	0.146	0.174
	0.3	0.028	0.031	0.170	0.206	0.183	0.219
	0.4	0.029	0.032	0.176	0.213	0.190	0.226
	0.5	0.025	0.027	0.152	0.184	0.164	0.195
	0.6	0.017	0.019	0.105	0.128	0.113	0.136
	0.7	0.008	0.009	0.047	0.057	0.051	0.061
	0.8	-0.001	-0.001	-0.005	-0.006	-0.005	-0.006
	0.9	-0.005	-0.005	-0.030	-0.037	-0.032	-0.039
½ span 2	0	0	0	0	0	0	0
	0.1	0.029	0.032	0.175	0.213	0.189	0.226
	0.2	0.071	0.078	0.430	0.521	0.464	0.553
	0.3	0.112	0.122	0.674	0.817	0.727	0.867
	0.4	0.140	0.153	0.846	1.025	0.912	1.088
	0.5	0.150	0.164	0.907	1.100	0.978	1.167

← Half point of unit

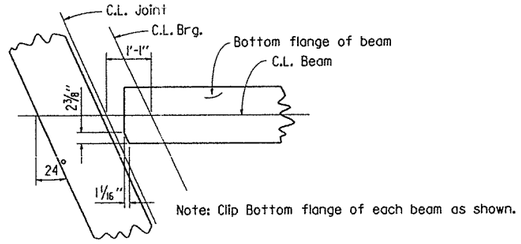
Note: Symmetrical about half-point of Unit.

Note: Camber for Dead Load Deflection plus Vertical Curve ± ¼" tolerance. Deflections shown are along C.L. Beam from a chord from C.L. Bearing to C.L. Bearing. Vertical Curve corrections are not included. Negative sign (-) indicates point above chord.



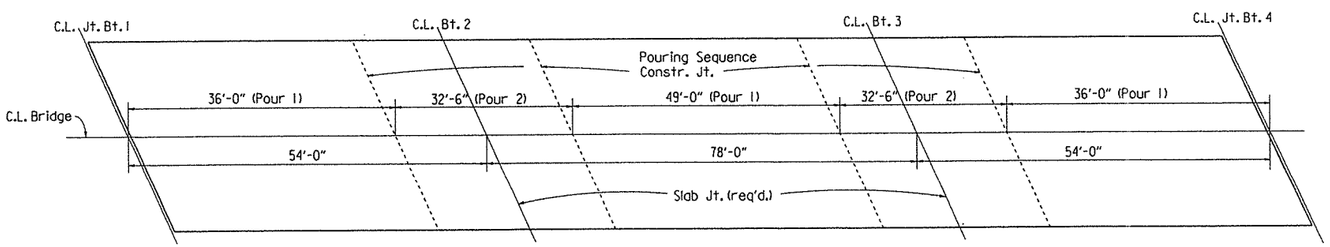
DEAD LOAD DEFLECTION DIAGRAM

No Scale



PLAN OF BEARING AT END BENT

¾" = 1'-0"



Note: Pours with the some number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. 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.

SLAB POURING SEQUENCE

No Scale

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	251	636
				B7276		186' CONT. UNIT		53499

GENERAL NOTES ①

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Third Edition with 2006 Interim Revisions.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	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. 149911 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. 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 be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports. 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, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted unless otherwise noted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36 unless otherwise noted.

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. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Structural steel shapes of equal or greater strength may be substituted for shapes shown if prior approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

Beams and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05.

All beams shall be blocked in their true position in the shop in groups as specified in Subsection 807.54 (b)(2). 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 degrees F. A tolerance of ¼" +/- is allowed for camber.

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.

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.

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 beam webs and on the bottom of the beam 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.

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.

SHEET 6 OF 6

DETAILS OF 186' CONTINUOUS W-BEAM UNIT CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS Carl J. Fuselier REGISTERED PROFESSIONAL ENGINEER No. 7510 7/16/13 CARL J. FUSELIER

BRIDGE ENGINEER

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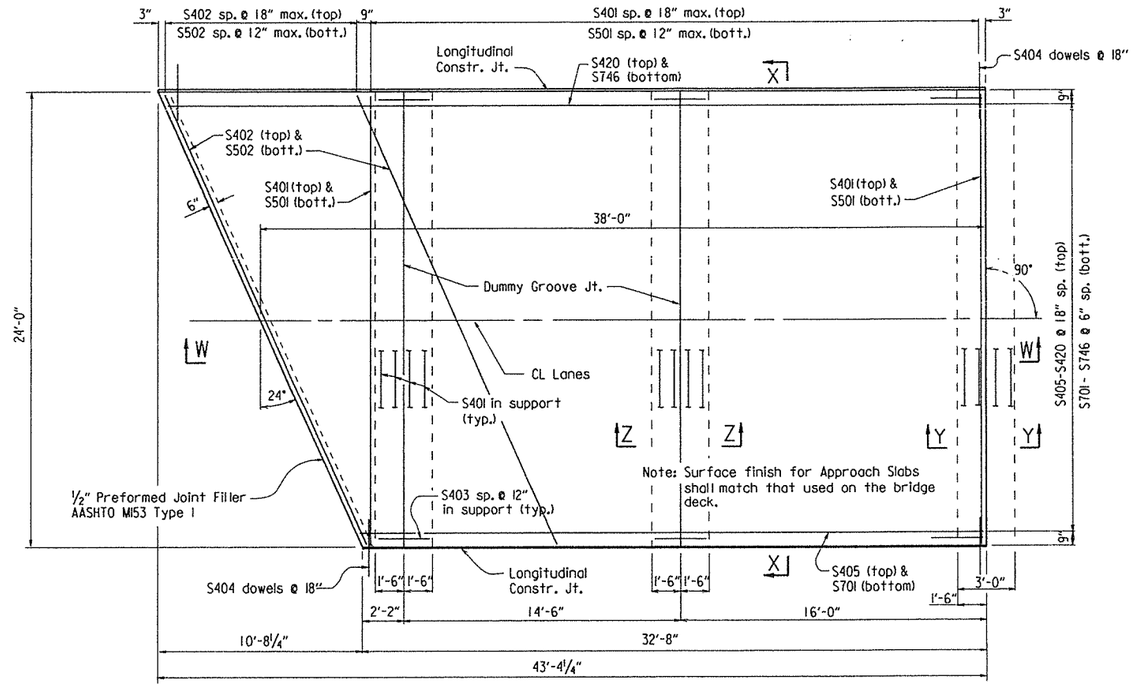
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DESIGNED BY: DGM DATE: 2/07

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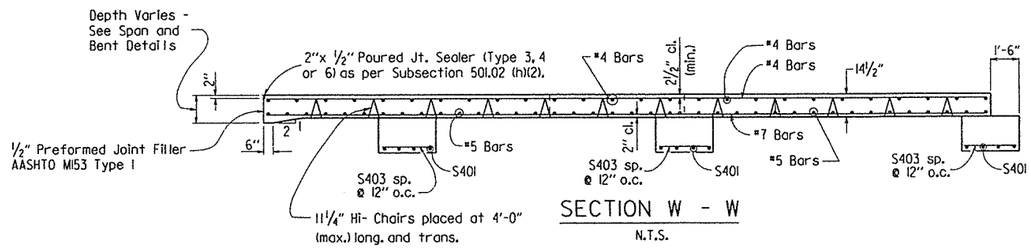
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				JOB NO.		CA0904	252	636
				(1) B7276		APPROACH SLAB		53500



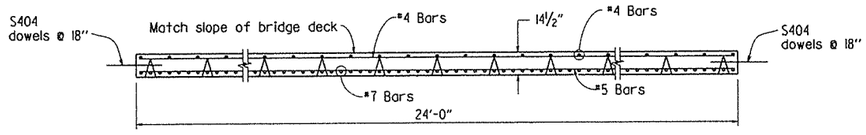
PLAN - APPROACH SLAB

¼" = 1'-0"



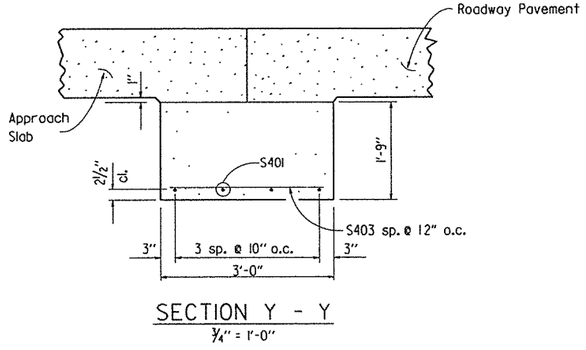
SECTION W - W

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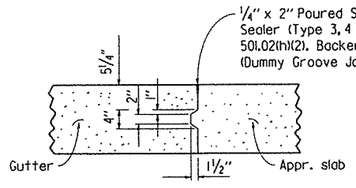
SECTION X - X

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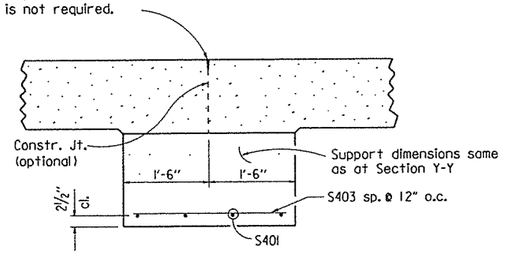
SECTION Y - Y

¾" = 1'-0"



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" = 1'-0"



SECTION Z - Z

¾" = 1'-0"

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 4 APPROACH SLAB

Reinforcing Steel	Concrete (Cu. Yds.)
5965 lbs.	55.0

BAR LIST

Mark	No. Req'd.	Length
S401	34	23'-8"
S402	8	25'-11"
S403	72	2'-8"
S404	51	3'-0"
S405-S420	1ea.	32'-8" to 42'-8"
S501	33	23'-8"
S502	11	25'-11"
S701 to S746	1ea.	32'-8" to 42'-8"

GENERAL NOTES

Concrete shall be Class S (AE) (f'c = 4,000 psi).

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
7/16/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 4 APPROACH SLAB CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JAC DATE: 1-25-07 FILENAME: bCA0904b11_as.dgn

CHECKED BY: AMS DATE: 7/13 SCALE: ¼" = 1'-0"

DESIGNED BY: STD DATE: —

BRIDGE NO. B7276 DRAWING NO. 53500

PRINT DATE: 7/3/2013

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				JOB NO.		CA0904	253	636
				(1) B7276		TYPE SPECIAL 4 GUTTERS		53501

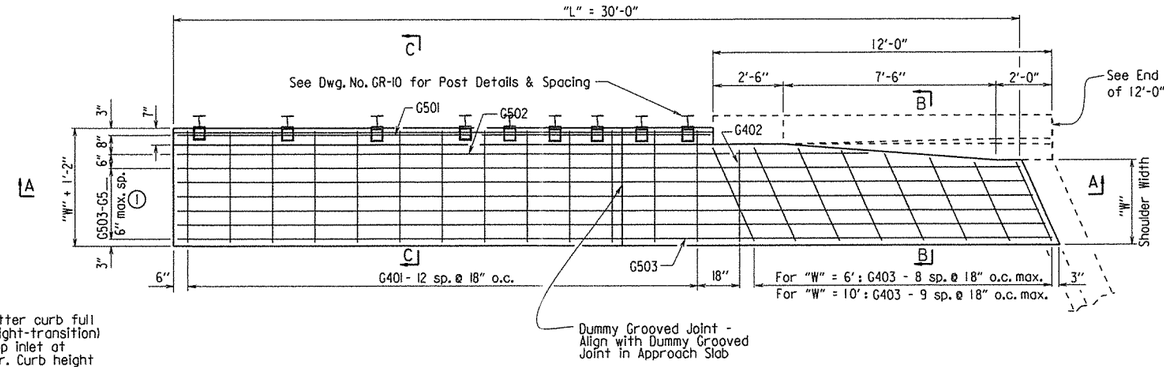
QUANTITIES FOR ONE TYPE SPECIAL 4 APPROACH GUTTER

For "L" = 30':

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
6	535	9.66
10	881	15.67

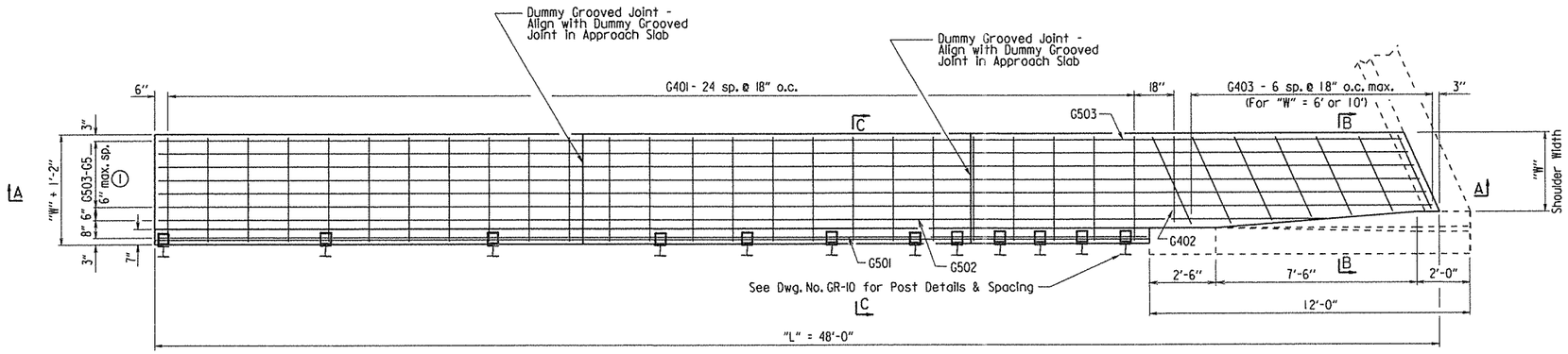
For "L" = 48':

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
6	809	14.80
10	1266	22.76

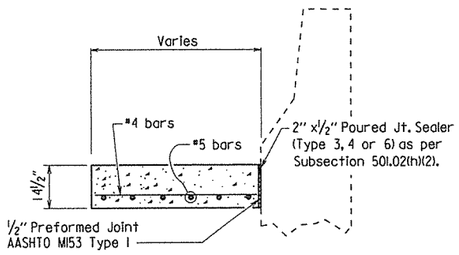


Note:
Construct gutter curb full height (no height-transition) and place drop inlet at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

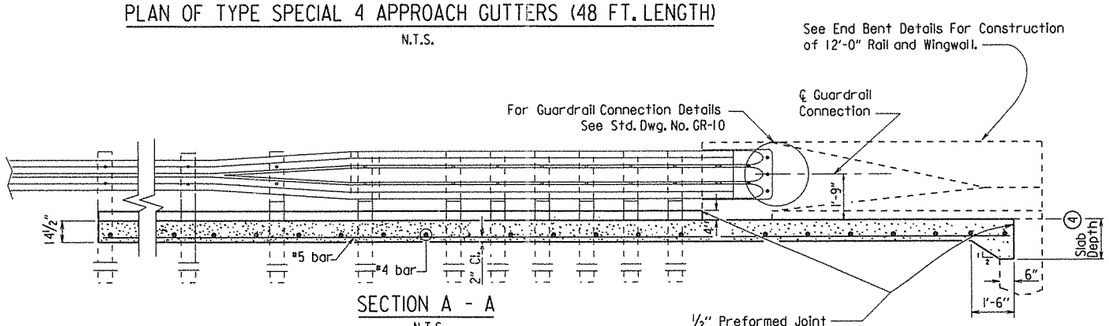
PLAN OF TYPE SPECIAL 4 APPROACH GUTTERS (30 FT. LENGTH)
N.T.S.



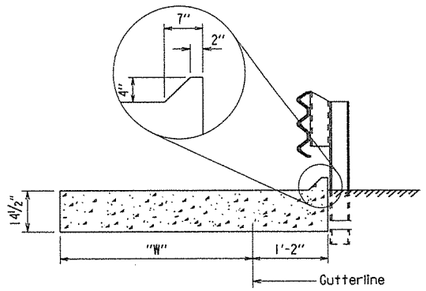
PLAN OF TYPE SPECIAL 4 APPROACH GUTTERS (48 FT. LENGTH)
N.T.S.



SECTION B - B
N.T.S.



SECTION A - A
N.T.S.



SECTION C - C
N.T.S.

BAR LIST - TYPE SPECIAL 4 GUTTER (30 FT. LENGTH)

Mark	No. Required for Width "W" 6'-0"	No. Required for Width "W" 10'-0"	Length
G401	13	13	"W" + 10"
G402	1	1	"W" + 3"
G403	9	10	(2)
G501	1	1	18'-8"
G502	1	1	23'-6"
(1) G503-G5__	1 each	1 each	(3)

BAR LIST - TYPE SPECIAL 4 GUTTER (48 FT. LENGTH)

Mark	No. Required for Width "W" 6'-0"	No. Required for Width "W" 10'-0"	Length
G401	25	25	"W" + 10"
G402	1	1	"W" + 3"
G403	7	7	(2)
G501	1	1	36'-8"
G502	1	1	41'-8"
(1) G503-G5__	1 each	1 each	(3)

(1) G514 for "W" = 6'
G522 for "W" = 10'

(2) Bar Lengths vary due to rail transition. Provide 2" cover at ends.

(3) Bar Lengths vary due to skew. Provide 2" cover at ends.

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 4 APPROACH GUTTERS CR 39 (ARTHUR ROAD)

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAC DATE: 1-29-2007 FILENAME: bCA0904b11_ag.dgn
CHECKED BY: AMS DATE: 7/13 SCALE: 3/8" = 1'-0" or as noted
DESIGNED BY: STD DATE: —
BRIDGE NO. B7276 DRAWING NO. 53501

PRINT DATE: 7/3/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	254	636
				①	07277	- LAYOUT -	53793	

Notes: For R/W Data, Guard Rail Details & Barrier Rail Details, see Roadway Plans.

Use Type C Approach Gutter at Beg. Br. ("w" = 6'-0")
Use Type Special 5 Approach Slab at Beg. Br.

Use Type Special 5 Approach Gutter at End of Bridge.
Use Type Special 6 Approach Slab at End of Bridge.

FUTURE CONSTRUCTION

Note: Excavate as shown Approx. 980 Cu. Yds. of Excavation.

Dumped Riprap 1'-6" thick placed on Filter Blanket. Top of Riprap Elev. 1108.0 at Beg. of Bridge only.

Toe of Fill

Test Hole (Typ.)

① Bridge Const. Chord

Precast Conc. Barrier (See Rdwy. Plans)

8'-0" Shldr. | 24'-0" Pavement | 8'-0" Shldr.

4'-0" Clear

47'-8¼" Out to Out Width

10'-0"

Point of Minimum Vertical Clearance

Top of Cut

Elev. 1082

34' +/-

Toe of Rock Fill Slope at End of Bridge Only. See "DETAIL A", Dwg. No. 53795 and Roadway Plans.

Top of Cut

Elev. 1084

Constant Superelevation

Sta. 1107+84.56

Superelevation Varies

Sta. 1109+18.77

20'-0" Roadway

Sta. 1108 + 09.56

Elev. 1074

C.L. PEACH ORCHARD RD. (CO. RD. 37)

Sta. 101 + 97.62 County Road 37 = Sta. 1108 + 39.44 Constr. C.L. U.S. Hwy 71

Constr. C.L. U.S. Hwy 71

Slope Varies

2'-0" P.C.C. Barrier Rail

40'-0" Clear Roadway

25'-1" Min. Clr.

1'-5" Parapet Rail

Varies

9'-0"

IV:3H

IV:2H

1V:2H

26'-2" Min. Cir. (FUTURE CONST.)

Limits of Aggregate Base Course (Class 7) ②

Tangent Distance over 500' For Constr. C.L. U.S. Hwy 71

P.T. Sta. 1108 + 97.06

S. 74° 23' 27.16" E.

Left Edge of Bridge Deck Job CA0904

Precast Conc. Barrier (See Rdwy. Plans)

66'-0½" Out to Out Width

S. 68° 40' 57.16" E.

C.L. Ramp 1

5'-6"

Barrier Rail (See Rdwy. Plans)

Pt. Sta. 1108+08.76

PLAN

① Notes: Bridge to be constructed on a chord defined as the forward tangent of the 1° Curve of the Construction C.L. U.S. Hwy 71 as described in the "HORIZONTAL CURVE DATA".

Bents shall be constructed perpendicular to the bridge construction chord. Left edge of bridge deck shall be constructed parallel to to bridge construction chord. Parapets and Barrier rails shall be constructed concentric to the respective curves.

For additional information see "CONSTRUCTION CHORD DETAILS", Dwg. No. 53795 and detail drawings.

LVC = 2900'
-6.00%
+2.50%
PVC Sta. 1102 + 63.71
PVI Sta. 1117 +19.71 El. 1050.44
PVT Sta. 1131 + 63.71

VERTICAL CURVE DATA ALONG Constr. C.L. U.S. Hwy 71

Not to Scale

Total Length of Bridge = 196'-2"

1'-1" | 55'-0" Comp. W-Beam Span No. 1 | 84'-0" Comp. W-Beam Span No. 2 | 55'-0" Comp. W-Beam Span No. 3 | 1'-1"

C.L. 2" Poured Silicone Jt.

Slope Intercept Sta. 1107+36.93

Begin Bridge Sta. 1107+43.06 Elev. 1112.32

Sta. 1107+99.15 Elev. 1109.78

Sta. 1108+83.15 Elev. 1106.15

End Bridge Sta. 1109+39.23 Elev. 1103.84

Slope Intercept Sta. 1109+46.73

Proposed Grade Line at Constr. C.L. U.S. Hwy 71

Guard Rail

6'-4⅛"

③ Top of Deck at Constr. C.L. to Low Seat of Cap

5'-11⅞"

Conc. Parapet Rail (Right Side)

Precast Conc. Barrier (Lt. Side - See Rdwy. Plans)

Existing Ground Line Constr. C.L. U.S. Hwy 71

③ Top of Deck at Constr. C.L. to Low Steel = 5'-9⅞"

21'-3" Min. Vert. Cir.

② Rock fill this bridge end only

Concrete Barrier Rail (Rt. Side - See Rdwy. Plans)

50' Piling

Varies ② 55'-80' Piling

NOTE: For Soil Boring Data, see Dwg. No. 53794.

Note: Span lengths, stations & elevations are along Constr. C.L. U.S. Hwy 71. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53795 for additional information.

② See "DETAIL A", Dwg. No. 53795

NOTE: See Bent Details, Dwg. Nos. 53798 - 53801, for Footing Elevations and Bent Heights.

③ Constr. C.L. = Constr. C.L. U.S. Hwy 71 (typ.)

Varies 10'-15' Piling

C.L. Peach Orchard Rd. (Co. Rd. 37)

Varies 20'-35' Piling

BENT NOS. ① ② ③ ④

ELEVATION

Const. C.L. U.S. Hwy 71

P.I. Sta. 1094+25.6 1
Δ = 30° 08' 39" Rt.
D = 1° 00' 00"
T = 1542.96'
L = 3014.4 1'
P.C. Sta. 1078 + 22.12
P.T. Sta. 1108 + 97.06

C.L. Ramp 1

P.I. Sta. 1106 + 44.38
Δ = 09° 53' 13.00" Rt.
D = 03° 00' 00"
T = 165.19'
L = 329.56'
P.C. Sta. 1104 + 79.19
P.T. Sta. 1108 + 08.76

HORIZONTAL CURVE DATA

DETAIL DRAWINGS:

	DRAWING NO.
Bent No. 1	53796 & 53797
Bent No. 2	53798 & 53799
Bent No. 3	53800 & 53801
Bent No. 4	53802 & 53803
55'-0" Comp. W-Beam Span No. 1	53804 - 53807
84'-0" Comp. W-Beam Span No. 2	53808 - 53811
55'-0" Comp. W-Beam Span No. 3	53812 - 53815
Details of Elastomeric Bearings	53818
Steel Piles	14995A
Type C Approach Gutter	2018C
Type Special 5 Approach Slab	53819
Type Special 6 Approach Slab	53820
Type Special 5 Approach Gutter	53821

MAINTENANCE OF TRAFFIC: For details of Maintenance of Traffic, see Roadway Plans.

Sta. 1107+84.56 +3.7%
Sta. 1110+76.67 0.0 %
-2.0%
Sta. 1112+34.56
Constr. C.L. U.S. Hwy 71 & Point of Rotation
-2.0%
-3.7%
Sta. 1109+18.77
Sta. 1107+84.56

SUPERELEVATION TRANSITION

Not to Scale

LOOKING AHEAD

NOTE: All elevations on Bridge are based on Constr. C.L. U.S. Hwy 71 stations & corresponding Superelevation Cross Slopes.

GENERAL NOTES

BENCH MARK: B.M. 902 Chiseled Square in S.E. Corner of Church, 384.68' Lt. of C.L. Median, Sta. 1106 + 65.49, Elev. 1114.04.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition), with applicable supplemental specifications and special provisions. Unless noted otherwise, Section and Subsection refer to the Standard Construction Specification.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications Third Edition, with 2006 interims.

LIVE LOADING: HL93 METHOD OF DESIGN: LRFD

SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S (AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	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 upon request.

STEEL PILING: All piling shall be HP 12X53 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 95 tons per pile. Piling shall be driven into the material designated as hard chert or limestone on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the specifications. Piling in end bents shall be driven after embankment to bottom of cap is in place. On all piles the contractor shall use approved steel H-Pile driving points.

FOOTINGS: The top of the footings for Bents 2 and 3 shall have a minimum cover above top of footing of 2'-0". Foundations for footings shall be prepared in accordance with Subsection 801.04 and backfilled according to Subsection 801.08.

TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP Job CA0904 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3). Textured Coating Finish shall not be applied to surfaces where Class 2 Protective Surface Treatment is applied.

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. Tining shall continue to left edge of bridge deck.

STATE OF ARKANSAS
CARL J. FUSELIER
12/1/13
REGISTERED PROFESSIONAL ENGINEER
No. 7510
BRIDGE ENGINEER

SHEET 1 OF 3

LAYOUT OF BRIDGE OVER PEACH ORCHARD ROAD HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS)(S)

BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

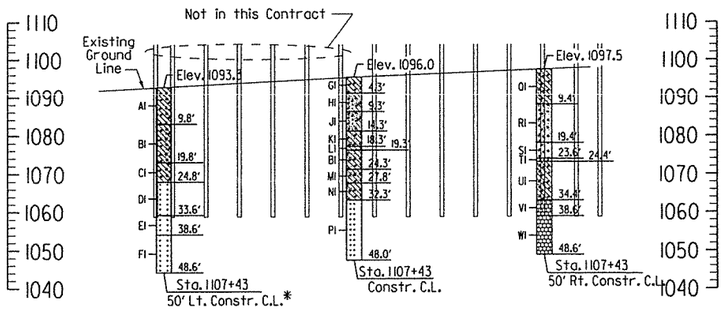
LITTLE ROCK, ARK.

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CHECKED BY: JGT DATE: 12-2-13
DESIGNED BY: SWP DATE: 9/13
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SCALE: 1" = 20'-0" OR AS NOTED

BRIDGE NO. 07277 DRAWING NO. 53793

PRINT DATE: 1/23/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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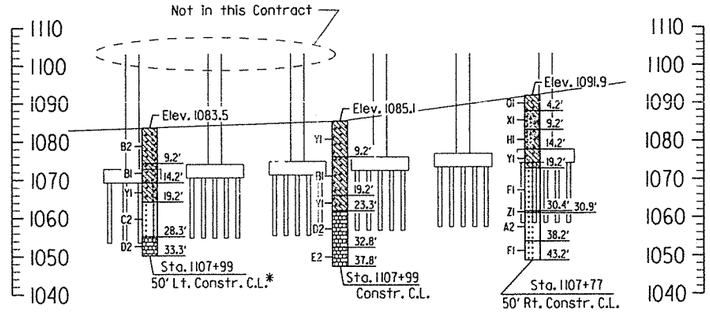


Sta. 1107+43 - 50' Lt. Constr. C.L.*
5. 3- 6. 3, N=27
10. 3- 10. 6, N=60(4)
15. 3- 16. 3, N=27
20. 3- 21. 3, N=5
25. 3- 25. 5, N=60(2)

Sta. 1107+43 - Constr. C.L.
4. 8- 5. 8, N=60
9. 8- 10. 8, N=23
14. 8- 15. 8, N=8
19. 8- 20. 8, N=12
24. 8- 25. 8, N=17
29. 8- 30. 8, N=3

Sta. 1107+43 - 50' Rt. Constr. C.L.
4. 9- 5. 9, N=23
9. 9- 10. 1, N=60(2)
14. 9- 15. 9, N=27
19. 9- 20. 9, N=21
24. 4- 24. 7, N=60(4)
29. 9- 30. 9, N=24
34. 4- 34. 6, N=60(2)

SECTION A-A



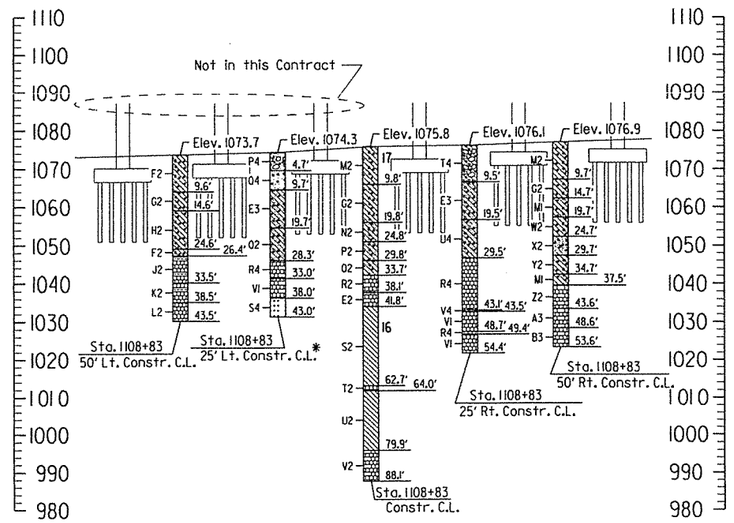
Sta. 1107+99 - 50' Lt. Constr. C.L.*
4. 7- 5. 7, N=68
9. 7- 10. 7, N=21
14. 7- 15. 7, N=41
19. 7- 20. 4, N=72(2)

Sta. 1107+99 - Constr. C.L.
4. 7- 5. 7, N=34
9. 7- 10. 7, N=16
14. 7- 15. 7, N=19
19. 7- 20. 7, N=31

Sta. 1107+77 - 50' Rt. Constr. C.L.
4. 7- 5. 7, N=29
9. 7- 10. 7, N=64
14. 7- 15. 7, N=32
19. 2- 19. 5, N=60(3)

SECTION B-B

* Constr. C.L. = Constr. C.L. U.S. Hwy 71(typ.)



Sta. 1108+83 - 25' Lt. Constr. C.L.*
5. 2- 6. 2, N=5
10. 2- 11. 2, N=12
15. 2- 16. 2, N=10
20. 2- 21. 2, N=16
25. 2- 26. 2, N=22

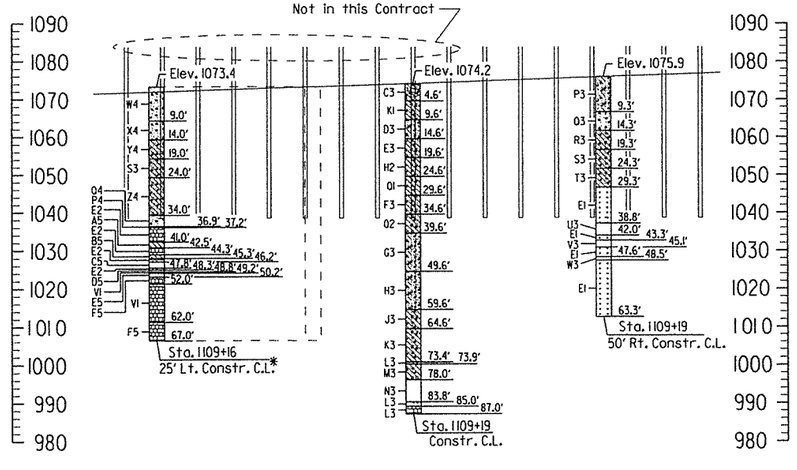
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5. 3- 6. 3, N=6
10. 3- 11. 3, N=11
15. 3- 16. 3, N=10
20. 3- 21. 3, N=40
25. 3- 26. 3, N=87
30. 3- 31. 3, N=18

Sta. 1108+83 - 25' Rt. Constr. C.L.
5. 0- 6. 0, N=7
10. 0- 11. 0, N=8
15. 0- 16. 0, N=7
20. 0- 21. 0, N=21
25. 0- 26. 0, N=16
29. 5- 29. 8, N=60(4)
35. 0- 35. 7, N=62(2)

Sta. 1108+83 - 50' Lt. Constr. C.L.
5. 1- 6. 1, N=4
10. 1- 11. 1, N=11
15. 1- 16. 1, N=13
20. 1- 21. 1, N=11
25. 1- 26. 1, N=3

Sta. 1108+83 - 50' Rt. Constr. C.L.
5. 2- 6. 2, N=7
10. 2- 11. 2, N=12
15. 2- 16. 2, N=22
20. 2- 21. 2, N=17
25. 2- 26. 2, N=14
30. 2- 31. 2, N=4
35. 2- 36. 2, N=14

SECTION C-C

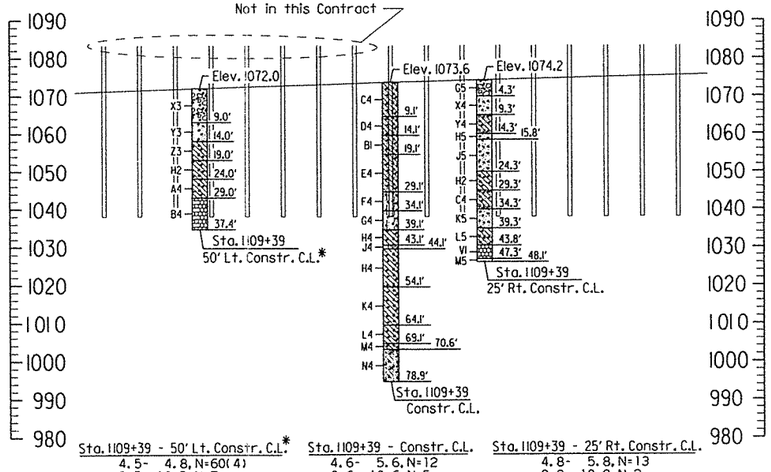


Sta. 1109+16 - 25' Lt. Constr. C.L.*
4. 5- 5. 5, N=31
9. 5- 10. 5, N=12
14. 5- 15. 5, N=4
19. 5- 20. 5, N=15
24. 5- 25. 5, N=39
29. 5- 30. 5, N=49
34. 5- 35. 5, N=10

Sta. 1109+19 - Constr. C.L.
5. 1- 6. 1, N=5
10. 1- 11. 1, N=5
15. 1- 16. 1, N=13
20. 1- 21. 1, N=11
25. 1- 26. 1, N=22
30. 1- 31. 1, N=32
35. 1- 36. 1, N=21
40. 1- 41. 1, N=14
45. 1- 46. 1, N=16
50. 1- 51. 1, N=5
55. 1- 56. 1, N=7
60. 1- 61. 1, N=17
65. 1- 66. 1, N=7
70. 1- 71. 1, N=7
75. 5- 76. 5, N=25
85. 0- 85. 3, N=60(4)

Sta. 1109+19 - 50' Rt. Constr. C.L.
4. 8- 5. 8, N=7
9. 8- 10. 8, N=4
14. 8- 15. 8, N=5
19. 8- 20. 8, N=11
24. 8- 25. 8, N=30
29. 8- 30. 1, N=60(4)
34. 3- 34. 4, N=60(1)

SECTION D-D



Sta. 1109+39 - 50' Lt. Constr. C.L.*
4. 5- 4. 8, N=60(4)
9. 5- 10. 5, N=7
14. 5- 15. 5, N=6
19. 5- 20. 5, N=12
24. 5- 25. 5, N=50
29. 5- 29. 8, N=60(3)

Sta. 1109+39 - Constr. C.L.
4. 6- 5. 6, N=12
9. 6- 10. 6, N=5
14. 6- 15. 6, N=12
19. 6- 20. 6, N=16
24. 6- 25. 6, N=33
29. 6- 30. 6, N=15
34. 6- 35. 6, N=11
39. 6- 40. 6, N=16
44. 6- 45. 6, N=11
49. 6- 50. 6, N=28
54. 1- 54. 4, N=60(4)
59. 6- 60. 6, N=6
64. 6- 65. 6, N=6
69. 6- 70. 6, N=51
74. 1- 74. 4, N=60(4)
78. 9- 78. 9, N=60(0)

Sta. 1109+39 - 25' Rt. Constr. C.L.
4. 8- 5. 8, N=13
9. 8- 10. 8, N=2
14. 8- 15. 8, N=5
19. 8- 20. 8, N=14
24. 8- 25. 8, N=9
29. 8- 30. 8, N=13
34. 8- 35. 8, N=16
39. 8- 40. 8, N=8

SECTION E-E

NOTE: For Soil Boring Legend, see Dwg. No. 53796.

STATE OF ARKANSAS
Carl J. Puseller
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. PUSELLER
BRIDGE ENGINEER

SHEET 2 OF 3

LAYOUT OF BRIDGE OVER PEACH ORCHARD ROAD HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS)(S)

BENTON COUNTY
ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: SWP DATE: 9/13
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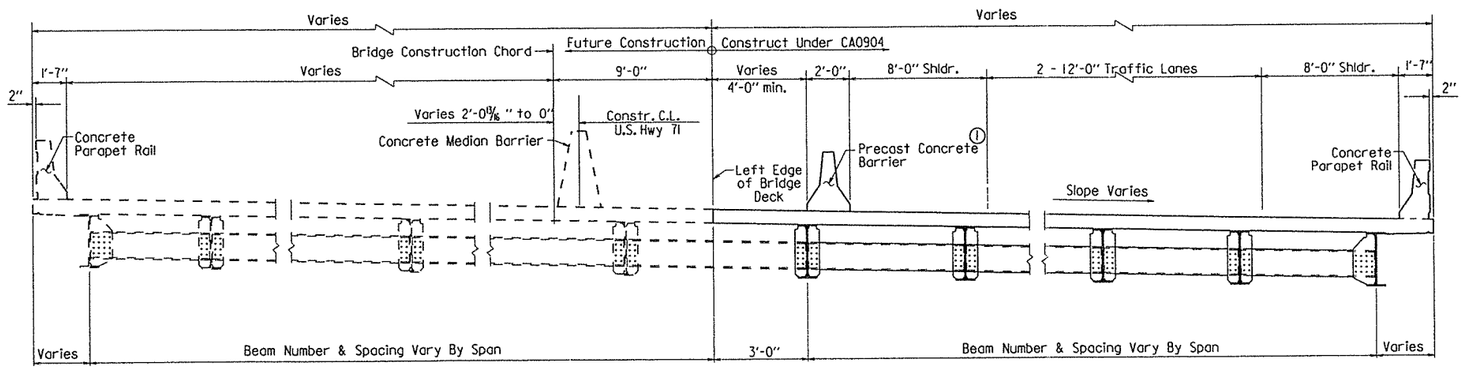
PRINT DATE: 12/9/2013

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				6	ARK.			
				JOB NO.		CA0904	256	636
				(1) 07277	-	LAYOUT	-	53795

BORING LEGEND

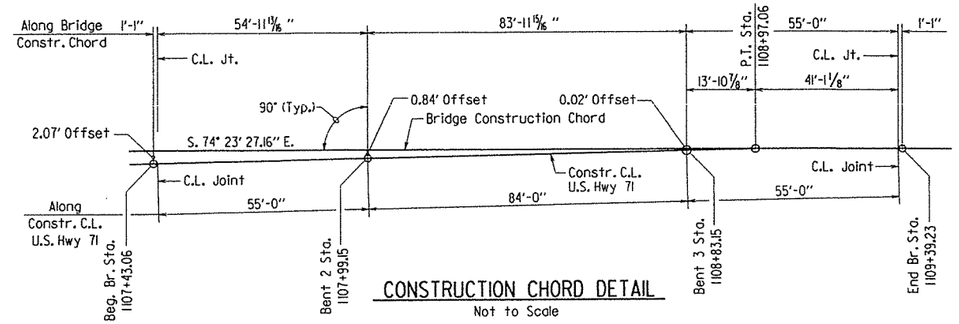
A1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with some Organic Matter
B1-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
C1-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay
D1-Hard, Gray Chert with some Clay Seams
E1-Hard, Gray Chert with Limestone Seams
F1-Hard, Gray Chert with Limestone and some Dark Gray Shale Seams
G1-Moist, Stiff to Very Stiff , Brown and Gray Gravelly (Chert Fragments) Clay
H1-Moist, Very Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments)
J1-Moist, Medium Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments) with some Organic Matter
K1-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
L1-Moist, Very Soft, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
M1-Moist, Medium Dense, Brown and Gray Clayey Gravel (Chert Fragments)
N1-Moist, Very Loose, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
P1-Hard, Gray Chert with Limestone and some Thin Dark Gray Shale Seams
Q1-Moist, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
R1-Moist, Medium Dense, Brown Sand with Gravel (Chert Fragments) and some Clay
S1-Moist, Medium Dense, Brown and Gray Gravel (Chert Fragments) with some Clay
T1-Hard, Gray Fractured Chert
U1-Moist, Very Stiff, Brown and Gray Gravely (Chert Fragments) Clay
V1-Hard, Gray Cherty Limestone
W1-Hard, Gray Cherty Limestone with some Thin Dark Gray Shale Seams
X1-Moist, Medium Dense, Reddish Brown Clayey Sand with Gravel (Chert Fragments)
Y1-Moist, Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
Z1-Soil-filled Cavity (30.4' to 30.9')
A2-Hard, Gray Chert with Limestone and some Dark Gray Shale and Fractured Seams
B2-Moist, Very Dense, Brown and Gray Clayey Gravel (Chert Fragments) with Sand
C2-Hard, Gray Chert with Limestone and some Dark Gray Shale Seams
D2-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
E2-Hard, Gray Cherty Limestone
F2-Moist, Soft, Reddish Brown Gravelly (Chert Fragments) Clay
G2-Moist, Stiff, Brown Gravelly (Chert Fragments) Clay
H2-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay
J2-Hard, Gray Cherty Limestone with Dark Gray Shale and some Fractured Seams
K2-Hard, Gray Cherty Limestone with Dark Gray Shale Seams
L2-Hard, Gray Cherty Limestone with Dark Gray Shale Seams and some Slickensides
M2-Moist, Medium Stiff, Brown Gravelly (Chert Fragments) Clay
N2-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
P2-Moist, Very Hard, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
Q2-Moist, Very Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
R2-Hard, Gray Cherty Limestone with some Fractured Seams
S2-Soil-filled Cavity (41.8' - 62.7')
T2-Hard, Gray Fractured Cherty Limestone
U2-Soil-filled Cavity (64.0' - 79.9')
V2-Hard, Gray Limestone
W2-Moist, Stiff, Brown Gravelly (Chert Fragments) Clay
X2-Moist, Medium Dense, Brown and Gray Clayey Sand with Gravel (Chert Fragments)
Y2-Moist, Soft, Brown and Gray Gravelly (Chert Fragments) Clay
Z2-Hard, Gray Fractured Cherty Limestone
A3-Hard, Gray Cherty Limestone with some Cherty Clay
B3-Hard, Gray Cherty Limestone
C3-Moist, Medium Stiff, Brown Gravelly (Chert Fragments) Clay with Sand and Cobbles
D3-Moist, Loose, Brown Clayey Gravel with Sand
E3-Moist, Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
F3-Moist, Hard, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
G3-Wet, Medium Dense, Reddish Brown Clayey Gravel (Chert Fragments) with Sand
H3-Wet, Loose, Reddish Brown Clayey Gravel (Chert Fragments) with Sand
J3-Wet, Very Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
K3-Wet, Medium Stiff, Brown and Gray Gravelly Clay with Sand
L3-Hard, Gray Fractured Chert
M3-Wet, Very Stiff, Brown and Gray Gravelly Clay with Sand
N3-Cavity (78.0' to 83.8')
P3-Moist, Loose, Brown and Gray Clayey Gravel with Sand
Q3-Moist, Very Loose, Gray Sand with Gravel
R3-Moist, Medium Stiff, Brown Gravelly Clay with Sand
S3-Moist, Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
T3-Moist, Very Stiff, Reddish Brown Gravelly
U3-Cavity (38.8' to 42.0')
V3-Cavity (43.3' to 45.1')
W3-Cavity (47.6' to 48.5')
X3-Moist, Very Dense, Brown and Gray Chert Cobbles with Gravel (Limestone Fragments)
Y3-Moist, Loose, Gray and Brown Sand with Gravel (Cherty Limestone Fragments)
Z3-Moist, Medium Stiff, Brown Gravelly (Cherty Limestone Fragments) Clay
A4-Moist, Hard, Reddish Brown Gravelly (Chert Fragments) Clay
B4-Hard, Gray Cherty Limestone and some Thin Dark Gray Shale Seams
C4-Moist, Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
D4-Moist, Loose, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
E4-Moist, Very Stiff to Hard, Reddish Brown Sandy Clay with Gravel (Chert Fragments)
F4-Moist, Medium Dense, Reddish Brown Silty Sand with Gravel (Chert Fragments)
G4-Wet, Medium Dense, Reddish Brown Silty Sand with Gravel (Chert Fragments)
H4-Wet, Medium Dense, Reddish Brown Clayey Gravel (Chert Fragments)
J4-Wet, Medium Dense, Reddish Brown Clayey Gravel (Chert Fragments) with Cobbles
K4-Wet, Loose, Reddish Brown Clayey Gravel (Chert Fragments)
L4-Wet, Loose, Brown and Gray Clayey Gravel (Chert Fragments)
M4-Wet, Very Dense, Reddish Brown Clayey Gravel (Chert Fragments)
N4-Wet, Very Dense, Gray and Brown Clayey Gravel (Chert Fragments) with Sand
P4-Moist, Loose, Brown and Gray Sand with Gravel (Chert Fragments) and Cobbles
Q4-Moist, Loose, Brown and Gray Sand with Gravel (Chert Fragments)
R4-Hard, Gray Fractured Cherty Limestone
S4-Hard, Gray Chert with Limestone Dark Gray Shale and some Vertically Fractured Seams
T4-Moist, Medium Stiff, Brown and Gray Gravelly (Chert Fragments) Clay with Sand and Cobbles
U4-Moist, Very Stiff, Reddish Brown and Gray Gravelly (Chert Fragments) Clay with Sand
V4-Cavity (43.1' to 43.5')
W4-Moist, Medium Dense to Dense, Brown and Gray Sand with Gravel (Chert Fragments) and some Clay
X4-Moist, Medium Dense, Brown and Gray Sand with Gravel (Chert Fragments)
Y4-Moist, Soft, Brown and Gray Gravelly (Chert Fragments) Clay with Sand
Z4-Moist, Hard, Reddish Brown to Brown and Gray Gravelly (Chert Fragments) Clay with Sand
A5-Soil-filled Cavity (41.0' to 42.0')
B5-Soil-filled Cavity (44.3' to 45.3')
C5-Cavity (46.2' to 47.0')
D5-Cavity (48.3' to 48.8')
E5-Cavity (49.2' to 50.2')
F5-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams
G5-Moist, Loose, Brown and Gray Sand with Gravel (Chert Fragments), Cobbles and some Clay
H5-Moist, Loose, Gray Gravel (Chert Fragments) with Sand
J5-Moist, Medium Dense, Brown and Gray Sand with Gravel (Chert Fragments) and some Clay
K5-Wet, Medium Dense, Brown and Gray Sand with Gravel (Chert Fragments) and some Clay
L5-Wet, Medium Stiff, Reddish Brown Gravelly (Chert Fragments) Clay with Sand
M5-Cavity (47.3' to 48.1')

Note: Traces of Chert and Cavities were encountered in the borings and may be encountered in greater amounts at other locations in the project area.

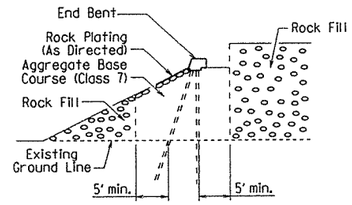


TYPICAL ROADWAY SECTION
Looking Ahead
Not to Scale

(1) Precast Concrete Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4.



CONSTRUCTION CHORD DETAIL
Not to Scale



Where rock fill is used 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 "Rock Fill".

At the Contractor's option preboring or other methods as approved by the Engineer may be used to facilitate pile installation thru 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 the item "Steel Piling".

DETAIL A (FOR END OF BRIDGE ONLY)
Not to Scale

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

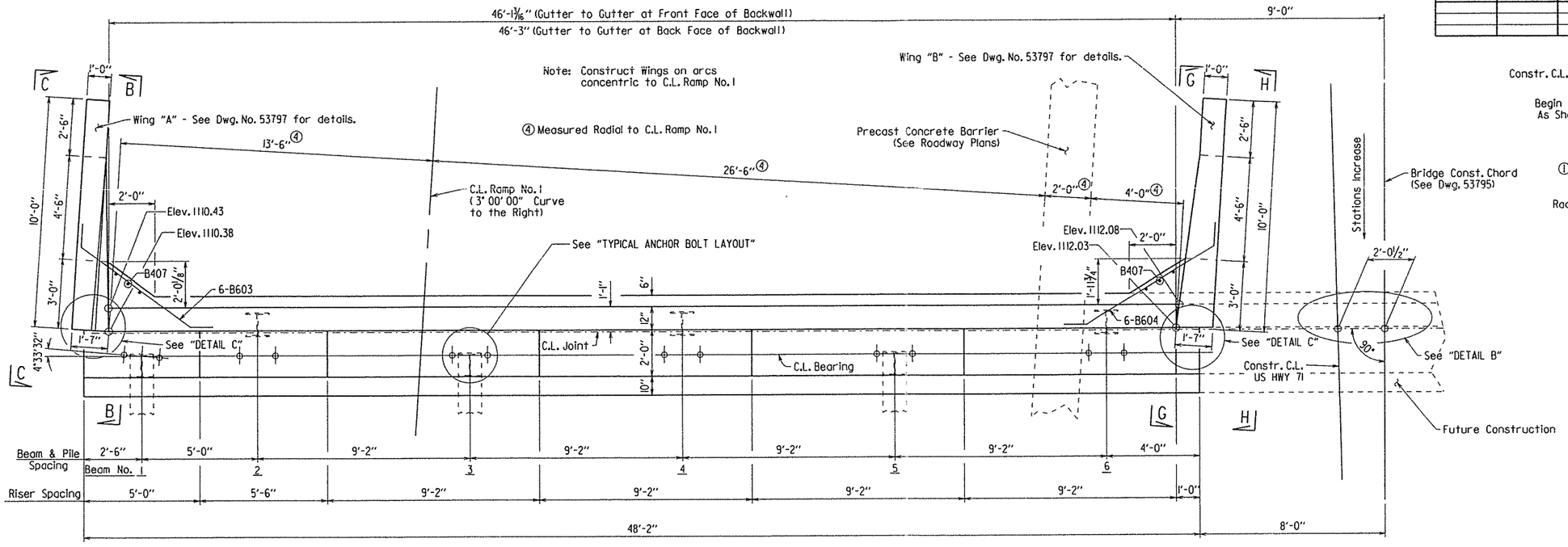
SHEET 3 OF 3
LAYOUT OF BRIDGE OVER PEACH ORCHARD ROAD
HWY. 71B - HWY. 72 SOUTH
(BELLA VISTA BYPASS)(S)
BENTON COUNTY
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: JCT DATE: 12/2/13
DESIGNED BY: SWP DATE: 9/13
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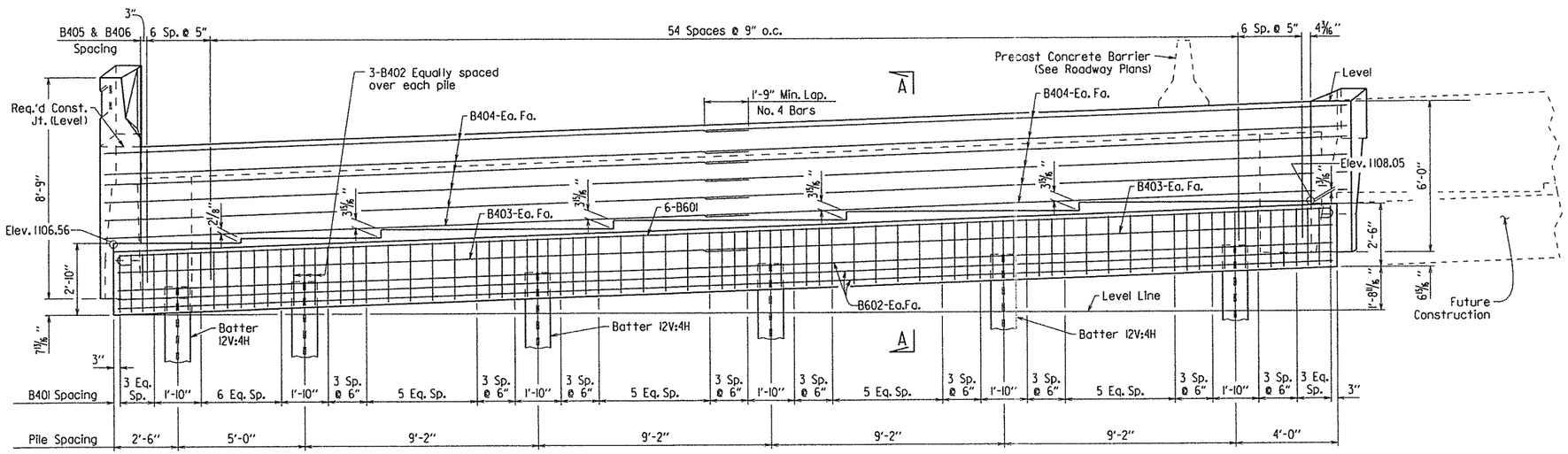
BRIDGE NO. 07277 DRAWING NO. 53795

PRINT DATE: 12/9/2013

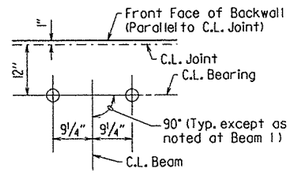
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				JOB NO.		CA0904	257	636
				① 07277 -		END BENT		- 53796



PLAN VIEW

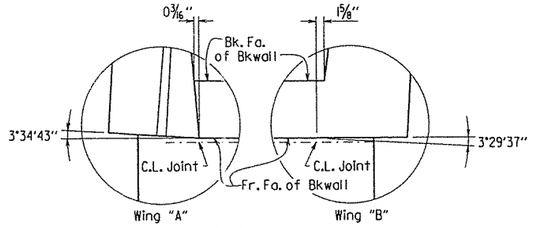


ELEVATION
LOOKING BACK

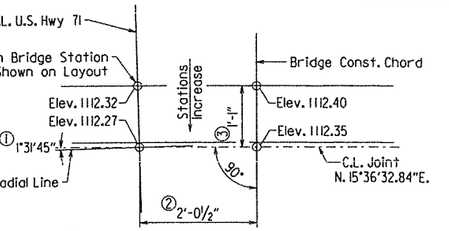


TYPICAL ANCHOR BOLT LAYOUT
No Scale

Note : For Details of Elastomeric Bearings, see Dwg. Nos. 53818.

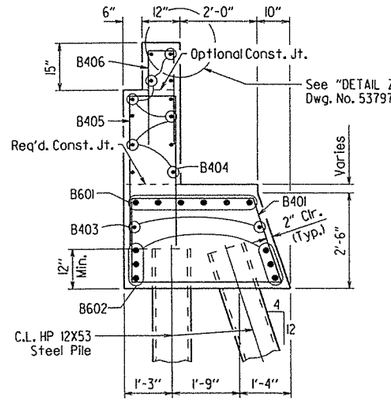


DETAIL C
No Scale



①Measured from radial line to C.L. Joint
②Measured along C.L. Joint
③Measured along Bridge Const. Chord. See Dwg. 53795 for additional details of Bridge Const. Chord.

DETAIL B
3/4" = 1'-0"



SECTION A-A
1/2" = 1'-0"

GENERAL NOTES

All concrete shall be Class S and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall be Grade 60 (Yield strength = 60,000 p.s.i.) conforming to AASHTO M31 or M322, Type A, with mill test reports.

The backwall above the required construction joint shall not be poured until the beams are in place. The backwall above the optional construction joint shall not be poured until the superstructure slab has been placed. See Dwg. No. 53817 for additional information.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)".

If anchor bolts are drilled into the cap, the top reinforcing bars shall be placed to avoid damage.

Class 2 Protective Surface Treatment shall be applied to the top of the backwall. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0904 "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.

For additional information, see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER
BRIDGE ENGINEER

SHEET 1 OF 2

DETAILS OF BENT NO. 1
PEACH ORCHARD RD.

ROUTE SEC.

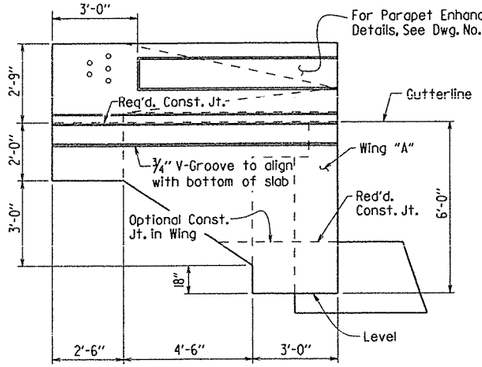
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: SWP	DATE: 10/13		

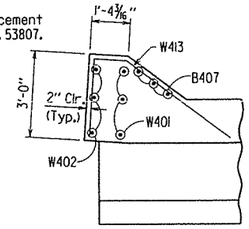
BRIDGE NO. 07277. DRAWING NO. 53796

PRINT DATE: 12/9/2013

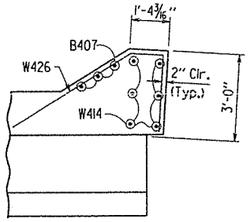
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				6	ARK.			
				JOB NO.		CA0904	238	636
				(1) 07277 -		END BENT	- 53797	



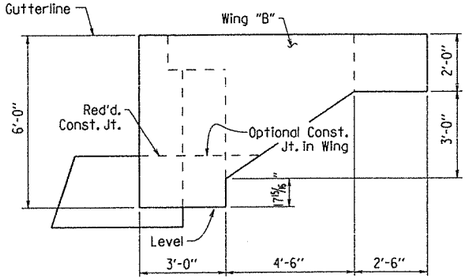
VIEW C-C
3/8" = 1'-0"



SECTION Z-Z
3/8" = 1'-0"



SECTION T-T
3/8" = 1'-0"



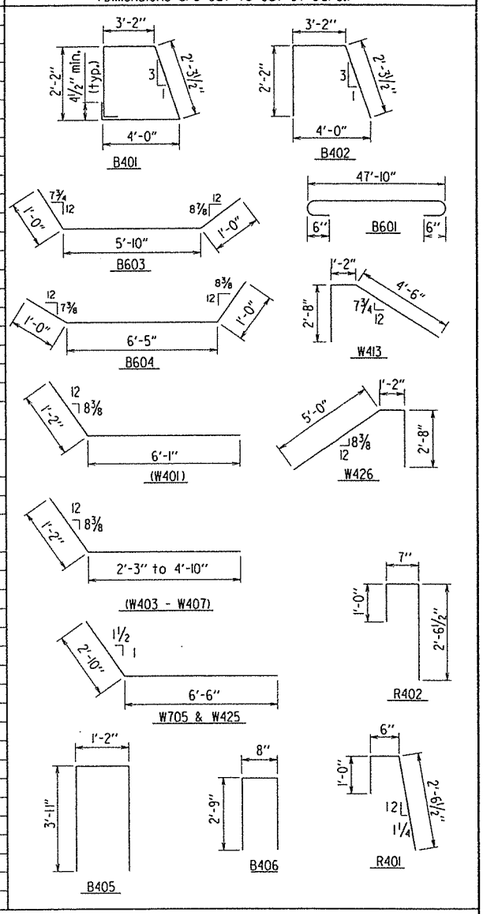
VIEW H-H
3/8" = 1'-0"

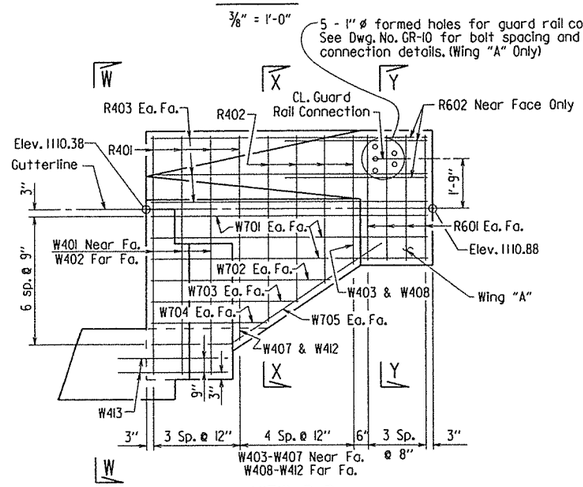
Note: Construct Wings on arcs concentric to C.L. Ramp No. 1

BAR LIST

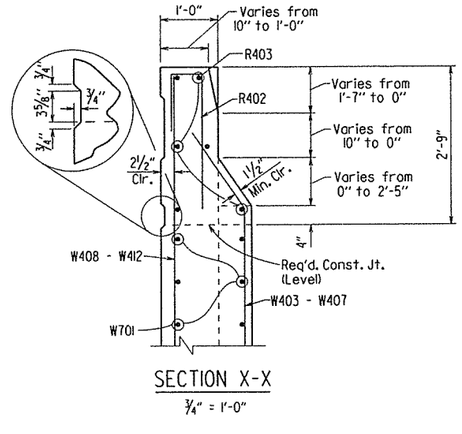
Mark	No. Req'd.	Length	Pin Dia.
B401	66	12'-0"	2"
B402	18	7'-6"	2"
B403	4	24'-10"	str.
B404	24	25'-4"	str.
B405	67	8'-10"	2"
B406	67	6'-0"	2"
B407	6	4'-5"	str.
B601	6	49'-2"	4 1/2"
B602	6	47'-10	str.
B603	6	7'-10"	4 1/2"
B604	6	8'-5"	4 1/2"
R401	4	3'-11"	2"
R402	4	4'-0"	2"
R403	6	9'-8"	str.
R601	8	4'-5"	str.
R602	3	5'-0"	str.
W401	3	7'-3"	2"
W402	3	8'-5"	str.
W403 to W407	1 ea.	3'-5" to 6'-0"	2"
W408 to W412	1 ea.	4'-6" to 7'-1"	str.
W413	2	8'-3"	2"
W414	6	5'-8"	str.
W415 to W419	2 ea.	1'-9" to 4'-6"	str.
W420	8	1'-8"	str.
W421	6	9'-8"	str.
W422	2	6'-0"	str.
W423	2	4'-11"	str.
W424	2	3'-10"	str.
W425	2	9'-4"	2"
W426	2	8'-9"	2"
W701	6	9'-8"	str.
W702	2	6'-0"	str.
W703	2	4'-11"	str.
W704	2	3'-10"	str.
W705	2	9'-4"	5 1/4"

Bending Diagrams
(Dimensions are out to out of bars.)

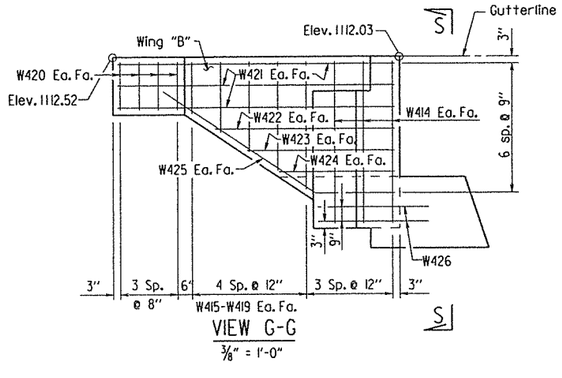




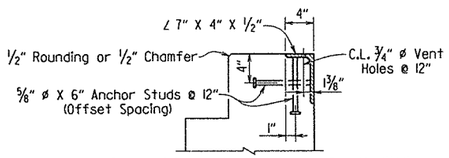
VIEW B-B
3/8" = 1'-0"



SECTION X-X
3/4" = 1'-0"



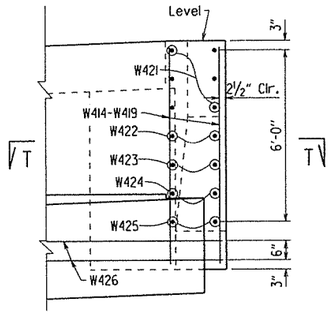
VIEW G-G
3/8" = 1'-0"



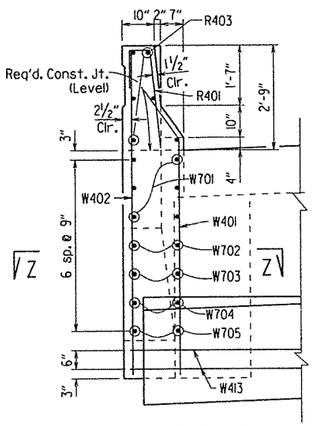
For additional Joint Details, see Dwg. No. 53817

DETAIL Z
No Scale

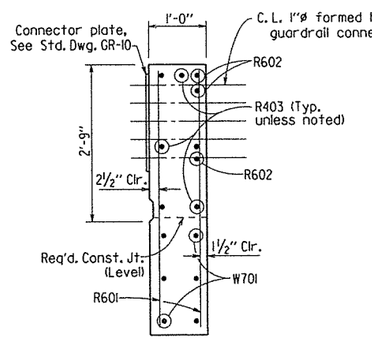
Note: Concrete shall be hand packed under the joint armor in the backwall.



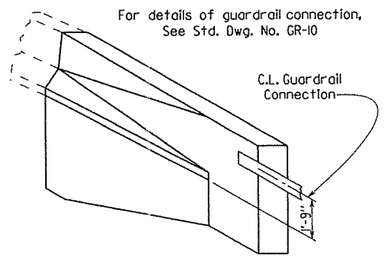
VIEW S-S
3/4" = 1'-0"



VIEW W-W
1/2" = 1'-0"



SECTION Y-Y
3/4" = 1'-0"



THREE DIMENSIONAL VIEW OF RAIL
Wing "A" Only
No Scale

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER
BRIDGE ENGINEER

SHEET 2 OF 2

DETAILS OF BENT NO. 1
PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

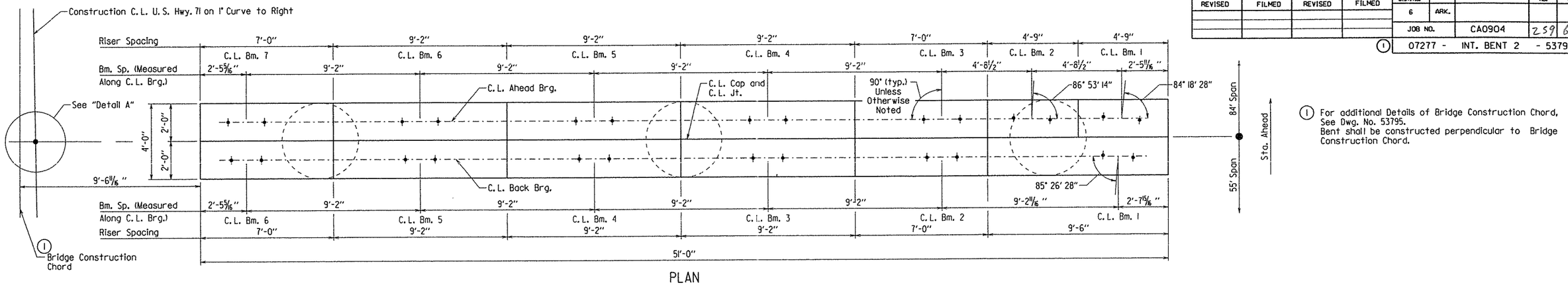
LITTLE ROCK, ARK.

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CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: SWP DATE: 10/13
FILENAME: bca0904xl2_bl.dgn
SCALE: AS NOTED

BRIDGE NO. 07277 DRAWING NO. 53797

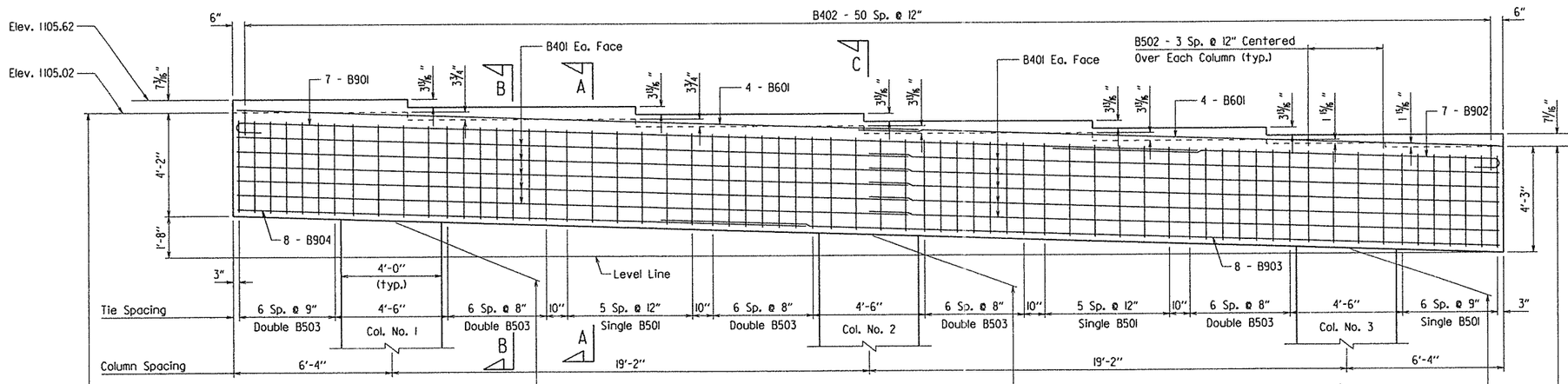
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		CA0904	259	636
				① 07277 -		INT. BENT 2	- 53798	

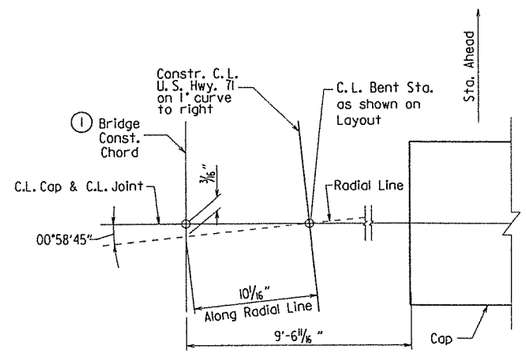


① For additional Details of Bridge Construction Chord, See Dwg. No. 53795. Bent shall be constructed perpendicular to Bridge Construction Chord.

PLAN



ELEVATION
LOOKING AHEAD



DETAIL A
N. T. S.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT NO. 2
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

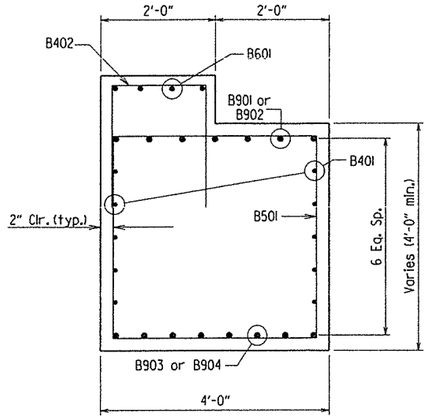
LITTLE ROCK, ARK.

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DESIGNED BY: SWP DATE: 10/13

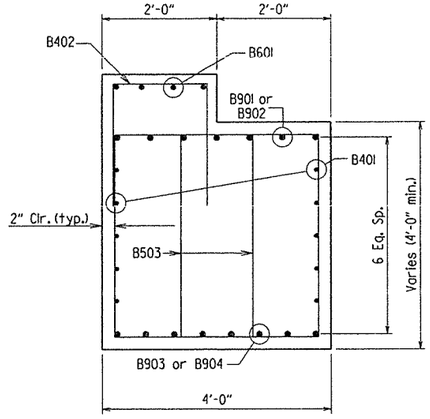
BRIDGE NO. 07277 DRAWING NO. 53798

PRINT DATE: 09-DEC-2013

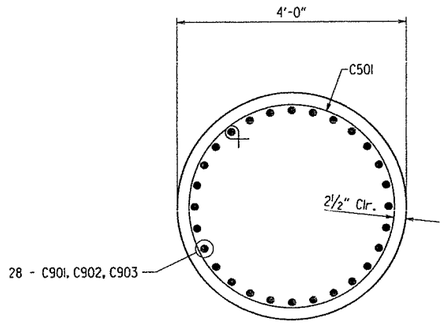
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				6	ARK.			
				JOB NO.		CA0904	260	636
				(1) 07277 -		INT. BENT 2	- 53799	



SECTION A-A



SECTION B-B

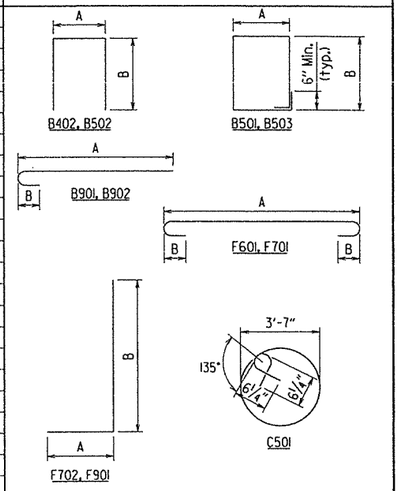


SECTION D-D

BAR LIST

	MARK	NUMBER REQUIRED	LENGTH	'A'	'B'	P.D.
(2)	B401	20	26'-3"	-	-	Str.
	B402	51	4'-11"	1'-8"	1'-8"	2"
	B501	19	15'-2"	3'-8"	3'-8"	2½"
	B502	12	10'-10"	3'-8"	3'-8"	2½"
	B503	70	12'-10"	2'-6"	3'-8"	2½"
(2)	B601	8	27'-4"	-	-	Str.
(2)	B901	7	39'-0"	37'-9"	10"	9"
(2)	B902	7	20'-0"	18'-9"	10"	9"
(2)	B903	8	33'-4"	-	-	Str.
(2)	B904	8	23'-1"	-	-	Str.
	C501	114	12'-10"	See Diagram		3¾"
	C901	28	28'-6"	-	-	Str.
	C902	28	27'-6"	-	-	Str.
	C903	28	25'-6"	-	-	Str.
	F601	66	10'-0"	-	-	Str.
	F701	126	11'-8"	10'-0"	7"	5¼"
	F702	12	4'-10"	2'-6"	2'-6"	5¼"
	F901	84	10'-6"	9'-0"	1'-8"	9"

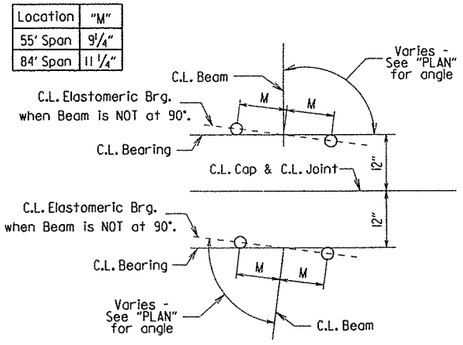
BENDING DIAGRAMS



Dimensions are out to out of bars.

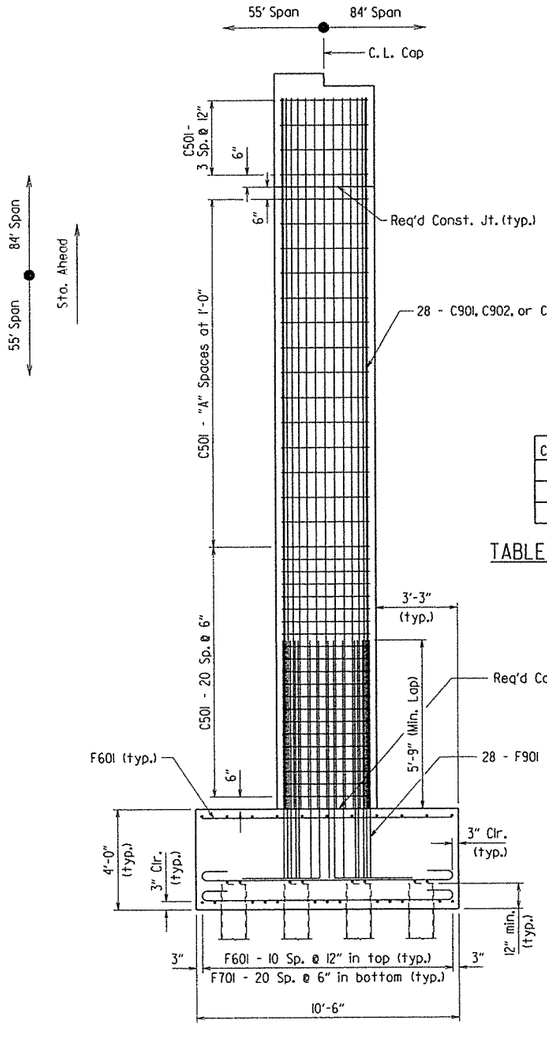
(2) Lap Length = 4's = 1'-9"
Lap Length = 6's = 2'-7"
Lap Length = 9's = 5'-9"

Location	"M"
55' Span	9¼"
84' Span	11¼"



TYPICAL ANCHOR BOLT LAYOUT

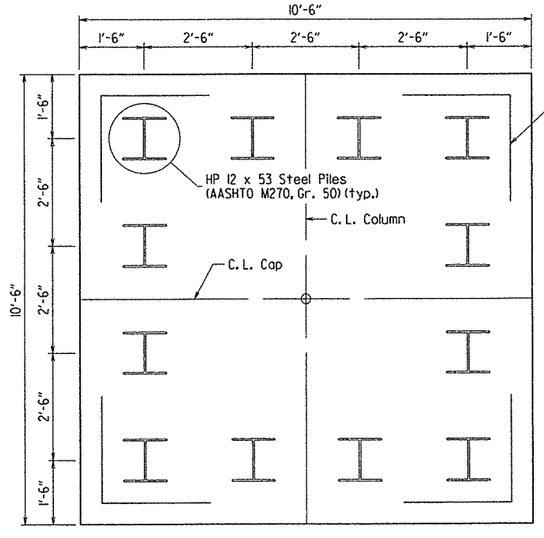
For Details of Elastomeric Bearings, see Dwg. No. 53818.



SECTION C-C

Col. No.	"A"
1	14
2	13
3	11

TABLE OF VARIABLES



SECTION E-E

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength of 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 be Grade 60 (Yield strength = 60,000 psi.) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Reinforcing bars in top of cap and riser shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see Layout.

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT NO. 2
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

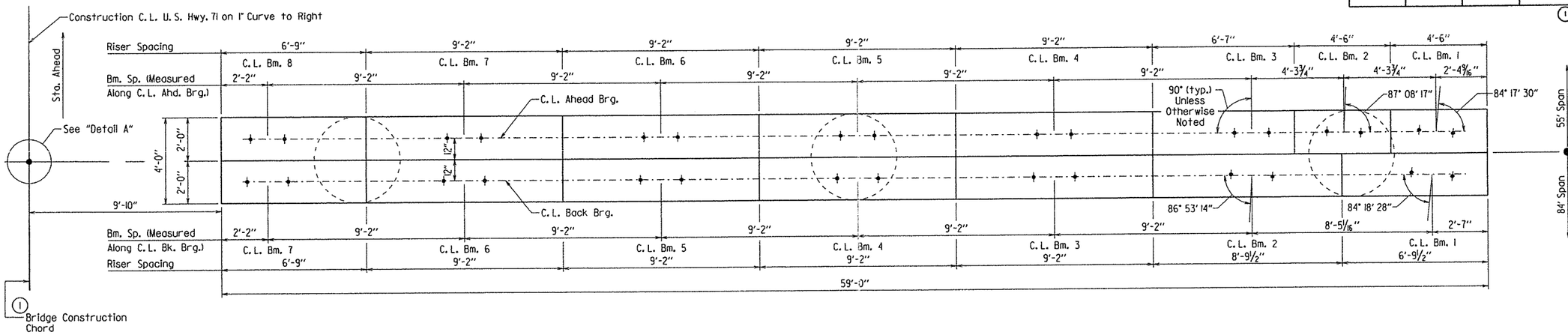
LITTLE ROCK, ARK.

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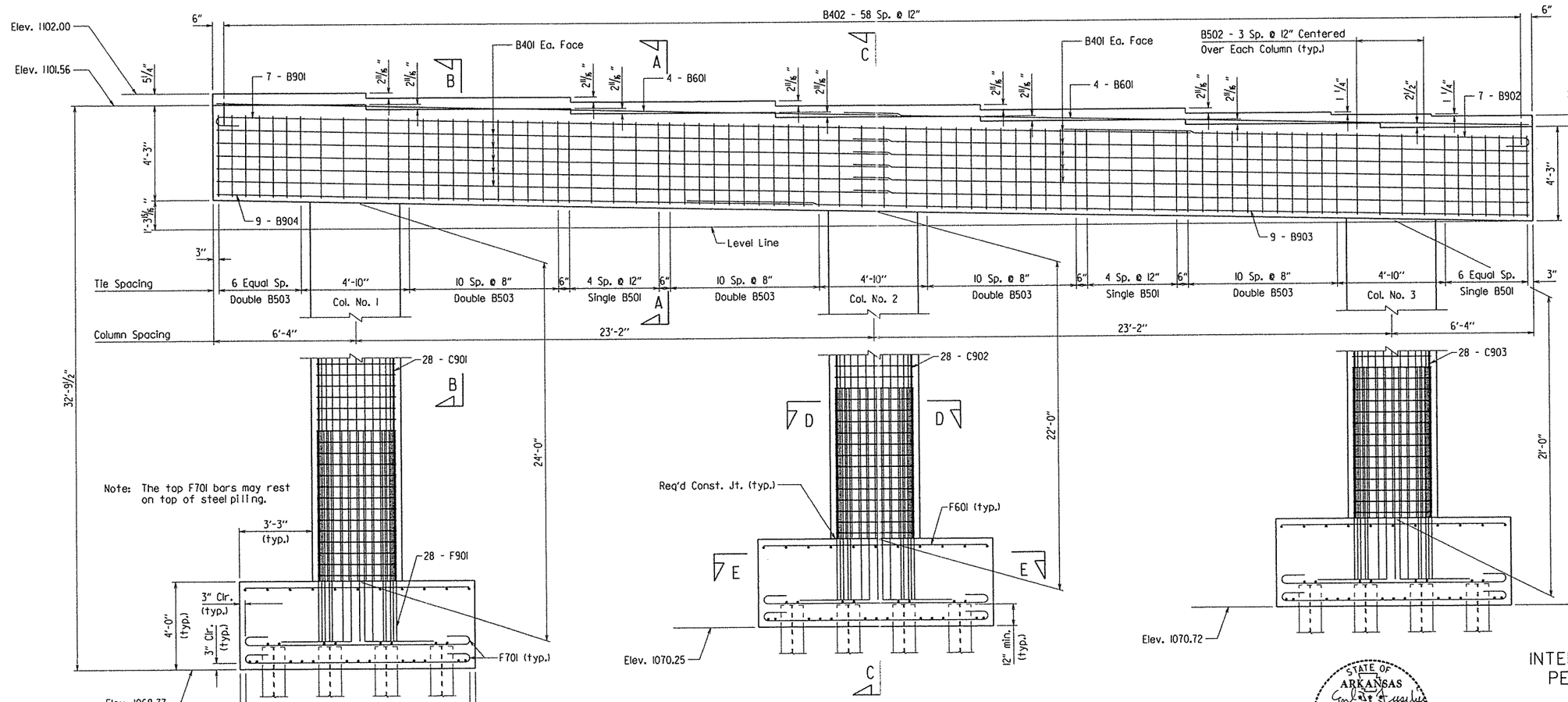
BRIDGE NO. 07277 DRAWING NO. 53799

PRINT DATE: 09-DEC-2013

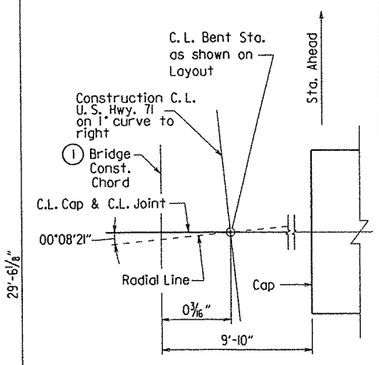
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				6	ARK.			
				JOB NO.		CA0904	261	636
				① 07277 -		INT. BENT 3	- 53800	



① For additional Details of Bridge Construction Chord, See Dwg. No. 53795. Bent shall be constructed perpendicular to Bridge Construction Chord.



ELEVATION
LOOKING AHEAD



DETAIL A
N.T.S.

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT NO. 3 PEACH ORCHARD ROAD

ROUTE SEC.

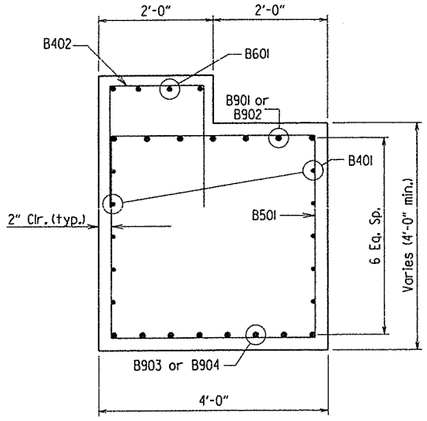
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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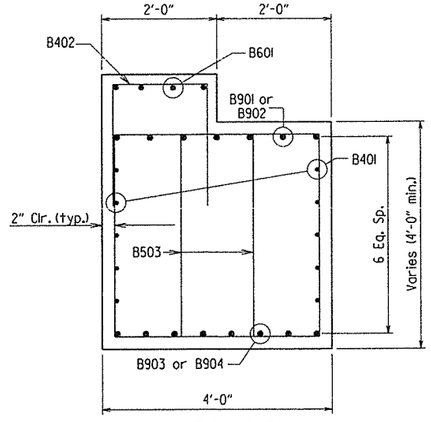
BRIDGE NO. 07277 DRAWING NO. 53800

PRINT DATE: 09-DEC-2013

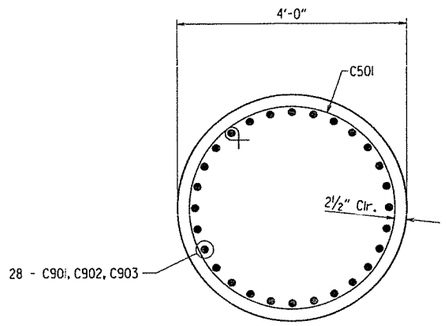
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				(1) 07277 -		INT. BENT 3 - 53801		



SECTION A-A



SECTION B-B

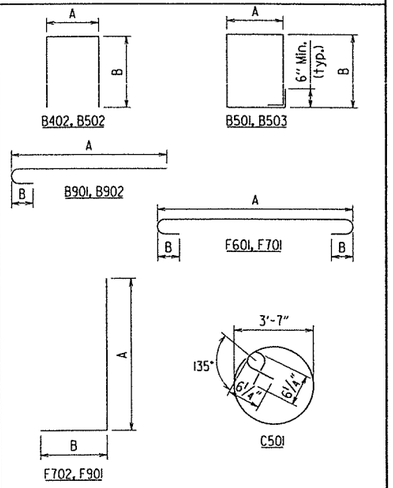


SECTION D-D

BAR LIST

	MARK	NUMBER REQUIRED	LENGTH	'A'	'B'	P.D.
(2)	B401	20	30'-3"	-	-	Str.
	B402	59	5'-4"	1'-8"	1'-8"	2"
	B501	17	15'-2"	3'-8"	3'-8"	2½"
	B502	12	10'-10"	3'-8"	3'-8"	2½"
	B503	102	12'-10"	2'-6"	3'-8"	2½"
(2)	B601	8	30'-8"	-	-	Str.
(2)	B901	7	45'-1"	43'-10"	10"	9"
(2)	B902	7	22'-1"	20'-10"	10"	9"
(2)	B903	9	37'-9"	-	-	Str.
(2)	B904	9	26'-9"	-	-	Str.
	C501	109	12'-10"	See Diagram		3¾"
	C901	28	27'-6"	-	-	Str.
	C902	28	25'-6"	-	-	Str.
	C903	28	24'-6"	-	-	Str.
	F601	66	10'-0"	-	-	Str.
	F701	126	11'-8"	10'-0"	7"	5¼"
	F702	12	4'-10"	2'-6"	2'-6"	5¼"
	F901	84	10'-6"	9'-0"	1'-8"	9"

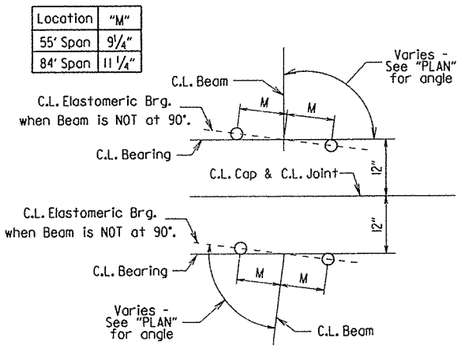
BENDING DIAGRAMS



Dimensions are out to out of bars.

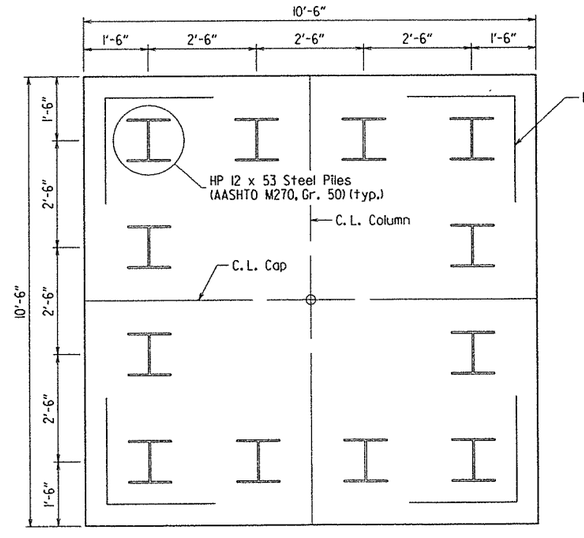
(2) Lap Length = 4's = 1'-9"
Lap Length = 6's = 2'-7"
Lap Length = 9's = 5'-9"

Location	"M"
55' Span	9¼"
84' Span	11¼"

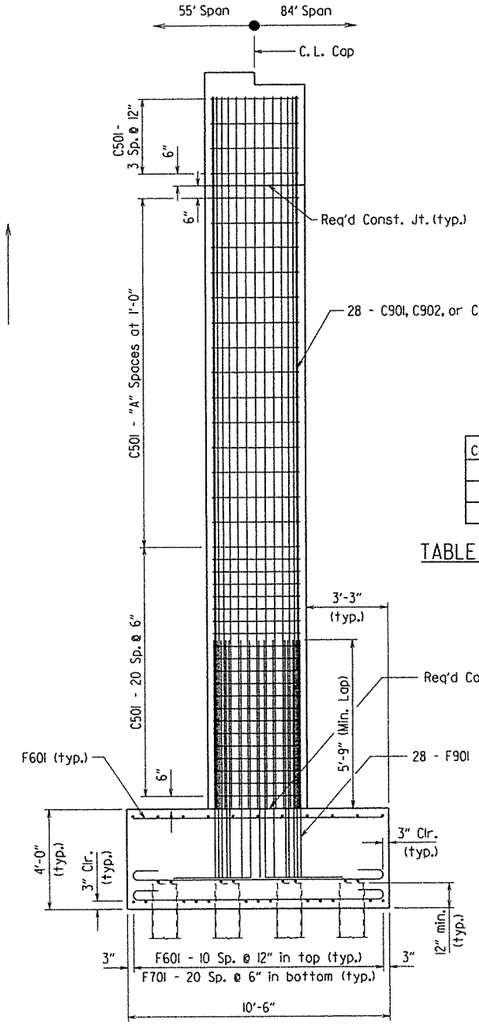


TYPICAL ANCHOR BOLT LAYOUT

For Details of Elastomeric Bearings, see Dwg. No. 53818.



SECTION E-E



SECTION C-C

Col. No.	"A"
1	13
2	11
3	10

TABLE OF VARIABLES

GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength of 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 be Grade 60 (Yield strength = 60,000 psi.) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Reinforcing bars in top of cap and riser shall be properly placed to avoid interference with anchor bolts or sheet metal sheets.

For additional information, see Layout.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT NO. 3
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

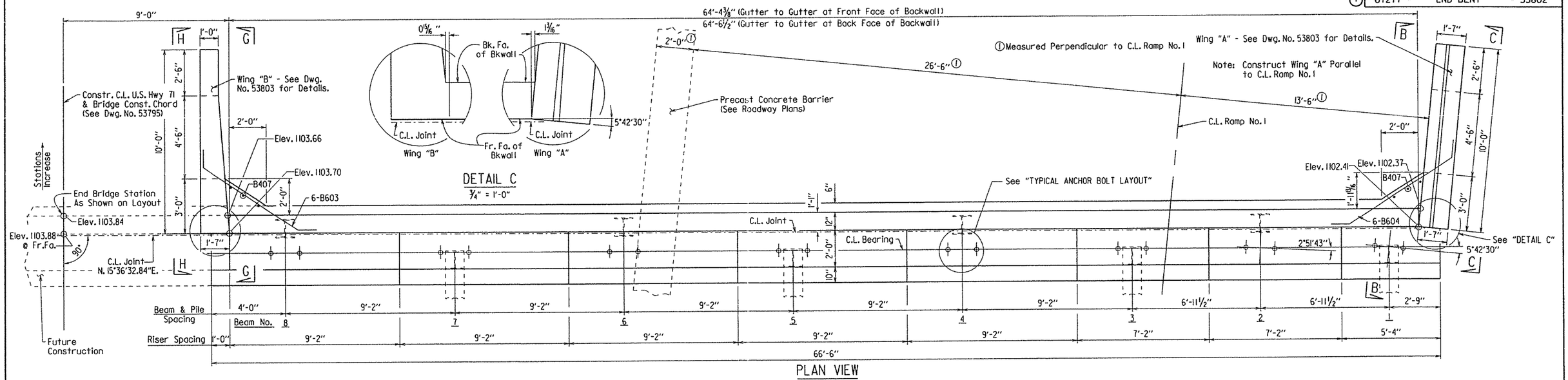
LITTLE ROCK, ARK.

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DESIGNED BY: SWP DATE: 10/13

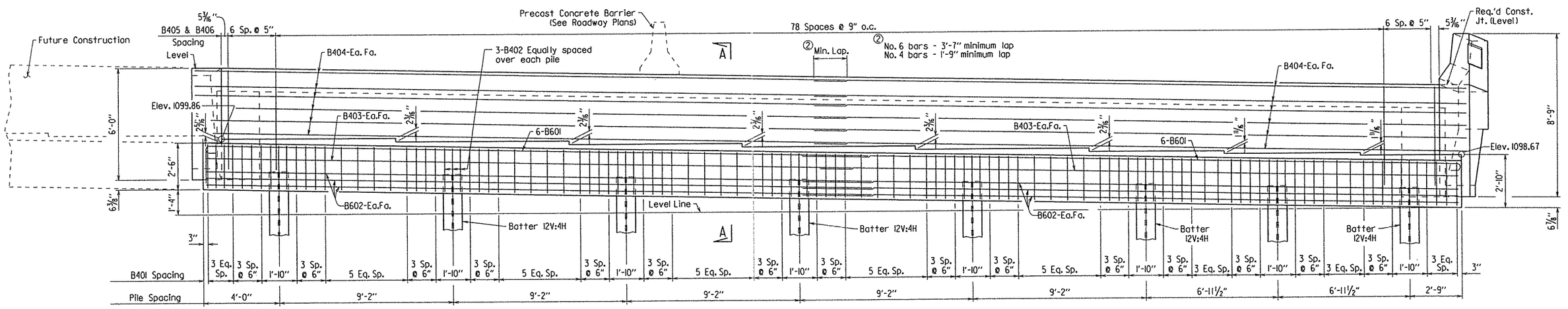
BRIDGE NO. 07277 DRAWING NO. 53801

PRINT DATE: 09-DEC-2013

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				JOB NO.		CA0904	263	636
				① 07277 -		END BENT	- 53802	

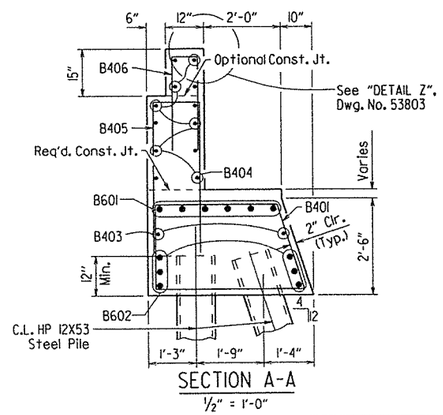


PLAN VIEW



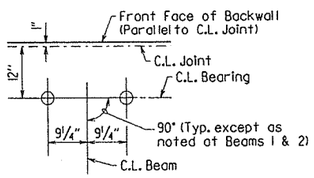
ELEVATION

LOOKING AHEAD



SECTION A-A

½" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

No Scale

Note : For Details of Elastomeric Bearings, see Dwg. Nos. 53818.

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 be Grade 60 (Yield strength = 60,000 p.s.i.) conforming to AASHTO M31 or M322, Type A, with mill test reports.

The backwall above the required construction joint shall not be poured until the beams are in place. The backwall above the optional construction joint shall not be poured until the superstructure slab has been placed. See Dwg. No. 53817 for additional information.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)".

If anchor bolts are drilled into the cap, the top reinforcing bars shall be placed to avoid damage.

Class 2 Protective Surface Treatment shall be applied to the top of the backwall. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0904 "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.

For additional information, see layout.

STATE OF ARKANSAS
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SHEET 1 OF 2

DETAILS OF BENT NO. 4
PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

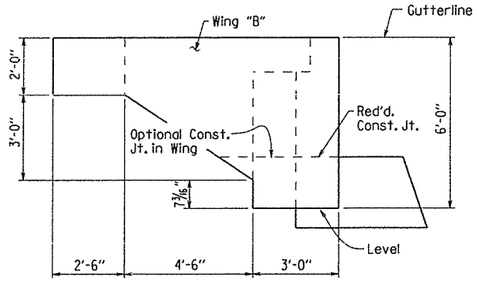
LITTLE ROCK, ARK.

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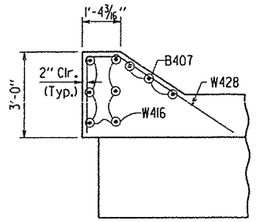
BRIDGE NO. 07277 DRAWING NO. 53802

PRINT DATE: 12/9/2013

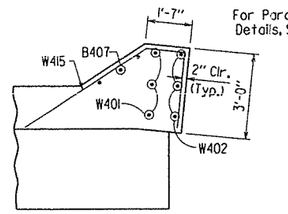
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				JOB NO.		CA0904	264	636
				①	07277 -	END BENT	- 53803	



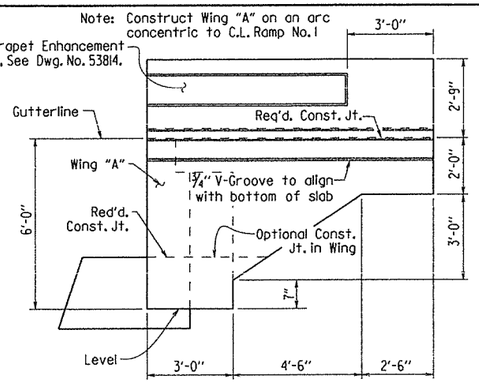
VIEW H-H
3/8" = 1'-0"



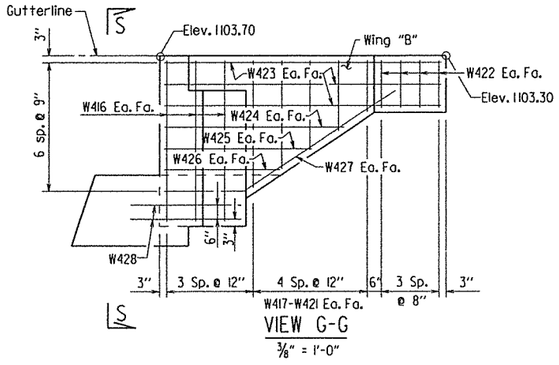
SECTION T-T
3/8" = 1'-0"



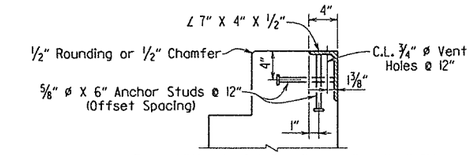
SECTION Z-Z
3/8" = 1'-0"



VIEW C-C
3/8" = 1'-0"



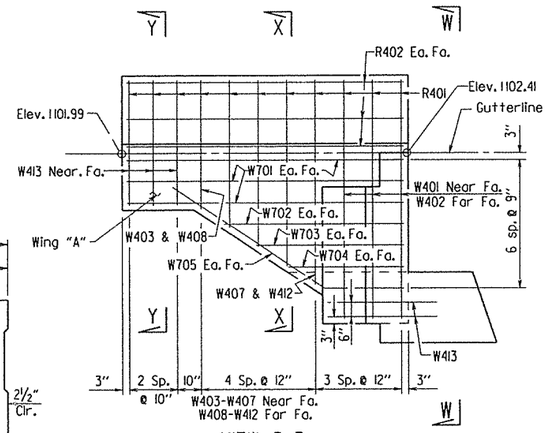
VIEW G-G
3/8" = 1'-0"



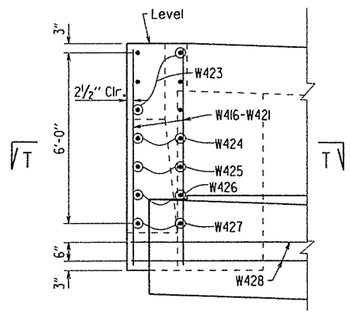
For additional Joint Details, see Dwg. No. 53817

DETAIL Z
No Scale

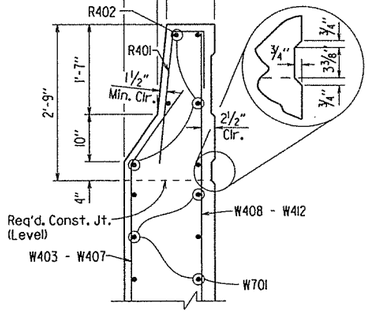
Note: Concrete shall be hand packed under the joint armor in the backwall.



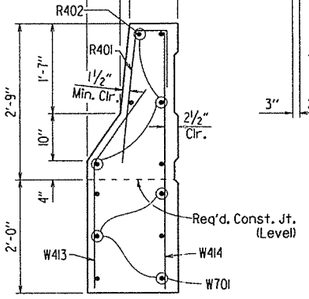
VIEW B-B
3/8" = 1'-0"



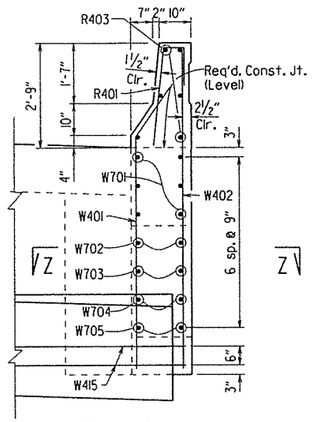
VIEW S-S
3/4" = 1'-0"



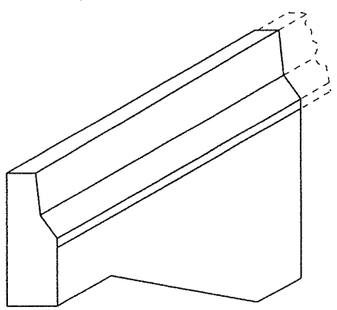
SECTION X-X
3/4" = 1'-0"



SECTION Y-Y
3/4" = 1'-0"



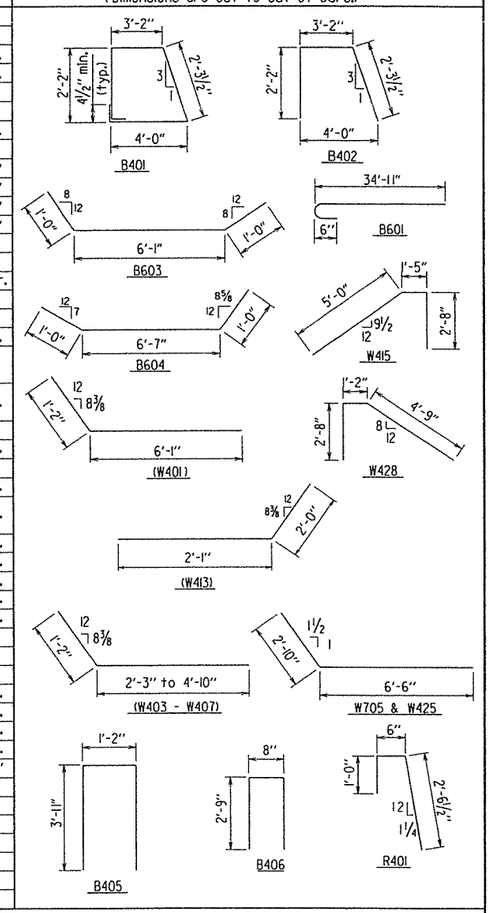
VIEW W-W
1/2" = 1'-0"



THREE DIMENSIONAL VIEW OF RAIL
Wing "A" Only
No Scale

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
B401	9	12'-0"	2"	
B402	24	7'-6"	2"	
B403	4	34'-0"	str.	
B404	24	34'-7"	str.	
B405	9	8'-10"	2"	
B406	9	6'-0"	2"	
B407	6	4'-5"	str.	
B601	6	35'-7"	4 1/2"	
B602	6	34'-11"	4 1/2"	
B603	6	8'-7"	4 1/2"	
B604	6	8'-1"	4 1/2"	
R401	11	3'-11"	2"	
R402	6	9'-8"	str.	
W401	3	7'-3"	2"	
W402	3	8'-5"	str.	
W403 to W407	1 ea.	3'-5" to 6'-0"	2"	
W408 to W412	1 ea.	4'-6" to 7'-1"	str.	
W413	3	4'-1"	2"	
W414	3	4'-5"	str.	
W415	2	9'-0"	2"	
W416	6	5'-8"	str.	
W417 to W421	2 ea.	1'-9" to 4'-6"	str.	
W422	8	1'-8"	str.	
W423	6	9'-8"	str.	
W424	2	6'-0"	str.	
W425	2	4'-11"	str.	
W426	2	3'-10"	str.	
W427	2	9'-4"	2"	
W428	2	8'-6"	2"	
W701	6	9'-8"	str.	
W702	2	6'-0"	str.	
W703	2	4'-11"	str.	
W704	2	3'-10"	str.	
W705	2	9'-4"	5 1/4"	



PRINT DATE: 12/9/2013

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT NO. 4
PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13 FILENAME: bca0904x12_bl.dgn
CHECKED BY: SWP DATE: 12/9/13 SCALE: AS NOTED
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BRIDGE NO. 07277 DRAWING NO. 53803

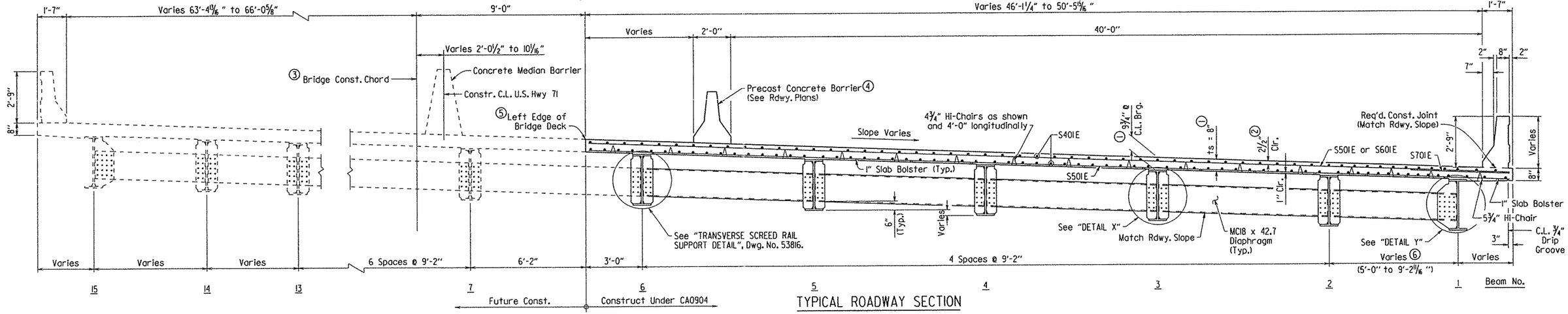
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				6	ARK.			
				JOB NO.		CA0904	265	636
				① 07277 -		SPAN DETAILS	- 53804	

SLAB REINFORCING

Longitudinal: S401E in top & bottom placed as shown (12" max.)
Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——— Alternate
S501E-Top & Bottom @ 15" o.c. ———
S701E @ 15" o.c. - Top of overhang (RT. side only)
For placement of transverse reinforcing steel, see "REINFORCING PLAN", Dwg. No. 53806.

NOTE: The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

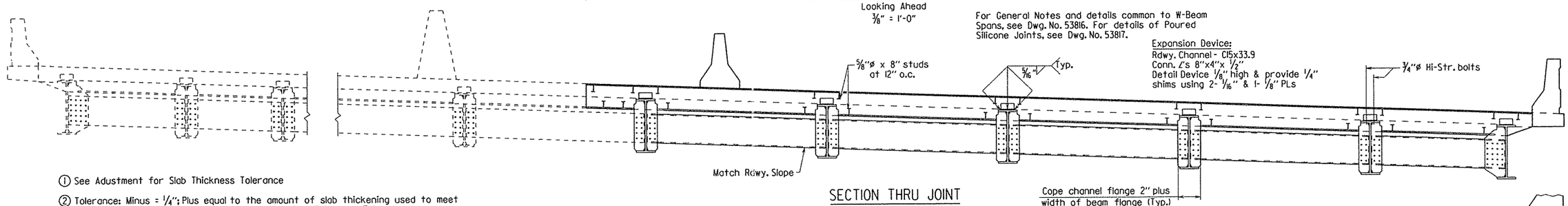
NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job CA0904 "Textured Coating Finish".



TYPICAL ROADWAY SECTION

Looking Ahead
3/8" = 1'-0"

For General Notes and details common to W-Beam Spans, see Dwg. No. 53816. For details of Poured Silicone Joints, see Dwg. No. 53817.



SECTION THRU JOINT

Looking Ahead
3/8" = 1'-0"



**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.

Note : ts = slab thickness as shown on "TYPICAL ROADWAY SECTION".

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1 3/4". 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. 14991 for tolerances when permanent steel deck forms are used." Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

① See Adustment for Slab Thickness Tolerance

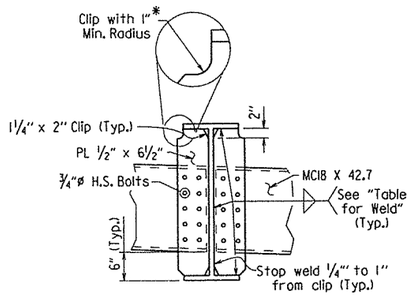
② Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See Adustment for Slab Thickness Tolerance.

③ See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53795

④ Precast Concrete Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4.

⑤ If stay-in-place forkwork is used on left side, a means for supporting future deck forming shall be constructed.

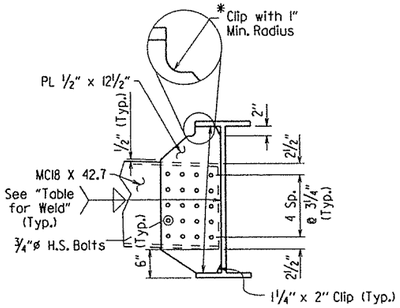
⑥ The longitudinal slab reinforcing between Beams 1 & 2 shall flare such that an even spacing is maintained between the bars.



DETAIL X

3/4" = 1'-0"

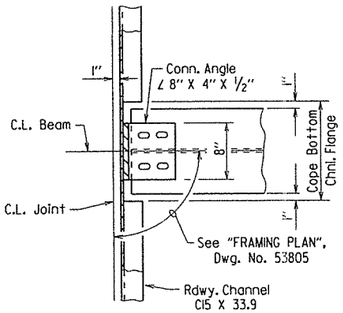
*If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.



DETAIL Y

3/4" = 1'-0"

Note: Connection Plate may not be perpendicular to Beam Web. See "FRAMING PLAN", Dwg. No. 53813.



CHANNEL CONNECTION DETAIL

No Scale

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
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SHEET 1 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

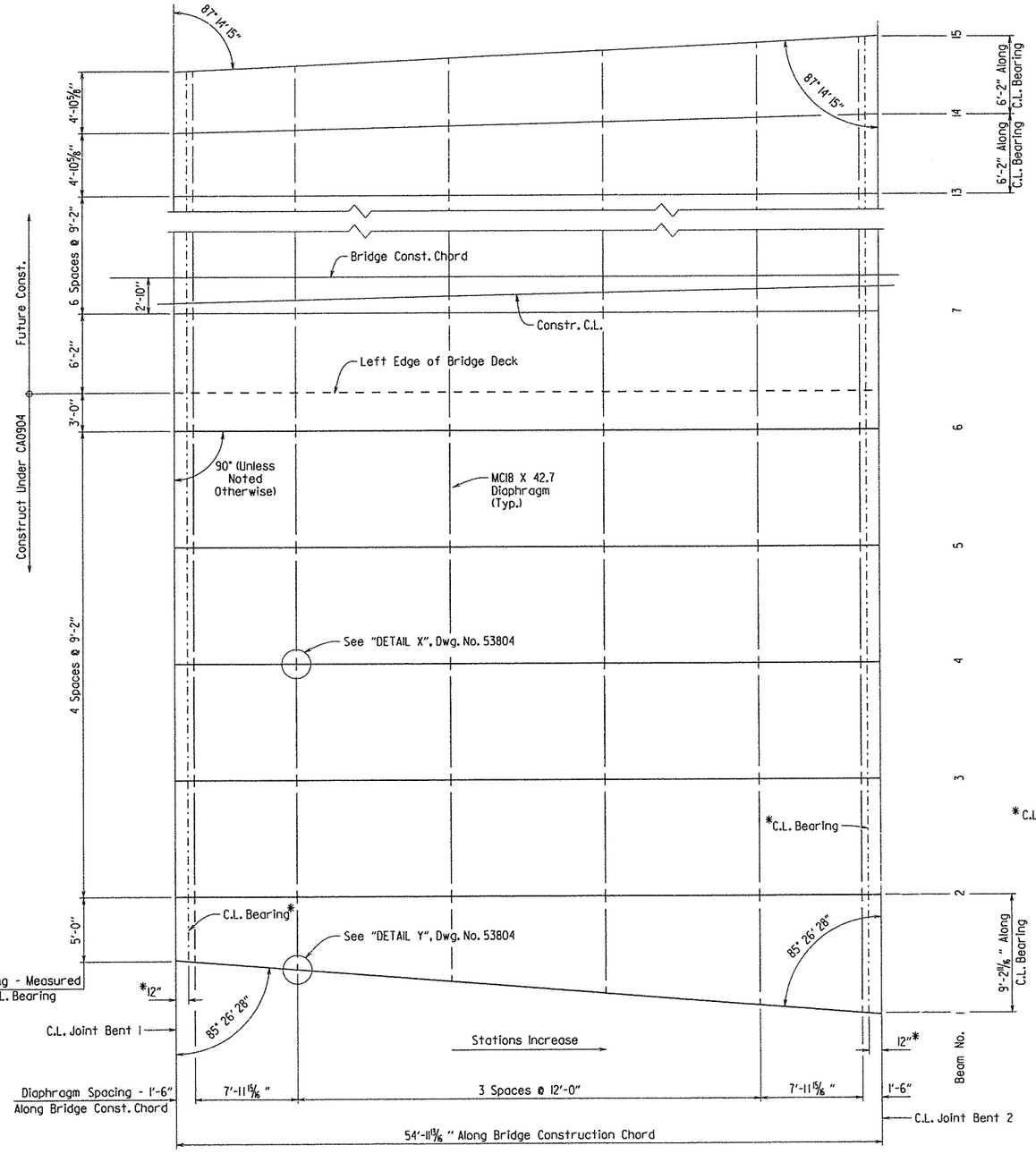
LITTLE ROCK, ARK.

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DESIGNED BY: SWP DATE: 10/13

BRIDGE NO. 07277 DRAWING NO. 53804

PRINT DATE: 12/9/2013

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				6	ARK.			
				JOB NO.		CA0904	266	636
				①	07277 -	SPAN DETAILS	- 53805	



FRAMING PLAN

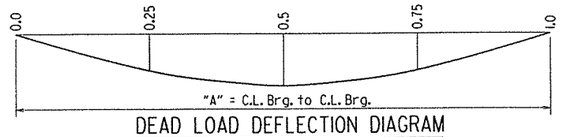
3/16" = 1'-0"

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord.

See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53975 for additional details.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

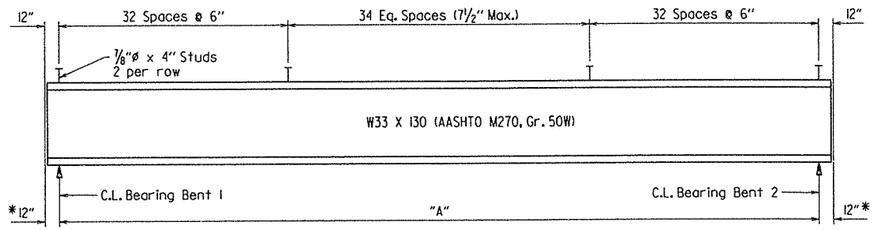
Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
	Beams 1 & 6	Beams 2 - 5	Beams 1 & 6	Beams 2 - 5	Beams 1 & 6	Beams 2 - 5
0.0	0	0	0	0	0	0
0.25	0.102	0.118	0.676	0.807	0.716	0.844
0.5	0.143	0.165	0.948	1.131	1.004	1.183
0.75	0.102	0.118	0.676	0.807	0.716	0.844
1.0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

No Scale

NOTE:
Camber for Dead Load Deflection plus Vertical curve +/- ¼" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included.

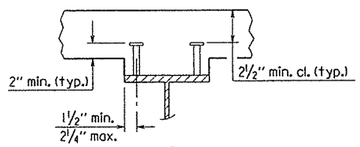


BEAM ELEVATION

No Scale

Beam No.	"A" = C.L. Brg. to C.L. Brg.
1	53'-1⅞"
2-6	52'-11⅝"

*C.L. Bearing is Parallel to C.L. Joint



Stud Shear Connectors shown shall be ⅞" ø 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"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 measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 2 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

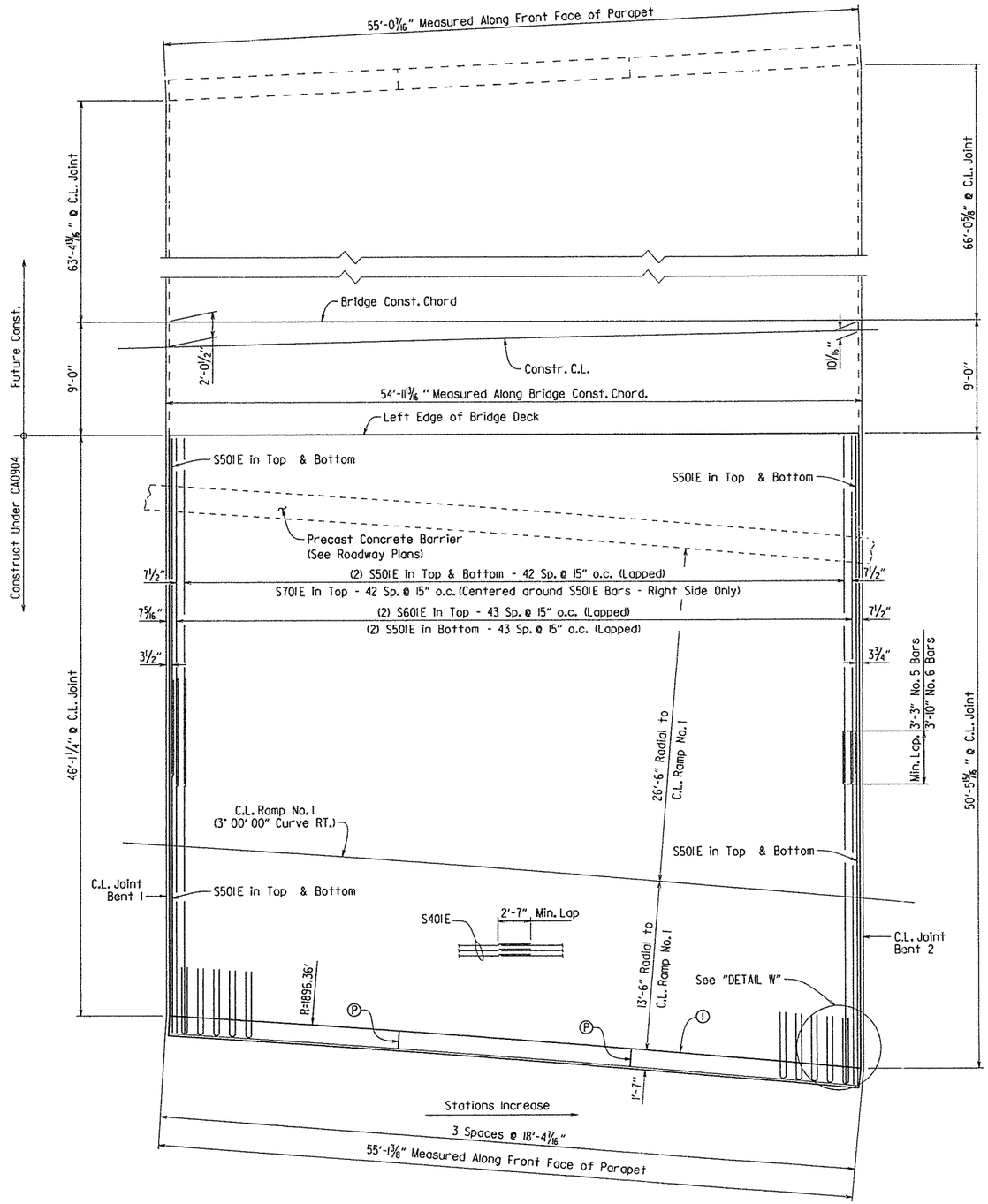
LITTLE ROCK, ARK.

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BRIDGE NO. 07277 DRAWING NO. 53805

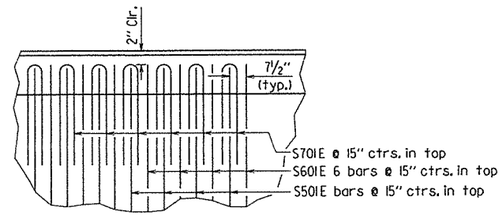
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	267	636
				(1)	07277 -	SPAN DETAILS	- 53806	



REINFORCING PLAN

3/16" = 1'-0"

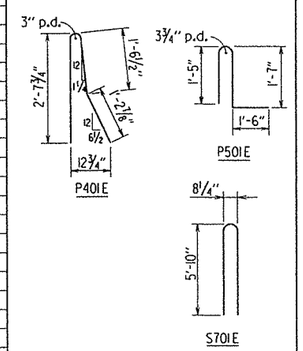


DETAIL W

No Scale

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	246	28'-8"	Str.	
S501E	268	27'-6"	Str.	
S601E	88	27'-10"	Str.	
S701E	43	12'-1"	6 1/2"	
P401E	111	5'-6"	2"	
P402E	21	18'-0"	Str.	
P403E	8	6'-0"	Str.	
P501E	111	4'-6"	2 1/2"	



Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

(1) Concentric to C.L. Ramp No. 1

(P) Partial Depth Parapet Joint at this location

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53975 for additional details.

Note: All longitudinal lines shall be constructed concentric to their respective curves. See Dwg. No. 53793 for "HORIZONTAL CURVE DATA". The left edge of the bridge deck is parallel to the Bridge Construction Chord.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/6/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 3 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13 FILENAME: bca0904x12_sl.dgn

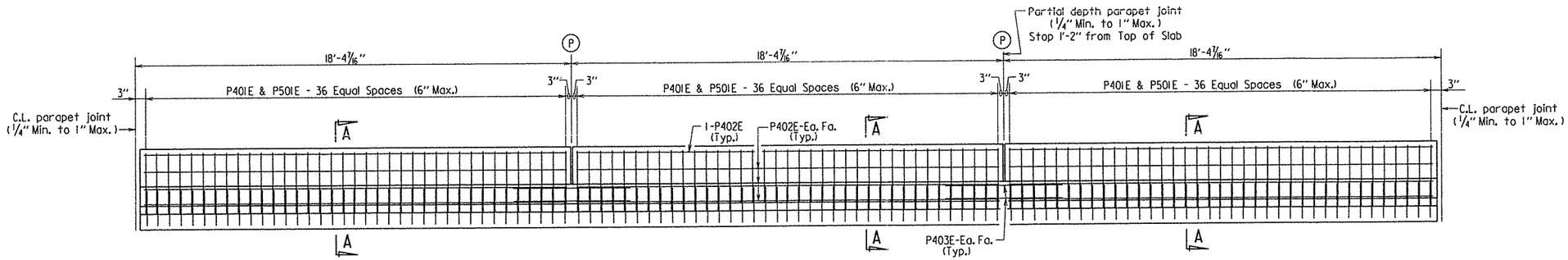
CHECKED BY: SWP DATE: 12/9/13 SCALE: 3/16"=1'-0"

DESIGNED BY: SWP DATE: 10/13

BRIDGE NO. 07277 DRAWING NO. 53806

PRINT DATE: 12/9/2013

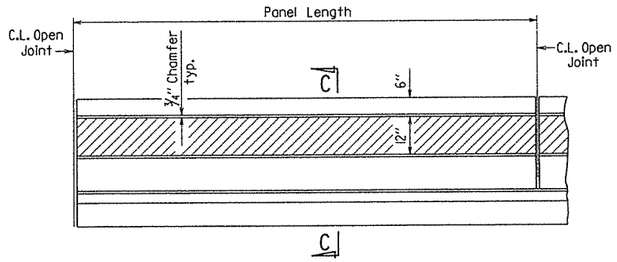
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	268	636
				(1)	07277 -	SPAN DETAILS	- 53807	



DETAILS OF PARAPET RAIL - RIGHT GUTTER

No Scale

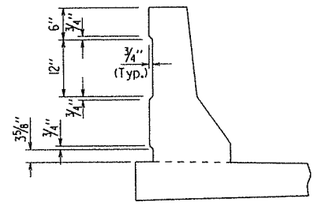
(P) Partial depth parapet joint at this location



Note: Recess shall be made continuous.

DETAILS OF PARAPET ENHANCEMENT

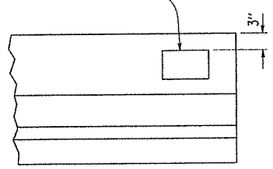
Outside Face of Rail
No Scale



SECTION C-C

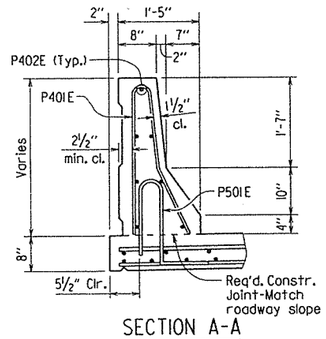
No Scale

Place Type D name plate on front face of span rail approx. 2'-0" from front face of backwall on right side Beginning of Bridge.



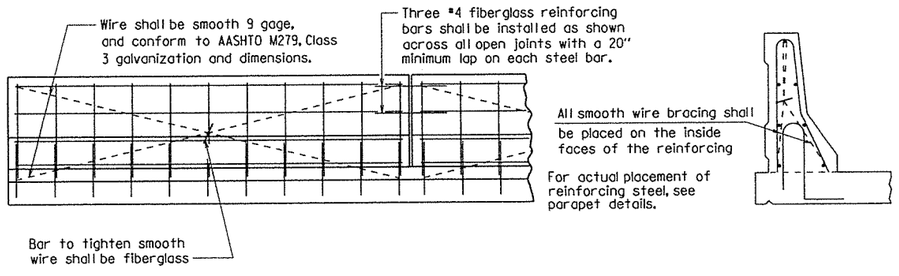
NAME PLATE DETAIL

No Scale



SECTION A-A

Scale: 3/4" = 1'-0"



All panels shall be braced as required 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

No Scale

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13

BRIDGE ENGINEER

SHEET 4 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13
CHECKED BY: EWP DATE: 12/9/13
DESIGNED BY: EWP DATE: 10/13

FILENAME: bca0904xl2_sl.dgn
SCALE: 3/8"=1'-0"

BRIDGE NO. 07277 DRAWING NO. 53807

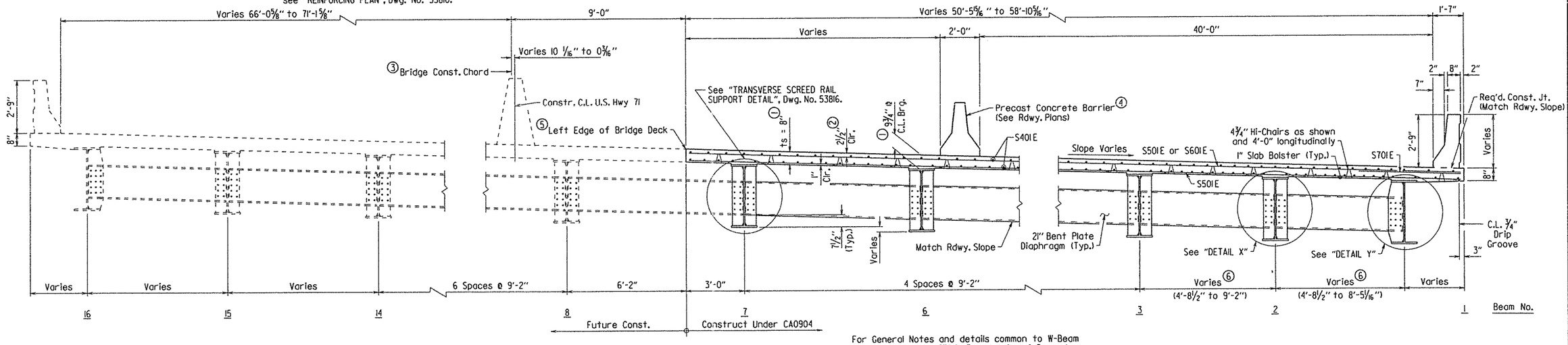
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	269	636
				(1) 07277 -		SPAN DETAILS	- 53808	

SLAB REINFORCING
Longitudinal: S401E in top & bottom placed as shown (12" max.)
Transverse: S601E-Top; S501E-Bottom @ 15" o.c. ——— Alternate
S501E-Top & Bottom @ 15" o.c. ———
S701E @ 15" o.c. - Top of overhang (RT. side only)
For placement of transverse reinforcing steel, see "REINFORCING PLAN", Dwg. No. 53810.

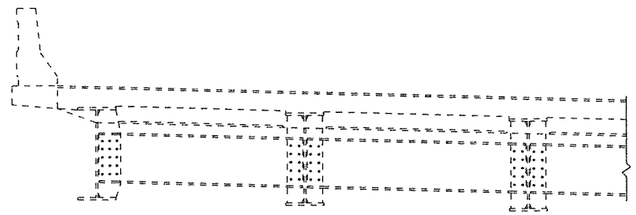
NOTE: The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

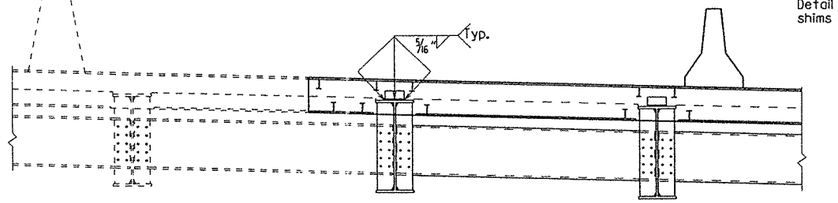
NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job CA0904 "Textured Coating Finish".



TYPICAL ROADWAY SECTION

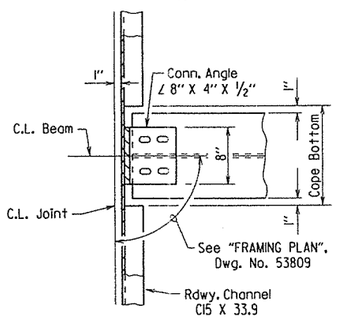
Looking Ahead
3/8" = 1'-0"





SECTION THRU JOINT

Looking Ahead
3/8" = 1'-0"

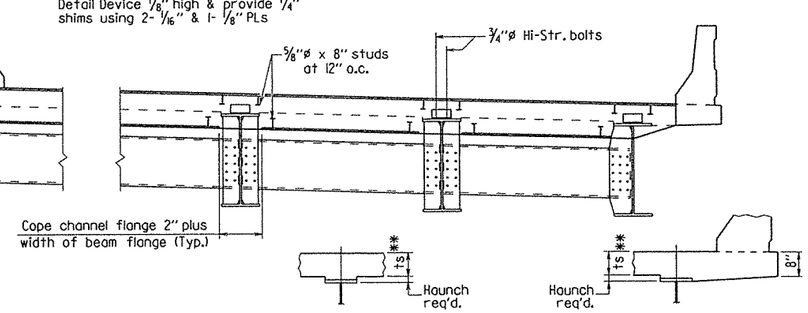


CHANNEL CONNECTION DETAIL

No Scale

For General Notes and details common to W-Beam Spans, see Dwg. No. 53816. For details of Poured Silicone Joints, see Dwg. No. 53817.

Expansion Device:
Rdwy. Channel - C15x33.9
Conn. L's 8"x4"x 1/2"
Detail Device 1/8" high & provide 1/4" shims using 2- 1/16" & 1- 1/8" PLs



Beams 2 thru 7 — Beam 1

**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.

Note : ts = slab thickness as shown on "TYPICAL ROADWAY SECTION".

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1 3/4". 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. 14991 for tolerances when permanent steel deck forms are used." Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

① See Adustment for Slab Thickness Tolerance .

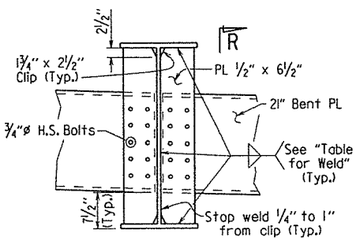
② Tolerance: Minus = 1/4"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See Adustment for Slab Thickness Tolerance.

③ See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53795

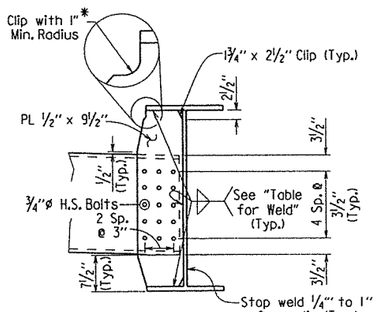
④ Precast Concrete Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4.

⑤ If stay-in-place forkwork is used on left side, a means for supporting future deck forming shall be constructed.

⑥ The longitudinal slab reinforcing between Beams 1 & 2 and Beams 2 & 3 shall flare such that an even spacing is maintained between the bars.



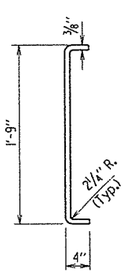
DETAIL X
3/4" = 1'-0"



DETAIL Y
3/4" = 1'-0"

*If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

Note: Connection Plate may not be perpendicular to Beam Web. See "FRAMING PLAN", Dwg. No. 53809.



Typ. cross-section for all 21" bent plate diaphragms.

SECTION R-R
No Scale

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
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
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12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 4

DETAILS OF 84-0" COMPOSITE W-BEAM SPAN NO. 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

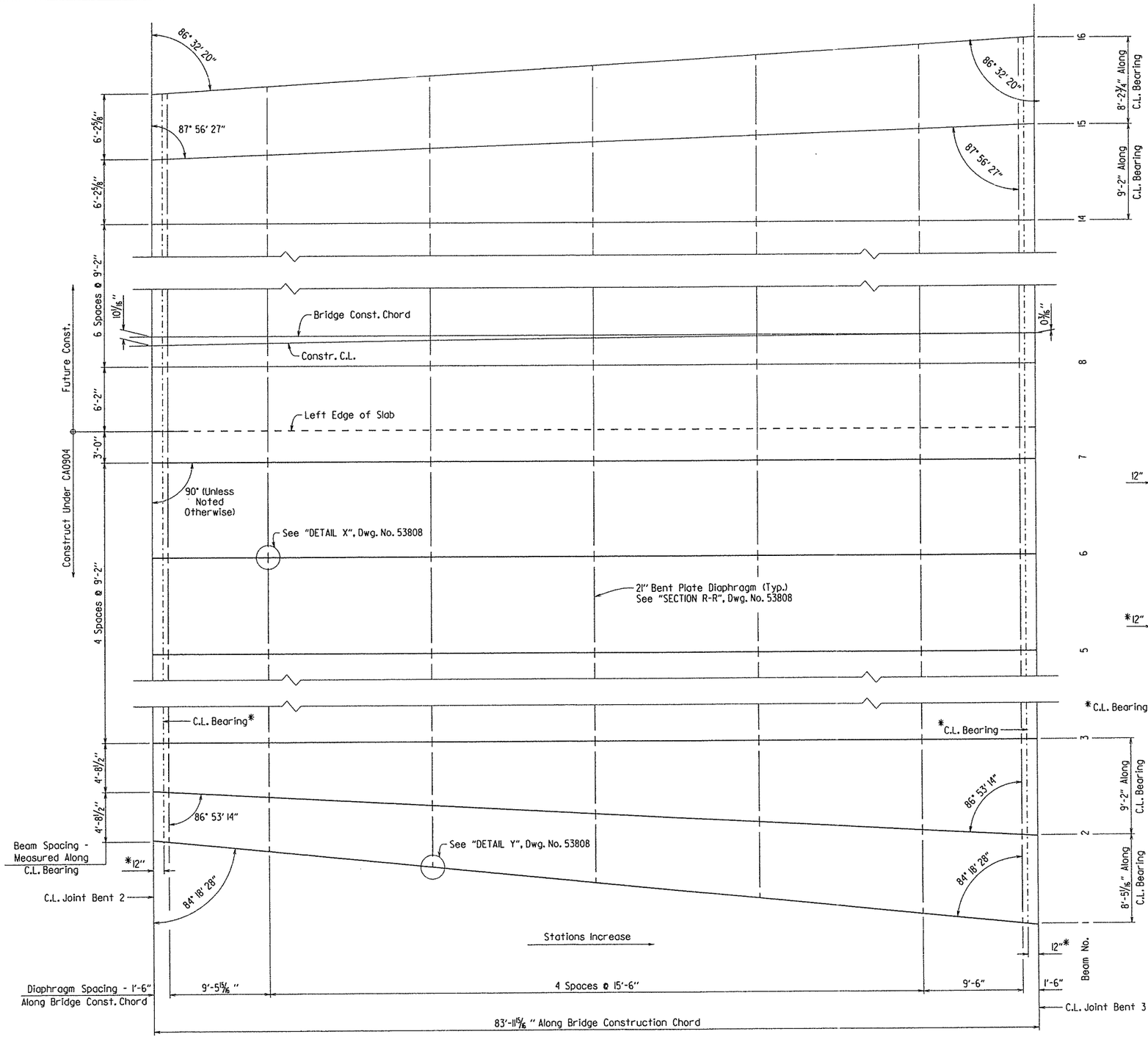
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CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: SWP DATE: 10/13

FILENAME: bca0904x12_sl.dgn
SCALE: 3/8"=1'-0"

BRIDGE NO. 07277 DRAWING NO. 53808

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	270	636
				(1) 07277 - SPAN DETAILS - 53809				



FRAMING PLAN

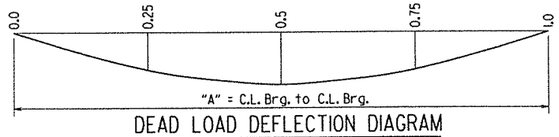
3/16" = 1'-0"

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord.

See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53975 for additional details.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

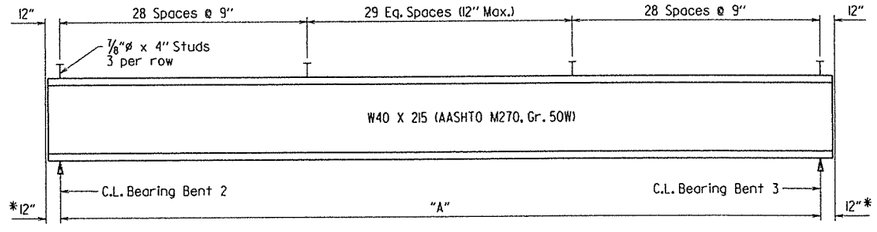
Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
	Beams 1, 2, 3 & 7	Beams 4 - 6	Beams 1, 2, 3 & 7	Beams 4 - 6	Beams 1, 2, 3 & 7	Beams 4 - 6
0.0	0	0	0	0	0	0
0.25	0.348	0.309	1.688	1.624	1.785	1.701
0.5	0.487	0.521	2.366	2.735	2.503	2.864
0.75	0.348	0.309	1.688	1.624	1.785	1.701
1.0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

No Scale

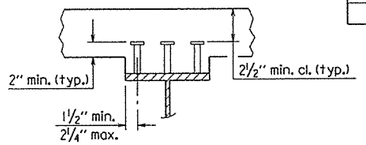
NOTE:
Camber for Dead Load Deflection plus Vertical curve +/- ¼" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included.



BEAM ELEVATION

No Scale

Beam No.	"A" = C.L. Brg. to C.L. Brg.
1	82'-4¹³⁄₁₆"
2	82'-1⅞"
3-7	81'-11¹⁵⁄₁₆"



Stud Shear Connectors shown shall be ⅞"ø 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"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 measurement of structural steel in shear connectors.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
Carl J. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSSELIER

BRIDGE ENGINEER

SHEET 2 OF 4

DETAILS OF 84'-0" COMPOSITE W-BEAM SPAN NO. 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

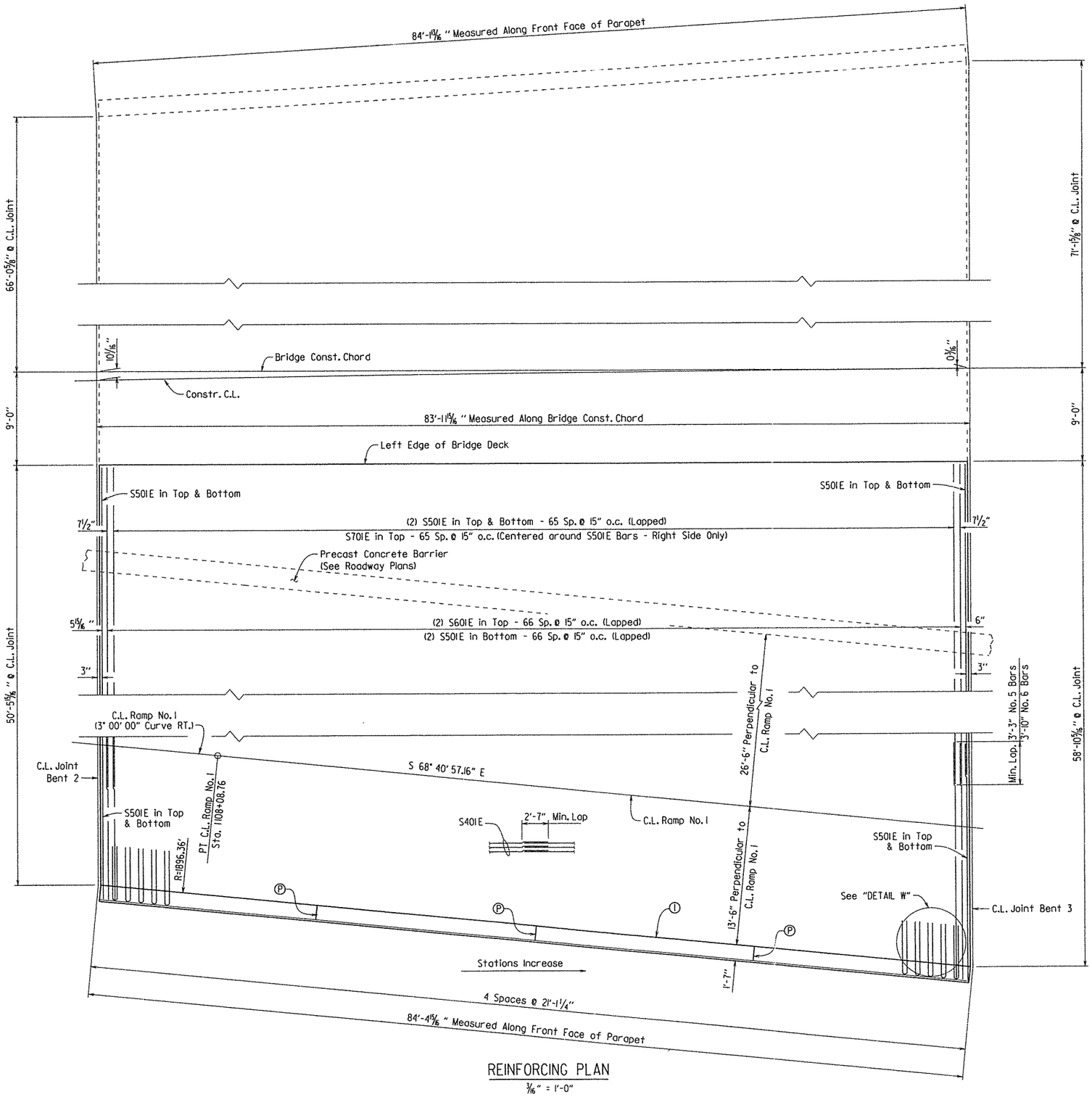
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CHECKED BY: SWP DATE: 12/3/13
DESIGNED BY: SWP DATE: 10/13

FILENAME: bco0904xl2_sl.dgn
SCALE: 3/16"=1'-0"

BRIDGE NO. 07277 DRAWING NO. 53809

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	271	636
				(1) 07277 -		SPAN DETAILS	- 53810	

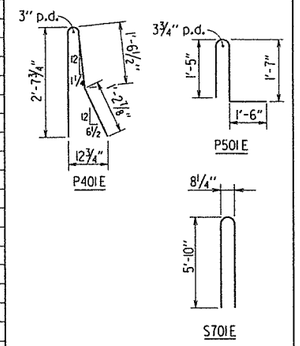


REINFORCING PLAN

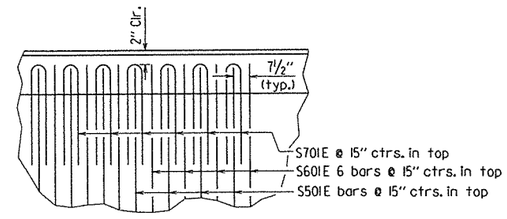
3/16" = 1'-0"

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	290	43'-2"	Str.	
S501E	406	31'-8"	Str.	
S601E	134	32'-0"	Str.	
S701E	66	12'-1"	6 1/2"	
P401E	168	5'-6"	2"	
P402E	28	21'-9"	Str.	
P403E	12	6'-0"	Str.	
P501E	168	4'-6"	2 1/2"	



Note: All Bars designated with an "E" suffix are to be Epoxy Coated.



DETAIL W

No Scale

(1) Parallel to C.L. Ramp No. 1

(P) Partial Depth Parapet Joint at this location

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53975 for additional details.

Note: All longitudinal lines shall be constructed concentric to their respective curves. See Dwg. No. 53793 for "HORIZONTAL CURVE DATA". The left edge of the bridge deck is parallel to the Bridge Construction Chord.

STATE OF ARKANSAS
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REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 3 OF 4

DETAILS OF 84'-0" COMPOSITE W-BEAM SPAN NO. 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13 FILENAME: bca0904xl2_sl.dgn

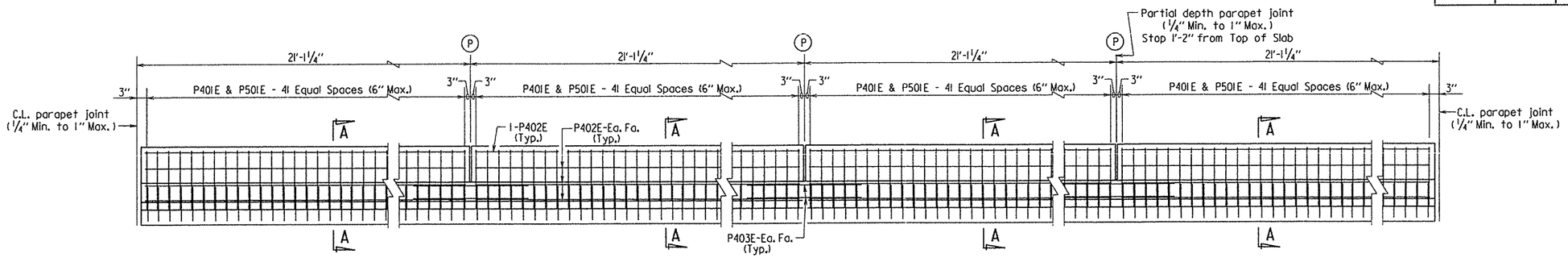
CHECKED BY: SWP DATE: 12/9/13 SCALE: 3/16"=1'-0"

DESIGNED BY: SWP DATE: 10/13

BRIDGE NO. 07277 DRAWING NO. 53810

PRINT DATE: 12/9/2013

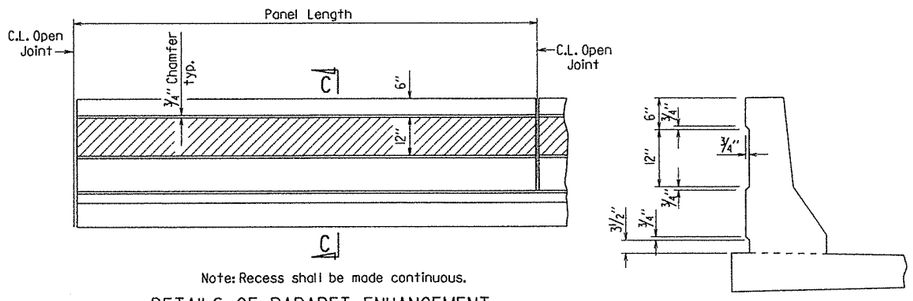
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	272	636
				(1) 07277 - SPAN DETAILS - 53811				



(P) Partial depth parapet joint at this location

DETAILS OF PARAPET RAIL - RIGHT GUTTER

No Scale

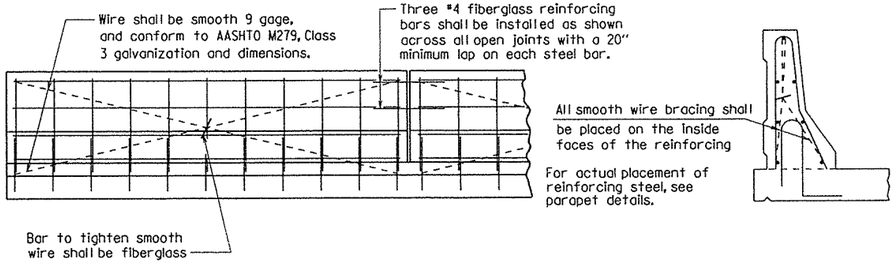


DETAILS OF PARAPET ENHANCEMENT

Outside Face of Rail
No Scale

SECTION C-C

No Scale

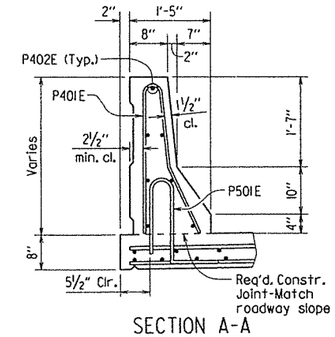


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

No Scale



SECTION A-A

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 4 OF 4

DETAILS OF 84'-0" COMPOSITE W-BEAM SPAN NO. 2

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13
CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: SWP DATE: 10/13

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BRIDGE NO. 07277 DRAWING NO. 53811

PRINT DATE: 12/9/2013

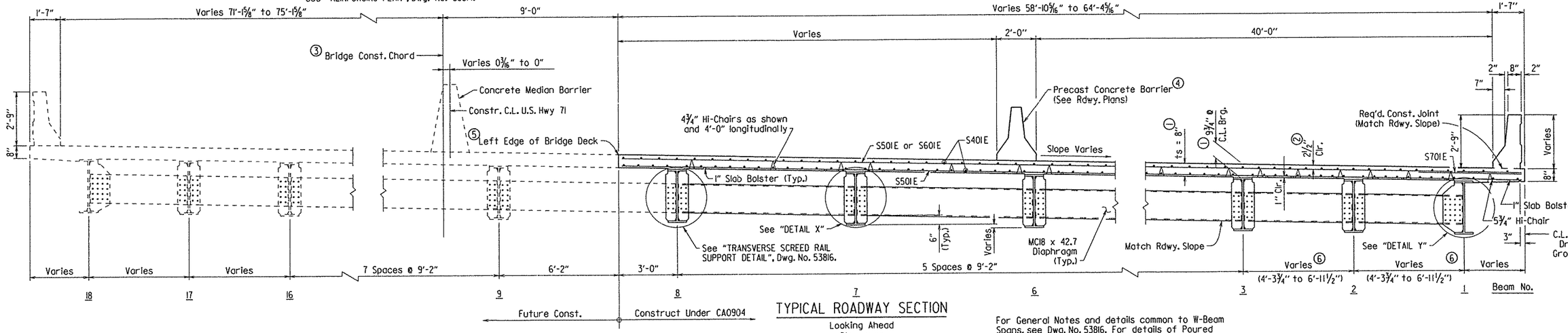
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				6	ARK.			
				JOB NO.		CA0904	273	636
				(1)	07277 -	SPAN DETAILS	- 53812	

SLAB REINFORCING

Longitudinal: S401E in top & bottom placed as shown (12" max.)
Transverse: S601E-Top; S501E-Bottom @ 15" o.c. — Alternate
S501E-Top & Bottom @ 15" o.c.
S701E @ 15" o.c. - Top of overhang (RT. side only)
For placement of transverse reinforcing steel, see "REINFORCING PLAN", Dwg. No. 53814.

NOTE: The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

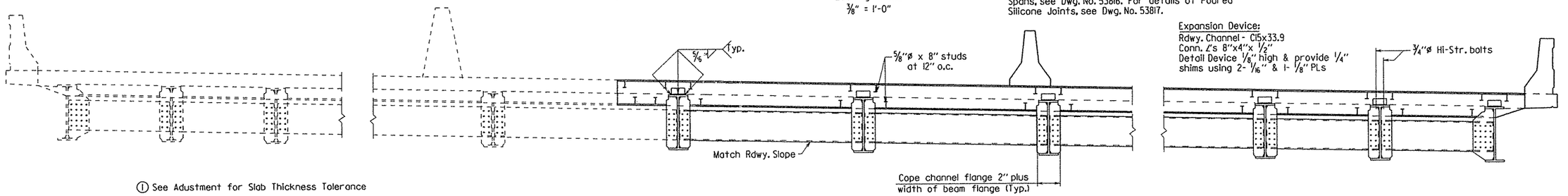
NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job CA0904 "Textured Coating Finish".



TYPICAL ROADWAY SECTION

Looking Ahead
⅜" = 1'-0"

For General Notes and details common to W-Beam Spans, see Dwg. No. 53816. For details of Poured Silicone Joints, see Dwg. No. 53817.



SECTION THRU JOINT

Looking Ahead
⅜" = 1'-0"

① See Adustment for Slab Thickness Tolerance

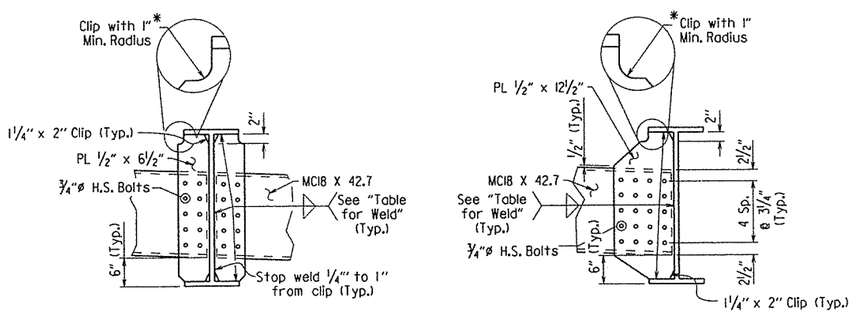
② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See Adustment for Slab Thickness Tolerance.

③ See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53795

④ Precast Concrete Barrier shall not be connected to the surface of the bridge deck. See Std. Dwg. TC-4.

⑤ If stay-in-place forkwork is used on left side, a means for supporting future deck forming shall be constructed.

⑥ The longitudinal slab reinforcing between Beams 1 & 2 and Beams 2 & 3 shall flare such that an even spacing is maintained between the bars.



DETAIL X

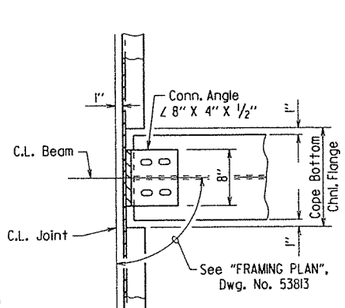
¾" = 1'-0"

*If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

DETAIL Y

¾" = 1'-0"

Note: Connection Plate may not be perpendicular to Beam Web. See "FRAMING PLAN", Dwg. No. 53813.



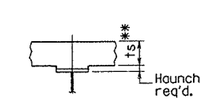
CHANNEL CONNECTION DETAIL

No 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.



**Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note : ts = slab thickness as shown on "TYPICAL ROADWAY SECTION".

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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. 1499I for tolerances when permanent steel deck forms are used." Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

STATE OF ARKANSAS
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No. 7510
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BRIDGE ENGINEER

SHEET 1 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

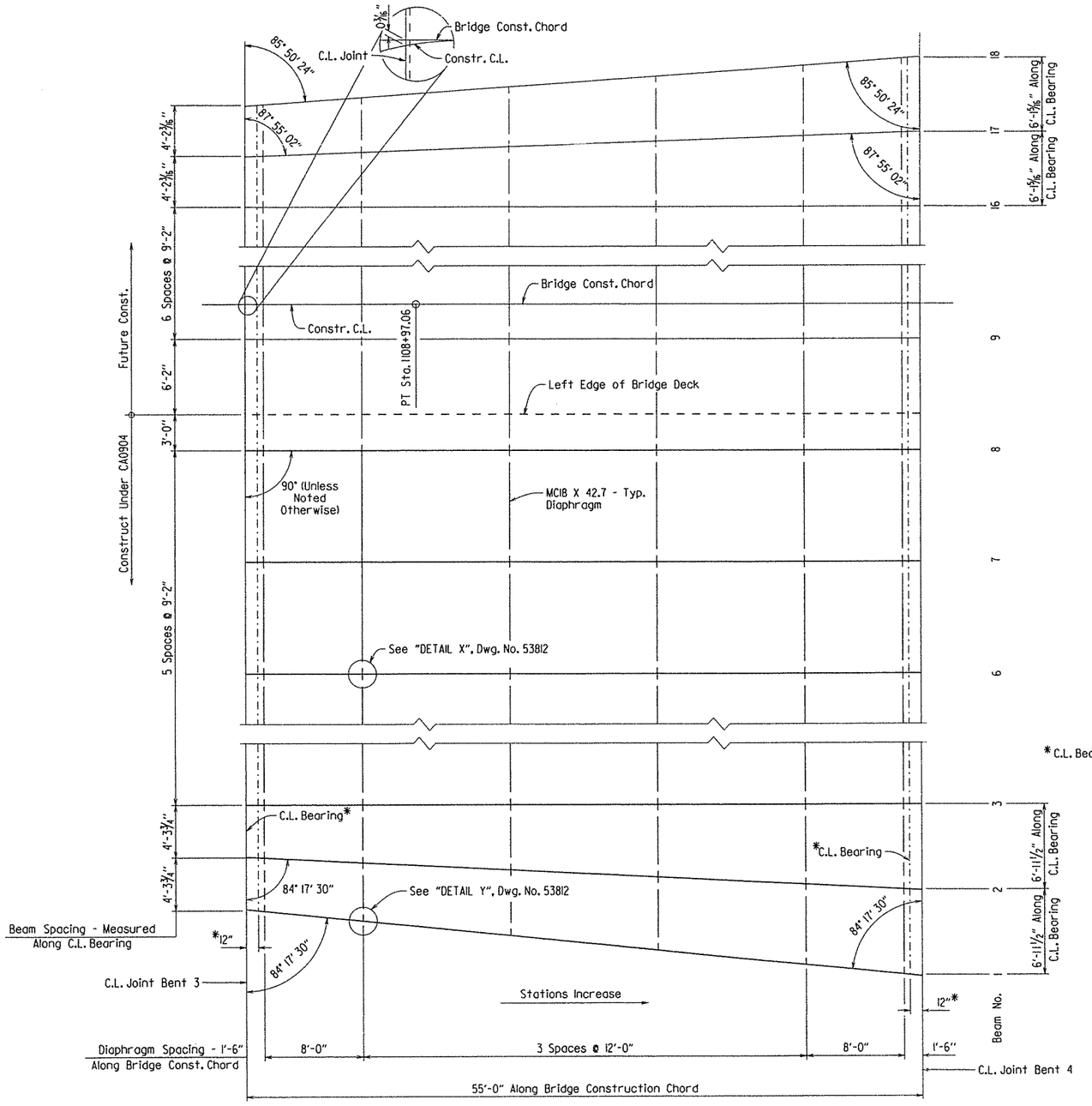
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CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: SWP DATE: 10/13

FILENAME: bca0904xl2_sl.dgn
SCALE: ⅜"=1'-0"

BRIDGE NO. 07277 DRAWING NO. 53812

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	274	636
				(1) 07277 - SPAN DETAILS - 53813				



FRAMING PLAN

3/16" = 1'-0"

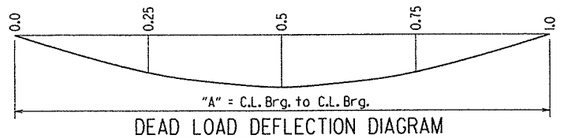
Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord.

See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53975 for additional details.

*C.L. Bearing is Parallel to C.L. Joint

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

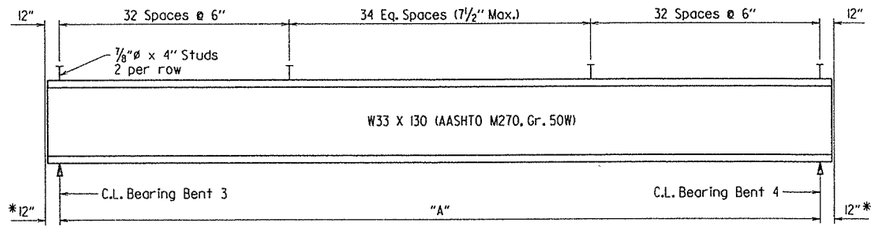
Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
	Beams 1, 2 & 8	Beams 3 - 7	Beams 1, 2 & 8	Beams 3 - 7	Beams 1, 2 & 8	Beams 3 - 7
0.0	0	0	0	0	0	0
0.25	0.118	0.118	0.685	0.806	0.724	0.843
0.5	0.166	0.166	0.960	1.130	1.015	1.1832
0.75	0.118	0.118	0.685	0.806	0.724	0.843
1.0	0	0	0	0	0	0



DEAD LOAD DEFLECTION DIAGRAM

No Scale

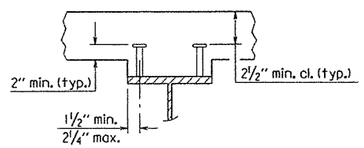
NOTE:
Camber for Dead Load Deflection plus Vertical curve +/- 1/4" tolerance.
Deflections shown are from a chord from C.L. Bearing to C.L. Bearing.
Vertical curve corrections not included.



BEAM ELEVATION

No Scale

Beam No.	"A" = C.L. Brg. to C.L. Brg.
1	53'-3 3/16"
2	53'-0 15/16"
3-8	53'-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 beam 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 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

No Scale

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BRIDGE ENGINEER

SHEET 2 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13
CHECKED BY: SWP DATE: 12/9/13
DESIGNED BY: SWP DATE: 10/1/13

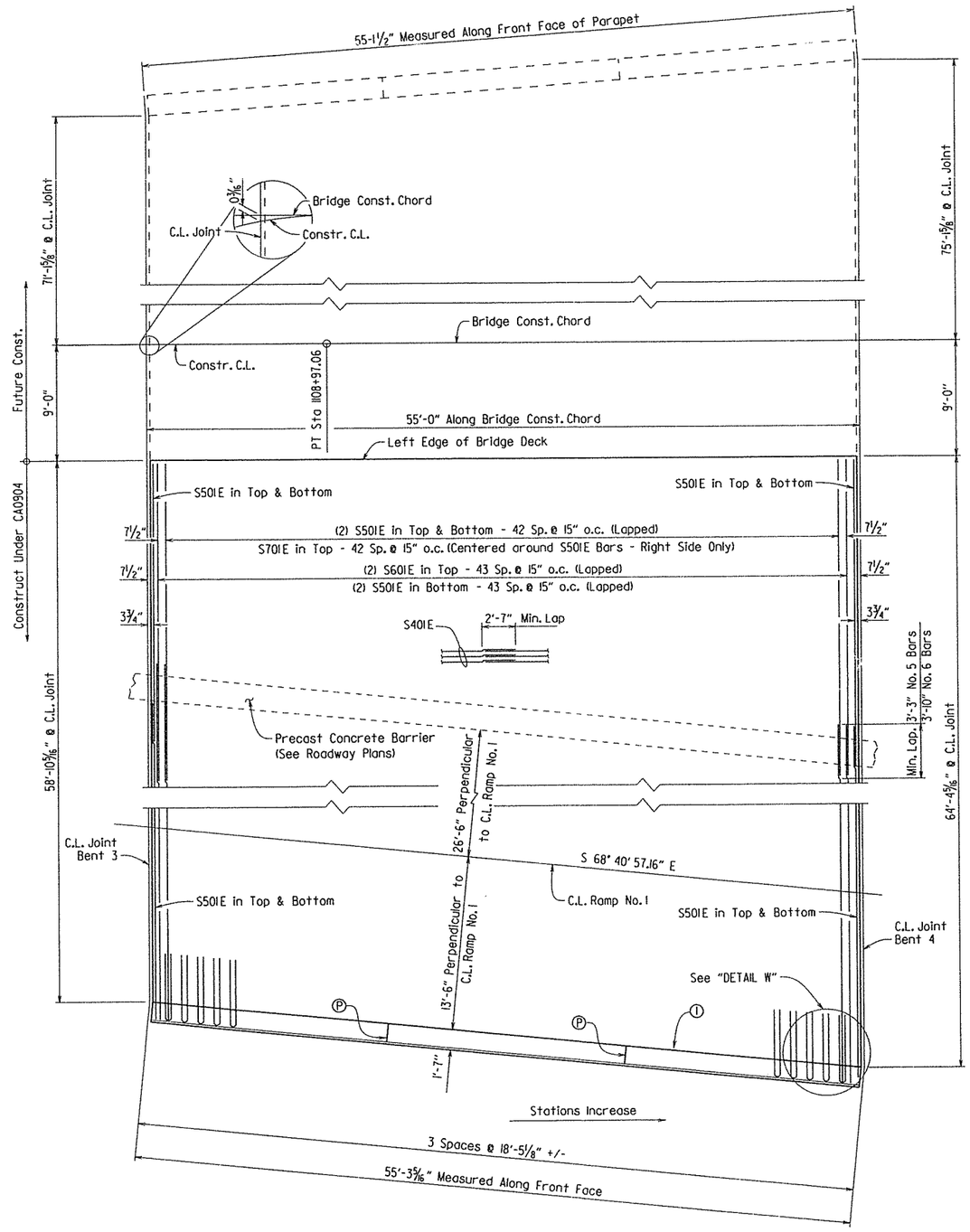
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SCALE: 3/16"=1'-0"

BRIDGE NO. 07277 DRAWING NO. 53813

PRINT DATE: 12/9/2013

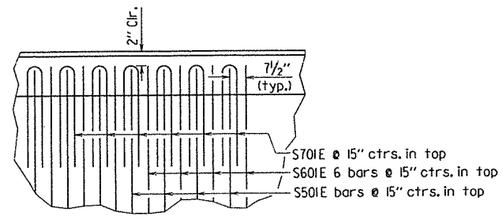
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	275	636
①	07277 -	SPAN DETAILS	- 53814	



REINFORCING PLAN

⅜" = 1'-0"

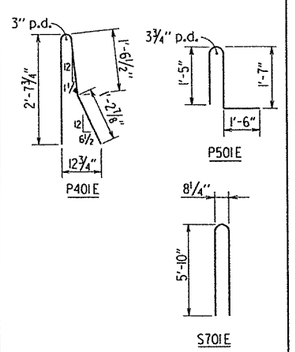


DETAIL W

No Scale

BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of bars.)
S401E	310	28'-8"	Str.	
S501E	268	34'-5"	Str.	
S601E	88	34'-9"	Str.	
S701E	43	12'-1"	6½"	
P401E	111	5'-6"	2"	
P402E	21	18'-0"	Str.	
P403E	8	6'-0"	Str.	
P501E	111	4'-6"	2½"	



Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

Ⓘ Parallel to C.L. Ramp No. 1

Ⓟ Partial Depth Parapet Joint at this location

Note: C.L. Joints at Bents are perpendicular to the Bridge Construction Chord. See "CONSTRUCTION CHORD DETAIL", Dwg. No. 53975 for additional details.

Note: All longitudinal lines shall be constructed concentric to their respective curves. See Dwg. No. 53793 for "HORIZONTAL CURVE DATA". The left edge of the bridge deck is parallel to the Bridge Construction Chord.

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SHEET 3 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13 FILENAME: bca0904xl2_sl.dgn

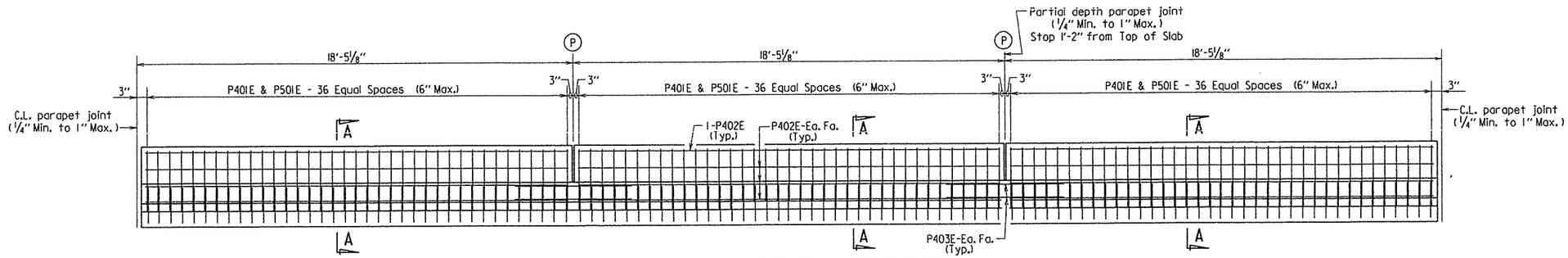
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DESIGNED BY: SWP DATE: 10/13

BRIDGE NO. 07277 DRAWING NO. 53814

PRINT DATE: 12/9/2013

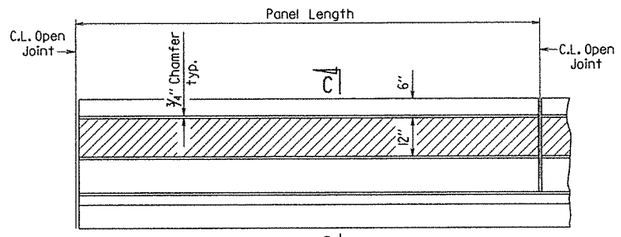
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				6	ARK.			
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(P) Partial depth parapet joint at this location

DETAILS OF PARAPET RAIL - RIGHT GUTTER

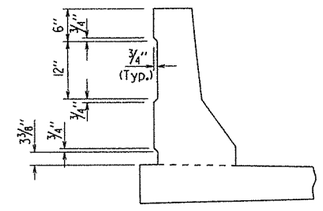
No Scale



Note: Recess shall be made continuous.

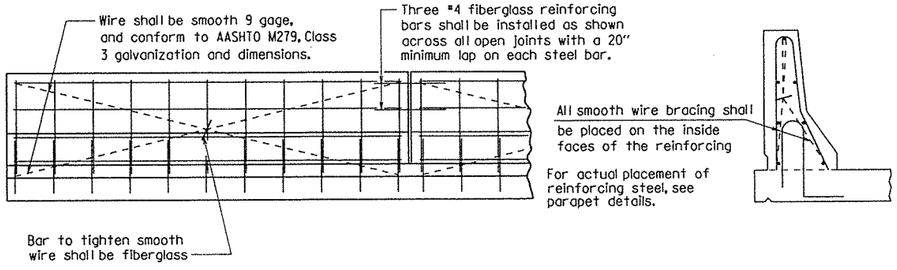
DETAILS OF PARAPET ENHANCEMENT

Outside Face of Rail
No Scale



SECTION C-C

No Scale

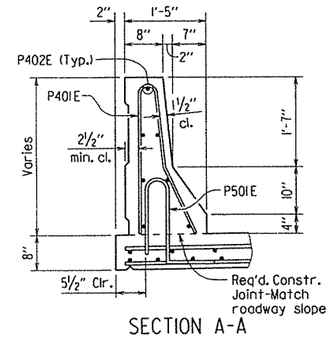


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

No Scale



SECTION A-A

Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
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SHEET 4 OF 4

DETAILS OF 55'-0" COMPOSITE W-BEAM SPAN NO. 3

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 10/24/13
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DESIGNED BY: SWP DATE: 10/13

FILENAME: bca0904x12_sl.dgn
SCALE: 3/8"=1'-0"

BRIDGE NO. 07277 DRAWING NO. 53815

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	277	636
				(1) 07277 -		SPAN DETAILS	- 53816	

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications Third Edition, with 2006 Interim Revisions.

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Grade 60, AASHTO M31 or M322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	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. 14991 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. 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 be Grade 60 (Yield Strength = 60,00 psi.) conforming to AASHTO M31 or M322, Type A, with mill test reports. 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 :
Structural steel shall be AASHTO M 270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50W)". Grade 50W steel shall not be painted unless noted otherwise. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e) except as noted on Dwg. No. 53818 for external load plates. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36 unless otherwise noted.

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. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05.

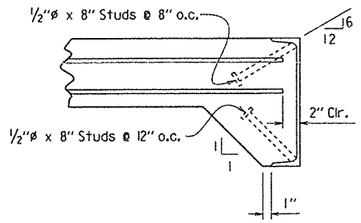
All beams shall be blocked in their true position in the shop with the webs horizontal as specified in Subsection 807.54(b). The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in their true position and this information shall become part 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 degrees F. A tolerance of ¼" +/- is allowed for camber.

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 falswork 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.

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 beam webs and on the bottom of the beam flanges. Holes for ¾" ø high-strength bolts may be 15/16 " ø diameter if a washer is supplied for use under both the nut and head of the bolt.

Diaphragms shall be installed as beams are erected. Unless otherwise noted, all bolts in diaphragms shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

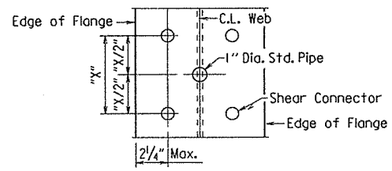
Bearings shall be installed in accordance with Subsection 808.08. This work and material are to be considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.



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.

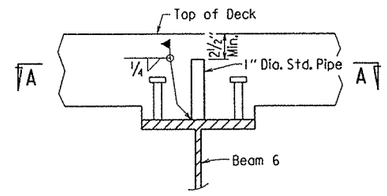
DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING

No Scale



VIEW A-A

No Scale



TRANSVERSE SCREED RAIL SUPPORT DETAIL

No Scale

Notes: The transverse screed rail supports shall be centered over the beam web and centered longitudinally between adjacent rows of shear connectors.

The pipe shall not interfere with the proper vertical position of the deck reinforcing steel.

The pipe shall be free of dirt, grease, rust, or other foreign substance before the deck is poured.

Care shall be exercised so as air voids do not exist in the pipe after placement of the deck concrete.

All welding shall be performed by a certified welder and in accordance with Subsections 802.13 and 807.26.

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BRIDGE ENGINEER

COMMON DETAILS FOR COMPOSITE W-BEAM SPANS PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

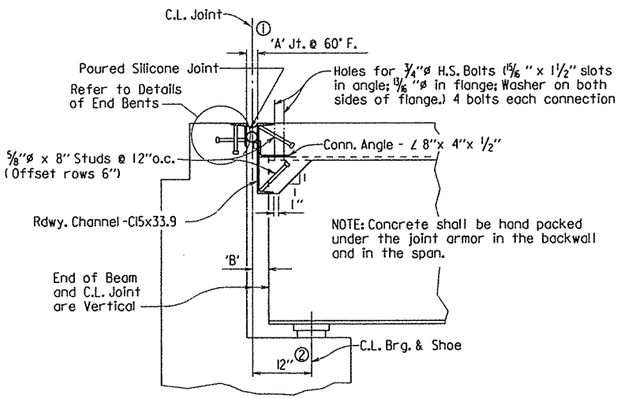
LITTLE ROCK, ARK.

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CHECKED BY: SWP DATE: 12/9/13 SCALE: 3/8"=1'-0"
DESIGNED BY: SWP DATE: 10/2013

BRIDGE NO. 07277 DRAWING NO. 53816

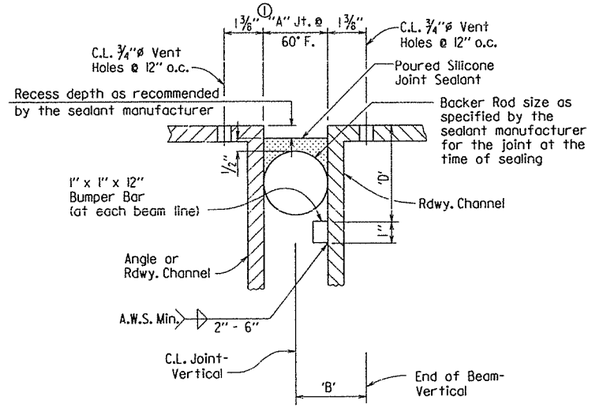
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	218	636
				①	07277 -	JOINT DETAILS	- 53817	



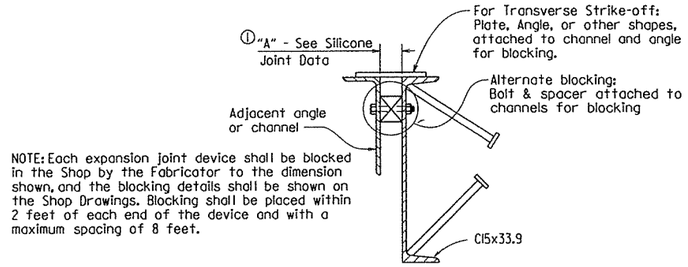
SECTION THRU JOINT AT BENTS 1 & 4

Scale: ¾" = 1'-0"



DETAIL OF POURED SILICONE JOINT SEAL

NO SCALE

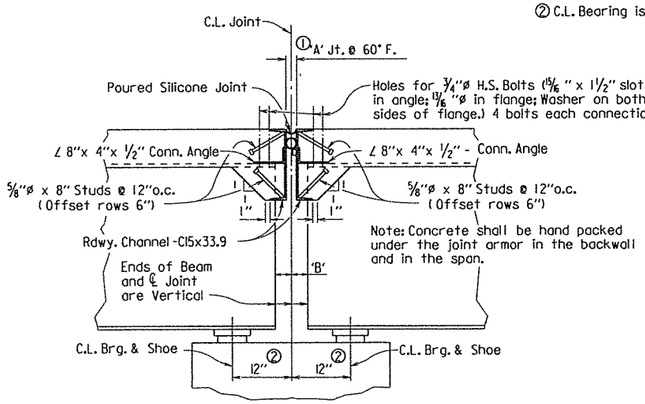


NOTE: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension shown, and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

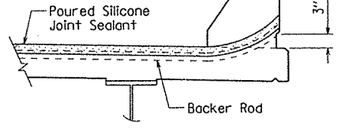
Scale: 1½" = 1'-0"

② C.L. Bearing is parallel to C.L. Joint



SECTION THRU JOINT AT BENTS 2 & 3

Scale: ¾" = 1'-0"



JOINT SEAL PLACEMENT AT CURB

NO SCALE

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			
All	2⅛"	2"	1⅞"	2¼" ±	1" x 1"	5"

①The 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° 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 that 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.

EXPANSION DEVICE INSTALLATION

BENTS 1 & 4

The Contractor may elect to install the expansion device for the end bents 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. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

BENTS 2 & 3

After all beams on both sides of the joint are erected, the blocked expansion device shall be installed and adjusted for grade. Connection bolts shall be tightened only on the span whose concrete will be poured first. Connection bolts on the second span shall be loosely installed to allow for thermal movements and for end rotation of the beams of the first span while the concrete deck is poured.

After the concrete on the first span has hardened and immediately prior to pouring concrete for the second span, the blocking shall be removed and the joint width shall be adjusted for temperature. Joint openings shown are for when concrete is poured at an air temperature of 60°F. If concrete is poured at other temperatures, set the joint width by interpolating. After the joint width has been set, the connection bolts on the second span shall be tightened and concrete in the second span can then be poured. A joint opening adjustment is not required for end rotation of the beams caused by the weight of the slab and parapets.

STATE OF ARKANSAS
CARL J. FUSELIER
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13

BRIDGE ENGINEER

DETAILS OF JOINTS PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

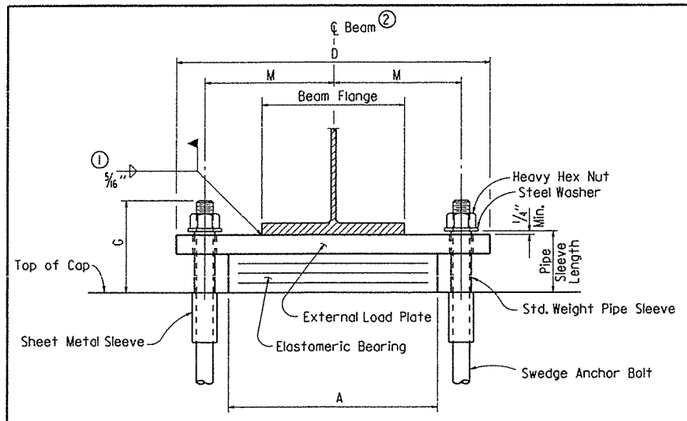
LITTLE ROCK, ARK.

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DESIGNED BY: SWP DATE: 10/.13

BRIDGE NO. 07277 DRAWING NO. 53817

PRINT DATE: 12/9/2013

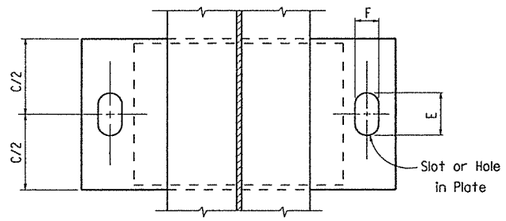
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				JOB NO.		CA0904	279	636
				①	07277 - ELASTOMERIC BEARINGS - 53818			



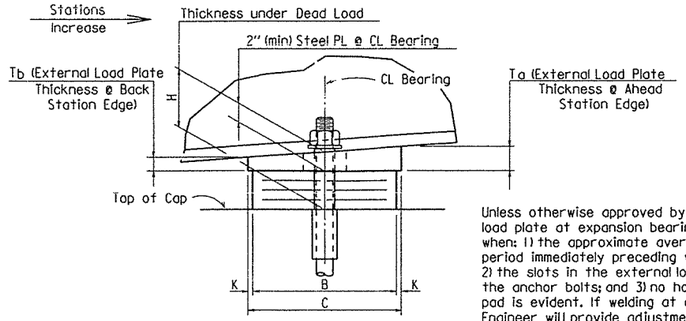
FRONT VIEW

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. Beam.



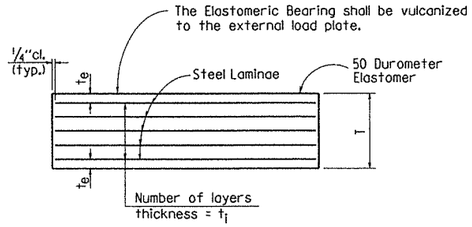
PLAN VIEW



SIDE VIEW

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.

Note: The direction of the bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in Table of Fabricator Variables.

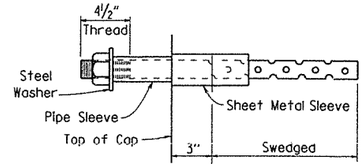


t_e = thickness of elastomer cover on top and bottom of pad

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 OPL 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 Beam Spans (M 270, Gr. 50W)"

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 shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, 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(e) for unpainted Grade 50W steel.

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 Beam Spans (M270, Gr. 50W)".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

Tabular Data by : TMG Date: 11/15/2013

Checked by : SWP Date: 12/9/13

Designed by : SLW Date: 10/13

TABLE OF FABRICATOR VARIABLES

*Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION BENT NO(S).	LOCATION SPAN 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 LAMINAE	T	EXTERNAL LOAD PLATE C	D	E	F	K	M	T_a	T_b	ANCHOR BOLT ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
07277	1	SPAN 1	EXP.	6	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	3 3/4"	2 5/8"	1/2"	9 1/4"	1.77"	2.23"	1 3/4"x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"
	2 Bk.	SPAN 1	FIX	6	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	2 5/8"	2 5/8"	1/2"	9 1/4"	1.78"	2.22"	1 3/4"x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"
	2 Ahd.	SPAN 2	FIX	7	146	9"	4 3/8"	17"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	29"	3 1/8"	3 1/8"	1/2"	11 1/4"	1.80"	2.20"	2 1/4"x32"	55	2 1/2" x 4 3/4"	4" x 8"	4"
	3 Bk.	SPAN 2	EXP.	7	146	9"	4 3/8"	17"	8"	3	1/2"	1/4"	4 @ 12 Ga.	2 1/16"	9"	29"	4"	3 1/8"	1/2"	11 1/4"	1.81"	2.19"	2 1/4"x32"	55	2 1/2" x 4 3/4"	4" x 8"	4"
	3 Ahd.	SPAN 3	FIX	8	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	2 5/8"	2 5/8"	1/2"	9 1/4"	1.79"	2.21"	1 3/4"x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"
	4	SPAN 3	EXP.	8	111	7"	3 13/16"	13 1/2"	9"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	10"	24 1/2"	3 3/4"	2 5/8"	1/2"	9 1/4"	1.80"	2.20"	1 3/4"x 26"	55	2" x 4 1/4"	4" x 8"	3 3/8"

PRINT DATE: 09-DEC-2013

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/1/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS
PEACH ORCHARD ROAD

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: Nov.12.96

CHECKED BY: AMS DATE: Jul.7.05

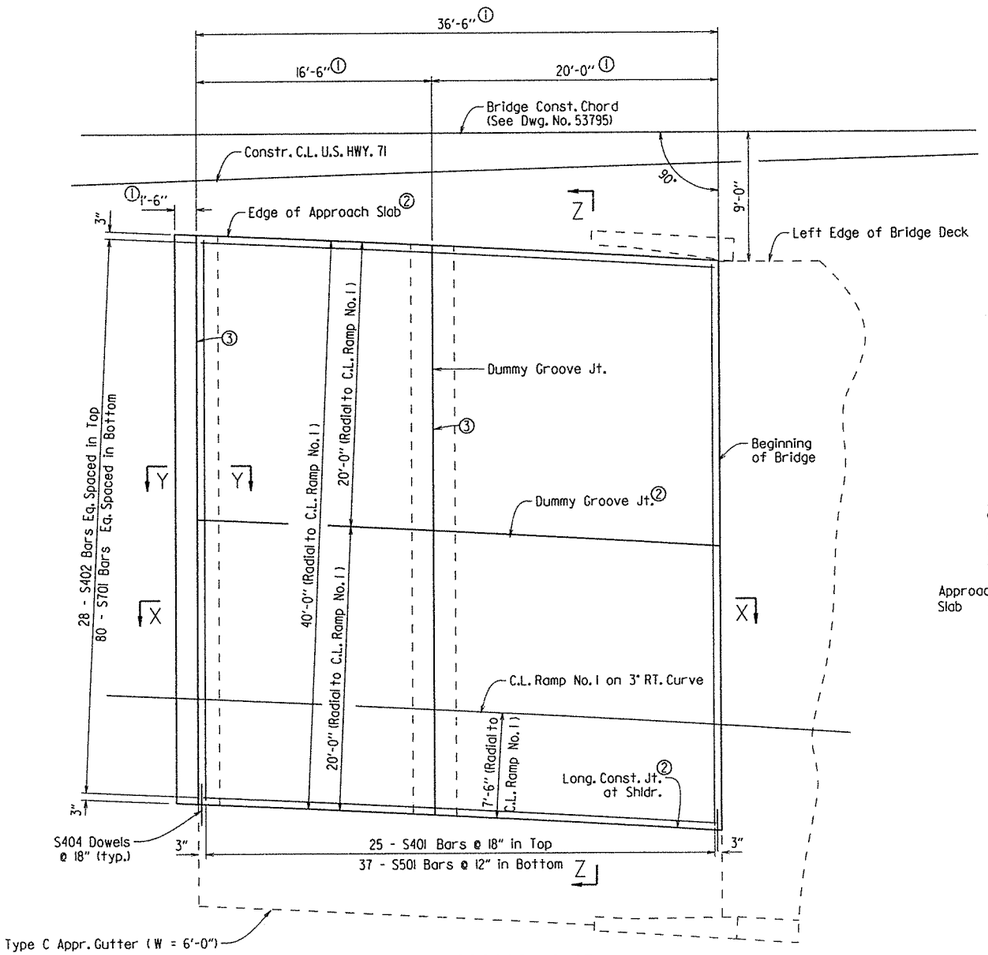
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BRIDGE NO. 07277 DRAWING NO. 53818

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				①	07277 - APPROACH SLAB		- 53819	

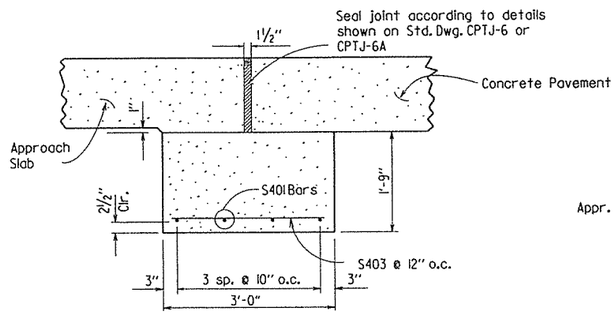


PLAN - APPROACH SLAB
3/16" = 1'-0"

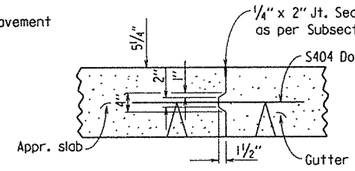
① Measured Along Bridge Construction Chord

② Longitudinal Line Concentric to C.L. Ramp No.1

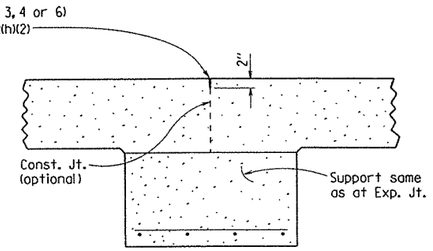
③ Transverse Line Parallel to Beginning of Bridge



SECTION Y - Y
¾" = 1'-0"



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
3/4 " = 1'-0"



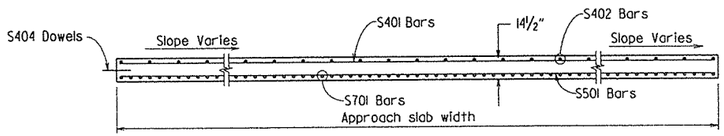
DETAILS OF DUMMY GROOVED JOINT
3/4 " = 1'-0"

BAR LIST

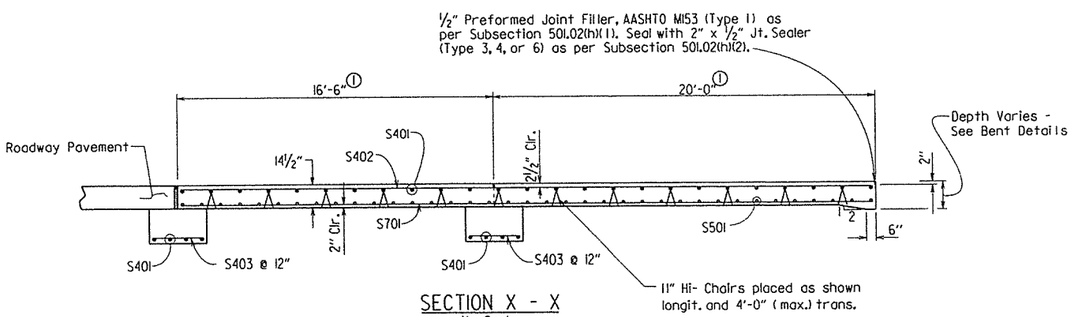
Mark	No. Req'd	Length
S401	33	39'-8"
S402	28	36'-2"
S403	80	2'-8"
S404	25	3'-0"
S501	37	39'-8"
S701	80	36'-2"

APPROX. QUANTITIES (FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yards)
9,190	81.10



SECTION Z - Z
No Scale



SECTION X - X
No Scale

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Type Special 5 Approach Slab will be measured and paid for in in accordance with Section 504.

Surface Finish shall be that used on the bridge deck.

STATE OF ARKANSAS
Carl R. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 5 APPROACH SLAB PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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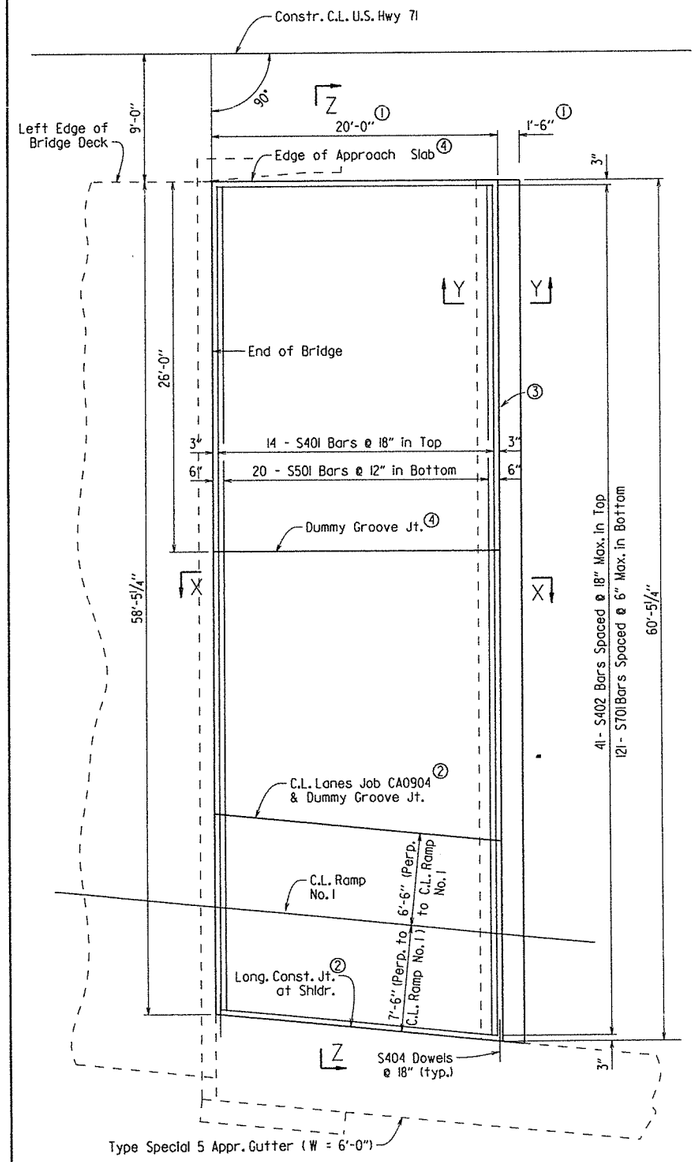
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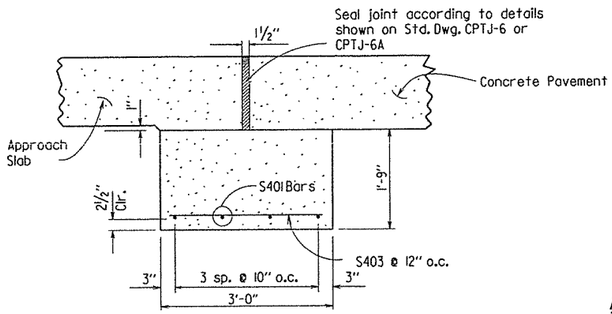
BRIDGE NO. 07277 DRAWING NO. 53819

PRINT DATE: 12/9/2013

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				JOB NO.		CA0904	281	636
				①	07277 -	APPROACH SLAB	- 53820	



PLAN - APPROACH SLAB
3/16" = 1'-0"



SECTION Y - Y
¾" = 1'-0"

BAR LIST

Mark	No. Req'd	Length
S401	18	Varies 58'-1" to 60'-1"
S402	41	19'-8"
S403	61	2'-8"
S404	14	3'-0"
S501	20	Varies 58'-1" to 60'-1"
S701	121	19'-8"

① Measured Along Construction C.L. U.S. Hwy 71

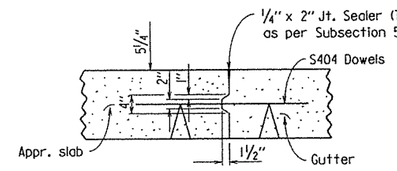
② Longitudinal Line Concentric to C.L. Ramp No. 1

③ Transverse Line Parallel to End of Bridge

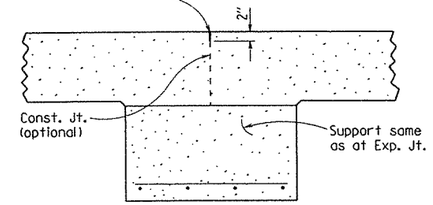
④ Longitudinal Line Parallel to Construction C.L. U.S. Hwy 71

APPROX. QUANTITIES (FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yards)
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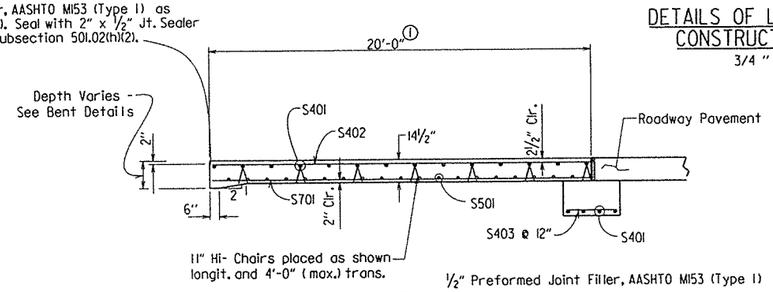


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
3/4 " = 1'-0"

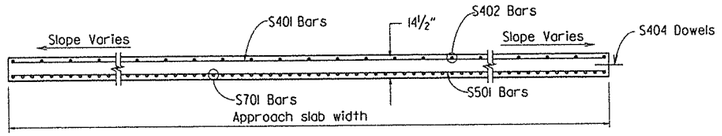


DETAILS OF DUMMY GROOVED JOINT
3/4 " = 1'-0"

½" Preformed Joint Filler, AASHTO M153 (Type 1) as per Subsection 501.02(h)(1). Seal with 2" x ½" Jt. Sealer (Type 3, 4, or 6) as per Subsection 501.02(h)(2).



SECTION X - X
No Scale



SECTION Z - Z
No Scale

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi.)

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Type Special 6 Approach Slab will be measured and paid for in in accordance with Section 504.

Surface Finish shall be that used on the bridge deck.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 6 APPROACH SLAB PEACH ORCHARD RD.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 9/20/13 FILENAME: bca0904x12_as.dgn

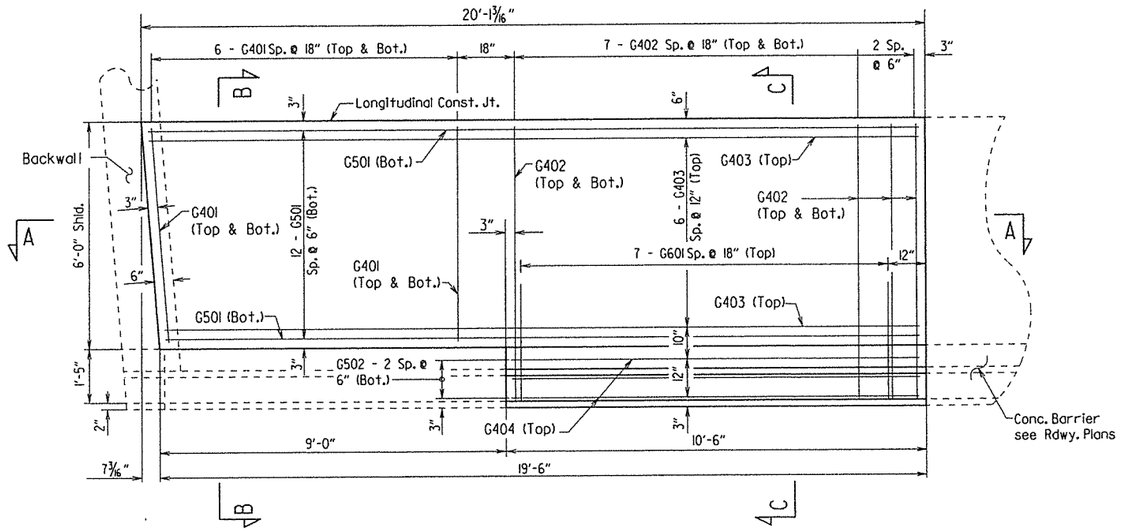
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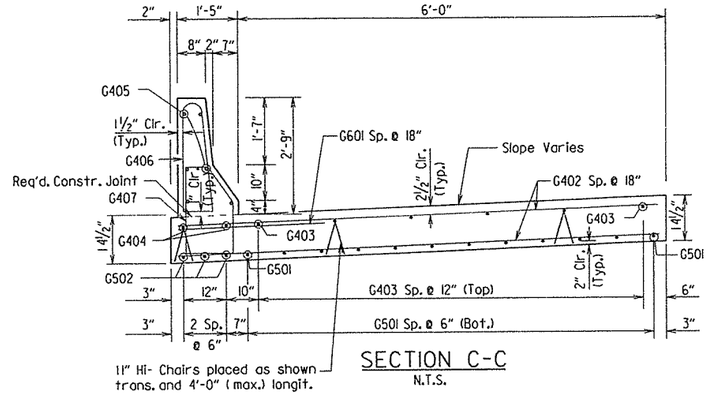
BRIDGE NO. 07277 DRAWING NO. 53820

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		CA0904	282	636
				① 07277 - APPROACH GUTTER - 53821				



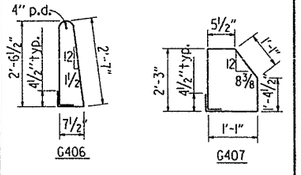
PLAN OF TYPE SPECIAL APPROACH GUTTER
N.T.S.



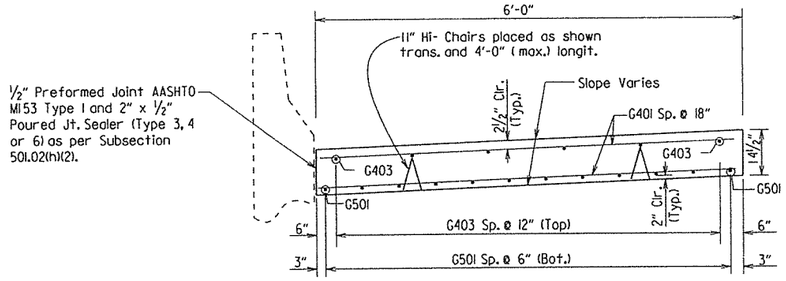
SECTION C-C
N.T.S.

BAR LIST FOR ONE GUTTER

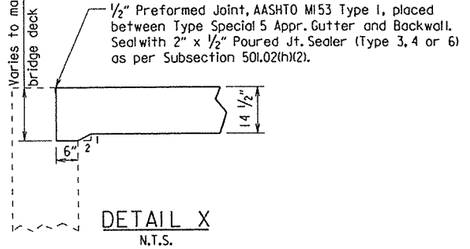
MK	NO. REQ'D	Length	Pin Dia.	Bending Diagram
G401	12	5'-8"	Str.	(Dimensions are out to out of bars.)
G402	18	7'-3"	Str.	
G403	6	①	Str.	
G404	2	10'-2"	Str.	
G405	6	10'-2"	Str.	
G406	15	6'-4"	2"	
G407	15	6'-7"	2"	
G501	12	①	Str.	
G502	3	10'-2"	Str.	
G601	7	3'-0"	Str.	



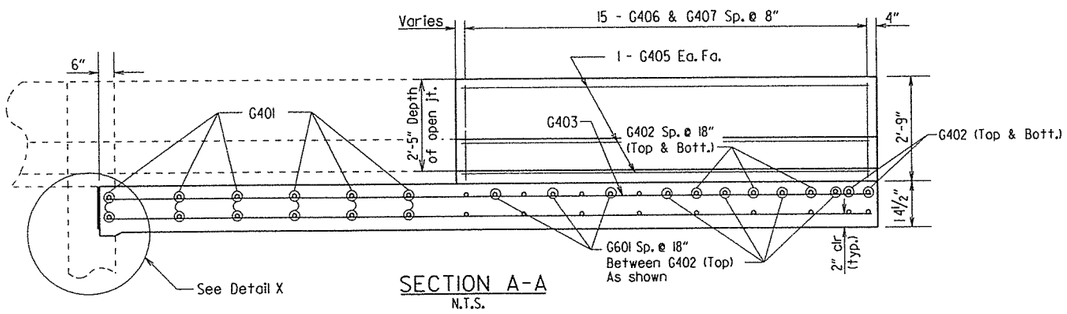
① Length Varies from 19'-2" to 19'- 8"



SECTION B-B
N.T.S.



DETAIL X
N.T.S.



SECTION A-A
N.T.S.

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcing Steel shall be Grade 60 (yeild strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Type Special Approach Gutter will be measured and paid for in accordance with Section 504 of the Standard Specifications.

APPROX. QUANTITIES
(FOR INFORMATION ONLY)

Reinforcing Steel (lbs.)	Concrete (cubic yards)
700	7.10

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
12/11/13

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 5 APPROACH GUTTER PEACH ORCHARD RD.

ROUTE SEC.

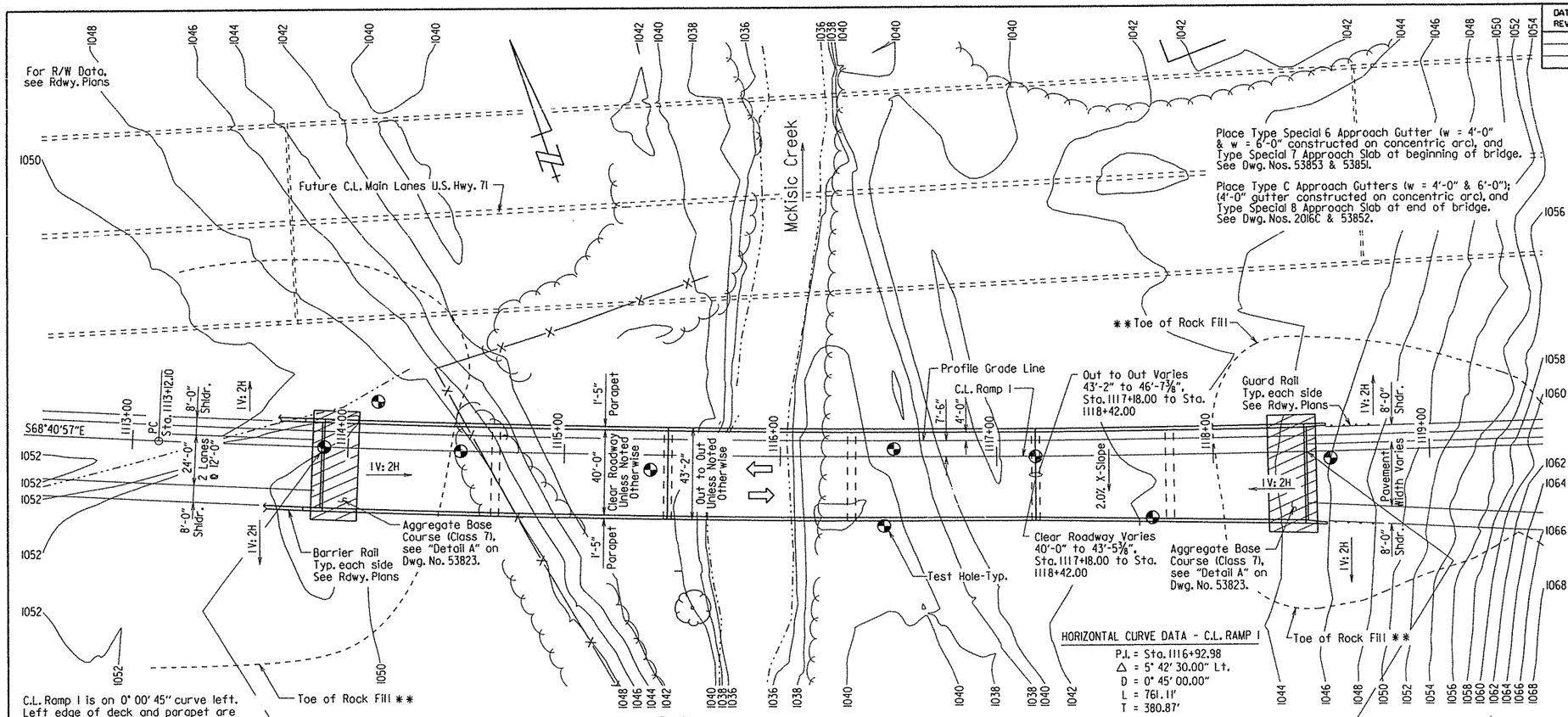
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 9/20/13
CHECKED BY: JCT DATE: 11/24/13
DESIGNED BY: STD DATE: —
FILENAME: bca0904xl2_ag.dgn
SCALE: No Scale

BRIDGE NO. 07277 DRAWING NO. 53821

PRINT DATE: 12/11/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	283	636
				(1) 07279		LAYOUT - RAMP I	53822	



GENERAL NOTES

BENCH MARK: The GPS and CTL Points listed in the Survey Control Details may be used as Bench Marks.

Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 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.

LIVE LOADING: HL93 SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M31 or M322, Type A)	fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 50W)	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 S Tined Bridge Roadway Surface Finish.

TEXTURED COATING FINISH: A Class 3 Textured Coating Finish shall be applied to bridge surfaces and barrier rail as specified in Special Provision Job CA0904 "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.

SUBSTRUCTURE

STEEL PILING: Piling shall be HP 12x53; AASHTO M270, Gr. 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 and Limestone on the boring legend. Piling 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.

FOOTINGS: Footings for interior Bents shall be set a minimum of 2'-0" into material designated as Chert and Limestone on the boring legend and shall be set at or below the channel bottom. Foundations for footings shall be prepared in accordance with subsection 801.04 and backfilled according to subsection 801.08. Rock excavation 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.

See detail drawings for additional notes.

DETAIL DRAWINGS:	DRAWING NUMBER(S):
End Bents	53824, 53825, 53831, 53832
Intermediate Bents	53826 - 53830
159'-0" Cont. Comp. W-Beam Unit (Unit 1)	53833 - 53837
170'-0" Cont. Comp. W-Beam Unit (Unit 2)	53838 - 53842
124'-0" Cont. Comp. W-Beam Unit (Unit 3)	53843 - 53847
Joint Details	53848
Elastomeric Bearings	53850
Type Special 6 Approach Gutter	53853
Type C Approach Gutter	2016C
Type Special 7 Approach Slab	53851
Type Special 8 Approach Slab	53852
Steel Piling	14955A

SHEET 1 OF 2

LAYOUT OF RAMP I BRIDGE OVER McKISIC CREEK HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S) BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS Carl J. Fuselier REGISTERED PROFESSIONAL ENGINEER No. 7510 12/11/13 CARL J. FUSELIER

BRIDGE ENGINEER

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CHECKED BY: DHP DATE: 12-9-13 SCALE: 1" = 30'-0"

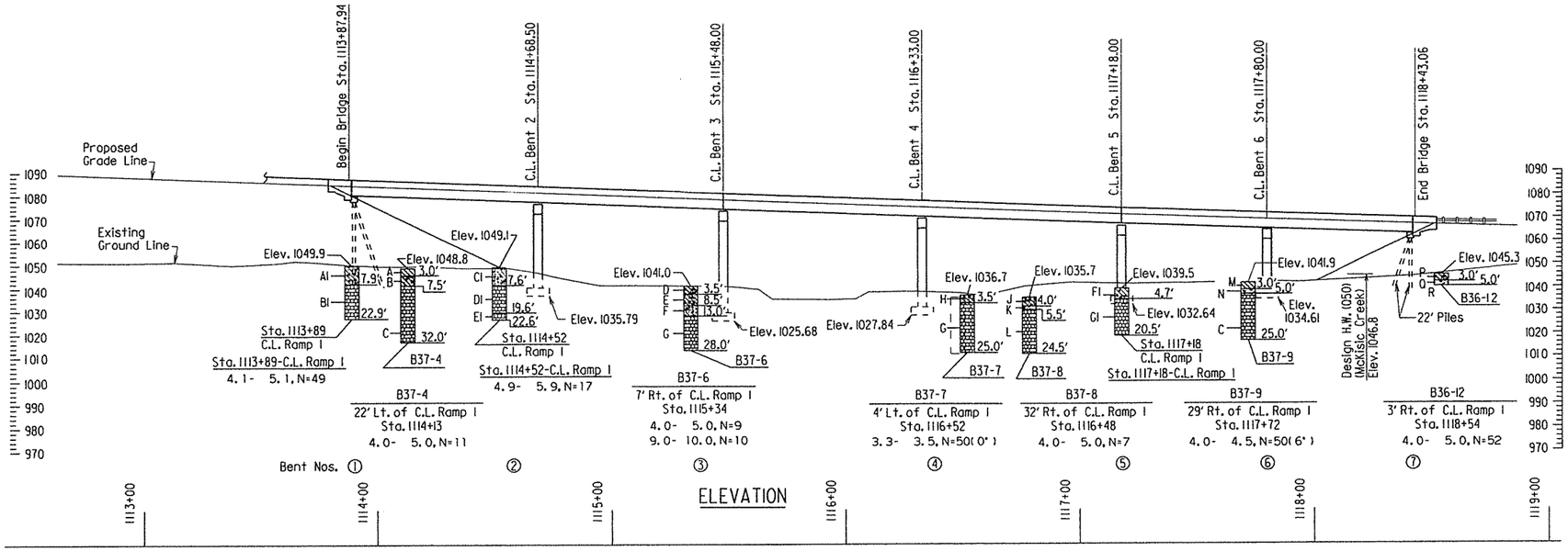
DESIGNED BY: CSL DATE: Sept. 2013

BRIDGE NO. 07279 DRAWING NO. 53822

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	284	636
① 07279		LAYOUT - RAMP I		53823



HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	**WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	10800	1045.8	1045.7
Base	100	12264	1046.7	1046.7
Extreme	500	16167	1048.0	1048.1
Overtopping	>500	-----	-----	-----

* Unconstricted water surface without structure or roadway approaches.
Drainage area = 21.8 square miles.
Historical H.W. Elev. = N/A ft.

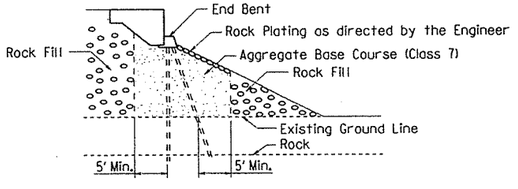
** Includes Proposed Bridge in addition to bridges for Future Main Lanes and Future Ramp 4 immediately downstream of this location.

BORING LEGEND

Materials designated A - R refer to borings B36-12, B37-4, B37-6, B37-7, B37-8, and B37-9, obtained from Geotechnical Investigation report by others dated April 2003. Materials designated AI- GI refer to borings obtained from Geotechnical Investigation Report by AHTD dated June 2007.

A-LEAN CLAY, brown, moist (CL)
B-SILTY LEAN CLAY, few sand and gravel red, very stiff, moist (CL-ML)
C-CHERT, stratified, some limestone seams, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
D-SILTY LEAN CLAY, brown, medium stiff, moist (CL-ML)
E-SANDY LEAN CLAY, little gravel brown, stiff (CL)
F-CLAYEY SAND, little gravel red, loose, wet (SC)
G-LIMESTONE, stratified, some chert seams and inclusions, light gray and gray, very fine grained, medium bedded, fresh, hard, solid
H-CLAYEY GRAVEL, few sand red, dense, moist (GC)
J-SANDY LEAN CLAY, dark brown, very soft, wet (CL)
K-SANDY GRAVEL, brown, medium dense, wet (GP)
L-CHERT, stratified, some limestone seams, light gray and gray, very fine grained, thin to medium bedded, fresh, solid
M-LEAN CLAY, dark brown (CL)
N-SANDY GRAVEL, brown, very dense, dry (GP)
P-SILTY LEAN CLAY, dark brown (CL-ML)
O-SANDY GRAVEL, little clay light brown, very dense, dry (GP)
R-Auger refusal on apparent limestone

AI-Moist, Dense, Reddish Brown and Gray Clayey Gravel (Chert Fragments) with Sand
BI-Hard, Gray Cherty Limestone
CI-Moist, Medium Dense, Reddish Brown and Gray Sand with Clay and Gravel (Chert Fragments)
DI-Hard, Gray Cherty Limestone
EI-Hard, Gray Fractured Cherty Limestone
FI-Moist, Hard, Brown Gravely (Chert Fragments) Clay
GI-Hard, Gray Cherty Limestone with some Dark Gray Shale Seams



Where rock fill is used 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) and Rock Plating shall be paid for as "Rock Fill".

At the Contractor's option preboring or other methods as approved by the Engineer may be used to facilitate pile installation thru 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
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF RAMP I BRIDGE OVER McKISIC CREEK
HWY. 71B - HWY. 72 SOUTH (BELLA VISTA BYPASS) (S)
BENTON COUNTY

ROUTE 71 SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION

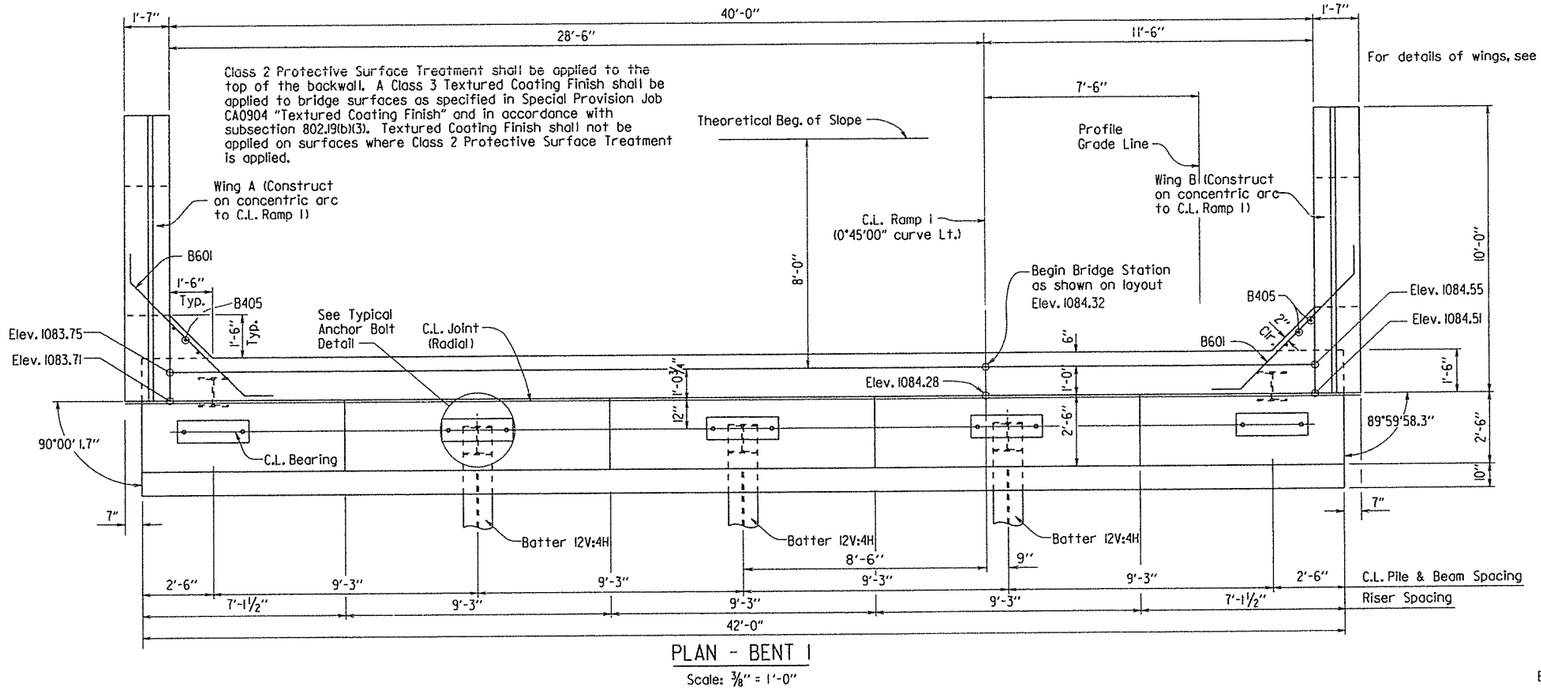
LITTLE ROCK, ARK.

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DESIGNED BY: CSL DATE: Sept 2013

BRIDGE NO. 07279 DRAWING NO. 53823

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	285	636
				①	07279	BENT I	53824	

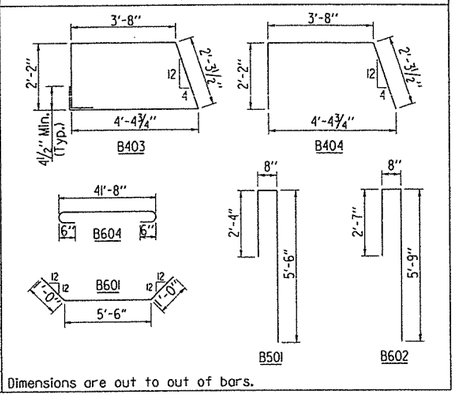


PLAN - BENT I

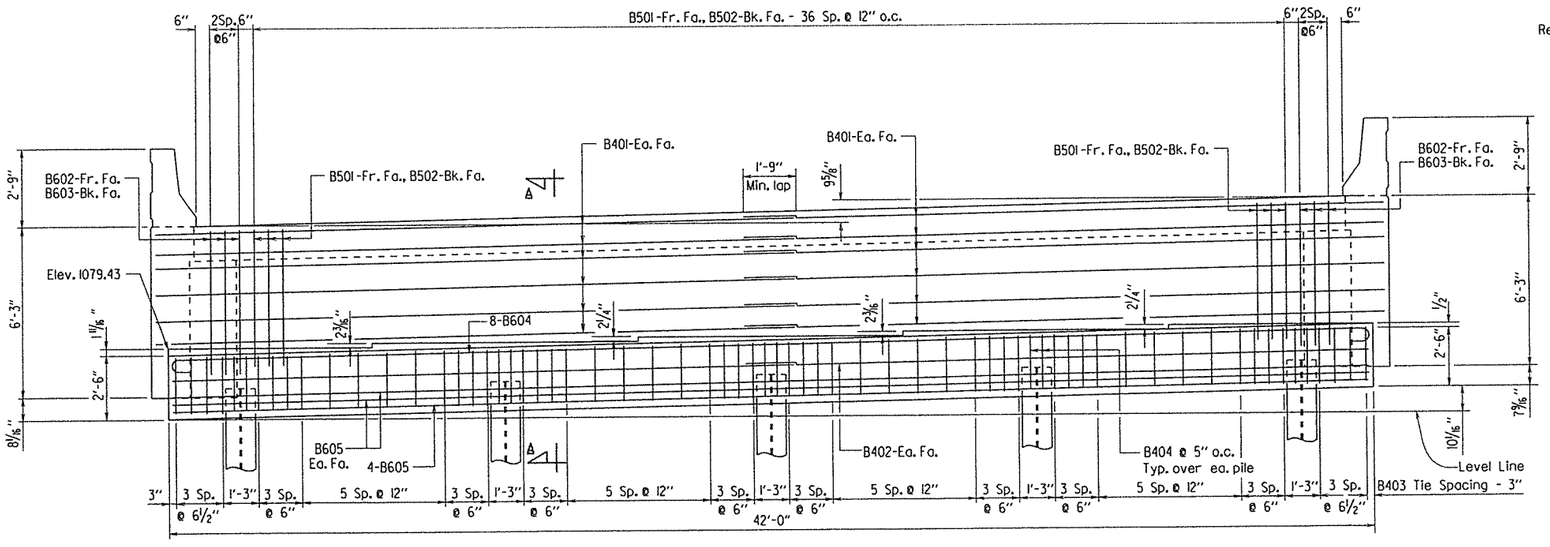
Scale: 3/8" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	20	22'-4"	Str.	
B402	4	21'-9"	Str.	
B403	56	12'-11"	2"	
B404	10	8'-0"	2"	
B405	6	4'-8"	Str.	
B501	37	8-4"	2 1/2"	
B502	37	5-6"	Str.	
B601	8	7'-6	4 1/2"	
B602	6	8'-9	4 1/2"	
B603	6	4'-6	Str.	
B604	8	43'-0"	4 1/2"	
B605	8	41'-8"	Str.	



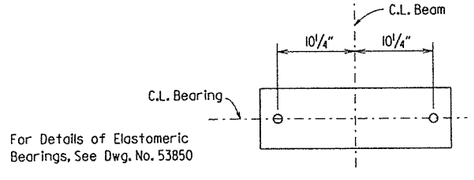
Dimensions are out to out of bars.



ELEVATION

Looking Back

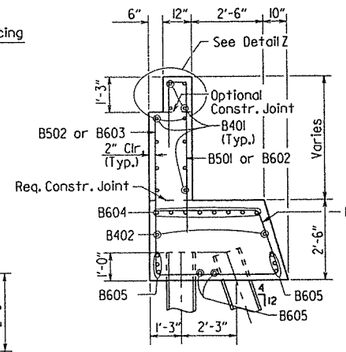
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For Details of Elastomeric Bearings, See Dwg. No. 53850

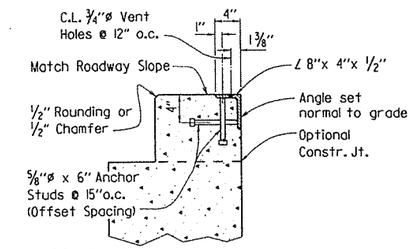
TYPICAL ANCHOR BOLT LAYOUT

Scale: 3/4" = 1'-0"



SECTION - A-A

No Scale



For additional joint details, See Dwg. No. 53848

DETAIL Z

No Scale

Concrete shall be hand packed under the joint armor in the backwall.

GENERAL NOTES

All concrete shall be Class "S" with a 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 be Grade 60 (Yield Strength = 60,000 psi) conform to AASHTO M31 or M322, Type A, with Mill Test Reports.

Structural steel in end bents shall be M270, Gr.50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr.50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

The backwall below the paving bracket shall not be poured until the beams are in place. The backwall above the paving bracket shall not be poured before the superstructure slab in the adjacent span has been placed. Avoid having heavy construction equipment behind the backwall until the concrete for the span has been completed. See Drawing No. 53848 for additional information.

Piling shall be HP12x53; AASHTO M270, Gr. 50.

For additional information, see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT 1
McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 09/17/13 FILENAME: bca0904x13_b1.dgn

CHECKED BY: DHP DATE: 12-9-13 SCALE: 3/8" = 1'-0"

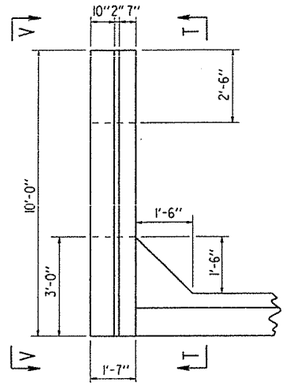
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BRIDGE NO. 07279 DRAWING NO. 53824

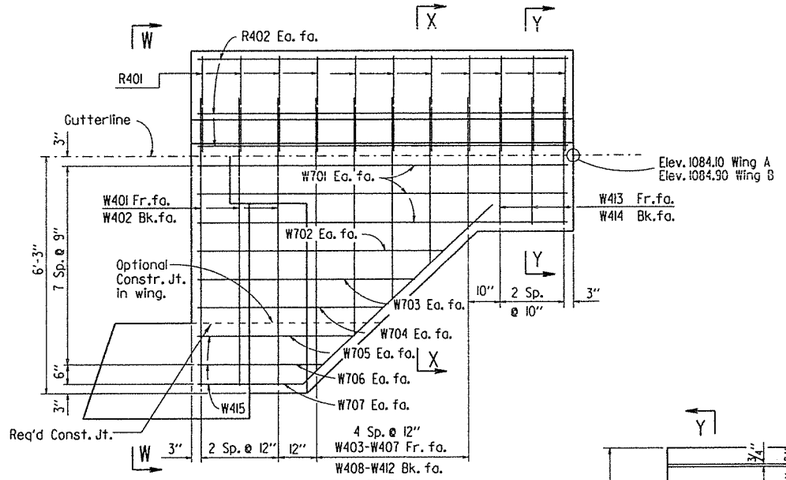
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	286	636
				(1) 07279		BENT 1 DETAILS	53825	

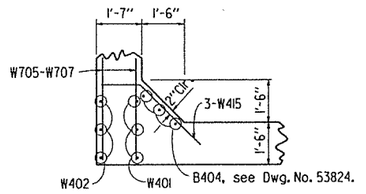
Wings are Constructed on Arc Concentric to C.L. Ramp 1.



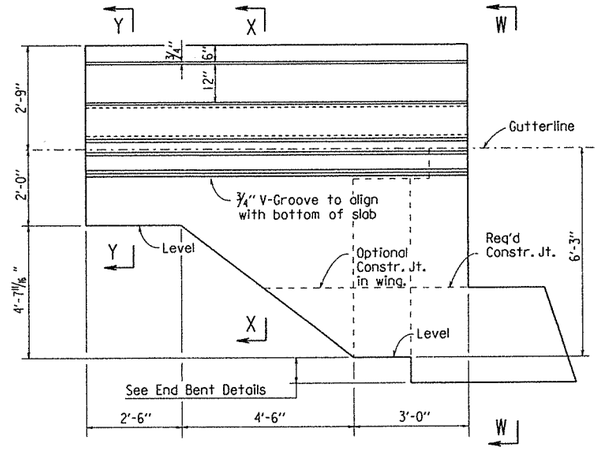
PLAN OF RAIL
3/8" = 1'-0"



VIEW T-T
1/2" = 1'-0"



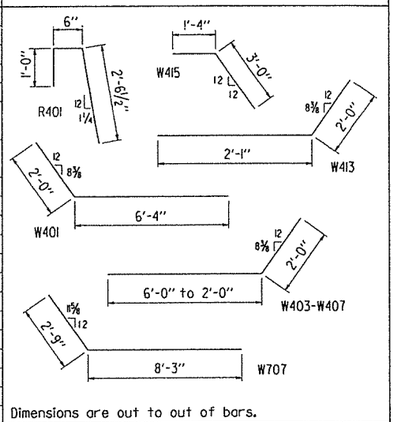
SECTION Z-Z
3/8" = 1'-0"



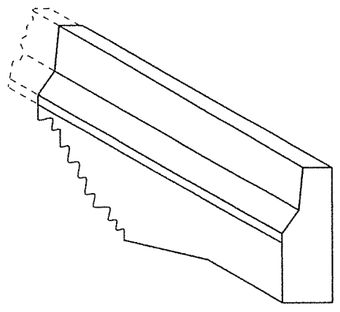
VIEW V-V
1/2" = 1'-0"

BAR LIST

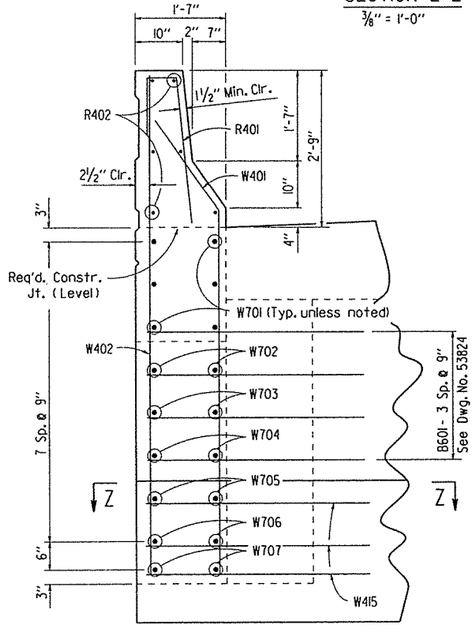
Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram
R401	22	3'-11"	2"	
R402	12	9'-8"	Str.	
W401	6	8'-4"	2"	
W402	6	8'-8"	Str.	
W403-W407	2 ea.	8'-0" to 4'-0"	2"	
W408-W412	2 ea.	8'-5" to 4'-6"	Str.	
W413	6	4'-1"	2"	
W414	6	4'-5"	Str.	
W415	6	4'-4"	2"	
W701	12	9'-8"	Str.	
W702	4	6'-3"	Str.	
W703	4	5'-6"	Str.	
W704	4	4'-9"	Str.	
W705	4	4'-0"	Str.	
W706	4	3'-4"	Str.	
W707	4	11'-0"	5 1/4"	



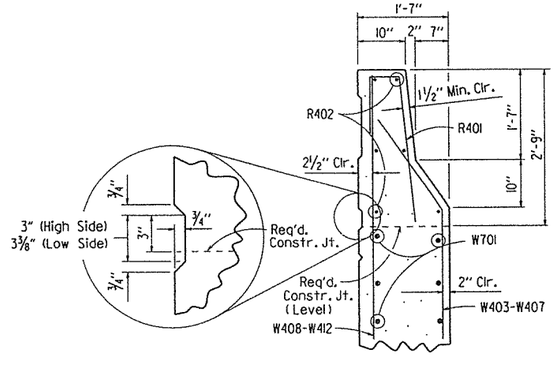
Dimensions are out to out of bars.



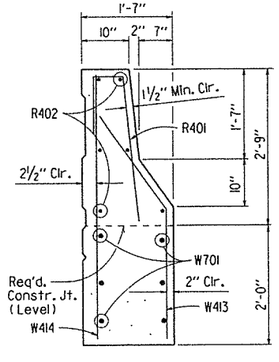
THREE DIMENSIONAL VIEW OF RAIL
No Scale



VIEW W-W
3/4"=1'-0"



SECTION X-X
3/4"=1'-0"



SECTION Y-Y
3/4"= 1'-0"

STATE OF ARKANSAS
Carl J. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
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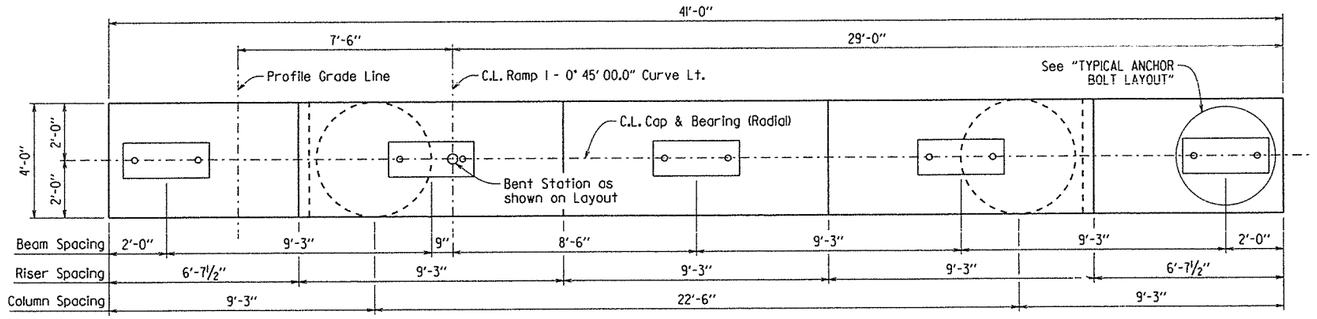
SHEET 2 OF 2
DETAILS OF BENT 1
McKISIC CREEK RAMP 1
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

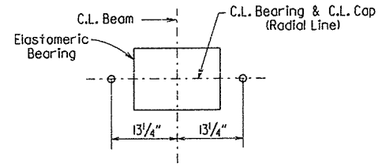
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SCALE: AS SHOWN

BRIDGE NO. 07279 DRAWING NO. 53825

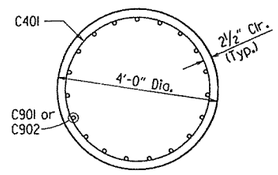
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	287	636
				①		07279 - INT. BENTS - 53826		





TYPICAL ANCHOR BOLT LAYOUT
No Scale

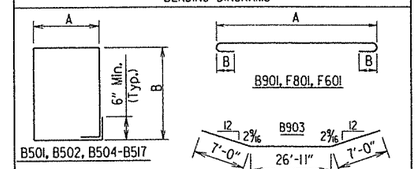


SECTION D-D
No Scale

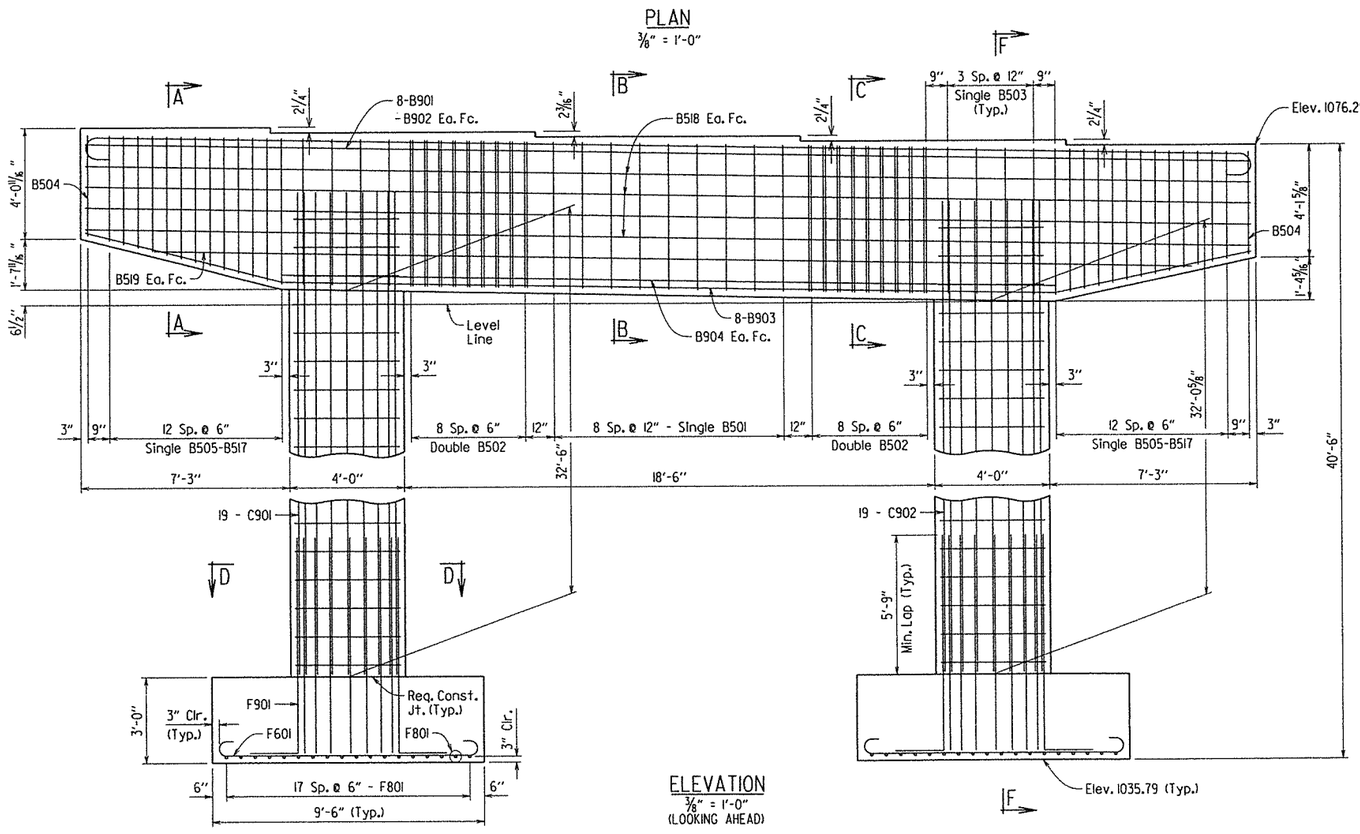
BAR LIST

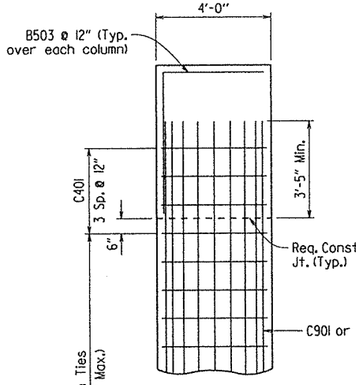
MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B501	9	18'-2"	3'-8"	5'-2"	2½"
B502	36	15'-2"	2'-2"	5'-2"	2½"
B503	8	13'-10"	3'-8"	5'-2"	2½"
B504	2		3'-8"	3'-8½"	2½"
B505-B517	2 each	Var. 15'-7" to 18'-2"	3'-8"	Var. 3'-10½" to 5'-2"	2½"
B518	8	40'-8"			Str.
B519	2	35'-7"			Str.
B901	8	43'-2"	40'-8"	10"	9"
B902	2	40'-8"			Str.
B903	8	40'-11"			9"
B904	2	26'-6"			Str.
C401	72	12'-4"			3"
C901	19	37'-4"			Str.
C902	19	36'-10"			Str.
F601	54	10'-4"	9'-0"	6"	4½"
F801	36	15'-4"	13'-6"	8"	6"
F901	38	11'-9"	10'-4"	1'-8"	9"

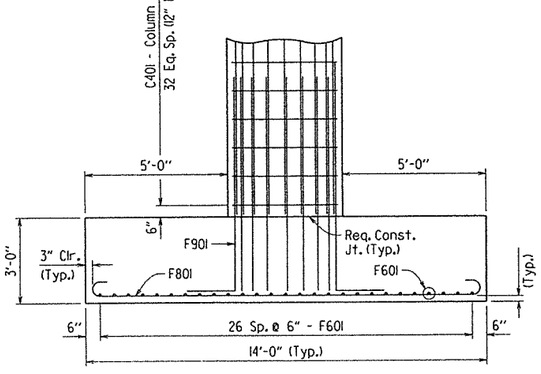
BENDING DIAGRAMS



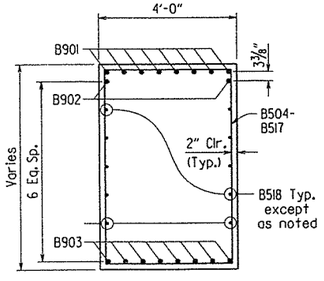
Dimensions are out to out of bars.



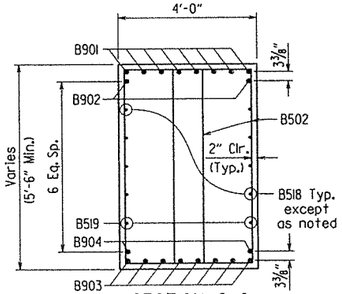




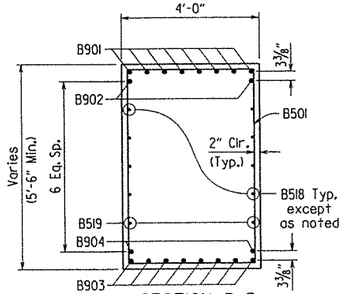
SECTION F-F
⅜" = 1'-0"



SECTION A-A
No Scale



SECTION C-C
No Scale



SECTION B-B
No Scale

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners are to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER 12/11/13

BRIDGE ENGINEER

DETAILS OF BENT 2
McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

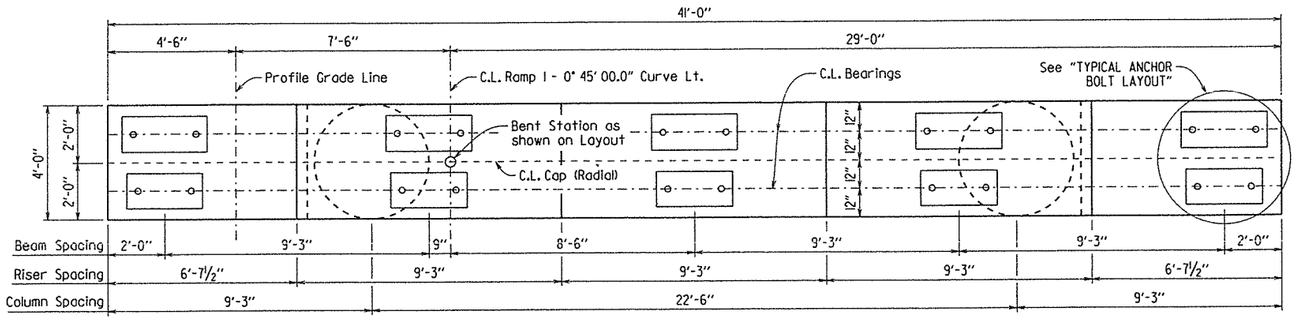
LITTLE ROCK, ARK.

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CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown
DESIGNED BY: CMW DATE: 9/13

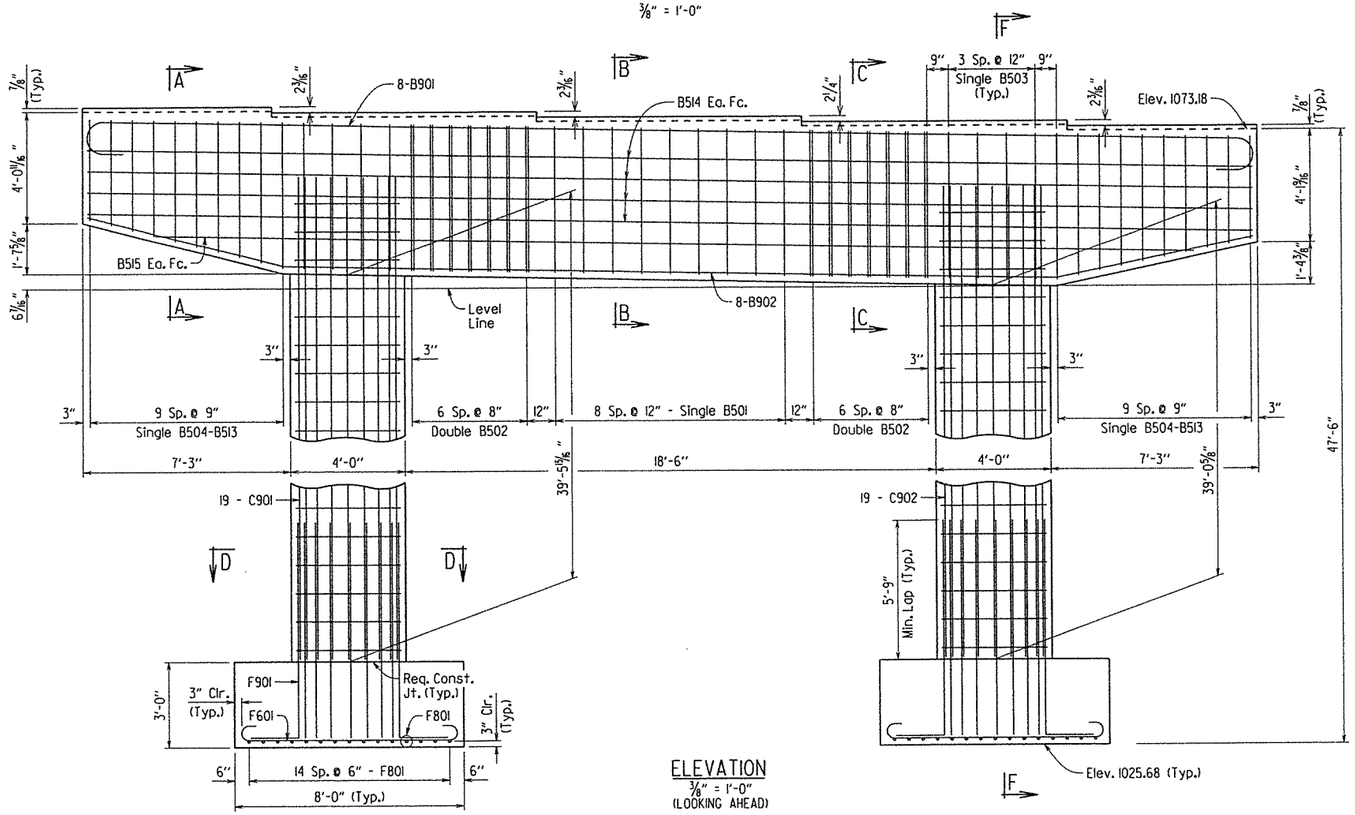
BRIDGE NO. 07279 DRAWING NO. 53826

PRINT DATE: 12/9/2013

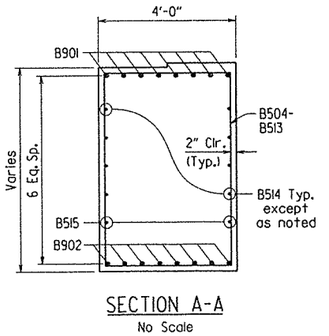
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	288	636
				①		07279 - INT. BENTS - 53827		



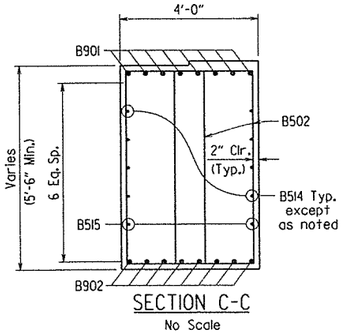
PLAN
⅜" = 1'-0"



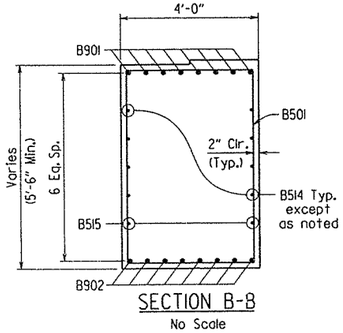
ELEVATION
⅜" = 1'-0"
(LOOKING AHEAD)



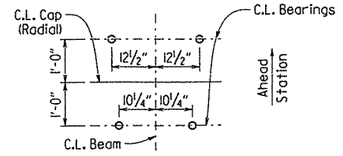
SECTION A-A
No Scale



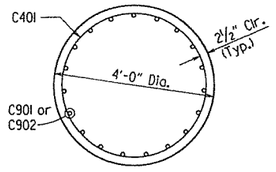
SECTION C-C
No Scale



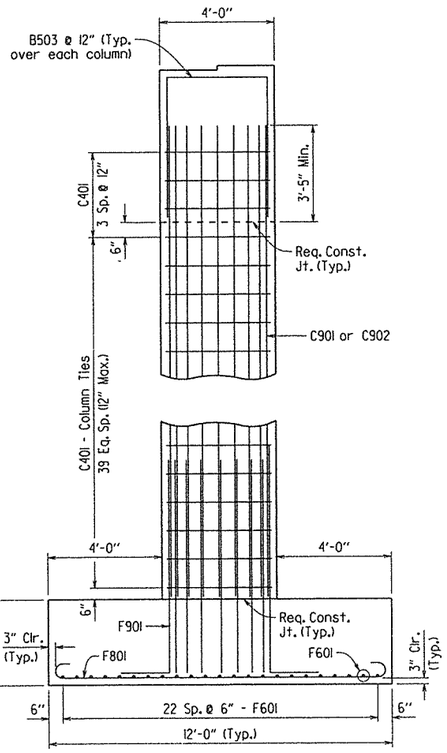
SECTION B-B
No Scale



TYPICAL ANCHOR BOLT LAYOUT
No Scale



SECTION D-D
No Scale

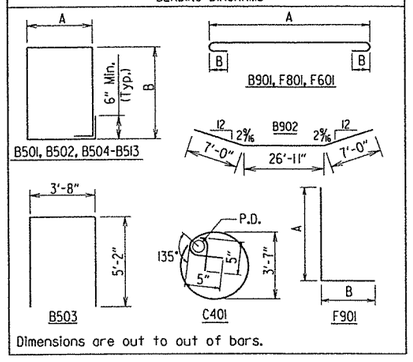


SECTION F-F
⅜" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B501	9	18'-2"	3'-8"	5'-2"	2½"
B502	28	15'-2"	2'-2"	5'-2"	2½"
B503	8	13'-10"	3'-8"	5'-2"	2½"
B504-B513	2 each	Var. 15'-3" to 18'-2"	3'-8"	Var. 3'-8½" to 5'-2"	2½"
B514	8	40'-8"			Str.
B515	2	35'-0"			Str.
B901	8	43'-2"	40'-8"	10"	9"
B902	8	40'-11"			9"
C401	86	12'-4"			3"
C901	19	44'-6"			Str.
C902	19	44'-0"			Str.
F601	46	8'-10"	7'-6"	6"	4½"
F801	30	13'-4"	11'-6"	8"	6"
F901	38	11'-9"	10'-4"	1'-8"	9"

BENDING DIAGRAMS



Dimensions are out to out of bars.

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners are to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER
BRIDGE ENGINEER

DETAILS OF BENT 3
McKISIC CREEK RAMP I

ROUTE SEC.

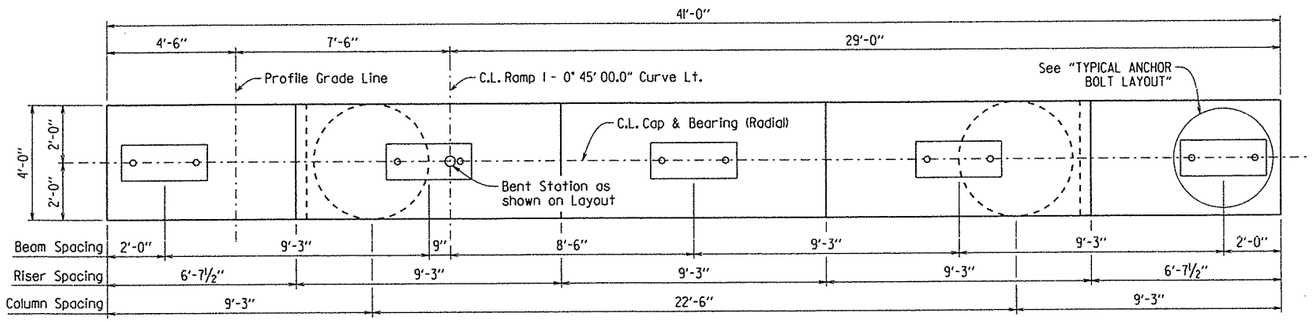
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

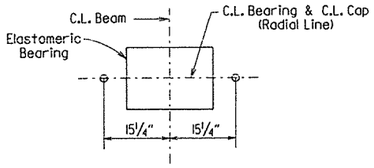
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CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown
DESIGNED BY: CMW DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53827

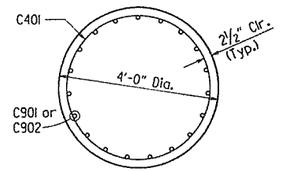
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	289	636
				(1)		07279 - INT. BENTS - 53828		





TYPICAL ANCHOR BOLT LAYOUT
No Scale

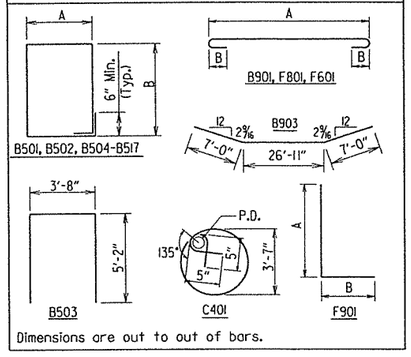


SECTION D-D
No Scale

BAR LIST

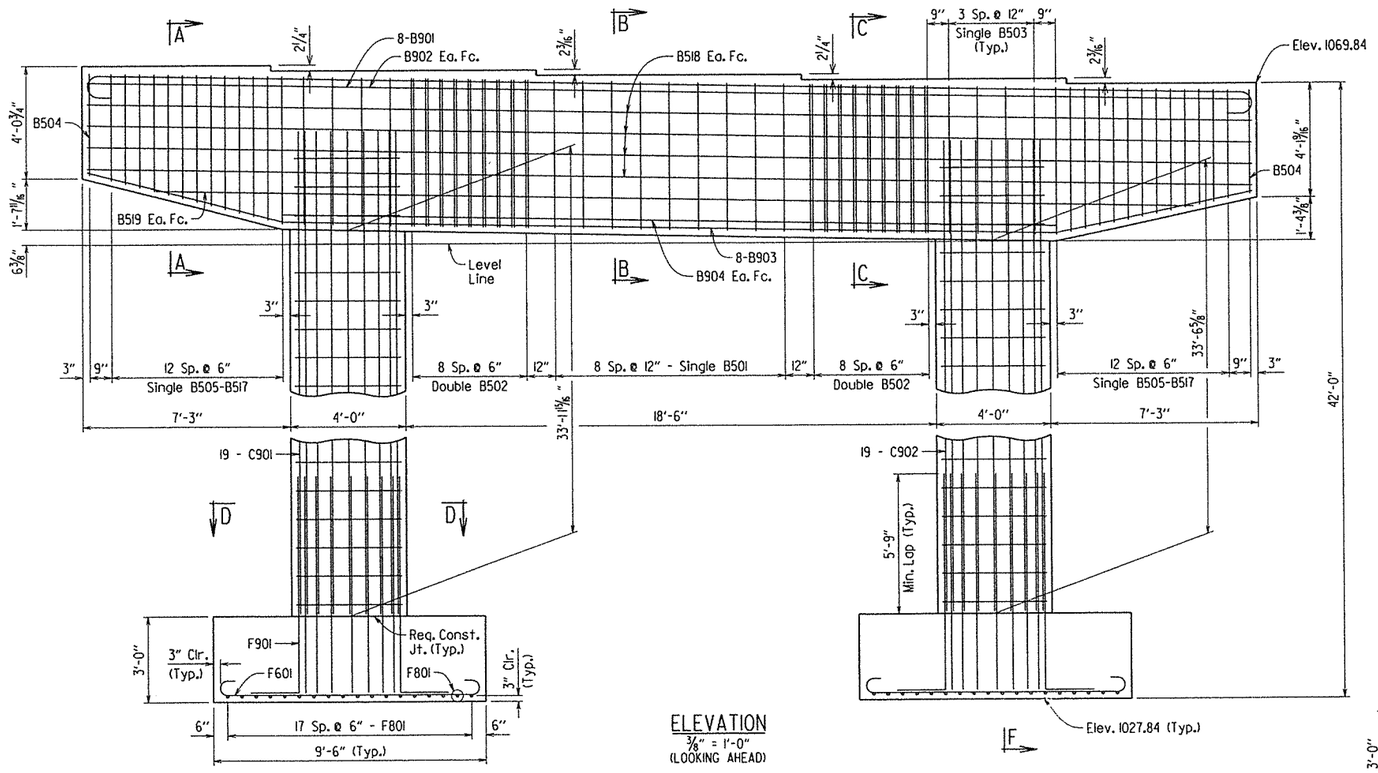
MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B501	9	18'-2"	3'-8"	5'-2"	2½"
B502	36	15'-2"	2'-2"	5'-2"	2½"
B503	8	13'-10"	3'-8"	5'-2"	2½"
B504	2	15'-3"	3'-8"	3'-8½"	2½"
B505-B517	2 each	Var. 15'-7" to 18'-2"	3'-8"	Var. 3'-10½" to 5'-2"	2½"
B518	8	40'-8"			Str.
B519	2	35'-9"			Str.
B901	8	43'-2"	40'-8"	10"	9"
B902	2	40'-8"			Str.
B903	8	40'-11"			9"
B904	2	26'-6"			Str.
C401	74	12'-4"			3"
C901	19	38'-10"			Str.
C902	19	38'-4"			Str.
F601	54	10'-4"	9'-0"	6"	4½"
F801	36	15'-4"	13'-6"	8"	6"
F901	38	11'-9"	10'-4"	1'-8"	9"

BENDING DIAGRAMS

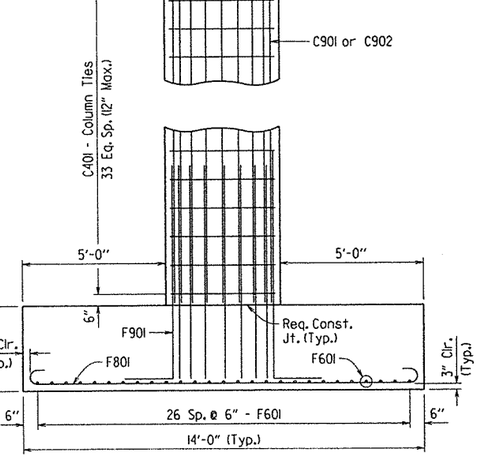


Dimensions are out to out of bars.

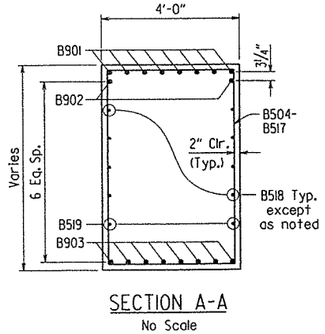
PLAN
⅜" = 1'-0"



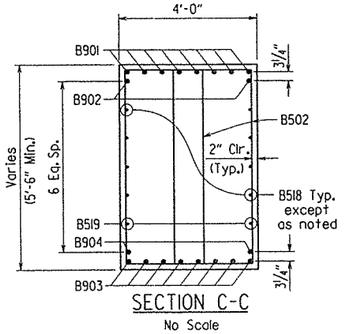
ELEVATION
⅜" = 1'-0"
(LOOKING AHEAD)



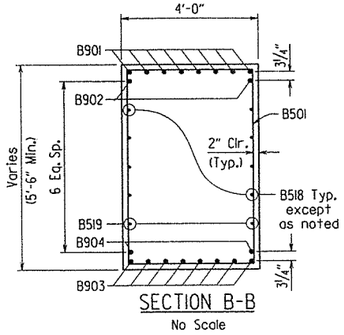
SECTION F-F
⅜" = 1'-0"



SECTION A-A
No Scale



SECTION C-C
No Scale



SECTION B-B
No Scale

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners are to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

STATE OF ARKANSAS
Carl L. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL L. FUSELIER
BRIDGE ENGINEER

DETAILS OF BENT 4
McKISIC CREEK RAMP I

ROUTE SEC.

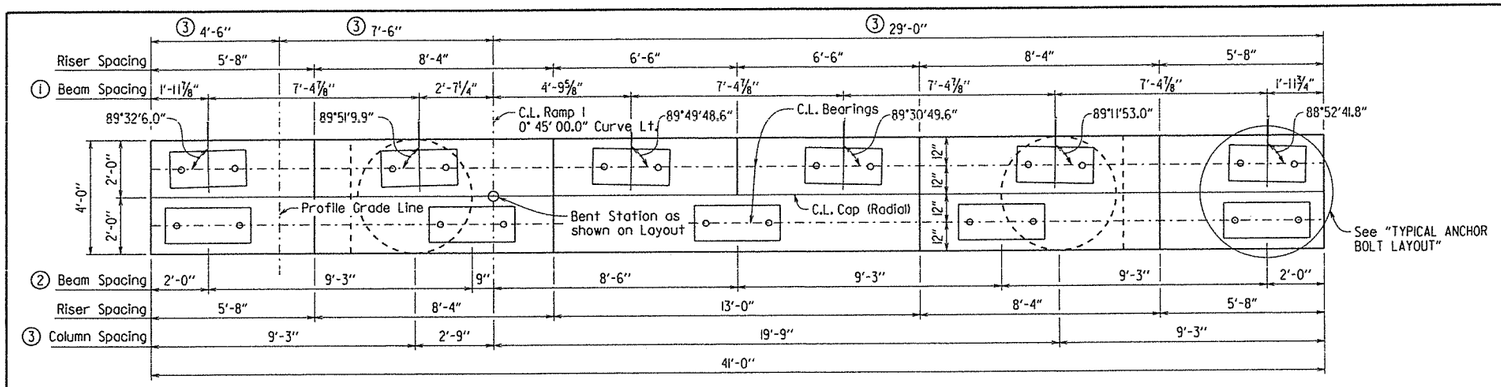
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 09/27/2013 FILENAME: bca0904xl3_b4.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown
DESIGNED BY: CMW DATE: 9/13

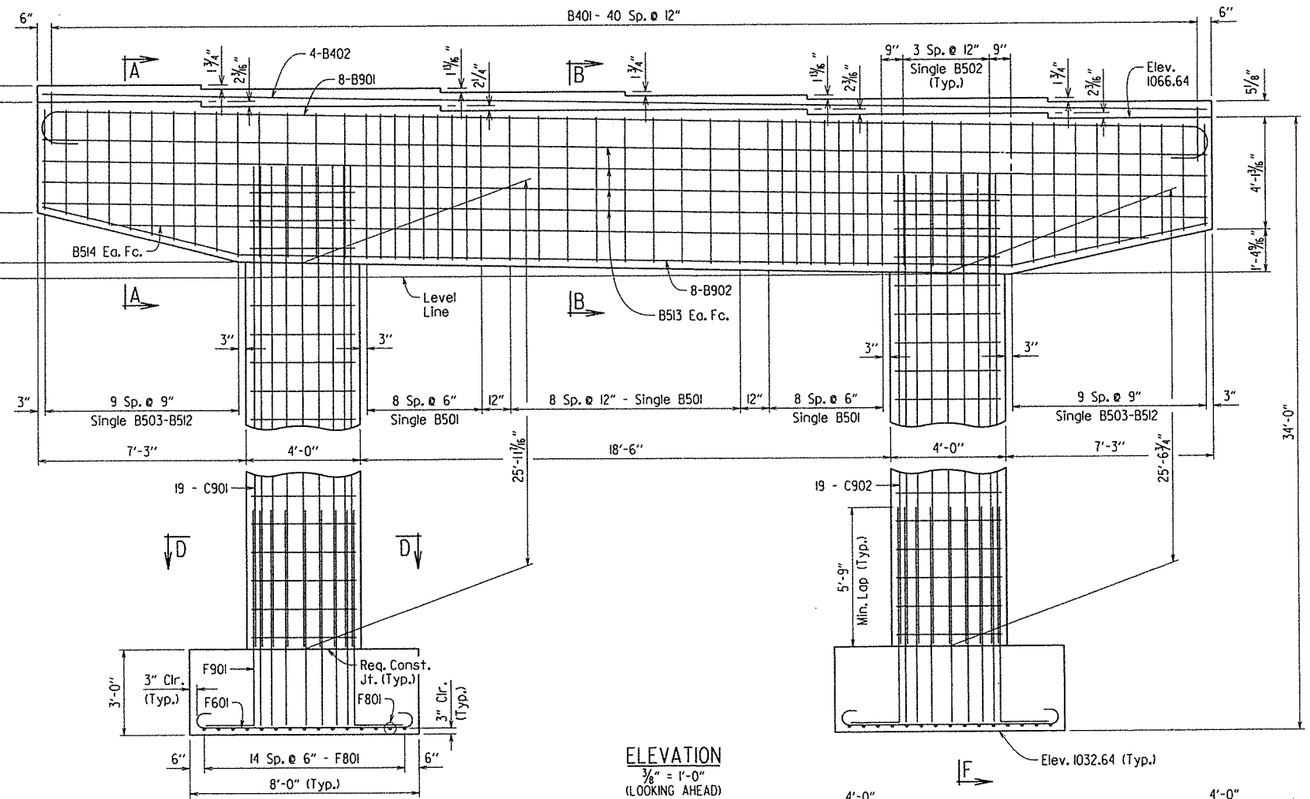
BRIDGE NO. 07279 DRAWING NO. 53828

PRINT DATE: 12/9/2013

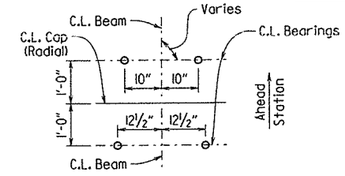
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	290	636
				①	07279 - INT. BENTS - 53829			



PLAN
⅜" = 1'-0"



ELEVATION
⅜" = 1'-0"
(LOOKING AHEAD)



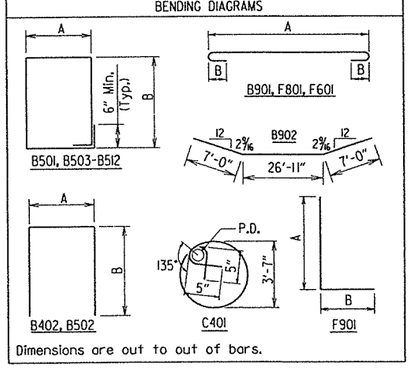
TYPICAL ANCHOR BOLT LAYOUT
No Scale

① Measured along C.L. Bearing Bent 5 Ah.
② Measured along C.L. Bearing Bent 5 Bk.
③ Measured along C.L. Cap

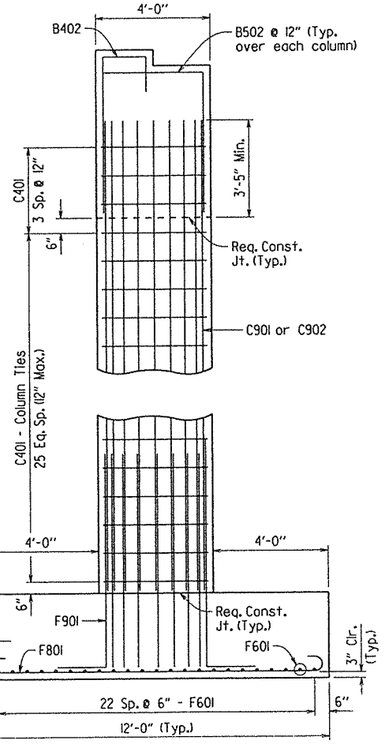
BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	4	40'-8"			Str.
B402	41	4'-6"	1'-8"	1'-6"	2"
B501	18	18'-2"	3'-8"	5'-2"	2½"
B502	8	13'-10"	3'-8"	5'-2"	2½"
B503-B512	2 each	Var. 15'-3" to 18'-2"	3'-8"	Var. 3'-8½" to 5'-2"	2½"
B513	8	40'-8"			Str.
B514	2	35'-7"			Str.
B901	8	43'-2"	40'-8"	10"	9"
B902	8	40'-11"			9"
C401	58	12'-4"			3"
C901	19	31'-0"			Str.
C902	19	30'-6"			Str.
F601	46	8'-10"	7'-6"	6"	4½"
F801	30	13'-4"	11'-6"	8"	6"
F901	38	11'-9"	10'-4"	1'-8"	9"

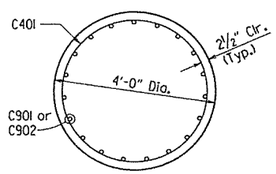
BENDING DIAGRAMS



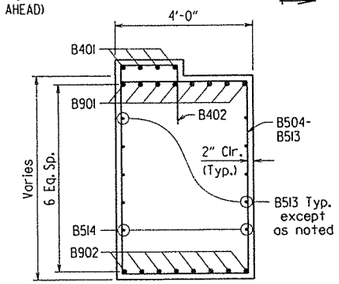
Dimensions are out to out of bars.



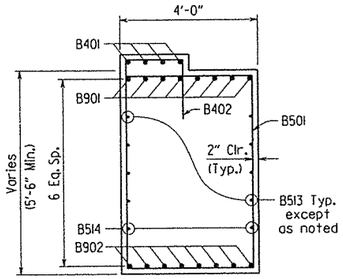
SECTION F-F
⅜" = 1'-0"



SECTION D-D
No Scale



SECTION A-A
No Scale



SECTION B-B
No Scale

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners are to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF BENT 5
McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

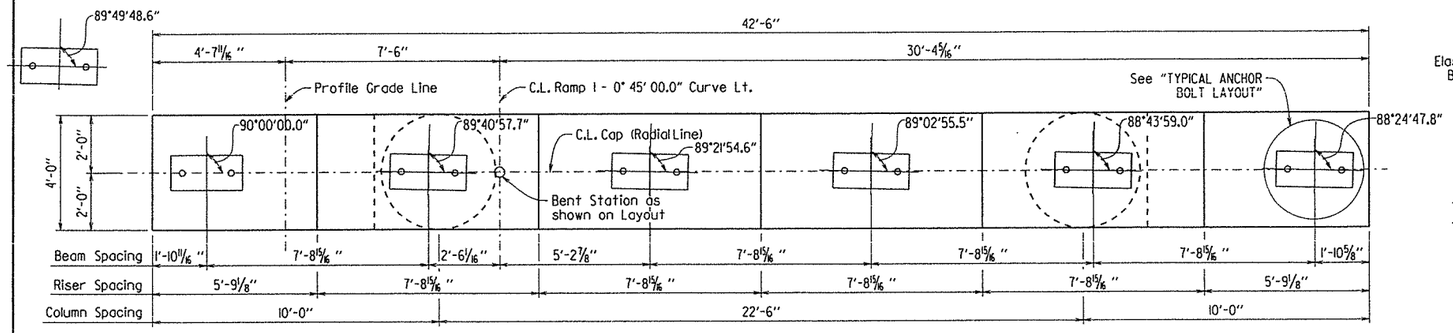
LITTLE ROCK, ARK.

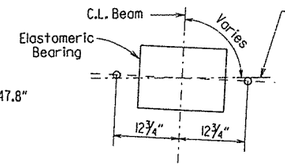
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CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown
DESIGNED BY: CMW DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53829

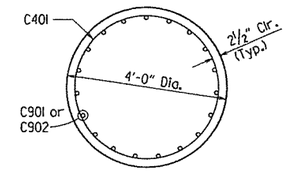
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	29	636
				(1)		07279 - INT. BENTS - 53830		





TYPICAL ANCHOR BOLT LAYOUT
No Scale

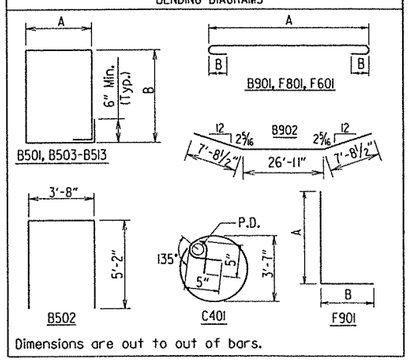


SECTION D-D
No Scale

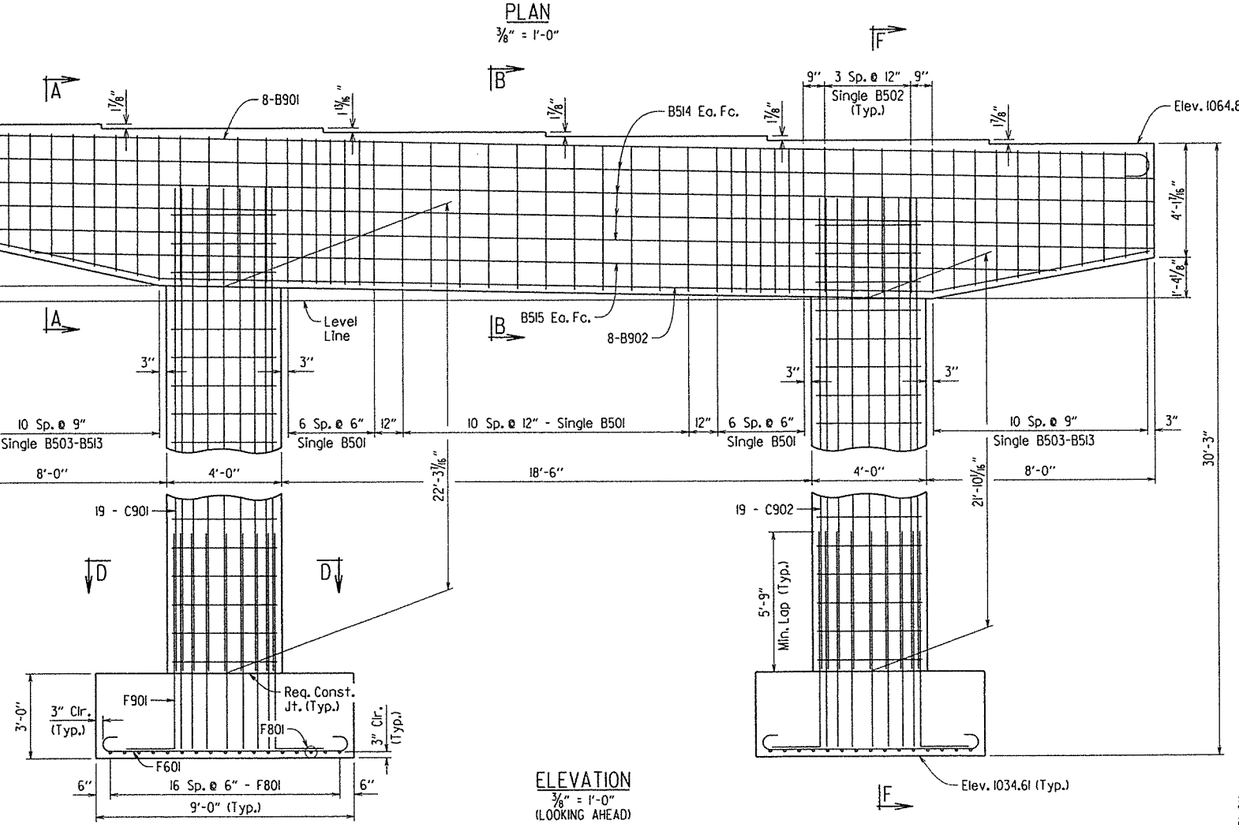
BAR LIST

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B501	25	18'-2"	3'-8"	5'-2"	2 1/2"
B502	8	13'-10"	3'-8"	5'-2"	2 1/2"
B503-B513	2 each	Var. 15'-3" to 18'-2"	3'-8"	Var. 3'-8 1/2" to 5'-2"	2 1/2"
B514	8	42'-2"			Str.
B515	2	36'-6"			Str.
B901	8	44'-8"	42'-2"	10"	9"
B902	8	42'-4"			9"
C401	52	12'-4"			3"
C901	19	27'-3"			Str.
C902	19	26'-10"			Str.
F601	50	9'-10"	8'-6"	6"	4 1/2"
F801	34	14'-4"	12'-6"	8"	6"
F901	38	11'-9"	10'-4"	1'-8"	9"

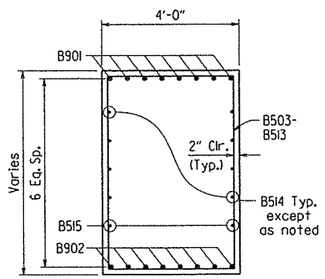
BENDING DIAGRAMS



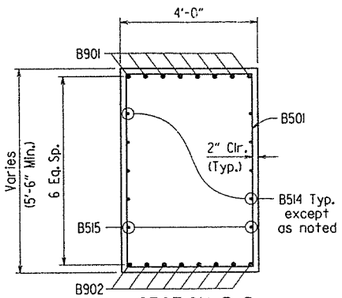
Dimensions are out to out of bars.



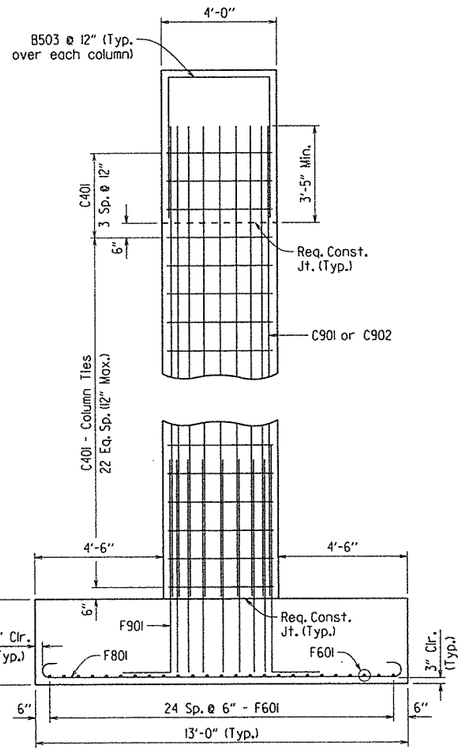
ELEVATION
3/8" = 1'-0"
(LOOKING AHEAD)



SECTION A-A
No Scale



SECTION B-B
No Scale



SECTION F-F
3/8" = 1'-0"

GENERAL NOTES

All concrete shall be Class "S" and be poured in the dry. All exposed corners are to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

STATE OF ARKANSAS
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DETAILS OF BENT 6
McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

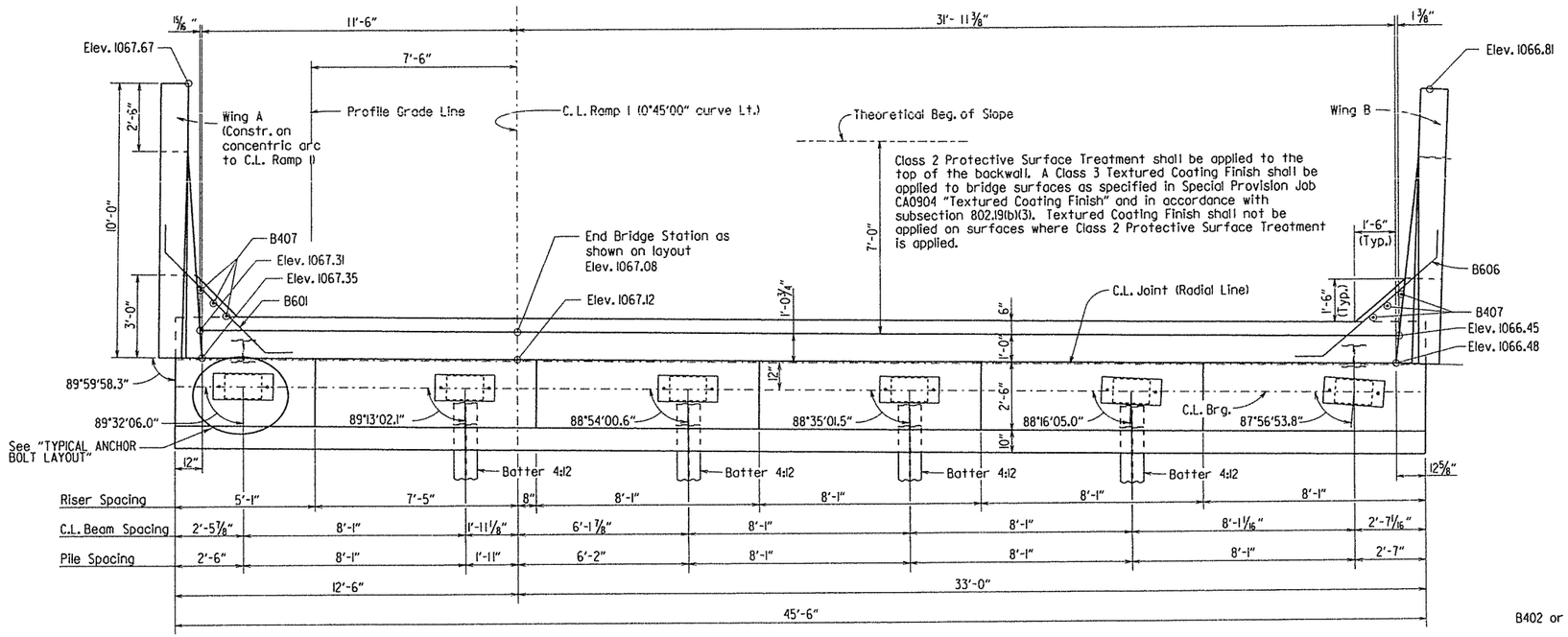
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DESIGNED BY: CMW DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53830

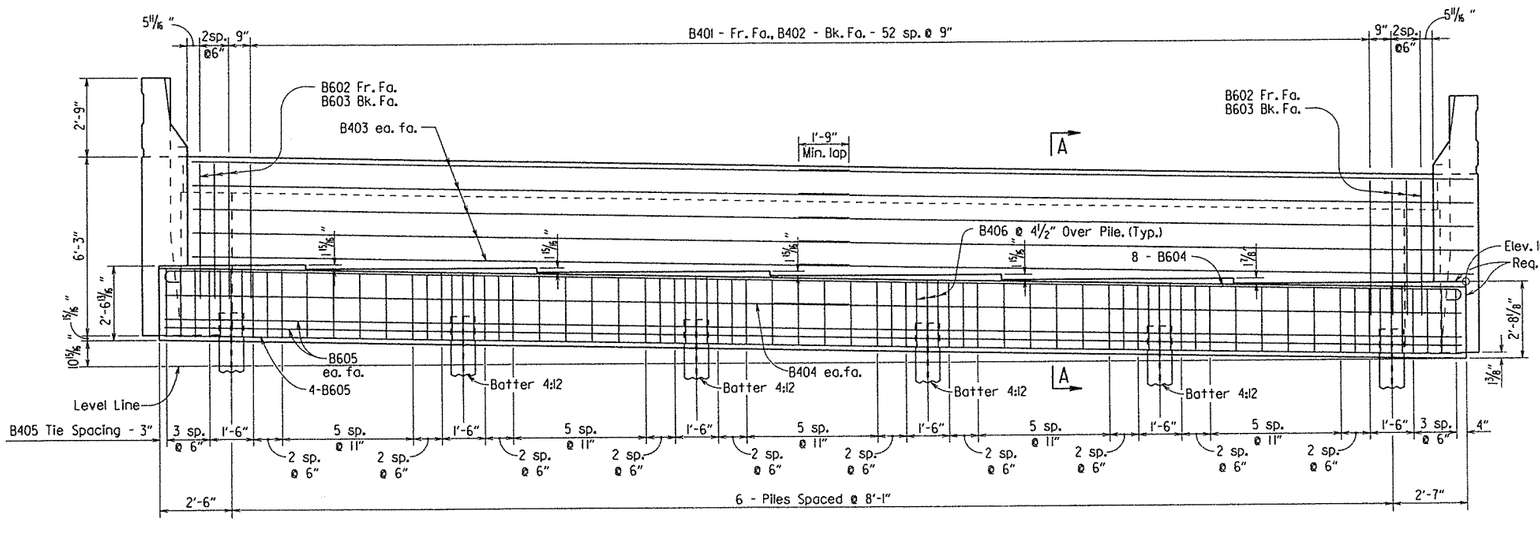
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	292	636
				07279		BENT 7	53831	

For details of wing & rail, see Dwg. No. 53832



PLAN - BENT 7

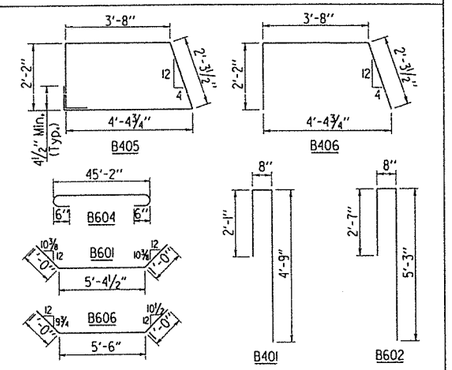


ELEVATION - BENT 7
Looking Ahead

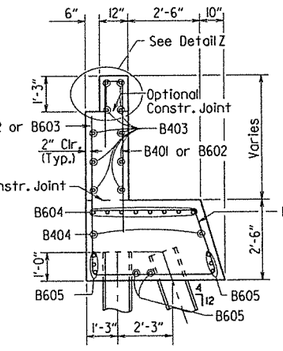
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	53	7'-4"	2"
B402	53	3'-6"	Str.
B403	20	24'-1"	Str.
B404	4	23'-6"	Str.
B405	58	12'-11"	2"
B406	18	8'-0"	2"
B407	6	4'-8"	Str.
B601	4	7'-5"	4 1/2"
B602	6	8'-3"	4 1/2"
B603	6	4'-0"	Str.
B604	8	46'-6"	4 1/2"
B605	8	45'-2"	Str.
B606	4	7'-6"	4 1/2"

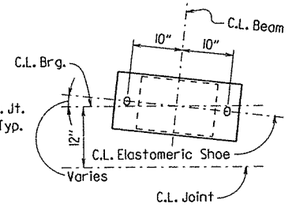
BENDING DIAGRAMS



Dimensions are out to out of bars.

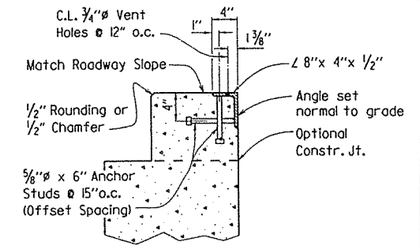


SECTION - A-A
No Scale



For Details of Elastomertic Bearings, See Dwg. No. 53850.

TYPICAL ANCHOR BOLT LAYOUT
No Scale



For additional joint details, See Dwg. No. 53848

Concrete shall be hand packed under the joint armor in the backwall.

DETAIL Z
No Scale

GENERAL NOTES

All concrete shall be Class "S" with a 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 be Grade 60 (Yield Strength = 60,000 psi) conform to AASHTO M31 or M322, Type A, with Mill Test Reports.

Structural steel in end bents shall be M270, Gr.50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr.50W)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

The backwall below the paving bracket shall not be poured until the beams are in place. The backwall above the paving bracket shall not be poured before the superstructure slab in the adjacent span has been placed. Avoid having heavy construction equipment behind the backwall until the concrete for the span has been completed. See Drawing No. 53848 for additional information.

Piling shall be HP12x53; AASHTO M270, Gr. 50.

For additional information, see layout.

STATE OF ARKANSAS
Carl J. Fuselier
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BRIDGE ENGINEER

SHEET 1 OF 2
DETAILS OF BENT 7
McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

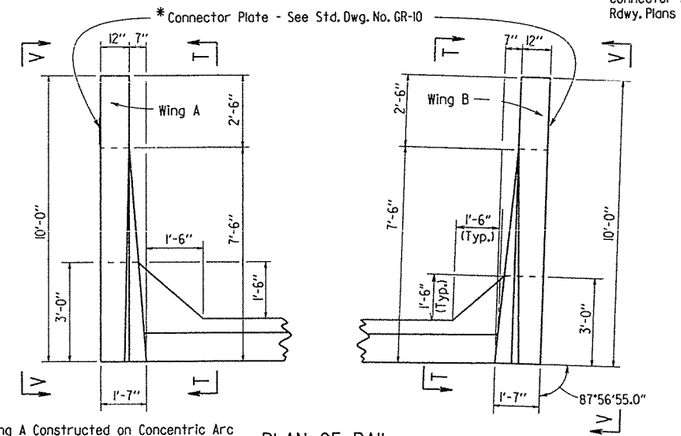
LITTLE ROCK, ARK.

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CHECKED BY: DHP DATE: 12-9-13 SCALE: 3/8" = 1'-0"
DESIGNED BY: DHP DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53831

PRINT DATE: 12/9/2013

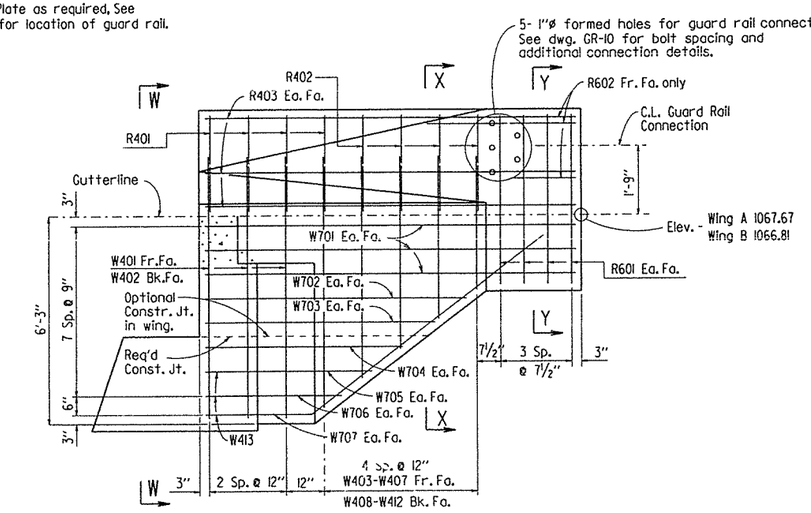
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				6	ARK.			
				JOB NO.		CA0904	293	636
				①	07279	BENT 7	53832	



Wing A Constructed on Concentric Arc to CL Ramp I. Wing B Constructed on Chord Extending from CL Joint Bent No. 5 to C.L. Joint Bent No. 7

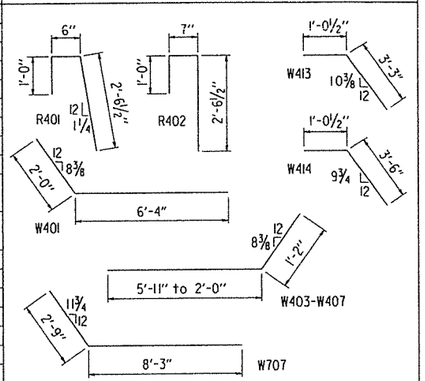
PLAN OF RAIL
3/8" = 1'-0"

*Connector Plate as required, See Rdwy. Plans for location of guard rail.

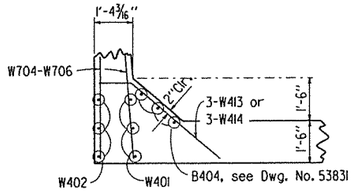


BAR LIST

Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram
R401	8	3'-11"	2"	
R402	8	4'-0"	2"	
R403	12	9'-8"	Str.	
R601	16	4'-5"	Str.	
R602	6	5'-0"	Str.	
W401	6	8'-4"	2"	
W402	6	8'-8"	Str.	
W403-W407	2 ea.	7'-1" to 3'-2"	2"	
W408-W412	2 ea.	8'-5" to 4'-6"	Str.	
W413	3	4'-4"	2"	
W414	3	4'-7"	2"	
W701	12	9'-8"	Str.	
W702	4	6'-4"	Str.	
W703	4	5'-7"	Str.	
W704	4	4'-10"	Str.	
W705	4	4'-1"	Str.	
W706	4	3'-4"	Str.	
W707	4	11'-0"	5¼"	

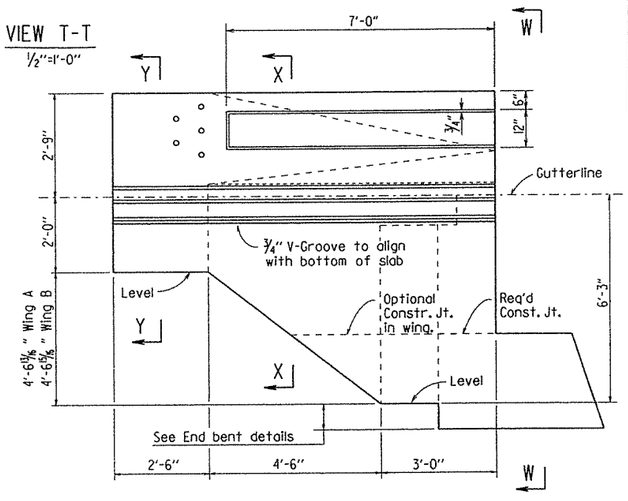


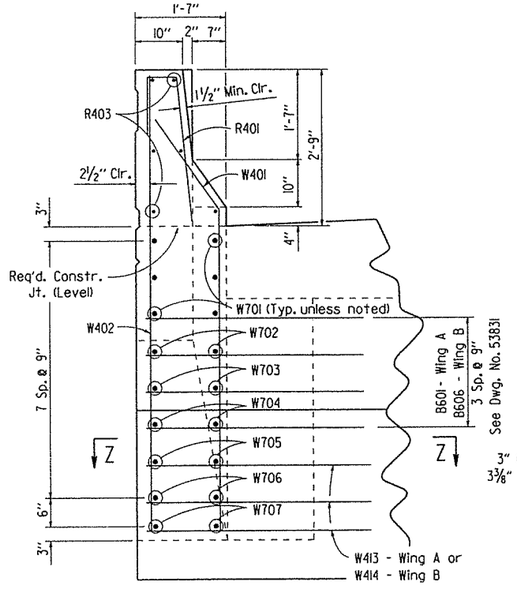
Dimensions are out to out of bars.



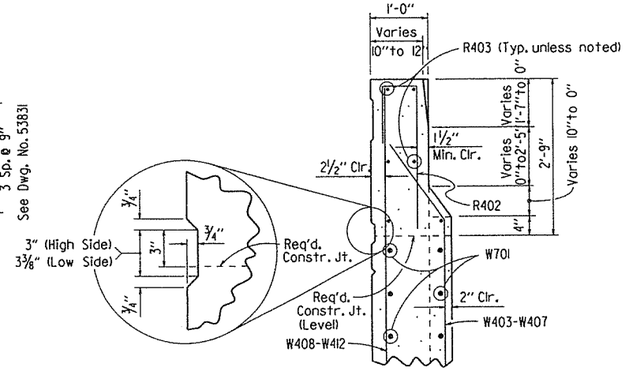
SECTION Z-Z
3/8" = 1'-0"

VIEW T-T
½"=1'-0"

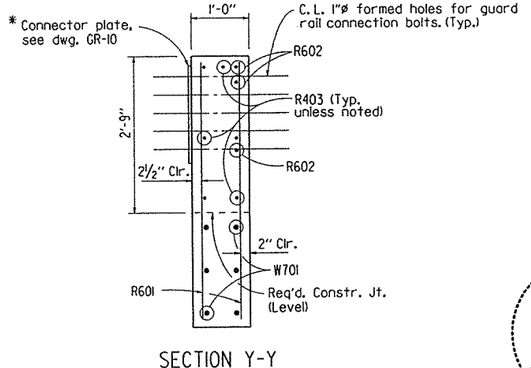




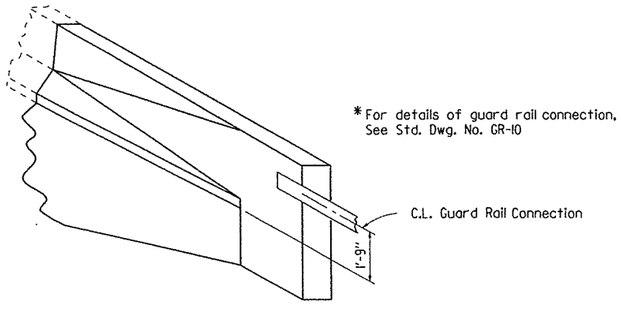
VIEW W-W
¾"=1'-0"



SECTION X-X
¾"=1'-0"



SECTION Y-Y
¾"= 1'-0"



THREE DIMENSIONAL VIEW OF RAIL
No Scale

STATE OF ARKANSAS
Carl J. Fusselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSSELIER
BRIDGE ENGINEER

SHEET 2 OF 2
DETAILS OF BENT 7
McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 09/18/13 FILENAME: bca0904x13_bl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS SHOWN
DESIGNED BY: DHP DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53832

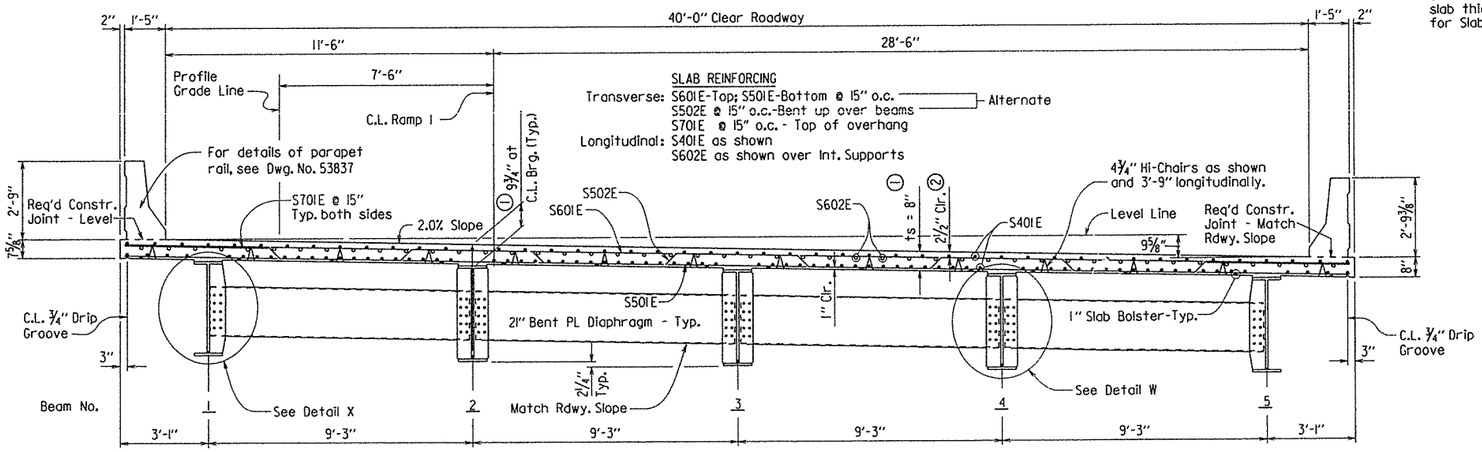
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	299	636
				①	07279 - 159' UNIT - 53833			

For General Notes, See Dwg. No. 53849.

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0904 "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.

At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

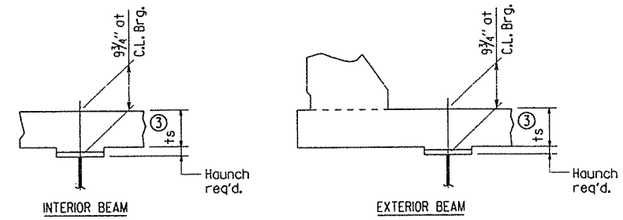


TYPICAL ROADWAY SECTION

Looking Ahead
Scale: ⅜" = 1'-0"

① See Adjustment for Slab Thickness Tolerance

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See Adustment for Slab Thickness Tolerance



③ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on Typical Roadway Section.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

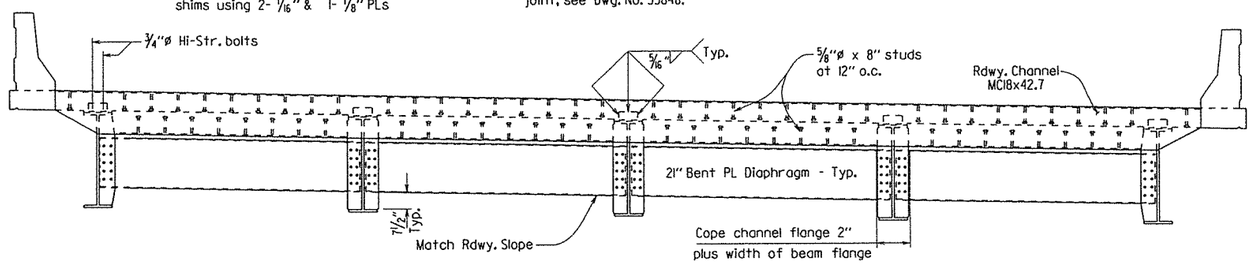
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

④ If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

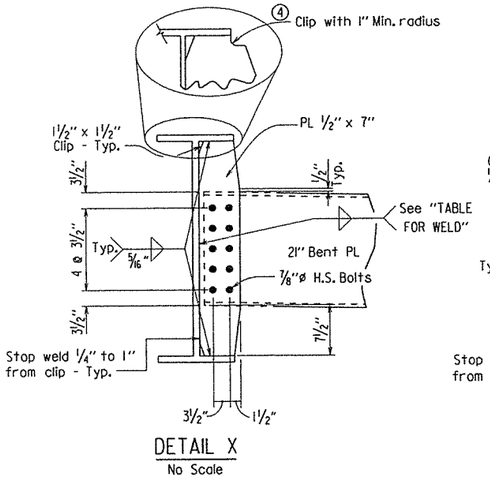
Expansion Device:
Rdwy. Channel - MC18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLS

For details of poured silicone joint, see Dwg. No. 53848.



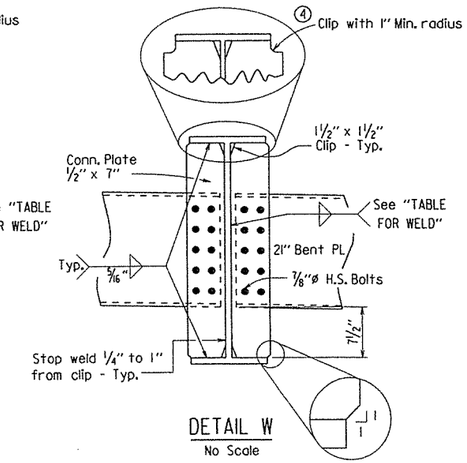
SECTION THRU JOINT

Looking Ahead
Scale: ⅜" = 1'-0"



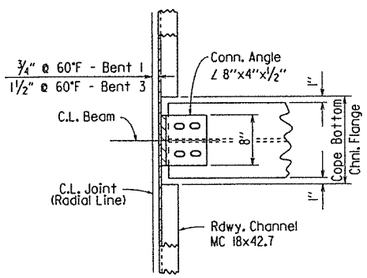
DETAIL X

No Scale



DETAIL W

No Scale



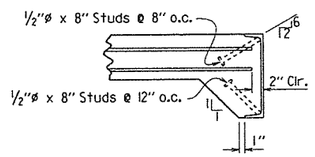
CHANNEL CONNECTION DETAILS

No 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"	

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.



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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING

No Scale

STATE OF ARKANSAS
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SHEET 1 OF 5

DETAILS OF 159' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 1) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 9/10/13
CHECKED BY: DHP DATE: 12-9-13
DESIGNED BY: CMLJ DATE: 8/13

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SCALE: AS NOTED

BRIDGE NO. 07279

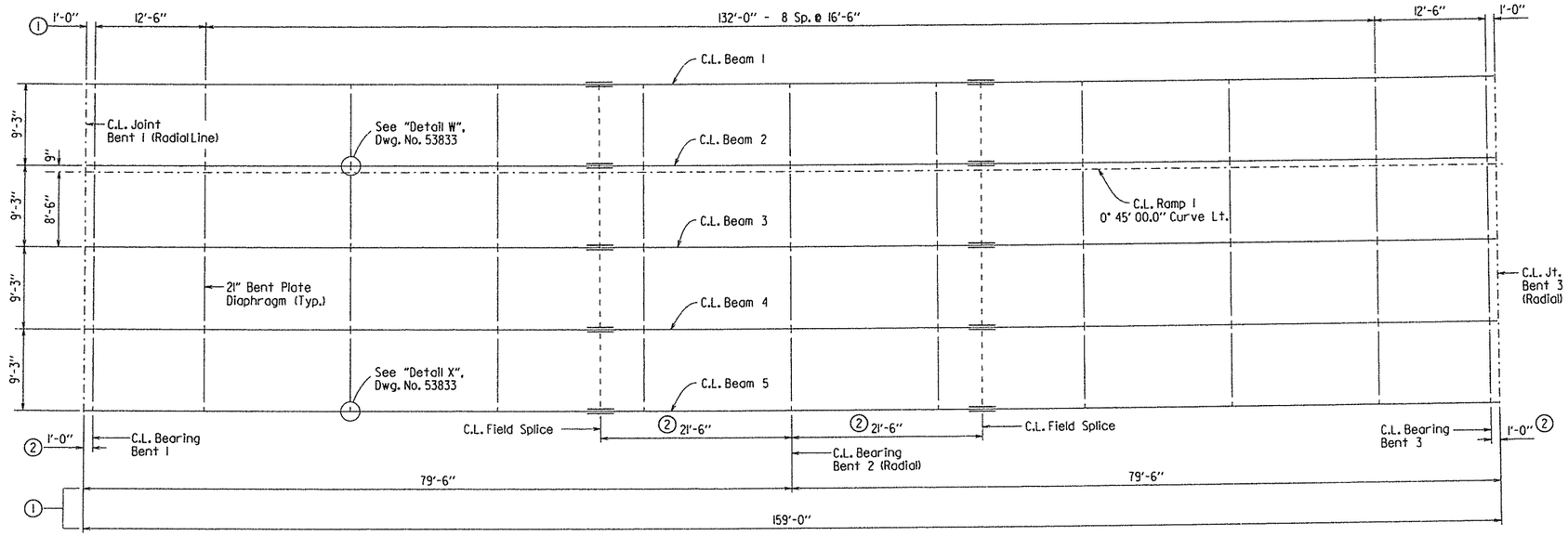
DRAWING NO. 53833

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	295	636
				(1) 07279		159' UNIT 53834		

Beams are Curved and Concentric to C.L. Ramp 1. Diaphragms are placed on Radial Lines and spaced along C.L. Ramp 1.

(1) Measured along C.L. Ramp
(2) Measured along C.L. Beam

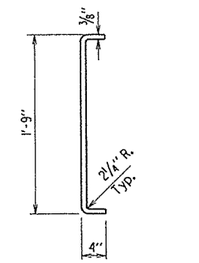


FRAMING PLAN

Scale: 1/8" = 1'-0"

TABLE OF VARIABLES

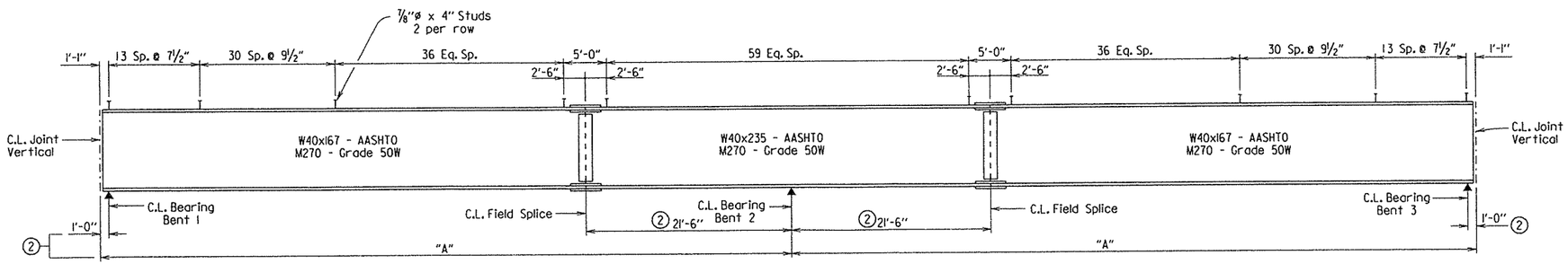
Beam	"A"
1	79'-4 3/4"
2	79'-5 15/16"
3	79'-7 1/16"
4	79'-8 3/16"
5	79'-9 3/8"



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V

No Scale



BEAM ELEVATION

No Scale

Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

STATE OF ARKANSAS
Carl J. Fuselier
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No. 7510
12/11/13
CARL J. FUSELIER
BRIDGE ENGINEER

SHEET 2 OF 5

DETAILS OF 159' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 1) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 9/10/13 FILENAME: bca0904x13_sl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown
DESIGNED BY: GMW DATE: 8/13

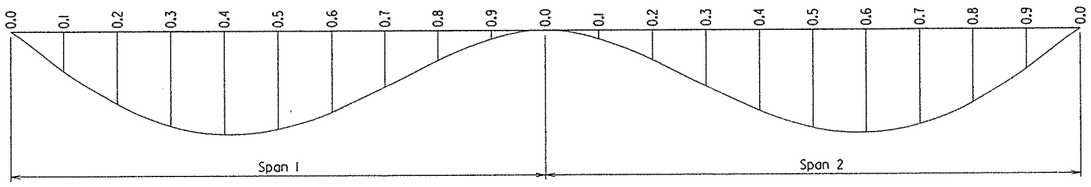
BRIDGE NO. 07279 DRAWING NO. 53834

PRINT DATE: 12/9/2013

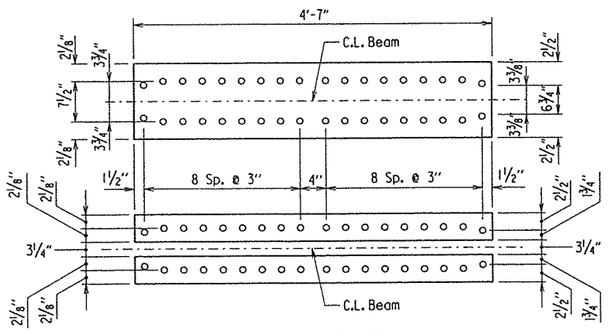
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	296	636
				(1) 07279		159' UNIT	53835	

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

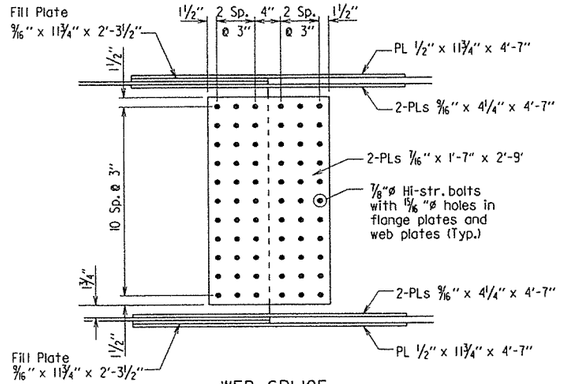
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Ext. Beam	Int. Beam	Ext. Beam	Int. Beam	Ext. Beam	Int. Beam
Span 1	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.067	0.069	0.355	0.393	0.394	0.421
	0.2	0.122	0.125	0.650	0.720	0.720	0.771
	0.3	0.159	0.164	0.848	0.940	0.941	1.007
	0.4	0.174	0.179	0.924	1.023	1.027	1.098
	0.5	0.165	0.170	0.876	0.970	0.975	1.042
	0.6	0.137	0.141	0.723	0.802	0.807	0.863
	0.7	0.095	0.098	0.499	0.554	0.560	0.598
	0.8	0.051	0.053	0.266	0.296	0.300	0.320
	0.9	0.015	0.016	0.079	0.087	0.089	0.095
Span 2	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.015	0.016	0.078	0.087	0.088	0.094
	0.2	0.051	0.052	0.262	0.292	0.295	0.315
	0.3	0.095	0.098	0.498	0.553	0.557	0.596
	0.4	0.136	0.140	0.716	0.795	0.799	0.855
	0.5	0.165	0.170	0.874	0.969	0.972	1.041
	0.6	0.173	0.179	0.921	1.021	1.022	1.094
	0.7	0.159	0.164	0.848	0.940	0.940	1.006
	0.8	0.123	0.126	0.654	0.725	0.724	0.776
	0.9	0.066	0.069	0.355	0.393	0.393	0.421
	0	0.000	0.000	0.000	0.000	0.000	0.000



Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance.
Deflections shown are from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included.
Negative sign (-) indicates point above chord.



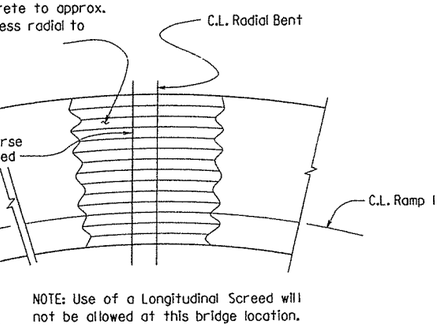
FLANGE SPLICE



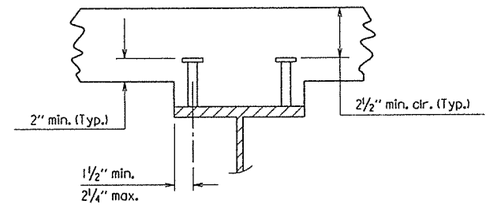
WEB SPLICE

All splice plates shall be AASHTO M270, Gr. 50W

FIELD SPLICE - DETAILS
Scale: 1" = 1'-0"



CONCRETE PLACEMENT PROCEDURE
No Scale



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 beam 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 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. Maximum stud spacing = 24"

SHEAR CONNECTOR DETAIL
NO SCALE

SHEET 3 OF 5

DETAILS OF 159' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 1) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DRAWN BY: CSG DATE: 9/10/13
CHECKED BY: DHP DATE: 12-9-13
DESIGNED BY: CMW DATE: 8/13
FILENAME: bco0904x13_sl.dgn
SCALE: As Shown

BRIDGE NO. 07279 DRAWING NO. 53835

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	297	636
(1) 07279		159' UNIT	53836	

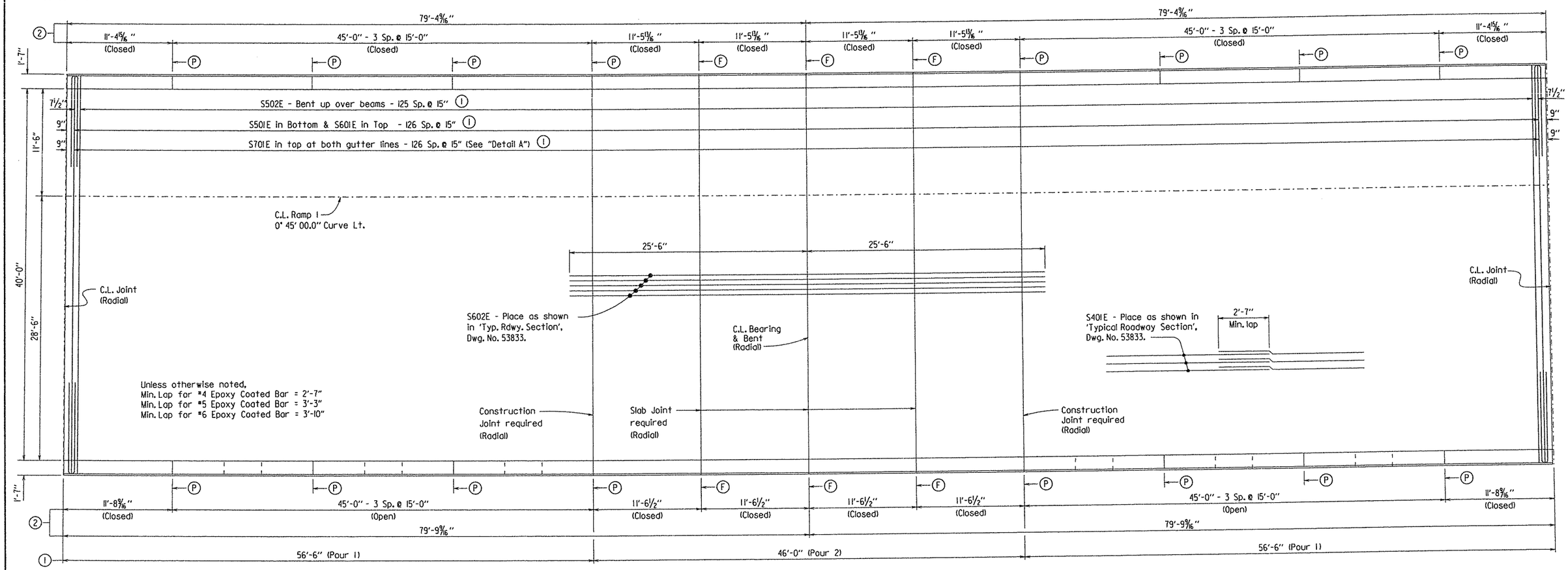
All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Ramp 1. Long. reinforcing steel shall be placed on curves concentric with C.L. Ramp 1.

(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'-2" from top of slab.

(1) Measured along C.L. Ramp

(2) Measured along gutter line



REINFORCING PLAN & DECK POURING SEQUENCE

Scale: 3/16" = 1'-0"

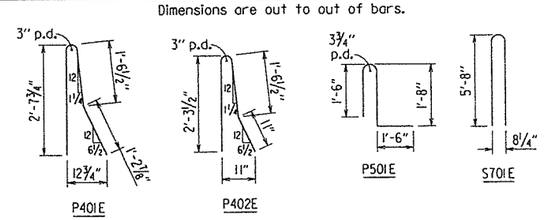
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a Pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing 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.

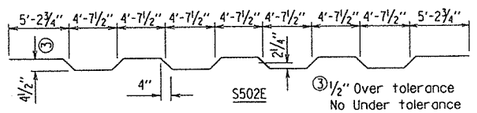
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	615	33'-11"	Str.
P401E	582	5'-6"	3"
P402E	48	4'-10"	3"
P403E	32	35'-4"	Str.
P404E	52	11'-2"	Str.
P405E	36	14'-8"	Str.
S501E	127	42'-10"	Str.
S502E	126	43'-8"	3"
P501E	582	4'-9"	3 3/4"
S601E	127	42'-8"	Str.
S602E	46	51'-0"	Str.
S701E	254	11'-8"	6 1/2"

BENDING DIAGRAMS

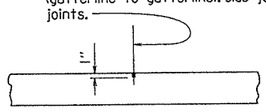
Dimensions are out to out of bars.





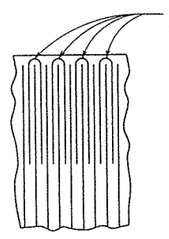
Bars marked with an "E" suffix shall be epoxy coated.

1/2" x 1" Type 3, 4 or 6 Joint Sealer. See subsections 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 joint shall be installed before the parapet rail 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. The joint sealer shall extend across the deck slab (gutterline to gutterline). Slab joints shall align with parapet open joints.



SLAB JOINT DETAIL

No Scale



DETAIL A

No Scale

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
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12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 159' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 1) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 9/10/13 FILENAME: bca0904x13_sl.dgn

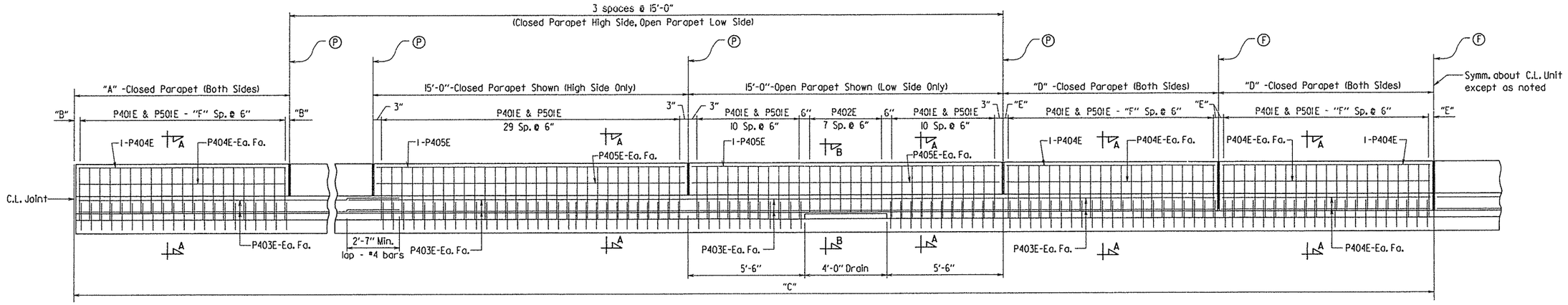
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED

DESIGNED BY: CMW DATE: 8/13

BRIDGE NO. 07279 DRAWING NO. 53836

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	298	636
				(1)	07279 -	159' UNIT	- 53837	

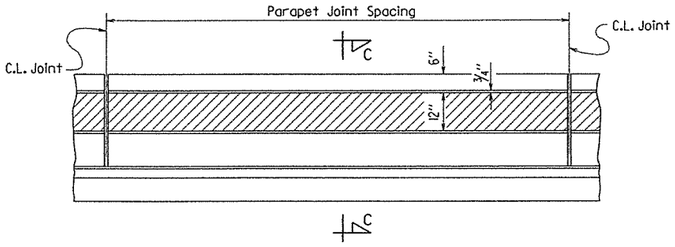


Ⓕ C.L. Full-Depth Parapet Joint (1¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53836. Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (1¼" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53836. Stop 1'-2" from top of slab.

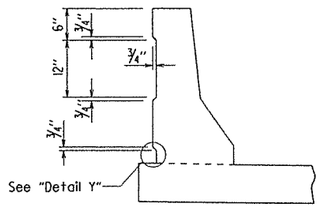
PARAPET RAIL REINFORCING PLAN

Scale: ⅜" = 1'-0"



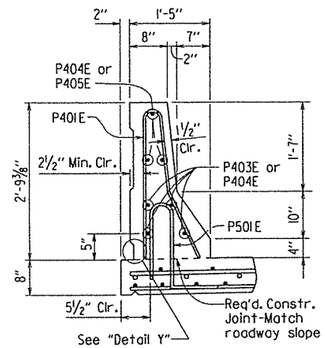
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



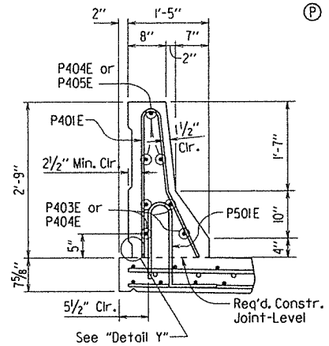
SECTION C-C

No Scale



SECTION A-A

Low Side
Scale: ¾" = 1'-0"

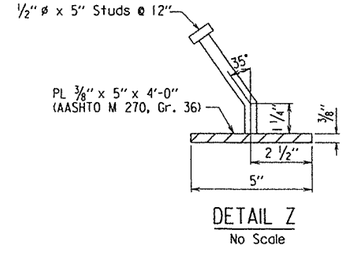


SECTION A-A

High Side
Scale: ¾" = 1'-0"

DETAIL Y

No Scale

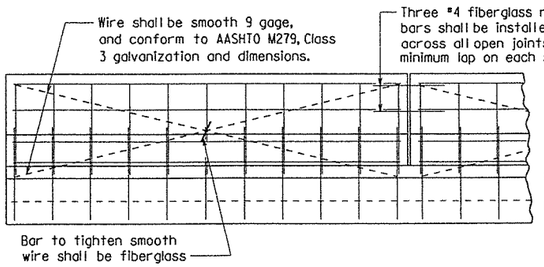


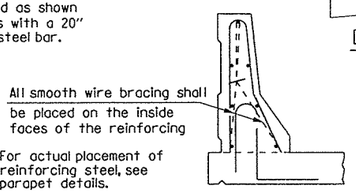
DETAIL Z

No Scale

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 will be considered subsidiary to "Structural Steel in Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."



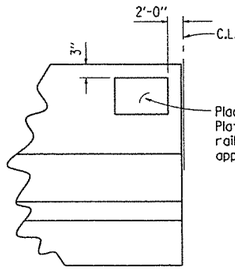


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

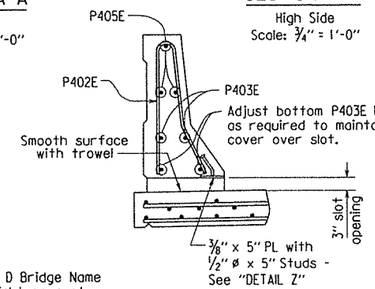
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



NAME PLATE DETAIL

No Scale



SECTION B-B

Scale: ¾" = 1'-0"

TABLE OF VARIABLES

Gutterline	Span	"A"	"B"	"C"	"D"	"E"	"F"
High Side	1	11'-4⅝"	5½"	79'-4⅜"	11'-5⅜"	5⅞"	21
	2	11'-4⅝"	5½"	79'-4⅜"	11'-5⅜"	5⅞"	21
Low Side	1	11'-8⅜"	4⅝"	79'-9⅜"	11'-6½"	3¼"	22
	2	11'-8⅜"	4⅝"	79'-9⅜"	11'-6½"	3¼"	22

STATE OF ARKANSAS
Carl J. Fuselier
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SHEET 5 OF 5

DETAILS OF 159' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 1)

MCKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 9/10/13 FILENAME: bca0904x13_sl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED
DESIGNED BY: CMW DATE: 8/13

BRIDGE NO. 07279 DRAWING NO. 53837

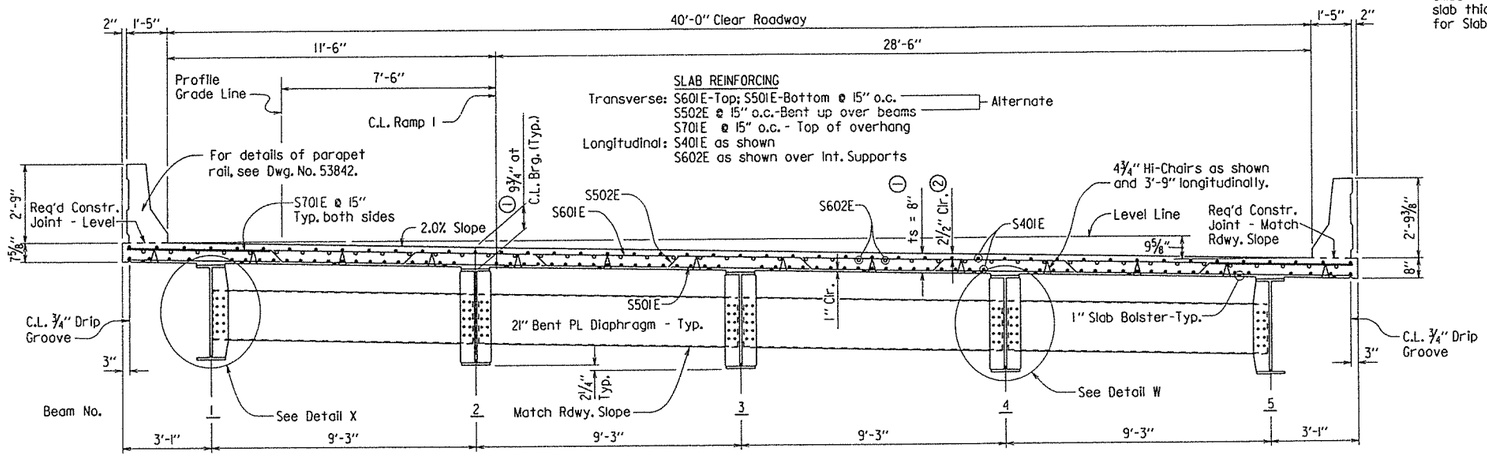
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	299	636
				(1)	07279 - 170' UNIT - 53838			

For General Notes, See Dwg. No. 53849.

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0904 "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.

At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

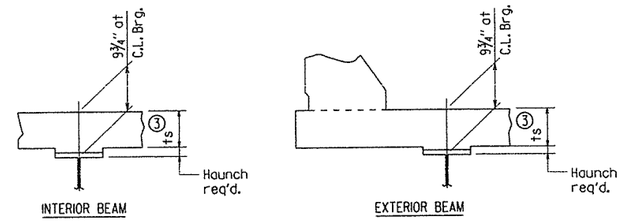


TYPICAL ROADWAY SECTION

Looking Ahead
Scale: ⅜" = 1'-0"

① See Adjustment for Slab Thickness Tolerance

② Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See Adustment for Slab Thickness Tolerance



③ Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on Typical Roadway Section.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

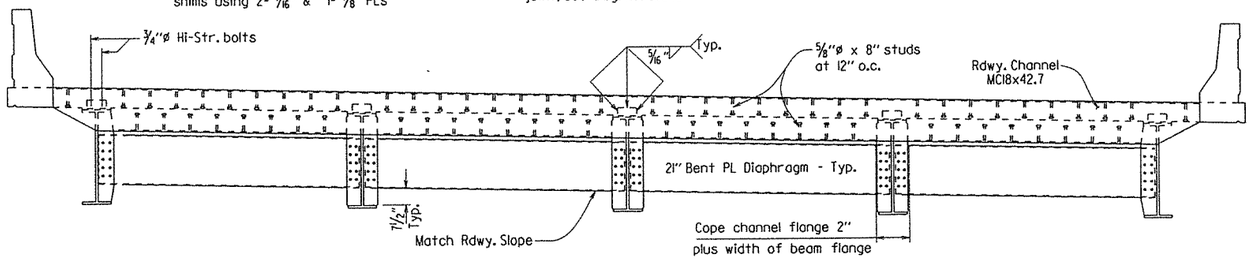
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

④ If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

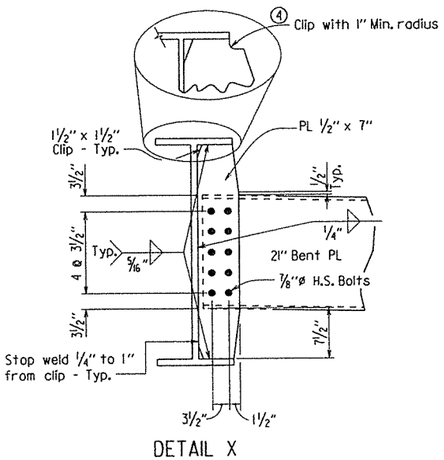
Expansion Device:
Rdwy. Channel - MC18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 7/16" & 1- ⅛" PLs

For details of poured silicone joint, see Dwg. No. 53848



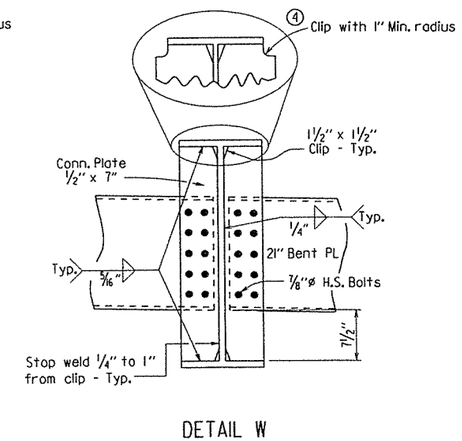
SECTION THRU JOINT

Looking Ahead
Scale: ⅜" = 1'-0"



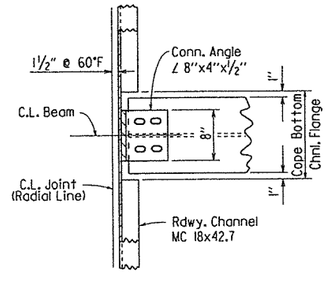
DETAIL X

No Scale



DETAIL W

No Scale



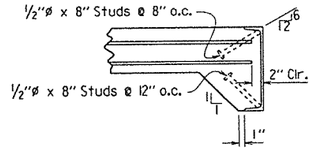
CHANNEL CONNECTION DETAILS

No 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"	

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.



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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING

No Scale

STATE OF ARKANSAS
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12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 5

DETAILS OF 170' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 2)

McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSG DATE: 9/10/13 FILENAME: bca0904xl3_sl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED
DESIGNED BY: CMW DATE: 8/13

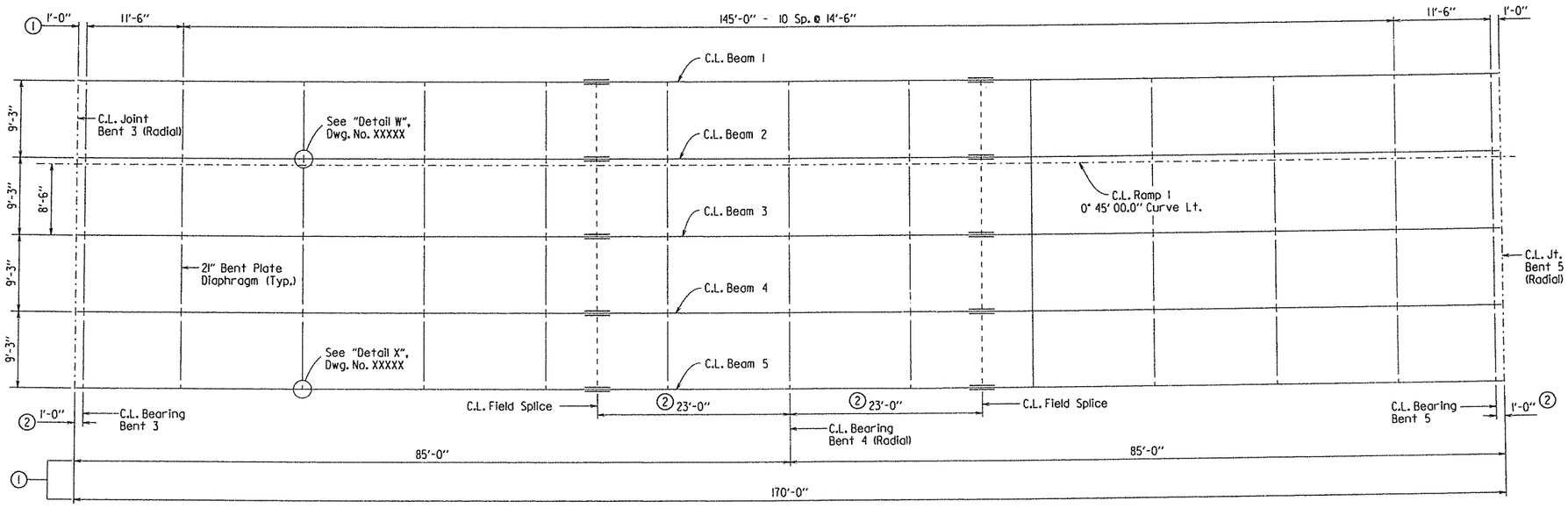
BRIDGE NO. 07279 DRAWING NO. 53838

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	300	636
				(1) 07279		170' UNIT	53839	

Beams are Curved and Concentric to C.L. Ramp 1. Diaphragms are placed on Radial Lines and spaced along C.L. Ramp 1.

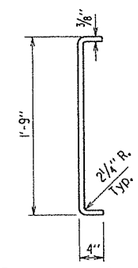
(1) Measured along C.L. Ramp
(2) Measured along C.L. Beam



FRAMING PLAN
Scale: 1/8" = 1'-0"

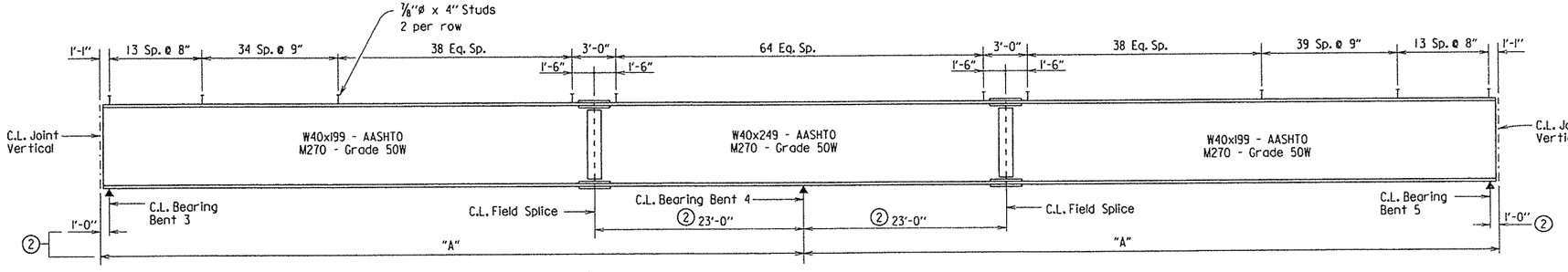
TABLE OF VARIABLES

Beam	"A"
1	84'-10 11/16"
2	84'-11 7/8"
3	85'-1 1/8"
4	85'-2 3/8"
5	85'-3 5/8"



Typ. cross-section for all 21" bent plate diaphragms.

SECTION V-V
No Scale



BEAM ELEVATION
No Scale

Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

STATE OF ARKANSAS
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SHEET 2 OF 5

DETAILS OF 170' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 2) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HOT DATE: 8/16/07 FILENAME: bca0904x13_sl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown
DESIGNED BY: CMW DATE: 8/13

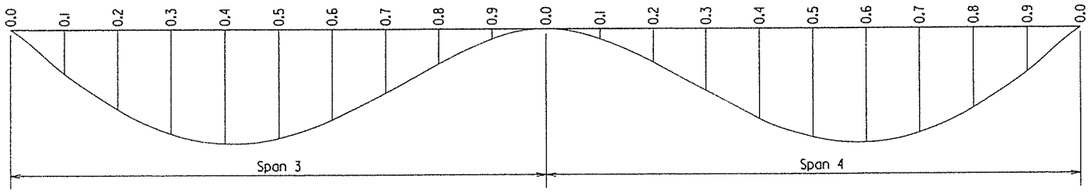
BRIDGE NO. 07279 DRAWING NO. 53839

PRINT DATE: 12/9/2013

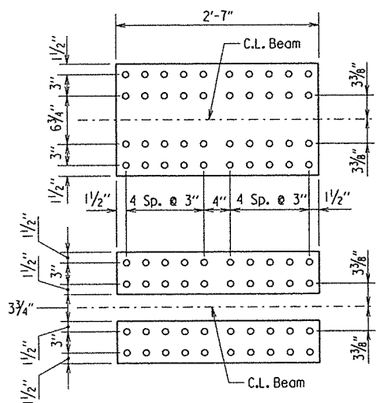
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	301	636
				(1)	07279	170' UNIT	53840	

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

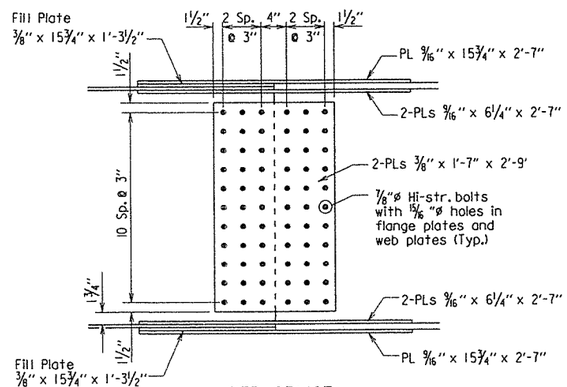
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Ext. Beam	Int. Beam	Ext. Beam	Int. Beam	Ext. Beam	Int. Beam
Span 3	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.083	0.086	0.389	0.436	0.429	0.467
	0.2	0.150	0.157	0.709	0.795	0.781	0.852
	0.3	0.196	0.205	0.924	1.036	1.018	1.111
	0.4	0.215	0.224	1.011	1.134	1.114	1.216
	0.5	0.205	0.214	0.964	1.081	1.065	1.160
	0.6	0.171	0.178	0.800	0.898	0.884	0.963
	0.7	0.121	0.126	0.565	0.634	0.626	0.681
	0.8	0.066	0.069	0.309	0.346	0.343	0.373
	0.9	0.020	0.020	0.089	0.100	0.100	0.108
Span 4	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.020	0.020	0.089	0.101	0.100	0.109
	0.2	0.064	0.066	0.295	0.332	0.328	0.357
	0.3	0.117	0.122	0.546	0.613	0.604	0.658
	0.4	0.171	0.178	0.799	0.897	0.883	0.962
	0.5	0.204	0.213	0.960	1.077	1.060	1.156
	0.6	0.215	0.224	1.010	1.133	1.113	1.215
	0.7	0.196	0.205	0.924	1.037	1.019	1.112
	0.8	0.150	0.157	0.708	0.795	0.780	0.852
	0.9	0.082	0.086	0.389	0.436	0.428	0.467
	0	0.000	0.000	0.000	0.000	0.000	0.000



Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.



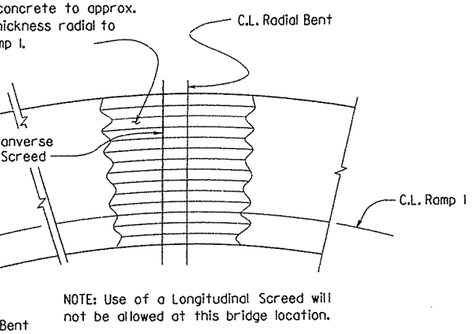
FLANGE SPLICE



WEB SPLICE

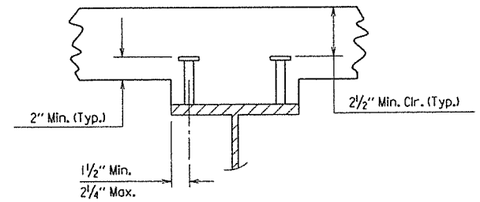
All splice plates shall be AASHTO M270, Gr. 50W

FIELD SPLICE - DETAILS
Scale: 1" = 1'-0"



NOTE: Use of a Longitudinal Screed will not be allowed at this bridge location.

CONCRETE PLACEMENT PROCEDURE
No Scale



Stud Shear Connectors shown shall be ⅞"ø 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"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 measurement of structural steel in shear connectors. Maximum stud spacing = 24"

SHEAR CONNECTOR DETAIL
NO SCALE

SHEET 3 OF 5

DETAILS OF 170' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 2) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DRAWN BY: HOT DATE: 8/16/07
CHECKED BY: DHP DATE: 12-9-13
DESIGNED BY: CMW DATE: 8/13
FILENAME: bca0904x13_sl.dgn
SCALE: As Shown

BRIDGE NO. 07279 DRAWING NO. 53840

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	302	636
				(1) 07279 - 170' UNIT - 53841				

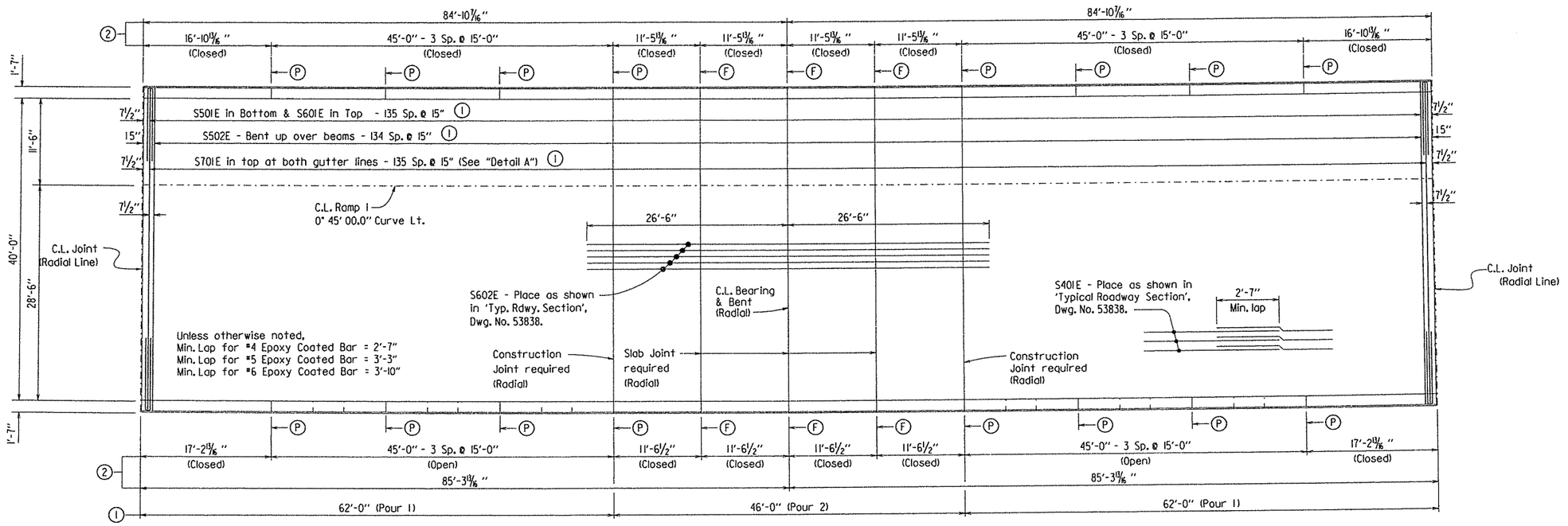
All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Ramp 1. Long. reinforcing steel shall be placed on curves concetric with C.L. Ramp 1.

(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'-2" from top of slab.

(1) Measured along C.L. Ramp

(2) Measured along gutter line



REINFORCING PLAN & DECK POURING SEQUENCE

Scale: 1/8" = 1'-0"

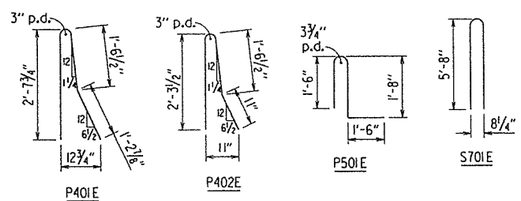
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a Pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing 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.

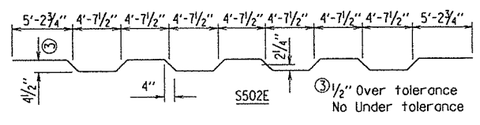
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	615	36'-2"	Str.
P401E	628	5'-6"	3"
P402E	48	4'-10"	3"
P403E	32	38'-0"	Str.
P404E	12	16'-6"	Str.
P405E	36	14'-8"	Str.
P406E	40	11'-2"	Str.
S501E	136	42'-10"	Str.
S502E	135	43'-8"	3"
P501E	628	4'-9"	3 3/4"
S601E	136	42'-8"	Str.
S602E	46	53'-0"	Str.
S701E	272	11'-8"	6 1/2"

BENDING DIAGRAMS

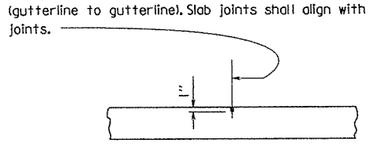
Dimensions are out to out of bars.





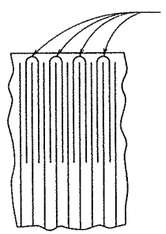
Bars marked with an "E" suffix shall be epoxy coated.

1/2" x 1" Type 3, 4 or 6 Joint Sealer. See subsections 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 joint shall be installed before the parapet rail 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. The joint sealer shall extend across the deck slab (gutterline to gutterline). Slab joints shall align with parapet open joints.



SLAB JOINT DETAIL

No Scale



DETAIL A

No Scale

STATE OF ARKANSAS
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SHEET 4 OF 5

DETAILS OF 170' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 2) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HOT DATE: 8/17/07 FILENAME: bca0904x13_sl.dgn

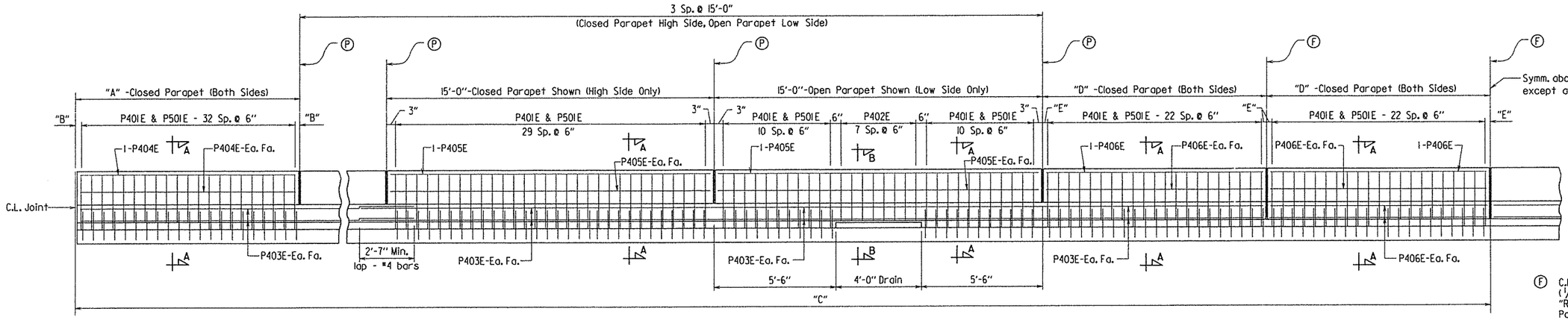
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED

DESIGNED BY: CMW DATE: 8/13

BRIDGE NO. 07279 DRAWING NO. 53841

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	303	636
				①	07279 - 170' UNIT - 53842			

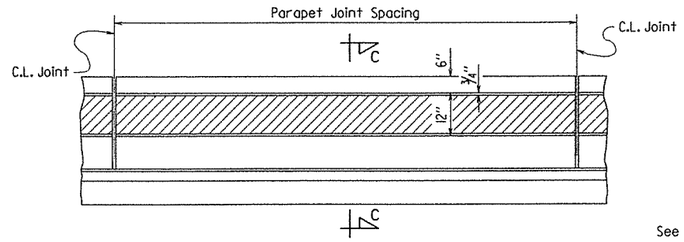


PARAPET RAIL REINFORCING PLAN

Scale: 3/8" = 1'-0"

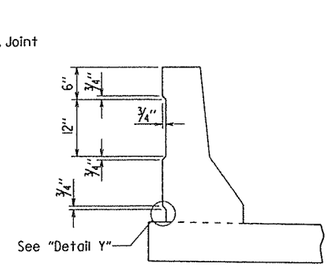
Ⓕ C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. XXXXX. Stop 4" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. XXXXX. Stop 1'-2" from top of slab.



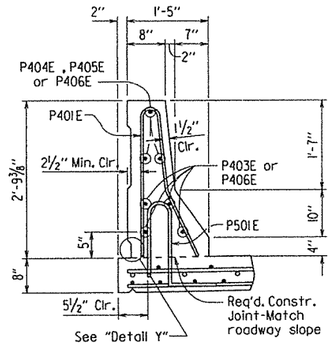
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



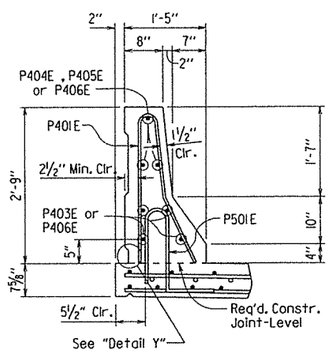
SECTION C-C

No Scale



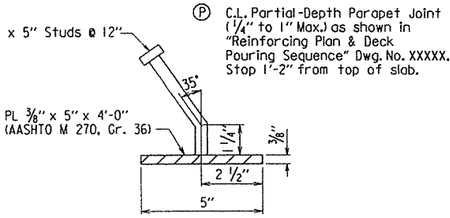
SECTION A-A

Low Side
Scale: 3/4" = 1'-0"



SECTION A-A

High Side
Scale: 3/4" = 1'-0"

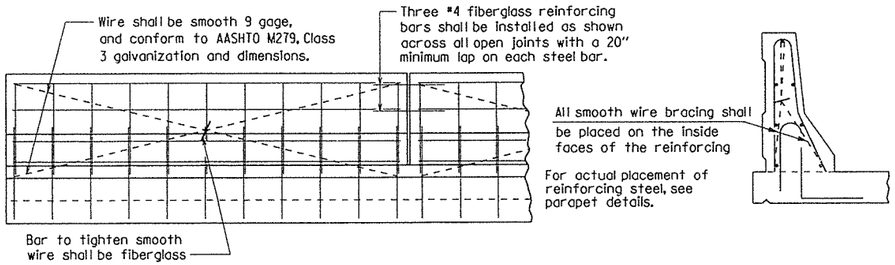


DETAIL Z

No Scale

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 Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."

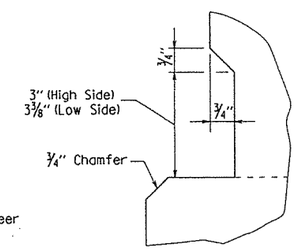


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

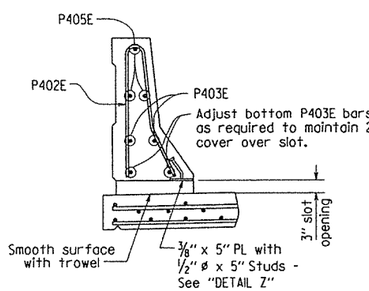
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



DETAIL Y

No Scale



SECTION B-B

Scale: 3/4" = 1'-0"

TABLE OF VARIABLES

Gutterline	Span	"A"	"B"	"C"	"D"	"E"
High Side	3	16'-10 13/16"	5 7/16"	84'-10 7/16"	11'-5 13/16"	2 5/16"
	4	16'-10 13/16"	5 7/16"	84'-10 7/16"	11'-5 13/16"	2 5/16"
Low Side	3	17'-2 13/16"	7 3/8"	85'-3 13/16"	11'-6 1/2"	3 1/4"
	4	17'-2 13/16"	7 3/8"	85'-3 13/16"	11'-6 1/2"	3 1/4"

STATE OF ARKANSAS
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SHEET 5 OF 5

DETAILS OF 170' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 2) MCKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: HOT DATE: 8/20/07 FILENAME: bca0904xl3_sl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED
DESIGNED BY: CMJ DATE: 8/13

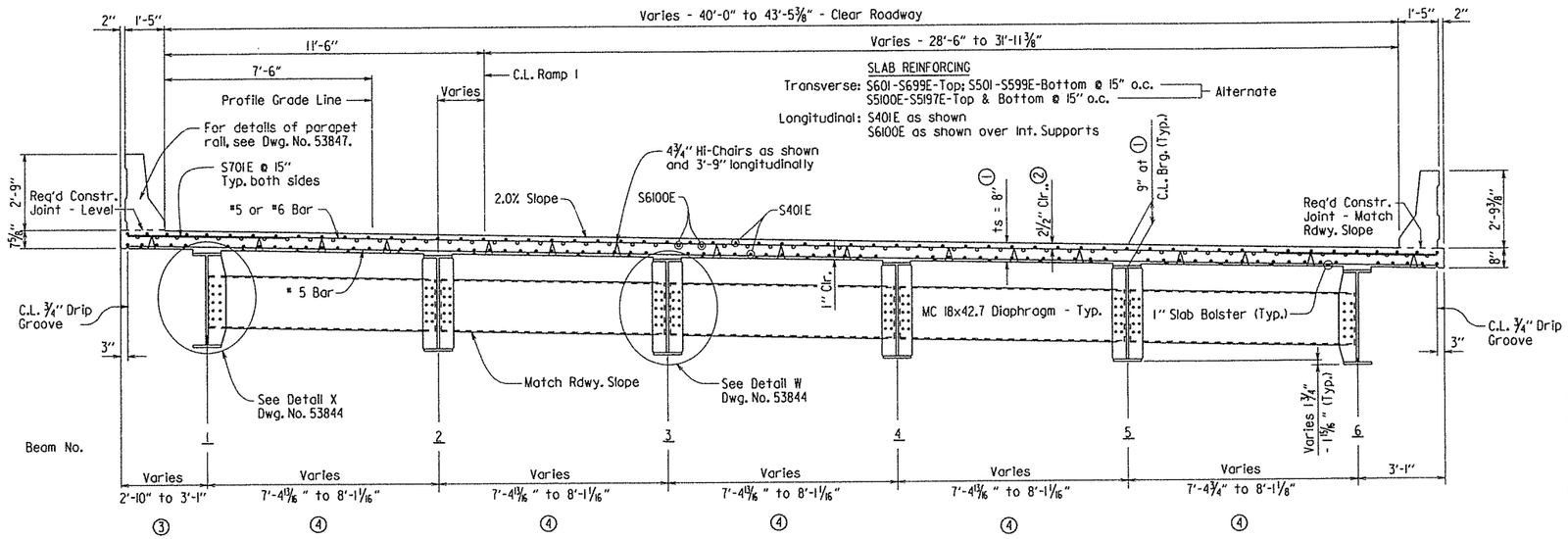
BRIDGE NO. 07279 DRAWING NO. 53842

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	304	636
				(1) 07279		124' UNIT		53843

Class 2 Protective Surface Treatment shall be applied to the top of the Roadway Surface. A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job CA0904 "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.

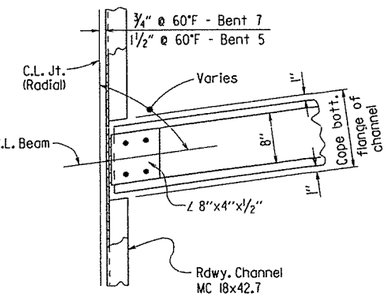
The Superstructure Details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.



TYPICAL ROADWAY SECTION

Looking Ahead
Scale: ⅜" = 1'-0"

For General Notes, See Dwg. No. 53848.



CHANNEL CONNECTION DETAIL

No Scale

(1) See Adjustment for Slab Thickness Tolerance.

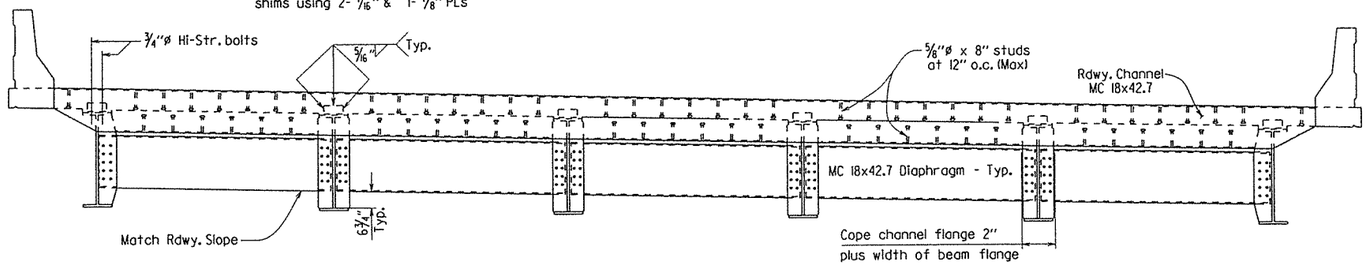
(2) Tolerance: Minus = ¼": Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See adjustment for Slab Thickness Tolerance.

(3) Longitudinal reinforcing steel shall be placed on curves concentric with C.L. Ramp 1.

(4) Longitudinal reinforcing steel is flared from C.L. Joint @ Bent 5 to Bent 7.

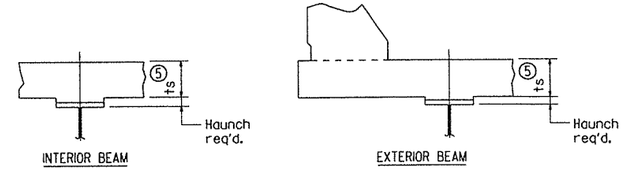
Expansion Device:
Rdwy. Channel - MC 18x42.7
Conn. ∠'s 8"x4"x ½"
Detail Device ⅛" high & provide ¼" shims using 2- 1/16" & 1- ⅛" PLs

For details of poured silicone joint, see Dwg. No. 53849.



SECTION THRU JOINT

Looking Ahead
Scale: ⅜" = 1'-0"



(5) Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ts = slab thickness as shown on Typical Roadway Section.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance : Minimum - occurs when top flange contacts 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. 1499I for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

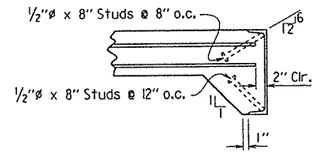
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No 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.



As an alternate to 5/8"ø studs, ½"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.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCING

No Scale

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

SHEET 1 OF 5

DETAILS OF 124' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 3) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

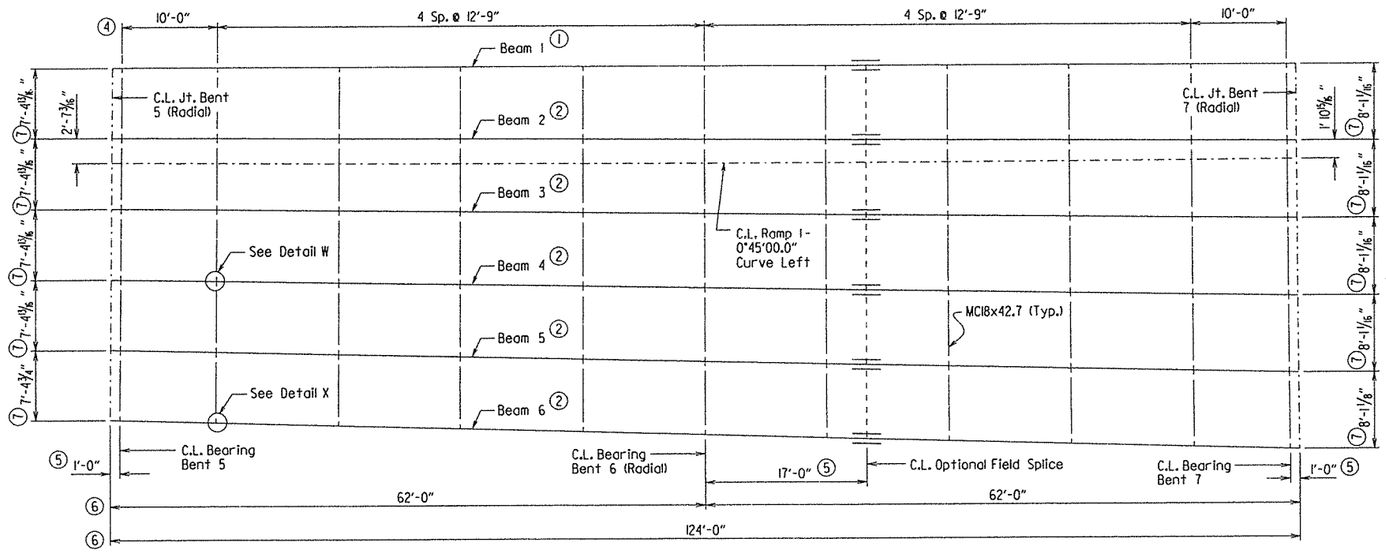
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 9/19/13 FILENAME: bca0904x13_s2.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED
DESIGNED BY: CMW DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53843

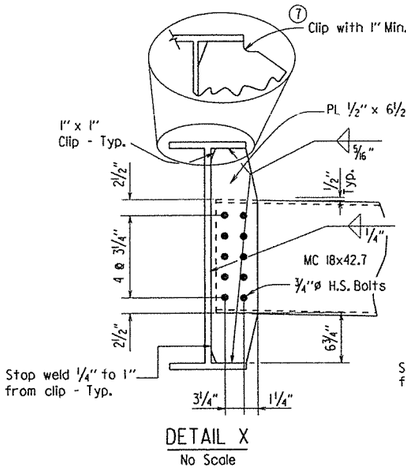
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	305	636
				(1) 07279		124' UNIT	53844	



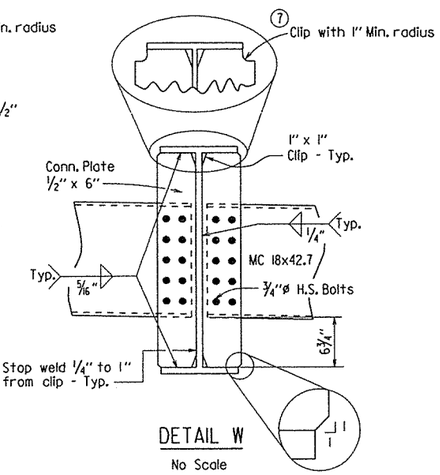
FRAMING PLAN

Scale: ⅛" = 1'-0"



DETAIL X

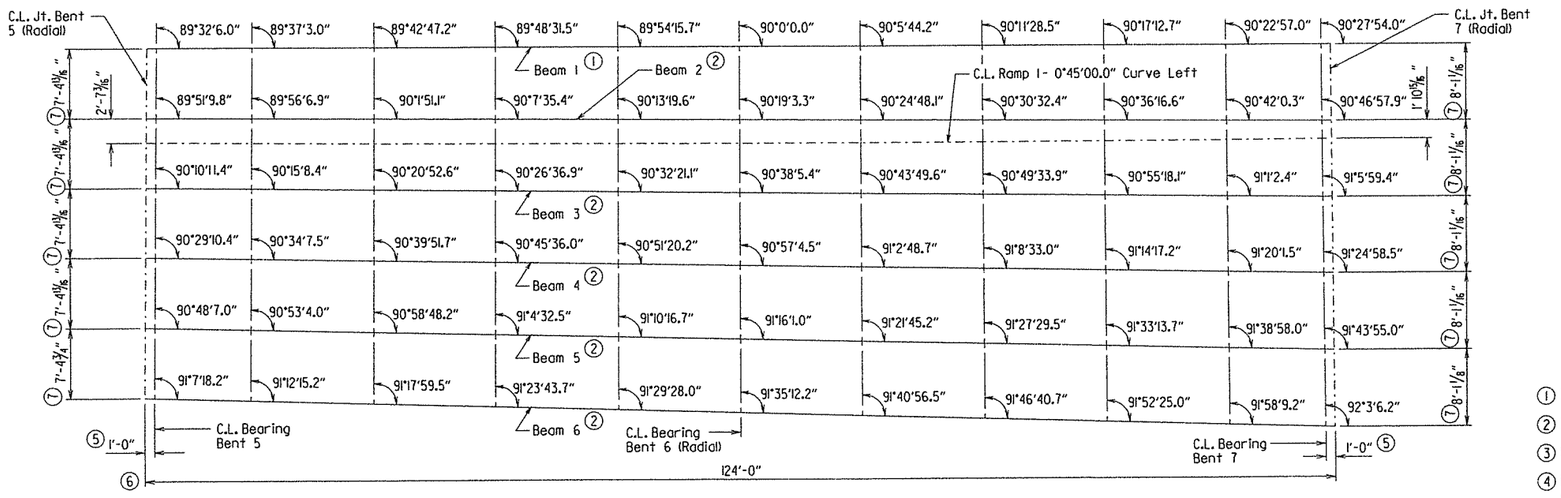
No Scale



DETAIL W

No Scale

(7) If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accomodate the deck form support.

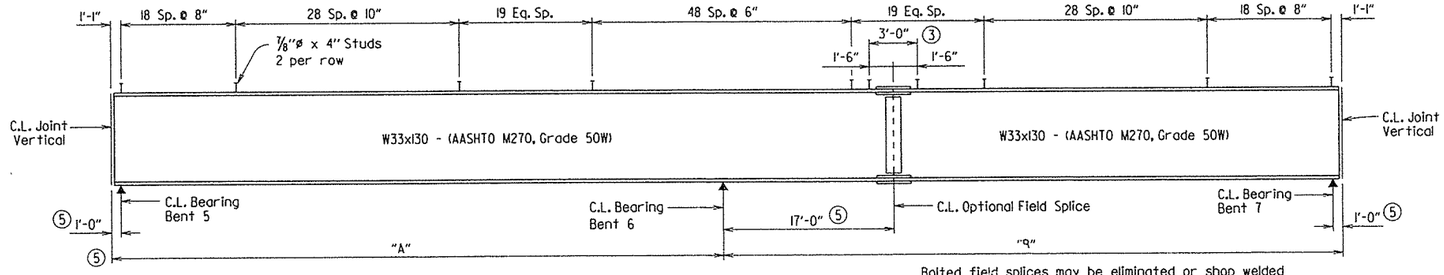


FRAMING PLAN

Scale: ⅛" = 1'-0"

TABLE OF VARIABLES

Beam	"A"	"B"
1	61'-11"	61'-11"
2	61'-11¾"	61'-11⅞"
3	62'-0½"	62'-0⅝"
4	62'-1⅝"	62'-1½"
5	62'-2⅛"	62'-2⅜"
6	62'-2⅝"	62'-3¼"



BEAM ELEVATION

No Scale

Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

(1) Beam 1 is parallel to a chord of a concentric arc C.L. Ramp 1.

(2) Beams 2 thru 6 are flared from C.L. Joint @ Bent 5 to Bent 7.

(3) Shear Connectors in this region may be omitted if optional field splice is used.

(4) Diaphragms at Bents 5 & 7 shall be constructed parallel to C.L. Joint. All other diaphragms shall be placed on Radial Lines and spaced along C.L. Ramp 1.

(5) Measured along C.L. Beam.

(6) Measured along C.L. Ramp 1.

(7) At C.L. Joint.

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SHEET 2 OF 5

DETAILS OF 124' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 3) McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 9/20/13 FILENAME: bca0904x13_s2.dgn

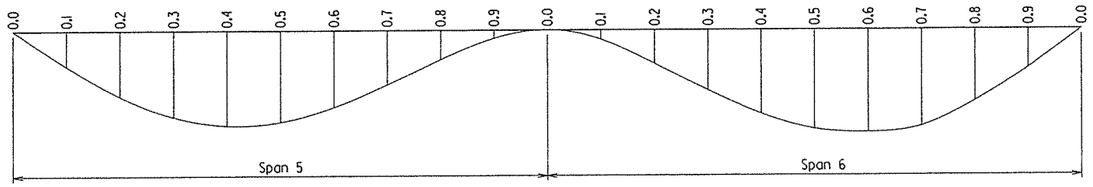
CHECKED BY: DHP DATE: 12-9-13 SCALE: As Shown

DESIGNED BY: CMW DATE: 8/13

BRIDGE NO. 07279 DRAWING NO. 53844

PRINT DATE: 12/9/2013

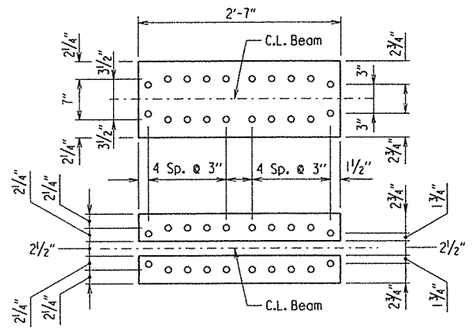
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	306	636
				(1) 07279		124' UNIT	53845	



Camber for Dead Load Deflection plus Vertical curve ± 1/4" tolerance. Deflections shown are from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.

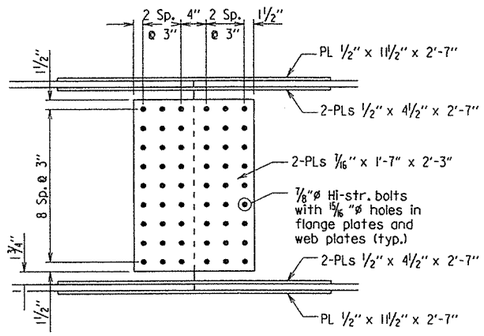
TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		EXTERIOR BEAM	INTERIOR BEAM	EXTERIOR BEAM	INTERIOR BEAM	EXTERIOR BEAM	INTERIOR BEAM
5	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.037	0.042	0.209	0.228	0.234	0.240
	0.2	0.069	0.077	0.386	0.420	0.431	0.442
	0.3	0.090	0.101	0.506	0.551	0.565	0.580
	0.4	0.100	0.111	0.557	0.606	0.622	0.638
	0.5	0.096	0.107	0.536	0.583	0.599	0.614
	0.6	0.081	0.090	0.452	0.490	0.505	0.516
	0.7	0.058	0.065	0.322	0.347	0.360	0.365
	0.8	0.032	0.036	0.175	0.187	0.196	0.197
	0.9	0.010	0.011	0.051	0.053	0.057	0.056
6	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.010	0.011	0.060	0.070	0.066	0.073
	0.2	0.032	0.036	0.191	0.219	0.212	0.229
	0.3	0.058	0.065	0.344	0.391	0.382	0.409
	0.4	0.081	0.090	0.478	0.542	0.531	0.567
	0.5	0.096	0.107	0.565	0.638	0.627	0.668
	0.6	0.100	0.111	0.585	0.660	0.650	0.691
	0.7	0.090	0.101	0.530	0.598	0.589	0.626
	0.8	0.069	0.077	0.404	0.455	0.449	0.477
	0.9	0.037	0.042	0.219	0.247	0.243	0.259
	0	0.000	0.000	0.000	0.000	0.000	0.000



FLANGE SPLICE

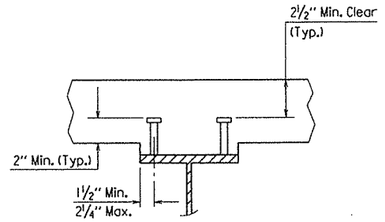
Scale: 1" = 1'-0"



WEB SPLICE

Scale: 1" = 1'-0"

All splice plates shall be AASHTO M270, Gr. 50W



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 beam flange in accordance with the recommendations of the Manufacturer. ¾"ø studs may be used in place of the 7/8"ø studs shown, at the ratio of 1.361 - ¾"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. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL

No Scale

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SHEET 3 OF 5

DETAILS OF 124' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 3) McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 9/20/13
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DESIGNED BY: CMW DATE: 8/13

FILENAME: bca0904xl3_s2.dgn
SCALE: As Shown

BRIDGE NO. 07279 DRAWING NO. 53845

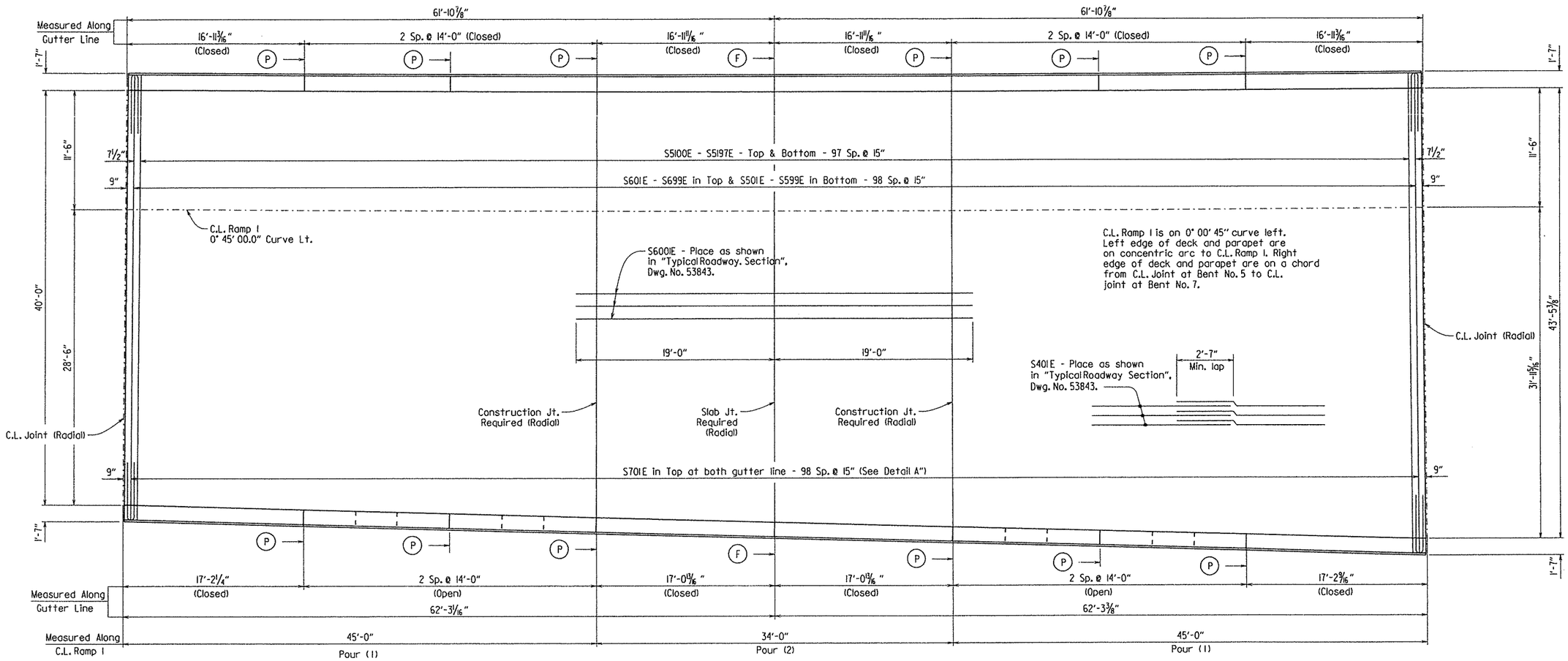
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	307	636
				(1) 07279		124' UNIT	53846	

(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'-2" from top of slab.

All transverse reinfocing steel shall be placed on radial lines and shall be measured along C.L. Ramp 1. All longitudinal reinforcing steel shall be placed as shown on "TYPICAL ROADWAY SECTION". See Dwg. No. 53843.

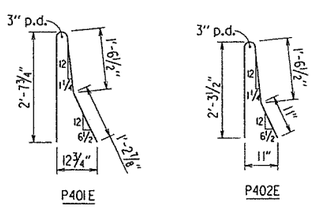


BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	536	32'-11"	Str.
P401E	464	5'-6"	3"
P402E	32	4'-10"	3"
P403E	32	32'-6"	Str.
P404E	24	16'-8"	Str.
P405E	24	13'-8"	Str.
S501E - S599E	1 each	42'-10" 46'-3"	Str.
S5100E - S5197E	2 each	42'-10" - 46'-3"	Str.
P501E	464	4'-9"	3 3/4"
S601E - S699E	1 each	42'-8" - 46'-1"	Str.
S6100E	58	38'-0"	Str.
S701E	198	12'-1"	6 1/2"

BENDING DIAGRAMS

Dimensions are out to out of bars.

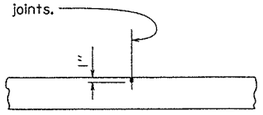


Bars marked with an "E" suffix shall be epoxy coated.

REINFORCING PLAN & DECK POURING SEQUENCE

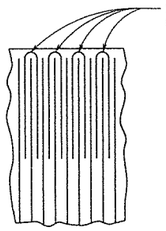
Scale: 3/16" = 1'-0"

1/2" x 1" Type 3, 4 or 6 Joint Sealer. See subsections 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 joint shall be installed before the parapet rail 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. The joint sealer shall extend across the deck slab (gutterline to gutterline). Slab joints shall align with parapet open joints.



SLAB JOINT DETAIL

No Scale



DETAIL A

No Scale

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 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 an 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.

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SHEET 4 OF 5
DETAILS OF 124' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 3)
McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

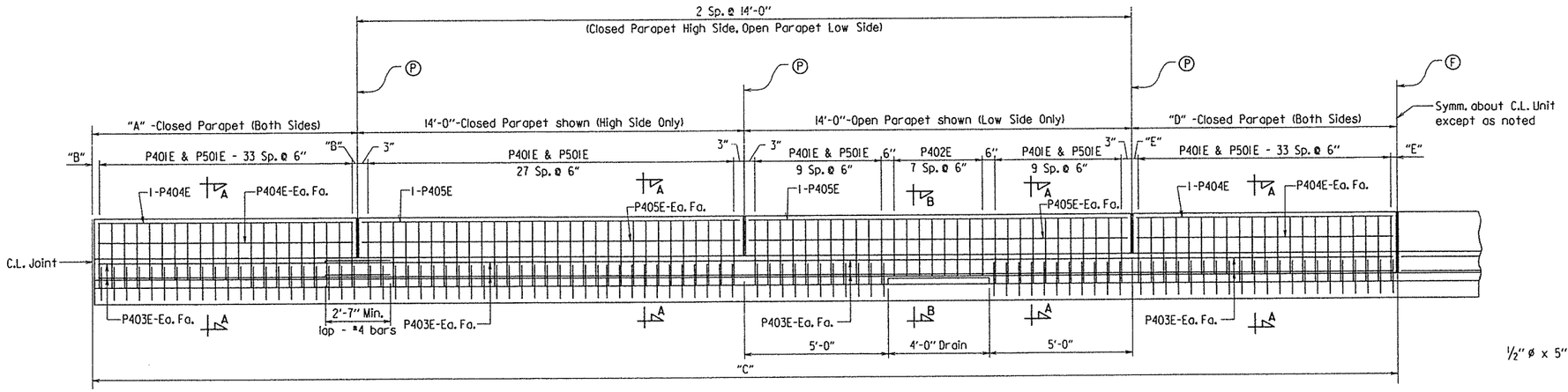
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CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED
DESIGNED BY: CMW DATE: 9/13

BRIDGE NO. 07279 DRAWING NO. 53846

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0904	308	636
(1)	07279 -	124' UNIT	- 53847	

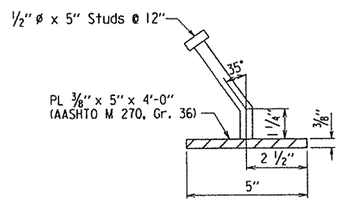


PARAPET RAIL REINFORCING PLAN

Scale: 3/8" = 1'-0"

(F) C.L. Full-Depth Parapet Joint (1/4" to 1" max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53846. Stop 4" from top of slab.

(P) C.L. Partial-Depth Parapet Joint (1/4" to 1" max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 53846. Stop 1'-2" from top of slab.

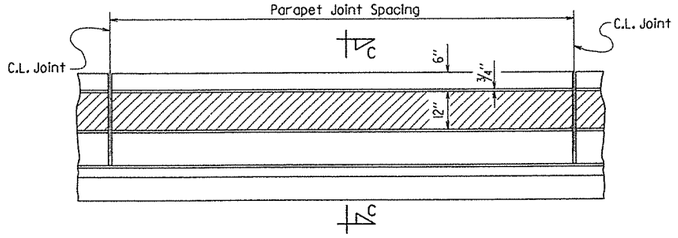


DETAIL Z

No Scale

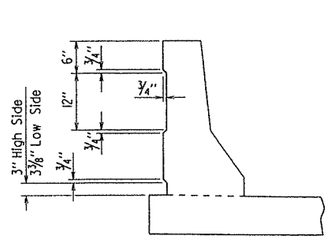
The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long., granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)."



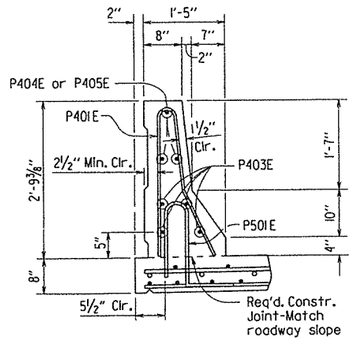
DETAILS OF PARAPET ENHANCEMENT

Outside Face Of Rail
No Scale



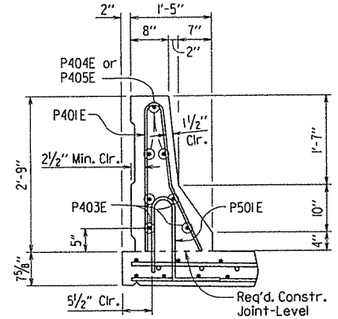
SECTION C-C

No Scale



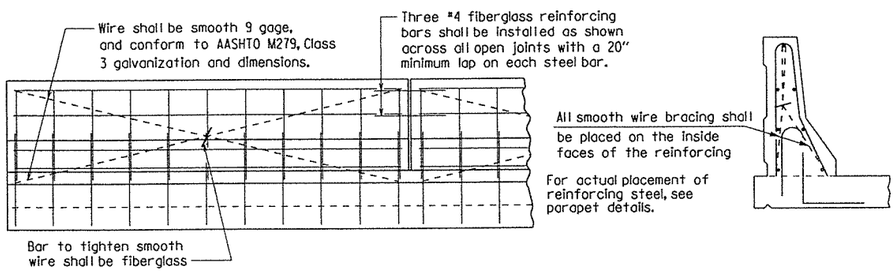
SECTION A-A

Low Side
Scale: 3/4" = 1'-0"



SECTION A-A

High Side
Scale: 3/4" = 1'-0"

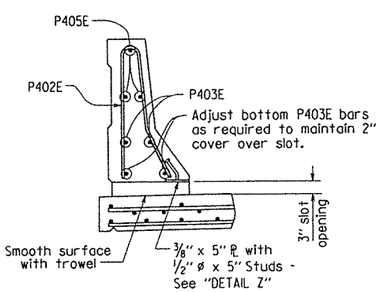


All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

NO SCALE



SECTION B-B

Scale: 3/4" = 1'-0"

TABLE OF VARIABLES

Gutterline	Span	"A"	"B"	"C"	"D"	"E"
High Side	5	16'-11 3/16"	2 5/8"	61'-10 7/8"	16'-11 11/16"	2 7/8"
	6	16'-11 3/16"	2 5/8"	61'-10 7/8"	16'-11 11/16"	2 7/8"
Low Side	5	17'-2 1/4"	4 1/8"	62'-3 1/16"	17'-0 13/16"	3 3/8"
	6	17'-2 3/16"	4 5/16"	62'-3 3/16"	17'-0 13/16"	3 3/8"

STATE OF ARKANSAS
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BRIDGE ENGINEER

SHEET 5 OF 5

DETAILS OF 124' CONTINUOUS COMPOSITE W-BEAM UNIT (UNIT 3)

McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

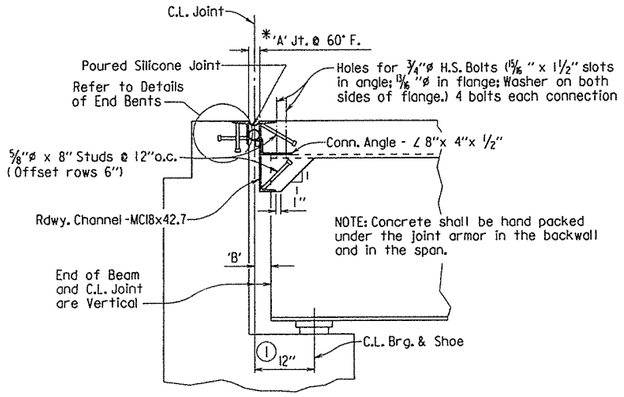
LITTLE ROCK, ARK.

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DESIGNED BY: CMW DATE: 8/13

BRIDGE NO. 07279 DRAWING NO. 53847

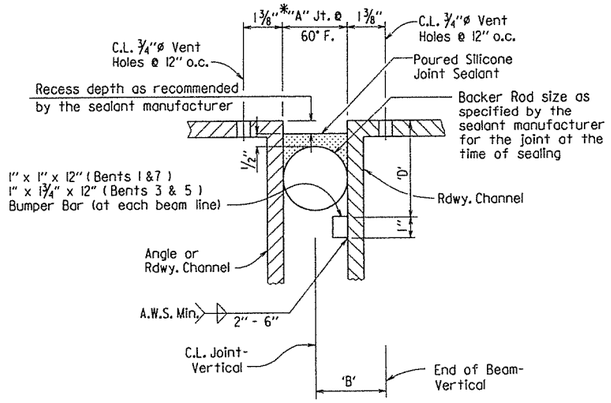
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	309	636
				①	07279 - ALL UNITS - 53848			



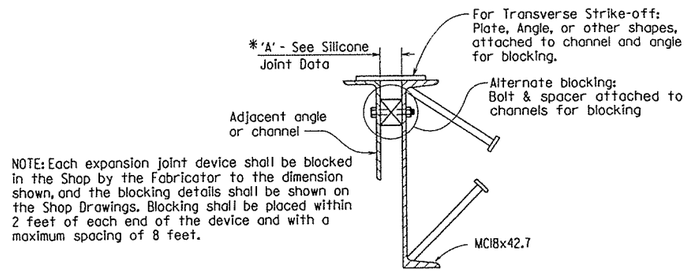
SECTION THRU JOINT AT BENTS 1 & 7

Scale: ¾" = 1'-0"



DETAIL OF POURED SILICONE JOINT SEAL

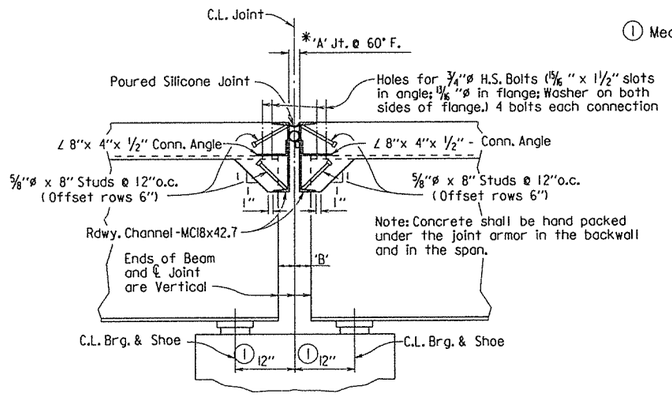
NO SCALE



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

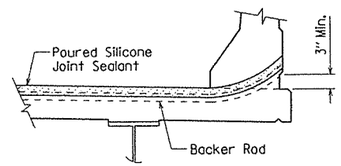
Scale: 1½" = 1'-0"

① Measured along C.L. Beam.



SECTION THRU JOINT AT BENTS 3 & 5

Scale: ¾" = 1'-0"



JOINT SEAL PLACEMENT AT CURB

NO SCALE

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 & 7	1 5/16"	1½"	1 3/16"	2 7/16" ±	1" x 1"	5"
3 & 5	2¾"	3"	2 11/16"	3 5/8" ±	1" x 1¾"	5"

* 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° 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 that 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.

EXPANSION DEVICE INSTALLATION

BENTS 1 & 7

The Contractor may elect to install the expansion device for the end bents 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. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

BENTS 3 & 5

After all beams on both sides of the joint are erected, the blocked expansion device shall be installed and adjusted for grade. Connection bolts shall be tightened only on the unit whose concrete will be poured first. Connection bolts on the second unit shall be loosely installed to allow for thermal movements and for end rotation of the beams of the first unit while the concrete deck is poured.

After the concrete on the first unit has hardened and immediately prior to pouring concrete for the second unit, the blocking shall be removed and the joint width shall be adjusted for temperature. Joint openings shown are for when concrete is poured at an air temperature of 60°F. If concrete is poured at other temperatures, set the joint width by interpolating. After the joint width has been set, the connection bolts on the second unit shall be tightened and concrete in the second unit can then be poured. A joint opening adjustment is not required for end rotation of the beams caused by the weight of the slab and parapets.

STATE OF ARKANSAS
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12/11/13
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DETAILS OF JOINTS
McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CSL DATE: 10/01/13 FILENAME: bca0904b2_jt.dgn

CHECKED BY: DHP DATE: 12-9-13 SCALE: AS NOTED

DESIGNED BY: STD DATE: —

BRIDGE NO. 07279 DRAWING NO. 53848

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	310	636
				①		07279 - ALL UNITS - 53849		

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 Edition with 2005 and 2006 interims).

LIVE LOADING: HL-93

MATERIALS AND STRENGTHS:
Concrete: All concrete shall be Class S(AE) with a minimum 28 day strength f'c = 4000 psi.

Reinforcing Steel: Reinforcing steel shall be Grade 60 (Yield Strenght =60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Structural Steel: Structural steel shall conform to AASHTO M270, Gr. 50W (Fy = 50,000 psi.) or AASHTO M270 Gr.36 (Fy = 36,000 psi.).

STRUCTURAL STEEL:
All Structural Steel shall be AASHTO M270, Gr. 50W unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Beam Spans (M270, Gr.50W)". Structural Steel completely embedded in concrete may be AASHTO M270. Gr. 36 or Gr. 50. AASHTO M270, Gr.50W Steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84e 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. Payment will be based on the basis of shapes and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams including web and flange splice plates, bent plate and channel 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 shall be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr.50W)".

Steel 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.

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.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with the recommendations of the manufacturer.

All beams shall be blocked in their true position in the shop as specified in subsection 807.54(b)(1). The camber, length of sections, distance between bearings, and opening of joints shall be measured with the beams in their true position and this information shall become part of the permanent record of this job. The component parts shall be match marked in this assembly and those marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60 degrees F. A tolerance of 1/4" (plus or minus) allowed for camber.

Field connections shall be bolted with high-strength bolts. Bolts shall be 3/4"ø, except as noted, and open holes shall be 11/16 "ø unless otherwise noted. Holes for 3/4"ø bolts may be 15/16 "ø if a washer is supplied for use under both the nut and the head of the bolt. Bolt spacing shall be 2 1/2" for 3/4"ø bolts. For field splices, bolts shall be 7/8"ø bolts. Open holes shall be 15/16 "ø. Bolt spacing shall be 3" for 7/8'ø bolts. Bolts shall be placed with heads on the outside face of the exterior beam web and on the bottom of the beam 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 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.

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 deck.

Bearings shall be seated in accordance with subsection 808.08. This work and material will not be paid for directly but will be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr. 50W)".

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)".

CONCRETE:
All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4000 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

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 bridge deck slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

PRINT DATE: 12/9/2013

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

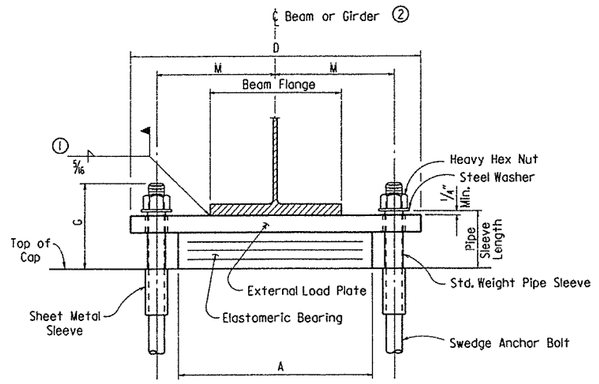
BRIDGE ENGINEER

GENERAL NOTES
McKISIC CREEK RAMP I
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

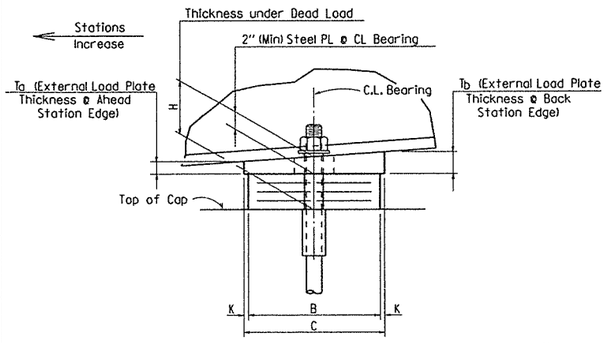
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BRIDGE NO. 07279 DRAWING NO. 53849

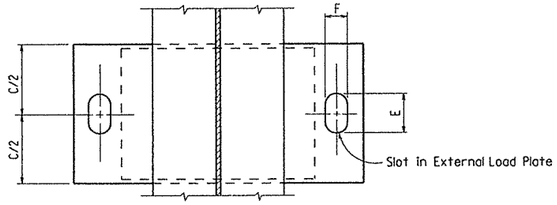
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				JOB NO.		CA0904	311	636
				①	07279	ELASTO. BRGS.		53850



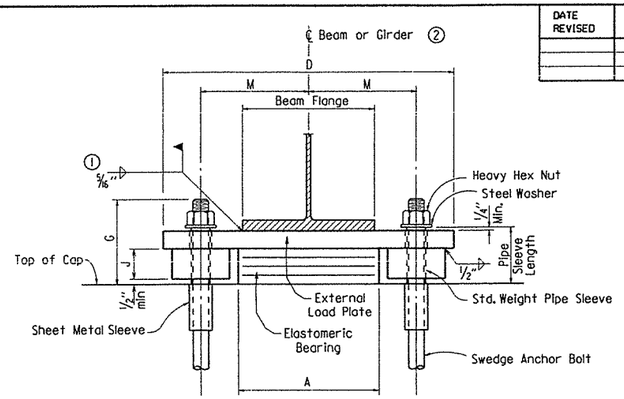
FRONT VIEW - AT BENT NOS. 1, 3 & 5 (AHEAD & BACK), & 7



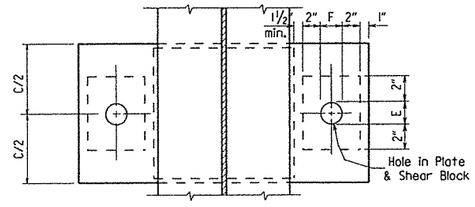
SIDE VIEW - AT BENT NOS. 1, 3 & 5 (AHEAD & BACK), & 7



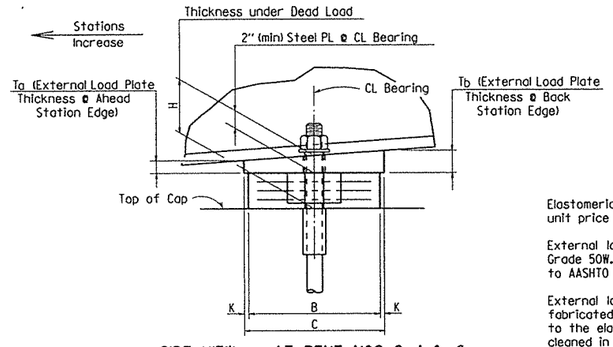
PLAN VIEW - AT BENT NOS. 1, 3 & 5 (AHEAD & BACK), & 7



FRONT VIEW - AT BENT NOS. 2, 4 & 6



PLAN VIEW - AT BENT NOS. 2, 4 & 6

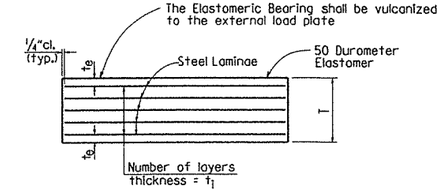


SIDE VIEW - AT BENT NOS. 2, 4 & 6

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 Centerline Beam or Girder shall align with centerline 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.

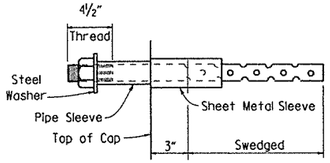


t_e = thickness of elastomer cover on top and bottom of pad

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 OPL 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 Beam Spans (M270, Grade 50W)."

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 M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates and external load plates with shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces 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(e) for unpainted weathering steel.

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 Beam Spans (M270, Gr.50W)". 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".

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: UNIT	LOCATION: BEAM NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD: G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE: C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT: 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.)
07279	1	159'	All	EXP	5	121.00	6¾"	3 11/16"	16"	8"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	9"	26"	3 1/2"	2 1/4"	-	1/2"	10 1/4"	1.82	2.18	1 1/2"ø x 24"	55	1 1/2"ø x 4 1/8"	3"ø x 6"	3"
	2	159'	All	FIX	5	292.00	7 1/4"	3 11/16"	16"	15"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	16"	35 3/4"	3 1/8"	3 1/8"	1 1/4"	1/2"	13 1/4"	1.69	2.31	2"ø x 29"	55	2 1/2"ø x 4 1/8"	4"ø x 6"	3 3/4"
	3 Back	159'	All	EXP	5	121.00	6¾"	3 11/16"	16"	8"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	9"	26"	3 1/2"	2 1/4"	-	1/2"	10 1/4"	1.82	2.18	1 1/2"ø x 24"	55	1 1/2"ø x 4 1/8"	3"ø x 6"	3"
	3 Ahead	170'	All	EXP	5	129.00	7"	3 11/16"	20"	8"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	9"	31"	4 1/8"	2 5/8"	-	1/2"	12 1/2"	1.82	2.18	1 3/4"ø x 27"	55	2"ø x 4 1/8"	4"ø x 6"	3 3/8"
	4	170'	All	FIX	5	317.00	7 1/4"	3 11/16"	20"	12"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	13"	39 3/4"	3 1/8"	3 1/8"	1 1/4"	1/2"	15 1/4"	1.74	2.26	2"ø x 29"	55	2 1/2"ø x 4 1/8"	4"ø x 6"	3 3/4"
	5 Back	170'	All	EXP	5	129.00	7"	3 11/16"	20"	8"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	9"	31"	4 1/8"	2 5/8"	-	1/2"	12 1/2"	1.83	2.17	1 3/4"ø x 27"	55	2"ø x 4 1/8"	4"ø x 6"	3 3/8"
	5 Ahead	124'	All	EXP	6	85.00	6¾"	3 11/16"	15 1/2"	8"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	9"	25 1/2"	3 1/4"	2 1/4"	-	1/2"	10"	1.83	2.17	1 1/2"ø x 24"	55	1 1/2"ø x 4 1/8"	3"ø x 6"	3"
	6	124'	All	FIX	6	197.00	7"	3 11/16"	15 1/2"	11"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	12"	34 1/4"	2 5/8"	2 5/8"	1 1/4"	1/2"	12 3/4"	1.79	2.21	1 3/4"ø x 27"	55	2"ø x 4 1/8"	4"ø x 6"	3 3/8"
	7	124'	All	EXP	6	95.00	6¾"	3 11/16"	15 1/2"	8"	2	1/2"	1/4"	3 @ 12 Ga.	1 13/16"	9"	25 1/2"	3 1/4"	2 1/4"	-	1/2"	10"	1.86	2.14	1 1/2"ø x 24"	55	1 1/2"ø x 4 1/8"	3"ø x 6"	3"

*Maximum Design Load = Service I Limit State

Tabular Data by : CSL Date: 10-02-13

Checked by : DHP Date: 12-9-13

Designed by : CMW Date: 9/13/13

STATE OF ARKANSAS Carl J. Fuselier REGISTERED PROFESSIONAL ENGINEER No. 7510 12/11/13 CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS McKISIC CREEK RAMP I

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CRE DATE: 2-09-05 FILENAME: bca0904b2.el.dgn

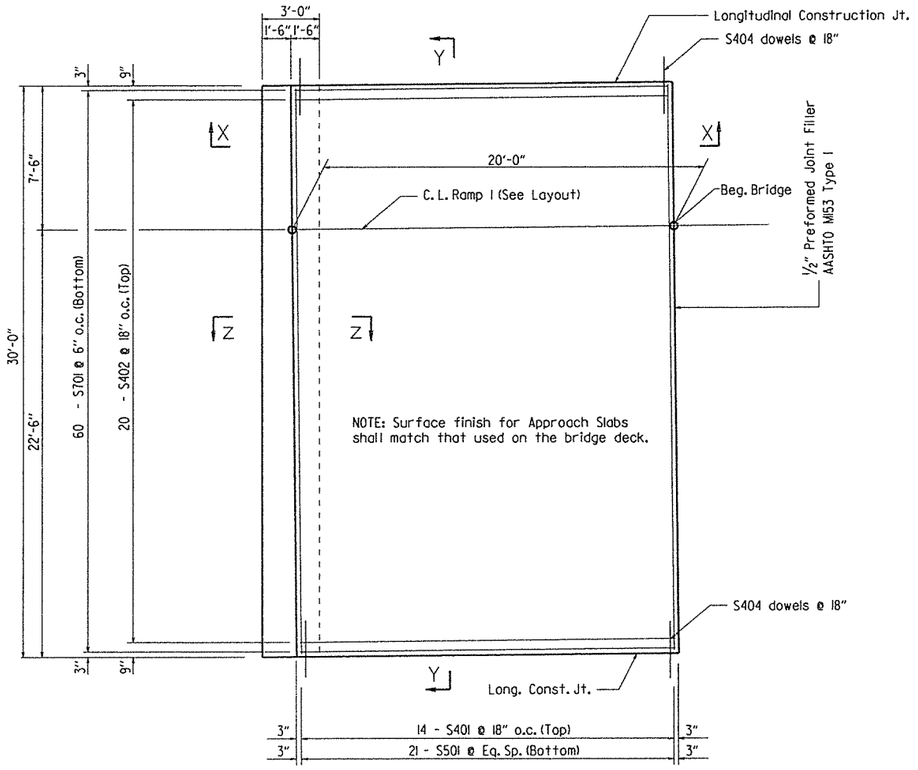
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DESIGNED BY: Std. DATE: ——

BRIDGE NO. 07279 DRAWING NO. 53850

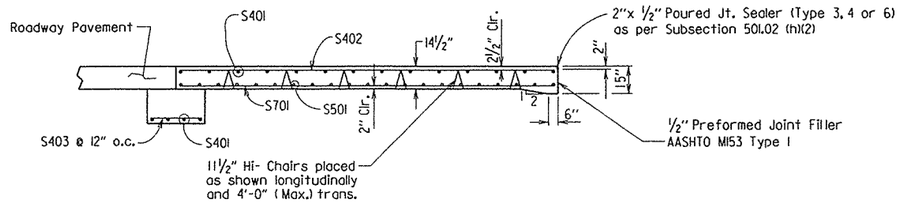
PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	312	636
				①		07279 - APPROACH SLAB - 53851		



PLAN - APPROACH SLAB
1/4" = 1'-0"

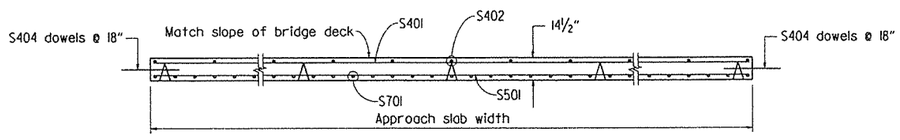
Longitudinal lines shall be constructed on arcs concentric to C.L. Ramp 1



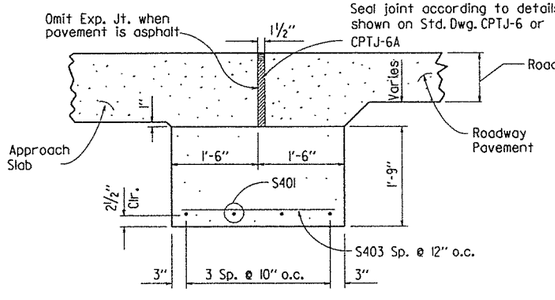
SECTION X-X
1/4" = 1'-0"

BAR LIST

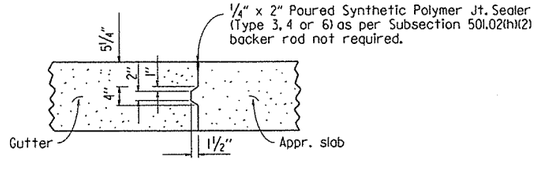
MARK	NO. REQ'D	LENGTH
S401	18	29'-8"
S402	20	19'-8"
S403	30	2'-8"
S404	28	3'-0"
S501	21	29'-8"
S701	60	19'-8"



SECTION Y-Y
No Scale



SECTION Z-Z
3/4" = 1'-0"



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
3/4" = 1'-0"

GENERAL NOTES

Concrete shall be class S(AE) (f'c = 4,000 psi.).

Reinforcement Steel shall be Grade 60 (yield sternqth = 60,000psi) conforming to AASHTO M31 or M322 ,Type A, with mill test reports.

Approach Slab (Type Special 7) will be measured and paid for in accordance with Section 504 of the Standard Specifications.

(FOR INFORMATION ONLY)
TABLE OF QUANTITIES FOR
TYPE SPECIAL 7 APPROACH SLAB

Reinforcing Steel	Concrete (Cu. Yds.)
3790 lb.	33.00

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 7 APPROACH SLAB McKISIC CREEK RAMP 1

ROUTE SEC.

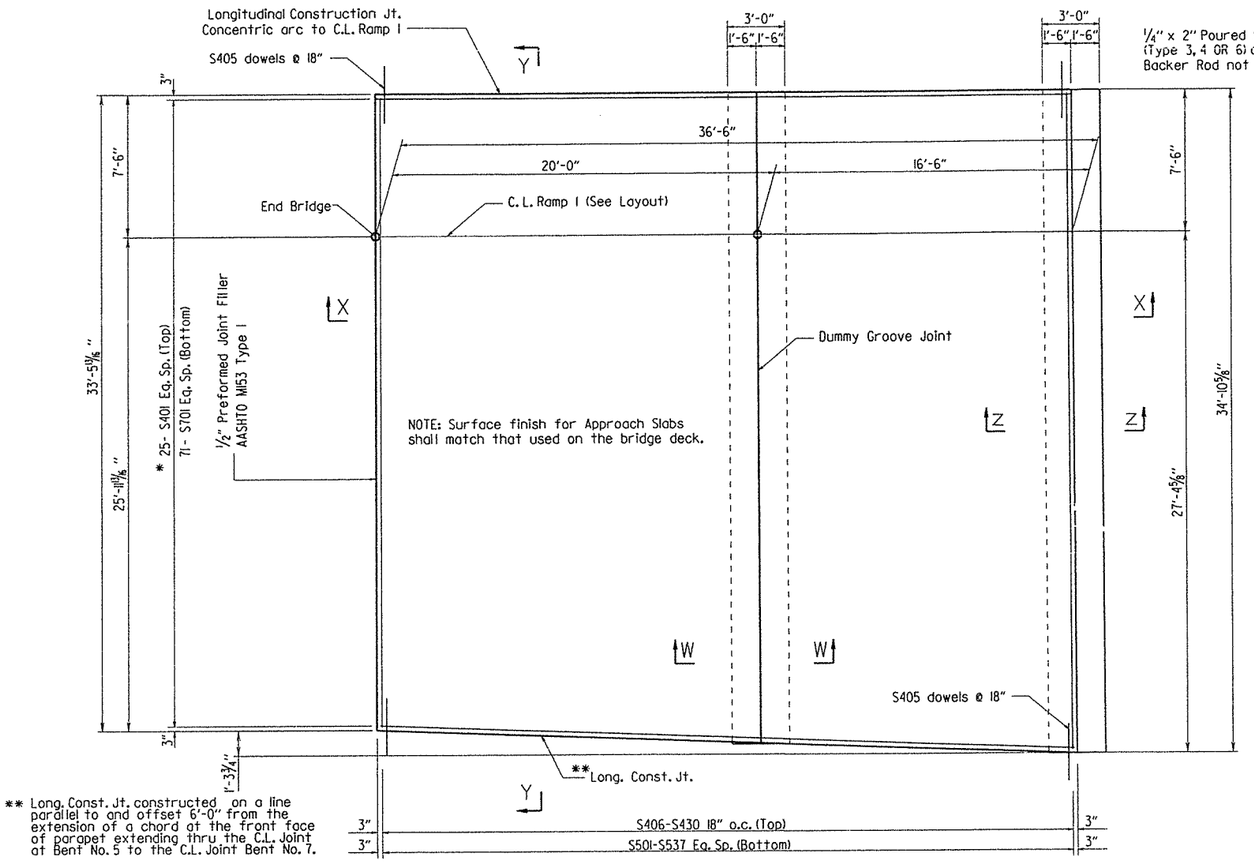
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CSL DATE: 9-18-13 FILENAME: bca0903b2_asl.dgn
CHECKED BY: DHP DATE: 12-9-13 SCALE: AS SHOWN
DESIGNED BY: Std. DATE:

BRIDGE NO. 07279 DRAWING NO. 53851

PRINT DATE: 12/9/2013

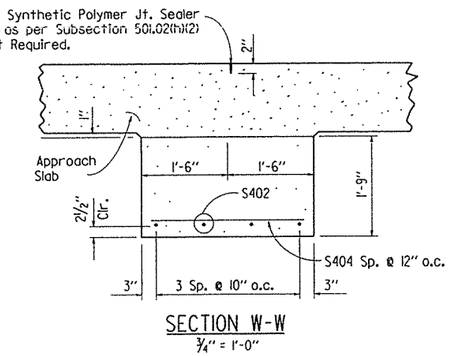
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	313	636
				(1)		07279 - APPROACH SLAB - 53852		



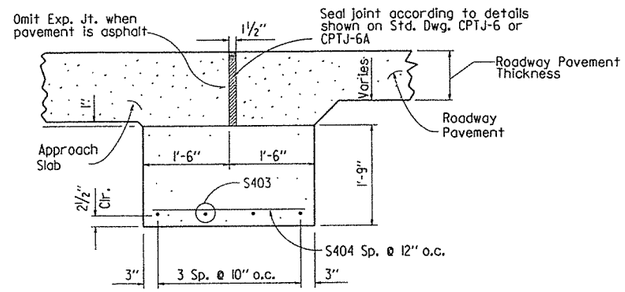
** Long. Const. Jt. constructed on a line parallel to and offset 6'-0" from the extension of a chord at the front face of parapet extending thru the C.L. Joint at Bent No. 5 to the C.L. Joint Bent No. 7.

PLAN - APPROACH SLAB
¼" = 1'-0"

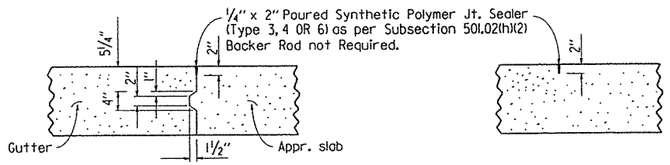
* Splay reinforcing to meet minimum edge distance.
Maximum spacing of S401 bars shall be 18" o.c.
Maximum spacing of S701 bars shall be 6" o.c.



SECTION W-W
¾" = 1'-0"

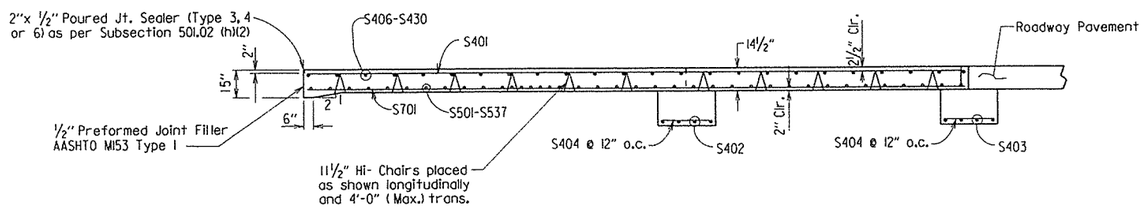


SECTION Z-Z
¾" = 1'-0"

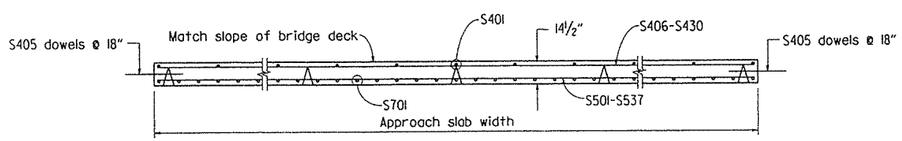


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
¾" = 1'-0"

DETAILS OF DUMMY GROOVED JOINT
¾" = 1'-0"



SECTION X-X
¼" = 1'-0"



SECTION Y-Y
No Scale

(FOR INFORMATION ONLY)
TABLE OF QUANTITIES FOR
TYPE SPECIAL 8 APPROACH SLAB

Reinforcing Steel	Concrete (Cu. Yds.)
8040 lb.	69.86

BAR LIST

MARK	NO. REQ'D.	LENGTH
S401	24	36'-2"
S402	4	33-11"
S403	4	34-6"
S404	72	2'-8"
S405	50	3'-0"
S406-S430	1 ea.	33'-2" to 34-6"
S501-S537	1 ea.	33'-2" to 34-6"
S701	70	36'-2"

GENERAL NOTES:

Concrete shall be Class S(AE) (f'c = 4,000 psi.).

Reinforcement Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Slab (Type Special 8) will be measured and paid for in accordance with Section 504 of the Standard Specifications.

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL 8 APPROACH SLAB McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

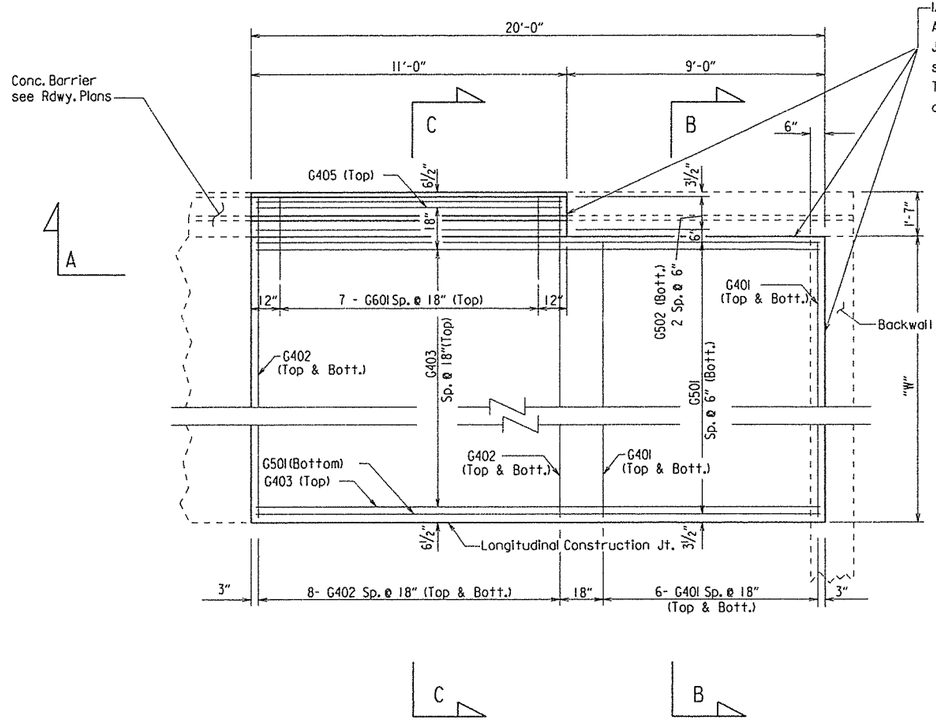
LITTLE ROCK, ARK.

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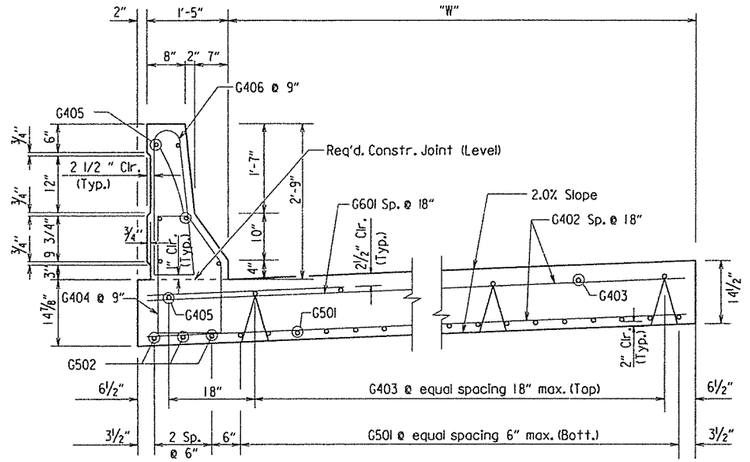
BRIDGE NO. 07279 DRAWING NO. 53852

PRINT DATE: 12/9/2013

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		CA0904	314	636
				1 07279	TYPE SPEC. APPR. GUTTER		53853	



PLAN
N.T.S.

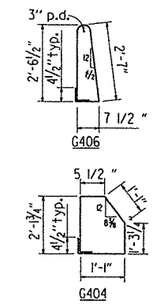


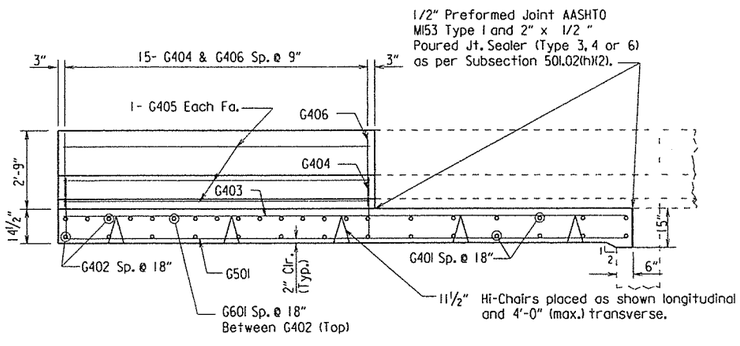
SECTION C-C
N.T.S.

BAR LIST

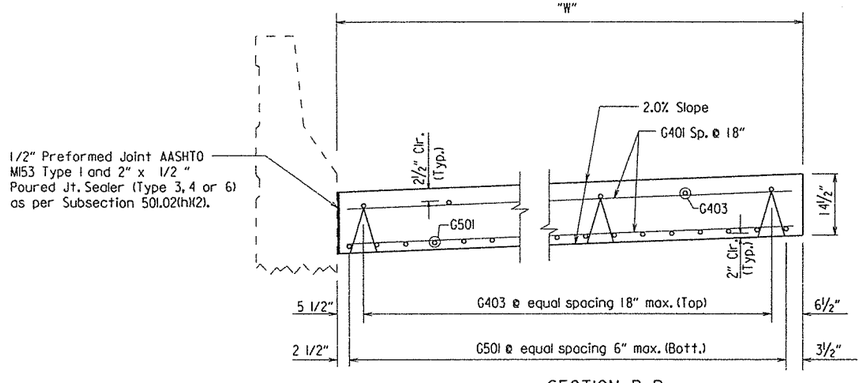
MARK	NO. REQ'D. FOR WIDTH "W" 4'-0"	NO. REQ'D. FOR WIDTH "W" 6'-0"	LENGTH	P.D.	BENDING DIAGRAMS
G401	12	12	"W"- 4"	Str.	
G402	16	16	"W" + 1'-3"	Str.	
G403	3	5	19'-8"	Str.	
G404	15	15	6'-5"	2"	
G405	7	7	10'-8"	Str.	
G406	15	15	6'-4"	2"	
G501	8	12	19'-8"	Str.	
G502	3	3	10'-8"	Str.	
G601	7	7	3'-1"	Str.	

Dimensions are out to out of bars.





SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

(FOR INFORMATION ONLY) QUANTITIES FOR ONE TYPE SPECIAL 6 APPROACH GUTTER

"W" width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
4	530	5.40
6	680	7.20

STATE OF ARKANSAS
Carl J. Fuselier
REGISTERED PROFESSIONAL ENGINEER
No. 7510
12/11/13
CARL J. FUSELIER

BRIDGE ENGINEER

GENERAL NOTES

Concrete shall be Class S or Class S(AE) (f'c = 4,000 psi.) or mixture used for Portland Cement Pavement.

Reinforcement Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

Approach Gutter (Type Special 6) will be measured and paid for in accordance with Section 504 of the Standard Specifications.

DETAILS OF TYPE SPECIAL 6 APPROACH GUTTER McKISIC CREEK RAMP 1

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

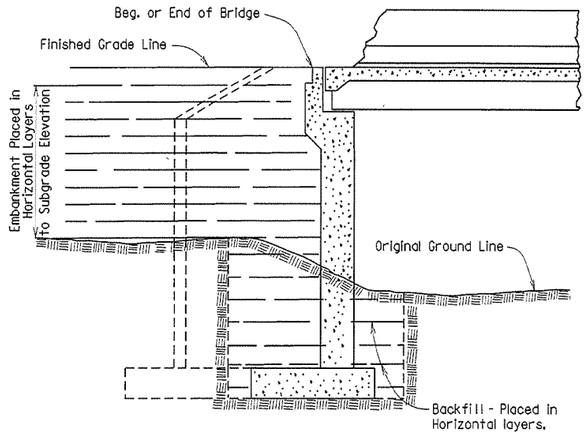
LITTLE ROCK, ARK.

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DESIGNED BY: STD. DATE:

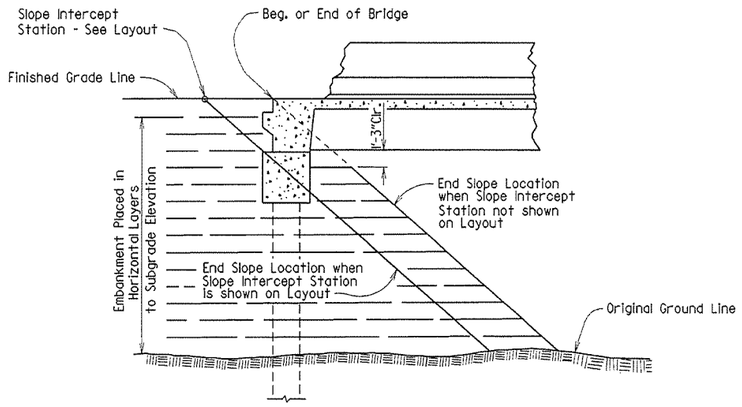
BRIDGE NO. 07278 DRAWING NO. 53853

PRINT DATE: 12/9/2013

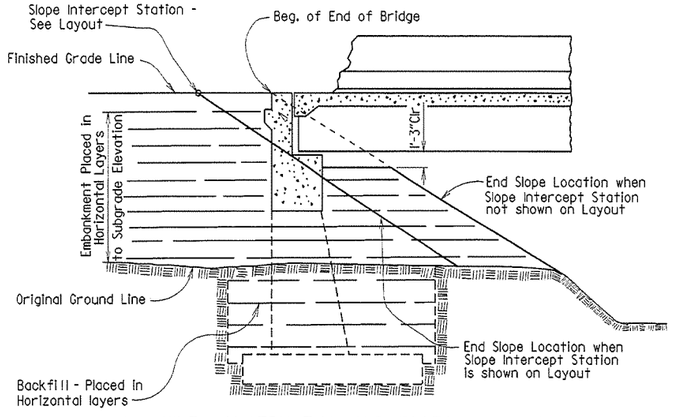
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		315	
				JOB NO.				
				①	EMBANKMENT & BACKFILL			1888A



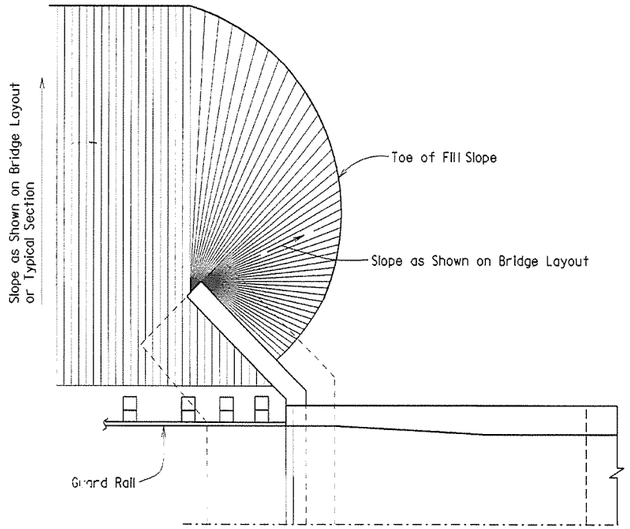
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



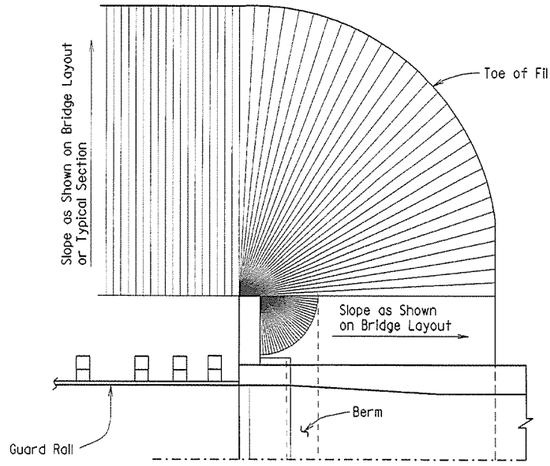
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



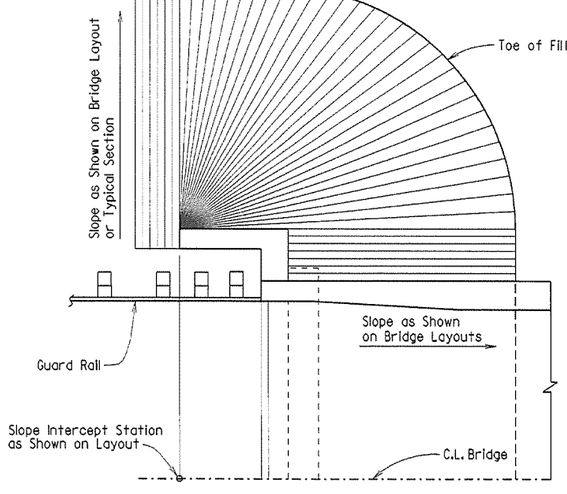
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



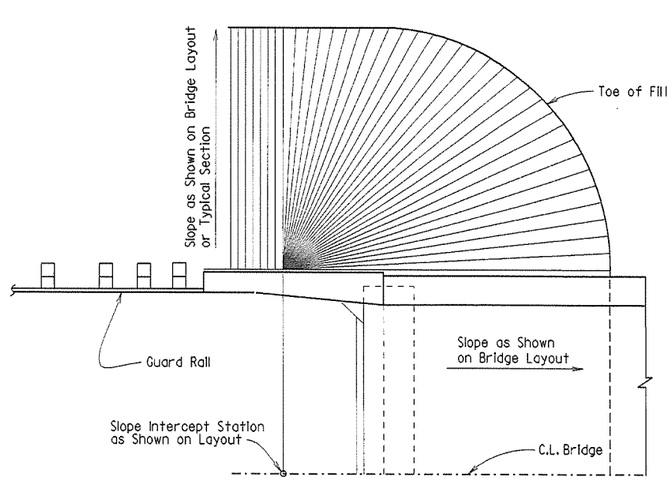
VERTICAL WALL ABUTMENTS



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 4 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 of the Specifications for construction requirements.

⚠ Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
CHARLES P. BRAND

BRIDGE ENGINEER

EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

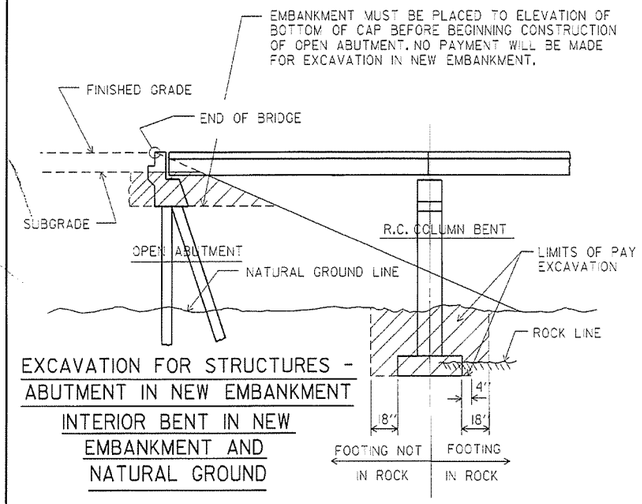
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BRIDGE NO. DRAWING NO. 1888A

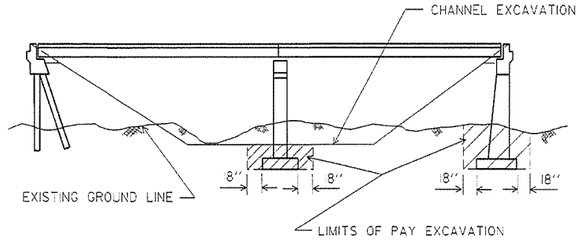
BI888A.STD

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.				

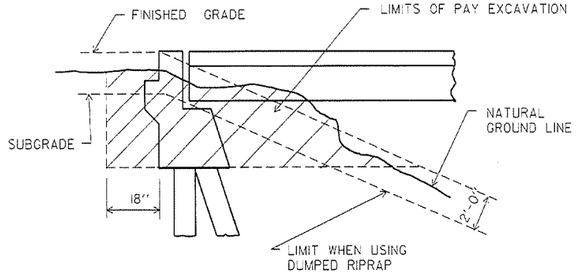
1 RIP. & EXCAV. 1891F



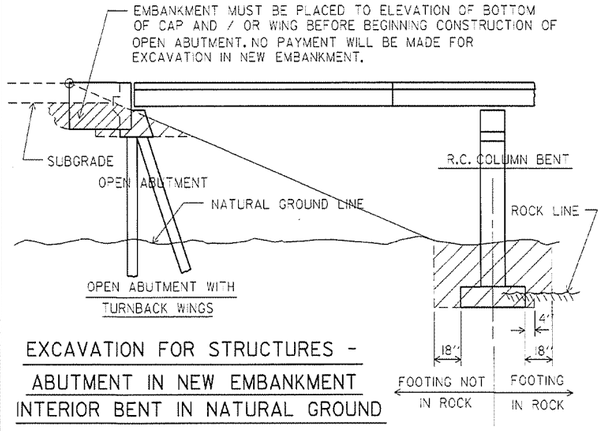
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



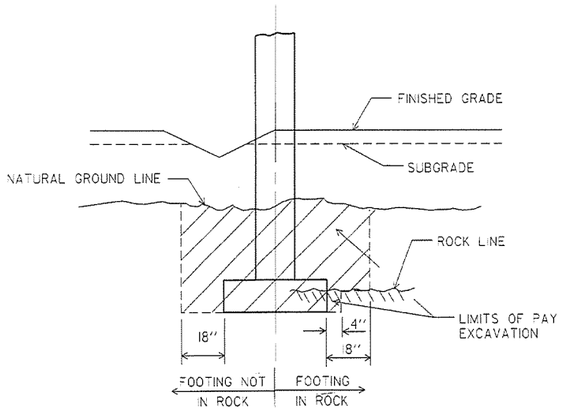
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



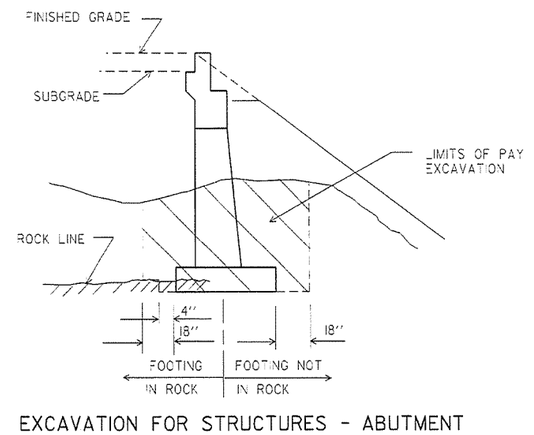
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



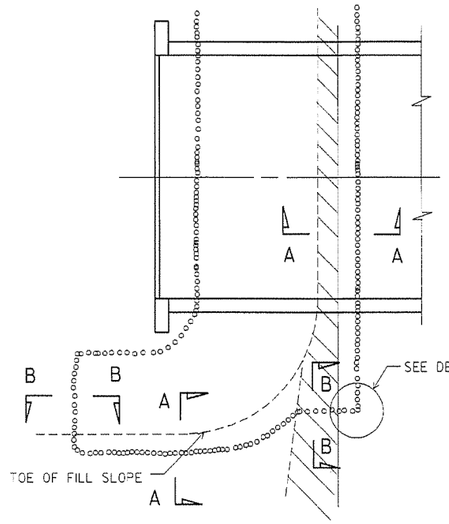
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



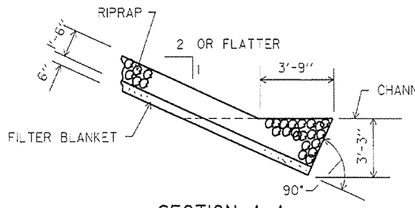
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



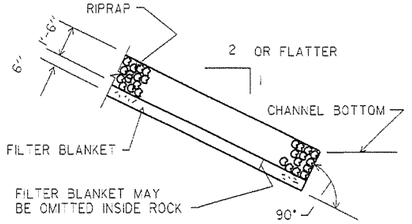
PLAN OF DUMPED RIPRAP



SECTION A-A

(TOE EXCAVATION IN SOIL)

EXCAVATION FOR TOES IS NOT A PAY ITEM



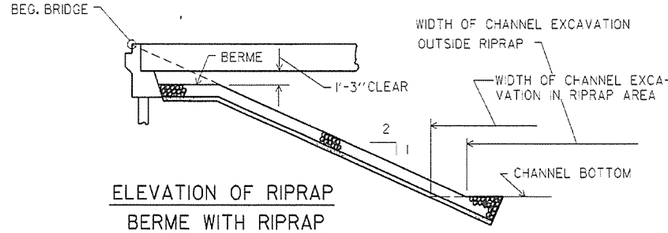
SECTION A-A

(TOE EXCAVATION IN ROCK)

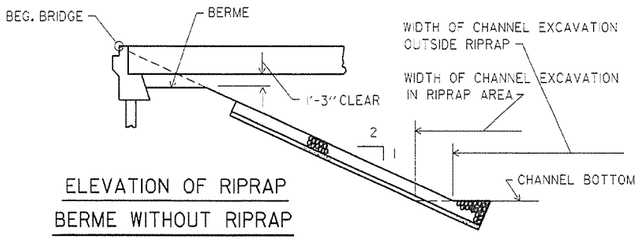
NOTE : USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

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.

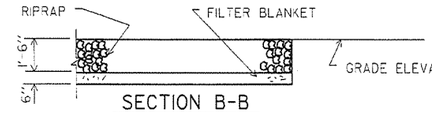
NOTE : DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



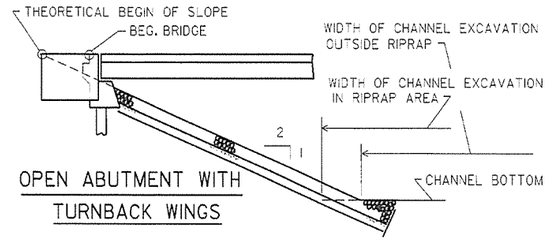
ELEVATION OF RIPRAP BERME WITH RIPRAP



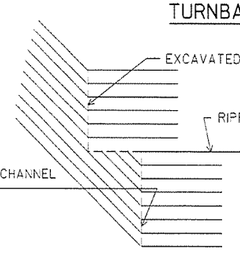
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4637
CHARLES P. BRAND

BRIDGE ENGINEER

⚠ Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

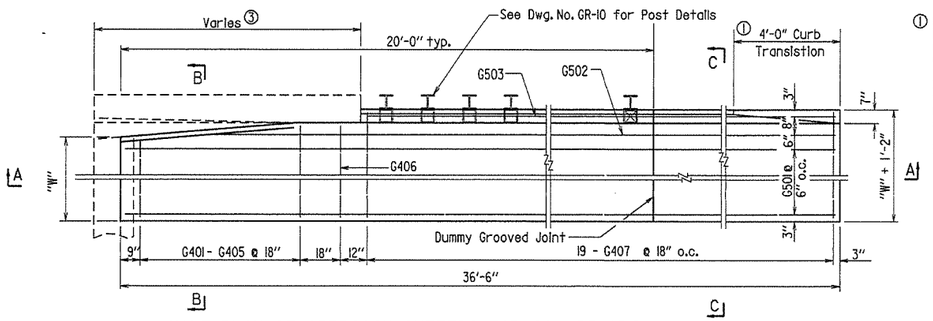
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 1891F

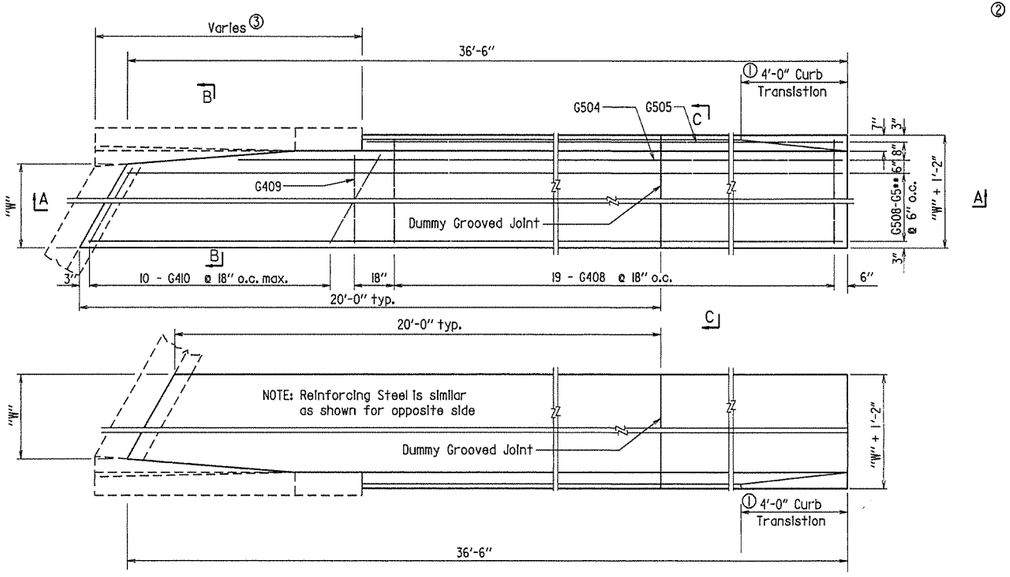
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				6	ARK.		317	
07-14-2010				JOB NO.				

① TYPE C GUTTERS - 2016C



HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

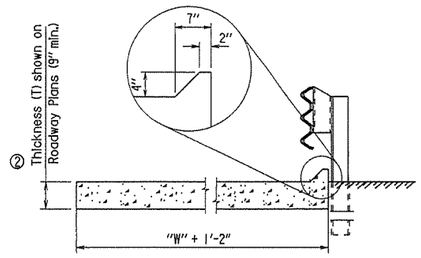
③ Length Varies See End Bt. Details for Actual Length. Quantities Shown are for 10'-0" Transition Rail.



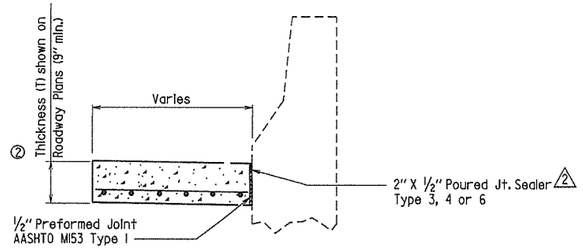
PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

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.

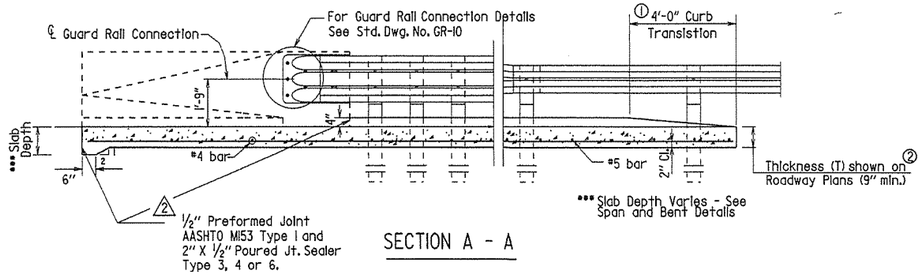


SECTION C - C
N.T.S.



SECTION B - B
N.T.S.

② Thickness shall match Approach Slab Thickness. Thickness shall be 9" If Approach Slab is not used.



SECTION A - A

***BAR LIST FOR ONE TYPE C GUTTER

Mark	No. Req'd. for Width "W"				Length	Square or Skewed
	4'-0"	6'-0"	8'-0"	10'-0"		
G401 - G405	1 each	1 each	1 each	1 each	"W"-3" to "W"+3"	Square
G406	1	1	1	1	"W"+3"	Square
G407	19	19	19	19	"W"+ 10"	Square
G408	19	19	19	19	"W"+ 10"	Skewed
G409	1	1	1	1	"W"+3"	Skewed
G410	10	10	10	10	*	Skewed
G501	8	12	16	20	36'-2"	Square
G502	1	1	1	1	31'-8"	Square
G503	1	1	1	1	27'-2"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G508 - G5__ **	1 each	1 each	1 each	1 each	*	Skewed

*** Special bar list required when skew angle exceeds 35° for W = 10'; 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

* Bar Lengths vary with Skew.

** G515 for W = 4'
G519 for W = 6'
G523 for W = 8'
G527 for W = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER ③

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)				
		T=9"	T=10"	T=11"	T=12"	T=14½"
4	439	5.19	5.75	6.31	6.88	8.25
6	623	7.24	8.02	8.80	9.59	11.52
8	807	9.28	10.29	11.30	12.32	14.79
10	991	11.33	12.56	13.79	15.03	18.06

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

⚠1 Revised and redrawn 4-10-2003. By KDH Ck. By: CJF 4-10-2003

⚠2 Added joint sealer type
07-14-2010 by MJT Checked by: CJF 7-14-2010

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF STANDARD TYPE C APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016C.STD
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD. DATE:

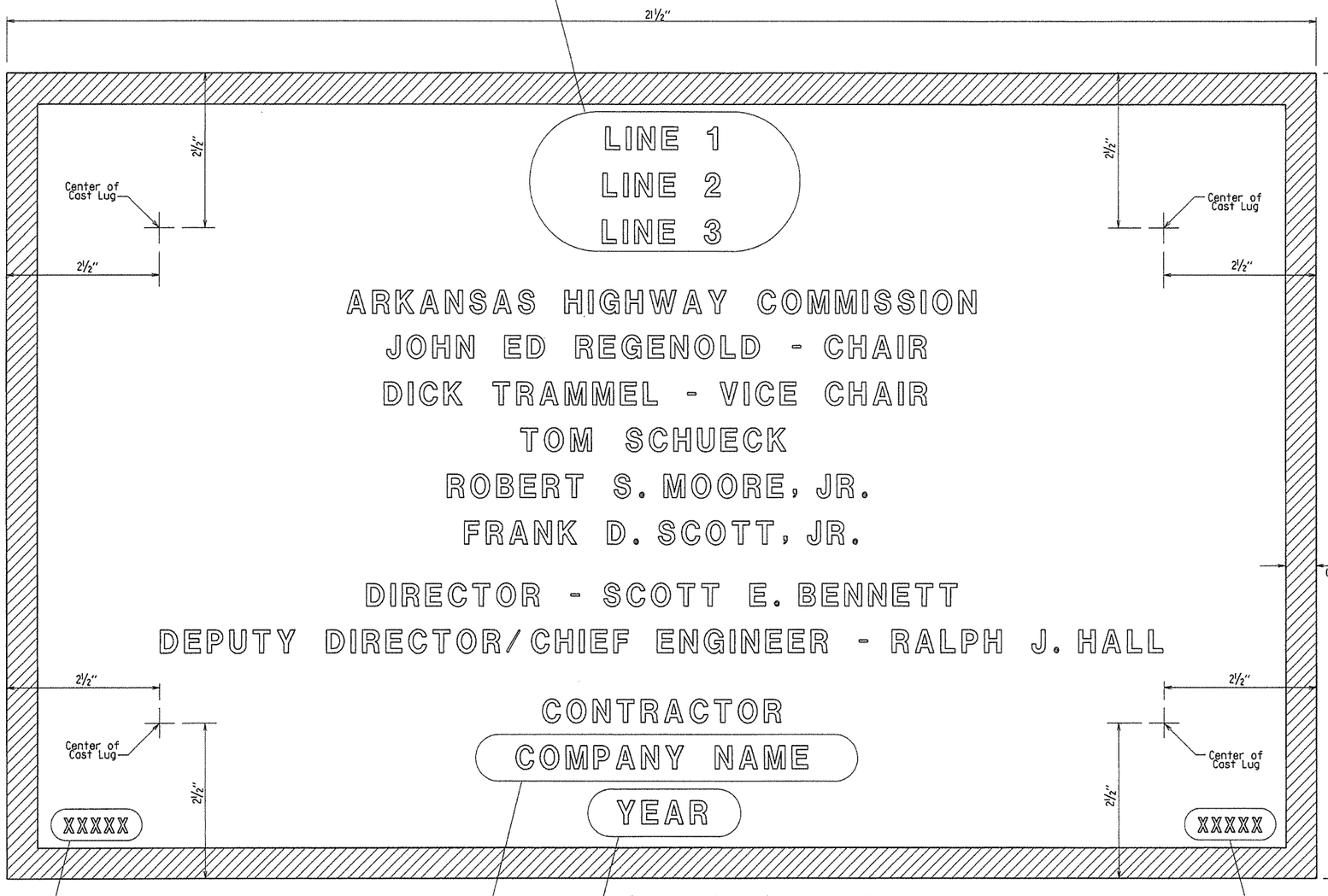
BRIDGE NO. DRAWING NO. 2016C

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11		10-30-13		6	ARK.		318	
1-3-13		1-16-14		JOB NO.				
1-10-13								

(1) NAME PLATE 2387

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	



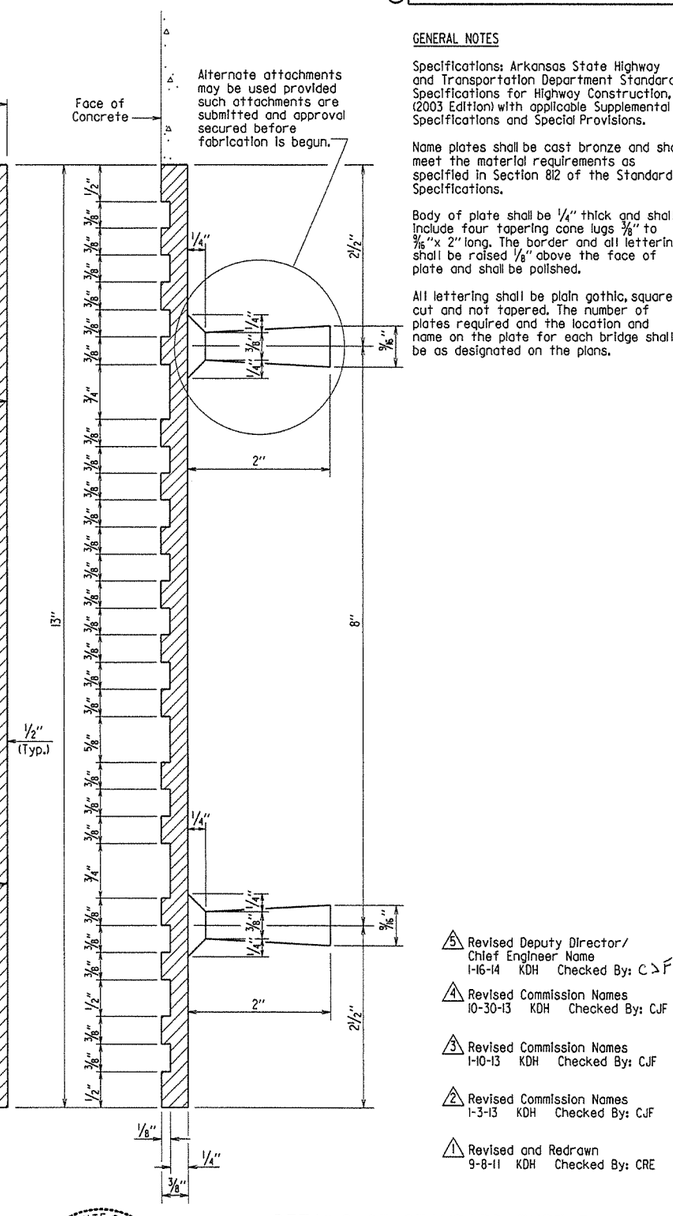
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

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 : A1234
05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 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 of the Standard Specifications.

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.

5 Revised Deputy Director/ Chief Engineer Name 1-16-14 KDH Checked By: CJF

4 Revised Commission Names 10-30-13 KDH Checked By: CJF

3 Revised Commission Names 1-10-13 KDH Checked By: CJF

2 Revised Commission Names 1-3-13 KDH Checked By: CJF

1 Revised and Redrawn 9-8-11 KDH Checked By: CRE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7510
CARL J. FUSELIER
BRIDGE ENGINEER

DETAILS OF STANDARD TYPE D
BRIDGE NAME PLATE
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

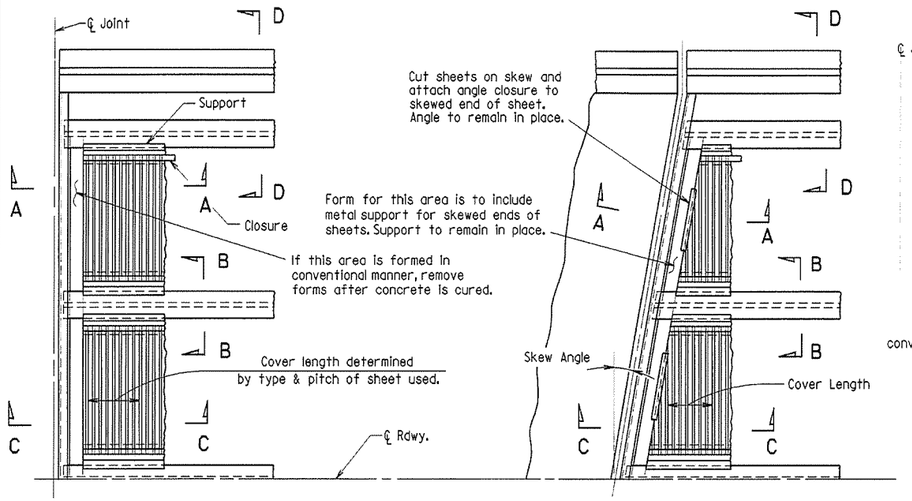
DRAWN BY: KDH DATE: 9-8-11 FILENAME: b2387_std.dgn
CHECKED BY: CRE DATE: 9-8-11 SCALE: 1'-0" = 1'-0"
DESIGNED BY: STD. DATE: — OR AS NOTED

BRIDGE NO. DRAWING NO. 2387

PRINT DATE: 1/9/2014

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		319	
04-10-2003						JOB NO.				

① BR. DECK FORMS 14991

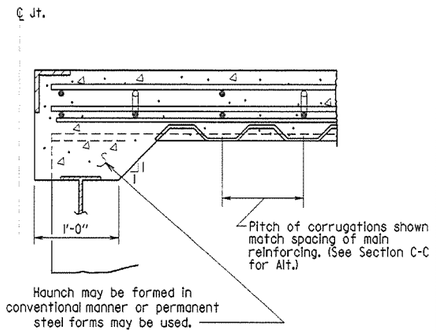


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

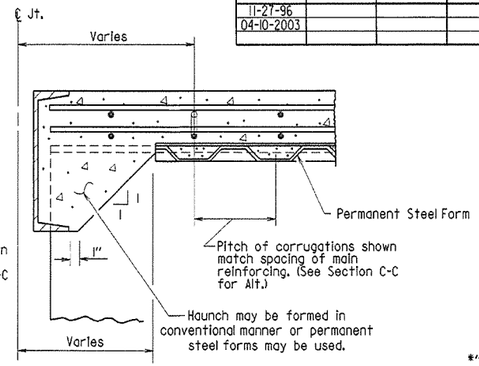
3/8" = 1'-0"



SECTION A-A

N.T.S.

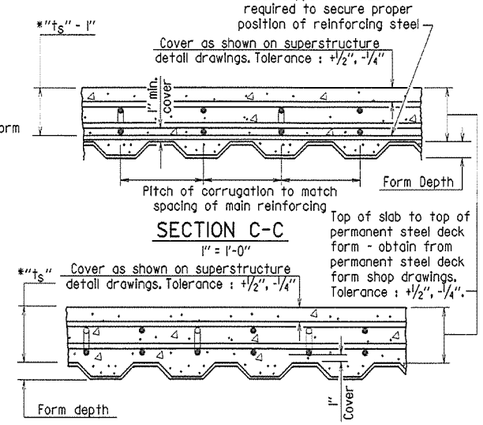
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



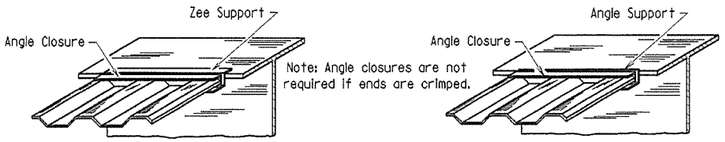
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

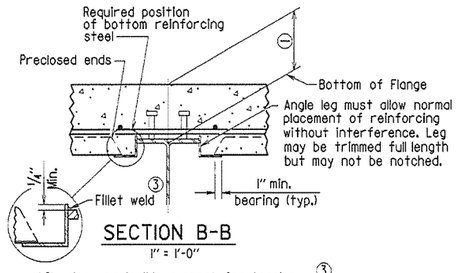
1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

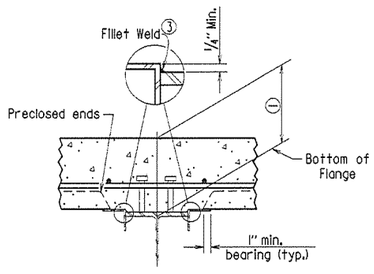
N.T.S.



SECTION B-B

1" = 1'-0"

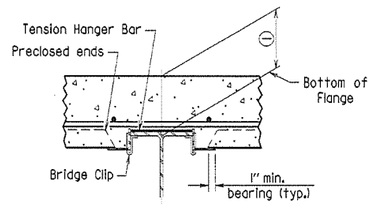
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)



SECTION B-B

1" = 1'-0"

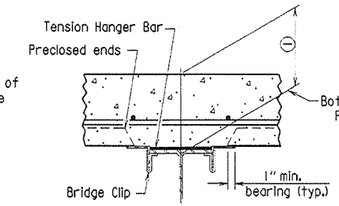
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are not used)

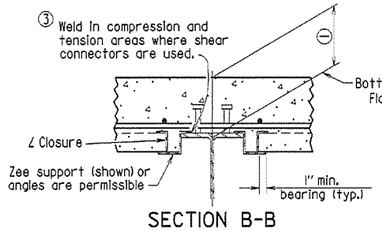


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are not used)

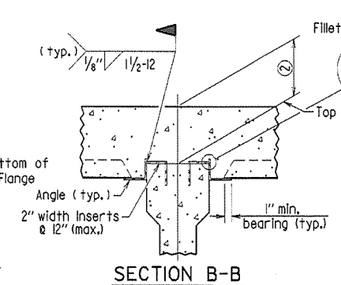
③ Minimum weld: 1/8" x 1" ℄ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

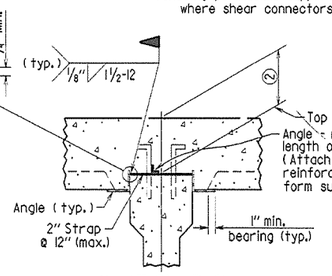


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

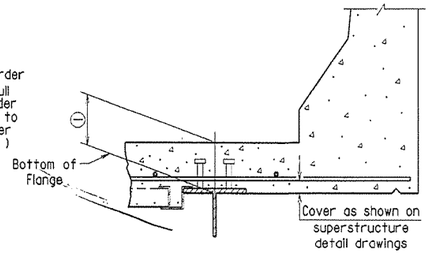


SECTION B-B

(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 + 1 3/4" + 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.

⚠ Revised for 2003 AHTD Construction Specifications and CPB Seal. MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

⚠ Redrawn and revised 11/27/96; MJT

*t_S = slab thickness as shown on superstructure detail drawings.

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) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge 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 Bridge 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 Bridge 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 (2003 Edition), with applicable supplemental specifications and special provisions.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

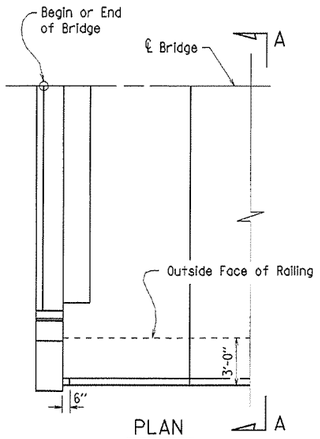
DRAWN BY: MJT DATE: 10-17-96
CHECKED BY: CPB DATE: 10-17-96
DESIGNED BY: STD. DATE: —
SCALE: as noted

BRIDGE NO. DRAWING NO. 14991

B14991.STD

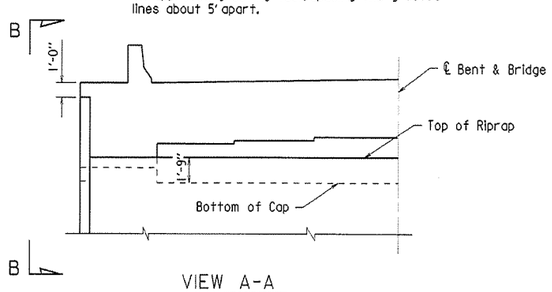
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		320	
				JOB NO.				

1 RIPRAP & PILE - 14995A

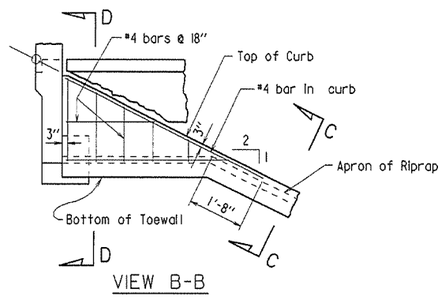


PLAN

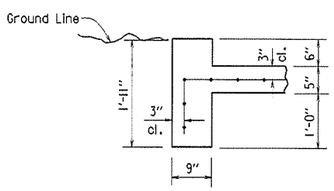
Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



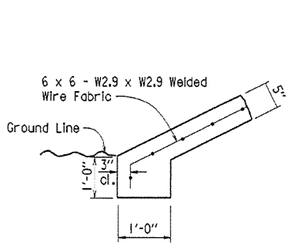
VIEW A-A



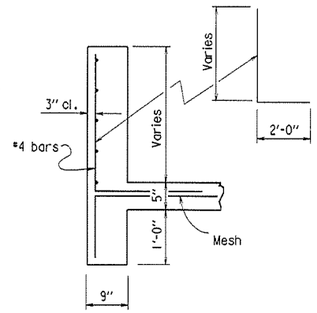
VIEW B-B



SECTION C-C

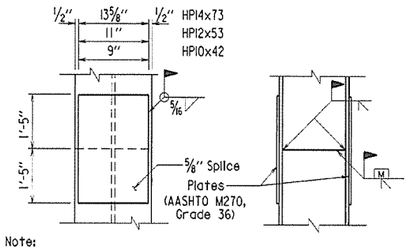


TOE WALL



SECTION D-D

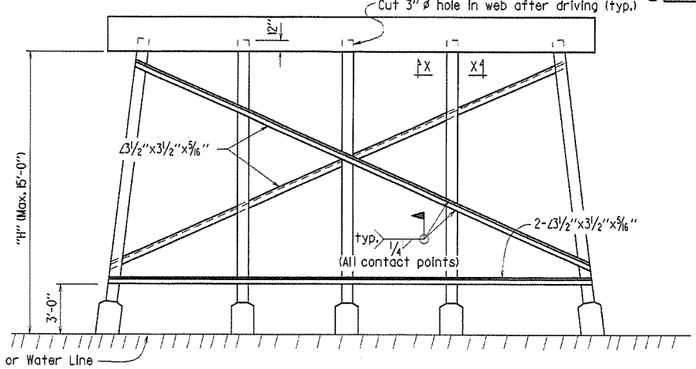
DETAILS OF CONCRETE RIPRAP



Note:
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

Scale : 1" = 1'-0"



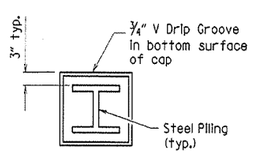
Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Omit bottom bracing where "H" is less than 10 ft. Omit all bracing where "H" is less than 5 ft.

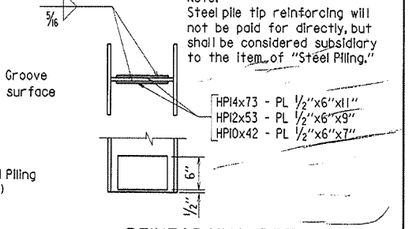
Note:
Where required by the bridge layout sheet, pile encasements shall be constructed.

Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

TYPICAL BRACING FOR INT. STEEL PILE BENTS

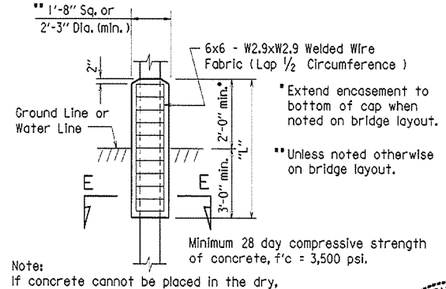


VIEW X-X



REINFORCING DETAIL FOR STEEL PILE TIP

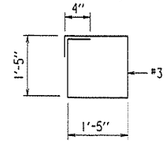
Scale : 1" = 1'-0"

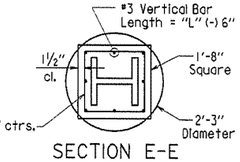


Note:
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

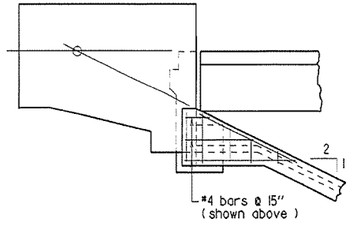
PILE ENCASEMENT DETAIL

Reinforcing Alternate
#3 Vertical - 8 per encasement
#3 ties @ 12" ctrs.
Yield Strength , fy = 60,000 psi.

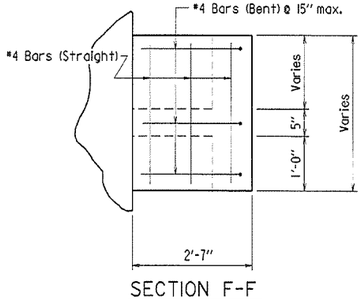




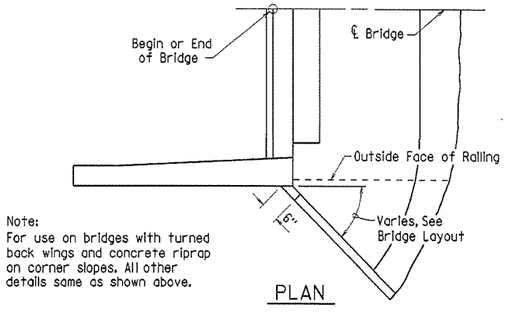
SECTION E-E
REINF. ALTERNATE



ELEVATION

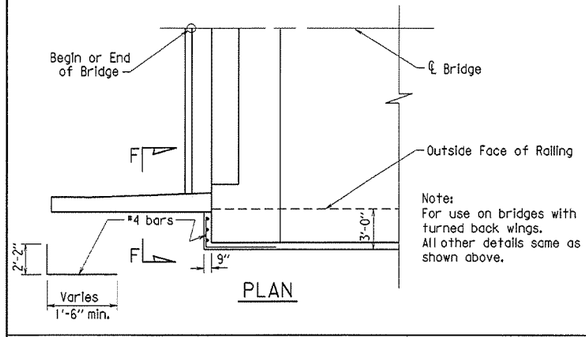


SECTION F-F



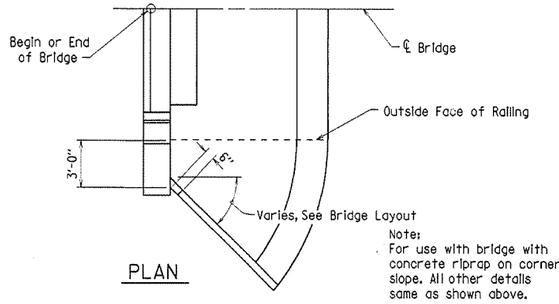
PLAN

Note:
For use on bridges with turned back wings and concrete riprap on corner slopes. All other details same as shown above.



PLAN

Note:
For use on bridges with turned back wings. All other details same as shown above.



PLAN

Note:
For use with bridge with concrete riprap on corner slope. All other details same as shown above.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

1 Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

DETAILS OF CONCRETE RIPRAP
AND MISC. DETAILS OF STEEL PILING

ROUTE SEC.

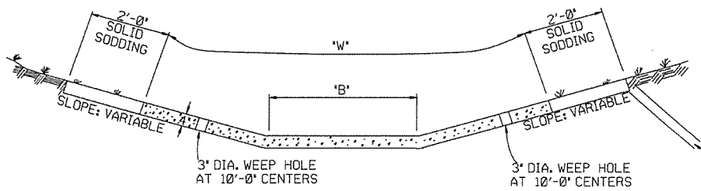
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI4995A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted
DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 14995A

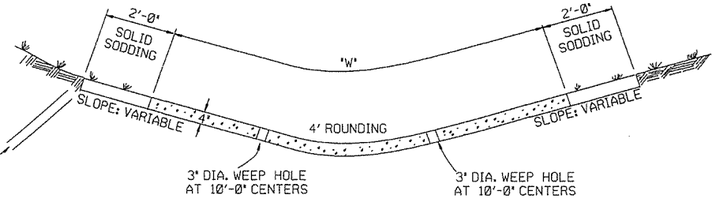
REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



TYPE A

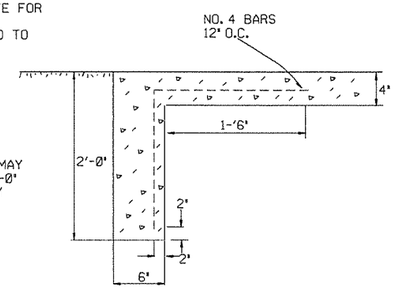
EXCAVATE TO NEAT LINES TO CONSTRUCT DITCH PAVING AND SOLID SODDING.

REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



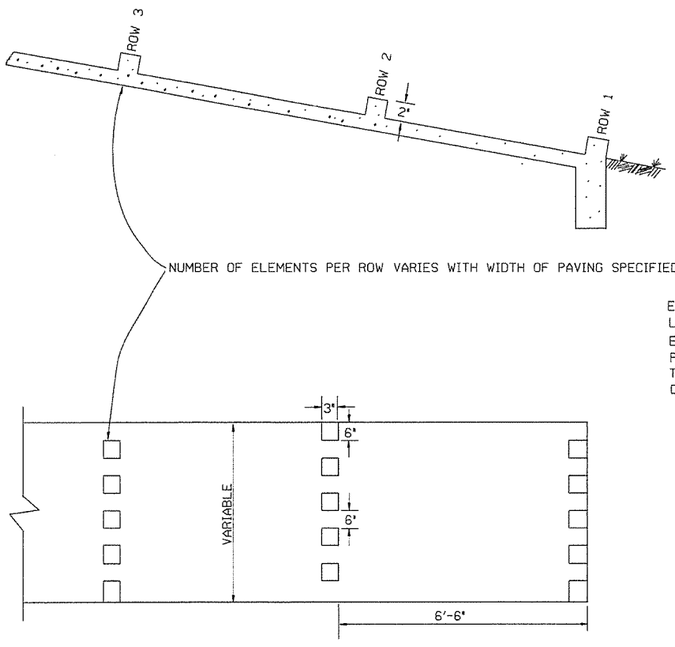
TYPE B

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



ENERGY DISSIPATORS
(NO SCALE)

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.

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.

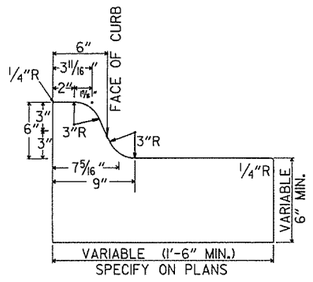
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

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

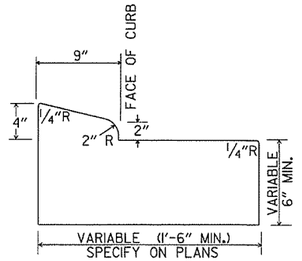
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

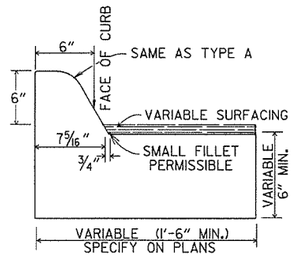
STANDARD DRAWING CDP-1



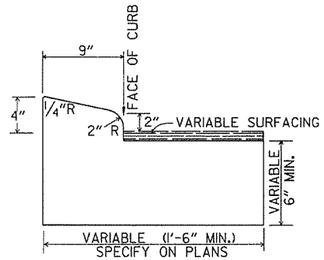
TYPE A



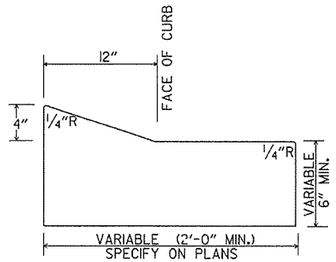
TYPE B-1



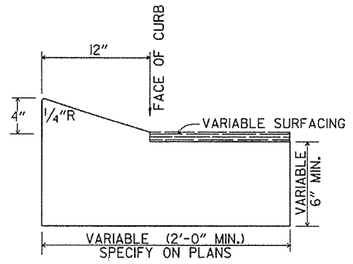
TYPE C



TYPE B-2

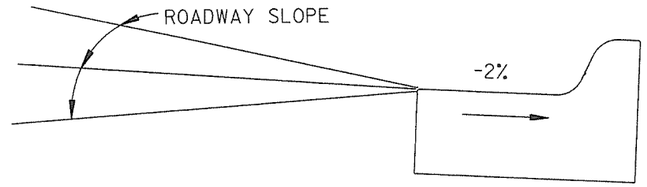


TYPE E-1



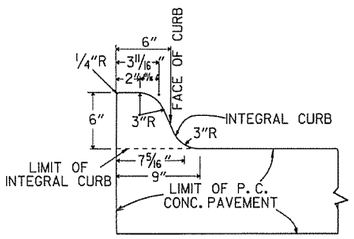
TYPE E-2

CONCRETE COMBINATION CURB AND GUTTER

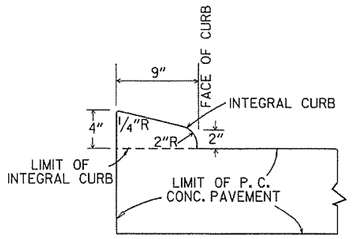


DETAIL OF GUTTER SLOPE

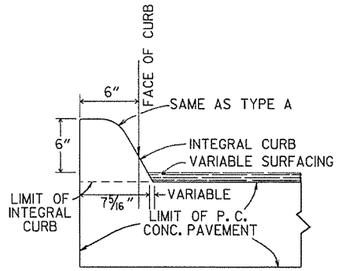
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



TYPE A

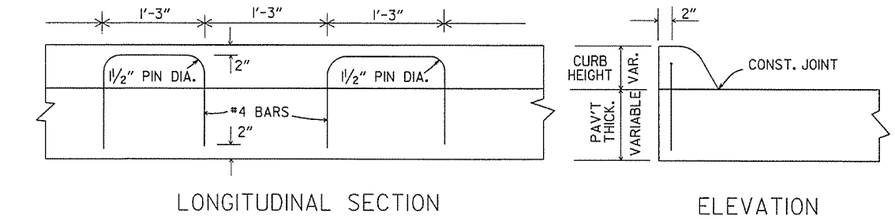


TYPE B



TYPE C

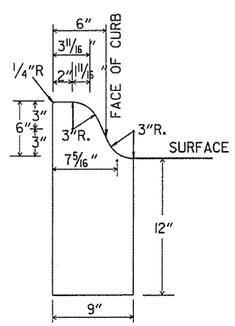
INTEGRAL CURB



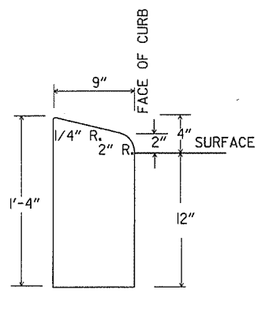
LONGITUDINAL SECTION

ELEVATION

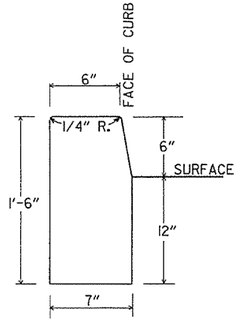
ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



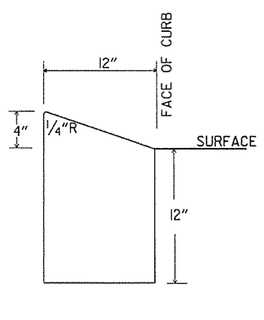
TYPE A



TYPE B

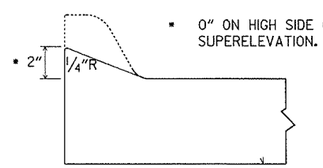


TYPE D



TYPE E

CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

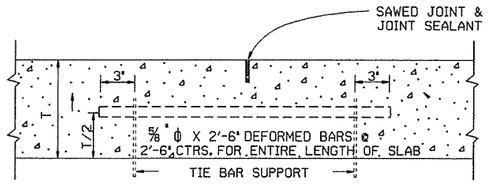
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIBLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

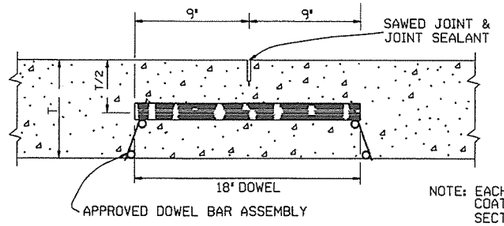
CURBING DETAILS

STANDARD DRAWING CG-1



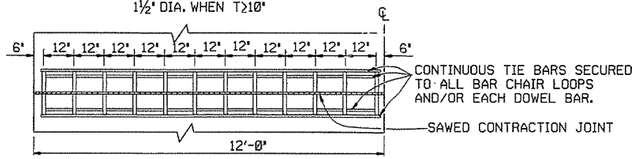
LONGITUDINAL JOINT

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.

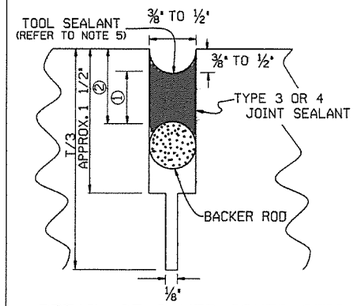
ROUND STEEL BAR DOWEL
1¼" DIA. WHEN T<10"
1½" DIA. WHEN T≥10"



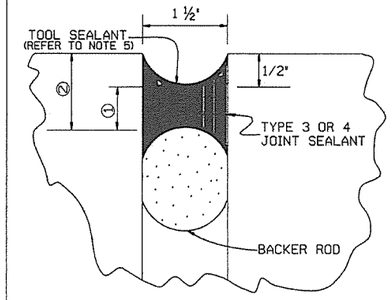
ONE-HALF 24' PAVEMENT
12 DOWELS
PLAN

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



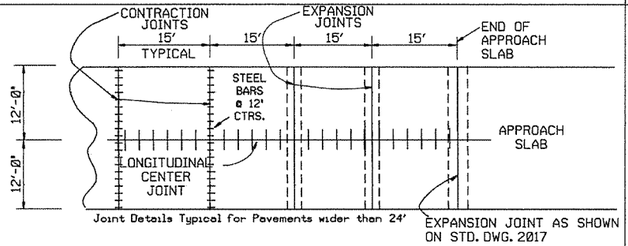
DETAIL OF EXPANSION JOINT

JOINT CONFIGURATION FOR TYPE 3 OR 4 JOINT SEALANT

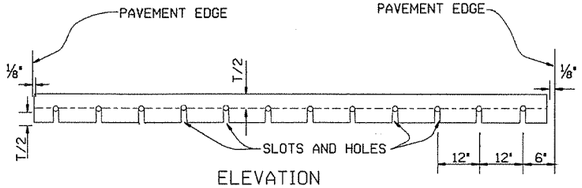
JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
¼	¼	⅜	½
⅜	¼	½	½
½	¼	⅝	½
⅝	½	¾	⅝
¾	½	¾	⅞
¾	¾	⅞	⅞
1 ½	¾	2	1 ¼

JOINT CONFIGURATION FOR TYPE 5 JOINT SEALANT

JOINT WIDTH	SEALANT THICKNESS ①	BACKER ROD DIAMETER	BACKER ROD PLACEMENT DEPTH ②
INCHES			
¼	½	⅜	⅜
⅜	¼	½	1

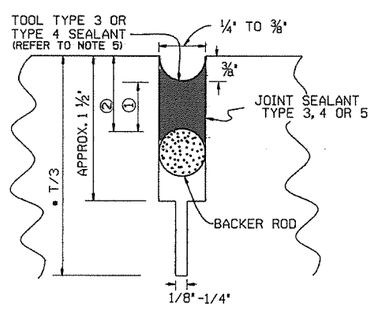


PLAN SHOWING EXPANSION JOINTS AT BRIDGE APPROACH SLABS



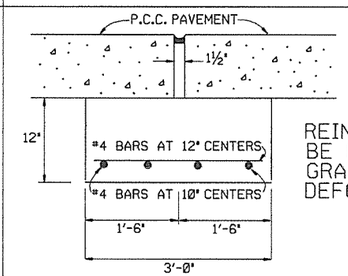
ELEVATION

NOTE: ALL DOWEL BARS SHALL CONFORM TO THE DETAILS FOR CONTRACTION JOINTS.



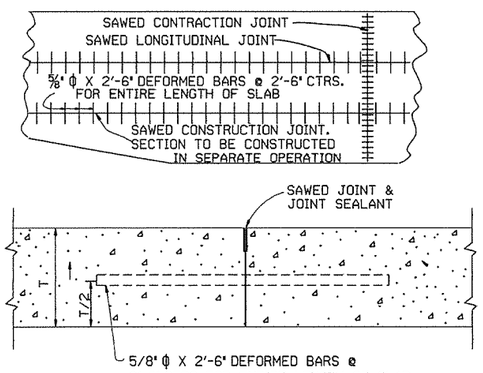
•NOTE: T/3 SAW CUT NOT REQUIRED FOR LONGITUDINAL CONSTRUCTION JOINT.

DETAIL OF SAWED LONGITUDINAL JOINT AND LONGITUDINAL CONSTRUCTION JOINT



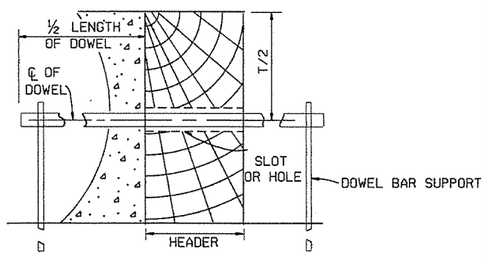
REINFORCING SHALL BE GRADE 40 OR GRADE 60 DEFORMED BARS.

DETAIL OF JOINT SUPPORT FOR EXPANSION JOINTS



NOTE: TIE BARS SHALL BE 15' FROM TRANSVERSE JOINTS.

LONGITUDINAL CONSTRUCTION JOINT



SECTION

TRANSVERSE CONSTRUCTION JOINT

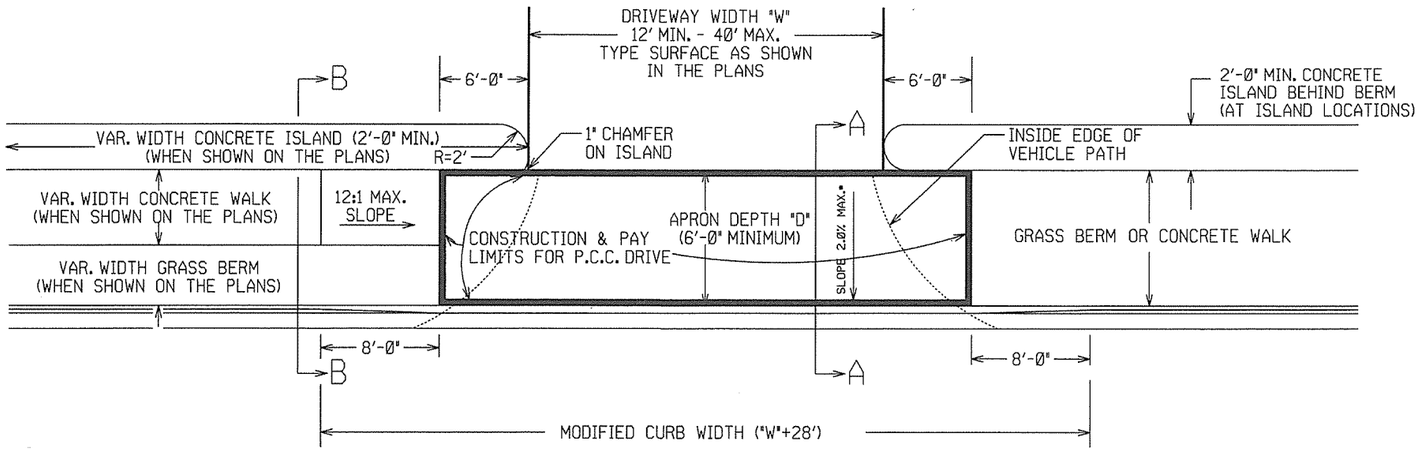
GENERAL NOTES
1. 'T' DENOTES THICKNESS OF SLAB.
2. DOWEL BARS SHALL BE PLACED IN ACCORDANCE WITH THE DIMENSIONS SHOWN. A TOLERANCE OF PLUS OR MINUS ONE INCH WILL BE ALLOWED FOR THE VERTICAL AND LATERAL PLACEMENT AND A TOLERANCE OF PLUS OR MINUS ¼" WILL BE ALLOWED FOR THE TILT AND SKEW. DOWEL BARS SHALL 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.

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

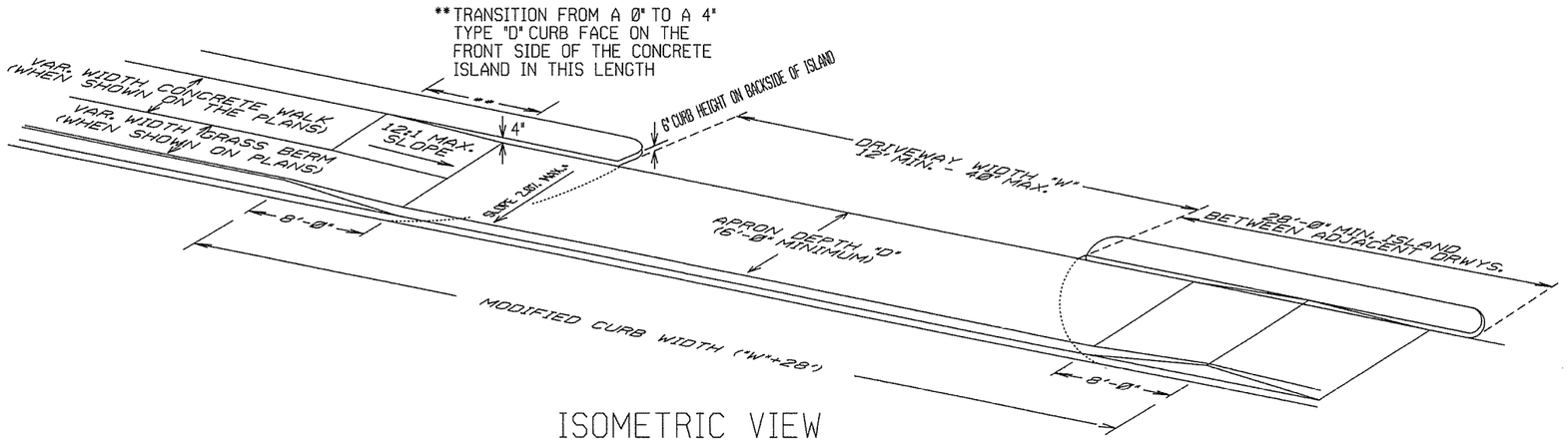
ARKANSAS STATE HIGHWAY COMMISSION

TRANSVERSE & LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT (NON-REINFORCED)

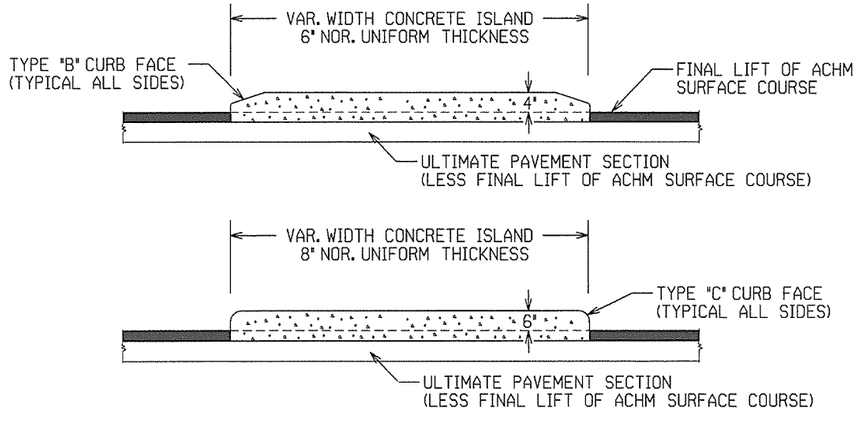
STANDARD DRAWING CPTJ - 6A



PLAN VIEW

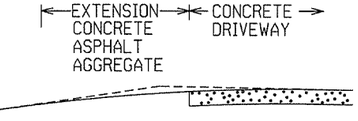


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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".



EXTENSION TYPICAL SECTIONS

1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY

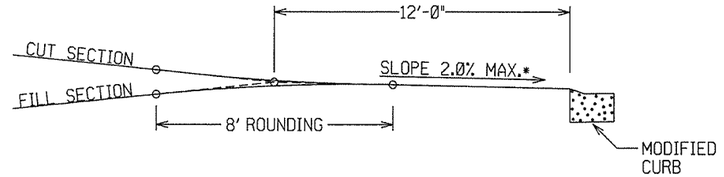
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

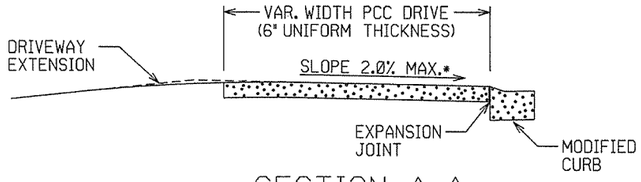
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

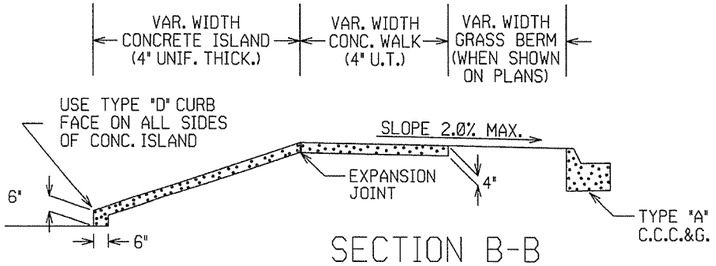


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY FROM THE ROADWAY UNLESS APPROVED BY THE ENGINEER.



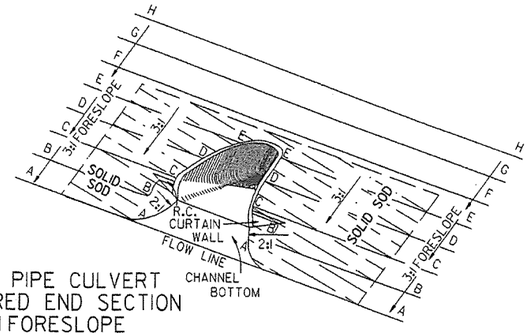
SECTION A-A



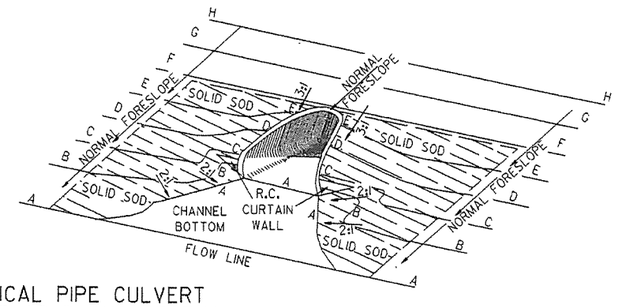
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
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

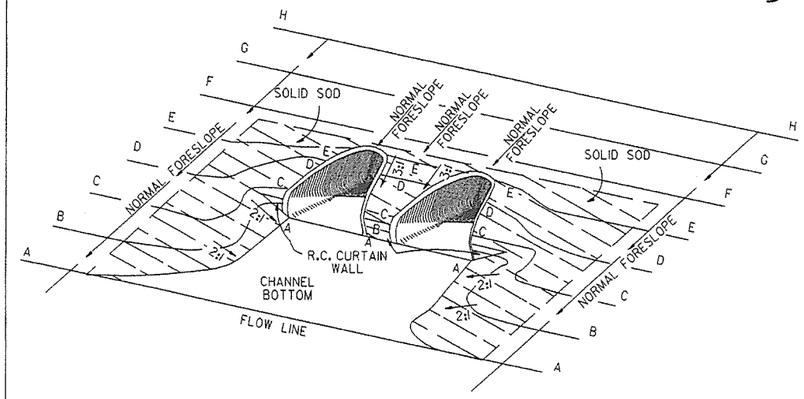
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

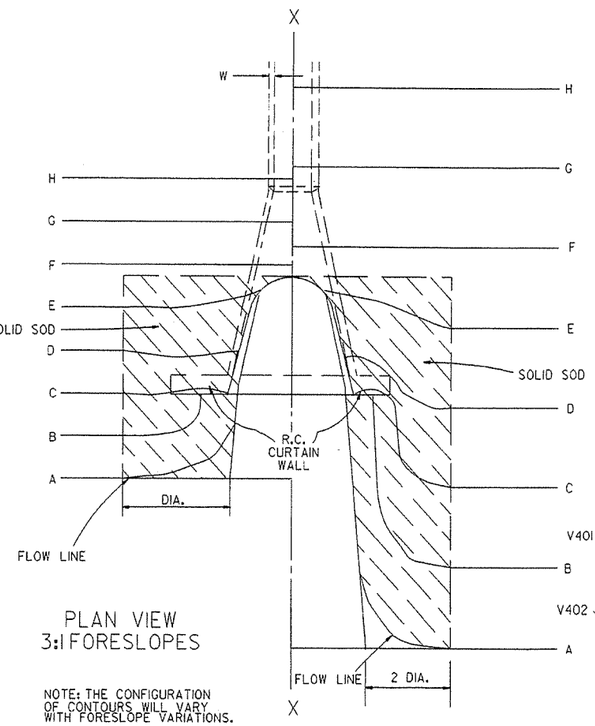
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	1'-11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	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.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	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

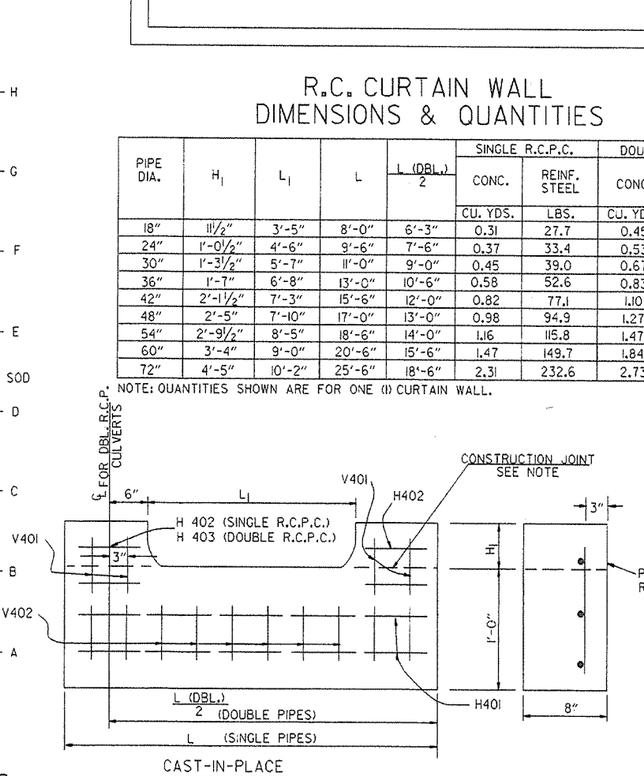
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

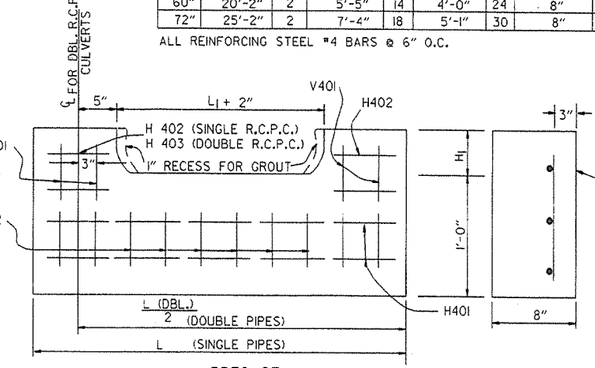
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



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

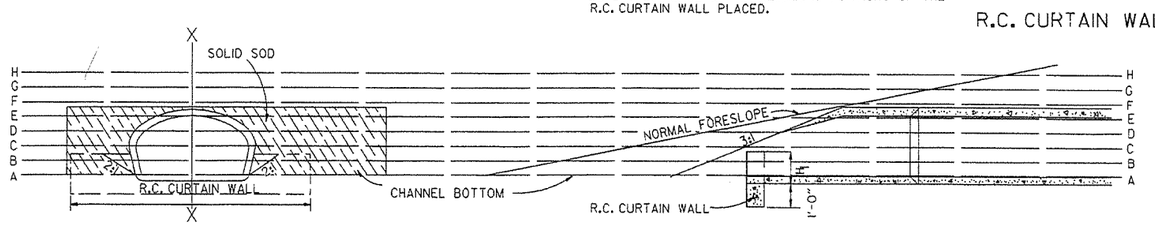
SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	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 W10 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

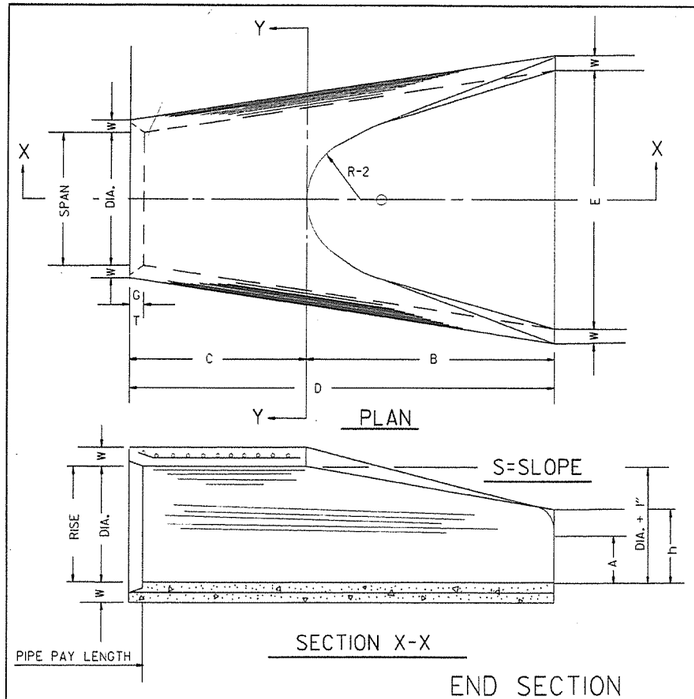
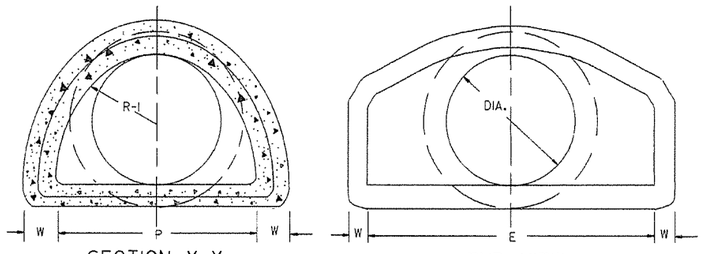


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	C-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-11 1/2"	4'-0"	3:1	25"	33 3/16"	16 13/16"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 1/4"	8'-1 3/4"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 7/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65 1/2"	33 1/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	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 13/16"	24"	5"	13250	4'-6"



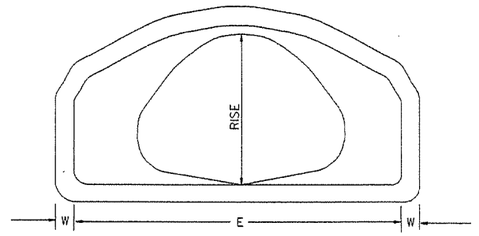
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

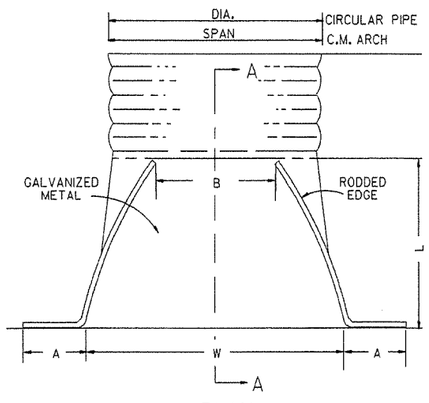
ARCH PIPE

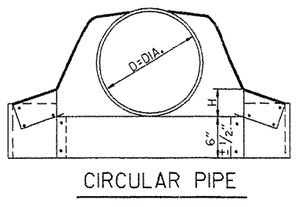
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	C-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2:1
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2:1
21	26	26	15 1/2	16	2 3/4"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2:1
24	28 1/2	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 13/16"	15"	2 1/2"	2 1/2:1
30	36 1/4	36	22 1/2	23	3 1/2"	10"	3'-1"	3'-0 1/2"	6'-1 1/2"	6'-0"	47 13/16"	20"	3"	2 1/2:1
36	43 3/4	44	26 5/8	27	4"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	6'-6"	54 5/16"	22"	3 1/2"	2 1/2:1
42	51 1/8	51	31 5/16	31	4 1/2"	11 1/2"	4'-7"	1-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2:1
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	7'-10"	70 5/16"	24"	4 1/4"	2 1/2:1
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4 3/4"	2 1/4:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 13/16"	24"	5"	2 1/4:1

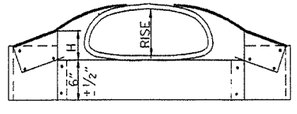
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE







CIRCULAR PIPE

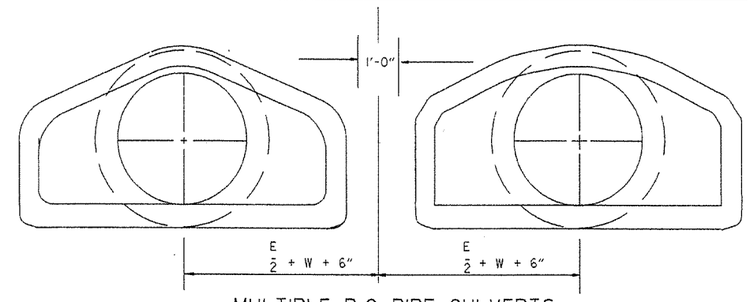
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1 3/4:1
66	12	18	36	12	87	120	1 1/2:1
72	12	18	39	12	87	126	1 1/3:1

C.M. ARCH PIPE

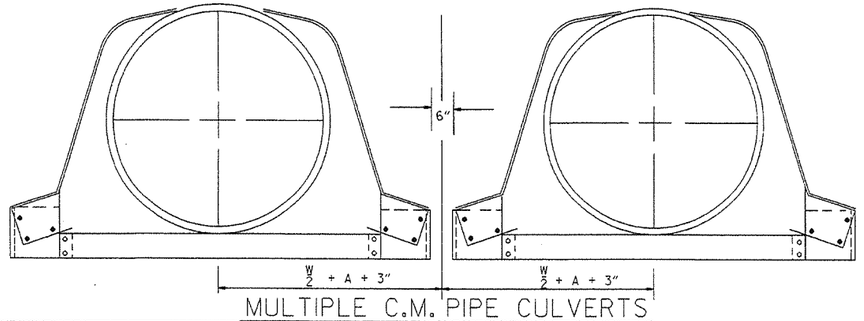
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85	2 1/2:1	12
48"	57	38	18	26	12	63	90	2 1/2:1	12
54"	64	43	18	30	12	70	102	2 1/4:1	12
60"	71	47	18	33	12	77	114	2 1/4:1	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

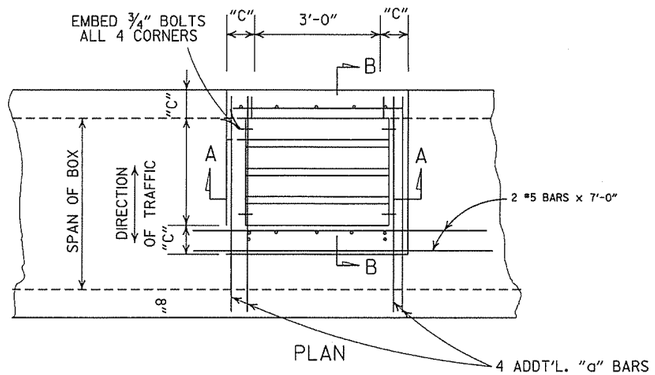
DATE	REVISION	ENGINEER
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
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

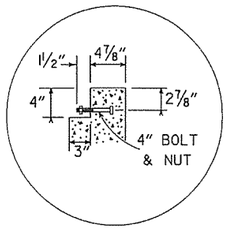
FLARED END SECTION

STANDARD DRAWING FES-2

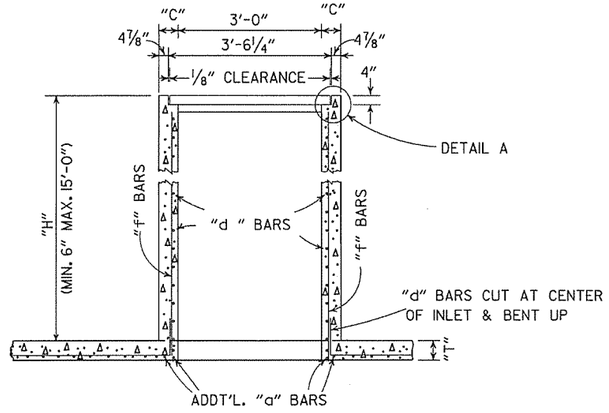
stdfes2.dgn



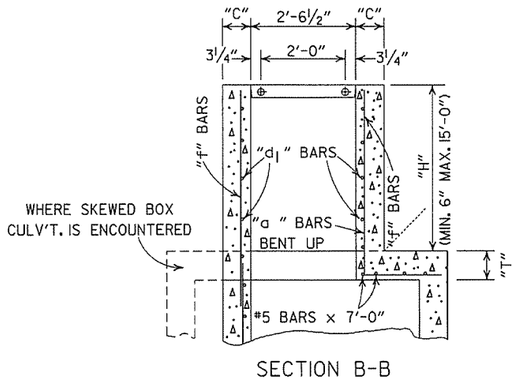
PLAN



DETAIL A



SECTION A-A

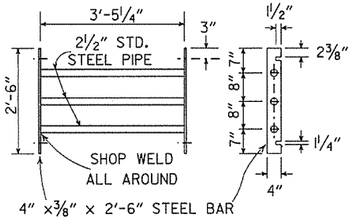


SECTION B-B

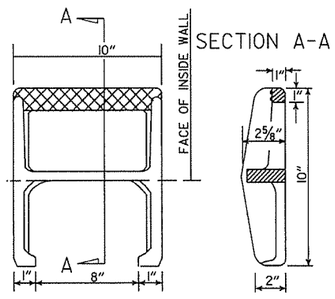
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

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:

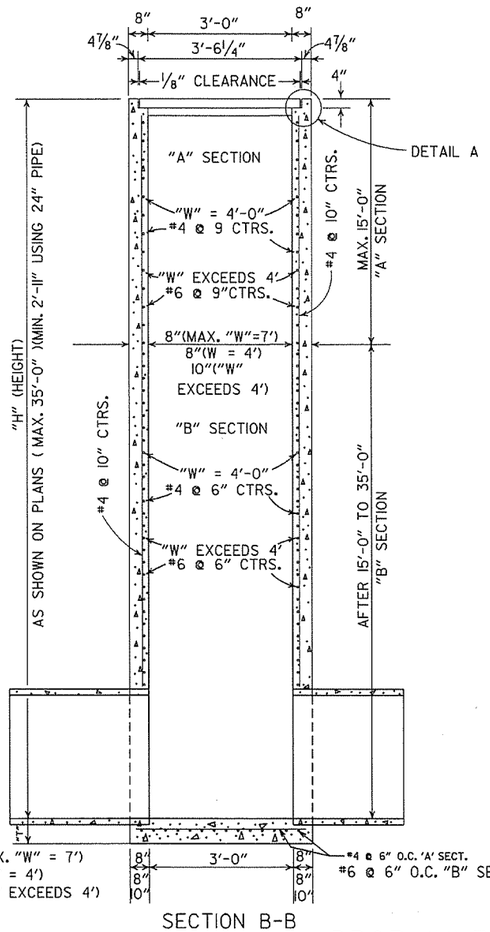
1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, 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

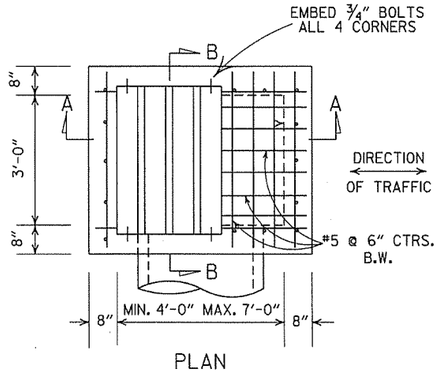
327

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"

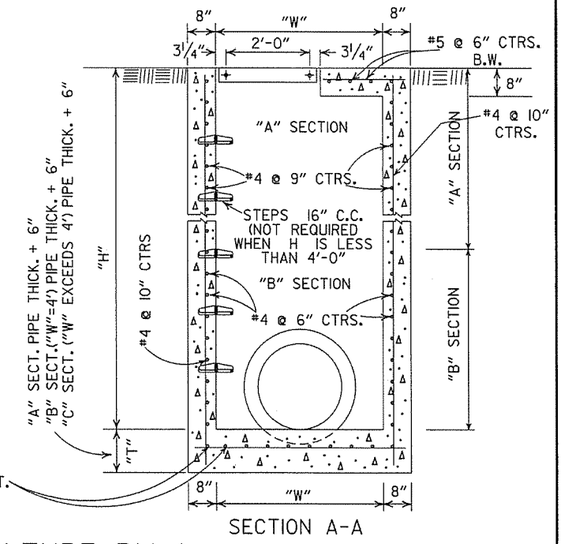
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

DROP INLET(TYPE RM)

REVISED		DATE FILMED
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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

STANDARD DRAWING FPC-9D

4'-0" LENGTH DROP INLET

PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0" CLASS A CONC.	HEIGHT 5'-0" REINF. STEEL	PLUS OR MINUS PER LIN. FT. OF HEIGHT CLASS A CONC.	PLUS OR MINUS PER LIN. FT. OF HEIGHT REINF. STEEL
		CU. YDS.	POUNDS	CU. YDS.	POUNDS
18"	2'-6"	1.77	156	0.28	22
24"	2'-6"	1.79	156	0.28	22
30"	3'-2"	2.39	205	0.30	26
36"	3'-8"	2.63	236	0.32	28
42"	4'-4"	2.95	250	0.34	30
48"	4'-10"	3.21	265	0.36	32

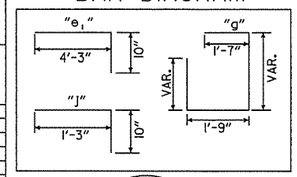
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

DROP INLET EXTENSION

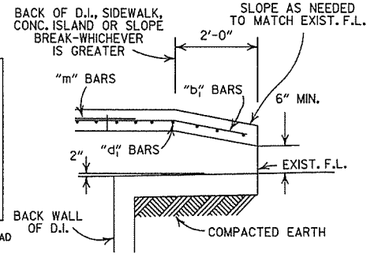
4'-0" CLASS A CONC.	4'-0" REINF. STEEL	8'-0" CLASS A CONC.	8'-0" REINF. STEEL
CU. YDS.	POUNDS	CU. YDS.	POUNDS
0.58	38	0.87	72
DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
0.04	3		

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET		
INSIDE DIA. PIPE	CLASS A CONC.	REINF. STEEL
INCHES	CU. YDS.	POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

BAR DIAGRAM

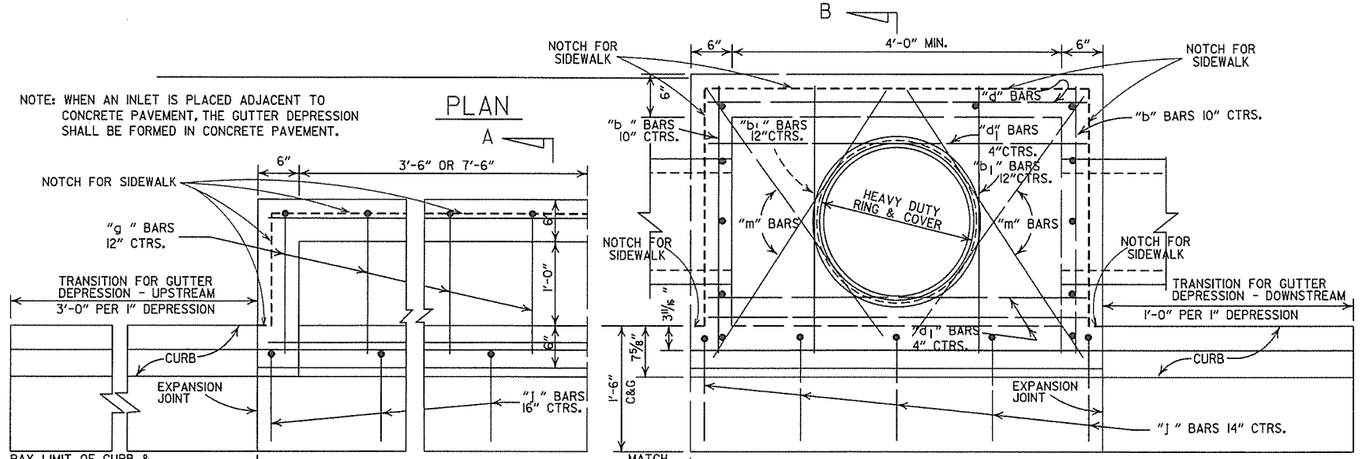


BACK OPENING

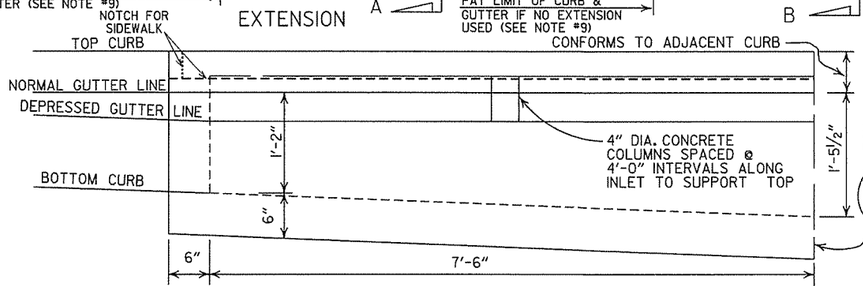


WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

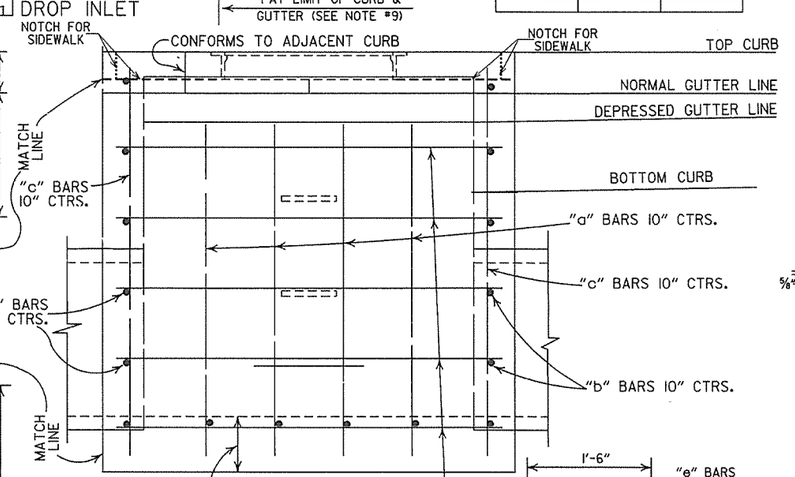
PLAN



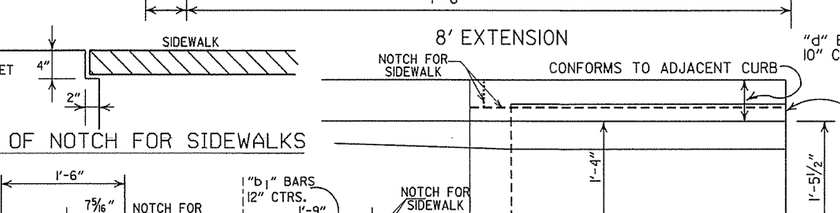
EXTENSION



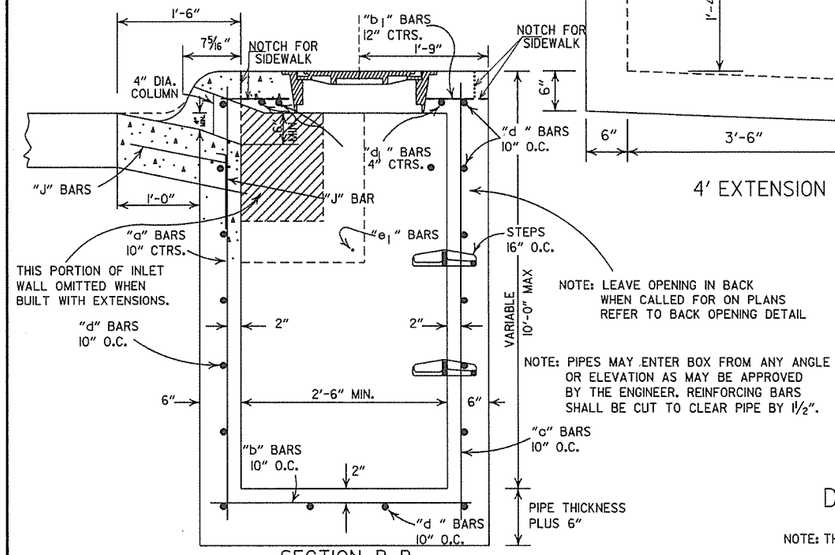
DROP INLET



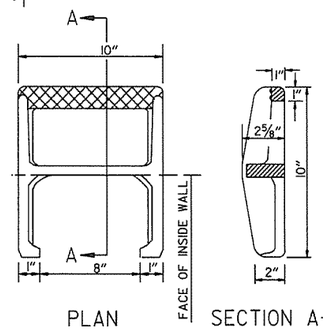
ELEVATION



SECTION B-B



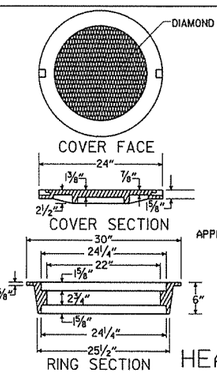
DETAIL OF STEP FOR DROP INLET



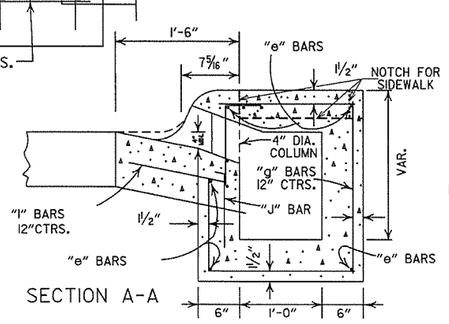
APPROX. WEIGHT = 11 LBS. (CAST IRON)

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

HEAVY DUTY RING & COVER



APPROXIMATE TOTAL WEIGHT = 333 LBS.



GENERAL NOTES:

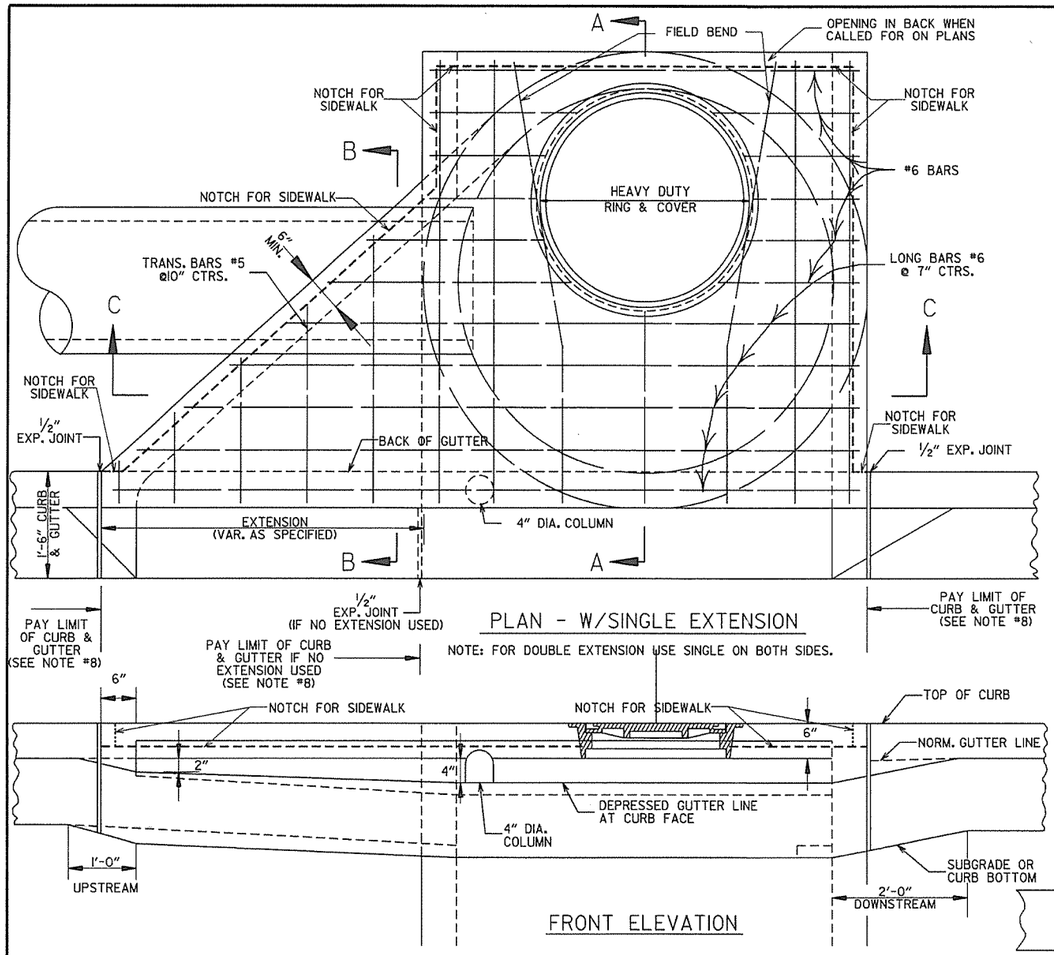
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
3. ALL REINF. BARS SHALL BE #4 AND HAVE 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
6. WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
9. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
10. 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 M105 CLASS 35B & AASHTO M306.
11. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. 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 REV.	REVISION	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13; REVISED SECTION B-B	
1-12-00	CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99	ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98	REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9,10,&11	
10-18-96	CORRECTED SPELLING	
4-26-96	ADDED NOTE 8 & REVISED (4')(8') EXTENSION TITLES	10-18-96
4-1-93	REVISED BACK OPENING & NOTE	
8-15-91	DELETE TYPE IV GRATE	
7-15-88	REVISED STEP DETAIL	
5-20-83	REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83	ADDED GENERAL NOTE NO. 4	
3-2-81	ADDED TYPE IV-A GRATE	
5-22-74	DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72	REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS (TYPE C)

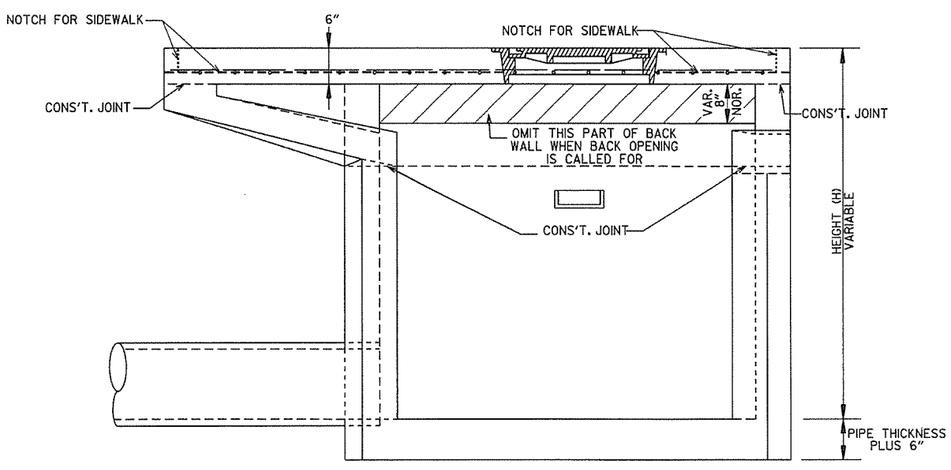
STANDARD DRAWING FPC-9E



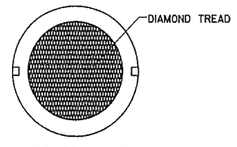
PLAN - W/SINGLE EXTENSION

NOTE: FOR DOUBLE EXTENSION USE SINGLE ON BOTH SIDES.

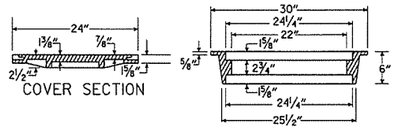
FRONT ELEVATION



SECTION C-C



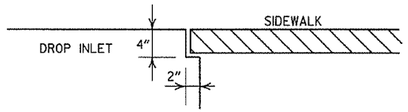
COVER FACE



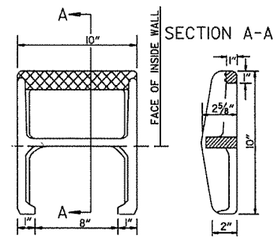
APPROXIMATE TOTAL WEIGHT = 333 LBS.

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 M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.



DETAIL OF NOTCH FOR SIDEWALKS

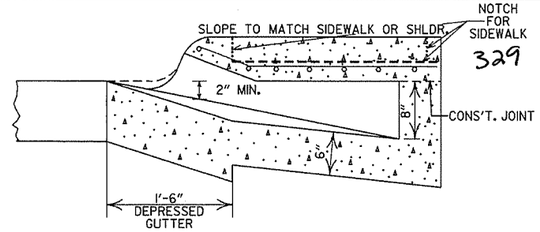


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

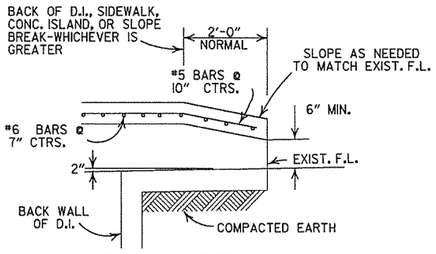
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET



329

SECTION B-B

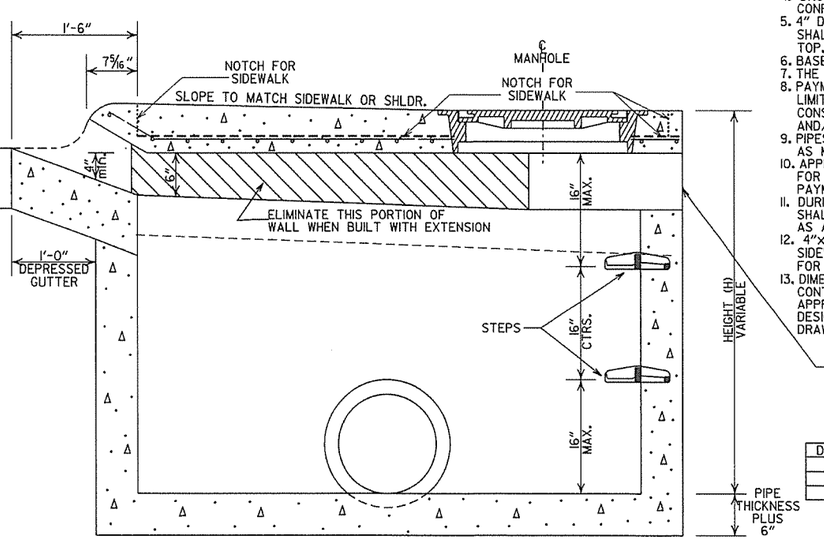


BACK OPENING

WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

GENERAL NOTES:

1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1 1/2" COVER.
4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
13. 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.



SECTION A-A

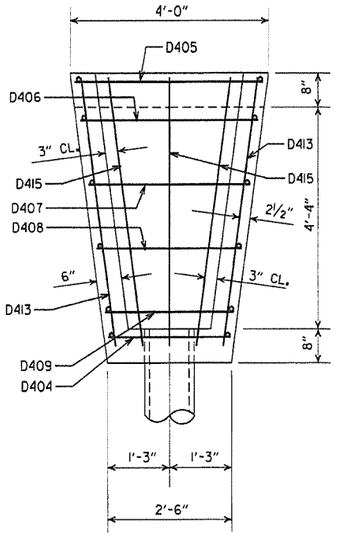
DIA. OF D.I.	DIA. OF OUTLET PIPE	MINIMUM WALL THICKNESS CAST IN PLACE	MINIMUM WALL THICKNESS PRECAST
4' I.D.	12" THRU 27"	6"	5"
5' I.D.	30" THRU 42"	8"	6"
6' I.D.	48" THRU 54"	8"	7"

DATE	REVISIONS	DATE FILMED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01	ADDED NOTE 13	
1-12-00	REVISED HEAVY DUTY RING & COVER	
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS	
7-02-98	REP. NOTE 8, REM. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET	
4-26-96	ADDED NOTE 11, ADJ. OPENING DIMENSION	
10-12-95	CORRECTED #6 BAR SPACING	
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX	
7-2-95	TYPE C TO MO (OPEN BACK DETAIL)	
11-1-93	REVISED GENERAL NOTES	11-3-94
4-1-93	REV. BACK OPEN. DETAIL & NOTE	4-1-93
8-15-91	REVISED NOTES 11,12 & ADDED BK.OPEN DETAIL	8-15-91
11-30-89	ADDED NOTE NO. 12	11-30-89
5-23-89	ADDED NOTE & MINIMUM WALL THICKNESS	513-5-23-89
7-15-88	ADDED EXTEND NOTE TO SECTION A-A	639-7-15-88
1-14-87	MODIFIED WALL THICKNESS	783-1-14-87
6-12-87	ISSUED	465-12-87

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET (TYPE MO)

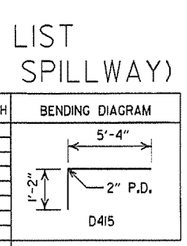
STANDARD DRAWING FPC-9M

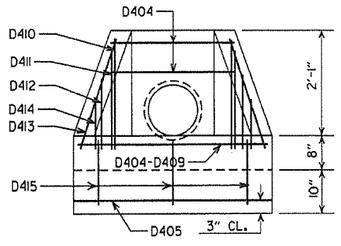


PLAN

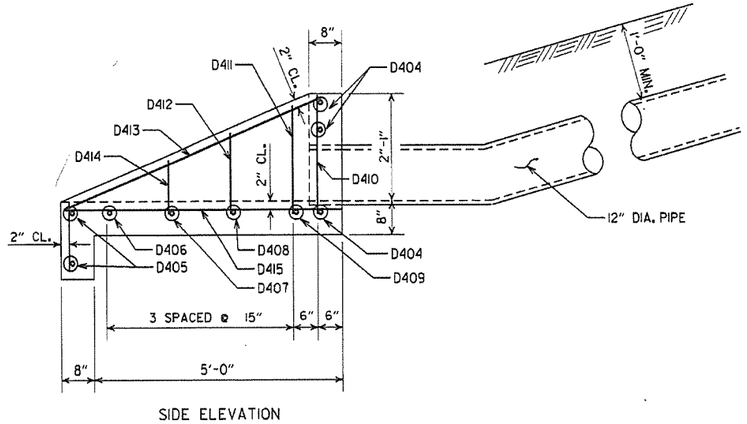
BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	
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"	



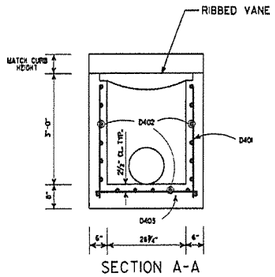


FRONT ELEVATION



SIDE ELEVATION
CONCRETE SPILLWAY

DETAILS OF CONCRETE SPILLWAY (TYPE A)

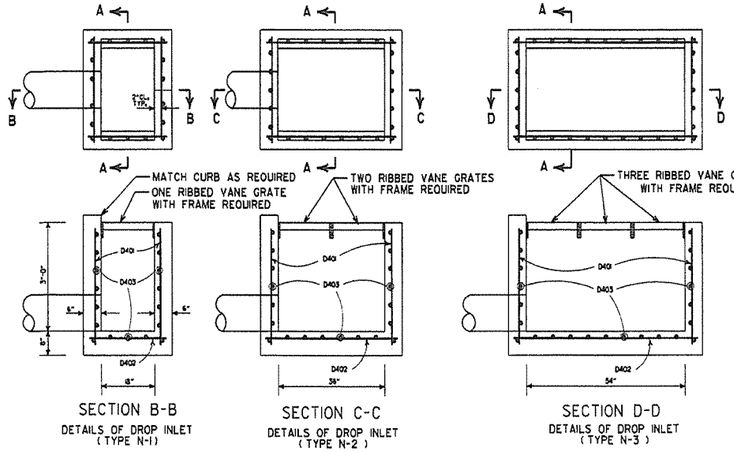


SECTION A-A

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



SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

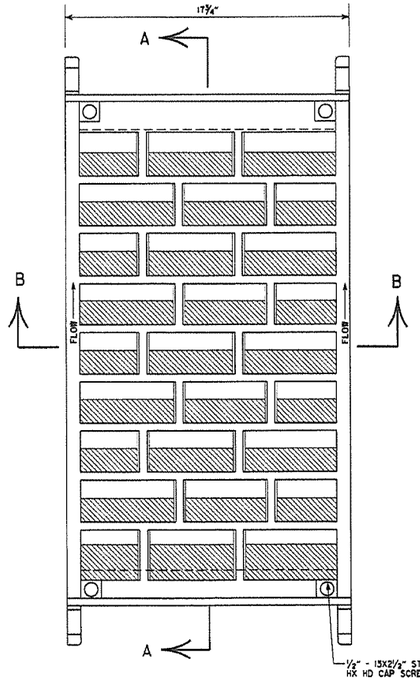
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

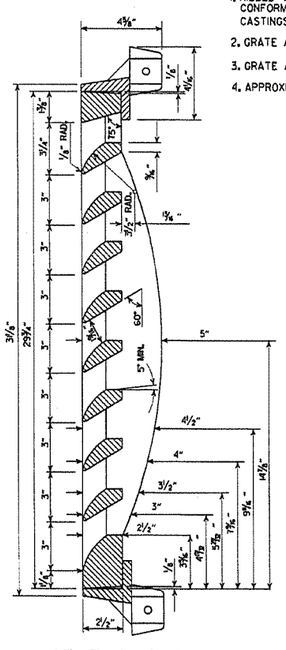
SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

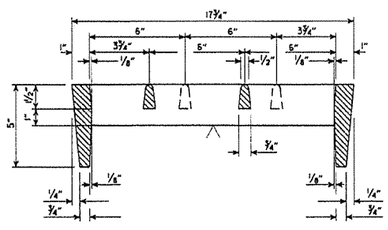
GENERAL NOTES (GRATE & FRAME)

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.

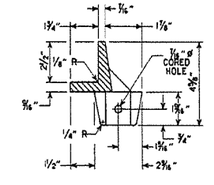




SECTION A-A



SECTION B-B



SECTION THRU FRAME

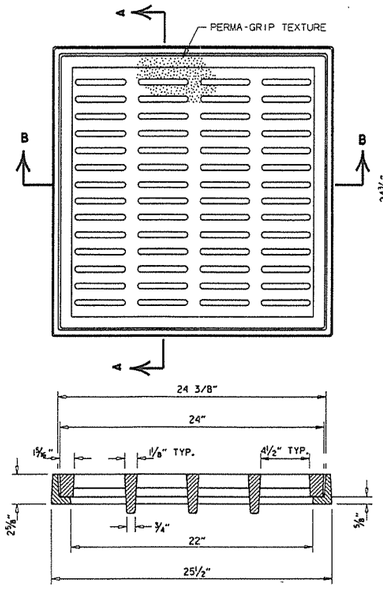
DETAILS OF RIBBED VANE GRATE AND FRAME

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

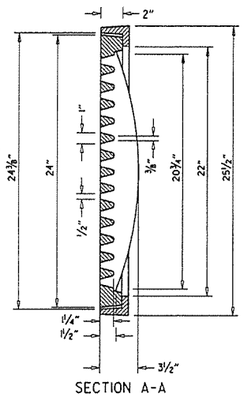
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N



SECTION B-B

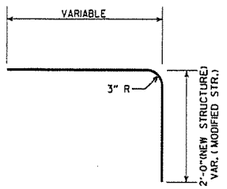


SECTION A-A

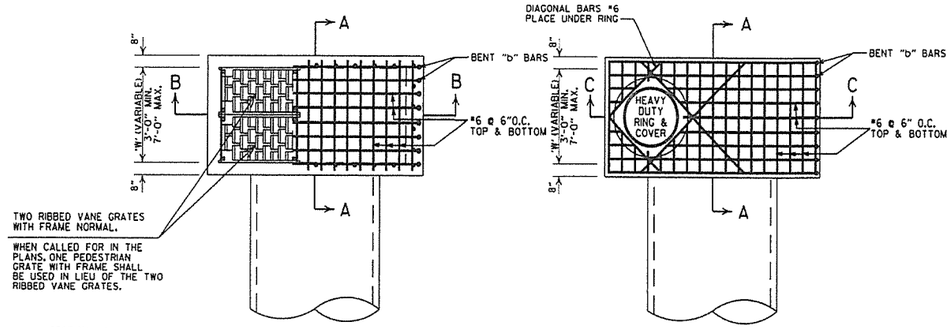
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

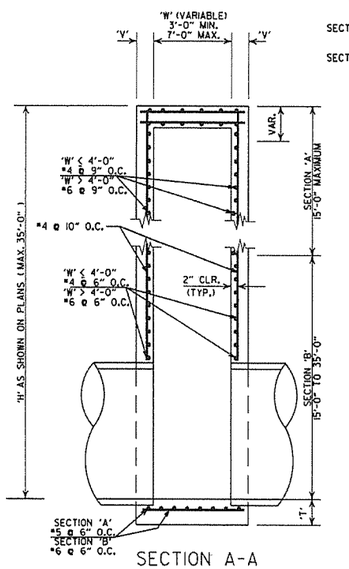
1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE 1/2" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS 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 211 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

DETAILS OF PEDESTRIAN GRATE AND FRAME



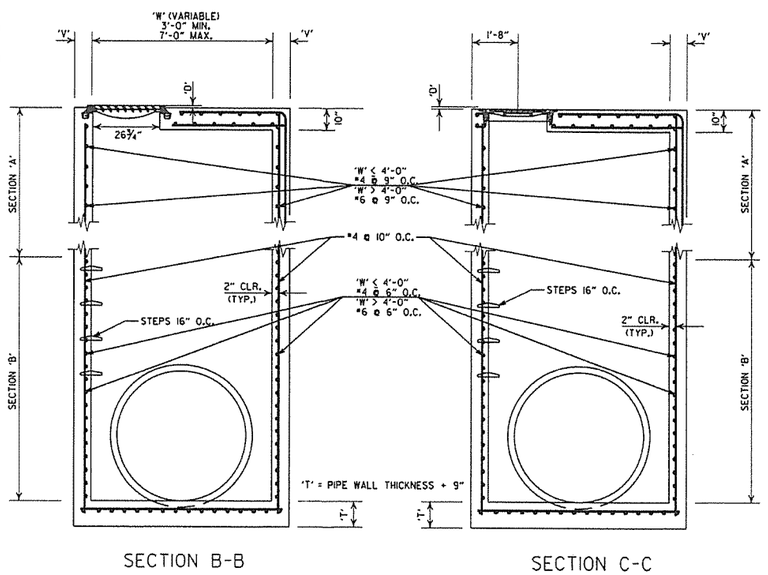
DETAIL OF BENT "b" BAR





SECTION A-A

DETAILS OF DROP INLET
(TYPE ST)



SECTION B-B

SECTION C-C

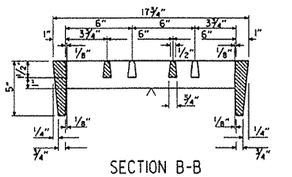
DETAILS OF JUNCTION BOX
(TYPE ST)

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

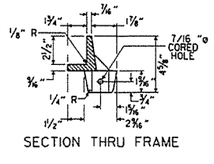
1. THE 'D' DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A 3/4" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

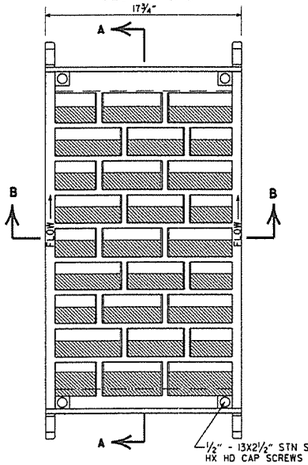
1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE 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.

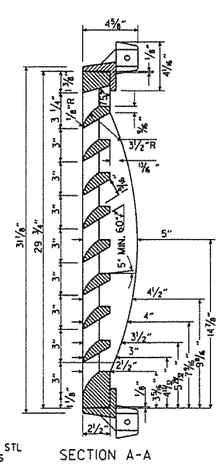


SECTION B-B



SECTION THRU FRAME



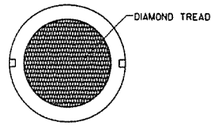


SECTION A-A

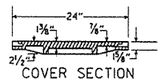
DETAILS OF RIBBED VANE GRATE AND FRAME

GENERAL NOTES (RIBBED VANE GRATE & FRAME)

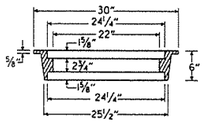
1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY
RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

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

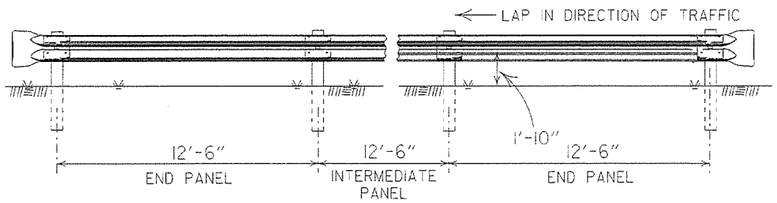
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

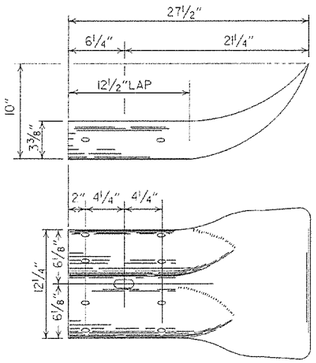
STANDARD DRAWING FPC-9S



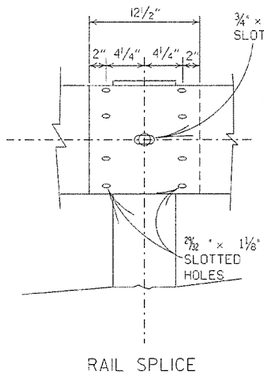
PLAN



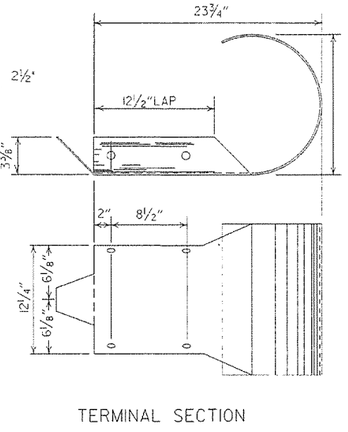
ELEVATION



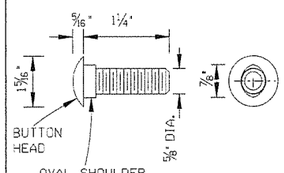
TERMINAL SECTION



RAIL SPLICE

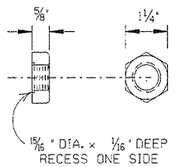


TERMINAL SECTION

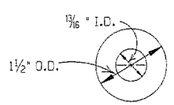


SPLICE BOLT

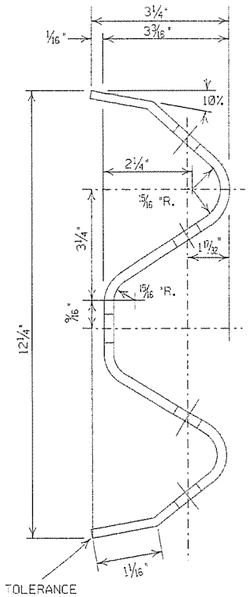
NOTE: POST BOLT SAME EXCEPT LENGTH.



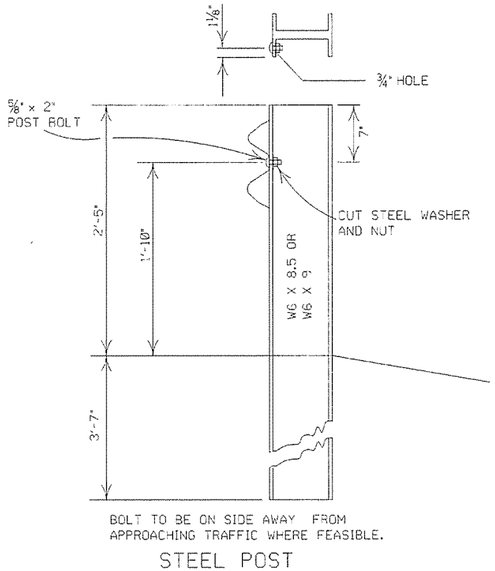
NUT



CUT STEEL WASHER

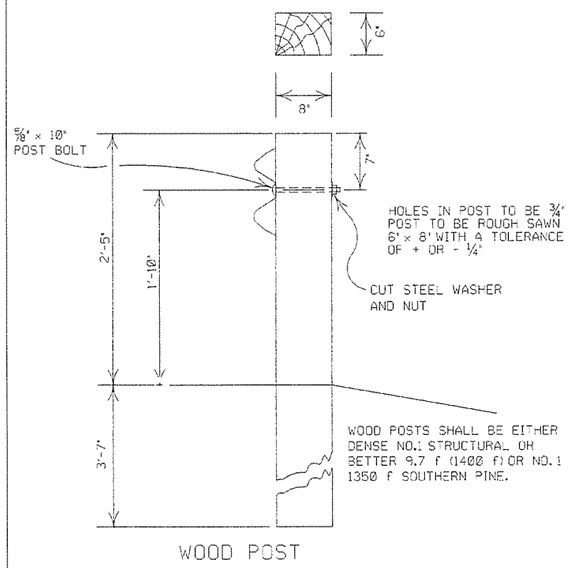


SECTION THRU RAIL



BOLT TO BE ON SIDE AWAY FROM APPROACHING TRAFFIC WHERE FEASIBLE.

STEEL POST



WOOD POST

DETAILS OF POST CONNECTIONS

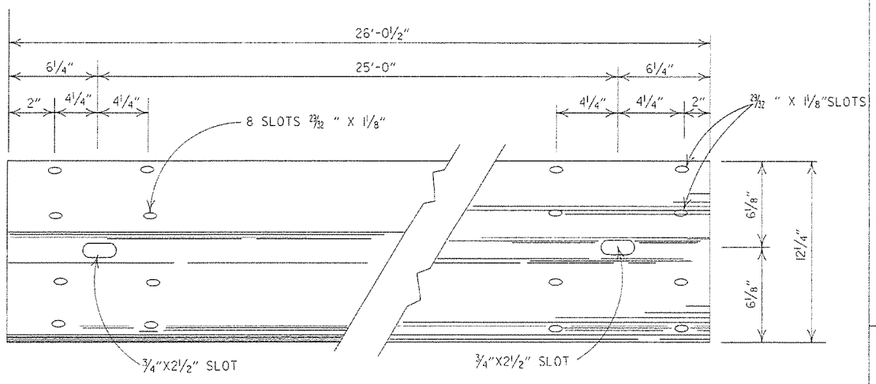
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
8-22-02	REVISED DIMENSION ON STEEL POST	
11-16-01	REVISED STEEL AND WOOD POST	
8-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
6-2-94	ADDED ALTERNATE STEEL POST SIZE	
8-5-93	REVISED STEEL POSTS SIZE	8-5-93
8-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
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

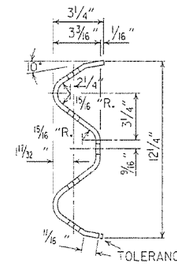
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS (TYPE C)

STREET / ROAD BARRICADE OR TEMPORARY INSTALLATION

STANDARD DRAWING GR-7

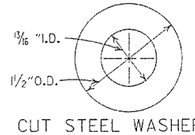




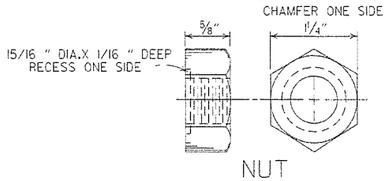
DETAILS OF W-BEAM GUARD RAIL

RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.

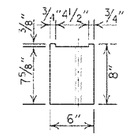
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



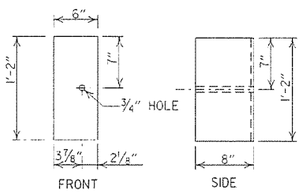
CUT STEEL WASHER



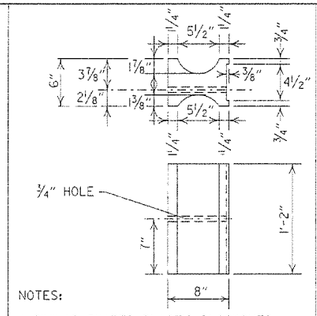
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"X8"X1'-2" WITH NO NOTCH REQUIRED.



WOOD BLOCKOUT (W-BEAM)

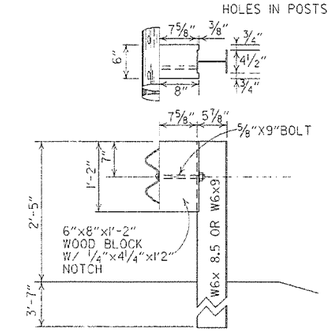


NOTES:

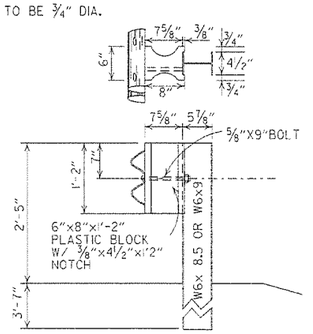
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.

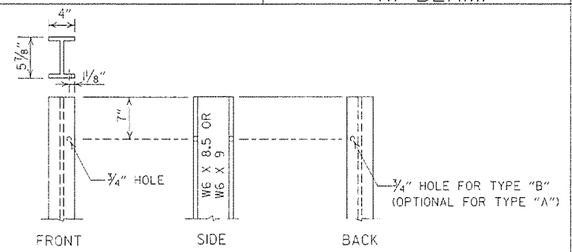


WOOD BLOCKOUT CONNECTIONS

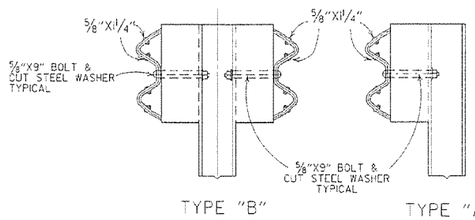


PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" 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.

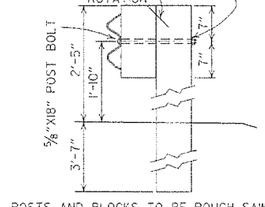
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

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.

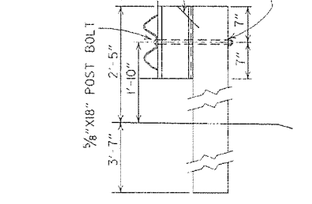
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

HOLES IN POSTS AND BLOCKS TO BE 3/4" DIA.



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

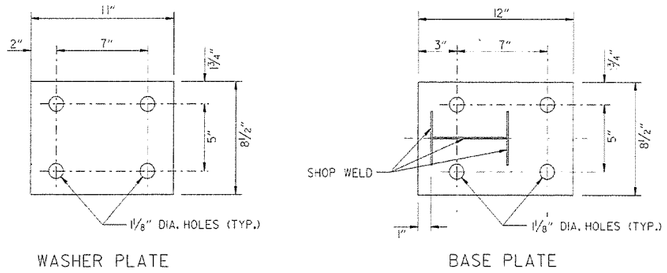
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	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 P.ACE. 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 W.T. 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

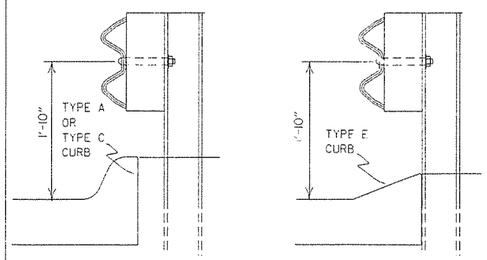
GUARD RAIL DETAILS

STANDARD DRAWING GR-8



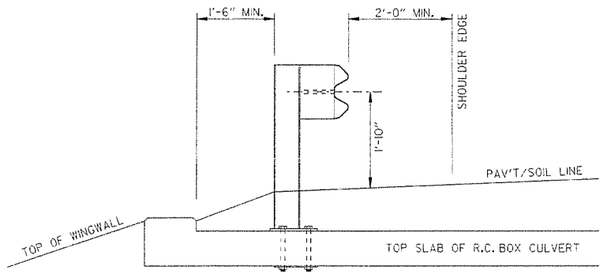
WASHER PLATE BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

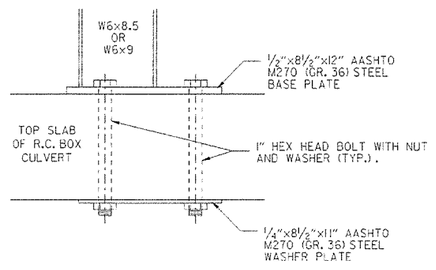


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

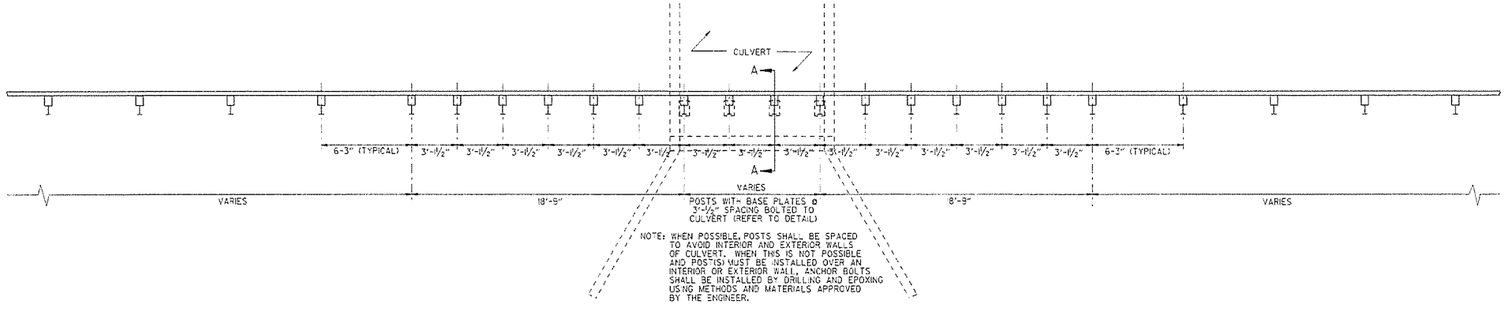
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



DETAIL OF CONNECTION

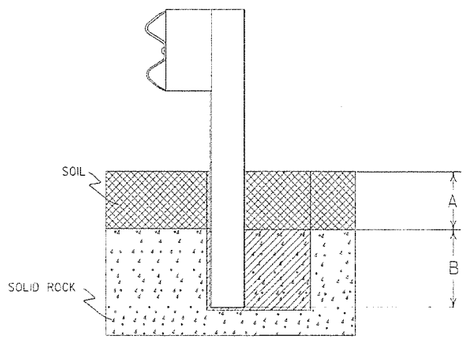


NOTE: WHEN POSSIBLE, POSTS SHALL BE SPACED TO AVOID INTERIOR AND EXTERIOR WALLS OF CULVERT. WHEN THIS IS NOT POSSIBLE AND POST(S) MUST BE INSTALLED OVER AN INTERIOR OR EXTERIOR WALL, ANCHOR BOLTS SHALL BE INSTALLED BY DRILLING AND EPOXING USING METHODS AND MATERIALS APPROVED BY THE ENGINEER.

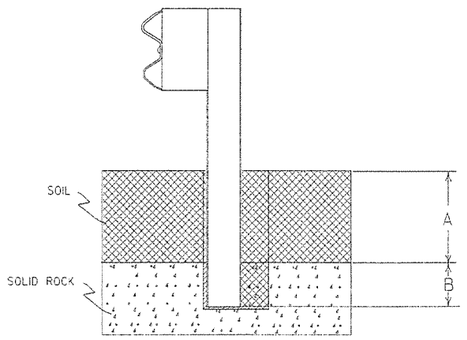
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

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

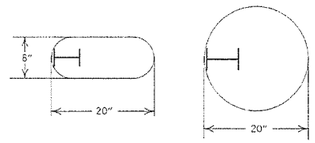


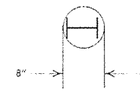
Case 2



Plan View Steel Posts

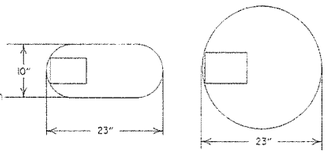
Either hole configuration acceptable

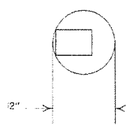




Plan View Wood Posts

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)

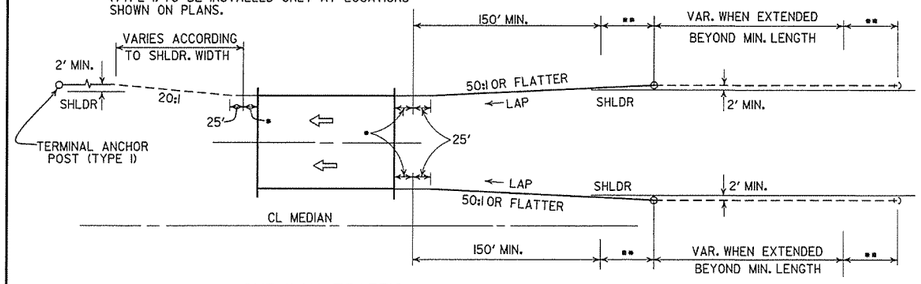
DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL 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	
8-6-93	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

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GUARD RAIL DETAILS

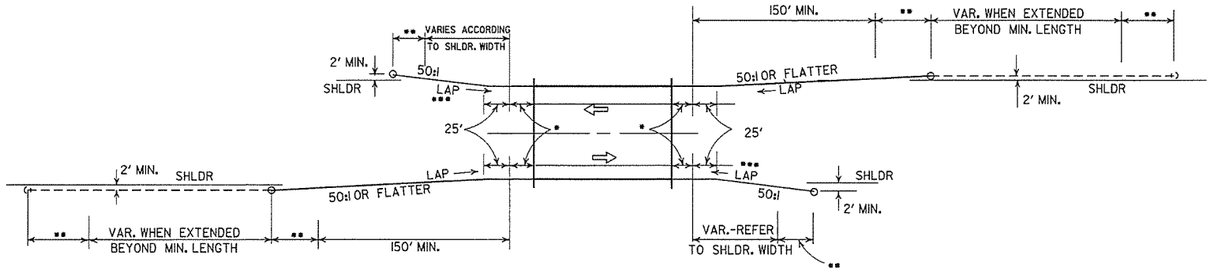
STANDARD DRAWING GR-8A

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

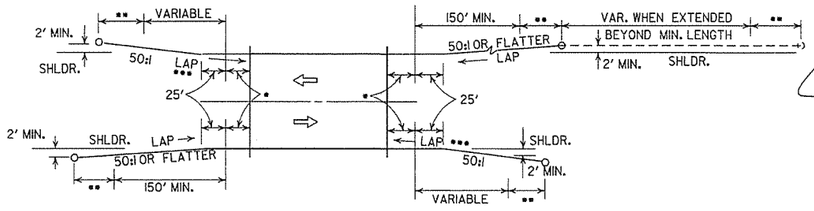
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

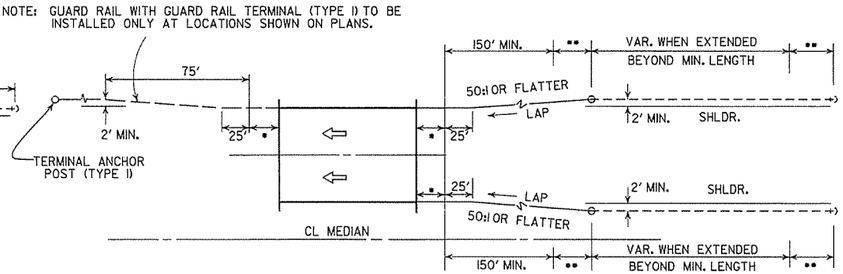
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• 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

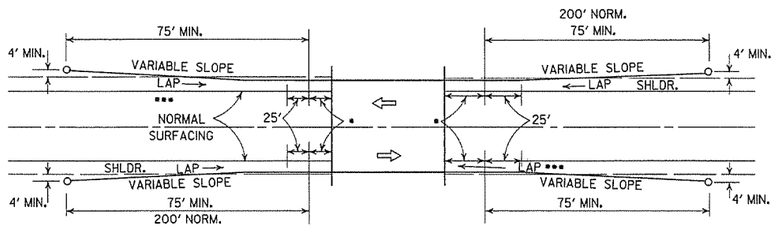
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



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

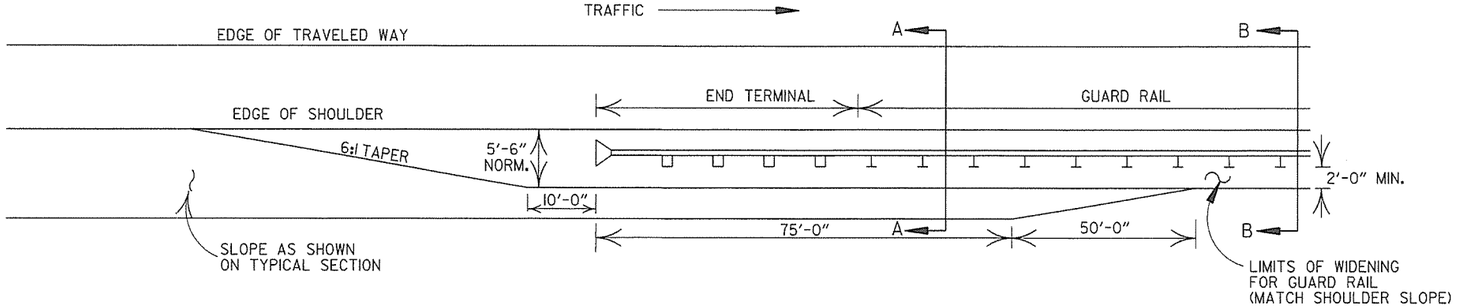
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

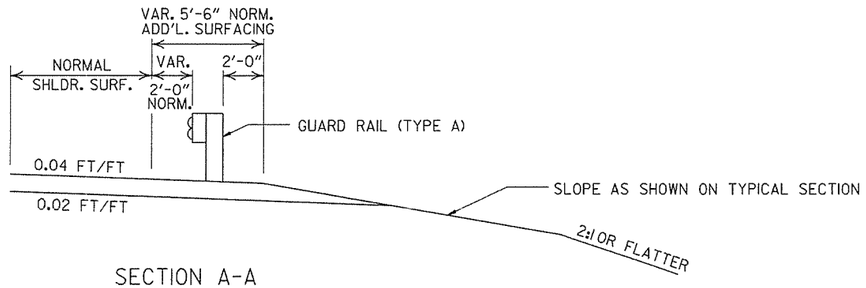
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

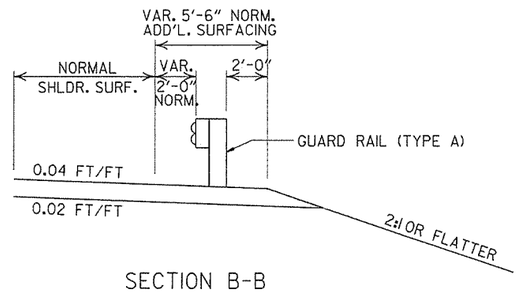
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





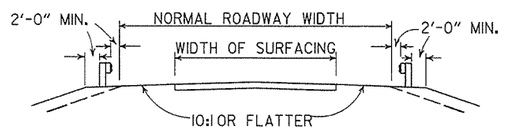
SECTION A-A



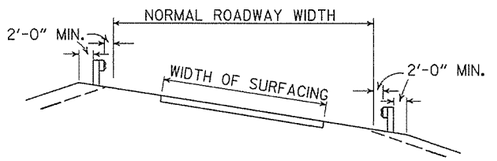
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.

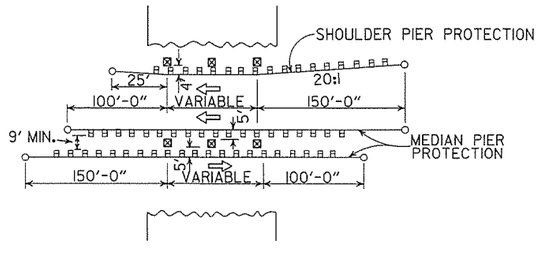


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



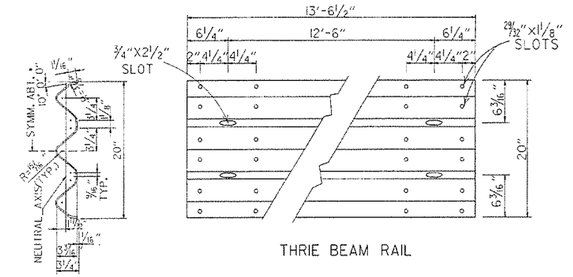
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

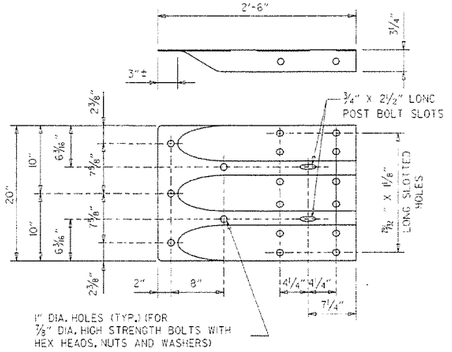
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A



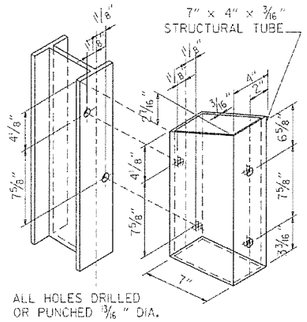
THRIE BEAM RAIL

SECTION THRU THRIE BEAM RAIL



1" DIA. HOLES (TYP.) (FOR ⅞" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)

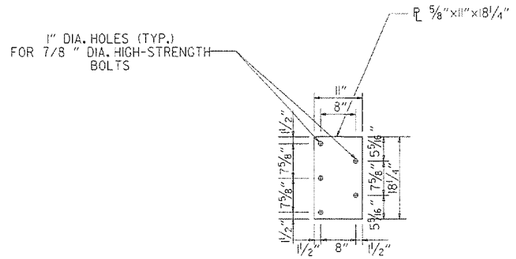
SPECIAL END SHOE



ALL HOLES DRILLED OR PUNCHED ⅜" DIA.

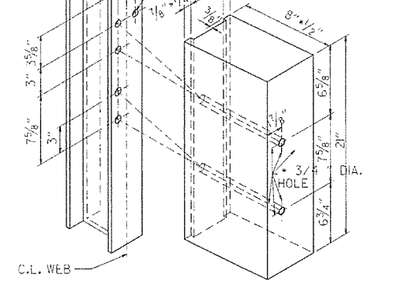
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL

ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.



CONNECTOR PLATE

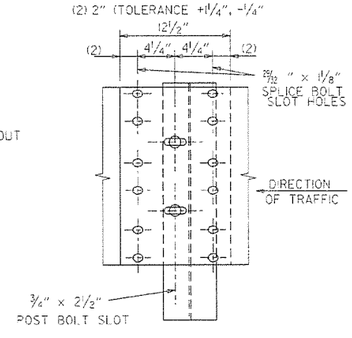
CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



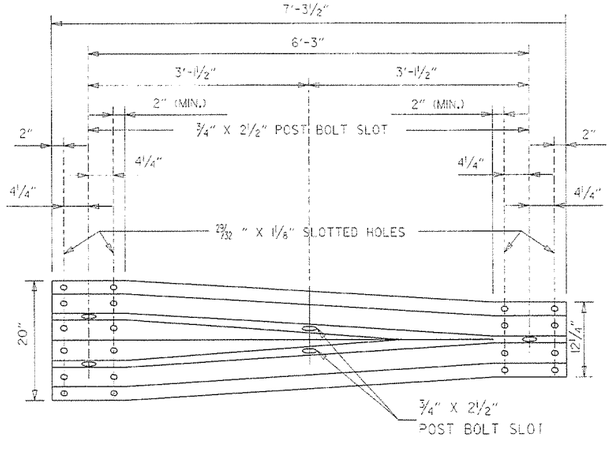
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

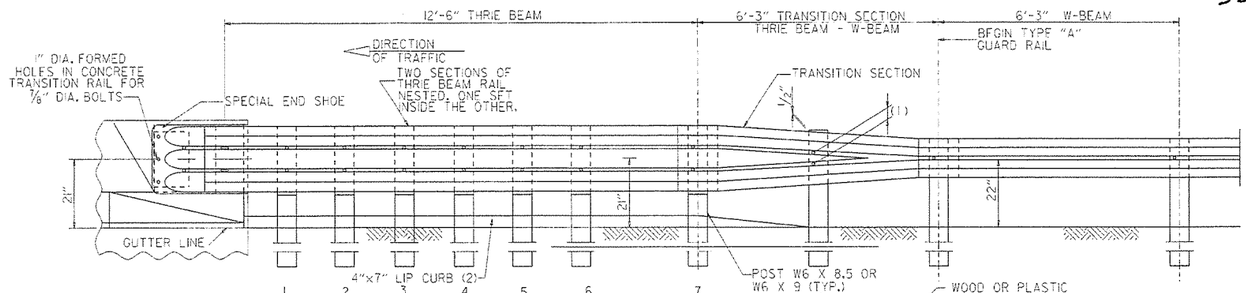
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



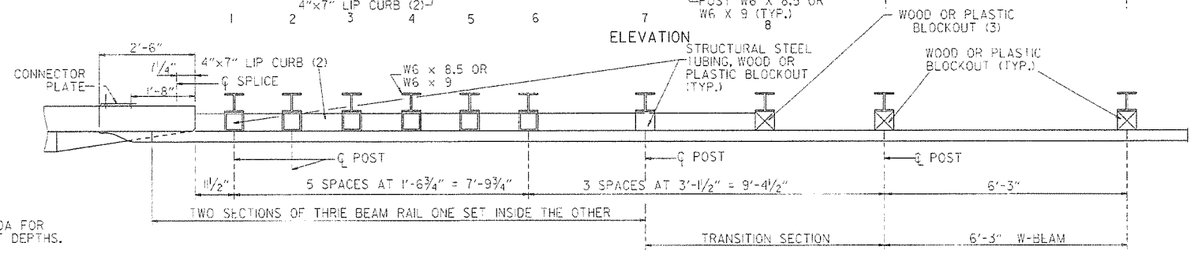
THRIE BEAM RAIL SPLICE AT POST



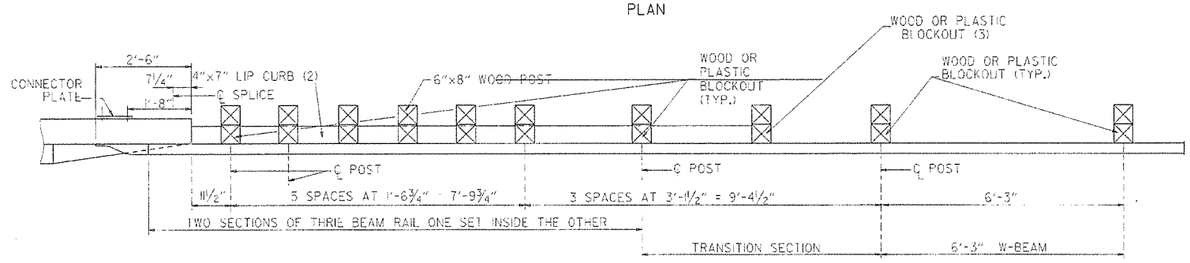
TRANSITION SECTION



ELEVATION



PLAN



PLAN

NOTE:
SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.

(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.

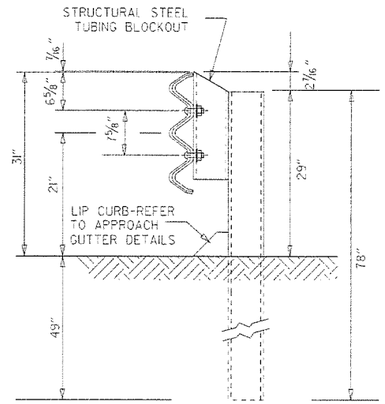
THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W BEAM POSTS FOR ENTIRE JOB.

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	

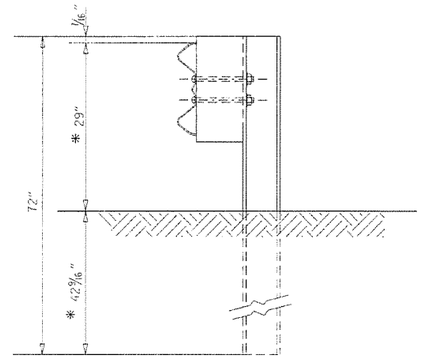
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-10

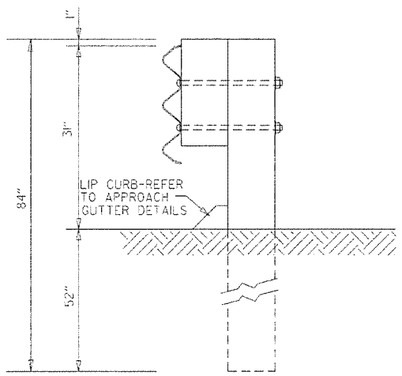


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7

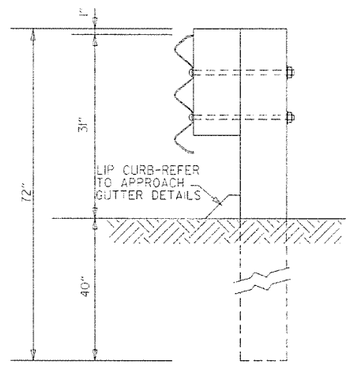


W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

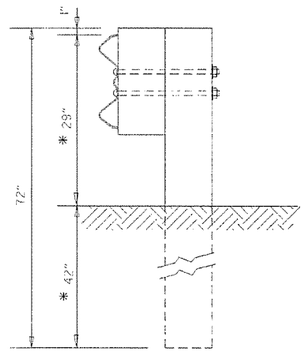
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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.

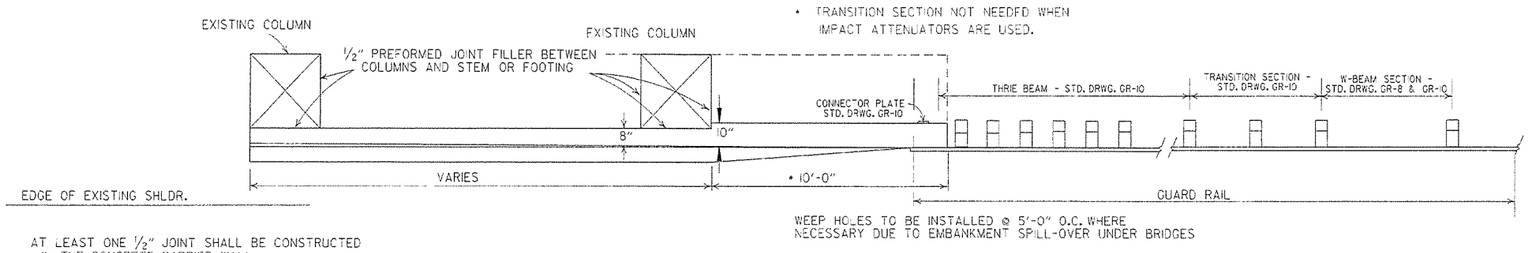
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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

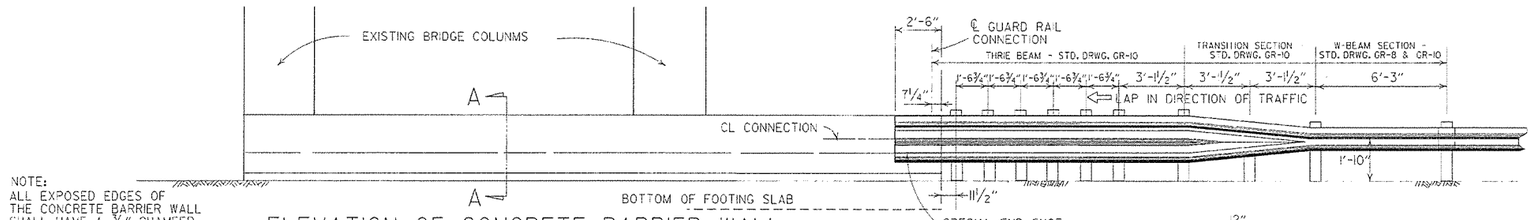


• TRANSITION SECTION NOT NEEDED WHEN IMPACT ATTENUATORS ARE USED.

WEEP HOLES TO BE INSTALLED @ 5'-0" O.C. WHERE NECESSARY DUE TO EMBANKMENT SPILL-OVER UNDER BRIDGES

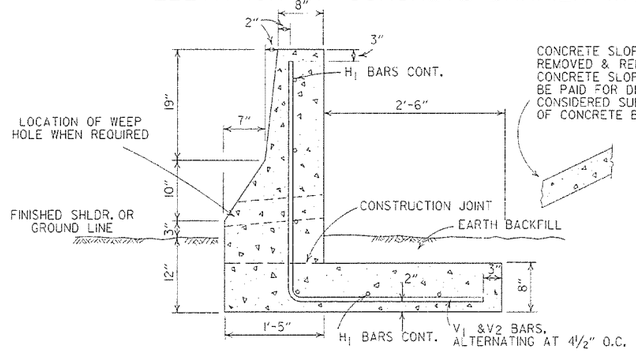
AT LEAST ONE ½" JOINT SHALL BE CONSTRUCTED IN THE CONCRETE BARRIER WALL. JOINTS SHALL BE EQUALLY SPACED AT A MAXIMUM OF 25'-0" O.C. FILL JOINT WITH PREFORMED JOINT FILLER.

PLAN OF CONCRETE BARRIER WALL



NOTE:
ALL EXPOSED EDGES OF THE CONCRETE BARRIER WALL SHALL HAVE A ¾" CHAMFER.

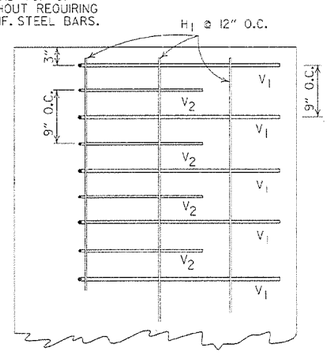
ELEVATION OF CONCRETE BARRIER WALL



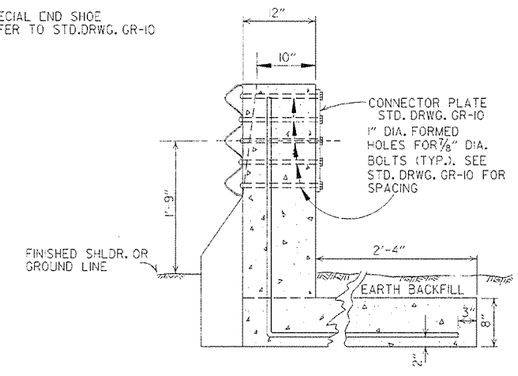
CONCRETE SLOPE PAVING TO BE REMOVED & REPLACED WHERE REQ'D. CONCRETE SLOPE PAVING WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM OF CONCRETE BARRIER WALL.

SECTION A-A

IF FOR ANY REASON IT IS NECESSARY TO CONSTRUCT THE FOOTING AT A LOWER ELEVATION THAN IS SHOWN, THE STEM MAY BE LENGTHENED 1'-0" BETWEEN FIN. SHLDR. AND TOP OF FOOTING WITHOUT REQUIRING HEAVIER REINF. STEEL BARS.



PLAN OF REINFORCING STEEL IN FOOTING

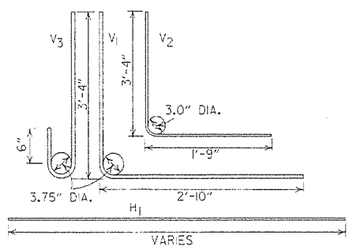


SECTION THRU CONNECTION

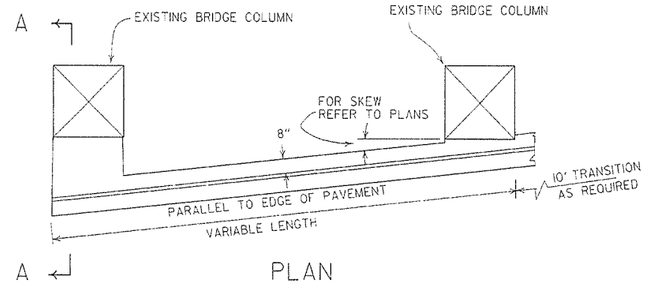
BAR LIST

MARK	NO.	SIZE	LENGTH
V1		#5	6'-2¼"
V2		#4	5'-1"
V3		#5	4'-11⅛"
H1	6	4	VAR.

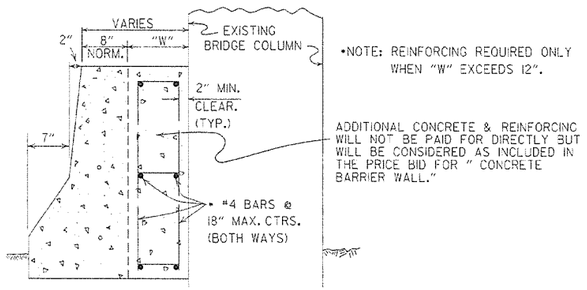
THE V3 BARS SHALL BE USED IN PLACE OF THE V1 & V2 BARS IN FRONT OF PIERS.



BEND DIAGRAMS



PLAN



SECTION A-A

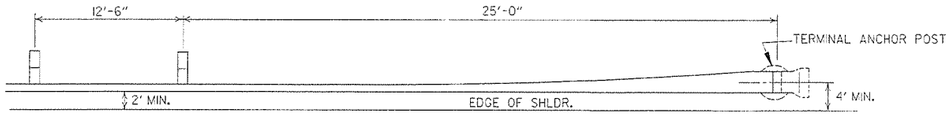
DETAILS OF CONCRETE BARRIER WALL WHEN PIERS ARE SKEWED TO ROADWAY

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
8-22-02	REV. SECTION A-A OF DETAILS OF CONCRETE BARRIER WALL	
6-29-00	MOVED DIMENSION LINE	
5-18-00	ADDED NOTE	
3-30-00	REVISED TO INCLUDE THRIE BEAM	
6-2-94	ADDED TRANSITION SECTION NOTE	
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED DRAWING PLAN CONC. BARR.	8-15-91
2-16-89	ADDED SKEWED DETAILS	594-2-16-89
7-14-88	CHANGED TITLE	
10-9-87	REDRAWN & REVISED	

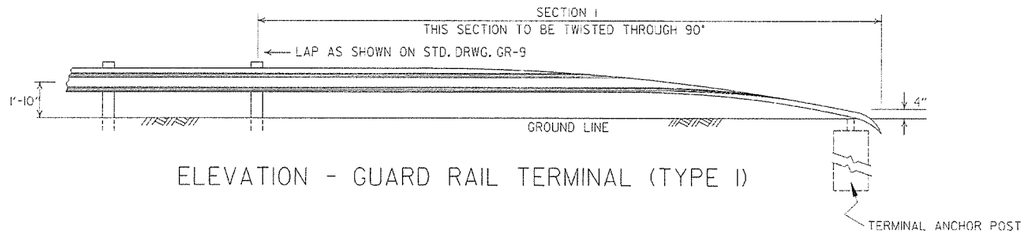
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE BARRIER WALL (PIER PROTECTION TYPE A)

STANDARD DRAWING GR-11

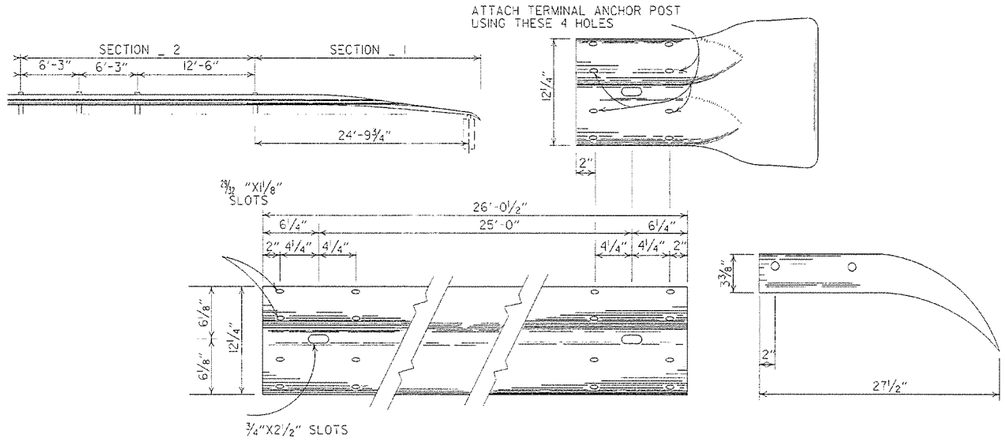


PLAN - GUARD RAIL TERMINAL (TYPE I)



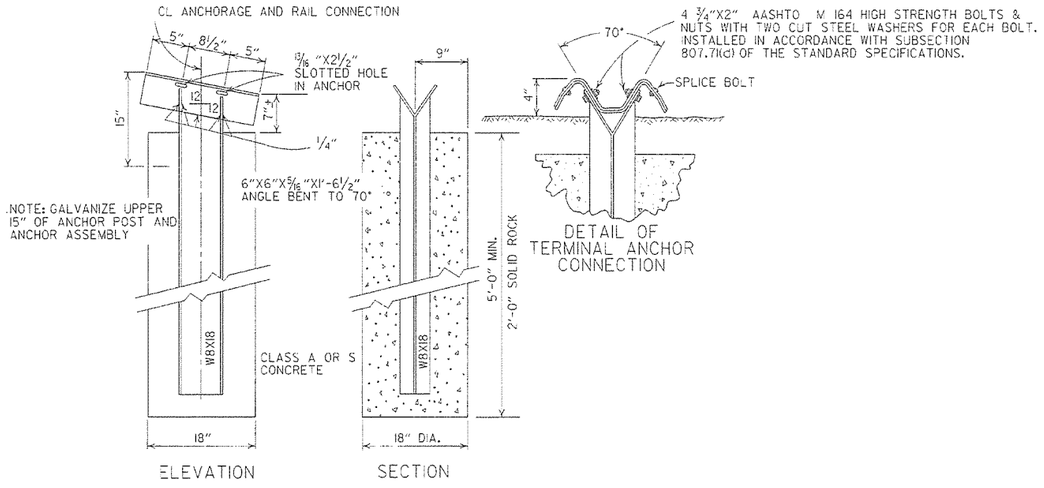
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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

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.

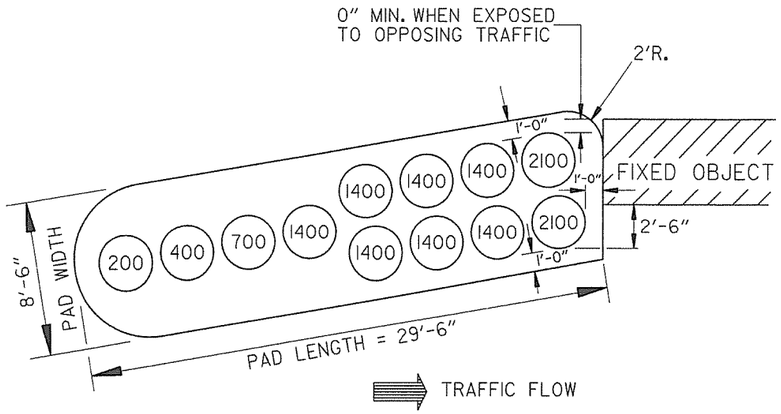
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

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

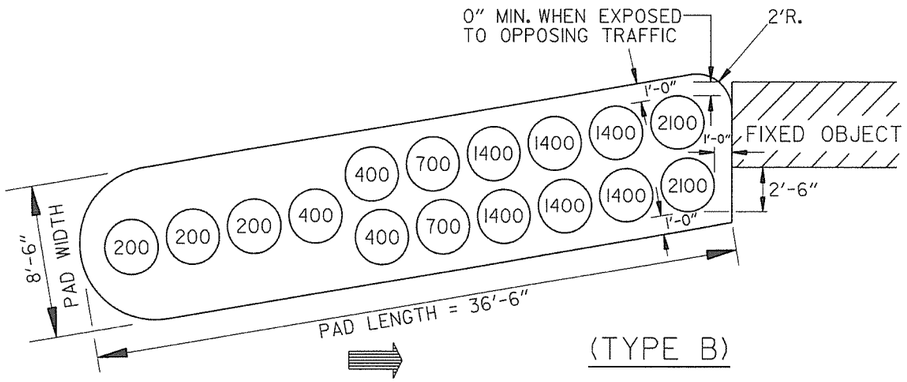
GUARD RAIL DETAILS

STANDARD DRAWING GRT-1



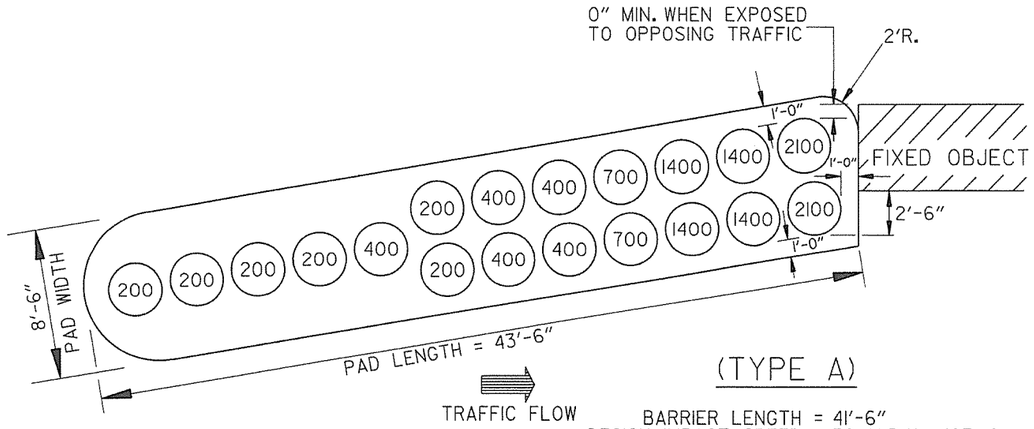
(TYPE C)

BARRIER LENGTH = 27'-6"
DESIGN IMPACT SPEED = 50 M.P.H.= 73.3 fps



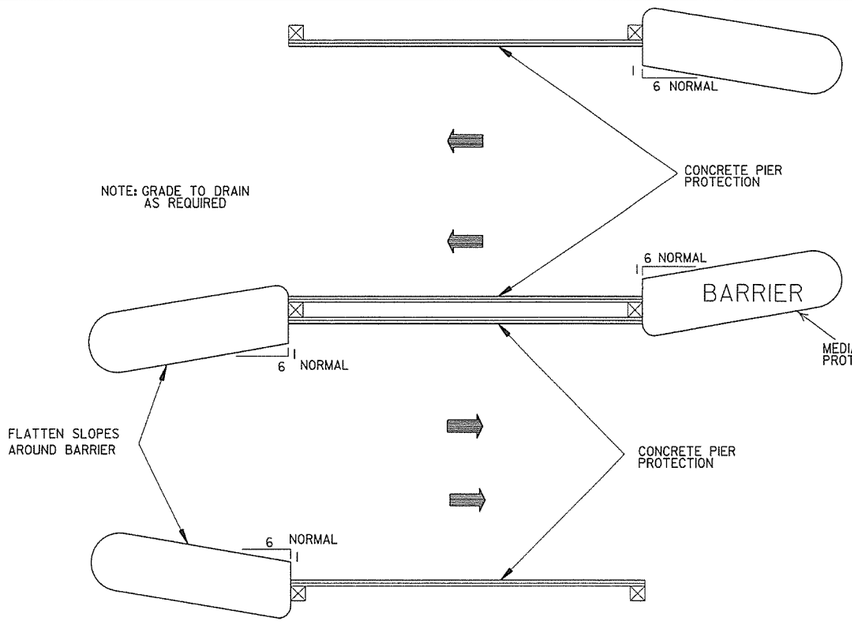
(TYPE B)

BARRIER LENGTH = 34'-6"
DESIGN IMPACT SPEED = 60 M.P.H.= 88 fps

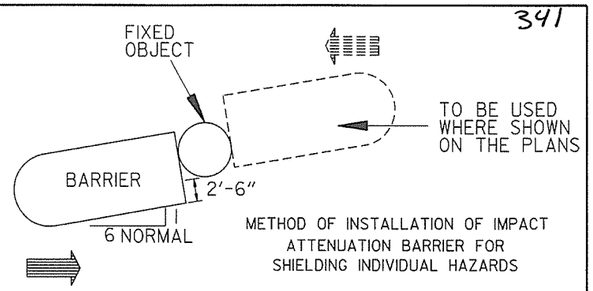


(TYPE A)

BARRIER LENGTH = 41'-6"
DESIGN IMPACT SPEED = 70 M.P.H.= 103 fps



METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR PIER PROTECTION



METHOD OF INSTALLATION OF IMPACT ATTENUATION BARRIER FOR SHIELDING INDIVIDUAL HAZARDS

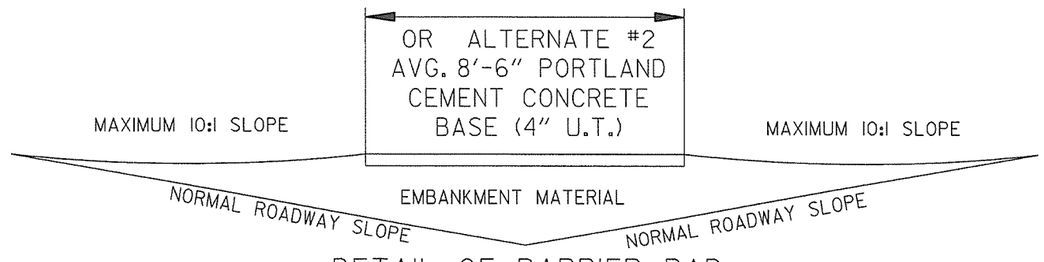
APPROXIMATE QUANTITIES PER PAD

TYPE	ALTERNATE #1		ALTERNATE #2
	AGGR. BASE COURSE	A.C.H.M. SURFACE COURSE	P.C.CONC. BASE (4"U.T.)
	TONS	TONS	SQ.YDS.
A	9.7	4.6	41.6
B	8.1	3.8	34.9
C	6.6	3.1	28.3

NOTE: APPROXIMATE QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR IMPACT ATTENUATION BARRIER.

GENERAL NOTES

1. DIMENSIONS SHOWN ARE TO TOP OF PLASTIC MODULES.
2. SPACING BETWEEN PLASTIC MODULES SHALL NOT EXCEED 6" AT THE TOP.
3. PLASTIC MODULES SHALL MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



DETAIL OF BARRIER PAD

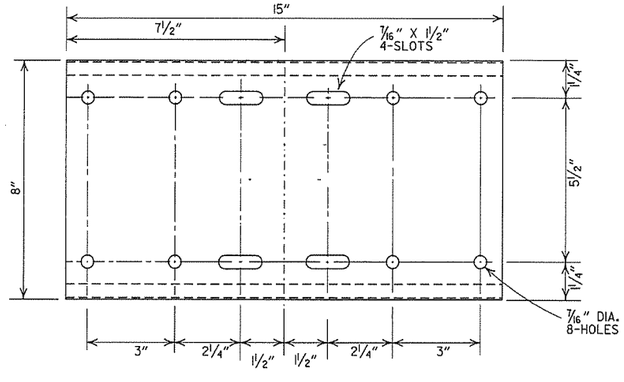
NOTE: BARRIER PAD TO BE SKEWED TOWARD ONCOMING TRAFFIC A MAXIMUM OF 6:1 WITH 6:1 BEING NORMAL

DATE	REVISION	DATE FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-29-07	REVISED TY. A & TY. C ARRAYS	
11-19-98	REVISED FIXED OBJECT	
11-18-98	REV. NOTES & TYPE A MOD. WTS.	
10-18-96	REDRAWN	
7-15-88	CONFORMED TO 1988 SPECS	
7-29-87	REDRAWN	

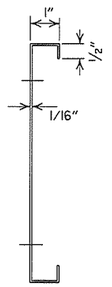
ARKANSAS STATE HIGHWAY COMMISSION

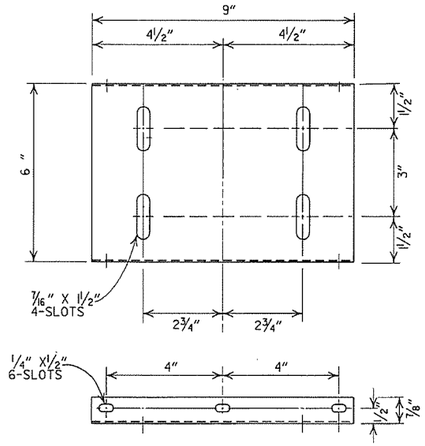
IMPACT ATTENUATION BARRIER

STANDARD DRAWING IB-1

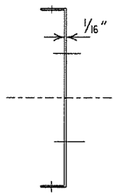


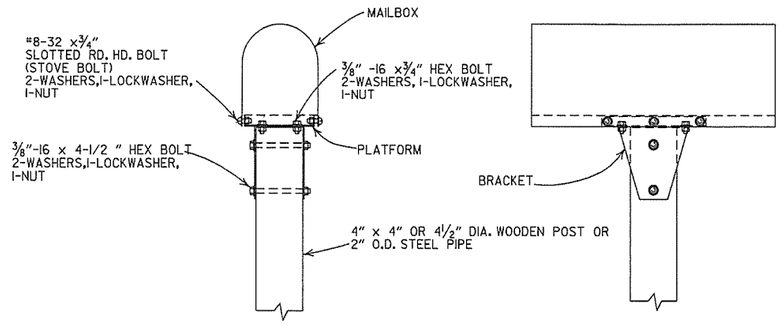
SHELF



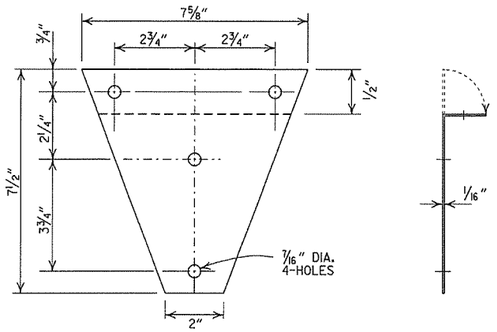


PLATFORM

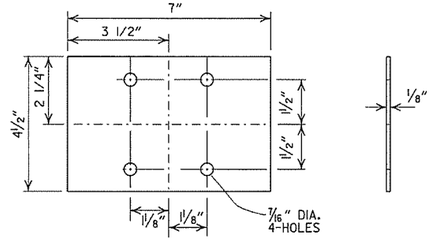




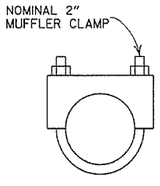
SINGLE INSTALLATION



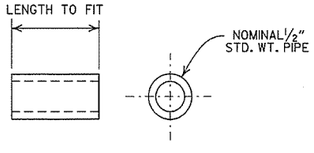
BRACKET



ANTI-TWIST PLATE



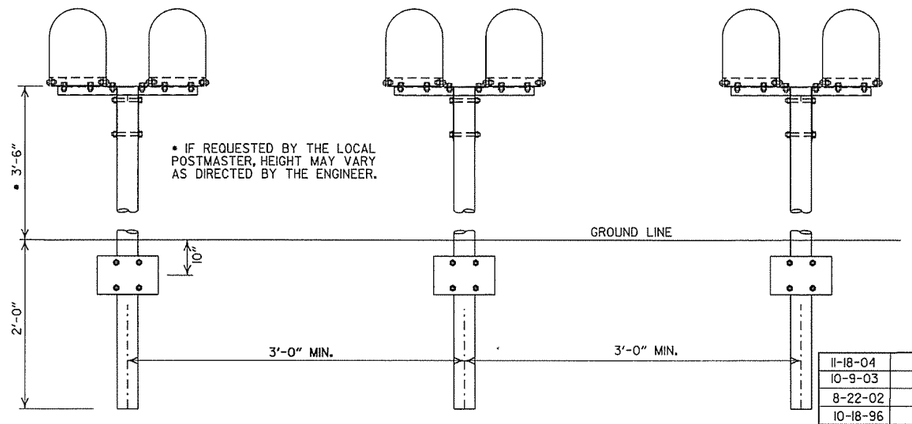
CLAMP



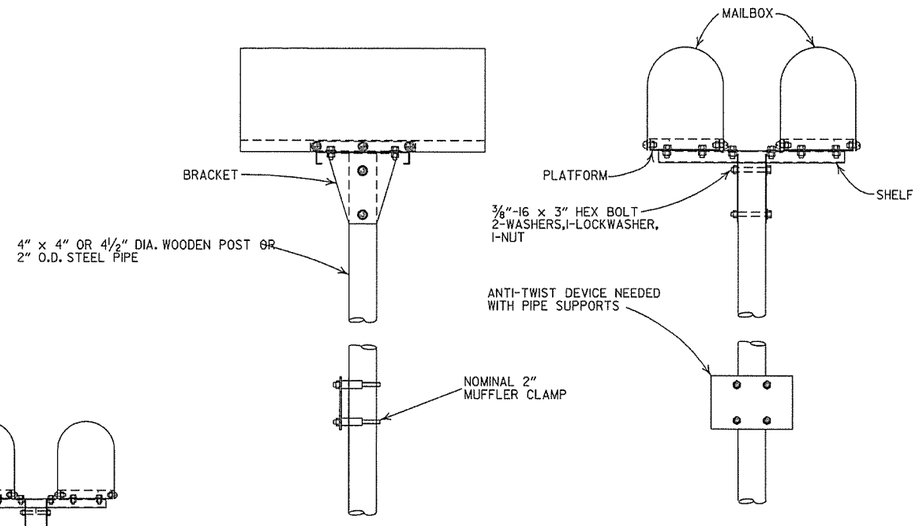
SPACER

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 X¾" 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.



SPACING FOR MULTIPLE POST INSTALLATION



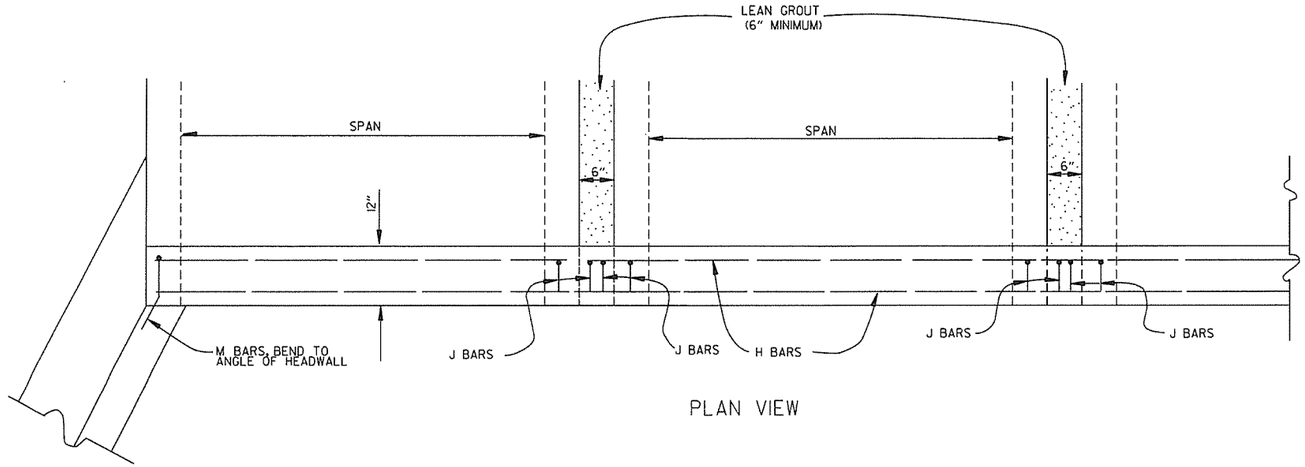
DOUBLE INSTALLATION

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

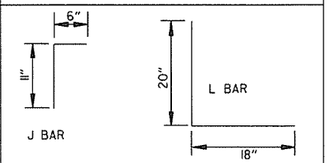
STANDARD DRAWING MB-1



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 3/4" 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.

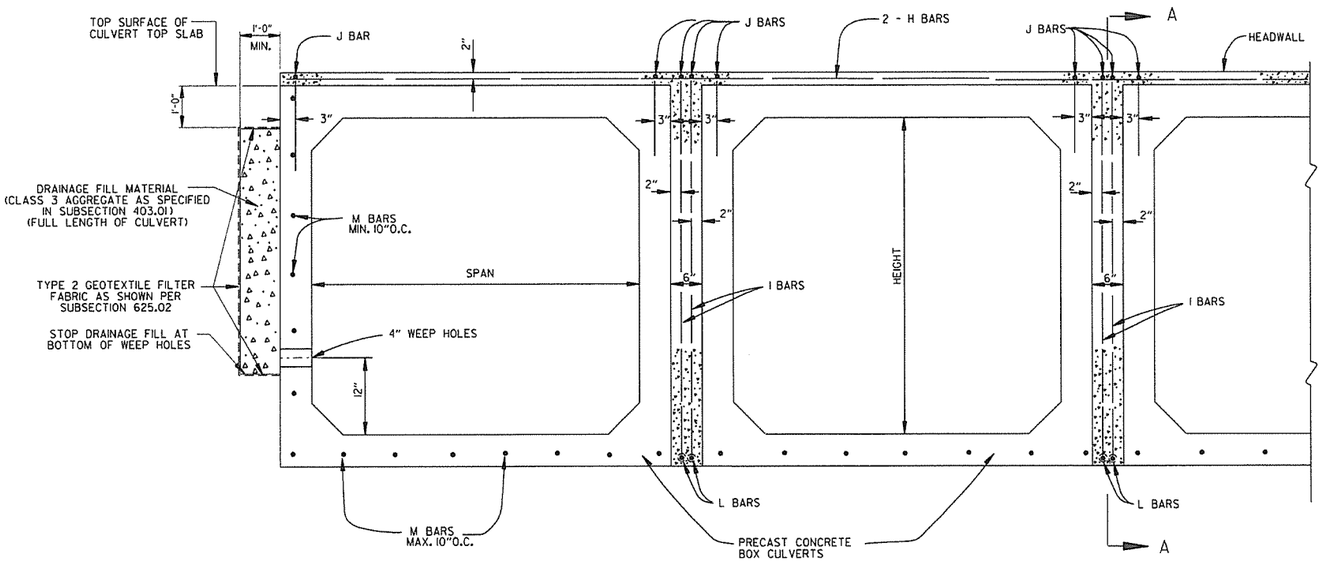
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

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.

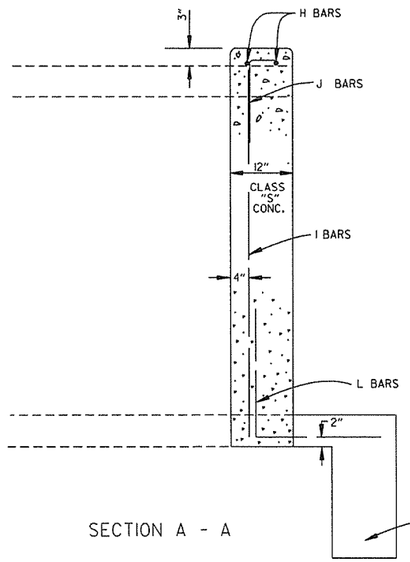
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT, SEE DETAILS ON THIS DRAWING.

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 1991SPECS	
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	31 5/16	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	87½	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.

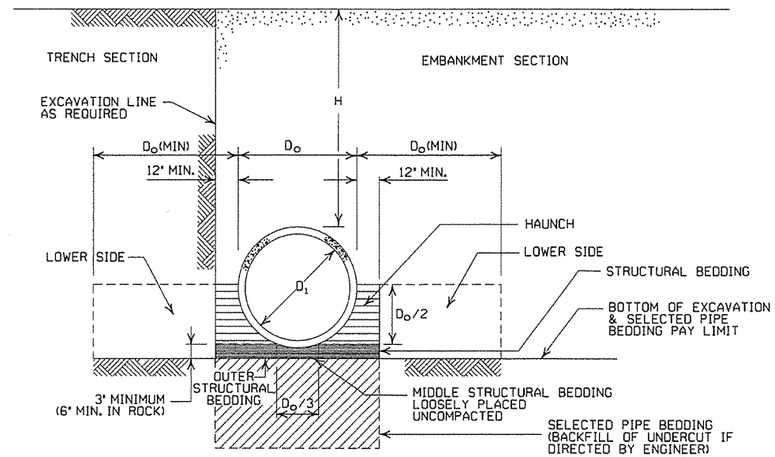
- LEGEND -

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 (2003 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
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

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	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			

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				
			MIN. THICKNESS REQUIRED INCHES	INSTALLATION TYPE 2	INSTALLATION TYPE 1	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

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.

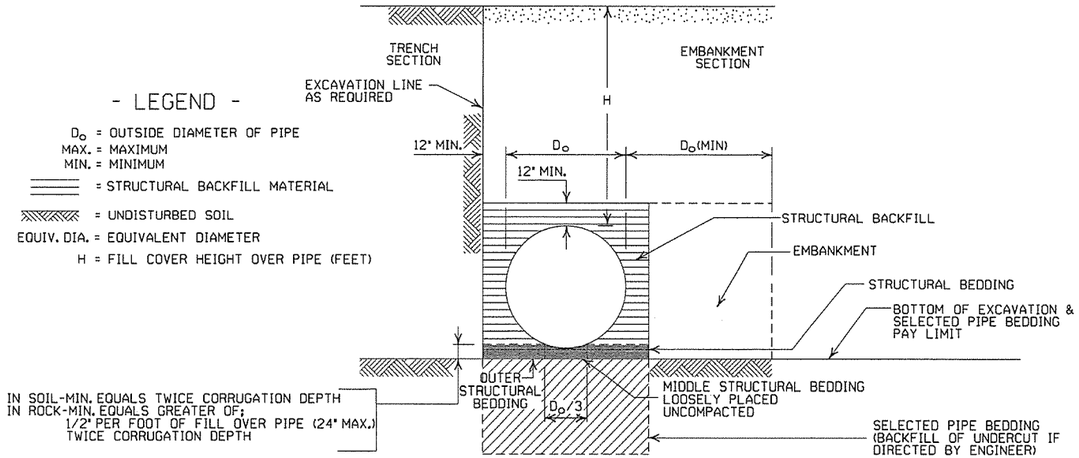
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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



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 (2003 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."

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.

DATE	REVISION	DATE FILMED
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"	TRENCH WIDTH (FEET) "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"

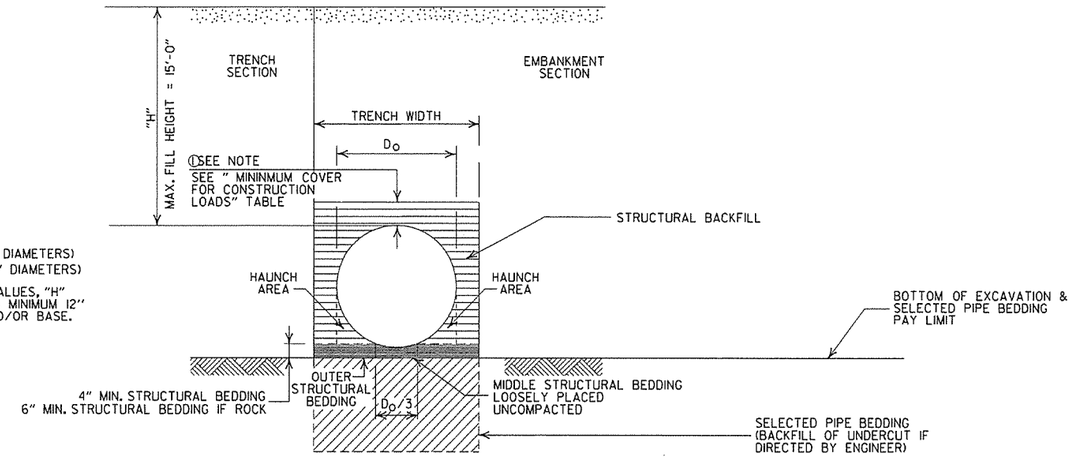
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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, 2003 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
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

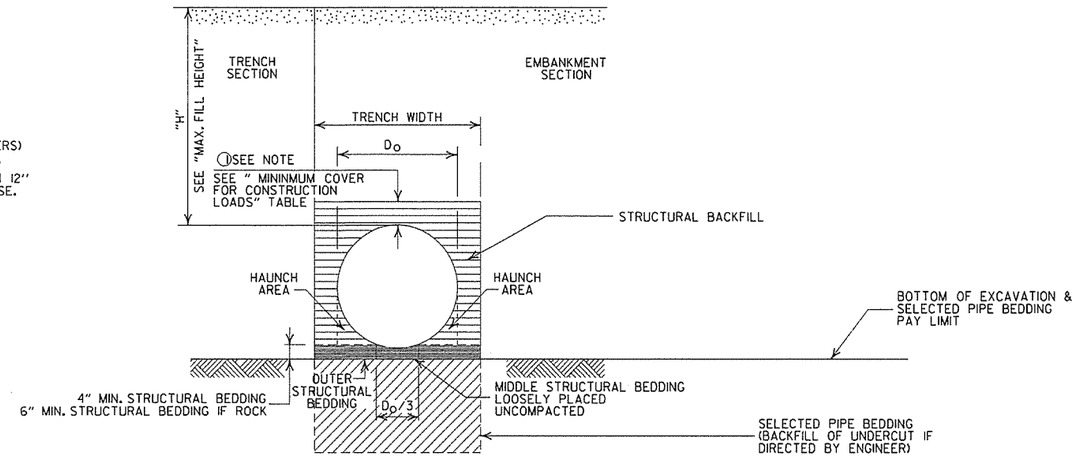
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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, 2003 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
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	

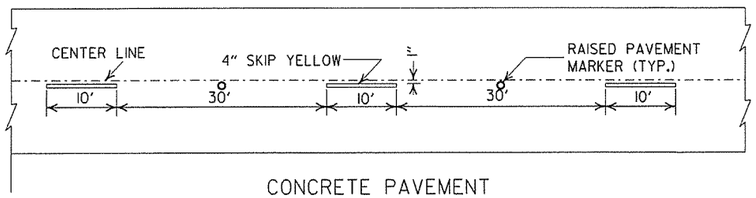
ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

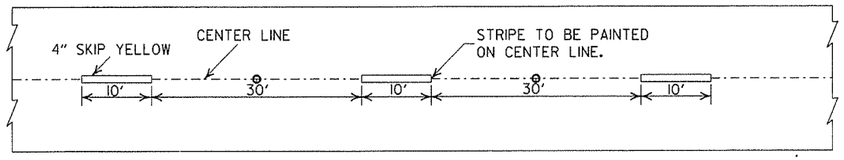
STANDARD DRAWING PCP-2

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.

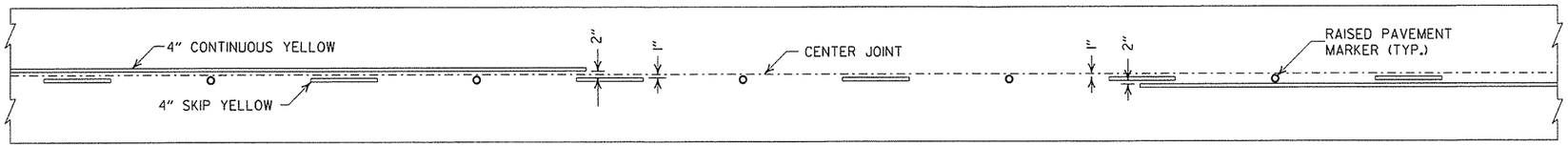


CONCRETE PAVEMENT

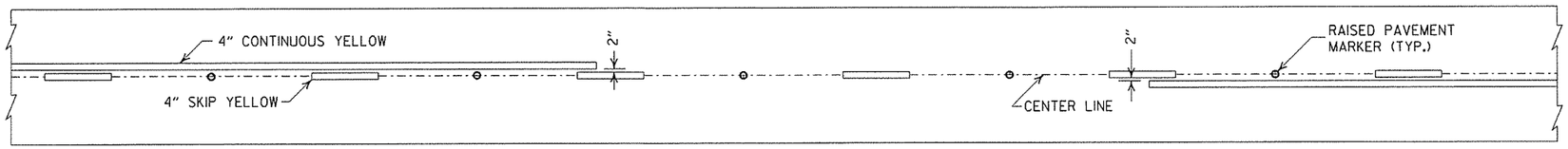


ASPHALT PAVEMENT

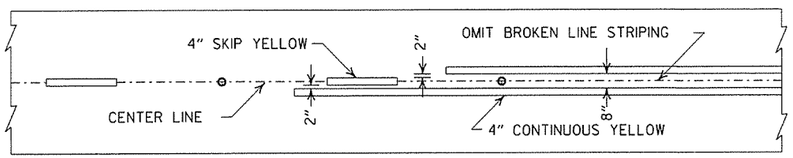
BROKEN LINE STRIPING



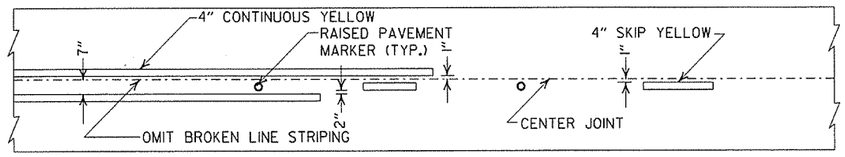
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

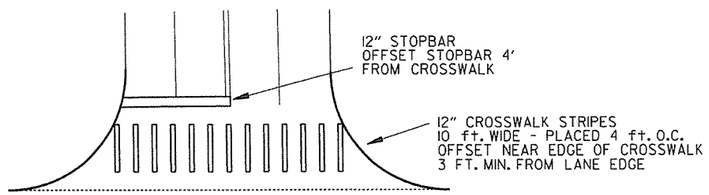


ASPHALT PAVEMENT



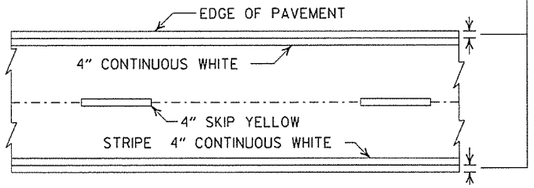
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

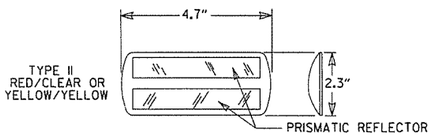


CROSSWALK AND STOPBAR DETAILS

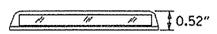
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



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

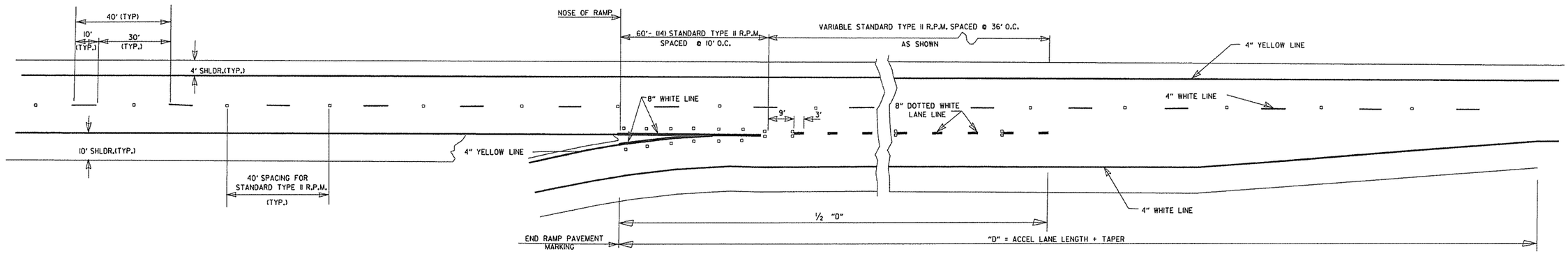
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

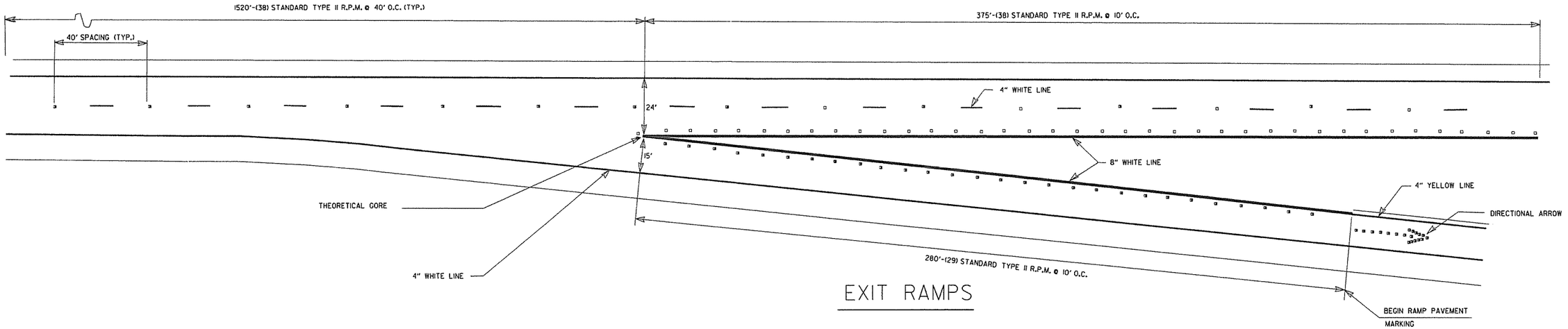
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

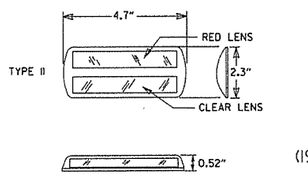
4" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

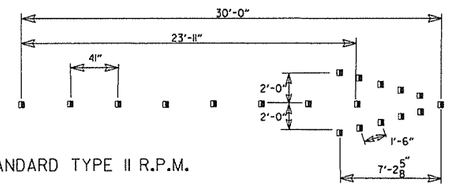


EXIT RAMPS



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 AHTD 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

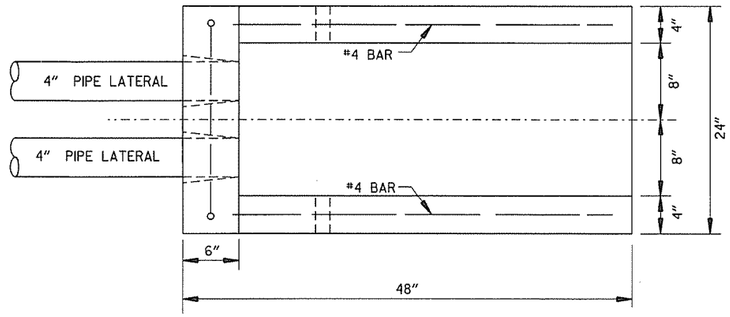
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

STANDARD DRAWING PM-2

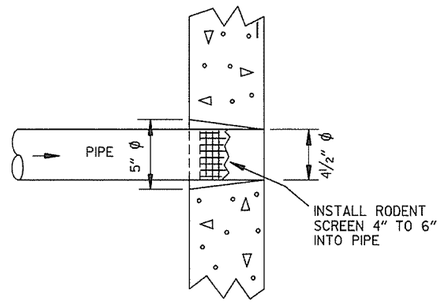
NOTE:
1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

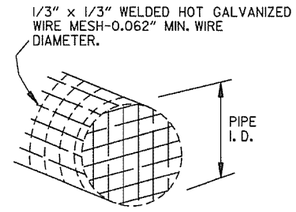
3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



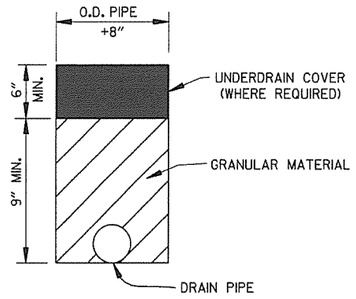
PLAN VIEW

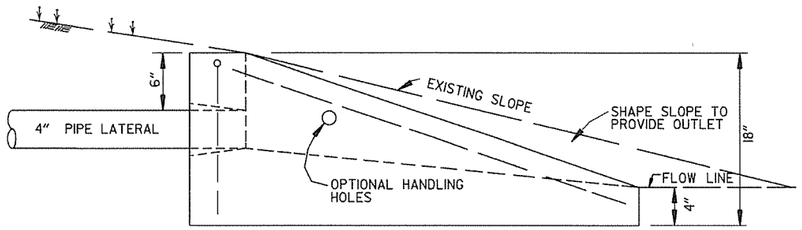


DETAIL OF HOLE FOR 4" PIPE

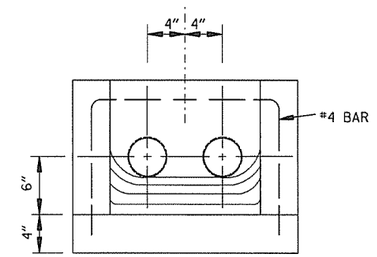


DETAIL OF RODENT SCREEN

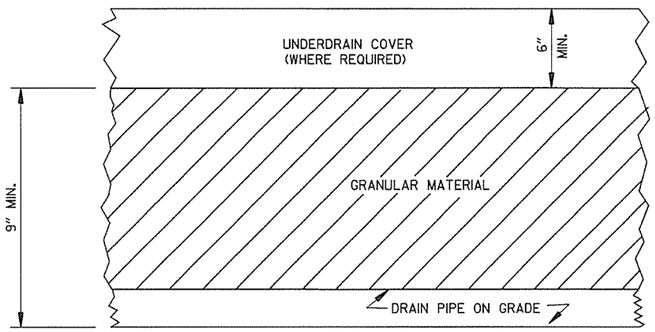




SIDE VIEW

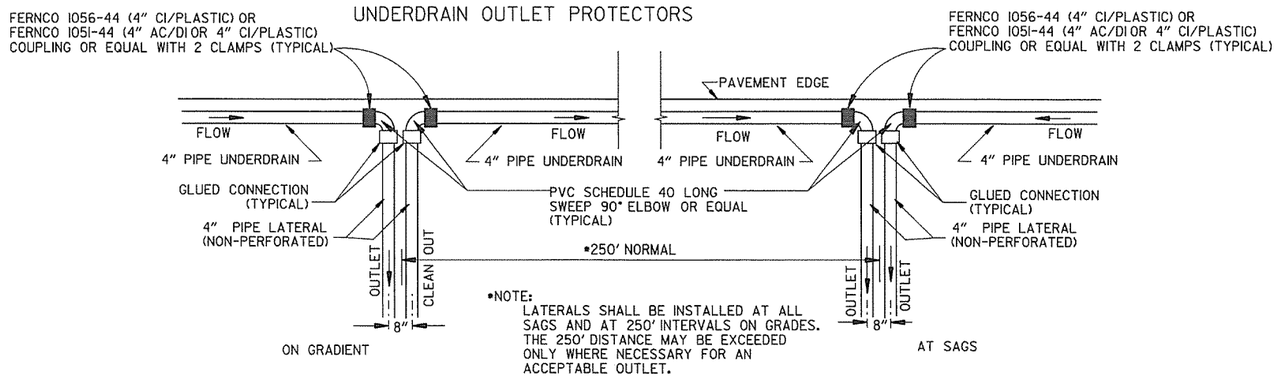


FRONT VIEW



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

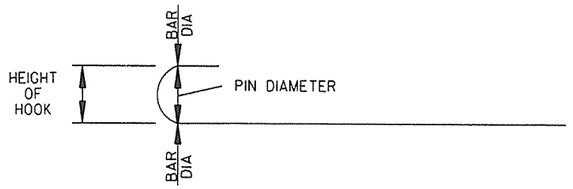
STANDARD DRAWING PU-1

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

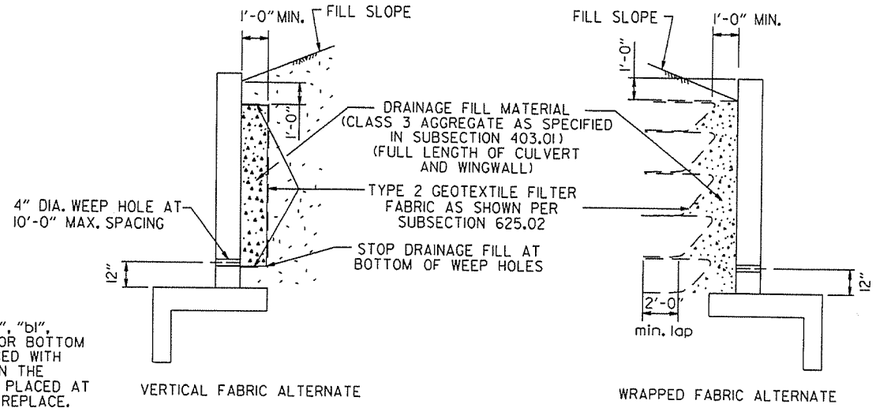
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

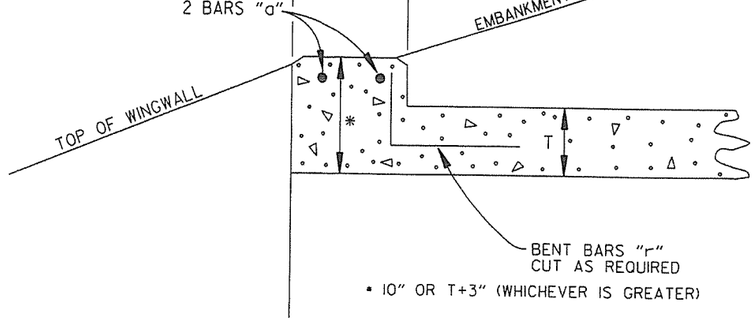
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

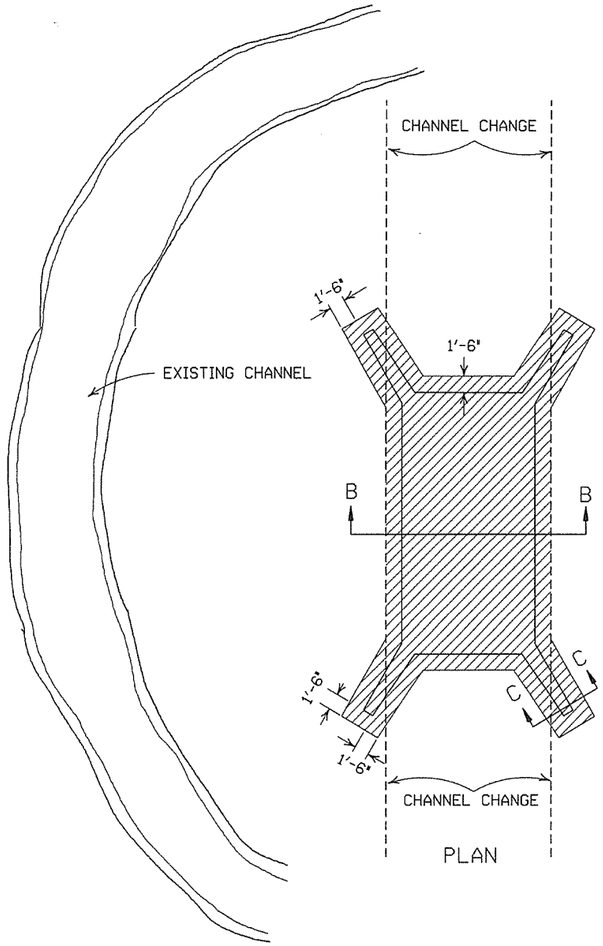
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

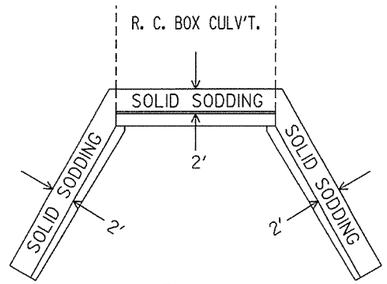
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

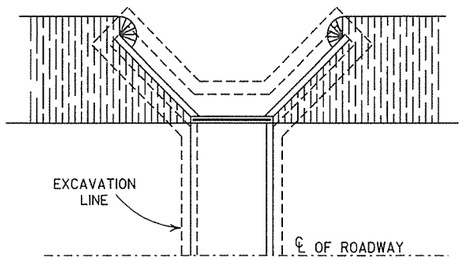
SOLID SODDING



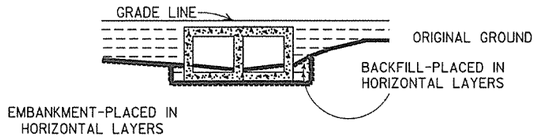
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

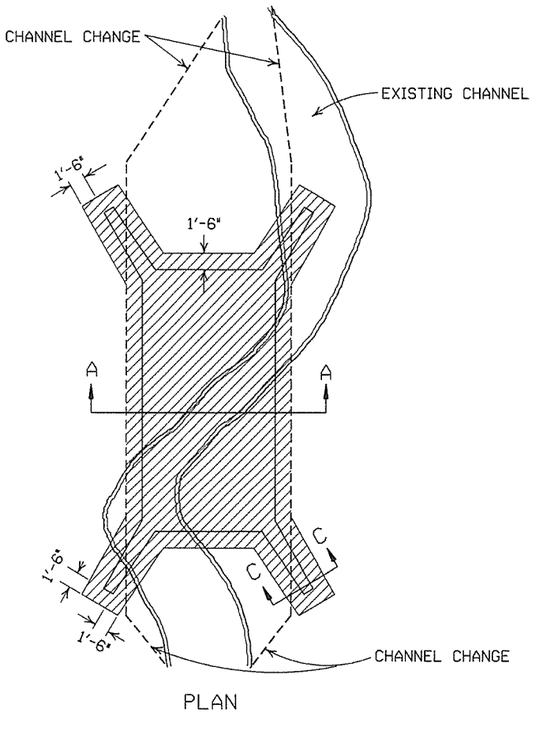


PLAN

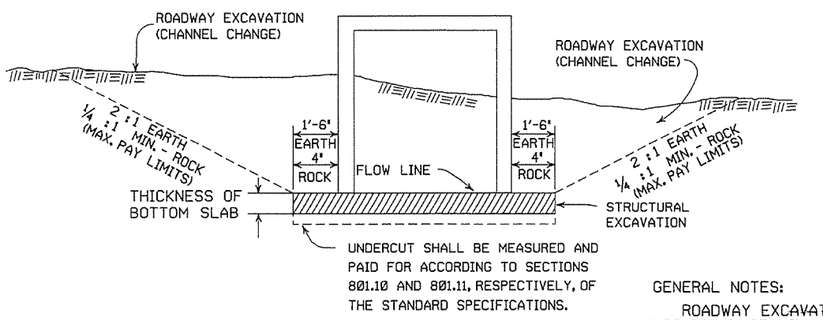


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

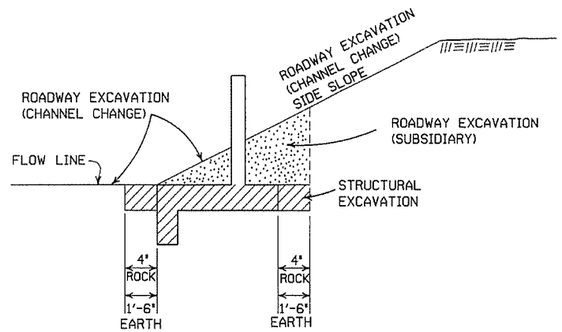


PLAN

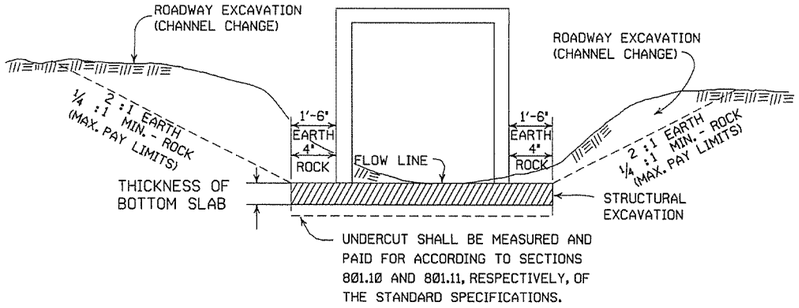


SECTION B-B

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.

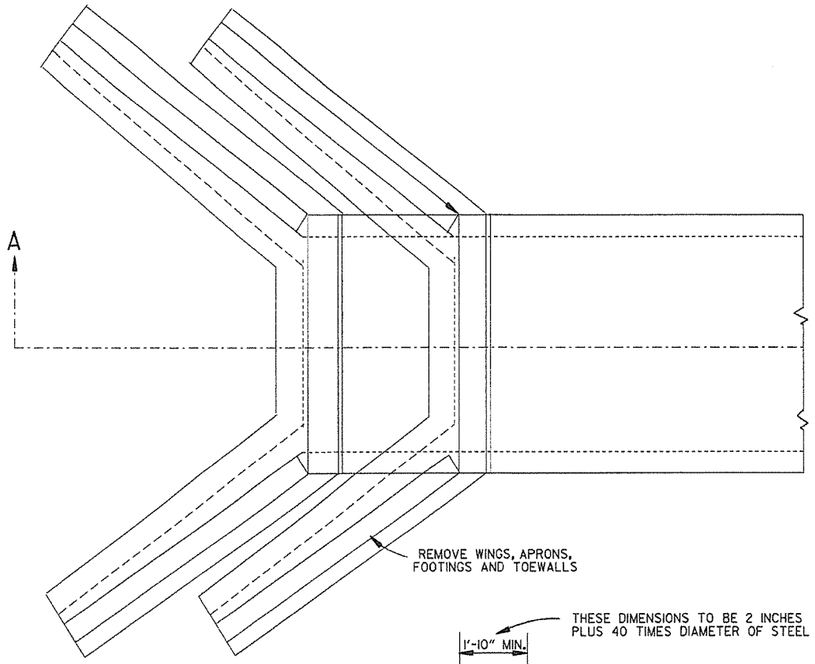
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

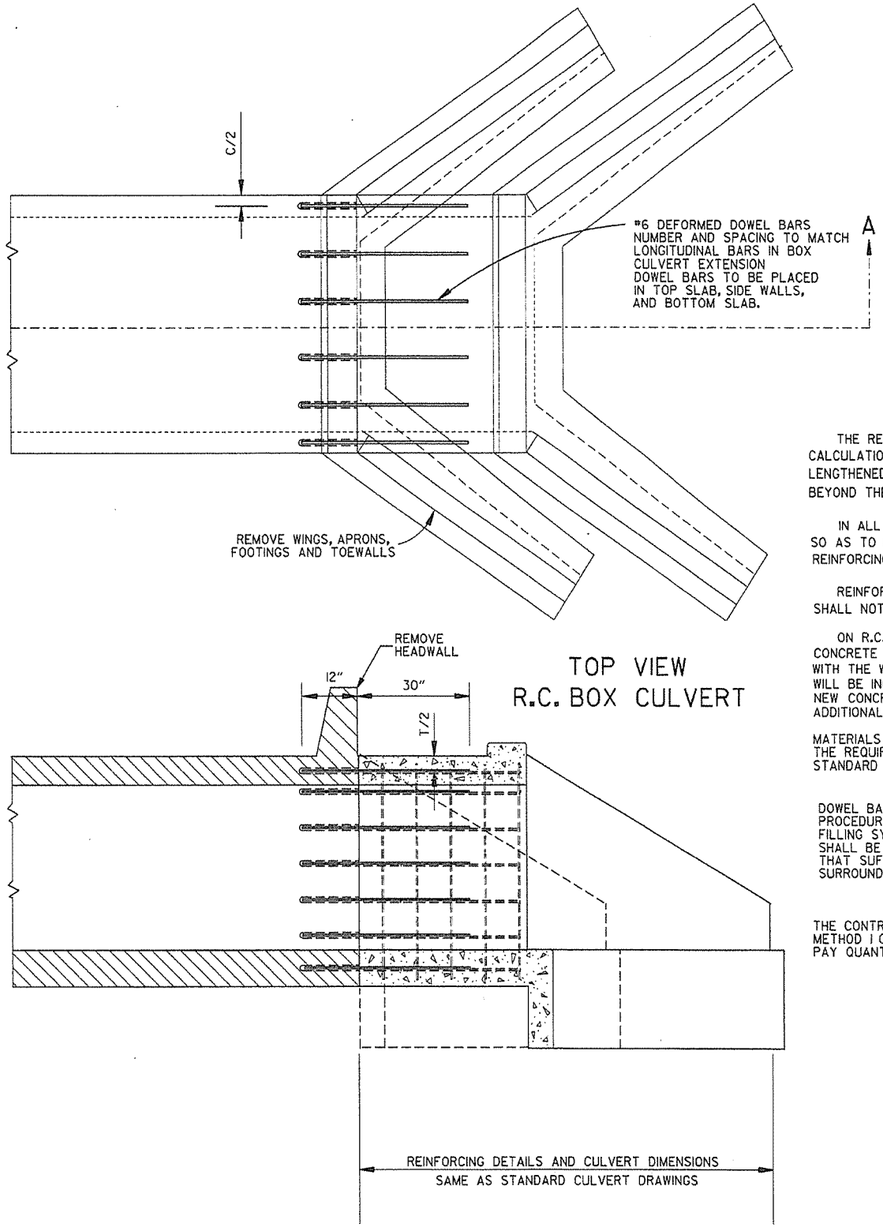
STANDARD DRAWING RCB-2



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

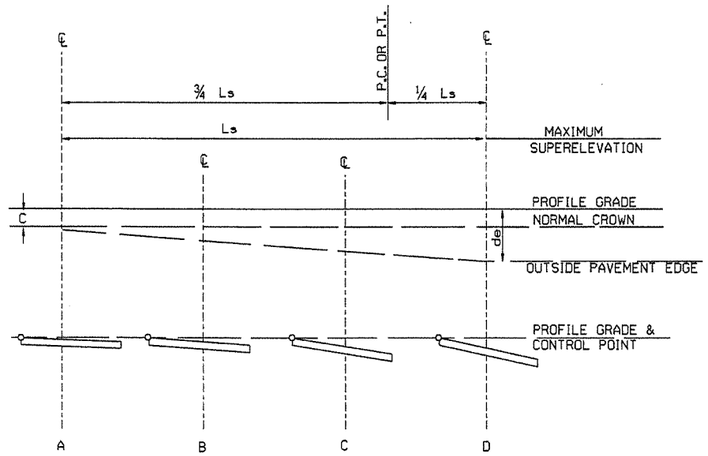
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

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.			N. C.			0.022			0.023			0.025			0.028		
1° 00′	N. C.			N. C.			R. C.			0.026			0.030			0.033	250	350	0.037	275	350
1° 15′	N. C.			R. C.			0.021			0.032			0.037			0.041			0.046		
1° 30′	N. C.			0.021			0.026			0.037			0.043			0.048			0.054		
1° 45′	N. C.			0.025	175		0.031	200		0.043	225		0.049	250		0.055			0.062		
2° 00′	R. C.			0.028			0.036			0.048		350	0.055		350	0.062			0.070		
2° 15′	R. C.			0.031			0.040			0.053			0.061			0.069	265		0.078	300	
2° 30′	0.021			0.034			0.045		300	0.058			0.067			0.075	280		0.085	315	400
2° 45′	0.023			0.037			0.049			0.063			0.072			0.081	300		0.091	335	
3° 00′	0.025	150		0.040		250	0.053			0.067	230		0.077	260		0.087	315	400	0.096	350	
3° 15′	0.027			0.043			0.057			0.072	245		0.082	275		0.090	325		0.098	360	450
3° 30′	0.029			0.046			0.061			0.076	255		0.086	285		0.095	340		0.100	360	
3° 45′	0.031			0.049			0.065	205		0.080	265		0.090	295	400	0.097	345				
4° 00′	0.033			0.051			0.069	215		0.083	270		0.093	305		0.099	350				
4° 30′	0.037			0.056			0.072	225		0.087	280		0.096	315							
5° 00′	0.040			0.061			0.078	240		0.091	295		0.098	320							
5° 30′	0.043			0.066	185		0.083	250		0.094	300	400									
6° 00′	0.046			0.070	190		0.088	260		0.096	305										
6° 30′	0.050			0.074	200		0.092	270		0.100	315										
7° 00′	0.053			0.078	210		0.095	280	350												
7° 30′	0.056			0.081	215		0.098	285													
8° 00′	0.058			0.084	220		0.099	290													
8° 30′	0.061			0.087	225	300	0.100	290													
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	300																		
20° 00′	0.097	215																			
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′



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$

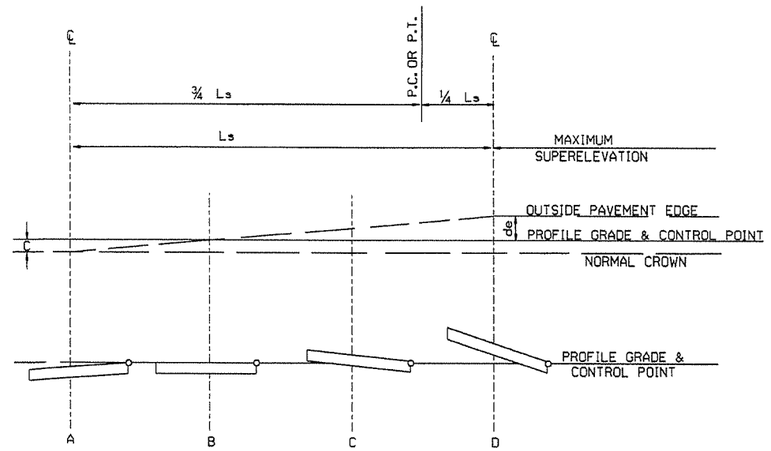
ABBREVIATIONS

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.)

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%



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

01-09-87	ISSUED	578-1-15-87
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

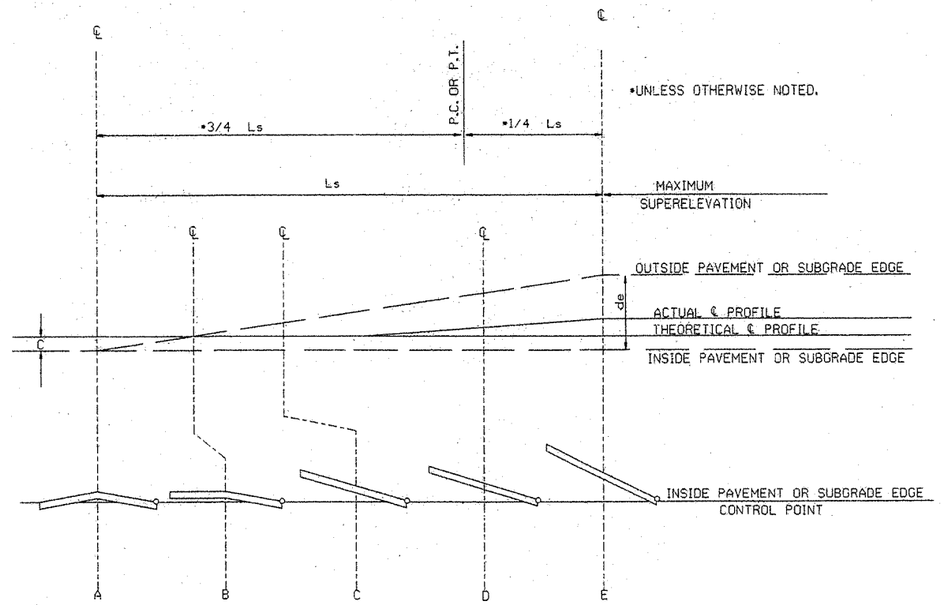
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

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.			N.C.		
0° 45′	N.C.			N.C.			R.C.			R.C.			R.C.			R.C.		
1° 00′	N.C.			N.C.			0.021			0.022			0.023			0.028		
1° 15′	N.C.			R.C.			0.026			0.026			0.030			0.037		
1° 30′	N.C.			0.021			0.031			0.032			0.037			0.046		
1° 45′	N.C.			0.025			0.036			0.037			0.043			0.054		
2° 00′	R.C.			0.028	175		0.040	200		0.043	225		0.049	250		0.062	275	
2° 15′	R.C.			0.031			0.045			0.048			0.055			0.070		300
2° 30′	0.021			0.034			0.049			0.053			0.061			0.078	300	
2° 45′	0.023			0.037			0.053			0.056			0.067			0.085	315	350
3° 00′	0.025			0.040			0.057			0.063			0.072			0.091	335	
3° 15′	0.027	150		0.043		200	0.061			0.067	230		0.077	260		0.096	350	
3° 30′	0.029			0.046			0.065	205		0.072	245		0.082	275		0.098	360	400
3° 45′	0.031			0.049			0.069	215		0.076	255		0.086	285		0.100	360	
4° 00′	0.033			0.051			0.072	225		0.080	265		0.090	295	350			
4° 30′	0.037			0.056			0.078	240		0.083	270		0.093	305				
5° 00′	0.040			0.061			0.083	250		0.087	280		0.096	315				
5° 30′	0.043			0.066	185		0.088	260		0.091	295		0.098	320				
6° 00′	0.046			0.070	190		0.092	270		0.094	300	350						
6° 30′	0.050			0.074	200		0.095	280	300	0.096	305							
7° 00′	0.053			0.078	210		0.098	285		0.100	315							
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.

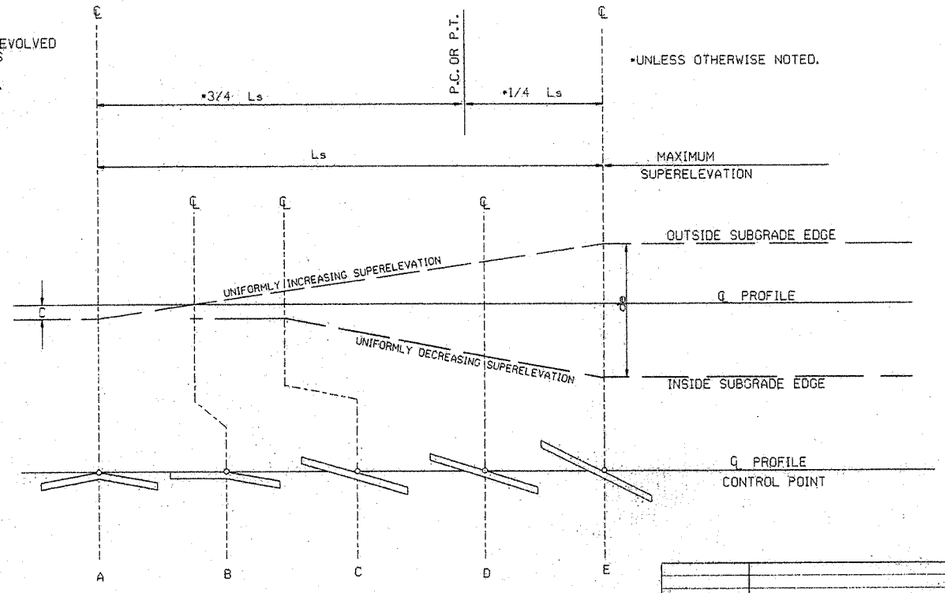
GENERAL NOTES

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 = $\frac{Lde}{Ls}$

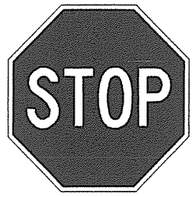
DATE	REVISION	DATE FILMED
10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

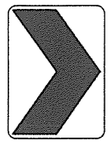
FILE STDSE2.DGN



R1-1
30"X30"



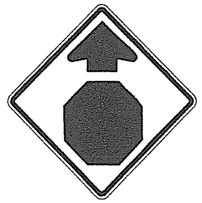
W1-3
30"X30"
(LT. OR RT.)



W1-8
18"X24"



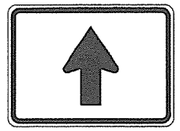
W2-5
30"X30"



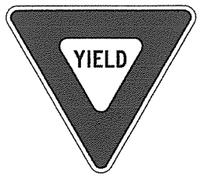
W3-1
36"X36"



W5-1
36"X36"



M6-3
21"X15"



R1-2
36"X36"X36"



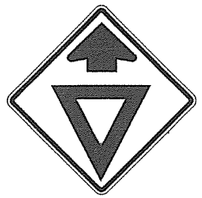
W1-4
30"X30"
(LT. or RT.)



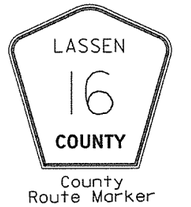
W2-1
30"X30"



S1-1
36"X36"

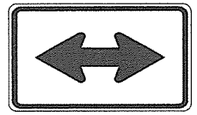


W3-2
36"X36"

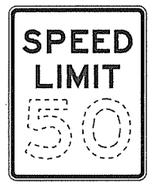


County
Route Marker
M1-6
24"X24"

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"



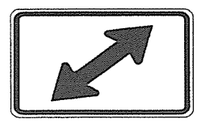
W5-2
36"X36"



W8-3
36"X36"



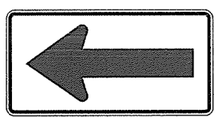
R1-3P
18"X6"



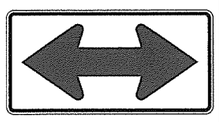
M6-5
21"X15"



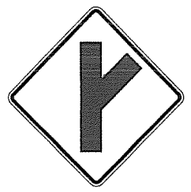
W1-1
30"X30"
(LT. or RT.)



W1-6
48"X24"



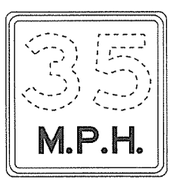
W1-7
48"X24"



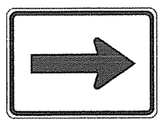
W2-3
30"X30"
(LT. or RT.)



W5-3
36"X36"

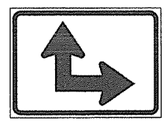


W13-1P
18"X18"

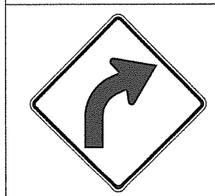


M6-1
21"X15"

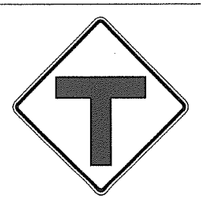
NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.



M6-6
21"X15"



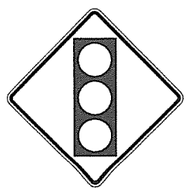
W1-2
30"X30"
(LT. or RT.)



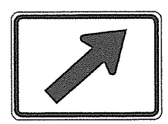
W2-4
30"X30"



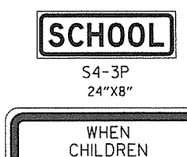
W10-1
36" DIAMETER



W3-3
36"X36"



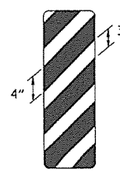
M6-2
21"X15"



S4-3P
24"X8"



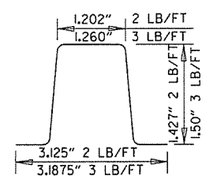
S4-2P
24"X10"



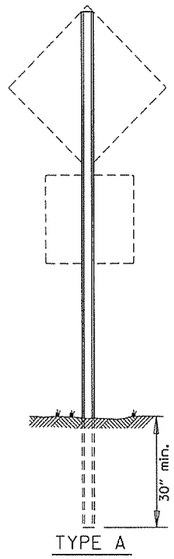
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

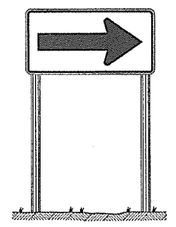


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

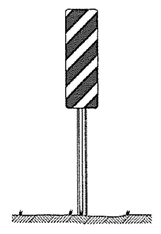


TYPE A

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

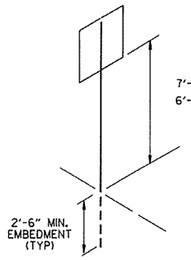
SUPPORT ASSEMBLIES

DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-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

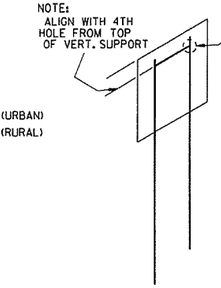
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

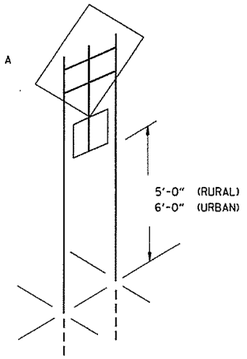
STANDARD DRAWING SHS-1



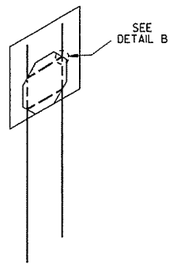
U-1



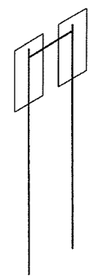
U-2



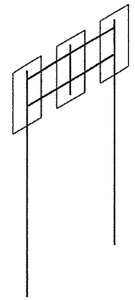
U-2 (A)



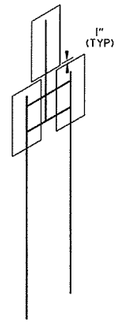
U-2 (B)



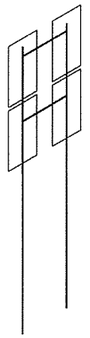
U-2 (1)



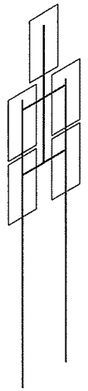
U-2 (2)



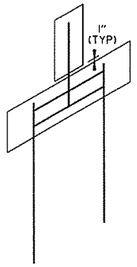
U-2 (3)



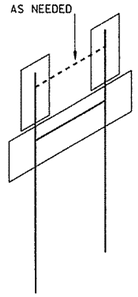
U-2 (4)



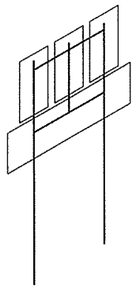
U-2 (5)



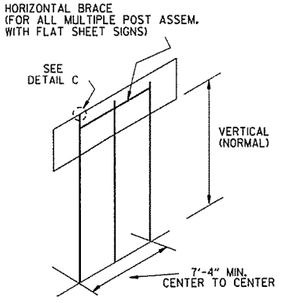
U-2 (6)



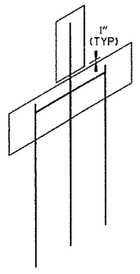
U-2 (7)



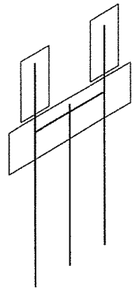
U-2 (8)



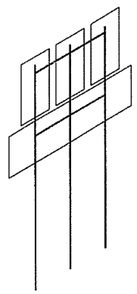
U-3



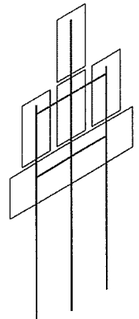
U-3 (1)



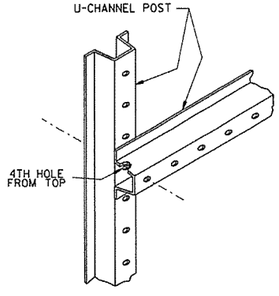
U-3 (2)



U-3 (3)

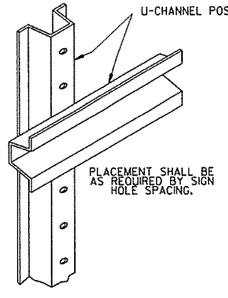


U-3 (4)



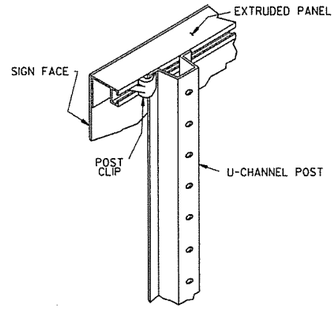
DETAIL A

SHOWING HORIZONTAL BRACE



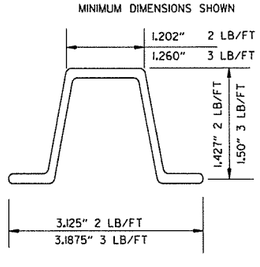
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



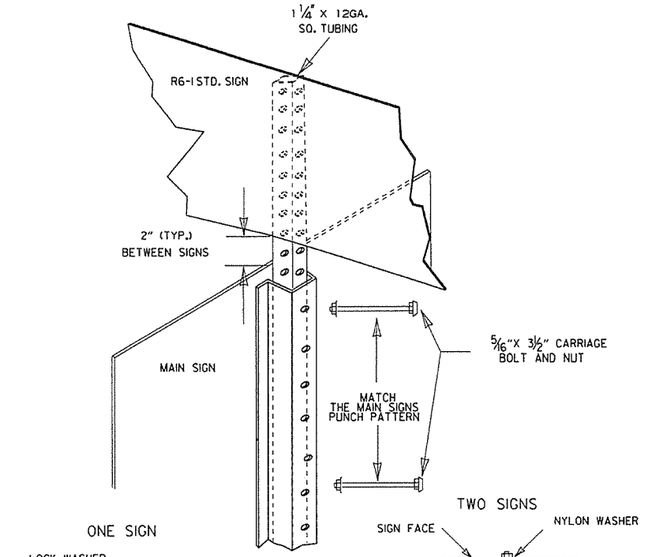
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



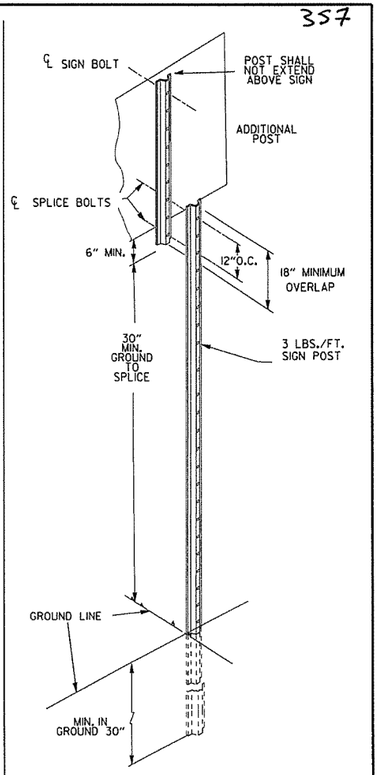
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

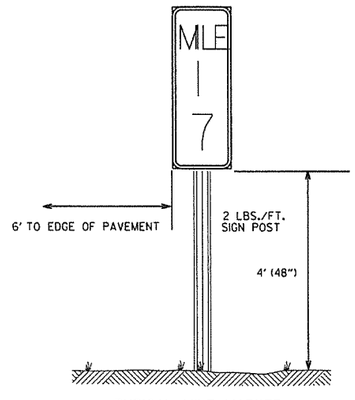
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

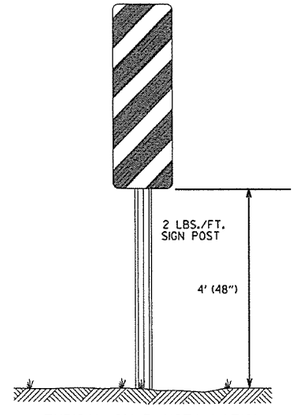
NORMAL INSTALLATIONS WILL REQUIRE $\frac{5}{16}$" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

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

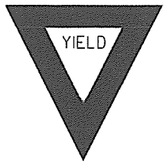
STANDARD DRAWING SHS-2

R1-1



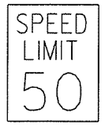
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

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



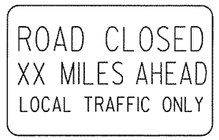
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



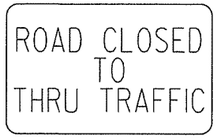
48"X30"

RII-3A



60"X30"

RII-4



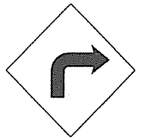
60"X30"

RSP-1



48"X30"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2



STD. 36"X36"
FWY. 48"X48"

WI-3



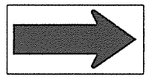
STD. 48"X48"

WI-4



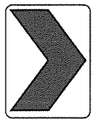
STD. 48"X48"

WI-6



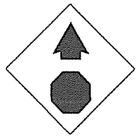
STD. 48"X24"
SPECIAL 60"X30"

WI-8



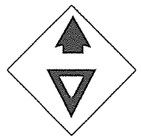
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



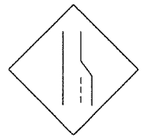
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



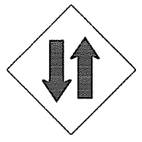
STD. 36"X36"
FWY. 48"X48"

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



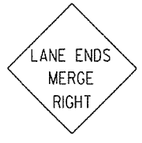
EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



STD. 36"X36"
FWY. 48"X48"

WI3-1



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



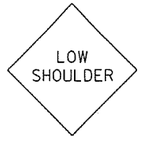
STD. 18"X18"

W8-11



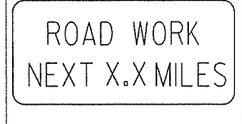
STD. 36"X36"
FWY. 48"X48"

W8-9



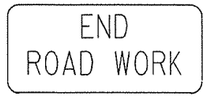
STD. 36"X36"
FWY. 48"X48"

G20-1



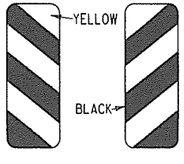
60"X24"

G20-2



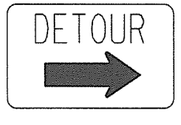
48"X24"

OM-3L OM-3R



12"X36"

M4-9



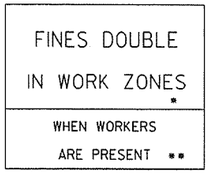
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	3/4 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.

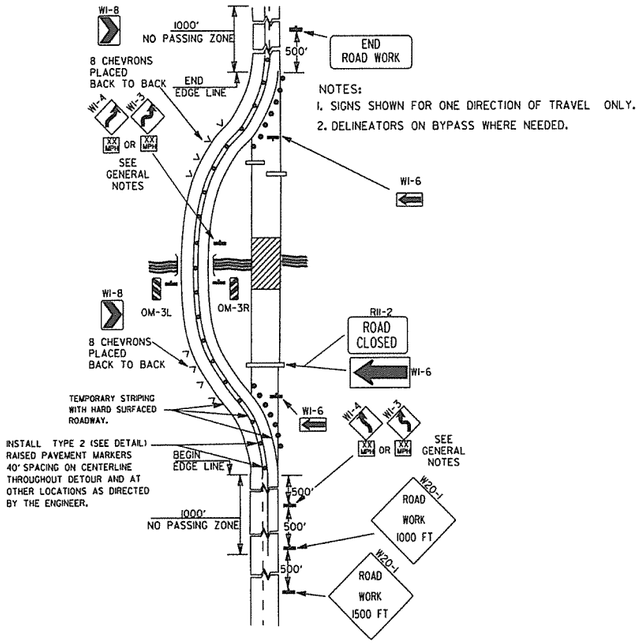
- NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY 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

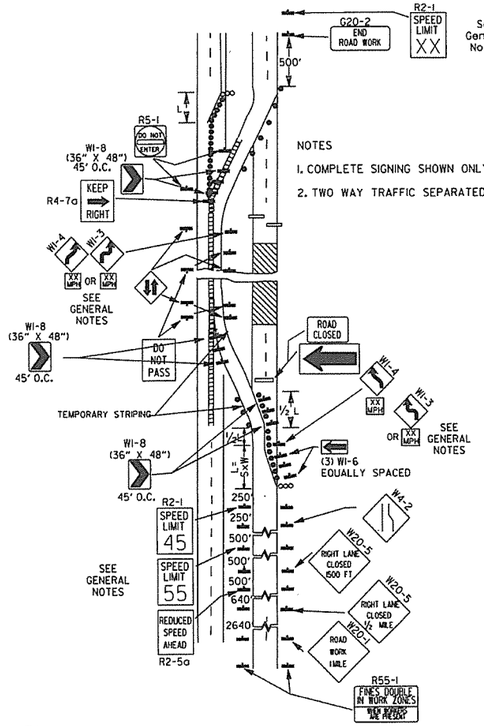
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



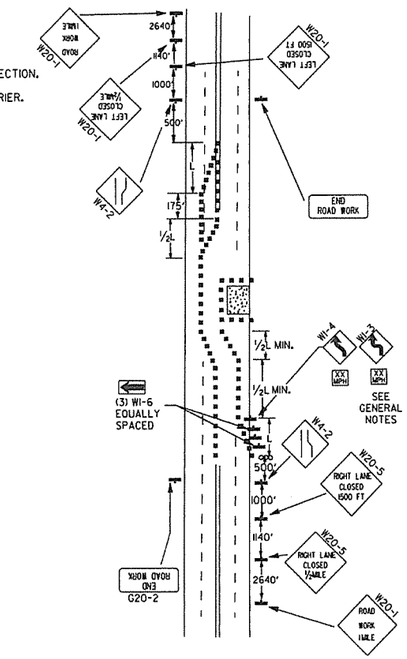
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

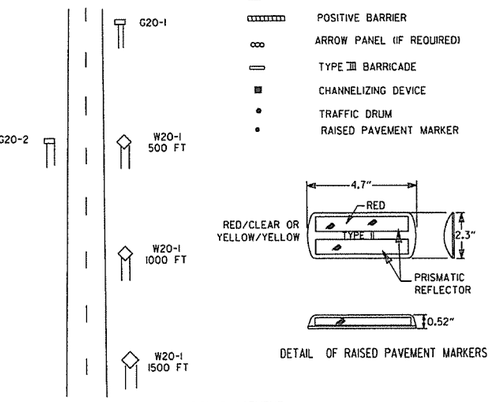


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

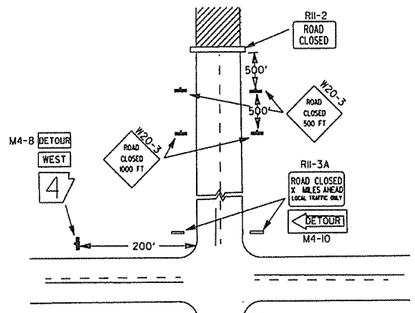


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

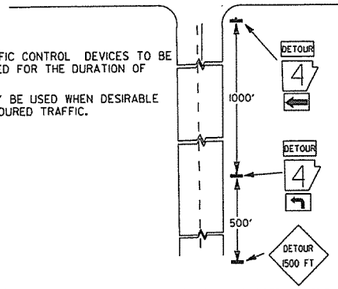


DETAIL OF RAISED PAVEMENT MARKERS

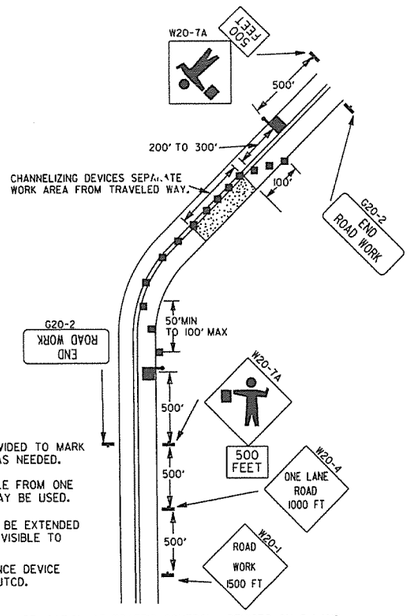
TYPICAL ADVANCE WARNING SIGN PLACEMENT



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.

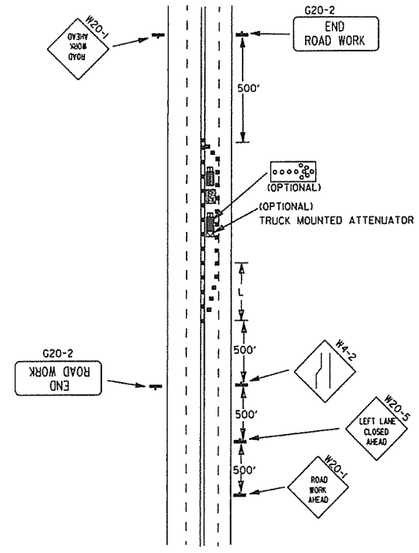


(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



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.

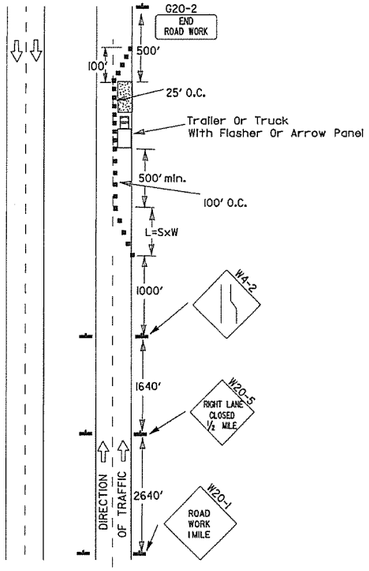
GENERAL NOTES:
1. ADVISORY SPEED POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE R2-5A 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	
3-11-10	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 WI-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

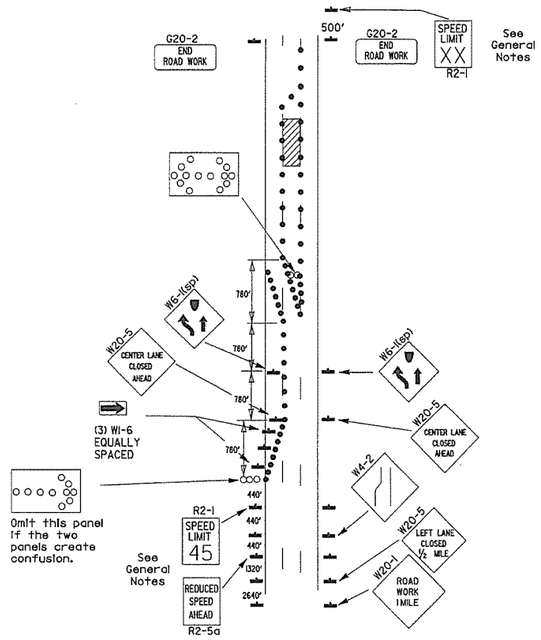
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

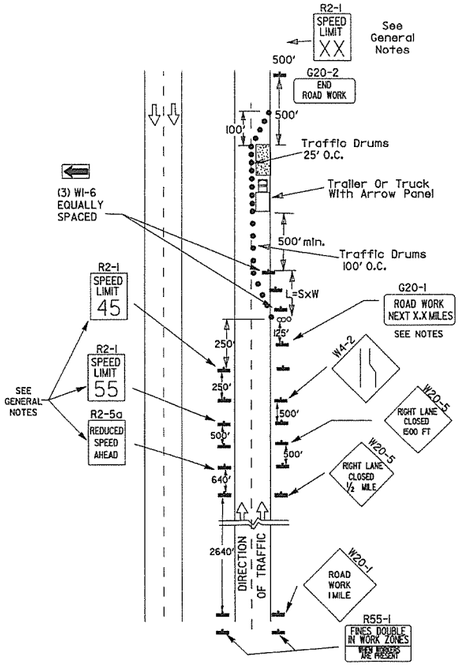
STANDARD DRAWING TC-2



(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.

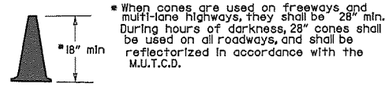
KEY:

- 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 1mile 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 1mile 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



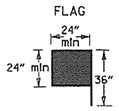
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

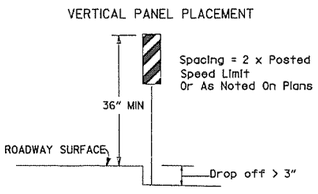
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

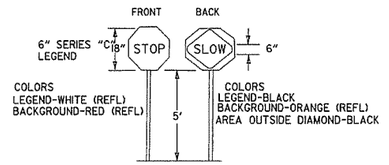
* When shown on the plans concrete barrier will be used.

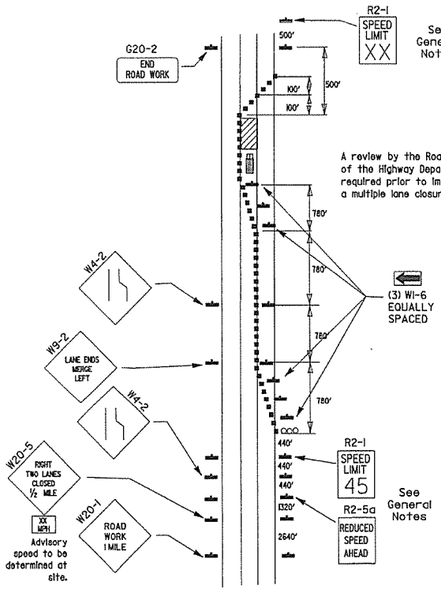
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



Flag shall be of good grade red material

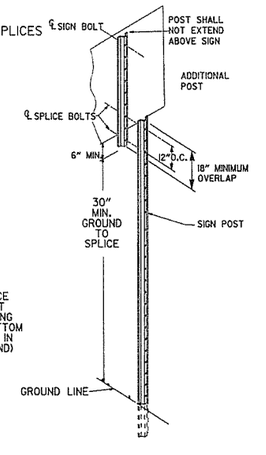






(D) Typical application - closing multiple lanes of a multilane highway.

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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.

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	

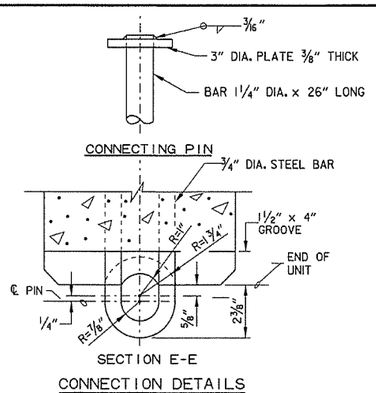
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

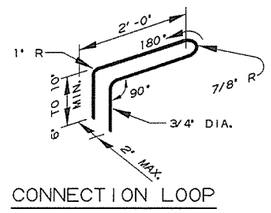
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

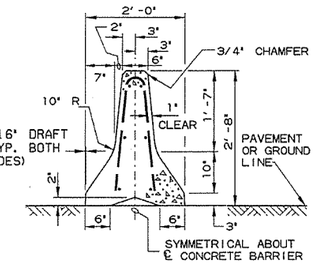
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", 90°, 3 3/8" R, LIFTING HOLE
S-2	HORIZ. 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"



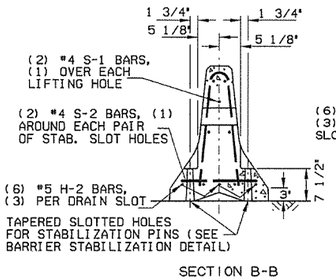
CONNECTION DETAILS



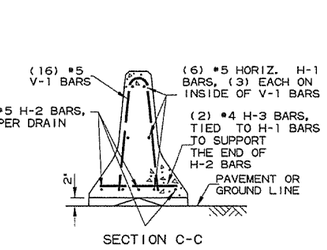
CONNECTION LOOP



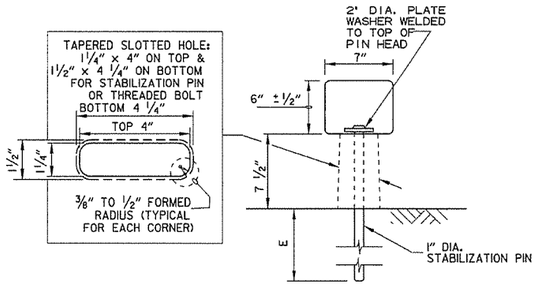
SECTION A-A



SECTION B-B



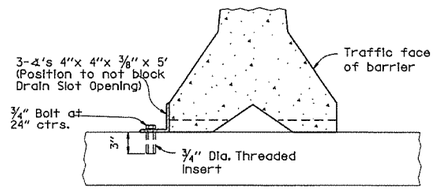
SECTION C-C



BARRIER STABILIZATION DETAIL

ROADWAY SECTION

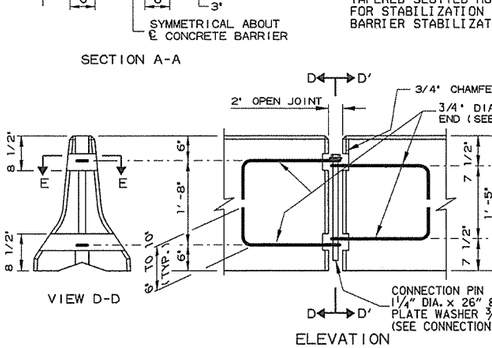
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas

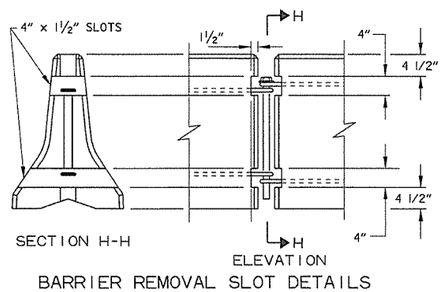


NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks to be retained. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

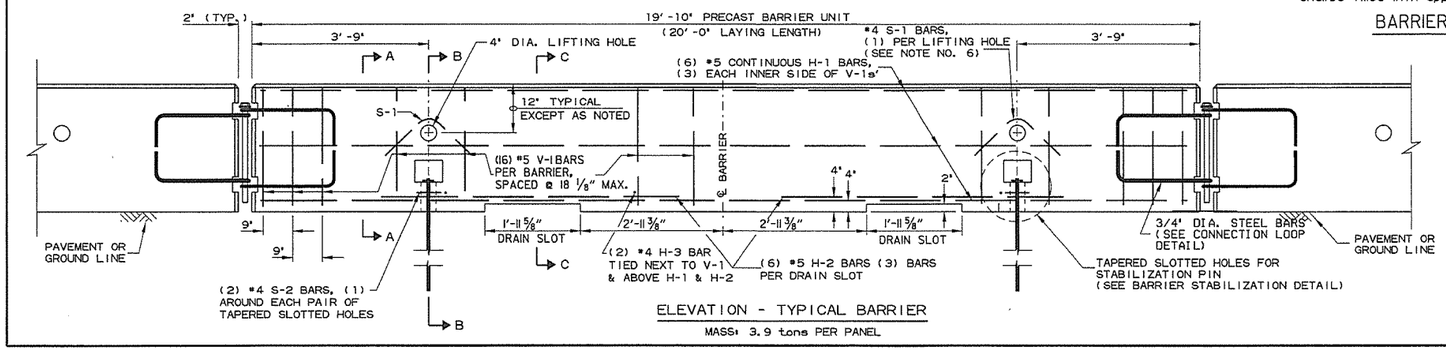
BARRIER STABILIZATION DETAIL

BRIDGE DECKS





BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

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.

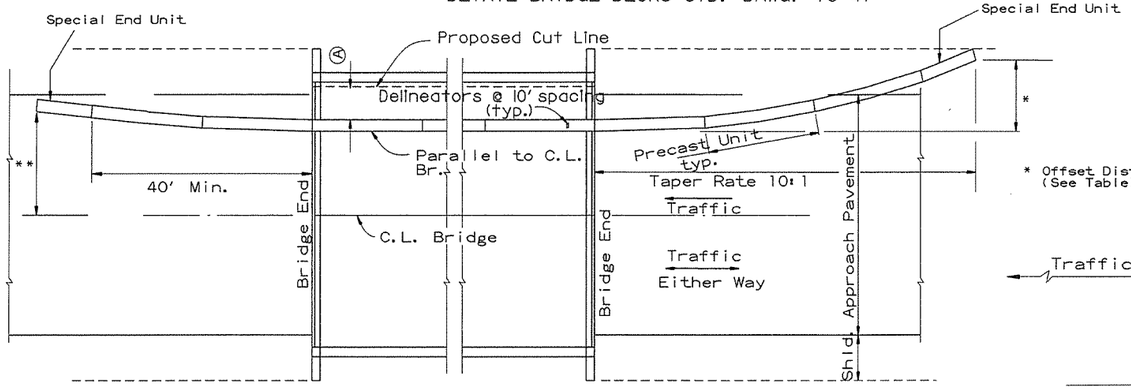
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

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)

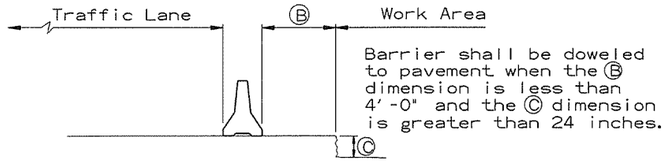


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

* Offset Distance (See Table)

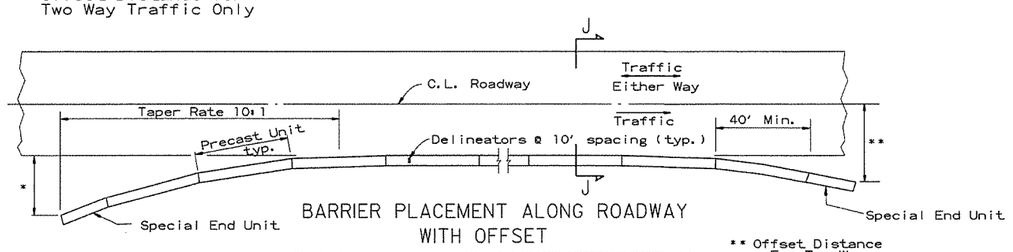
** Offset Distance for Two Way Traffic Only



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



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

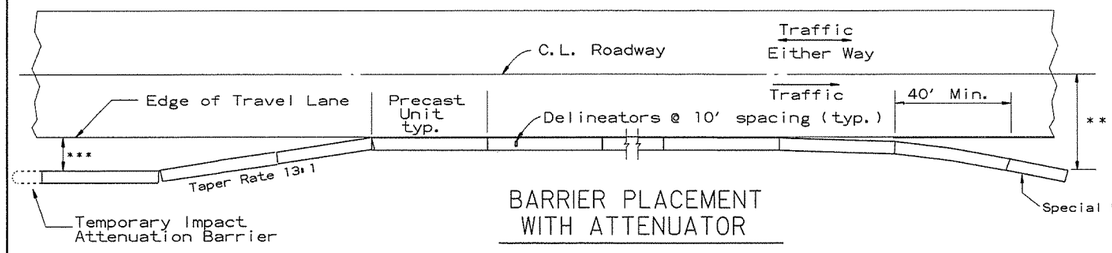
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

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.

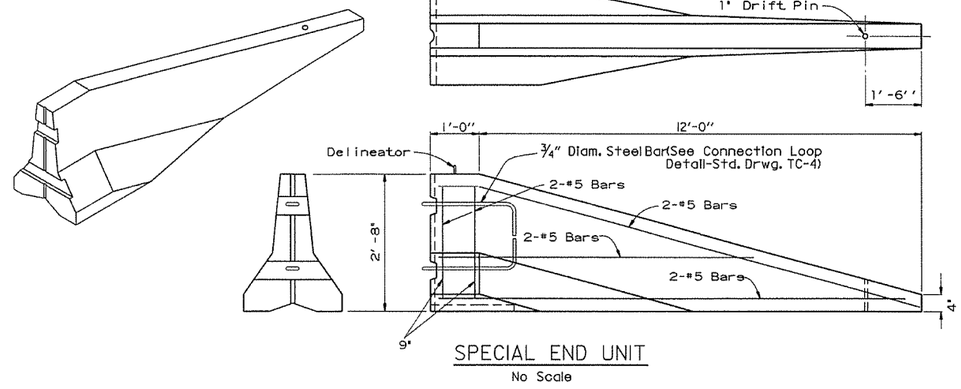


BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator



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	

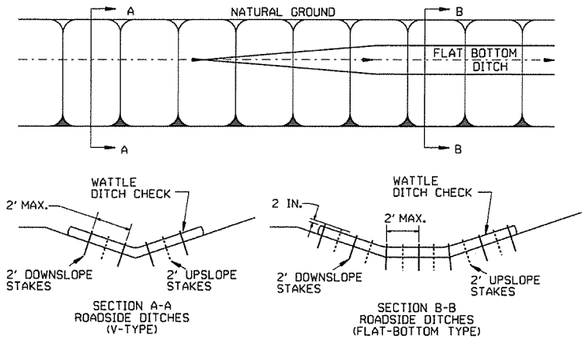
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

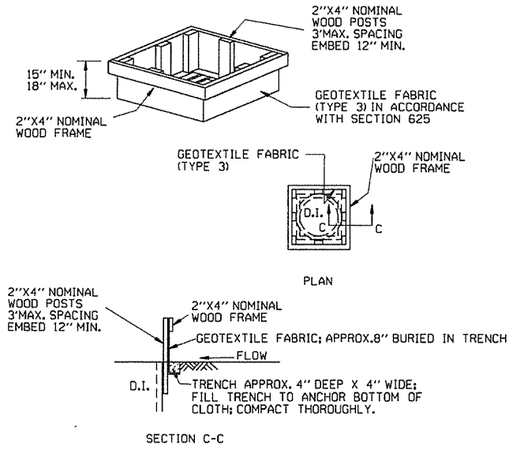
STANDARD DRAWING TC-5

GENERAL NOTES

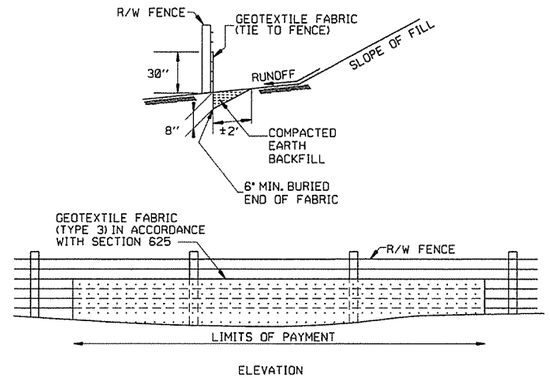
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



DROP INLET SILT FENCE (E-7)



SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

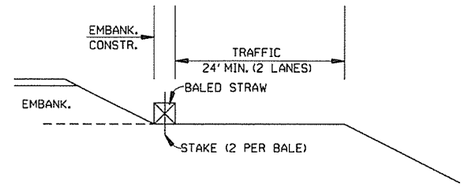
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

GENERAL NOTES

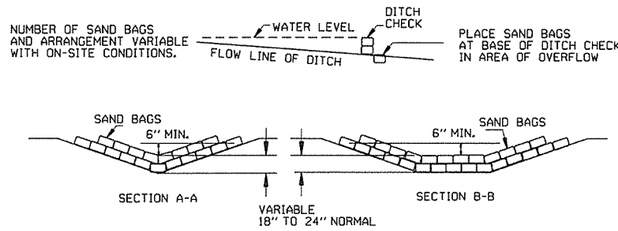
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

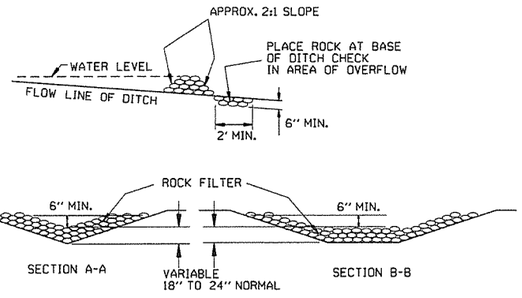
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



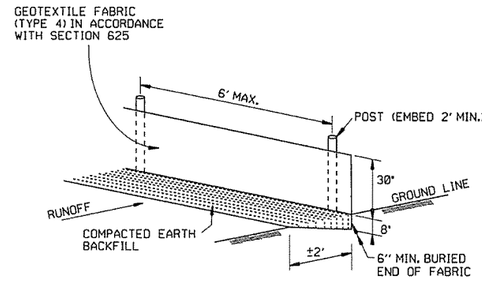
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)



SILT FENCE (E-11)

GENERAL NOTES

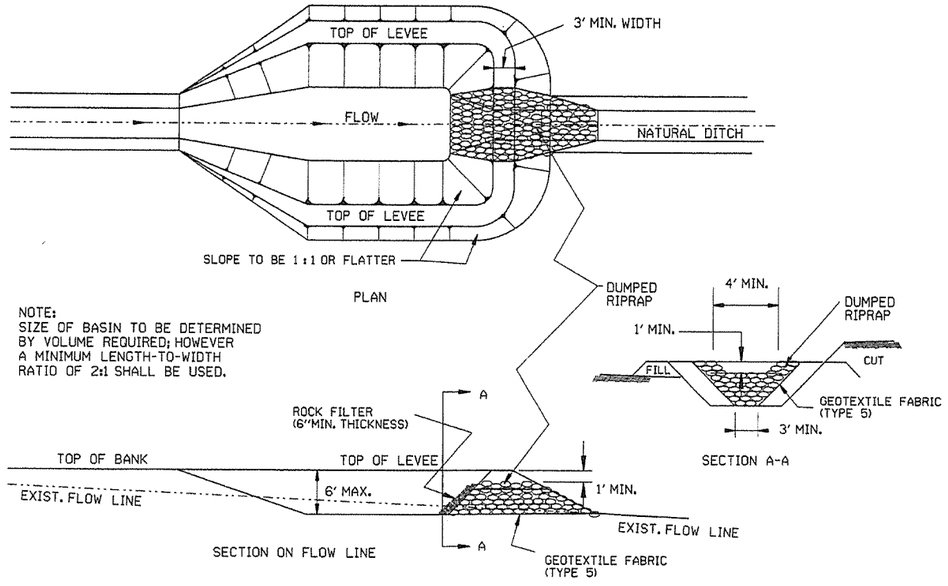
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

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

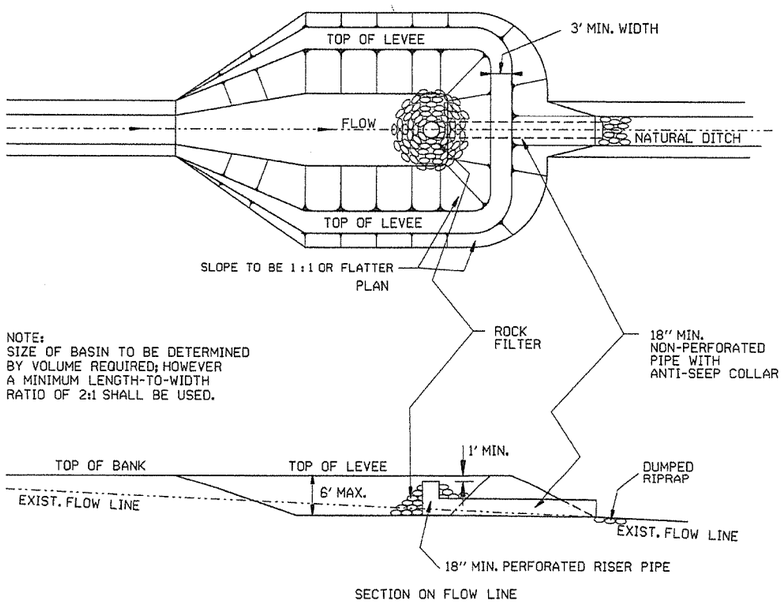
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

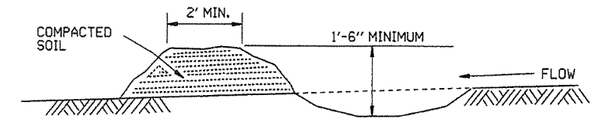
STANDARD DRAWING TEC-1



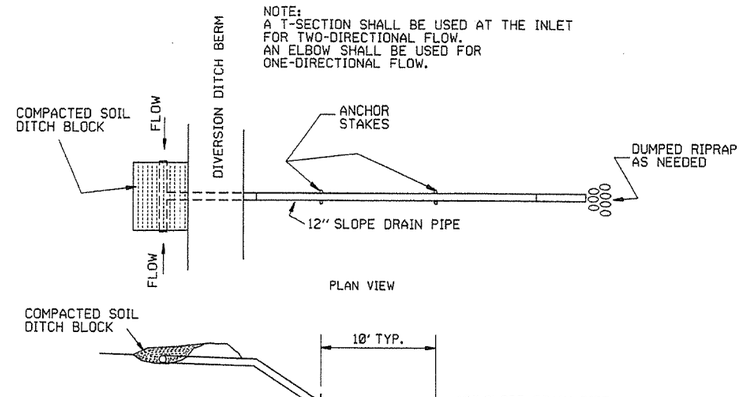
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



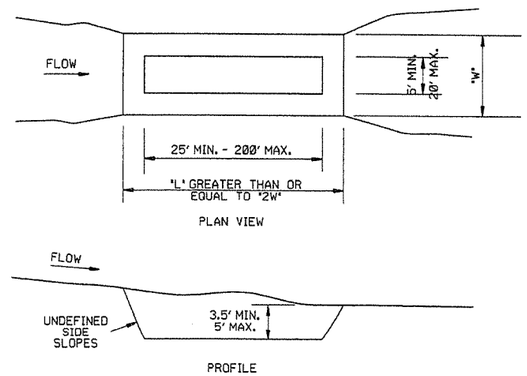
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

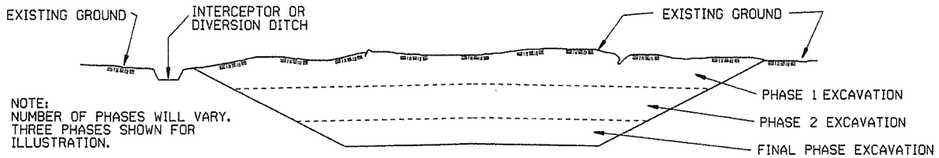
STANDARD DRAWING TEC-2

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



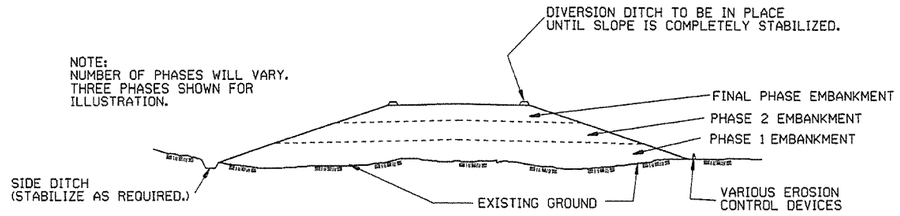
GENERAL NOTE

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

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

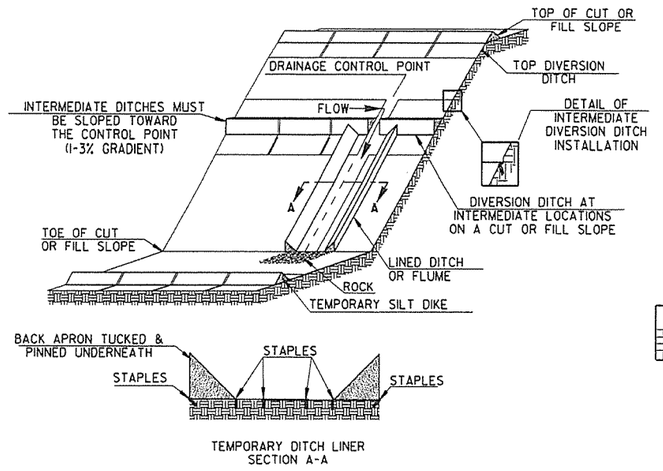
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

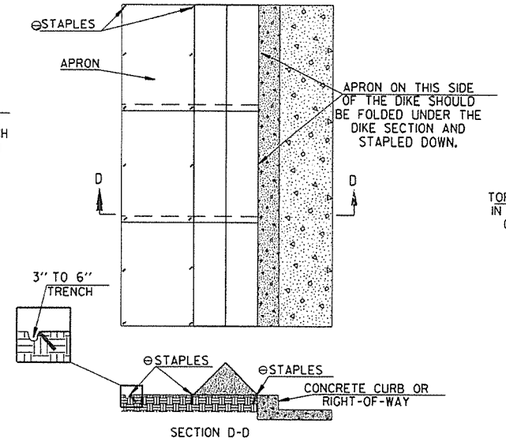
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

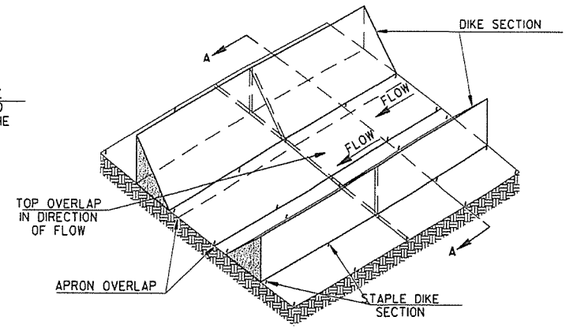
STANDARD DRAWING TEC-3



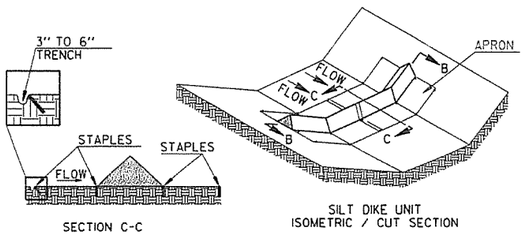
TRIANGULAR SILT DIKE INSTALLATION
FOR
DIVERSION DITCH AND/OR DITCH LINER

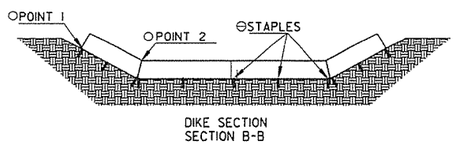


TRIANGULAR SILT DIKE INSTALLATION
FOR
CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION
FOR
TEMPORARY DITCH LINER

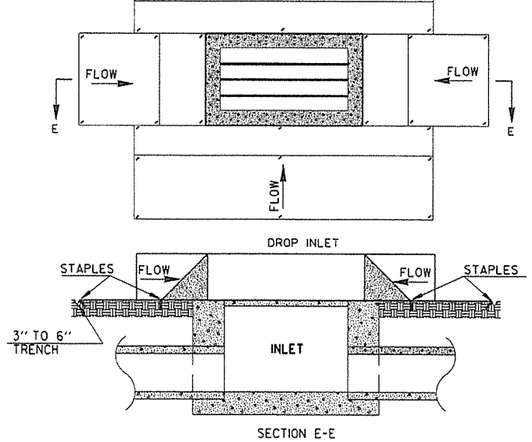




TRIANGULAR SILT DIKE INSTALLATION
FOR
ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION
FOR
DROP INLETS

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS

NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

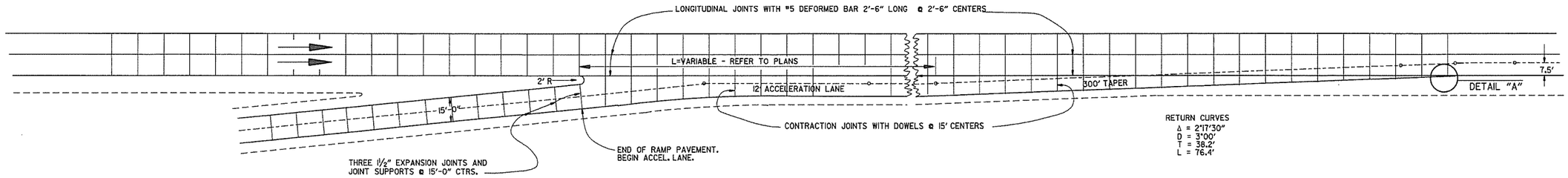
3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

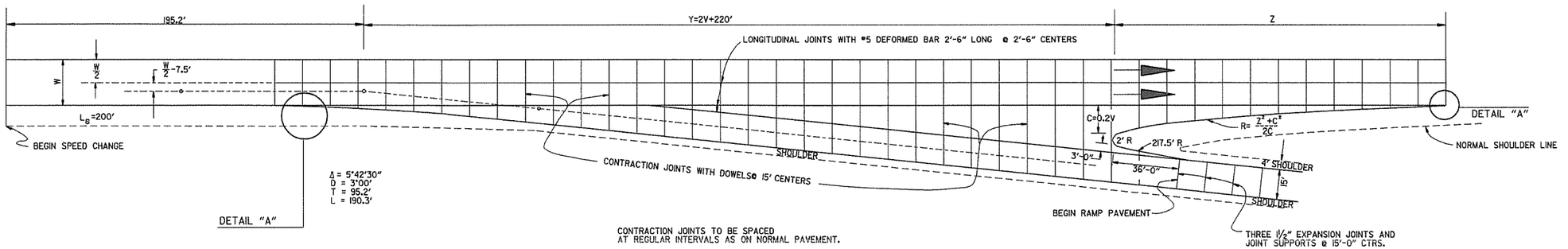
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4



ENTRANCE RAMP

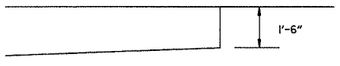
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



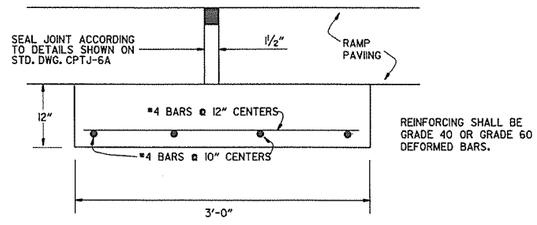
EXIT RAMP

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

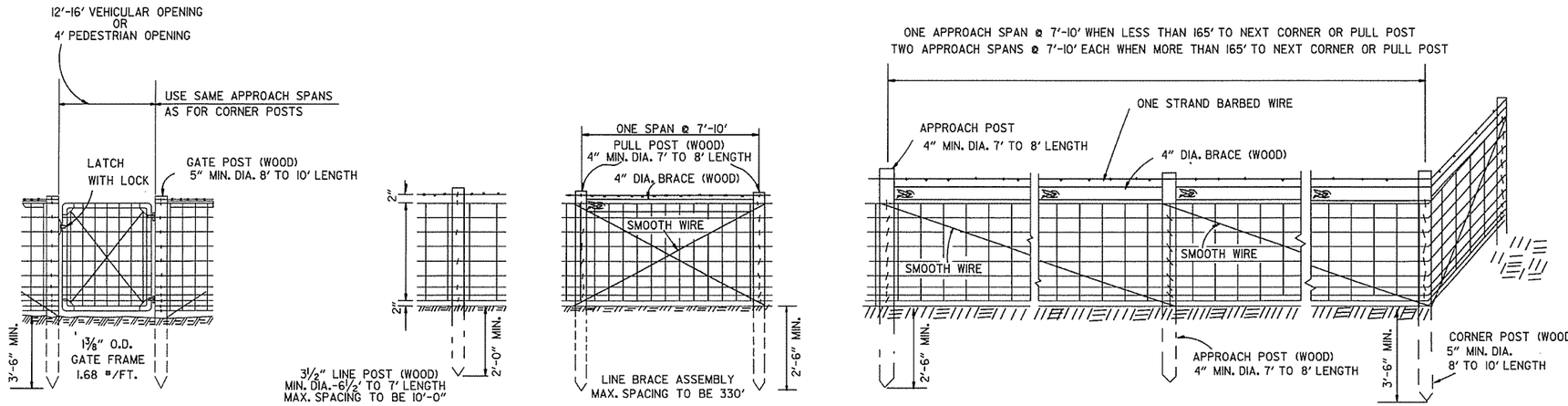
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE 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.

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	CONFORM'D TO 1988 SPECIFICATIONS	65C-7-15-88
3-2-81	ISSUED	511-10-2-72
DATE	REVISION	DATE FILM'D

ARKANSAS STATE HIGHWAY COMMISSION

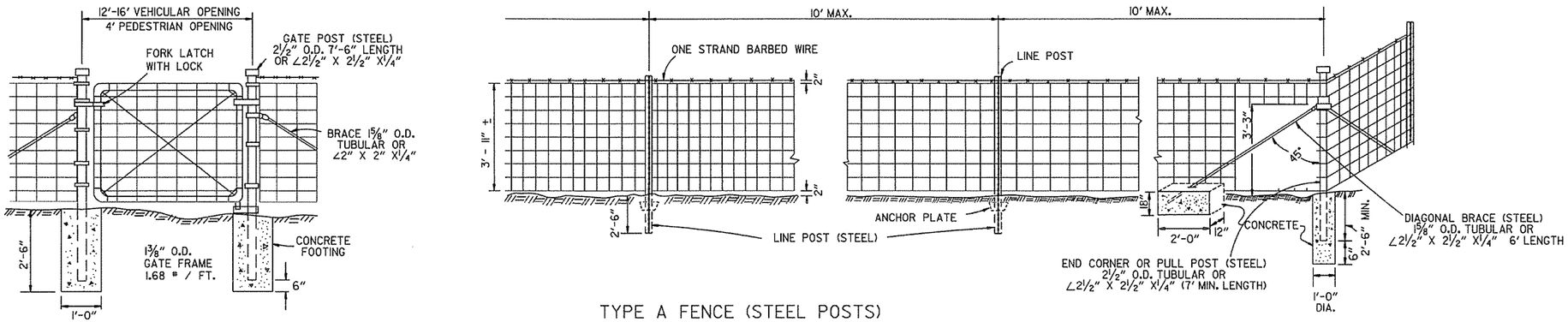
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A

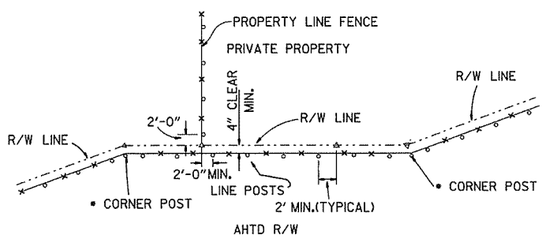


NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



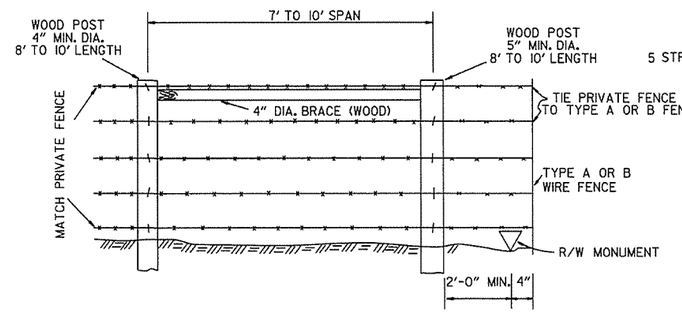
TYPE A FENCE (STEEL POSTS)



*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.

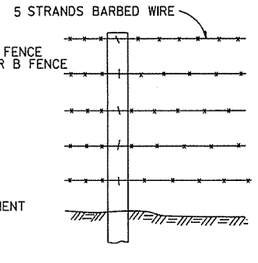
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



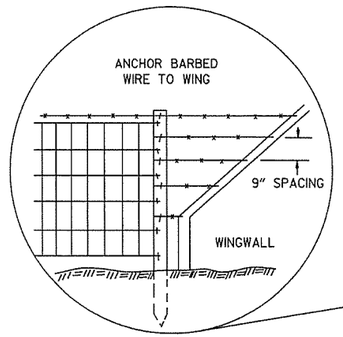
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

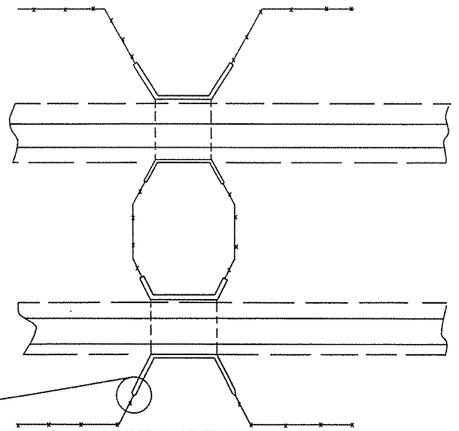
PRIVATE FENCE TERMINAL INSTALLATION



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.

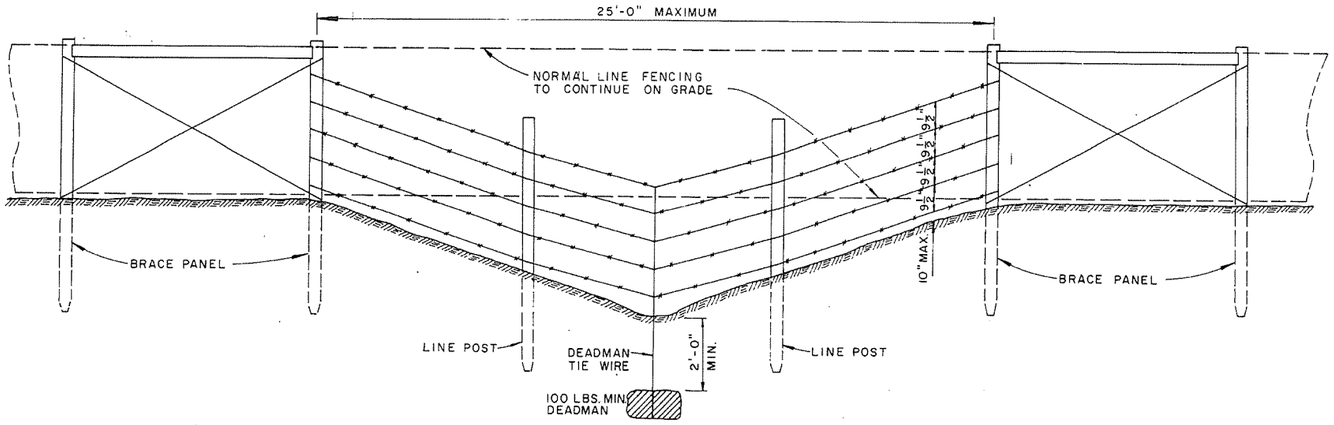
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

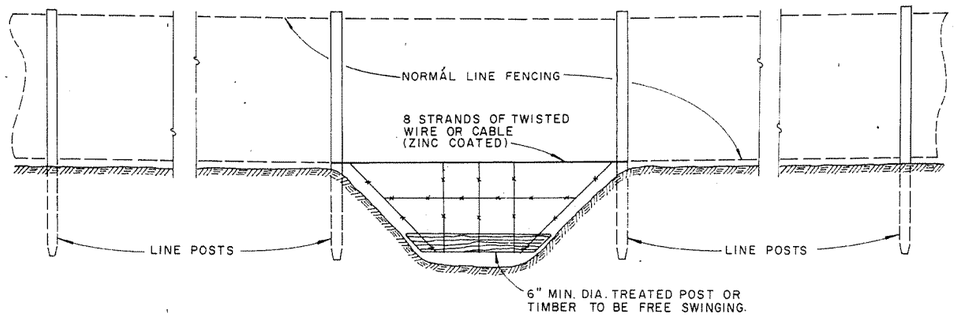
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
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	

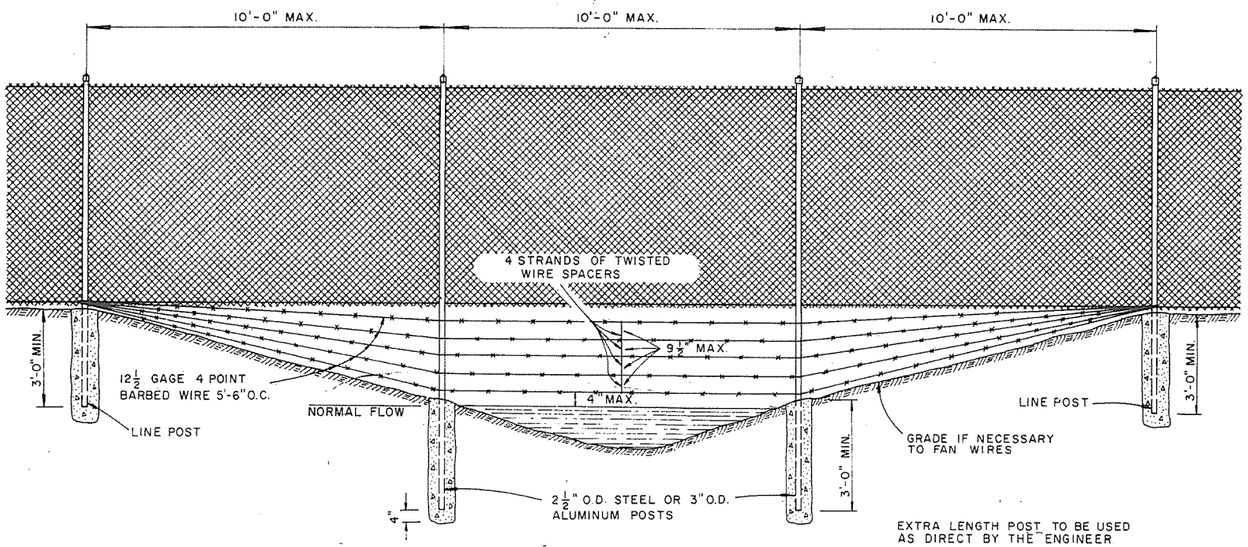
ARKANSAS STATE HIGHWAY COMMISSION

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 FILM'D.
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED & REDRAWN	529-10-2-72

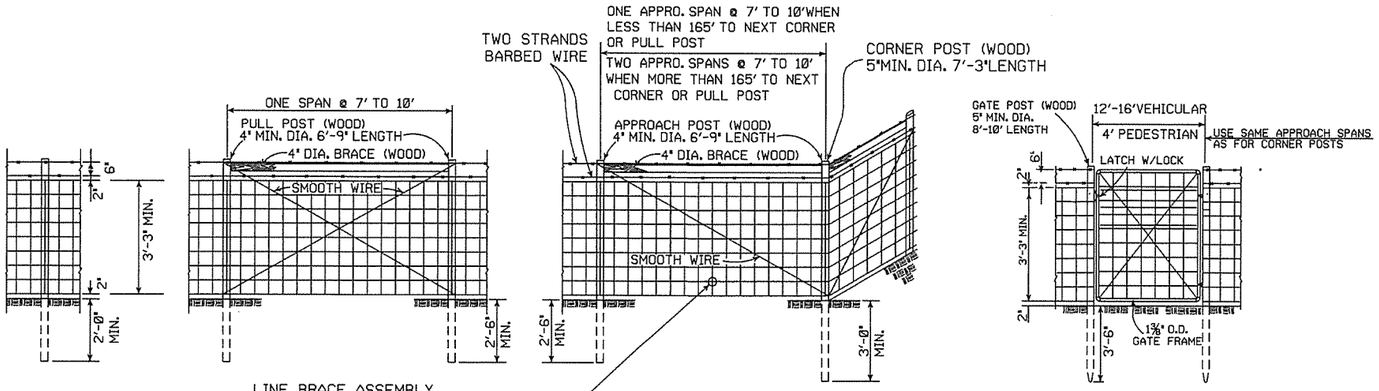
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE WATER GAPS

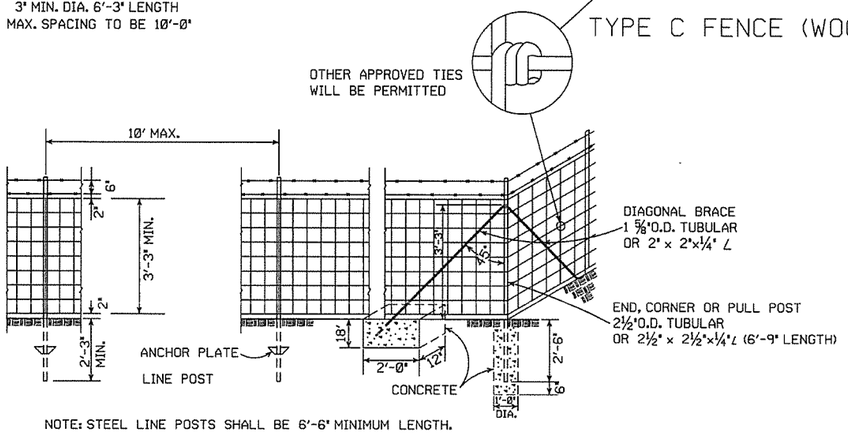
STANDARD DRAWING

WF-2

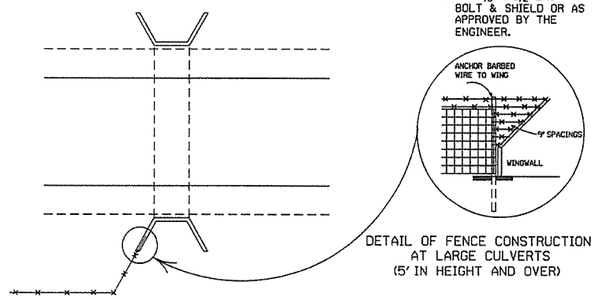
3M—11-71—67001—PP&SCo



TYPE C FENCE (WOOD POSTS)



NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

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.

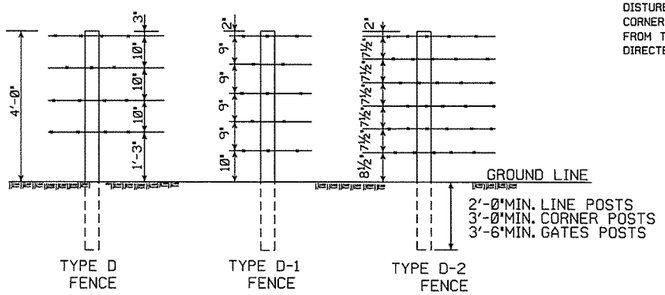
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 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.

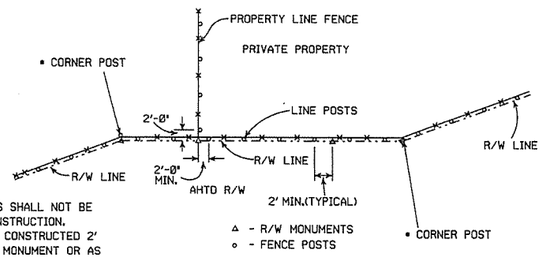
STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

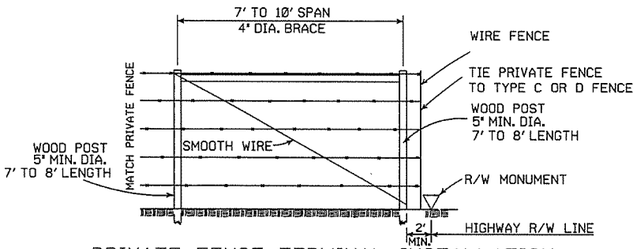


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



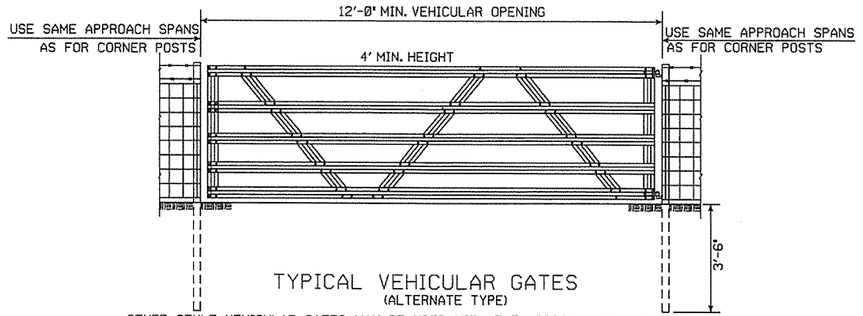
• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

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.

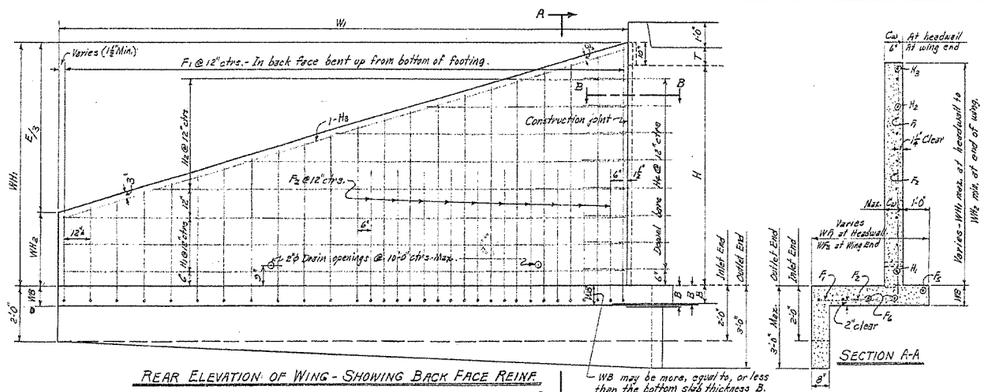
DATE	REVISION	FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	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

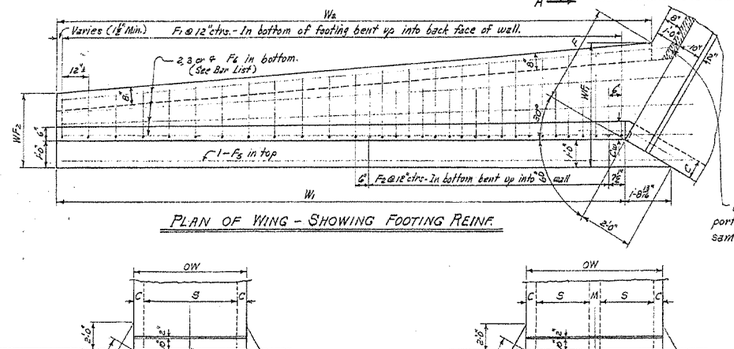
ARKANSAS STATE HIGHWAY COMMISSION

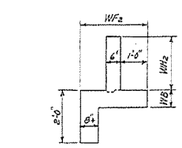
WIRE FENCE TYPE C AND D

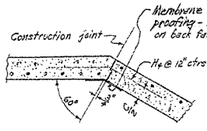
STANDARD DRAWING WF-4

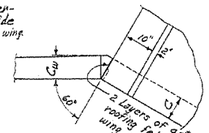
FED. ROAD	STATE	FED. AID PROJECT	SHEET NO.	TOTAL SHEETS
-	ARK.		371	
JOB NO.				











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 HDWL. TO END OF WING	LENGTH OF WING WALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE INLET END	* QUANTITY PER WING CLASS S CONCRETE OUTLET END
H	WB	C_W	WH_1	WH_2	WF_1	WF_2	F	E	W_1	W_2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	0'-11½"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-0⅜"	8'-6"	9'-10⅝"	9'-2⅝"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-0"	10'-6"	12'-1½"	12'-1½"	1.866	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	12'-6"	14'-5⅛"	14'-7½"	2.970	2.668
		7"	5'-11"	1'-8"	3'-4"	2'-4½"	2'-1⅜"	12'-5"	14'-5⅛"	14'-7½"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1½"	3.990	3.661
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1½"	3.811	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1½"	3.582	3.803
7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0⅝"	19'-8⅝"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅛"	16'-6"	19'-0⅝"	19'-8⅝"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-5"	18'-6"	21'-0½"	22'-0"	5.761	6.049

* Quantity per wing does not include headwall or that portion of apron or footwall for the length W_3.

APRON DIMENSION W_3 = (OW - 2F)

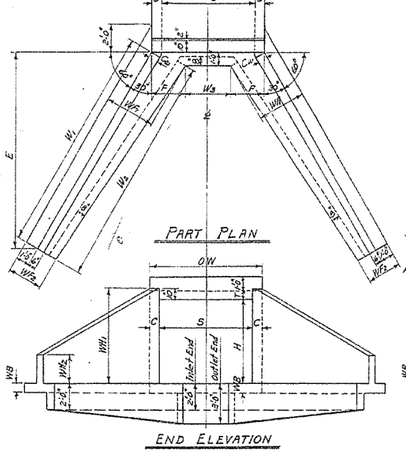
CLEAR SPAN S	CLEAR HEIGHT H	FOOTING DIMENSION 2F	SINGLE BARREL CULVERT OW	SINGLE BARREL CULVERT W_3	DOUBLE BARREL CULVERT OW	DOUBLE BARREL CULVERT W_3	TRIPLE BARREL CULVERT OW	TRIPLE BARREL CULVERT W_3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE BARREL CULVERT W_3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE BARREL CULVERT W_3
4'	2'	1'-11⅛"	5'-0"	3'-0⅝"	9'-8"	7'-8⅝"	14'-4"	12'-4⅝"	19'-0"	17'-0⅝"	23'-8"	21'-8⅝"
	3'	2'-8⅝"	5'-0"	2'-3⅜"	9'-8"	6'-11⅜"	14'-4"	11'-7¾"	19'-0"	16'-3¾"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	16'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-2"	0'-8⅝"	9'-8"	5'-4⅝"	14'-4"	10'-0⅝"	19'-0"	15'-8⅝"	23'-8"	19'-3⅝"
	6'	5'-0⅝"	5'-2"	0'-1⅛"	9'-11"	4'-10⅝"	14'-8"	9'-7⅝"	19'-5"	14'-10⅝"	24'-2"	19'-1⅝"
5'	3'	2'-8⅝"	6'-0"	3'-5⅝"	11'-8"	8'-1⅛"	17'-4"	14'-7⅝"	23'-0"	20'-3⅛"	28'-8"	25'-11⅝"
	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'-8⅝"	11'-8"	7'-4⅝"	17'-4"	13'-0⅝"	23'-0"	18'-8⅝"	28'-8"	24'-3⅝"
	6'	5'-0⅝"	6'-2"	1'-1⅛"	11'-11"	6'-10⅝"	17'-8"	12'-7⅝"	23'-5"	18'-0⅝"	29'-2"	24'-1⅛"
	7'	6'-1⅜"	6'-5"	0'-5⅝"	12'-1"	5'-10⅝"	17'-11"	11'-9⅝"	23'-9"	17'-1⅝"	29'-7"	23'-1⅝"
6'	3'	2'-8⅝"	7'-0"	4'-3⅝"	13'-8"	10'-1⅛"	20'-4"	17'-7⅝"	27'-0"	24'-3⅛"	33'-8"	30'-11⅝"
	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'-8⅝"	13'-8"	9'-4⅝"	20'-4"	16'-0⅝"	27'-0"	22'-8⅝"	33'-8"	29'-3⅝"
	6'	5'-0⅝"	7'-2"	2'-1⅛"	13'-11"	8'-10⅝"	20'-8"	15'-7⅝"	27'-5"	22'-0⅝"	34'-2"	29'-1⅛"
	7'	6'-1⅜"	7'-5"	1'-0⅝"	14'-1"	7'-10⅝"	20'-11"	14'-9⅝"	27'-9"	21'-0⅝"	34'-7"	28'-1⅝"
	8"	7'-4"	7'-9"	0'-0"	14'-8"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-10"
7'	4'	3'-6"	8'-0"	4'-6"	15'-8"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3⅜"	8'-0"	3'-8⅝"	15'-8"	11'-4⅝"	23'-4"	19'-0⅝"	31'-0"	26'-8⅝"	38'-8"	34'-3⅝"
	6'	5'-0⅝"	8'-2"	3'-1⅛"	15'-11"	10'-10⅝"	23'-8"	18'-7⅝"	31'-5"	26'-0⅝"	39'-2"	34'-1⅛"
	7'	6'-1⅜"	8'-5"	2'-0⅝"	16'-1"	9'-10⅝"	23'-11"	17'-8⅝"	31'-9"	25'-0⅝"	39'-7"	33'-1⅝"
	8'	7'-4"	8'-9"	1'-0"	16'-8"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-10"
8'	4'	3'-6"	9'-0"	5'-6"	17'-8"	14'-2"	26'-4"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-8⅝"	17'-11"	13'-7⅝"	26'-8"	22'-0⅝"	35'-5"	31'-1⅛"	44'-2"	39'-10⅝"
	6'	5'-0⅝"	9'-2"	4'-1⅛"	17'-11"	12'-10⅝"	26'-8"	21'-7⅝"	35'-5"	30'-4⅛"	44'-2"	39'-1⅛"
	7'	6'-1⅜"	9'-3"	3'-0⅝"	18'-1"	11'-10⅝"	26'-11"	20'-8⅝"	35'-9"	29'-4⅝"	44'-7"	38'-1⅝"
	8"	7'-4"	9'-9"	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'-10⅝"	19'-11"	15'-7⅝"	29'-8"	25'-4⅝"	39'-5"	35'-1⅝"	49'-2"	44'-10⅝"
	6'	5'-0⅝"	10'-3"	5'-2⅝"	20'-1"	15'-0⅝"	29'-11"	24'-10⅝"	39'-9"	34'-10⅝"	49'-7"	44'-6⅝"
	7'	6'-1⅜"	10'-3"	4'-0⅝"	20'-1"	13'-10⅝"	29'-11"	23'-8⅝"	39'-9"	33'-6⅝"	49'-7"	43'-6⅝"
	8"	7'-4"	10'-4"	3'-0"	20'-2"	12'-10"	30'-0"	22'-8"	39'-10"	32'-6"	49'-8"	42'-6"
10'	5'	4'-3⅜"	11'-2"	6'-10⅝"	21'-11"	17'-7⅝"	32'-8"	28'-4⅝"	43'-5"	39'-1⅝"	54'-2"	49'-10⅝"
	6'	5'-0⅝"	11'-3"	6'-2⅝"	22'-1"	17'-0⅝"	32'-11"	27'-10⅝"	43'-9"	38'-10⅝"	54'-7"	49'-6⅝"
	7'	6'-1⅜"	11'-3"	5'-0⅝"	22'-1"	15'-10⅝"	32'-11"	26'-8⅝"	43'-9"	37'-6⅝"	54'-7"	48'-6⅝"
	8'	7'-4"	11'-4"	4'-0"	22'-2"	14'-10"	33'-0"	25'-8"	43'-10"	36'-6"	54'-8"	47'-6"
11'	6'	5'-0⅝"	12'-0"	7'-3⅝"	24'-2"	19'-1⅛"	36'-0"	30'-1⅛"	47'-10"	42'-1⅛"		
	7'	6'-1⅜"	12'-0"	6'-1⅝"	24'-2"	17'-11⅛"	36'-0"	29'-0⅝"	47'-10"	41'-0⅝"		
	8'	7'-4"	12'-0"	5'-0"	24'-2"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0⅝"	13'-0"	8'-3⅝"	26'-2"	21'-1⅛"	39'-0"	33'-1⅛"	51'-10"	46'-1⅛"		
	7'	6'-1⅜"	13'-0"	7'-1⅝"	26'-2"	19'-11⅛"	39'-0"	32'-0⅝"	51'-10"	45'-0⅝"		
	8'	7'-4"	13'-0"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

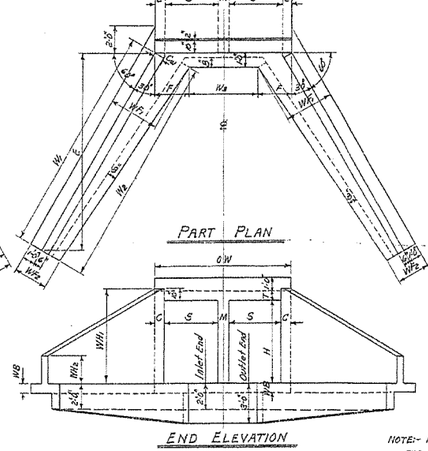
QUANTITIES

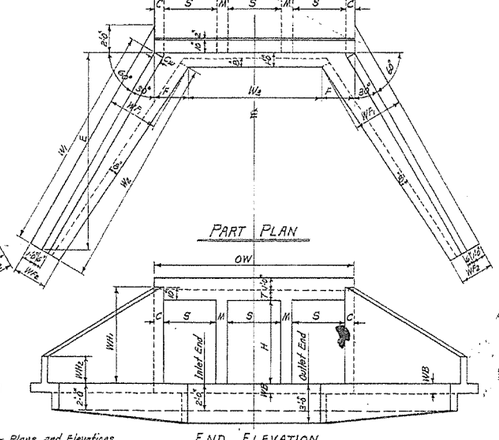
CLASS S CONCRETE - 4 WINGS

CLEAR SPAN S	CLEAR HEIGHT H	THICKNESS OF WING AT HEADWALL C_W	THICKNESS OF WING FOOTING WB	REINFORCING STEEL - FOR 4 WINGS @ LB.	HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS SINGLE BARREL CULVERT CU.YD.	DOUBLE BARREL CULVERT CU.YD.	TRIPLE BARREL CULVERT CU.YD.	QUADRUPLE BARREL CULVERT CU.YD.	QUINTUPLE BARREL CULVERT CU.YD.
4'	2'	6"	7"	108.0	4.50	5.46	6.42	7.38	8.34
	3'	6"	7"	168.8	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	254.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	353.8	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	6.97	7.48	8.79	9.96	11.12
	4'	6"	7"	254.6	8.56	9.70	10.87	12.03	13.20
	5'	6"	7"	357.8	10.96	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	16.36	17.15	18.34	19.54
	7'	7½"	8½"	1134.6	18.96	20.16	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"	254.6	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	14.99	16.39	17.78	19.18	20.59
	7'	7½"	8½"	1134.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1922.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	254.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.58	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7½"	8½"	1134.6	19.38	21.02	22.69	24.28	25.92
	8'	8"	9"	1923.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	254.6	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'	7½"	8½"	1134.6	19.59	21.46	23.30	25.16	26.93
	8'	8"	9"	1925.6	24.54	26.41	28.29	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.39	16.37	18.45	20.47
	6'	7½"	8"	583.1	15.94	18.04	20.09	22.19	24.23
	7'	7½"	8½"	1136.6	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	12.49	14.80	17.05	19.24	21.52
	6'	7½"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7½"	8½"	1136.6	20.09	22.37	24.64	26.87	29.15
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.91	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.33	
	7'	8"	8½"	1136.6	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"	8½"	1136.6	20.87	23.69	26.50	29.13	
	8'	8"	9"	1925.6	25.42	28.25	30.96	33.69	

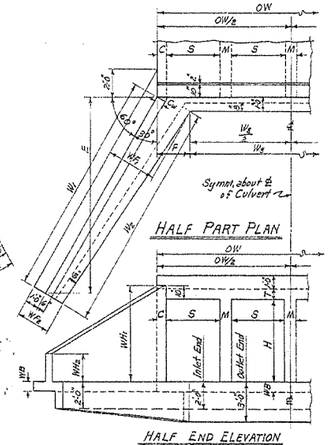
* For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.

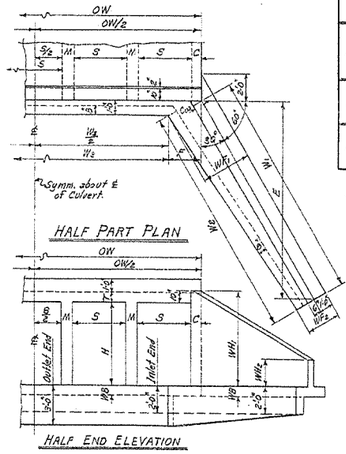






NOTE:- Plans and Elevations are not to scale.



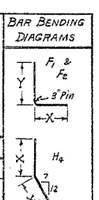


MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT H	F_1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	F_1 SPACING	F_1 NO. REQD	F_1 LENGTHS VARY MIN.	F_1 X MAX.	F_1 Y MIN.	F_1 Y MAX.	F_2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F_1 bars. SIZE	F_2 SPACING	F_2 NO. REQD	F_2 LENGTH	F_5 Straight: Longitudinal in Top of wing footing heel. SIZE	F_5 NO. REQD	F_5 LENGTH	F_3 Straight: Longitudinal in bottom of wing footing toe. SIZE	F_3 NO. REQD	F_3 LENGTH	H_1 Straight: Horizontal in back face of wing. SIZE	H_1 SPACING	H_1 NO. REQD	H_1 LENGTH	H_2 Straight: Horizontal in back face of wing. One bar of each length. SIZE	H_2 SPACING	H_2 NO. REQD	H_2 LENGTHS VARY MAX.	H_2 MIN.	H_3 In back face of wing at top - on slope. SIZE	H_3 NO. REQD	H_3 LENGTH	H_4 Bent: Dowels thru construction joint at headwall. SIZE	H_4 SPACING	H_4 NO. REQD	H_4 LENGTH	H_4 X	QUANTITY REINFORCING STEEL PER WING LB.
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	#3	12"	1	—	9'-6"	#3	1	7'-4"	#3	12"	2	2'-8"	1'-4"	27.0
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-5"	—	—	—	—	#3	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"	#3	12"	2	7'-6"	9'-0"	#3	1	9'-9"	#3	12"	3	2'-8"	1'-4"	41.1
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	—	—	—	—	#3	1	14'-9"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	9'-0"	#3	1	12'-2"	#3	12"	4	2'-8"	1'-4"	63.7
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	1'-11"	6'-0"	#3	12"	4	3'-6"	1'-1"	2'-6"	#3	1	16'-8"	#3	3	16'-0"	#5	12"	2	14'-2"	#3	12"	3	10'-11"	4'-0"	#3	1	14'-2"	#3	12"	5	2'-8"	1'-4"	89.5
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-2"	1'-6"	3'-3"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-4"	#3	12"	4	16'-4"	4'-0"	#3	1	17'-0"	#3	12"	6	2'-8"	1'-4"	145.8
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	2'-7"	8'-1"	#4	12"	7	5'-6"	1'-7"	4'-0"	#4	1	21'-4"	#4	4	21'-0"	#4	12"	5	17'-9"	4'-0"	#4	1	19'-5"	#4	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	10	6'-6"	1'-10"	4'-9"	#4	1	23'-8"	#4	4	23'-6"	#4	12"	5	17'-9"	4'-0"	#4	1	21'-6"	#4	12"	8	3'-6"	1'-9"	326.4

BAR BENDING DIAGRAMS



Designed By:- W.C.H. 8-20-62. Checked By:-
Drawn By:- W.C.H. 12-4-62. Checked By:- RAS - 1-3-63
Quantities By:- W.C.H. 12-14-62. Checked By:- RJS - 1-31-63
Rechecked By:- RJS - 3-22-63

REVISIONS:- Membrane added. 5-10-66 W.C.H.

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 #/A
Reinforcing Steel 20,000 #/#²

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

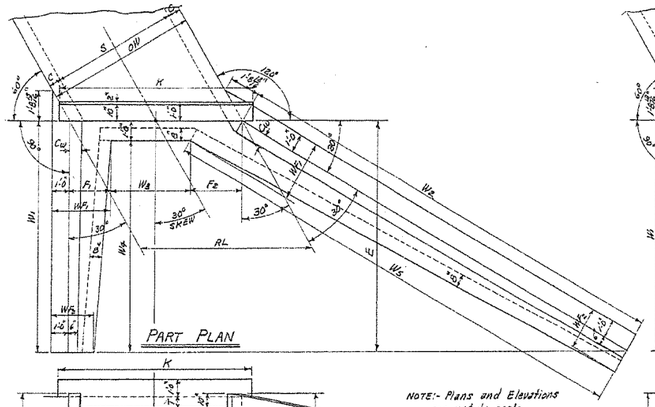
STANDARD DRAWING NO. W-X003-1

(3)

Reshot 3-8-93

171

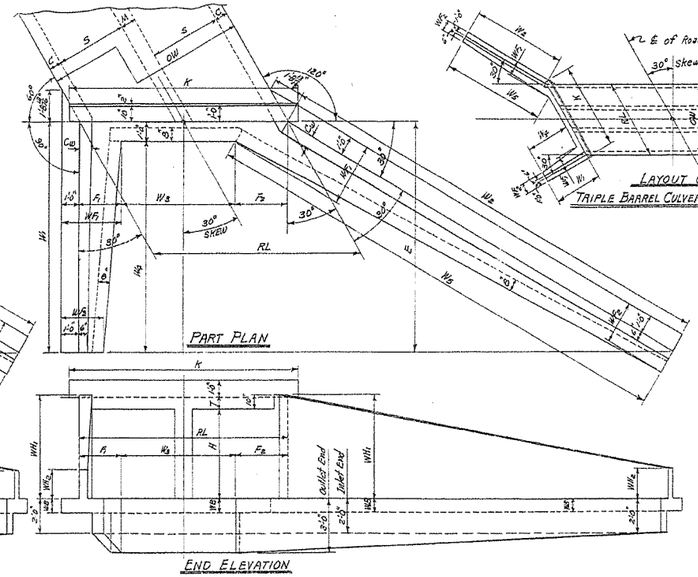
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			372	
JOB No.					



SINGLE BARREL CULVERT-30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

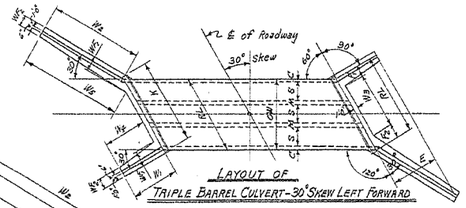
NOTE:- Plans and Elevations are not to scale.

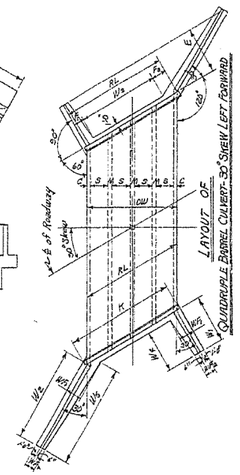


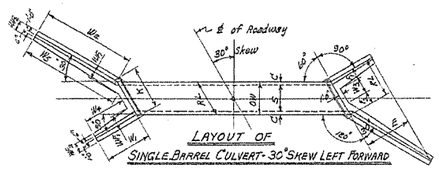
DOUBLE BARREL CULVERT-30° SKEW RIGHT FORWARD

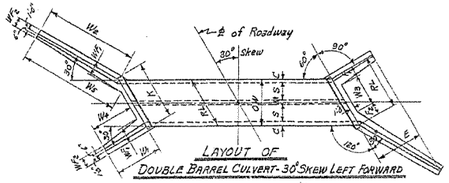
Details of Culvert with 30° Skew Left Forward is reversed, see Layout below.

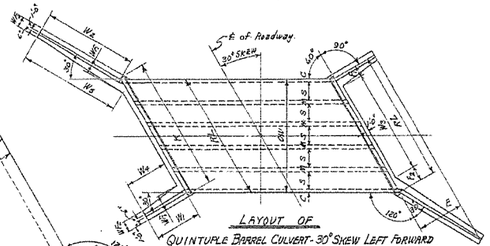
NOTE:- The length of the wings for the Plans, Elevations, and Layouts, as drawn, are proportioned for 3:1 slopes. For 2:1 slopes the wings are proportionally shorter, while for 4:1 slopes they are longer.

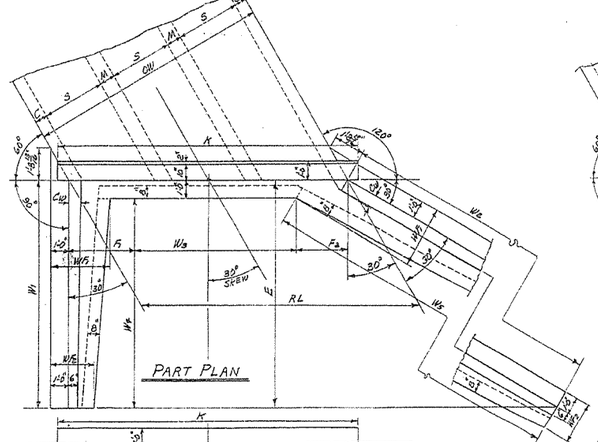






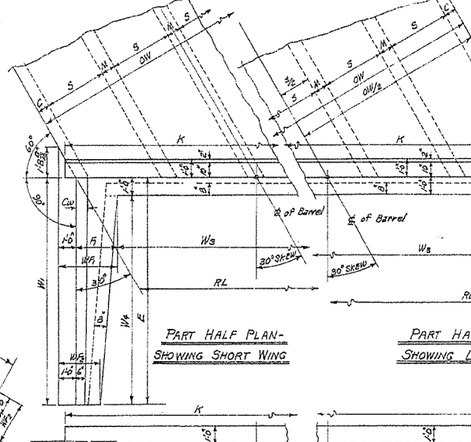






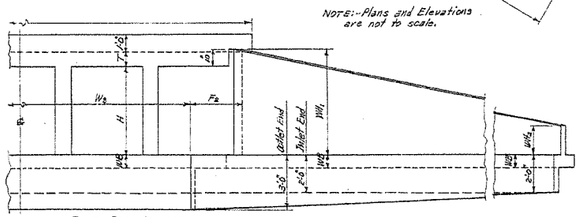
TRIPLE BARREL CULVERT-30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at top center of sheet.



QUADRUPLE BARREL CULVERT-30° SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout at above center.



QUINTUPLE BARREL CULVERT-30° SKEW RT. FWD.

Details of Culvert with 30° Skew Left Forward is reversed, see Layout above.

NOTE:-Plans and Elevations are not to scale.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = OW x 1.1547 — K = RL + (1-1 7/8") — W_3 = RL - (F_1 + F_2)

USE WITH DRAWING NO.	CLEAR SPAN S	CLEAR HEIGHT H	SUM OF FOOTING WIDTHS F_1+F_2	SINGLE BARREL CULVERT OW	SINGLE RL	SINGLE K	SINGLE W_3	DOUBLE BARREL CULVERT OW	DOUBLE RL	DOUBLE K	DOUBLE W_3	TRIPLE BARREL CULVERT OW	TRIPLE RL	TRIPLE K	TRIPLE W_3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE RL	QUADRUPLE K	QUADRUPLE W_3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE RL	QUINTUPLE K	QUINTUPLE W_3
W-X302-1, W-X303-1 OR W-X304-1. (FOR H=8'-0" OR LESS)	4'	2'-3⅜"	5'-0"	5'-0⅛"	6'-11⅝"	3'-6"		9'-8"	11'-2"	12'-3⅜"	8'-10⅝"	14'-6"	16'-6⅝"	17'-10⅝"	14'-3⅝"	19'-0"	21'-11⅝"	23'-1"	19'-5⅛"	23'-8"	27'-4"	28'-5⅛"	25'-0⅜"
		3'	3'-3⅜"	5'-0"	"	"	2'-6"	9'-8"	"	"	7'-10⅜"	14'-9"	"	"	13'-3⅜"	19'-0"	"	"	18'-8"	23'-8"	"	"	26'-10⅜"
		4'	4'-3⅜"	5'-0"	"	"	1'-6"	9'-8"	"	"	6'-10⅜"	14'-9"	"	"	12'-8⅜"	19'-0"	"	"	18'-8"	23'-8"	"	"	23'-10⅜"
		5'	5'-3⅜"	5'-0"	5'-0⅛"	6'-11⅝"	0'-6"	9'-8"	11'-2"	12'-3⅜"	5'-10⅜"	14'-6"	16'-6⅝"	17'-10⅝"	11'-3⅜"	19'-0"	21'-11⅝"	23'-1"	16'-8"	23'-8"	27'-4"	28'-5⅛"	22'-0⅜"
		6'	6'-3⅜"	5'-2"	5'-11⅝"	7'-1½"	Ⓐ 0"	9'-11"	11'-5½"	12'-7½"	5'-2⅜"	14'-8"	16'-11⅜"	18'-1"	10'-8"	19'-5"	22'-5"	23'-7"	16'-1⅝"	24'-8"	27'-10⅜"	29'-0⅛"	21'-7⅜"
		3'	3'-3⅜"	6'-0"	6'-11⅝"	8'-1"	3'-7⅛"	11'-8"	13'-5⅝"	14'-7⅜"	10'-2⅛"	17'-4"	20'-0⅛"	21'-2"	16'-9"	23'-0"	26'-6⅛"	27'-8⅝"	23'-3⅜"	28'-8"	33'-1⅛"	34'-3"	29'-1⅜"
		4'	4'-3⅜"	6'-0"	"	"	2'-7⅛"	11'-8"	"	"	9'-2⅝"	17'-4"	"	"	15'-3"	23'-0"	"	"	22'-3⅜"	28'-8"	"	"	28'-11"
		5'	5'-3⅜"	6'-0"	6'-11⅝"	8'-1"	1'-7⅛"	11'-8"	13'-5⅝"	14'-7⅜"	8'-2⅛"	17'-4"	20'-0⅛"	21'-2"	14'-9"	23'-0"	26'-6⅛"	27'-8⅝"	21'-3⅜"	28'-8"	33'-1⅛"	34'-3"	27'-11"
		6'	6'-3⅜"	6'-2"	7'-1½"	8'-3⅝"	0'-10⅝"	11'-11"	13'-9½"	15'-11"	7'-5⅜"	17'-8"	20'-4⅝"	21'-6⅝"	12'-2⅜"	23'-3"	27'-0⅝"	28'-2⅝"	20'-5⅛"	29'-2"	33'-9½"	34'-10"	27'-5"
		7'	7'-3⅜"	6'-3"	7'-2⅝"	8'-4⅝"	Ⓐ 0"	12'-1"	13'-11⅝"	15'-11⅝"	6'-2⅝"	17'-11"	20'-8⅜"	21'-10"	12'-11"	23'-8"	27'-5⅝"	28'-7"	19'-8"	29'-7"	34'-2"	35'-3⅜"	26'-9⅜"
	6'	3'	3'-3⅜"	7'-0"	8'-1"	9'-2⅜"	4'-9⅜"	13'-8"	15'-9⅜"	16'-11⅛"	12'-6⅛"	20'-4"	23'-5⅛"	24'-7⅛"	20'-2⅝"	27'-0"	31'-2⅛"	32'-4"	27'-1"	33'-8"	38'-1⅛"	40'-0⅛"	35'-0⅝"
		4'	4'-3⅜"	7'-0"	"	"	3'-3⅜"	13'-8"	"	"	11'-6⅜"	20'-4"	"	"	19'-2⅜"	27'-0"	"	"	26'-1"	33'-8"	"	"	34'-11"
		5'	5'-3⅜"	7'-0"	8'-1"	9'-2⅜"	2'-9⅜"	13'-8"	15'-9⅜"	16'-11⅛"	10'-6⅜"	20'-4"	23'-5⅛"	24'-7⅛"	18'-2⅜"	27'-0"	31'-2⅛"	32'-4"	25'-11"	33'-8"	38'-1⅛"	40'-0⅛"	33'-7⅛"
		6'	6'-3⅜"	7'-2"	8'-3⅜"	9'-5⅝"	2'-1⅜"	13'-11"	16'-0⅝"	17'-2⅝"	9'-9⅝"	20'-8"	23'-10⅛"	25'-0⅛"	17'-2⅝"	27'-5"	31'-7⅝"	32'-9⅝"	25'-0⅝"	34'-2"	38'-9⅝"	40'-7⅝"	33'-2⅝"
		7'	7'-3⅜"	7'-3"	8'-4⅝"	9'-6⅞"	0'-7⅛"	14'-1"	16'-3⅜"	17'-5"	8'-6"	20'-11"	24'-1⅛"	25'-3⅛"	16'-4⅛"	27'-9"	32'-0⅛"	33'-2⅛"	24'-3⅜"	34'-7"	39'-0⅛"	41'-1"	32'-2"
		8'	8'-3⅜"	8'-4"	9'-5⅝"	10'-8⅜"	0"	14'-2"	16'-4⅝"	17'-6⅝"	7'-1"	21'-0"	24'-2⅝"	25'-4⅝"	15'-5⅝"	27'-11"	32'-2⅝"	33'-4⅝"	23'-4⅝"	34'-11"	39'-2⅝"	41'-3⅝"	31'-3⅝"
	8'	4'	4'-3⅜"	8'-0"	9'-2⅜"	10'-5⅝"	4'-0⅜"	15'-8"	18'-1⅛"	19'-3"	15'-0⅜"	23'-4"	26'-11⅜"	28'-1⅛"	22'-8"	31'-0"	35'-9½"	36'-11⅛"	31'-1⅝"	38'-6"	44'-3⅜"	45'-9⅜"	40'-0⅝"
		5'	5'-3⅜"	8'-0"	9'-2⅜"	10'-5⅝"	3'-11⅜"	15'-8"	18'-1⅛"	19'-3"	12'-9⅜"	23'-4"	26'-11⅜"	28'-1⅛"	21'-8"	31'-0"	35'-9½"	36'-11⅛"	30'-6"	38'-6"	44'-3⅜"	45'-9⅜"	39'-4⅝"
		6'	6'-3⅜"	8'-2"	9'-5⅝"	10'-7"	3'-2"	15'-11"	18'-4⅛"	19'-6⅝"	12'-1⅝"	23'-8"	27'-1"	28'-3⅝"	21'-0⅝"	31'-5"	36'-3⅜"	37'-5⅝"	30'-0"	39'-2"	45'-0⅜"	46'-6⅜"	38'-11⅝"
		7'	7'-3⅜"	8'-3"	9'-6⅝"	10'-8½"	1'-3"	16'-1"	18'-5⅝"	19'-8⅝"	10'-3⅜"	23'-11"	27'-2⅞"	28'-5¾"	19'-10⅜"	31'-9"	36'-6"	37'-8⅝"	28'-10⅝"	39'-7"	45'-9⅝"	46'-10⅝"	37'-11⅜"
		8'	8'-3⅜"	8'-4"	9'-7½"	10'-9⅝"	0'-4⅛"	16'-2"	18'-6"	19'-9⅝"	9'-4⅝"	24'-0"	27'-4⅝"	28'-7⅝"	18'-5⅝"	31'-10"	36'-9⅜"	37'-11⅝"	27'-4"	39'-11"	46'-3⅝"	47'-3⅝"	36'-11⅝"
	9'	4'	4'-3⅜"	9'-0"	10'-0⅝"	11'-4⅛"	4'-1⅛"	17'-6"	20'-0⅝"	21'-3⅜"	16'-1⅝"	26'-0"	30'-0⅝"	31'-3⅜"	24'-1⅜"	35'-0"	40'-5"	41'-6⅜"	36'-1⅜"	43'-6"	50'-0⅝"	51'-2"	46'-1⅜"
		5'	5'-3⅜"	9'-2"	10'-2"	11'-5⅜"	3'-12⅜"	17'-11"	20'-8⅝"	21'-10"	15'-5"	26'-8"	30'-9⅝"	31'-11⅝"	25'-6⅜"	35'-7"	40'-10⅝"	42'-0"	34'-7⅝"	44'-2"	51'-0"	52'-1⅛"	45'-8⅝"
		6'	6'-3⅜"	9'-2"	10'-2"	11'-5⅜"	4'-3⅜"	17'-11"	20'-8⅝"	21'-10"	14'-5"	26'-8"	30'-9⅝"	31'-11⅝"	24'-6⅝"	35'-7"	40'-10⅝"	42'-0"	34'-7⅝"	44'-2"	51'-0"	52'-1⅛"	44'-8⅝"
		7'	7'-3⅜"	9'-3"	10'-3⅛"	11'-6⅜"	2'-11"	18'-1"	20'-10⅝"	22'-0⅝"	13'-1⅝"	26'-11"	31'-1"	32'-2⅜"	23'-3⅜"	35'-9"	41'-3⅜"	42'-5⅜"	33'-1⅛"	44'-7"	51'-3⅝"	52'-7⅝"	43'-5⅛"
		8'	8'-3⅜"	9'-4"	10'-3⅝"	11'-7⅛"	1'-6⅝"	18'-2"	20'-11⅝"	22'-1⅛"	11'-8⅝"	27'-0"	31'-2⅜"	32'-4"	21'-11"	35'-10"	41'-5⅛"	42'-6⅝"	32'-1⅛"	44'-8"	51'-5"	52'-8⅝"	42'-3⅝"
		5'	5'-3⅜"	10'-2"	11'-0⅜"	12'-10⅜"	6'-5⅜"	19'-11"	23'-0"	24'-1⅜"	17'-8⅜"	29'-0"	34'-3⅜"	35'-5"	28'-1⅜"	39'-1"	45'-6⅜"	46'-8"	40'-3"	49'-3"	56'-9⅛"	57'-11⅛"	49'-5⅜"
		6'	6'-3⅜"	10'-3"	11'-1⅜"	13'-0"	5'-6⅜"	20'-1"	23'-2⅛"	24'-3⅜"	16'-11"	29'-1"	34'-4⅜"	35'-5⅝"	28'-3⅜"	39'-2"	45'-7⅜"	46'-9⅛"	40'-3⅜"	49'-4"	56'-10⅛"	58'-0"	50'-0⅜"
		7'	7'-3⅜"	10'-3"	11'-1⅜"	13'-0"	4'-0⅜"	20'-1"	23'-2⅛"	24'-3⅜"	15'-5"	29'-1"	34'-4⅜"	35'-5⅝"	28'-3⅜"	39'-2"	45'-7⅜"	46'-9⅛"	40'-3⅜"	49'-4"	56'-10⅛"	58'-0"	50'-0⅜"
		8'	8'-3⅜"	10'-4"	11'-1⅝"	13'-1"	2'-0"	20'-2"	23'-3⅝"	24'-4⅝"	14'-0⅛"	29'-2"	34'-5⅜"	35'-6⅝"	25'-9⅜"	39'-3"	45'-8⅜"	46'-10⅛"	36'-8⅜"	49'-5"	56'-11⅛"	58'-1"	48'-1"
	10'	5'	5'-3⅜"	11'-2"	12'-0⅜"	14'-0⅜"	7'-7⅜"	21'-11"	25'-3⅛"	26'-5⅛"	20'-0⅜"	32'-0"	37'-6⅜"	38'-10⅜"	32'-5⅜"	43'-5"	50'-1⅜"	51'-3⅝"	44'-9⅛"	54'-6"	62'-5⅛"	63'-8"	57'-3⅜"
		6'	6'-3⅜"	11'-3"	12'-1⅜"	14'-1⅜"	6'-8⅜"	22'-1"	25'-4"	26'-6⅜"	19'-2⅜"	32'-1"	37'-6⅜"	38'-10⅜"	31'-9"	43'-5"	50'-1⅜"	51'-3⅝"	44'-1"	54'-7"	62'-5⅛"	63'-8"	56'-9"
		7'	7'-3⅜"	11'-3"	12'-1⅜"	14'-1⅜"	5'-12⅜"	22'-1"	25'-4"	26'-6⅜"	17'-10⅜"	32'-1"	37'-6⅜"	38'-10⅜"	30'-3"	43'-5"	50'-1⅜"	51'-3⅝"	42'-5"	54'-7"	62'-5⅛"	63'-8"	55'-1"
		8'	8'-3⅜"	11'-4"	12'-1"	14'-2"	3'-10⅜"	22'-2"	25'-5⅛"	26'-7⅛"	16'-4"	33'-0"	38'-1⅛"	39'-3"	28'-10"	43'-10"	50'-7⅜"	51'-9⅝"	41'-1⅛"	55'-1"	63'-0⅛"	64'-3⅛"	53'-10⅝"
	11'	6'	6'-3⅜"	12'-4"	14'-0⅜"	15'-6⅝"	7'-11⅜"	24'-2"	27'-10⅜"	29'-0⅜"	21'-7⅜"	36'-0"	41'-6⅜"	42'-8⅜"	35'-3⅜"	47'-10"	55'-2⅜"	56'-6⅝"	48'-11⅜"	——	——	——	——
		7'	7'-3⅜"	12'-5"	"	"	6'-5⅜"	24'-3"	"	"	20'-1⅜"	36'-0"	"	"	32'-0⅜"	47'-10"	"	"	47'-5⅜"	——	——	——	——
		8'	8'-3⅜"	12'-5"	"	"	4'-11⅜"	24'-3"	"	"	18'-3⅜"	36'-0"	"	"	32'-3⅜"	47'-10"	"	"	45'-11⅜"	——	——	——	——
	12'	6'	6'-3⅜"	13'-4"	15'-0⅜"	16'-6⅝"	9'-1⅜"	26'-2"	30'-2⅝"	31'-4⅝"	23'-1⅜"	39'-0"	45'-0⅜"	46'-2⅝"	39'-3⅜"	51'-10"	59'-10⅝"	61'-0"	53'-7"	——	——	——	——
		7'	7'-3⅜"	13'-5"	"	"	7'-7⅜"	26'-3"	"	"	22'-0⅜"	39'-0"	"	"	37'-3⅜"	51'-10"	"	"	52'-1"	——	——	——	——
		8'	8'-3⅜"	13'-5"	"	"	6'-1⅜"	26'-3"	"	"	20'-11⅜"	39'-0"	"	"	35'-3⅜"	51'-10"	"	"	50'-7"	——	——	——	——
W-X302-2, W-X303-2 OR W-X304-2. (FOR H=9'-0" & OVER)	7'	9'	10'-3⅜"	8'-6"	9'-5⅝"	10'-11⅝"	Ⓐ 0"	16'-5"	19'-11⅛"	20'-11⅝"	6'-2⅛"	28'-5"	28'-11⅛"	29'-5"	17'-9"	32'-3"	37'-2⅜"	38'-2⅝"	26'-5⅝"	40'-2"	46'-9⅝"	47'-11⅝"	35'-7⅛"
	8'	9'	10'-3⅜"	9'-6"	10'-11⅝"	12'-1½"	0'-2⅝"	18'-5"	21'-3⅝"	22'-5"	10'-6"	27'-9"	31'-1⅝"	32'-2⅝"	20'-9½"	36'-3"	41'-10⅝"	43'-0⅛"	31'-1"	45'-2"	52'-1⅜"	53'-3⅝"	41'-9⅝"
		10'	12'-3⅜"	9'-8"	11'-2"	12'-3⅜"	Ⓐ 0"	18'-8"	21'-6⅝"	22'-8⅝"	9'-3⅝"	27'-8"	31'-1⅜"	32'-1⅝"	19'-8⅜"	36'-8"	42'-1⅝"	43'-2"	30'-0⅜"	45'-5"	52'-5⅝"	53'-10⅝"	40'-5⅝"
	9'	9'	10'-3⅜"	10'-4"	12'-1½"	13'-3⅜"	1'-6⅛"	20'-5"	23'-6⅜"	24'-8⅜"	12'-9⅜"	30'-4"	35'-0⅜"	36'-2⅝"	24'-3"	40'-3"	46'-8⅜"	47'-7½"	35'-8⅝"	50'-2"	57'-11⅝"	59'-1"	47'-2"
		10'	12'-3⅜"	10'-8"	12'-3⅜"	13'-5⅝"	0'-0⅝"	20'-8"	23'-10⅝"	25'-0⅛"	11'-7⅛"	30'-8"	35'-4⅜"	36'-6⅝"	23'-1⅜"	40'-8"	46'-11⅛"	48'-1⅛"	34'-8⅜"	50'-8"	58'-4"	59'-8"	46'-2⅝"
		11'	13'-3⅜"	10'-10"	12'-6⅝"	13'-8"	Ⓐ 0"	20'-10"	24'-0⅝"	25'-2⅝"	10'-3⅜"	30'-10"	35'-7⅛"	36'-9"	21'-10"	40'-10"	47'-1⅛"	48'-3⅜"	33'-4⅝"	50'-10"	58'-8⅜"	59'-10⅝"	44'-11⅝"
	10'	9'	10'-3⅜"	11'-6"	13'-3⅜"	14'-5⅝"	2'-6⅜"	22'-5"	25'-10⅜"	27'-0⅝"	15'-3⅜"	33'-4"	38'-5⅜"	39'-7⅝"	27'-3⅜"	44'-3"	51'-1⅜"	52'-3"	40'-1"	55'-5"	63'-3⅜"	64'-5⅜"	52'-1⅛"
		10'	12'-3⅜"	11'-8"	13'-5⅝"	14'-7⅝"	1'-2⅜"	22'-8"	26'-1⅛"	27'-2⅝"	15'-10⅜"	33'-8"	38'-10⅛"	40'-0⅛"	26'-7½"	44'-8"	51'-7"	52'-8⅝"	39'-3⅜"	55'-8"	64'-3⅜"	65'-5⅛"	52'-10"
		11'	13'-3⅜"	11'-10"	13'-8"	14'-9⅜"	Ⓐ 0"	22'-10"	26'-4⅜"	27'-4⅝"	14'-7⅜"	33'-10"	39'-0⅛"	40'-0⅝"	25'-5⅜"	44'-10"	51'-9½"	52'-11"	38'-10"	55'-10"	64'-5⅝"	65'-7⅛"	50'-8½"
		12'	15'-3⅜"	12'-0"	13'-10⅛"	15'-0⅝"	Ⓐ 0"	23'-0"	26'-6⅝"	27'-8⅜"	11'-3⅜"	34'-0"	39'-3⅜"	40'-5"	24'-0"	45'-0"	51'-11⅝"	53'-1⅛"	36'-8⅝"	56'-0"	64'-8"	65'-9⅜"	49'-2⅜"
	11'	9'	10'-3⅜"	12'-6"	14'-5⅛"	15'-7"	3'-9"	24'-5"	28'-2⅜"	29'-4⅜"	17'-5"	36'-4"	41'-11⅛"	43'-1⅛"	31'-2⅜"	48'-3"	55'-0⅜"	56'-2⅝"	44'-1⅛"	——	——	——	——
		10'	12'-3⅜"	12'-8"	14'-7⅛"	15'-9⅛"	2'-4⅛"	24'-8"	28'-5⅛"	29'-7⅜"	16'-2⅜"	36'-8"	42'-4⅛"	43'-5⅝"	30'-0⅜"	48'-8"	55'-6⅜"	57'-0⅛"	43'-3⅛"	——	——	——	——
		11'	13'-3⅜"	12'-10"	14'-9⅜"	15'-11⅜"	1'-0⅝"	24'-10"	28'-8⅛"	29'-10⅜"	15'-1"	36'-10"	42'-6⅝"	43'-8⅛"	28'-9⅜"	48'-10"	56'-4⅜"	57'-6⅝"	42'-5⅛"	——	——	——	——
		12'	15'-3⅜"	13'-0"	15'-0⅛"	16'-2"	Ⓐ 0"	25'-0"	28'-10⅜"	30'-0⅝"	13'-7⅛"	37'-0"	42'-8⅜"	43'-10⅝"	27'-5⅜"	49'-0"	56'-7"	57'-8⅜"	41'-5⅜"	——	——	——	——
	12'	9'	10'-3⅜"	13'-6"	15'-2⅞"	16'-4⅜"	4'-3⅜"	24'-5"	28'-1"	29'-3⅛"	19'-8⅜"	39'-1"	44'-5"	45'-5⅞"	34'-2⅜"	52'-3"	60'-0⅜"	61'-2⅝"	47'-5⅜"	——	——	——	——
		10'	12'-3⅜"	13'-8"	15'-3⅜"	16'-4⅛"	3'-1⅛"	24'-6"	28'-2⅜"	29'-4⅝"	18'-4⅛"	39'-2"	44'-6⅛"	45'-6⅝"	33'-1⅛"	52'-5"	60'-1⅜"	61'-3⅝"	46'-6⅛"	——	——	——	——
		11'	13'-3⅜"	13'-10"	15'-11⅝"	17'-1⅝"	2'-2⅜"	24'-10"	28'-7⅛"	29'-9⅜"	17'-2⅜"	39'-10"	45'-0"	46'-0⅜"	32'-0⅜"	52'-10"	60'-7⅛"	61'-9⅜"	45'-7⅛"	——	——	——	——
		12'	15'-3⅜"	14'-0"	16'-0⅜"	17'-3⅜"	0'-10⅜"	25'-0"	28'-11⅜"	30'-2⅜"	16'-0"	40'-0"	45'-3⅜"	46'-3⅞"	30'-11"	53'-0"	61'-0⅜"	62'-0⅝"	44'-8⅜"	——	——	——	——

Ⓐ Special case for these boxes, See Detail "R" and Table "A" for revised values of F_1, F_2, W_2 and W_3, when apron width is more than 1'-0" and W_3=0. For Details "R" and Tables "A" for each slope, see Drawing Nos. W-X302-1, W-X302-2, or W-X303-1, W-X303-2, or W-X304-1, W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 30° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X302-1 or W-X302-2	W-X303-1 or W-X303-2	W-X304-1 or W-X304-2.

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

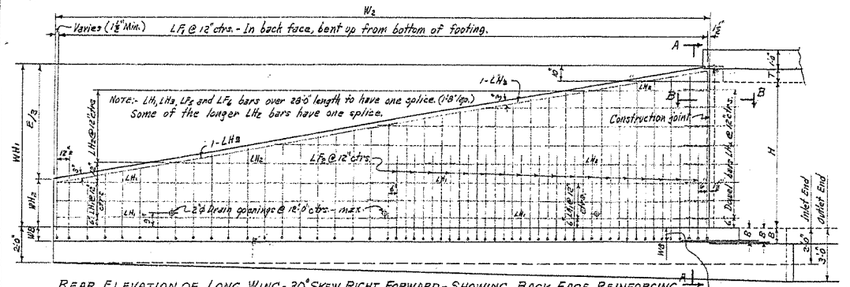
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER H=2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'.

STANDARD DRAWING NO. W-X30

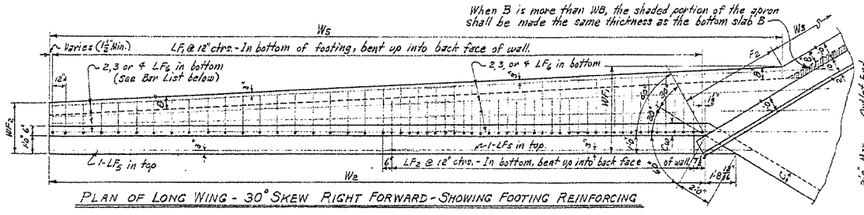
Designed by:- W.C.H. 5-16-63 Checked by:- [illegible] 5-21-63
Drawn by:- W.C.H. 7-15-63 Checked by:-
Quantities by:- Checked by:-

Reshot 3-8-93

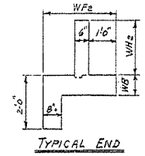
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			373	
JOB No.					



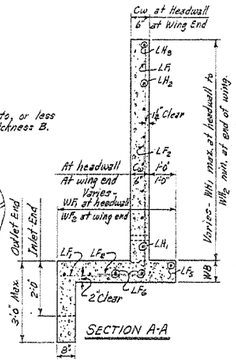
REAR ELEVATION OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



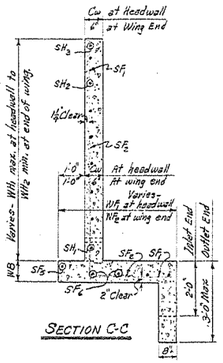
PLAN OF LONG WING - 30° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING



TYPICAL END VIEW OF WING



SECTION A-A



SECTION C-C

REGULAR WING DIMENSIONS - 3:1 SLOPES

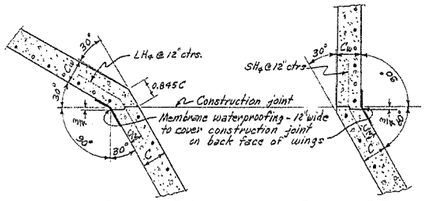
CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HDWL. + C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	FOOTING DIMENSION PARALLEL WITH HEADWALL SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL LONG WING	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTHS OF WINGWALLS SHORT WING	LENGTHS OF WINGWALLS LONG WING	INSIDE FOOTING DIMENSION SHORT WING	INSIDE FOOTING DIMENSION LONG WING	* QUANTITY PER WING CLASS S CONCRETE INLET END SHORT WING	* QUANTITY PER WING CLASS S CONCRETE INLET END LONG WING	* QUANTITY PER WING CLASS S CONCRETE OUTLET END SHORT WING	* QUANTITY PER WING CLASS S CONCRETE OUTLET END LONG WING
H	WB	C_W	WH_1	WH_2	WF_1	WF_2	F_1	F_2	E	W_1	W_2	W_3	W_5	CU.YD.	CU.YD.	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-6"	2'-0"	1'-6"	0'-11½"	6'-6"	6'-6"	13'-0"	5'-6"	19'-3⅜"	0.752	1.599	0.836	1.717
3'	7"	6"	3'-10"	1'-0"	2'-9"	2'-1½"	1'-8"	1'-1⅞"	6'-6"	8'-6"	17'-0"	7'-6"	19'-10⅞"	1.130	2.340	1.239	2.565
4'	7"	6"	4'-10"	1'-6"	3'-0"	2'-3"	2'-0"	1'-3⅜"	10'-6"	10'-6"	21'-0"	9'-6"	22'-5½"	1.577	3.270	1.711	3.552
5'	7"	6"	5'-10"	1'-8"	3'-3"	2'-4½"	2'-4"	2'-1½"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.093	4.391	2.252	4.680
		7"	5'-10"	1'-8"	3'-3"	2'-4½"	2'-4"	2'-1½"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0½"	2.179	4.526	2.337	4.862
° 6'	8'	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	2'-3⅞"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.908	6.026	3.092	6.419
		7½"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	2'-3⅞"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.966	6.147	3.150	6.543
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-8"	2'-3⅞"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	3.025	6.272	3.208	6.667
° 7'	8½"	7½"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	2'-7⅞"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.811	7.895	4.019	8.350
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-2"	2'-7⅞"	16'-6"	16'-6"	33'-0"	15'-6"	36'-5⅜"	3.889	8.057	4.095	8.512
° 8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	2'-7⅞"	18'-6"	18'-6"	37'-0"	17'-6"	41'-6⅝"	4.874	10.097	5.107	10.612

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_3.

° See Table 'A' for special values of F_1 & F_2 and W_2 & W_3 for Single 9'x6', 6'x7' and 6'x8' Box Culverts.

TABLE "A" - DIMENSIONS FOR DETAIL "A"

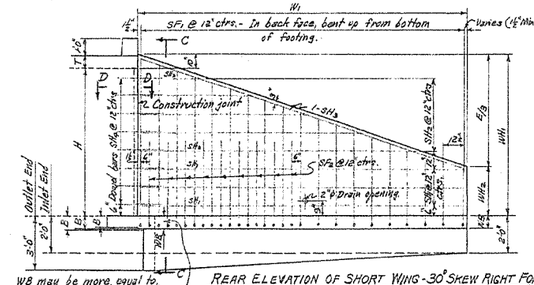
S	H	F_1	F_2	W_3	Y	W_4	W_5
4'	6'	2'-7⅞"	3'-3⅝"	0"	1'-1⅜"	13'-4⅛"	31'-3½"
5'	7'	3'-1⅝"	4'-1"	0"	1'-3⅜"	15'-2⅜"	35'-10⅛"
6'	8'	3'-7⅛"	4'-10⅜"	0"	1'-5½"	17'-1⅛"	40'-6"



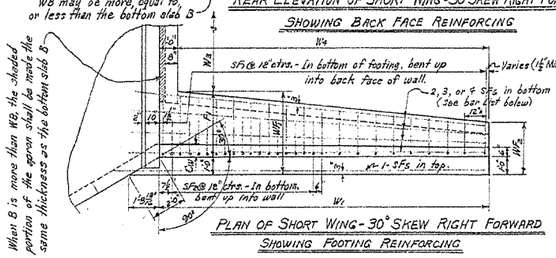
SECTION B-B SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS

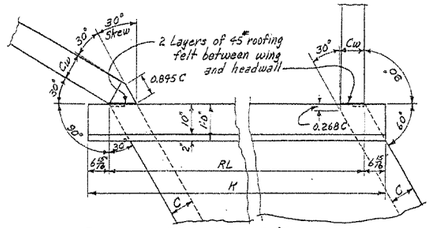
NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



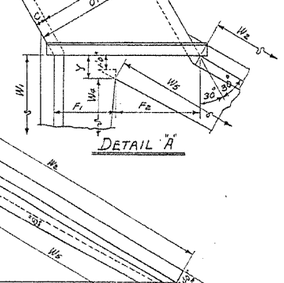
REAR ELEVATION OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING BACK FACE REINFORCING



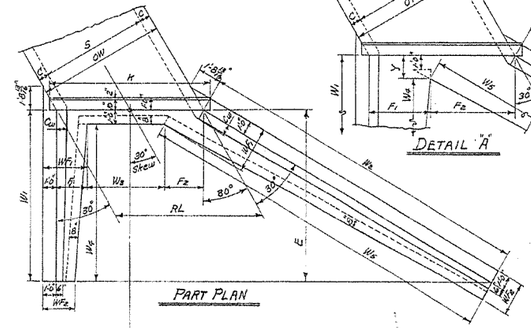
PLAN OF SHORT WING - 30° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING



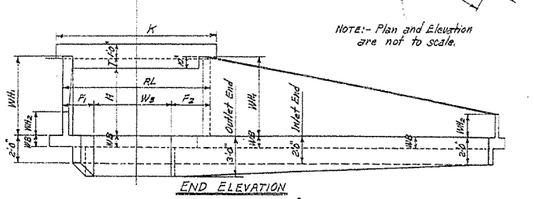
DETAILS AT TOP OF WINGS - 30° SKEW RIGHT FORWARD



DETAIL "A"



PART PLAN



END ELEVATION

NOTE:- Plan and Elevation are not to scale.

SINGLE BARREL CULVERT - 30° SKEW RIGHT FORWARD

Details of Culvert with 30° Skew Left Forward is reversed, see Drawing No. W-X30.

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X30. For values of RL, K and W_3 for each box, see above Std. also.

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 of wings.

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	C_W	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	
4'	2'	6"	7"	144	5.80	6.90	8.01	9.12	10.23	
	3'	6"	7"	213	8.08	9.18	10.29	11.40	12.51	
	4'	6"	7"	327	10.78	11.88	12.99	14.10	15.21	
	5'	6"	7"	460	13.90	15.00	16.11	17.22	18.32	
	6'	7"	8"	762	18.05	19.99	21.13	22.27	23.41	
5'	3'	6"	7"	213	8.35	9.67	11.01	12.36	13.70	
	4'	6"	7"	327	11.03	12.36	13.71	15.06	16.40	
	5'	6"	7"	460	14.14	15.98	16.83	18.17	19.52	
	6'	7"	8"	762	19.11	20.98	21.86	23.24	24.62	
	7'	7½"	8½"	1474	24.51	25.84	27.35	28.75	30.16	
6'	3'	6"	7"	213	8.57	10.17	11.73	13.33	14.92	
	4'	6"	7"	327	11.27	12.86	14.93	16.09	17.62	
	5'	6"	7"	460	14.38	15.98	17.55	19.15	20.73	
	6'	7"	8"	762	19.35	20.98	22.59	24.21	25.83	
	7'	7½"	8½"	1474	24.79	26.44	28.08	29.73	31.38	
	8'	8"	9"	1870	31.15	32.87	34.51	36.17	37.83	
7'	4'	6"	7"	327	11.52	13.37	15.19	17.05	18.85	
	5'	6"	7"	460	14.63	16.49	18.31	20.16	21.97	
	6'	7"	8"	762	19.61	21.68	23.32	25.20	27.04	
	7'	7½"	8½"	1474	25.05	26.94	28.82	30.71	32.59	
	8'	8"	9"	1870	31.47	33.37	35.25	37.16	39.05	
8'	4'	6"	7"	327	11.77	13.89	15.97	18.09	20.12	
	5'	7"	7"	460	15.44	17.60	19.70	21.83	23.89	
	6'	7"	8"	762	19.86	21.98	24.05	26.17	28.20	
	7'	7½"	8½"	1474	25.30	27.96	29.58	31.73	33.81	
	8'	8"	9"	1870	31.72	33.88	36.00	38.16	40.27	
9'	5'	7"	7"	460	15.72	18.13	20.47	22.87	25.15	
	6'	7½"	8"	762	20.50	22.93	25.29	27.71	30.01	
	7'	7½"	8½"	1474	25.55	27.98	30.34	32.76	35.07	
	8'	8"	9"	1870	31.97	34.39	36.76	39.18	41.49	
10'	5'	7"	7"	460	15.98	18.65	21.25	23.80	26.42	
	6'	7½"	8"	762	20.74	23.45	26.07	28.69	31.28	
	7'	7½"	8½"	1474	25.81	28.50	31.12	33.70	36.36	
	8'	8"	9"	1870	32.22	34.91	37.54	40.12	42.76	
11'	6'	8"	8"	762	21.39	24.38	27.25	30.11	——	
	7'	8"	8½"	1474	26.55	29.53	32.41	35.27	——	
	8'	8"	9"	1870	32.97	35.95	38.83	41.19	——	
12'	6'	8"	8"	762	21.64	24.93	28.05	31.20	——	
	7'	8"	8½"	1474	26.81	30.08	33.21	36.36	——	
	8'	8"	9"	1870	32.73	35.99	39.13	42.28	——	

* For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

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.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-130X-0	R-230X-01	R-330X-01	R-430X-01	R-530X-01
	R-230X-02	R-330X-02	R-430X-02	R-530X-02
R-130X-1	R-230X-1	R-330X-1	R-430X-1	R-530X-1
	R-230X-2	R-330X-2		

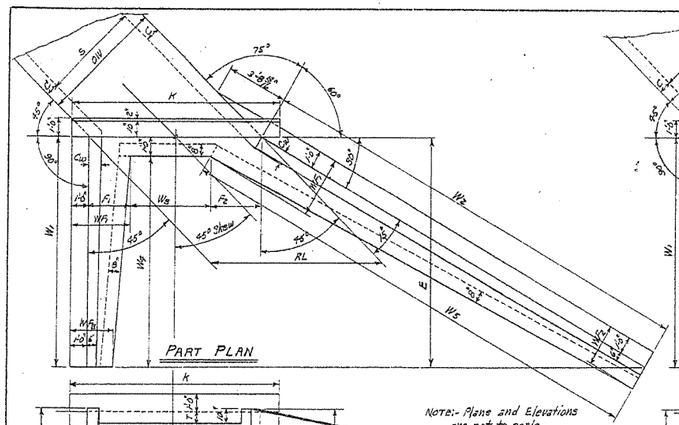
CLASS S CONCRETE

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

| CLEAR HEIGHT | WING | LOCATION | SF1 & LF1 BENT STRAIGHT: In bottom of footing, bent up into back face of wing. One bar (or two bars) of each length | | | | | | | SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. | | | | | | SF3 & LF3 STRAIGHT: Longitudinal in top of wing footing heel. | | | SF4 & LF4 STRAIGHT: Longitudinal in bottom of wing footing toe. | | | SH1 & LH1 STRAIGHT: Horizontal in back face of wing. | | | | SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. | | | | | | SH3 & LH3 BENT: In back face of wing at top - on slope. | | | SH4 & LH4 BENT: Dowels thru construction joint at headwall. | | | | BAR BENDING DIAGRAM | QUANTITY: REINFORCING STEEL PER WING - LBS. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

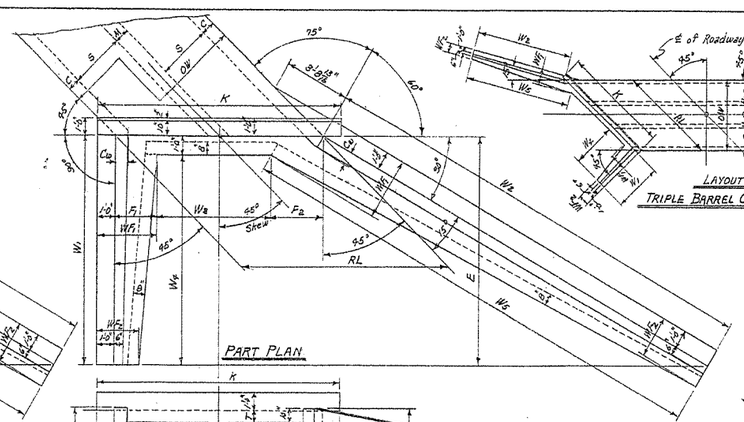
Reshot 3-8-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			379	
JOB No.					



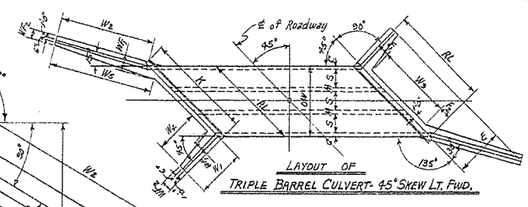
SINGLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

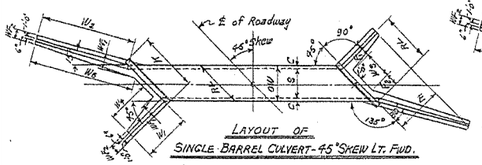
Details of Culvert with 45° Skew Left Forward is reversed, see Layout below.

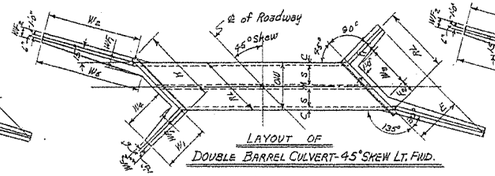


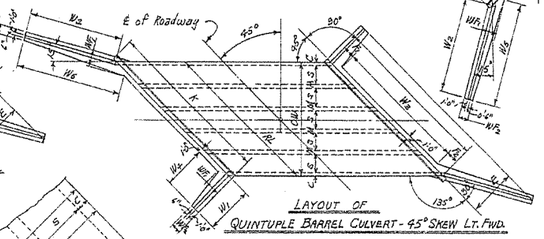
DOUBLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

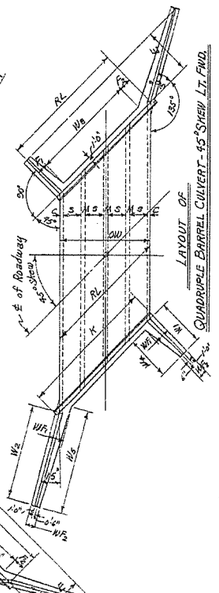
Details of Culvert with 45° Skew Left Forward is reversed, see Layout below.

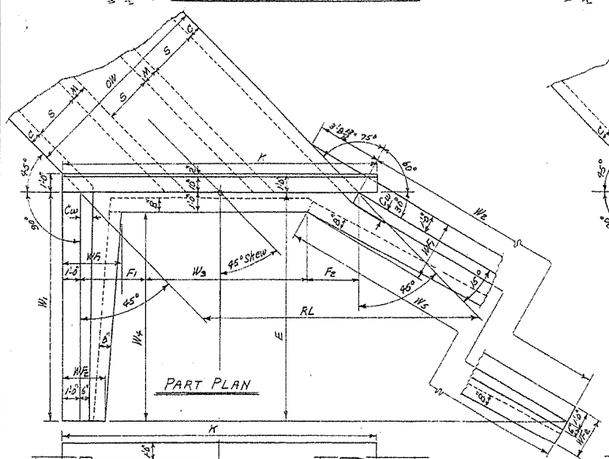






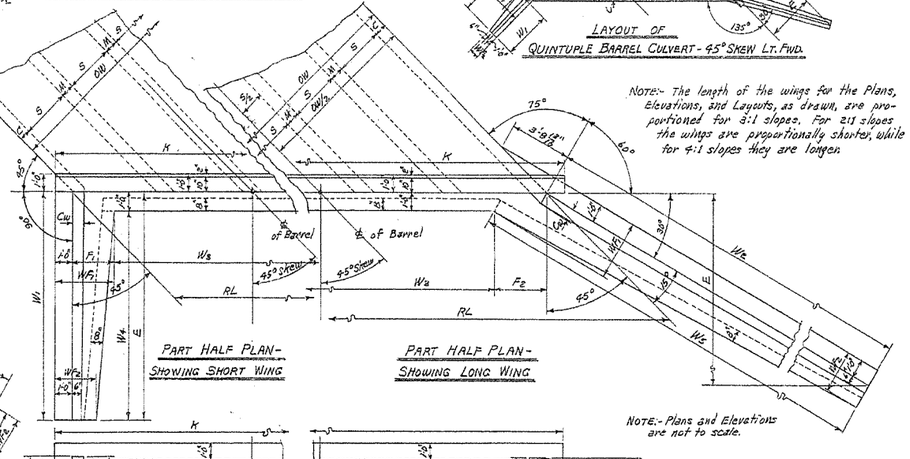


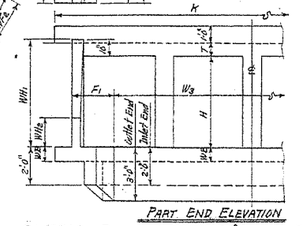




TRIPLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

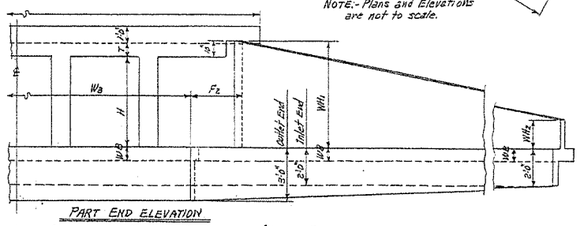
Details of Culvert with 45° Skew Left Forward is reversed, see Layout at top center of sheet.





QUADRUPLE BARREL CULVERT - 45° SKEW RT. FWD.

Details of Culvert with 45° Skew Left Forward is reversed, see Layout at above center.



QUINTUPLE BARREL CULVERT - 45° SKEW RT. FWD.

Details of Culvert with 45° Skew Left Forward is reversed, see Layout above.

ROADWAY LENGTH RL — HEADWALL LENGTH K — APRON DIMENSION W_3

RL = .OW × 1.41421 — K = RL + (2'-0") — W_3 = RL - (F_1 + F_2)

USE WITH DRAWING No.	CLEAR COVER	CLEAR FILL	SUM OF FOOTING DIMENSIONS	SINGLE BARREL CULVERT				DOUBLE BARREL CULVERT				TRIPLE BARREL CULVERT				QUADRUPLE BARREL CULVERT				QUINTUPLE BARREL CULVERT			
	S	H	F_1+F_2	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3	OW	RL	K	W_3
W-X452-1 OR W-X453-1, W-X454-1. (FOR H=8'-0" OR LESS.)	2'	2'-3¾"	5'-0"	7'-0⅝"	9'-2⅛"	4'-9⅜"	9'-8"	13'-8"	15'-8"	11'-4⅜"	19'-0"	26'-10⅝"	28'-10⅝"	24'-7⅝"	23'-8"	33'-5⅛"	35'-5⅛"	31'-2⅝"
	3'	3'-3¾"	5'-0"	"	"	3'-9⅜"	9'-8"	"	"	10'-4⅜"	19'-0"	"	"	17'-0"	23'-8"	"	"	30'-2⅝"
	4'	4'-3¾"	5'-0"	"	"	2'-9⅜"	9'-8"	"	"	9'-4⅜"	19'-0"	"	"	16'-0"	23'-8"	"	"	29'-2⅝"
	5'	5'-3¾"	5'-0"	7'-0⅝"	9'-2⅛"	1'-9⅜"	9'-8"	13'-8"	15'-8"	8'-4⅜"	19'-0"	26'-10⅝"	28'-10⅝"	24'-7⅝"	23'-8"	33'-5⅛"	35'-5⅛"	28'-2⅝"
	6'	6'-3¾"	5'-0"	7'-3⅝"	9'-5⅛"	1'-0⅜"	9'-11"	14'-0⅛"	16'-0⅛"	7'-0⅜"	19'-5"	27'-5⅛"	29'-5⅛"	25'-2⅝"	24'-2"	34'-2⅛"	36'-2"	27'-10⅝"
	3'	3'-3¼"	6'-0"	8'-5⅝"	10'-7⅛"	5'-2⅜"	11'-8"	16'-6"	18'-6"	13'-2⅝"	21'-3"	29'-3⅝"	31'-3⅝"	27'-0⅝"	25'-10"	36'-4⅝"	38'-4⅝"	29'-3"
	4'	4'-3¼"	6'-0"	"	"	4'-2⅜"	11'-8"	"	"	12'-2⅝"	21'-3"	"	"	26'-3"	25'-10"	"	"	28'-3"	25'-10"	"	"	36'-3⅝"
	5'	5'-3¼"	6'-0"	8'-5⅝"	10'-7⅛"	3'-2⅜"	11'-8"	16'-6"	18'-6"	11'-2⅝"	21'-3"	29'-3⅝"	31'-3⅝"	26'-10⅝"	25'-10"	36'-4⅝"	38'-4⅝"	27'-3"	25'-10"	43'-6"	45'-6"	34'-3⅝"
	6'	6'-3¼"	6'-0"	8'-5⅝"	10'-7⅛"	2'-2⅜"	11'-8"	16'-6"	18'-6"	10'-1"	21'-3"	29'-3⅝"	31'-3⅝"	26'-10⅝"	25'-10"	36'-4⅝"	38'-4⅝"	26'-3"	25'-10"	43'-6"	45'-6"	33'-3⅝"
	7'	7'-0⅛"	6'-3"	8'-10⅝"	10'-12⅛"	1'-0⅜"	12'-5"	17'-1"	19'-1"	9'-3⅝"	22'-0"	30'-0⅝"	32'-0⅝"	27'-9"	26'-7"	37'-5⅝"	39'-5⅝"	25'-3"	26'-7"	44'-9"	46'-9"	32'-0⅝"
	3'	3'-3¾"	7'-0"	9'-10⅝"	11'-12⅛"	6'-7⅜"	13'-8"	19'-3"	21'-3"	16'-0⅝"	20'-1"	28'-1⅝"	30'-1⅝"	25'-10⅝"	24'-10"	34'-11⅝"	36'-11⅝"	33'-1"	33'-11"	43'-4"	45'-4"	43'-4"
	4'	4'-3¾"	7'-0"	"	"	5'-7⅜"	13'-8"	"	"	15'-0⅜"	20'-1"	"	"	24'-10⅝"	24'-10"	"	"	33'-11"	33'-11"	"	"	43'-4"
	5'	5'-3¾"	7'-0"	9'-10⅝"	11'-12⅛"	4'-7⅜"	13'-8"	19'-3⅜"	21'-3"	13'-10⅝"	20'-1"	28'-1⅝"	30'-1⅝"	23'-10⅝"	24'-10"	33'-11"	35'-11"	32'-1"	33'-11"	49'-7⅝"	51'-7⅝"	42'-4"
	6'	6'-3¾"	7'-12"	10'-1⅝"	12'-1⅛"	3'-10⅜"	13'-11"	19'-10⅛"	21'-10⅛"	13'-2⅝"	20'-5"	28'-5⅝"	30'-5⅝"	23'-10⅝"	25'-2"	34'-5⅝"	36'-5⅝"	32'-6"	34'-2"	49'-11⅝"	51'-11⅝"	42'-4"
	7'	7'-9⅜"	7'-9"	10'-3"	12'-2⅞"	2'-5⅜"	14'-1"	19'-11"	21'-11"	12'-1⅝"	20'-11"	29'-1"	31'-1"	24'-0⅝"	25'-6"	35'-0⅝"	37'-0⅝"	31'-5"	34'-7"	50'-4⅝"	52'-4⅝"	41'-1⅜"
	8'	9'-3⅜"	7'-9"	10'-4½"	12'-4"	1'-1⅛"	14'-2"	20'-0⅝"	22'-0⅝"	10'-9⅝"	21'-0"	29'-6⅝"	31'-6⅝"	24'-1⅝"	25'-10"	35'-5⅝"	37'-5⅝"	30'-1"	34'-8"	49'-10⅝"	51'-10⅝"	39'-9"
	4'	4'-3⅝"	9'-0"	12'-0⅝"	14'-2⅝"	8'-5⅛"	17'-0"	23'-1⅛"	25'-1⅛"	20'-0⅜"	26'-9"	37'-2⅜"	39'-2⅜"	32'-11⅜"	35'-0"	49'-0"	51'-0"	45'-2⅜"	49'-3"	63'-7⅜"	65'-7⅜"	57'-0⅝"
	5'	5'-3⅝"	9'-2"	12'-1⅛"	14'-3⅛"	7'-0⅜"	17'-1"	23'-4"	25'-4"	17'-10⅜"	26'-9"	37'-2⅜"	39'-2⅜"	32'-11⅜"	35'-0"	49'-0"	51'-0"	42'-1"	49'-3"	63'-7⅜"	65'-7⅜"	53'-9"
	6'	6'-3⅝"	9'-2"	12'-1⅛"	14'-3⅛"	6'-0⅜"	17'-1"	23'-4"	25'-4"	16'-0⅜"	26'-9"	37'-2⅜"	39'-2⅜"	31'-5⅜"	35'-0"	49'-0"	51'-0"	42'-1"	49'-3"	63'-7⅜"	65'-7⅜"	54'-2⅝"
	7'	7'-9⅜"	9'-2"	12'-1⅛"	14'-3⅛"	5'-3⅜"	17'-1"	23'-4"	25'-4"	14'-10⅜"	26'-11"	37'-10⅜"	39'-10⅜"	30'-10⅜"	35'-0"	49'-0"	51'-0"	42'-1"	49'-3"	63'-7⅜"	65'-7⅜"	54'-2⅝"
	8'	9'-3⅜"	9'-2"	12'-2⅝"	14'-4⅛"	4'-3⅜"	17'-2"	23'-5⅝"	25'-5⅝"	13'-9⅜"	27'-0"	38'-0⅝"	40'-0⅝"	29'-9⅝"	35'-0"	49'-0"	51'-0"	42'-1"	49'-3"	63'-7⅜"	65'-7⅜"	54'-2⅝"
	5'	5'-3⅝"	10'-2"	14'-5⅝"	16'-7⅛"	9'-1⅜"	19'-1"	26'-8"	30'-2"	22'-10⅜"	29'-8"	41'-11⅜"	43'-11⅜"	36'-0⅜"	39'-5"	55'-10⅜"	57'-10⅜"	50'-5⅜"	55'-2"	69'-2⅜"	71'-2⅜"	60'-11⅝"
	6'	6'-3⅝"	10'-8"	14'-6"	16'-8"	8'-2⅜"	20'-1"	28'-0⅝"	30'-0⅝"	22'-1⅜"	29'-11"	42'-3⅜"	44'-3⅜"	36'-4⅜"	39'-5"	56'-2⅜"	58'-2⅜"	49'-11⅝"	55'-2"	70'-1⅜"	72'-1⅜"	61'-10⅜"
	7'	7'-9⅜"	10'-8"	14'-6"	16'-8"	8'-8⅜"	20'-1"	28'-0⅝"	30'-0⅝"	20'-7⅜"	29'-11"	42'-3⅜"	44'-3⅜"	34'-4⅜"	39'-5"	56'-2⅜"	58'-2⅜"	48'-5⅜"	55'-2"	70'-1⅜"	72'-1⅜"	62'-2⅜"
	8'	9'-3⅜"	10'-8"	14'-7⅝"	16'-9⅛"	5'-4⅜"	20'-2"	28'-2⅝"	30'-2⅝"	18'-4⅜"	30'-0"	42'-5⅝"	44'-5⅝"	32'-6⅜"	39'-5"	56'-2⅜"	58'-2⅜"	47'-0"	55'-2"	70'-1⅜"	72'-1⅜"	63'-0⅝"
	6'	6'-3⅝"	12'-0"	17'-5⅝"	19'-5⅝"	11'-2⅜"	24'-2"	34'-2⅛"	36'-2"	27'-11"	36'-0"	50'-11"	52'-11"	44'-0⅜"	47'-10"	67'-7⅜"	69'-7⅜"	61'-4⅜"	—	—	—	—
	7'	7'-9⅜"	12'-0"	"	"	10'-8⅜"	24'-2"	"	"	26'-5"	36'-0"	"	"	43'-1⅜"	47'-10"	"	"	59'-10⅜"	—	—	—	—
	8'	9'-3⅜"	12'-0"	"	"	9'-7⅜"	24'-2"	"	"	25'-10⅜"	36'-0"	"	"	42'-7⅜"	47'-10"	"	"	58'-10⅜"	—	—	—	—
	6'	6'-3⅝"	13'-4"	18'-10⅝"	20'-10⅝"	12'-7⅜"	26'-2"	37'-0⅝"	39'-0"	30'-8⅜"	39'-1"	55'-11⅜"	57'-11⅜"	49'-0⅜"	51'-10"	73'-3⅜"	75'-3⅜"	67'-0⅜"	—	—	—	—
	7'	7'-9⅜"	13'-4"	"	"	11'-1⅜"	26'-2"	"	"	29'-5⅜"	39'-1"	"	"	46'-6⅜"	51'-10"	"	"	63'-6⅜"	—	—	—	—
	8'	9'-3⅜"	13'-4"	"	"	9'-7⅜"	25'-2"	"	"	27'-10⅜"	39'-0"	"	"	45'-10⅜"	51'-10"	"	"	62'-10⅜"	—	—	—	—
	7'	9'-3⅜"	14'-5"	20'-3⅝"	22'-3⅝"	13'-8⅜"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	9'	10'-3⅜"	14'-5"	20'-3⅝"	22'-3⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	8'	9'-3⅜"	14'-5"	20'-3⅝"	22'-3⅝"	9'-8⅜"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	9'	10'-3⅜"	14'-5"	20'-3⅝"	22'-3⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	10'	12'-3⅜"	14'-5"	20'-3⅝"	22'-3⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	9'	10'-3⅜"	16'-6"	19'-10⅝"	21'-10⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	10'	12'-3⅜"	16'-6"	19'-10⅝"	21'-10⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	11'	13'-3⅜"	16'-6"	19'-10⅝"	21'-10⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	12'	15'-3⅜"	16'-6"	19'-10⅝"	21'-10⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	9'	10'-3⅜"	18'-7"	21'-11⅝"	23'-11⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	10'	12'-3⅜"	18'-7"	21'-11⅝"	23'-11⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	11'	13'-3⅜"	18'-7"	21'-11⅝"	23'-11⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—
	12'	15'-3⅜"	18'-7"	21'-11⅝"	23'-11⅝"	11'-3"	28'-2"	40'-0⅝"	42'-0⅝"	32'-5⅜"	42'-2"	60'-4⅜"	62'-4⅜"	52'-1⅜"	55'-11"	79'-0⅜"	81'-0⅜"	72'-9⅜"	—	—	—	—

NOTE:- This drawing to be used in conjunction with Standard Wing Drawings for 45° Skews for each slope as listed below.

2:1 Slopes	3:1 Slopes	4:1 Slopes
W-X452-1 or W-X452-2	W-X453-1 or W-X453-2	W-X454-1 or W-X454-2.

NOTE:-
This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-145X-0	R-245X-01	R-345X-01	R-445X-01	R-545X-01
	R-245X-02	R-345X-02	R-445X-02	R-545X-02
R-145X-1	R-245X-1	R-345X-1	R-445X-1	
	R-245X-2	R-345X-2		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 2:1, 3:1 & 4:1 SLOPES

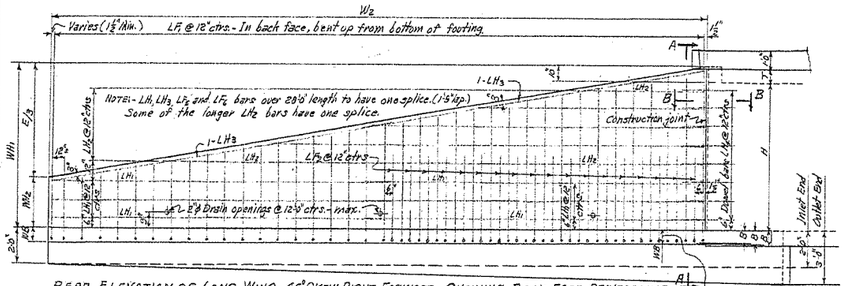
SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES — ALL DEPTHS OF COVER H = 2', 3', 4', 5', 6', 7', 8', 9', 10', 11' & 12'

STANDARD DRAWING No. W-X45

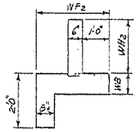
Designed by:- W.C.H. 5-16-63 — Checked by:-
Drawn by:- W.C.H. 6-15-64 — Checked by:-
Quantities by:- — Checked by:- JEM. 6-23-64

Reshot 3-8-93 352

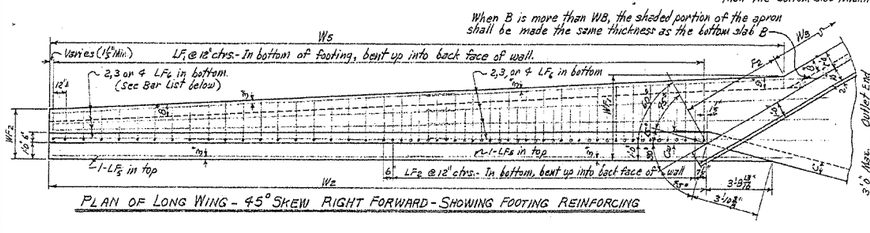
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			375	
JOB No.					



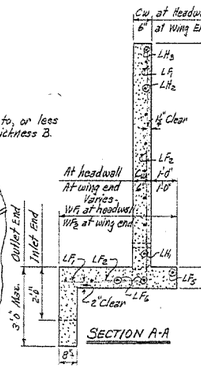
REAR ELEVATION OF LONG WING - 45° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING



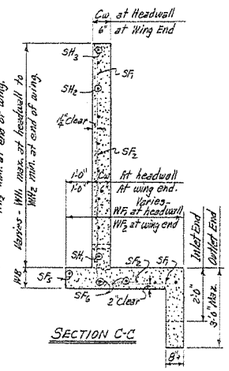
TYPICAL END VIEW OF WING



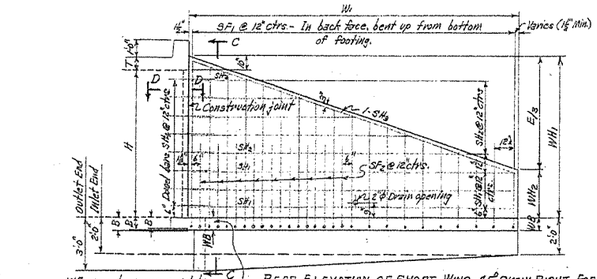
PLAN OF LONG WING - 45° SKEW RIGHT FORWARD - SHOWING FOOTING REINFORCING



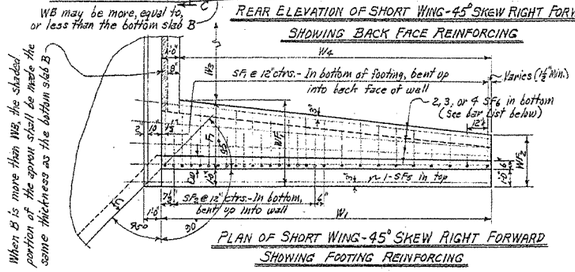
SECTION A-A



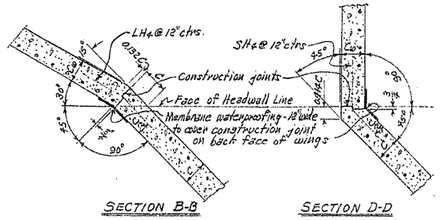
SECTION C-C



REAR ELEVATION OF SHORT WING - 45° SKEW RIGHT FORWARD - SHOWING BACK FACE REINFORCING

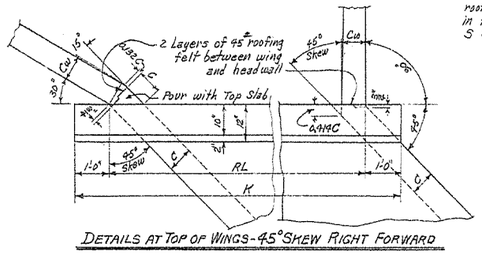


PLAN OF SHORT WING - 45° SKEW RIGHT FORWARD SHOWING FOOTING REINFORCING



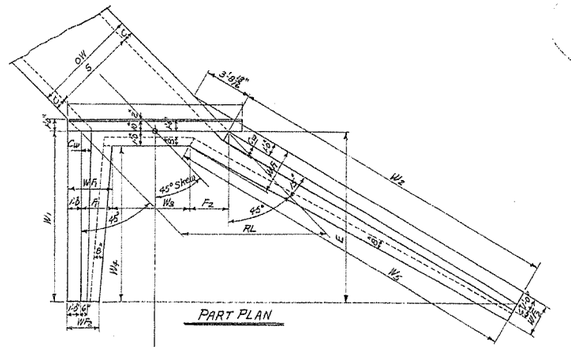
SECTION B-B SECTION D-D

SECTIONS THRU CONSTRUCTION JOINTS

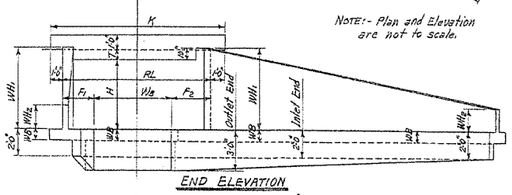


DETAILS AT TOP OF WINGS - 45° SKEW RIGHT FORWARD

NOTE:- Payment for the membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.



NOTE:- Plan and Elevation are not to scale.



END ELEVATION

SINGLE BARREL CULVERT - 45° SKEW RIGHT FORWARD

Details of Culvert with 45° Skew Left Forward is reversed, see Drawing No. W-X45.

REGULAR WING DIMENSIONS - 3:1 SLOPES

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	WINGWALL HEIGHTS: AT HEADWALL	WINGWALL HEIGHTS: AT END OF WING	WIDTHS OF WING FOOTINGS: AT HEADWALL	WIDTHS OF WING FOOTINGS: AT END OF WING	FOOTING DIMENSION PARALLEL WITH HEADWALL: SHORT WING	FOOTING DIMENSION PARALLEL WITH HEADWALL: LONG WING	PERPENDICULAR DIST. FROM HDWL. TO END OF WING	LENGTHS OF WINGWALLS: SHORT WING	LENGTHS OF WINGWALLS: LONG WING	INSIDE FOOTING DIMENSION: SHORT WING	INSIDE FOOTING DIMENSION: LONG WING	* QUANTITY PER WING, CLASS S CONCRETE: INLET END, SHORT WING	INLET END, LONG WING	OUTLET END, SHORT WING	OUTLET END, LONG WING
H	WB	Cw	WH1	WH2	WF1	WF2	F1	F2	E	W1	W2	W4	W5	Cu.Yd.	Cu.Yd.	Cu.Yd.	Cu.Yd.
2'	7"	6"	2'-10"	0'-8"	2'-0"	2'-0"	1'-4"	0'-11½"	6'-6"	6'-6"	13'-0"	5'-6"	13'-3⅝"	0.743	1.572	0.829	1.741
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-11½"	1'-8"	1'-7½"	8'-6"	8'-6"	17'-0"	7'-6"	17'-10⅝"	1.120	2.369	1.229	2.590
4'	7"	6"	4'-10"	1'-6"	3'-0"	3'-3½"	2'-0"	2'-3½"	10'-6"	10'-6"	21'-0"	9'-6"	22'-5⅝"	1.567	3.295	1.700	3.577
5'	7"	6"	5'-10"	1'-8"	3'-4"	3'-7½"	2'-4"	2'-11½"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0⅝"	2.082	4.367	2.241	4.705
		7"	5'-10"	1'-9"	3'-5"	3'-8½"	2'-4"	2'-11½"	12'-6"	12'-6"	25'-0"	11'-6"	27'-0⅝"	2.166	4.551	2.325	4.889
6'	8"	7"	6'-10"	2'-0"	3'-8"	3'-11½"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	2.894	6.055	3.078	6.450
		8"	6'-10"	2'-0"	3'-8"	3'-11½"	2'-8"	3'-7⅛"	14'-6"	14'-6"	29'-0"	13'-6"	31'-7½"	3.009	6.308	3.192	6.700
7'	8½"	7"	7'-10"	2'-4"	4'-2"	2'-10⅝"	3'-2"	4'-2⅝"	16'-6"	16'-6"	33'-0"	15'-6"	34'-5⅜"	3.794	7.930	4.003	8.385
		8"	7'-10"	2'-4"	4'-2"	2'-11⅝"	3'-2"	4'-2⅝"	16'-6"	16'-6"	33'-0"	15'-6"	34'-5⅜"	3.870	8.083	4.078	8.548
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	5'-2½"	18'-6"	18'-6"	37'-0"	17'-6"	41'-4⅝"	4.855	10.136	5.088	10.651

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W_5.

QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL IN 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"	142	6.15	7.50	8.86	10.22	11.58	
	3'	6"	7"	214	8.84	9.79	11.14	12.50	13.86	
	4'	6"	7"	328	11.13	12.98	13.94	15.20	16.54	
	5'	6"	7"	468	14.25	15.60	16.96	18.32	19.68	
	6'	7"	8"	763	19.23	20.62	22.02	23.41	24.81	
5'	3'	6"	7"	214	8.74	10.38	12.03	13.67	15.32	
	4'	6"	7"	328	11.63	13.07	14.72	16.37	18.02	
	5'	6"	7"	463	14.55	16.19	17.84	19.49	21.14	
	6'	7"	8"	763	19.53	21.21	22.90	24.59	26.28	
	7'	7½"	8½"	1475	24.99	26.69	28.41	30.14	31.86	
6'	3'	6"	7"	214	9.03	10.99	12.91	14.86	16.79	
	4'	6"	7"	328	11.73	13.69	15.60	17.56	19.48	
	5'	6"	7"	463	14.85	16.80	18.72	20.68	22.60	
	6'	7"	8"	763	19.93	21.82	23.79	25.78	27.76	
	7'	7½"	8½"	1475	25.28	27.30	29.31	31.38	33.35	
	8'	8"	9"	1872	31.70	33.74	35.75	37.79	39.81	
7'	4'	6"	7"	328	12.26	14.31	16.24	18.81	21.02	
	5'	6"	7"	463	15.15	17.03	19.65	21.93	24.13	
	6'	7"	8"	763	20.14	22.44	24.69	26.99	29.24	
	7'	7½"	8½"	1475	25.59	27.91	30.21	32.53	34.83	
	8'	8"	9"	1872	32.02	34.35	36.66	38.99	41.31	
8'	4'	6"	7"	328	12.35	14.35	17.49	20.08	22.57	
	5'	7"	7"	463	16.05	18.67	21.25	23.86	26.37	
	6'	7"	8"	763	20.95	23.07	25.66	28.26	30.77	
	7'	7½"	8½"	1475	25.90	28.04	31.18	33.78	36.32	
	8'	8"	9"	1872	32.33	34.97	37.56	40.21	42.80	
9'	5'	7"	7"	463	16.32	19.32	22.18	25.02	27.91	
	6'	7½"	8"	763	21.16	24.18	27.02	29.89	32.81	
	7'	7½"	8½"	1475	26.21	29.18	32.08	34.99	37.96	
	8'	8"	9"	1872	32.63	35.61	38.61	41.37	44.29	
10'	5'	7"	7"	463	16.69	19.96	23.14	26.27	29.47	
	6'	7½"	8"	763	21.98	24.77	27.99	31.13	34.36	
	7'	7½"	8½"	1475	26.53	29.82	33.04	36.19	39.42	
	8'	8"	9"	1872	32.95	36.25	39.46	42.62	45.85	
11'	6'	8"	8"	763	22.18	25.85	29.35	32.84	———	
	7'	8"	8½"	1475	27.39	30.99	34.51	38.01	———	
	8'	8"	9"	1872	33.26	36.91	40.43	43.93	———	
12'	6'	8"	8"	763	22.50	26.51	30.35	34.19	———	
	7'	8"	8½"	1475	27.66	31.66	35.49	39.35	———	
	8'	8"	9"	1872	33.58	37.58	41.41	45.27	———	

⊕ For reinforcing steel in Headwalls and Aprons, see Drawing Nos. of Barrel Sections listed below.

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.-

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-145X-0	R-245X-01	R-345X-01	R-445X-01	R-545X-01
	R-245X-02	R-345X-02	R-445X-02	R-545X-02
R-145X-1	R-245X-1	R-345X-1	R-445X-1	
	R-245X-2	R-345X-2		

CLASS S CONCRETE

BAR LIST FOR ONE SHORT AND ONE LONG WING - 2 EACH REQUIRED

CLEAR HEIGHT	WING LOCATION	SF1 & LF1 BENT: In bottom of footing, bent up into back face of wing. One bar (or two bars) of each length. SIZE	SPACING	NO. READ	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	SF2 & LF2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE	SPACING	NO. READ	LENGTH	X	Y	SF5 & LF5 STRAIGHT: Longitudinal in top of wing footing. SIZE	NO. READ	LENGTH	SF6 & LF6 STRAIGHT: Longitudinal in bottom of wing footing. SIZE	NO. READ	LENGTH	SH1 & LH1 STRAIGHT: Horizontal in back of wing. SIZE	SPACING	NO. READ	LENGTH	SH2 & LH2 STRAIGHT: Horizontal in back face of wing. One bar of each length. X SIZE	SPACING	NO. READ	LENGTHS VARY MAX.	LENGTHS VARY MIN.	SH3 & LH3 STRAIGHT: In back face of wing at top - on slope. SIZE	NO. READ	LENGTH	SH4 & LH4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	NO. READ	LENGTH	X	BAR BENDING DIAGRAM	QUANTITY: REINFORCING STEEL PER WING - LBS. SHORT WING	LONG WING
H	SHORT OR LONG																																																	
2'	Short	#3	12"	7	1'-7"	3'-11"	0'-8"	1'-0"	1'-0"	3'-0"	—	—	—	—	—	—	#3	1	8'-6"	#3	2	8'-0"	#3	12"	1	6'-3"	#3	12"	1	—	3'-3"	#3	1	6'-7"	#3	12"	2	2'-8"	1'-0"		29.4	46.3
	Long	#3	12"	14	1'-5"	8'-11"	0'-8"	1'-0"	0'-10"	3'-0"	—	—	—	—	—	—	#3	1	17'-6"	#3	2	15'-6"	#3	12"	1	12'-5"	#3	12"	1	—	6'-6"	#3	1	12'-11"	#3	12"	2	"	"			
3'	Short	#3	12"	9	2'-1"	5'-3"	0'-10"	1'-4"	1'-0"	4'-0"	—	—	—	—	—	—	#3	1	10'-6"	#3	2	10'-0"	#3	12"	1	8'-3"	#3	12"	1	6'-9"	3'-3"	#3	1	8'-8"	#3	12"	3	"	"		36.8	70.8
	Long	#3	12"	18	1'-11"	5'-3"	0'-10"	1'-4"	1'-0"	4'-0"	—	—	—	—	—	—	#3	1	21'-6"	#3	2	20'-6"	#3	12"	1	16'-9"	#3	12"	1	13'-3"	3'-3"	#3	1	14'-0"	#3	12"	3	"	"			
4'	Short	#3	12"	11	2'-6"	6'-7"	0'-11"	1'-8"	1'-0"	5'-0"	—	—	—	—	—	—	#5	1	12'-6"	#3	3	12'-0"	#3	12"	1	10'-3"	#5	12"	3	9'-9"	3'-3"	#3	1	10'-9"	#3	12"	4	"	"		55.9	107.9
	Long	#3	12"	22	2'-4"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—	#5	1	25'-6"	#3	3	24'-6"	#5	12"	1	20'-6"	#5	12"	3	19'-6"	6'-6"	#3	1	21'-0"	#3	12"	4	"	"			
5'	Short	#3	12"	13	2'-10"	7'-11"	1'-0"	2'-0"	2'-0"	6'-0"	#4	12"	3	3'-6"	1'-1"	2'-6"	#5	1	14'-6"	#3	3	14'-0"	#5	12"	2	12'-8"	#5	12"	3	11'-6"	3'-3"	#3	1	12'-11"	#3	12"	5	"	"		72.7	153.7
	Long	#3	12"	26	2'-9"	7'-10"	1'-0"	1'-11"	1'-10"	6'-0"	#3	12"	6	3'-6"	1'-1"	2'-6"	#5	2	15'-8"	#3	6	15'-7"	#3	12"	2	24'-9"	#3	12"	3	18'-6"	6'-6"	#3	1	20'-1"	#3	12"	5	"	"			
6'	Short	#4	12"	15	3'-4"	9'-4"	1'-2"	2'-4"	2'-0"	7'-1"	#3	12"	5	4'-6"	1'-4"	3'-5"	#5	1	16'-6"	#3	3	16'-0"	#5	12"	2	14'-8"	#5	12"	4	13'-3"	3'-3"	#3	1	15'-0"	#3	12"	6	"	"		127.6	253.9
	Long	#4	12"	30	3'-3"	9'-3"	1'-2"	2'-3"	2'-3"	7'-1"	#3	12"	6	4'-6"	1'-4"	3'-3"	#5	2	17'-6"	#3	6	18'-0"	#3	12"	4	26'-1"	6'-6"	#3	2	15'-5"	#3	12"	6	2'-8"	1'-4"					
7'	Short	#4	12"	17	3'-11"	10'-10"	1'-3"	2'-10"	2'-9"	8'-1"	#4	12"	6	5'-6"	1'-7"	4'-0"	#6	1	18'-6"	#4	4	18'-0"	#6	12"	2	16'-3"	#4	12"	5	15'-3"	3'-3"	#4	1	17'-1"	#4	12"	7	3'-6"	1'-8"		296.5	491.1
	Long	#4	12"	34	3'-9"	10'-9"	1'-3"	2'-8"	2'-7"	8'-1"	#4	12"	8	5'-6"	1'-7"	4'-0"	#6	2	19'-8"	#4	8	20'-6"	#4	12"	4	17'-2"	#4	12"	5	8'-10½"	6'-6"	#4	2	19'-5"	#4	12"	7	"	"			
8'	Short	#4	12"	19	4'-6"	12'-5"	1'-5"	3'-2"	3'-2"	9'-2"	#4	12"	9	6'-6"	1'-10"	4'-9"	#6	1	20'-6"	#4	4	20'-0"	#4	12"	3	18'-3"	#4	12"	5	15'-9"	3'-3"	#4	1	19'-6"	#4	12"	8	"	"		312.5	623.6
	Long	#4	12"	38	4'-4"	12'-3"	1'-5"	3'-2"	3'-0"	9'-2"	#4	12"	18	6'-6"	1'-10"	4'-9"	#6	2	21'-8"	#4	8	22'-9"	#4	12"	6	19'-2"	#4	12"	5	8'-10½"	6'-6"	#4	2	19'-6"	#4	12"	8	3'-6"	1'-9"			

NOTE:- Bars for short wing shall be marked with prefix letter 'S', while those for long wing shall be marked with letter 'L'.

⊠ Length without splice. Bars over 28'0" length may be spliced. (1'8" lap)

REVISIONS:- Membrane Added. 5-10-66 W.C.H.

MEMBRANE:- A membrane waterproofing 18" wide, consisting of three mopings 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.

TYPICAL WING DETAILS

NOTE:- For remainder of General Plans and Elevations of Single, Double, Triple, Quadruple and Quintuple Span Culverts, see Std. Drawing No. W-X45. For values of RL, K and W_6 for each box, see above Std. also.

Designed By:- W.C.H. 5-13-63 Checked By:- J.E.M. 7-21-64
Drawn By:- W.C.H. 6-5-64 Checked By:- J.E.M. 7-21-64
Quantities By:- W.C.H. 7-2-64 Checked By:- J.E.M. 7-21-64

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD WINGS
FOR
REINFORCED CONCRETE BOX CULVERTS
45° SKEW

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES
SINGLES, DOUBLES, TRIPLES, — ALL DEPTHS OF COVER
QUADRUPLES & QUINTUPLES — FOR H = 8'-0" OR LESS

STANDARD DRAWING No. W-X453-1

RESHOT 3-4-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			376	
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

SECTION & BAR GROUP	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT: In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	"b" bars BENT - See Diagram at Right. In Top and Bottom Slabs of Barrel Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"d" bars. Longitudinal in Top Slab of Barrel STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"d1" bars Longitudinal in Sidewalls STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars. Longitudinal in Bottom Slab of Barrel STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Sidewalls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
SECTION "A" & BAR GROUP "A" 3:1 = 32'-0" 4:1 = 32'-0"	D	S	H																											
	0' to 10'-0"	4'@ 1/	3'	#4	12"	48	68	4'-9"	#4	12"	44	64	5'-2"	4'-8½"	#4	12"	5	#4	12"	5	#4	12"	5	#4	12"	5	#4	12"	44	64	3'-10"
			4'			48	68	4'-9"			44	64	5'-7"	4'-8½"			5			8			8			5			44	64	4'-10"
			5'			48	68	4'-9"			44	64	5'-9"	4'-8½"			5			10			10			5			44	64	5'-10"
			6'			48	68	4'-11"			44	64	5'-9"	4'-10½"			5			12			12			5			44	64	6'-10"
		6'@ 1/	3'			48	68	5'-9"			44	64	6'-8"	5'-8½"			6			6			6			6			44	64	3'-11"
			4'			48	68	5'-9"			44	64	6'-8"	5'-8½"			6			8			8			6			44	64	4'-11"
			5'	#5	12"	48	68	5'-9"	#5	12"	44	64	6'-8"	5'-8½"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	44	64	5'-11"
			6'			48	68	5'-11"			44	64	6'-10"	5'-10½"			6			12			12			6			44	64	6'-11"
			7'			48	68	6'-0"			44	64	6'-11"	5'-11½"			6			19			19			6			44	64	7'-11"
		6'@ 1/	4'			48	68	6'-9"			44	64	7'-10"	6'-8"			7			8			8			7			44	64	5'-0"
			5'			48	68	6'-9"			44	64	7'-10"	6'-8"			7			10			10			7			44	64	6'-2"
			6'	#5	12"	48	68	6'-11"	#6	12"	44	64	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	44	64	7'-0"
			7'			48	68	7'-0"			44	64	8'-1"	6'-11"			7			14			14			7			44	64	8'-1"
			8'			48	68	7'-1"			44	64	8'-2"	7'-0"			7			16			16			7			44	64	9'-1"
		4'@ 1/	3'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			6			6			5			22	32	3'-10"
			4'			22	32	4'-9"			22	32	5'-3"	4'-8½"			5			8			8			5			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-5"	4'-8½"			5			10			10			5			22	32	5'-10"
			6'			22	32	4'-11"			22	32	5'-11"	4'-10½"			5			12			12			5			22	32	6'-10"
		6'@ 1/	3'			22	32	5'-9"			22	32	6'-10"	5'-8"			6			6			6			6			22	32	3'-11"
			4'			22	32	5'-9"			22	32	6'-10"	5'-8"			6			8			8			6			22	32	4'-11"
			5'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	22	32	5'-11"
			6'			22	32	5'-11"			22	32	7'-1"	5'-10"			6			12			12			6			22	32	6'-11"
			7'			22	32	6'-0"			22	32	7'-1"	5'-11"			6			14			14			6			22	32	7'-11"
		6'@ 1/	4'			22	32	6'-9"			22	32	7'-10"	6'-8"			7			8			8			7			22	32	5'-1"
			5'			22	32	6'-9"			22	32	7'-10"	6'-8"			7			10			10			7			22	32	6'-3"
			6'	#6	12"	22	32	6'-11"	#6	12"	22	32	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	22	32	7'-1"
			7'			22	32	6'-11"			22	32	8'-1"	6'-11"			7			14			14			7			22	32	8'-1"
			8'			22	32	7'-1"			22	32	8'-2"	7'-0"			7			16			16			7			22	32	9'-1"
		4'@ 1/	3'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			6			6			5			22	32	3'-10"
			4'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			8			8			5			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			10			10			5			22	32	5'-10"
			6'	#5	12"	22	32	4'-11"	#5	12"	22	32	5'-4"	4'-10½"	#4	12"	5	#4	12"	12	#4	12"	12	#4	12"	5	#4	12"	22	32	6'-10"
		6'@ 1/	3'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			6			6			6			24	36	4'-0"
			4'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			8			8			6			24	36	5'-0"
			5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	24	36	6'-0"
			6'			24	36	5'-11"			24	36	7'-1"	5'-11"			6			12			12			6			24	36	7'-0"
			7'			24	36	6'-0"			24	36	7'-1"	5'-11"			6			14			14			6			24	36	8'-0"
		6'@ 1/	4'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			8			8			7			24	36	5'-2"
			5'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			10			10			7			24	36	6'-4"
			6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	24	36	7'-2"
			7'			24	36	6'-11"			24	36	8'-1"	6'-11"			7			14			14			7			24	36	8'-2"
			8'			24	36	7'-1"			24	36	8'-2"	7'-0"			7			16			16			7			24	36	9'-2"
		4'@ 1/	3'			24	36	4'-9"			24	36	5'-3"	4'-8½"			5			6			6			5			24	36	3'-11"
			4'			24	36	4'-9"			24	36	5'-3"	4'-8½"			5			8			8			5			24	36	4'-11"
			5'			24	36	4'-9"			24	36	5'-5"	4'-8½"			5			10			10			5			24	36	5'-11"
			6'			24	36	4'-11"			24	36	5'-11"	4'-10½"			5			12			12			5			24	36	6'-11"
		6'@ 1/	3'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			6			6			6			24	36	4'-1"
			4'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			8			8			6			24	36	5'-1"
			5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	24	36	6'-1"
			6'			24	36	5'-11"			24	36	7'-2"	5'-10"			6			12			12			6			24	36	7'-1"
			7'			24	36	6'-0"			24	36	7'-2"	5'-11"			6			14			14			6			24	36	8'-1"
		6'@ 1/	4'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			8			8			7			24	36	5'-3"
			5'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			10			10			7			24	36	6'-5"
			6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	24	36	7'-3"
			7'			24	36	7'-0"			24	36	8'-1"	6'-11"			7			14			14			7			24	36	8'-3"
			8'			24	36	7'-1"			24	36	8'-2"	7'-0"			7			16			16			7			24	36	9'-3"

SECTION & BAR GROUP	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT: In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	"b" bars BENT - See Diagram at Right. In Top and Bottom Slabs of Barrel Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"d" bars. Longitudinal in Top Slab of Barrel STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"d1" bars Longitudinal in Sidewalls STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars. Longitudinal in Bottom Slab of Barrel STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Sidewalls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
SECTION "B" & BAR GROUP "B" 3:1 = 41'-0" 4:1 = 41'-0"	D	S	H																											
	0' to 10'-0"	4'@ 1/	3'	#4	12"	22	32	4'-9"	#5	12"	22	32	5'-3"	4'-8½"	#4	12"	5	#4	12"	5	#4	12"	5	#4	12"	5	#4	12"	22	32	3'-10"
			4'			22	32	4'-9"			22	32	5'-3"	4'-8½"			5			8			8			5			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-5"	4'-8½"			5			10			10			5			22	32	5'-10"
			6'			22	32	4'-11"			22	32	5'-11"	4'-10½"			5			12			12			5			22	32	6'-10"
		6'@ 1/	3'			22	32	5'-9"			22	32	6'-10"	5'-8"			6			6			6			6			22	32	3'-11"
			4'			22	32	5'-9"			22	32	6'-10"	5'-8"			6			8			8			6			22	32	4'-11"
			5'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	22	32	5'-11"
			6'			22	32	5'-11"			22	32	7'-1"	5'-11"			6			12			12			6			22	32	6'-11"
			7'			22	32	6'-0"			22	32	7'-1"	5'-11"			6			14			14			6			22	32	7'-11"
		6'@ 1/	4'			22	32	6'-9"			22	32	7'-10"	6'-8"			7			8			8			7			22	32	5'-1"
			5'			22	32	6'-9"			22	32	7'-10"	6'-8"			7			10			10			7			22	32	6'-3"
			6'	#6	12"	22	32	6'-11"	#6	12"	22	32	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	22	32	7'-1"
			7'			22	32	6'-11"			22	32	8'-1"	6'-11"			7			14			14			7			22	32	8'-1"
			8'			22	32	7'-1"			22	32	8'-2"	7'-0"			7			16			16			7			22	32	9'-1"
		4'@ 1/	3'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			6			6			5			22	32	3'-10"
			4'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			8			8			5			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			10			10			5			22	32	5'-10"
			6'	#5	12"	22	32	4'-11"	#5	12"	22	32	5'-4"	4'-10½"	#4	12"	5	#4	12"	12	#4	12"	12	#4	12"	5	#4	12"	22	32	6'-10"
		6'@ 1/	3'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			6			6			6			24	36	4'-0"
			4'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			8			8			6			24	36	5'-0"
			5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	24	36	6'-0"
			6'			24	36	5'-11"			24	36	7'-2"	5'-10"			6			12			12			6			24	36	7'-0"
			7'			24	36	6'-0"			24	36	7'-2"	5'-11"			6			14			14			6			24	36	8'-0"
		6'@ 1/	4'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			8			8			7			24	36	5'-2"
			5'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			10			10			7			24	36	6'-4"
			6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	24	36	7'-2"
			7'			24	36	7'-0"			24	36	8'-1"	6'-11"			7			14			14			7			24	36	8'-2"
			8'			24	36	7'-1"			24	36	8'-2"	7'-0"			7			16			16			7			24	36	9'-2"
		4'@ 1/	3'			24	36	4'-9"			24	36	5'-3"	4'-8½"			5			6			6			5			24	36	3'-11"
			4'			24	36	4'-9"			24	36	5'-3"	4'-8½"			5			8			8			5			24	36	4'-11"
			5'			24	36	4'-9"			24	36	5'-5"	4'-8½"			5			10			10			5			24	36	5'-11"
			6'			24	36	4'-11"			24	36	5'-11"	4'-10½"			5			12			12			5			24	36	6'-11"
		6'@ 1/	3'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			6			6			6			24	36	4'-1"
			4'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			8			8			6			24	36	5'-1"
			5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	24	36	6'-1"
			6'			24	36	5'-11"			24	36	7'-2"	5'-10"			6			12			12			6			24	36	7'-1"
			7'			24	36	6'-0"			24	36	7'-2"	5'-11"			6			14			14			6			24	36	8'-1"
		6'@ 1/	4'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			8			8			7			24	36	5'-3"
			5'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			10			10			7			24	36	6'-5"
			6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	24	36	7'-3"
			7'			24	36	7'-0"			24	36	8'-1"	6'-11"			7			14			14			7			24	36	8'-3"
			8'			24	36	7'-1"			24	36	8'-2"	7'-0"			7			16			16			7			24	36	9'-3"

SECTION & BAR GROUP	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT: In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	"b" bars BENT - See Diagram at Right. In Top and Bottom Slabs of Barrel Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH	X	"d" bars. Longitudinal in Top Slab of Barrel STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"d1" bars Longitudinal in Sidewalls STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars. Longitudinal in Bottom Slab of Barrel STRAIGHT SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars STRAIGHT Verticals in Sidewalls SIZE	SPACING	NUMBER REQ'D 3:1	NUMBER REQ'D 4:1	LENGTH
SECTION "C" & BAR GROUP "C" 3:1 = 41'-0" 4:1 = 41'-0"	D	S	H																											
	0' to 10'-0"	4'@ 1/	3'	#4	12"	22	32	4'-9"	#5	12"	22	32	5'-3"	4'-8½"	#4	12"	5	#4	12"	5	#4	12"	5	#4	12"	5	#4	12"	22	32	3'-10"
			4'			22	32	4'-9"			22	32	5'-3"	4'-8½"			5			8			8			5			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-5"	4'-8½"			5			10			10			5			22	32	5'-10"
			6'			22	32	4'-11"			22	32	5'-11"	4'-10½"			5			12			12			5			22	32	6'-10"
		6'@ 1/	3'			22	32	5'-9"			22	32	6'-10"	5'-8"			6			6			6			6			22	32	3'-11"
			4'			22	32	5'-9"			22	32	6'-10"	5'-8"			6			8			8			6			22	32	4'-11"
			5'	#5	12"	22	32	5'-9"	#6	12"	22	32	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	22	32	5'-11"
			6'			22	32	5'-11"			22	32	7'-1"	5'-11"			6			12			12			6			22	32	6'-11"
			7'			22	32	6'-0"			22	32	7'-1"	5'-11"			6			14			14			6			22	32	7'-11"
		6'@ 1/	4'			22	32	6'-9"			22	32	7'-10"	6'-8"			7			8			8			7			22	32	5'-1"
			5'			22	32	6'-9"			22	32	7'-10"	6'-8"			7			10			10			7			22	32	6'-3"
			6'	#6	12"	22	32	6'-11"	#6	12"	22	32	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	22	32	7'-1"
			7'			22	32	6'-11"			22	32	8'-1"	6'-11"			7			14			14			7			22	32	8'-1"
			8'			22	32	7'-1"			22	32	8'-2"	7'-0"			7			16			16			7			22	32	9'-1"
		4'@ 1/	3'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			6			6			5			22	32	3'-10"
			4'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			8			8			5			22	32	4'-10"
			5'			22	32	4'-9"			22	32	5'-2"	4'-8½"			5			10			10			5			22	32	5'-10"
			6'	#5	12"	22	32	4'-11"	#5	12"	22	32	5'-4"	4'-10½"	#4	12"	5	#4	12"	12	#4	12"	12	#4	12"	5	#4	12"	22	32	6'-10"
		6'@ 1/	3'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			6			6			6			24	36	4'-0"
			4'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			8			8			6			24	36	5'-0"
			5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	24	36	6'-0"
			6'			24	36	5'-11"			24	36	7'-2"	5'-10"			6			12			12			6			24	36	7'-0"
			7'			24	36	6'-0"			24	36	7'-2"	5'-11"			6			14			14			6			24	36	8'-0"
		6'@ 1/	4'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			8			8			7			24	36	5'-2"
			5'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			10			10			7			24	36	6'-4"
			6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	24	36	7'-2"
			7'			24	36	7'-0"			24	36	8'-1"	6'-11"			7			14			14			7			24	36	8'-2"
			8'			24	36	7'-1"			24	36	8'-2"	7'-0"			7			16			16			7			24	36	9'-2"
		4'@ 1/	3'			24	36	4'-9"			24	36	5'-3"	4'-8½"			5			6			6			5			24	36	3'-11"
			4'			24	36	4'-9"			24	36	5'-3"	4'-8½"			5			8			8			5			24	36	4'-11"
			5'			24	36	4'-9"			24	36	5'-5"	4'-8½"			5			10			10			5			24	36	5'-11"
			6'			24	36	4'-11"			24	36	5'-11"	4'-10½"			5			12			12			5			24	36	6'-11"
		6'@ 1/	3'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			6			6			6			24	36	4'-1"
			4'			24	36	5'-9"			24	36	6'-10"	5'-8"			6			8			8			6			24	36	5'-1"
			5'	#5	11"	24	36	5'-9"	#6	11"	24	36	6'-10"	5'-8"	#4	12"	6	#4	12"	10	#4	12"	10	#4	12"	6	#4	12"	24	36	6'-1"
			6'			24	36	5'-11"			24	36	7'-2"	5'-10"			6			12			12			6			24	36	7'-1"
			7'			24	36	6'-0"			24	36	7'-2"	5'-11"			6			14			14			6			24	36	8'-1"
		6'@ 1/	4'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			8			8			7			24	36	5'-3"
			5'			24	36	6'-9"			24	36	7'-10"	6'-8"			7			10			10			7			24	36	6'-5"
			6'	#6	11"	24	36	6'-11"	#6	11"	24	36	8'-0"	6'-10"	#4	12"	7	#4	12"	12	#4	12"	12	#4	12"	7	#4	12"	24	36	7'-3"
			7'

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
G	ARK.			377	
JOB No.					

BAR LIST FOR VARIOUS SECTIONS OF BARREL

SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"b" bars BENT - See Diagram at Right In top and Bottom Slabs of Barrel - Hooked. Alternate with "a" bars. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	X	"d" bars Longitudinal in Top Slab of Barrel SIZE	SPACING	MATERIAL	LENGTH	"d1" bars Longitudinal in Sidewalls. SIZE	SPACING	MATERIAL	LENGTH	"e" bars Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	MATERIAL	LENGTH	"f" bars STRAIGHT Verticals in Sidewalls SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH
"A"	2:1-26'0", 3:1-26'0", 4:1-26'0"	0' TO 10'0"	10'0"	1@ 4' 2"	#4	12"	28	48	68	4'9"	#5	12"	28	48	68	5'7"	4'8½"	#4	12"	5	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	24	44	64	2'10"
				6' 3"	#5	12"	28	48	68	6'9"	#6	12"	28	48	68	7'10"	6'7"	#4	12"	7	#4	12"	6	#4	12"	7	#4	12"	7	#4	12"	24	44	64	4'10"
				7' 4"	#5	12"	28	48	68	7'9"	#6	12"	28	48	68	8'10"	7'8"	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	24	44	64	5'11"
				8' 4'	#6	12"	28	48	68	8'9"	#6	12"	28	48	68	9'10"	8'8"	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	24	44	64	6'3"
				5'	#6	12"	28	48	68	8'11"	#6	12"	28	48	68	10'0"	8'10"	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	24	44	64	6'3"
				5'	#7	11"	30	52	74	9'11"	#7	11"	26	48	70	11'2"	9'10"	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	24	44	64	6'5"
				6'	#7	11"	30	52	74	10'0"	#7	11"	26	48	70	11'2"	10'11"	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	24	44	64	7'5"
				5'			28	48	68	10'11"			24	44	64	12'2"	10'10"			11			11			11			11			24	44	64	6'7"
				6'	#7	12"	28	48	68	11'0"	#7	12"	24	44	64	12'3"	10'11"	#4	12"	11	#4	12"	11	#4	12"	11	#4	12"	11	#4	12"	24	44	64	7'7"
				7'			28	48	68	11'0"			24	44	64	12'3"	11'11"			14			14			14			14			24	44	64	8'7"
"B"	2:1-46'0", 3:1-46'0", 4:1-46'0"	10'0" TO 15'0"	15'0"	4' 2"	#4	12"	12	22	32	4'9"	#5	12"	12	22	32	5'8"	4'8½"	#4	12"	5	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	12	22	32	2'10"
				6' 3'	#4	12"	12	22	32	6'9"	#5	12"	12	22	32	7'10"	6'8"	#4	12"	7	#4	12"	6	#4	12"	7	#4	12"	7	#4	12"	12	22	32	4'1"
				7' 4'	#4	11"	14	24	34	7'9"	#6	11"	12	24	34	8'10"	7'8"	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	12	22	32	5'8"
				8' 5'	#7	12"	12	22	32	8'9"	#7	12"	12	22	32	9'10"	8'8"	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	12	22	32	5'5"
				5'	#7	12"	12	22	32	8'11"	#7	12"	12	22	32	10'0"	8'10"	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	12	22	32	6'5"
				6'	#7	12"	12	22	32	9'11"	#7	12"	12	22	32	11'2"	9'10"	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	12	22	32	6'7"
				7'	#7	12"	12	22	32	10'0"	#7	12"	12	22	32	11'2"	10'11"	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	12	22	32	7'7"
				5'			12	22	32	10'11"			12	22	32	12'2"	10'10"			12			12			12			12			12	22	32	6'9"
				6'	#8	12"	12	22	32	11'0"	#7	12"	12	22	32	12'3"	10'11"	#4	12"	11	#4	12"	11	#4	12"	11	#4	12"	11	#4	12"	12	22	32	7'9"
				7'			12	22	32	11'0"			12	22	32	12'3"	11'11"			14			14			14			14			12	22	32	8'9"
"C"	2:1-46'0", 3:1-46'0", 4:1-46'0"	15'0" TO 20'0"	20'0"	4' 2'	#5	12"	12	22	32	4'9"	#5	12"	12	22	32	5'8"	4'8½"	#4	12"	5	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	12	22	32	2'10"
				6' 3'	#6	11"	14	24	34	6'9"	#6	11"	12	24	34	7'10"	6'8"	#4	12"	7	#4	12"	6	#4	12"	7	#4	12"	7	#4	12"	12	22	32	4'1"
				7' 4'	#7	12"	12	20	30	7'9"	#7	12"	10	20	30	9'10"	7'8"	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	12	22	32	5'5"
				8' 4'	#7	12"	12	22	32	8'9"	#7	12"	12	22	32	10'0"	8'8"	#4	11"	10	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	12	22	32	5'7"
				5'			12	22	32	8'11"			12	22	32	10'2"	8'10"			10			10			10			10			12	22	32	6'7"
				9' 5'	#8	12"	12	22	32	9'11"	#7	12"	12	22	32	11'2"	9'10"	#4	11"	11	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	12	22	32	6'11"
				6'	#8	12"	12	22	32	10'0"	#7	12"	12	22	32	11'2"	10'11"	#4	11"	12	#4	12"	11	#4	12"	11	#4	12"	11	#4	12"	12	22	32	7'0"
				7'			12	22	32	10'11"			12	22	32	12'3"	10'11"			13			13			13			13			12	22	32	7'10"
				10' 6'	#8	12"	12	22	32	11'0"	#8	12"	12	22	32	12'5"	10'11"	#4	12"	13	#4	12"	13	#4	12"	13	#4	12"	13	#4	12"	12	22	32	9'0"
				7'			12	22	32	11'0"			12	22	32	12'5"	10'11"			13			13			13			13			12	22	32	9'0"
"D"	2:1-46'0", 3:1-46'0", 4:1-46'0"	20'0" TO 25'0"	25'0"	4' 2'	#5	11"	14	24	36	4'9"	#5	11"	12	24	36	5'8"	4'8½"	#4	12"	5	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	12	22	32	2'11"
				6' 3'	#7	12"	12	22	32	6'9"	#7	12"	12	22	32	7'10"	6'8"	#4	12"	7	#4	12"	6	#4	12"	7	#4	12"	7	#4	12"	12	22	32	4'2"
				7' 4'	#7	12"	12	22	32	7'9"	#7	12"	12	22	32	9'10"	7'8"	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	8	#4	12"	12	22	32	5'5"
				8' 4'	#8	12"	12	22	32	8'9"	#7	12"	12	22	32	10'0"	8'8"	#4	11"	10	#4	12"	9	#4	12"	9	#4	12"	9	#4	12"	12	22	32	5'7"
				9' 5'	#8	12"	12	22	32	9'11"	#7	12"	12	22	32	11'2"	9'10"	#4	11"	11	#4	12"	10	#4	12"	10	#4	12"	10	#4	12"	12	22	32	6'11"
				6'	#8	12"	12	22	32	10'0"	#7	12"	12	22	32	11'2"	10'11"	#4	11"	12	#4	12"	11	#4	12"	11	#4	12"	11	#4	12"	12	22	32	7'0"
				10' 6'	#8	12"	12	22	32	11'0"	#8	12"	12	22	32	12'5"	10'11"	#4	12"	13	#4	12"	13	#4	12"	13	#4	12"	13	#4	12"	12	22	32	9'0"
				7'			12	22	32	11'0"			12	22	32	12'5"	11'11"			14			14			14			14			12	22	32	9'0"
"E"	2:1-46'0", 3:1-46'0", 4:1-46'0"	25'0" TO 30'0"	30'0"	4' 2'	#6	13"	12	20	30	4'9"	#6	13"	12	20	30	5'10"	4'8"	#4	12"	5	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	12	22	32	3'1"
				6' 3'	#7	12"	12	22	32	6'9"	#7	12"	12	22	32	8'10"	6'8"	#4	9½"	9	#4	12"	6	#4	12"	7	#4	12"	7	#4	12"	12	22	32	4'7"
				7' 4'			14	28	38	7'11"			16	26	40	9'6"	7'8"			10			8			10			10			16	26	40	5'10"
				6'	#7	10"	14	28	38	8'8"	#7	10"	16	26	40	9'5"	8'1"	#4	9½"	10	#4	12"	9	#4	12"	10	#4	12"	10	#4	12"	16	26	40	6'10"
				7'			14	28	38	8'8"			16	26	40	9'5"	8'11"			12			10			12			12			16	26	40	7'10"
				8'			14	28	38	8'8"			16	26	40	9'8"	8'5"			14			10			14			14			16	26	40	8'10"
				9'			14	28	38	8'8"			16	26	40	9'8"	9'5"			16			10			16			16			16	26	40	9'10"
				6' 4'	#8	11"	14	26	36	8'10"	#7	11"	12	24	34	10'1"	8'9"	#4	9½"	10	#4	12"	9	#4	12"	10	#4	12"	10	#4	12"	12	24	34	6'11"
				5'			14	26	36	9'11"			12	24	34	10'2"	8'10"			12			12			12			12			12	24	34	7'11"
				9' 5'	#8	11"	14	24	36	10'0"	#8	11"	12	24	34	11'5"	9'11"	#4	9"	13	#4	12"	12	#4	12"	12	#4	12"	12	#4	12"	12	24	34	7'2"
				6'			14	24	34	10'1"			12	24	34	11'6"	10'0"			13			13			13			13			12	24	34	8'2"
				10' 5'						10'1"						10'0"				10			10			10			10					7'4"
				6'						10'3"						11'8"	10'2"			10			10			10			10					8'4"
				7'	#8	10"				10'5"	#8	10"				11'10"	10'4"	#5	12"	10	#5	12"	10	#5	12"	10	#5	12"	10	#5	12"	10			9'4"
				8'						10'7"						12'0"	10'8"			10			10			10			10					10'4"
				9'						10'9"						12'2"	10'11"			10			10			10			10					11'0"
				5'						4'9"						5'10"	4'8"			5			5			5			5					3'2"
				6'						6'9"						8'0"	6'8"			6			6			6			6					4'8"
				7'						6'11"						8'2"	6'10"			9			9			9			9					5'8"
				5'						7'1"						8'4"	7'0"			9			9			9			9					6'10"
				6'						7'3"						8'4"	7'2"			9			9			9			9					7'2"
				7'						7'5"						8'6"	7'4"			9			9			9			9					7'5"
				8'						7'7"						8'8"	7'6"			9			9			9			9					7'8"
				9'						7'9"						8'10"	7'8"			9			9			9			9					8'0"
				5'						8'0"						9'3"	7'11"			11			11			11			11					5'11"
				6'						8'1"						9'4"	8'1"			11			11			11			11					6'4"
				7'						8'3"						9'6"	8'3"			11			11			11			11					6'8"
				8'						8'5"						9'8"	8'5"			11			11			11			11					7'1"
				9'						8'7"						9'10"	8'6"			11			11			11			11					7'4"
				10'						8'9"						10'0"	8'8"			11			11			11			11					7'7"
				6'						9'0"						10'5"	8'11"			13			13			13			13					6'3"
				7'						9'2"						10'7"	9'1"			13			13			13			13					6'7"
				8'						9'4"						10'9"	9'3"			13			13			13			13					6'10"
				9'						9'6"						10'11"	9'5"			13			13			13			13					7'1"
				10'						9'8"						11'1"	9'7"			13			13			13			13					7'4"
				11'						9'10"						11'3"	9'9"			13			13			13			13					7'7"
				12'						10'0"						11'5"	9'11"			13			13			13			13					7'10"

NOTE:- Bars for each Section to be marked with the Section Letter; thus for Section B, the bars should be marked Ba, Bb, Bc, Bd, Be, and Bf.

"F"	2:1-46'0", 3:1-46'0", 4:1-46'0"	30'0" TO 35'0"	35'0"	4' 2'	#6	13"	12	20	30	4'9"	#6	13"	12	20	30	5'10"	4'8"	#4	12"	5	#4	12"	4	#4	12"	5	#4	12"	5	#4	12"	12	22	32	3'1"
				6' 3'	#7	12"	12	22	32	6'9"	#7	12"	12	22	32	8'10"	6'8"	#4	9½"	9	#4	12"	6	#4	12"	7	#4	12"	7	#4	12"	12	22	32	4'7"
				7' 4'			14	28	38	7'11"			16	26	40	9'6"	7'8"			10			8			10			10			16	26	40	5'10"
				6'	#7	10"	14	28	38	8'8"	#7	10"	16	26	40	9'5"	8'1"	#4	9½"	10	#4	12"	9	#4	12"	10	#4	12"	10	#4	12"	16	26	40	6'10"
				7'			14	28	38	8'8"			16	26	40	9'5"	8'11"			12			10			12			12			16	26	40	7'10"
				8'			14	28	38	8'8"			16	26	40	9'8"	8'5"			14			10			14			14			16	26	40	8'10"
				9'			14	28	38	8'8"			16	26	40	9'8"	9'5"			16			10			16			16			16	26	40	9'10"
				6' 4'	#8	11"	14	26	36	8'10"	#7	11"	12	24	34	10'1"	8'9"	#4	9½"	10	#4	12"	9	#4	12"	10	#4	12"	10	#4	12"	12	24	34	6'11"
				5'			14	26	36	9'11"			12	24	34	10'2"	8'10"			12			12			12			12			12	24	34	7'11"
				9' 5'	#8	11"	14	24	36	10'0"	#8	11"	12	24	34	11'5"	9'11"	#4	9"	13	#4	12"	12	#4	12"	12	#4	12"	12	#4	12"	12	24	34	7'2"
				6'			14	24	34	10'1"			12	24	34	11'6"	10'0"			13			13			13			13			12	24	34	8'2"
				10' 5'						10'1"						10'0"				10			10			10			10					7'4"
				6'						10'3"						11'8"	10'2"			10			10			10			10					8'4"
				7'	#8	10"				10'5"	#8	10"				11'10"	10'4"	#5	12"	10	#5	12"	10	#5	12"	10	#5	12"	10	#5	12"	10			9'4"
				8'						10'7"						12'0"	10'8"			10			10			10			10					10'4"
				9'						10'9"						12'2"	10'11"			10			10			10			10					11'0"
				5'						4'9"						5'10"	4'8"			5			5			5			5					3'2"
				6'						6'9"						8'0"	6'8"			6			6			6			6					4'8"
				7'						6'11"						8'2"	6'10"			9			9			9			9					5'8"
				5'						7'1"						8'4"	7'0"			9			9			9			9					6'10"
				6'						7'3"						8'4"	7'2"			9			9			9			9					7'2"
				7'						7'5"						8'6"	7'4"			9			9			9			9					7'5"
				8'						7'7"						8'8"	7'6"			9			9			9			9					7'8"
				9'						7'9"						8'10"	7'8"			9			9			9			9					8'0"
				5'						8'0"						9'3"	7'11"			11			11			11			11					5'11"
				6'						8'1"						9'4"	8'1"			11			11			11			11					6'4"
				7'						8'3"						9'6"	8'3"			11			11			11			11					6'8"
				8'						8'5"						9'8"	8'5"			11			11			11			11					7'1"
				9'						8'7"						9'10"	8'6"			11			11			11			11					7'4"
				10'						8'9"						10'0"	8'8"			11			11			11			11					7'7"
				6'						9'0"						10'5"	8'11"			13			13			13			13					6'3"
				7'						9'2"						10'7"	9'1"			13			13			13			13					6'7"
				8'						9'4"						10'9"	9'3"			13			13			13			13					6'10"
				9'						9'6"						10'11"	9'5"			13			13			13			13					7'1"
				10'						9'8"						11'1"	9'7"			13			13			13			13					7'4"
				11'						9'10"						11'3"	9'9"			13			13			13			13					7'7"
				12'						10'0"						11'5"	9'11"			13			13			13			13					7'10"

"G"	Varies with Length of Barrel	Varies	35'0" TO 40'0"	40'0"	4' 2'	#6	12"				4'9"	#6	12"				5'10"	4'8"	#4	12"	5															3'2"
					3'						6'9"						8'0"	6'8"			6															4'8"
					4'						6'11"						8'2"	6'10"			9															5'8"
				6'	5'	#7	11"				7'1"	#7	11"				8'4"	7'0"	#4	9½"	9															6'10"
					6'						7'3"						8'4"	7'2"			9															7'2"
					7'						7'5"						8'6"	7'4"			9															7'5"
					8'						7'7"						8'8"	7'6"			9															7'8"
					9'						7'9"						8'10"	7'8"			9															8'0"
				8'	5'	#8	11"				8'0"	#7	11"				9'3"	7'11"	#4	9½"	11															5'11"
					6'						8'1"						9'4"	8'1"			11															6'4"
					7'						8'3"						9'6"	8'3"			11															6'8"
					8'						8'5"						9'8"	8'5"			11															7'1"
					9'						8'7"						9'10"	8'6"			11															7'4"
					10'						8'9"						10'0"	8'8"			11															7'7"
				6'	6'	#8	11"				9'0"	#8	11"				10'5"	8'11"	#4	9½"	13															6'3"
					7'						9'2"						10'7"	9'1"			13															6'7"
					8'						9'4"						10'9"	9'3"			13															6'10"
					9'						9'6"						10'11"	9'5"			13															7'1"
					10'						9'8"						11'1"	9'7"			13															7'4"
					11'						9'10"						11'3"	9'9"			13															7'7"
					12'						10'0"						11'5"	9'11"			13															7'10"

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos W-X002-1 or W-X002-2, W-X003-1 or W-X003-2, & W-X004-1 or W-X004-2.

Designed By:- W.C.H. 12-9-64 Checked By:-
Drawn By:- W.C.H. 12-11-64 Checked By:-
Quantities By:- W.C.H. 12-17-64 Checked By:-

DIMENSIONS AND QUANTITIES

MIN. DESIGN DEPTH OF COVER	CLEAR SPAN	BARREL DIMENSIONS: CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES: CLASS 'S' CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL PER LIN. FT. OF BARREL	ADDITIONAL PER LAP.	ADDITIONAL TWO HEADWALLS & BARINS
D	S	H	A	OW	T	C	B	OH	CU.YD.	LB.	LB.	LB.
SECTION "A"-10'0"	1@ 4'	2'	8	5'-0"	6½"	6"	6½"	3'-1"	0.275	24.96	11.69	51.93
	6'	3'	18	7'-0"	7⅞"	6"	7⅛"	4'-8"	0.435	54.32	16.70	93.29
	7'	4'	28	8'-0"	8"	6"	8⅛"	5'-10½"	0.556	66.53	20.04	109.92
	8'	5'	40	9'-0"	8½"	6"	9"	6'-6"	0.678	80.86	23.38	126.35
	9'	5'	55	10'-0"	9⅛"	7"	10"	7'-1"	0.844	110.91	25.05	176.61
		6'	54	10'-8"	9⅛"	7⅛"	10⅛"	7'-8"	0.911	149.83	26.72	173.61
	10'	5'	50	11'-3"	10"	7⅛"	11⅛"	7'-10"	0.972	129.64	28.39	268.97
		6'	60	11'-3"	10⅛"	7⅛"	11⅛"	7'-10"	1.092	128.22	28.39	245.39
		7'	70	11'-3"		7⅛"		8'-1.0"	1.088	130.56	30.06	245.86
SECTION "B"-15'0"	4'	2'	8	5'-0"	6⅞"	6"	6⅝"	3'-1"	0.275	31.80	11.69	51.93
	6'	3'	18	7'-0"	8"	6"	8⅛"	4'-8"	0.442	62.62	16.70	118.07
	7'	4'	28	8'-0"	8⅝"	6"	9⅛"	5'-6"	0.593	77.39	20.04	135.88
	8'	5'	32	9'-0"	9⅜"	6"	10⅛"	5'-8½"	0.718	88.91	21.71	192.88
	9'	5'	40	9'-8"		7"		6'-0½"	0.796	93.77	23.38	195.61
		6'	54	10'-8"	9⅜"	7⅛"	10⅝"	6'-10½"	0.922	115.02	25.05	219.61
	10'	5'	50	11'-8"		7"		7'-0½"	1.060	139.74	28.39	298.66
		6'	60	11'-5"	11⅜"	7⅛"	12⅝"	8'-0½"	1.128	193.23	30.06	300.92
		7'	70	11'-5"

RESHOT 3-5-93 420 456

BAR LIST FOR VARIOUS SECTIONS OF BARREL

Designed by:- W.C.H. 9-17-62 Checked by:- RJHS - 11-12-62
Drawn by:- W.C.H. 10-15-62 Checked by:- RJHS - 11-19-62
Quantities by:- W.C.H. 11-9-62 Checked by:- RJHS - 11-20-62

NOTE:- Bars for each Section to be marked with the Section letter, thus for Section B, the bars should be marked Ba, Bb, Bc, Bd, Be, Bf, Bg, and Bh.

SECTION & BAR GROUP	LENGTHS OF SECTION	DEPTH OF COVER	CLEAR SPANS	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slab of Barrel. 2 Rqd'd in Apron and Headwall - Each.	"b" bars BENT - see Diagram at Right. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "c" bars.	"b2" bars BENT - See Diagram at Right. In Top of Bottom Slab, bent down under Division Wall - hooked. Alternate with "a" and "c" bars.	"c" bars STRAIGHT In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars.	"d" bars Longitudinal in Top Slab of Barrel	"d1" bars STRAIGHT Longitudinal in Sidewalls and Division Walls	"e" bars Longitudinal in Bottom Slab of Barrel	"f" bars STRAIGHT Vertical in Sidewalls and Division Walls
		D	S	H	SIZE SPACING NUMBER REQ'D 3:1 4:1 LENGTH	SIZE SPACING NUMBER REQ'D 3:1 4:1 LENGTH X Y Z	SIZE SPACING NUMBER REQ'D 3:1 4:1 LENGTH X Y Z	SIZE SPACING NUMBER REQ'D 3:1 4:1 LENGTH	SIZE SPACING NO. REQ'D LENGTH	SIZE SPACING NO. REQ'D LENGTH	SIZE SPACING NO. REQ'D LENGTH	SIZE SPACING NUMBER REQ'D 3:1 4:1 LENGTH
SECTION "A" & BAR GROUP "A"	3:1 = 32'-0" 4:1 = 32'-0"	0' to 10'-0"	2 @ 2'-0"	3'	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 4'-6"	#4 12" 14	#4 12" 14	#4 12" 14	#4 12" 88 128 3'-9"
			4 @ 2'-0"	4'	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 4'-6"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 4'-3"
			6 @ 2'-0"	5'	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 4'-6"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 4'-9"
				6'	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 20 29 10'-5" 0'-2⅝" 2'-1" 3'-5" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 4'-6"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 5'-3"
SECTION "B" & BAR GROUP "B"	3:1 = 24'-0" 4:1 = 16'-0"	0' to 10'-0"	2 @ 2'-0"	3'	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 52 74 11'-5"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 98 70 5'-3" 88 128 3'-10"
			4 @ 2'-0"	4'	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 52 74 11'-5"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 98 70 5'-3" 88 128 4'-3½"
			6 @ 2'-0"	5'	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 24 36 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 52 74 11'-5"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 24 35 12'-6" 0'-3" 2'-6½" 4'-2"	#5 11" 98 70 5'-3" 88 128 5'-1"
				6'	#6 11" 24 36 11'-8" 0'-3" 2'-5½" 4'-3"	#6 11" 24 36 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 11" 24 36 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 11" 52 74 11'-8"	#5 11" 24 35 12'-9" 0'-3" 2'-5½" 4'-3"	#5 11" 24 35 12'-9" 0'-3" 2'-5½" 4'-3"	#5 11" 24 35 12'-9" 0'-3" 2'-5½" 4'-3"	#5 11" 98 70 5'-3" 88 128 5'-10"
				7'	#6 11" 24 36 11'-10" 0'-3" 2'-5½" 4'-3½"	#6 11" 24 36 11'-10" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 11" 24 36 11'-10" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 11" 52 74 11'-10"	#5 11" 24 35 12'-11" 0'-3" 2'-5½" 4'-3½"	#5 11" 24 35 12'-11" 0'-3" 2'-5½" 4'-3½"	#5 11" 24 35 12'-11" 0'-3" 2'-5½" 4'-3½"	#5 11" 98 70 5'-3" 88 128 6'-7"
SECTION "C" & BAR GROUP "C"	3:1 = 16'-0" 4:1 = 16'-0"	10'-0" to 15'-0"	2 @ 2'-0"	3'	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5"	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5" 12'-6" 0'-3" 2'-6"	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5" 12'-6" 0'-3" 2'-6"	#6 10" 66 90 4'-6"	#4 12" 14	#4 12" 14	#4 12" 14	#4 12" 88 128 4'-5"
			4 @ 2'-0"	4'	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5"	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5" 12'-6" 0'-3" 2'-6"	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5" 12'-6" 0'-3" 2'-6"	#6 10" 66 90 4'-6"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 5'-0"
			6 @ 2'-0"	5'	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5"	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5" 12'-6" 0'-3" 2'-6"	#6 10" 26 40 9'-5" 0'-3½" 2'-0" 3'-5" 12'-6" 0'-3" 2'-6"	#6 10" 66 90 4'-6"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 5'-6"
				6'	#6 10" 26 40 9'-8" 0'-3½" 2'-0" 3'-5½"	#6 10" 26 40 9'-8" 0'-3½" 2'-0" 3'-5½" 12'-9" 0'-3" 2'-6"	#6 10" 26 40 9'-8" 0'-3½" 2'-0" 3'-5½" 12'-9" 0'-3" 2'-6"	#6 10" 66 90 4'-9"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 6'-3"
				7'	#6 10" 26 40 9'-11" 0'-3½" 2'-0" 3'-6"	#6 10" 26 40 9'-11" 0'-3½" 2'-0" 3'-6" 12'-11" 0'-3" 2'-6"	#6 10" 26 40 9'-11" 0'-3½" 2'-0" 3'-6" 12'-11" 0'-3" 2'-6"	#6 10" 66 90 4'-9"	#4 12" 16	#4 12" 16	#4 12" 16	#4 12" 88 128 6'-9"
SECTION "D" & BAR GROUP "D"	3:1 = 11'-0" 4:1 = 11'-0"	15'-0" to 20'-0"	2 @ 2'-0"	3'	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11"	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11" 12'-6" 0'-3" 2'-6"	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 6'-0"	#5 12" 16	#5 12" 16	#5 12" 16	#5 12" 98 70 5'-3" 88 128 5'-0"
			4 @ 2'-0"	4'	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11"	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11" 12'-6" 0'-3" 2'-6"	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 6'-0"	#5 12" 16	#5 12" 16	#5 12" 16	#5 12" 88 128 5'-6"
			6 @ 2'-0"	5'	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11"	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11" 12'-6" 0'-3" 2'-6"	#6 13" 20 30 13'-5" 0'-4" 2'-6" 4'-11" 12'-6" 0'-3" 2'-6"	#6 13" 42 60 6'-0"	#5 12" 16	#5 12" 16	#5 12" 16	#5 12" 88 128 6'-0"
				6'	#6 13" 20 30 13'-8" 0'-4" 2'-6" 5'-0"	#6 13" 20 30 13'-8" 0'-4" 2'-6" 5'-0" 12'-9" 0'-3" 2'-6"	#6 13" 20 30 13'-8" 0'-4" 2'-6" 5'-0" 12'-9" 0'-3" 2'-6"	#6 13" 42 60 6'-3"	#5 12" 16	#5 12" 16	#5 12" 16	#5 12" 88 128 6'-9"
				7'	#6 13" 20 30 13'-11" 0'-4" 2'-6" 5'-0"	#6 13" 20 30 13'-11" 0'-4" 2'-6" 5'-0" 12'-11" 0'-3" 2'-6"	#6 13" 20 30 13'-11" 0'-4" 2'-6" 5'-0" 12'-11" 0'-3" 2'-6"	#6 13" 42 60 6'-3"	#5 12" 16	#5 12" 16	#5 12" 16	#5 12" 88 128 7'-6"
SECTION "E" & BAR GROUP "E"	3:1 = 11'-0" 4:1 = 16'-0"	25'-0" to 30'-0"	2 @ 2'-0"	3'	#6 12" 22 32 14'-7" 0'-3⅜" 2'-11" 4'-11"	#6 12" 22 32 14'-7" 0'-3⅜" 2'-11" 4'-11" 12'-6" 0'-3" 2'-6"	#6 12" 22 32 14'-7" 0'-3⅜" 2'-11" 4'-11" 12'-6" 0'-3" 2'-6"	#6 12" 44 64 6'-3"	#5 12" 18	#5 12" 18	#5 12" 18	#5 12" 98 70 5'-3" 88 128 6'-0"
			4 @ 2'-0"	4'	#6 12" 22 32 14'-7" 0'-3⅜" 2'-11" 4'-11"	#6 12" 22 32 14'-7" 0'-3⅜" 2'-11" 4'-11" 12'-6" 0'-3" 2'-6"	#6 12" 22 32 14'-7" 0'-3⅜" 2'-11" 4'-11" 12'-6" 0'-3" 2'-6"	#6 12" 44 64 6'-3"	#5 12" 20	#5 12" 20	#5 12" 20	#5 12" 98 70 5'-3" 88 128 6'-5"
			6 @ 2'-0"	5'	#6 12" 22 32 14'-10" 0'-3⅜" 2'-11" 5'-0"	#6 12" 22 32 14'-10" 0'-3⅜" 2'-11" 5'-0" 12'-9" 0'-3" 2'-6"	#6 12" 22 32 14'-10" 0'-3⅜" 2'-11" 5'-0" 12'-9" 0'-3" 2'-6"	#6 12" 44 64 6'-3"	#5 12" 20	#5 12" 20	#5 12" 20	#5 12" 98 70 5'-3" 88 128 6'-11"
				6'	#6 12" 22 32 14'-11" 0'-3⅜" 2'-11" 5'-0"	#6 12" 22 32 14'-11" 0'-3⅜" 2'-11" 5'-0" 12'-11" 0'-3" 2'-6"	#6 12" 22 32 14'-11" 0'-3⅜" 2'-11" 5'-0" 12'-11" 0'-3" 2'-6"	#6 12" 44 64 6'-3"	#5 12" 20	#5 12" 20	#5 12" 20	#5 12" 98 70 5'-3" 88 128 7'-5"
				7'	#6 12" 22 32 15'-1" 0'-3⅜" 2'-11" 5'-0"	#6 12" 22 32 15'-1" 0'-3⅜" 2'-11" 5'-0" 12'-11" 0'-3" 2'-6"	#6 12" 22 32 15'-1" 0'-3⅜" 2'-11" 5'-0" 12'-11" 0'-3" 2'-6"	#6 12" 44 64 6'-3"	#5 12" 20	#5 12" 20	#5 12" 20	#5 12" 98 70 5'-3" 88 128 8'-0"
SECTION "F" & BAR GROUP "F"	3:1 = 10'-0" 4:1 = 16'-0"	30'-0" to 35'-0"	2 @ 2'-0"	3'	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5"	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5" 12'-6" 0'-3" 2'-6"	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5" 12'-6" 0'-3" 2'-6"	#6 11" 52 74 9'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 98 70 5'-3" 88 128 6'-0"
			4 @ 2'-0"	4'	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5"	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5" 12'-6" 0'-3" 2'-6"	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5" 12'-6" 0'-3" 2'-6"	#6 11" 52 74 9'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 98 70 5'-3" 88 128 6'-5"
			6 @ 2'-0"	5'	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5"	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5" 12'-6" 0'-3" 2'-6"	#6 11" 24 36 9'-5" 0'-3" 2'-5" 3'-5" 12'-6" 0'-3" 2'-6"	#6 11" 52 74 9'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 24 35 10'-7" 0'-3½" 2'-11½" 3'-5"	#5 11" 98 70 5'-3" 88 128 6'-11"
				6'	#6 11" 24 36 9'-8" 0'-3" 2'-5" 3'-5½"	#6 11" 24 36 9'-8" 0'-3" 2'-5" 3'-5½" 12'-9" 0'-3" 2'-6"	#6 11" 24 36 9'-8" 0'-3" 2'-5" 3'-5½" 12'-9" 0'-3" 2'-6"	#6 11" 52 74 9'-8"	#5 11" 24 35 10'-10" 0'-3½" 2'-11½" 3'-5½"	#5 11" 24 35 10'-10" 0'-3½" 2'-11½" 3'-5½"	#5 11" 24 35 10'-10" 0'-3½" 2'-11½" 3'-5½"	#5 11" 98 70 5'-3" 88 128 7'-5"
				7'	#6 11" 24 36 9'-11" 0'-3" 2'-5" 3'-6"	#6 11" 24 36 9'-11" 0'-3" 2'-5" 3'-6" 12'-11" 0'-3" 2'-6"	#6 11" 24 36 9'-11" 0'-3" 2'-5" 3'-6" 12'-11" 0'-3" 2'-6"	#6 11" 52 74 9'-11"	#5 11" 24 35 10'-11" 0'-3½" 2'-11½" 3'-6"	#5 11" 24 35 10'-11" 0'-3½" 2'-11½" 3'-6"	#5 11" 24 35 10'-11" 0'-3½" 2'-11½" 3'-6"	#5 11" 98 70 5'-3" 88 128 8'-0"
SECTION "G" & BAR GROUP "G"	3:1 = 11'-0" 4:1 = 16'-0"	35'-0" to 40'-0"	2 @ 2'-0"	3'	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 10" 66 90 5'-3"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 10" 98 70 5'-3" 88 128 6'-5"
			4 @ 2'-0"	4'	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 10" 66 90 5'-3"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 10" 98 70 5'-3" 88 128 6'-8"
			6 @ 2'-0"	5'	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 10" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 10" 66 90 5'-3"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 10" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 10" 98 70 5'-3" 88 128 7'-0"
				6'	#6 10" 28 38 11'-8" 0'-3" 2'-5½" 4'-3"	#6 10" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 10" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 10" 66 90 5'-3"	#5 10" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#5 10" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#5 10" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#6 10" 98 70 5'-3" 88 128 7'-6"
				7'	#6 10" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½"	#6 10" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 10" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 10" 66 90 5'-3"	#5 10" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#5 10" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#5 10" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#6 10" 98 70 5'-3" 88 128 8'-0"
Varies with Length of Barrel.	35'-0" to 40'-0"		2 @ 2'-0"	3'	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 11" 98 70 5'-3" 88 128 6'-5"
			4 @ 2'-0"	4'	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 11" 98 70 5'-3" 88 128 6'-8"
			6 @ 2'-0"	5'	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 11" 98 70 5'-3" 88 128 7'-0"
				6'	#6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3"	#6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#6 11" 98 70 5'-3" 88 128 7'-6"
				7'	#6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½"	#6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#6 11" 98 70 5'-3" 88 128 8'-0"
Varies with Length of Barrel.	35'-0" to 40'-0"		2 @ 2'-0"	3'	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 11" 98 70 5'-3" 88 128 6'-5"
			4 @ 2'-0"	4'	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 11" 98 70 5'-3" 88 128 6'-8"
			6 @ 2'-0"	5'	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2"	#6 11" 98 70 5'-3" 88 128 7'-0"
				6'	#6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3"	#6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½"	#6 11" 98 70 5'-3" 88 128 7'-6"
				7'	#6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½"	#6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6"	#6 11" 66 90 5'-3"	#5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3"	#6 11" 98 70 5'-3" 88 128 8'-0"

Varies with Length of Barrel. — 35'-0" to 40'-0" — 2 @ 2'-0" — 3' — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6" — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6" — #6 11" 66 90 5'-3" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #6 11" 98 70 5'-3" 88 128 6'-5"

Varies with Length of Barrel. — 4 @ 2'-0" — 4' — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6" — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6" — #6 11" 66 90 5'-3" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #6 11" 98 70 5'-3" 88 128 6'-8"

Varies with Length of Barrel. — 6 @ 2'-0" — 5' — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6" — #6 11" 28 38 11'-5" 0'-3" 2'-5" 4'-2" 12'-6" 0'-3" 2'-6" — #6 11" 66 90 5'-3" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #5 11" 26 36 12'-6" 0'-3½" 2'-6" 4'-2" — #6 11" 98 70 5'-3" 88 128 7'-0"

Varies with Length of Barrel. — 6' — #6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" — #6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6" — #6 11" 28 38 11'-8" 0'-3" 2'-5½" 4'-3" 12'-9" 0'-3" 2'-6" — #6 11" 66 90 5'-3" — #5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½" — #5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½" — #5 11" 26 36 12'-9" 0'-3½" 2'-6" 4'-2½" — #6 11" 98 70 5'-3" 88 128 7'-6"

Varies with Length of Barrel. — 7' — #6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" — #6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6" — #6 11" 28 38 11'-11" 0'-3" 2'-5½" 4'-3½" 12'-11" 0'-3" 2'-6" — #6 11" 66 90 5'-3" — #5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3" — #5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3" — #5 11" 26 36 13'-0" 0'-3½" 2'-6" 4'-3" — #6 11" 98 70 5'-3" 88 128 8'-0"

DIMENSIONS — QUANTITIES

SECTION & BAR GROUP	MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS: CLEAR SPANS	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS & DIVISION WALL	THICKNESS OF DIVISION WALL	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	UNIT QUANTITIES: CLASS S CONC. PER LIN. FT. OF BARREL	REINFORCING STEEL: PER LIN. FT. OF BARREL	ADDITIONAL: PER LAP	ADDITIONAL: TWO HEADWALLS & APRONS
	D	S	H	A	OW	T	C	M	B	OH	CU.YD.	LB.	LB.	LB.
SECTION "A" & BAR GROUP "A"	0' to 10'-0"	2 @ 2'-0"	3'	20.0	24'-0"	6"	6" 8"	6"	6"	4'-0"	0.543	70.19	33.90	100.20
		4 @ 2'-0"	4'	32.0	28'-0"		6" 8"			5'-0"	0.605	75.53	36.74	100.20
		6 @ 2'-0"	5'	40.0	32'-0"		6" 8"			6'-0"	0.667	80.87	40.08	100.20
			6'	48.0	36'-0"		7" 9"			7'-0"	0.793	86.99	43.42	101.54
SECTION "B" & BAR GROUP "B"	10'-0" to 15'-0"	2 @ 2'-0"	3'	30.0	34'-0"	7"	6" 8"	7"	6"	4'-1⅝"	0.653	97.61	36.74	121.13
		4 @ 2'-0"	4'	40.0	38'-0"		6" 8"			5'-1⅝"	0.715	102.96	40.08	121.13
		6 @ 2'-0"	5'	50.0	42'-0"		6" 8"			6'-1⅝"	0.777	108.30	43.42	121.13
			6'	60.0	46'-0"		7" 9"			7'-1⅝"	0.904	114.77	46.76	122.97
			7'	70.0	50'-0"		7⅝" 10"			8'-1⅝"	1.025	132.68	50.10	123.36
SECTION "C" & BAR GROUP "C"	15'-0" to 20'-0"	2 @ 2'-0"	3'	30.0	34'-0"	7"	6" 8"	7"	6"	4'-1⅝"	0.880	116.47	43.42	142.51
		4 @ 2'-0"	4'	40.0	38'-0"		6" 8"	

RESHOT 3-5-93 410 ~~167~~

BAR LIST FOR VARIOUS SECTIONS OF BARREL

SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT
"A"	2'-1"=6'0", 3'-1"=20'0" & 4'-1"=16'0"	0' TO 10'-0"	20	
"B"	2'-1"=6'0", 3'-1"=20'0" & 4'-1"=16'0"	10'-1" TO 15'0"		
"C"	2'-1"=6'0", 3'-1"=20'0" & 4'-1"=16'0"	15'-1" TO 20'-0"		
"D"	2'-1"=6'0", 3'-1"=20'0" & 4'-1"=16'0"	20'-1" TO 25'0"		
"E"	2'-1"=6'0", 3'-1"=16'0" & 4'-1"=16'0"	25'-1" TO 30'-0"		
"F"	2'-1"=6'0", 3'-1"=16'0" & 4'-1"=16'0"	30'-0" TO 35'-0"		
"G"	Varies with Length of Barrel	35'-0" TO 40'-0"		

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, B8, B9 and B10.

Designed by:- W.C.H. 12-31-64. Checked by:-
Drawn by:- W.C.H. 1-8-65. Checked by:-
Quantities by:- W.C.H. 1-19-65. Checked by:-

"a" bars — STRAIGHT
In Top and Bottom Slabs of Barrel. 2 Add'l in Apron and Headwall - Each.

"b" bars — BENT - See Diagram at Right.
In Bottom of Top Slab bent up over Division Wall - Hooked. Alternate with "a" and "c" bars.

"b2" bars — BENT - See Diagram at Right.
In Top of Bottom Slab bent down under Division Wall - Hooked. Alternate with "a" and "c" bars.

"c" bars — STRAIGHT
In Top and Bottom Slabs of Barrel. Alternate with "b" and "b2" bars.

"d" bars — Longitudinal in Top Slab of Barrel.

"d1" bars — Longitudinal in Sidewalls and Division Wall

"e" bars — Longitudinal in Bottom Slab of Barrel.

"f" bars — STRAIGHT
Vertical in Sidewalls and Division Wall.

Section & Bar Group	Size	Spacing	Number Req'd 2:1	3:1	4:1	Length	X	Y	Z
"A"	#4	13"	26	26	26	9'-5"	0'-2 5/8"	2'-1"	3'-5"
	#5	12"	28	28	28	11'-5"	0'-3 1/8"	2'-1 1/2"	3'-5"
	#6	11"	30	30	30	13'-5"	0'-3 5/8"	2'-2"	3'-5"
	#7	10"	32	32	32	15'-5"	0'-4 1/8"	2'-2 1/2"	3'-5"
	#8	9"	36	36	36	17'-5"	0'-4 5/8"	2'-3"	3'-5"
"B"	#4	11"	14	24	34	9'-5"	0'-1 3/8"	2'-1"	3'-5"
	#5	10"	16	28	38	11'-5"	0'-1 7/8"	2'-1 1/2"	3'-5"
	#6	9"	18	32	42	13'-5"	0'-2 3/8"	2'-2"	3'-5"
	#7	8"	20	36	48	15'-5"	0'-2 7/8"	2'-2 1/2"	3'-5"
	#8	7"	24	40	54	17'-5"	0'-3 3/8"	2'-3"	3'-5"
"C"	#4	10"	16	26	36	9'-5"	0'-3 3/8"	2'-1"	3'-5"
	#5	9"	18	30	40	11'-5"	0'-3 7/8"	2'-1 1/2"	3'-5"
	#6	8"	20	34	46	13'-5"	0'-4 3/8"	2'-2"	3'-5"
	#7	7"	24	40	54	15'-5"	0'-4 7/8"	2'-2 1/2"	3'-5"
	#8	6"	28	46	62	17'-5"	0'-5 3/8"	2'-3"	3'-5"
"D"	#4	12"	12	22	32	9'-5"	0'-1 1/2"	2'-1"	3'-5"
	#5	11"	12	26	34	11'-5"	0'-1 7/8"	2'-1 1/2"	3'-5"
	#6	11"	14	28	34	13'-5"	0'-2 3/8"	2'-2"	3'-5"
	#7	11"	16	32	42	15'-5"	0'-2 7/8"	2'-2 1/2"	3'-5"
	#8	11"	18	36	48	17'-5"	0'-3 3/8"	2'-3"	3'-5"
"E"	#4	12"	12	22	32	9'-5"	0'-1 1/2"	2'-1"	3'-5"
	#5	12"	12	26	34	11'-5"	0'-1 7/8"	2'-1 1/2"	3'-5"
	#6	12"	14	28	34	13'-5"	0'-2 3/8"	2'-2"	3'-5"
	#7	12"	16	32	42	15'-5"	0'-2 7/8"	2'-2 1/2"	3'-5"
	#8	12"	18	36	48	17'-5"	0'-3 3/8"	2'-3"	3'-5"
"F"	#4	12"	24	44	64	3'-0"			
	#5	11"	24	44	64	3'-6"			
	#6	11"	24	44	64	4'-0"			
	#7	11"	24	44	64	4'-6"			
	#8	12"	24	44	64	5'-0"			

Varies with Length of Barrel

"G" — Varies with Length of Barrel

Size	Spacing	Number Req'd	Length	X	Y	Z
#4	12"	8	10'-0"	0'-5 5/8"	1'-8 5/8"	3'-5"
#5	10"	8	12'-0"	0'-7 1/8"	1'-9 1/2"	3'-5"
#6	10"	8	14'-0"	0'-8 5/8"	1'-10 3/8"	3'-5"
#7	10"	8	16'-0"	0'-10 1/8"	1'-11 1/4"	3'-5"
#8	10"	8	18'-0"	0'-11 5/8"	2'-0 1/8"	3'-5"

Varies with Length of Barrel

Dimensions — Barrel Dimensions

Max. Design Depth of Cover	Clear Span	Clear Height	Sq. Ft. Openings	Overall Width	Thickness of Top Slab	Thickness of Sidewalls	Thickness of Division Wall	Thickness of Bottom Slab	Overall Height
D	S	H	A	OW	T	C	M	B	OH
Sect. "A" 10'-0"	20								
	4'	2'	16	9'-8"	6"	6"	8"	6"	3'-0"
	6'	3'	36	13'-8"	7 1/2"	6"	8"	7 1/2"	4'-3"
	7'	4'	56	16'-8"	8 1/2"	6"	8"	8 1/2"	5'-5"
	8'	4'	64	17'-8"	9 1/2"	6"	8"	9 1/2"	5'-7"
	9'	5'	90	19'-11"	10"	7"	9"	10 1/2"	6'-8 1/2"
	10'	5'	100	21'-11"	10 1/2"	7"	9"	11 1/2"	6'-10 1/2"
Sect. "B" 15'-0"	4'	2'	16	9'-8"	6"	6"	8"	6"	3'-0 1/2"
	6'	3'	36	13'-8"	7 1/2"	6"	8"	7 1/2"	4'-3 1/2"
	7'	4'	56	16'-8"	8 1/2"	6"	8"	8 1/2"	5'-5 1/2"
	8'	4'	64	17'-8"	9 1/2"	6"	8"	9 1/2"	5'-7 1/2"
	9'	5'	90	19'-11"	10 1/2"	7"	9"	10 1/2"	6'-8 1/2"
	10'	5'	100	21'-11"	11 1/2"	7"	9"	11 1/2"	6'-10 1/2"
Sect. "C" 20'-0"	4'	2'	16	9'-8"	6 1/2"	6"	8"	7"	3'-1 1/2"
	6'	3'	36	13'-8"	8 1/2"	6"	8"	9 1/2"	4'-4"
	7'	4'	56	15'-8"	10"	6"	8"	11"	5'-9"
	8'	4'	64	17'-8"	11 1/2"	6"	8"	11 1/2"	5'-11"
	9'	5'	90	19'-11"	12 1/2"	7"	9"	13 1/2"	7'-1 1/2"
	10'	5'	100	21'-11"	13 1/2"	7"	9"	14 1/2"	7'-3 1/2"
Sect. "D" 25'-0"	4'	2'	16	9'-8"	7 1/2"	6"	8"	8"	3'-3 1/2"
	6'	3'	36	13'-8"	9 1/2"	6"	8"	10"	4'-7 1/2"
	7'	4'	56	15'-8"	11"	6"	8"	12 1/2"	5'-11"
	8'	4'	64	17'-8"	12 1/2"	6"	8"	13 1/2"	6'-1"
	9'	5'	90	19'-11"	13 1/2"	7"	9"	14"	7'-3 1/2"
	10'	5'	100	21'-11"	14 1/2"	7"	9"	15"	7'-5 1/2"
Sect. "E" 30'-0"	4'	2'	16	9'-8"	8"	6"	8"	9"	3'-5 1/2"
	6'	3'	36	13'-8"	11"	6"	8"	12 1/2"	4'-9"
	7'	4'	56	15'-8"	12 1/2"	6"	8"	14 1/2"	5'-11"
	8'	4'	64	17'-8"	14"	6"	8"	15 1/2"	6'-1"
	9'	5'	90	19'-11"	15"	7"	9"	16"	7'-3 1/2"
	10'	5'	100	21'-11"	16"	7"	9"	17"	7'-5 1/2"
Sect. "F" 35'-0"	4'	2'	16	9'-8"	8"	6"	8"	9"	3'-5 1/2"
	6'	3'	36	13'-8"	11"	6"	8"	12 1/2"	4'-9"
	7'	4'	56	15'-8"	12 1/2"	6"	8"	14 1/2"	5'-11"
	8'	4'	64	17'-8"	14"	6"	8"	15 1/2"	6'-1"
	9'	5'	90	19'-11"	15"	7"	9"	16"	7'-3 1/2"
	10'	5'	100	21'-11"	16"	7"	9"	17"	7'-5 1/2"
Sect. "G" 40'-0"	4'	2'	16	9'-8"	8"	6"	8"	9"	3'-5 1/2"
	6'	3'	36	13'-8"	11"	6"	8"	12 1/2"	4'-9"
	7'	4'	56	15'-8"	12 1/2"	6"	8"	14 1/2"	5'-11"
	8'	4'	64	17'-8"	14"	6"	8"	15 1/2"	6'-1"
	9'	5'	90	19'-11"	15"	7"	9"	16"	7'-3 1/2"
	10'	5'	100	21'-11"	16"	7"	9"	17"	7'-5 1/2"

Quantities — Unit Quantities

Class S Conc. Per Lin. Ft. of Barrel	Reinforcing Steel Per Lin. Ft. of Barrel	Additional Per Lap	Additional Two Headwalls & Aprons
Cu.Yd.	Lb.	Lb.	Lb.
0.481	69.84	30.06	100.20
0.818	111.13	40.08	142.51
1.069	146.89	48.93	169.23
1.283	176.34	51.77	298.20
1.630	222.02	58.95	279.89
1.860	239.47	61.79	309.93
0.496	70.92	30.06	100.20
0.881	117.66	40.08	142.51
1.166	158.60	48.93	215.98
1.392	184.82	51.77	298.20
1.784	231.32	58.95	279.89
2.084	266.19	61.79	309.93
0.524	75.16	30.06	
0.942	135.54	40.08	
1.262	167.88	48.93	
1.501	185.52	51.77	
1.922	269.06	58.95	
2.232	312.56	61.79	
0.556	76.77	30.06	
1.008	193.69	40.08	
1.359	179.01	48.93	
1.610	207.78	51.77	
2.095	282.97	58.95	
2.367	332.82	61.79	
0.586	80.74	30.06	
1.071	153.37	40.08	
1.432	194.56	48.93	
1.719	218.16	51.77	
1.998	294.86	55.11	
1.970	259.58	58.95	
2.193	285.12	61.79	
2.267	306.38	65.13	
2.568	311.22	68.97	
2.676	330.68	71.81	
2.195	302.98	61.79	
2.396	328.50	65.13	
2.672	390.26	68.97	
2.823	369.24	71.81	
2.822	393.24	75.15	
3.039	432.69	78.99	
3.290	457.98	81.83	
0.616	85.48	30.06	
1.134	169.67	40.08	
1.523	200.29	48.93	
1.766	226.92	55.11	
1.930	249.13	58.95	
2.081	278.69	61.79	
2.278	326.17	65.13	
1.821	252.97	51.77	
1.956	263.98	55.11	
2.079	278.90	58.95	
2.249	304.81	61.79	
2.400	326.89	65.13	
2.601	358.06	68.97	
2.921	393.31	71.81	
2.342	356.00	65.13	
2.998	366.96	68.97	
2.642	383.26	71.81	
2.799	408.60	75.15	
3.004	439.25	78.99	
0.646	91.13	30.06	
1.198	172.84	40.08	
1.287	180.14	43.42	
1.397	188.82	46.74	
1.543	210.71	50.10	
1.706	233.98	53.44	
1.861	260.14	56.78	
1.415	230.01	48.43	
1.728	238.92	51.77	
1.879	257.93	55.11	
2.049	280.76	58.95	
2.205	310.73	61.79	
2.908	343.64	65.13	
1.971	278.70	55.11	
2.111	290.57	58.95	
2.244	306.81	61.79	
2.419	332.29	65.13	
2.580	359.68	68.97	
2.789	386.42	71.81	
3.016	422.26	75.15	

Dowel Bars for Two Headwalls

Span	Size	Spacing	No. Req'd	Length	X	Bars "x" Dowel bars in Headwalls
4'	#4	12"	20	2'-4"	1'-2"	
6'	#4	12"	28	2'-6"	1'-3"	
7'	#4	12"	32	2'-8"	1'-4"	
8'	#5	12"	36	3'-0"	1'-6"	
9'	#5	12"	40	3'-1"	1'-6½"	
10'	#5	12"	44	3'-2"	1'-7"	

Bars "x" — Dowel bars in Headwalls

Length of Sections for Skewed Culverts

Skew Angle	Sec. of Skew Angle	2:1 Slopes Sections A	B,C,D,E or F	3:1 Slopes Sections A	B,C,D,E or F	4:1 Slopes A	B,C,D,E or F
0°	1.0	12.0	6.0'	22.0'	11.0'	32.0'	16.0'
15°	1.0353	12.426	6.212	22.776'	11.388'	33.129	16.564'
30°	1.1547	13.356	6.928	25.628	12.702'	36.950	18.975'
45°	1.4142	16.970	8.985	31.118	15.556'	45.253	22.627'

Bar Size	Pin Diam.	K	Add for 2 Hooks
#4	2	4/3	0'-10½"
#5	2½"	4⅔	0'-11½"
#6	3"	5"	1'-0"
#7	3½"	5⅔	1'-0"
#8	4"	6⅔	1'-0"

Bending Diagram for Bars "b" and "b2".

Note:- Dimensions are to centers of bars (a & b2).

Typical Longitudinal Section — Showing Sections and Bar Groups for Various Depths of Cover

Note:- Lengths of Sections and Bar Groups are to be shown on Cross Section Sheets or on Special Culvert Layout Sheet.

Sections and Bar Groups to be Used for Various Depths of Cover

Depths of Cover	Sections & Bar Groups for End Sections A	B	C	D	E	F	Mid-Section and Bar Group
5.0 to 9.5'	A						A
10.0 to 14.5'	A						B
15.0 to 19.5'	A	B					C
20.0 to 24.5'	A	B	C				D
25.0 to 29.5'	A	B	C	D			E
30.0 to 34.5'	A	B	C	D	E		F
35.0 to 40.0'	A	B	C	D	E	F	G

OR ALT.

Depths of Cover	Sections & Bar Groups for End Sections A	B	C	D	E	F	Mid-Section and Bar Group
5.0 to 9.5'	A						A
10.0 to 14.5'	A						B
15.0 to 19.5'	A	B					C
20.0 to 26.5'	A	B	C				D
26.0 to 29.5'	A	B	2@D				E
30.0 to 34.5'	A	B	C	2@E			F
35.0 to 40.0'	A	B	2@D		2@F		G

Part Longitudinal Section

Typical Section M-M

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 (min) 1200 lb/sq.in.
Reinforcing Steel 20000 lb/sq.in.

Note:- This drawing to be used in conjunction with Std. Wing Drawing Nos. W-X002-1 or W-X002-2, W-X003-1 or W-X003-2, & W-X004-1 or W-X004-2.

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 38"ø length of barrel over 32'6". Lap longitudinal bars 30 diam. min.
Construction Joints:- Construction joints between wingwalls, sidewalls, division wall and slabs shall be only where shown on plans.
Specifications:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

Class S Concrete

ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

Addl 4',6',7',8',9' & 10' Spans
Doubles

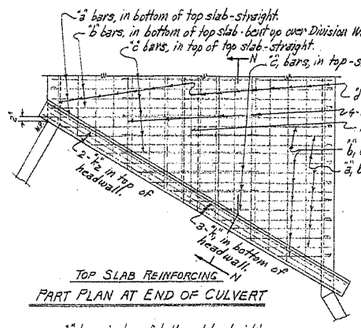
2:1, 3:1 or 4:1 Slopes
Over 5'-0" Cover

STANDARD DRAWING NO. R-200X-X4

Fed. Road No.	State	Fed. Aid Project	Fiscal Year	Sheet No.	Total Sheets
6	ARK.			379	
Job No.					

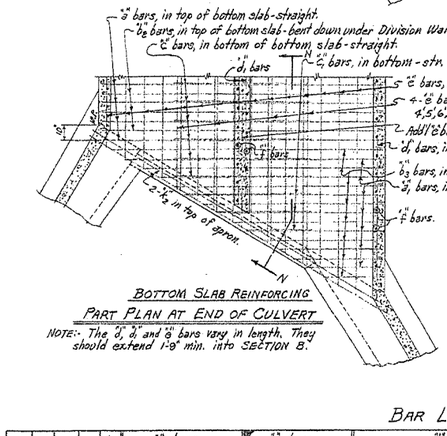
Reshot 3-8-93

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			380	
JOB No.					



TOP SLAB REINFORCING

PART PLAN AT END OF CULVERT

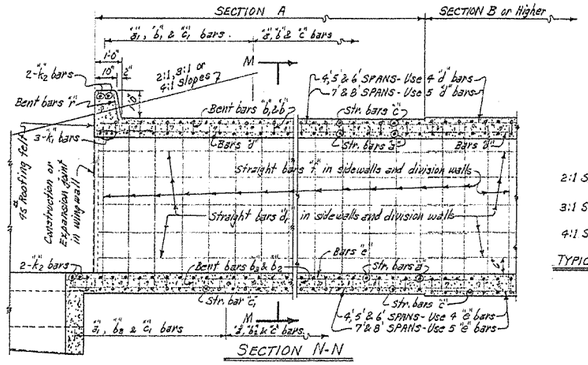


BOTTOM SLAB REINFORCING

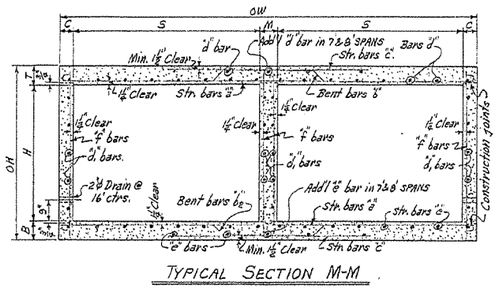
PART PLAN AT END OF CULVERT

NOTE:- The "d", "d1" and "e" bars vary in length. They should extend 1'-8" min. into SECTION B.

NOTE:- For Details of Standard Wings and bar lists, see Drawing No. W-X302-1 or W-X302-2; W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.



SECTION N-N

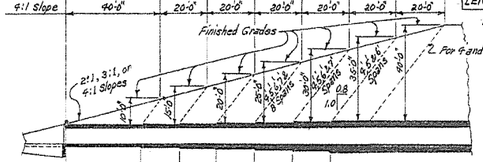


TYPICAL SECTION M-M

LENGTH OF SECTIONS ON 30° SKEW

SLOPE	2:1		3:1		4:1	
SECTIONS	A	B,C,D E & F	A	B,C,D E & F	A	B,C,D E & F
LENGTHS	13'-10⅝"	6'-11⅝"	25'-2⅜"	12'-6⅜"	36'-11⅝"	18'-5⅝"

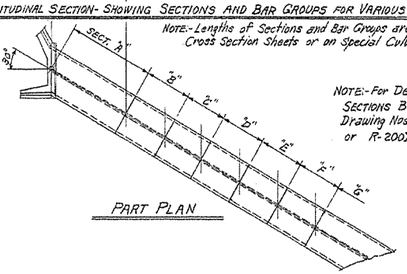
NOTE:- Minimum ℄ Length of SECTION "A" on 30° Skew = (0.288675 OW+2').



2:1 Slope =	SECTIONS	A=12'-6"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	MID-SECTION G- Varies	Those lengths are perpendicular to ℄ of roadway. See Table of Skew Lengths above.
	Bar Group	A	B	C	D	E	F	G	
3:1 Slope =	SECTIONS	A=22'-6"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	MID-SECTION G- Varies	
	Bar Group	A	B	C	D	E	F	G	
4:1 Slope =	SECTIONS	A=32'-6"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	MID-SECTION G- Varies	
	Bar Group	A	B	C	D	E	F	G	

TYPICAL LONGITUDINAL SECTION- SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections and Bar Groups are to be shown on Cross Section Sheets or on Special Culvert Layout Sheet.



PART PLAN

NOTE:- For Details and Bar Lists for SECTIONS B thru G, see Barrel Drawing Nos. R-200X-X.1, R-200X-X.2, or R-200X-X.3.

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	D	E	F	MID-SECTION AND BAR GROUP
5.0' to 9.5'	A						A
10.0' to 14.5'	A						B
15.0' to 19.5'	A	B					C
20.0' to 24.5'	A	B	C				D
25.0' to 29.5'	A	B	C	D			E
30.0' to 34.5'	A	B	C	D	E		F
35.0' to 40.0'	A	B	C	D	E	F	G

OR ALT.

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	D	E	F	MID-SECTION AND BAR GROUP
5.0' to 9.5'	A						A
10.0' to 14.5'	A						B
15.0' to 19.5'	A	B					C
20.0' to 24.5'	A	B	2@C				D
25.0' to 29.5'	A	B	2@D				E
30.0' to 34.5'	A	B	2@C	2@E			F
35.0' to 40.0'	A	B	2@D	2@F			G

SECTION "A" = 10'-0"	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 DIVISION WALL	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALL	QUANTITIES - ONE SECTION "A": CLASS S CONCRETE BARREL ONLY			REINFORCING STEEL BARREL, APRON AND HEADWALL.		
													2:1	3:1	4:1	2:1	3:1	4:1
	D	S	H	A	OW	T	C	M	B	OH	RL	K	CU.YD.	CU.YD.	CU.YD.	LB.	LB.	LB.
	2'-0" to 5'-0"	4@	2'	16	9'-8"	6"	6"	8"	6"	3'-0"	11'-8"	12'-3⅜"	6.66	12.22	17.77	1063	1903	2550
			3'	24	9'-9"		6'	8"		4'-0"	"	"	7.52	13.79	20.06	1142	1943	2786
			4'	32	9'-8"		6'	8"		5'-0"	"	"	8.38	15.36	22.35	1221	2084	2991
			5'	40	9'-8"		6'	8"		6'-0"	"	"	9.24	16.94	24.64	1300	2224	3197
			6'	48	9'-11"		7'	9"		7'-0"	11'-5½"	12'-7½"	10.99	20.14	29.29	1393	2391	3438
	2'-0" to 5'-0"	5@	3'	30	11'-5"	6½"	6'	8"	6½"	4'-1"	13'-8⅜"	14'-7½"	9.05	16.58	24.12	1539	2685	3821
			4'	40	11'-8"		6'	8"		5'-1"	"	"	9.91	18.16	26.41	1618	2774	4027
			5'	50	11'-8"		6'	8"		6'-1"	"	"	10.76	19.73	28.70	1697	2914	4232
			6'	60	11'-11"		7'	9"		7'-1"	13'-9½"	14'-11"	12.52	22.96	33.39	1796	3090	4485
			7'	70	12'-1"	7½"	10"			8'-1"	13'-11"	15'-1"	14.20	26.03	37.86	2053	3532	5157
	2'-0" to 5'-0"	6@	3'	36	13'-8"	7½"	6'	8"	7½"	4'-3"	15'-5⅜"	16'-4½"	11.33	20.77	30.21	1755	3039	4356
			4'	48	13'-8"		6'	8"		5'-3"	"	"	12.19	22.35	32.50	1834	3180	4562
			5'	60	13'-8"		6'	8"		6'-3"	"	"	13.04	23.90	34.76	1913	3320	4767
			6'	72	13'-11"		7'	9"		7'-3"	16'-0⅝"	17'-2⅝"	14.82	27.17	39.52	2012	3494	5018
			7'	84	14'-1"		7½"	10"		8'-3"	16'-2⅜"	17'-3½"	16.51	30.27	44.03	2273	3945	5702
			8'	96	14'-2"		8"	10"		9'-3"	16'-4⅛"	17'-6⅛"	17.98	32.96	47.94	2445	4256	6116
	2'-0" to 5'-0"	7@	4'	56	15'-8"	8½"	6'	8"	8½"	5'-5"	18'-1⅛"	19'-3"	14.81	27.15	39.49	2352	4084	5782
			5'	70	15'-8"		6'	8"		6'-5"	"	"	15.67	28.72	41.78	2430	4186	5987
			6'	84	15'-11"		7'	9"		7'-5"	18'-4⅝"	19'-6⅝"	17.97	32.02	46.58	2544	4378	6259
			7'	98	16'-1"		7½"	10"		8'-5"	18'-6⅜"	19'-9½"	19.17	35.15	51.12	2813	4940	6958
			8'	112	16'-2"		8"	10"		9'-5"	19'-8"	19'-9½"	20.64	37.84	55.04	2973	5147	7370
			9'	126	16'-5"		9"	11"		10'-5"	19'-11½"	20'-1⅝"	22.10	42.33	61.57	3175	5505	7872
	2'-0" to 5'-0"	8@	4'	64	17'-8"	9½"	6'	8"	9½"	5'-7"	20'-4⅝"	21'-6⅝"	17.77	32.58	47.39	2765	4922	6974
			5'	80	17'-11"		7'	9"		6'-7"	20'-8⅛"	21'-10"	19.98	35.71	51.93	2874	5010	7144
			6'	96	17'-11"		7'	9"		7'-7"	"	"	20.96	37.51	54.56	2953	5151	7350
			7'	112	18'-1"		7½"	10"		8'-7"	20'-10⅝"	22'-1⅝"	22.18	40.46	59.14	3148	5424	7807
			8'	128	18'-2"		8"	10"		9'-7"	20'-11⅜"	22'-1⅝"	23.65	43.35	63.05	3341	5783	8398
			9'	144	18'-5"		9"	11"		10'-7"	21'-3⅝"	22'-5"	26.18	47.90	69.44	3535	6116	8824
			10'	160	18'-8"		10"	12"		11'-7"	21'-6⅝"	22'-10½"	28.94	52.87	76.90	3893	6766	9770

* For remainder of quantities see Std. Wing and Barrel Drawings listed below. Total steel quantities listed above include one lap of longitudinal bars, plus an additional lap for 4:1 slopes.

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.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls, division wall 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 #/□"

Note:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.
For Barrels of 4', 5' & 6' Spans, see Drawing No. R-200X-X1. of 7' Spans Drawing No. R-200X-X.3, and of 8' Spans Drawing No. R-200X-X2.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS

30° SKEW - SECTIONS "A" ONLY

4', 5', 6', 7' AND 8' SPANS — 2:1, 3:1 OR 4:1 SLOPES
DOUBLES — OVER 5'-0" COVER

STANDARD DRAWING NO. R-230X-1

BAR LIST FOR SECTION "A" ON 30° SKEW - ONE END ONLY.

SECTION & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT: In Top and Bottom Slab of Barrel. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"a1" bars STRAIGHT: In Top and Bottom Slab of Barrel - (Two of each Length) SIZE	SPACING	NO. REQ'D	LENGTH MAX.	MIN.
SECTION "A" & BAR GROUP "A"	4:1 = 36'-11⅝"	0'-0" TO 10'-0" MAXIMUM.	4@	2'	#4	12"	23	43	65	9'-5"	#4	12"	6	7'-6"	3'-8"
	3:1 = 25'-2⅜"			3'			23	43	65	"			6	"	"
	2:1 = 13'-10⅝"			4'			23	43	65	"			6	"	"
	Designed by:- W.C.H. 9-17-62.			5'			23	43	65	9'-8"			6	"	"
	Drawn by:- W.C.H. 1-28-64.			6'			23	43	65	9'-8"			6	7'-9"	3'-11"
	Quantities by:- W.C.H 4-23-64		5@	3'			25	49	75	11'-5"			10	9'-10"	3'-6"
	Checked by:- N.M.S. 11-12-62			4'			25	49	75	"			10	"	"
	Checked by:-			5'			25	49	75	"			10	"	"
	Checked by:-			6'			25	49	75	11'-8"			10	10'-1"	3'-9"
				7'			25	49	75	11'-11"			10	10'-3"	3'-11"
			6@	3'			21	45	67	13'-5"			12	11'-8"	2'-11"
				4'			21	45	67	"			12	"	"
				5'			21	45	67	"			12	"	"
				6'			21	45	67	13'-8"			12	11'-11"	3'-2"
				7'			21	45	67	13'-11"			12	12'-1"	3'-6"
				8'			21	45	67	13'-11"			12	12'-3"	3'-9"
			7@	4'			21	43	67	h			14	h	h
				5'			21	43	67	"			14	"	"
				6'			21	43	67	15'-8"			14	13'-8"	3'-5"
				7'			21	43	67	15'-11"			14	13'-10"	3'-8"
				8'			21	43	67	15'-11"			14	14'-0"	3'-8"
				9'			21	43	67	16'-2"			14	14'-2"	3'-11"
			8@	4'			17	39	61	17'-5"			14	15'-6"	4'-0"
				5'			17	39	61	17'-8"			14	15'-9"	4'-3"
				6'			17	39	61	h			16	h	h
				7'			17	39	61	17'-11"			16	15'-11"	2'-6"
				8'			17	39	61	17'-11"			16	16'-0"	2'-7"
				9'			17	39	61	18'-2"			16	16'-2"	2'-9"
				10'			17	39	61	18'-5"			16	16'-6"	3'-0"

SECTION & BAR GROUP	"b" bars BENT - See Diagrams below. Alternate with "a" and "c" bars. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	X	Y	Z	"b1" bars BENT - See Diagrams below. Alternate with "a1" and "c1" bars. SIZE	SPACING	NO. REQ'D	LENGTH MAX.	MIN.	L MAX.	MIN.
SECTION "A" & BAR GROUP "A"	#4	13"	10	21	31	10'-5"	0'-2⅝"	2'-1"	3'-5"	#4	13"	4	9'-0"	3'-1"	8'-5"	2'-8"
			10	21	31	"	"	"	"			4	"	"	"	"
			10	21	31	"	"	"	"			4	"	"	"	"
			10	21	31	"	"	"	"			4	"	"	"	"
			10	21	31	10'-9"	0'-2⅝"	2'-2"	3'-6"			4	9'-3"	3'-4"	8'-8"	2'-11"
			10	21	31	10'-9"	0'-2⅝"	2'-2"	3'-6"			4	9'-3"	3'-4"	8'-8"	2'-11"
	#5	11"	10	23	34	12'-6"	0'-3"	2'-6½"	4'-2"	#5	11"	4	11'-3"	3'-8"	10'-7"	2'-8"
			11	23	34	"	"	"	"			6	"	"	"	"
			11	23	34	"	"	"	"			6	"	"	"	"
			11	23	36	12'-9"	"	2'-7½"	4'-3"			6	11'-6"	3'-5"	10'-10"	2'-11"
			11	23	36	12'-11"	0'-3"	2'-8½"	4'-5"			6	11'-8"	3'-7"	11'-0"	3'-1"
	#5	11"	10	21	33	14'-7"	0'-3½"	2'-11"	4'-11"	#5	11"	4	13'-3"	4'-3"	12'-6"	3'-9"
			10	21	33	"	"	"	"			6	"	"	"	"
			10	21	33	"	"	"	"			6	"	"	"	"
			10	21	33	14'-10"	"	3'-0"	5'-0"			6	13'-6"	4'-6"	12'-9"	4'-0"
			10	21	33	15'-0"	"	3'-1"	5'-0½"			6	13'-9"	4'-8"	12'-11"	4'-2"
			10	21	33	15'-1"	0'-3⅝"	3'-1"	5'-1"			6	13'-9"	4'-9"	13'-0"	4'-3"
	#5	12"	10	21	32	16'-10"	0'-4⅜"	3'-5"	5'-7"	#5	12"	4	15'-5"	4'-7"	14'-6"	4'-0"
			9	21	32	"	"	"	"			7	"	"	"	"
			9	21	32	17'-1"	"	3'-5½"	5'-8"			8	15'-8"	4'-11"	14'-9"	2'-6"
			9	21	32	17'-3"	"	3'-6"	5'-8½"			8	15'-11"	5'-0"	14'-11"	2'-8"
			9	21	32	17'-6"	"	3'-6½"	5'-9"			8	15'-11"	5'-0½"	15'-0"	2'-9"
			9	21	32	17'-7"	0'-4⅝"	3'-7"	5'-10"			8	16'-2"	5'-1"	15'-3"	3'-0"
	#6	13"	9	20	30	18'-11"	0'-4⅝"	3'-6"	6'-5"	#6	13"	6	17'-5"	5'-3"	16'-5"	3'-0"
			9	20	30	19'-2"	"	3'-7"	6'-6"			6	17'-7"	5'-4"	16'-8"	3'-3"
			9	20	30	"	"	"	"			6	"	"	"	"
			9	19	30	19'-4"	"	3'-8"	6'-6½"			6	17'-10"	5'-4"	16'-10"	3'-5"
			9	19	30	19'-5"	"	3'-8½"	6'-7"			6	18'-0"	5'-5"	17'-0"	3'-6"
			9	19	30	19'-8"	"	3'-9"	6'-8"			6	18'-2"	5'-6"	17'-2"	3'-9"
			9	19	30	19'-9"	0'-4⅝"	3'-10"	6'-8"			6	18'-3"	5'-7"	17'-5"	4'-0"

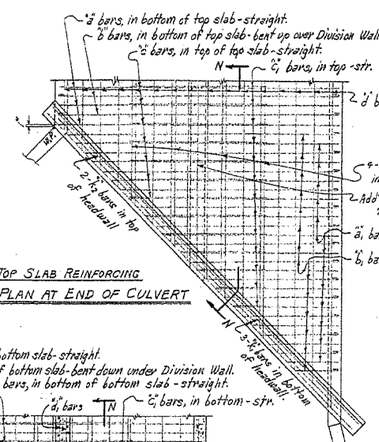
SECTION & BAR GROUP	"b2" bars BENT - See Diagrams below. Alternate with "a" and "c" bars. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	X	Y	Z	"b3" bars. SIZE	SPACING	NO. REQ'D	LENGTH MAX.	MIN.	L MAX.	MIN.
SECTION "A" & BAR GROUP "A"	#4	13"	11	22	32	10'-5"	0'-2⅝"	2'-1"	3'-5"	#4	13"	4	9'-0"	3'-1"	8'-5"	2'-8"
			11	22	32	"	"	"	"			4	"	"	"	"
			11	22	32	"	"	"	"			4	"	"	"	"
			11	22	32	"	"	"	"			4	"	"	"	"
			11	22	32	10'-8"	0'-2⅝"	2'-2"	3'-6"			4	9'-3"	3'-4"	8'-8"	2'-11"
			11	22	32	10'-8"	0'-2⅝"	2'-2"	3'-6"			4	9'-3"	3'-4"	8'-8"	2'-11"
	#5	11"	12	26	37	12'-6"	0'-3"	2'-6½"	4'-2"	#5	11"	4	11'-3"	3'-8"	10'-7"	2'-8"
			12	26	37	"	"	"	"			6	"	"	"	"
			12	26	37	"	"	"	"			6	"	"	"	"
			12	26	37	12'-9"	"	2'-7½"	4'-3"			6	11'-6"	3'-5"	10'-10"	2'-11"
			12	26	37	12'-11"	0'-3"	2'-8½"	4'-5"			6	11'-8"	3'-7"	11'-0"	3'-1"
	#5	11"	11	22	34	14'-7"	0'-4⅜"	2'-10"	4'-11"	#5	11"	4	13'-3"	4'-3"	12'-6"	3'-9"
			11	22	34	"	"	"	"			6	"	"	"	"
			11	22	34	"	"	"	"			6	"	"	"	"
			11	22	34	14'-10"	"	2'-11"	5'-0"			6	13'-6"	4'-6"	12'-9"	4'-0"
			11	22	34	15'-0"	"	3'-0"	5'-0½"			6	13'-9"	4'-8"	12'-11"	4'-2"
			11	22	34	15'-1"	0'-4⅜"	3'-0"	5'-1"			6	13'-9"	4'-9"	13'-0"	4'-3"
	#5	12"	10	22	33	16'-10"	0'-5⅜"	3'-3½"	5'-7"	#5	12"	4	15'-5"	4'-7"	14'-6"	4'-0"
			10	22	33	"	"	"	"			7	"	"	"	"
			10	22	33	17'-1"	"	3'-4½"	5'-8"			8	15'-8"	4'-11"	14'-9"	2'-6"
			10	22	33	17'-3"	"	3'-5"	5'-8½"			8	15'-11"	5'-0"	14'-11"	2'-8"
			10	22	33	17'-4"	"	3'-5½"	5'-9"			8	15'-11"	5'-0½"	15'-0"	2'-9"
			10	22	33	17'-7"	0'-5⅜"	3'-6½"	5'-10"			8	16'-2"	5'-1"	15'-3"	3'-0"
	#6	13"	9	20	30	19'-0"	0'-6⅛"	3'-6"	6'-5"	#6	13"	6	17'-5"	5'-3"	16'-5"	3'-0"
			9	20	30	19'-2"	"	3'-7"	6'-6"			6	17'-7"	5'-4"	16'-8"	3'-3"
			9	20	30	"	"	"	"			6	"	"	"	"
			9	19	30	19'-4"	"	3'-8"	6'-6½"			6	17'-10"	5'-4"	16'-10"	3'-5"
			9	19	30	19'-5"	"	3'-8½"	6'-7"			6	18'-0"	5'-5"	17'-0"	3'-6"
			9	19	30	19'-8"	"	3'-9"	6'-8"			6	18'-2"	5'-6"	17'-2"	3'-9"
			9	19	30	19'-9"	0'-6⅛"	3'-10"	6'-8"			6	18'-3"	5'-7"	17'-5"	4'-0"

SECTION & BAR GROUP	"c" bars STRAIGHT: In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"c1" bars STRAIGHT: In Top and Bottom Slab of Barrel. All with "b1" & "b3" bars. (Two of each Length) SIZE	SPACING	NO. REQ'D	LENGTH MAX.	MIN.	"d" bars STRAIGHT: Longitudinal in Top Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH
SECTION "A" & BAR GROUP "A"	#4	13"	25	45	67	4'-6"			2	3'-3"	—	#5	15"	14	
			25	45	67	"			2	"	—			14	
			25	45	67	"			2	"	—			14	
			25	45	67	"			2	"	—			14	
			25	45	67	4'-9"			2	3'-6"	—			14	
			25	45	67	4'-9"			2	3'-6"	—			14	
	#5	11"	27	51	77	5'-8"			4	5'-5"	3'-10"	#5	11"	14	
			27	51	77	"			4	"	"			14	
			27	51	77	"			4	"	"			14	
			27	51	77	5'-9"			4	5'-7"	4'-0"			14	
			27	51	77	5'-10"			4	5'-8"	4'-1"			16	
	#5	11"	23	47	69	6'-8"			6	6'-7"	3'-1"	#5	12"	18	
			23	47	69	"			6	"	"			18	
			23	47	69	"			6	"	"			18	
			23	47	69	6'-9"			6	6'-9"	3'-3"			18	
			23	47	69	6'-10"			6	6'-10"	3'-4"			18	
			23	47	69	6'-10"			6	6'-11"	3'-5"			18	
	#5	12"	25	47	71	7'-8"			6	7'-6"	2'-10"	#5	12"	20	
			25	47	71	"			6	"	"			20	
			25	47	71	"			6	"	"			20	
			25	47	71	7'-9"			6	7'-8"	3'-0"			20	
			25	47	71	7'-10"			6	7'-9"	3'-1"			20	
			25	47	71	7'-10"			6	7'-10"	3'-2"			20	
	#6	13"	21	43	65	8'-8"			8	8'-7"	3'-3"	#6	13"	23	
			21	43	65	8'-9"			8	8'-8"	3'-5"			23	
			21	43	65	"			8	"	"			23	
			21	43	65	8'-10"			8	8'-9"	3'-6"			23	
			21	43	65	8'-10"			8	8'-10"	3'-7"			23	
			21	43	65	9'-0"			8	8'-11"	3'-8"			23	

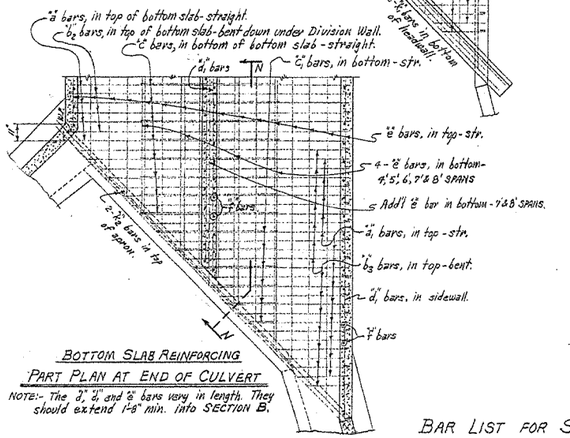
SECTION & BAR GROUP	"e" bars STRAIGHT: Longitudinal in Sidewalls and Division Wall. SIZE	SPACING	NO. REQ'D	LENGTH	"e" bars STRAIGHT: Longitudinal in Bottom Slab of Barrel. SIZE	SPACING	NO. REQ'D	LENGTH	"f" bars STRAIGHT: Verticals in Sidewalls and Division Wall. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"k1" bars STRAIGHT: In Bottom of Headwall. SIZE	NO. REQ'D	LENGTH	"k2" bars STRAIGHT: In Top of Headwall and Apron. (2 Each) SIZE	NO. REQ'D	LENGTH
SECTION "A" & BAR GROUP "A"	#4	14"	8	3'-3"	#4	12"	14	4'-1"	#4	12"	56	102	148	2'-9"	#5	3	10'-11"	#6	4	12'-0"
											56	102	148	3'-1"		3	"		4	"
											56	102	148	3'-5"		3	"		4	"
											56	102	148	3'-9"		3	"		4	"
											56	102	148	4'-1"		3	"		4	"
											56	102	148	4'-5"		3	"		4	12'-6"
											56	102	148	4'-9"		3	"		4	"
											56	102	148	5'-1"		3	"		4

REDHOT 3-9-93 408

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			38	
JOB No.					



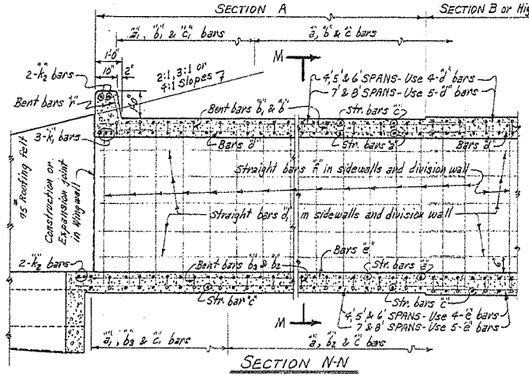
TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT



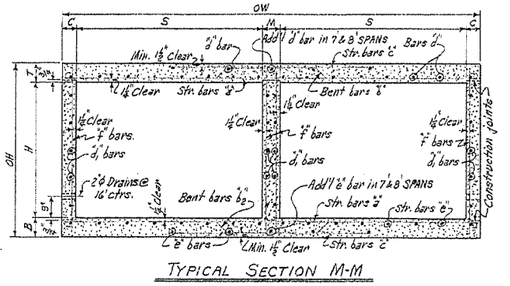
BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

NOTE:- The "d", "d1" and "e" bars vary in length. They should extend 1'-8" min. into SECTION B.

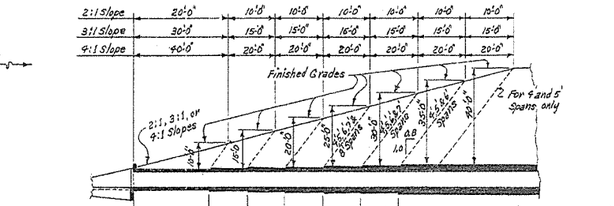
NOTE:- For Details of Standard Wings and bar lists, see Drawing No. W-X452-1 or W-X452-2; W-X453-1 or W-X453-2, and W-X454-1 or W-X454-2. Also W-X45.



SECTION N-N



TYPICAL SECTION M-M



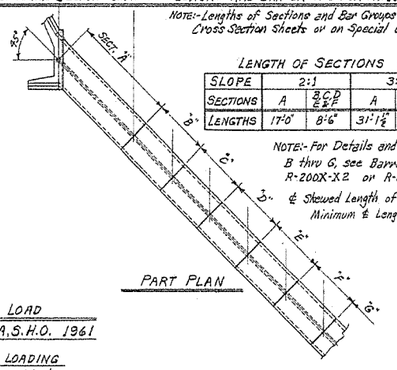
2:1 Slope =	SECTIONS	A=12'-0"	B=6'-0"	C=6'-0"	D=6'-0"	E=6'-0"	F=6'-0"	MID-SECTION G- Varies	These lengths are perpendicular to ℄ of roadway. See Table of Skew Lengths below.
	Bar Group	A	B	C	D	E	F	G	
3:1 Slope =	SECTIONS	A=22'-0"	B=11'-0"	C=11'-0"	D=11'-0"	E=11'-0"	F=11'-0"	MID-SECTION G- Varies	
	Bar Group	A	B	C	D	E	F	G	
4:1 Slope =	SECTIONS	A=32'-0"	B=16'-0"	C=16'-0"	D=16'-0"	E=16'-0"	F=16'-0"	MID-SECTION G- Varies	
	Bar Group	A	B	C	D	E	F	G	

TYPICAL LONGITUDINAL SECTION- SHOWING SECTIONS AND BAR GROUPS FOR VARIOUS DEPTHS OF COVER

NOTE:- Lengths of Sections and Bar Groups are to be shown on Cross Section Sheets or on Special Culvert Layout Sheet.

LENGTH OF SECTIONS ON 45° SKEW

SLOPE	2:1		3:1		4:1	
SECTIONS	A	B C D E F	A	B C D E F	A	B C D E F
LENGTHS	17'-0"	8'-6"	31'-1½"	15'-6⅝"	45'-3"	22'-7½"



PART PLAN

NOTE:- For Details and Bar Lists for SECTION B thru G, see Barrel Drawing Nos. R-200X-X1, R-200X-X2 or R-200X-X3.

℄ Skewed Length of A = 1.41421 A. Minimum ℄ Length on skews (0.50W+1').

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb. Axles @ 4'-8" ctrs

UNIT STRESSES:-
Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 24,000#/□"

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS											* QUANTITIES - ONE SECTION "A"					
												CLASS S CONCRETE			REINFORCING STEEL		
												BARREL ONLY			BARREL, APRON AND HEADWALL		
	CLEAR SPANS	SQ.FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS	THICKNESS OF DIVISION WALL	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	TEMPORARY	LENGTH OF HEADWALL		2:1	3:1	4:1	2:1	3:1	4:1
D.	S	H	A	OW	T	C	M	B	OH	RL	K	CU.YD.	CU.YD.	CU.YD.	LB.	LB.	LB.
SECTION "A" = 10'-0"	4'-0"	2'	16	9'-8"	6"	6"	8"	6"	3'-0"	13'-8"	15'-8"	8.18	14.97	21.77	1288	2203	3147
		3'	24	9'-8"		6"	8"		4'-0"	"	"	9.23	14.90	26.57	1384	2374	3397
		4'	32	9'-8"		6"	8"		5'-0"	"	"	10.28	18.83	27.38	1479	2545	3647
		5'	40	9'-8"		6"	8"		6'-0"	"	"	11.34	20.74	30.18	1575	2716	3897
		6'	48	9'-11"		7"	9"		7'-0"	14'-0½"	16'-0½"	13.99	24.68	35.88	1689	2916	4187
	5'-0"	3'	30	11'-8"		6"	8"		4'-1"	16'-6"	18'-6"	11.10	20.33	29.55	1935	3292	4712
		4'	40	11'-8"		6"	8"		5'-1"	"	"	12.16	22.25	32.35	2080	3463	4962
		5'	50	11'-8"	6½"	6"	8"	6½"	6'-1"	"	"	13.21	24.18	35.16	2126	3634	5212
		6'	60	11'-11"		6"	8"		7'-1"	16'-10½"	18'-10½"	15.37	28.14	40.91	2229	3855	5528
		7'	70	12'-1"		7"	9"		8'-1"	17'-1"	19'-1"	17.42	31.90	46.38	2597	4608	6389
	6'-0"	3'	36	13'-8"		6"	8"		4'-3"	19'-3⅜"	21'-4⅜"	15.91	25.96	37.01	2216	3777	5378
		4'	48	13'-8"		6"	8"		5'-3"	"	"	16.96	27.39	38.92	2312	3948	5628
		5'	60	13'-8"		6"	8"		6'-3"	"	"	18.00	29.29	42.59	2407	4119	5878
		6'	72	13'-11"		7"	9"		7'-3"	19'-8⅝"	21'-8⅝"	18.19	33.30	48.42	2694	4237	6132
		7'	84	14'-1"	7½"	7½"	10"	7½"	8'-3"	19'-11"	21'-11"	20.26	37.10	53.94	2821	4899	7033
		8'	96	14'-2"		8"	10"		9'-3"	20'-0⅝"	22'-0⅝"	22.07	40.90	58.73	3017	5232	7536
	7'-0"	4'	56	15'-8"		6"	8"		5'-5"	22'-1⅝"	24'-1⅝"	18.17	33.27	48.37	2952	5018	7123
		5'	70	15'-8"		6"	8"		6'-5"	"	"	19.23	35.20	51.18	3098	5184	7373
		6'	84	15'-11"		7"	9"		7'-5"	22'-6⅝"	24'-6"	21.94	39.25	57.06	3125	5909	7496
		7'	98	16'-1"	8¼"	7½"	10"	8¾"	8'-5"	22'-9"	24'-9"	23.58	43.08	62.63	3267	5957	8555
		8'	112	16'-2"		8"	10"		9'-5"	22'-10⅝"	24'-10⅝"	25.33	46.38	67.42	3666	6296	9066
		9'	126	16'-5"		9"	11"		10'-5"	23'-2⅝"	25'-2⅝"	28.34	51.88	75.43	3914	6798	9632
	8'-0"	4'	64	17'-8"		6"	8"		5'-7"	24'-1⅜"	26'-1⅜"	21.01	38.93	58.66	3915	5871	8461
		5'	80	17'-11"		7"	9"		6'-7"	25'-1⅜"	27'-1⅜"	23.90	43.76	63.68	3585	6237	8845
		6'	96	17'-11"		7"	9"		7'-7"	"	"	25.11	45.97	66.83	3680	6608	9095
		7'	112	18'-1"	9¼"	7½"	10"	9¾"	8'-7"	25'-6⅝"	27'-5"	27.22	49.85	72.44	3882	6667	9505
		8'	128	18'-2"		8"	10"		9'-7"	25'-9⅝"	27'-10⅝"	29.02	53.13	77.24	4193	7149	10,215
		9'	144	18'-5"		9"	11"		10'-7"	26'-0⅝"	28'-0⅝"	32.06	58.70	85.34	4401	7557	10,819
		10'	160	18'-8"		10"	12"		11'-7"	26'-4⅜"	28'-4⅜"	36.39	66.80	97.21	4847	8368	11,973

* For remainder of quantities see Std. Wing and Barrel Drawings listed below.

SECTIONS AND BAR GROUPS TO BE USED FOR VARIOUS DEPTHS OF COVER

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	D	E	F	MID-SECTION AND BAR GROUP
5.0' to 9.5'	A						A
10.0' to 14.5'	A						B
15.0' to 19.5'	A	B					C
20.0' to 24.5'	A	B	C				D
25.0 to 29.5'	A	B	C	D			E
30.0 to 39.5'	A	B	C	D	E		F
35.0' to 40.0'	A	B	C	D	E	F	G

OR ALT.

DEPTHS OF COVER	SECTIONS & BAR GROUPS FOR END SECTIONS A	B	C	D	E	F	MID-SECTION AND BAR GROUP
5.0' to 9.5'	A						A
10.0' to 14.5'	A						B
15.0' to 19.5'	A	B					C
20.0' to 24.5'	A	B	C				D
25.0 to 29.5'	A	B	2@C				E
30.0 to 39.5'	A	B	2@C	2@E			F
35.0' to 40.0'	A	B	2@D	2@F			G

BAR LIST FOR SECTION "A" ON 45° SKEW - ONE END ONLY

SECTION "A" & BAR GROUP	LENGTH OF SECTION	DEPTH OF COVER	CLEAR SPAN	CLEAR HEIGHT	"a" bars STRAIGHT In Top and Bottom Slab of Barrel. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"a1" bars STRAIGHT In Top and Bottom Slab of Barrel (Two of each Length) SIZE	SPACING	NUMBER REQ'D	LENGTH
Section "A" & Bar Group "A"	4'-1⅛" = 45°-3"	0'-0" to 10'-0" MAXIMUM	4'@	2'	#4	13"	25	51	77	9'-5"	#4	12"	11	24
				3'			25	51	77	"		12"	"	"
				4'			25	51	77	"		12"	"	"
				5'			25	51	77	"		12"	"	"
				6'			25	51	77	9'-8"		12"	11	24
			5@	3'	#4	11"	27	57	87	11'-5"	#4	12"	12	27
				4'			27	57	87	"		12"	"	"
				5'			25	57	87	11'-8"		12"	12	27
				6'			25	57	87	11'-10"		12"	"	"
				7'			25	57	87	12'-0"		12"	11	27
			6@	3'	#4	12"	23	51	79	13'-5"	#4	12"	10	24
				4'			23	51	79	"		12"	"	"
				5'			23	51	79	"		12"	"	"
				6'			21	51	79	12'-8"		12"	10	24
				7'			21	49	79	12'-10"		12"	"	"
				8'			21	49	79	13'-0"		12"	11	24
			7@	4'	#4	12"	21	49	77	12'-5"	#4	12"	10	24
				5'			21	49	77	"		12"	"	"
				6'			21	49	77	12'-8"		12"	10	24
				7'			21	49	77	12'-10"		12"	"	"
				8'			21	49	77	13'-0"		12"	11	24
			8@	4'	#4	12"	21	49	77	12'-5"	#4	12"	10	24
				5'			21	49	77	"		12"	"	"
				6'			21	49	77	12'-8"		12"	10	24
				7'			21	49	77	12'-10"		12"	"	"
				8'			21	49	77	13'-0"		12"	11	24
				9'			21	49	77	13'-2"		12"	"	"
				10'			21	49	77	13'-4"		12"	12	24
	2:1 = 12'-0"		4'@	2'	#4	13"	17	43	69	7'-2"	#4	13"	7	20
				3'			17	43	69	"		13"	"	"
				4'			17	43	69	"		13"	"	"
				5'			17	43	69	7'-3"		13"	7	20
				6'			17	43	69	7'-4"		13"	"	"
			5@	3'	#4	13"	17	43	69	7'-4"	#4	13"	7	20
				4'			17	43	69	"		13"	"	"
				5'			17	43	69	7'-5"		13"	7	20
				6'			17	43	69	7'-6"		13"	"	"
				7'			17	43	69	7'-7"		13"	8	20
				8'			17	43	69	7'-8"		13"	"	"
			6@	3'	#4	13"	17	43	69	7'-7"	#4	13"	7	20
				4'			17	43	69	"		13"	"	"
				5'			17	43	69	7'-8"		13"	7	20
				6'			17	43	69	7'-9"		13"	"	"
				7'			17	43	69	7'-10"		13"	8	20
				8'			17	43	69	8'-0"		13"	"	"
				9'			17	43	69	8'-1"		13"	8	20
				10'			17	43	69	8'-2"		13"	"	"
			7@	4'	#4	13"	17	43	69	7'-10"	#4	13"	7	20
				5'			17	43	69	7'-11"		13"	"	"
				6'			17	43	69	8'-0"		13"	8	20
				7'			17	43	69	8'-1"		13"	"	"
				8'			17	43	69	8'-2"		13"	8	20
				9'			17	43	69	8'-3"		13"	"	"
				10'			17	43	69	8'-4"		13"	9	20
			8@	4'	#4	13"	17	43	69	8'-0"	#4	13"	8	20
				5'			17	43	69	8'-1"		13"	"	"
				6'			17	43	69	8'-2"		13"	8	20
				7'			17	43	69	8'-3"		13"	"	"
				8'			17	43	69	8'-4"		13"	9	20
				9'			17	43	69	8'-5"		13"	"	"
				10'			17	43	69	8'-6"		13"	9	20

SECTION "A" & BAR GROUP	"b" bars BENT - See Diagrams below. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "e" bars. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	"b1" bars BENT - See Diagrams below. In Bottom of Top Slab- some bent up over Division Wall - Ave. end hooked. Alternate with "a" and "e" or "c" bars. SIZE	SPACING	NUMBER REQ'D	LENGTH MAX.	LENGTH MIN.	L MAX.	L MIN.
Section "A" & Bar Group "A"	#5	13"	24	38	10'-5"	0'-2⅝"	#5	13"	7	9'-5"	2'-9"	8'-10"	2'-6"
			24	38	"	"			7	"	"	"	"
			24	38	"	"			7	"	"	"	"
			24	38	"	"			7	"	"	"	"
			24	38	10'-8"	0'-2⅝"			7	9'-8"	3'-0"	9'-1"	2'-7"
	#5	11"	27	43	12'-6"	0'-3"	#5	11"	10	11'-7"	3'-2"	10'-11"	2'-8"
			27	43	"	"			10	"	"	"	"
			27	43	12'-9"	"			10	11'-8"	3'-5"	11'-2"	2'-11"
			27	43	"	"			10	11'-10"	3'-7"	11'-5"	3'-1"
			27	43	12'-11"	0'-3"			10	12'-0"	3'-7"	11'-8"	3'-1"
	#5	12"	23	39	13'-5"	0'-3"	#5	12"	11	13'-3"	3'-4"	12'-10"	3'-10"
			23	39	"	"			11	"	"	"	"
			24	38	"	"			11	13'-6"	3'-7"	13'-1"	3'-4"
			24	38	13'-8"	0'-3"			11	13'-9"	3'-7"	13'-4"	3'-5"
			24	38	13'-11"	0'-3"			11	14'-0"	3'-10"	13'-7"	3'-6"
	#5	12"	24	38	14'-2"	0'-3"	#5	12"	11	14'-3"	3'-10"	13'-10"	3'-7"
			24	38	"	"			11	"	"	"	"
			24	38	14'-5"	"			11	14'-6"	3'-10"	14'-1"	3'-8"
			24	38	14'-8"	"			11	14'-9"	3'-10"	14'-4"	3'-8"
			24	38	14'-10"	"			11	15'-0"	3'-10"	14'-7"	3'-9"
	#5	12"	24	38	15'-1"	"	#5	12"	11	15'-3"	3'-10"	14'-10"	3'-9"
			24	38	"	"			11	"	"	"	"
			24	38	15'-4"	"			11	15'-6"	3'-10"	15'-1"	3'-10"
			24	38	15'-7"	"			11	15'-9"	3'-10"	15'-4"	3'-10"
			24	38	15'-10"	"			11	16'-0"	3'-10"	15'-7"	3'-11"
	#5	12"	24	38	16'-1"	"	#5	12"	11	16'-3"	3'-10"	15'-10"	3'-11"
			24	38	"	"			11	"	"	"	"
			24	38	16'-4"	"			11	16'-6"	3'-10"	16'-1"	4'-0"
			24	38	16'-7"	"			11	16'-9"	3'-10"	16'-4"	4'-0"
			24	38	16'-10"	"			11	17'-0"	3'-10"	16'-7"	4'-1"
	#5	12"	24	38	17'-1"	"	#5	12"	11	17'-3"	3'-10"	16'-10"	4'-1"
			24	38	"	"			11	"	"	"	"
			24	38	17'-4"	"			11	17'-6"	3'-10"	17'-1"	4'-2"
			24	38	17'-7"	"			11	17'-9"	3'-10"	17'-4"	4'-2"
			24	38	17'-10"	"			11	18'-0"	3'-10"	17'-7"	4'-3"
	#5	12"	24	38	18'-1"	"	#5	12"	11	18'-3"	3'-10"	17'-10"	4'-3"
			24	38	"	"			11	"	"	"	"
			24	38	18'-4"	"			11	18'-6"	3'-10"	18'-1"	4'-4"
			24	38	18'-7"	"			11	18'-9"	3'-10"	18'-4"	4'-4"
			24	38	18'-10"	"			11	19'-0"	3'-10"	18'-7"	4'-5"
	#5	12"	24	38	19'-1"	"	#5	12"	11	19'-3"	3'-10"	18'-10"	4'-5"
			24	38	"	"			11	"	"	"	"
			24	38	19'-4"	"			11	19'-6"	3'-10"	19'-1"	4'-6"
			24	38	19'-7"	"			11	19'-9"	3'-10"	19'-4"	4'-6"
			24	38	19'-10"	"			11	20'-0"	3'-10"	19'-7"	4'-7"
	#5	12"	24	38	20'-1"	"	#5	12"	11	20'-3"	3'-10"	19'-10"	4'-7"
			24	38	"	"			11	"	"	"	"
			24	38	20'-4"	"			11	20'-6"	3'-10"	20'-1"	4'-8"
			24	38	20'-7"	"			11	20'-9"	3'-10"	20'-4"	4'-8"
			24	38	20'-10"	"			11	21'-0"	3'-10"	20'-7"	4'-9"

SECTION "A" & BAR GROUP	"b2" bars BENT - See Diagrams below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with "d" and "e" bars. SIZE	SPACING	NUMBER REQ'D 2:1	3:1	4:1	LENGTH	X	Y	Z	"b3" bars. In Top of Bottom Slab- some bent down under Division Wall. one end hooked. Alternate with "d" and "e" or "c" bars SIZE	SPACING	NUMBER REQ'D	LENGTH MAX.	LENGTH MIN.	L MAX.	L MIN.
Section "A" & Bar Group "A"	#5	13"	25	38	10'-5"	0'-2⅝"	2'-1"	3'-5"		#5	13"	7	9'-5"	2'-9"	8'-10"	2'-6"
			25	38	"	"	"	"				7	"	"	"	"
			25	38	"	"	"	"				7	"	"	"	"
			25	38	"	"	"	"				7	"	"	"	"
			25	38	10'-8"	0'-2⅝"	2'-2"	3'-6"				7	9'-8"	3'-0"	9'-1"	2'-7"
	#5	11"	28	44	12'-6"	0'-3"	2'-6½"	4'-2"		#5	11"	10	11'-7"	3'-2"	10'-11"	2'-8"
			28	44	"	"	"	"				10	"	"	"	"
			28	44	12'-9"	"	2'-7½"	4'-3"				10	11'-8"	3'-5"	11'-2"	2'-11"
			28	44	"	"	"	"				10	11'-10"	3'-7"	11'-5"	3'-1"
			28	44	12'-11"	0'-3"	2'-8½"	4'-3"				10	12'-0"	3'-7"	11'-8"	3'-1"
	#5	12"	25	39	13'-5"	0'-3"	2'-10"	4'-5"		#5	12"	11	13'-3"	3'-4"	12'-10"	3'-10"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	13'-8"	0'-3"	2'-11"	5'-0"				11	13'-6"	3'-7"	13'-1"	3'-4"
			25	39	13'-11"	"	3'-0"	5'-0"				11	13'-9"	3'-7"	13'-4"	3'-5"
			25	39	14'-2"	"	3'-1"	5'-1"				11	14'-0"	3'-10"	13'-7"	3'-6"
	#5	12"	25	39	14'-5"	"	3'-2"	5'-2"		#5	12"	11	14'-3"	3'-10"	13'-10"	3'-7"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	14'-8"	"	3'-3"	5'-3"				11	14'-6"	3'-10"	14'-1"	3'-8"
			25	39	14'-10"	"	3'-4"	5'-4"				11	14'-9"	3'-10"	14'-4"	3'-8"
			25	39	15'-1"	"	3'-5"	5'-5"				11	15'-0"	3'-10"	14'-7"	3'-9"
	#5	12"	25	39	15'-4"	"	3'-6"	5'-6"		#5	12"	11	15'-3"	3'-10"	14'-10"	3'-9"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	15'-7"	"	3'-7"	5'-7"				11	15'-6"	3'-10"	15'-1"	3'-10"
			25	39	15'-10"	"	3'-8"	5'-8"				11	15'-9"	3'-10"	15'-4"	3'-10"
			25	39	16'-1"	"	3'-9"	5'-9"				11	16'-0"	3'-10"	15'-7"	3'-11"
	#5	12"	25	39	16'-4"	"	3'-10"	5'-10"		#5	12"	11	16'-3"	3'-10"	15'-10"	3'-11"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	16'-7"	"	3'-11"	5'-11"				11	16'-6"	3'-10"	16'-1"	4'-0"
			25	39	16'-10"	"	4'-0"	6'-0"				11	16'-9"	3'-10"	16'-4"	4'-0"
			25	39	17'-1"	"	4'-1"	6'-1"				11	17'-0"	3'-10"	16'-7"	4'-1"
	#5	12"	25	39	17'-4"	"	4'-2"	6'-2"		#5	12"	11	17'-3"	3'-10"	16'-10"	4'-1"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	17'-7"	"	4'-3"	6'-3"				11	17'-6"	3'-10"	17'-1"	4'-2"
			25	39	17'-10"	"	4'-4"	6'-4"				11	17'-9"	3'-10"	17'-4"	4'-2"
			25	39	18'-1"	"	4'-5"	6'-5"				11	18'-0"	3'-10"	17'-7"	4'-3"
	#5	12"	25	39	18'-4"	"	4'-6"	6'-6"		#5	12"	11	18'-3"	3'-10"	17'-10"	4'-3"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	18'-7"	"	4'-7"	6'-7"				11	18'-6"	3'-10"	18'-1"	4'-4"
			25	39	18'-10"	"	4'-8"	6'-8"				11	18'-9"	3'-10"	18'-4"	4'-4"
			25	39	19'-1"	"	4'-9"	6'-9"				11	19'-0"	3'-10"	18'-7"	4'-5"
	#5	12"	25	39	19'-4"	"	4'-10"	6'-10"		#5	12"	11	19'-3"	3'-10"	18'-10"	4'-5"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	19'-7"	"	4'-11"	6'-11"				11	19'-6"	3'-10"	19'-1"	4'-6"
			25	39	19'-10"	"	5'-0"	7'-0"				11	19'-9"	3'-10"	19'-4"	4'-6"
			25	39	20'-1"	"	5'-1"	7'-1"				11	20'-0"	3'-10"	19'-7"	4'-7"
	#5	12"	25	39	20'-4"	"	5'-2"	7'-2"		#5	12"	11	20'-3"	3'-10"	19'-10"	4'-7"
			25	39	"	"	"	"				11	"	"	"	"
			25	39	20'-7"	"	5'-3"	7'-3"				11	20'-6"	3'-10"	20'-1"	4'-8"
			25	39	20'-10"	"	5'-4"	7'-4"				11	20'-9"	3'-10"	20'-4"	4'-8"
			25	39	21'-1"	"	5'-5"	7'-5"				11	21'-0"	3'-10"	20'-7"	4'-9"

| SECTION "A" & BAR GROUP | "c" bars STRAIGHT In Top and Bottom Slab of Barrel. SIZE | SPACING | NUMBER REQ'D 2:1 | 3:1 | 4:1 | LENGTH | "c1" bars STRAIGHT In Top and Bottom Slab of Barrel. Alt. with "b" & "b2" bars. (Two of each Length) SIZE | SPACING | NUMBER REQ'D | LENGTH | "d" bars STRAIGHT Longitudinal In Top Slab of Barrel. SIZE | SPACING | NUMBER REQ'D |