DATE REVISED	DATE REVISED	FED.RD. DIST.NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
		6	ARK.	101054	1	311
		HWY. 230 STRS. & APPRS. (S)				

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

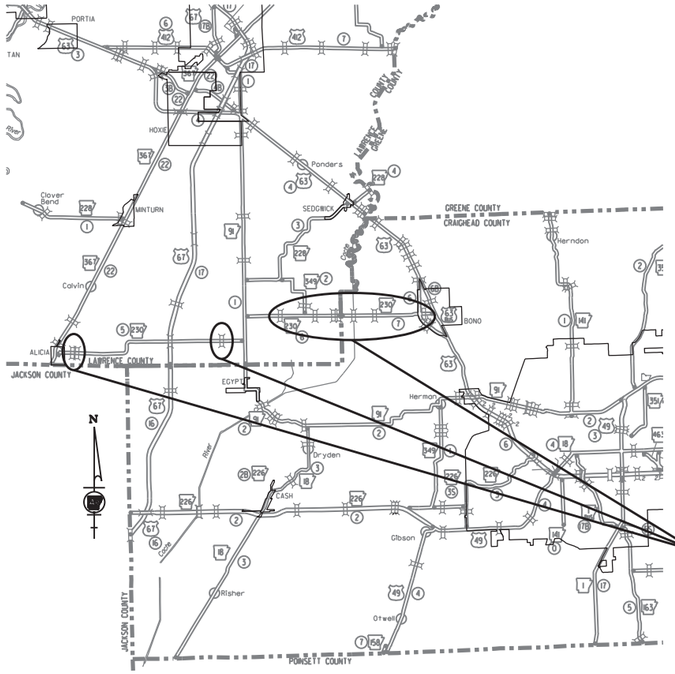
HWY. 230 STRS. & APPRS. (S)

LAWRENCE AND CRAIGHEAD COUNTIES

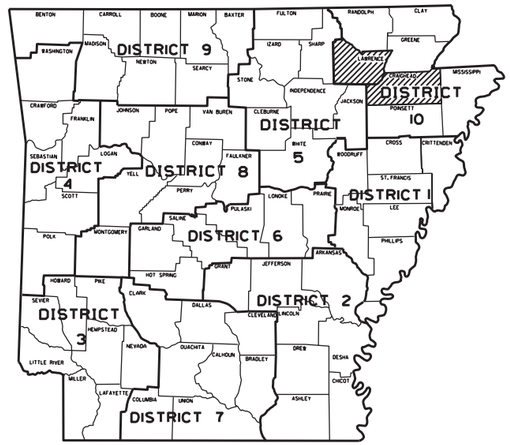
ROUTE 230 SECTION 5, 6 & 7

JOB 101054

FEDERAL AID PROJ. NHPP-1638(4)



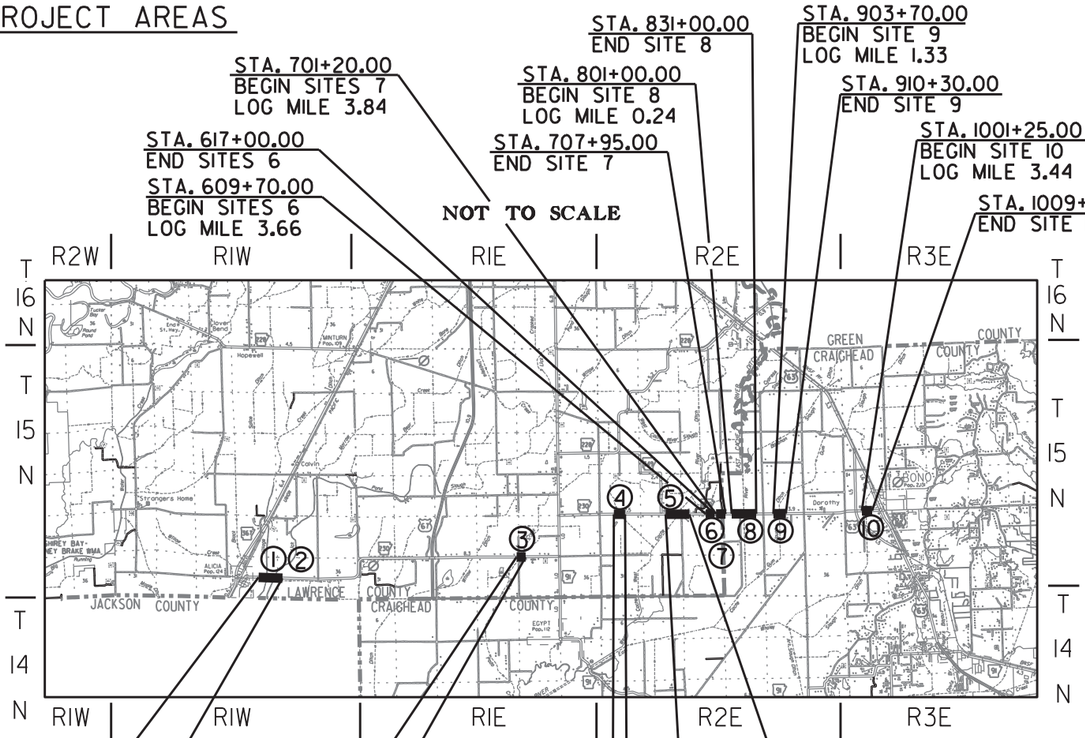
VICINITY MAP



ARK. HWY. DIST. NO. 10

PROJECT AREAS

NOT TO SCALE



BRIDGE DATA

① STA. 110+52.49 BRIDGE END
BRIDGE NO. 07522
120'-0 1/8" BRIDGE LENGTH
30"-0" CLEAR ROADWAY
119'-0" INTEGRAL
COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT
(39'-6", 40'-0", 39'-6")
STA. 111+72.51 BRIDGE END

② STA. 120+99.48 BRIDGE END
BRIDGE NO. 07523
120'-0 3/8" BRIDGE LENGTH
30"-0" CLEAR ROADWAY
119'-0" INTEGRAL
COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT
(39'-6", 40'-0", 39'-6")
STA. 122+19.52 BRIDGE END

⑤ STA. 515+93.52 BRIDGE END
BRIDGE NO. 07524
226'-11 1/2" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
224'-6" COMPOSITE
PRESTRESSED
CONCRETE GIRDER UNIT
(74'-9", 75'-0", 74'-9")
STA. 518+20.48 BRIDGE END

⑧ STA. 815+10.00 BR. END
BR. NO. 07525
225'-0" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
224'-0" INTEGRAL
COMPOSITE PRESTRESSED
CONCRETE GIRDER UNIT
(74'-6", 75'-0"', 74'-6")
STA. 817+35.00 BR. END

STRUCTURES OVER 20'-0" SPAN

③ STA. 310+48.00 - CONSTRUCT
QUAD. 11' x 6' x 80' R.C. BOX CULVERT
ON A 25° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q25 = 792 CFS, D.A. = 7.10 SQ. MI.
SPAN = 47'-1"

④ STA. 410+24.54 - CONSTRUCT
TRP. 10' x 6' x 84' R.C. BOX CULVERT
ON A 30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q25 = 592 CFS, D.A. = 2.22 SQ. MI.
SPAN = 32'-6"

⑥ STA. 613+21.00 - CONSTRUCT
QUINT. 10' x 6' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 12840 CFS, D.A. = 610 SQ. MI.
D.A. - SITES 6, 7 AND 8
SPAN = 53'-9"

⑦ STA. 704+44.00 - CONSTRUCT
QUINT. 10' x 6' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 12840 CFS, D.A. = 610 SQ. MI.
D.A. = SITES 6, 7 AND 8
SPAN = 53'-9"

⑨ STA. 906+90.00 - CONSTRUCT
QUAD. 12' x 9' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 2550 CFS, D.A. = 25.8 SQ. MI.
SPAN = 51'-5"

⑩ STA. 1005+95.00 - CONSTRUCT
TRP. 12' x 7' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 970 CFS, D.A. = 1.98 SQ. MI.
SPAN = 38'-9"

SITES 6,7 & 8 COMBINED DRAINAGE AREA

DESIGN TRAFFIC DATA

DESIGN YEAR	2042
2022 ADT	680
2042 ADT	760
2042 DHV	84
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	8%
DESIGN SPEED	55 MPH

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 35°53'40"	N 35°54'43"	N 35°54'32"
LONGITUDE	W 91°04'33"	W 90°56'36"	W 90°48'29"

LENGTH OF PROJECT CALCULATED ALONG C.L.

GROSS LENGTH OF PROJECT	13155.00	FEET	OR	2.492	MILES
NET : : ROADWAY	12185.75	:		2.308	MILES
NET : : BRIDGES	969.25	:		0.184	MILES
NET : : PROJECT	13155.00	:		2.492	MILES

CERTIFICATE OF AUTHORIZATION NEEL-SCHAFFER, INC. NO. 285 ARKANSAS

Digitally signed by Raymond K. Eidson
Date: 2022.10.05 16:14:40-05'00'

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 19372 RAYMOND KYLE EIDSON

R101054_TTL_TYP_SCD.dgn 10/5/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	2	311

(2) INDEX OF SHEETS

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.
1	TITLE SHEET		
2	INDEX OF SHEETS		
3	STANDARD DRAWINGS		
4	GOVERNING SPECIFICATIONS AND GENERAL NOTES		
5 - 8	TYPICAL SECTIONS OF IMPROVEMENT		
9 - 31	SPECIAL DETAILS		
32 - 72	TEMPORARY EROSION CONTROL DETAILS		
73 - 94	MAINTENANCE OF TRAFFIC DETAILS		
95	PERMANENT PAVEMENT MARKING DETAILS		
96 - 113	QUANTITIES		
114	SCHEDULE OF BRIDGE QUANTITIES	07522, 07523, 07524, 07525	65241
115 - 116	SUMMARY OF QUANTITIES AND REVISIONS		
117 - 129	SURVEY CONTROL DETAILS		
130 - 152	PLAN AND PROFILE SHEETS		
153	LAYOUT OF BRIDGE, HIGHWAY 230 OVER VILLAGE CREEK (SHEET 1 OF 2)	07522	65242
154	LAYOUT OF BRIDGE, HIGHWAY 230 OVER VILLAGE CREEK (SHEET 2 OF 2)	07522	65243
155	DETAILS OF END BENTS, VILLAGE CREEK	07522	65244
156	DETAILS OF INTERMEDIATE BENTS, VILLAGE CREEK	07522	65245
157	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 1 OF 8)	07522	65246
158	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 2 OF 8)	07522	65247
159	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 3 OF 8)	07522	65248
160	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 4 OF 8)	07522	65249
161	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 5 OF 8)	07522	65250
162	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 6 OF 8)	07522	65251
163	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 7 OF 8)	07522	65252
164	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, VILLAGE CREEK (SHEET 8 OF 8)	07522	65253
165	DETAILS OF TYPE SPECIAL APPROACH GUTTERS, VILLAGE CREEK	07522	65254
166	DETAILS OF TYPE SPECIAL APPROACH SLAB, VILLAGE CREEK	07522	65255
167	LAYOUT OF BRIDGE, HIGHWAY 230 OVER LICK POND SLOUGH (SHEET 1 OF 2)	07523	65256
168	LAYOUT OF BRIDGE, HIGHWAY 230 OVER LICK POND SLOUGH (SHEET 2 OF 2)	07523	65257
169	DETAILS OF END BENTS, LICK POND SLOUGH	07523	65258
170	DETAILS OF INTERMEDIATE BENTS, LICK POND SLOUGH	07523	65259
171	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 1 OF 8)	07523	65260
172	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 2 OF 8)	07523	65261
173	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 3 OF 8)	07523	65262
174	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 4 OF 8)	07523	65263
175	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 5 OF 8)	07523	65264
176	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 6 OF 8)	07523	65265
177	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 7 OF 8)	07523	65266
178	DETAILS OF 119' INTEGRAL PRESTRESSED GIRDER UNIT, LICK POND SLOUGH (SHEET 8 OF 8)	07523	65267
179	DETAILS OF TYPE SPECIAL APPROACH GUTTERS, LICK POND SLOUGH	07523	65268
180	DETAILS OF TYPE SPECIAL APPROACH SLAB, LICK POND SLOUGH	07523	65269
181	LAYOUT OF BRIDGE, HIGHWAY 230 OVER WEST FORK OF THE CACHE RIVER (SHEET 1 OF 2)	07524	65270
182	LAYOUT OF BRIDGE, HIGHWAY 230 OVER WEST FORK OF THE CACHE RIVER (SHEET 2 OF 2)	07524	65271
183	DETAILS OF END BENTS, WEST FORK OF THE CACHE RIVER (SHEET 1 OF 3)	07524	65272
184	DETAILS OF END BENTS, WEST FORK OF THE CACHE RIVER (SHEET 2 OF 3)	07524	65273
185	DETAILS OF END BENTS, WEST FORK OF THE CACHE RIVER (SHEET 3 OF 3)	07524	65274
186	DETAILS OF INTERMEDIATE BENTS, WEST FORK OF THE CACHE RIVER	07524	65275
187	DETAILS OF 30" DIA. STEEL SHEEL PILES, WEST FORK OF THE CACHE RIVER	07524	65276
188	DETAILS OF ELASTOMERIC BEARINGS, WEST FORK OF THE CACHE RIVER	07524	65277
189	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 1 OF 9)	07524	65278
190	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 2 OF 9)	07524	65279
191	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 3 OF 9)	07524	65280
192	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 4 OF 9)	07524	65281
193	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 5 OF 9)	07524	65282
194	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 6 OF 9)	07524	65283
195	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 7 OF 9)	07524	65284
196	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 8 OF 9)	07524	65285
197	DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT, WEST FORK OF THE CACHE RIVER (SHEET 9 OF 9)	07524	65286
198	DETAILS OF TYPE SPECIAL APPROACH GUTTERS, WEST FORK OF THE CACHE RIVER	07524	65287
199	DETAILS OF TYPE SPECIAL APPROACH SLAB, WEST FORK OF THE CACHE RIVER	07524	65288
200	LAYOUT OF BRIDGE, HIGHWAY 230 OVER CACHE RIVER DITCH (SHEET 1 OF 2)	07525	65289
201	LAYOUT OF BRIDGE, HIGHWAY 230 OVER CACHE RIVER DITCH (SHEET 2 OF 2)	07525	65290
202	DETAILS OF END BENTS, CACHE RIVER DITCH	07525	65291
203	DETAILS OF INTERMEDIATE BENTS, CACHE RIVER DITCH	07525	65292
204	DETAILS OF 30" DIA. STEEL SHELL PILES, CACHE RIVER DITCH	07525	65293
205	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 1 OF 8)	07525	65294
206	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 2 OF 8)	07525	65295
207	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 3 OF 8)	07525	65296
208	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 4 OF 8)	07525	65297
209	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 5 OF 8)	07525	65298
210	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 6 OF 8)	07525	65299
211	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 7 OF 8)	07525	65300
212	DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT, CACHE RIVER DITCH (SHEET 8 OF 8)	07525	65301
213	DETAILS OF TYPE SPECIAL APPROACH GUTTERS, CACHE RIVER DITCH	07525	65302
214	DETAILS OF TYPE SPECIAL APPROACH SLAB, CACHE RIVER DITCH	07525	65303
215 - 311	CROSS SECTIONS		

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	3	311
				(2) STANDARD DRAWINGS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55008	STANDARD DETAILS FOR POURED SILICONE JOINTS	02-11-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	05-11-21
55021	STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	03-24-16

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
DR-2	DETAILS OF DRIVEWAYS & STREET TURNOUTS	05-19-22
FES-1	FLARED END SECTION	10-18-96
FES-2	FLARED END SECTION	10-18-96
GR-6	GUARDRAIL DETAILS	05-19-22
GR-7	GUARDRAIL DETAILS	11-07-19
GR-8	GUARDRAIL DETAILS	11-07-19
GR-9	GUARDRAIL DETAILS	11-07-19
GR-10	GUARDRAIL DETAILS	11-07-19
GR-11	GUARDRAIL DETAILS	11-07-19
GR-12	GUARDRAIL DETAILS	05-14-20
MB-1	MAILBOX DETAILS	11-18-04
PBC-1	PRECAST CONCRETE BOX CULVERTS	01-28-15
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1	REINFORCED CONCRETE BOX CULVERT DETAILS	07-26-12
RCB-2	EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3	METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	11-07-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4	TEMPORARY EROSION CONTROL DEVICES	07-26-12
W-X003-1	DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	05-10-66
R-200X-0	DETAILS OF STANDARD BARREL SECTIONS FOR REINFORCED CONCRETE BOX CULVERTS	05-24-63

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10/26/22				6	ARK.			
				JOB NO.		101054	4	311

(2) GOVERNING SPECIFICATIONS AND GENERAL NOTES

Digitally signed by Raymond K. Eidson
Date: 2022.11.22 15:25:55-05'00'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON

GOVERNING SPECIFICATIONS

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

NUMBER **TITLE**

ERRATA_____ ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273__ REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273__ SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273__ SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273__ SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273__ SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273__ SUPPLEMENT - TRAINING PROGRAM - JOB 101054
FHWA-1273__ SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273__ SUPPLEMENT - WAGE RATE DETERMINATION
100-3_____ CONTRACTOR'S LICENSE
100-4_____ DEPARTMENT NAME CHANGE
102-2_____ ISSUANCE OF PROPOSALS
105-4_____ MAINTENANCE DURING CONSTRUCTION
107-2_____ RESTRAINING CONDITIONS
108-1_____ LIQUIDATED DAMAGES
108-2_____ WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1_____ PROTECTION OF WATER QUALITY AND WETLANDS
210-1_____ UNCLASSIFIED EXCAVATION
303-1_____ AGGREGATE BASE COURSE
306-1_____ QUALITY CONTROL AND ACCEPTANCE
307-1_____ CEMENT
308-1_____ CEMENT
400-1_____ TACK COATS
400-4_____ DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____ PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____ LIQUID ANTI-STRIP ADDITIVE
400-7_____ TRACKLESS TACK
404-3_____ DESIGN OF ASPHALT MIXTURES
410-1_____ CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____ DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
410-4_____ EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
501-2_____ CEMENT
600-2_____ INCIDENTAL CONSTRUCTION
603-1_____ LANE CLOSURE NOTIFICATION
604-1_____ RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____ TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
606-1_____ PIPE CULVERTS FOR SIDE DRAINS
617-1_____ GUARDRAIL TERMINAL (TYPE 2)
620-1_____ MULCH COVER
800-1_____ STRUCTURES
802-3_____ CONCRETE FOR STRUCTURES
802-4_____ CEMENT
804-2_____ REINFORCING STEEL FOR STRUCTURES
808-1_____ INSTALLATION OF ELASTOMERIC BEARINGS
808-2_____ ELASTOMERIC BEARINGS
JOB 101054__ BIDDING REQUIREMENTS AND CONDITIONS
JOB 101054__ BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 101054__ BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 101054__ CARGO PREFERENCE ACT REQUIREMENTS
JOB 101054__ CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 101054__ COLD MILLING – COUNTY PROPERTY
JOB 101054__ CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB 101054__ CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 101054__ CONSTRUCTION PROJECT INFORMATION SIGN
JOB 101054__ DELAY IN RIGHT OF WAY OCCUPANCY
JOB 101054__ DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 101054__ EMBANKMENT CONSTRUCTION
JOB 101054__ ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT
JOB 101054__ EXTENSION FOR PIPE CULVERTS
JOB 101054__ FLEXIBLE BEGINNING OF WORK
JOB 101054__ GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
JOB 101054__ GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 101054__ LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 101054__ MAINTENANCE OF TRAFFIC
JOB 101054__ MANDATORY ELECTRONIC CONTRACT
JOB 101054__ MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 101054__ NESTING SITES OF MIGRATORY BIRDS
JOB 101054__ OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 101054__ PARTNERING REQUIREMENTS
JOB 101054__ PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS (IRI)

GOVERNING SPECIFICATIONS - CONTINUED

JOB 101054__ PLASTIC PIPE
JOB 101054__ PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 101054__ PRICE ADJUSTMENT FOR FUEL
JOB 101054__ PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 101054__ REMOVAL OF HISTORIC TRUSS SPANS OF BRIDGE NUMBERS M3817 AND M3187
JOB 101054__ SECTION 404 NATIONWIDE 23 PERMIT REQUIREMENTS
JOB 101054__ SEQUENCE OF CONSTRUCTION
JOB 101054__ SHORING FOR CULVERTS
JOB 101054__ SOIL STABILIZATION
JOB 101054__ STORM WATER POLLUTION PREVENTION PLAN
JOB 101054__ SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 101054__ UTILITY ADJUSTMENTS
JOB 101054__ VALUE ENGINEERING
JOB 101054__ WARM MIX ASPHALT
JOB 101054__ WATER POLLUTION CONTROL
JOB 101054__ WELLHEAD PROTECTION

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 ENSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

7. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.

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

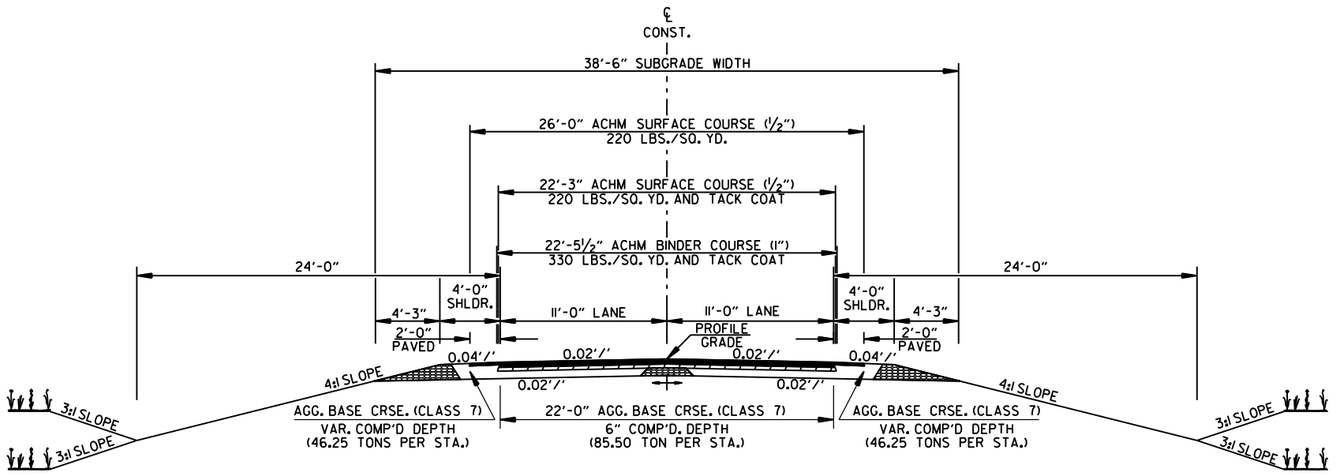
9. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

10. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 26 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

11. ARDOT WILL CONSTRUCT PERMANENT SIGNING.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	5	311

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 230 - FULL DEPTH SECTION

STA. 309+99.00 TO STA. 310+97.00 SITE 3
STA. 408+50.00 TO STA. 412+98.00 SITE 4
STA. 508+36.24 TO STA. 515+51.54 SITE 5
STA. 518+62.42 TO STA. 524+82.70 SITE 5
STA. 611+00.00 TO STA. 615+70.00 SITE 6
STA. 702+50.00 TO STA. 706+50.00 SITE 7
STA. 808+54.66 TO STA. 814+73.50 SITE 8
STA. 817+71.50 TO STA. 823+71.58 SITE 8
STA. 906+39.00 TO STA. 907+95.00 SITE 9
STA. 1005+40.00 TO STA. 1006+50.00 SITE 10

NOTES:

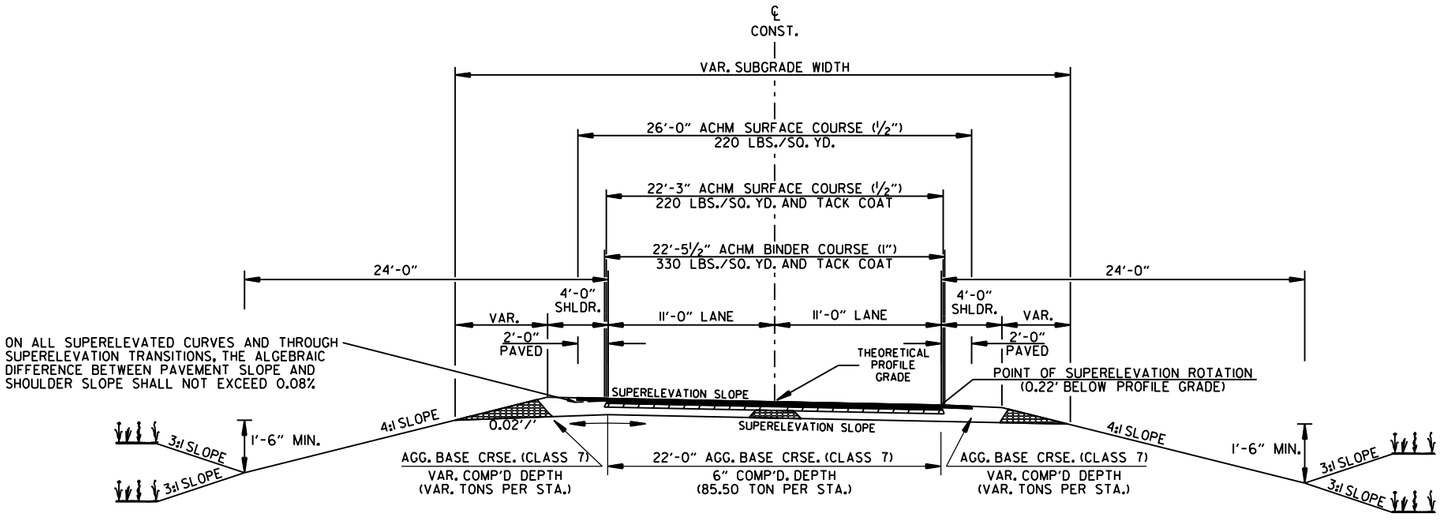
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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.

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

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



HWY. 230 - FULL DEPTH SECTION (SUPERELEVATION)

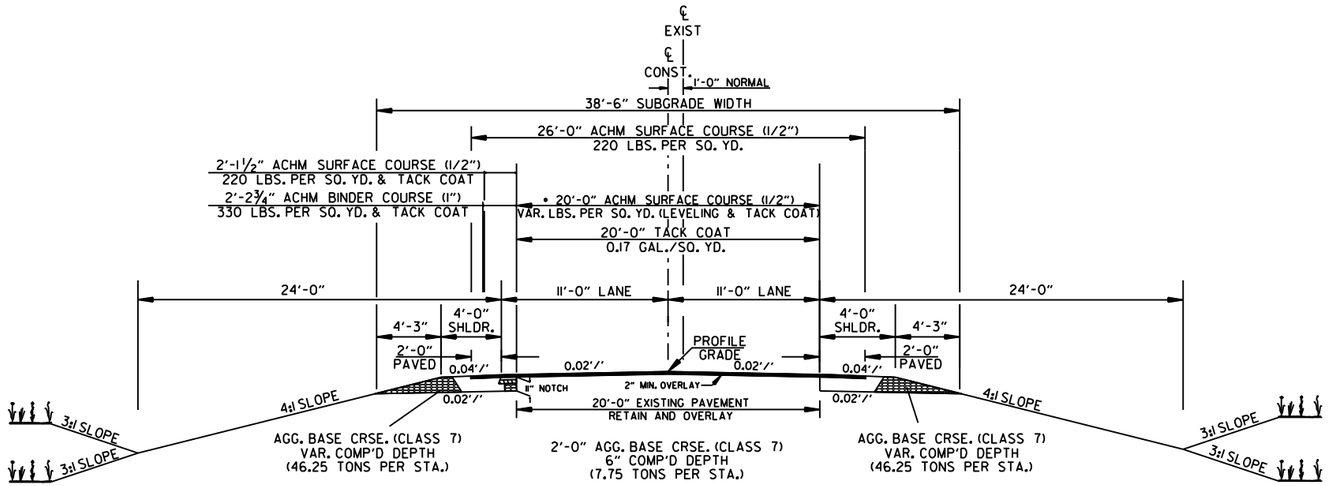
STA. 107+38.00 TO STA. 110+16.00 SITE 1
STA. 112+09.00 TO STA. 120+63.00 SITE 1 & 2
STA. 122+63.00 TO STA. 125+16.00 SITE 2

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	6	311

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 230 - NOTCH AND WIDEN SECTION LEFT

STA. 405+50.00 TO STA. 408+50.00 SITE 4
STA. 412+98.00 TO STA. 415+00.00 SITE 4
STA. 501+00.00 TO STA. 508+36.24 SITE 5
STA. 524+82.70 TO STA. 530+90.00 SITE 5
STA. 609+70.00 TO STA. 611+00.00 SITE 6
STA. 615+70.00 TO STA. 617+00.00 SITE 6
STA. 701+20.00 TO STA. 702+50.00 SITE 7
STA. 706+50.00 TO STA. 707+95.00 SITE 7
STA. 801+00.00 TO STA. 808+54.66 SITE 8
STA. 823+71.58 TO STA. 831+00.00 SITE 8
STA. 903+70.00 TO STA. 906+39.00 SITE 9
STA. 907+95.00 TO STA. 910+30.00 SITE 9
STA. 1001+25.00 TO STA. 1005+40.00 SITE 10
STA. 1006+50.00 TO STA. 1009+75.00 SITE 10

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

NOTES:

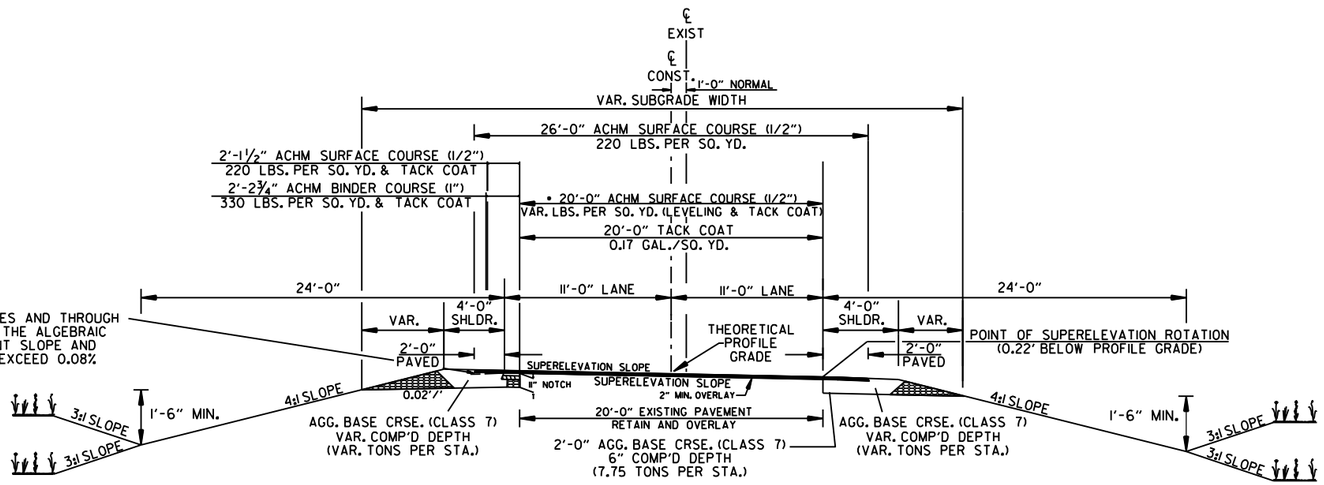
REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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.

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

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

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.



NOTE: SEE SPECIAL DETAIL SHEET NO. 11 FOR HORIZONTAL TRANSITION DETAIL.

HWY. 230 - NOTCH AND WIDEN SECTION LEFT (SUPERELEVATION)

STA. 100+39.20 TO STA. 107+38.00 SITE 1
STA. 125+16.00 TO STA. 131+00.00 SITE 2

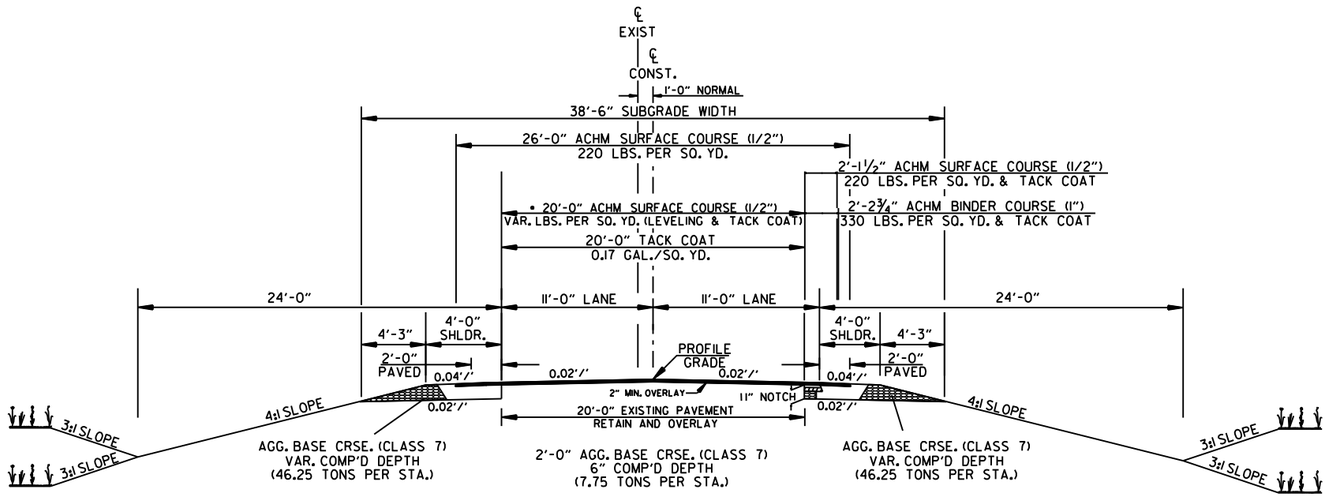
• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

TYPICAL SECTIONS OF IMPROVEMENT

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	7	311

(2) TYPICAL SECTIONS OF IMPROVEMENT



HWY. 230 - NOTCH AND WIDEN SECTION RIGHT

STA. 309+00.00 TO STA. 309+99.00 SITE 3
STA. 310+97.00 TO STA. 312+00.00 SITE 3

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.

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.

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

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

WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (½") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.

NOTE: SEE SPECIAL DETAIL SHEET NO. 11 FOR HORIZONTAL TRANSITION DETAIL.

•TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

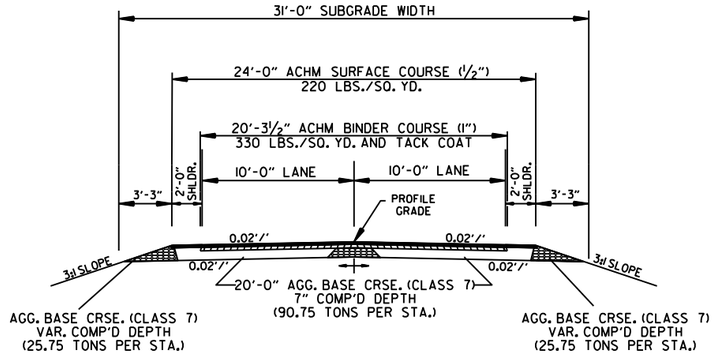
R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	8	311

(2) TYPICAL SECTIONS OF IMPROVEMENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



DETOUR - FULL DEPTH SECTION

STA. 3303+15.00 TO STA. 3306+01.73 SITE 3
STA. 3314+54.74 TO STA. 3316+96.00 SITE 3
STA. 6008+27.93 TO STA. 6010+19.35 SITE 6
STA. 6016+43.43 TO STA. 6018+34.01 SITE 6
STA. 6999+48.99 TO STA. 7001+42.35 SITE 7
STA. 7007+70.18 TO STA. 7009+63.19 SITE 7
STA. 9101+19.81 TO STA. 9103+21.82 SITE 9
STA. 9111+32.92 TO STA. 9113+56.10 SITE 9

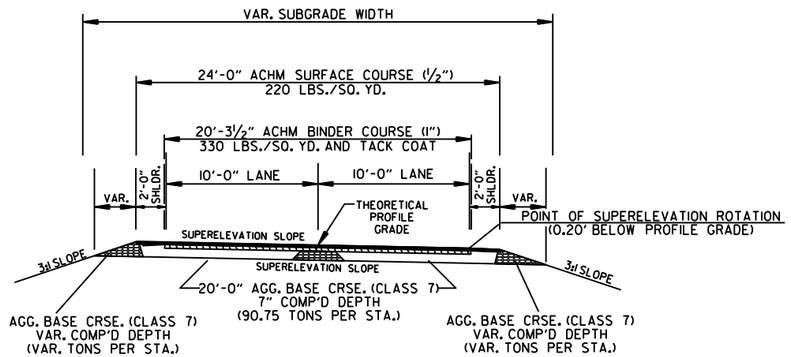
NOTES:

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.

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.

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

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



DETOUR - FULL DEPTH SECTION (SUPERELEVATION)

STA. 3306+01.73 TO STA. 3314+54.74 SITE 3
STA. 6010+19.35 TO STA. 6016+43.43 SITE 6
STA. 7001+42.35 TO STA. 7007+70.18 SITE 7
STA. 9103+21.82 TO STA. 9111+32.92 SITE 9

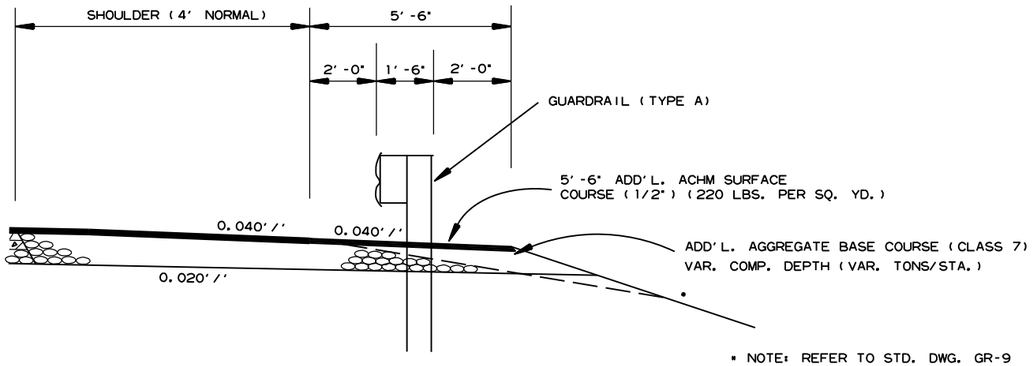
R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	9	311

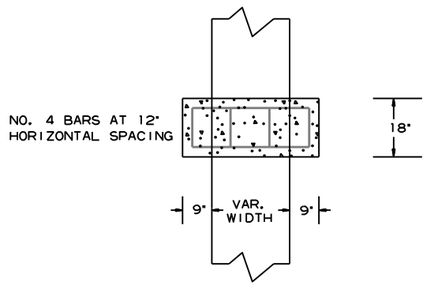
(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



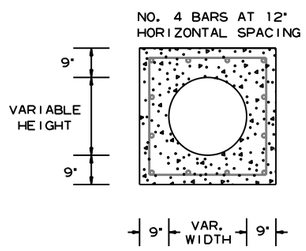
* NOTE: REFER TO STD. DWG. GR-9 AND CROSS SECTIONS FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.

WIDENING FOR GUARDRAIL

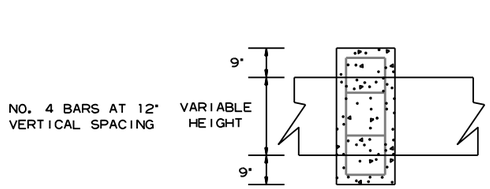


TOP VIEW

MIN 3" COVER

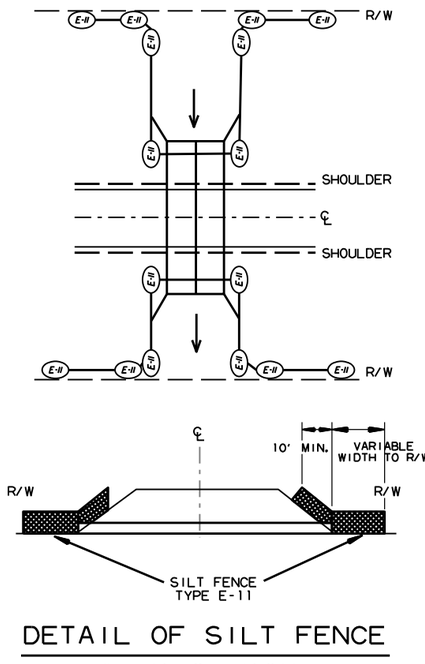


FRONT VIEW

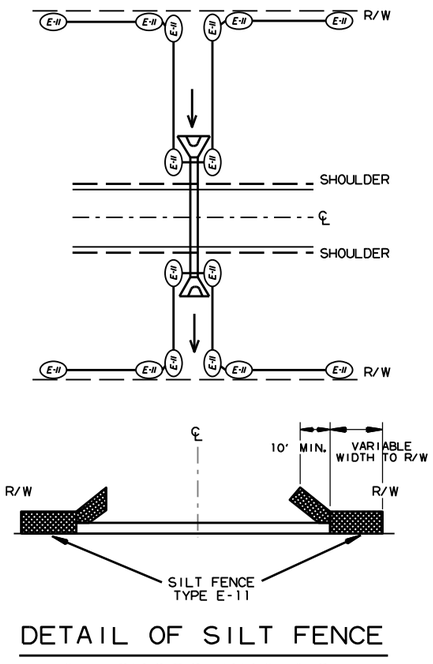


SIDE VIEW

PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL



DETAIL OF SILT FENCE
AT R.C. BOX



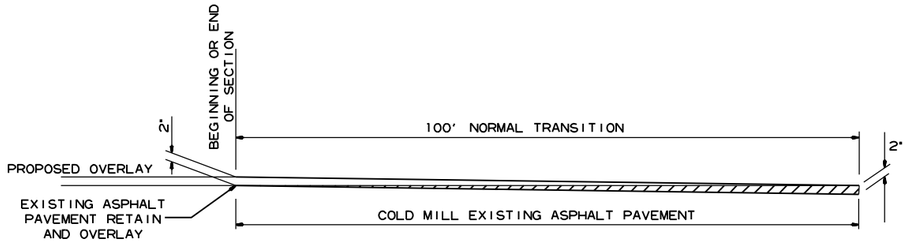
DETAIL OF SILT FENCE
AT CROSS DRAINS

R101054_ITL_TYP_SCD.dgn 8/15/2022

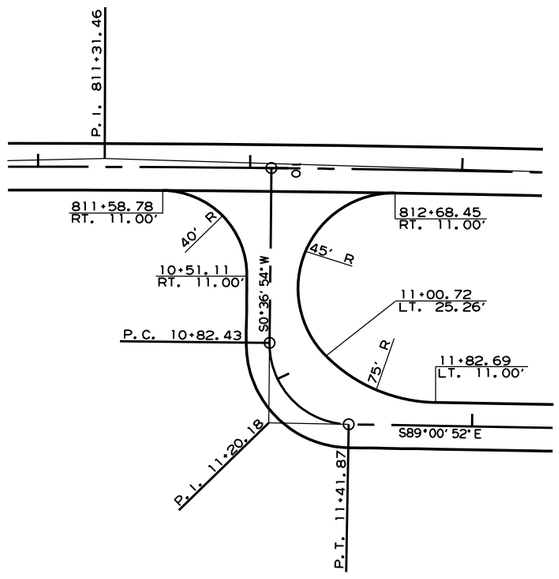
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	10	311

(2) SPECIAL DETAILS

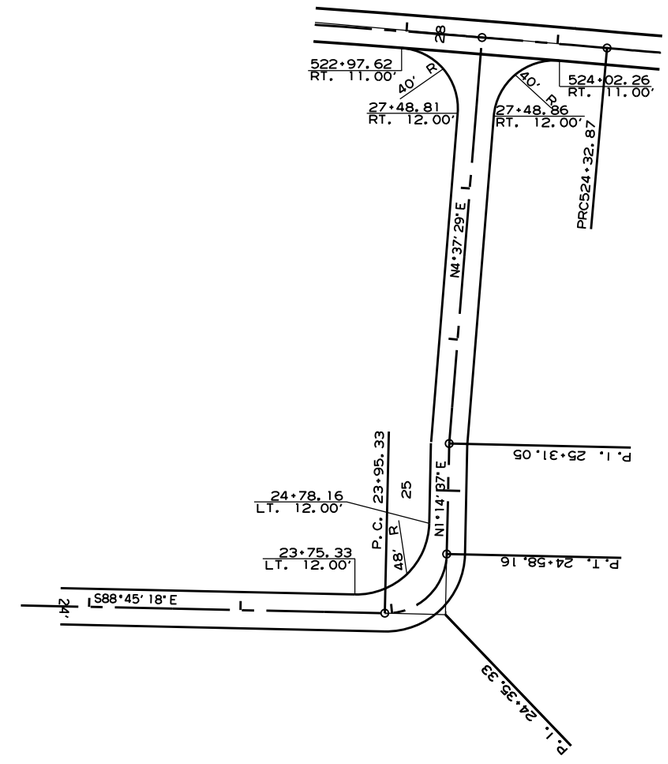
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22



DETAIL FOR TRANSITIONS



SITE 8 - COUNTY ROAD 194 TURNOUT



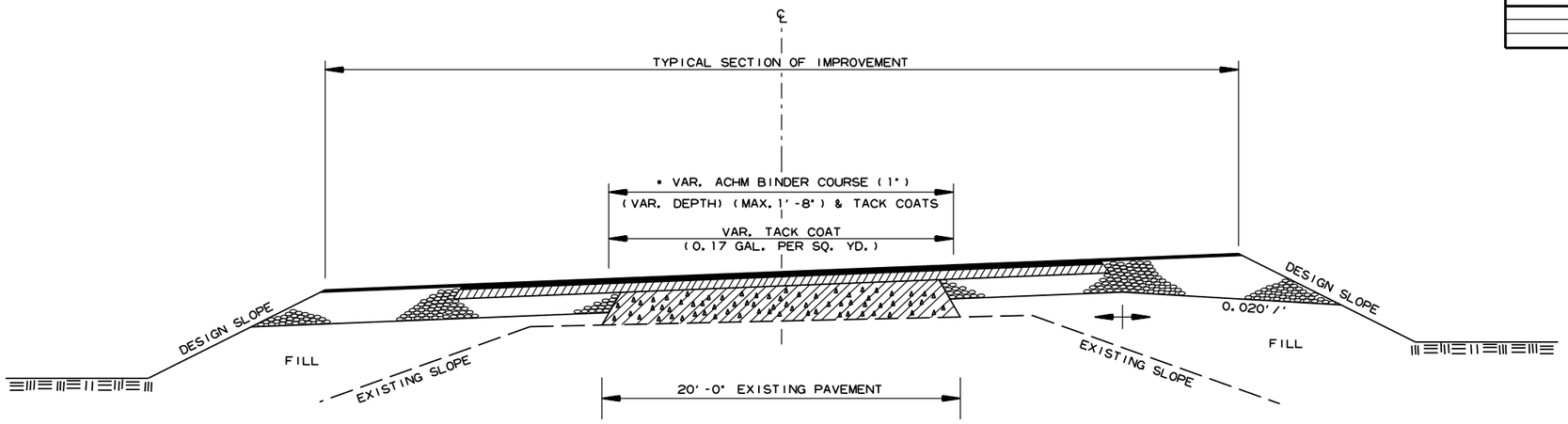
SITE 5 - DRIVEWAY STA. 523+50 RT.

R101054_TTL_TYP_SCD.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	11	311

(2) SPECIAL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



▪ 6" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (1")

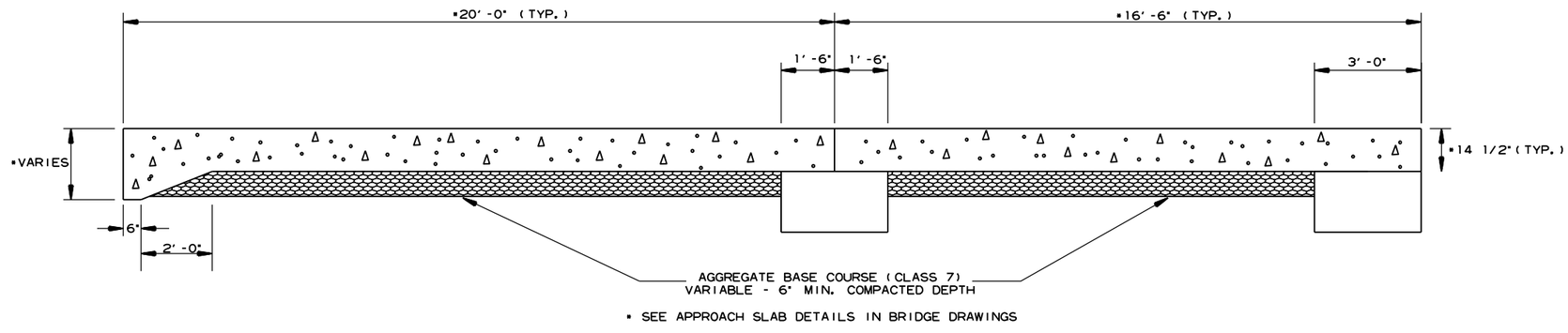
METHOD OF RAISING GRADE

NOTES:

(1) THIS DETAIL TO BE USED ONLY 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.



▪ SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB

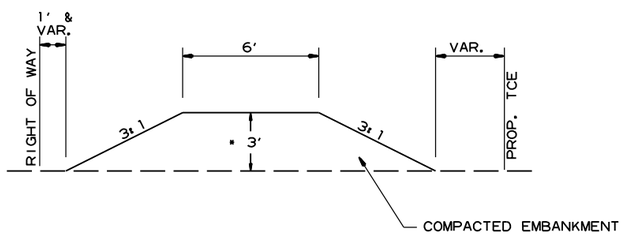
R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	12	311

(2) SPECIAL DETAILS

NOTE: SEE CROSS SECTIONS

* 3' MAX., MATCH EXISTING BERM HEIGHT

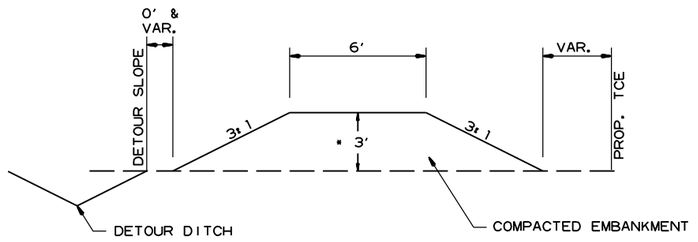


BERM DETAIL

SITE 1 STA. 100+28 TO STA. 105+75 LT.
SITE 2 STA. 117+05 TO STA. 119+57 LT.
SITE 2 STA. 127+27 TO STA. 131+34 LT.
SITE 3 STA. 305+15 TO STA. 308+46 RT.
SITE 3 STA. 312+00 TO STA. 315+00 RT.
SITE 3 STA. 5+79 TO STA. 9+48 RT. CO. RD. 745
SITE 4 STA. 406+87 TO STA. 410+68 RT
SITE 4 STA. 409+93 TO STA. 411+71 LT.
SITE 4 STA. 409+93 TO STA. 415+00 LT.
SITE 5 STA. 501+00 TO STA. 505+76 LT.
SITE 5 STA. 508+38 TO STA. 512+40 LT.
SITE 5 STA. 512+64 TO STA. 516+27 LT.
SITE 5 STA. 519+83 TO STA. 521+70 LT.
SITE 5 STA. 521+86 TO STA. 531+80 LT.
SITE 6 STA. 609+00 TO STA. 617+00 LT.
SITE 7 STA. 701+20 TO STA. 707+95 LT.
SITE 8 STA. 804+85 TO STA. 813+21 LT.
SITE 8 STA. 819+86 TO STA. 828+49 LT.
SITE 8 STA. 828+65 TO STA. 830+07 LT.
SITE 8 STA. 830+23 TO STA. 832+00 LT.
SITE 9 STA. 902+00 TO STA. 906+60 LT.
SITE 9 STA. 904+88 TO STA. 906+59 RT.
SITE 9 STA. 907+23 TO STA. 912+00 LT.
SITE 9 STA. 907+34 TO STA. 908+33 RT.
SITE 10 STA. 1000+70 TO STA. 1004+24 RT.
SITE 10 STA. 1000+25 TO STA. 1004+02 LT.
SITE 10 STA. 1004+18 TO STA. 1005+70 LT.
SITE 10 STA. 1006+13 TO STA. 1007+80 LT.
SITE 10 STA. 1006+22 TO STA. 1007+73 RT.
SITE 10 STA. 1007+96 TO STA. 1010+33 LT.
SITE 10 STA. 1007+97 TO STA. 1011+00 RT.

NOTE: SEE CROSS SECTIONS

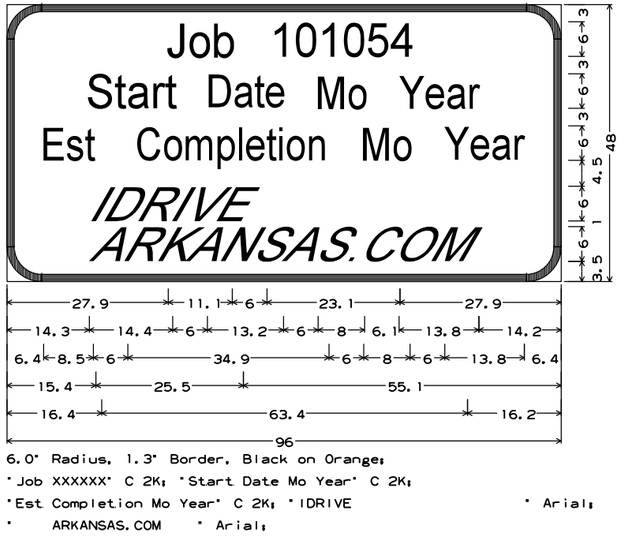
* 3' MAX., MATCH EXISTING BERM HEIGHT



TEMPORARY BERM DETAIL

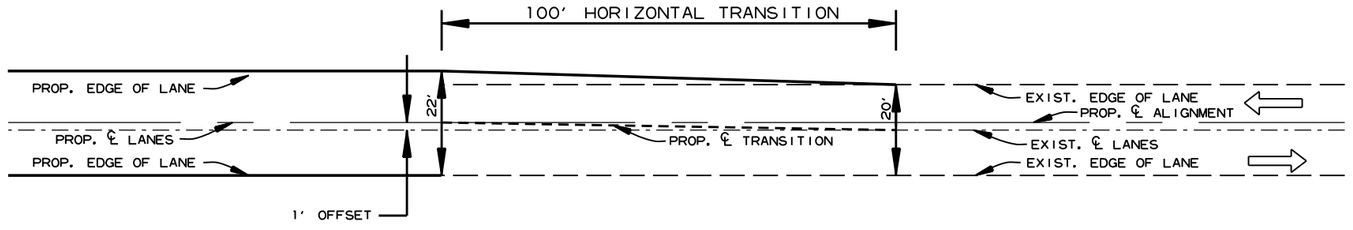
SITE 3 STA. 3305+20 TO STA. 3308+68 RT. DETOUR
SITE 3 STA. 3312+03 TO STA. 3315+06 RT. DETOUR
SITE 3 STA. 8+52 TO STA. 8+93 RT. CO. RD. 745
SITE 6 STA. 6009+06 TO STA. 6017+09 LT. DETOUR
SITE 7 STA. 7001+36 TO STA. 7008+03 LT. DETOUR
SITE 9 STA. 9102+29 TO STA. 9106+89 LT. DETOUR
SITE 9 STA. 9107+54 TO STA. 9112+33 LT. DETOUR

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



6.0" Radius, 1.3" Border, Black on Orange;
"Job XXXXXX" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE " Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN



HORIZONTAL TRANSITION

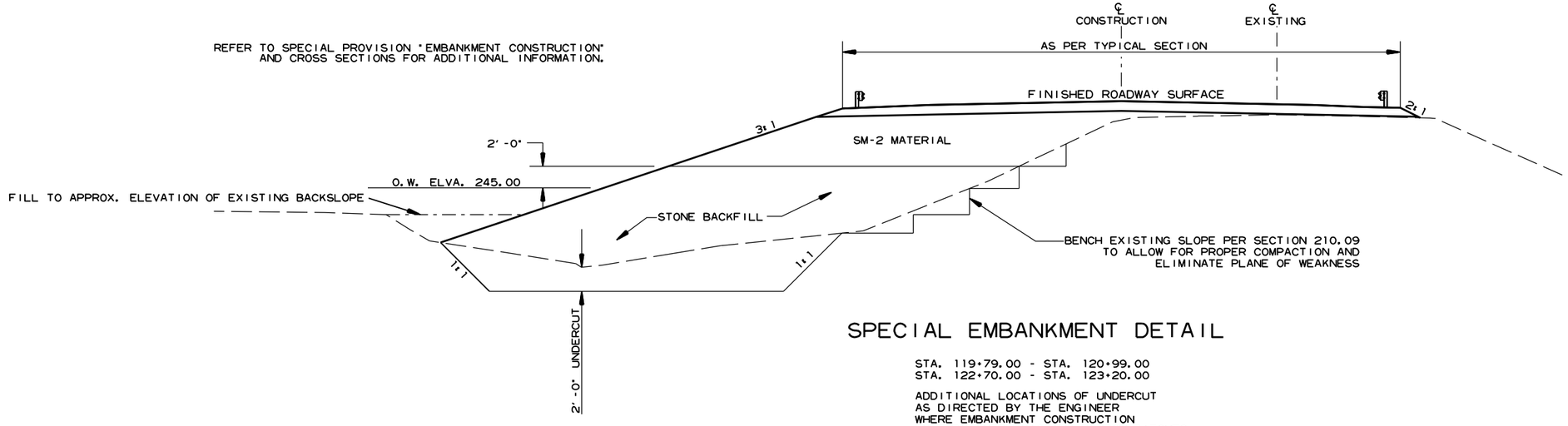
SITE 3 STA. 308+00 TO STA. 309+00
SITE 3 STA. 312+00 TO STA. 313+00
SITE 4 STA. 404+50 TO STA. 405+50
SITE 4 STA. 415+00 TO STA. 416+00
SITE 6 STA. 608+70 TO STA. 609+70
SITE 6 STA. 617+00 TO STA. 618+00
SITE 7 STA. 700+20 TO STA. 701+20
SITE 7 STA. 707+95 TO STA. 708+95
SITE 9 STA. 902+70 TO STA. 903+70
SITE 9 STA. 910+30 TO STA. 911+30
SITE 10 STA. 1000+25 TO STA. 1001+25
SITE 10 STA. 1009+75 TO STA. 1010+75

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	13	311

(2) SPECIAL DETAILS

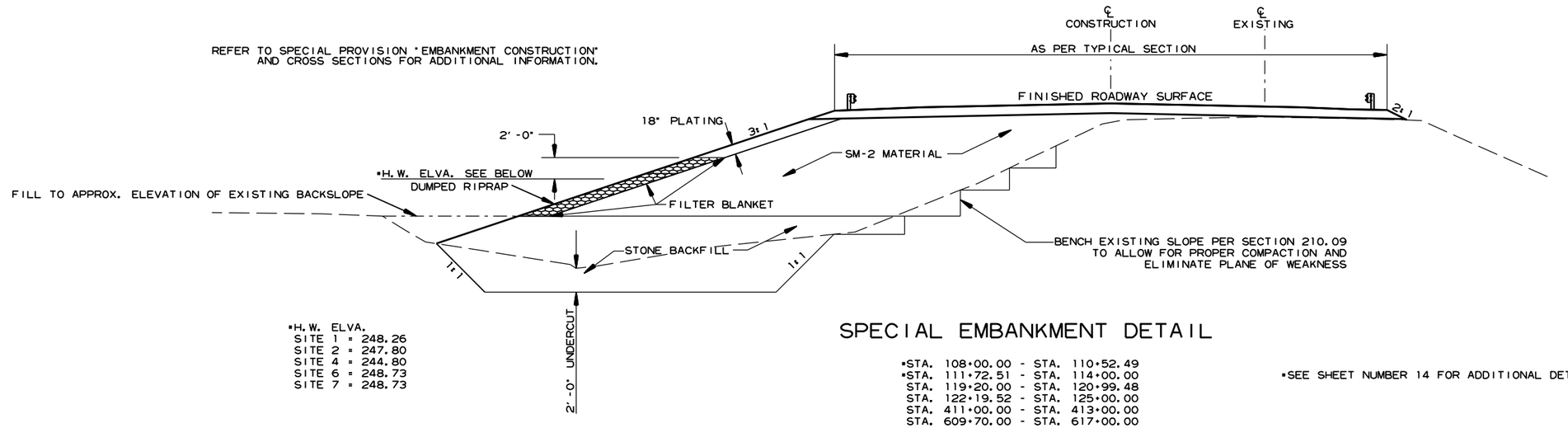
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



SPECIAL EMBANKMENT DETAIL

STA. 119+79.00 - STA. 120+99.00
STA. 122+70.00 - STA. 123+20.00

ADDITIONAL LOCATIONS OF UNDERCUT
AS DIRECTED BY THE ENGINEER
WHERE EMBANKMENT CONSTRUCTION
EXTENDS OVER EXISTING BORROW DITCHES.



*H.W. ELVA.
SITE 1 = 248.26
SITE 2 = 247.80
SITE 4 = 244.80
SITE 6 = 248.73
SITE 7 = 248.73

SPECIAL EMBANKMENT DETAIL

*STA. 108+00.00 - STA. 110+52.49
*STA. 111+72.51 - STA. 114+00.00
STA. 119+20.00 - STA. 120+99.48
STA. 122+19.52 - STA. 125+00.00
STA. 411+00.00 - STA. 413+00.00
STA. 609+70.00 - STA. 617+00.00
STA. 701+00.00 - STA. 708+00.00

ADDITIONAL LOCATIONS OF UNDERCUT
AS DIRECTED BY THE ENGINEER
WHERE EMBANKMENT CONSTRUCTION
EXTENDS OVER EXISTING BORROW DITCHES.

*SEE SHEET NUMBER 14 FOR ADDITIONAL DETAILS

R101054_TTL_TYP_SCD.dgn 8/15/2022

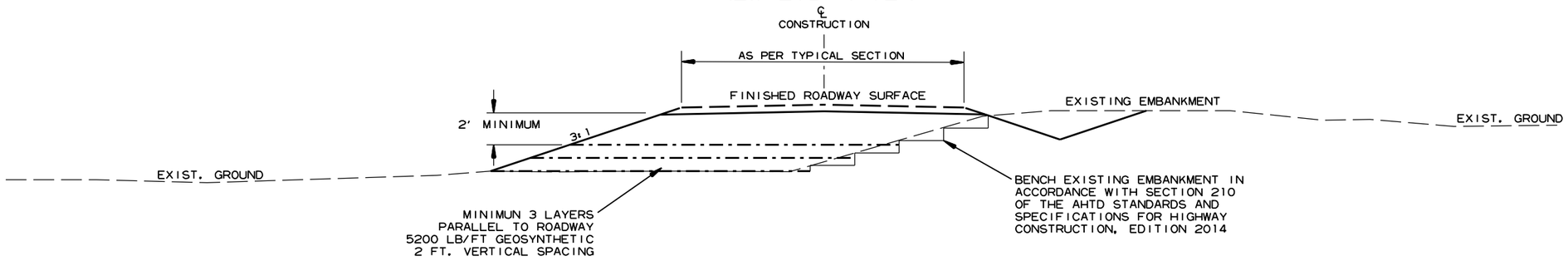
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	14	311

(2) SPECIAL DETAILS

NOTE:
GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
(FOR FURTHER DETAILS SEE THE SPECIAL PROVISION AND CROSS SECTIONS)

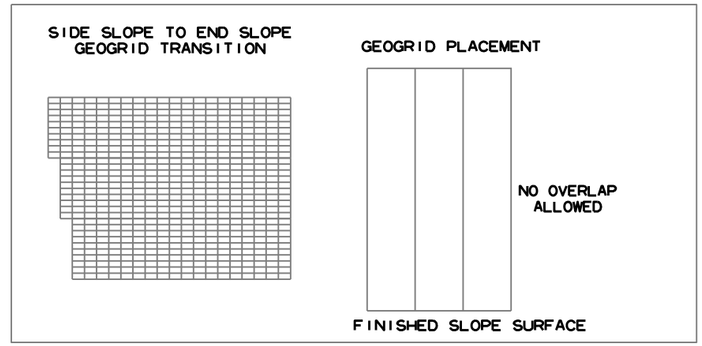
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

NEW EMBANKMENT



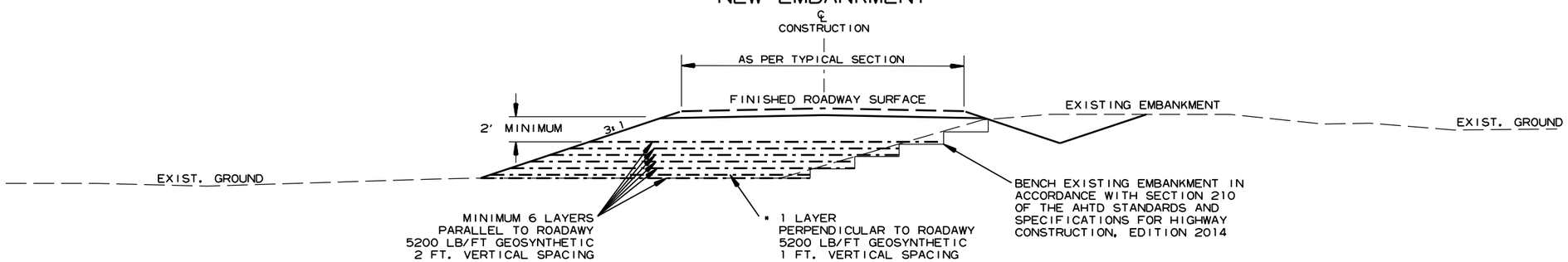
COMPACTED EMBANKMENT (SPECIAL)
BRIDGE NO. 07522

STA. 109+80.00-110+55.00
STA. 109+64.00-110+55.00 (BOTTOM LAYER)



GEOGRID SPECIAL DETAILS

NEW EMBANKMENT



COMPACTED EMBANKMENT (SPECIAL)
BRIDGE NO. 07522

STA. 111+72.00-112+72.00
*STA. 111+72.00 - 112+88.00 (SECOND LAYER)
STA. 111+72.00-112+88.00 (BOTTOM LAYER)

R101054_TTL_TYP_SCD.dgn 8/15/2022

SPECIAL DETAILS

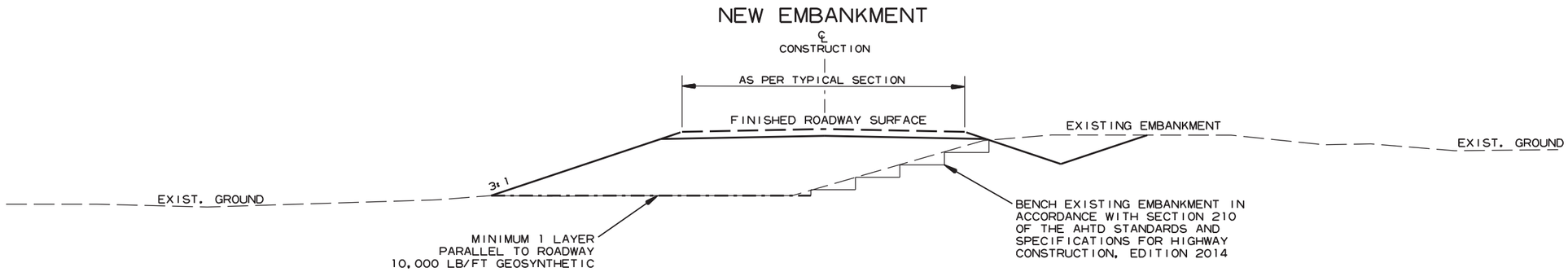
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10/26/22				6	ARK.			
				JOB NO.		101054	15	311

(2) SPECIAL DETAILS

NOTE:
GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
(FOR FURTHER DETAILS SEE THE SPECIAL PROVISION AND CROSS SECTIONS)

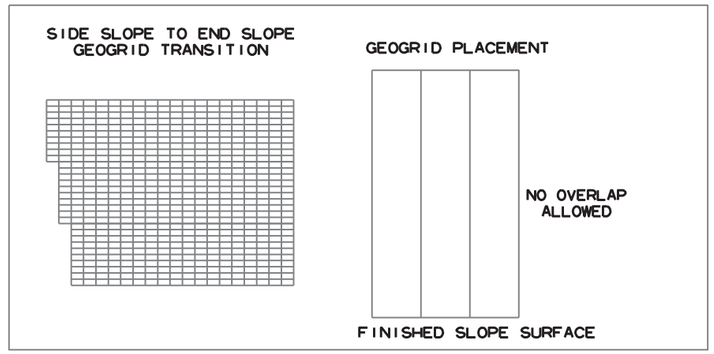
Digitally signed by Raymond K. Eidson
Date: 2022.11.02 15:26:18-05'00'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON

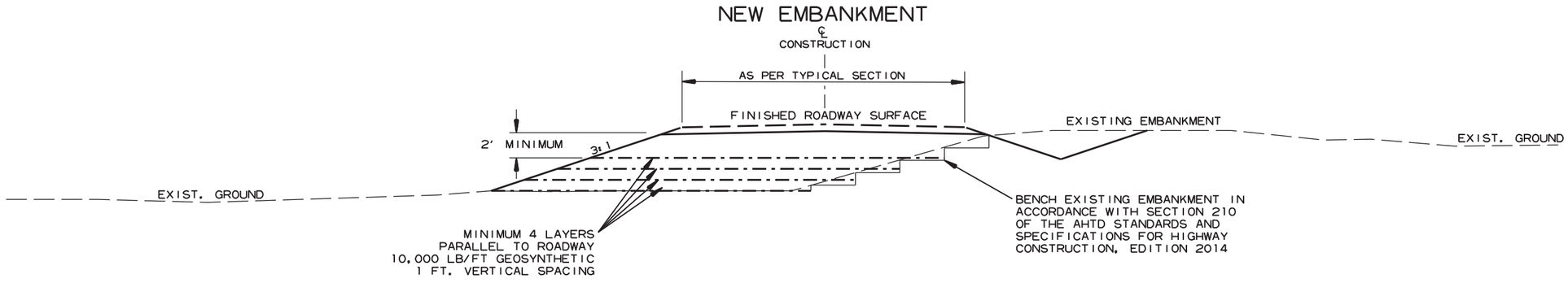


COMPACTED EMBANKMENT (SPECIAL)
BRIDGE NO. 07524

STA. 514+71.00-515+91.00



GEOGRID SPECIAL DETAILS



COMPACTED EMBANKMENT (SPECIAL)
BRIDGE NO. 07524

STA. 518+21.00-519+71.00

R101054_TTL_TYP_SCD.dgn 11/2/2022

SPECIAL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	16	311
				1		SPECIAL DETAILS		

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
47'-1"	6'-0"	0'-9"	0'-8"	25	3:1	50'-9 1/8"	2'-0"	6'-10"	2'-0"	5	55	3'-2"	3'-3 7/8"	3'-9"	0'-6 7/8"	0'-5 3/8"	14'-6"	25'-0"	18'-0 3/8"	28'-6 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
12.32	1049

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY	F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	15	L Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	4	14'-2"
				L Max	7'-10"												4'-10"				
				X Min	0'-9"				X -				X -				Max				
				X Max	0'-11"												9'-4"				
				Y Min	2'-4"				Y -				Y -								
				Y Max	7'-0"																
WING B	4	12	25	L Min	3'-1"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	4	24'-8"
				L Max	8'-3"												8'-5"				
				X Min	0'-9"				X -				X -				Max				
				X Max	1'-4"												16'-3"				
				Y Min	2'-5"				Y -				Y -								
				Y Max	7'-0"																

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY	F6 LENGTHS	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS	REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	10	L Min	4'-9"	4	18'-10"	6	18	10	Min	-	-	-	Min	4	2	14'-10"	4	2	15'-5"	6	12	6	L 3'-4"	407
				L Max	9'-3"						2'-8"				-											
				X Min	2'-4"						Max				Max										X 1'-8"	
				X Max	2'-4"						2'-10"				-											
				Y Min	2'-6"																					
				Y Max	7'-0"																					
WING B	4	18	17	L Min	4'-8"	4	29'-4"	6	18	17	Min	-	-	-	Min	4	2	25'-0"	4	2	27'-5"	6	12	6	L 3'-4"	642
				L Max	9'-3"						2'-8"				-											
				X Min	2'-4"						Max				Max										X 1'-8"	
				X Max	2'-4"						3'-3"				-											
				Y Min	2'-5"																					
				Y Max	7'-0"																					

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"

Digitally signed by M. Wesley Phillips
Date: 2022.09.20 14:29:44-05'00'

STATE OF ARKANSAS
M. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
M. WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

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 DRAWING RCB-2.
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 DEPTH	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
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH								
25	3	2	11	6	13'-0"	14.5	3	14.5	6.5	8	47'-1"	8'-5"	6	9	Max 46'-9" Min 3'-8"	27	6	6	Max 46'-3" Min 3'-6"	41
															46'-9"	3			46'-3"	4

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
4	6	Max 46'-9" Min 3'-8"	41	4	6	Max 46'-9" Min 3'-8"	41	5	6.5	49	8'-1"	4	12	84	8-1"	4	7.5	151	Max 23'-9" Min 1'-10"
		46'-9"	4			46'-9"	4												

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIBUTION REINFORCNG 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" LENGTH
4	7.5	151	Max 23'-9" Min 1'-10"	4	12	6	LONG 23'-7"	4	12	12	LONG 18'-4"
							SHORT 2'-0"			12	MID 12'-10"
										12	SHORT 7'-4"

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NC. REQ'D
4	26'-8"	12	4	26'-8"	12	4	2'-1"	1'-1"	53

CLASS "S" CONCRETE (Includes HDWL) CU. YDS.	REINFORCING STEEL (GR 60) (Includes HDWL) LBS.
64.63	9057

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING 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

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	"h" HDWL BARS Y	"h" HDWL BARS LENGTH	"h" HDWL BARS NO. REQ'D

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL	TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D
A	2	11	6	14.5	14.5	6.5	8	47'-1"	8'-5"	54	5	46'-9"	8	48'-2"	6	46'-9"	17	38

BOTTOM SLAE REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINFORCING 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
4	46'-9"	4	48'-1"	4	46'-9"	12	54	5	6.5	198	8'-1"	4	12	324	8'-1"	4	7.5	151

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
4	7.5	151	4	12	12	4	12	36

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
264.57	31899

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUADRUPLE BARREL BOX CULVERT
Sta. 310+48.00

SPECIAL DETAILS

Ver. 1.1 17 b101054_c3.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.		101054	17	311
				(1)	SPECIAL DETAILS			

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
47'-1"	6'-0"	0'-9"	0'-8"	25	3:1	50'-9 1/8"	2'-0"	6'-10"	2'-0"	5	55	3'-2"	3'-3 7/8"	3'-9"	0'-6 7/8"	0'-5 3/8"	14'-6"	25'-0"	18'-0 3/8"	28'-6 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
14.02	1049

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS		F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	15	L	Min	3'-0"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min
					Max	7'-10"														4'-10"
				X	Min	0'-9"				X	-				X	-				Max
					Max	0'-11"														9'-4"
				Y	Min	2'-4"				Y	-				Y	-				
					Max	7'-0"														
WING B	4	12	25	L	Min	3'-1"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min
					Max	8'-3"														8'-5"
				X	Min	0'-9"				X	-				X	-				Max
					Max	1'-4"														16'-3"
				Y	Min	2'-5"				Y	-				Y	-				
					Max	7'-0"														

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	4	14'-2"	4	18	10	L	Min	4'-9"	4	8	18'-10"	6	18	10	Min	-	-	-	Min	4	2	14'-10"	4	2	15'-5"	6	12	6	L	3'-4"	407
									Max	9'-3"							2'-8"				-												
								X	Min	2'-4"							Max				Max											X	1'-8"	
									Max	2'-4"											-												
								Y	Min	2'-6"							2'-10"																	
									Max	7'-0"																							
WING B	4	18	4	24'-8"	4	18	17	L	Min	4'-8"	4	8	29'-4"	6	18	17	Min	-	-	-	Min	4	2	25'-0"	4	2	27'-5"	6	12	6	L	3'-4"	642
									Max	9'-3"							2'-8"				-												
								X	Min	2'-4"							Max				Max											X	1'-8"	
									Max	2'-4"											-												
								Y	Min	2'-5"							3'-3"																	
									Max	7'-0"																							

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 (Grade 60)."

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

OUTLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DISTRIB. REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DISTRIB. REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DISTRIB. REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DISTRIB. REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																																									
25	3:1	2	11	6	13'-0"	14.5	3	14.5	6.5	8	47'-1"	8'-5"	6	9	Max 46'-9" Min 3'-8"	27	6	6	Max 45'-9" Min 3'-8"	41	4	6	Max 46'-9" Min 3'-8"	41	4	6	Max 46'-9" Min 3'-8"	41	5	6.5	49	8'-1"	4	12	84	8'-1"	4	7.5	151	Max 23'-9" Min 1'-10"	4	7.5	151	Max 23'-9" Min 1'-10"	4	12	6	LONG 23'-7" SHORT 2'-0"	4	12	12	LONG 18'-4" MID 12'-10" SHORT 7'-4"
															46'-9"	3			46'-9"	4			46'-9"	4			46'-9"	4																												

CLASS "S" CONCRETE (Includes HDWL)	(1) REINFORCING STEEL (GR 60) (Includes HDWL)
CU. YDS.	LBS.
64.63	9057

"k1" HDWL BARS			"k2" HDWL BARS			"h" HDWL BARS			
SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	Y	NO. REQ'D
4	26'-8"	12	4	26'-8"	12	4	2'-1"	1'-1"	53

OUTLET SLOPE SECTION(S)

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. LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	"b" SIZE	"b" L	"c" SIZE	"c" L	SPACING	NO. REQ'D	BOTTOM SLAB REINF. LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	"b1" SIZE	"b1" L	"f" SIZE	"f" L	SPACING	NO. REQ'D	SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DISTRIB. REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DISTRIB. REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DISTRIB. REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DISTRIB. REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S		H	T	B	C	W	OW	OH	SL																																											

HDWL DEPTH	ADDITIONAL REINF. FOR HDWL	"h" HDWL BARS			
HD	LBS.	SIZE	Y	LENGTH	NO. REQ'D

CLASS "S" CONCRETE	REINFORCING STEEL (GR 60)
CU. YDS.	LBS.
TOTAL	

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

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT
QUADRUPLE BARREL BOX CULVERT
Sta. 310+48.00

SPECIAL DETAILS

Ver. 1.1 17 b101054_c3.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.		101054	18	311

(1) SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
32'-6"	6'-0"	0'-9"	0'-8"	30	3:1	36'-2 1/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	17'-11 3/8"	32'-5 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
12.37	1112

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	15	L	Min	3'-0"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min	4	18	4	14'-2"	4	18	10	L	Min	4'-9"	4	8	18'-9"	6	18	10	Min	-	-	-	-	4	2	14'-10"	4	2	15'-4"	6	12	6	L	3'-4"	393
					Max	7'-8"														4'-10"								Max	9'-3"									2'-8"													
				X	Min	0'-9"				X	-				X	-				Min								Min	2'-4"									-												
					Max	0'-9"														Max								Max	2'-4"									Max												
				Y	Min	2'-4"				Y	-				Y	-				9'-4"								Min	2'-6"									2'-8"												
					Max	7'-0"																							Max	7'-0"									-												
WING B	4	12	29	L	Min	3'-0"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min	4	18	4	28'-8"	4	18	20	L	Min	4'-7"	4	8	33'-3"	6	18	20	Min	-	-	-	-	4	2	28'-11"	4	2	31'-9"	6	12	6	L	3'-4"	719
					Max	8'-3"														9'-10"								Max	9'-3"									2'-8"												
				X	Min	0'-9"				X	-				X	-				Min								Min	2'-4"									-												
					Max	1'-4"														Max								Max	2'-4"									Max												
				Y	Min	2'-4"				Y	-				Y	-				18'-10"								Min	2'-4"									3'-3"												
					Max	7'-0"																							Max	7'-0"									-												

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"

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

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 DRAWING RCB-2.

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

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

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVER ALL WIDTH	OVER ALL HEIGHT	TOP SLAB REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DIST. REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DIST. REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DIST. REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH	CLASS "S" CONCRETE (Includes HDWL)	(1) REINFORCING STEEL (GR 60) (Includes HDWL)
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	OH																		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	19	311

(1) SPECIAL DETAILS

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
32'-6"	6'-0"	0'-9"	0'-8"	30	3:1	36'-2 1/8"	2'-0"	6'-10"	2'-0"	0	60	3'-2"	3'-2"	3'-9"	0'-6"	0'-5 1/8"	14'-6"	29'-0"	17'-11 3/8"	32'-5 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
13.76	1112

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	15	L	Min	-	-	-	-	-	-	-	-	4	18	4	Min 4'-10"	4	18	4	14'-2"	4	18	10	L Min 4'-9"		4	8	18'-9"	6	18	10	Min 2'-8"	-	-	-	-	4	2	14'-10"	4	2	15'-4"	6	12	6	L 3'-4"		393
					Max												Max 9'-4"								Max 2'-4"								Max 2'-8"				Max -								X 1'-8"	
				X	Min 0'-9"																				Min 2'-4"																					
					Max 0'-9"																				Max 2'-6"																					
				Y	Min 2'-4"																				Min 2'-6"																					
					Max 7'-0"																				Max 7'-0"																					
WING B	4	12	29	L	Min 3'-0"	-	-	-	-	-	-	-	-	4	18	4	Min 9'-10"	4	18	4	28'-8"	4	18	20	L Min 4'-7"		4	8	33'-3"	6	18	20	Min 2'-8"	-	-	-	-	4	2	28'-11"	4	2	31'-9"	6	12	6	L 3'-4"		719
					Max 8'-3"												Max 18'-10"								Max 9'-3"								Max 3'-3"				Max -								X 1'-8"	
				X	Min 0'-9"																				Min 2'-4"																					
					Max 1'-4"																				Max 2'-4"																					
				Y	Min 2'-4"																				Min 2'-4"																					
					Max 7'-0"																				Max 7'-0"																					

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 (Grade 60)."

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | 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" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | (1) REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	20	311

(1) SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
53'-9"	6'-0"	0'-9"	0'-8"	0	3:1	52'-8"	2'-0"	6'-10"	2'-0"	30	30	3'-2"	3'-4 7/8"	3'-4 7/8"	0'-3 1/4"	0'-3 1/4"	16'-6"	16'-6"	20'-0 3/8"	20'-0 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
10.83	900

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	17	L	Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
					Max	7'-11"												5'-6"									Max	9'-3"							2'-8"				-									
				X	Min	0'-9"				X -				X -				Max								X	Min	2'-4"							Max				Max								X	1'-8"	
					Max	1'-0"												10'-8"									Max	2'-4"							2'-11"				-									
				Y	Min	2'-4"				Y -				Y -												Y	Min	2'-7"																					
					Max	7'-0"																					Max	7'-0"																					
WING B	4	12	17	L	Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
					Max	7'-11"												5'-6"									Max	9'-3"							2'-8"				-									
				X	Min	0'-9"				X -				X -				Max								X	Min	2'-4"							Max				Max								X	1'-8"	
					Max	1'-0"												10'-8"									Max	2'-4"							2'-11"				-									
				Y	Min	2'-4"				Y -				Y -												Y	Min	2'-7"																					
					Max	7'-0"																					Max	7'-0"																					

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 DRAWING RCB-2.

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

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
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

INLET SKEWED END SECTION

SKEW (DEGREE)	SLOPE	DESIGN FILL DEPTH (FT.)	CLEAR SPAN (FT.)	CLEAR HEIGHT (FT.)	SECTION LENGTH	TOP SLAB THK.	HDWL DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	TOP SLAB REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DIST. REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DIST. REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DIST. REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	CH			Max				Max				Max				Max																											
															Min				Min				Min				Min																											

"k1" HDWL BARS			"k2" HDWL BARS			"h" HDWL BARS			
SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	Y	NO. REQ'D

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

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

INLET SLOPE SECTION(S)

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. 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. 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. "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DIST. REINF. "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DIST. REINF. "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DIST. REINF. "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	W	OW	CH	SL																																										

HDWL DEPTH	ADDITIONAL REINF. FOR HDWL	"h" HDWL BARS			
HD	LBS.	SIZE	Y	LENGTH	NO. REQ'D
3"	71	4	0'-11"	1'-11"	55

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
TOTAL	
0.50	142

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	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. 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. 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. "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH	TOP SLAB DIST. REINF. "g" LENGTH = SL SIZE	SPACING	NO. REQ'D	BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE	SPACING	NO. REQ'D	SIDE WALL DIST. REINF. "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D	INTERIOR WALL DIST. REINF. "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
D	S	H	T	B	C	W	OW	CH	SL																																										
A	5	10	6	12	12	6.5	8	53'-9"	8'-0"	72	5	53'-5"	7	54'-10"	4	53'-5"	17	50	4	53'-5"	4	54'-9"	4	53'-5"	11	78	5	7	246	7'-8"	4	12	576	7'-8"	4	9	149	4	9	149	4	12	12	4	12	48

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
346.67	42193

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 613+21.00

SPECIAL DETAILS

Ver. 1.1 17 b101054_c6.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.		101054	21	311

(1) SPECIAL DETAILS

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
53'-9"	6'-0"	0'-9"	0'-8"	0	3:1	52'-8"	2'-0"	6'-10"	2'-0"	30	30	3'-2"	3'-4 7/8"	3'-4 7/8"	0'-3 1/4"	0'-3 1/4"	16'-6"	16'-6"	20'-0 3/8"	20'-0 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
12.51	900

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY		F1 LENGTHS	F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS		F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS		F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F4 LENGTHS
WING A	4	12	17	L	Min	3'-0"	-	-	-	L	-		-	-	-	L	-		4	18	4	Min	
					Max	7'-11"																5'-6"	
				X	Min	0'-9"				X	-					X	-					Max	
					Max	1'-0"																10'-8"	
				Y	Min	2'-4"				Y	-					Y	-						
					Max	7'-0"																	
WING B	4	12	17	L	Min	3'-0"	-	-	-	L	-		-	-	-	L	-		4	18	4	Min	
					Max	7'-11"																5'-6"	
				X	Min	0'-9"				X	-					X	-					Max	
					Max	1'-0"																10'-8"	
				Y	Min	2'-4"				Y	-					Y	-						
					Max	7'-0"																	

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY		F6 LENGTHS	F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
									Max	9'-3"							2'-8"				-												
								X	Min	2'-4"							Max				Max										X	1'-8"	
									Max	2'-4"							2'-11"				-											
								Y	Min	2'-7"																							
									Max	7'-0"																							
WING B	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
									Max	9'-3"							2'-8"				-											
								X	Min	2'-4"							Max				Max										X	1'-8"	
									Max	2'-4"							2'-11"				-											
								Y	Min	2'-7"																							
									Max	7'-0"																							

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 (Grade 60)."

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVERALL WIDTH | OVERALL 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" LENGTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	22	311

1 SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
53'-9"	6'-0"	0'-9"	0'-8"	0	3:1	52'-8"	2'-0"	6'-10"	2'-0"	30	30	3'-2"	3'-4 7/8"	3'-4 7/8"	0'-3 1/4"	0'-3 1/4"	16'-6"	16'-6"	20'-0 3/8"	20'-0 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
10.83	900

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	17	L	Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
					Max	7'-11"								X -				5'-6"									Max	9'-3"							2'-8"				-										
				X	Min	0'-9"								X -				Max								X	Min	2'-4"							Max				Max								X	1'-8"	
					Max	1'-0"												10'-8"									Max	2'-4"							2'-11"				-										
				Y	Min	2'-4"								Y -												Y	Min	2'-7"																					
					Max	7'-0"																					Max	7'-0"																					
WING B	4	12	17	L	Min	3'-0"	-	-	-	L -	-	-	-	L -	4	18	4	Min	4	18	4	16'-2"	4	18	11	L	Min	4'-10"	4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
					Max	7'-11"								X -				5'-6"									Max	9'-3"							2'-8"				-										
				X	Min	0'-9"								X -				Max								X	Min	2'-4"							Max				Max								X	1'-8"	
					Max	1'-0"												10'-8"									Max	2'-4"							2'-11"				-										
				Y	Min	2'-4"								Y -												Y	Min	2'-7"																					
					Max	7'-0"																					Max	7'-0"																					

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"

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

STATE OF ARKANSAS
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

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 DRAWING RCB-2.
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 DEPTH	BOTTOM SLAB THK.	SIDE WALL THK.	INTERIOR WALL THK.	OVERALL WIDTH	OVERALL HEIGHT	TOP SLAB REINF. "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	TOP SLAB REINF. "c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D	BOTTOM SLAB REINF. "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	BOTTOM SLAB REINF. "f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D	SIDE WALL REINF. "f0" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" SIZE	"g" SPACING	"g" NO. REQ'D	"g" LENGTHS VARY	BOTTOM SLAB DIST. REINF. "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY	SIDE WALL DIST. REINF. "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH	INTERIOR WALL DIST. REINF. "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
SK	SL	D	S	H	LL	T	HD	B	C	W	OW	CH			Max				Max				Max				Max																Max							LONG			
																																															LONG			
															Min				Min				Min				Min																Min							SHORT			
																																															SHORT			

"k1" HDWL BARS			"k2" HDWL BARS			"h" HDWL BARS			
SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	Y	NO. REQ'D

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

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

INLET SLOPE SECTION(S)

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. LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINF. LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" LENGTH = SL SIZE	"g" SPACING	"g" NO. REQ'D	BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DIST. REINF. "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D	INTERIOR WALL DIST. REINF. "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D
D	S	H	T	B	C	W	OW	CH	SL																																									

HDWL DEPTH	ADDITIONAL REINF. FOR HDWL	"h" HDWL BARS			
HD	LBS.	SIZE	Y	LENGTH	NO. REQ'D
3"	71	4	0'-11"	1'-11"	55

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
TOTAL	
0.50	142

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.)	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. LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	"c" SPACING	"c" NO. REQ'D	BOTTOM SLAB REINF. LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	"f" SPACING	"f" NO. REQ'D	SIDE WALL REINF. "f0" LENGTH = OH - 4" SIZE	"f0" SPACING	"f0" NO. REQ'D	"f0" LENGTH	INTERIOR WALL REINF. "f1" LENGTH = OH - 4" SIZE	"f1" SPACING	"f1" NO. REQ'D	"f1" LENGTH	TOP SLAB DIST. REINF. "g" LENGTH = SL SIZE	"g" SPACING	"g" NO. REQ'D	BOTTOM SLAB DIST. REINF. "e" LENGTH = SL SIZE	"e" SPACING	"e" NO. REQ'D	SIDE WALL DIST. REINF. "d1" LENGTH = SL SIZE	"d1" SPACING	"d1" NO. REQ'D	INTERIOR WALL DIST. REINF. "d2" LENGTH = SL SIZE	"d2" SPACING	"d2" NO. REQ'D
D	S	H	T	B	C	W	OW	CH	SL																																									
A	5	10	6	12	12	6.5	8	53'-9"	8'-0"	72	5	53'-5"	7	54'-10"	4	53'-5"	17	50	4	53'-5"	4	54'-9"	4	53'-5"	11	78	5	7	246	7'-8"	4	12	576	7'-8"	4	9	149	4	9	149	4	12	12	4	12	48

CLASS "S" CONCRETE	REINFORCING STEEL (GR. 60)
CU. YDS.	LBS.
346.67	42193

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUINTUPLE BARREL BOX CULVERT
Sta. 704+44.00

SPECIAL DETAILS

LRFD

Ver. 1.1 17 b101054_c7.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.		101054	23	311

(1) SPECIAL DETAILS

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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) OUTLET	REINFORCING STEEL (Includes apron and laps if required) OUTLET
OW	H	WB	CW	SK	SL	K	HL	WH1	WH2	AF1	AF2	WE	WF1	WF2	G1	G2	W1	W2	W3	W4	CU.YD	LBS.
53'-9"	6'-0"	0'-9"	0'-8"	0	3:1	52'-8"	2'-0"	6'-10"	2'-0"	30	30	3'-2"	3'-4 7/8"	3'-4 7/8"	0'-3 1/4"	0'-3 1/4"	16'-6"	16'-6"	20'-0 3/8"	20'-0 3/8"	12.51	900

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	17	L	Min 3'-0"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min	4	18	4	16'-2"	4	18	11	L Min 4'-10"		4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
					Max 7'-11"														5'-6"								Max 9'-3"								2'-8"													
				X	Min 0'-9"				X	-				X	-				Max								Min 2'-4"								Max				Max							X	1'-8"	
					Max 1'-0"														10'-8"								Max 2'-4"								2'-11"				-								
				Y	Min 2'-4"				Y	-				Y	-												Min 2'-7"																					
					Max 7'-0"																							Max 7'-0"																					
WING B	4	12	17	L	Min 3'-0"	-	-	-	L	-	-	-	-	L	-	4	18	4	Min	4	18	4	16'-2"	4	18	11	L Min 4'-10"		4	8	20'-10"	6	18	11	Min	-	-	-	Min	4	2	16'-9"	4	2	17'-9"	6	12	6	L	3'-4"	450
					Max 7'-11"														5'-6"								Max 9'-3"								2'-8"													
				X	Min 0'-9"				X	-				X	-				Max								Min 2'-4"								Max				Max							X	1'-8"	
					Max 1'-0"														10'-8"								Max 2'-4"								2'-11"				-								
				Y	Min 2'-4"				Y	-				Y	-												Min 2'-7"																					
					Max 7'-0"																							Max 7'-0"																					

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
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

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

OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVERALL WIDTH | OVERALL 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" LENGTH | CLASS "S" CONCRETE (Includes HDWL) | (1) REINFORCING STEEL (GR 60) (Includes HDWL) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	24	311

1 SPECIAL DETAILS

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
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

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

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
51'-5"	9'-0"	0'-10"	0'-9"	0	3:1	50'-0"	2'-0"	9'-10"	3'-0"	30	30	3'-3"	4'-10"	4'-10"	1'-10"	1'-10"	23'-6"	23'-6"	26'-10 1/8"	26'-10 1/8"

CLASS "S" CONCRETE (Includes apron) INLET	REINFORCING STEEL (Includes apron and laps if required) INLET
CU.YD	LBS.
18.62	1644

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	24	L	Min	4'-2"	4	12	11	L	6-3"		-	-	-	L	-		4	18	8	Min
					Max	12'-5"																5'-7"
				X	Min	0'-10"				X	1'-9"					X	-					Max
					Max	2'-5"																21'-0"
				Y	Min	3'-5"				Y	4-7"					Y	-					
					Max	10'-1"																
WING B	4	12	24	L	Min	4'-2"	4	12	11	L	6-3"		-	-	-	L	-		4	18	8	Min
					Max	12'-5"																5'-7"
				X	Min	0'-10"				X	1'-9"					X	-					Max
					Max	2'-5"																21'-0"
				Y	Min	3'-5"				Y	4-7"					Y	-					
					Max	10'-1"																

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY		F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	4	23'-2"	4	18	16	L	Min	5'-11"	4	8	27'-8"	6	18	16	Min		4	18	2	Min	4	2	24'-0"	4	2	25'-8"	6	12	9	L	3'-4"	822
									Max	12'-5"							2'-9"					24'-3"												
								X	Min	2'-5"							Max					Max											X	1'-8"	
									Max	2'-5"							4'-3"					24'-3"											
								Y	Min	3'-7"																								
									Max	10'-1"																								
WING B	4	18	4	23'-2"	4	18	16	L	Min	5'-11"	4	8	27'-8"	6	18	16	Min		4	18	2	Min	4	2	24'-0"	4	2	25'-8"	6	12	9	L	3'-4"	822
									Max	12'-5"							2'-9"					24'-3"												
								X	Min	2'-5"							Max					Max											X	1'-8"	
									Max	2'-5"							4'-3"					24'-3"											
								Y	Min	3'-7"																								
									Max	10'-1"																								

INLET SKEWED END SECTION

SKEW (DEGREE) SK	SLOPE SL	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	SECTION LENGTH LL	TOP SLAB THK. T	HDWL DEPTH HD	BOTTOM SLAB THK E	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH

TOP SLAB REINFORCING STEEL "a" SIZE	"a" SPACING	"a" LENGTHS VARY	"a" NO. REQ'D	"c" SIZE	"c" SPACING	"c" LENGTHS VARY	"c" NO. REQ'D
		Max				Max	
		Min				Min	

BOTTOM SLAB REINFORCING STEEL "d" SIZE	"d" SPACING	"d" LENGTHS VARY	"d" NO. REQ'D	"f" SIZE	"f" SPACING	"f" LENGTHS VARY	"f" NO. REQ'D
		Max				Max	
		Min				Min	

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
			Max
			Min

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY
			Max
			Min

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH
			LONG
			SHORT

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
			LONG
			MID
			SHORT

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D

"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D

"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D

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

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

INLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK B	SIDE WALL THK C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL

TOP SLAB REINFORCING 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 REINFORCING 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 REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D

SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	"h" HDWL BARS Y	"h" HDWL BARS LENGTH	"h" HDWL BARS NO. REQ'D
3"	68	4	1'-2"	2'-2"	53

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
TOTAL	
0.48	145

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

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

MID-SECTION

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL
A	2	12	9	15	15	8.5	8	51'-5"	11'-6"	72

TOP SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	Bent "b" SIZE	Bent "b" L	"c" SIZE	"c" L	SPACING	NO. REQ'D
5	51'-1"	8	52'-7"	8	51'-1"	17	50

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	Bent "b1" SIZE	Bent "b1" L	"f" SIZE	"f" L	SPACING	NO. REQ'D
5	51'-1"	5	52'-6"	5	51'-1"	14	61

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
6	6	288	11'-2"

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH
4	12	432	11'-2"

TOP SLAB DISTRIBUTION REINF. STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D
5	11	119

BOTTOM SLAB DISTRIBUTION REINF. STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D
5	11	119

SIDE WALL DISTRIBUTION REINF. STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	18

INTERIOR WALL DISTRIBUTION REINF. STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D
4	12	54

CLASS "S" CONCRETE CU. YDS.	REINFORCING STEEL (GR. 60) LBS.
424.78	58519

SHEET 1 OF 2
DETAILS OF R.C. BOX CULVERT
QUADRUPLE BARREL BOX CULVERT
Sta. 906+90.00

SPECIAL DETAILS

LRFD

Ver. 1.1 17 b101054_c9.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.		101054	25	311

(1) SPECIAL DETAILS

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
51'-5"	9'-0"	0'-10"	0'-9"	0	3:1	50'-0"	2'-0"	9'-10"	3'-0"	30	30	3'-3"	4'-10"	4'-10"	1'-10"	1'-10"	23'-6"	23'-6"	26'-10 1/8"	26'-10 1/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
20.34	1644

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	24	L	Min	4'-2"	4	12	11	L 6'-3"	-	-	-	L -	4	18	8	Min	4	18	4	23'-2"
					Max	12'-5"												5'-7"				
				X	Min	0'-10"				X 1'-9"				X -				Max				
					Max	2'-5"												21'-0"				
				Y	Min	3'-5"				Y 4'-7"				Y -								
					Max	10'-1"																
WING B	4	12	24	L	Min	4'-2"	4	12	11	L 6'-3"	-	-	-	L -	4	18	8	Min	4	18	4	23'-2"
					Max	12'-5"												5'-7"				
				X	Min	0'-10"				X 1'-9"				X -				Max				
					Max	2'-5"												21'-0"				
				Y	Min	3'-5"				Y 4'-7"				Y -								
					Max	10'-1"																

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	16	L	Min	5'-11"	4	8	27'-8"	6	18	16	Min	4	18	2	Min	4	2	24'-0"	4	2	25'-8"	6	12	9	L	3'-4"	822
					Max	12'-5"							2'-9"				24'-3"												
				X	Min	2'-5"							Max				Max										X	1'-8"	
					Max	2'-5"																							
				Y	Min	3'-7"							Min				24'-3"												
					Max	10'-1"							4'-3"																
WING B	4	18	16	L	Min	5'-11"	4	8	27'-8"	6	18	16	Min	4	18	2	Min	4	2	24'-0"	4	2	25'-8"	6	12	9	L	3'-4"	822
					Max	12'-5"							2'-9"				24'-3"												
				X	Min	2'-5"							Max				Max										X	1'-8"	
					Max	2'-5"																							
				Y	Min	3'-7"							Min				24'-3"												
					Max	10'-1"							4'-3"																

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 (Grade 60)."

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

OUTLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | 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" LENGTH | CLASS "S" CONCRETE (Includes HDWL) CU. YDS. | (1) REINFORCING STEEL (GR 60) (Includes HDWL) LBS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	26	311

(1) SPECIAL DETAILS

INLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
38'-9"	7'-0"	0'-9"	0'-8"	0	3:1	37'-4"	2'-0"	7'-10"	2'-4"	30	30	3'-2"	3'-9 3/4"	3'-9 3/4"	0'-9"	0'-9"	19'-0"	19'-0"	22'-2 3/8"	22'-2 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
INLET	INLET
CU.YD	LBS.
11.87	1080

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY			F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS			F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS			F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY
WING A	4	12	19	L	Min	3'-6"	4	12	4	L	3'-9"		-	-	-	L	-		4	18	6	Min
					Max	9'-4"																3'-10"
				X	Min	0'-9"				X	1'-4"					X	-					Max
					Max	1'-5"																14'-3"
				Y	Min	2'-10"				Y	2'-6"					Y	-					
					Max	8'-0"																
WING B	4	12	19	L	Min	3'-6"	4	12	4	L	3'-9"		-	-	-	L	-		4	18	6	Min
					Max	9'-4"																3'-10"
				X	Min	0'-9"				X	1'-4"					X	-					Max
					Max	1'-5"																14'-3"
				Y	Min	2'-10"				Y	2'-6"					Y	-					
					Max	8'-0"																

WING	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY			F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY			F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS			F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS			REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	6	18'-8"	4	18	13	L	Min	5'-1"	4	8	23'-0"	6	18	13	Min			-	-	-	Min			4	2	19'-4"	4	2	20'-6"	6	12	7	L	3'-4"		540
									Max	10'-3"							2'-8"						-														
								X	Min	2'-4"							Max						Max												X	1'-8"	
									Max	2'-4"																											
								Y	Min	2'-10"							3'-4"						-														
									Max	8'-0"																											
WING B	4	18	6	18'-8"	4	18	13	L	Min	5'-1"	4	8	23'-0"	6	18	13	Min			-	-	-	Min			4	2	19'-4"	4	2	20'-6"	6	12	7	L	3'-4"		540
									Max	10'-3"							2'-8"						-														
								X	Min	2'-4"							Max						Max												X	1'-8"	
									Max	2'-4"																											
								Y	Min	2'-10"							3'-4"						-														
									Max	8'-0"																											

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
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

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 DRAWING RCB-2.

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

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

INLET SKEWED END SECTION

| SKEW (DEGREE) | SLOPE | DESIGN FILL DEPTH (FT.) | CLEAR SPAN (FT.) | CLEAR HEIGHT (FT.) | SECTION LENGTH | TOP SLAB THK. | HDWL DEPTH | BOTTOM SLAB THK. | SIDE WALL THK. | INTERIOR WALL THK. | OVER ALL WIDTH | OVER ALL HEIGHT | TOP SLAB REINF. "a" SIZE | "a" SPACING | "a" LENGTHS VARY | "a" NO. REQ'D | TOP SLAB REINF. "c" SIZE | "c" SPACING | "c" LENGTHS VARY | "c" NO. REQ'D | BOTTOM SLAB REINF. "d" SIZE | "d" SPACING | "d" LENGTHS VARY | "d" NO. REQ'D | BOTTOM SLAB REINF. "f" SIZE | "f" SPACING | "f" LENGTHS VARY | "f" NO. REQ'D | SIDE WALL REINF. "f0" SIZE | "f0" SPACING | "f0" NO. REQ'D | "f0" LENGTH | INTERIOR WALL REINF. "f1" SIZE | "f1" SPACING | "f1" NO. REQ'D | "f1" LENGTH | TOP SLAB DIST. REINF. "g" SIZE | "g" SPACING | "g" NO. REQ'D | "g" LENGTHS VARY | BOTTOM SLAB DIST. REINF. "e" SIZE | "e" SPACING | "e" NO. REQ'D | "e" LENGTHS VARY | SIDE WALL DIST. REINF. "d1" SIZE | "d1" SPACING | "d1" NO. REQ'D | "d1" LENGTH | INTERIOR WALL DIST. REINF. "d2" SIZE | "d2" SPACING | "d2" NO. REQ'D | "d2" LENGTH | CLASS "S" CONCRETE (Includes HDWL) | (1) REINFORCING STEEL (GR 60) (Includes HDWL) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	27	311

(1) SPECIAL DETAILS

OUTLET WINGWALL TABLE

OVER ALL WIDTH	CLEAR HEIGHT	FOOTING THK.	WING WALL THK.	BOX SKEW (DEG.)	SLOPE	HDWL LENGTH	HEE.	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
38'-9"	7'-0"	0'-9"	0'-8"	0	3:1	37'-4"	2'-0"	7'-10"	2'-4"	30	30	3'-2"	3'-9 3/4"	3'-9 3/4"	0'-9"	0'-9"	19'-0"	19'-0"	22'-2 3/8"	22'-2 3/8"

CLASS "S" CONCRETE (Includes apron)	REINFORCING STEEL (Includes apron and laps if required)
OUTLET	OUTLET
CU.YD	LBS.
13.21	1080

WING	F1 BAR SIZE	F1 MAX. SPACING	F1 NO. REQ'D	F1 LENGTHS VARY		F2 BAR SIZE	F2 SPACING	F2 NO. REQ'D	F2 LENGTHS	F3 BAR SIZE	F3 SPACING	F3 NO. REQ'D	F3 LENGTHS	F4 BAR SIZE	F4 SPACING	F4 NO. REQ'D	F4 LENGTHS VARY	F5 BAR SIZE	F5 SPACING	F5 NO. REQ'D	F5 LENGTHS
WING A	4	12	19	L	Min 3'-6"	4	12	4	L 3'-9"	-	-	-	L -	4	18	6	Min	4	18	4	18'-8"
					Max 9'-4"												3'-10"				
				X	Min 0'-9"				X 1'-4"				X -				Max				
					Max 1'-5"												14'-3"				
				Y	Min 2'-10"				Y 2'-6"				Y -								
					Max 8'-0"																
WING B	4	12	19	L	Min 3'-6"	4	12	4	L 3'-9"	-	-	-	L -	4	18	6	Min	4	18	4	18'-8"
					Max 9'-4"												3'-10"				
				X	Min 0'-9"				X 1'-4"				X -				Max				
					Max 1'-5"												14'-3"				
				Y	Min 2'-10"				Y 2'-6"				Y -								
					Max 8'-0"																

WING	F6 BAR SIZE	F6 SPACING	F6 NO. REQ'D	F6 LENGTHS VARY		F7 BAR SIZE	F7 NO. REQ'D	F7 LENGTHS	F8 BAR SIZE	F8 SPACING	F8 NO. REQ'D	F8 LENGTHS VARY	F9 BAR SIZE	F9 SPACING	F9 NO. REQ'D	F9 LENGTHS	F10 BAR SIZE	F10 NO. REQ'D	F10 LENGTHS	F11 BAR SIZE	F11 NO. REQ'D	F11 LENGTHS	F12 BAR SIZE	F12 SPACING	F12 NO. REQ'D	F12 LENGTHS		REINF. STEEL QTY. PER WING (LBS)
WING A	4	18	13	L	Min 5'-1"	4	8	23'-0"	6	18	13	Min	-	-	-	Min	4	2	19'-4"	4	2	20'-6"	6	12	7	L	3'-4"	540
					Max 10'-3"							2'-8"				-												
				X	Min 2'-4"							Max				Max										X	1'-8"	
					Max 2'-4"							3'-4"				-												
				Y	Min 2'-10"																							
					Max 8'-0"																							
WING B	4	18	13	L	Min 5'-1"	4	8	23'-0"	6	18	13	Min	-	-	-	Min	4	2	19'-4"	4	2	20'-6"	6	12	7	L	3'-4"	540
					Max 10'-3"							2'-8"				-												
				X	Min 2'-4"							Max				Max										X	1'-8"	
					Max 2'-4"							3'-4"				-												
				Y	Min 2'-10"																							
					Max 8'-0"																							

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 (Grade 60)."

STATE OF ARKANSAS
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
WESLEY PHILLIPS

TABULAR DATA BY: MWP DATE: 1/26/2021
CHECKED BY: KBC DATE: 2/2/2021

OUTLET SKEWED END SECTION

SKEW (DEGREE) SK	SLOPE SL	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	SECTION LENGTH LL	TOP SLAB THK. T	HDWL DEPTH HD	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH

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
		Max				Max	
		Min				Min	

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
		Max				Max	
		Min				Min	

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
			Max
			Min

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" SIZE	"e" SPACING	"e" NO. REQ'D	"e" LENGTHS VARY
			Max
			Min

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" SIZE	"d1" SPACING	"d1" NO. REQ'D	"d1" LENGTH
			LONG
			SHORT

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" SIZE	"d2" SPACING	"d2" NO. REQ'D	"d2" LENGTH
			LONG
			SHORT

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

"k1" HDWL BARS SIZE	"k1" HDWL BARS LENGTH	"k1" HDWL BARS NO. REQ'D	"k2" HDWL BARS SIZE	"k2" HDWL BARS LENGTH	"k2" HDWL BARS NO. REQ'D	"h" HDWL BARS SIZE	"h" HDWL BARS LENGTH	"h" HDWL BARS Y	"h" HDWL BARS NO. REQ'D

OUTLET SLOPE SECTION(S)

R.C. BOX SECTION	DESIGN FILL DEPTH (FT.) D	CLEAR SPAN (FT.) S	CLEAR HEIGHT (FT.) H	TOP SLAB THK. T	BOTTOM SLAB THK. B	SIDE WALL THK. C	INTERIOR WALL THK. W	OVER ALL WIDTH OW	OVER ALL HEIGHT OH	SECTION LENGTH (FT.) SL

LENGTH = OW - 4" + BENDS "a" SIZE	"a" L	"b" SIZE	"b" L	"c" SIZE	"c" L	SPACING	NO. REQ'D

BOTTOM SLAB REINFORCING STEEL LENGTH = OW - 4" + BENDS "d" SIZE	"d" L	"b1" SIZE	"b1" L	"f" SIZE	"f" L	SPACING	NO. REQ'D

SIDE WALL REINFORCING STEEL "f0" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

INTERIOR WALL REINFORCING STEEL "f1" LENGTH = OH - 4" SIZE	SPACING	NO. REQ'D	LENGTH

TOP SLAB DISTRIBUTION REINFORCING STEEL "g" LENGTH = SL SIZE	SPACING	NO. REQ'D

BOTTOM SLAB DISTRIBUTION REINFORCING STEEL "e" LENGTH = SL SIZE	SPACING	NO. REQ'D

SIDE WALL DISTRIBUTION REINFORCING STEEL "d1" LENGTH = SL SIZE	SPACING	NO. REQ'D

INTERIOR WALL DISTRIBUTION REINFORCING STEEL "d2" LENGTH = SL SIZE	SPACING	NO. REQ'D

CLASS "S" CONCRETE CU YDS.	REINFORCING STEEL (GR 60) LBS.
TOTAL	
0.36	104

HDWL DEPTH HD	ADDITIONAL REINF. FOR HDWL LBS.	"h" HDWL BARS SIZE	Y	LENGTH	NO. REQ'D
3"	51	4	1'-0"	2'-0"	40

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

Unless otherwise noted, all dimensions are in inches.

SHEET 2 OF 2
DETAILS OF R.C. BOX CULVERT

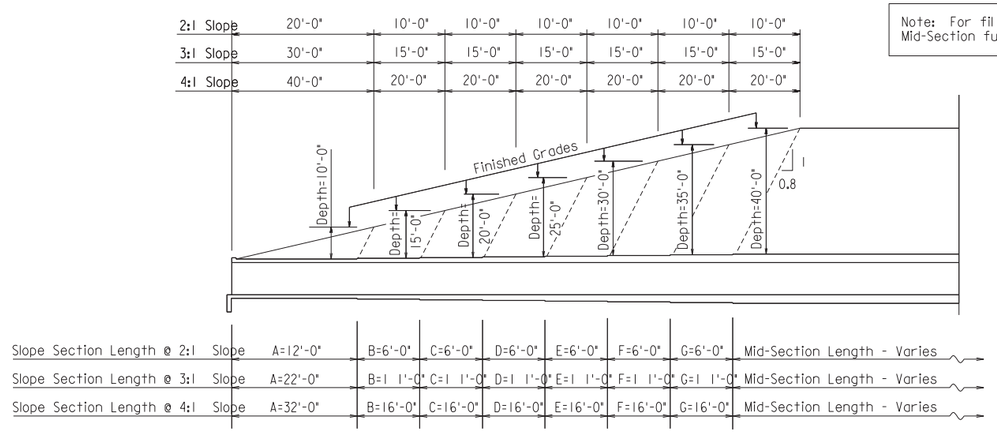
TRIPLE BARREL BOX CULVERT
Sta. 1005+95.00

SPECIAL DETAILS

Ver. 1.1 17 b101054_c10.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.		101054	28	311

1 SPECIAL DETAILS

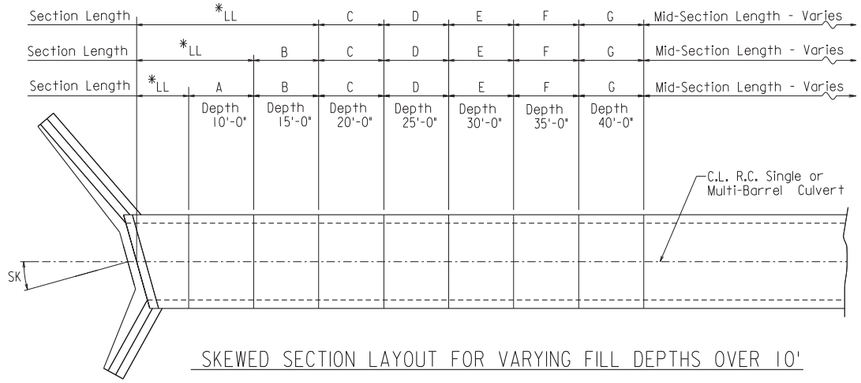


LONGITUDINAL SECTION LENGTH SCHEDULE FOR VARYING FILL DEPTHS OVER 10'

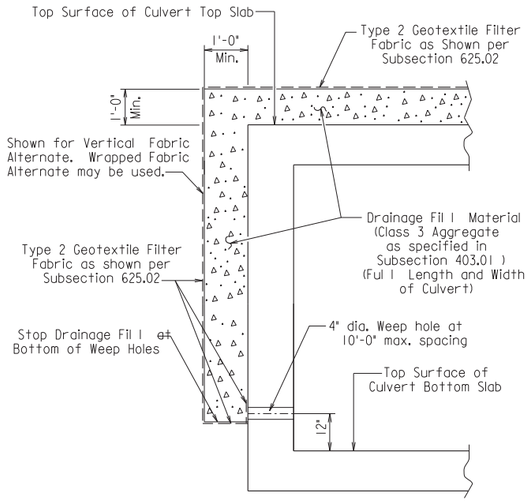
Lengths for Non-Skewed Boxes

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

*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.

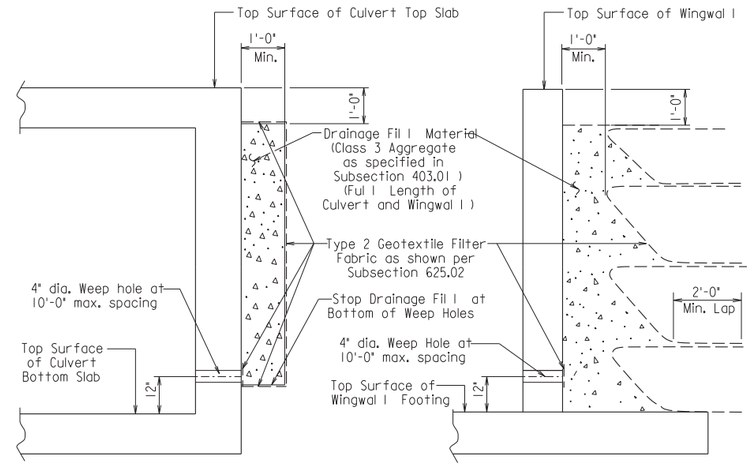


SKEWED SECTION LAYOUT FOR VARYING FILL DEPTHS OVER 10'



CULVERT DRAINAGE DETAIL FOR ROCK FILL

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

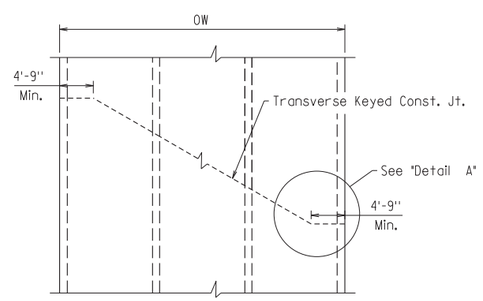


For Details of Excavation and Pay Limits, see Standard Drawing RCB-2.

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

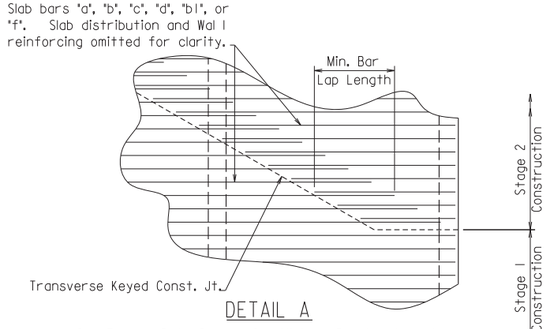
WRAPPED FABRIC ALTERNATE
(Shown for Wingwall, Similar for Culvert)

WINGWALL & CULVERT DRAINAGE DETAIL



SKEWED TRANSVERSE JOINT DETAIL

This detail shall be used to construct a skewed transverse joint only for Multi-Barrel Culverts and only when required by the Maintenance of Traffic Plans. Otherwise, transverse joints should be made normal to the centerline of the barrel.



DETAIL A

See Tabular Data Sheets for Minimum Bar Lap Lengths.

Shown for transverse reinforcing, longitudinal reinforcing similar.

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

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

LIVE LOADING: HL-93

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

Reinforcing Steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

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. 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 keyed and shall be normal to the centerline of barrel except as noted. Reinforcing shall be continuous through joints unless noted otherwise. Reinforcing through stage construction joints shall provide the minimum bar lap length shown on the Tabular Data Sheets. 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 5 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 Section 607. When the top slab of the box culvert serves as the finished roadway surface, a precast reinforced concrete box culvert substitution is not allowed.

STATE OF ARKANSAS
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
WESLEY PHILLIPS

SHEET 1 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

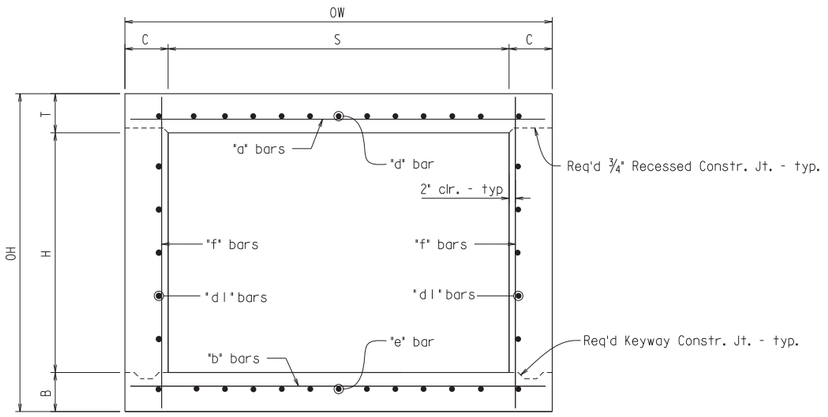
GENERAL NOTES & LONGITUDINAL SECTION LENGTH SCHEDULE

SPECIAL DETAILS

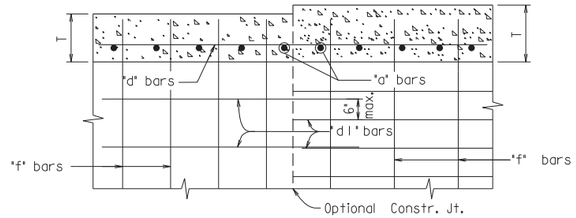
Ver. 1.1 17 b101054_culvert.dgn

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.		101054	29	311
				(1)		SPECIAL DETAILS		

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



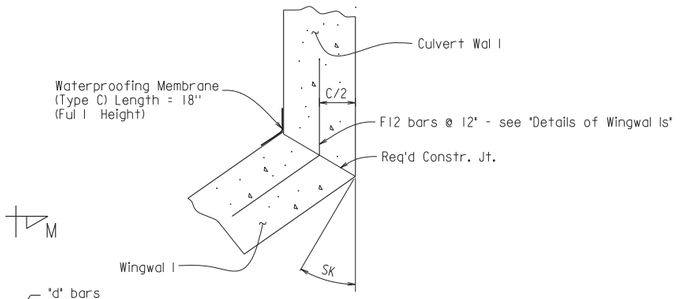
TYPICAL SECTION M-M



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

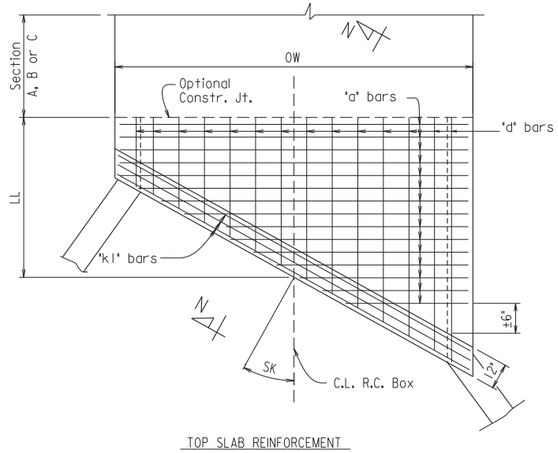
LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS

TOP SLAB SHOWN, BOTTOM SLAB SIMILAR

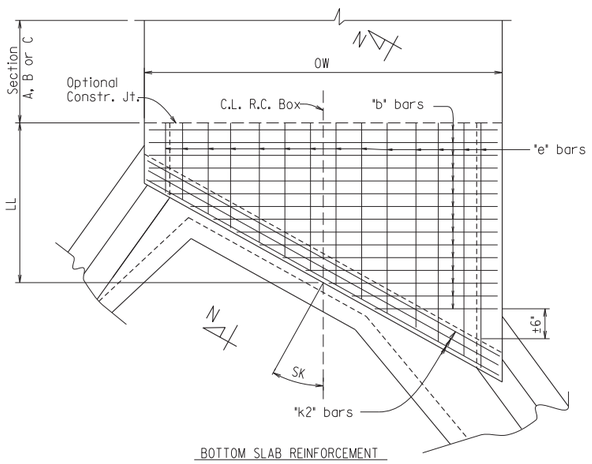


WINGWALL ATTACHMENT

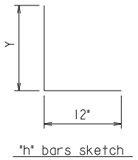
See "Details of Wingwall Is" for additional information and wingwall details.



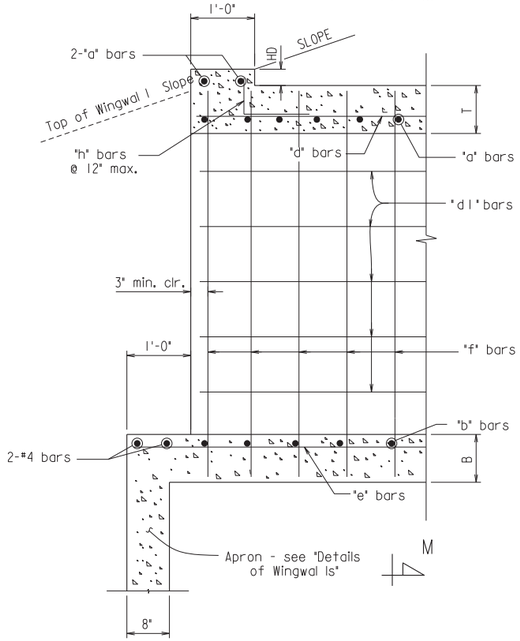
TOP SLAB REINFORCEMENT



BOTTOM SLAB REINFORCEMENT

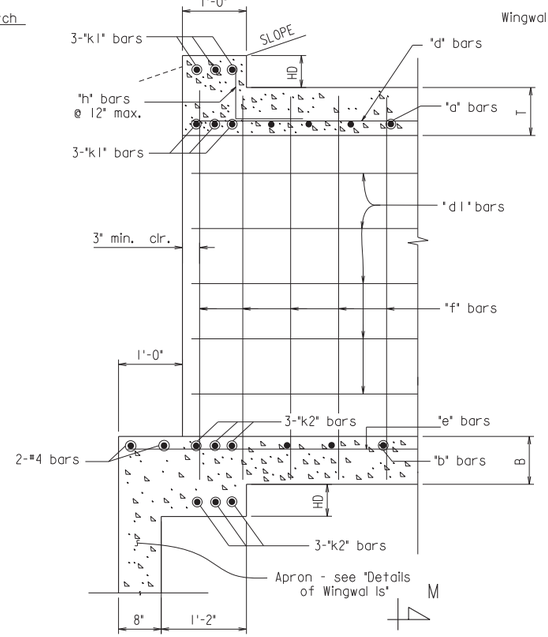


"h" bars sketch



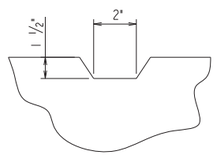
PART LONGITUDINAL SECTION

(Non-Skewed Ends)



PART LONGITUDINAL SECTION N-N

(Skewed Ends)



TYPICAL KEYWAY DETAIL

(All Construction Joints)

SKEWED END SECTION DETAILS

SHEET 2 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF SINGLE BARREL R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

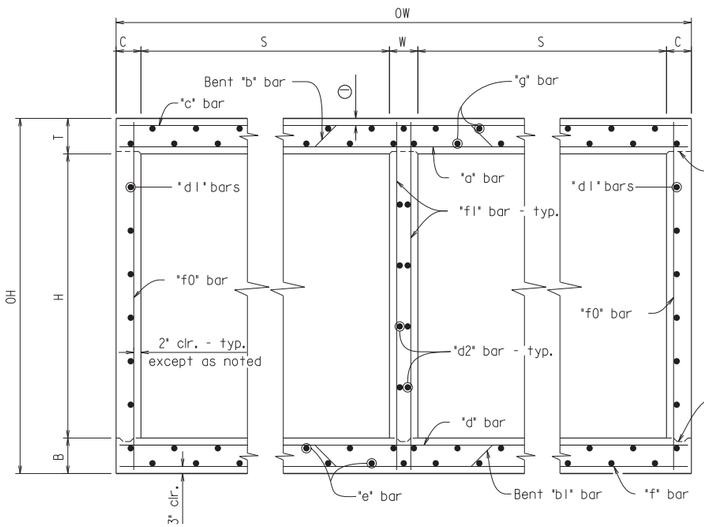
Ver. 1.1 17 b101054_culvert.dgn

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.		101054	30	311

1 SPECIAL DETAILS

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

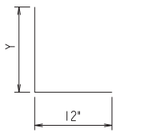
Note: When top slab of culvert serves as finished roadway surface, see General Notes on Sheet 1 of 4.



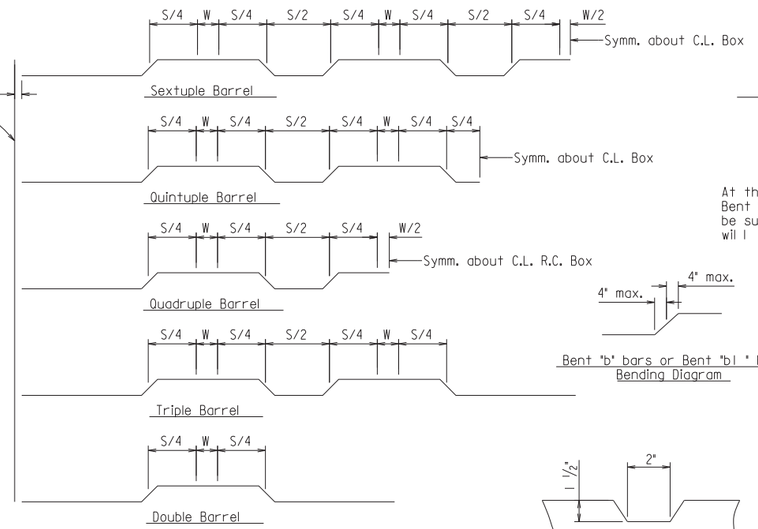
TYPICAL SECTION M-M

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

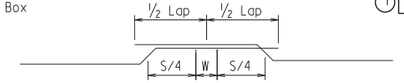
Bottom Slab
Straight "d" bars shall alternate with Bent "b1" bars in top.
Straight "f" bars shall alternate with Bent "b1" bars in bottom.



"h" bars sketch



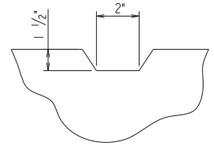
Bent "b" bars or Bent "b1" bars sketch



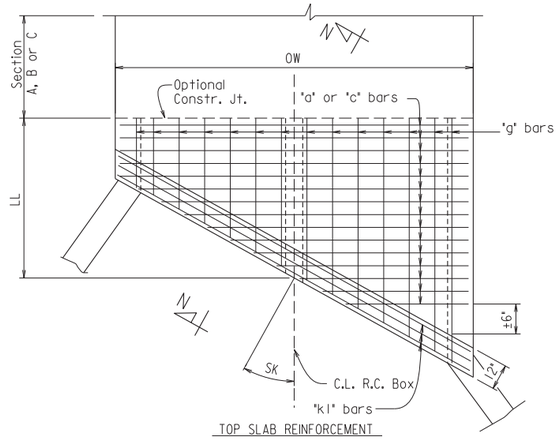
Lap Detail
For Bent "b" bars and Bent "b1" bars

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.

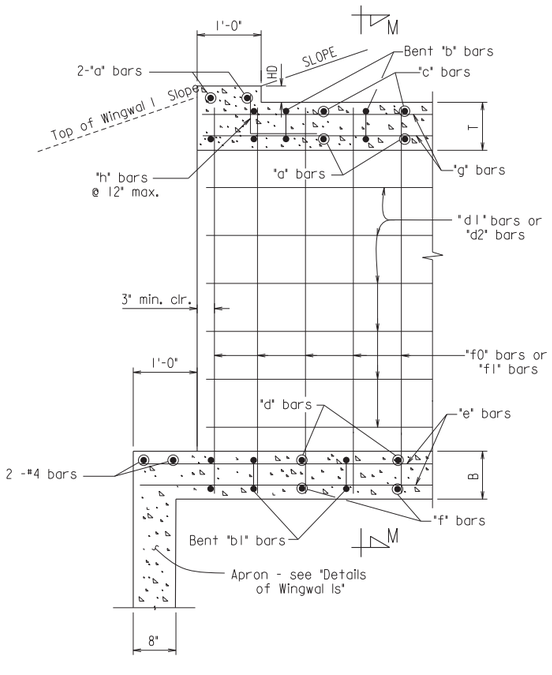
Bent "b" bars or Bent "b1" bars Bending Diagram



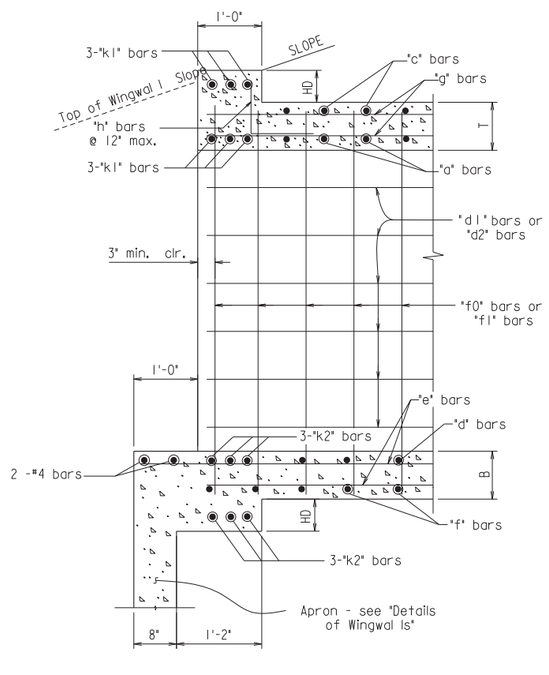
TYPICAL KEYWAY DETAIL
(All Construction Joints)



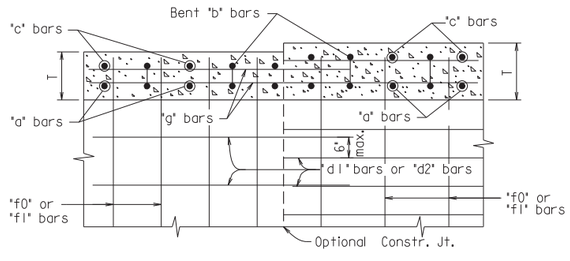
TOP SLAB REINFORCEMENT
Straight "c" bars in top.
Straight "a" bars in bottom.



PART LONGITUDINAL SECTION
(Non-Skewed Ends)

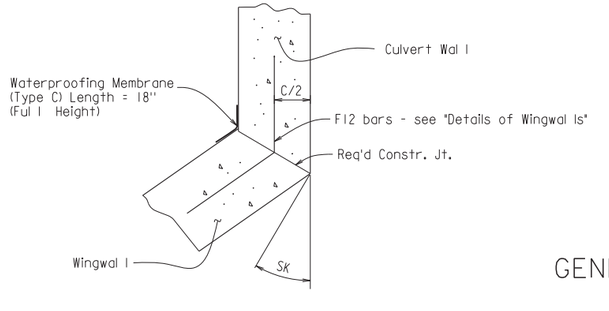


PART LONGITUDINAL SECTION N-N
(Skewed Ends)

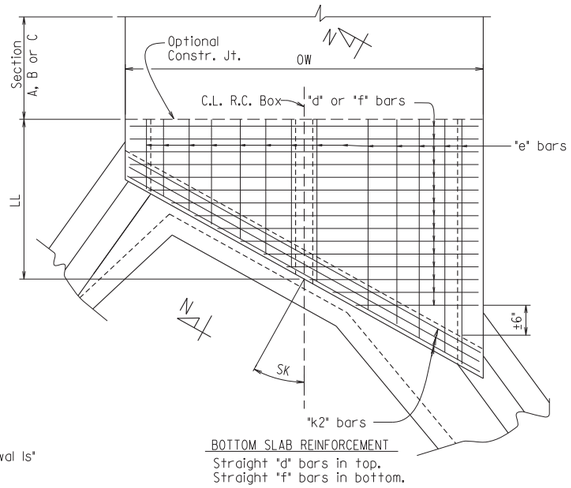


Longitudinal Bar Spacing at individual sections shall be maintained, which may result in noncontact bar laps.

LONGITUDINAL LAP DETAIL AT CHANGE IN SECTIONS
TOP SLAB SHOWN, BOTTOM SLAB SIMILAR



WINGWALL ATTACHMENT
See "Details of Wingwall s" 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

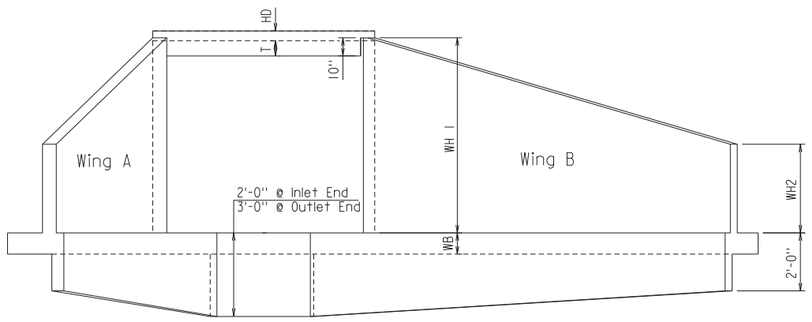
DETAILS OF MULTI-BARREL R.C. BOX CULVERT

SPECIAL DETAILS

STATE OF ARKANSAS
W. Wesley Phillips
LICENSED PROFESSIONAL ENGINEER
No. 19901
W. WESLEY PHILLIPS

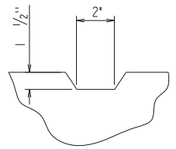
Ver. 1.1 17 b101054_culvert.dgn

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.		101054	31	311
				(1)	SPECIAL DETAILS			



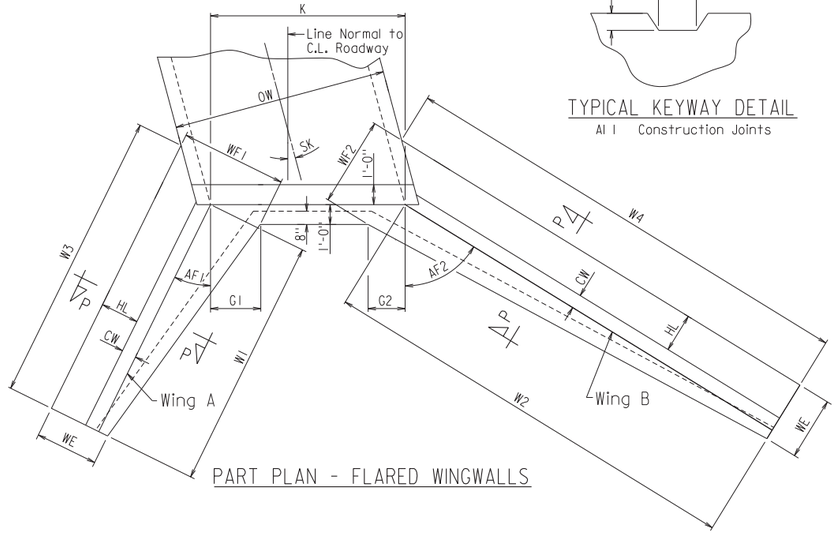
END ELEVATION

Flared Wingwal Is Shown

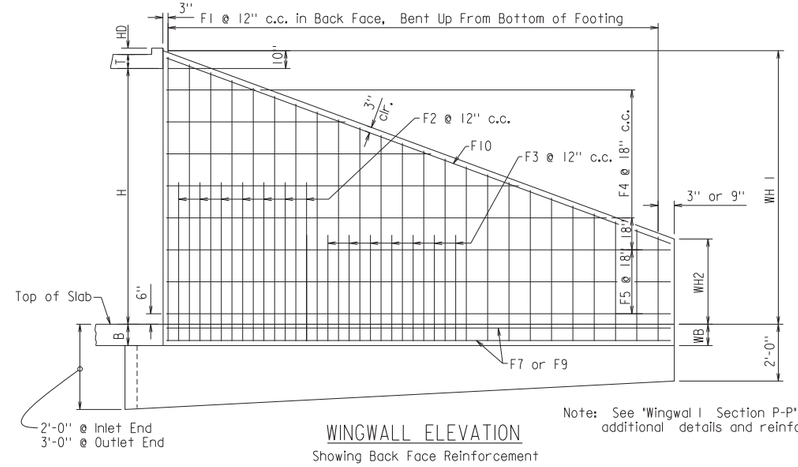


TYPICAL KEYWAY DETAIL

Al l Construction Joints



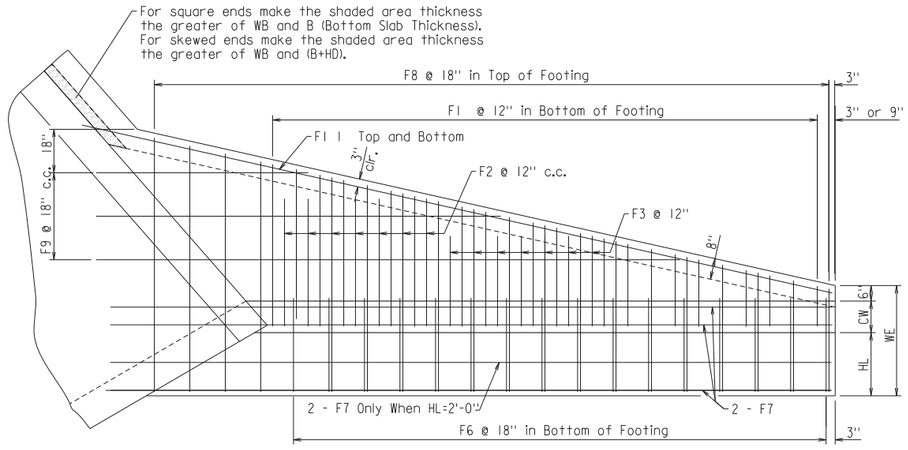
PART PLAN - FLARED WINGWALLS



WINGWALL ELEVATION

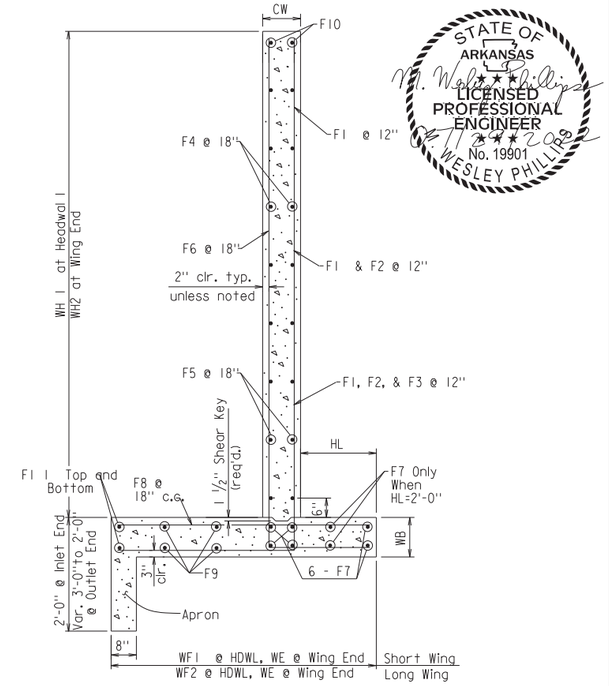
Showing Back Face Reinforcement

Note: See 'Wingwal l Section P-P' for additional details and reinforcing.

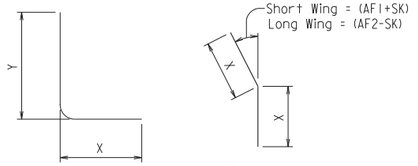


PLAN - FLARED WINGWALLS

Showing Footing Reinforcement

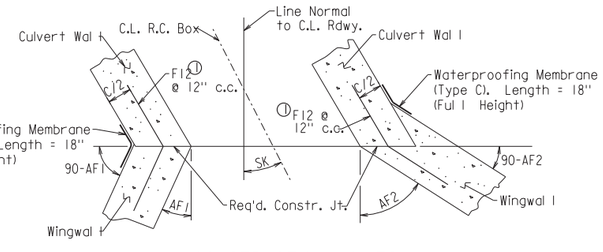


WINGWALL SECTION P-P



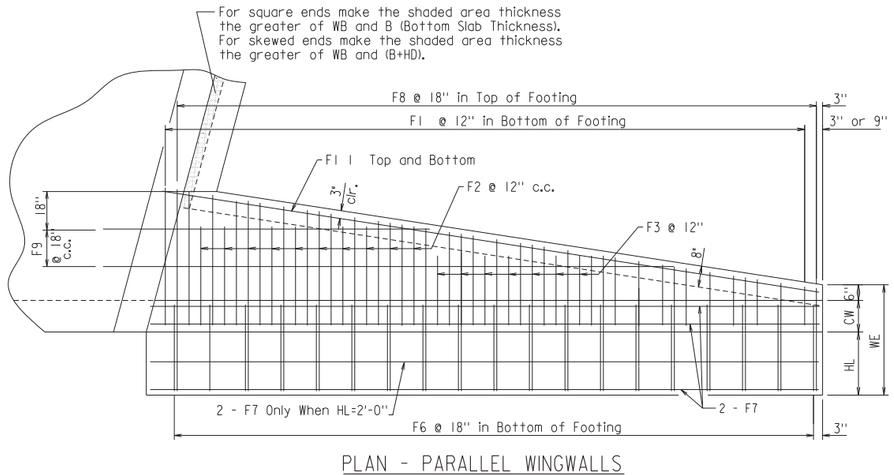
F1, F2, F3, & F6 BARS (1)F12 BAR

(1)F12 is a straight bar for paral lel wingwal ls



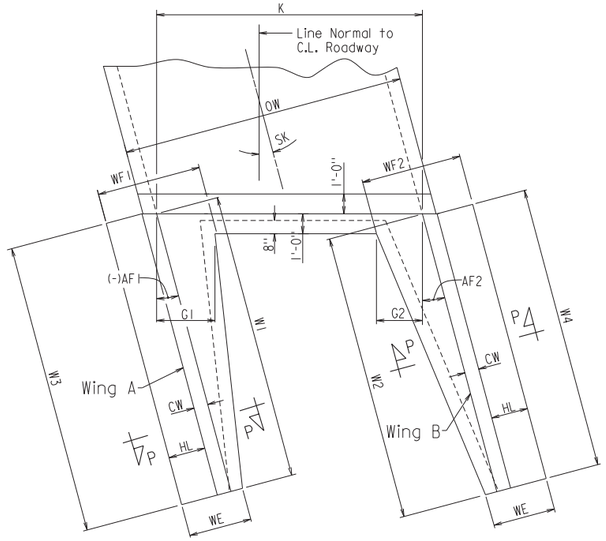
CONSTRUCTION JOINTS

Flared Wingwal Is Shown



PLAN - PARALLEL WINGWALLS

Showing Footing Reinforcement



PART PLAN - PARALLEL WINGWALLS

SHEET 4 OF 4

GENERAL DETAILS OF R.C. BOX CULVERT

DETAILS OF WINGWALLS

SPECIAL DETAILS

Ver. 1.1 17 b101054_culvert.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.		101054	32	311

(2) TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

STA. 101+00.00
BEGIN JOB 101054
BEGIN SITE 1& 2

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

POB 100+00.00
P.C. 101+14.20
P.I. 104+56.79
P.T. 107+98.92
P.C. 113+58.97
P.I. 117+82.97
P.I. 120+44.46
P.C. 124+55.09
P.I. 127+85.09

PROP. TCE
PROP. ROW
EXIST. ROW
S86°51'33"E
N88°00'20"E
S79°59'55"E

=591 LIN.FT. E-11
=374 LIN.FT. E-11
=334 LIN.FT. E-11
=252 LIN.FT. E-11
=260 LIN.FT. E-11
=483 LIN.FT. E-11
=256 LIN.FT. E-11
=869 LIN.FT. E-11
=91 LIN.FT. E-11
=139 LIN.FT. E-11
=322 LIN.FT. E-11
=535 LIN.FT. E-11
=210 LIN.FT. E-11

50' VEGETATION BUFFER
25' VEGETATION BUFFER
VILLAGE
MH

LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE

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

LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 1-2.dgn 8/15/2022

CLEARING AND GRUBBING STAGE - SITE 1& 2 SHT 1 OF 2
TEMPORARY EROSION CONTROL DETAILS

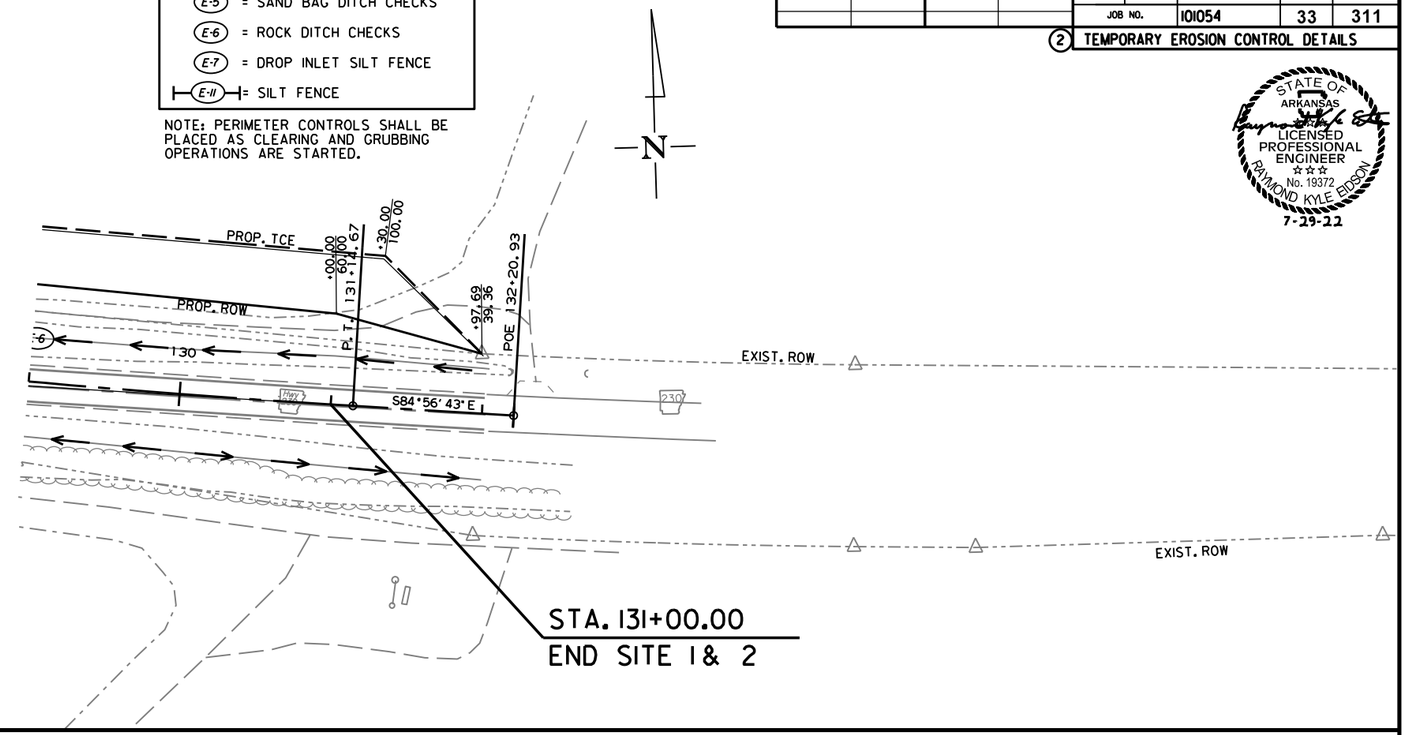
REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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.		101054	33	311
				(2) TEMPORARY EROSION CONTROL DETAILS				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

R101054_CG_TEC_Site 1-2.dgn 8/15/2022

CLEARING AND GRUBBING STAGE - SITE 1& 2 SHT 2 OF 2
TEMPORARY EROSION 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.		101054	34	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

STA. 309+00.00
BEGIN SITE 3

STA. 312+00.00
END SITE 3

N

=143 LIN.FT. E-11
=117 LIN.FT. E-11
=104 LIN.FT. E-11
=52 LIN.FT. E-11
=156 LIN.FT. E-11
=573 LIN.FT. E-11
=758 LIN.FT. E-11
=33 LIN.FT. E-11

25' VEGETATION BUFFER
PROP. ROW
PROP. TCE
PAVED
HWY CL PI
HWY CL PC
APPROX LOC
FINISHED FLOOR
GAS TANK
POB 3302+94.05
P.I. 303+60.02
Δ= 00°16'47"LT.
P.I. 3304+19.78
P.C. 3303+15.00
P.T. 3305+23.72
P.C. 3307+19.28
P.I. 3308+24.76
P.T. 3309+28.70
P.C. 3310+82.20
P.I. 9+03.50
P.I. 3311+88.28
P.T. 3312+93.49
P.C. 3314+81.23
P.I. 3315+89.07
P.T. 3316+96.00
POE 317+20.00
P.C. 5+37.61
POB 5+09.43
S89°10'08"E
S88°43'01"E
S88°59'48"E
S88°49'52"E
S76°28'42"E
S89°08'08"E
N5°59'52"E
N78°19'10"E
N68°16'00"E
N0°45'39"E
P.I. 6+37.85
P.I. 8+40.73
P.C. 7+62.10
P.T. 7+14.94

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

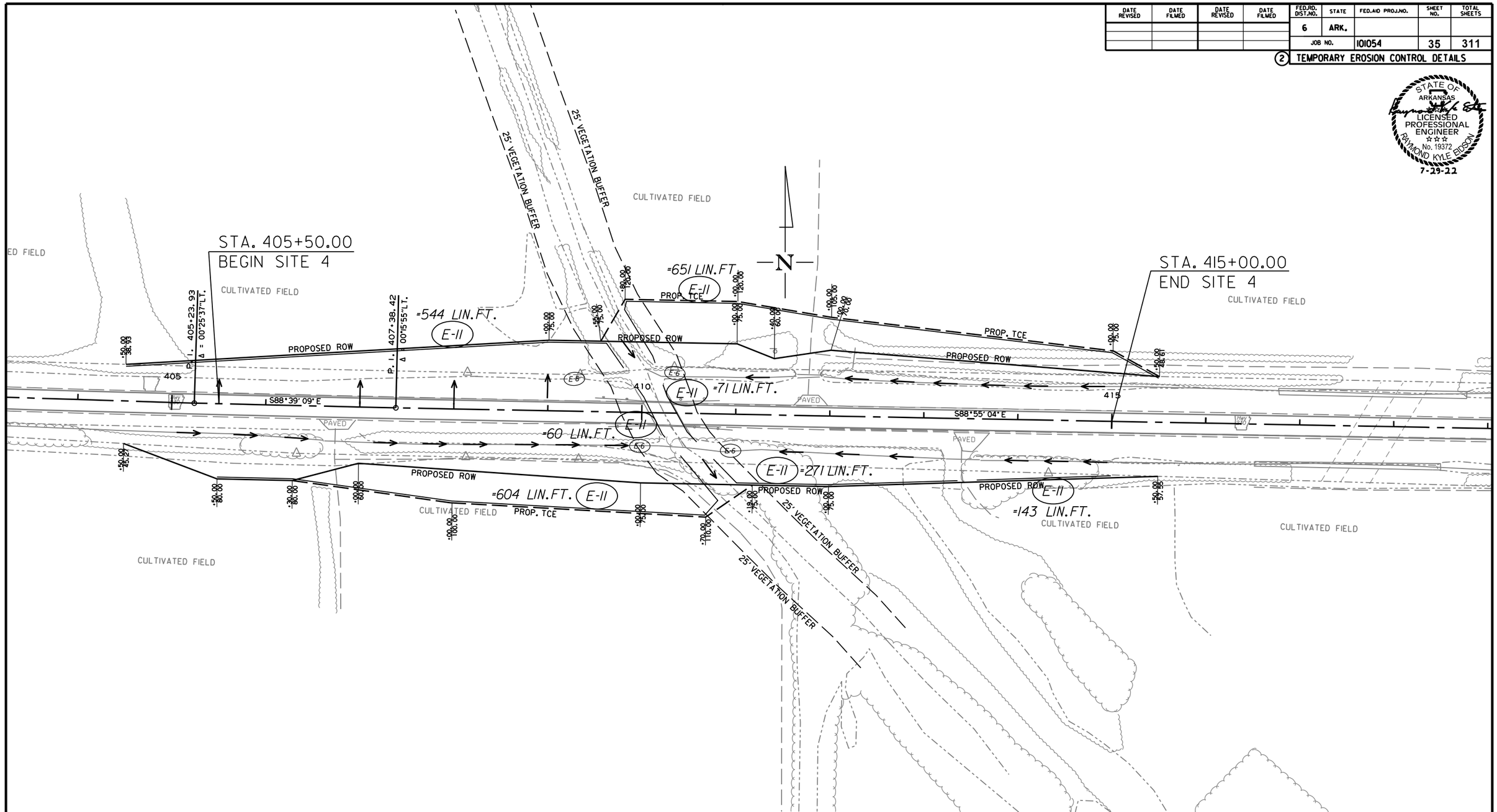
R101054_CG_TEC_Site 3.dgn 8/15/2022

CLEARING AND GRUBBING STAGE - SITE 3
TEMPORARY EROSION 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.		101054	35	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 4.dgn 8/15/2022

CLEARING AND GRUBBING STAGE - SITE 4
TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

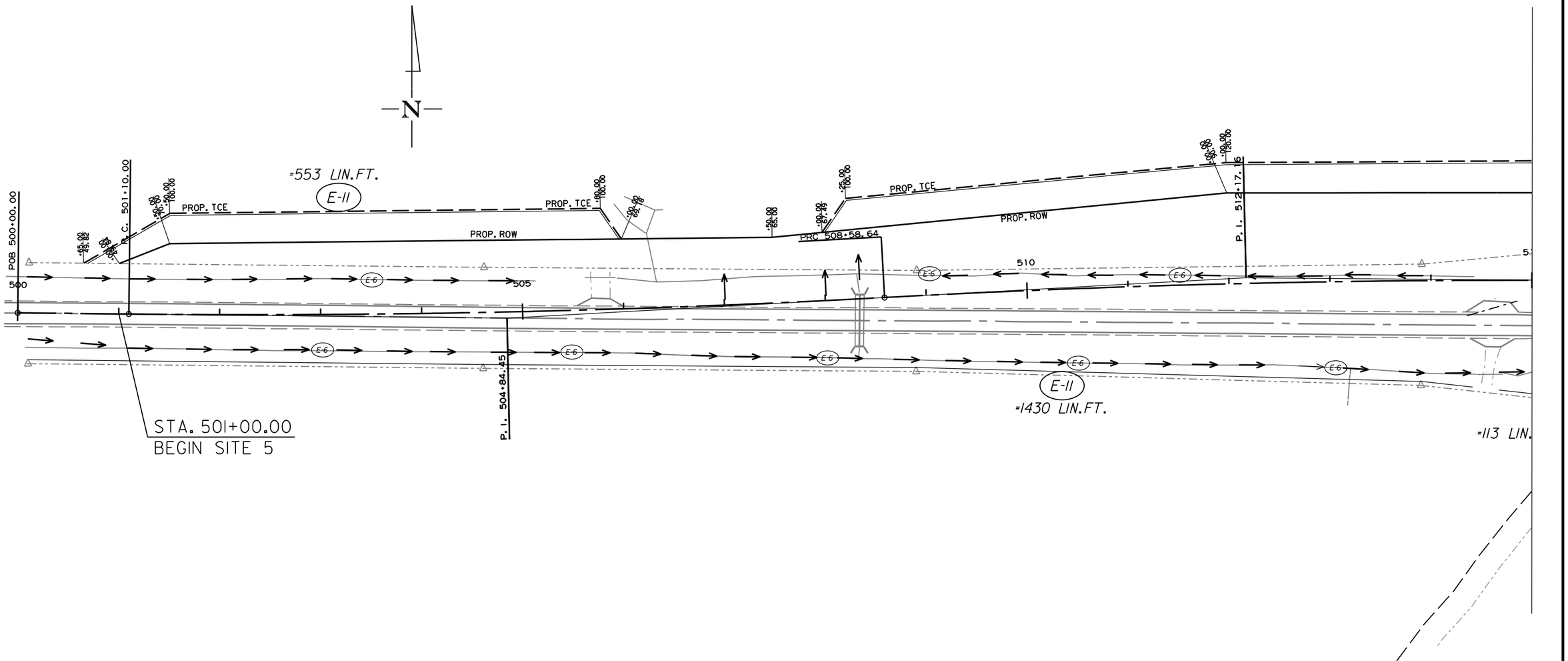
REVISIONS

DATE OF REVISION	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	36	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



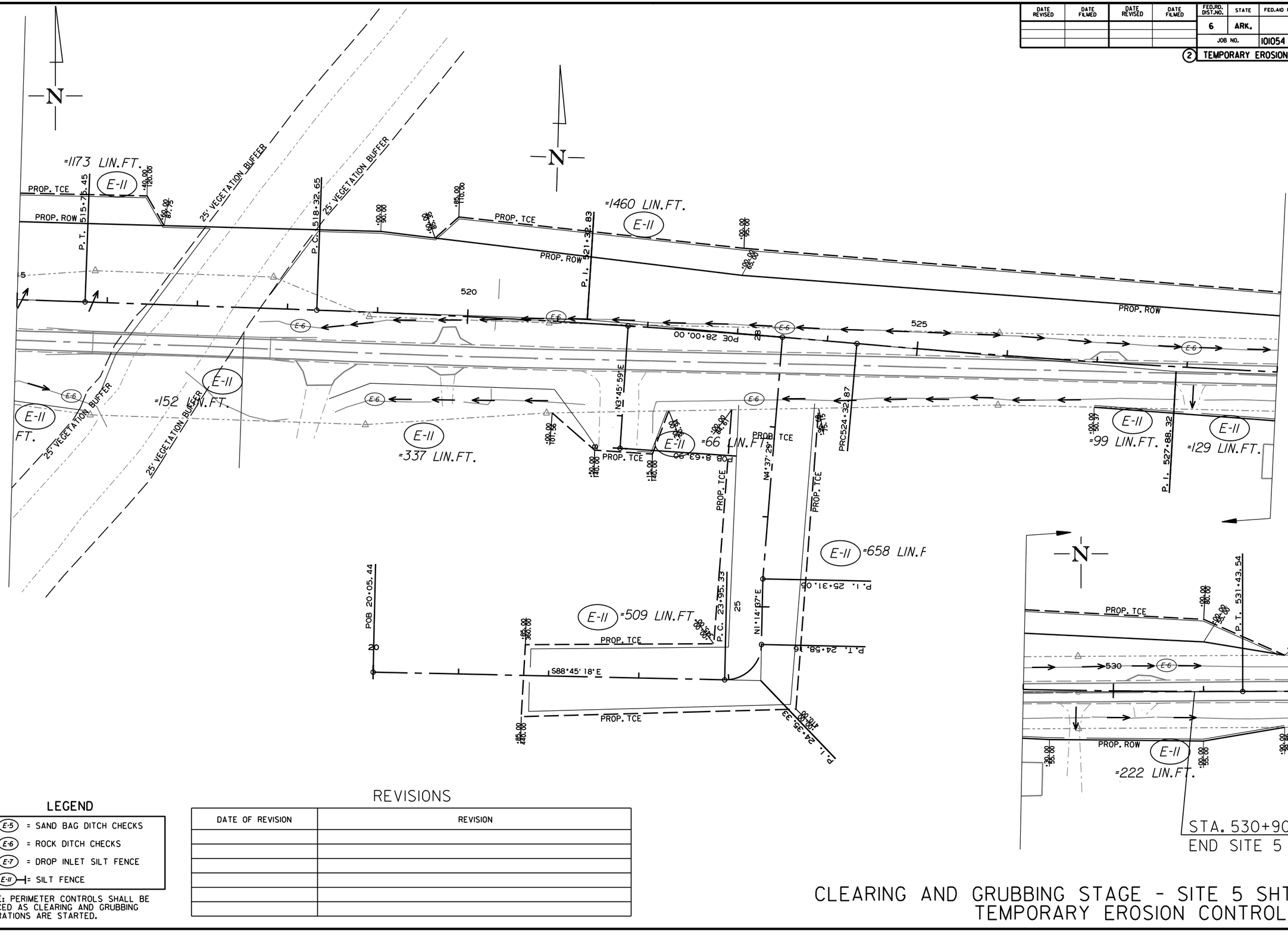
R101054_CG_TEC_Site 5.dgn 8/15/2022

CLEARING AND GRUBBING STAGE - SITE 5 SHT 1 OF 2
TEMPORARY EROSION 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.		101054	37	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
9-20-22



LEGEND

E-5	= SAND BAG DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

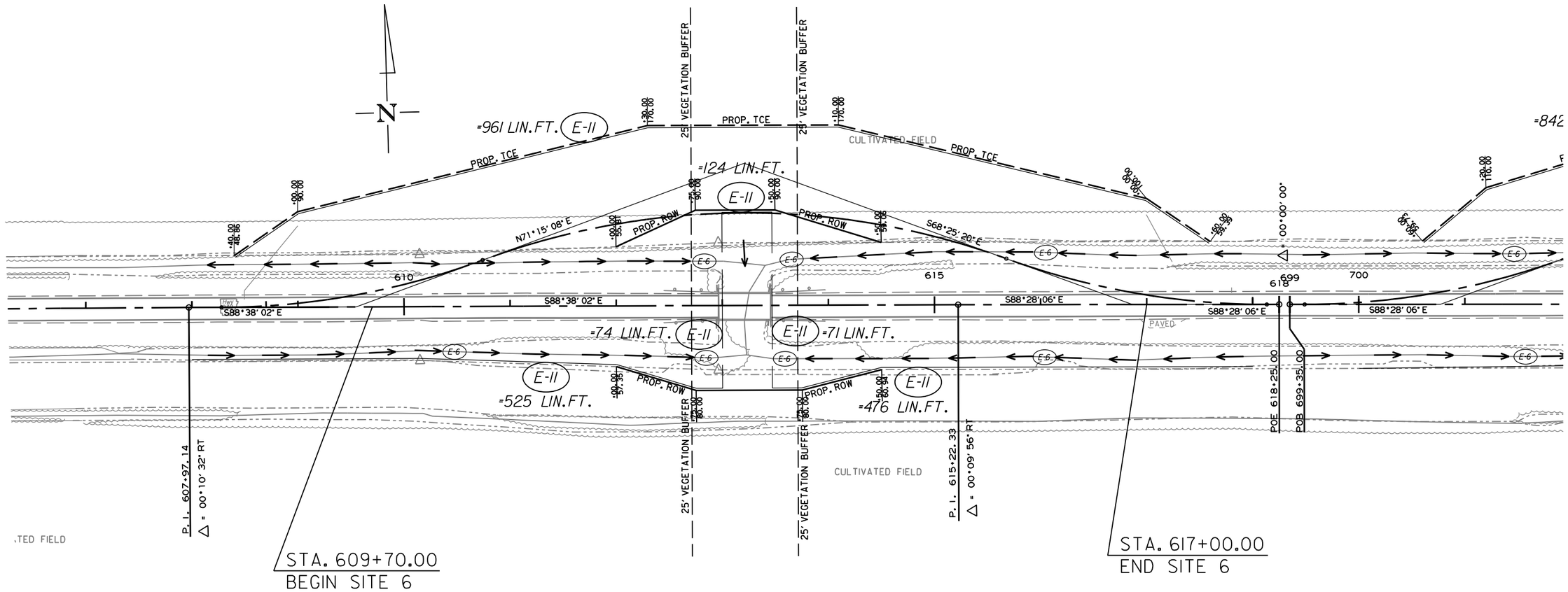
CLEARING AND GRUBBING STAGE - SITE 5 SHT 2 OF 2
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 5.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	38	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

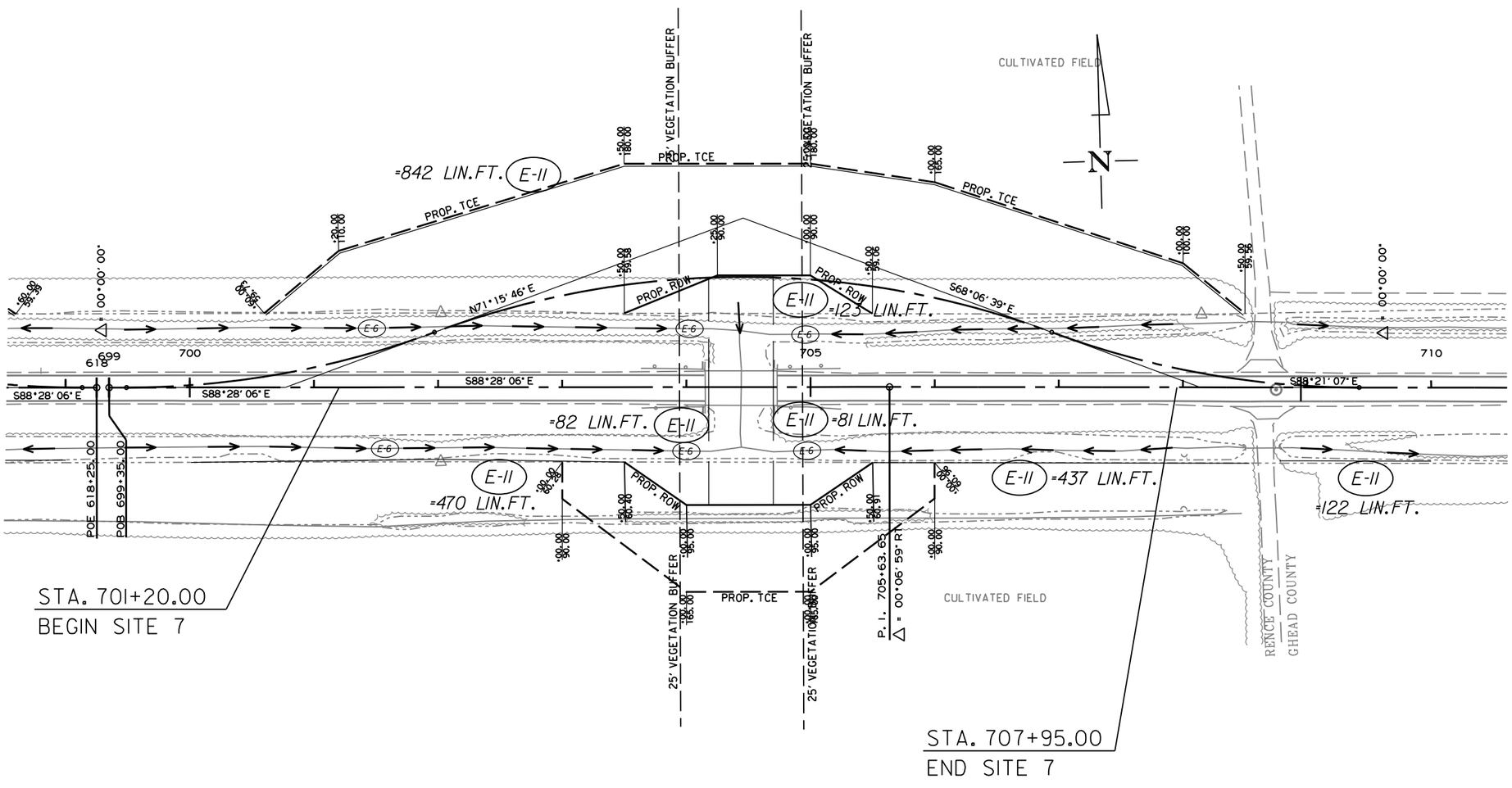
CLEARING AND GRUBBING STAGE - SITE 6
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	39	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING STAGE - SITE 7
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

LEGEND

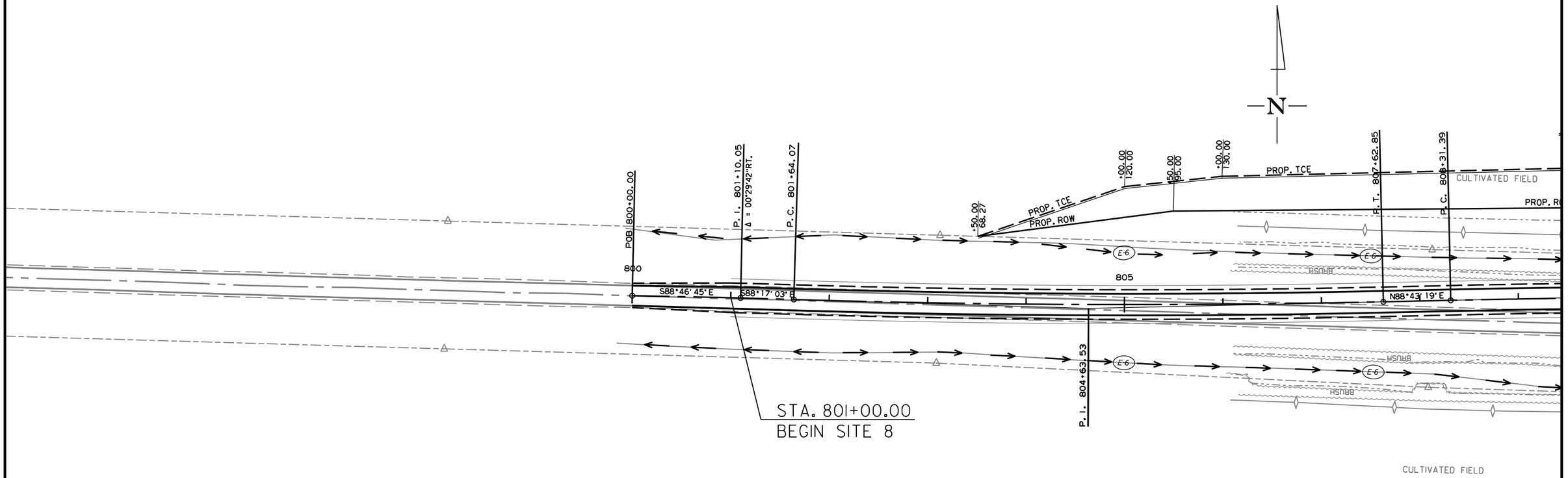
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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.		101054	40	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
9-20-22



REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 8.dgn 9/20/2022

CLEARING AND GRUBBING STAGE - SITE 8 SHT 1 OF 3
TEMPORARY EROSION 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.		101054	41	311

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EDSON
No. 19372
9-20-22

=1134 LIN.FT. E-11
=158 LIN.FT. E-11
=146 LIN.FT. E-11
=1550 LIN.FT. E-11
=635 LIN.FT. E-11
=296 LIN.FT. E-11
=63 LIN.FT. E-11
=262 LIN.FT. E-11

PROP. TCE
PROP. ROW
CULTIVATED FIELD
BRUSH
25' VEGETATION BUFFER
CRAIGHEAD CO. RD. 194
Hwy 351
Hwy 1

P.I. 11+31.46
P.C. 10+72.67
P.T. 11+38.30
P.C. 12+29.73
P.T. 12+93.03
P.I. 12+67.89
P.C. 33+67.56
P.I. 34+50.24
P.T. 34+29.64
P.I. 30+89.34
P.T. 31+14.35
P.I. 821+40.51
P.T. 824+40.44
P.C. 818+40.44
P.C. 30+50.34
POB 20+00.00
P.C. 20+65.80
P.I. 20+93.72
P.T. 21+15.56
P.C. 10+82.43
P.I. 11+20.18
P.T. 11+41.87
P.C. 12+88.57
P.T. 15+04.64
P.I. 14+24.78
P.I. 23+04.66
P.T. 23+25.99
POE 18+48.83

N84°40'12"E
N1°06'54"E
S88°16'41"E
S0°36'54"W
S88°20'13"E 5375.18'
S89°00'52"E
S0°35'09"E
N82°43'30"W
S66°52'35"W
S2°04'11"W
S85°16

REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING STAGE - SITE 8 SHT 2 OF 3
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 8.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	42	311

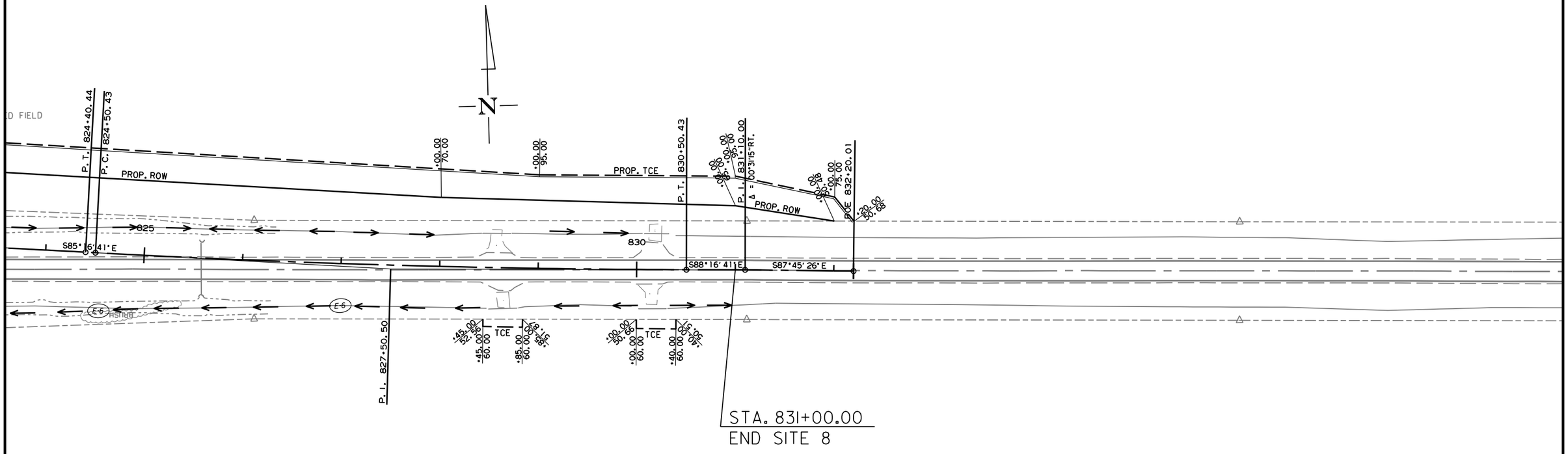
(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING STAGE - SITE 8 SHT 3 OF 3
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	43	311

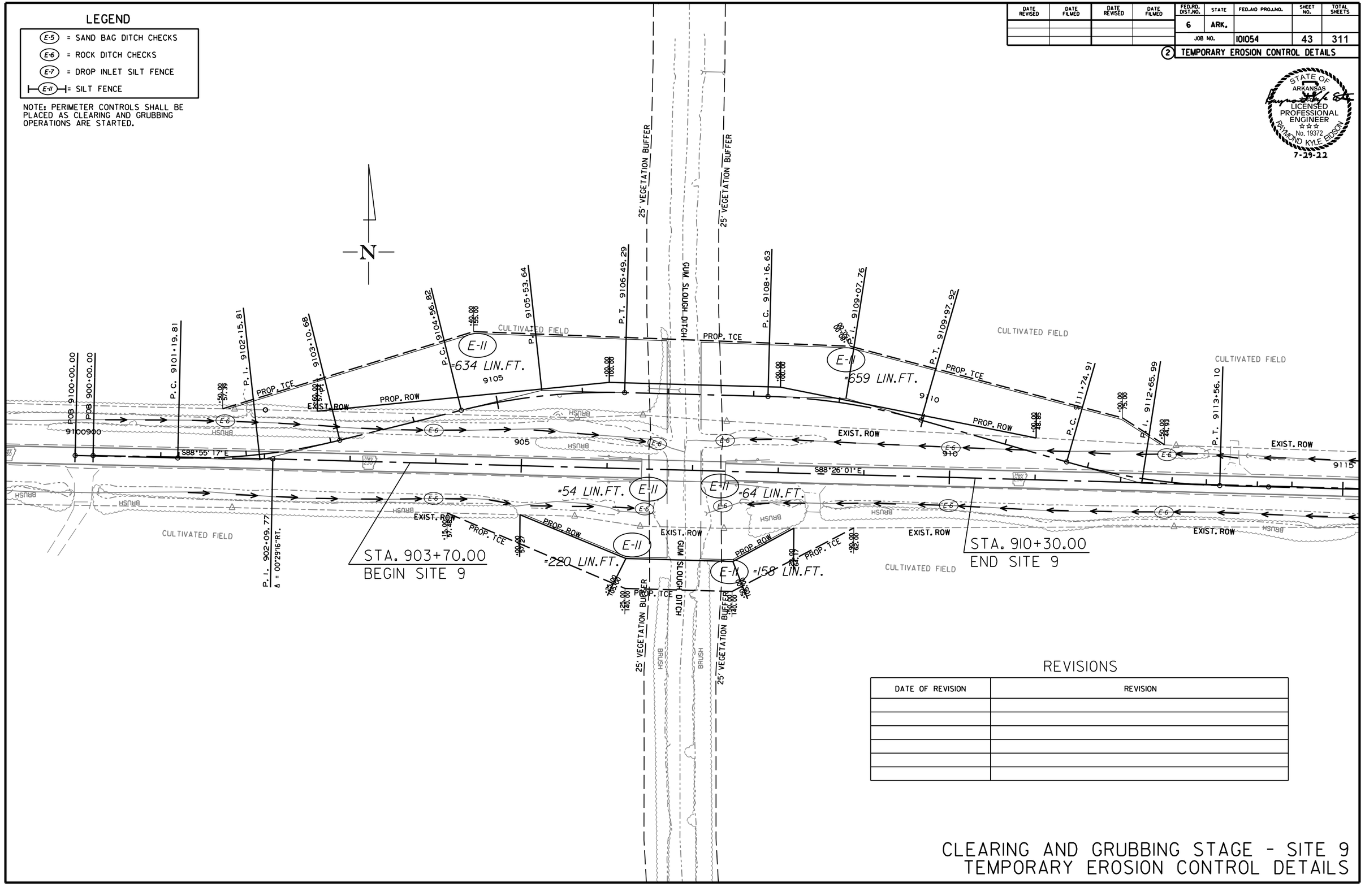
(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING STAGE - SITE 9
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 9.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	44	311

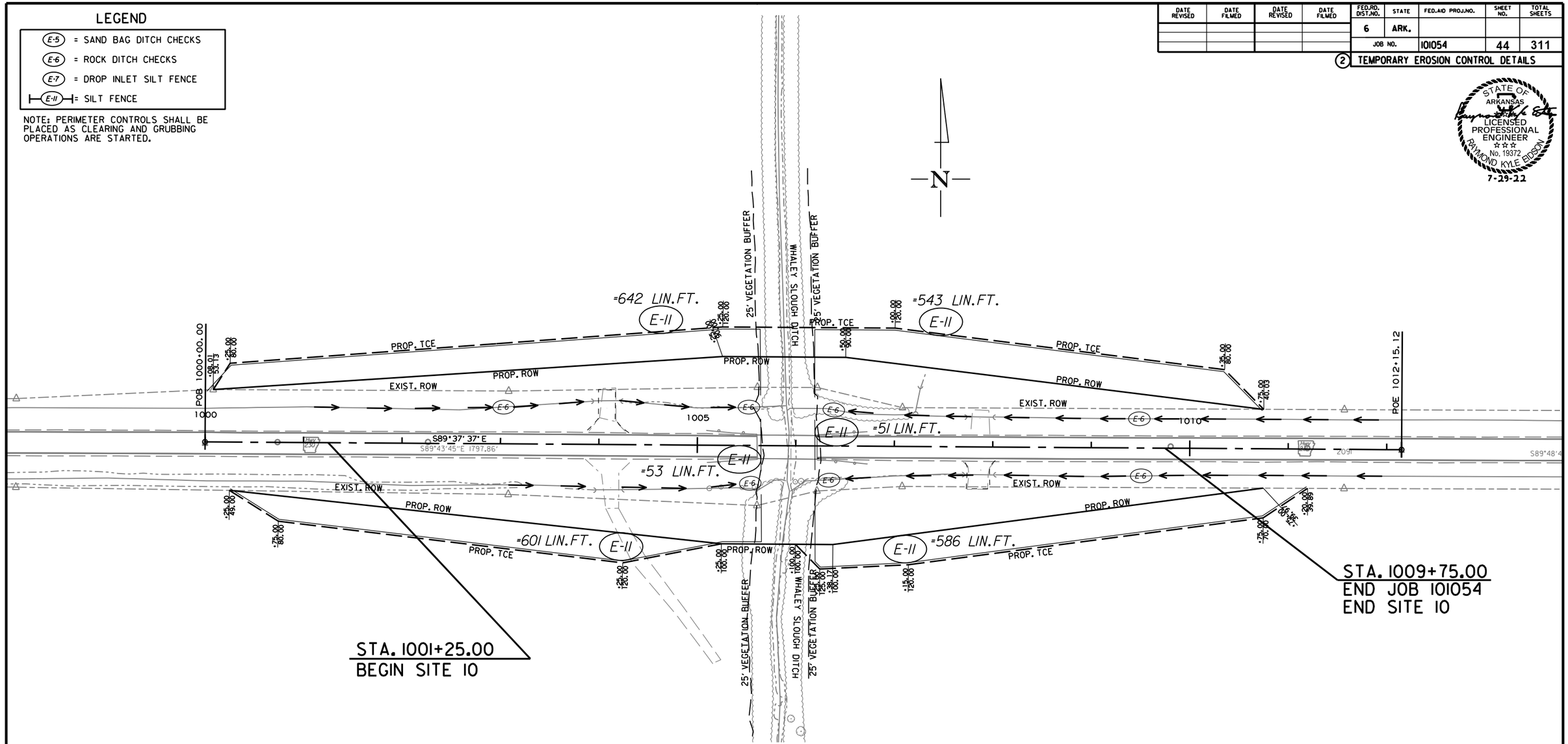
(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

CLEARING AND GRUBBING STAGE - SITE 10
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 10.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	45	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

REVISIONS

DATE OF REVISION	REVISION

DENOTES STAGE I CONSTRUCTON

STA. 101+00.00
BEGIN JOB 101054
BEGIN SITE 1 & 2

N

POB 100+00.00
100.00 90.21
100.00 68.88
P.C. 101+14.20
PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
100
S86°51'33"E
105
E-6
591 LIN.FT.
E-11
100.00 105.00
50.00 75.00
P.T. 107+98.92
CONST. LIMITS
PROP. ROW
110
EXIST. ROW
S88°00'20"E
252 LIN.FT.
E-11
100.00 95.00
50' VEGETATION BUFFER
483 LIN.FT.
E-11
100.00 75.00
CONST. LIMITS
P.C. 113+58.97
CONST. LIMITS
115
PROP. ROW
EXIST. ROW
374 LIN.FT.
E-11
P.I. 104+56.79
260 LIN.FT.
E-11
EXIST. ROW
334 LIN.FT.
E-11
E-6
EXIST. ROW
256 LIN.FT.
E-11
EXIST. R
50' VEGETATION BUFFER
50' VEGETATION BUFFER

LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE

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

100.00 105.00
75.00 68.88
100.00 73.23
P.C. 117+82.97
PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
115
869 LIN.FT.
E-11
50.00 105.00
P.T. 120+44.46
100.00 80.00
50' VEGETATION BUFFER
30.00 95.00
50' VEGETATION BUFFER
139 LIN.FT.
E-11
DENOTES STAGE I CONSTRUCTON
N
REVISIONS

DATE OF REVISION	REVISION

CONST. LIMITS
120
PROP. ROW
EXIST. ROW
S79°59'55"E
125
P.C. 124+55.09
50.00 60.00
60.59 60.00
PROP. TCE
PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
130
EXIST. ROW
EXIST. ROW
EXIST. ROW
322 LIN.FT.
E-11
E-11
210 LIN.FT.
P.I. 127+85.09
50' VEGETATION BUFFER
50' VEGETATION BUFFER

LEGEND

- E-5 = SAND BAG DITCH CHECKS
- E-6 = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- E-11 = SILT FENCE

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

R101054_CG_TEC_Site 1-2.dgn 8/15/2022

STAGE I- SITE 1 & 2 SHT 1 OF 2
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

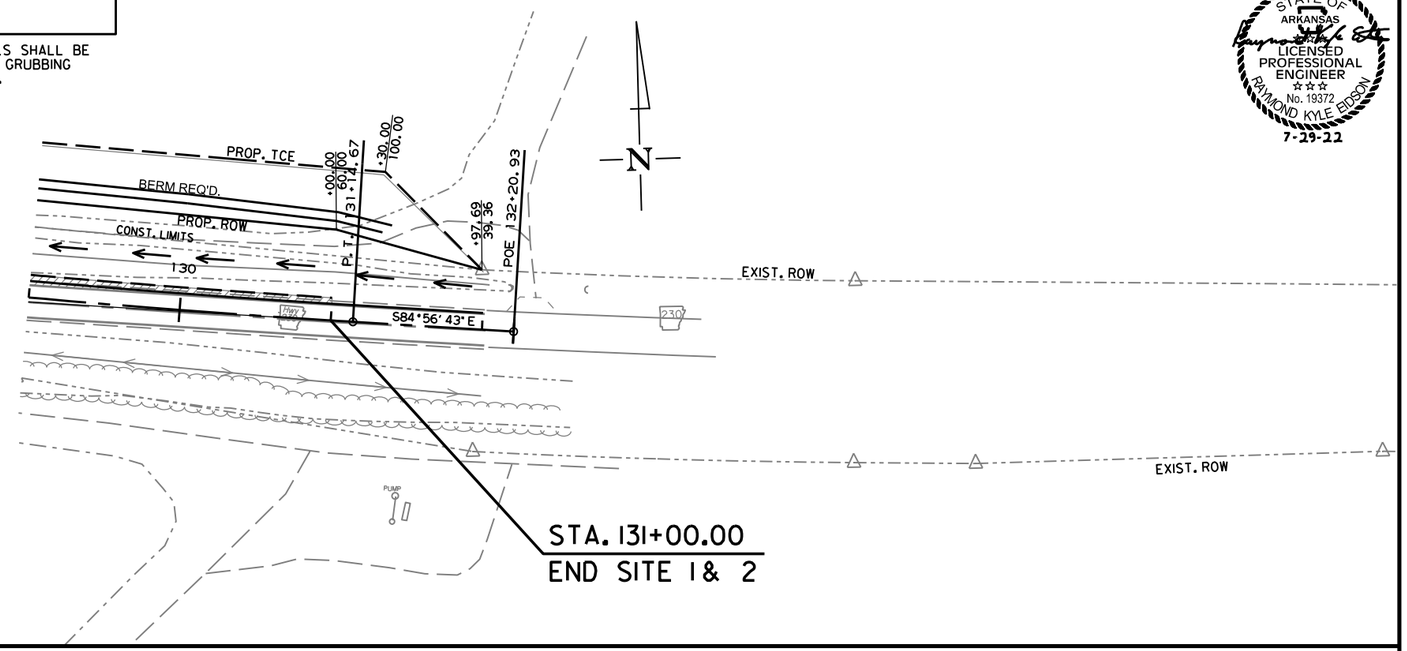
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES STAGE I CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	46	311
				(2) TEMPORARY EROSION CONTROL DETAILS				



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

R101054_CG_TEC_Site 1-2.dgn 8/15/2022

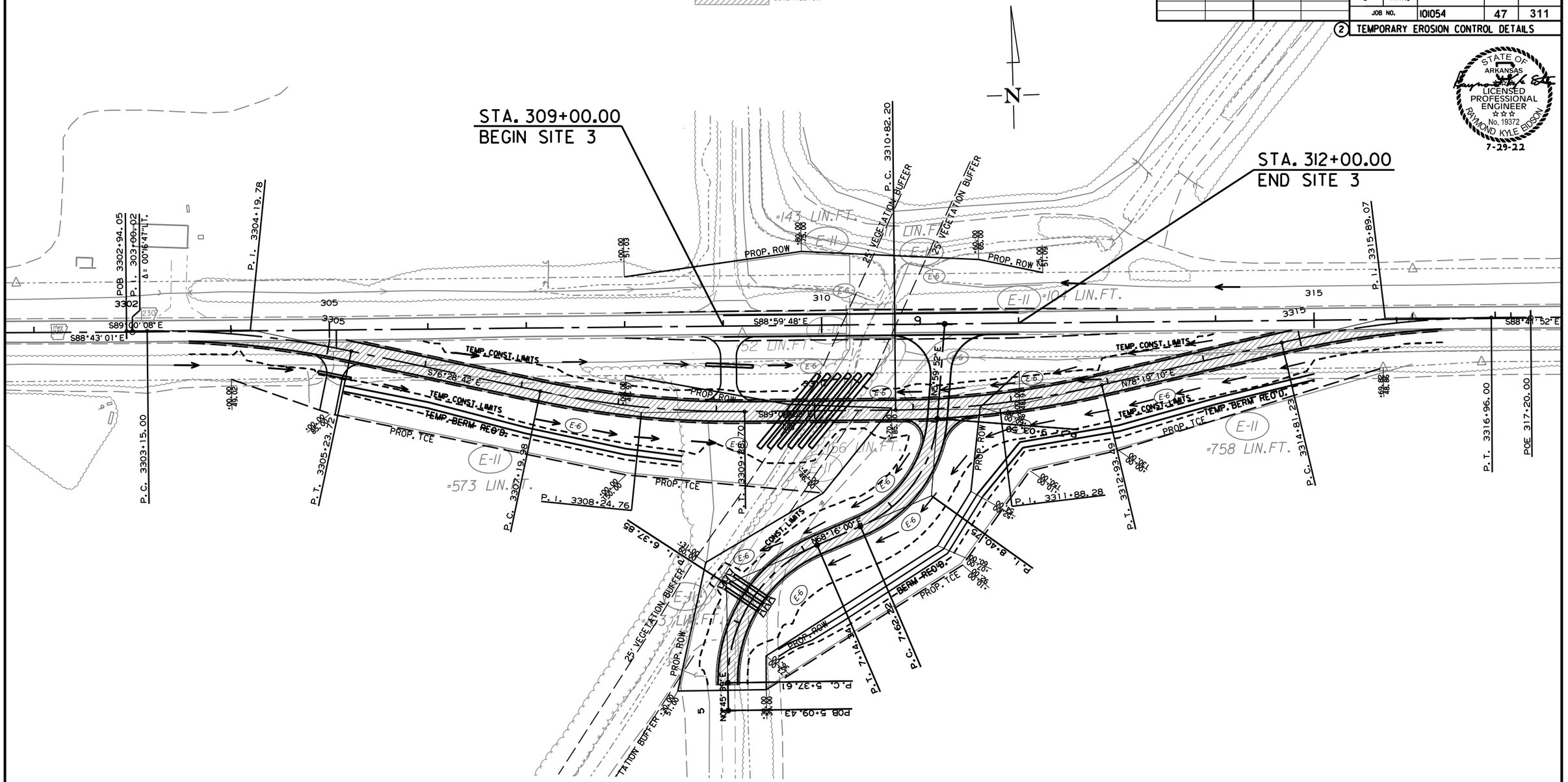
STAGE I- SITE I & 2 SHT 2 OF 2
TEMPORARY EROSION CONTROL DETAILS

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.		101054	47	311

(2) TEMPORARY EROSION CONTROL DETAILS

DENOTES STAGE I CONSTRUCTON

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 3.dgn 8/15/2022

STAGE I - SITE 3
TEMPORARY EROSION 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.		101054	48	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES STAGE I CONSTRUCTON

STA. 405+50.00
BEGIN SITE 4

STA. 415+00.00
END SITE 4

25' VEGETATION BUFFER

PROPOSED ROW
PROP. TCE
BERM REQ'D.
CONST. LIMITS
S88°39'09"E
S88°55'04"E
405
415
410
16'
18'
PAVED

=651 LIN.FT.
=544 LIN.FT.
=71 LIN.FT.
=60 LIN.FT.
=207 LIN.FT.
=143 LIN.FT.

PN:1154
PD:SI20PN
PN:1155
PD:SI20PN

N

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 4
TEMPORARY EROSION CONTROL DETAILS

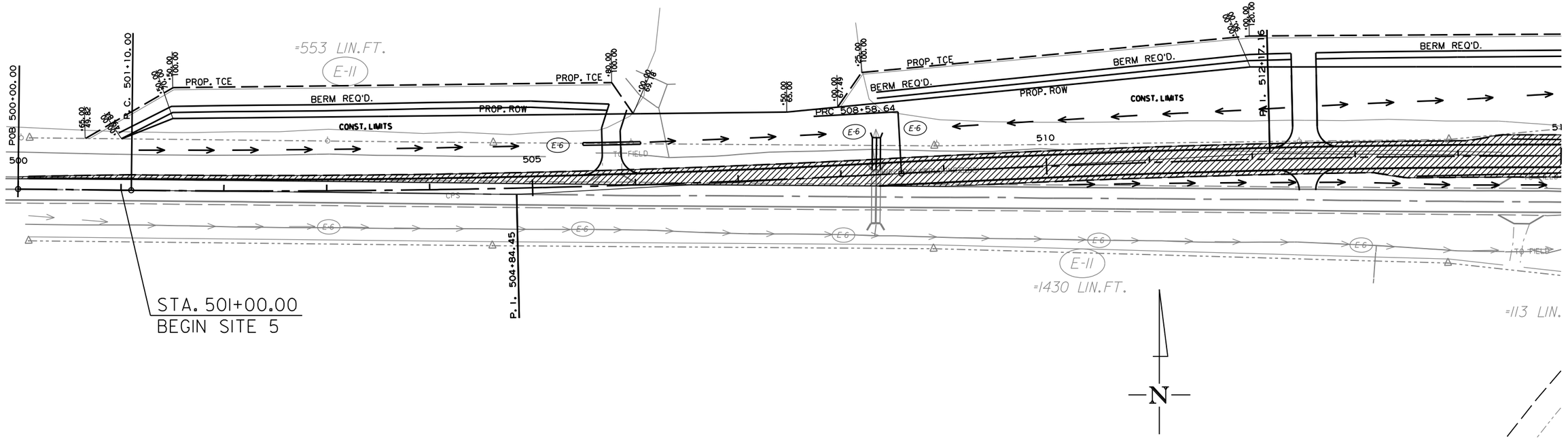
R101054_CG_TEC_Site 4.dgn 8/15/2022

DENOTES STAGE I CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	49	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 5 SHT 1 OF 2
TEMPORARY EROSION CONTROL DETAILS

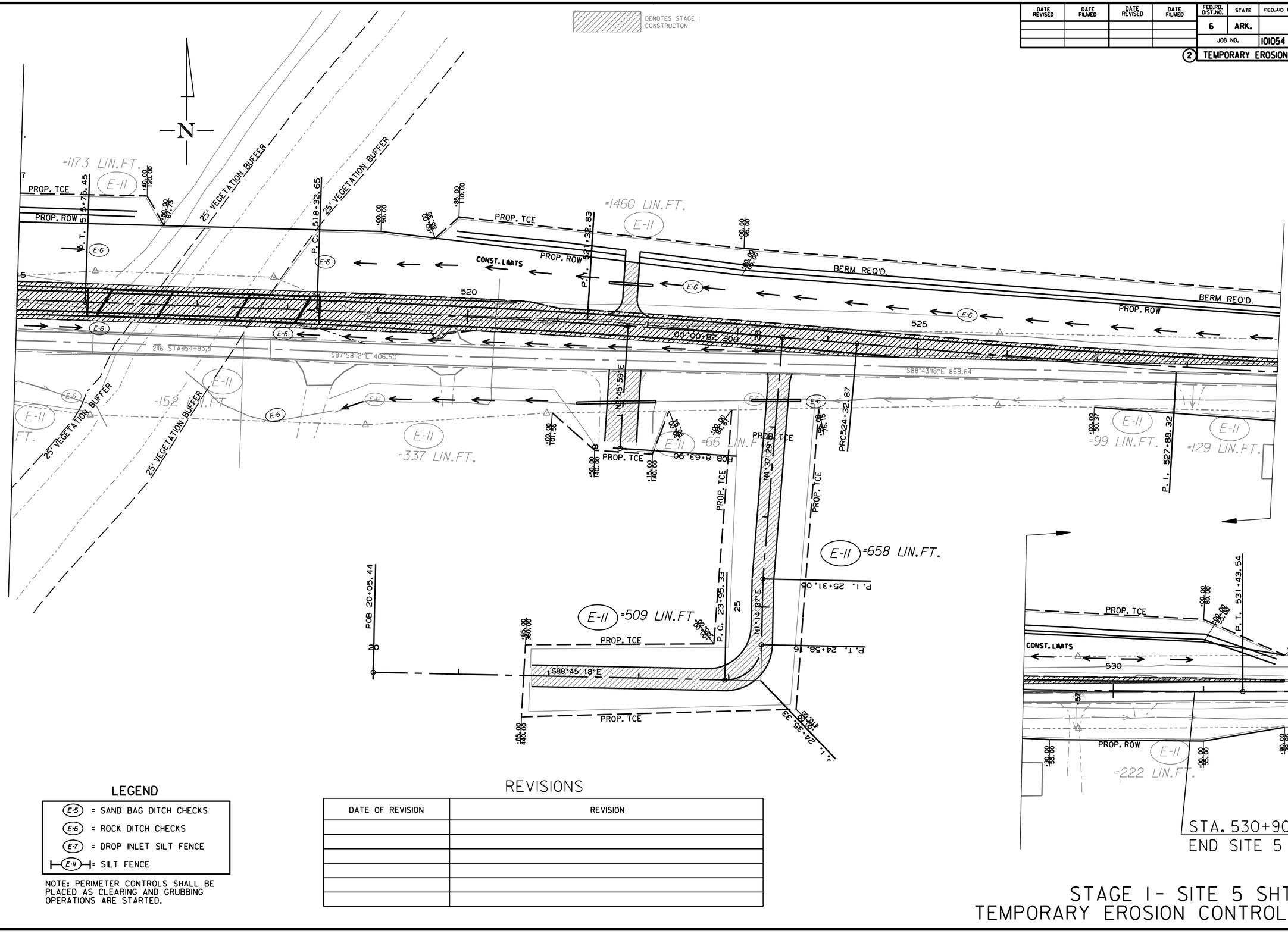
R101054_CC_TEC_Site 5.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	50	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
9-20-22

DENOTES STAGE I CONSTRUCTON



LEGEND

E-5	= SAND BAG DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 5 SHT 2 OF 2
TEMPORARY EROSION CONTROL DETAILS

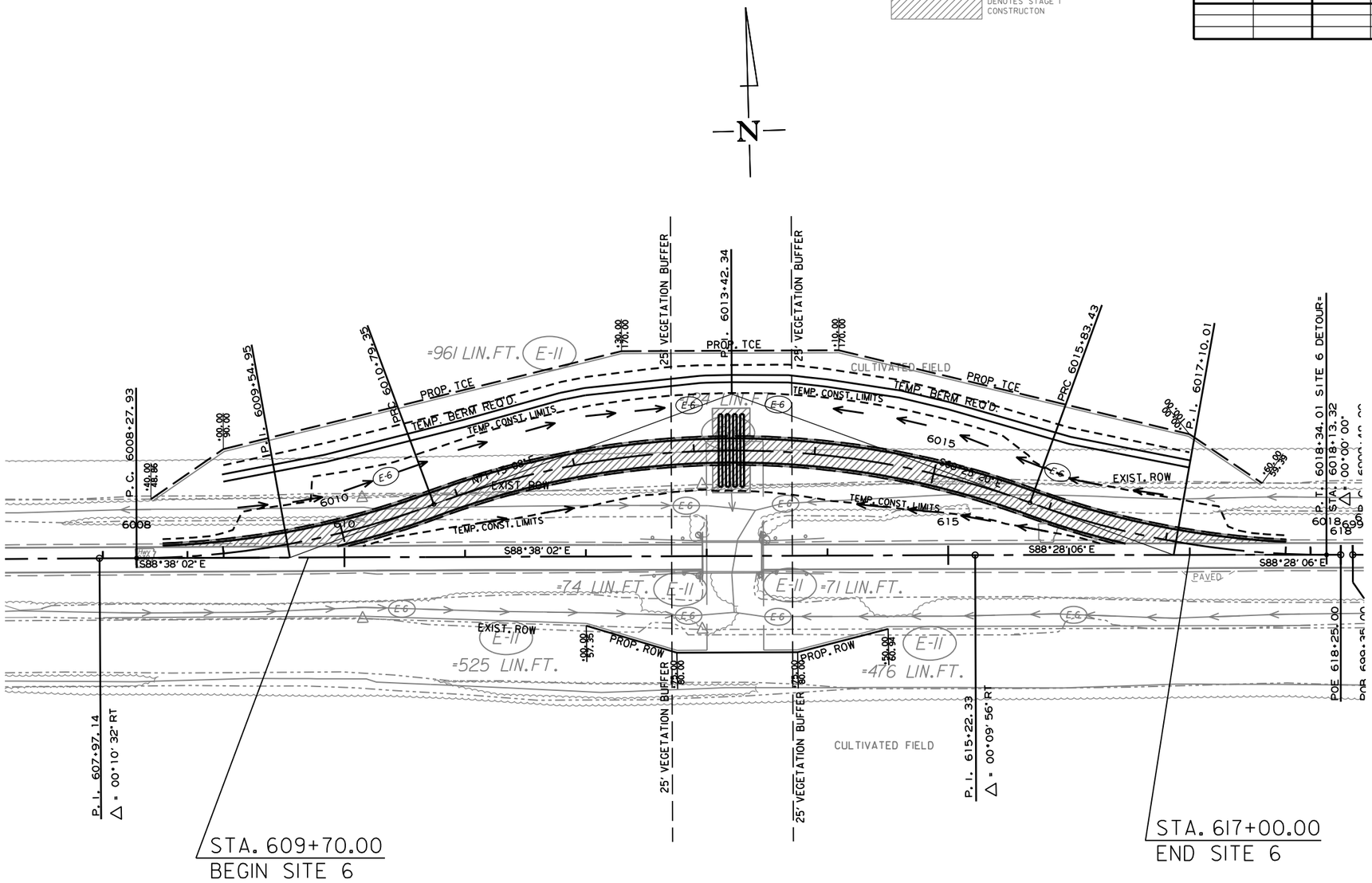
R101054_CG_TEC_Site 5.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	51	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES STAGE I CONSTRUCTON



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 6
TEMPORARY EROSION CONTROL DETAILS

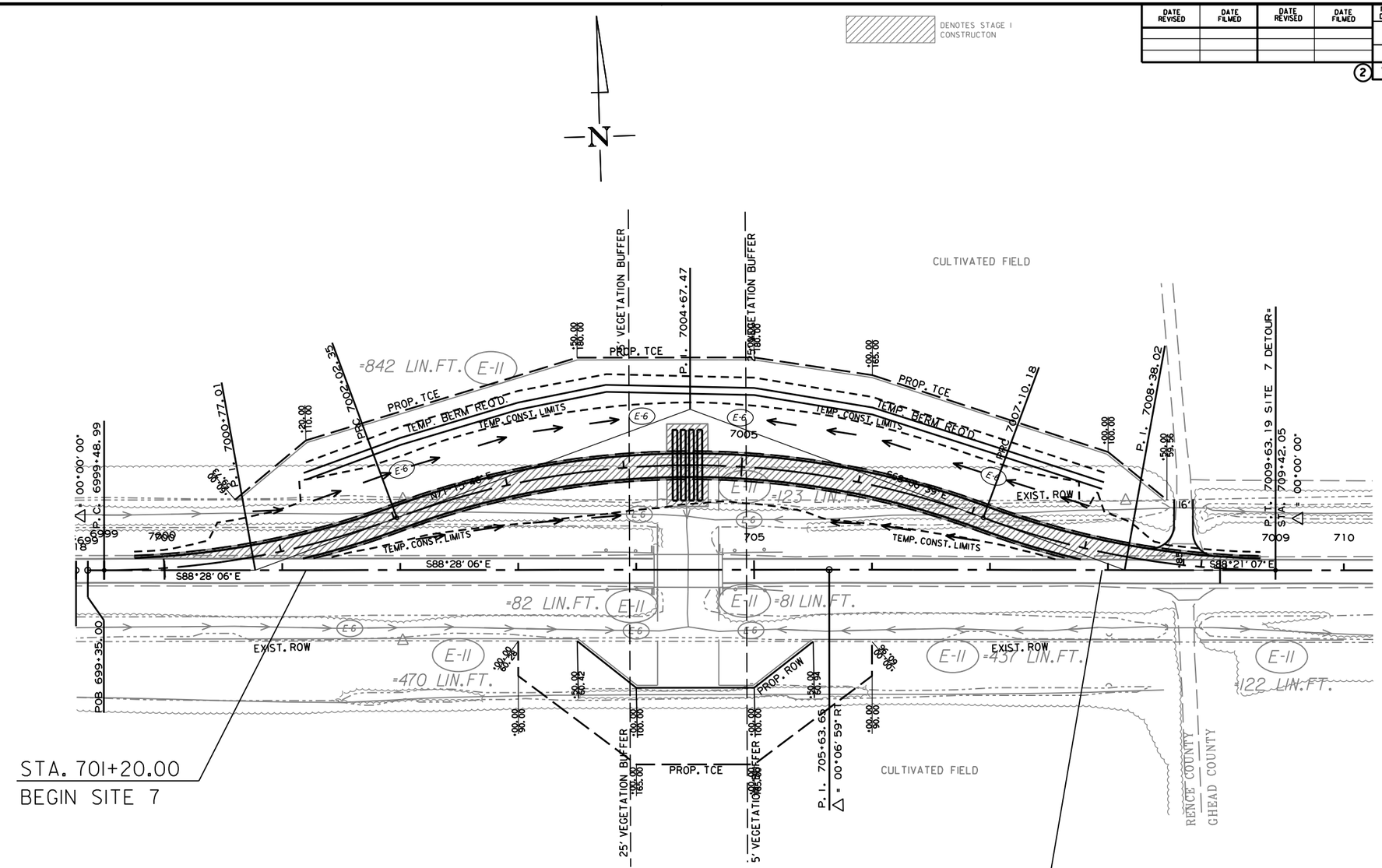
R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	52	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES STAGE I CONSTRUCTON



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 7
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	53	311

(2) TEMPORARY EROSION CONTROL DETAILS

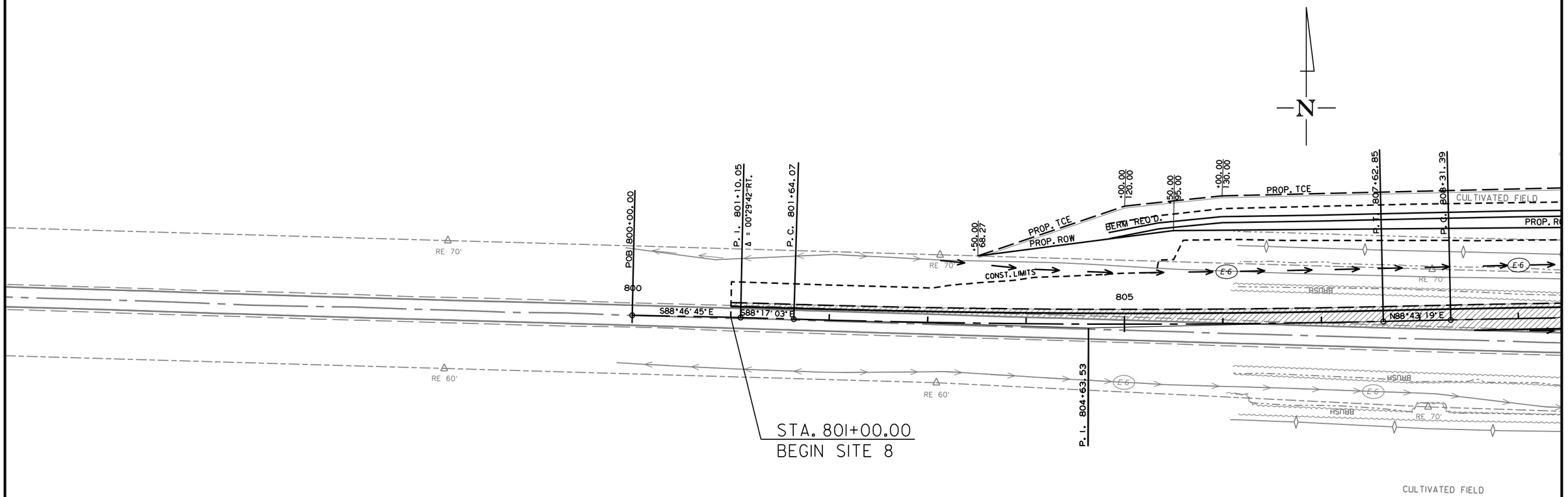
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES STAGE I CONSTRUCTON

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 8.dgn 8/15/2022

STAGE I- SITE 8 SHT 1 OF 3
TEMPORARY EROSION 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.		101054	54	311

(2) TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES STAGE I CONSTRUCTON

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EDSON
No. 19372
9-20-22

=1134 LIN.FT. E-11
=1550 LIN.FT. E-11
=146 LIN.FT. E-11
=158 LIN.FT. E-11
=635 LIN.FT. E-11
=296 LIN.FT. E-11
=63 LIN.FT. E-11
=262 LIN.FT. E-11

PROP. TCE
PROP. ROW
CONST. LIMITS
BERM REQ'D.
CULTIVATED FIELD
CULTIVATED FIELD
CULTIVATED FIELD
CULTIVATED FIELD
CULTIVATED FIELD
BRUSH
FLOOD GATE
FLOOD GATE
25' VEGETATION BUFFER
25' VEGETATION BUFFER
25' VEGETATION BUFFER
CR 410/Hwy 194
Hwy 270
Hwy 270

P.I. 11+31.46
P.C. 10+72.67
P.I. 11+38.30
P.C. 12+29.73
P.T. 12+93.03
P.I. 12+67.89
P.I. 14+24.78
P.C. 33+67.56
P.I. 34+29.64
P.I. 30+68.34
P.C. 30+50.34
P.I. 30+89.85
P.I. 23+04.66
P.T. 23+25.99
P.C. 22+77.88
P.I. 20+93.72
P.C. 20+65.80
P.I. 11+20.18
P.T. 11+41.87
P.C. 10+82.43
P.T. 15+04.64
P.C. 12+88.57
P.I. 821+40.51
P.T. 824+40.44
P.C. 818+40.44
POB 20+00.00
POE 18+48.83

N84°40'12"E
S88°16'41"E
S89°00'52"E
S0°36'54"W
S2°04'11"W
N82°43'30"W
S66°52'35"W
S0°35'09"E

810
815
820
825

CONST. LIMITS

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 8.dgn 9/20/2022

STAGE I- SITE 8 SHT 2 OF 3
TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

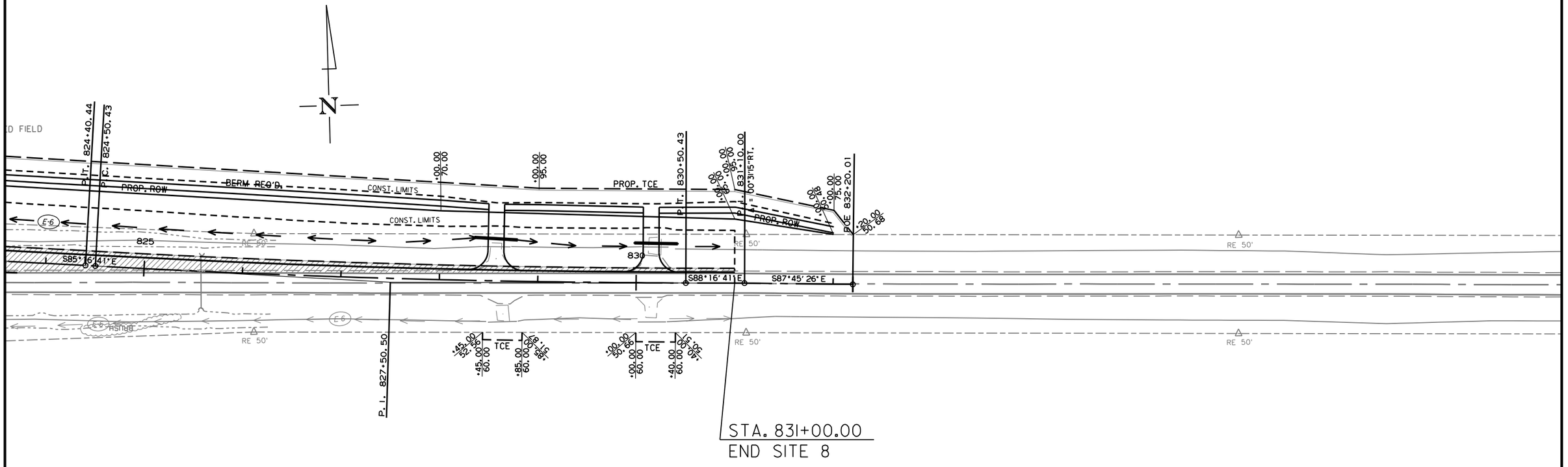
DENOTES STAGE I CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	55	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 8.dgn 8/15/2022

STAGE I- SITE 8 SHT 3 OF 3
TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

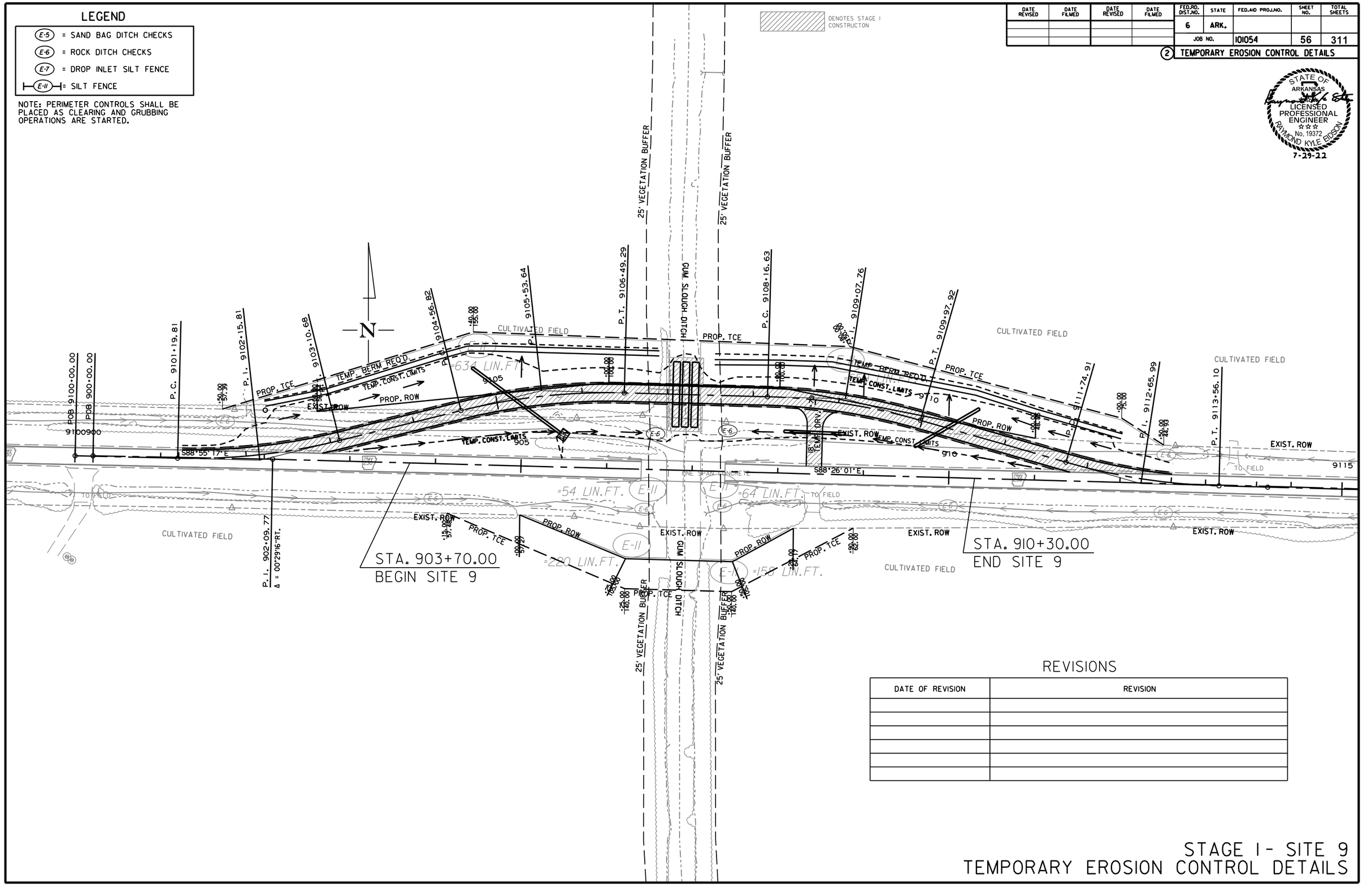
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

DENOTES STAGE I CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	56	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 9
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 9.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	57	311

(2) TEMPORARY EROSION CONTROL DETAILS

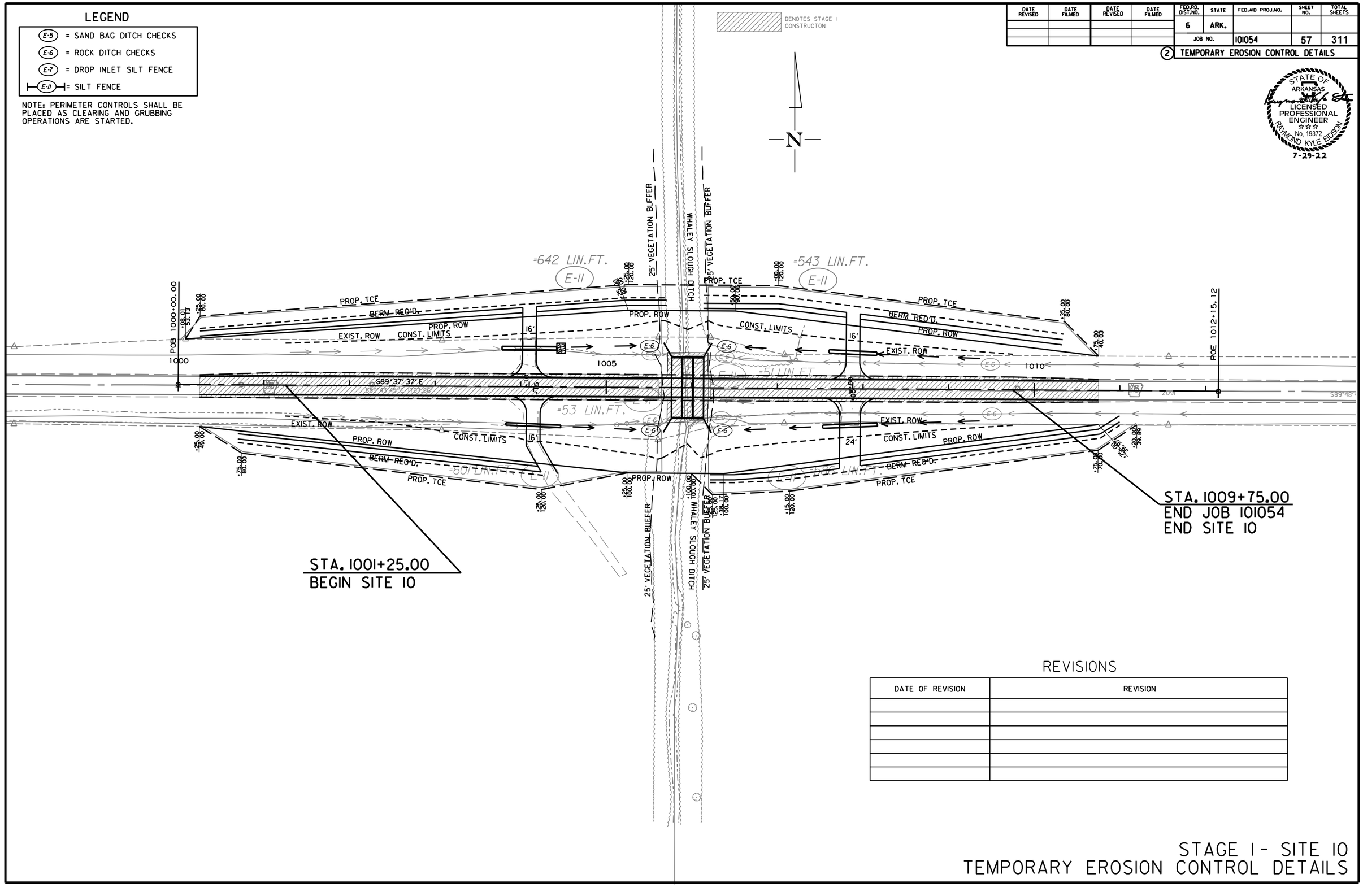
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES STAGE I CONSTRUCTON

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

STAGE I - SITE 10
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 10.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	58	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

STA. 101+00.00
BEGIN JOB 101054
BEGIN SITE 1& 2

DENOTES STAGE 2 CONSTRUCTON

N

POB 100+00.00
P.C. 101+14.20
P.T. 107+98.92
P.I. 104+56.79
P.C. 113+58.97

PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
EXIST. ROW
S86°51'33"E
N88°00'20"E
50' VEGETATION BUFFER
VILLAGE

=591 LIN.FT. E-11
=252 LIN.FT. E-11
=483 LIN.FT. E-11
=374 LIN.FT. E-11
=334 LIN.FT. E-11
=260 LIN.FT. E-11
=256 LIN.FT. E-11

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES STAGE 2 CONSTRUCTON

P.T. 120+44.46
P.C. 124+55.09
P.I. 127+85.09

PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
EXIST. ROW
S79°59'55"E

=869 LIN.FT. E-11
=139 LIN.FT. E-11
=535 LIN.FT. E-11
=322 LIN.FT. E-11
=210 LIN.FT. E-11

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 1-2.dgn 8/15/2022

STAGE 2 - SITE 1 & 2 SHT 1 OF 2
TEMPORARY EROSION CONTROL DETAILS

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

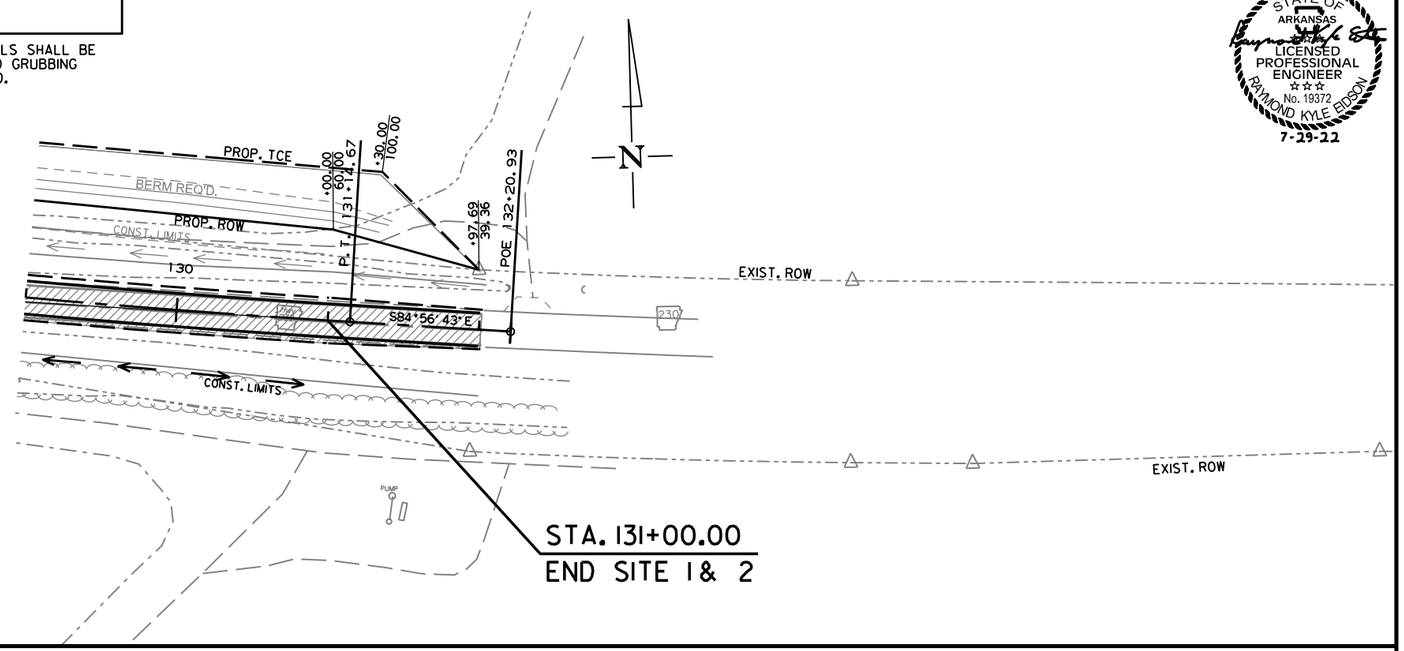
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

DENOTES STAGE 2 CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	59	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



R101054_CG_TEC_Site 1-2.dgn 8/15/2022

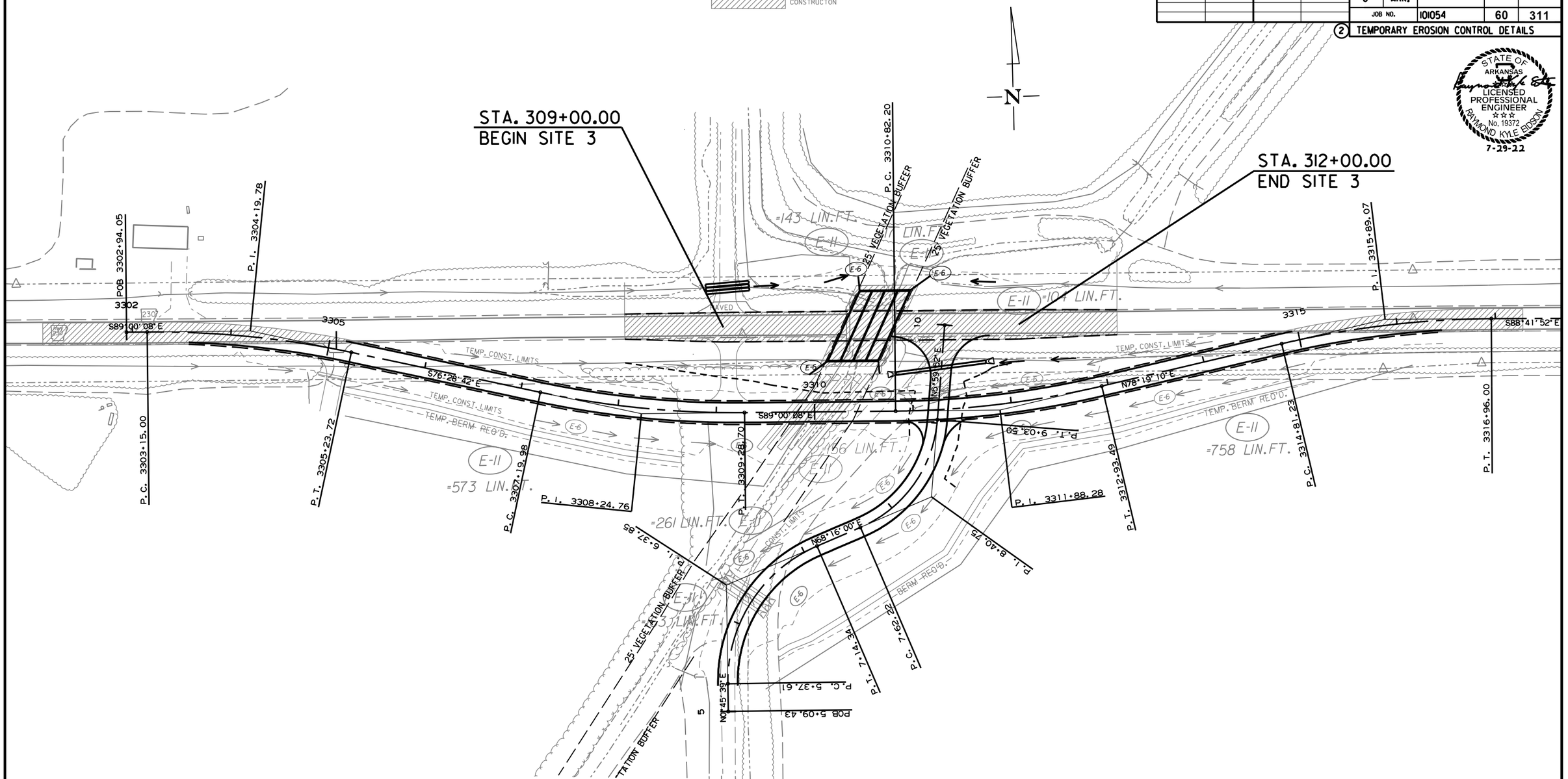
STAGE 2 - SITE 1 & 2 SHT 2 OF 2
TEMPORARY EROSION CONTROL DETAILS

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.		101054	60	311

(2) TEMPORARY EROSION CONTROL DETAILS

DENOTES STAGE 2 CONSTRUCTON

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

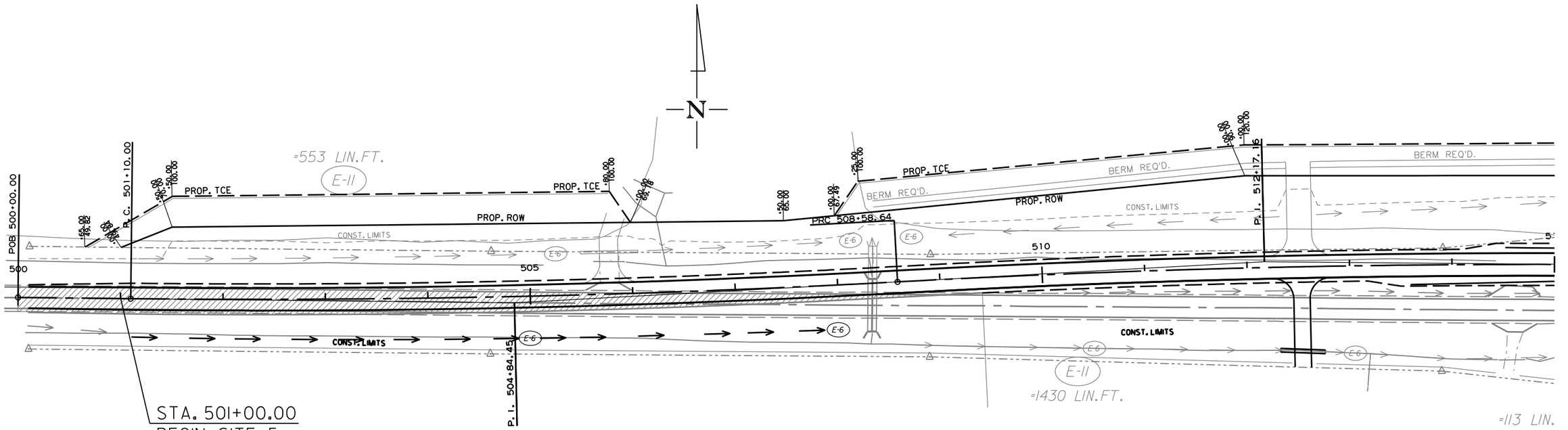
R101054_CG_TEC_Site 3.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	61	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES STAGE 2 CONSTRUCTON



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2 - SITE 5 SHT 1 OF 2
TEMPORARY EROSION CONTROL DETAILS

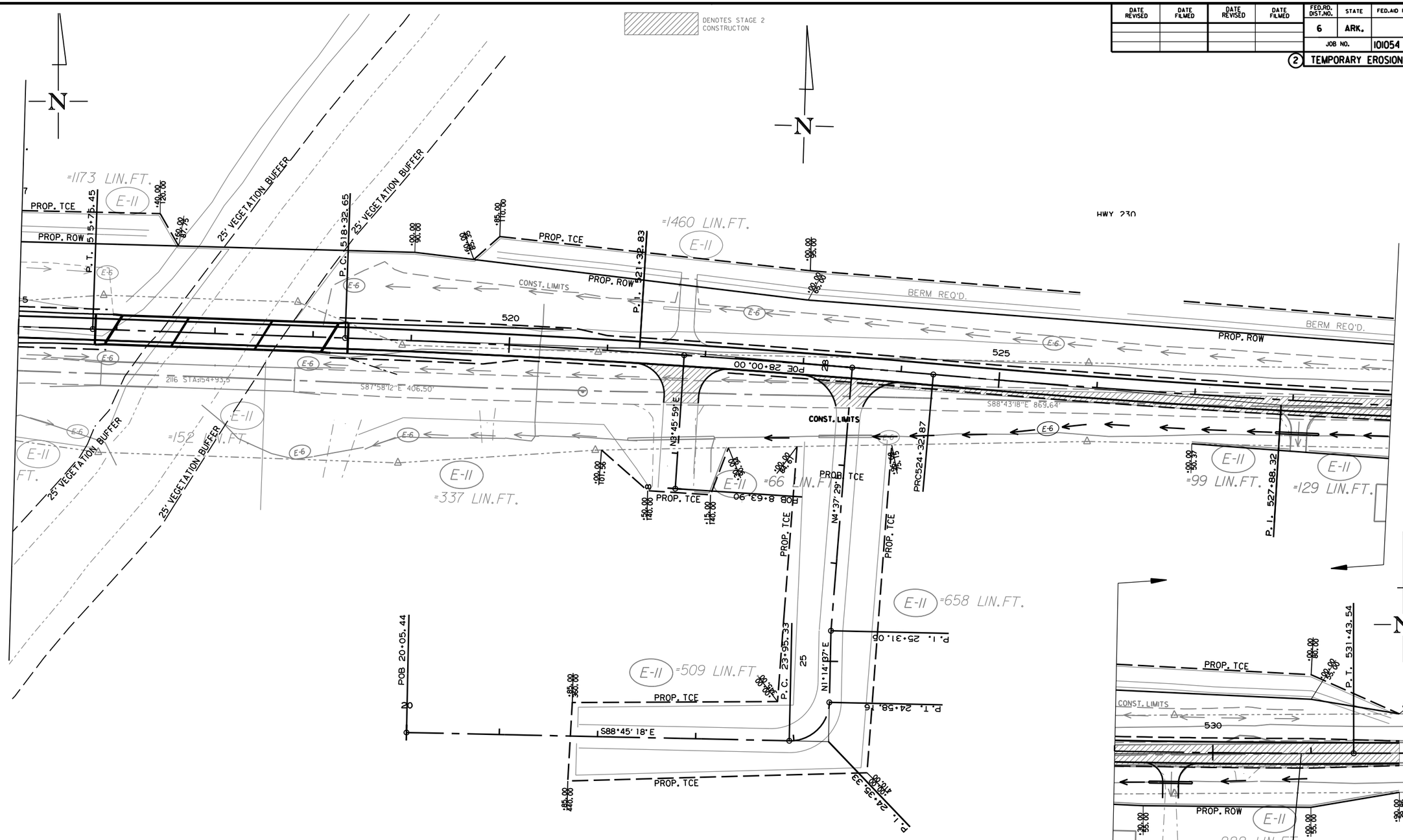
R101054_CG_TEC_Site 5.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	62	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

DENOTES STAGE 2 CONSTRUCTON



STA. 530+90.00
END SITE 5

LEGEND

E-5	= SAND BAG DITCH CHECKS
E-6	= ROCK DITCH CHECKS
E-7	= DROP INLET SILT FENCE
E-11	= SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2 - SITE 5 SHT 2 OF 2
TEMPORARY EROSION CONTROL DETAILS

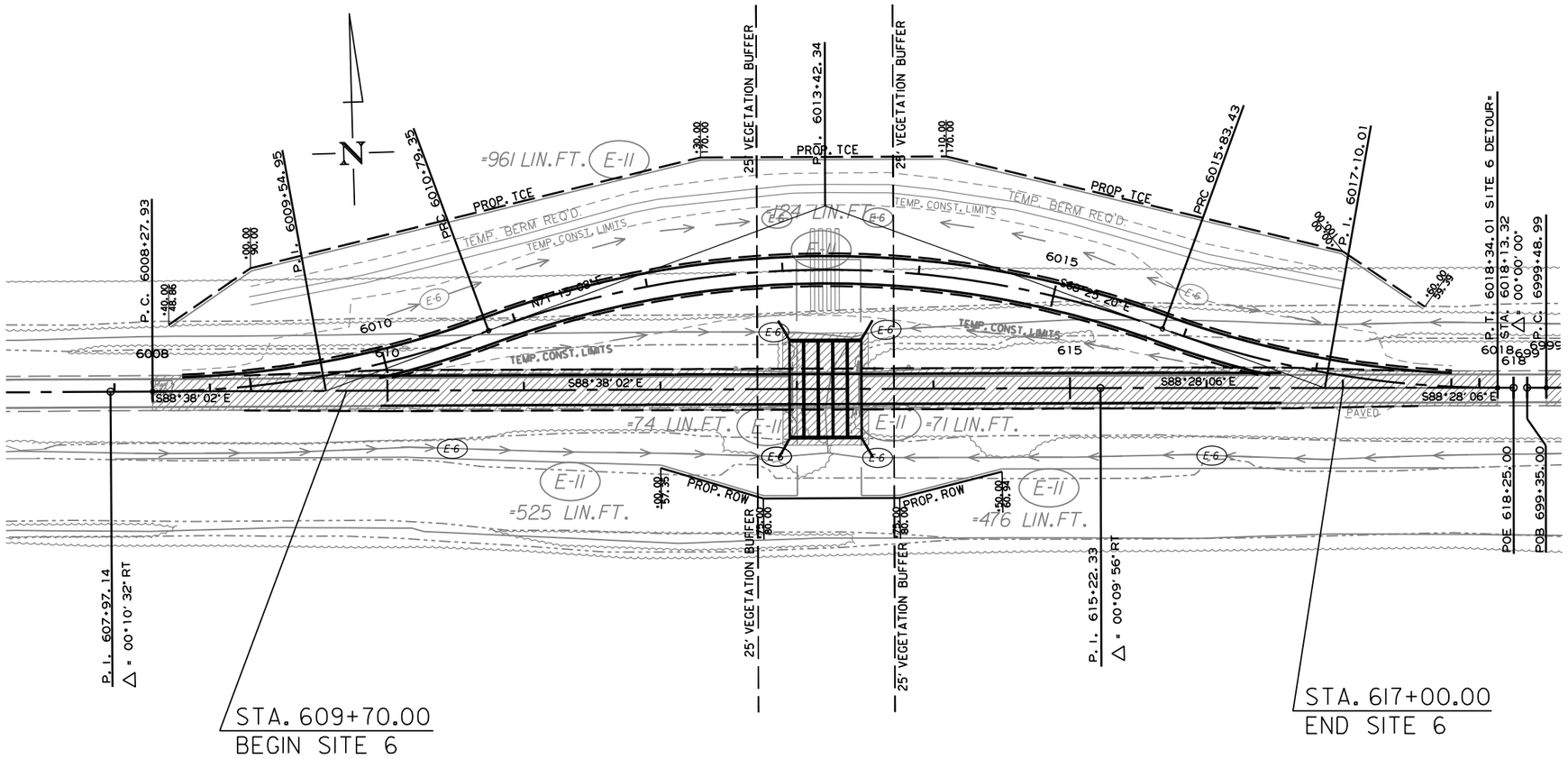
R101054_CG_TEC_Site 5.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	63	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES STAGE 2 CONSTRUCTON



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

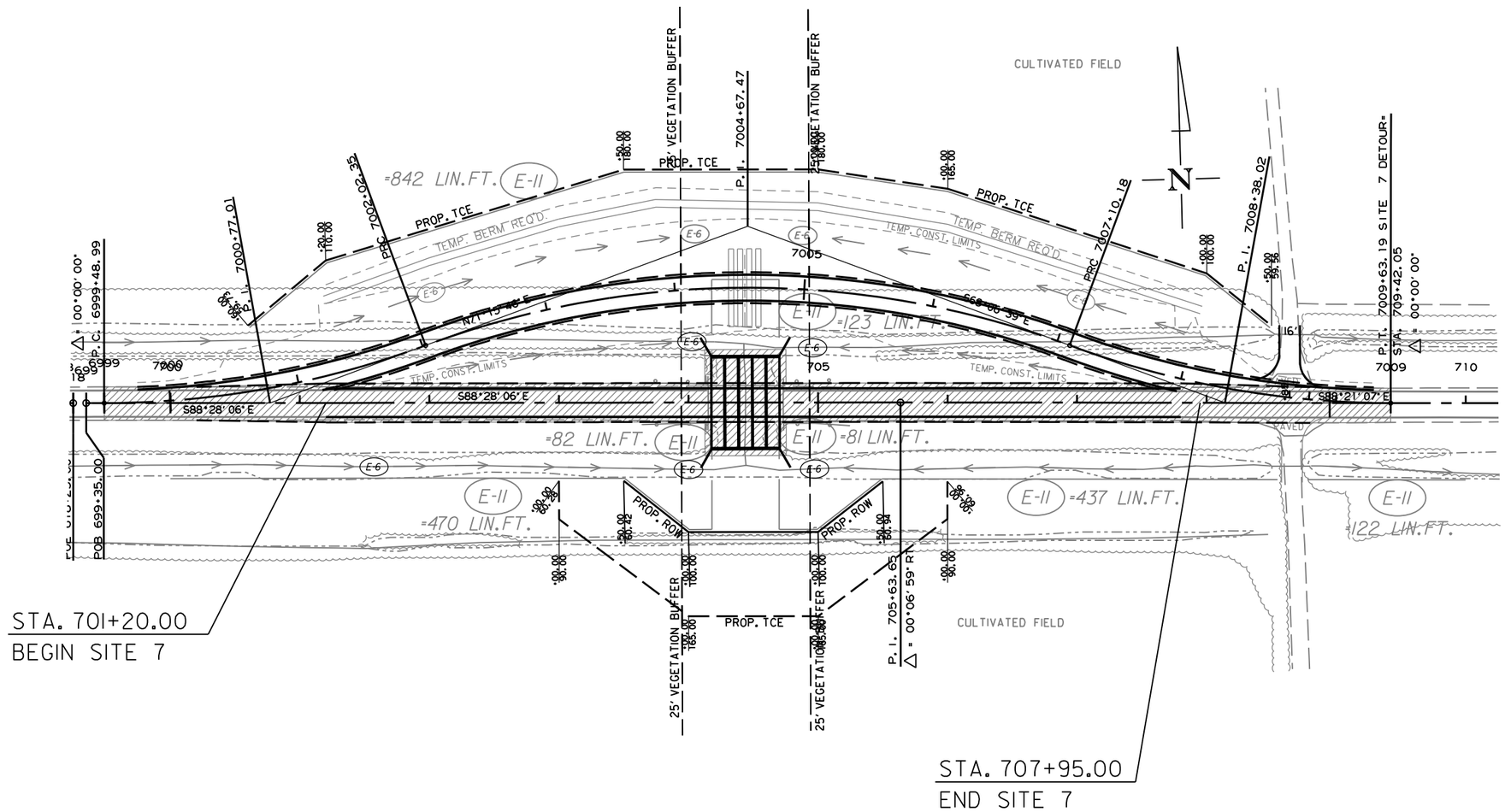
STAGE 2 - SITE 6
TEMPORARY EROSION CONTROL DETAILS

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.		101054	64	311

(2) TEMPORARY EROSION CONTROL DETAILS

DENOTES STAGE 2 CONSTRUCTON

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 2 - SITE 7
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

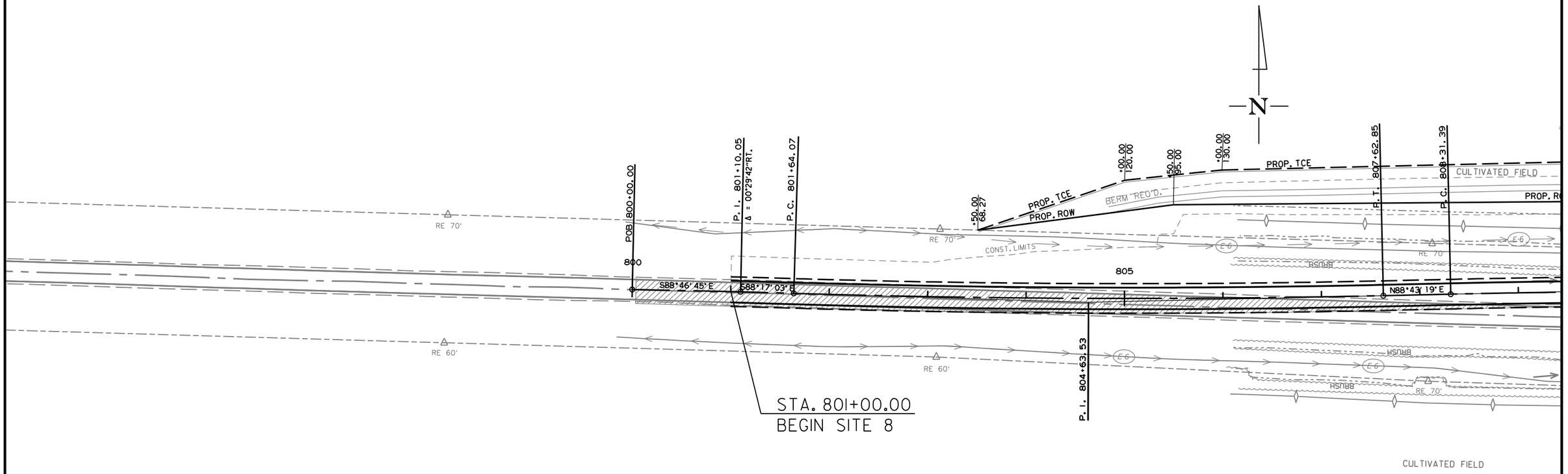
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

DENOTES STAGE 2 CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	65	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 8.dgn 8/15/2022

STAGE 2 - SITE 8 SHT 1 OF 3
TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES STAGE 2 CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	66	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
9-20-22

=1134 LIN.FT. E-11 | =1550 LIN.FT. E-11 | =146 LIN.FT. E-11 | =158 LIN.FT. E-11 | =635 LIN.FT. E-11 | =63 LIN.FT. E-11 | =262 LIN.FT. E-11

PROP. TCE | PROP. ROW | CONST. LIMITS | BERM REQ'D. | CULTIVATED FIELD | FLOOD GATE | BRUSH | EXISTING ELEV. 226.0 | 25' VEGETATION BUFFER | 15' VEGETATION BUFFER

P.I. 11+31.46 | P.C. 10+72.67 | N11°06'54"E | P.C. 12+29.73 | P.T. 12+93.03 | P.I. 12+67.89 | P.T. 11+38.30 | P.T. 14+31.39 | N84°40'14"E | P.C. 33+67.56 | P.I. 24+50.24 | P.T. 34+29.64 | N82°43'30"W | P.I. 30+68.34 | P.T. 30+80.00 | P.I. 30+50.34 | P.I. 821+40.51 | P.T. 824+40.44 | P.C. 818+40.44 | POB 20+00.00 | S85°16'

810 | 815 | 820 | S88°16'41"E | S30°36'54"W | P.C. 10+82.43 | P.I. 14+24.78 | P.C. 20+65.80 | S89°00'52"E | S66°52'35"W | P.I. 20+93.72 | P.I. 11+20.18 | P.T. 11+41.87 | P.C. 12+88.57 | P.T. 15+04.64 | P.I. 23+04.66 | P.T. 23+25.99 | P.C. 22+77.88 | P.I. 21+15.56 | S0°35'09"E | POE 18+48.83

CULTIVATED FIELD

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 8.dgn 9/20/2022

STAGE 2 - SITE 8 SHT 2 OF 3
TEMPORARY EROSION CONTROL DETAILS

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

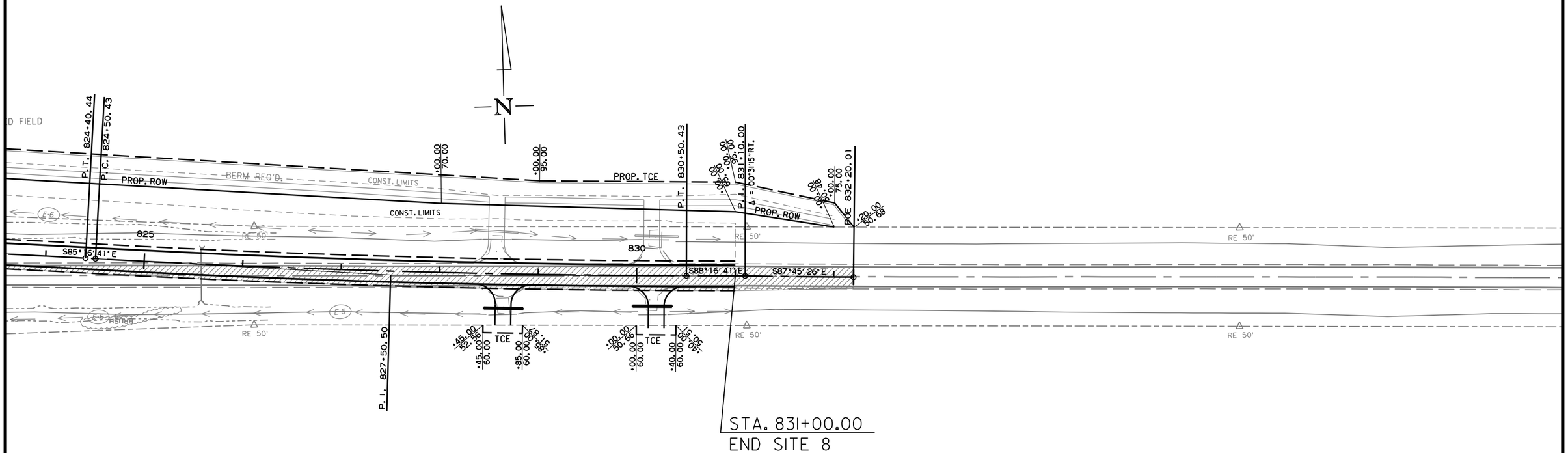
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

DENOTES STAGE 2 CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	67	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



STA. 831+00.00
END SITE 8

REVISIONS

DATE OF REVISION	REVISION

STAGE 2 - SITE 8 SHT 3 OF 3
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 8.dgn 8/15/2022

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

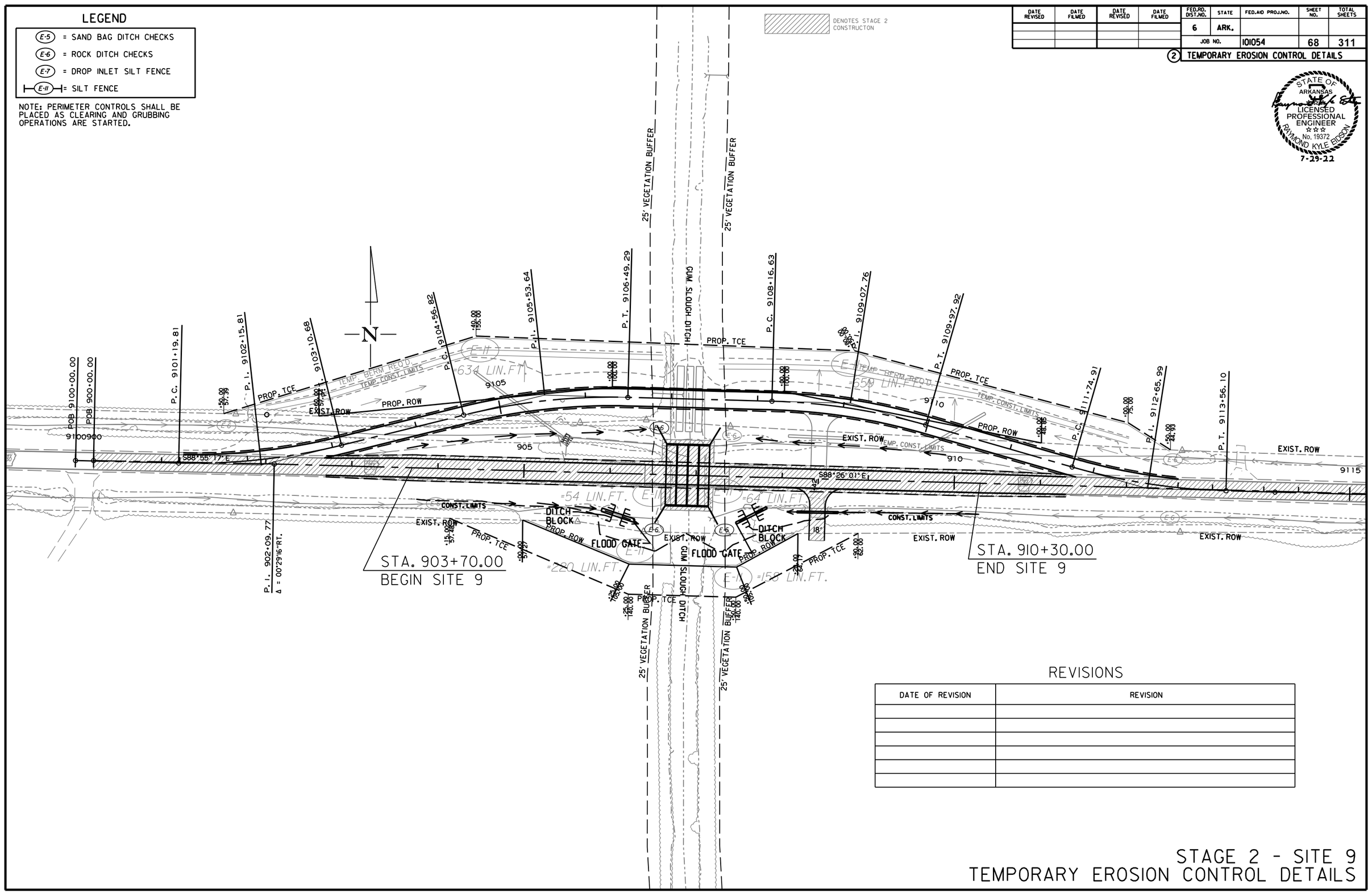
NOTE: PERIMETER CONTROLS SHALL BE PLACED AS CLEARING AND GRUBBING OPERATIONS ARE STARTED.

DENOTES STAGE 2 CONSTRUCTON

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	68	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



REVISIONS

DATE OF REVISION	REVISION

STAGE 2 - SITE 9
TEMPORARY EROSION CONTROL DETAILS

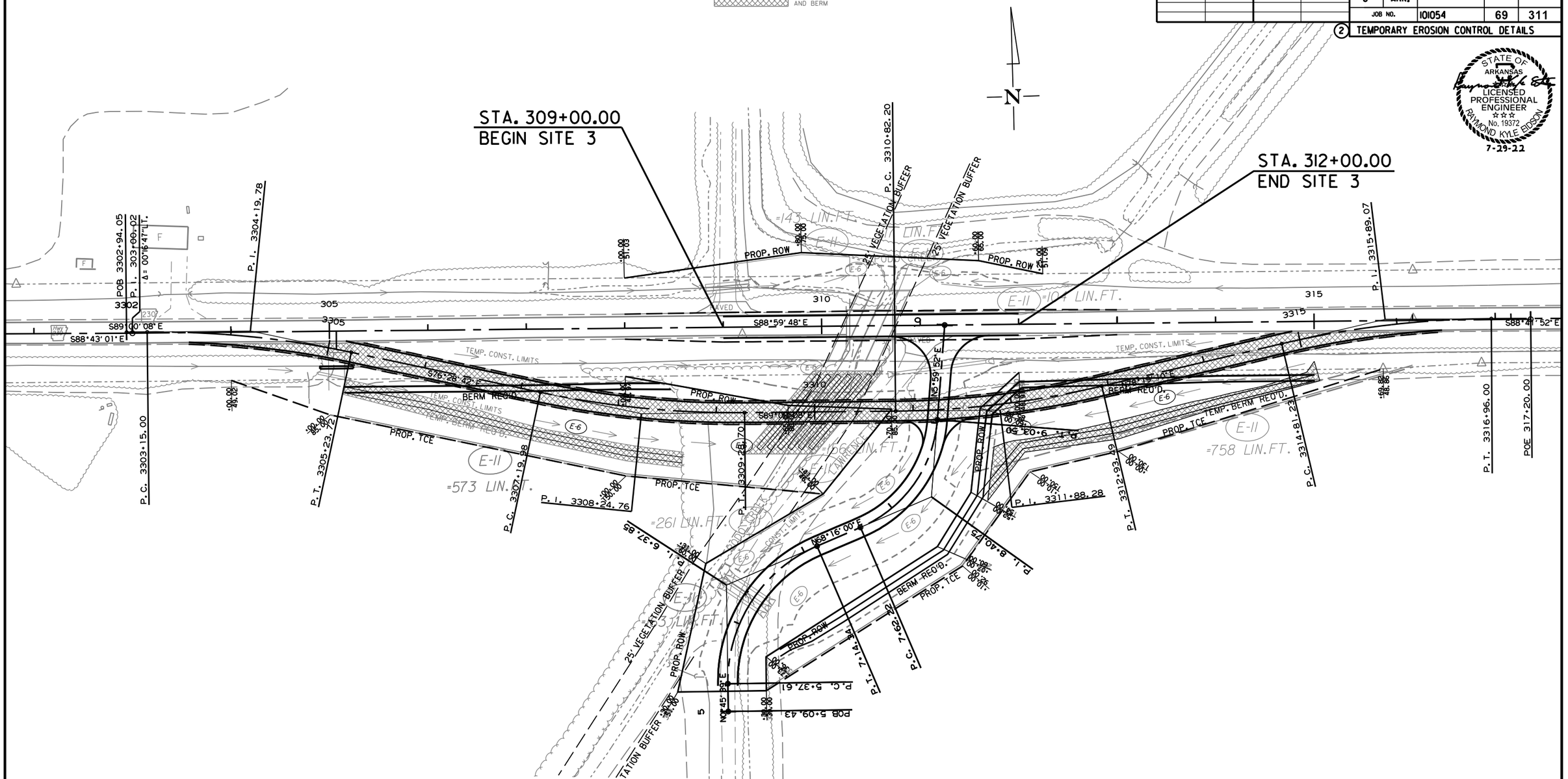
R101054_CG_TEC_Site 9.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	69	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES OBLITERATION OF EXISTING PAVEMENT AND BERM



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

R101054_CG_TEC_Site 3.dgn 8/15/2022

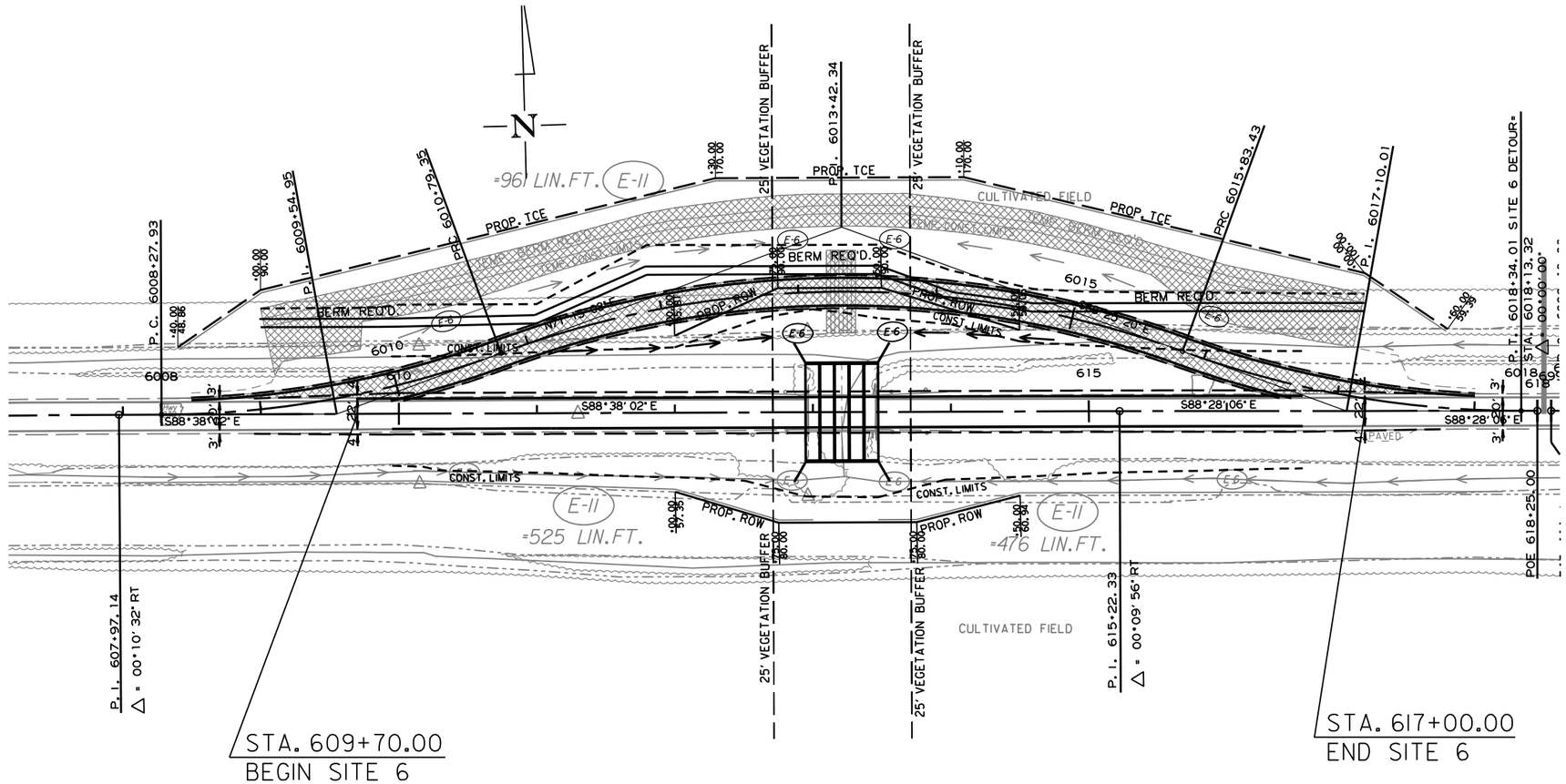
STAGE 3 - SITE 3
TEMPORARY EROSION CONTROL DETAILS

DENOTES OBLITERATION OF EXISTING PAVEMENT AND BERM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	70	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 3 - SITE 6
TEMPORARY EROSION CONTROL DETAILS

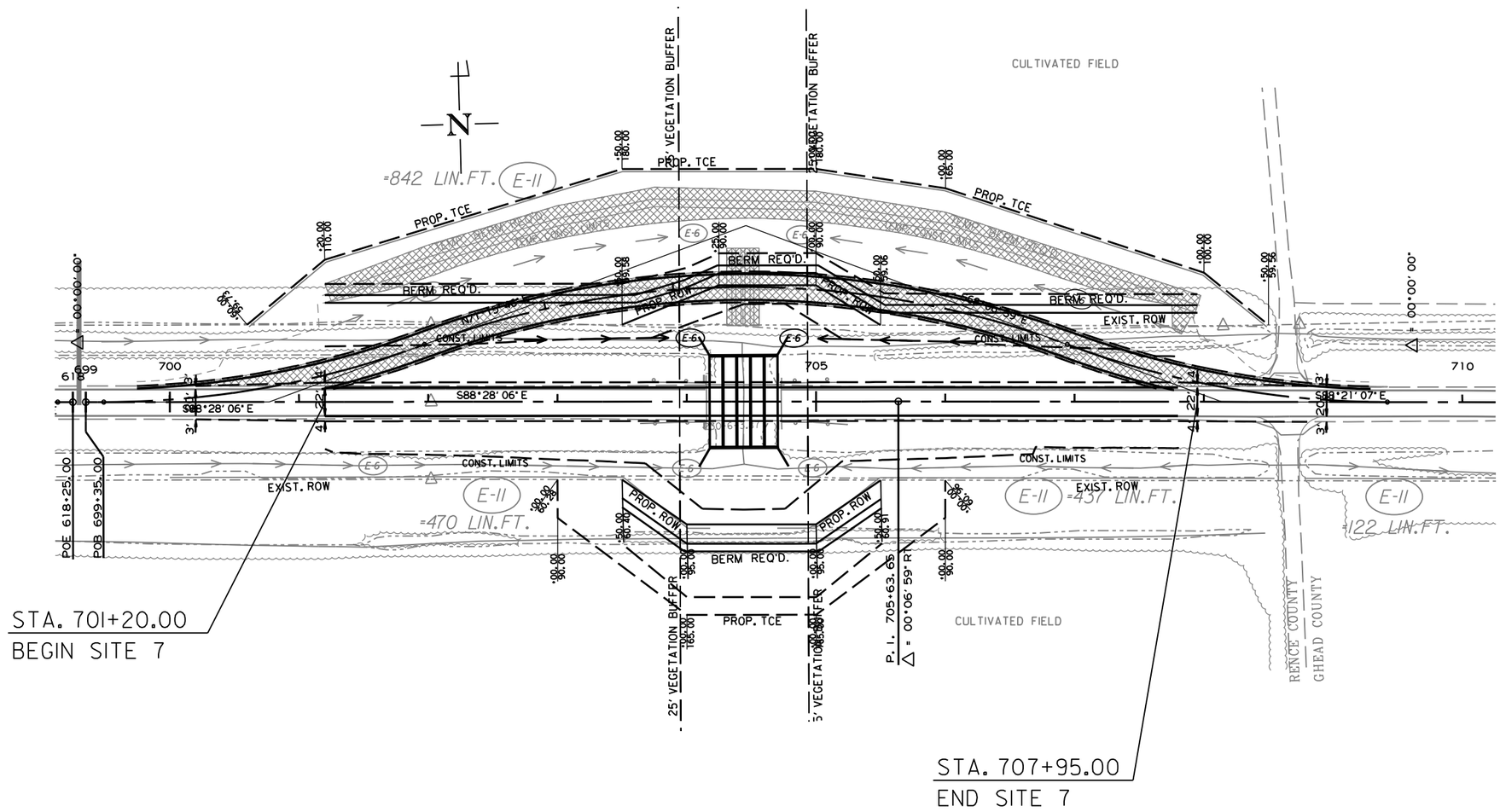
R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	71	311

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES OBLITERATION OF EXISTING PAVEMENT AND BERM



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

REVISIONS

DATE OF REVISION	REVISION

STAGE 3 - SITE 7
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	72	311

(2) TEMPORARY EROSION CONTROL DETAILS

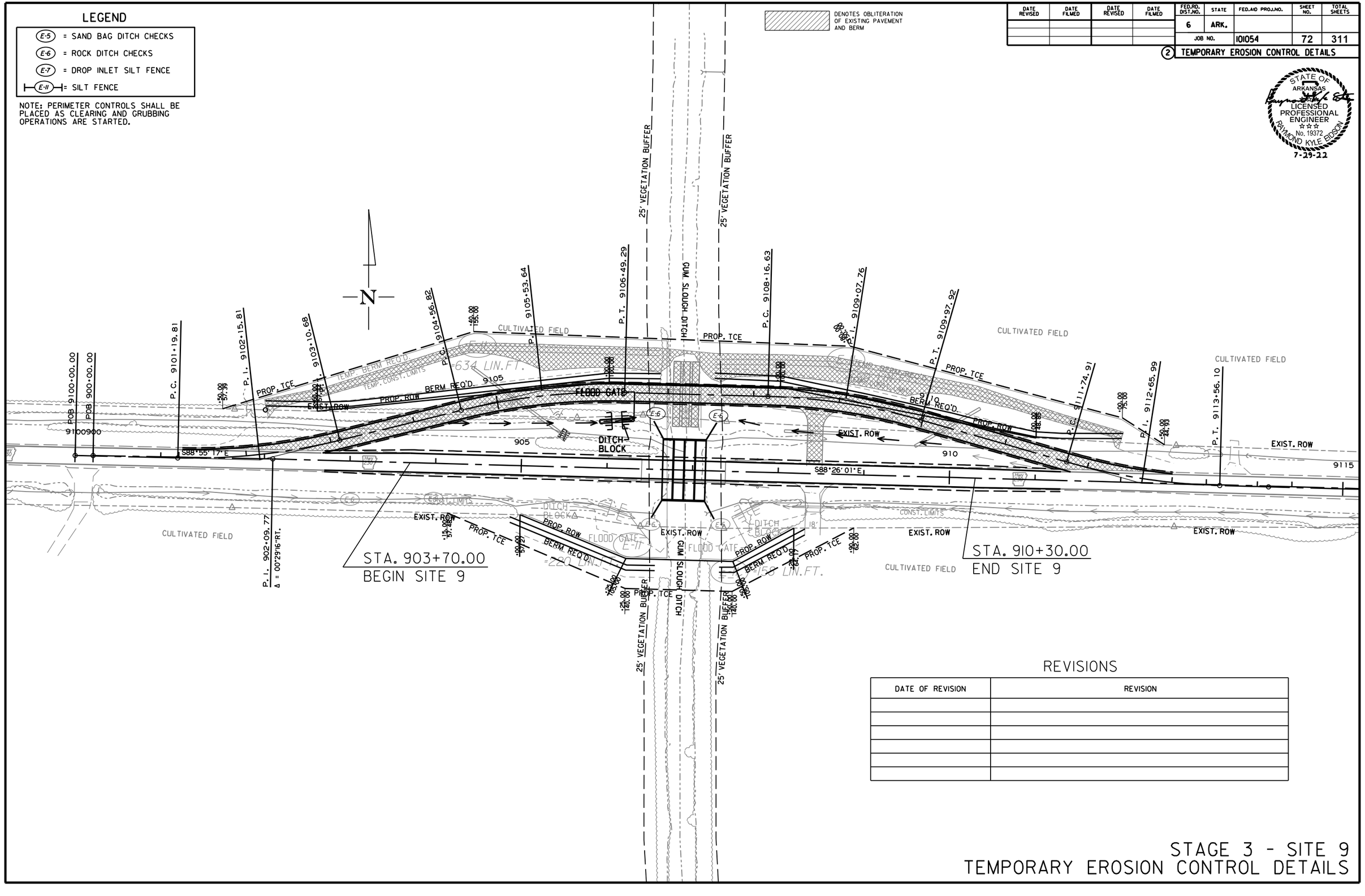
LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

DENOTES OBLITERATION OF EXISTING PAVEMENT AND BERM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EDSON
No. 19372
7-29-22



REVISIONS

DATE OF REVISION	REVISION

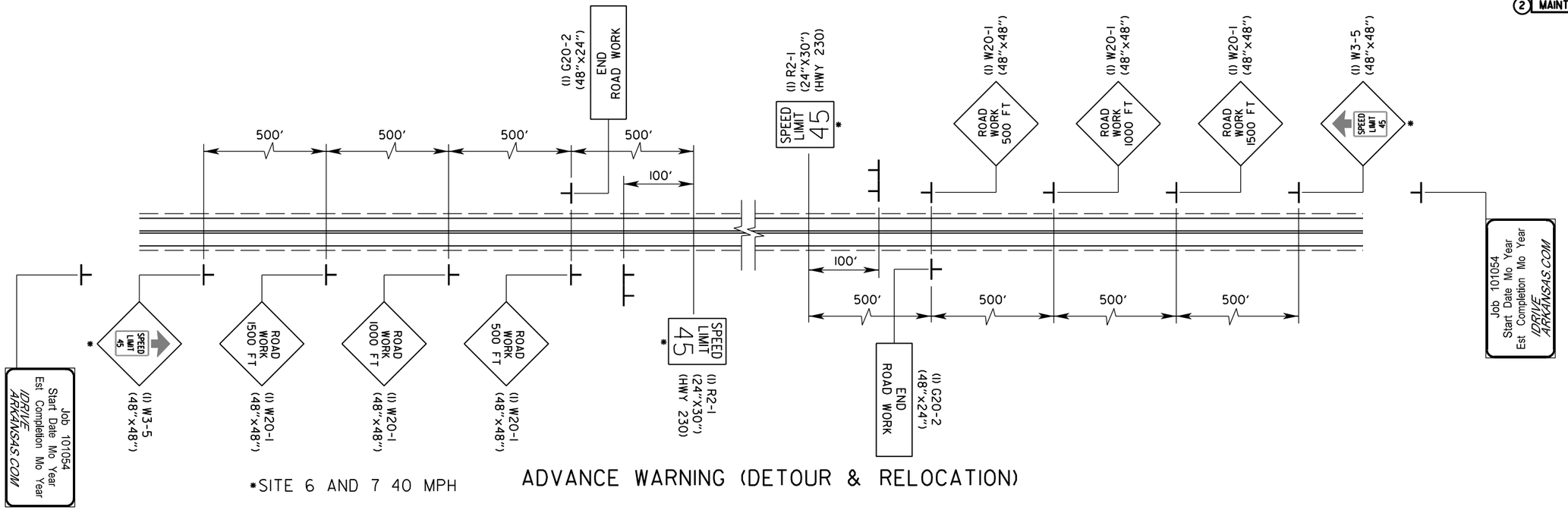
STAGE 3 - SITE 9
TEMPORARY EROSION CONTROL DETAILS

R101054_CG_TEC_Site 9.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	73	311

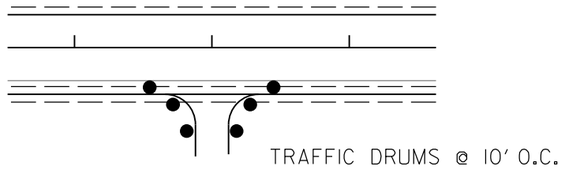
(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

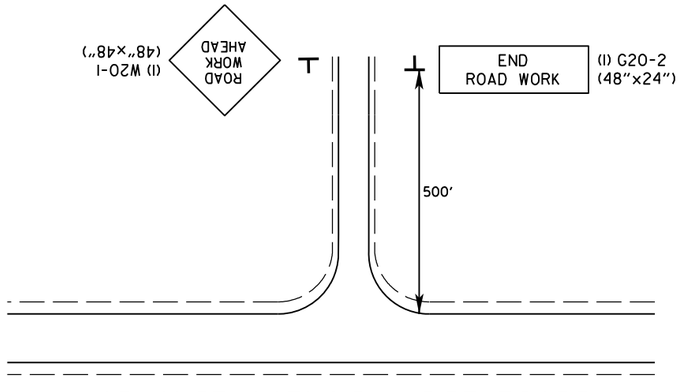


*SITE 6 AND 7 40 MPH

ADVANCE WARNING (DETOUR & RELOCATION)



DRIVEWAY/TRAFFIC DRUM DETAIL



ADVANCE WARNING - SIDE ROADS
(ALL STAGES)

(2) W21-5a (36"x36")	RIGHT SHOULDER CLOSED	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
(2) R4-1 (24"x30")	DO NOT PASS	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
(2) W8-1 (30"x30")	BUMP	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER
(2) W20-1 (48"x48")	ROAD WORK AHEAD	ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

ADVANCE WARNING DETAILS
MAINTENANCE OF TRAFFIC DETAILS

R101054_MDT_AWGN.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	74	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDISON
7-29-22

SITE 1&2

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT BRIDGE NO. 07522, 07523 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE. REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 1 & 2 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

FINISH SLOPES AND CONSTRUCT DRIVEWAYS, OBLITERATE EXISTING BRIDGE STRUCTURE & ROADWAY.

SITE 3

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT DETOUR FROM STA. 3303+15.00 TO STA. 3316+96.00 AS SHOWN ON STAGE 1- SITE 3 MAINTENANCE OF TRAFFIC DETAILS

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 3 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO DETOUR.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTUCT QUINT. 10'x6'x80' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 310+48.00. CONSTRUCT ROADWAY APPROACH.

NOTCH AND WIDEN EXISTING ROADWAY FROM STA. 309+00.00 TO STA. 309+99.00 AND STA. 310+97.00 TO STA. 312+00.00.

STAGE 3:

OBLITERATE DETOUR AND OPEN LAWRENCE ROAD 745. SHIFT TRAFFIC BACK ONTO EXISTING ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 4

INSTALL ADVANCE WARNING SIGNS AS SHOWN IN THE DETOUR ROUTE MAINTENANCE OF TRAFFIC DETAILS.

DETOUR TRAFFIC ONTO APPROVED DETOUR ROUTE.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT TRP. 10'x6'x84' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 410+24.54. CONSTRUCT ROADWAY APPROACH.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.

SITE 5

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT BRIDGE NO. 07524 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE. REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 5 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO PROPOSED ROAD.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

FINISH SLOPES AND CONSTRUCT DRIVEWAYS, OBLITERATE EXISTING BRIDGE STRUCTURE & ROADWAY.

SITE 6

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT DETOUR FROM STA. 6008+27.93 TO STA. 6018+34.01 AS SHOWN ON STAGE 1- SITE 6 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS, INSTALL TRAFFIC DRUMS AND STRIPING AS SHOWN ON STAGE 2 - SITE 6 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO DETOUR.

ADD W13-1(40 M.P.H) SIGN TO THE W1-5L SIGN.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTUCT QUINT. 10'x6'x72' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 616+55.00. CONSTRUCT ROADWAY APPROACH.

NOTCH AND WIDEN EXISTING ROADWAY FROM STA. 609+70.00 TO STA. 611+00.00 AND STA. 615+70.00 TO STA. 617+00.00.

STAGE 3:

OBLITERATE DETOUR ROAD. SHIFT TRAFFIC BACK ONTO EXISTING ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 7

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT DETOUR FROM STA. 6999+48.99 TO STA. 7009+63.19 AS SHOWN ON STAGE 1- SITE 7 MAINTENANCE OF TRAFFIC DETAILS.

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 7 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO DETOUR.

ADD W13-1(40 M.P.H) SIGN TO THE W1-5L.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTUCT SEXT. 10'x6'x72' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 704+44.00. CONSTRUCT ROADWAY APPROACH.

NOTCH AND WIDEN EXISTING ROADWAY FROM STA. 701+20.00 TO STA. 702+50.00 AND STA. 706+50.00 TO 707+95.00.

STAGE 3:

OBLITERATE DETOUR ROAD. SHIFT TRAFFIC BACK ONTO EXISTING ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 8

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE NECESSARY DRIVEWAYS.

CONSTRUCT BRIDGE NO. 07525 AND PROPOSED ROADWAY THROUGH FIRST LAYER OF SURFACE COURSE. REFER TO CROSS SECTIONS FOR LOCATIONS OF TEMPORARY SLOPES.

CONSTRUCT & RELOCATE CRAIGHEAD CO. RD 194.

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 8 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO PROPOSED ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

FINISH SLOPES AND CONSTRUCT DRIVEWAYS, OBLITERATE EXISTING BRIDGE STRUCTURE & ROADWAY.

COMPLETE CONSTRUCTION ON CRAIGHEAD CO. RD 194.

SITE 9

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AS SHOWN. INSTALL TRAFFIC DRUMS AND VERTICAL PANELS TO DELINEATE THE WORK ZONE AND NECESSARY DRIVEWAYS.

CONSTRUCT DETOUR FROM STA. 9101+19.81 TO STA. 9113+56.10 AS SHOWN ON STAGE 1- SITE 9 MAINTENANCE OF TRAFFIC DETAILS

STAGE 2:

MAINTAIN ADVANCE WARNING SIGNS TRAFFIC DRUMS, AND STRIPING AS SHOWN ON STAGE 2 - SITE 9 MAINTENANCE OF TRAFFIC DETAILS. SHIFT TRAFFIC ONTO DETOUR.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTUCT QUAD. 12'x9'x72' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 906+90.00. CONSTRUCT ROADWAY APPROACH.

NOTCH AND WIDEN EXISTING ROADWAY FROM STA. 903+70.00 TO STA. 906+39.00 AND STA. 907+95.00 TO STA. 910+30.00.

STAGE 3:

OBLITERATE DETOUR ROAD. SHIFT TRAFFIC BACK ONTO EXISTING ROADWAY.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

SITE 10

INSTALL ADVANCE WARNING SIGNS AS SHOWN IN THE DETOUR ROUTE MAINTENANCE OF TRAFFIC DETAILS.

DETOUR TRAFFIC ONTO APPROVED DETOUR ROUTE.

REMOVE EXISTING BRIDGE STRUCTURE AND CONSTRUCT TRP. 12'x7'x72' R.C. BOX CULVERT WITH WING WALLS AS SHOWN AT STA. 1005+95.00. CONSTRUCT ROADWAY APPROACH.

MILL OUT THE TRANSITIONS AT BOTH ENDS OF JOB AND PLACE FINAL 2" LIFT OF SURFACE COURSE. INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

PLACE FINAL LIFT OF ACHM SURFACE COURSE, CONSTRUCT TRANSITIONS, AND INSTALL PERMANENT PAVEMENT MARKINGS.

SEQUENCE OF CONSTRUCTION:

PHASE I: SITES 1, 2, & 10 (ALL STAGES)
PHASE II: SITES 6, 7, 8 & 9 (ALL STAGES)
PHASE III: SITES 3, 4 & 5 (ALL STAGES)

ADVANCE WARNING DETAILS
MAINTENANCE OF TRAFFIC DETAILS

8/15/2022

R101054_MDT_AWGN.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.		101054	75	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDISON
7-29-22

STA. 101+00.00
BEGIN JOB 101054
BEGIN SITE 1&2

DENOTES STAGE I CONSTRUCTION

CULTIVATED FIELD

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

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

POB - 100+00.00
P. C. 101+14.20
PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
P. T. 107+98.92
CONST. LIMITS VERTICAL PANELS 55' O.C. = 17 EACH
P. C. 113+58.97
S86°51'33"E
PN:2 PD:ARDOT STD. MON. STAMPED PN:2
PN:3 PD:ARDOT STD. MON. STAMPED PN:3
S88°00'20"E
TRAFFIC DRUMS 55' O.C. = 15 EACH
P. L.
GATE

STA. 131+00.00
END SITE 1&2

DENOTES STAGE I CONSTRUCTION

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

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

PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
P. C. 117+92.97
P. C. 124+55.09
P. T. 131+14.67
VERTICAL PANELS 55' O.C. = 18 EACH
S79°59'01"E
PN:4 PD:ARDOT STD. MON. STAMPED PN:4
PN:5 PD:ARDOT STD. MON. STAMPED PN:5
PN:6 PD:ARDOT STD. MON. STAMPED PN:6
POE 132+20.93
S84°56'43"E
EXIST. ROW
2007 HWY CL PT
CULTIVATED FIELD
WATER
SOUTHWEST BELL
YELLOW PAINT CORN AT END
253 LEONG RW MON

R101054_MOT_Site 1 and 2.dgn 8/15/2022

PHASE I
STAGE I - SITE I & 2
MAINTENANCE OF TRAFFIC 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.		101054	76	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDISON
7-29-22

STA. 101+00.00
BEGIN JOB 101054
BEGIN SITE 1&2

DENOTES OBLITERATION OF EXISTING PAVEMENT

DENOTES STAGE 2 CONSTRUCTON

N

CULTIVATED FIELD

POB 100+00.00

P.C. 101+14.20

PROP. TCE

BERM REQ'D

PROP. ROW

CONST. LIMITS

CONSTRUCTION PAVEMENT MARKING - WHITE

CONSTRUCTION PAVEMENT MARKING - DBL. YELLOW

VERTICAL PANELS 55' O.C. = 13 EACH

P.T. 104+98.92

S86°51'33"E

PN:1 PD:ARDOT STD. MON. STAMPED PN:1

P.I. 104+56.79

(1) W24-1L (48"x48")

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

16' BARR. TYP. III RT.

PN:3 PD:ARDOT STD. MON. STAMPED PN:3

TRAFFIC DRUMS 55' O.C. = 17 EACH

P.C. 113+58.97

TRAFFIC DRUMS 10' O.C. = 12 EACH

8' BARR. TYP. III RT.

8' BARR. TYP. III LT.

PN:2 PD:ARDOT STD. MON. STAMPED PN:2

PN:4 PD:ARDOT STD. MON. STAMPED PN:4

PN:5 PD:ARDOT STD. MON. STAMPED PN:5

PN:6 PD:ARDOT STD. MON. STAMPED PN:6

S84°56'43"E

POE 132+20.9

P.C. 124+55.09

S79°59'55"E

TRAFFIC DRUMS 10' O.C. = 8 EACH

STA. 131+00.00
END SITE 1&2

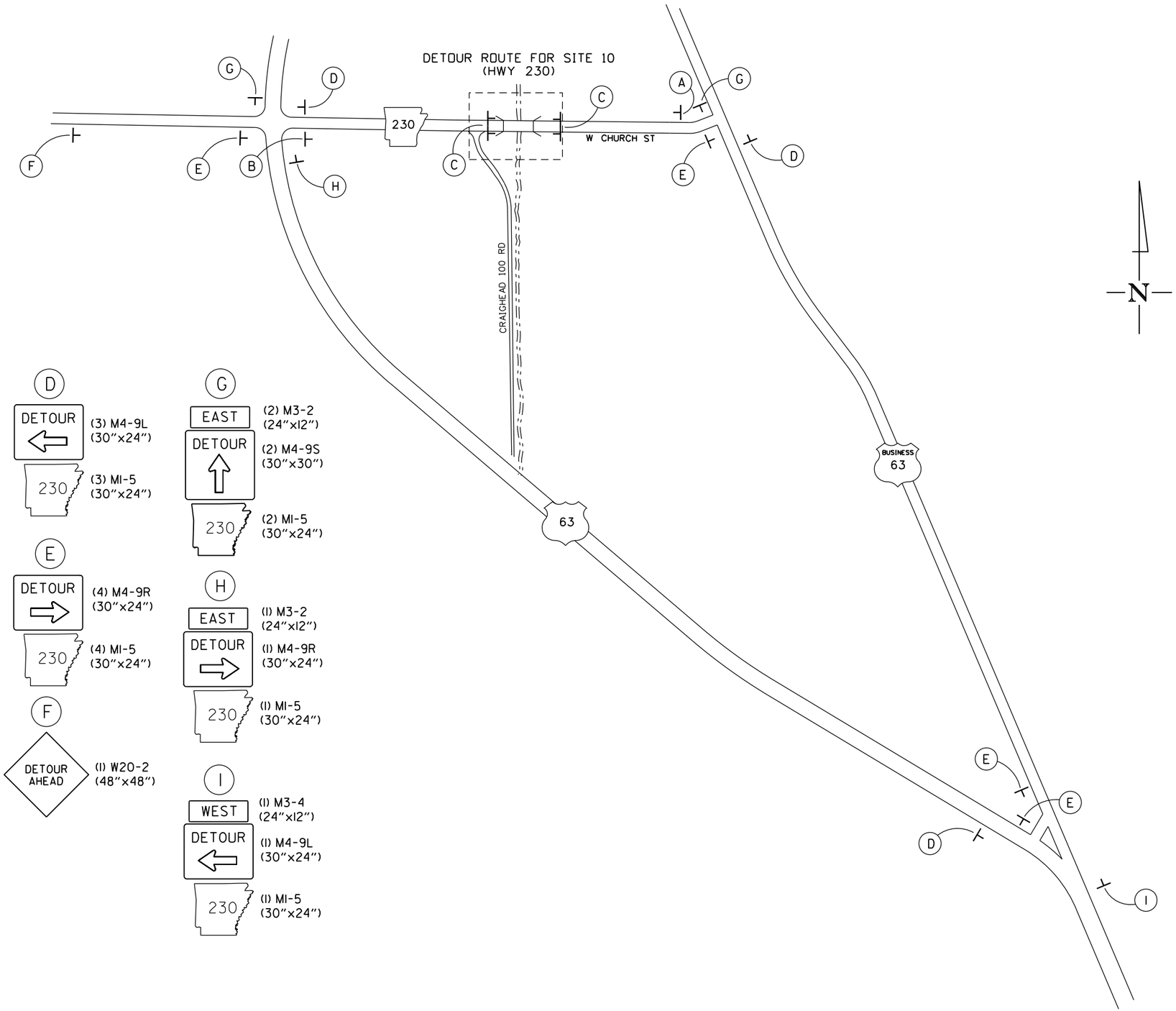
PHASE I
STAGE 2 - SITE 1 & 2
MAINTENANCE OF TRAFFIC DETAILS

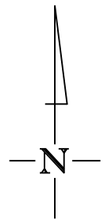
R101054_MOT_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	77	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22





A — BRIDGE OUT 0.5 MILES AHEAD LOCAL TRAFFIC ONLY — (1) RII-3B (60"x30")

16' BARRICADE TYPE III (RIGHT)

B — BRIDGE OUT 0.25 MILES AHEAD LOCAL TRAFFIC ONLY — (1) RII-3B (60"x30")

16' BARRICADE TYPE III (RIGHT)

C — ROAD CLOSED — (2) RII-2 (48"x30")

8' BARRICADE TYPE III (LEFT)

8' BARRICADE TYPE III (RIGHT)

D — DETOUR — (3) M4-9L (30"x24")
230 — (3) MI-5 (30"x24")

E — DETOUR — (4) M4-9R (30"x24")
230 — (4) MI-5 (30"x24")

F — DETOUR AHEAD — (1) W20-2 (48"x48")

G — EAST — (2) M3-2 (24"x12")
DETOUR — (2) M4-9S (30"x30")
230 — (2) MI-5 (30"x24")

H — EAST — (1) M3-2 (24"x12")
DETOUR — (1) M4-9R (30"x24")
230 — (1) MI-5 (30"x24")

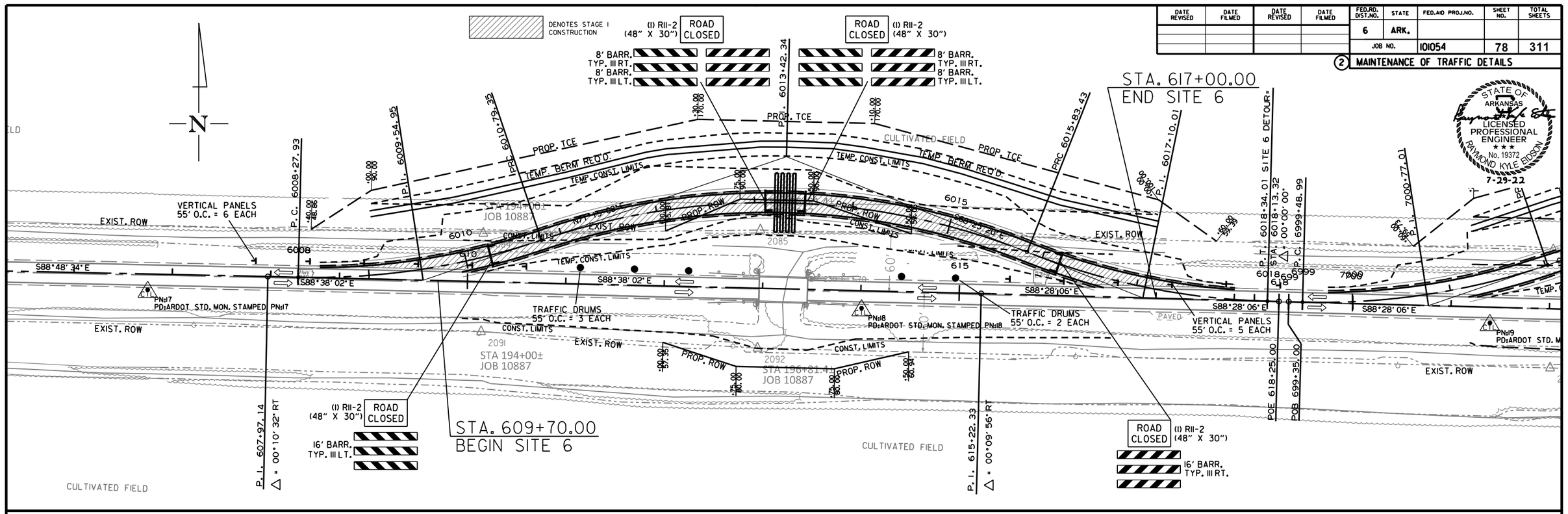
I — WEST — (1) M3-4 (24"x12")
DETOUR — (1) M4-9L (30"x24")
230 — (1) MI-5 (30"x24")

R100869_MDT_Site10.dgn 8/15/2022

PHASE I
DETOUR ROUTE - SITE 10
MAINTENANCE OF TRAFFIC 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.		101054	78	311

(2) MAINTENANCE OF TRAFFIC DETAILS

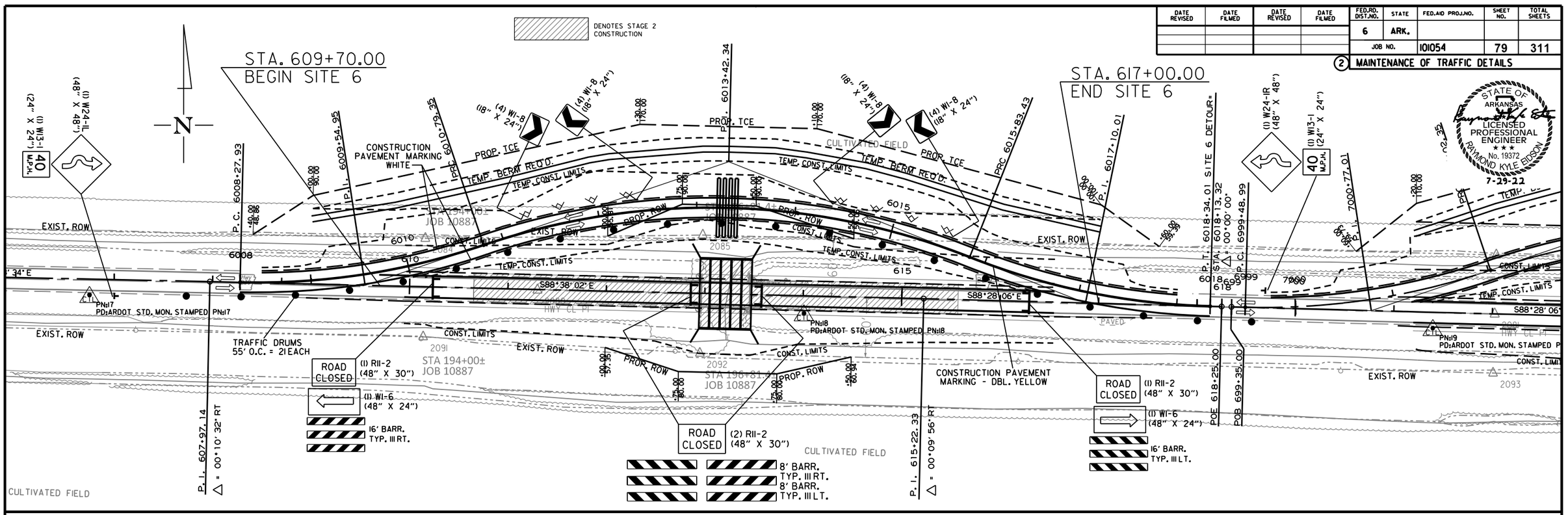


PHASE II
STAGE I - SITE 6
MAINTENANCE OF TRAFFIC DETAILS

R101054_MOT_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	79	311

(2) MAINTENANCE OF TRAFFIC DETAILS



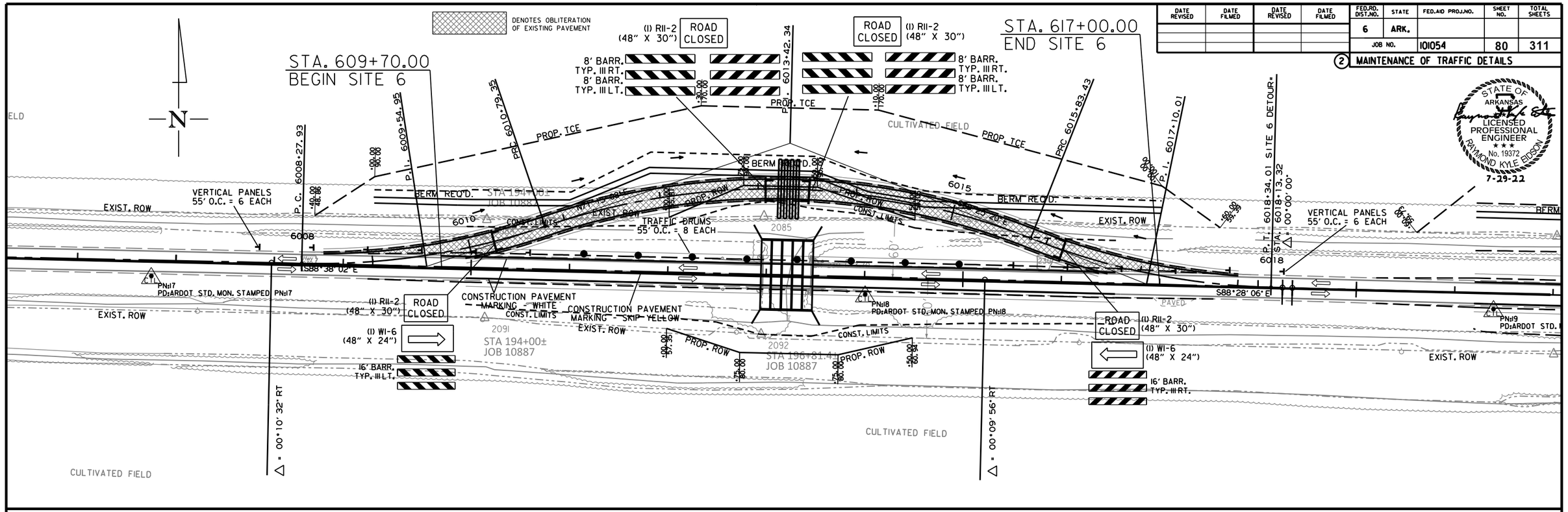
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

R101054_MDT_Site 6 and 7.dgn 8/15/2022

PHASE II
STAGE 2 - SITE 6
MAINTENANCE OF TRAFFIC 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.		101054	80	311

(2) MAINTENANCE OF TRAFFIC DETAILS



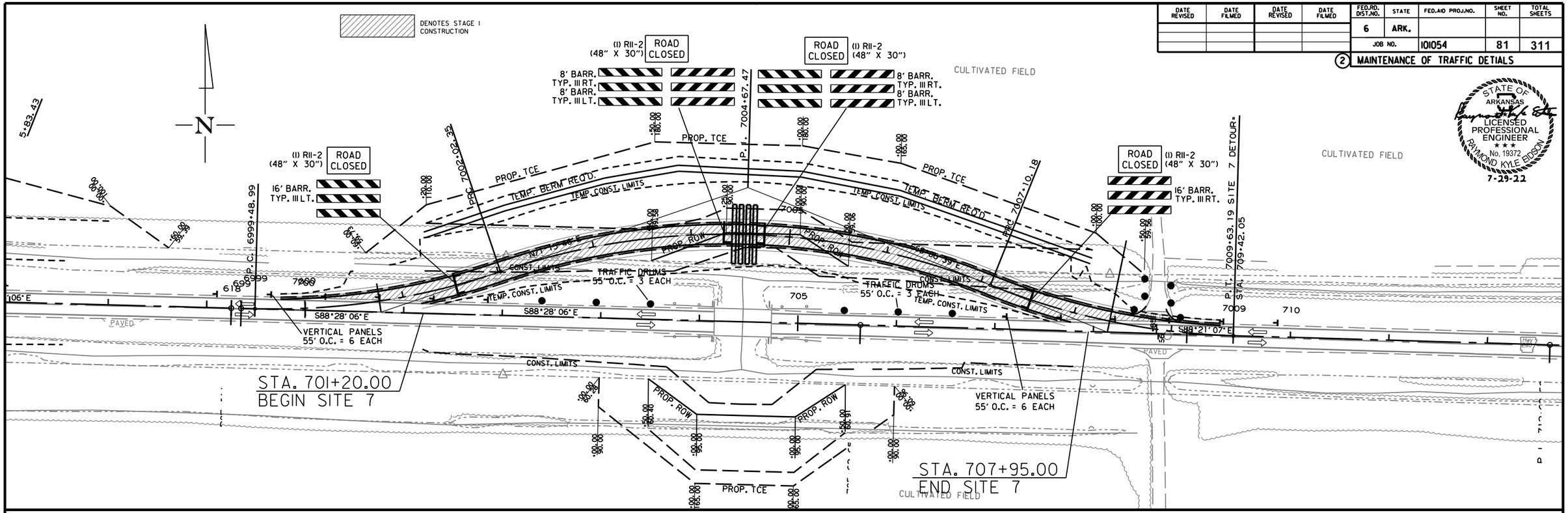
R101054_MOT_Site 6 and 7.dgn 8/15/2022

PHASE II
STAGE 3 - SITE 6
MAINTENANCE OF TRAFFIC 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.	101054		81	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



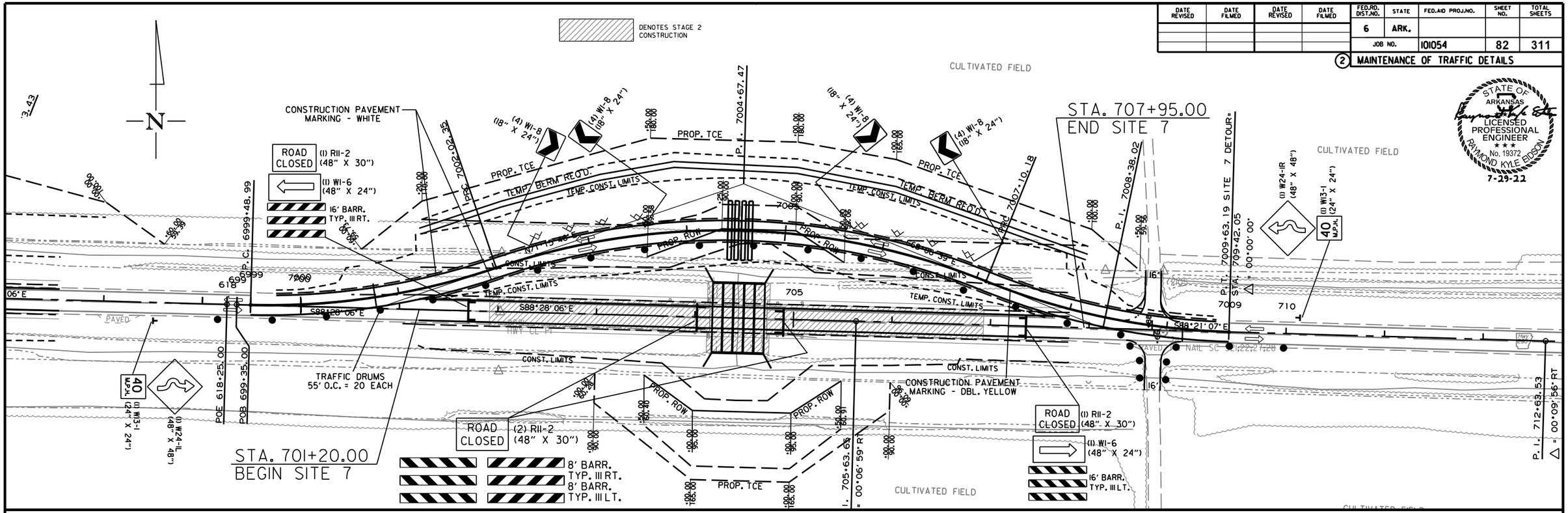
PHASE II
STAGE I - SITE 7
MAINTENANCE OF TRAFFIC DETAILS

R101054_MOT_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	82	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

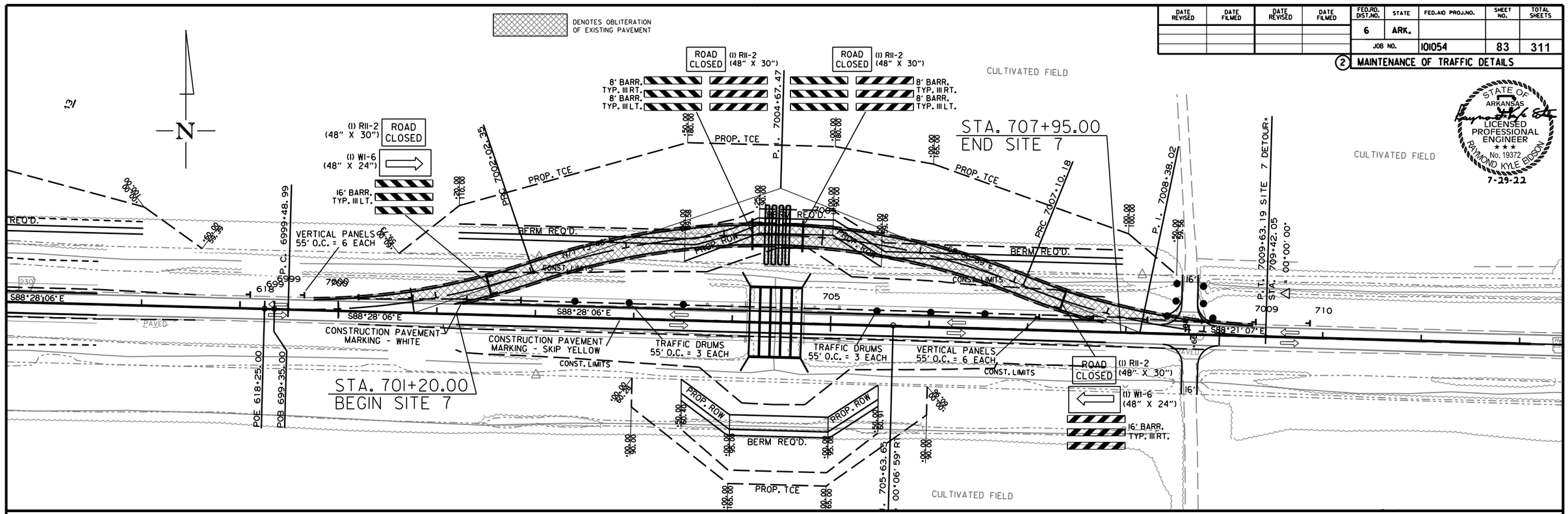


PHASE II
STAGE 2 - SITE 7
MAINTENANCE OF TRAFFIC DETAILS

R101054_MOT_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	83	311

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

PHASE II
STAGE 3 - SITE 7
MAINTENANCE OF TRAFFIC DETAILS

R101054_MOT_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	84	311

(2) MAINTENANCE OF TRAFFIC DETAILS

DENOTES STAGE I CONSTRUCTION

STA. 801+00.00
BEGIN SITE 8

N

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

ROAD CLOSED (I) RII-2 (48" X 30")
16' BARR. TYP. III LT.

VERTICAL PANELS 55' O.C. = 15 EACH

TRAFFIC DRUMS 55' O.C. = 9 EACH

VERTICAL PANELS 55' O.C. = 4 EACH

FLOOD GATE

TEMP. (IA) REQ'D. 45 MPH

TRAFFIC DRUMS 55' O.C. = 2 EACH

TRAFFIC DRUMS 10' O.C. = 4 EACH

TRAFFIC DRUMS 55' O.C. = 5 EACH

CULTIVATED FIELD

CRAIGHEAD CO.RD.194

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EDSON
No. 19372
9-20-22

POB 800+00.00
P.I. 801+10.05
Δ = 00°29'42" RT.
P.C. 801+64.07
P.C. 807+62.85
P.T. 808+31.39
P.I. 811+31.46
P.C. 10+72.67
P.I. 12+29.73
P.C. 10+82.43
P.I. 11+20.18
P.T. 11+41.87
P.C. 33+67.56
P.I. 821+40.51
P.C. 824+40.44
P.T. 824+50.43
P.I. 830+50.43
P.I. 831+10.00
Δ = 00°31'15" RT.
P.C. 818+40.44
POB 20+00.00
P.I. 14+24.78
P.C. 20+65.80
P.C. 22+77.88
P.I. 23+04.66
POE 832+20.01

S88°46'45"E
S88°17'03"E
N88°43'19"E
S88°16'41"E
N84°40'12"E
S89°00'52"E
N82°43'30"W
S85°16'41"E
S87°45'26"E
S65°52'35"W

PROP. TCE
PROP. ROW
BERM REQ'D.
CONST. LIMITS
TCE
BRUSH
RET/WALL
35.00' R
50.00' R

STA. 831+00.00
END SITE 8

PHASE II
STAGE I - SITE 8
MAINTENANCE OF TRAFFIC DETAILS

R101054_MOT_Site8.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	85	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EDSON
No. 19372
9-20-22

DENOTES STAGE 2 CONSTRUCTION

DENOTES OBLITERATION OF EXISTING PAVEMENT

STA. 801+00.00
BEGIN SITE 8

POB 800+00.00

P. I. 801+10.05
Δ = 00°29'42"RT.

P. C. 801+64.07

PROP. TCE
PROP. ROW
BERM REQ'D.
CONST. LIMITS
CONSTRUCTION PAVEMENT MARKING - WHITE
CONSTRUCTION PAVEMENT MARKING - DBL. YELLOW
RE 70'
RE 60'
RE 100'
RE 85'

S88°46'45"E
S88°17'03"E
N88°43'19"E
S88°16'41"E
S89°00'52"E
S50°36'54"W

VERTICAL PANELS
55' O.C. = 14 EACH

STA. 808+00 BEGIN 100'
LANE SHIFT FROM 2@11' TO
2@10' TEMPORARY LANES

P. I. 804+63.53

P. I. 807+62.85
P. C. 808+31.39
P. I. 811+31.46
P. C. 10+72.67
P. I. 11+38.30
P. C. 12+31.39
P. C. 10+82.43
P. I. 11+20.18
P. C. 12+88.57
P. T. 15+04.64

FLOOD GATE

TRAFFIC DRUMS
55' O.C. = 8 EACH

TRAFFIC DRUMS
25' O.C. = 17 EACH

TEMP. (IA) REO'D.
45 MPH

35.00' R

(I) WI-4L
(48" X 48")

(I) WI-4R
(48" X 48")

(I) WI-6
(48" X 24")

ROAD CLOSED
(I) RII-2
(48" X 30")

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

STA. 823+00 BEGIN 100'
LANE SHIFT FROM 2@10'
TEMPORARY LANES TO
2@11'

P. I. 824+40.44
P. C. 824+50.43
P. I. 827+50.50
P. I. 830+50.43
P. C. 831+31.46

STA. 831+00.00
END SITE 8

VERTICAL PANELS
55' O.C. = 12 EACH

TCE

P. I. 20+93.72
P. C. 22+77.88
P. I. 23+04.66
P. I. 23+25.99
P. C. 30+50.34
P. C. 20+65.80
POE 832+20.01

PROP. ROW

PHASE II
STAGE 2 - SITE 8
MAINTENANCE OF TRAFFIC DETAILS

9/20/2022

R101054_MOT_Site8.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.		101054	86	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDISON
7-29-22

DENOTES STAGE I CONSTRUCTION

POB 9100+00.00
POB 900+00.00
9100900
S88°34'21"E 500.00'
S89°08'43"E 500.02'
VERTICAL PANELS 55' O.C. = 7 EACH
S88°55'17"E
P.I. 902+09.77
Δ = 00°29'16"RT.
9101+03.68
9104+56.82
P.I. 9105+53.64
P.T. 9106+49.29
GUM SLOUGH DITCH
P.C. 9108+16.63
P.I. 9109+07.76
P.T. 9109+97.92
P.C. 9111+74.91
P.T. 9113+56.10
VERTICAL PANELS 55' O.C. = 6 EACH
PROP. TCE
TEMP. BERM REQ'D.
TEMP. CONST. LIMITS
PROP. ROW
EXIST. ROW
CONST. LIMITS
905
910
915
S88°34'21"E 400.00'
S88°26'01"E
N87°42'21"E 77.03'
S89°09'36"E 77.51'
N89°47'31"E
ROAD CLOSED
(1) R11-2 (48" X 30")
16' BARR. TYP. III LT.
TRAFFIC DRUMS 55' O.C. = 3 EACH
TRAFFIC DRUMS 55' O.C. = 4 EACH
18' TEMP. DRN.
STA. 903+70.00
BEGIN SITE 9
STA. 910+30.00
END SITE 9
16' BARR. TYP. III RT.
2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079

DENOTES STAGE I CONSTRUCTION

POE 9115+48.72
POE 915+36.83
915

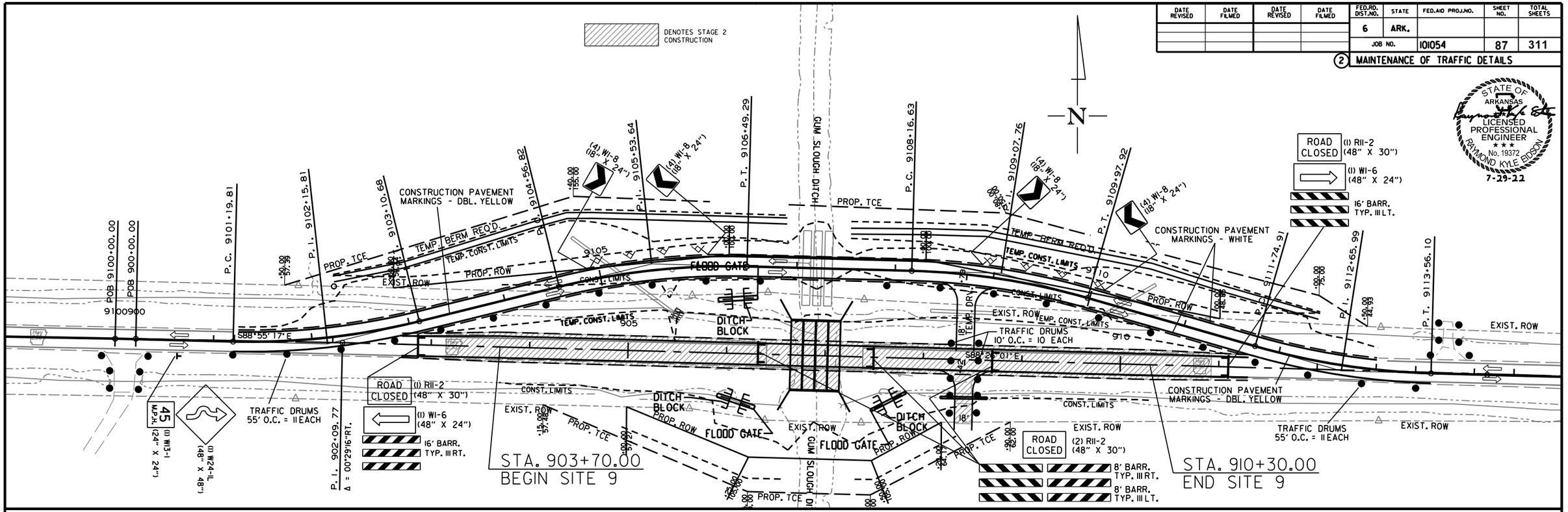
8/15/2022
R100869_MDT_Site9.dgn

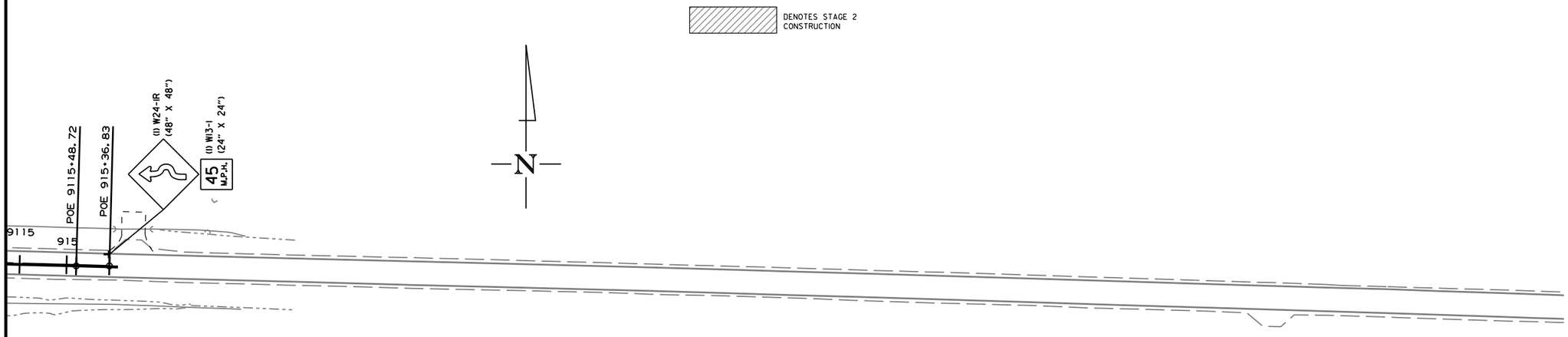
PHASE II
STAGE I - SITE 9
MAINTENANCE OF TRAFFIC DETAILS

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.		101054	87	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22





R100869_MDT_Site9.dgn 8/15/2022

PHASE II
STAGE 2 - SITE 9
MAINTENANCE OF TRAFFIC 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.		101054	88	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

DENOTES STAGE 3 OBLITERATE DETOUR ROAD

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYP. III LT.

TRAFFIC DRUMS 55' O.C. = 11 EACH

VERTICAL PANELS 55' O.C. = 7 EACH

POB 9100+00.00
POB 900+00.00
9100900

S88°55'17"E

P.I. 902+09.77
Δ = 00°29'16"RT.

CONSTRUCTION PAVEMENT MARKING - DBL YELLOW

CONSTRUCTION PAVEMENT MARKING - WHITE

STA. 903+70.00
BEGIN SITE 9

P.I. 9104+56.82
P.I. 9105+53.64
P.T. 9106+49.29
P.C. 9108+16.63
P.I. 9109+07.76
P.T. 9109+97.92
P.I. 9111+74.91
P.T. 9113+56.10

GUM SLOUGH DITCH

PROP. TCE
TEMP. CONST. LIMITS
PROP. ROW
BERM REQ'D
CONST. LIMITS
EXIST. ROW
FLOOD GATE
DITCH BLOCK
18' TEMP. DRIVE

S88°26'01"E

ROAD CLOSED
(1) R11-2 (48" X 30")
(1) W1-6 (48" X 24")
16' BARR. TYP. III RT.

VERTICAL PANELS 55' O.C. = 5 EACH

TO FIELD

STA. 910+30.00
END SITE 9

DENOTES OBLITERATION OF EXISTING PAVEMENT

POE 9115+48.72
POE 915+36.83

PHASE II
STAGE 3 - SITE 9
MAINTENANCE OF TRAFFIC DETAILS

8/15/2022
R100869_MOT_Site9.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.		101054	89	311

(2) MAINTENANCE OF TRAFFIC DETAILS

DENOTES STAGE I CONSTRUCTION

STA. 309+00.00
BEGIN SITE 3

POB 300+00.00
300
S89°00'08"E
S88°43'01"E
2032
HWY CL PI
230'
POB 302+94.05
P.I. 303+00.02
Δ= 00°16'47"LT.
3302
P.C. 3303+15.00
P.I. 3304+19.78
305
3305
P.T. 3305+23.72
P.C. 3307+19.88
P.I. 3308+24.76
P.T. 3309+28.70
P.C. 3310+82.20
310
315
3315
S88°59'48"E
S76°28'42"E
N78°19'10"E
S89°20'00"E
N68°16'00"E
P.I. 3311+88.28
P.T. 3312+93.49
P.C. 3314+81.23
P.I. 6+37.85
P.I. 8+40.75
P.C. 5+37.61
POB 5+09.43
P.T. 7+14.34
P.C. 7+82.32
NOT 45° PSE
5

ROAD CLOSED (1) RII-2 (48" X 30")
16' BARR. TYP. III RT.

VERTICAL PANELS 55' O.C. = 6 EACH

TRAFFIC DRUMS 55' O.C. = 5 EACH

ROAD CLOSED (1) RII-2 (48" X 30")
16' BARR. TYP. III RT.

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

TRAFFIC DRUMS 55' O.C. = 3 EACH

TRAFFIC DRUMS 55' O.C. = 4 EACH

ROAD CLOSED (1) RII-2 (48" X 30")
16' BARR. TYP. III LT.

ROAD CLOSED (3) RII-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.

PROP. ROW
TEMP. CONST. LIMITS
TEMP. BERM REQ'D.
PROP. TCE
CONST. LIMITS
TEMP. DRIVE
PODD CREEK
PAVED
APPROXIMATE SC S26°27'34"E
2102
LIMITS

STA. 312+00.00
BEGIN SITE 3

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

DENOTES STAGE I CONSTRUCTION

P.I. 3315+89.07
VERTICAL PANELS 55' O.C. = 6 EACH
POE 3318+33.06
S88°41'52"E
P.T. 3316+96.00
POE 317+20.00
F

8/15/2022
R101054_MOT_Site3.dgn

PHASE III
STAGE I - SITE 3
MAINTENANCE OF TRAFFIC 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.		101054	90	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDISON
7-29-22

DENOTES STAGE 2 CONSTRUCTION

STA. 309+00.00
BEGIN SITE 3

STA. 312+00.00
BEGIN SITE 3

(I) WI-6 (48" X 24")
ROAD CLOSED (I) RII-2 (48" X 30")
16' BARR. TYP. III LT.

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

TRAFFIC DRUMS 55' O.C. = 9 EACH

TRAFFIC DRUMS 10' O.C. = 10 EACH

TRAFFIC DRUMS 55' O.C. = 11 EACH

POB 300+00.00
300
S89°00'08"E
S88°43'01"E
2032 HWY CL PI
175' MIN
45 M.P.H. (I) WI3-1 (24" X 24")
(I) W24-1R (48"x48")
POB 3302+94.05
P.I. 303+00.02
Δ= 00°16'47"LT.
3302
P.C. 3303+15.00
P.I. 3304+19.78
305
3305
P.T. 3305+23.72
16' TEMP. DRIVE
S76°28'42"E
TEMP. CONST. LIMITS
TEMP. BERM REQ'D.
PROP. TCE
CONSTRUCTION PAVEMENT MARKING - DBL. YELLOW
P.C. 3307+19.38
P.I. 3308+24.76
P.I. 3309+28.70
P.I. 6+32.85
PROP. ROW
CONST. LIMITS
16'
51.00
310
S88°59'48"E
2102 APPROXIMATE SC S26;27;34;35
3310
S89°08'08"E
16' TEMP. DRIVE
LAWRENCE RD
PODD CREEK
N68°16'00"E
P.I. 3311+88.28
P.C. 3312+93.69
P.I. 9+03.50
CONSTRUCTION PAVEMENT MARKING - WHITE
N78°19'10"E
3315
P.C. 3314+81.23
P.I. 8+40.75
P.C. 7+62.42
P.T. 7+19.84
P.C. 5+37.61
POB 5+09.43
N0°45'39"E
5
PROP. ROW
BERM REQ'D.
PROP. TCE
(I) WI-6 (48" X 24")
ROAD CLOSED (I) RII-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.
16' BARR. TYP. III RT.

DENOTES STAGE 2 CONSTRUCTION

TRAFFIC DRUMS 55' O.C. = 3 EACH
CONSTRUCTION PAVEMENT MARKING - DBL. YELLOW
(I) W24-1L (48"x48")
45 M.P.H. (I) WI3-1 (24" X 24")
PARKING
2033 HWY CL PC
CONSTRUCTION PAVEMENT MARKING - WHITE
175' MIN
POE 317+20.00
PAVED
2035 HWY CL PT
230
F

PHASE III
STAGE 2 - SITE 3
MAINTENANCE OF TRAFFIC DETAILS

8/15/2022
R101054_MDT_Site3.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.		101054	91	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

DENOTES OBLITERATION OF EXISTING PAVEMENT

DENOTES STAGE 3 CONSTRUCTION UNDER TRAFFIC

STA. 309+00.00
BEGIN SITE 3

STA. 312+00.00
BEGIN SITE 3

(1) WI-6 (48" X 24")
ROAD CLOSED
(1) RII-2 (48" X 30")
16' BARR. TYP. III RT.

CONSTRUCTION PAVEMENT MARKING - WHITE

CONSTRUCTION PAVEMENT MARKING - SKIP YELLOW

VERTICAL PANELS 55' O.C. = 6 EACH

TRAFFIC DRUMS 55' O.C. = 7 EACH

TRAFFIC DRUMS 55' O.C. = 5 EACH

(2) RII-2 (48" X 30")
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.

16' BARR. TYP. III LT.

CULTIVATED FIELD

FOLD CREEK

LAWRENCE DITCH

APPROXIMATE SCYS26;27;34;35

BERM REQ'D.

PROP. TCE

PROP. ROW

CONST. LIMITS

POB 300+00.00

POB 3302+94.05

P.I. 303+00.02

Δ = 00°16'47" LT.

P.I. 3304+19.78

P.C. 3303+15.00

P.T. 3305+23.72

P.C. 3307+19.88

P.I. 3308+24.76

P.T. 3309+28.70

P.C. 3310+82.20

P.I. 3311+88.28

P.I. 9+03.50

P.I. 8+40.73

P.I. 6+37.85

POE 317+20.00

PN:7 PD:ARDOT STD. MON. STAMPED PN:7

PN:8 PD:ARDOT STD. MON. STAMPED PN:8

PN:9 PD:ARDOT STD. MON. STAMPED PN:9

PN:10 PD:ARDOT STD. MON. STAMPED PN:10

PN:51 PD:SI20PN

PN:53 PD:SI20PN

2032 HWY CL PI

2033 HWY CL PI

2035 HWY CL PT

2102

S88°43'01"E

S88°59'48"E

S76°28'43"E

S89°08'08"E

N88°16'00"E

N5°59'52"E

FINISHED FLOOR

APPROX LOC

LOWEST UTILITY LINE

GAS TANK

PUMP

TANK

SOUTHWEST BELL

CONC RW MON

PARKING

PAVED

F

R101054_MDT_Site3.dgn

8/15/2022

PHASE III
STAGE 3 - SITE 3
MAINTENANCE OF TRAFFIC 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.		101054	92	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

A — BRIDGE OUT 1.5 MILES AHEAD LOCAL TRAFFIC ONLY — (1) RII-3B (60"x30")

16' BARRICADE TYPE III (RIGHT)

B — BRIDGE OUT 1.0 MILES AHEAD LOCAL TRAFFIC ONLY — (1) RII-3B (60"x30")

16' BARRICADE TYPE III (RIGHT)

C — ROAD CLOSED — (2) RII-2 (48"x30")

8' BARRICADE TYPE III (LEFT)

8' BARRICADE TYPE III (RIGHT)

D — DETOUR — (5) M4-9L (30"x24")

230 — (5) MI-5 (30"x24")

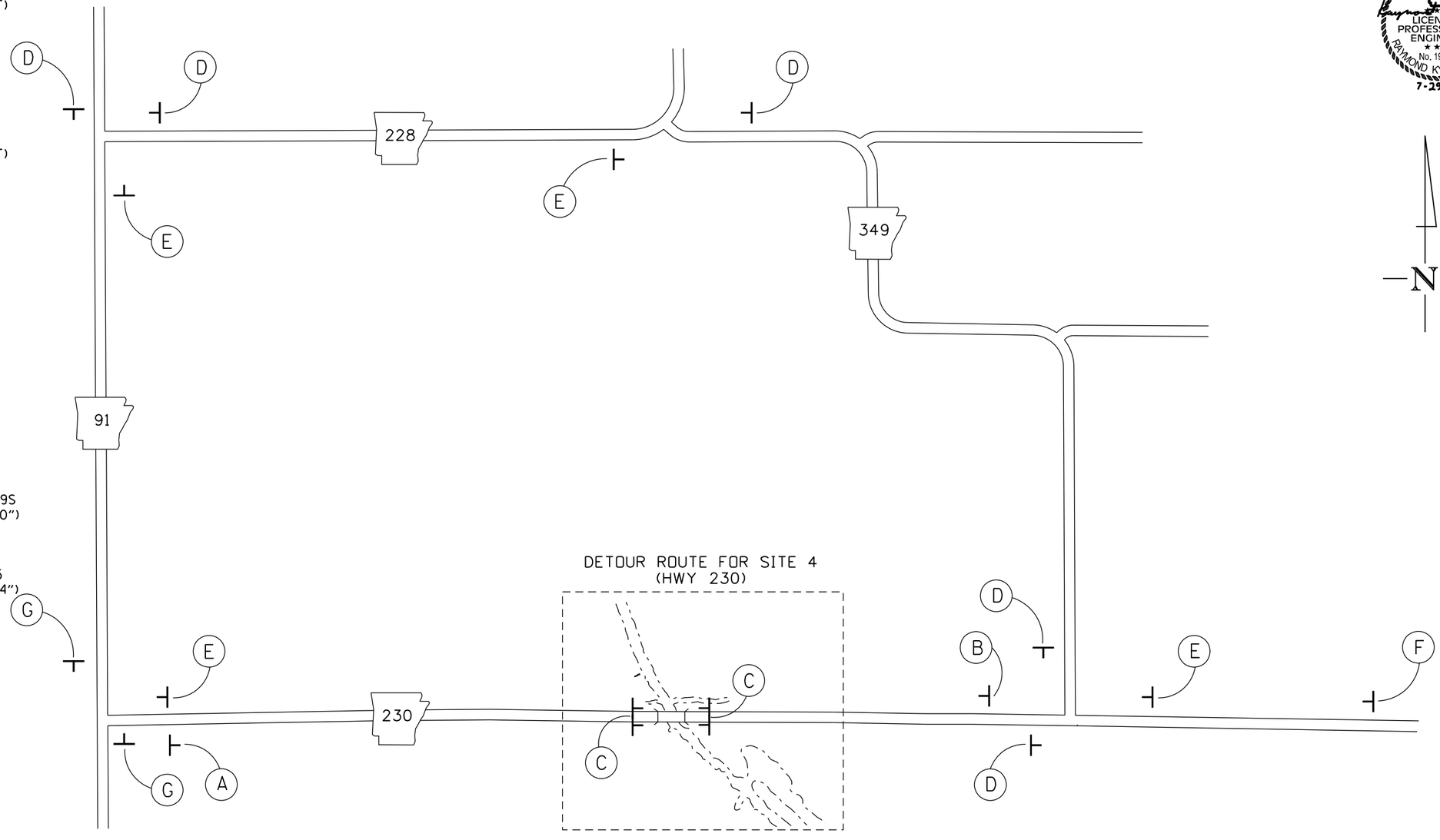
G — DETOUR — (2) M4-9S (30"x30")

230 — (2) MI-5 (30"x24")

E — DETOUR — (4) M4-9R (30"x24")

230 — (4) MI-5 (30"x24")

F — DETOUR AHEAD — (1) W20-2 (48"x48")



R101054_MDT_Site4.dgn 8/15/2022

PHASE III
DETOUR ROUTE - SITE 4
MAINTENANCE OF TRAFFIC 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.		101054	93	311

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★★★
No. 19372
RAYMOND KYLE EIDSON
9-20-22

STA. 501+00.00
BEGIN SITE 5

HWY 230
P.I. 504+84.45
Δ = 3°44'35"LT.
D = 00°30'00"
T = 374.45'
L = 748.64'
P.C. 501+10.00
P.R.C. 508+58.64
e = NO SUPER

HWY 230
P.I. 512+17.16
Δ = 3°35'03"RT.
D = 00°30'00"
T = 358.52'
L = 716.81'

DENOTES STAGE I CONSTRUCTION

ROAD CLOSED (I) RII-2 (48" X 30")
16' BARR. TYP. III LT.
8' BARR. TYP. III RT.
8' BARR. TYP. III LT.

PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
VERTICAL PANELS 55' O.C. = 20 EACH
TRAFFIC DRUMS 55' O.C. = 9 EACH
POB 500+00.00
P.C. 501+10.00
PRC 508+58.64
P.I. 512+17.16
S87°49'42"E 450.62'
S88°01'11"E 628.14'
S87°58'12"E 594.05'

HWY 230
P.I. 527+88.32
Δ = 3°33'12"LT.
D = 00°30'00"
T = 355.45'
L = 710.67'
P.R.C. 524+32.87
P.T. 531+43.54
e = NO SUPER

STA. 530+90.00
END SITE 5

TRAFFIC DRUMS 55' O.C. = 9 EACH
TRAFFIC DRUMS 55' O.C. = 6 EACH
VERTICAL PANELS 55' O.C. = 15 EACH
P.I. 521+45.54
POE 532+53.50
POE 8+63.90
POE 28+00.00
PRC524+32.87
P.I. 527+88.32
S87°58'12"E 406.50'
S88°43'18"E 869.64'
N4°37'29"E

9/20/2022
R101054_MDT_Site5.dgn

PHASE III
STAGE I - SITE 5
MAINTENANCE OF TRAFFIC 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.		101054	94	311

(2) MAINTENANCE OF TRAFFIC DETAILS

DENOTES STAGE 2 CONSTRUCTION

DENOTES OBLITERATION OF EXISTING PAVEMENT

STA. 501+00.00
BEGIN SITE 5

POB 500+00.00

HWY 230
P.I. 504+84.45
Δ = 3°44'35"LT.
D = 00°30'00"
T = 374.45'
L = 748.64'
P.C. 501+10.00
P.R.C. 508+58.64
e = NO SUPER

P.C. 501+10.00

PROP. TCE

BERM REQ'D.

PROP. ROW

CONST. LIMITS

18'

VERTICAL PANELS
55' O.C. = 15 EACH

PRC 508+58.64

(1) WI-6
(48" X 24")

ROAD CLOSED

(1) RII-2
(48" X 30")

16' BARR.
TYP. III RT.

TRAFFIC DRUMS
55' O.C. = 9 EACH

HWY 230
P.I. 512+17.16
Δ = 3°35'03"RT.
D = 00°30'00"
T = 358.52'
L = 716.81'
P.R.C. 508+58.64
P.T. 515+75.45
e = NO SUPER

P.I. 512+17.16

24'

CONSTRUCTION PAVEMENT MARKING - DBL. YELLOW

CONSTRUCTION PAVEMENT MARKING - WHITE

P.I. 504+84.45

(1) WI-4L
(48" X 48")

TRAFFIC DRUMS
10' O.C. = 8 EACH

16'

(1) WI-4R
(48" X 48")

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
9-20-22

P.T. 515+75.45

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

TRAFFIC DRUMS
55' O.C. = 6 EACH

CONST. LIMITS

P.C. 518+32.65

(1) WI-4L
(48" X 48")

P.I. 521+43.83

16'

520

CONSTRUCTION PAVEMENT MARKING - DBL. YELLOW

CONSTRUCTION PAVEMENT MARKING - WHITE

POE 8+63.90

POE 28+00.00

N3°45'59"E

TRAFFIC DRUMS
10' O.C. = 14 EACH

PROP. TCE

N4°37'29"E

PRC524+32.87

TRAFFIC DRUMS
10' O.C. = 10 EACH

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

(1) WI-6
(48" X 24")

ROAD CLOSED
(1) RII-2
(48" X 30")
16' BARR. TYP. III LT.

HWY 230
P.I. 527+88.32
Δ = 3°33'12"LT.
D = 00°30'00"
T = 355.45'
L = 710.67'
P.R.C. 524+32.87
P.T. 531+43.54
e = NO SUPER

DENOTES STAGE 2 CONSTRUCTION

DENOTES OBLITERATION OF EXISTING PAVEMENT

STA. 530+90.00
END SITE 5

525

530

VERTICAL PANELS
55' O.C. = 16 EACH

P.I. 527+88.32

16'

P.T. 531+43.54

(1) WI-4R
(48" X 48")

POE 532+53.50

S88°44'57"E 731.57'

9/20/2022

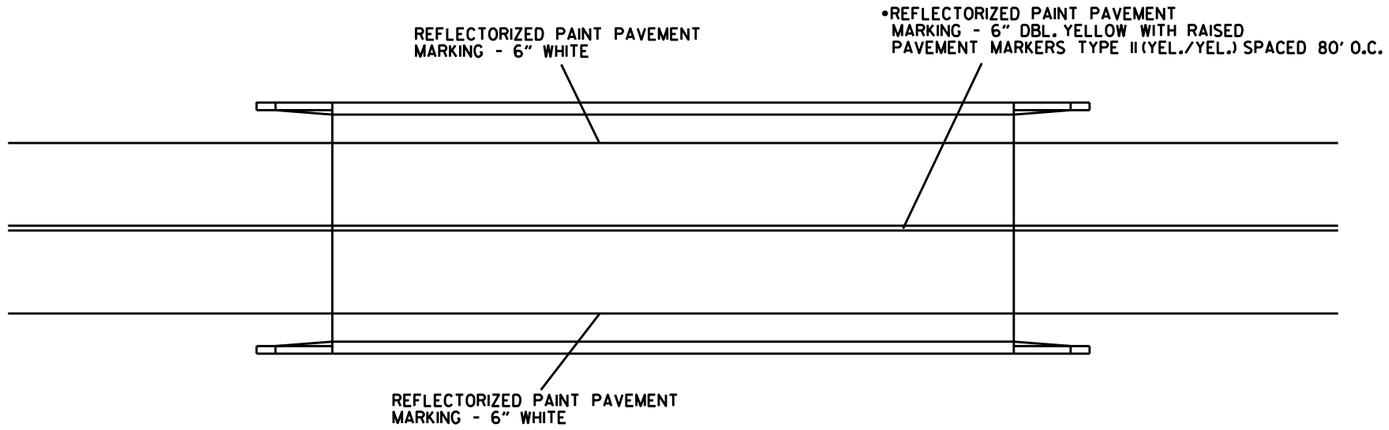
R101054_MDT_Site5.dgn

PHASE III
STAGE 2 - SITE 5
MAINTENANCE OF TRAFFIC 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.		101054	95	311

(2) PERMANENT PAVEMENT MARKING DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



SITE 1 AND 2

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 6400 LIN. FT.
WHITE = 6400 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80' O.C.) = 40 EACH

SITE 3

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 3400 LIN. FT.
WHITE = 3400 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80 O.C.) = 23 EACH

SITE 4

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 2300 LIN. FT.
WHITE = 2300 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80 O.C.) = 15 EACH

SITE 5

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 6380 LIN. FT.
WHITE = 6380 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80 O.C.) = 40 EACH

SITE 6

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 1970 LIN. FT.
WHITE = 1970 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80' O.C.) = 13 EACH

SITE 7

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 1986 LIN. FT.
WHITE = 1986 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80' O.C.) = 13 EACH

SITE 8

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 7678 LIN. FT.
WHITE = 7678 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80 O.C.) = 40 EACH

SITE 9

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 2434 LIN. FT.
WHITE = 2434 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80 O.C.) = 16 EACH

SITE 10

REFLECTORIZED PAINT PAVEMENT MARKING
DBL. YELLOW = 2100 LIN. FT.
WHITE = 2100 LIN. FT.

RAISED PAVEMENT MARKERS TYPE II
(YEL/YEL) (80 O.C.) = 14 EACH

• THE YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT. THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING. CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

PERMANENT PAVEMENT MARKING DETAILS

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	96	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	REFLECTORIZED PAINT PAVEMENT MARKING	
							TYPE II	6"	
							(YELLOW/YELLOW)	WHITE	YELLOW
	LIN. FT.- EACH			LIN. FT.		LIN. FT.	EACH	LIN. FT.	
SITE 1 & 2									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2622			2622					
CONSTRUCTION PAVEMENT MARKINGS	12800				12800				
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			40				40		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			6400					6400	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			6400						6400
SITE 3									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	752			752					
CONSTRUCTION PAVEMENT MARKINGS	6178	6800			12978				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1173					1173			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			23				23		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			3400					3400	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			3400						3400
SITE 4									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			15				15		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			2300					2300	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			2300						2300
SITE 5									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	2719			2719					
CONSTRUCTION PAVEMENT MARKINGS	12760				12760				
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			40				40		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			6380					6380	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			6380						6380
SITE 6									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	1050			1050					
CONSTRUCTION PAVEMENT MARKINGS	2640	3940			6580				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1384					1384			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			13				13		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			1970					1970	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			1970						1970
SITE 7									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	1050			1050					
CONSTRUCTION PAVEMENT MARKINGS	2660	3972			6632				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1306					1306			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			13				13		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			1986					1986	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			1986						1986
SITE 8									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	3849			3849					
CONSTRUCTION PAVEMENT MARKINGS	15356				15356				
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			40				40		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			7678					7678	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			7678						7678
SITE 9									
REMOVAL OF PERMANENT PAVEMENT MARKINGS	1029			1029					
CONSTRUCTION PAVEMENT MARKINGS	3573	4868			8441				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	1372					1372			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			16				16		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			2434					2434	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			2434						2434
SITE 10									
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)			14				14		
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")			2100					2100	
REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")			2100						2100
TOTALS:				**13071**	**75547**	**5325**	**214**	**34648**	**34648**

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

NOTE: THE 6" YELLOW STRIPING QUANTITY HAS BEEN ESTIMATED BASED ON A DOUBLE YELLOW CENTERLINE STRIPE FOR THE ENTIRE PROJECT.
THE PROJECT MUST BE MARKED FOR PASSING/NO PASSING ZONES PRIOR TO THE PLACEMENT OF ANY FINAL STRIPING.
CONTACT THE MAINTENANCE DIVISION AFTER THE FINAL LIFT OF SURFACE COURSE HAS BEEN PLACED TO SCHEDULE THE ZONING OF THE PROJECT.

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	97	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

ADVANCE WARNING SIGNS AND DEVICES (BOX 1 OF 5)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		RIGHT	LEFT	EACH			
	SITE 1 & 2										LIN. FT.					
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	2		2	2	32.0								
W3-5	SPEED REDUCTION	48"x48"	2	2		2	2	32.0								
R2-1	SPEED LIMIT 45	24"x30"	2	2		2	2	10.0								
G20-2	END ROAD WORK	48"x24"	2	2		2	2	16.0								
R11-2	ROAD CLOSED	48"x30"	4	4		4	4	40.0								
W24-1L	DOUBLE REVERSE CURVE LEFT	48"x48"		1		1	1	16.0								
W24-1R	DOUBLE REVERSE CURVE RIGHT	48"x48"		1		1	1	16.0								
R4-1	DO NOT PASS	24"x30"	2	2		2	2	10.0								
W8-1	BUMP	30"x30"	2	2		2	2	12.5								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2		2	2	18.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2		2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS		35	26		35			35							
	TRAFFIC DRUMS		42	43		43				43						
	TYPE III BARRICADE-RT. (8')		4	4		4					32					
	TYPE III BARRICADE-LT. (8')		4	4		4						32				
	TYPE III BARRICADE-RT. (16')		1	1		1					16					
	TYPE III BARRICADE-LT. (16')		1	1		1						16				
SITE 1 & 2 TOTALS:								**362.5**	**35**	**43**	**48**	**48**				**4**
	SITE 3															
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	3	3	3	3	3	48.0								
R2-1	SPEED LIMIT 45	24"x30"	2	2	2	2	2	10.0								
G20-2	END ROAD WORK	48"x24"	3	3	3	3	3	24.0								
R11-2	ROAD CLOSED	48"x30"	6	7	6	7	7	70.0								
W24-1L	DOUBLE REVERSE CURVE LEFT	48"x48"		1		1	1	16.0								
W24-1R	DOUBLE REVERSE CURVE RIGHT	48"x48"		1		1	1	16.0								
W1-6	LARGE ARROW	48"x24"		2	2	2	2	16.0								
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		2		2	2	8.0								
W3-5	SPEED REDUCTION	48"x48"	2	2	2	2	2	32.0								
R4-1	DO NOT PASS	24"x30"	2	2		2	2	10.0								
W8-1	BUMP	30"x30"	2	2	2	2	2	12.5								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	2	18.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2	2	2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS		12		12	12			12							
	TRAFFIC DRUMS		46	45	12	46				46						
	TYPE III BARRICADE-RT. (8')		3	4	2	4					32					
	TYPE III BARRICADE-LT. (8')		3	4	2	4						32				
	TYPE III BARRICADE-RT. (16')		2	1	3	3					48					
	TYPE III BARRICADE-LT. (16')		1	1	1	1						16				
SITE 3 TOTALS:								**440.5**	**12**	**46**	**80**	**48**				**4**

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

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	98	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

ADVANCE WARNING SIGNS AND DEVICES (BOX 2 OF 5)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		RIGHT	LEFT	EACH			
	SITE 4										LIN. FT.					
W20-1	ROAD WORK 1500 FT.	48"x48"	2			2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2			2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2			2	2	32.0								
R11-3B	BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY	60"x30"	2			2	2	25.0								
R11-2	ROAD CLOSED	48"x30"	2			2	2	20.0								
M4-9L	DETOUR LEFT	30"x24"	5			5	5	25.0								
M4-9R	DETOUR RIGHT	30"x24"	4			4	4	20.0								
M4-9S	DETOUR	30"x24"	2			2	2	10.0								
W20-2	DETOUR AHEAD	48"x48"	1			1	1	16.0								
M1-5	STATE ROUTE SIGN	30"x24"	11			11	11	55.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2			2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS															
	TRAFFIC DRUMS															
	TYPE III BARRICADE-RT. (8')		2			2					16					
	TYPE III BARRICADE-LT. (8')		2			2						16				
	TYPE III BARRICADE-RT. (16')		2			2					32					
SITE 4 TOTALS:								**331.0**			**48**	**16**				**4**
	SITE 5															
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	2		2	2	32.0								
R2-1	SPEED LIMIT 45	48"x24"	2	2		2	2	16.0								
G20-2	END ROAD WORK	48"x24"	2	2		2	2	16.0								
R11-2	ROAD CLOSED	48"x30"	4	6		6	6	60.0								
W1-4L	HORIZONTAL ALIGNMENT	48"x48"		2		2	2	32.0								
W1-4R	HORIZONTAL ALIGNMENT	48"x48"		2		2	2	32.0								
W1-6	LARGE ARROW	48"x24"		2		2	2	16.0								
W3-5	SPEED REDUCTION	48"x48"	2	2		2	2	32.0								
R4-1	DO NOT PASS	24"x30"	2	2		2	2	10.0								
W8-1	BUMP	30"x30"	2	2		2	2	12.5								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2		2	2	18.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2		2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS		35	31		35			35							
	TRAFFIC DRUMS		44	43		44				44						
	TYPE III BARRICADE-RT. (8')		2	4		4					32					
	TYPE III BARRICADE-LT. (8')		2	4		4						32				
	TYPE III BARRICADE-RT. (16')		1	1		1					16					
	TYPE III BARRICADE-LT. (16')		1	1		1						16				
SITE 5 TOTALS:								**436.5**	**35**	**44**	**48**	**48**				**4**

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

R101054_TTL_TYP_SCD.dgn 9/20/2022

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.		101054	99	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

ADVANCE WARNING SIGNS AND DEVICES (BOX 3 OF 5)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
											RIGHT	LEFT				
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		LIN. FT.		EACH			
SITE 6																
W20-1	ROAD WORK 1500 FT	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	2	32.0								
R2-1	SPEED LIMIT 40	48"x24"	2	2	2	2	2	16.0								
G20-2	END ROAD WORK	48"x24"	2	2	2	2	2	16.0								
R11-2	ROAD CLOSED	48"x30"	4	4	4	4	4	40.0								
W24-1L	DOUBLE REVERSE CURVE LEFT	48"x48"		1		1	1	16.0								
W24-1R	DOUBLE REVERSE CURVE RIGHT	48"x48"		1		1	1	16.0								
W1-6	LARGE ARROW	48"x24"		2	2	2	2	16.0								
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		2		2	2	8.0								
W1-8	CHEVRON SIGN	18"x24"		16		16	16	48.0								
W3-5	SPEED REDUCTION	48"x48"	2	2	2	2	2	32.0								
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0								
W8-1	BUMP	30"x30"	2	2	2	2	2	12.5								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	2	18.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2	2	2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS		12		12	12			12							
	TRAFFIC DRUMS		5	21	8	21				21						
	TYPE III BARRICADE-RT. (8')		2	2	2	2					16					
	TYPE III BARRICADE-LT. (8')		2	2	2	2						16				
	TYPE III BARRICADE-RT. (16')		1	1	1	1					16					
	TYPE III BARRICADE-LT. (16')		1	1	1	1						16				
SITE 6 TOTALS:								**440.5**	**12**	**21**	**32**	**32**				**4**
SITE 7																
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	2	32.0								
R2-1	SPEED LIMIT 40	48"x24"	2	2	2	2	2	16.0								
G20-2	END ROAD WORK	48"x24"	2	2	2	2	2	16.0								
R11-2	ROAD CLOSED	48"x30"	4	4	4	4	4	40.0								
W24-1L	DOUBLE REVERSE CURVE LEFT	48"x48"		1		1	1	16.0								
W24-1R	DOUBLE REVERSE CURVE RIGHT	48"x48"		1		1	1	16.0								
W1-6	LARGE ARROW	48"x24"		2	2	2	2	16.0								
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		2		2	2	8.0								
W1-8	CHEVRON SIGN	18"x24"		16		16	16	48.0								
W3-5	SPEED REDUCTION	48"x48"	2	2	2	2	2	32.0								
R4-1	DO NOT PASS	24"x30"	2	2		2	2	10.0								
W8-1	BUMP	30"x30"	2	2	2	2	2	12.5								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	2	18.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2	2	2	2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS		12		12	12			12							
	TRAFFIC DRUMS		12	26	12	26				26						
	TYPE III BARRICADE-RT. (8')		2	2	2	2					16					
	TYPE III BARRICADE-LT. (8')		2	2	2	2						16				
	TYPE III BARRICADE-RT. (16')		1	1	1	1					16					
	TYPE III BARRICADE-LT. (16')		1	1	1	1						16				
SITE 7 TOTALS:								**440.5**	**12**	**26**	**32**	**32**				**4**

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

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	100	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

ADVANCE WARNING SIGNS AND DEVICES (BOX 4 OF 5)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
											RIGHT	LEFT				
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		LIN. FT.		EACH			
	SITE 8															
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2		2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	3	3		3	3	48.0								
R2-1	SPEED LIMIT 45	48"x24"	2	2		2	2	16.0								
G20-2	END ROAD WORK	48"x24"	3	3		3	3	24.0								
R11-2	ROAD CLOSED	48"x30"	4	4		4	4	40.0								
W1-4L	HORIZONTAL ALIGNMENT	48"x48"		2		2	2	32.0								
W1-4R	HORIZONTAL ALIGNMENT	48"x48"		2		2	2	32.0								
W1-6	LARGE ARROW	48"x24"		2		2	2	16.0								
	TEMPORARY IMPACT ATTENUATION BARRIER		2			2	2						2			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	2		2	2							2		
	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)			2		2	2								2	
	VERTICAL PANELS		37	26		37			37							
	TRAFFIC DRUMS		54	56		56				56						
W3-5	SPEED REDUCTION	48"x48"	2	2		2	2	32.00								
R4-1	DO NOT PASS	24"x30"	2	2		2	2	10.00								
W8-1	BUMP	30"x30"	2	2		2	2	12.50								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2		2	2	18.00								
SPECIAL	CONSTRUCTION PROJECT INFORMATON SIGN	96"x48"	2	2		2	2	64.00								
	CONSTRUCTION PROJECT INFORMATON SIGN UPDATE					4										4
	TYPE III BARRICADE-RT. (8')		2	2		2					16					
	TYPE III BARRICADE-LT. (8')		2	2		2						16				
	TYPE III BARRICADE-RT. (16')		1	1		1					16					
	TYPE III BARRICADE-LT. (16')		1	1		1						16				
SITE 8 TOTALS:								**440.5**	**37**	**56**	**32**	**32**	**2**	**2**	**2**	**4**
	SITE 9															
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0								
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	2	32.0								
R2-1	SPEED LIMIT 45	48"x24"	2	2	2	2	2	16.0								
G20-2	END ROAD WORK	48"x24"	2	2	2	2	2	16.0								
R11-2	ROAD CLOSED	48"x30"	2	5	2	5	5	50.0								
W24-1L	DOUBLE REVERSE CURVE LEFT	48"x48"		1		1	1	16.0								
W24-1R	DOUBLE REVERSE CURVE RIGHT	48"x48"		1		1	1	16.0								
W1-6	LARGE ARROW	48"x24"		5	2	5	5	40.0								
W13-1	SPEED LIMIT (ADVISORY)	24"x24"		2		2	2	8.0								
W1-8	CHEVRON SIGN	18"x24"		16		16	16	48.0								
W3-5	SPEED REDUCTION	48"x48"	2	2	2	2	2	32.0								
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0								
W8-1	BUMP	30"x30"	2	2	2	2	2	12.5								
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	2	2	2	2	2	18.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATON SIGN	96"x48"	2	2	2	2	2	64.0								
	CONSTRUCTION PROJECT INFORMATON SIGN UPDATE					4										4
	VERTICAL PANELS		13		12	13			13							
	TRAFFIC DRUMS		13	44	11	44				44						
	TYPE III BARRICADE-RT. (8')			3		3					24					
	TYPE III BARRICADE-LT. (8')			3		3						24				
	TYPE III BARRICADE-RT. (16')		1	1	1	1					16					
	TYPE III BARRICADE-LT. (16')		1	1	1	1						16				
SITE 9 TOTALS:								**474.5**	**13**	**44**	**40**	**40**				**4**

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

R101054_TTL_TYP_SCD.dgn 9/20/2022

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.		101054	101	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
9-20-22

ADVANCE WARNING SIGNS AND DEVICES (BOX 5 OF 5)

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	TEMP. IMPACT ATTEN.BARR. (RELOCATION)	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE
											RIGHT	LEFT				
			LIN. FT. - EACH				NO.	SQ. FT.	EACH		LIN. FT.		EACH			
	SITE 10															
W20-1	ROAD WORK 1500 FT.	48"x48"	2			2	2	32.0								
W20-1	ROAD WORK 1000 FT.	48"x48"	2			2	2	32.0								
W20-1	ROAD WORK 500 FT.	48"x48"	2			2	2	32.0								
R11-3B	BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY	60"x30"	2			2	2	25.0								
R11-2	ROAD CLOSED	48"x30"	2			2	2	20.0								
M4-9L	DETOUR LEFT	30"x24"	4			4	4	20.0								
M4-9R	DETOUR RIGHT	30"x24"	5			5	5	25.0								
M4-9S	DETOUR	30"x24"	2			2	2	10.0								
W20-2	DETOUR AHEAD	48"x48"	1			1	1	16.0								
M1-5	STATE ROUTE SIGN	30"x24"	11			11	11	55.0								
M3-2	DIRECTION SIGN EAST	24"x12"	3			3	3	6.0								
M3-4	DIRECTION SIGN WEST	24"x12"	1			1	1	2.0								
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	96"x48"	2			2	2	64.0								
	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE					4										4
	VERTICAL PANELS															
	TRAFFIC DRUMS															
	TYPE III BARRICADE-RT. (8')		2			2					16					
	TYPE III BARRICADE-LT. (8')		2			2						16				
	TYPE III BARRICADE-RT. (16')		2			2					32					
SITE 10 TOTALS:								**339.0**			**48**	**16**				**4**
SUBTOTALS (SITE 1 & 2)								**362.5**	**35**	**43**	**48**	**48**				**4**
SUBTOTALS (SITE 3)								**440.5**	**12**	**46**	**80**	**48**				**4**
SUBTOTALS (SITE 4)								**331.0**			**48**	**16**				**4**
SUBTOTALS (SITE 5)								**436.5**	**35**	**44**	**48**	**48**				**4**
SUBTOTALS (SITE 6)								**440.5**	**12**	**21**	**32**	**32**				**4**
SUBTOTALS (SITE 7)								**440.5**	**12**	**26**	**32**	**32**				**4**
SUBTOTALS (SITE 8)								**440.5**	**37**	**56**	**32**	**32**	**2**	**2**	**2**	**4**
SUBTOTALS (SITE 9)								**474.5**	**13**	**44**	**40**	**40**				**4**
SUBTOTALS (SITE 10)								**339.0**			**48**	**16**				**4**
JOB TOTALS:								**3705.5**	**156**	**280**	**408**	**312**	**2**	**2**	**2**	**36**

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

R101054_TTL_TYP_SCD.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	102	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT			COMPACTED EMBANKMENT (SPECIAL)	DUMPED RIPRAP	FILTER BLANKET
				NORM.	SM-2	TOTAL			
			CU. YD.						SQ. YDS.
SITE 1 & 2									
101+00	131+00	STAGE 1-MAIN LANES	3653	6136	11471	17607	4467	714	1861
101+00	131+00	STAGE 2-MAIN LANES	2985	315	353	668	117		
ENTIRE	SITE	APPROACHES		775		775			
ENTIRE	SITE	BRIDGE EXCAVATION	60						
SITE 3									
3303+15	3316+96	STAGE 1-MAIN LANES - DETOUR	1676	3382		3382			
5+35.61	9+50.00	STAGE 1 - CO. RD. 745	1755	424		424			
309+00	312+00	STAGE 2-MAIN LANES	1442	550		550			
8+50.00	9+89.00	STAGE 2 - CO. RD. 745	383	173		173			
3303+15	3316+96	STAGE 3-MAIN LANES - DETOUR OBLITERATION	3201	1528		1528			
ENTIRE	SITE	APPROACHES		125		125			
ENTIRE	SITE	TEMPORARY APPROACHES		345		345			
310+48.00		CHANNEL CHANGE	584						
SITE 4									
405+50	415+00	STAGE 1-MAIN LANES	1997	2213	636	2849		123	264
405+50	415+00	APPROACHES		450		450			
410+24.54		CHANNEL CHANGE	390						
SITE 5									
501+00	530+90	STAGE 1-MAIN LANES	3222	15130		15130	2661		
501+00	530+90	STAGE 2-MAIN LANES	4939	319		319	176		
ENTIRE	SITE	APPROACHES	199	2136		2136			
ENTIRE	SITE	BRIDGE EXCAVATION	1270						
SITE 6									
6008+27.92	9018+33.99	STAGE 1-MAIN LANES - DETOUR	699	5406	25	5431		214	443
609+70	617+00	STAGE 2-MAIN LANES	1354	5	1442	1447		805	517
6008+27.92	9018+33.99	STAGE 3-MAIN LANES - DETOUR OBLITERATION	5023	868		868			
613+21.00		CHANNEL CHANGE	360						
SITE 7									
6999+48.99	7009+63.19	STAGE 1-MAIN LANES - DETOUR	1318	5539		5539			
701+20	707+95	STAGE 2-MAIN LANES	1545	1091	1144	2235		714	504
6999+48.99	7009+63.19	STAGE 3-MAIN LANES - DETOUR OBLITERATION	5106	1194		1194			
ENTIRE	SITE	APPROACHES		5		5			
ENTIRE	SITE	TEMPORARY APPROACHES		5		5			
704+44.00		CHANNEL CHANGE	378						
SITE 8									
801+00	831+00	STAGE 1-MAIN LANES	8171	19639		19639			
801+00	831+00	STAGE 2-MAIN LANES	3808	931		931			
10+11.00	16+50.00	STAGE 2 - CO. RD. 145	366	1234		1234			
ENTIRE	SITE	APPROACHES	495	7882		7882			
		BRIDGE EXCAVATION	1880						
SITE 9									
9101+19.81	9113+56.10	STAGE 1-MAIN LANES - DETOUR	1972	5709		5709			
903+70	910+30	STAGE 2-MAIN LANES	2310	1651		1651			
9101+19.81	9113+56.10	STAGE 3-MAIN LANES - DETOUR OBLITERATION	6280	1091		1091			
ENTIRE	SITE	APPROACHES		100		100			
ENTIRE	SITE	TEMPORARY APPROACHES		415		415			
906+90.00		CHANNEL CHANGE	721						
SITE 10									
1001+25	1009+75	STAGE 1-MAIN LANES	4968	2176		2176			
ENTIRE	SITE	APPROACHES		895		895			
1005+95.00		CHANNEL CHANGE	536						
TOTALS:			**75046**	**89837**	**15071**	**104908**	**7421**	**2570**	**3585**

STONE BACKFILL

STATION	STATION	LOCATION / DESCRIPTION	STONE BACKFILL
			TON
SITE 1 & 2			
108+00	110+52	HWY. 230	3599.74
111+72	114+00	HWY. 230	3740.27
119+20	121+00	HWY. 230	6511.30
122+19	125+00	HWY. 230	7788.42
SITE 4			
411+00	413+00	HWY. 230	650.20
SITE 6			
609+70	617+00	HWY. 230	8263.19
SITE 7			
701+00	708+00	HWY. 230	4703.98
TOTAL:			**35257.10**

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE	1000
		DIRECTED BY THE ENGINEER	
TOTAL:			**1000**

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

R101054_TTL_TYP_SCD.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	103	311
				(2) QUANTITIES				

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

EROSION CONTROL MATTING

STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
SITE 1 & 2				
101+00.00	105+32.00	HWY. 230 LT.	432.00	384.00
105+87.00	110+43.00	HWY. 230 LT.	456.00	405.33
115+87.00	116+65.00	HWY. 230 LT.	78.00	69.33
117+15.00	117+85.00	HWY. 230 LT.	70.00	62.22
122+19.00	124+00.00	HWY. 230 LT.	181.00	160.89
127+00.00	131+00.00	HWY. 230 LT.	400.00	355.56
101+00.00	103+00.00	HWY. 230 RT.	200.00	177.78
115+25.00	120+90.00	HWY. 230 RT.	565.00	502.22
129+00.00	131+00.00	HWY. 230 RT.	200.00	177.78
SITE 3				
309+27.00	310+37.00	HWY. 230 LT.	110.00	97.78
311+11.00	312+00.00	HWY. 230 LT.	89.00	79.11
309+00.00	309+87.00	HWY. 230 RT.	87.00	77.33
310+58.00	310+67.00	HWY. 230 RT.	9.00	8.00
311+75.00	312+00.00	HWY. 230 RT.	25.00	22.22
06+00.00	09+00.00	CO. RD. 745 LT.	300.00	266.67
06+00.00	09+68.00	CO. RD. 745 RT.	368.00	327.11
SITE 4				
405+50.00	409+76.00	HWY. 230 LT.	426.00	378.67
410+21.00	411+53.00	HWY. 230 LT.	132.00	117.33
412+05.00	414+00.00	HWY. 230 LT.	195.00	173.33
405+50.00	406+56.00	HWY. 230 RT.	106.00	94.22
407+00.00	410+25.00	HWY. 230 RT.	325.00	288.89
410+91.00	413+21.00	HWY. 230 RT.	230.00	204.44
413+73.00	415+00.00	HWY. 230 RT.	127.00	112.89
SITE 5				
501+00.00	505+50.00	HWY. 230 LT.	450.00	400.00
506+06.00	512+00.00	HWY. 230 LT.	594.00	528.00
512+75.00	516+18.00	HWY. 230 LT.	343.00	304.89
518+19.00	521+55.00	HWY. 230 LT.	336.00	298.67
522+02.00	531+00.00	HWY. 230 LT.	898.00	798.22
501+00.00	508+34.00	HWY. 230 RT.	734.00	652.44
518+19.00	521+26.00	HWY. 230 RT.	307.00	272.89
526+00.00	527+85.00	HWY. 230 RT.	185.00	164.44
528+28.00	529+35.00	HWY. 230 RT.	107.00	95.11
529+80.00	530+00.00	HWY. 230 RT.	20.00	17.78
SITE 6				
609+70.00	612+86.00	HWY. 230 LT.	316.00	280.89
613+55.00	616+00.00	HWY. 230 LT.	245.00	217.78
610+00.00	612+86.00	HWY. 230 RT.	286.00	254.22
613+55.00	616+00.00	HWY. 230 RT.	245.00	217.78
SITE 7				
701+20.00	704+09.00	HWY. 230 LT.	289.00	256.89
704+78.00	707+00.00	HWY. 230 LT.	222.00	197.33
702+00.00	704+09.00	HWY. 230 RT.	209.00	185.78
704+78.00	706+00.00	HWY. 230 RT.	122.00	108.44
SITE 8				
801+00.00	804+00.00	HWY. 230 RT.	300.00	266.67
810+00.00	815+10.00	HWY. 230 RT.	510.00	453.33
817+00.00	818+00.00	HWY. 230 RT.	100.00	88.89
828+00.00	828+45.00	HWY. 230 RT.	45.00	40.00
828+86.00	829+95.00	HWY. 230 RT.	109.00	96.89
830+36.00	831+00.00	HWY. 230 RT.	64.00	56.89
SITE 9				
903+00.00	906+50.00	HWY. 230 LT.	350.00	311.11
907+27.00	910+30.00	HWY. 230 LT.	303.00	269.33
904+00.00	906+50.00	HWY. 230 RT.	250.00	222.22
907+27.00	908+60.00	HWY. 230 RT.	133.00	118.22
907+66.00	910+30.00	HWY. 230 RT.	264.00	234.67
SITE 10				
1001+25.00	1005+70.00	HWY. 230 LT.	445.00	395.56
1006+22.00	1009+75.00	HWY. 230 LT.	353.00	313.78
1001+25.00	1005+70.00	HWY. 230 RT.	445.00	395.56
1006+22.00	1009+75.00	HWY. 230 RT.	353.00	313.78
TOTAL:				**13371.55**

NOTE: AVERAGE WIDTH = 8'-0"

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
SITE 1 AND 2		
100+51	8" x 23.5' SIDE DRAIN	1
104+42	18" x 21' SIDE DRAIN	1
104+80	15" x 53.5' SIDE DRAIN	1
105+60	24" x 54.5' SIDE DRAIN	1
116+90	18" x 21' SIDE DRAIN	1
119+50	15" x 24.5' SIDE DRAIN	1
125+82	36" x 28' SIDE DRAIN	1
SITE 3		
305+07	24" x 24' SIDE DRAIN	1
309+05	24" x 48.5' SIDE DRAIN	1
6+32	36" x 31' CROSS DRAIN	1
9+50	30" x 42' CROSS DRAIN	1
SITE 4		
406+78	24" x 27.5' SIDE DRAIN	1
411+79	24" x 28' SIDE DRAIN	1
411+79	15" x 23.5' SIDE DRAIN	1
412+24	12" x 21.5' SIDE DRAIN	1
413+47	36" x 35.5' SIDE DRAIN	1
SITE 5		
505+78	32" x 30' SIDE DRAIN	1
514+60	36" x 26' SIDE DRAIN	1
519+80	36" x 36.5' SIDE DRAIN	1
520+31	24" x 64.3' CROSS DRAIN	1
520+31	16" x 20' SIDE DRAIN	1
521+78	24" x 77.3' SIDE DRAIN	1
528+08	18" x 27' SIDE DRAIN	1
529+57	18" x 28' SIDE DRAIN	1
530+32	18" x 28' SIDE DRAIN	1
16+55	36" x 51.1' CROSS DRAIN	1
SITE 8		
814+50	87' SIDE DRAIN	1
814+50	36" x 96' SIDE DRAIN	2
828+57	18" x 29' SIDE DRAIN	1
828+67	18" x 29' SIDE DRAIN	1
830+16	18" x 25' SIDE DRAIN	1
830+20	18" x 28' SIDE DRAIN	1
SITE 9		
906+36	48" x 40' SIDE DRAIN	1
906+64	18" x 40' SIDE DRAIN	1
907+38	30" x 41' SIDE DRAIN	1
908+42	24" x 31' SIDE DRAIN	1
SITE 10		
1004+10	48" x 28' SIDE DRAIN	1
1004+15	36" x 27' SIDE DRAIN	1
1007+23	18" x 25' SIDE DRAIN	1
1007+85	48" x 30' SIDE DRAIN	1
1007+88	48" x 28' SIDE DRAIN	1
TOTAL:		**42**

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

REMOVAL OF EXISTING BRIDGE STRUCTURE

STATION	STATION	LOCATION	LUMP SUM
310+25	310+75	SITE 3	1.00
410+08	410+38	SITE 4	1.00
612+96	613+46	SITE 6	1.00
704+15	704+73	SITE 7	1.00
906+40	907+38	SITE 9	1.00
1005+60	1006+21	SITE 10	1.00

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	WINGWALLS	GUARDRAIL
			EACH	LIN. FT.
110+56	111+57	RT. OF HWY. 230 SITE 1		101
110+57	111+58	LT. OF HWY. 230 SITE 1		101
120+89	121+97	LT. OF HWY 230 SITE 2		108
120+93	122+01	RT. OF HWY 230 SITE 2		108
310+25	310+76	RT. OF HWY. 230 SITE 3		51
310+25	310+76	LT. OF HWY. 230 SITE 3		51
409+50	410+82	LT. OF HWY. 230 SITE 4		132
409+65	410+97	RT. OF HWY 230 SITE 4		132
508+34		LT. OF HWY. 230 SITE 5	1	
515+34	516+43	LT. OF HWY. 230 SITE 5		109
515+34	516+43	RT. OF HWY 230 SITE 5		109
517+83	518+34	LT. OF HWY. 230 SITE 5		51
517+83	518+10	RT. OF HWY 230 SITE 5		27
612+45	613+97	LT. OF HWY. 230 SITE 6		152
612+45	613+97	RT. OF HWY 230 SITE 6		152
703+64	704+15	LT. OF HWY. 230 SITE 7		51
703+64	704+15	RT. OF HWY 230 SITE 7		51
704+73	705+24	LT. OF HWY. 230 SITE 7		51
704+73	705+24	RT. OF HWY 230 SITE 7		51
815+08	815+33	LT. OF HWY. 230 SITE 8		25
815+08	815+33	RT. OF HWY 230 SITE 8		25
817+04	817+55	LT. OF HWY. 230 SITE 8		51
817+04	817+55	RT. OF HWY 230 SITE 8		51
905+89	906+40	LT. OF HWY. 230 SITE 9		51
905+89	906+40	RT. OF HWY 230 SITE 9		51
907+39	907+90	LT. OF HWY. 230 SITE 9		51
907+39	907+90	RT. OF HWY 230 SITE 9		51
1005+10	1005+61	LT. OF HWY. 230 SITE 10		51
1005+10	1005+61	RT. OF HWY 230 SITE 10		51
1006+22	1006+73	LT. OF HWY. 230 SITE 10		51
1006+22	1006+73	RT. OF HWY 230 SITE 10		51
TOTALS:			**1**	**2148**

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS.

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	104	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

EROSION CONTROL (BOX 1 OF 2)

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL											
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	PIPE FOR SLOPE DRAINS SLOPE DRAIN (E-12)	DUMPED RIPRAP	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU.YD.	CU. YD.
SITES 1 & 2																			
ENTIRE	SITE	CLEARING AND GRUBBING						6.66	6.66	135.9			36	4716					187
ENTIRE	SITE	STAGE 1	3.54	7.08	3.54	361.1	3.54	0.65	0.65	13.3			18						6
ENTIRE	SITE	STAGE 2	2.93	5.86	2.93	298.9	2.93												
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.62	3.24	1.62	165.2	1.62	1.83	1.83	37.3	45	110	36	1179	80	2	200	200	266
SITE 3																			
ENTIRE	SITE	CLEARING AND GRUBBING						3.45	3.45	70.4			12	2066					81
ENTIRE	SITE	STAGE 1						1.10	1.10	22.4			24						8
ENTIRE	SITE	STAGE 2	0.23	0.46	0.23	23.5	0.23	0.26	0.26	5.3			9						3
ENTIRE	SITE	STAGE 3	2.63	5.26	2.63	268.3	2.63												
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.72	1.44	0.72	73.4	0.72	1.13	1.13	23.1	36	88	12	517			200	200	231
SITE 4																			
ENTIRE	SITE	CLEARING AND GRUBBING						2.30	2.30	46.9			12	2344					91
ENTIRE	SITE	STAGE 1	2.26	4.52	2.26	230.5	2.26						12						4
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.57	1.14	0.57	58.1	0.57	0.58	0.58	11.8	18	44	12	586			200	200	230
SITE 5																			
ENTIRE	SITE	CLEARING AND GRUBBING						6.66	6.66	135.9			48	5734					228
ENTIRE	SITE	STAGE 1	4.87	9.74	4.87	496.7	4.87						33						11
ENTIRE	SITE	STAGE 2	2.58	5.16	2.58	263.2	2.58						9						7
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.86	3.72	1.86	189.7	1.86	1.74	1.74	35.5	81	198	48	1434	80	2	200	200	287
SITE 6																			
ENTIRE	SITE	CLEARING AND GRUBBING						2.05	2.05	41.8			18	2231					89
ENTIRE	SITE	STAGE 1						1.43	1.43	29.2			12						4
ENTIRE	SITE	STAGE 2						0.24	0.24	4.9			18						6
ENTIRE	SITE	STAGE 3	2.67	5.34	2.67	272.3	2.67						18						6
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.67	1.34	0.67	68.3	0.67	1.03	1.03	21.0	54	132	18	558			200	200	239
TOTALS:			**27.15**	**54.30**	**27.15**	**2769.2**	**27.15**	**31.11**	**31.11**	**634.7**	**234**	**572**	**405**	**21365**	**160**	**4**	**1000**	**1000**	**1984**

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
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./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 ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	105	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

EROSION CONTROL (BOX 2 OF 2)

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL											
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	SILT FENCE	PIPE FOR SLOPE DRAINS	DUMPED RIPRAP	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
											(E-1)	(E-5)	(E-6)	(E-11)	SLOPE DRAIN (E-12)		(E-14)		
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU.YD.	CU.YD.	CU.YD.	CU. YD.
SITE 7																			
ENTIRE	SITE	CLEARING AND GRUBBING						1.92	1.92	39.2			18	2157					86
ENTIRE	SITE	STAGE 1						1.28	1.28	26.1			12						4
ENTIRE	SITE	STAGE 2						0.76	0.76	15.5			15						5
ENTIRE	SITE	STAGE 3	2.54	5.08	2.54	259.1	2.54						9						
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.64	1.28	0.64	65.3	0.64	0.99	0.99	20.2	36	88	18	540			200	200	234
SITE 8																			
ENTIRE	SITE	CLEARING AND GRUBBING						9.82	9.82	200.3			51	4244					174
ENTIRE	SITE	STAGE 1	5.18	10.36	5.18	528.4	5.18	0.76	0.76	15.5			21						7
ENTIRE	SITE	STAGE 2	2.36	4.72	2.36	240.7	2.36						9						3
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			1.89	3.78	1.89	192.8	1.89	2.65	2.65	54.1	63	154	51	1057	80	2	200	200	270
SITE 9																			
ENTIRE	SITE	CLEARING AND GRUBBING						2.14	2.14	43.7			33	1789					77
ENTIRE	SITE	STAGE 1						0.99	0.99	20.2			6						2
ENTIRE	SITE	STAGE 2						0.73	0.73	14.9			9						3
ENTIRE	SITE	STAGE 3	2.49	4.98	2.49	254.0	2.49						6	447					19
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.62	1.24	0.62	63.2	0.62	0.97	0.97	19.8	45	110	33	559			200	200	242
SITE 10																			
ENTIRE	SITE	CLEARING AND GRUBBING						3.24	3.24	66.1			21	2476					99
ENTIRE	SITE	STAGE 1	3.01	6.02	3.01	307.0	3.01						12						4
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.75	1.50	0.75	76.5	0.75	0.81	0.81	16.5	27	66	21	619			200	200	236
BLOCK TOTALS:			**19.48**	**38.96**	**19.48**	**1987.0**	**19.48**	**27.06**	**27.06**	**552.1**	**171**	**418**	**345**	**13888**	**80**	**2**	**800**	**800**	**1465**
BLOCK 1 TOTALS			27.15	54.30	27.15	2769.2	27.15	31.11	31.11	634.7	234	572	405	22532	160	4	1000	1000	2028
BLOCK 2 TOTALS			19.48	38.96	19.48	1987.0	19.48	27.06	27.06	552.1	171	418	345	13888	80	2	800	800	1465
JOB TOTALS:			**46.63**	**93.26**	**46.63**	**4756.2**	**46.63**	**58.17**	**58.17**	**1186.8**	**405**	**990**	**750**	**36420**	**240**	**6**	**1800**	**1800**	**3493**

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

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 ESTIMATED.
SEE SECTION 104.03 OF THE STD. SPECS.

R101054_TTL_TYP_SCD.dgn 9/20/2022

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.		101054	106	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
108+21.10	110+39.85	RT. SIDE	150	1	1
109+01.38	110+45.13	LT. SIDE	75	1	1
111+79.87	113+23.62	RT. SIDE	75	1	1
111+85.15	114+03.90	LT. SIDE	150	1	1
118+66.71	120+85.46	RT. SIDE	150	1	1
119+49.75	120+93.50	LT. SIDE	75	1	1
122+25.50	123+69.25	RT. SIDE	75	1	1
122+33.54	124+52.29	LT. SIDE	150	1	1
513+57.01	515+75.76	RT. SIDE	150	1	1
514+49.33	515+93.08	LT. SIDE	75	1	1
518+20.92	519+64.67	RT. SIDE	75	1	1
518+38.24	520+56.99	LT. SIDE	150	1	1
812+81.25	815+00.00	RT. SIDE	150	1	1
813+56.25	815+00.00	LT. SIDE	75	1	1
817+45.00	818+88.75	RT. SIDE	75	1	1
817+45.00	819+63.75	LT. SIDE	150	1	1
TOTALS:			1800	16	16

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	190
ENGINEER	
TOTAL:	190

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
* ENTIRE PROJECT TO BE USED IF AND			5000	40
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			5000	40

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

SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC		FEET				
101+39	35	53	39.69	91	4	32.56	7.25' LT.	0-5	39	25	A-6(13)	GRAY/BROWN
105+44	35	53	39.47	91	4	27.66	9.00' LT.	0-5	28	13	A-6(5)	TAN
115+90	35	53	39.13	91	4	14.99	25.00' LT.	0-5	50	32	A-7-6(25)	BROWN
117+40	35	53	39.03	91	4	13.13	26.50' LT.	0-5	34	20	A-6(13)	TAN
125+76	35	53	38.16	91	4	3.74	12.50' LT.	0-5	30	14	A-6(2)	BROWN
129+88	35	53	37.69	91	3	58.78	8.00' LT.	0-5	35	19	A-6(7)	TAN/GRAY
305+10	35	53	52.10	90	57	48.30	18.00' RT.	0-5	47	32	A-7-6(31)	TAN
315+00	35	53	51.80	90	57	36.80	18.50' RT.	0-5	34	19	A-6(10)	TAN
405+85	35	54	41.35	90	55	8.15	9.00' LT.	0-5	23	7	A-4(1)	TAN
413+99	35	54	40.92	90	54	58.15	8.50' RT.	0-5	30	15	A-6(9)	TAN
504+75	35	54	38.68	90	53	41.85	19.00' LT.	0-5	29	14	A-6(2)	TAN
511+14	35	54	38.56	90	53	36.01	27.50' LT.	0-5	25	9	A-4(2)	TAN
523+82	35	54	38.11	90	53	21.72	34.00' LT.	0-5	33	19	A-6(11)	TAN
528+74	35	54	37.73	90	53	15.73	13.00' LT.	0-5	29	15	A-6(2)	BROWN
608+95	35	54	36.88	90	52	43.12	15.50' LT.	0-5	25	10	A-4(0)	TAN
613+14	35	54	37.25	90	52	38.06	68.00' LT.	0-5	34	21	A-6(9)	TAN
616+85	35	54	36.62	90	52	33.62	16.50' LT.	0-5	26	13	A-2-6(0)	TAN
700+85	35	54	36.43	90	52	29.91	9.50' LT.	0-5	30	18	A-6(6)	BROWN
704+37	35	54	36.86	90	52	25.66	66.00' LT.	0-5	32	20	A-6(6)	TAN
707+75	35	54	36.24	90	52	21.61	16.00' LT.	0-5	29	17	A-6(3)	BROWN
819+74	35	54	35.08	90	51	42.72	29.00' LT.	0-5	31	17	A-6(8)	TAN
828+85	35	54	34.83	90	51	40.25	11.50' LT.	0-5	34	19	A-6(10)	BROWN/GRAY
905+67	35	54	33.89	90	50	52.36	68.50' LT.	0-5	30	18	A-6(5)	TAN

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.

MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
	EACH	
HWY. 230 - SITE 1	1	1
HWY. 230 - SITE 3	1	1
HWY. 230 - SITE 5	2	2
TOTALS:	4	4

AUTOMATIC FLOODGATE

STATION	LOCATION	24"	30"	36"	48"
		EACH			
SITE 8					
812+10	RT. OF HWY 230			1	
813+10	LT. OF HWY. 230			2	
819+10	RT. OF HWY 230	1			
820+10	LT. OF HWY. 230		1		
SITE 9					
906+10	RT. OF HWY 230				1
906+10	LT. OF HWY. 230				1
907+66	RT. OF HWY. 230		1		
TOTALS:		1	2	3	2

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	107	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL)	APPROACH SLABS TYPE SPECIAL	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
SITE 1						
110+13.35	110+49.85	RT. HWY. 230	15.18		863	
110+17.93	110+55.13	LT. HWY. 230	15.18		863	
110+14.05	110+52.49	HWY. 230		51.29	5964	25.19
111+72.51	112+10.95	HWY. 230		51.29	5964	25.19
111+69.87	112+07.07	RT. HWY. 230	15.18		863	
111+75.15	112+11.65	LT. HWY. 230	15.18		863	
SITE 2						
120+58.97	120+95.47	RT. HWY. 230	15.18		864	
120+65.93	121+03.50	LT. HWY. 230	15.18		864	
120+60.04	120+99.48	HWY. 230		52.28	6094	26.05
122+19.52	122+58.97	HWY. 230		52.28	6094	26.05
122+15.50	122+53.07	RT. HWY. 230	15.18		864	
122+23.54	122+60.00	LT. HWY. 230	15.18		864	
SITE 5						
515+49.22	515+85.76	RT. HWY. 230	15.66		901	
515+64.28	516+03.08	LT. HWY. 230	15.66		901	
515+51.54	515+93.52	HWY. 230		55.63	6474	28.96
518+20.48	518+62.42	HWY. 230		55.63	6474	28.96
518+10.92	518+49.75	RT. HWY. 230	15.66		901	
518+28.24	518+64.70	LT. HWY. 230	15.66		901	
SITE 8						
814+73.50	815+10.00	RT. HWY. 230	15.18		865	
814+73.50	815+10.00	LT. HWY. 230	15.18		865	
814+73.50	815+10.00	HWY. 230		49.38	5668	23.53
817+35.00	817+71.50	HWY. 230		49.38	5668	23.53
817+35.00	817+71.50	RT. HWY. 230	15.18		865	
817+35.00	817+71.50	LT. HWY. 230	15.18		865	
TOTALS:			**244.80**	**417.16**	**62372**	**207.46**

NOTE: USE T =13" FOR 4' SHOULDER.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
SITE 1 AND 2				
107+50	113+50	SR 230	6	6
119+00	127+00	SR 230	8	8
SITE 4				
405+50	406+50	SR 230	1	1
410+00	412+00	SR 230	2	2
413+00	415+00	SR 230	2	2
SITE 5				
506+00	508+00	SR 230	2	2
515+50	520+00	SR 230	5	5
SITE 8				
815+00	815+80	SR 230	1	1
816+50	817+50	SR 230	1	1
SITE 10				
1005+00	1006+25	SR 230	2	2
TOTALS:			**30**	**30**

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP	FILTER BLANKET
		CU. YD.	SQ. YD.
105+60	OUTLET OF PIPE CULVERT	7	13
9105+21	OUTLET OF PIPE CULVERT	7	13
1004+10	OUTLET OF PIPE CULVERT	7	13
	TO BE USED IF AND WHERE		
	DIRECTED BY THE ENGINEER		
TOTALS:		**21**	**39**

*NOTE: QUANTITY ESTIMATED.
SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

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

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
SITE 1 & 2		
110+52	HWY. 230 ON LT.	1
120+99	HWY. 230 ON LT.	1
SITE 3		
310+48	HWY. 230 ON LT.	1
SITE 4		
410+25	HWY. 230 ON LT.	1
SITE 5		
515+94	HWY. 230 ON LT.	1
SITE 6		
613+21	HWY. 230 ON LT.	1
SITE 7		
704+44	HWY. 230 ON LT.	1
SITE 8		
815+10	HWY. 230 ON LT.	1
SITE 9		
906+90	HWY. 230 ON LT.	1
SITE 10		
1005+95	HWY. 230 ON LT.	1
TOTAL:		**10**

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

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	108	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS V)	PIPE CULVERT ALTERNATES		FLARED END SECTIONS FOR R.C. PIPE CULVERTS	FLARED END SECTION ALTERNATES FOR PIPE CULVERT ALTERNATES	TEMPORARY CULVERTS					SPAN	HEIGHT	LENGTH	CLASS S CONCRETE-ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STR.-ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		36"	ALT. 1 (CLASS III) 36"	ALT. 2, 3 AND 4 (WITH CLASS III ALT. 1) 36"	36"	36"	24"	36"	48"	72"	96"									
		LIN. FT.			EACH	EACH	LIN. FT.					LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
SITE 3																				
6+30	QUAD. 36" x 40' PIPE CULVERT CO. RD.745	160			8															PCC-1, FES-1, FES-2
9+50	36" x 88' PIPE CULVERT CO. RD. 745		88	92		2														PCC-1, PCM-1,FES-1,FES-2
3305+12	24" x 34' TEMP. PIPE CULVERT DETOUR						34													PCC-1, PCM-1
3309+12	24" x 52' TEMP. PIPE CULVERT DETOUR						52													PCC-1, PCM-1
3310+00	SEXT. 72" x 96' TEMP. PIPE CULVERT DETOUR									576										PCC-1, PCM-1
SITE 5																				
508+34	DBL 4' x 2' R.C. BOX CULVERT											8	2	33	19.20	3088	10	6	0.08	W-X003-1, R-200X-0, RCB-3
SITE 6																				
6013+34	QUAD. 36" x 60' TEMP. PIPE CULVERT DETOUR							240												PCC-1, PCM-1
SITE 7																				
7004+56	QUAD. 48" x 60' TEMP. PIPE CULVERT DETOUR								240											PCC-1, PCM-1
SITE 8																				
825+67	36" x 20' EXTEND PIPE CULVERT		20	24		1												17	0.21	PCC-1, PCM-1,FES-1,FES-2
SITE 9																				
9105+21	36" x 128' TEMP. PIPE CULVERT DETOUR ON A 45° RT. FWD. SKEW							128												PCC-1, PCM-1
9107+21	TRP. 96" x 76' TEMP. PIPE CULVERT DETOUR										228									PCC-1, PCM-1
9110+32	36" x 88' TEMP. PIPE CULVERT DETOUR ON A 45° LT. FWD. SKEW							88												PCC-1, PCM-1
SUBTOTALS:		**160**	**108**	**116**	**8**	**3**	**86**	**456**	**240**	**576**	**228**				**19.20**	**3088**	**10**	**23**	**0.29**	
STRUCTURES OVER 20' - 0" SPAN																				
SITE 3																				
310+48.00	QUAD. 11' x 6' x 80' R.C. BOX CULVERT ON A 25° LT. FWD. SKEW											11	6	80	420.17	52111	215	44	0.55	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SITE 4																				
410+24.54	TRP. 10' x 6' x 84' R.C. BOX CULVERT ON A 30° RT. FWD. SKEW											10	6	84	276.32	40270	139	39	0.49	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SITE 6																				
613+21.00	QUINT. 10' x 6' x 72' R.C. BOX CULVERT											10	6	72	371.01	44277	178	42	0.53	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SITE 7																				
704+44.00	QUINT. 10' x 6' x 72' R.C. BOX CULVERT											10	6	72	371.01	44277	178	42	0.53	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SITE 9																				
906+90.00	QUAD. 12' x 9' x 72' R.C. BOX CULVERT											12	9	72	464.70	62097	225	47	0.59	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SITE 10																				
1005+95.00	TRP. 12' x 7' x 72 R.C. BOX CULVERT											12	7	72	309.63	39205	155	37	0.47	PBC-1, RCB-1, RCB-2, SPECIAL DETAILS
SUBTOTALS:															**2212.84**	**282237**	**1090**	**251**	**3.16**	
TOTALS:		**160**	**108**	**116**	**8**	**3**	**86**	**456**	**240**	**576**	**228**				**2232.04**	**285325**	**1100**	**274**	**3.45**	

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.

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

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	109	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

BASE AND SURFACING (BOX 1 OF 4)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)			TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
100+00.00	101+00.00	SITE 1 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
101+00.00	107+38.00	SITE 1 - NOTCH & WDEN	638.00	VAR.	491.98	VAR.	1132.24	56.61				56.61	VAR.	562.58	330.00	32.83	VAR.	569.66	220.00	62.66	26.00	1843.11	220.00	202.74	265.40
107+38.00	110+14.05	SITE 1 - FULL DEPTH	276.05	178.00	491.37	44.71	1371.36	68.57				68.57	22.46	688.90	330.00	113.67	22.25	682.46	220.00	75.07	26.00	797.48	220.00	87.72	162.79
112+10.95	120+60.03	SITE 1 & 2 - FULL DEPTH	849.08	178.00	1511.36	44.71	4218.04	210.90				210.90	22.46	2118.93	330.00	349.62	22.25	2099.11	220.00	230.90	26.00	2452.90	220.00	269.82	500.72
122+58.97	125+16.00	SITE 2 - FULL DEPTH	257.03	178.00	457.51	44.71	1276.87	63.84				63.84	22.46	641.43	330.00	105.84	22.25	635.44	220.00	69.90	26.00	742.53	220.00	81.68	151.58
125+16.00	131+00.00	SITE 2 - NOTCH & WDEN	584.00	VAR.	441.95	VAR.	988.48	49.42				49.42	VAR.	491.00	330.00	81.02	VAR.	497.48	220.00	54.72	26.00	1687.11	220.00	185.58	240.30
131+00.00	132+00.00	SITE 2 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
308+00.00	309+00.00	SITE 3 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
309+00.00	309+99.00	SITE 3 - NOTCH & WDEN	99.00	VAR.	56.10	VAR.	57.83	2.89				2.89	VAR.	28.36	330.00	4.68	VAR.	29.47	220.00	3.24	26.00	286.00	220.00	31.46	34.70
309+99.00	310+97.00	SITE 3 - FULL DEPTH	98.00	178.00	174.44	44.71	486.84	24.34				24.34	22.46	244.56	330.00	40.35	22.25	242.28	220.00	26.65	26.00	283.11	220.00	31.14	57.79
310+97.00	312+00.00	SITE 3 - NOTCH & WDEN	103.00	VAR.	56.89	VAR.	341.97	17.10				17.10	VAR.	26.45	330.00	4.36	27.57	315.52	220.00	34.71	26.00	297.56	220.00	32.73	67.44
312+00.00	313+00.00	SITE 3 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
3303+15.00	3305+16.16	STIE 3 - DETOUR TRANSITION	201.16	VAR.	141.63	VAR.	138.83	6.94				6.94	VAR.	138.83	330.00	22.91	VAR.	171.15	220.00	18.83					18.83
3305+16.16	3314+94.55	SITE 3 - DETOUR FULL DEPTH	978.39	142.25	1391.76	20.29	2205.73	110.29				110.29	20.29	2205.73	330.00	363.95	24.00	2609.04	220.00	286.99					286.99
3314+94.55	3316+96.00	SITE 3 - DETOUR TRANSITION	201.45	VAR.	529.88	VAR.	136.63	6.83				6.83	VAR.	136.63	330.00	22.54	VAR.	167.98	220.00	18.48					18.48
404+50.00	405+50.00	SITE 4 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
405+50.00	409+84.00	SITE 4 - NOTCH & WDEN	434.00	VAR.	219.80	VAR.	112.35	5.62				5.62	VAR.	54.51	330.00	8.99	VAR.	57.84	220.00	6.36	26.00	1253.78	220.00	137.92	144.28
409+84.00	410+65.00	SITE 4 - FULL DEPTH	81.00	178.00	144.18	44.71	402.39	20.12				20.12	22.46	202.14	330.00	33.35	22.25	200.25	220.00	22.03	26.00	234.00	220.00	25.74	47.77
410+65.00	415+00.00	SITE 4 - NOTCH & WDEN	435.00	VAR.	219.08	VAR.	104.52	5.23				5.23	VAR.	51.14	330.00	8.44	VAR.	53.38	220.00	5.87	26.00	1256.67	220.00	138.23	144.10
415+00.00	416+00.00	SITE 4 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
500+00.00	501+00.00	SITE 5 - TRANSITION	100.00						VAR.	233.33	39.67	39.67									VAR.	222.22	220.00	24.44	24.44
501+00.00	508+36.24	SITE 5 - NOTCH & WDEN	736.24	VAR.	563.12	VAR.	1280.22	64.01				64.01	VAR.	636.02	330.00	104.94	VAR.	644.20	220.00	70.86	26.00	2126.92	220.00	233.96	304.82
508+36.24	515+50.64	SITE 5 - FULL DEPTH	714.40	178.00	1271.63	44.71	3548.98	177.45				177.45	22.46	1782.82	330.00	294.17	22.25	1766.16	220.00	194.28	26.00	2063.82	220.00	227.02	421.30
518+62.42	524+81.01	SITE 5 - FULL DEPTH	618.59	178.00	1101.09	44.71	3073.02	153.65				153.65	22.46	1543.73	330.00	254.72	22.25	1529.29	220.00	168.22	26.00	1787.04	220.00	196.57	364.79
524+81.01	530+90.00	SITE 5 - NOTCH & WDEN	608.99	VAR.	497.97	VAR.	1242.82	62.14				62.14	VAR.	618.04	330.00	101.98	VAR.	624.78	220.00	68.73	26.00	1759.30	220.00	193.52	262.25
530+90.00	531+90.00	SITE 5 - TRANSITION	100.00						VAR.	233.33	39.67	39.67									VAR.	222.22	220.00	24.44	24.44
608+70.00	609+70.00	STIE 6 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
609+70.00	611+00.00	SITE 6 - NOTCH & WDEN	130.00	VAR.	66.92	VAR.	39.99	2.00				2.00	VAR.	19.41	330.00	3.20	VAR.	20.58	220.00	2.26	26.00	375.56	220.00	41.31	43.57
611+00.00	615+70.00	SITE 6 - FULL DEPTH	470.00	178.00	836.60	44.71	2334.86	116.74				116.74	22.46	1172.91	330.00	193.53	22.25	1161.94	220.00	127.81	26.00	1357.78	220.00	149.36	277.17
615+70.00	617+00.00	SITE 6 - NOTCH & WDEN	130.00	VAR.	69.35	VAR.	51.26	2.56				2.56	VAR.	24.91	330.00	4.11	VAR.	26.35	220.00	2.90	26.00	375.56	220.00	41.31	44.21
617+00.00	618+00.00	SITE 6 - TRANSITION	100.00	VAR.	236.13				VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
6008+27.93	6009+94.00	STIE 6 - DETOUR TRANSITION	166.07	VAR.	122.74	VAR.	131.24	6.56				6.56	VAR.	131.24	330.00	21.65	VAR.	160.21	220.00	17.62					17.62
6009+94.00	6016+61.00	SITE 6 - DETOUR FULL DEPTH	667.00	142.25	948.81	20.29	1503.71	75.19				75.19	20.29	1503.71	330.00	248.11	24.00	1778.67	220.00	195.65					195.65
6016+61.00	6018+34.01	SITE 6 - DETOUR TRANSITION	173.01	VAR.	124.55	VAR.	127.25	6.36				6.36	VAR.	127.25	330.00	21.00	VAR.	160.92	220.00	17.70					17.70
700+20.00	701+20.00	STIE 7 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
701+20.00	702+50.00	SITE 7 - NOTCH & WDEN	130.00	VAR.	64.84	VAR.	28.28	1.41				1.41	VAR.	13.48	330.00	2.22	VAR.	14.80	220.00	1.63	26.00	375.56	220.00	41.31	42.94
702+50.00	706+50.00	SITE 7 - FULL DEPTH	400.00	178.00	712.00	44.71	1987.11	99.36				99.36	22.46	998.22	330.00	164.71	22.25	988.89	220.00	108.78	26.00	1155.56	220.00	127.11	235.89
706+50.00	707+95.00	SITE 7 - NOTCH & WDEN	145.00	VAR.	76.23	VAR.	53.66	2.68				2.68	VAR.	26.18	330.00	4.32	VAR.	27.48	220.00	3.02	26.00	418.89	220.00	46.08	49.10
707+95.00	708+95.00	SITE 7 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
6999+48.99	7001+22.00	STIE 7 - DETOUR TRANSITION	173.01	VAR.	124.88	VAR.	128.18	6.41				6.41	VAR.	128.18	330.00	21.15	VAR.	162.04	220.00	17.82					17.82
7001+22.00	7007+90.69	SITE 7 - DETOUR FULL DEPTH	668.69	142.25	951.21	20.29	1507.52	75.38				75.38	20.29	1507.52	330.00	248.74	24.00	1783.17	220.00	196.15					196.15
7007+90.69	7009+63.19	SITE 7 - DETOUR TRANSITION	172.50	VAR.	127.82	VAR.	137.25	6.86				6.86	VAR.	137.25	330.00	22.65	VAR.	170.59	220.00	18.76					18.76
BOX 1 TOTALS:					**14223.82**		**30149.43**	**1507.46**		**2688.86**	**457.14**	**1964.60**		**17962.06**		**2363.75**		**19351.13**		**2128.60**		**25596.88**		**2815.59**	**4944.19**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.3% MIN. AGGR.....4.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	110	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

BASE AND SURFACING (BOX 2 OF 4)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						TOTAL GALLONS	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								TOTAL PG 64-22
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)				AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	
			FEET			TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON		FEET			TON	FEET			TON	FEET			TON	TON
MAIN LANES																									
800+00.00	801+00.00	SITE 8 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
801+00.00	808+54.66	SITE 8 - NOTCH & WIDEN	754.66	VAR.	597.74	VAR.	1429.66	71.48				71.48	VAR.	710.61	330.00	117.25	VAR.	719.05	220.00	79.10	26.00	2180.13	220.00	239.81	318.91
808+54.66	814+73.50	SITE 8 - FULL DEPTH	618.84	178.00	1101.54	44.71	3074.26	153.71				153.71	22.46	1544.35	330.00	254.82	22.25	1529.91	220.00	168.29	26.00	1787.76	220.00	196.65	364.94
817+71.50	823+71.58	SITE 8 - FULL DEPTH	600.08	178.00	1068.14	44.71	2981.06	149.05				149.05	22.46	1497.53	330.00	247.09	22.25	1483.53	220.00	163.19	26.00	1733.56	220.00	190.69	353.88
823+71.58	831+00.00	SITE 8 - NOTCH & WIDEN	728.42	VAR.	571.38	VAR.	1348.02	67.40				67.40	VAR.	669.95	330.00	110.54	VAR.	678.07	220.00	74.59	26.00	2104.32	220.00	231.48	306.07
831+00.00	832+00.00	SITE 8 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
902+70.00	903+70.00	SITE 9 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
903+70.00	906+39.00	SITE 9 - NOTCH & WIDEN	269.00	VAR.	145.28	VAR.	122.21	6.11				6.11	VAR.	59.61	330.00	9.84	VAR.	62.60	220.00	6.89	26.00	777.11	220.00	85.48	92.37
906+39.00	907+95.00	SITE 9 - FULL DEPTH	156.00	178.00	277.68	44.71	774.97	38.75				38.75	22.46	389.31	330.00	64.24	22.25	385.67	220.00	42.42	26.00	450.67	220.00	49.57	91.99
907+95.00	910+30.00	SITE 9 - NOTCH & WIDEN	235.00	VAR.	127.07	VAR.	107.63	5.38				5.38	VAR.	52.51	330.00	8.66	VAR.	55.12	220.00	6.06	26.00	678.89	220.00	74.68	80.74
910+30.00	911+30.00	SITE 9 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
9101+19.81	9102+87.86	STIE 9 - DETOUR TRANSITION	168.05	VAR.	122.17	VAR.	287.97	14.40				14.40	VAR.	126.98	330.00	20.95	VAR.	160.99	220.00	17.71					17.71
9102+87.86	9111+82.36	SITE 9 - DETOUR FULL DEPTH	894.50	142.25	1272.43	20.29	2016.60	100.83				100.83	20.29	2016.60	330.00	332.74	24.00	2385.33	220.00	262.39					262.39
9111+82.36	9113+56.10	SITE 9 - DETOUR TRANSITION	173.74	VAR.	120.29	VAR.	259.53	12.98				12.98	VAR.	114.11	330.00	18.83	VAR.	145.42	220.00	16.00					16.00
1000+25.00	1001+25.00	SITE 10 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
1001+25.00	1005+40.00	SITE 10 - NOTCH & WIDEN	415.00	VAR.	211.23	VAR.	114.85	5.74				5.74	VAR.	55.12	330.00	9.09	VAR.	59.73	220.00	6.57	26.00	1198.89	220.00	131.88	138.45
1005+40.00	1006+50.00	SITE 10 - FULL DEPTH	110.00	178.00	195.80	44.71	546.46	27.32				27.32	22.46	274.51	330.00	45.29	22.25	271.94	220.00	29.91	26.00	317.78	220.00	34.96	64.87
1006+50.00	1009+75.00	SITE 10 - NOTCH & WIDEN	325.00	VAR.	162.89	VAR.	75.47	3.77				3.77	VAR.	35.93	330.00	5.93	VAR.	39.54	220.00	4.35	26.00	938.89	220.00	103.28	107.63
1009+75.00	1010+75.00	SITE 10 - TRANSITION	100.00						VAR.	222.22	37.78	37.78									VAR.	222.22	220.00	24.44	24.44
ADDITIONAL FOR LEVELING																									
101+00.00	107+38.00	SITE 1 - LEVELING	638.00						VAR.	1006.15	171.05	171.05					VAR.	1006.15	VAR.	110.68					110.68
125+16.00	131+00.00	SITE 2 - LEVELING	584.00						VAR.	944.95	160.64	160.64					VAR.	944.95	VAR.	103.94					103.94
309+00.00	309+99.00	SITE 3 - LEVELING	99.00						VAR.	224.79	38.21	38.21					VAR.	224.79	VAR.	24.73					24.73
310+97.00	312+00.00	SITE 3 - LEVELING	103.00						VAR.	235.02	39.95	39.95					VAR.	235.02	VAR.	25.85					25.85
405+50.00	409+84.00	SITE 4 - LEVELING	434.00						VAR.	964.44	163.95	163.95					VAR.	703.02	VAR.	77.33					77.33
410+65.00	415+00.00	SITE 4 - LEVELING	435.00						VAR.	966.67	164.33	164.33					VAR.	471.59	VAR.	51.87					51.87
501+00.00	508+36.24	SITE 5 - LEVELING	736.24						VAR.	1174.27	199.63	199.63					VAR.	1174.27	VAR.	129.17					129.17
524+82.70	530+90.00	SITE 5 - LEVELING	607.30						VAR.	875.37	148.81	148.81					VAR.	875.37	VAR.	96.29					96.29
609+70.00	611+00.00	SITE 6 - LEVELING	130.00						VAR.	235.33	40.01	40.01					VAR.	235.33	VAR.	25.89					25.89
615+70.00	617+00.00	SITE 6 - LEVELING	130.00						VAR.	297.80	50.63	50.63					VAR.	297.80	VAR.	32.76					32.76
701+20.00	702+50.00	SITE 7 - LEVELING	130.00						VAR.	275.28	46.80	46.80					VAR.	275.28	VAR.	30.28					30.28
706+50.00	707+95.00	SITE 7 - LEVELING	145.00						VAR.	263.63	44.82	44.82					VAR.	263.63	VAR.	29.00					29.00
801+00.00	808+54.66	SITE 8 - LEVELING	754.66						VAR.	1158.13	196.88	196.88					VAR.	1158.13	VAR.	127.39					127.39
823+71.58	831+00.00	SITE 8 - LEVELING	728.42						VAR.	1130.80	192.24	192.24					VAR.	1130.80	VAR.	124.39					124.39
903+70.00	906+39.00	SITE 9 - LEVELING	269.00						VAR.	595.79	101.28	101.28					VAR.	595.79	VAR.	65.54					65.54
907+95.00	910+30.00	SITE 9 - LEVELING	235.00						VAR.	522.76	88.87	88.87					VAR.	522.76	VAR.	57.50					57.50
1001+25.00	1005+40.00	SITE 10 - LEVELING	415.00						VAR.	999.80	169.97	169.97					VAR.	999.80	VAR.	109.98					109.98
1006+50.00	1009+75.00	SITE 10 - LEVELING	325.00						VAR.	784.67	133.39	133.39					VAR.	784.67	VAR.	86.31					86.31
BOX 2 TOTALS:					**5973.64**		**13138.69**	**656.92**		**13988.97**	**2378.14**	**3035.06**		**7547.12**		**1245.27**		**19876.05**		**2186.37**		**13501.32**		**1485.12**	**3671.49**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.3% MIN. AGGR.....4.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	111	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

BASE AND SURFACING (BOX 3 OF 4)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						TOTAL GALLONS	ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
				TON / STATION	TON	(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)				AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
						TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON														
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR METHOD OF RAISING GRADE																									
407+00.00	409+84.00	SITE 4 - METHOD OF RAISING GRADE	284.00						20.00	1262.22	214.58	214.58	20.00	631.11	VAR.	208.27									
410+65.00	414+50.00	SITE 4 - METHOD OF RAISING GRADE	385.00						20.00	1711.11	290.89	290.89	20.00	855.56	VAR.	282.33									
609+91.00	611+00.00	SITE 6 - METHOD OF RAISING GRADE	109.00						20.00	484.44	82.35	82.35	20.00	242.22	VAR.	79.93									
615+70.00	616+51.00	SITE 6 - METHOD OF RAISING GRADE	81.00						20.00	360.00	61.20	61.20	20.00	180.00	VAR.	59.40									
701+61.00	702+50.00	SITE 7 - METHOD OF RAISING GRADE	89.00						20.00	395.56	67.25	67.25	20.00	197.78	VAR.	65.27									
706+50.00	707+59.00	SITE 7 - METHOD OF RAISING GRADE	109.00						20.00	484.44	82.35	82.35	20.00	242.22	VAR.	79.93									
904+15.00	906+39.00	SITE 9 - METHOD OF RAISING GRADE	224.00						20.00	995.56	169.25	169.25	20.00	497.78	VAR.	164.27									
907+95.00	909+78.00	SITE 9 - METHOD OF RAISING GRADE	183.00						20.00	813.33	138.27	138.27	20.00	406.67	VAR.	134.20									
1003+58.00	1005+40.00	SITE 10 - METHOD OF RAISING GRADE	182.00						20.00	808.89	137.51	137.51	20.00	404.44	VAR.	133.47									
1006+50.00	1008+68.00	SITE 10 - METHOD OF RAISING GRADE	218.00						20.00	968.89	164.71	164.71	20.00	484.44	VAR.	159.87									
ADDITIONAL FOR SUPERELEVATION - SITE 1 AND 2																									
100+39.20	103+39.20	SUPERELEVATION TRANSITION	300.00	9.60	28.80																				
103+39.20	107+23.92	MAXIMUM SUPERELEVATION	384.72	19.19	73.83																				
107+23.92	110+23.92	SUPERELEVATION TRANSITION	300.00	9.60	28.80																				
111+33.97	114+33.97	SUPERELEVATION TRANSITION	300.00	15.70	47.10																				
114+33.97	119+49.77	MAXIMUM SUPERELEVATION	515.80	31.40	161.96																				
119+49.77	122+49.77	SUPERELEVATION TRANSITION	300.00	15.70	47.10																				
122+49.77	125+49.77	SUPERELEVATION TRANSITION	300.00	9.60	28.80																				
125+49.77	128+89.67	MAXIMUM SUPERELEVATION	339.90	19.19	65.23																				
128+89.67	131+89.67	SUPERELEVATION TRANSITION	300.00	9.60	28.80																				
ADDITIONAL FOR GUARDRAIL																									
107+78.10	108+11.10	RT. OF HWY 230 - TRANSITION / SITE 1	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
108+58.38	108+91.38	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
108+11.10	110+39.85	RT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
108+91.38	110+45.13	LT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
111+79.87	113+33.62	RT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
111+85.15	114+13.90	LT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
113+33.62	113+66.62	RT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
114+13.90	114+46.90	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
118+23.71	118+56.71	RT. OF HWY 230 - TRANSITION / SITE 2	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
119+06.75	119+39.75	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
118+56.71	120+85.46	RT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
119+39.75	120+93.50	LT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
122+25.50	123+79.25	RT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
122+33.54	124+62.29	LT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
123+79.25	124+12.25	RT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
124+62.29	124+95.29	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
BOX 3TOTALS:					**1161.94**					**8284.44**	**1408.36**	**1408.36**		**4142.22**		**1366.94**						**1385.04**		**152.32**	**152.32**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.3% MIN. AGGR.....4.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

8/15/2022
R101054_TTL_TYP_SCD.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.		101054	112	311

(2) QUANTITIES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

BASE AND SURFACING (BOX 4 OF 4)

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT							ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")								
						(0.05 GAL. PER SQ. YD.)			(0.17 GAL. PER SQ. YD.)																
				TON / STATION	TON	TOTAL WID.	SQ.YD.	GALLON	TOTAL WID.	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 64-22	TOTAL PG 64-22
			FEET			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	TON
ADDITIONAL FOR GUARDRAIL																									
513+14.01	513+47.01	RT. OF HWY 230 - TRANSITION / SITE 5	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
514+06.33	514+39.33	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
513+47.01	515+75.76	RT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
514+39.33	515+93.08	LT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
518+20.92	519+74.67	RT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
518+38.24	520+66.99	LT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
519+74.67	520+07.67	RT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
520+66.99	520+99.99	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
812+38.25	812+71.25	RT. OF HWY 230 - TRANSITION / SITE 8	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
813+13.25	813+46.25	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
812+71.25	815+00.00	RT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
813+46.25	815+00.00	LT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
817+45.00	818+98.75	RT. OF HWY 230	153.75	39.20	60.27																7.50	128.13	220.00	14.09	14.09
817+45.00	819+73.75	LT. OF HWY 230	228.75	39.20	89.67																7.50	190.63	220.00	20.97	20.97
818+98.75	819+31.75	RT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
819+73.75	820+06.75	LT. OF HWY 230 - TRANSITION	33.00	VAR.	6.47																3.75	13.75	220.00	1.51	1.51
BOX 4 TOTALS					651.52																	1385.04		152.32	152.32
SUBTOTALS (BOX 1 OF 4)					14223.82		30149.43	1307.46		2688.86	457.14	1964.60		17962.06		2963.75		19351.13		2128.60		25596.83		2815.59	4944.19
SUBTOTALS (BOX 2 OF 4)					5973.64		13138.69	656.92		13988.97	2378.14	3035.06		7547.12		1245.27		19876.05		2186.37		13501.32		1485.12	3671.49
SUBTOTALS (BOX 3 OF 4)					1161.94					8284.44	1408.36	1408.36		4142.22		1366.94						1385.04		152.32	152.32
SUBTOTALS (BOX 4 OF 4)					651.52																	1385.04		152.32	152.32
TOTALS:					**22010.92**		**43288.12**	**2764.38**		**24962.27**	**4243.64**	**6408.02**		**29651.40**		**5575.96**		**39227.18**		**4314.97**		**41868.28**		**4605.35**	**8920.32**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.3% MIN. AGGR.....4.7% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	63	126
TOTALS:	**63**	**126**

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

ACHM PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100
TOTAL:	**100**

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10/26/22				6	ARK.			
				JOB NO.		101054	113	311

(2) QUANTITIES

Digitally signed by Raymond K. Eidson
Date: 2022.11.02 15:26:34-05'00'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON

DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS								STANDARD DRAWINGS
							18"	24"	30"	36"	42"	48"	42"X29"	51"X31"	
			FEET	SQ. YD.	TON	TON	LIN. FT.								
SITE 1 & 2															
104+80	RT.	HWY. 230	16	44.80	4.93	34.70	34								PCC-1, PCM-1
105+60	LT.	HWY. 230	16	44.80	4.93	69.81					54				PCC-1, PCM-1
115+10	RT.	HWY. 230	16	44.80	4.93	106.85									
115+60	LT.	HWY. 230	16	44.80	4.93	51.37									
116+90	LT.	HWY. 230	16	44.80	4.93	54.69				42					PCC-1, PCM-1
125+82	RT.	HWY. 230	16	44.80	4.93	52.96					132				PCC-1, PCM-1
SITE 3															
305+07	RT.	HWY. 230	16	44.80	4.93	46.35			34						PCC-1, PCM-1
309+05	LT.	HWY. 230	16	44.80	4.93	51.03				120					PCC-1, PCM-1
311+25	RT.	COUNTY ROAD 745	20	1055.00	116.05	430.79									
3305+12	RT.	HWY. 230 DETOUR	16	44.80	4.93	51.90									
3309+12	LT.	HWY. 230 DETOUR	16	44.80	4.93	42.50									
SITE 4															
406+78	RT.	HWY. 230	18	48.80	5.37	61.35							44		PCC-1, PCM-1
411+79	LT.	HWY. 230	16	44.80	4.93	69.34		48							PCC-1, PCM-1
413+47	RT.	HWY. 230	16	44.80	4.93	52.89		42							PCC-1, PCM-1
SITE 5															
505+78	LT.	HWY. 230	18	48.80	5.37	71.95			42						PCC-1, PCM-1
512+53	LT.	HWY. 230	24	60.80	6.69	124.80									
512+53	RT.	HWY. 230	16	44.80	4.93	80.98								40	PCC-1, PCM-1
521+78	LT.	HWY. 230	16	44.80	4.93	67.77			52						PCC-1, PCM-1
521+78	RT.	HWY. 230	35	141.64	15.58	249.76			88						PCC-1, PCM-1
523+50	RT.	HWY. 230	30	72.80	8.01	95.00			48						PCC-1, PCM-1
528+08	RT.	HWY. 230	16	44.80	4.93	37.85		44							PCC-1, PCM-1
529+57	RT.	HWY. 230	16	44.80	4.93	40.60		44							PCC-1, PCM-1
9+13	LT.	HWY. 230 - DRIVEWAY	24	66.23	7.29	496.04									
SITE 7															
708+64	LT.	HWY. 230	16	44.80	4.93	45.34									
708+66	RT.	HWY. 230	16	44.80	4.93	46.44									
7008+85	LT.	HWY. 230 DETOUR	16	44.80	4.93	44.56									
SITE 8															
812+10	RT.	COUNTY ROAD 194	22	1619.08	178.10	661.12				70					PCC-1, PCM-1
813+10	LT.	HWY. 230	20	52.80	5.81	327.26				128					PCC-1, PCM-1
819+10	RT.	HWY. 230	18	48.80	5.37	280.26		68							PCC-1, PCM-1
820+10	LT.	HWY. 230	16	44.80	4.93	390.36			50						PCC-1, PCM-1
828+57	LT.	HWY. 230	16	44.80	4.93	62.40	46								PCC-1, PCM-1
828+67	RT.	HWY. 230	16	44.80	4.93	38.23	42								PCC-1, PCM-1
830+16	LT.	HWY. 230	16	44.80	4.93	61.18	46								PCC-1, PCM-1
830+20	RT.	HWY. 230	16	44.80	4.93	39.15	42								PCC-1, PCM-1
SITE 9															
906+10	RT.	48" x 40' PIPE CULVERT SIDE DRAIN										40			PCC-1, PCM-1
906+10	LT.	48" x 40' PIPE CULVERT SIDE DRAIN										40			PCC-1, PCM-1
907+66	RT.	30" x 40' PIPE CULVERT SIDE DRAIN							40						PCC-1, PCM-1
908+42	RT.	HWY. 230	18	48.80	5.37	62.66		40							PCC-1, PCM-1
9108+73	RT.	HWY. 230 DETOUR	18	48.80	5.37	71.73				62					PCC-1, PCM-1
SITE 10															
1004+10	LT.	HWY. 230	16	44.80	4.93	76.82						46			PCC-1, PCM-1
1004+15	RT.	HWY. 230	16	44.80	4.93	89.22				50					PCC-1, PCM-1
1007+85	RT.	HWY. 230	24	60.80	6.69	112.09						48			PCC-1, PCM-1
1007+88	LT.	HWY. 230	16	44.80	4.93	72.74						40			PCC-1, PCM-1
* ENTIRE PROJECT TEMPORARY DRIVES						350.00									
TOTALS:				**4582.75**	**504.18**	**5272.84**	**210**	**286**	**354**	**472**	**186**	**214**	**44**	**40**	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.8% MIN. AGGR.....5.2% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
SITES 1 & 2				
100+00.00	101+00.00	HWY. 230	24.00	266.67
131+00.00	132+00.00	HWY. 230	24.00	266.67
SITE 3				
308+00.00	309+00.00	HWY. 230	24.00	266.67
312+00.00	313+00.00	HWY. 230	24.00	266.67
SITE 4				
404+50.00	405+50.00	HWY. 230	24.00	266.67
415+00.00	416+00.00	HWY. 230	24.00	266.67
SITE 5				
500+00.00	501+00.00	HWY. 230	24.00	266.67
530+90.00	531+90.00	HWY. 230	24.00	266.67
SITE 6				
608+70.00	609+70.00	HWY. 230	24.00	266.67
617+00.00	618+00.00	HWY. 230	24.00	266.67
SITE 7				
700+20.00	701+20.00	HWY. 230	24.00	266.67
707+95.00	708+95.00	HWY. 230	24.00	266.67
SITE 8				
800+00.00	801+00.00	HWY. 230	24.00	266.67
831+00.00	832+00.00	HWY. 230	24.00	266.67
SITE 9				
902+70.00	903+70.00	HWY. 230	24.00	266.67
910+30.00	911+30.00	HWY. 230	24.00	266.67
SITE 10				
1000+25.00	1001+25.00	HWY. 230	24.00	266.67
1009+75.00	1010+75.00	HWY. 230	24.00	266.67
TOTAL:				**4800.06**

NOTE: AVERAGE MILLING DEPTH 1".

STOCKPILE LOCATIONS:
SITES 1 - 7: (LAWRENCE COUNTY)
LAWRENCE COUNTY ROAD DEPARTMENT, 1776 HWY. 367 SOUTH, WALNUT RIDGE, ARKANSAS
SITES 8 - 10: (CRAIGHEAD COUNTY)
DAVIS BROTHERS FARMS, 1620 HWY. 230, BONO, ARKANSAS

R101054_TTL_TYP_SCD.dgn 11/2/2022

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	114	311

(1) 07522, 07523, 07524 & 07525 - QUANTITIES - 65241

SCHEDULE OF BRIDGE QUANTITIES - JOB. NO. 101054

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SP, SS & 802	SP, SS & 802	SS & 802	SS & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 805	805	SS & 805	SS & 805	SS & 808	SS & 809	812	SS & 816	SS & 816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	PRESTRESSED CONCRETE GIRDERS (TYPE I)	PRESTRESSED CONCRETE GIRDERS (TYPE III)	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL SHELL PILING (16" DIA.) (1)	STEEL SHELL PILING (18" DIA.) (1)	STEEL SHELL PILING (24" DIA.) (1)	STEEL SHELL PILING (30" DIA.) (1)	PILE ENCASEMENT	PREBORING	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	LIN. FT.	LIN. FT.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU. IN.	LIN. FT.	EACH	SQ. YD.	CU. YD.
07522	HIGHWAY 230 OVER VILLAGE CREEK	BENT 1				12.18					2,222	233	400					40				265	121
		BENT 2				21.50					4,472	343			525		65						
		BENT 3				21.48					4,472	343			525		65						
		BENT 4				12.36					2,222	233	420					40				300	136
		119'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT					292.33	468		449	13,653	33,943									1		
EXIST. BR. NO. M3224 (SITE NO. 1)				1																			
TOTALS FOR BRIDGE NO. 07522						67.52	292.33	468		449	27,041	35,095	820		1,050		130	80			1	565	257
07523	HIGHWAY 230 OVER LICK POND SLOUGH	BENT 1				13.04					2,391	247	400					40				373	170
		BENT 2				22.44					4,691	343			475		50						
		BENT 3				22.12					4,691	343			475		50						
		BENT 4				12.29					2,256	247	360					40				231	105
		119'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT					294.45	468		449	13,904	33,375									1		
EXIST. BR. NO. M3319 (SITE NO. 2)				1																			
TOTALS FOR BRIDGE NO. 07523						69.89	294.45	468		449	27,933	34,555	760		950		100	80			1	604	275
07524	HIGHWAY 230 OVER WEST FORK OF THE CACHE RIVER	BENT 1			47.09	39.68				10	8,027	837		525					2252	35		267	121
		BENT 2				24.47					5,284	364				500	55		3,658				
		BENT 3				24.47					5,284	364				500	50		3,658				
		BENT 4			59.23	39.68				10	8,027	837		525					2252	35		183	83
		224'-6" COMP. PRESTRESSED CONCRETE GIRDER UNIT					407.18		888	840	15,026	56,371									1		
EXIST. BR. NO. M3817 (SITE NO. 5)				1																			
TOTALS FOR BRIDGE NO. 07524					106.32	128.30	407.18		888	860	41,648	58,773		1,050		1,000	105		11,820	70	1	450	204
07525	HIGHWAY 230 OVER CACHE RIVER DITCH	BENT 1			25.39	13.78					2,221	317		320				40				213	97
		BENT 2				20.29					4,227	322				450	75						
		BENT 3				20.29					4,227	322				450	75						
		BENT 4			25.39	13.78					2,221	317		400				40				226	103
		224'-0" INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT					415.64		888	842	13,066	59,931									1		
EXIST. BR. NO. M3187 (SITE NO. 8)				1																			
TOTALS FOR BRIDGE NO. 07525					50.78	68.14	415.64		888	842	25,962	61,209		720		900	150	80			1	439	200
TOTALS FOR JOB NO. 101054					157.10	333.85	1,409.60	936	1,776	2600	122,584	189,632	1,580	1,770	2,000	1,900	485	240	11,820	70	4	2,058	936

(1) Steel shell piles shall conform to ASTM A252, Grade 3 (Fy = 45,000 psi)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
HWY. 230 STRS. & APPRS. (S)
LAWRENCE AND CRAIGHEAD COUNTIES

ROUTE 230 SEC. 5, 6 & 7

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: APR 2021 FILENAME: b101054xx_qx1.dgn
CHECKED BY: BKC DATE: JUN 2022 SCALE: None
DESIGNED BY: KJK DATE: APR 2021

BRIDGE NO. 07522, 07523, 07524 & 07525 DRAWING NO. 065241

PRINT DATE: 8/3/2022

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		30	STATION
201	GRUBBING		30	STATION
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		42	EACH
202	REMOVAL AND DISPOSAL OF WINGWALLS		1	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL		2148	LIN. FT.
SP & 207	STONE BACKFILL		35257	TON
SP, SS, & 210	UNCLASSIFIED EXCAVATION		75046	CU. YD.
SP & 210	COMPACTED EMBANKMENT		104908	CU. YD.
SP & 210	COMPACTED EMBANKMENT (SPECIAL)		7421	CU. YD.
SP & 210	SOIL STABILIZATION		1000	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)		27491	TON
SS & 401	TACK COAT		6534	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		5314	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")		262	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		8935	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		490	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT		4800	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		63	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY		100	TON
SP, SS, & 504	APPROACH SLABS		417.16	CU. YD.
SP, SS, & 504	APPROACH GUTTERS		244.80	CU. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP, SS, & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
603	24" TEMPORARY CULVERT		86	LIN. FT.
603	36" TEMPORARY CULVERT		456	LIN. FT.
603	48" TEMPORARY CULVERT		240	LIN. FT.
603	72" TEMPORARY CULVERT		576	LIN. FT.
603	96" TEMPORARY CULVERT		228	LIN. FT.
SS & 604	SIGNS		3706	SQ. FT.
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE		36	EACH
SS & 604	BARRICADES		720	LIN. FT.
SS & 604	TRAFFIC DRUMS		280	EACH
604	CONSTRUCTION PAVEMENT MARKINGS		75547	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		5325	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS		13071	LIN. FT.
SS & 604	VERTICAL PANELS		156	EACH
* SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	108	LIN. FT.
* SS & 606	36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 2)	116	LIN. FT.
* SS & 606	36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 3)	116	LIN. FT.
* SS & 606	36" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (14 GAUGE)	(ALTERNATE NO. 4)	116	LIN. FT.
SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS V)		160	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		210	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		286	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN		354	LIN. FT.
SP, SS, & 606	36" SIDE DRAIN		472	LIN. FT.
SP, SS, & 606	42" SIDE DRAIN		186	LIN. FT.
SP, SS, & 606	48" SIDE DRAIN		214	LIN. FT.
SS & 606	42" X 29" SIDE DRAIN		44	LIN. FT.
SS & 606	51" X 31" SIDE DRAIN		40	LIN. FT.
SS & 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS		8	EACH
* SS & 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	3	EACH
* SS & 606	36" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	3	EACH
SS & 606	SELECTED PIPE BEDDING		190	CU. YD.
SS & 611	4" PIPE UNDERDRAINS		5000	LIN. FT.
SS & 611	UNDERDRAIN OUTLET PROTECTORS		40	EACH
616	24" AUTOMATIC FLOODGATES		1	EACH
616	30" AUTOMATIC FLOODGATES		2	EACH
616	36" AUTOMATIC FLOODGATES		3	EACH
616	48" AUTOMATIC FLOODGATES		2	EACH
SS & 617	GUARDRAIL (TYPE A)		1800	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		16	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		16	EACH
620	LIME		93	TON
620	SEEDING		46.63	ACRE
SS & 620	MULCH COVER		104.80	ACRE
620	WATER		5946.5	M. GAL.
621	TEMPORARY SEEDING		58.17	ACRE
621	SILT FENCE		36420	LIN. FT.
621	SAND BAG DITCH CHECKS		990	BAG
621	SEDIMENT BASIN		1800	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		1800	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		3493	CU. YD.
621	PIPE FOR SLOPE DRAINS		240	LIN. FT.
621	ROCK DITCH CHECKS		750	CU. YD.
621	WATTLE (20")		405	LIN. FT.
623	SECOND SEEDING APPLICATION		46.63	ACRE
624	SOLID SODDING		274	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)		13372	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		4	EACH
637	MAILBOX SUPPORTS (SINGLE)		4	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")		34648	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")		34648	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		214	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER		2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		2	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)		2	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY		10	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY		19.20	CU. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		65460	POUND
SS & 816	FILTER BLANKET		3628	SQ. YD.
SS & 816	DUMPED RIPRAP		2597	CU. YD.

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES

Digitally signed by Raymond K. Eidson
Date: 2022.10.06 12:45:37 -05'00'

STATE OF ARKANSAS
RAYMOND KYLE EIDSON
No. 19072
PROFESSIONAL ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	R101054	115	311

② SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 3)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 4)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 5)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 6)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 7)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 8)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 9)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 10)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	157	CU. YD.
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	1090	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-ROADWAY	2212.84	CU. YD.
SP, SS, & 802	CLASS S CONCRETE-BRIDGE	333.85	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	1409.60	CU. YD.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE I)	936	LIN. FT.
SS & 802	PRESTRESSED CONCRETE GIRDERS (TYPE III)	1776	LIN. FT.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	2600	SQ. YD.
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	282237	POUND
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	122584	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	189632	POUND
SS & 805	STEEL SHELL PILING (16" DIAMETER)	1580	LIN. FT.
SS & 805	STEEL SHELL PILING (18" DIAMETER)	1770	LIN. FT.
SS & 805	STEEL SHELL PILING (24" DIAMETER)	2000	LIN. FT.
SS & 805	STEEL SHELL PILING (30" DIAMETER)	1900	LIN. FT.
SS & 805	PREBORING	240	LIN. FT.
SS & 805	PILE ENCASEMENT	485	LIN. FT.
SS & 808	ELASTOMERIC BEARINGS	11820	CU. IN.
SS & 809	SILICONE JOINT SEALANT	70	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	4	EACH
SS & 816	FILTER BLANKET	2058	SQ. YD.
SS & 816	DUMPED RIPRAP	936	CU. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
10/26/2022	REVISED GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION AND EMBANKMENT CONSTRUCTION SPECIAL PROVISIONS. REMOVED SPECIAL PROVISIONS LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSE AND PROSECUTION AND PROGRESS WITH BID SCHEDULE, ADDED SPECIAL PROVISIONS LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS AND PLASTICPIPE, REVISED SPECIAL DETAILS PLAN SHEET, SITE 5, REVISED NUMBER OF LAYERS AND LB/FT. REVISED NOTE SPELLING	4, 15, 113, 116

SUMMARY OF QUANTITIES AND REVISIONS

Digitally signed by Raymond K. Eidson
Date: 2022.11.02 15:26:52-05'00'

STATE OF ARKANSAS
RAYMOND KYLE EIDSON
LICENSED PROFESSIONAL ENGINEER
No. 19372

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.
10/26/22				6

STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
ARK.		116	311

JOB NO. 101054

(2) 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.		101054	117	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

SITES: 1-7

SURVEY CONTROL COORDINATES

Project Name: s101054
Date: 12/13/2019
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	569541.0259	1585683.9560	250.736	CTL	ARDOT STD. MON. STAMPED PN:1
2	569500.8571	1586382.6607	250.060	CTL	ARDOT STD. MON. STAMPED PN:2
3	569471.9436	1587059.0027	249.525	CTL	ARDOT STD. MON. STAMPED PN:3
4	569459.5156	1587618.7861	250.003	CTL	ARDOT STD. MON. STAMPED PN:4
5	569372.7335	1588211.1275	249.084	CTL	ARDOT STD. MON. STAMPED PN:5
6	569315.8407	1588834.6657	249.552	CTL	ARDOT STD. MON. STAMPED PN:6
7	571130.0839	1619158.5589	252.532	CTL	ARDOT STD. MON. STAMPED PN:7
8	571117.9406	1619909.6646	251.140	CTL	ARDOT STD. MON. STAMPED PN:8
9	571074.7599	1620555.5756	250.967	CTL	ARDOT STD. MON. STAMPED PN:9
10	571049.5189	1621291.6539	252.129	CTL	ARDOT STD. MON. STAMPED PN:10
11	576215.0685	1631677.3930	254.066	CTL	ARDOT STD. MON. STAMPED PN:11
12	576190.8444	1632398.4745	250.597	CTL	ARDOT STD. MON. STAMPED PN:12
13	576205.4685	1633073.0212	247.835	CTL	ARDOT STD. MON. STAMPED PN:13
14	576194.1381	1633732.1769	247.771	CTL	ARDOT STD. MON. STAMPED PN:14
15	576148.4143	1634447.4983	249.460	CTL	ARDOT STD. MON. STAMPED PN:15
16	575880.1402	1643593.3545	248.423	CTL	ARDOT STD. MON. STAMPED PN:16
17	575867.1482	1644264.2022	248.103	CTL	ARDOT STD. MON. STAMPED PN:17
18	575848.4517	1644989.7504	247.613	CTL	ARDOT STD. MON. STAMPED PN:18
19	575833.5238	1645628.3734	248.024	CTL	ARDOT STD. MON. STAMPED PN:19
20	575804.4162	1646342.1576	248.356	CTL	ARDOT STD. MON. STAMPED PN:20
21	575786.3392	1647224.9924	250.398	CTL	STD. AHTD MON. STAMPED PN:1,230,BONO
22	575764.9664	1647959.7348	250.614	CTL	STD. AHTD MON. STAMPED PN:2,230,BONO
23	575738.2899	1648857.4715	250.653	CTL	STD. AHTD MON. STAMPED PN:3,230,BONO
100	569261.2669	1589488.1505	254.938	GPS	ARDOT GPS #380018
101	569218.4775	1590877.3290	254.689	GPS	ARDOT GPS #380018A
102	571145.1952	1617123.3135	255.281	GPS	ARDOT GPS #380019
103	571148.3207	1618515.5017	252.383	GPS	ARDOT GPS #380019A
104	576077.4822	1638132.4069	249.364	GPS	ARDOT GPS #380020
105	576023.0722	1639573.7386	249.183	GPS	ARDOT GPS #380020A
900	575824.0939	1645960.1141	251.285	TBM	SQ CUT SE CRNR OF BRIDGE
901	569241.4764	1589478.9656	254.237	TBM	CHSQ IN NE COR OF BR

*Note - Rebar and Cap - Standard - 5/8" 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).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999943594 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s101054gi.ctl
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 380018 - 380018A, 380019 - 380019A, 380020 - 380020A
CONVERGENCE ANGLE: 00 35 55.14 RIGHT AT LAT N 35-53-52.87 LON W090-58-16.36
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

SITES: 8-10

SURVEY CONTROL COORDINATES

Project Name: s100869
Date: 12/21/2016
Coordinate System: ARKANSAS STATE PLANE - NORTH/SOUTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	575786.3392	1647224.9924	250.398	CTL	5/8" Rebar with 2" Aluminum Cap
2	575764.9664	1647959.7348	250.614	CTL	5/8" Rebar with 2" Aluminum Cap
3	575738.2899	1648857.4715	250.653	CTL	5/8" Rebar with 2" Aluminum Cap
4	575722.3871	1649334.6574	251.177	CTL	5/8" Rebar with 2" Aluminum Cap
5	575703.6352	1650154.1156	248.888	CTL	5/8" Rebar with 2" Aluminum Cap
6	575709.7676	1650973.1808	247.497	CTL	5/8" Rebar with 2" Aluminum Cap
7	575685.1243	1651896.5169	247.435	CTL	5/8" Rebar with 2" Aluminum Cap
8	575663.9822	1652754.9743	246.664	CTL	5/8" Rebar with 2" Aluminum Cap
9	575611.6333	1653552.8853	246.208	CTL	5/8" Rebar with 2" Aluminum Cap
10	575623.2036	1654391.1916	246.870	CTL	5/8" Rebar with 2" Aluminum Cap
11	575601.7225	1655179.8421	248.680	CTL	5/8" Rebar with 2" Aluminum Cap
12	575690.5900	1662788.5863	258.345	CTL	5/8" Rebar with 2" Aluminum Cap
13	575710.2428	1663602.6452	264.892	CTL	5/8" Rebar with 2" Aluminum Cap
14	575653.0731	1664442.3885	257.699	CTL	5/8" Rebar with 2" Aluminum Cap
15	575681.5257	1665183.2013	258.043	CTL	5/8" Rebar with 2" Aluminum Cap
16	575645.4288	1666040.3397	259.466	CTL	5/8" Rebar with 2" Aluminum Cap
17	575666.3854	1666824.2059	260.836	CTL	5/8" Rebar with 2" Aluminum Cap
100	592484.6352	1659005.2428	253.485	GPS	AHTD GPS MON. 160014
101	577661.7445	1666273.6168	258.850	GPS	NGS BM R 315 63B BONO
900	575823.9424	1645960.0510	251.285	TBM	SQ CUT SE CRNR OF BRIDGE 230 BONO
901	575734.3605	1649058.1298	249.963	TBM	SQ CUT SW CRNR OF BRIDGE 230 BONO
902	575609.8110	1653775.3249	247.633	TBM	SQUARE CUT IN SE CORN BR 230 BONO
903	575515.7720	1656597.4760	250.049	TBM	SQ CUT CNTR S HW 30' S OF C/L HWY 230
904	575479.0094	1658915.9398	253.567	TBM	X CUT IN BOLT OF FH 230 BONO
905	575556.6742	1662164.6441	257.866	TBM	X CUT IN BOLT OF FH 230 BONO
906	575653.2473	1664997.5829	258.875	TBM	SQ CUT SE END OF BRIDGE 230 BONO
907	575713.2157	1666936.2652	262.135	TBM	
908	575617.8743	1651636.3822	244.829	BM	SET RBR AL AET CAP
990	573863.0753	1668381.8647	268.811	BM	NGS BM D3 63B BONO

*Note - Rebar and Cap - Standard - 5/8" 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).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999943594 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s100869gi.ctl
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE or 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 160014 - NGS R 315
CONVERGENCE ANGLE: 00-40-25 RIGHT AT LT: 35.5433 LG: 0090.5033
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

R101054_TTL_TYP_SCD.dgn 8/15/2022

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.		101054	118	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
9-20-22

HWY 230 CL SITE 1 & 2

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	569504.8831	1586015.9497
8001	PC	101+14.20	569498.6259	1586129.9814
8003	PT	107+98.92	569491.7790	1586814.4371
8004	PC	113+58.97	569511.2711	1587374.1439
8006	PT	120+44.46	569463.5001	1588056.7100
8007	PC	124+55.09	569392.1837	1588461.1052
8009	PT	131+14.67	569305.7977	1589114.8010
8010	POE	132+20.93	569296.4364	1589220.6398

HWY 230 CL SITE 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8011	POB	300+00.00	571119.7586	1618906.7247
8012	PI	303+00.02	571113.0411	1619206.6710
8013	POE	317+20.00	571088.1752	1620626.4319

HWY 230 CL SITE 4

POINT NO.	TYPE	STATION	NORTHING	EASTING
8014	POB	400+00.00	576220.5994	1631978.4905
8015	PI	405+23.93	576204.3756	1632502.1693
8016	PI	407+38.42	576199.3318	1632716.6031
8017	POE	419+81.55	576175.8518	1633959.4960

HWY 230 CL SITE 5

POINT NO.	TYPE	STATION	NORTHING	EASTING
8018	POB	500+00.00	576026.2164	1639018.1529
8019	PC	501+10.00	576021.9993	1639128.0721
8021	PRC	508+58.64	576017.7474	1639876.5651
8023	PT	515+75.45	576014.6715	1640593.2499
8024	PC	518+32.65	576005.5251	1640850.2900
8026	PRC	524+32.87	575968.4847	1641449.2946
8028	PT	531+43.54	575928.0486	1642158.7002
8029	POE	532+53.50	575925.1976	1642268.6262

HWY 230 CL SITE 6

POINT NO.	TYPE	STATION	NORTHING	EASTING
8030	POB	600+00.00	575898.0079	1643589.4308
8031	PI	603+79.73	575889.2519	1643969.0549
8032	PI	607+97.14	575880.5783	1644386.3802
8033	PI	615+22.33	575863.2903	1645111.3629
8034	POE	618+25.00	575855.2005	1645413.9291

HWY 230 CL SITE 7

POINT NO.	TYPE	STATION	NORTHING	EASTING
8035	POB	699+35.00	575854.9332	1645423.9256
8036	PI	705+63.65	575638.1309	1646052.3496
8037	PI	712+63.53	575818.0021	1646751.9409
8038	PI	715+88.24	575807.7248	1647076.4937
8039	POE	720+05.45	575796.0395	1647493.5358

HWY 230 CL SITE 8

POINT NO.	TYPE	STATION	NORTHING	EASTING
8040	POB	800+00.00	575794.9133	1647492.4939
8041	PI	801+10.05	575792.5684	1647602.5184
8042	PC	801+64.07	575790.9509	1647656.5103
8044	PT	807+62.85	575788.6625	1648255.2226
8045	PC	808+31.39	575790.1912	1648323.7480
8047	PT	814+31.39	575787.8663	1648923.6750
8048	PC	818+40.44	575775.5742	1649332.5365
8050	PT	824+40.44	575741.8548	1649931.5196
8051	PC	824+50.43	575741.0325	1649941.4745
8053	PT	830+50.43	575707.3130	1650540.4576
8054	PI	831+10.00	575705.5227	1650600.0073
8055	POE	832+20.01	575701.2176	1650709.9276

HWY 230 CL SITE 9

POINT NO.	TYPE	STATION	NORTHING	EASTING
8056	POB	900+00.00	575641.6278	1653037.6225
8057	PI	902+09.77	575637.6786	1653247.3579
8058	POE	915+36.83	575601.4026	1654573.9176

HWY 230 CL SITE 10

POINT NO.	TYPE	STATION	NORTHING	EASTING
8059	POB	1000+00.00	575671.1239	1664376.2605
8060	POE	1012+15.12	575663.2142	1665591.3579

SITE 3 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8061	POB	3302+94.05	571114.1553	1619200.7223
8062	PC	3303+15.00	571113.7905	1619221.6692
8064	PT	3305+23.72	571087.4673	1619428.3084
8065	PC	3307+19.98	571041.5805	1619619.1227
8067	PT	3309+28.70	571015.2573	1619825.7620
8068	PC	3310+82.20	571012.5847	1619979.2329
8070	PT	3312+93.49	571032.2145	1620189.1831
8071	PC	3314+81.23	571070.2233	1620373.0328
8073	PT	3316+96.00	571089.7863	1620586.4574
8074	POE	3318+33.06	571086.6717	1620723.4799

SITE 6 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8075	PC	6008+27.93	575879.8444	1644417.1564
8077	PRC	6010+79.35	575917.6410	1644664.4195
8079	PRC	6015+83.43	575905.4490	1645158.0015
8081	PT	6018+34.01	575855.5127	1645402.2518

SITE 7 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8082	PC	6999+48.99	575854.5593	1645437.9116
8084	PRC	7002+02.35	575892.2604	1645687.1161
8086	PRC	7007+10.18	575878.5845	1646184.1850
8088	PT	7009+63.19	575827.2480	1646430.5937

SITE 9 DETOUR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8089	POB	9100+00.00	575641.7300	1653016.5745
8090	PC	9101+19.81	575638.8006	1653136.3451
8092	PT	9103+10.68	575659.4644	1653325.5245
8093	PC	9104+56.82	575694.4949	1653467.4120
8095	PT	9106+49.29	575715.1179	1653658.1889
8096	PC	9108+16.63	575710.6529	1653825.4672
8098	PT	9109+97.92	575683.0519	1654004.1570
8099	PC	9111+74.91	575634.1708	1654174.2627
8101	PT	9113+56.10	575606.5727	1654352.8458
8102	POE	9115+48.72	575601.4044	1654545.3985

COUNTY RD. SITE 3

POINT NO.	TYPE	STATION	NORTHING	EASTING
8103	POB	5+09.43	570712.1969	1619800.9009
8104	PC	5+37.61	570740.3731	1619801.2750
8106	PT	7+14.34	570877.7190	1619895.7184
8107	PC	7+62.22	570895.4494	1619940.1975
8109	PT	9+03.50	571002.6251	1620021.3483
8110	POE	10+00.00	571098.5961	1620031.4313

COUNTY RD. SITE 8

POINT NO.	TYPE	STATION	NORTHING	EASTING
8111	POB	10+00.00	575792.3812	1648702.3362
8112	PC	10+82.43	575709.9572	1648701.4513
8114	PT	11+41.87	575671.5549	1648738.7954
8115	PC	12+88.57	575669.0315	1648885.4662
8117	PT	15+04.64	575530.4839	1649023.0507
8118	POE	18+48.83	575186.3062	1649026.5705

SITE 5 DRIVEWAY 521+28

POINT NO.	TYPE	STATION	NORTHING	EASTING
8119	POB	8+63.90	575852.2156	1641186.5934
8120	POE	10+00.00	575988.0226	1641195.5338

SITE 5 DRIVEWAY 523+50

POINT NO.	TYPE	STATION	NORTHING	EASTING
8147	POB	20+05.44	575603.8663	1640912.7972
8148	PC	20+95.33	575595.3941	1641302.5959
8150	PT	24+58.16	575634.5165	1641343.4557
8151	PI	25+31.05	575707.3887	1641345.0377
8152	POE	28+00.00	575975.4647	1641366.7228

SITE 8 DRIVEWAY 813+10

POINT NO.	TYPE	STATION	NORTHING	EASTING
8126	POB	10+00.00	575790.8716	1648802.3199
8127	PC	10+72.67	575863.5298	1648803.7341
8129	PT	11+38.30	575907.4595	1648844.5456
8130	PC	12+29.73	575915.9526	1648935.5822
8132	PT	12+93.03	575957.5641	1648976.2887

SITE 8 DRIVEWAY 819+10

POINT NO.	TYPE	STATION	NORTHING	EASTING
8153	POB	20+00.00	575773.2728	1649402.0592
8134	PC	20+65.80	575707.5204	1649399.6828
8154	PT	21+15.56	575668.6445	1649372.9910
8155	PC	22+77.88	575604.8999	1649223.7137
8157	PT	23+25.99	575567.6834	1649197.1133

SITE 8 DRIVEWAY 820+10

POINT NO.	TYPE	STATION	NORTHING	EASTING
8140	POB	30+00.00	575769.2251	1649501.9769
8141	PC	30+50.34	575819.0772	1649504.2339
8143	PT	31+14.35	575864.0926	1649466.7223
8144	PC	33+67.56	575896.1568	1649215.5504
8146	PT	34+29.64	575938.8107	1649177.9955

R101054_TTL_TYP_SCD.dgn 9/20/2022

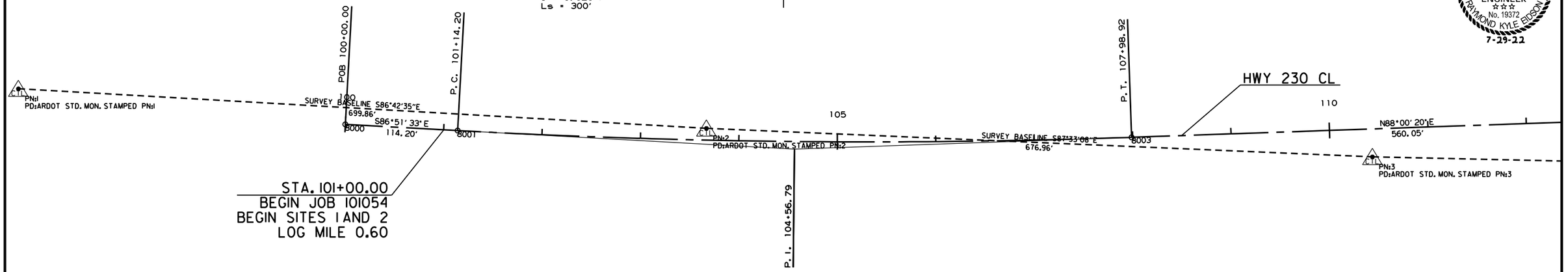
SURVEY CONTROL DETAILS

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.		101054	119	311

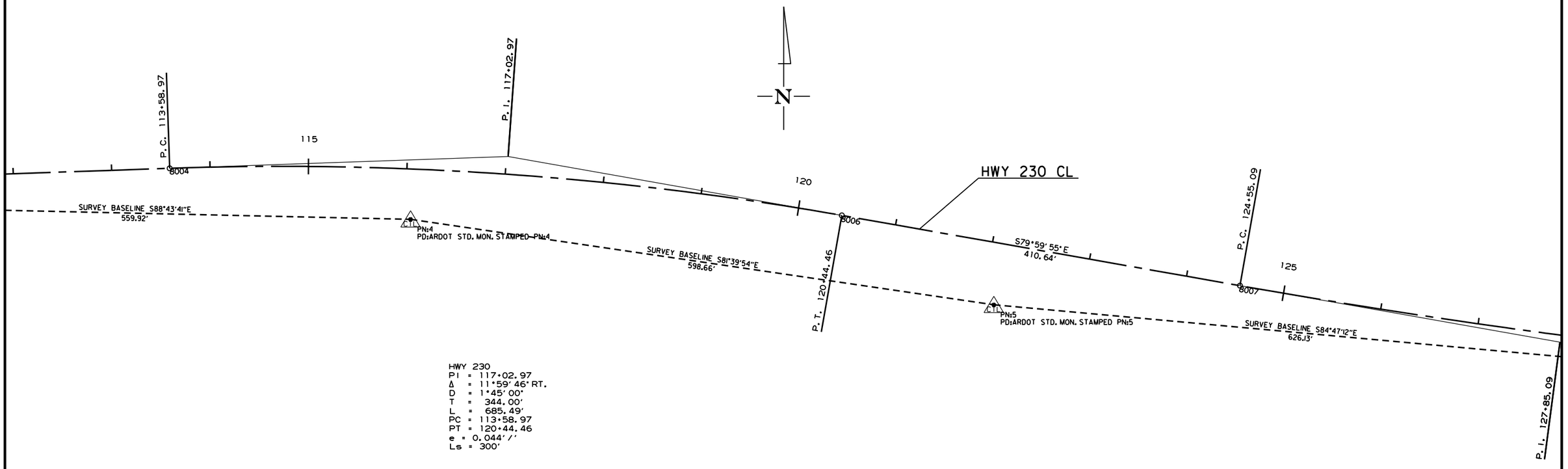
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

HWY 230
PI = 104+56.79
Δ = 5°08'07" LT.
D = 00°45'00"
T = 342.59'
L = 684.72'
PC = 101+14.20
PT = 107+98.92
e = 0.020'/'
Ls = 300'



HWY 230
PI = 117+02.97
Δ = 11°59'46" RT.
D = 1°45'00"
T = 344.00'
L = 685.49'
PC = 113+58.97
PT = 120+44.46
e = 0.044'/'
Ls = 300'



SURVEY CONTROL DETAILS

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	120	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

HWY 230
PI = 127+85.09
Δ = 4°56'49" LT.
D = 00°45'00"
T = 330.00'
L = 659.58'
PC = 124+55.09
PT = 131+14.67
e = 0.020'/'
Ls = 300'

HWY 230 CL

130

P.T. 131+14.67

POE 132+20.93

PN:6
PD:ARDOT STD. MON. STAMPED PN:6

8009

S84°56'43"E
106.25'

8010

SURVEY BASELINE S85°13'34"E
655.76'

P.I. 127+85.09

STA. 131+00.00
END SITES 1 AND 2

PN:100
PD:ARDOT GPS #380018

POB 300+00.00

300

SURVEY BASELINE S88°22'32"E
643.32'

PN:103
PD:ARDOT GPS #380019A

8011

S88°43'01"E
300.02'

S89°00'08"E
20.99

8012

PN:7 8061 8062
PD:ARDOT STD. MON. STAMPED PN:7

POB 3302+94.05

3302

P.I. 303+00.02
Δ = 0.0016'47"LT.

P.C. 3303+15.00

P.I. 3304+19.78

305

3305

8064

S76°28'42"E
196.25

P.T. 3305+23.72

8065

P.C. 3307+19.98

SURVEY BASELINE S89°04'26"E
751.20'

P.I. 3308+24.76

STA.309+00.00
BEGIN SITE 3
LOG MILE 7.32

P.T. 3309+28.70

S88°59'48"E
1419.98'

310

PN:8
PD:ARDOT STD. MON. STAMPED PN:8

HWY 230 CL

3310

P.C. 3310+82.20

N5°59'52"E
96.50'

8067

S89°00'08"E
153.49

8068

P.T. 9+03.50

STA. 311+24.90 HWY 230 =
STA. 10+00 CO. RD. 745
Δ 85° 00' 21"

P.C. 7+62.22

P.I. 6+37.85

N68°16'00"E
3109.88'

8069

P.T. 7+14.34

P.C. 5+37.61

N21°45'39"E
328.18'

POB 5+09.43

HWY 230 DETOUR
PI = 3304+19.78
Δ = 12°31'26" RT.
D = 6°00'01"
T = 104.78'
L = 208.72'
PC = 3303+15.00
PT = 3305+23.72
e = NO SUPER

HWY 230 DETOUR
PI = 3308+24.76
Δ = 12°31'26" LT.
D = 6°00'01"
T = 104.78'
L = 208.72'
PC = 3307+19.98
PT = 3309+28.70
e = 0.082'/'
Ls = 250'

COUNTY ROAD 745
PI = 6+37.85
Δ = 67°30'21" RT.
D = 38°11'50"
T = 100.24'
L = 176.73'
PC = 5+37+61
PT = 7+14.34
e = NO SUPER

COUNTY ROAD 745
PI = 8+40.75
Δ = 62°16'08" LT.
D = 44°04'25"
T = 78.53'
L = 141.28'
PC = 7+62.22
PT = 9+03.50
e = NO SUPER

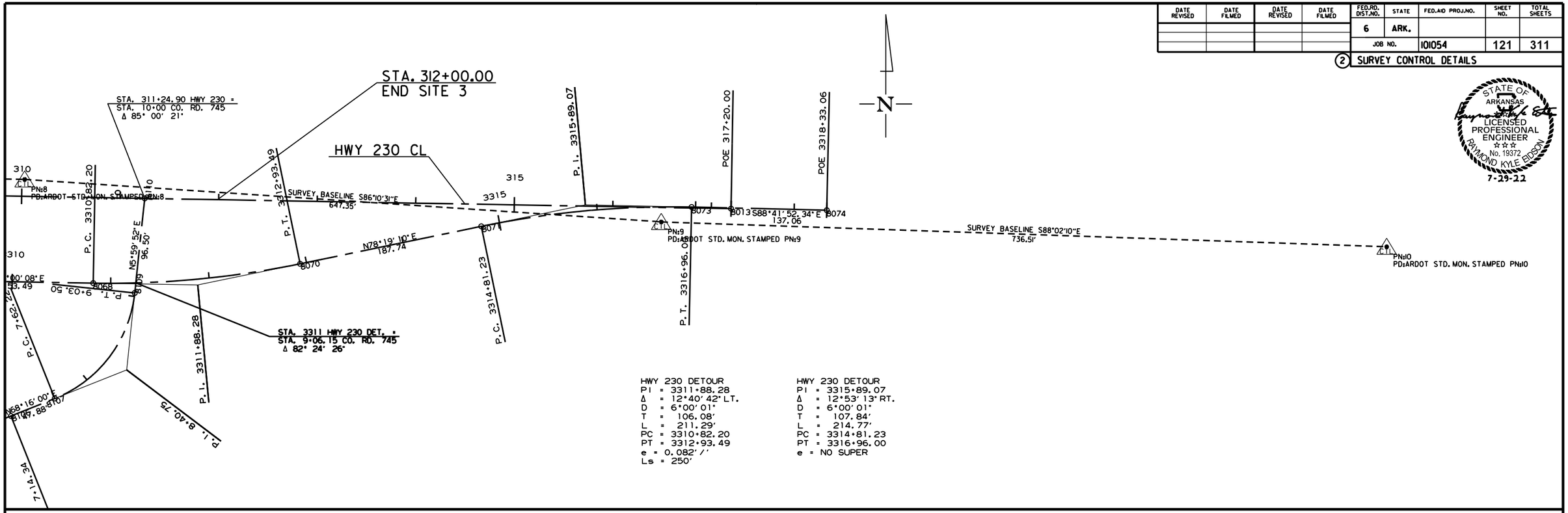
SURVEY CONTROL DETAILS

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	121	311

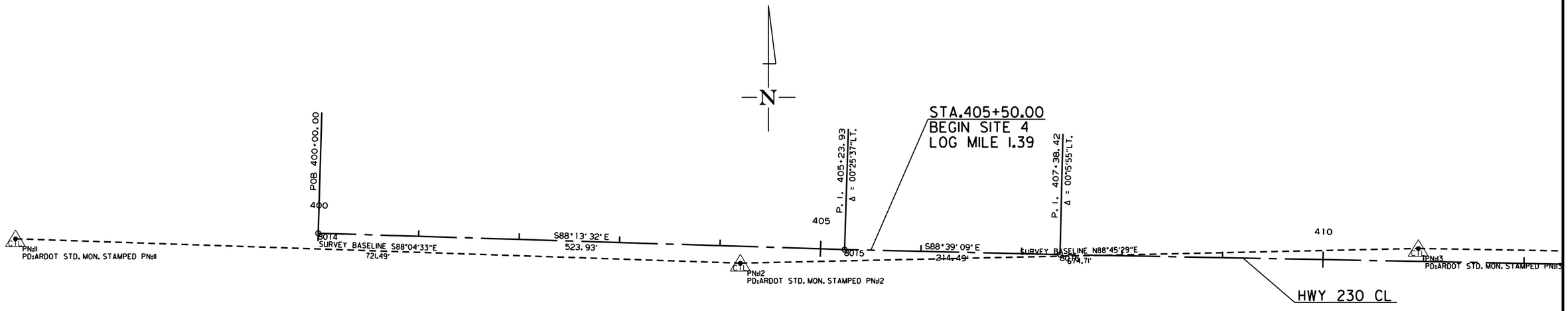
(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



HWY 230 DETOUR
PI = 3311+88.28
Δ = 12°40'42" LT.
D = 6°00'01"
T = 106.08'
L = 211.29'
PC = 3310+82.20
PT = 3312+93.49
e = 0.082'/'
Ls = 250'

HWY 230 DETOUR
PI = 3315+89.07
Δ = 12°53'13" RT.
D = 6°00'01"
T = 107.84'
L = 214.77'
PC = 3314+81.23
PT = 3316+96.00
e = NO SUPER



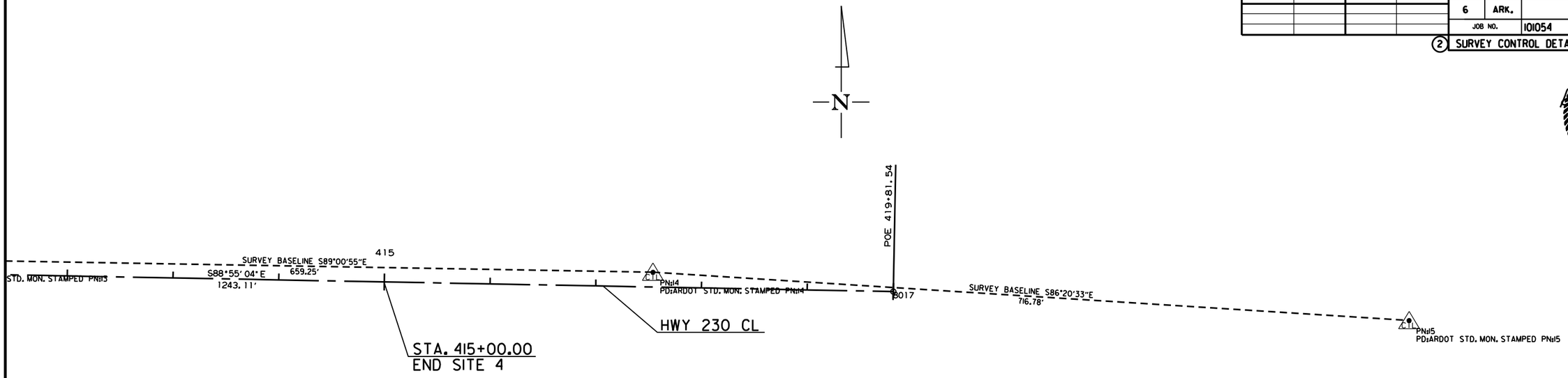
R101054_TTL_TYP_SCD.dgn 8/15/2022

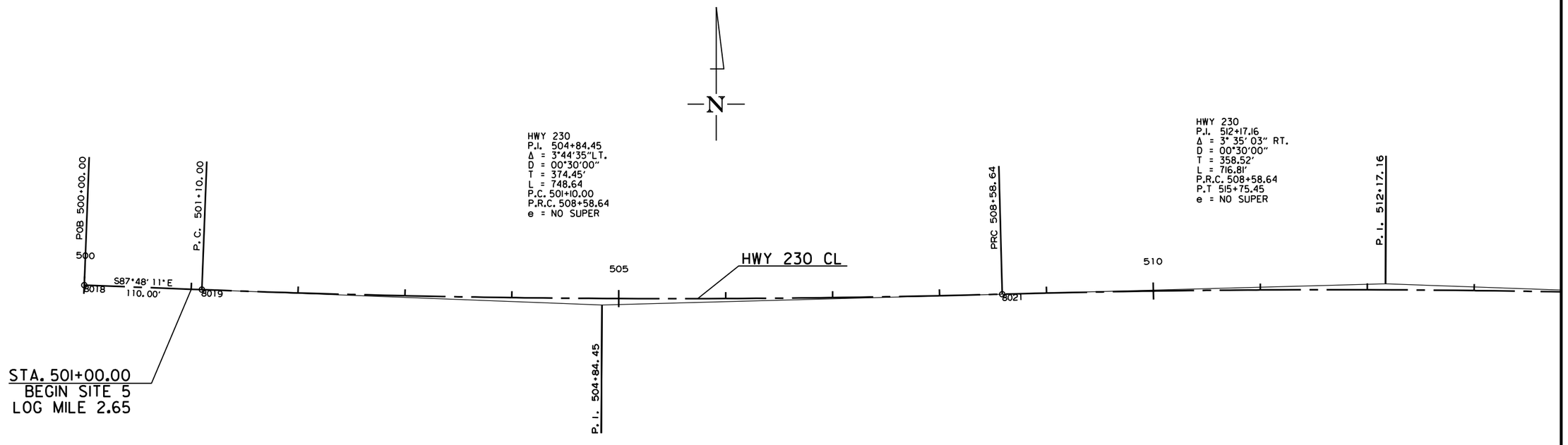
SURVEY CONTROL DETAILS

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.		101054	122	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22





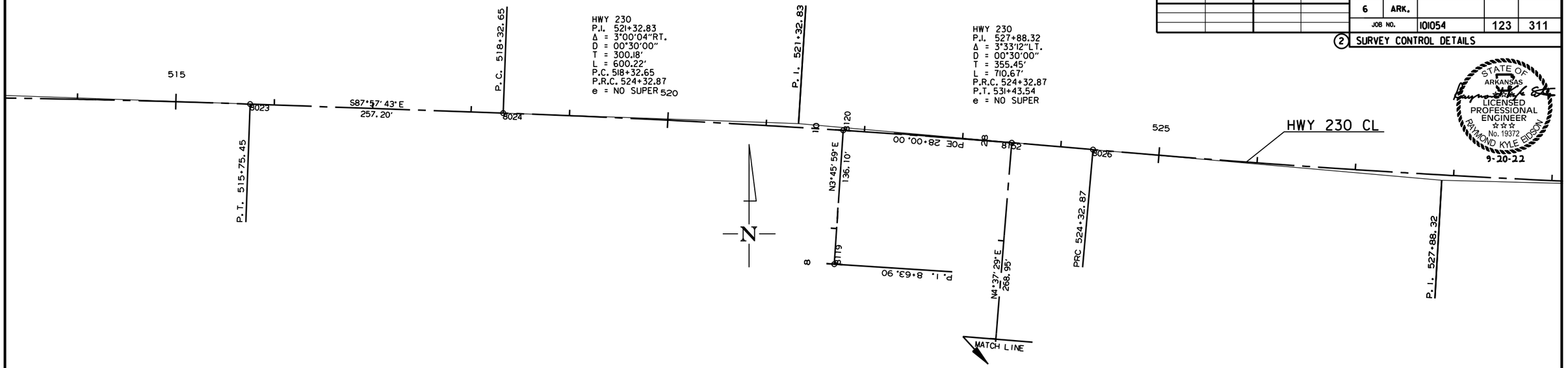
R101054_TTL_TYP_SCD.dgn 8/15/2022

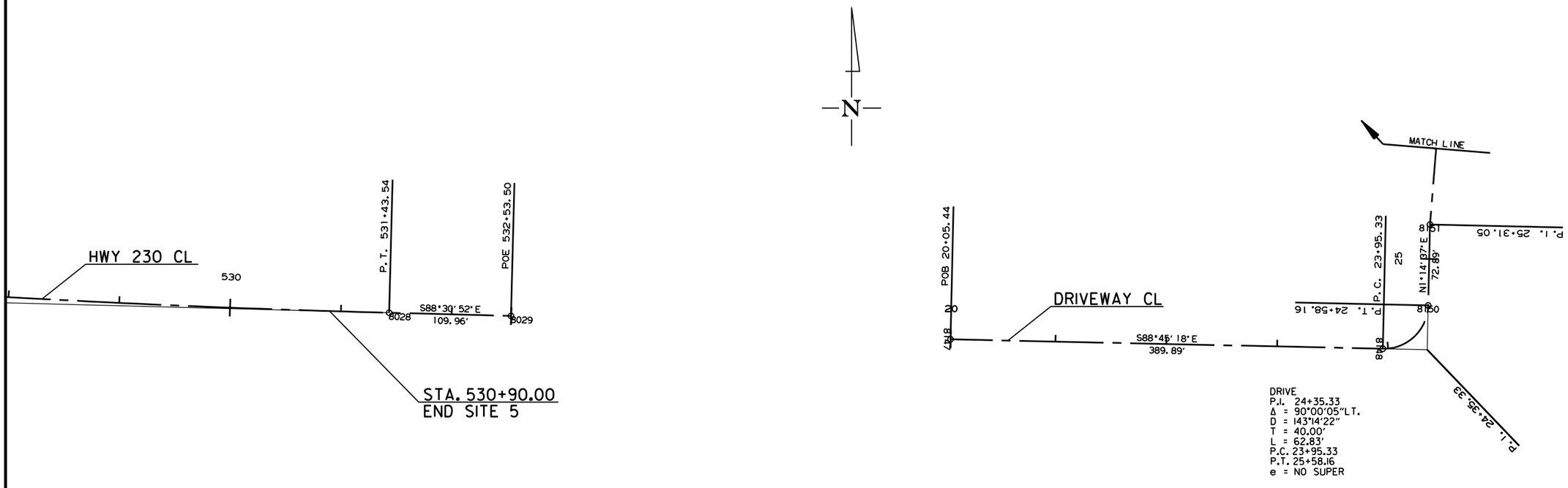
SURVEY CONTROL DETAILS

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.		101054	123	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22





SURVEY CONTROL DETAILS

R101054_TTL_TYP_SCD.dgn 9/20/2022

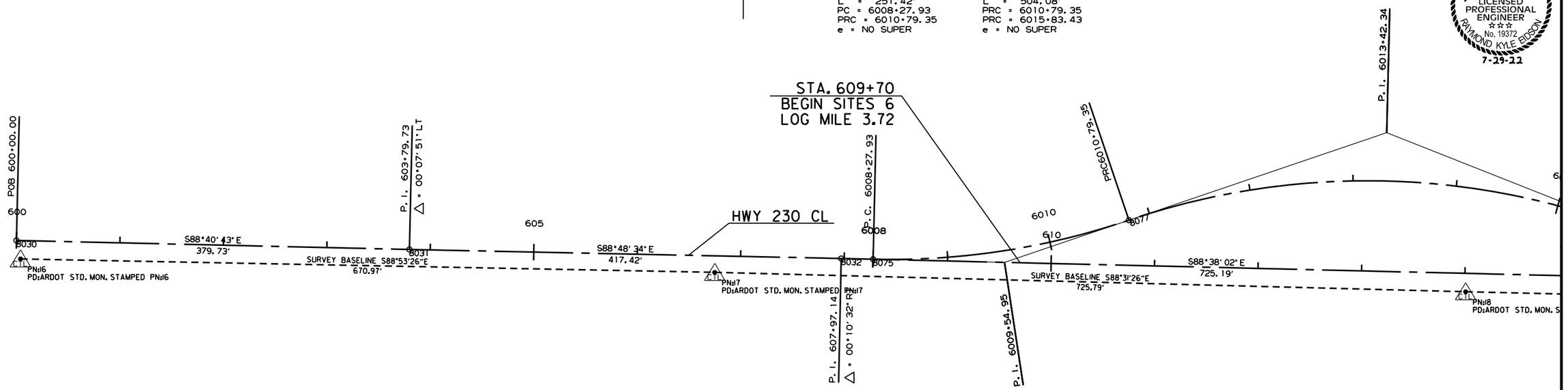
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	124	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

HWY 230 DETOUR
PI = 6009+54.95
Δ = 20°06'50" LT.
D = 8°00'00"
T = 127.02'
L = 251.42'
PC = 6008+27.93
PRC = 6010+79.35
e = NO SUPER

HWY 230 DETOUR
PI = 6013+42.34
Δ = 40°19'33" RT.
D = 8°00'00"
T = 262.99'
L = 504.08'
PRC = 6010+79.35
PRC = 6015+83.43
e = NO SUPER

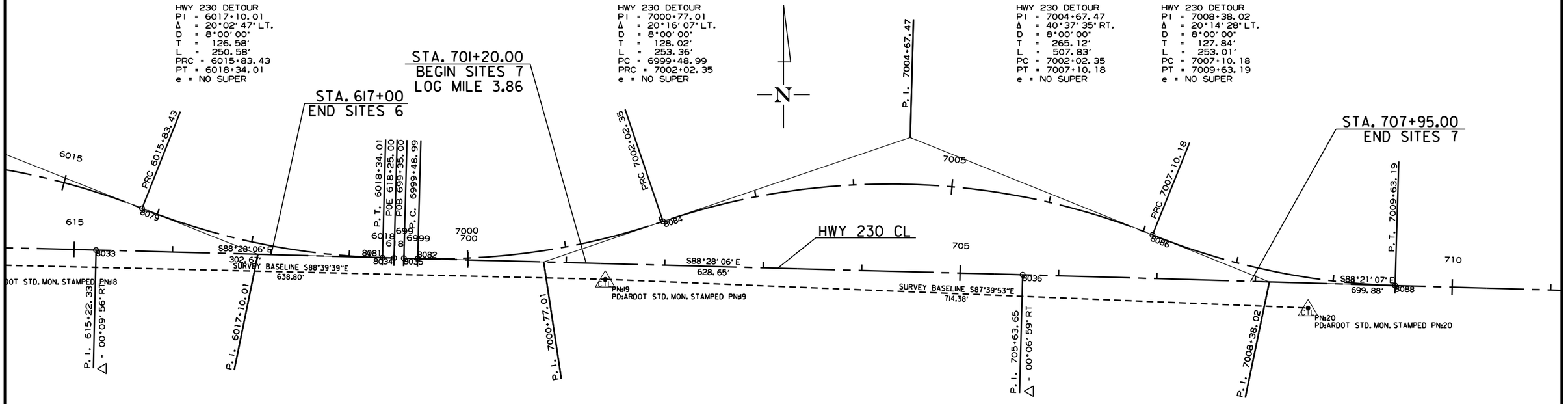


HWY 230 DETOUR
PI = 6017+10.01
Δ = 20°02'47" LT.
D = 8°00'00"
T = 126.58'
L = 250.58'
PRC = 6015+83.43
PT = 6018+34.01
e = NO SUPER

HWY 230 DETOUR
PI = 7000+77.01
Δ = 20°16'07" LT.
D = 8°00'00"
T = 128.02'
L = 253.36'
PC = 6999+48.99
PRC = 7002+02.35
e = NO SUPER

HWY 230 DETOUR
PI = 7004+67.47
Δ = 40°37'35" RT.
D = 8°00'00"
T = 265.12'
L = 507.83'
PC = 7002+02.35
PT = 7007+10.18
e = NO SUPER

HWY 230 DETOUR
PI = 7008+38.02
Δ = 20°14'28" LT.
D = 8°00'00"
T = 127.84'
L = 253.01'
PC = 7007+10.18
PT = 7009+63.19
e = NO SUPER



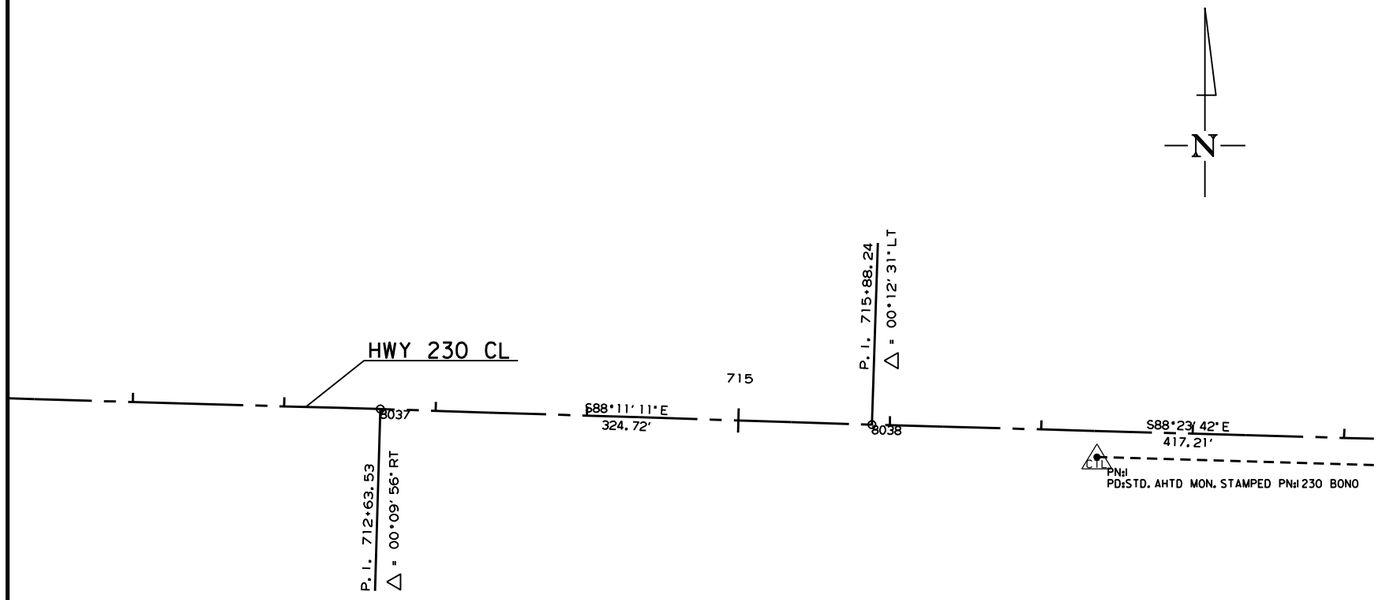
R101054_TTL_TYP_SCD.dgn 8/15/2022

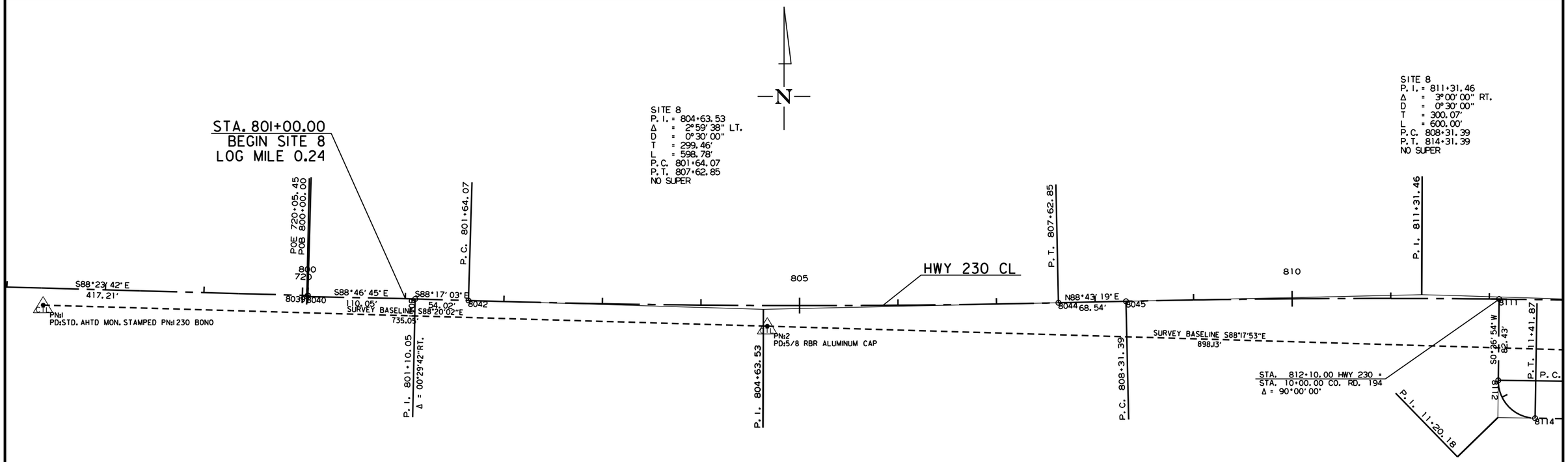
SURVEY CONTROL DETAILS

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.		101054	125	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22





SURVEY CONTROL DETAILS

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	126	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDISON
9-20-22

SITE 8
P.I. = 821+40.51
Δ = 3°00'00" RT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P.C. 818+40.44
P.T. 824+40.44
NO SUPER

SITE 8
P.I. = 827+50.50
Δ = 3°00'00" LT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P.C. 824+50.43
P.T. 830+50.43
NO SUPER

HWY 230 CL

815

P.I. 11+12.67
8129
N84°40'12"E 91.43'
8130
P.C. 12+29.73
8132
P.T. 12+93.03
P.I. 12+67.89
P.C. 10+72.62
8127
N1°06'54"E 72.67'
P.T. 11+38.30
8126
8111
S0°86'54"W 82.43'
P.T. 11+41.87
P.C. 10+82.43
8112
8114
S89°00'52"E 146.69'
8115
P.T. 8+14+31.39
P.I. 14+24.78
P.C. 12+88.57
P.T. 15+04.64
8117
S0°15'09"E 344.20'
15

P.C. 33+67.56
P.T. 34+29.64
8146
P.I. 34+05.42
8144
N82°43'30"W 253.21'
8143
P.T. 31+14.35
P.I. 30+89.94
P.C. 30+50.34
8141
S2°30'11"E 50.34'
8140
P.I. 821+40.51
P.C. 818+40.44
8048
S88°16'41"E 409.05'
8047
POB 20+00.00
8153
N2°04'11"W 1465.80'
P.C. 20+65.80
8154
P.I. 20+93.72
P.T. 21+15.56
P.I. 23+04.66
S66°52'35"W 162.32'
8155
8157
N23°
P.T. 23+25.99
P.C. 22+77.88

P.C. 824+50.43
825
S85°16'41"E 1991.80'
8051
P.T. 824+40.44
P.I. 827+50.50

PN:3
PD:STD. AHTD MON. STAMPED PN:3 230 BONO
SURVEY BASELINE S88°05'29"E 477.45'

PN:4
PD:STD. AHTD MON. STAMPED PN:4 230 BONO
SURVEY BASELINE S88°41'21"E 819.67'

PN:5
PD:STD. AHTD MON. S

COUNTY ROAD 194
PI = 11+20.18
Δ = 89°37'46" LT.
D = 150°46'42"
T = 37.75'
L = 59.44'
PC = 10+82.43
PT = 11+41.87
e = NO SUPER

COUNTY ROAD 194
PI = 14+24.78
Δ = 88°25'42" RT.
D = 40°55'32"
T = 136.21'
L = 216.07'
PC = 12+88.57
PT = 15+04.64
e = NO SUPER

DRIVEWAY STA. 813+10
PI = 11+12.87
Δ = 83°33'18" RT.
D = 127°19'26"
T = 40.20'
L = 65.63'
PC = 10+72.67
PT = 11+38.30
e = NO SUPER

DRIVEWAY STA. 813+10
PI = 12+67.89
Δ = 80°36'00" LT.
D = 127°19'26"
T = 38.16'
L = 63.29'
PC = 12+29.73
PT = 12+93.03
e = NO SUPER

DRIVEWAY STA. 819+10
PI = 20+93.72
Δ = 64°48'24" RT.
D = 130°13'04"
T = 27.93'
L = 49.77'
PC = 20+65.80
PT = 21+15.56
e = NO SUPER

DRIVEWAY STA. 819+10
PI = 23+04.66
Δ = 62°38'33" LT.
D = 130°13'04"
T = 26.77'
L = 48.11'
PC = 22+77.88
PT = 23+25.99
e = NO SUPER

DRIVEWAY STA. 820+10
PI = 30+89.94
Δ = 85°17'42" LT.
D = 133°14'46"
T = 39.60'
L = 64.01'
PC = 30+50.34
PT = 31+14.35
e = NO SUPER

DRIVEWAY STA. 820+10
PI = 34+05.42
Δ = 82°43'30" RT.
D = 133°14'46"
T = 37.86'
L = 62.08'
PC = 33+67.56
PT = 34+29.64
e = NO SUPER

STA. 831+00.00
END SITE 8

HWY 230 CL

830

P.T. 830+50.43
POE 832+20.01
8053
8054
8055
S88°16'41"E 59.58'
S87°45'26"E 110.00'
SURVEY BASELINE N89°14'16"E 819.09'
SURVEY BASELINE S88°28'16"E 923.66'

PN:5
PD:STD. AHTD MON. STAMPED PN:5 230 BONO

PN:6
PD:STD. AHTD MON. STAMPED PN:6 230 BONO

P.I. 827+50.50
P.I. 831+10.00
Δ = 00°31'15" RT.

R101054_TTL_TYP_SCD.dgn 9/20/2022

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.		101054	127	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22

N

PN:7
PD:STD. AHTD MON. STAMPED PN:7 230 BONO

SURVEY BASELINE S88°35'21"E
858.72'

PN:8
PD:STD. AHTD MON. STAMPED PN:8 230 BONO

POB 9100+00.00
POB 900+00.00
9100900
8089 8056
S88°35'56"E
119.81
P.C. 9101+19.81
S88°55'17"E
8090 209.77
P.I. 9102+15.81
P.I. 902+09.77
Δ = 00°29'16"RT.

SITE 9 DETOUR
P.I. = 9102+15.81
Δ = 15°16'10" LT.
D = 8°00'00"
T = 96.00'
L = 190.87'
P.C. 9101+19.81
P.T. 9103+10.68
NO SUPER

SITE 9 DETOUR
P.I. = 9105+53.64
Δ = 15°23'51" RT.
D = 8°00'00"
T = 96.82'
L = 192.47'
P.C. 9104+56.82
P.T. 9106+49.29
e = 0.094 '/'
LS=300'

SITE 9 DETOUR
P.I. = 9109+07.76
Δ = 14°30'12" RT.
D = 8°00'00"
T = 91.13'
L = 181.29'
P.C. 9108+16.63
P.T. 9109+97.92
e = 0.094 '/'
LS=300'

SITE 9 DETOUR
P.I. = 9112+65.99
Δ = 14°29'42" LT.
D = 8°00'00"
T = 91.08'
L = 181.19'
P.C. 9111+74.91
P.T. 9113+56.10
NO SUPER

P.T. 9103+10.68
P.C. 9104+56.82
P.I. 9105+53.64
P.T. 9106+49.29
P.C. 9108+16.63
P.I. 9109+07.76
P.T. 9109+97.92
P.C. 9111+74.91
P.T. 9113+56.10
POE 9115+48.72
POE 915+36.83

9105
8093
8095
S88°28'15"E
167.34
8096
8098
910
8099
9115
915
8101
8102 8058
S88°27'45"E
192.62

8092
N76°07'54"E
146.15
905
8052
SURVEY BASELINE S86°14'47"E
799.63'
S88°26'01"E
1327.06
SURVEY BASELINE N89°12'33"E
838.39'
SURVEY BASELINE
788

HWY 230 CL

PN:9
PD:STD. AHTD MON. STAMPED PN:9 230 BONO

PN:10
PD:STD. AHTD MON. STAMPED PN:10 230 BONO

P.I. 9102+15.81
P.I. 902+09.77
Δ = 00°29'16"RT.

P.I. 9112+65.99

STA. 903+70.00
BEGIN SITE 9
LOG MILE 1.28

STA. 910+30.00
END SITE 9

N

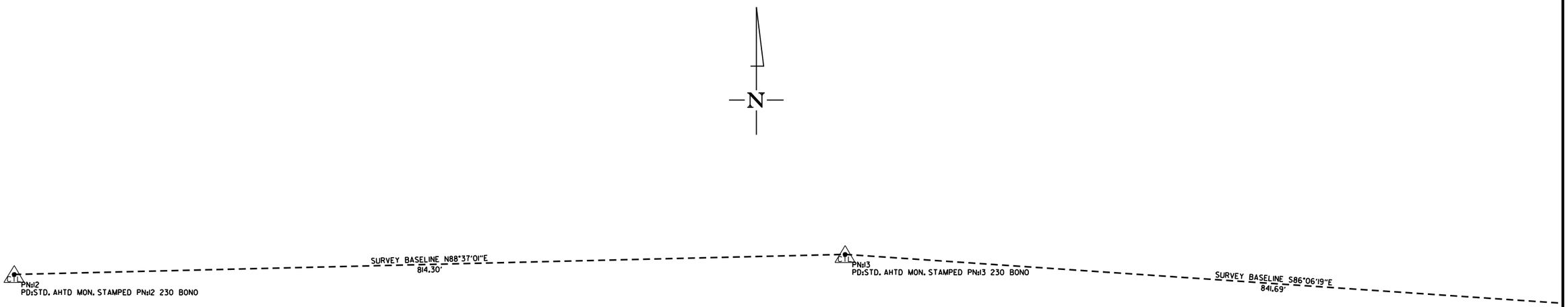
SURVEY CONTROL DETAILS

R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	128	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22



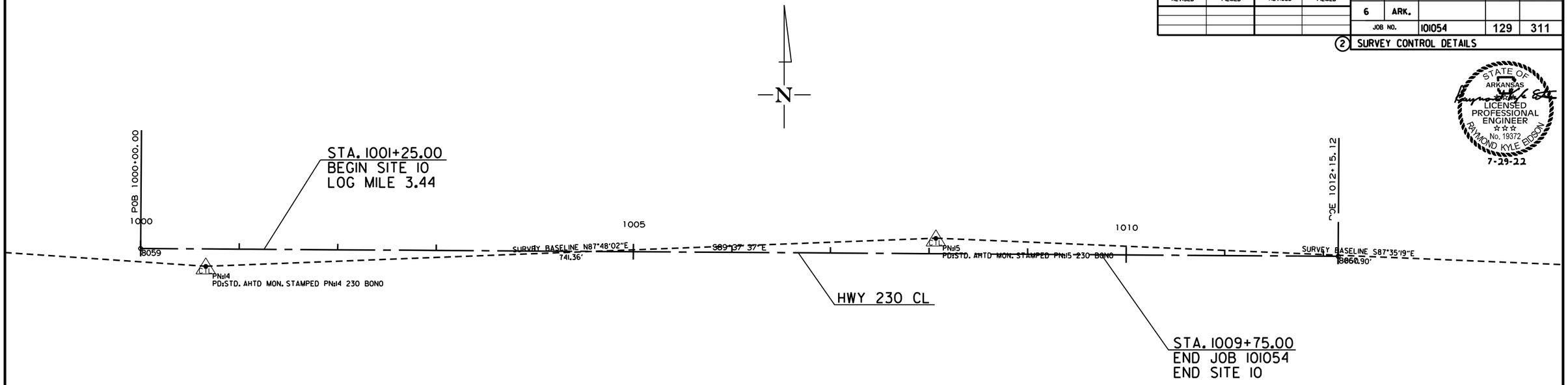
SURVEY CONTROL DETAILS

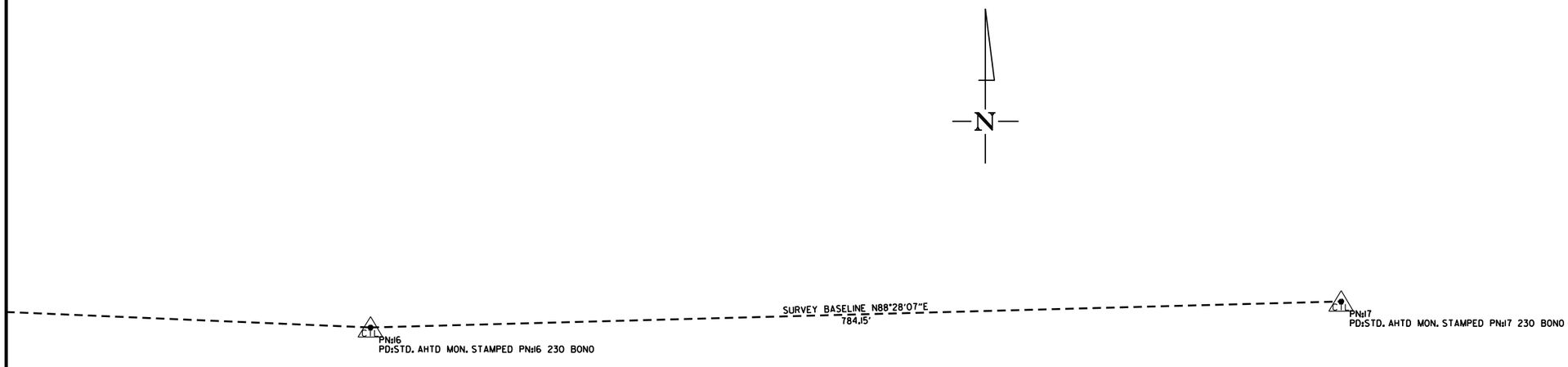
R101054_TTL_TYP_SCD.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	129	311

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EDSON
7-29-22





R101054_TTL_TYP_SCD.dgn 8/15/2022

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.	101054		130	311

(2) PLAN AND PROFILE SHEETS - SITE 1& 2

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
110+56	111+57	RT.	101
110+57	111+58	LT.	101

STA. 104+42 IN PLACE
18" x 21' CM PIPE CULVERT
LT. SIDE DRAIN REMOVE

STA. 100+51 IN PLACE
8" x 23.5' CM PIPE CULVERT
LT. SIDE DRAIN REMOVE

HWY 230
PI = 104+56.79
Δ = 5°08'07" LT.
D = 00°45'00"
T = 342.59'
L = 684.72'
PC = 101+14.20
PT = 107+98.92
e = 0.020'/'
Ls = 300'

STA. 105+60 IN PLACE
24" x 54.5' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
42" x 54' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
215 CU. YDS. COMP. EMB.
DUMPED RIPRAP

STA. 110+52.49 BR. END
BR. NO. 07522
120'-0 1/8" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
119'-0" INTEGRAL COMPOSITE
PRESTRESSED CONCRETE GIRDER
UNIT (39'-6", 40'-0", 39'-6")
STA. 111+72.51 BR. END

STA. 111+18- STA. 112+18 IN PLACE
BRIDGE NO. M3224
100' x 28' WOOD STRINGERS/BEAMS
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE
STR. (SITE NO. 1) = 1.00 LUMP SUM

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

CULTIVATED FIELD
100' TRANSITION
PROP. TCE
BERM REQ'D.
PROP. ROW
CONST. LIMITS
EXIST. ROW
S86°51'33"E
SPECIAL FLOOD HAZARD AREA
BRIDGE END STA. 110+52.49
BRIDGE END STA. 111+72.51
S88°00'20"E
VILLAGE CREEK
MHO
PN:2 PD:ARDOT STD. MON. STAMPED PN:2
PN:3 PD:ARDOT STD. MON. STAMPED PN:3
PN:II42 PD:SI20PN
PN:II43 PD:SI20PN
PN:II44 PD:SI20PN
PN:II45 PD:SI20PN
PN:II46 PD:SI20PN
PN:II37 PD:SI20PN
PN:II36 PD:SI20PN

STA. 101+00.00
BEGIN JOB 101054
BEGIN SITE 1& 2
LOG MILE 0.61

STA. 104+80 IN PLACE
15" x 53.5' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
35 CU. YDS. COMP. EMB.

STA.	STA.	SIDE	LIN. FT.	GUARDRAIL (TYPE A) EACH	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
108+21.10	110+39.85	RT.	150	1	1	1
109+01.38	110+45.13	LT.	75	1	1	1
111+79.87	113+23.62	RT.	75	1	1	1
111+85.15	114+03.90	LT.	150	1	1	1

HWY 230
PI = 117+02.97
Δ = 11°59'46" RT.
D = 1°45'00"
T = 344.00'
L = 685.49'
PC = 113+58.97
PT = 120+44.46
e = 0.044'/'
Ls = 300'

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 1& 2

STA. 100+39.20 BEGIN SUPERELEVATION
STA. 103+39.20 MAX. SUPERELEVATION (0.020'/')RC
STA. 107+23.92 MAX. SUPERELEVATION (0.020'/')RC
STA. 110+23.92 END SUPERELEVATION

STA. 104+00.00
BEGIN PROFILE GRADE

P.V.I. 104+00.00
ELEV. 250.79

P.V.C. 106+75.00
ELEV. 250.22

P.V.I. 108+25.00
ELEV. 249.91

K 175.44
VC=300'
e=0.64'

P.V.T. 109+75.00
ELEV. 252.16

P.V.C. 110+00.00
ELEV. 252.54

P.V.I. 111+50.00
ELEV. 254.79

K 200.00
VC=300'
e=-0.56'

P.V.T. 113+00.00

-0.21%
1.50%

BRIDGE END STA. 110+52.49
BRIDGE END STA. 111+72.51

Q25 DESIGN HW 248.25
OHW 246.00

2:1
2:1

102+00.00 LT. 245.64
110+73.01 LT. 240.40

LT. DITCH GRADE -0.60%

NOTE:
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATION IS 247 FT. MSL. BETWEEN STATIONS 110+60 AND 111+50. REFER TO SECTION 110.06(C) OF THE 2014 STANDARD SPECIFICATIONS.

265 260 255 250 245 240 235 230 225 220

100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	131	311

(2) PLAN AND PROFILE SHEETS - SITE 1& 2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EDISON
No. 19372
7-29-22

HWY. 230 - SITE 1& 2

STA. 115+60 IN PLACE
LT. CONSTRUCT APPROACH
= 80 CU. YDS. COMP. EMB.

STA. 115+10 IN PLACE
RT. CONSTRUCT APPROACH
= 260 CU. YDS. COMP. EMB.

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
120+89	121+97	LT.	108
120+93	122+01	RT.	108

STA. 116+90 IN PLACE
18" x 21' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
36" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
= 170 CU. YDS. COMP. EMB.

HWY 230
PI = 117+02.97
Δ = 11°59'46" RT.
D = 1°45'00"
T = 344.00'
L = 685.49'
PC = 113+58.97
PT = 120+44.46
e = 0.044'/'
Ls = 300'

STA. 120+99.48 BR. END
BR. NO. 07523
120'-0 3/8" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
119'-0" INTEGRAL COMPOSITE
PRESTRESSED CONCRETE GIRDER
UNIT (39'-6", 40'-0", 39'-6")
STA. 122+19.52 BR. END

STA. 121+42 - STA. 122+48 IN PLACE
BR. NO. M3319
106' x 28' WOOD STRINGERS/BEAMS
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE
STR. (SITE NO. 2) = 1.00 LUMP SUM

STA. 125+82 IN PLACE
36" x 28'RC PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
3 - 42" x 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
= 15 CU. YDS. COMP. EMB.

HWY 230
PI = 127+85.09
Δ = 4°56'49" LT.
D = 00°45'00"
T = 330.00'
L = 659.58'
PC = 124+55.09
PT = 131+14.67
e = 0.020'/'
Ls = 300'

STA.	STA.	SIDE	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
118+66.71	120+85.46	RT.	150	1	1
119+49.75	120+93.50	LT.	75	1	1
122+25.50	123+69.25	RT.	75	1	1
122+33.54	124+52.29	LT.	150	1	1

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 111+33.97 BEGIN SUPERELEVATION
STA. 114+33.97 MAX. SUPERELEVATION (0.044'/')
STA. 119+49.77 MAX. SUPERELEVATION (0.044'/')
STA. 122+49.77 END SUPERELEVATION

STA. 122+49.77 BEGIN SUPERELEVATION
STA. 125+49.77 MAX. SUPERELEVATION (0.020'/')RC
STA. 128+89.67 MAX. SUPERELEVATION (0.020'/')RC
STA. 131+89.67 END SUPERELEVATION

BRIDGE END STA. 120+99.48

BRIDGE END STA. 122+19.52

ELEV. 254.79

0.00%

P.V.C. 118+71.34 ELEV. 254.79

K 320.00 VC=400' e=-0.62'

P.V.I. 120+71.34 ELEV. 254.79

P.V.T. 122+71.34 ELEV. 252.29

-1.25%

P.V.C. 123+75.00 ELEV. 250.99

P.V.I. 125+25.00 ELEV. 249.12

K 182.93 VC=300' e=0.61'

P.V.T. 126+75.00 ELEV. 249.70

0.39%

P.V.I. 128+00.00

115+55.00 RT. 249.01

116+00.00 LT. 249.58

LT. DITCH GRADE -1.99%

RT. DITCH GRADE -0.95%

118+00.00 LT. 245.60

2:1

Q25 DESIGN HW 247.77

DHW 245.00

2:1

121+00.00 RT. 243.84

121+83.67 LT. 240.26

LT. DITCH GRADE 0.20%

125+00.00 LT. 240.89

STA. 128+00.00
END PROFILE GRADE

NOTE:
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATION IS 247 FT. MSL. BETWEEN STATIONS 121+00 AND 121+95. REFER TO SECTION 110.06(C) OF THE 2014 STANDARD SPECIFICATIONS.

265 260 255 250 245 240 235 230 225 220

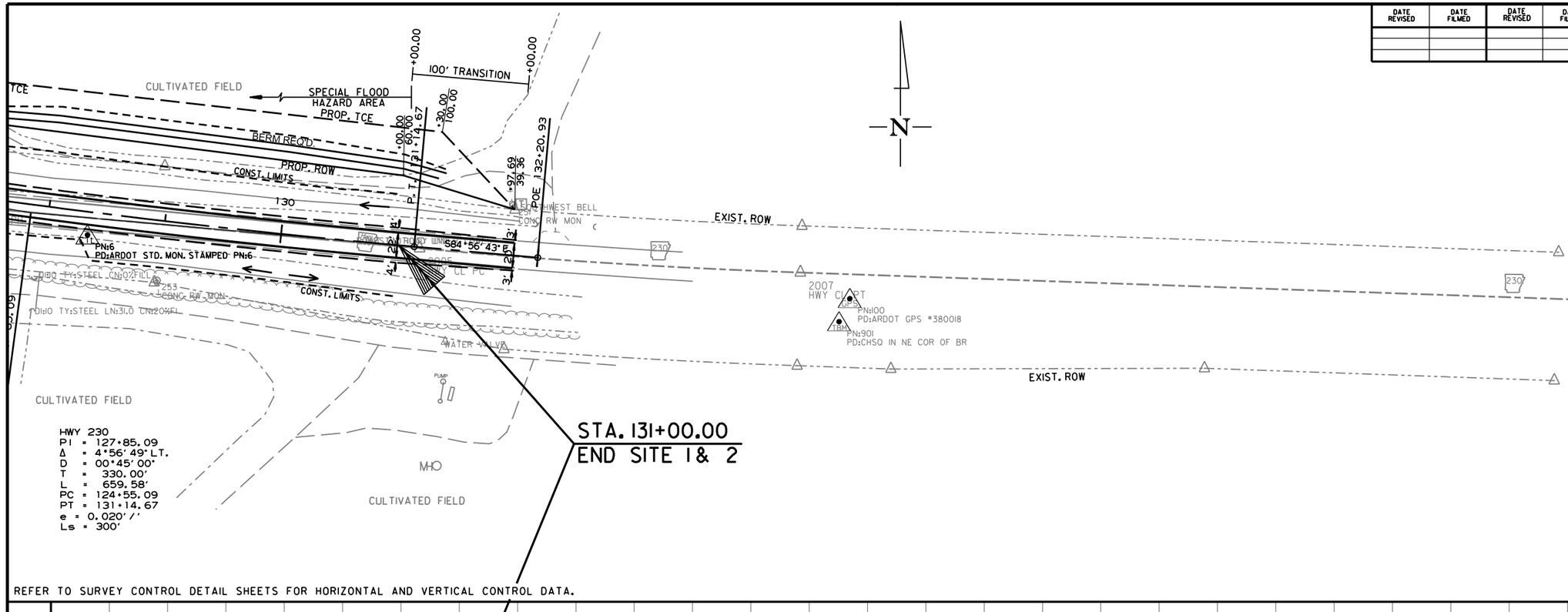
113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	132	311

(2) PLAN AND PROFILE SHEETS - SITE 1& 2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22



REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 1& 2

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	133	311

(2) PLAN AND PROFILE SHEETS - SITE 3

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

STA. 309+05 IN PLACE
24" x 48.5'CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
TRP. 36" x 40'PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
▪ 120 CU. YDS. COMP. EMB.

STA. 310+48.00 - CONSTRUCT
QUAD. 11' x 6' x 80'R.C. BOX CULVERT
ON A 25° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q25 ▪ 792 CFS, D.A. ▪ 7.10 SQ. MI.
SPAN ▪ 47'-1"

SPECIAL FLOOD HAZARD AREA

STA. ▪ 311+24.90 HWY. 230 ▪
STA. 10+00.00 CO. RD. 745
Δ ▪ 85° 00'21"

P.I. 303+00.02
Δ= 00°16'47"LT.

100' TRANSITION

PROP. ROW

CONST. LIMITS

PROP. TCE

BERM REQ'D.

CULTIVATED FIELD

FINISHED FLOOR

APPROX LOC

POOR CREEK

LAWRENCE RD 745

S88°43'01"E

S88°59'48"E

N5°59'52"E

N88°16'00"E

POE 317+20.00

HWY CL PC

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
310+25	310+76	RT.	51
310+25	310+76	LT.	51

STA. 305+07 IN PLACE
24" x 24'CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
30" x 34'PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
▪ 5 CU. YDS. COMP. EMB.

STA. 309+00.00
BEGIN SITE 3
LOG MILE 7.33

STA. 312+00.00
END SITE 3

STA. 311+24.90
RT. CONST. TURNOUT
▪ 543 CU. YD. COMP. EMB.
▪ 2083 CU. YD. UNCL. EXC.

STA. 310+25 - STA. 310+75 IN PLACE
BRIDGE NO. M3269
50' x 24' WOOD STRINGERS/BEAMS
SUPPORTED BY TRESTLE PILE BENTS WITH
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE,
SITE NO. 3 ▪ 1.00 LUMP SUM

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 3

P.V.I. 309+00.00
ELEV. 252.08

P.V.I. 312+00.00
ELEV. 252.02

-0.02%

309+00.00
LT. 246.21

Q25 DESIGN HW
248.67

312+00.00
RT. 245.84

LT. DITCH GRADE -2.60%

RT. DITCH GRADE -1.83%

RT. DITCH GRADE 2.33%

LT. DITCH GRADE 1.47%

308+00.00
RT. 245.90

309+81.00
RT. 242.58

310+35.00
LT. 242.70

310+60.00
RT. 242.58

310+94.00
LT. 242.70

312+00.00
LT. 244.26

F.L. INLET LT.= 242.70
F.L. OUTLET RT.= 242.58

NOTE:
THIS STREAM IS CLASSIFIED AS A INTERMITTENT STREAM. THE STREAM BANK ELEVATION IS 248 FT. MSL. BETWEEN STATIONS 310+25 AND 310+75. REFER TO SECTION 110.06(C) OF THE 2014 STANDARD SPECIFICATIONS.

270 265 260 255 250 245 240 235 230 225

303+00 304+00 305+00 306+00 307+00 308+00 309+00 310+00 311+00 312+00 313+00 314+00 315+00 316+00 317+00

8/15/2022

R101054_Site3.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.	101054		134	311

(2) PLAN AND PROFILE SHEETS - SITE 3 DETOUR

HWY 230 DETOUR
PI = 3304+19.78
Δ = 12°31'26" RT.
D = 6°00'01"
T = 104.78'
L = 208.72'
PC = 3303+15.00
PT = 3305+23.72
e = NO SUPER

HWY 230 DETOUR
PI = 3308+24.76
Δ = 12°31'26" LT.
D = 6°00'01"
T = 104.78'
L = 208.72'
PC = 3307+19.98
PT = 3309+28.70
e = 0.082'/'
Ls = 230'

STA. 3310+00.00 - INSTALL
SEXT. 72" x 96' TEMPORARY PIPE CULVERT
ON A 40° LT. FWD. SKEW
Q2 = 373 CFS, D.A. = 7.1 SQ. MI.

STA. 3309+12 INSTALL
TEMP. 24" x 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 265 CU. YDS.

HWY 230 DETOUR
PI = 3311+88.28
Δ = 12°40'42" LT.
D = 6°00'01"
T = 106.08'
L = 211.29'
PC = 3310+82.20
PT = 3312+93.49
e = 0.082'/'
Ls = 230'

HWY 230 DETOUR
PI = 3315+89.07
Δ = 12°53'13" RT.
D = 6°00'01"
T = 107.84'
L = 214.77'
PC = 3314+81.23
PT = 3316+96.00
e = NO SUPER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

SPECIAL FLOOD HAZARD AREA

CULTIVATED FIELD

POOD CREEK

PROP. ROW

PROP. TCE

TEMP. CONST. LIMITS

TEMP. BERM REQ'D.

CONST. LIMITS

PAVED

APPROX. LOC

FINISHED FLOOR

GAS TANK

LOWEST UTILITY LINE

LAWRENCE CREEK

STA. 3303+15.00 DETOUR =
STA. 303+15.00 SITE 3
BEGIN SITE 3 DETOUR

STA. 3305+12 INSTALL
TEMP. 24" x 34' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 80 CU. YDS.

STA. = 3311+03.85 HWY. 230 DET. =
STA. 9+06.15 CO. RD. 745
Δ = 82°24'26"

STA. 3316+96.00
END SITE 3 DETOUR

HWY. 230 - SITE 3 DETOUR

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 3306+01.73 BEGIN SUPERELEVATION
STA. 3308+16.73 MAX. SUPERELEVATION (0.066'/')
STA. 3308+76.72 MAX. SUPERELEVATION (0.066'/')
STA. 3310+26.98 POINT RC (0.020'/')

STA. 3310+26.98 POINT RC (0.020'/')
STA. 3311+77.18 MAX. SUPERELEVATION (0.066'/')
STA. 3312+39.74 MAX. SUPERELEVATION (0.066'/')
STA. 3314+54.74 END SUPERELEVATION

P.V.I. 3304+61.35 ELEV. 252.13
P.V.C. 3305+30.00 ELEV. 252.03
P.V.I. 3306+10.00 ELEV. 251.91
PVRC 3306+90.00 ELEV. 251.21
P.V.I. 3307+70.00 ELEV. 250.51
P.V.T. 3308+50.00 ELEV. 250.51
P.V.C. 3309+00.00 ELEV. 250.51
P.V.I. 3310+00.00 ELEV. 250.51
P.V.T. 3311+00.00 ELEV. 251.01
P.V.C. 3312+19.00 ELEV. 251.60
P.V.I. 3313+19.00 ELEV. 252.10
P.V.T. 3314+19.00 ELEV. 251.95
P.V.I. 3315+48.71 ELEV. 251.76

-0.15% | K 222.22 VC=160' e=-0.14' | -0.87% | K 183.91 VC=160' e=0.17' | 0.00% | K 400.00 VC=200' e=0.12' | 0.50% | K 307.69 VC=200' e=-0.16' | -0.15%

RT. DITCH GRADE -0.75% | RT. DITCH GRADE -1.75% | RT. DITCH GRADE 0.25%

3305+00.00 RT. 247.15
3309+00.00 RT. 244.16
3310+00.00 RT. 242.41
3312+00.00 RT. 246.45
3316+00.00 RT. 247.45

DESIGN HW 247.96

F.L. INLET LT. = 242.55
F.L. OUTLET RT. = 242.41

STA. 3304+61.96
BEGIN PROFILE
SITE 3 DETOUR

STA. 3315+47.73
END PROFILE
SITE 3 DETOUR

270 265 260 255 250 245 240 235 230 225

3303+00 3304+00 3305+00 3306+00 3307+00 3308+00 3309+00 3310+00 3311+00 3312+00 3313+00 3314+00 3315+00 3316+00 3317+00

8/15/2022

R101054_Site3.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.		101054	135	311

(2) PLAN AND PROFILE SHEETS-SITE 3 CO.RD. 745

STATE OF ARKANSAS
RAYMOND KYLE EIDSON
No. 19372
LICENSED PROFESSIONAL ENGINEER
7-29-22

STA. 9+50 IN PLACE
30" x 42' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
36" x 88' PIPE CULVERT
WITH FES LT. & RT.
R.C. PIPE (CLASS III)
(TYPE 1 OR 2)- 88 LIN. FT.
C.M. PIPE - 92 LIN. FT.

STA. 6+32 IN PLACE
36" x 31' CM PIPE CULVERT
REMOVE

STA. 6+30 CONSTRUCT
QUAD. 36" x 40' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 94 CFS D.A. = 183 ACRES
R.C. PIPE (CLASS V) = 40 LIN. FT.

STA. 3311+25.39 HWY. 230 DET.=
STA. 9+13.75 CO. RD. 745
Δ = 82°24'26"

STA. 311+24.90 HWY. 230 =
STA. 10+00.00 CO. RD. 745
Δ = 85°00'21"

COUNTY ROAD 745
PI = 6+37.85
Δ = 67°30'21" RT.
D = 38°11'50"
T = 100.24'
L = 176.73'
PC = 5+37.61
PT = 7+14.34
e = NO SUPER

COUNTY ROAD 745
PI = 8+40.75
Δ = 62°16'08" LT.
D = 44°04'25"
T = 78.53'
L = 141.28'
PC = 7+62.22
PT = 9+03.50
e = NO SUPER

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY 230 DETOUR
SITE 3 CO. RD. 745

HWY. 230 - SITE 3 CO. RD. 745

DETOUR
STA. 5+35.61
BEGIN CO. RD. 745

DETOUR
STA. 9+89.00
END CO. RD. 745

STA. 5+35.61
BEGIN CO. RD. 745

STA. 9+89.00
END CO. RD. 745

P.V.I. 5+35.61 ELEV. 247.94
P.V.C. 6+00.00 ELEV. 247.94
K 49.83 VC=150' e=0.56'
P.V.I. 6+75.00 ELEV. 247.93
P.V.T. 7+50.00 ELEV. 250.18
P.V.C. 7+51.25 ELEV. 250.22
P.V.I. 8+26.25 ELEV. 252.47
K 40.00 VC=150' e=-0.70' -0.75%
P.V.T. 9+01.25 ELEV. 251.91
P.V.C. 9+47.48 ELEV. 251.56
K 15.33 VC=40' e=0.13'
P.V.T. 9+87.48 ELEV. 251.78
P.V.I. 9+88.96 ELEV. 251.81
P.V.I. 10+00.00 ELEV. 252.03
-0.01% 3.00% 1.86% 1.32%
FT. DITCH GRADE 1.40%
RT. DITCH GRADE 1.32%
6+30.00 LT. 245.66
6+30.00 RT. 243.40
8+50.00 RT. 246.30
8+50.00 LT. 248.74
P.V.I. 9+87.48 ELEV. 251.41
F.L. INLET LT. = 243.40
F.L. OUTLET RT. = 241.96
F.L. INLET LT. = 244.80
F.L. OUTLET RT. = 243.27

P.V.I. 5+35.61 ELEV. 247.94
P.V.C. 6+00.00 ELEV. 247.94
K 49.83 VC=150' e=0.56'
P.V.I. 6+75.00 ELEV. 247.93
P.V.T. 7+50.00 ELEV. 250.18
P.V.C. 7+51.25 ELEV. 250.22
P.V.I. 8+26.25 ELEV. 252.47
K 40.00 VC=150' e=-0.70' -0.75%
P.V.T. 9+01.25 ELEV. 251.91
P.V.C. 9+24.05 ELEV. 250.91
P.V.I. 9+23.77 ELEV. 250.91
P.V.T. 9+56.05 ELEV. 251.12
P.V.I. 9+72.67 ELEV. 251.51
P.V.I. 9+88.96 ELEV. 251.81
K 59.57 VC=28' e=-0.02'
P.V.I. 9+03.65 ELEV. 251.89
K 9.61 VC=32' e=0.13'
P.V.T. 9+01.25 ELEV. 251.91
P.V.I. 9+40.05 ELEV. 250.75
P.V.C. 9+58.67 ELEV. 251.18
P.V.T. 9+86.67 ELEV. 251.77
-0.01% 3.00% 1.86% 1.00% 2.33% 1.80%
F.L. INLET LT. = 243.40
F.L. OUTLET RT. = 241.96
F.L. INLET LT. = 244.80
F.L. OUTLET RT. = 243.27

5+00 6+00 7+00 8+00 9+00 10+00
270 265 260 255 250 245 240 235 230 225

8/15/2022

R101054_Site3.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.		101054	136	311

(2) PLAN AND PROFILE SHEETS - SITE 4

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

STA. 410+24.54 - CONSTRUCT TRP. 10' x 6' x 84' R.C. BOX CULVERT ON A 30° RT. FWD. SKEW WITH 3:1 WINGS LT. & RT. Q25 = 592 CFS, D.A. = 2.22 SQ. MI. SPAN = 32'-6"

STA. 412+24 IN PLACE
12" x 21.5' CP PIPE CULVERT
LT. SIDE DRAIN REMOVE

STA. 410+08 - STA. 410+38 IN PLACE
BRIDGE NO. M3280
30' x 24' STEEL STRINGERS/BEAMS SUPPORTED BY TRESTLE PILE BENTS WITH TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE, SITE NO. 4 = 1.00 LUMP SUM

STA. 411+79 IN PLACE
24" x 28' CM PIPE CULVERT
LT. SIDE DRAIN AND 15" x 23.5' CM PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 230 CU. YDS.

SPECIAL FLOOD HAZARD AREA

100' TRANSITION

CULTIVATED FIELD

P.I. 405+23.93 Δ = 00°25'37"LT.

P.I. 407+38.42 Δ = 00°15'55"LT.

PROPOSED ROW

CONST. LIMITS

EXIST. ROW

PROP. TCE

BERM REQ'D.

S88°39'09"E

S88°55'04"E

PNI12 PD:ARDOT STD. MON. STAMPED PNI2

PNI13 PD:ARDOT STD. MON. STAMPED PNI3

PNI14 PD:ARDOT STD. MON. STAMPED PNI4

PNII52 PD:SI20PN

PNII55 PD:SI20PN

STA 70+66.1± JOB 10887

STA 74+00± JOB 10887

STA 77+00± JOB 10887

STA 78+00± JOB 10887

STA 82+00± JOB 10887

ArDOT JOB 10887

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
409+50	410+82	LT.	132
409+65	410+97	RT.	132

STA. 405+50.00
BEGIN SITE 4
LOG MILE 1.37

STA. 406+78 IN PLACE
24" x 27.5' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
42" x 29" x 44' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS.

STA. 413+47 IN PLACE
36" x 35.5' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 120 CU. YDS.

STA. 415+00.00
END SITE 4

HWY. 230 - SITE 4

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

P.V.C. 405+50.00 ELEV. 249.60
-1.16%
P.V.I. 407+00.00 ELEV. 247.86
K 138.89 VC=300' e=-0.81'
1.00%
PVRC 408+50.00 ELEV 249.36
P.V.I. 410+25.00 ELEV. 251.11
K 208.33 VC=350' e=-0.74'
-0.68%
PVRC 412+00.00 ELEV 249.92
P.V.I. 413+50.00 ELEV. 248.90
K 555.56 VC=300' e=0.20'
-0.14%
P.V.T. 415+00.00 ELEV. 248.69

F.L. INLET LT.= 241.08
F.L. OUTLET RT.= 241.00
Q25 = DESIGN HW 244.80

RT. DITCH GRADE -0.68%
LT. DITCH GRADE -0.76%
LT. DITCH GRADE 0.34%
RT. DITCH GRADE 0.32%

405+50.00 LT. 244.22
405+50.00 RT. 244.22
409+60.73 LT. 241.08
410+22.58 LT. 241.08
410+26.53 RT. 241.00
410+88.38 RT. 241.00
415+00.00 LT. 242.70
415+00.00 RT. 242.32

NOTE:
THIS STREAM IS CLASSIFIED AS A INTERMITTENT STREAM. THE STREAM BANK ELEVATION IS 247 FT. MSL. BETWEEN STATIONS 410+05 AND 410+40. REFER TO SECTION 110.06(C) OF THE 2014 STANDARD SPECIFICATIONS.

265 260 255 250 245 240 235 230 225 220

404+00 405+00 406+00 407+00 408+00 409+00 410+00 411+00 412+00 413+00 414+00 415+00 416+00 417+00

8/15/2022

R101054_Site4.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.	101054		137	311

(2) PLAN AND PROFILE SHEETS - SITE 5

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

STA. 505+78 IN PLACE
32" x 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
30" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 165 CU. YDS.

STA. 508+34 IN PLACE
DBL. 4' X 2' x 52' RC BOX CULVERT
WITH WINGS LT. & RT. RETAIN AND EXTEND
REMOVE LT. WINGWALL
INSTALL DBL. 4' X 2' X 33'
BOX CULVERT EXTENSION
WITH 3:1 WING LT.
Q25 = 55.06 CFS, D.A. = 82 ACRES

SPECIAL FLOOD HAZARD AREA

N

202 CPS

CTL PN:42 PD:ALUM CAP RBR

HWY 230
P.I. 504+84.45
Δ = 3°44'35"LT.
D = 00°30'00"
T = 374.45'
L = 748.64'
P.C. 501+10.00
P.R.C. 508+58.64
e = NO SUPER

100' TRANSITION

POB 500+00.00

P.C. 501+10.00

PROP. TCE

DERM REQ'D.

PROP. ROW

CONST. LIMITS

PRC 508+58.64

S87°49'42"E 450.62'

S88°01'11"E 628.14'

P.I. 504+84.45

STA. 501+00.00
BEGIN SITE 5
LOG MILE 2.65

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 5

P.V.I. 505+00.00
ELEV. 250.63

P.V.C. 507+00.00
ELEV. 250.61

P.V.I. 508+50.00
ELEV. 250.38

K 260.87
VC=300'
e=0.43'

-0.16%

LT. DITCH GRADE -0.12%
RT DITCH GRADE -0.27%

500+10.00
RT. 244.55

501+50.00
LT. 243.76

508+35.00
RT. 242.31

508+34.07
LT. 242.93

F.L. INLET ELEV = 242.93
F.L. OUTLET ELEV = 242.33

8/15/2022

R101054_Site5.dgn

REMOVAL AND DISPOSAL OF GUARDRAIL			
STA.	STA.	SIDE	LIN. FT.
515+34	516+43	RT.	109
515+34	516+43	LT.	109
517+83	518+10	RT.	27
517+83	518+34	LT.	51

STA. 512+53
CONSTRUCT APPROACH
LT. = 375 CU. YDS.

HWY 230
P.I. 512+17.16
Δ = 3°35'03"RT.
D = 00°30'00"
T = 358.52'
L = 716.81'
P.R.C. 508+58.64
P.T. 515+75.45
e = NO SUPER

HWY 230
P.I. 521+32.83
Δ = 3°00'04"RT.
D = 00°30'00"
T = 300.18'
L = 600.22'
P.C. 518+32.65
P.R.C. 524+32.87
e = NO SUPER

STA. 515+93.52 BR. END
BR. NO. 07524
226'-11 1/2" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
224'-6" COMPOSITE
PRESTRESSED CONCRETE GIRDER
UNIT (74'-9", 75'-0", 74'-9")
STA. 518+20.48 BR. END

STA. 520+31 IN PLACE
16" x 20' PIPE CULVERT
SIDE DRAIN REMOVE

STA. 520+31 IN PLACE
24" x 64.3' CM PIPE CULVERT
CROSS DRAIN REMOVE

STA. 521+78 INSTALL
30" x 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
285 CU. YDS. COMP. EMB.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	101054	138	311

(2) PLAN AND PROFILE SHEETS - SITE 5

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

STA. 521+78.35 HWY 230
STA. 10+00.00 DRIVE
Δ = 90°00'00"

STA. 512+53 INSTALL
51"x31"x 40' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH
RT. = 175 CU. YDS.

STA. 514+60 IN PLACE
36" x 26' CM PIPE CULVERT
SIDE DRAIN REMOVE

STA.	STA.	SIDE	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
513+57.01	515+75.76	RT.	150	1	1
514+49.33	515+93.08	LT.	75	1	1
518+20.92	519+64.67	RT.	75	1	1
518+38.24	520+56.99	LT.	150	1	1

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 515+85 - STA. 517+83 IN PLACE
BRIDGE NO. M3817
197' x 24' STEEL STRINGERS/BEAMS
SUPPORTED BY TRESTLE PILE BENTS WITH
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE,
SITE NO. 5 = 1.00 LUMP SUM

STA. 518+30 IN PLACE
36" x 52' RC PIPE CULVERT
SIDE DRAIN REMOVE

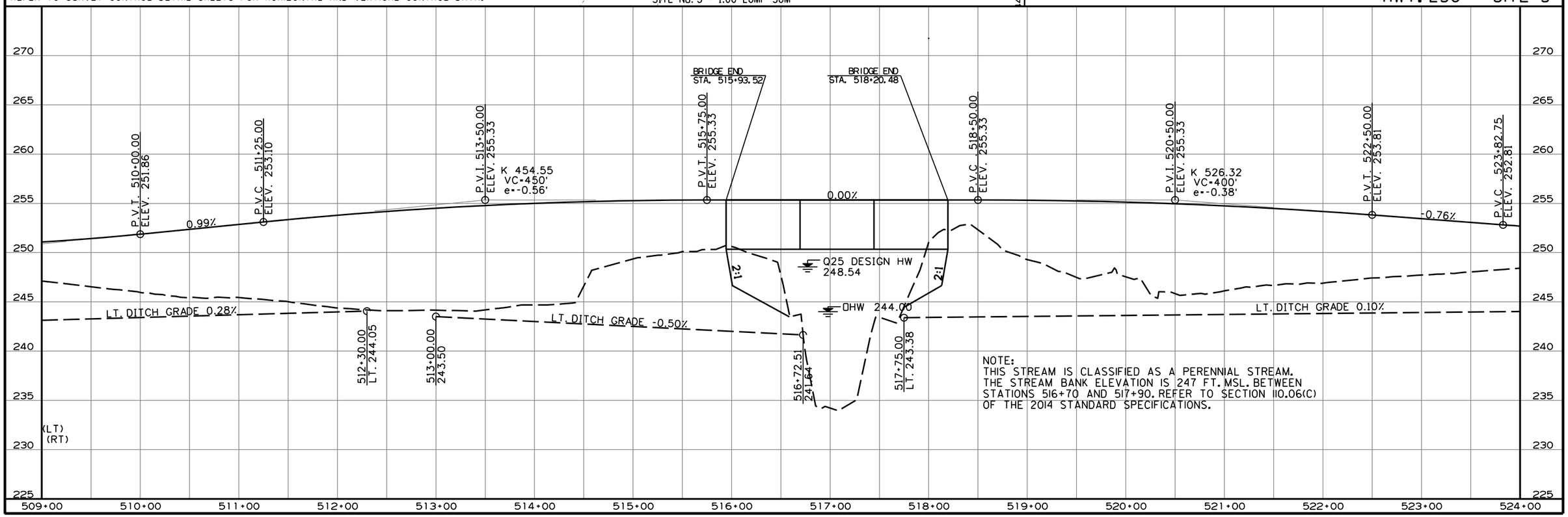
STA. 519+80 IN PLACE
36" x 36.5' CM PIPE CULVERT
SIDE DRAIN REMOVE

STA. 521+78 IN PLACE
24" x 77.3' CM PIPE CULVERT
SIDE DRAIN REMOVE

STA. 9+13.94 IN PLACE
24" x 88' CM PIPE CULVERT
CROSS DRAIN REMOVE

HWY 230
P.I. 527+88.32
Δ = 3°33'12"LT.
D = 00°30'00"
T = 355.45'
L = 710.67'
P.R.C. 524+32.87
P.T. 531+43.54
e = NO SUPER

HWY. 230 - SITE 5



NOTE:
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATION IS 247 FT. MSL. BETWEEN STATIONS 516+70 AND 517+90. REFER TO SECTION 110.06(C) OF THE 2014 STANDARD SPECIFICATIONS.

9/20/2022

R101054_Site5.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.		101054	139	311

(2) PLAN AND PROFILE SHEETS - SITE 5

HWY 230
P.I. 527+88.32
Δ = 3°33'12"LT.
D = 00°30'00"
T = 355.45'
L = 710.67'
P.R.C. 524+32.87
P.T. 531+43.54
e = NO SUPER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

N

100' TRANSITION

+90.00 +90.00

BERM REQ'D.
BERM REQ'D.
PROP. ICE
PROP. ROW
CONST. LIMITS
CONST. LIMITS
PROP. ROW
525
530
PULLOFF
PC BOX 1
I-ST-WOOD FRAME

P.T. 531+43.54
POE 532+53.50
PRC524+32.87
P.I. 527+88.32

PN:39
PDREBAR CAP ALUM CAP RBAR REBAR CAP RBAR ALU
S88°43'18"E 869.64

PN:38
PDREBAR CAP RBAR ALUM CAP
S88°43'18"E 719.31

2079
HWY CL POT

STA. 528+08 IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH -
60 CU. YDS. COMP. EMB.

STA. 529+57 IN PLACE
18" x 28' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH -
45 CU. YDS. COMP. EMB.

STA. 530+32 IN PLACE
18" x 28' CM PIPE CULVERT
SIDE DRAIN REMOVE

STA. 530+90.00
END SITE 5

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 5

K 400.00
VC-200'
e-0.12'

P.V.I. 524+82.75
ELEV. 252.05

-0.26%

P.V.T. 525+82.75
ELEV. 251.79

P.V.I. 526+00.00
ELEV. 251.74

LT. DITCH GRADE 0.10%

530+50.00
LT. 244.66

270 265 260 255 250 245 240 235 230 225

524+00 525+00 526+00 527+00 528+00 529+00 530+00 531+00 532+00

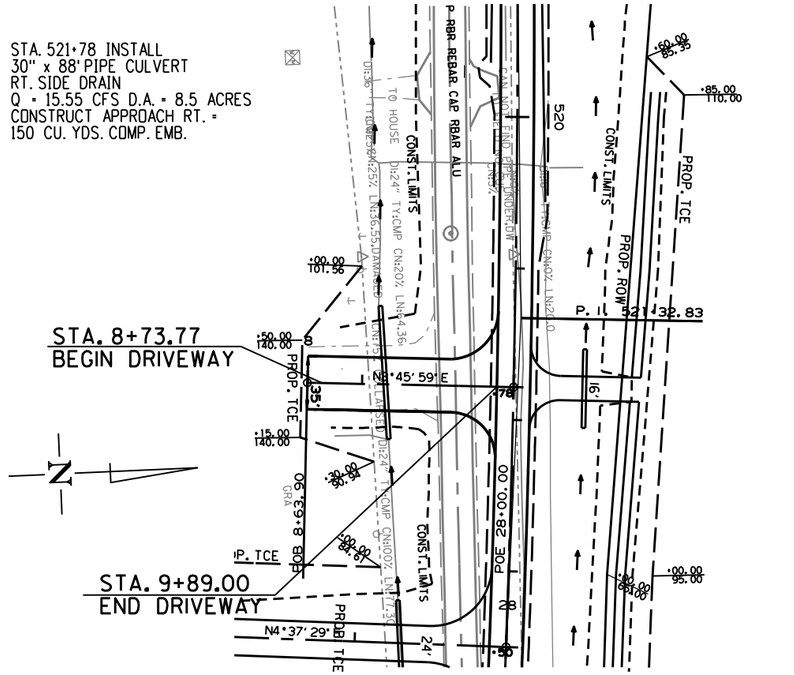
8/15/2022

R101054_Site5.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.		101054	140	311

(2) PLAN AND PROFILE SHEETS - SITE 5 DRIVES

STA. 521+78 INSTALL
30" x 88' PIPE CULVERT
RT. SIDE DRAIN
Q = 15.55 CFS D.A. = 8.5 ACRES
CONSTRUCT APPROACH RT. =
150 CU. YDS. COMP. EMB.

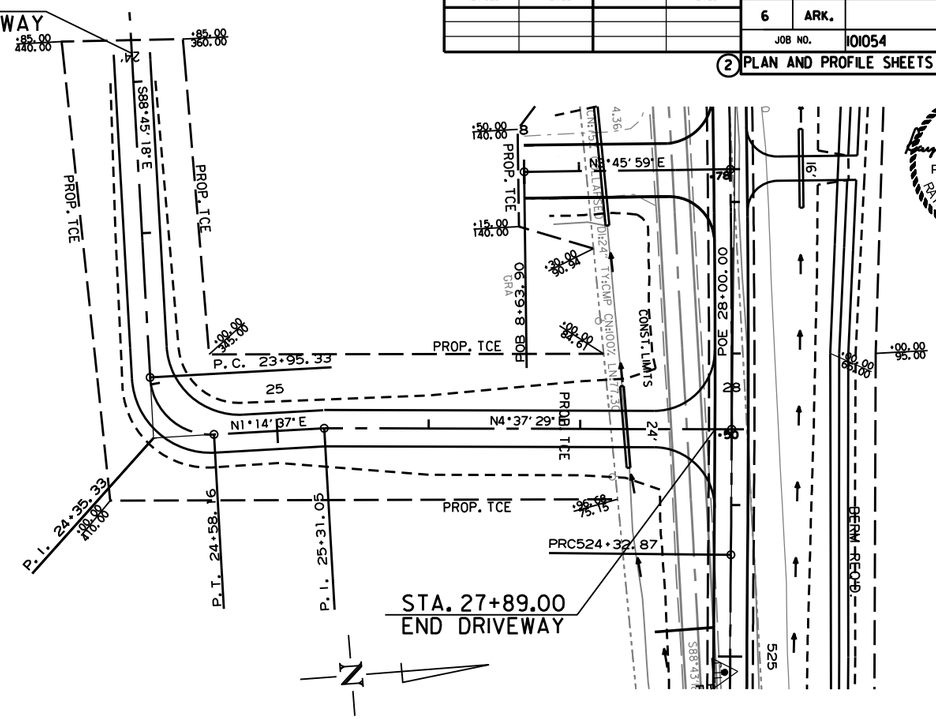


REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 20+81
BEGIN DRIVEWAY

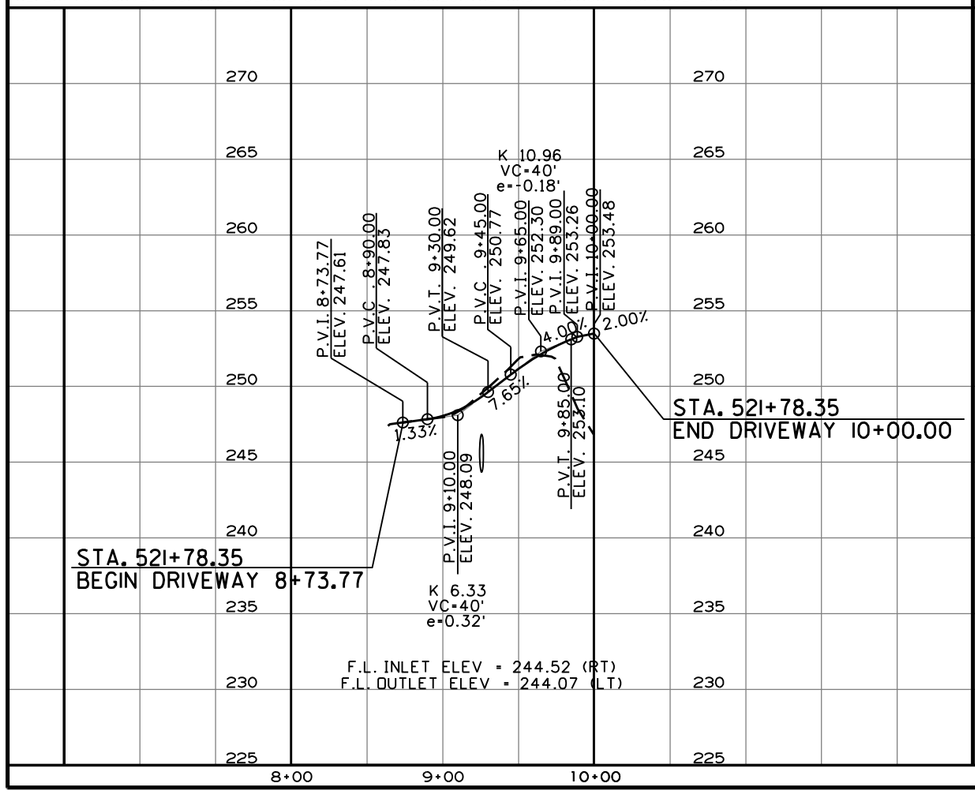
STA. 523+50
30" x 48' PIPE CULVERT
CONSTRUCT APPROACH LT. =
1196 CU. YDS. COMP. EMB.
47 CU. YDS. UNCLASS. EXC.

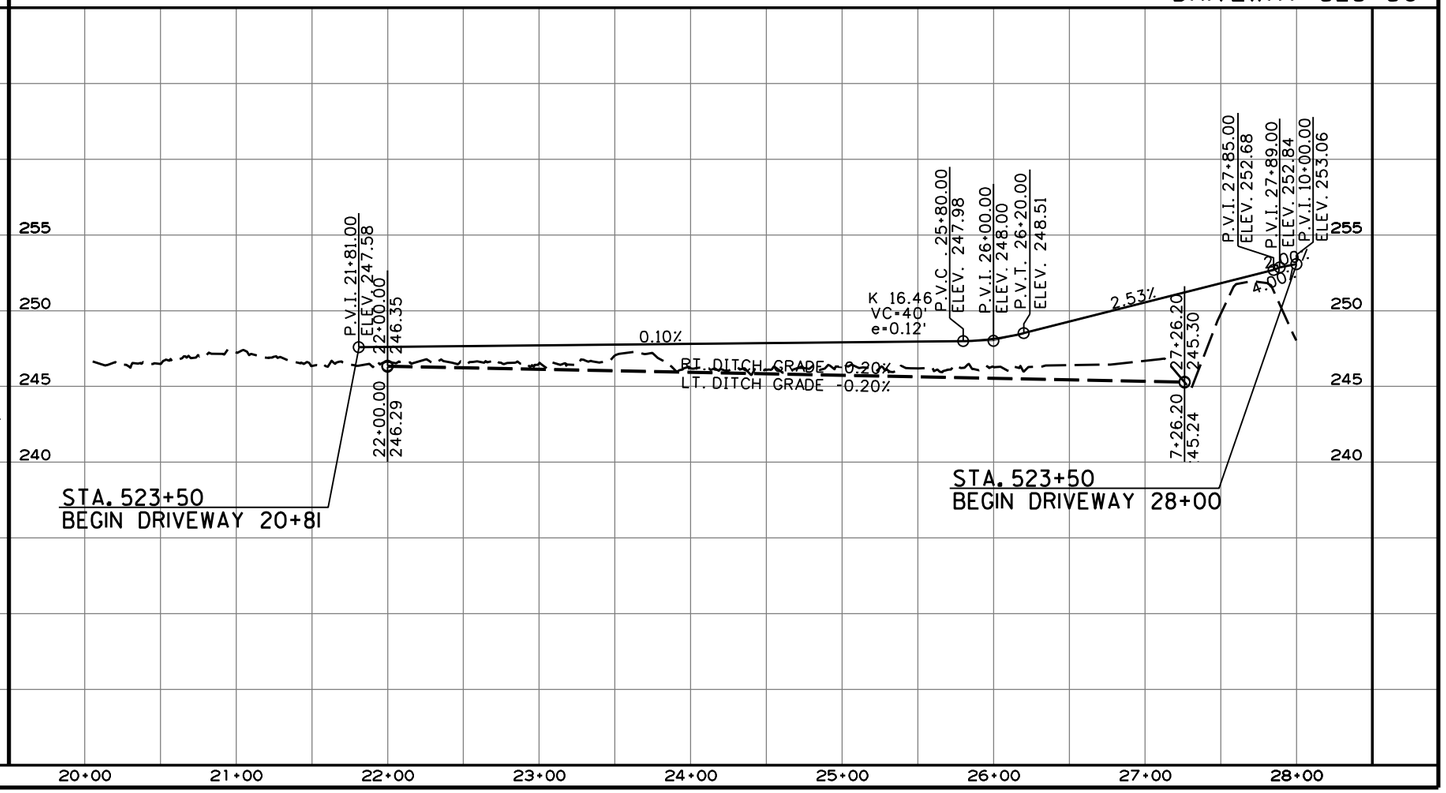
DRIVE
P.I. 24+35.33
Δ = 90°00'05"LT.
D = 143°14'22"
T = 40.00'
L = 62.83'
P.C. 23+95.33
P.T. 25+58.16
e = NO SUPER



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

DRIVEWAY 523+50





9/20/2022

R101054_Site5.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.		101054	141	311

(2) PLAN AND PROFILE SHEETS - SITE 6

STA. 612+96 - STA. 613+46 IN PLACE
BRIDGE NO. M2471
50' x 24' WOOD STRINGERS/BEAMS
SUPPORTED BY TRESTLE PILE BENTS WITH
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE,
SITE NO. 6 - 1.00 LUMP SUM

SPECIAL FLOOD HAZARD AREA

STA. 613+21.00 - CONSTRUCT
QUINT. 10' x 6' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 12840 CFS, D.A. = 610 SQ. MI.
D.A. = SITES 6, 7 AND 8
SPAN = 53'-9"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

CULTIVATED FIELD
PROP. TCE
100' TRANSITION
BERM REQ'D.
EXIST. ROW
PROP. ROW
CONST. LIMITS
605
610
615
699
700
618
S88°48'34"E
S88°38'02"E
S88°28'06"E
HWY CL PT
PN:17
PD:ARDOT STD. MON. STAMPED PN:17
PN:18
PD:ARDOT STD. MON. STAMPED PN:18
P.I. 607+97.14
Δ = 00°10'32" RT
P.I. 615+22.33
Δ = 00°09'56" RT
POE 618+25.00
POB 699+35.00

STA. 609+70.00
BEGIN SITE 6
LOG MILE 3.66

STA. 617+00.00
END SITE 6

HWY. 230 - SITE 6

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
612+45	613+97	RT.	152
612+45	613+97	LT.	152

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

GRADE RAISED DUE TO FREE BOARD REQUIREMENTS

P.V.C. 609+70.00
ELEV. 249.09
0.20%
P.V.I. 610+50.00
ELEV. 249.25
K 131.15
VC=160'
e=0.24'
P.V.T. 611+30.00
ELEV. 250.38
P.V.C. 611+50.00
ELEV. 250.67
1.42%
P.V.I. 613+25.00
ELEV. 253.15
K 127.74
VC=350'
e=-1.20'
-1.32%
PVRC 615+00.00
Elev 250.84
P.V.I. 616+00.00
ELEV. 249.52
K 181.82
VC=200'
e=0.28'
-0.22%
P.V.T. 617+00.00
ELEV. 249.31

+21
Q25
DESIGN HW
247.68

F.L. INLET LT.= 241.60
F.L. OUTLET RT.= 241.54

NOTE:
THIS STREAM IS CLASSIFIED AS A WETLAND STREAM.
THE STREAM BANK ELEVATION IS 243 FT. MSL. BETWEEN
STATIONS 612+95 AND 613+55. REFER TO SECTION 110.06(C)
OF THE 2014 STANDARD SPECIFICATIONS.

270 265 260 255 250 245 240 235 230 225

605+00 606+00 607+00 608+00 609+00 610+00 611+00 612+00 613+00 614+00 615+00 616+00 617+00 618+00

R101054_Site 6 and 7.dgn 9/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	142	311

(2) PLAN AND PROFILE SHEETS - SITE 6 DETOUR

DETOUR
PI = 6009+54.95
Δ = 20°06'50" LT.
D = 8°00'00"
T = 127.02'
L = 251.42'
PC = 6008+27.93
PRC = 6010+79.35
e = NO SUPER

DETOUR
PI = 6013+42.34
Δ = 40°19'33" RT.
D = 8°00'00"
T = 262.99'
L = 504.08'
PRC = 6010+79.35
PRC = 6015+83.43
e = 0.068 '/'
Ls = 300'

DETOUR
PI = 6017+10.01
Δ = 20°02'47" LT.
D = 8°00'00"
T = 126.58'
L = 250.58'
PRC = 6015+83.43
PT = 6018+34.01
e = NO SUPER

STA. 6013+34 - INSTALL
QUAD. 36" ROUND x 60' TEMPORARY PIPE
Q2 = 6109 CFS, D.A. = 610 SQ. MI.
SITES 6,7,8

SPECIAL FLOOD HAZARD AREA

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

CULTIVATED FIELD
EXIST. ROW
PROP. TCE
TEMP. BERM REQ'D.
TEMP. CONST. LIMITS
PROP. ROW
P.C. 6008+27.93
P.I. 6009+54.95
PRC 6010+79.35
P.I. 6013+42.34
PRC 6015+83.43
P.I. 6017+10.01
P.T. 6018+34.01 SITE 6 DETOUR
STA. 6018+13.32
00°00'00"
P.C. 6999+48.99
P.I. 7000+77.01
S88°48'34"E
S88°38'02"E
S88°28'06"E
PAVED
HWY CL PI
PN:17 PD:ARDOT STD. MON. STAMPED PN:17
PN:18 PD:ARDOT STD. MON. STAMPED PN:18
PN:19 PD:ARDOT
P.I. 607+97.14
Δ = 00°10'32" RT
P.I. 615+22.33
Δ = 00°09'56" RT
POE 618+25.00
POB 699+25.00

STA. 6008+27.93
BEGIN SITE 6 DETOUR

STA. 6018+34.01
END SITE 6 DETOUR

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

DETOUR - SITE 6

STA. 6010+19.35 BEGIN SUPERELEVATION
STA. 6012+19.35 MAX. SUPERELEVATION (0.068'/')
STA. 6014+43.43 MAX. SUPERELEVATION (0.068'/')
STA. 6016+43.43 END SUPERELEVATION

P.V.I. 6009+42.85
ELEV. 248.78
P.V.C. 6013+07.00
ELEV. 249.51
P.V.I. 6014+07.00
ELEV. 249.71
P.V.T. 6015+07.00
ELEV. 249.51
P.V.I. 6017+16.37
ELEV. 249.09
K 500.00
VC=200'
e=-0.10'
0.20%
-0.20%
Q2
DESIGN HW
246.10
LT. DITCH GRADE -0.01%
LT. DITCH GRADE 0.02%
6009+86.00
241.65
6013+22.00
241.61
6013+40.00
241.61
6015+46.00
241.65
F.L. INLET LT. = 241.61
F.L. OUTLET RT. = 241.60

265 260 255 250 245 240 235 230 225 220

6007+00 6008+00 6009+00 6010+00 6011+00 6012+00 6013+00 6014+00 6015+00 6016+00 6017+00 6018+00 6019+00

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101054		143	311

(2) PLAN AND PROFILE SHEETS - SITE 7

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

STA. 704+15 - STA. 704+73 IN PLACE
BRIDGE NO. M4019
58' x 24' STEEL STRINGERS/BEAMS
SUPPORTED BY TRESTLE PILE BENTS WITH
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE,
SITE NO. 7 = 1.00 LUMP SUM

STA. 704+44.00 - CONSTRUCT
QUINT. 10' x 6' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 12840 CFS, D.A. = 610 SQ. MI.
D.A. = SITES 6, 7 AND 8
SPAN = 53'-9"

CULTIVATED FIELD
STA. 308+64 IN PLACE
30" x 30' CM PIPE CULVERT
LT. SIDE DRAIN RETAIN
CONSTRUCT APPROACH
= 5 CU. YDS. COMP. EMB.

CULTIVATED FIELD

STA. 701+20.00
BEGIN SITE 7
LOG MILE 3.84

STA. 707+95.00
END SITE 7

CULTIVATED FIELD

HWY. 230 - SITE 7

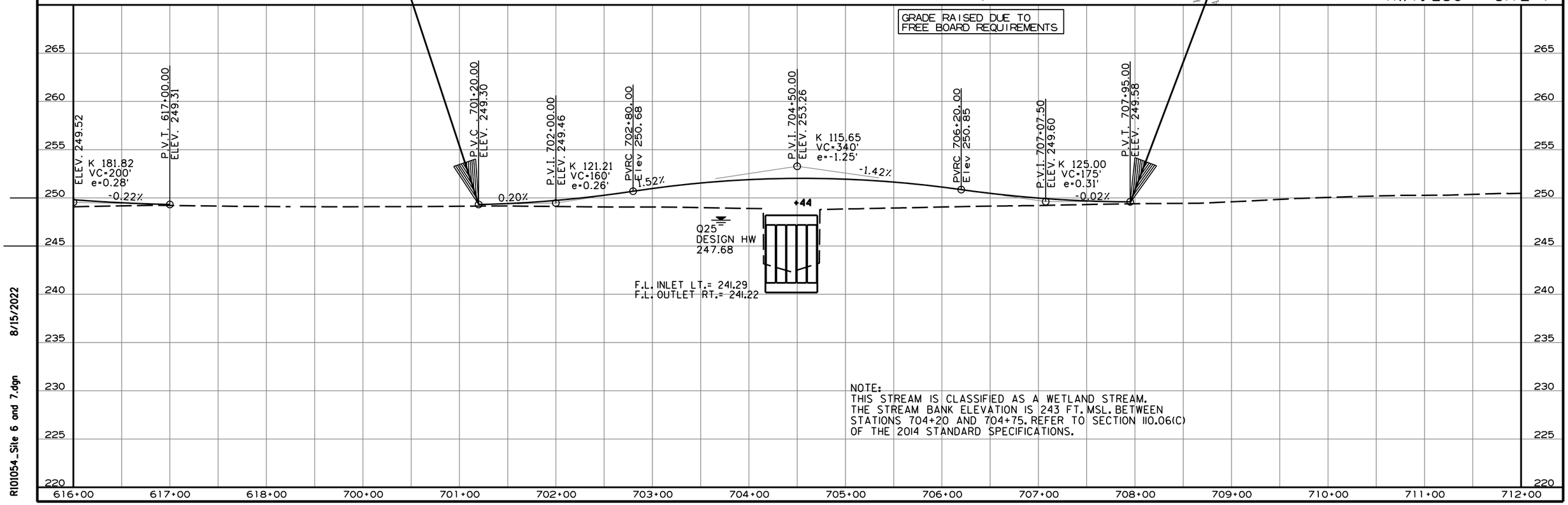
REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
703+64	704+15	RT.	51
703+64	704+15	LT.	51
704+73	705+24	RT.	51
704+73	705+24	LT.	51

CULTIVATED FIELD
STA. 308+66 IN PLACE
24" x 30' CM PIPE CULVERT
RT. SIDE DRAIN RETAIN
CONSTRUCT APPROACH
= 0 CU. YDS. COMP. EMB.

GRADE RAISED DUE TO
FREE BOARD REQUIREMENTS



NOTE:
THIS STREAM IS CLASSIFIED AS A WETLAND STREAM.
THE STREAM BANK ELEVATION IS 243 FT. MSL. BETWEEN
STATIONS 704+20 AND 704+75. REFER TO SECTION 110.06(C)
OF THE 2014 STANDARD SPECIFICATIONS.

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101054		144	311

(2) PLAN AND PROFILE SHEETS - SITE 7 DETOUR

DETOUR
PI = 7000+77.01
Δ = 20°16'07" LT.
D = 8°00'00"
T = 128.02'
L = 253.36'
PC = 6999+48.99
PRC = 7002+02.35
e = NO SUPER

DETOUR
PI = 7004+67.47
Δ = 40°37'35" RT.
D = 8°00'00"
T = 265.12'
L = 507.83'
PRC = 7002+02.35
PRC = 7007+10.18
e = 0.068'/'
Ls = 300'

DETOUR
PI = 7008+38.02
Δ = 20°14'28" LT.
D = 8°00'00"
T = 127.84'
L = 253.01'
PRC = 7007+10.18
PT = 7009+63.19
e = NO SUPER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

STA. 7008+85 IN PLACE
30" x 30' CM PIPE CULVERT
RT. SIDE DRAIN RETAIN
CONSTRUCT APPROACH =
5 CU. YDS. COMP. EMB.

STA. 6999+48.99
BEGIN SITE 7 DETOUR

STA. 7009+63.19
END SITE 7 DETOUR

DETOUR - SITE 7

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 7004+56 - INSTALL
QUAD. 48" x 60' TEMPORARY PIPE CULVERT
Q2 = 6109 CFS, D.A. = 610 SQ. MI.
SITES 6,7,8

SPECIAL FLOOD HAZARD AREA

STA. 7001+42.35 BEGIN SUPERELEVATION
STA. 7003+42.35 MAX. SUPERELEVATION (0.068'/')
STA. 7005+70.18 MAX. SUPERELEVATION (0.068'/')
STA. 7007+70.18 END SUPERELEVATION

P.V.I. 7000+67.24
ELEV. 248.94

P.V.C. 7003+12.00
ELEV. 249.97

P.V.I. 7004+12.00
ELEV. 250.39

K 298.51
VC=200'
e=-0.17'

P.V.T. 7005+12.00
ELEV. 250.14

P.V.I. 7008+50.36
ELEV. 249.29

0.42%

-0.25%

Q2
DESIGN HW
246.10

LT. DITCH GRADE -0.01%

LT. DITCH GRADE 0.23%

7001+01.00
241.32

7004+43.00
241.30

7004+64.00
241.30

7008+15.00
242.10

F.L. INLET LT. = 241.30
F.L. OUTLET RT. = 241.29

STA. 6623+52.00 - INSTALL
QUAD. 48" x 60' TEMPORARY PIPE

265 260 255 250 245 240 235 230 225 220

6999+00 7000+00 7001+00 7002+00 7003+00 7004+00 7005+00 7006+00 7007+00 7008+00 7009+00 7010+00

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101054		145	311

(2) PLAN AND PROFILE SHEETS - SITE 8

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

SPECIAL FLOOD HAZARD AREA

N

800+00.00 POB
100' TRANSITION
801+00.00

SITE 8
P.I. = 804+63.53
Δ = 2°59'38" LT.
D = 0°30'00.0"
T = 299.46'
L = 598.78'
P.C. 801+64.07
P.T. 807+62.85
NO SUPER

P.I. 801+10.05
Δ = 00°29'42"RT.
P.C. 801+64.07

800+50.00 68.27
PROP. TCE
PROP. ROW
BERM REQ'D.
801+00.00 20.00
801+50.00 35.00
802+00.00 130.00
CONST. LIMITS
10' FLAT BOTTOM DITCH
805
CONST. LIMITS
P.I. 804+63.53

EXIST. ROW
S88°20'13"E 500.00'
S88°46'45"E
S88°17'03"E
S87°11'28"E 500.10'
3:1
4:1

2629 RE 70'
2626 RE 70'
2627 RE 70'
2630 RE 60'
2625 RE 60'
2623 RE 60'

PN:1125
PD:8 SPIKE

PN:1
PD:STD. AHTD MON. STAMPED PN:1 230 BONO

PN:2
PD:5/8 RBR ALUMINUM CAP

STA. 801+00.00
BEGIN SITE 8
LOG MILE 0.24

805+34.88
LT. 240.77

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 8

265 260 255 250 245 240 235 230 225 220

800+00 801+00 802+00 803+00 804+00 805+00 806+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101054		146	311

(2) PLAN AND PROFILE SHEETS - SITE 8

STA.	STA.	SIDE	GUARDRAIL (TYPE A) LIN. FT.	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL TERMINAL (TYPE 2) EACH
812+81.25	815+00.00	RT.	150	1	1
813+56.25	815+00.00	LT.	75	1	1
817+45.00	818+88.75	RT.	75	1	1
817+45.00	819+63.75	LT.	150	1	1

STA. 813+10 INSTALL 36" x 64' DBL. PIPE CULVERT LT. SIDE DRAIN WITH FLOOD GATES CONSTRUCT APPROACH = 655 CU. YDS. COMP. EMB.

STA. 815+10.00 BR. END
BR. NO. 07525
225'-0" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
224'-0" INTEGRAL COMPOSITE PRESTRESSED CONCRETE GIRDER UNIT (74'-6", 75'-0", 74'-6")
STA. 817+35.00 BR. END

STA. 820+10 INSTALL 30" x 50' PIPE CULVERT LT. SIDE DRAIN WITH FLOOD GATE CONSTRUCT APPROACH 1325 CU. YDS. COMP. EMB.

SITE 8
P.I. = 811+31.46
Δ = 3°00'00" RT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P.C. 808+31.39
P.T. 814+31.39
NO SUPER

STA. 815+33 - STA. 817+05 IN PLACE
BR. NO. M3187
171' x 24' WOOD STRINGER SUPPORTED BY WOOD PILE BENTS WITH TIMBER AND CONCRETE CAPS
REMOVE AS EXISTING BRIDGE
STR. SITE NO. 8 = 1.00 LUMP SUM

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 812+10.00 HWY 230 =
STA. 10+00.00 CO. RD. 194
Δ = 90°00'00"

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
815+08	815+33	RT.	25
815+08	815+33	LT.	25
817+04	817+55	RT.	51
817+04	817+55	LT.	51

STA. 814+50 IN PLACE
87' PIPE CULVERT
RT. SIDE DRAIN
REMOVE

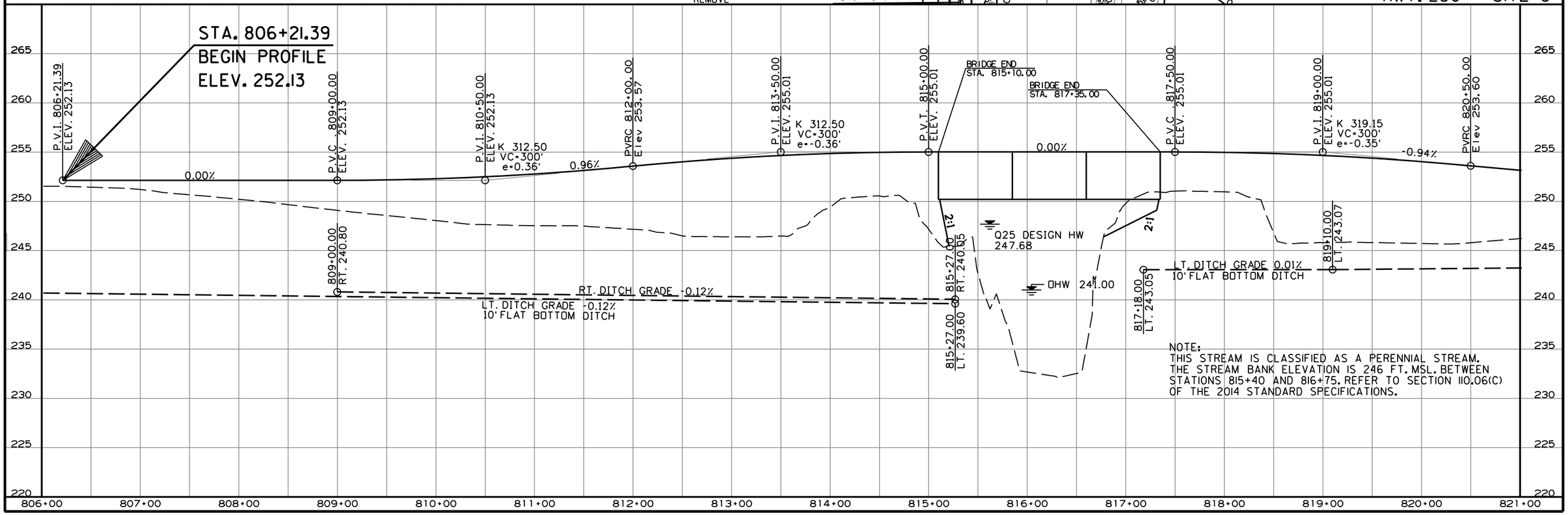
STA. 812+10.00
RT. CONST. TURNOUT
= 1030 CU. YD. COMP. EMB.
= 365 CU. YD. UNCL. EXC.

STA. 814+50 IN PLACE
DBL. 36" X 96' CM PIPE CULVERT LT. SIDE DRAIN
REMOVE

STA. 819+10
INSTALL 24" x 68' PIPE CULVERT
RT. SIDE DRAIN WITH FLOOD GATE
CONSTRUCT APPROACH =
2675 CU. YDS. COMP. EMB.
115 CU. YDS. UNCLASS. EXC.

HWY. 230 - SITE 8

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
9-20-22



NOTE:
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM. THE STREAM BANK ELEVATION IS 246 FT. MSL. BETWEEN STATIONS 815+40 AND 816+75. REFER TO SECTION 110.06(C) OF THE 2014 STANDARD SPECIFICATIONS.

R101054_Site8.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101054		147	311

(2) PLAN AND PROFILE SHEETS - SITE 8

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

STA. 825+67 IN PLACE
36" x 40' CM PIPE CULVERT
CROSS DRAIN RETAIN AND EXTEND
20'LT TO A COMPLETED LENGTH OF 60'
W / F.E.S. LT.
R.C. PIPE (CLASS III)(TYPE 1 OR 2) = 20 LIN. FT.
C.M. PIPE = 24 LIN. FT.

SITE 8
P. I. = 821+40.51
Δ = 3°00'00" RT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P. C. 818+40.44
P. T. 824+40.44
NO SUPER

SITE 8
P. I. = 827+50.50
Δ = 3°00'00" LT.
D = 0°30'00"
T = 300.07'
L = 600.00'
P. C. 824+50.43
P. T. 830+50.43
NO SUPER

STA. 828+57 IN PLACE
18" x 29' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
160 CU. YDS. COMP. EMB.

STA. 830+16 IN PLACE
18" x 25' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
160 CU. YDS. COMP. EMB.

100' TRANSITION

STA. 828+67 IN PLACE
18" x 29' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
70 CU. YDS. COMP. EMB.

STA. 830+20 IN PLACE
18" x 28' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
70 CU. YDS. COMP. EMB.

STA. 831+00.00
END SITE 8

HWY. 230 - SITE 8

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

P.V.I. 822+00.00
ELEV. 252.19
K 545.45
VC=300'
e=0.21'

P.V.I. 823+50.00
ELEV. 251.60

P.V.I. 827+00.00
ELEV. 250.24

-0.39%

STA. 827+00.00
END PROFILE
ELEV. 250.24

LT. DITCH GRADE 0.09%
10' FLAT BOTTOM DITCH

LT. DITCH GRADE 0.19%

825+70.00
LT. 243.64

827+10.00
LT. 243.91

LT. DITCH GRADE -0.21%
10' FLAT BOTTOM DITCH

831+10.00
LT. 243.08

8/15/2022
R101054_Site8.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.		101054	148	311

(2) PLAN AND PROFILE SHEETS-SITE 8 CO.RD. 194

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 8 CO. RD. 194

STA. 812+10
INSTALL 36" x 70' PIPE CULVERT
RT SIDE DRAIN WITH FLOOD GATE

SITE 8 CO. RD. 194
P. I. = 14+24.78
Δ = 88°25'42" RT.
D = 40°55'32"
T = 136.21'
L = 216.07'
P.C. 12+88.57
P.T. 15+04.64
NO SUPER

SITE 8 CO. RD. 194
P. I. = 11+20.18
Δ = 89°37'46" LT.
D = 150°46'42"
T = 37.75'
L = 59.44'
P.C. 10+82.43
P.T. 11+41.87
NO SUPER

STA. 16+50.00
END CO. RD. 194

STA. 10+11.00
BEGIN CO. RD. 194

STA. 812+10.00 HWY 230 =
STA. 10+00.00 CO. RD. 194
Δ = 90°00'00"

P.V.I. 10+11.00 ELEV. 251.99
P.V.C. 10+35.00 ELEV. 251.51
P.V.I. 11+35.00 ELEV. 249.51
P.V.T. 12+35.00 ELEV. 249.51
P.V.C. 13+50.00 ELEV. 249.51
P.V.I. 14+00.00 ELEV. 249.51
P.V.T. 14+50.00 ELEV. 250.00
P.V.C. 15+50.00 ELEV. 250.99
P.V.I. 16+00.00 ELEV. 251.49
P.V.T. 16+50.00 ELEV. 251.49

K 100.00
VC=200'
e=0.50'

K 101.01
VC=100'
e=0.12'

K 101.01
VC=100'
e=-0.12'

-0.00%
0.00%
0.00%
0.99%
0.00%

-88
F.L. INLET ELEV. = 242.20 (RT)
F.L. OUTLET ELEV. = 241.87 (LT.)

265 260 255 250 245 240 235 230 225 220

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	149	311

(2) PLAN AND PROFILE SHEETS-SITE 8 DRIVEWAYS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
9-20-22

DRIVEWAY
P. I. = 11+12.87
Δ = 83°33'18" RT.
D = 127°19'26"
T = 40.20'
L = 65.63'
P. C. 10+72.67
P. T. 11+38.30
NO SUPER

DRIVEWAY
P. I. = 12+67.89
Δ = 80°36'00" LT.
D = 127°19'26"
T = 38.16'
L = 63.29'
P. C. 12+29.73
P. T. 12+93.02
NO SUPER

DRIVEWAY
P. I. = 21+93.72
Δ = 64°48'24" RT.
D = 130°13'04"
T = 27.93'
L = 49.77'
P. C. 20+65.80
P. T. 21+15.56
NO SUPER

DRIVEWAY
P. I. = 23+04.66
Δ = 62°38'33" LT.
D = 130°13'04"
T = 26.77'
L = 48.11'
P. C. 22+77.88
P. T. 23+25.99
NO SUPER

DRIVEWAY
P. I. = 30+89.94
Δ = 85°17'42" LT.
D = 133°14'46"
T = 39.60'
L = 64.01'
P. C. 30+50.34
P. T. 31+14.35
NO SUPER

DRIVEWAY
P. I. = 34+05.42
Δ = 82°43'30" RT.
D = 133°14'46"
T = 37.86'
L = 62.08'
P. C. 33+67.56
P. T. 34+29.64
NO SUPER

STA. 10+11.00
BEGIN DRIVEWAY

STA. 12+93.03
END DRIVEWAY

STA. 20+11.00
BEGIN DRIVEWAY

STA. 23+25.99
END DRIVEWAY

STA. 30+11.00
BEGIN DRIVEWAY

STA. 34+29.64
END DRIVEWAY

HWY. 230 - SITE 8 DRIVEWAYS

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

STA. 813+10.00

C.L. DRIVEWAY P.V.I. 10+00.00 ELEV. 254.21
C.L. HWY 230 STA. 813+10.00 ELEV. 254.43
P.V.I. 10+11.00 ELEV. 254.21
P.V.I. 10+15.00 ELEV. 254.05
-2.00%
-0.80%
-3.48%
P.V.C. 11+50.00 ELEV. 249.36
K 37.31 VC=100' e=0.33'
P.V.I. 12+00.00 ELEV. 247.62
P.V.T. 12+50.00 ELEV. 247.22
-0.80%
P.V.I. 12+93.03 ELEV. 246.88

STA. 819+10.00

C.L. DRIVEWAY P.V.I. 20+00.00 ELEV. 254.61
C.L. HWY 230 STA. 819+10.00 ELEV. 254.61
P.V.I. 20+11.00 ELEV. 254.39
P.V.I. 20+15.00 ELEV. 254.23
-2.00%
-0.80%
-1.35%
P.V.C. 21+05.00 ELEV. 253.01
K 263.72 VC=100' e=0.05'
P.V.I. 21+55.00 ELEV. 252.34
P.V.T. 22+05.00 ELEV. 251.85
-0.97%
P.V.I. 23+25.99 ELEV. 250.68

STA. 820+10.00

C.L. DRIVEWAY P.V.I. 30+00.00 ELEV. 253.73
C.L. HWY 230 STA. 820+10.00 ELEV. 253.95
P.V.I. 30+11.00 ELEV. 253.73
P.V.I. 30+15.00 ELEV. 253.57
-2.00%
-0.80%
-2.76%
P.V.C. 31+50.00 ELEV. 249.84
K 51.02 VC=200' e=0.98'
P.V.I. 32+50.00 ELEV. 247.08
P.V.T. 33+50.00 ELEV. 248.24
1.16%
P.V.I. 34+29.64 ELEV. 249.16

R101054_Site8.dgn 9/20/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	150	311

(2) PLAN AND PROFILE SHEETS - SITE 9

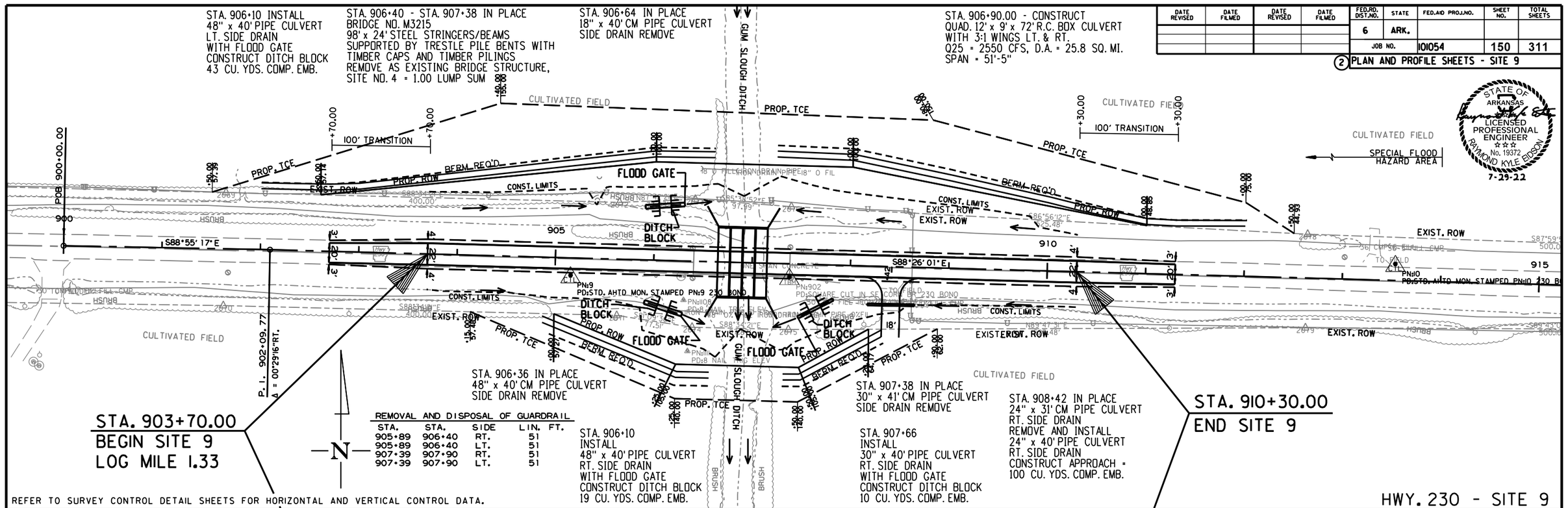
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

STA. 906+10 INSTALL
48" x 40' PIPE CULVERT
LT. SIDE DRAIN
WITH FLOOD GATE
CONSTRUCT DITCH BLOCK
43 CU. YDS. COMP. EMB.

STA. 906+40 - STA. 907+38 IN PLACE
BRIDGE NO. M3215
98' x 24' STEEL STRINGERS/BEAMS
SUPPORTED BY TRESTLE PILE BENTS WITH
TIMBER CAPS AND TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE,
SITE NO. 4 = 1.00 LUMP SUM

STA. 906+64 IN PLACE
18" x 40' CM PIPE CULVERT
SIDE DRAIN REMOVE

STA. 906+90.00 - CONSTRUCT
QUAD. 12' x 9' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 2550 CFS, D.A. = 25.8 SQ. MI.
SPAN = 51'-5"



STA. 903+70.00
BEGIN SITE 9
LOG MILE 1.33

STA. 906+36 IN PLACE
48" x 40' CM PIPE CULVERT
SIDE DRAIN REMOVE

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
905+89	906+40	RT.	51
905+89	906+40	LT.	51
907+39	907+90	RT.	51
907+39	907+90	LT.	51

STA. 906+10
INSTALL
48" x 40' PIPE CULVERT
RT. SIDE DRAIN
WITH FLOOD GATE
CONSTRUCT DITCH BLOCK
19 CU. YDS. COMP. EMB.

STA. 907+38 IN PLACE
30" x 41' CM PIPE CULVERT
SIDE DRAIN REMOVE

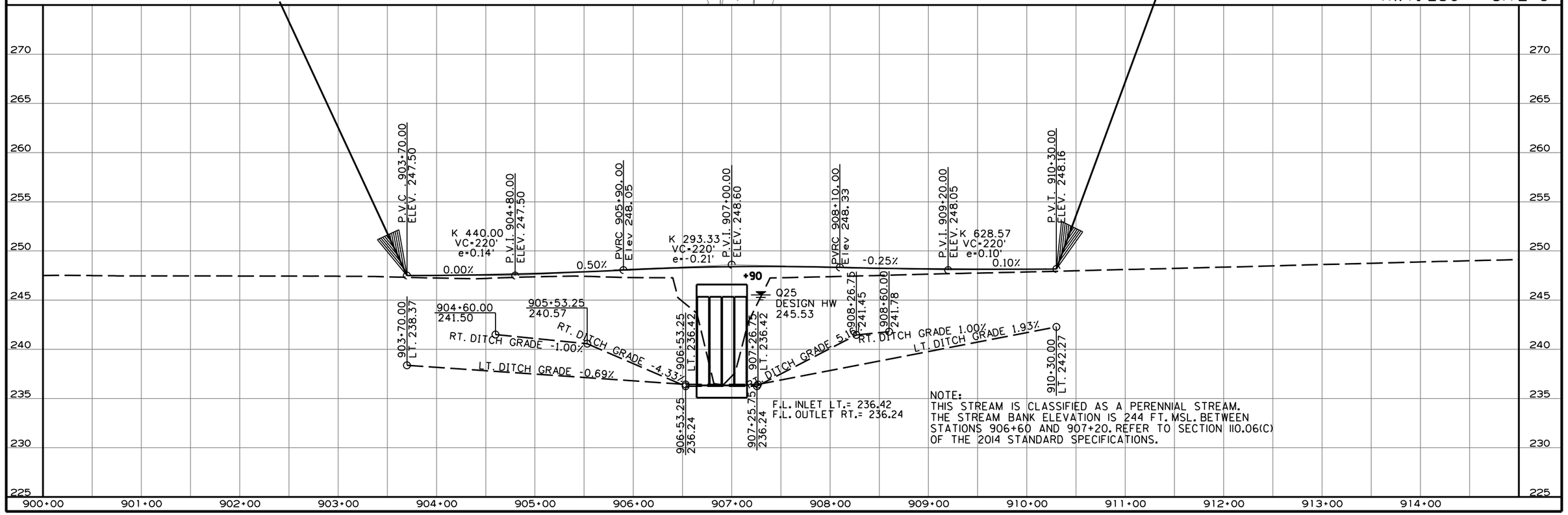
STA. 907+66
INSTALL
30" x 40' PIPE CULVERT
RT. SIDE DRAIN
WITH FLOOD GATE
CONSTRUCT DITCH BLOCK
10 CU. YDS. COMP. EMB.

STA. 908+42 IN PLACE
24" x 31' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 40' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
100 CU. YDS. COMP. EMB.

STA. 910+30.00
END SITE 9

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 9



NOTE:
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM.
THE STREAM BANK ELEVATION IS 244 FT. MSL. BETWEEN
STATIONS 906+60 AND 907+20. REFER TO SECTION 110.06(C)
OF THE 2014 STANDARD SPECIFICATIONS.

8/15/2022
R100869_Site9.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.	101054		151	311

(2) PLAN AND PROFILE SHEETS - SITE 9 DETOUR

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
RAYMOND KYLE EIDSON
No. 19372
7-29-22

SITE 9 DETOUR
P.I. = 9102+15.81
Δ = 15°16' 10" LT.
D = 8°00' 00"
T = 96.00'
L = 190.87'
P.C. 9101+19.81
P.T. 9103+10.68
NO SUPER

SITE 9 DETOUR
P.I. = 9105+53.64
Δ = 15°23' 51" RT.
D = 8°00' 00"
T = 96.82'
L = 192.47'
P.C. 9104+56.82
P.T. 9106+49.29
e = 0.094 '/'
LS=300'

SITE 9 DETOUR
P.I. = 9109+07.76
Δ = 14°30' 12" RT.
D = 8°00' 00"
T = 91.13'
L = 181.29'
P.C. 9108+16.63
P.T. 9109+97.92
e = 0.094 '/'
LS=300'

SITE 9 DETOUR
P.I. = 9112+65.99
Δ = 14°29' 42" LT.
D = 8°00' 00"
T = 91.08'
L = 181.19'
P.C. 9111+74.91
P.T. 9113+56.10
NO SUPER

STA. 9101+19.81 DETOUR
STA. 899+78.96 SITE 9
BEGIN SITE 9 - DETOUR

STA. 9105+21 INSTALL
36" x 128' TEMP. PIPE CULVERT
ON A 45° RT. FWD SKEW
DUMPED RIPRAP

STA. 9107+21.00 - INSTALL
TRP. 96" x 76' TEMPORARY PIPE CULVERT
Q2 = 990 CFS, D.A. = 25.8 SQ. MI.

STA. 9108+73 INSTALL
36" x 62' TEMP. PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH -
415 CU. YDS. COMP. EMB.

STA. 9110+32 INSTALL
36" x 88' TEMP. PIPE CULVERT
ON A 45° LT. FWD SKEW

STA. 9113+56.10
END SITE 9 DETOUR

SPECIAL FLOOD HAZARD AREA

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 9 DETOUR

STA. 9103+21.82 BEGIN SUPERELEVATION
STA. 9105+01.82 MAX. SUPERELEVATION (0.053'/')
STA. 9106+20.88 MAX. SUPERELEVATION (0.053'/')
STA. 9107+33.02 POINT RC (0.020'/')

STA. 9107+33.02 POINT RC (0.020'/')
STA. 9108+45.04 MAX. SUPERELEVATION (0.053'/')
STA. 9109+52.92 MAX. SUPERELEVATION (0.053'/')
STA. 9111+32.92 END SUPERELEVATION

P.V.I. 9102+38.97
ELEV. 247.26
P.V.C. 9103+75.00
ELEV. 247.83
P.V.I. 9104+75.00
ELEV. 248.25
K 476.19
VC=200'
e=-0.11'
P.V.T. 9105+75.00
ELEV. 248.25
P.V.C. 9110+05.00
ELEV. 248.25
P.V.I. 9110+95.00
ELEV. 248.25
K 1200.00
VC=180'
e=-0.03'
P.V.T. 9111+85.00
ELEV. 248.12
P.V.I. 9112+27.69
ELEV. 248.05

0.42%
0.00%
-0.15%

9102+30.00
238.91

LT. DITCH GRADE -0.53%
F.L. INLET LT.= 237.58
F.L. OUTLET RT.= 237.18

9104+80.00
237.58

RT. DITCH GRADE -0.54%

9105+70.00
237.18

Q2
DESIGN HW
243.95

9107+06.00
236.45

9107+36.00
236.45

F.L. INLET LT.= 236.64
F.L. OUTLET RT.= 236.45

9110+00.00
241.65

RT. DITCH GRADE 1.97%

9110+60.00
241.90

LT. DITCH GRADE 0.46%
F.L. INLET LT.= 241.90
F.L. OUTLET RT.= 241.66

9112+60.00
242.82

275
270
265
260
255
250
245
240
235
230

9100+00 9101+00 9102+00 9103+00 9104+00 9105+00 9106+00 9107+00 9108+00 9109+00 9110+00 9111+00 9112+00 9113+00 9114+00 9115+00

8/15/2022

R100869_Site9.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.	101054		152	311

(2) PLAN AND PROFILE SHEETS - SITE 10

SPECIAL FLOOD HAZARD AREA

STA. 1004+10 IN PLACE
48" x 28" CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
48" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
235 CU. YDS. COMP. EMB.
DUMPED RIPRAP

STA. 1005+95.00 - CONSTRUCT
TRP. 12' x 7' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 970 CFS, D.A. = 1.98 SQ.MI.
SPAN = 38-9"

STA. 1007+23 IN PLACE
18" x 25' IRON PIPE CULVERT
LT. SIDE DRAIN REMOVE

STA. 1007+88 IN PLACE
48" x 28" CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
48" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
180 CU. YDS. COMP. EMB.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19372
RAYMOND KYLE EIDSON
7-29-22

100' TRANSITION

CULTIVATED FIELD

PROP. TCE

BERM REQ'D.

PROP. ROW

CONST. LIMITS

EXIST. ROW

WHALEY SLOUGH DITCH

POB 1000+00.00

POE 1012+15.12

PNI4 PD:STD. AHTD MON. STAMPED PNI4 230 BONO

PNI5 PD:STD. AHTD MON. STAMPED PNI5 230 BONO

PNI906 PD:SQ. CUT SE END OF BRIDGE 230 BONO PNI5 0 FILL

PNI102 PD:8 NAIL TRIG ELEV

PNI104 PD:8 NAIL TRIG ELEV

REMOVAL AND DISPOSAL OF GUARDRAIL

STA.	STA.	SIDE	LIN. FT.
1005+10	1005+61	RT.	51
1005+10	1005+61	LT.	51
1006+22	1006+73	RT.	51
1006+22	1006+73	LT.	51

STA. 1001+25.00
BEGIN SITE 10
LOG MILE 3.44

STA. 1004+15 IN PLACE
36" x 27" CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
36" x 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
230 CU. YDS. COMP. EMB.

STA. 1007+85 IN PLACE
48" x 30" CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
48" x 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
250 CU. YDS. COMP. EMB.

STA. 1005+60 - STA. 1006+21
IN PLACE BRIDGE NO. M3130
60'-10" SPAN - 19' TIMBER
STRINGERS/BEAMS SUPPORTED BY
TRESTLE PILE BENTS WITH TIMBER CAPS AND
TIMBER PILINGS
REMOVE AS EXISTING BRIDGE STRUCTURE,
SITE NO. 10 = 1.00 LUMP SUM

STA. 1009+75.00
END JOB 101054
END SITE 10

SPECIAL FLOOD HAZARD AREA

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 230 - SITE 10

P.V.C. 1002+25.00 ELEV. 258.82
P.V.I. 1003+50.00 ELEV. 258.97
K 735.29 VC=250' e=0.11'
PVRC 1004+75.00 Elev 259.55
K 271.74 VC=250' e=-0.29'
P.V.I. 1006+00.00 ELEV. 260.12
PVRC 1007+25.00 Elev 259.55
K 357.14 VC=250' e=0.22'
P.V.I. 1008+50.00 ELEV. 258.97
P.V.T. 1009+75.00 ELEV. 259.27

0.12% 0.46% -0.46% 0.24%

Q25 DESIGN HW 256.84

1001+25.00 RT. 253.40
1001+25.00 LT. 252.27
RT. DITCH GRADE -0.93%
LT. DITCH GRADE -0.60%
1005+67.00 LT. 249.63
1005+67.00 RT. 249.27
RT. DITCH GRADE 8.00%
LT. DITCH GRADE 8.00%
1006+23.00 LT. 249.63
1006+23.00 RT. 249.27
LT. DITCH GRADE 1.20%
RT. DITCH GRADE 1.30%
1009+75.00 RT. 253.85
1009+75.00 LT. 253.85

F.L. INLET LT.= 249.63
F.L. OUTLET RT.= 249.27

NOTE:
THIS STREAM IS CLASSIFIED AS A PERENNIAL STREAM.
THE STREAM BANK ELEVATION IS 255 FT. MSL. BETWEEN
STATIONS 1005+80 AND 1006+10. REFER TO SECTION 110.06(C)
OF THE 2014 STANDARD SPECIFICATIONS.

275 270 265 260 255 250 245 240 235 230

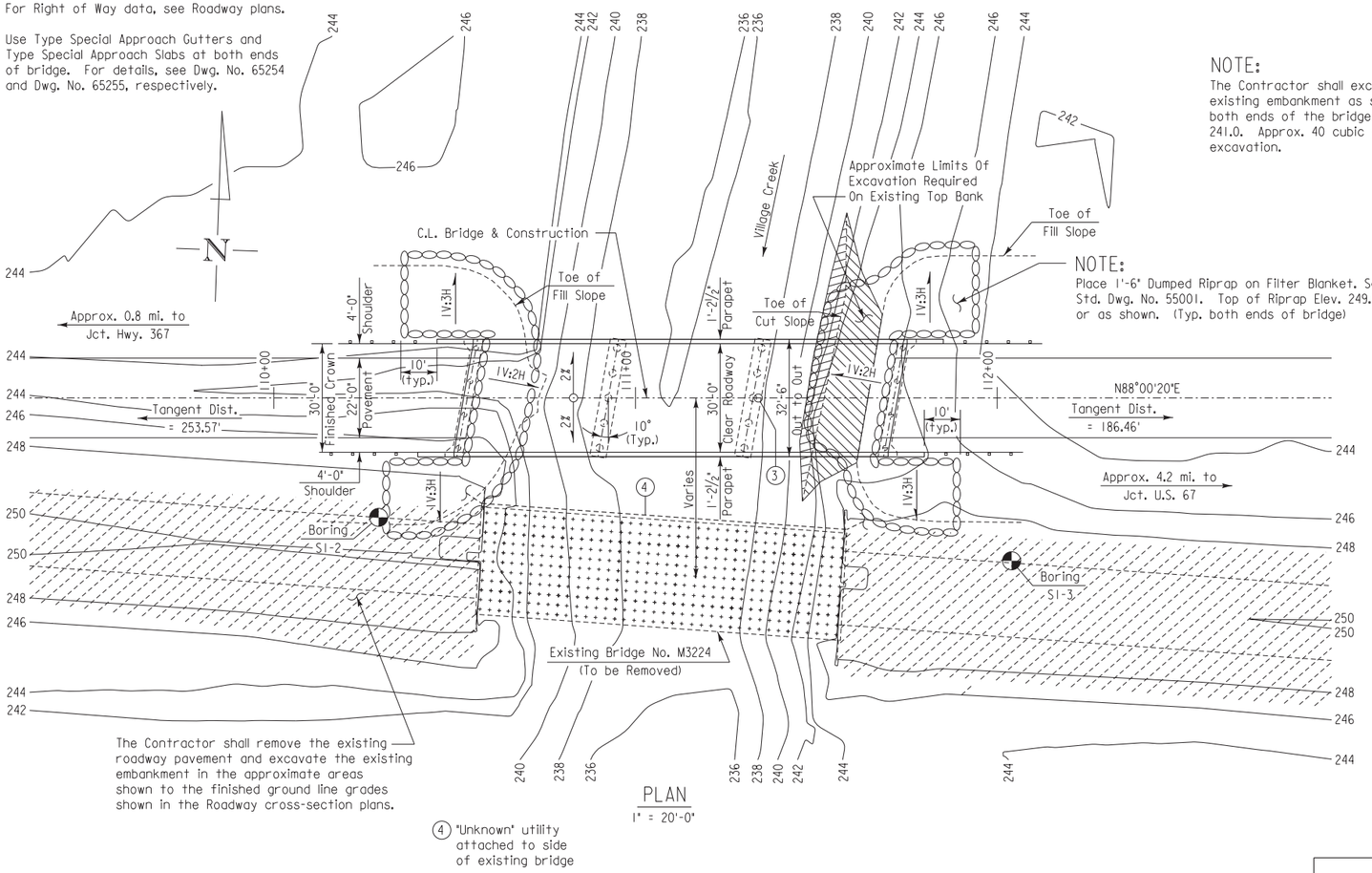
999+00 1000+00 1001+00 1002+00 1003+00 1004+00 1005+00 1006+00 1007+00 1008+00 1009+00 1010+00 1011+00 1012+00 1013+00 1014+00

R100869_Site10.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	153	311
				(1)	07522 - LAYOUT - 65242			

For Right of Way data, see Roadway plans.

Use Type Special Approach Gutters and Type Special Approach Slabs at both ends of bridge. For details, see Dwg. No. 65254 and Dwg. No. 65255, respectively.



PLAN
1" = 20'-0"

NOTE:
The Contractor shall excavate the existing embankment as shown at both ends of the bridge to Elev. 241.0. Approx. 40 cubic yards of excavation.

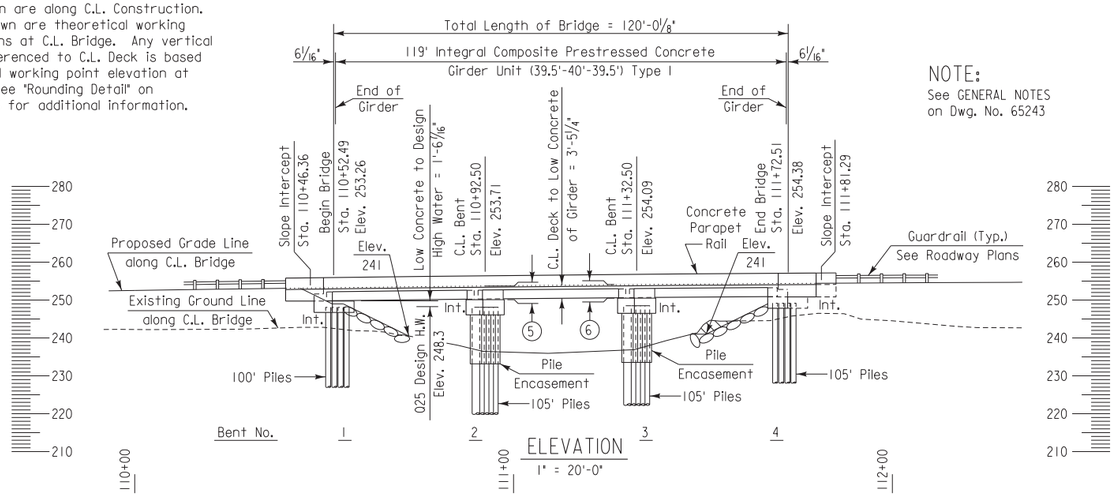
NOTE:
Place 1'-6" Dumped Riprap on Filter Blanket. See Std. Dwg. No. 55001. Top of Riprap Elev. 249.0 or as shown. (Typ. both ends of bridge)

(3) Cross Slope Varies - See SUPERELEVATION TRANSITION SKETCH

(4) "Unknown" utility attached to side of existing bridge

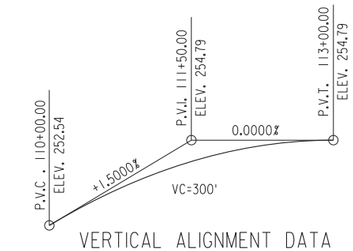
(5) C.L. Deck to Low Seat Top of Cap = 3'-6 11/16"
(6) C.L. Deck to Low Seat Top of Cap = 3'-6 9/16"

NOTE:
Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Dwg. No. 65246 for additional information.

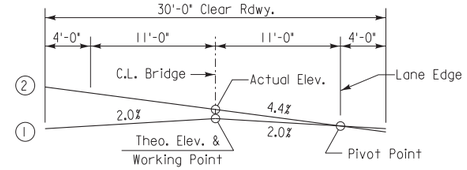


ELEVATION
1" = 20'-0"

NOTE:
See GENERAL NOTES on Dwg. No. 65243



VERTICAL ALIGNMENT DATA
N.T.S.



(1) Sta. 111+33.97 Begin Transition
Sta. 112+70.33 Reverse Crown
(2) Sta. 114+33.97 End Transition

SUPERELEVATION TRANSITION SKETCH

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	•NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	25	2570	248.3	248.3
BASE	100	3100	248.8	248.8
EXTREME	500	3680	249.4	249.4
OVERTOPPING	>500			

Drainage Area = 87.6 square miles
Historical High Water Elev. = N.A.

•Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 249.0 feet
Proposed Low Bridge Chord Elevation = 249.8 feet
Existing Low Bridge Chord Elevation = 247.3 feet

Digitally signed by Cynthia A. Rich
Date: 2022.09.20 14:28:48-05'00'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER VILLAGE CREEK
HWY. 230 STRS. & APPRS. (S)
LAWRENCE COUNTY

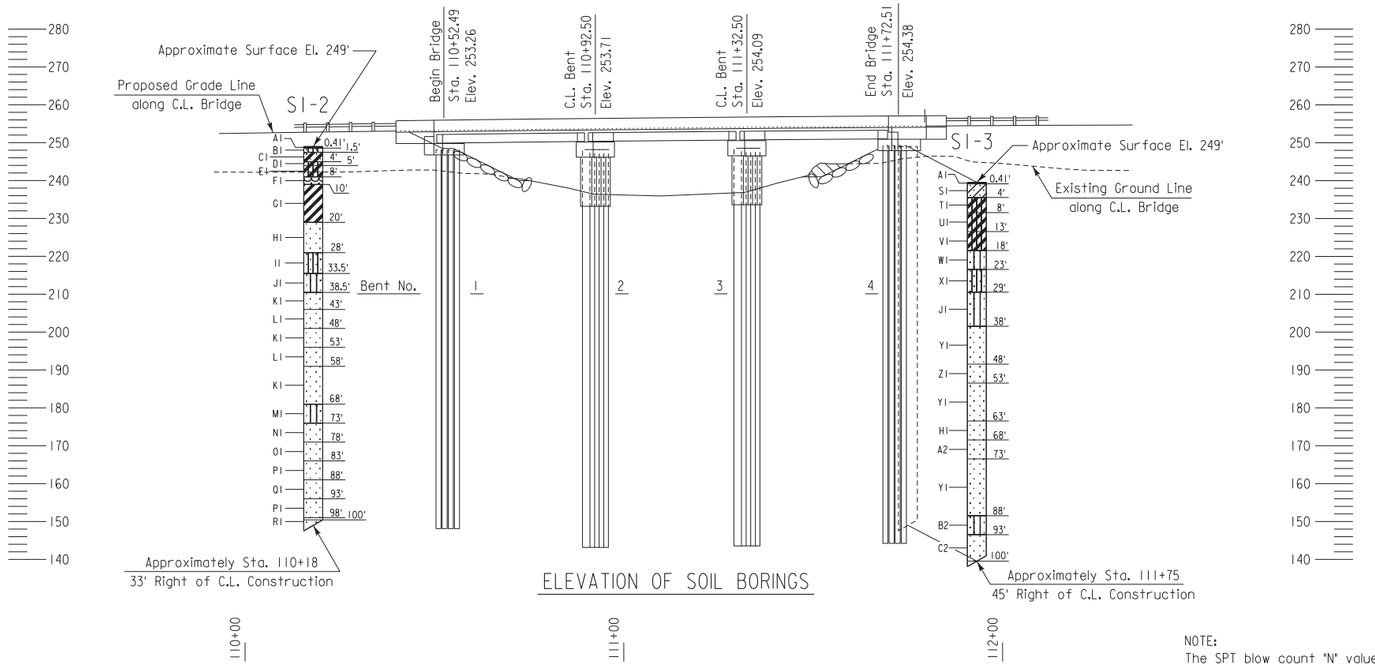
ROUTE 230 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_l1.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07522 DRAWING NO. 65242

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	154	311
				(1)		07522 - LAYOUT - 65243		



ELEVATION OF SOIL BORINGS

BORING LEGEND

A1-Asphalt
B1-Medium dense tan and light gray silty sand (SM) with gravel
C1-Medium stiff tan and light gray sandy clay (CL) with trace of gravel
D1-Stiff gray silty clay (CL) with gravel
E1-Stiff gray silty clay (CL)
F1-Wood
G1-Medium stiff light gray clay (CH), slightly sandy
H1-Loose light gray sand (SP)
I1-Very loose light gray silty sand (SM), slightly clayey with trace of organics
J1-Medium dense light gray sand (SP-SM), slightly silty
K1-Dense light gray and tan sand (SP)
L1-Medium dense light gray and tan sand (SP) with trace of organics
M1-Dense light gray and tan sand (SP-SM), slightly silty
N1-Loose light gray and tan sand (SP) with gravel
O1-Medium dense light gray and tan sand (SP) with gravel
P1-Medium dense light gray and tan sand (SP)
Q1-Dense light gray and tan sand (SP)
R1-Dense light gray and tan sand (SP) with trace of gravel
S1-Loose tan clayey sand (SC) with gravel
T1-Stiff tan and light gray silty clay (CL) with trace of organics
U1-Soft tan and light gray silty clay (CL) with sand
V1-Medium stiff tan and light gray silty clay (CL)
W1-Loose light gray sand (SP-SM), slightly silty
X1-Loose light gray silty sand (SM)
Y1-Medium dense light gray sand (SP)
Z1-Medium dense light gray sand (SP) with trace of organics
A2-Dense light gray sand (SP)
B2-Loose light gray sand (SP-SM), slightly silty, with trace of gravel
C2-Medium dense light gray sand (SP) with trace of gravel

NOTE:
The SPT blow count 'N' values are raw values. They have not been corrected for hammer energy. A hammer energy correction factor of 1.36 applies to borings SI-1 (not shown), SI-2, SI-3 & SI-4 (not shown).

"N" VALUES

SI-2, Approximately Sta. 110+18
33' Right of C.L. Construction

2 - 3, N=5
9 - 10, N=11
24 - 25, N=8
29 - 30, N=4
34 - 35, N=26
39 - 40, N=32
44 - 45, N=18
49 - 50, N=37
54 - 55, N=16
59 - 60, N=27
64 - 65, N=19
69 - 70, N=41
74 - 75, N=9
79 - 80, N=13
84 - 85, N=14
89 - 90, N=49
94 - 95, N=11
99 - 100, N=35

SI-3, Approximately Sta. 111+75
45' Right of C.L. Construction

2 - 3, N=7
24 - 25, N=5
29 - 30, N=19
34 - 35, N=25
39 - 40, N=25
44 - 45, N=13
49 - 50, N=16
54 - 55, N=19
59 - 60, N=15
64 - 65, N=8
69 - 70, N=48
74 - 75, N=21
79 - 80, N=15
84 - 85, N=23
89 - 90, N=10
94 - 95, N=23
99 - 100, N=27

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions, unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 4 SDI= 0.563g Site Class = E

MATERIALS AND STRENGTHS:

Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Class S (AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322 Type A, Gr. 60)	fy = 60,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bents 1 & 4 shall be 16" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 233 tons per pile. Piling in Bents 2 & 3 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 247 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place. All piling shall have a tip elevation of 147 or lower. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the items "STEEL SHELL PILING (16" DIA.)" and "STEEL SHELL PILING (24" DIA.)"

PREBORING: Preboring is required for all piling at Bents 1 and 4. Prebored holes shall have a diameter 6" greater than the diameter of the pile for a depth of 10' below the bottom of the cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly, but shall be considered subsidiary to the item 'Preboring'.

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend from bottom of cap to 3' below natural ground. See Standard Dwg. No. 55021 for additional information.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for 16" piles shall be 80,000 foot pounds per blow and for 24" piles shall be 80,000 foot pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING No.
End Bents	65244
Intermediate Bents	65245
119'-0" Integral Prestressed Concrete Girder Unit	65246-65253
Concrete Filled Steel Shell Piling	55021
Type Special Approach Gutters	65254
Type Special Approach Slab	65255

EXISTING BRIDGE: Existing Bridge No. M3224 (Log Mile 0.785) is 100' in length, 30' wide and consists of one 31-foot steel girder interior span, two 19-foot timber girder interior spans and two 15-foot timber girder end spans. All spans are supported by timber caps on timber piling. The existing bridge is located an average distance of approximately 49' downstream of the new bridge alignment.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. M3224 shall be removed in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER VILLAGE CREEK
HWY. 230 STRS. & APPRS. (S)
LAWRENCE COUNTY

ROUTE 230 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

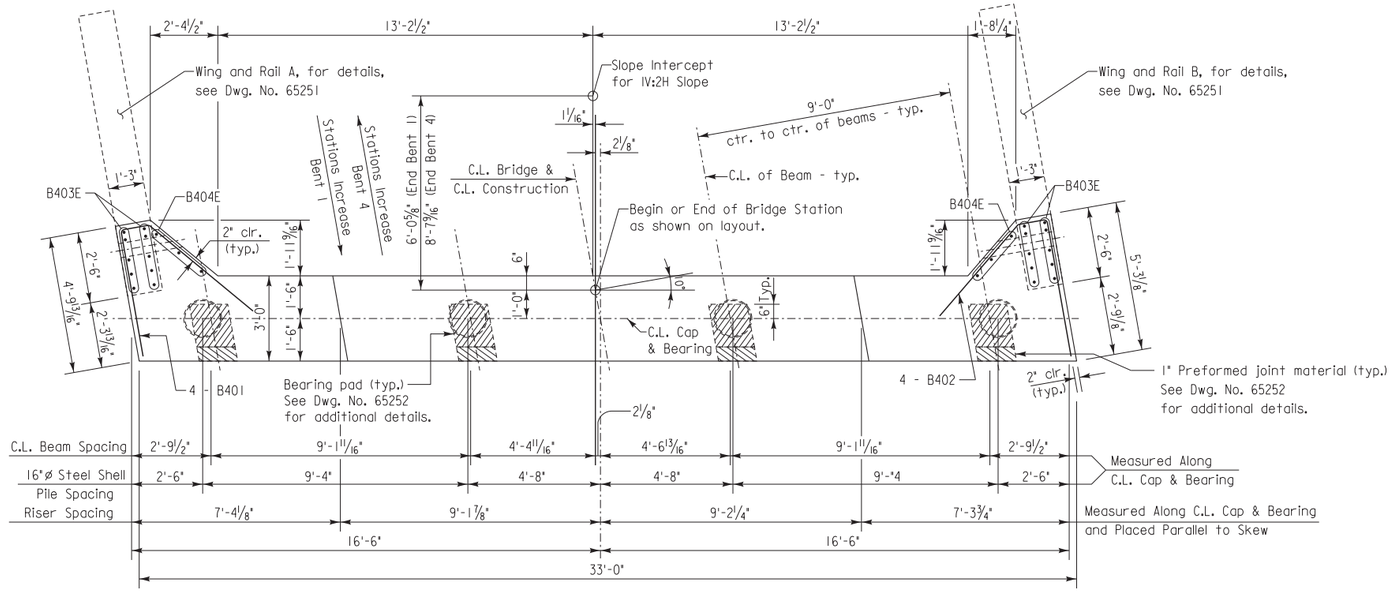
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/BCD DATE: NOV 2020
FILENAME: b101054x1_l2.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07522 DRAWING NO. 65243

PRINT DATE: 7/29/2022

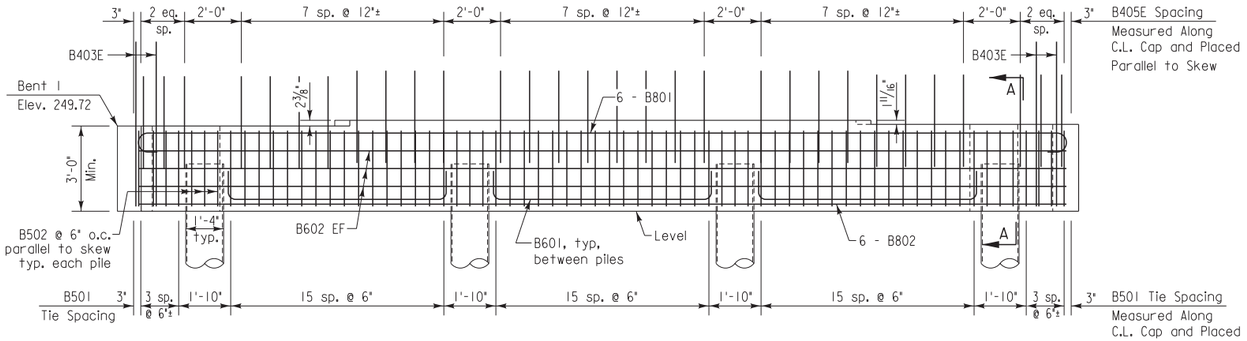
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	155	311

(1) 07522 - END BENTS - 65244



PLAN - BENTS 1 & 4

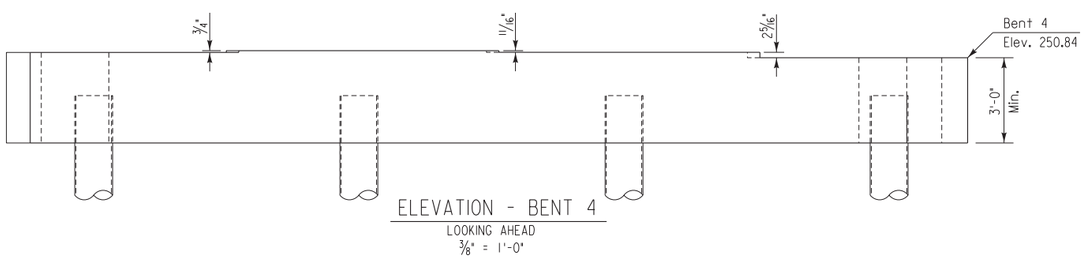
⅜" = 1'-0"



ELEVATION - BENT 1

LOOKING BACK

⅜" = 1'-0"



ELEVATION - BENT 4

LOOKING AHEAD

⅜" = 1'-0"

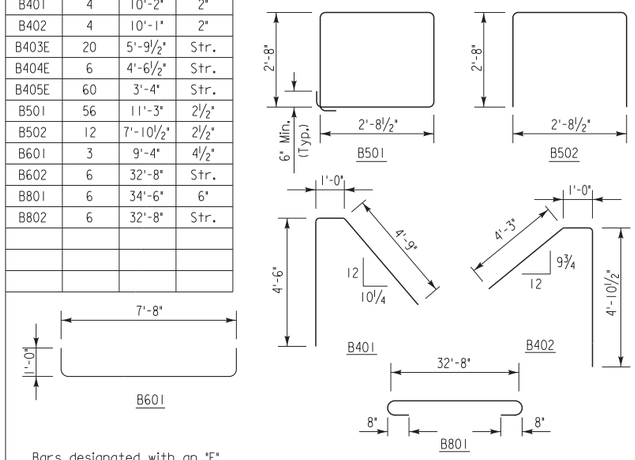
NOTE:
Reinforcing in Bent 4 Cap Similar to Reinforcing in Bent 1 Cap.

BAR LIST - PER BENT (1)

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	10'-2"	2"
B402	4	10'-1"	2"
B403E	20	5'-9½"	Str.
B404E	6	4'-6½"	Str.
B405E	60	3'-4"	Str.
B501	56	11'-3"	2½"
B502	12	7'-10½"	2½"
B601	3	9'-4"	4½"
B602	6	32'-8"	Str.
B801	6	34'-6"	6"
B802	6	32'-8"	Str.

BENDING DIAGRAMS

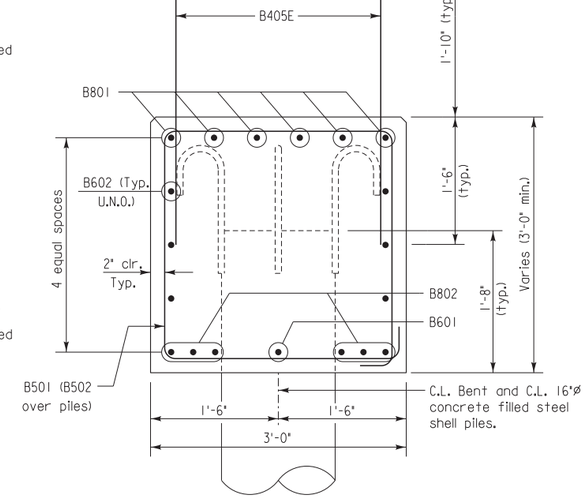
Dimensions are out to out of bars.



Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

(1) See Dwg. No. 65251 for additional details.



For details of concrete filled steel shell piles and pile anchorage, see Std. Dwg. No. 55021.

SECTION A-A

No Scale

CONCRETE:

Unless otherwise noted, concrete in caps shall be Class S with a minimum 28 day compressive strength f'c = 3,500 and shall be poured in the dry.

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

All reinforcing shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Granular Backfill and Pipe Underdrain required behind Bent, See Dwg. No. 65252 for details.

LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF END BENTS VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/LAC DATE: NOV 2020

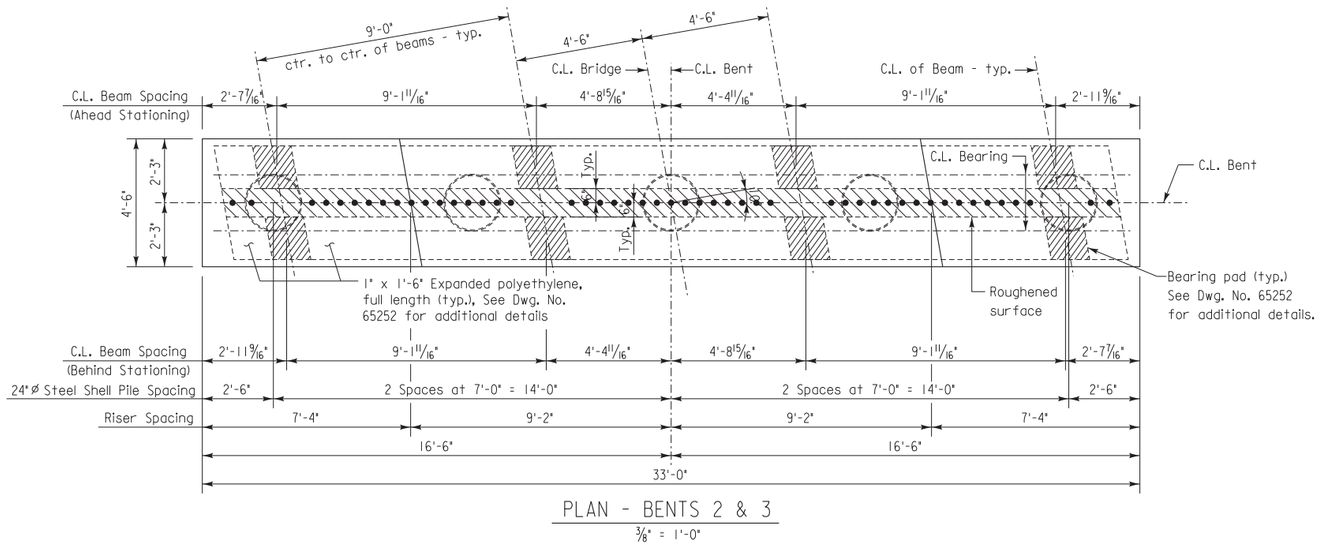
FILENAME: b101054x1_a1.dgn
SCALE: ⅜" = 1'-0"

BRIDGE NO. 07522

DRAWING NO. 65244

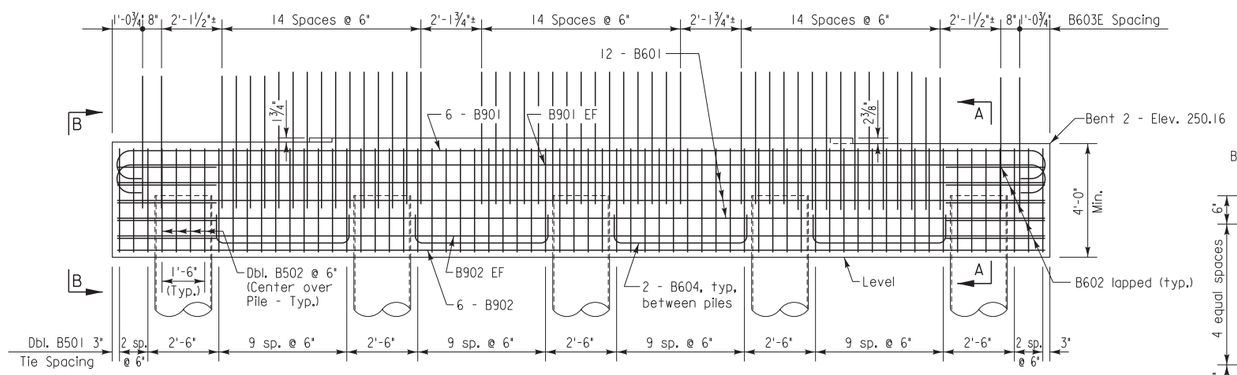
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	156	311
				07522 - INT. BENTS - 65245				



PLAN - BENTS 2 & 3

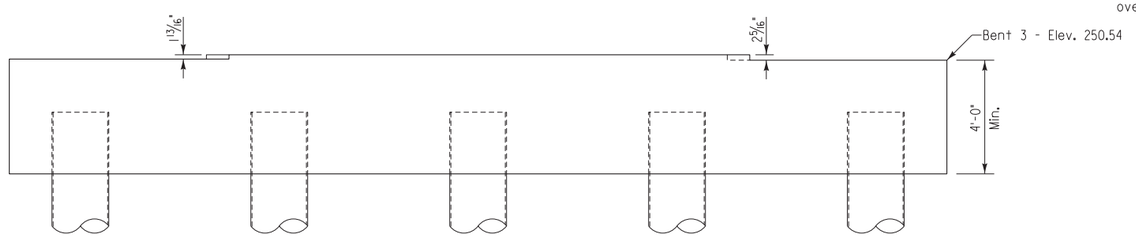
3/8" = 1'-0"



ELEVATION - BENT 2

LOOKING AHEAD

3/8" = 1'-0"



Reinforcing in Bent 3 cap similar to reinforcing shown in Bent 2 cap.

ELEVATION - BENT 3

LOOKING AHEAD

3/8" = 1'-0"

LEGEND

EF = Each Face

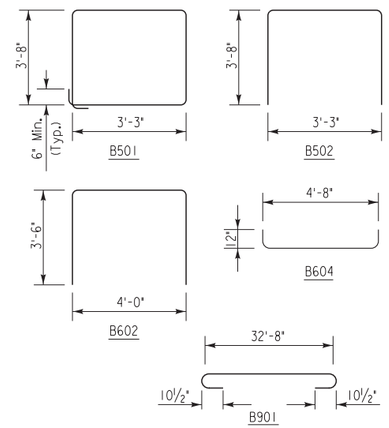
U.N.O. = Unless Noted Otherwise

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B501	92	14'-3"	2 1/2"
B502	40	10'-4"	2 1/2"
B601	12	32'-8"	Str.
B602	10	10'-9"	4 1/2"
B603E	49	4'-8"	Str.
B604	8	6'-4"	4 1/2"
B901	8	35'-3"	9 1/2"
B902	8	32'-8"	Str.

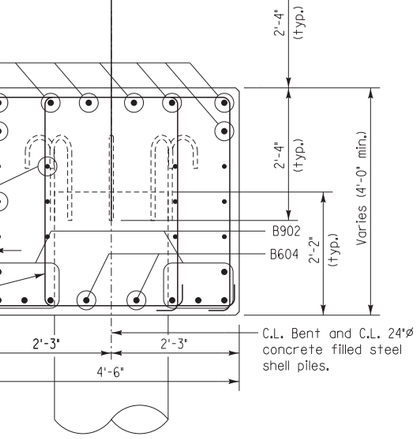
BENDING DIAGRAMS

Dimensions are out to out of bars.



Bars designated with an "E" suffix are to be epoxy coated.

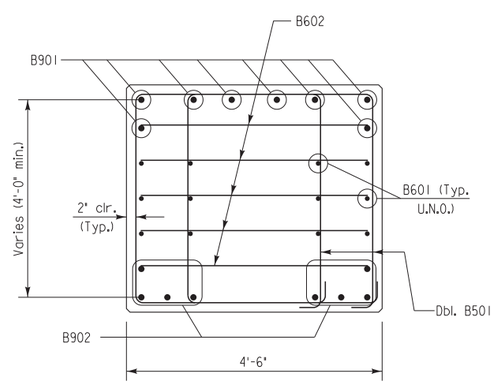
Dimensions are out to out of bars.



For details of concrete filled steel shell piles and pile anchorage, see Std. Dwg. No. 55021.

SECTION A-A

3/4" = 1'-0"



VIEW B-B

3/4" = 1'-0"

CONCRETE:

Unless otherwise noted, concrete in caps 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 shall be chamfered 3/4" unless otherwise noted.

REINFORCING STEEL:

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.

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020 FILENAME: b101054x1_b1.dgn

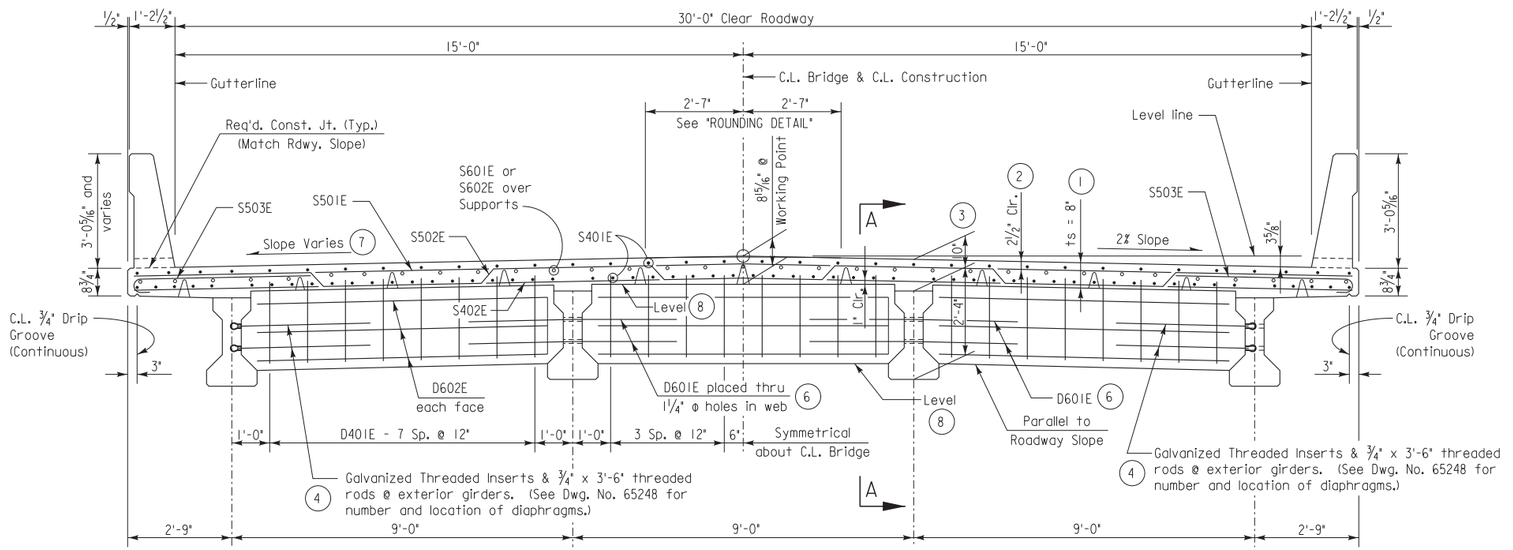
CHECKED BY: BKC DATE: JUN 2022 SCALE: 3/8" = 1'-0"

DESIGNED BY: KJK/LAC DATE: NOV 2020

BRIDGE NO. 07522 DRAWING NO. 65245

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	157	311
				(1)	07522 - 119' UNIT - 65246			



SLAB REINFORCING

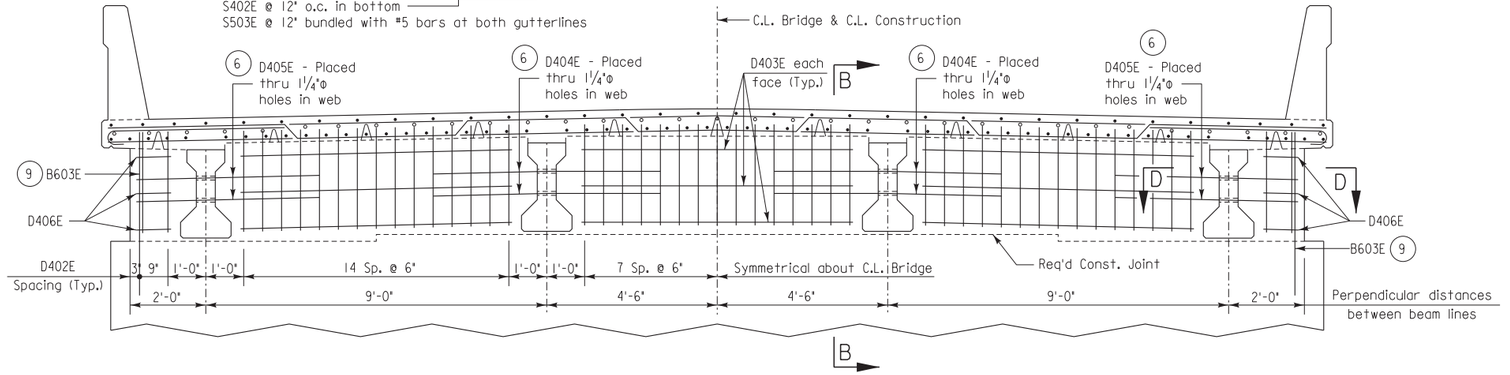
LONGITUDINAL: S401E as shown (12" max.)
S601E and S602E as shown

TRANSVERSE: S502E @ 12" o.c. bent up over girders
S501E @ 12" o.c. in top — Alternate
S402E @ 12" o.c. in bottom
S503E @ 12" bundled with #5 bars at both gutterlines

TYPICAL ROADWAY SECTION

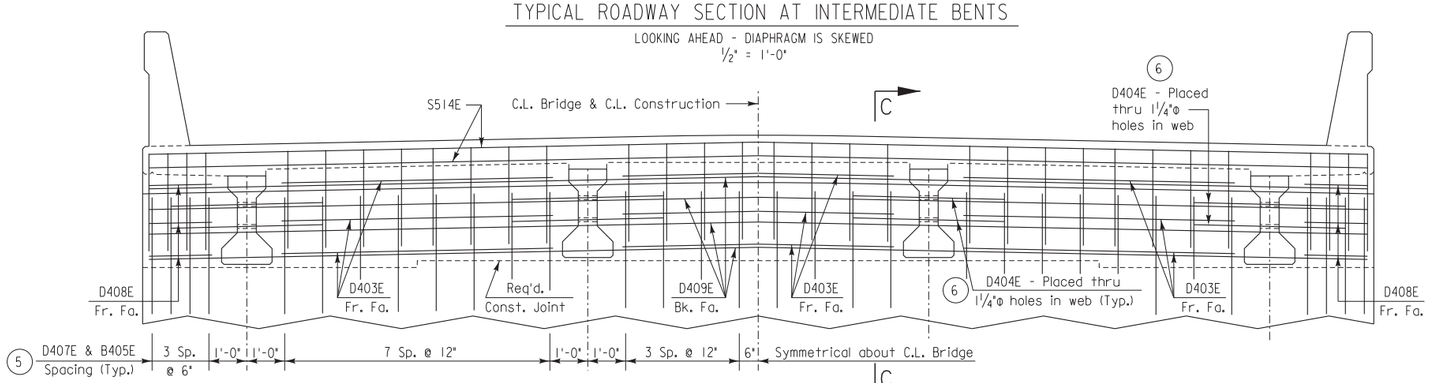
LOOKING AHEAD - DIAPHRAGM IS SKEWED
1/2" = 1'-0"

For "Section A-A", see Dwg. No. 65248.
For "Section B-B", "Section C-C" and "Section D-D", see Dwg. No. 65252.



TYPICAL ROADWAY SECTION AT INTERMEDIATE BENTS

LOOKING AHEAD - DIAPHRAGM IS SKEWED
1/2" = 1'-0"



TYPICAL ROADWAY SECTION AT END BENTS

LOOKING BACK - BENT 1, LOOKING AHEAD - BENT 4
DIAPHRAGM IS SKEWED
1/2" = 1'-0"

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or hi-chairs with full length lower runners directly on removable deck forms will not be allowed.

At the Contractor's option, two straight #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S (AE) Concrete.

(1) See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65252.

(2) Tolerance: Minus = 1/4"; Plus equal the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65652.

(3) This dimension taken at C.L. Bearing & C.L. Girder.

(4) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. 3/4" ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232 Class C. These items will not be paid for directly, but shall be considered subsidiary to the item "Prestressed Concrete Girders (Type I)".

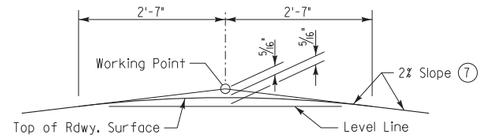
(5) For additional details of B405E bars, see bent details on Dwg. No. 65244.

(6) Bars shall be centered about the girders.

(7) See "SUPERELEVATION TRANSITION SKETCH" on Dwg. No. 65242.

(8) Bottom of slab and diaphragm is level when the cross slope of the bridge deck is in normal crown (2% each side of the C.L.).

(9) Only outer limits of bars shown for clarity. For additional details of B603E bars, see bent details on Dwg. No. 65245 for spacing of bars.



NOTE:
Working Point matches Theoretical Roadway Grade.

(7) Values shown are for 2% Peaked Crown. Dimension from Working Point to Top of Roadway Surface Varies from 5/16" at Station 111+06.47 to 1/4" near Station 111+72.51 (near End Bridge).

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

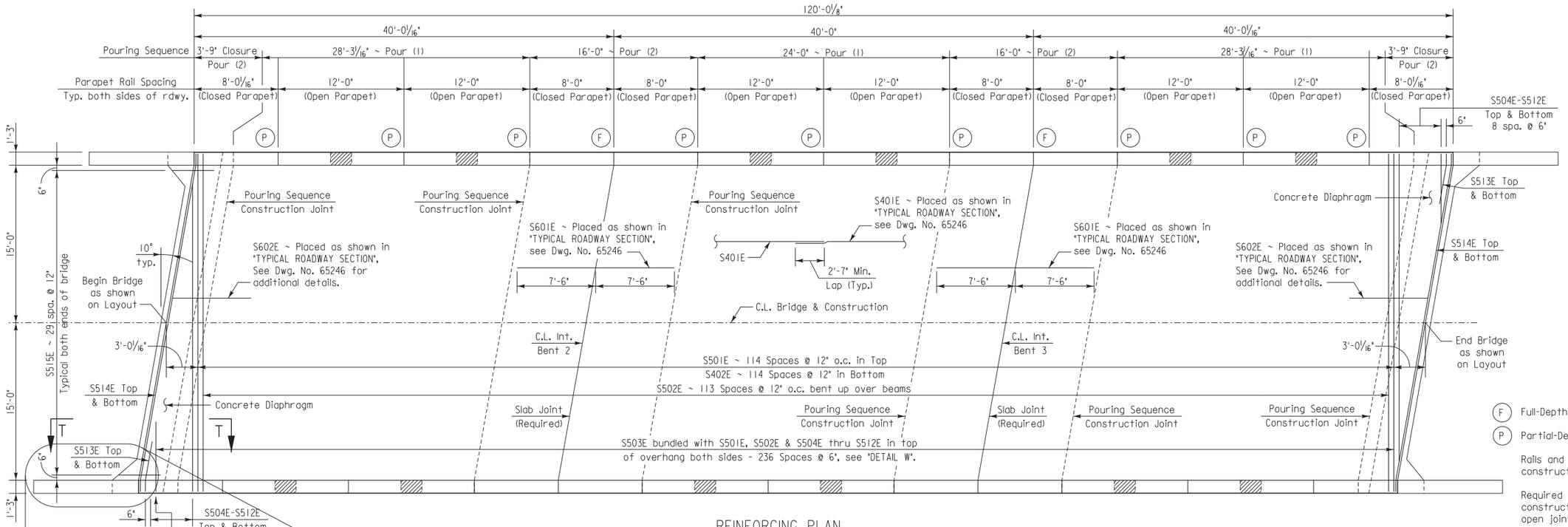
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

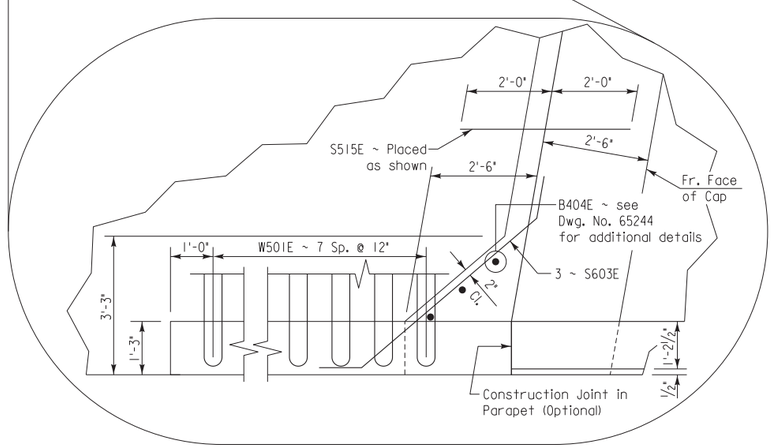
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_s1.dgn
SCALE: 1/2" = 1'-0"

BRIDGE NO. 07522 DRAWING NO. 65246

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	158	311
				(1)		07522 - 119' UNIT - 65247		





REINFORCING PLAN

3/16" = 1'-0"

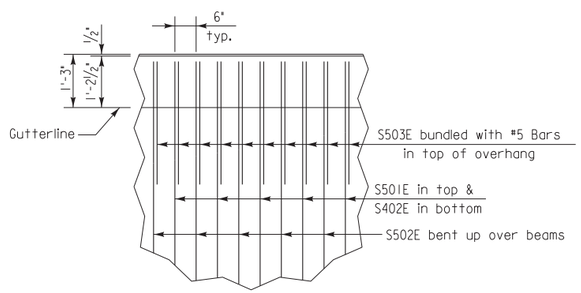
Slab Pouring Sequence Notes:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. No deviations from the pouring sequence shown will be allowed.

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 diaphragms shall not be poured prior to 90 days after release of strands for the girders.

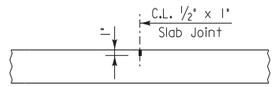
Concrete diaphragms at end bents and intermediate bents shall be poured monolithically with the deck above the diaphragm. Concrete diaphragms at mid-span shall be placed no less than 48 hours prior to deck slab pour.

Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.



DETAIL W

No Scale



Use 1/2" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod shall not be installed. Joint Sealer shall be measured and paid for as Class S(AE) Concrete - Bridge. Slab joints shall extend to the outside edge of the bridge deck and shall align with open joints at the front face of parapet, unless noted otherwise. Slab joint 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 as all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL

No Scale

(F) Full-Depth Parapet Joint at this location

(P) Partial-Depth Parapet Joint at this location

Rails and wings are included in span construction and included in span quantities.

Required slab joints and pouring sequence construction joints shall align with parapet open joints at the gutterline, unless noted otherwise.

For Bar list, see Dwg. No. 65253.

For "VIEW U-U" and "SECTION T-T", see Dwg. No. 65251.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_s2.dgn
SCALE: 3/16" = 1'-0"

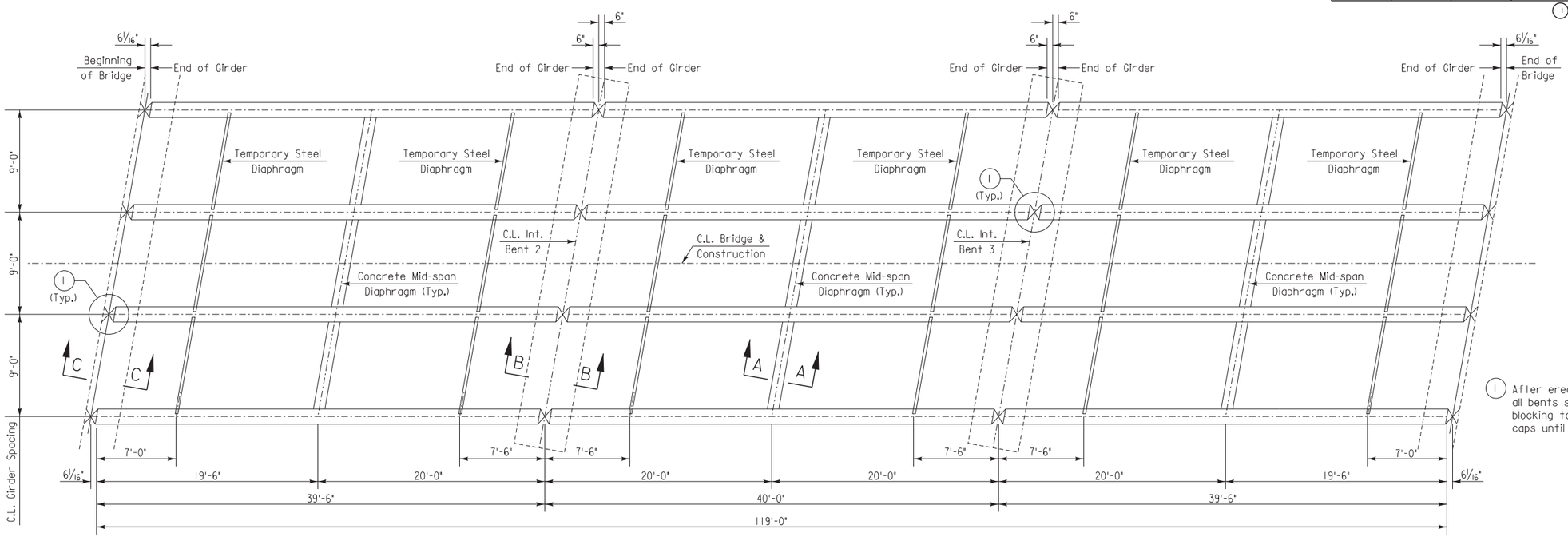
BRIDGE NO. 07522 DRAWING NO. 65247

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	159	311

(1) 07522 - 119' UNIT - 65248

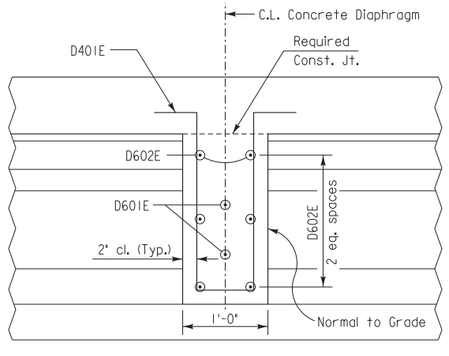


FRAMING PLAN

3/16" = 1'-0"

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until all diaphragms are poured or connected.

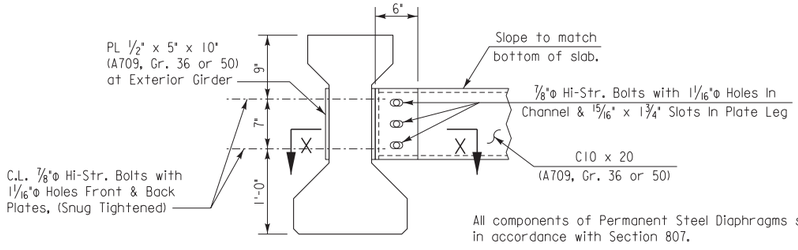
For "Section B-B" and "Section C-C", see Dwg. No. 65252.



SECTION A-A

Midspan Diaphragms

NO SCALE



Steel diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". Temporary Steel Diaphragms shall be removed upon completion of concrete set in the end bent and intermediate bent diaphragms. After they are removed, holes in webs shall be filled with a QPL approved non-shrink grout and the diaphragms and all connecting components shall remain the property of the Contractor. Temporary Diaphragm considered subsidiary to the item "Prestressed Concrete Girders (Type I)".

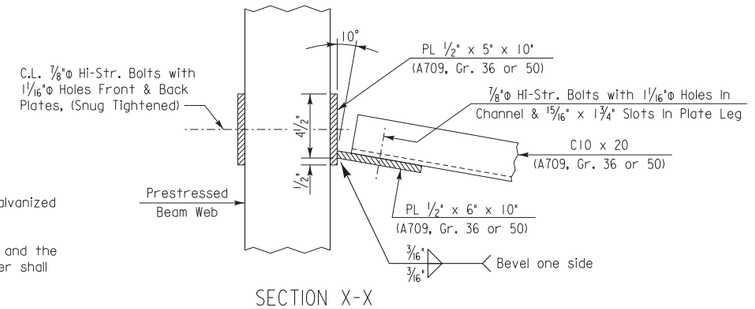
Permanent Steel Diaphragms may be used in lieu of a Concrete Diaphragm at midspan. Payment for permanent steel diaphragm and components will be based on concrete diaphragms.

All components of Permanent Steel Diaphragms shall be galvanized in accordance with Section 807.

A standard washer shall be supplied under both the nut and the head of the ⅞" dia. H.S. bolts. An additional plate washer shall cover the angle slots.

DETAILS OF STEEL DIAPHRAGM

NO SCALE



SECTION X-X

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

SHEET 3 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

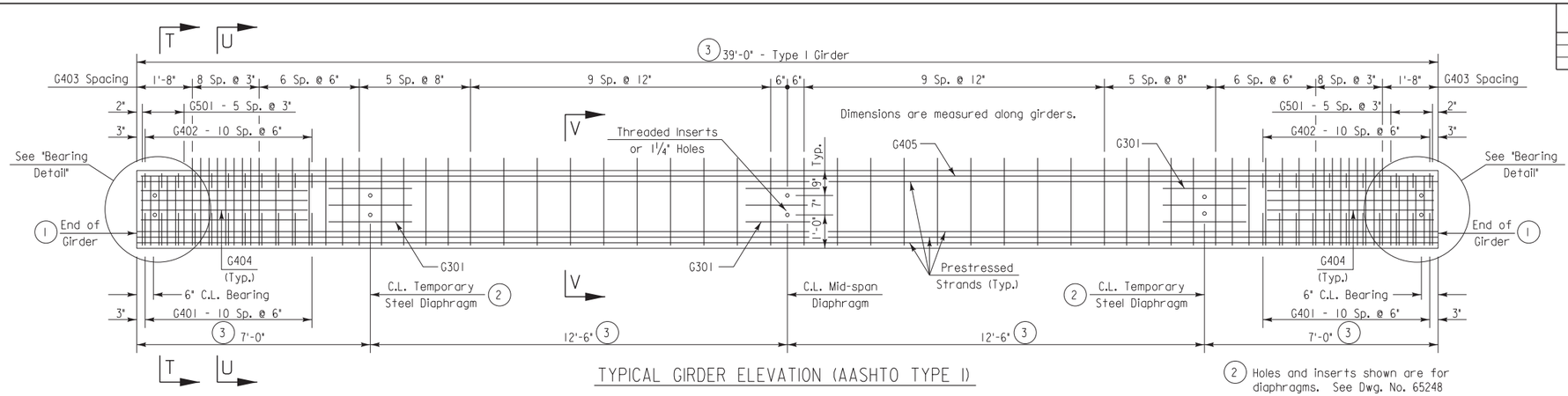
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_s3.dgn
SCALE: 3/16" = 1'-0"

BRIDGE NO. 07522 DRAWING NO. 65248

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	160	311
				(1)		07522 - 119' UNIT - 65249		



TYPICAL GIRDER ELEVATION (AASHTO TYPE I)

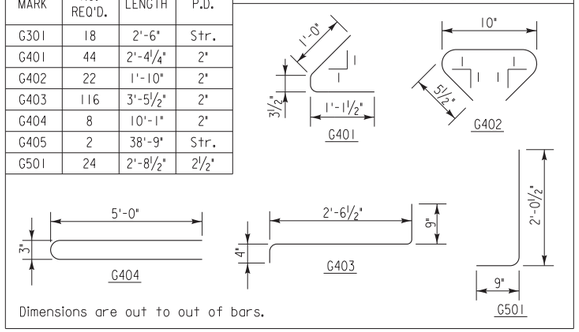
(2) Holes and inserts shown are for diaphragms. See Dwg. No. 65248 for additional details.

(3) This dimension shall be increased for effects of vertical profile on girder length to maintain 12" between ends of girders.

BAR LIST - PER GIRDER

MARK	NO. REQ'D.	LENGTH	P.D.
G301	18	2'-6"	Str.
G401	44	2'-4¼"	2"
G402	22	1'-10"	2"
G403	116	3'-5½"	2"
G404	8	10'-1"	2"
G405	2	38'-9"	Str.
G501	24	2'-8½"	2½"

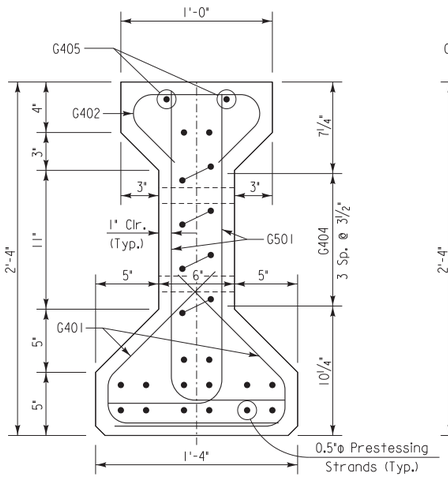
BENDING DIAGRAMS



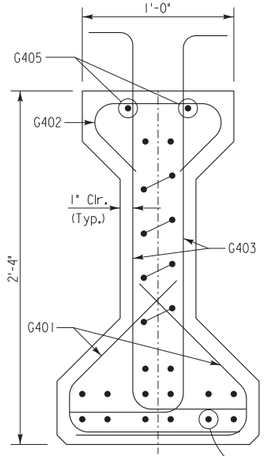
Dimensions are out to out of bars.

Note: All bars in BAR LIST shall be subsidiary to the item "39'-0" Prestressed Concrete Girders (Type I)". See span drawings for bar list of span reinforcing.

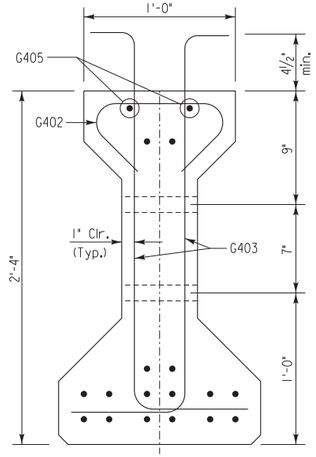
At the Contractor's option, the two G401 bars may be furnished as one bar.



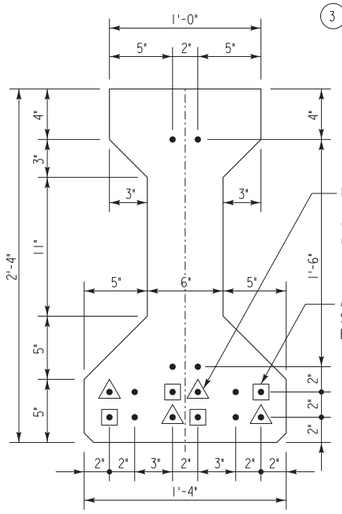
SECTION T-T



SECTION U-U



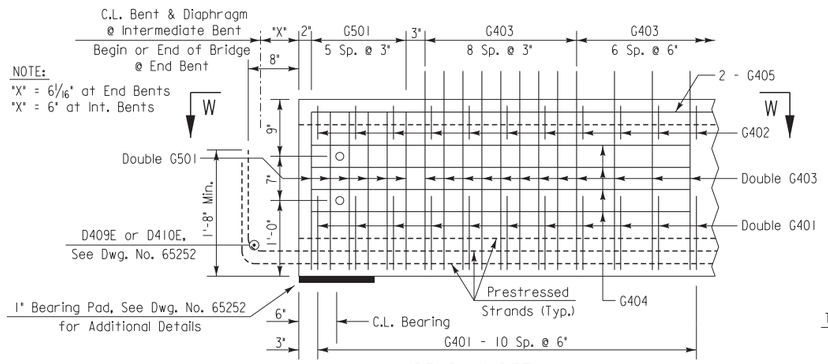
SECTION V-V



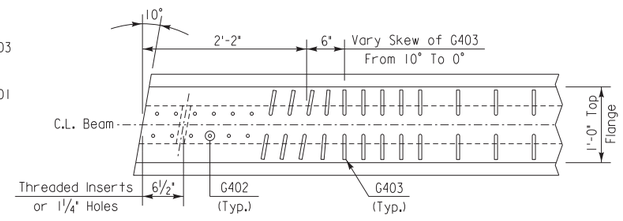
STRAND ARRANGEMENTS

(1) Saw and shop bend 4 bottom prestressing strands from each end of the girder into diaphragms as shown. Saw any remaining strands flush with the end of girder. See "Strand Arrangements" detail for alternating patterns.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands shall not be changed.



BEARING DETAIL



SECTION W-W

CAMBER NOTES

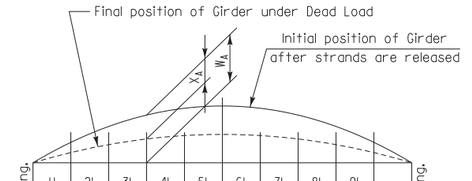
The camber and dead load deflection values shown are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders.
B. Estimated age of prestressed concrete girders at time of erection.
C. Profile of each girder under self weight.
D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if required.

Span Pt.	Inches	
	W_A	X_A
0.00	0	0
0.10	0.400"	0.171"
0.20	0.710"	0.305"
0.30	0.932"	0.400"
0.40	1.066"	0.457"
0.50	1.110"	0.476"
0.60	1.066"	0.457"
0.70	0.932"	0.400"
0.80	0.710"	0.305"
0.90	0.400"	0.171"
1.00	0	0

TABLE OF GIRDER VARIABLES



'W_A' is camber of Girder (Prestress + Dead Load of Girder @ 90 days after release)

'X_A' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

CAMBER & DEFLECTIONS (INCHES)

Note: 'W_A' & 'X_A' are based on the required minimum concrete strength and may vary from the dimension shown. 'W_A' & 'X_A' shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65252 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 4 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

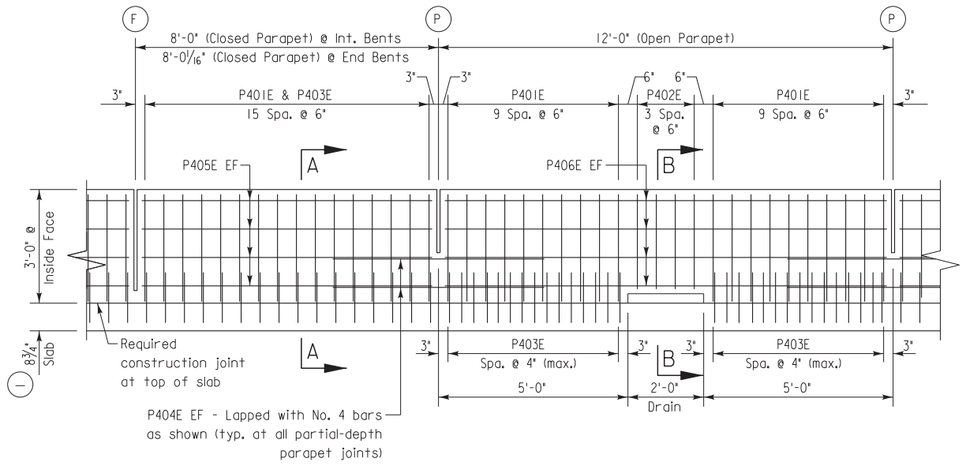
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_s4.dgn
SCALE: NO SCALE

BRIDGE NO. 07522 DRAWING NO. 65249

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	161	311
				(1)	07522 - 119' UNIT - 65250			



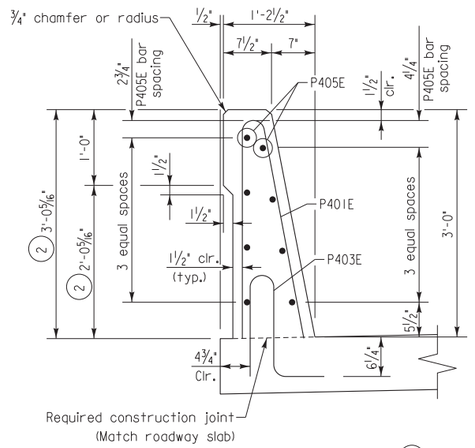
(1) Measured at edge of deck

DETAILS OF PARAPET RAIL

1/2" = 1'-0"

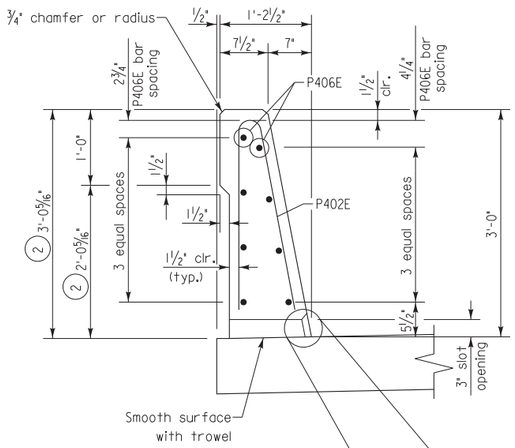
(F) C.L. Full-Depth Parapet Joint (1/4"-1" max.) Stop 4" from Top of Slab.

(P) C.L. Partial-Depth Parapet Joint (1/4"-1" max.) Stop 1-4" from Top of Slab.



SECTION A-A

1" = 1'-0"



SECTION B-B

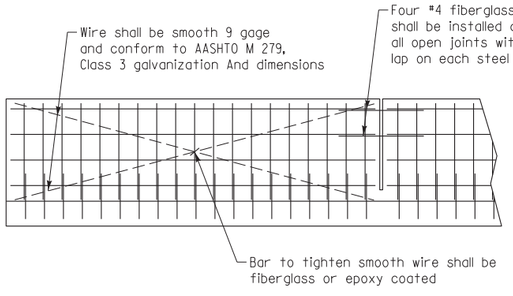
1" = 1'-0"

(2) Dimensions shown for 2% cross slope on bridge deck. Dimensions will vary per SUPERELEVATION TRANSISTION SKETCH shown on Dwg. No. 65242.

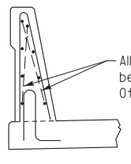
NOTE:
For locations of open and closed parapet panels and full-depth and partial-depth parapet joints, see 'REINFORCING PLAN' on Dwg. No. 65247.

LEGEND

EF = Each Face



NOTE:
For actual placement of reinforcing steel, see 'DETAILS OF PARAPET RAIL'.

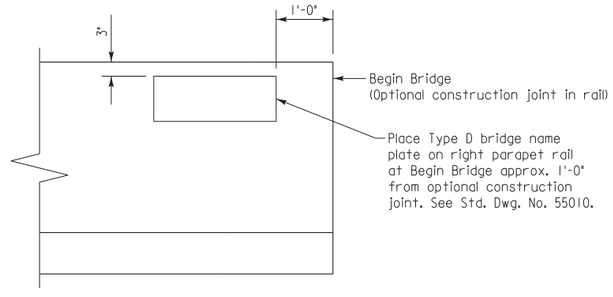


NOTE:
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the groove pattern.

NOTE:
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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face of Parapet)
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

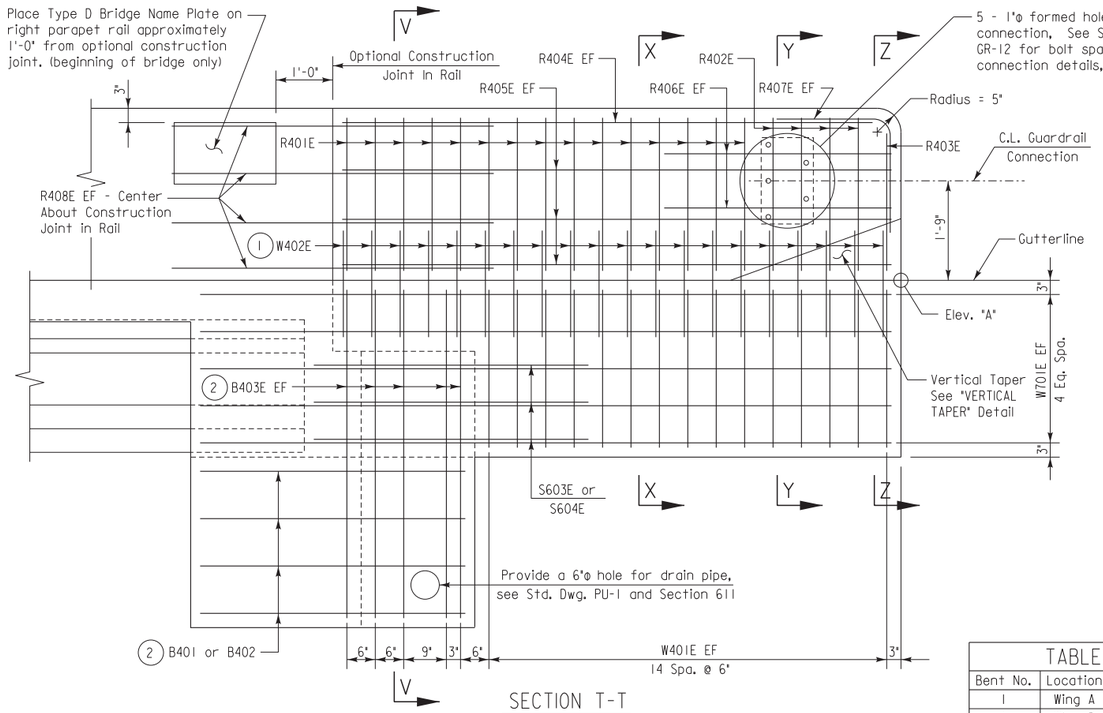
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_r1.dgn
SCALE: 1/2" = 1'-0"

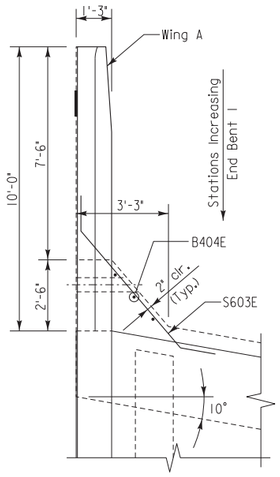
BRIDGE NO. 07522 DRAWING NO. 65250

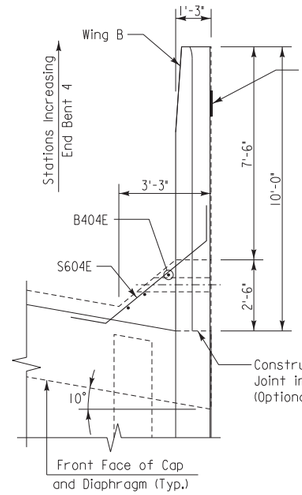
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	162	311
				(1)	07522 - 119' UNIT - 65251			

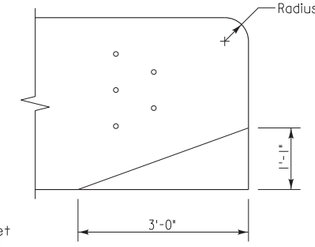


SECTION T-T
Scale: 3/4" = 1'-0"

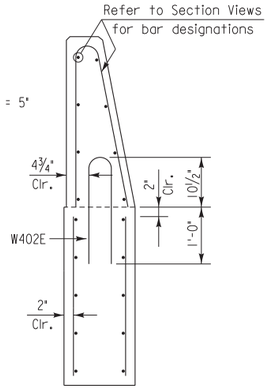




PLAN OF RAIL
Scale: 3/8" = 1'-0"



VERTICAL TAPER
Scale: 3/4" = 1'-0"



DETAIL A
Scale: 3/4" = 1'-0"

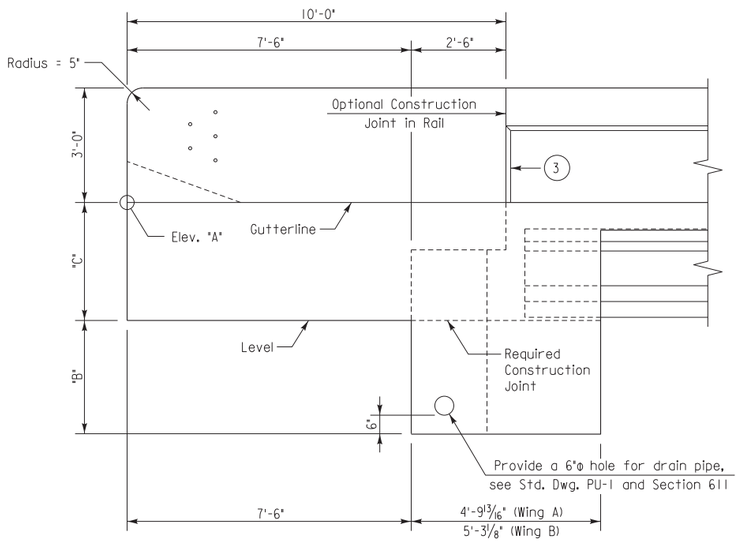
(1) See "DETAIL A" for placement of Bars W402E.

(2) See end bent details on Dwg. No. 65244 for reinforcing and additional details.

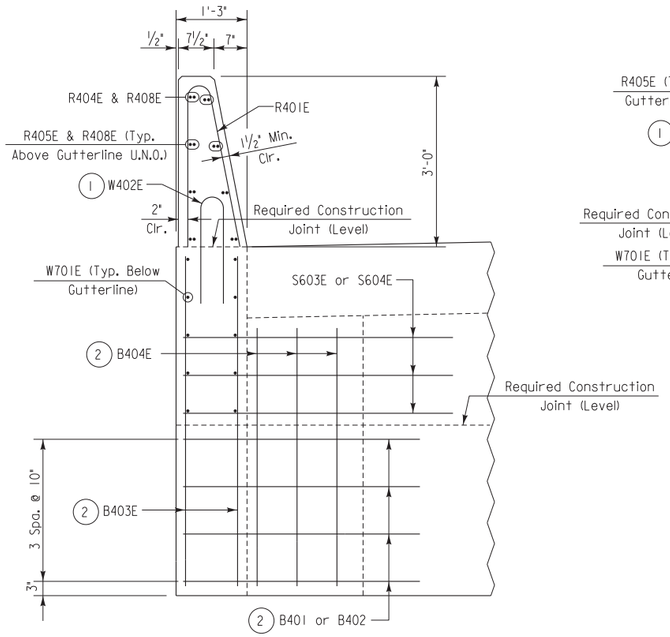
(3) Vertical chamfer not required if optional construction joint is used.

TABLE OF VARIABLES				
Bent No.	Location	Elev. "A"	"B"	"C"
1	Wing A	252.80	3'-0"	3'-0 5/16"
1	Wing B	252.87	3'-0 11/16"	3'-1 1/16"
4	Wing A	254.39	3'-2 1/4"	3'-4 1/4"
4	Wing B	254.13	3'-0"	3'-3 1/16"

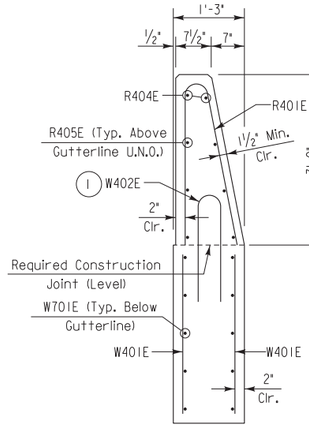
LEGEND
EF = Each Face



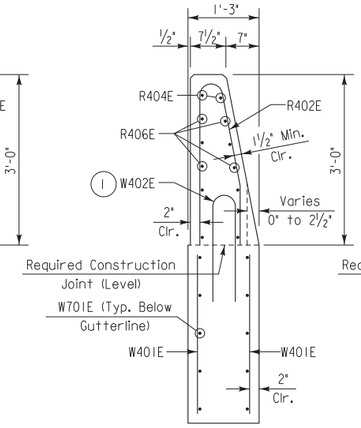
VIEW U-U
Scale: 1/2" = 1'-0"



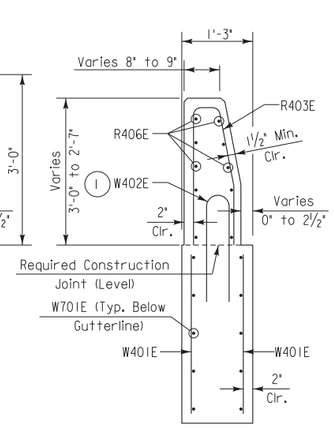
SECTON V-V
Scale: 3/4" = 1'-0"



SECTION X-X
Scale: 3/4" = 1'-0"



SECTION Y-Y
Scale: 3/4" = 1'-0"



SECTION Z-Z
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_w1.dgn
SCALE: 3/4" = 1'-0"

BRIDGE NO. 07522
DRAWING NO. 65251

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	163	311
				(1)	07522 - 119' UNIT - 65252			

GENERAL NOTES

CONCRETE:

All concrete, except for prestressed girders, 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 shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removal deck forming is used and are the basis for measurement of Class S (AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

The concrete deck (roadway surface) 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. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. 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 ASTM A709 as specified in the plans. Unless otherwise noted, Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W 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.

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. All welding shall conform to Subsection 807.26.

PRESTRESSED GIRDER:

Prestressing steel shall be 0.5" Φ Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type I as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.5" Φ strand shall be 30,980 lbs. except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

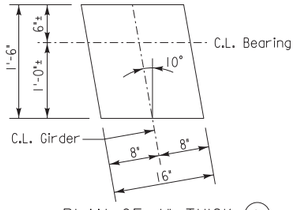
The tops of the girder shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding to the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

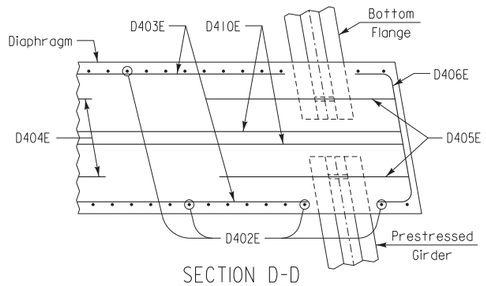
The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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.



PLAN OF 1" THICK (2) UNREINFORCED BEARING PAD



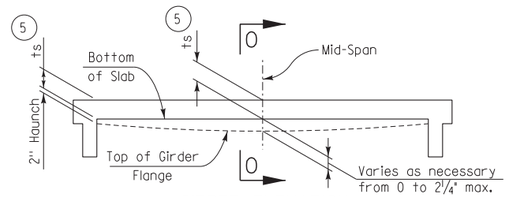
SECTION D-D

(1) For additional details, see End Bent Details, Dwg. No. 65244.

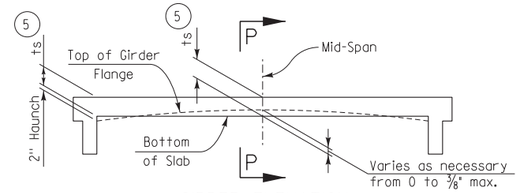
(2) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S Concrete-Bridge". Estimated pad deflection under dead load is ¼". See PLAN OF 1" THICK UNREINFORCED BEARING PAD below.

(3) Material shall conform to AASHTO M153, Type I per Subsection 501.02(h)(1).

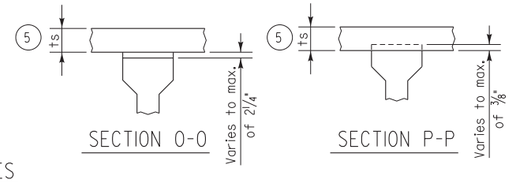
(4) Use closed-cell expanded polyethylene with a density of at least 2.1 lb/cf as determined by ASTM D3575 and with a minimum compressive stress of 9 psi at 25 percent deflection as determined by ASTM D3575.



GIRDER ELEVATION



GIRDER ELEVATION



SECTION O-O SECTION P-P

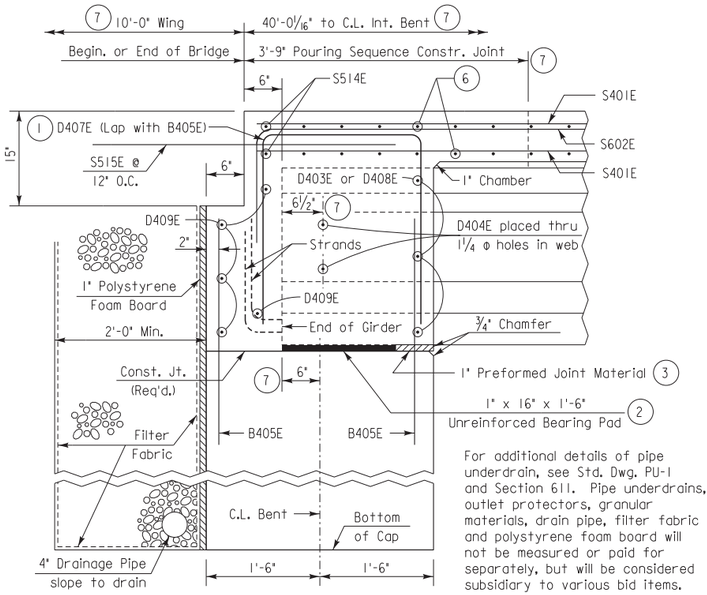
NOTES

ts = slab thickness as shown on superstructure details - See "Typical Roadway Section", Dwg. No. 65246.

(5) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

"Girder Elevation" sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ¾" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

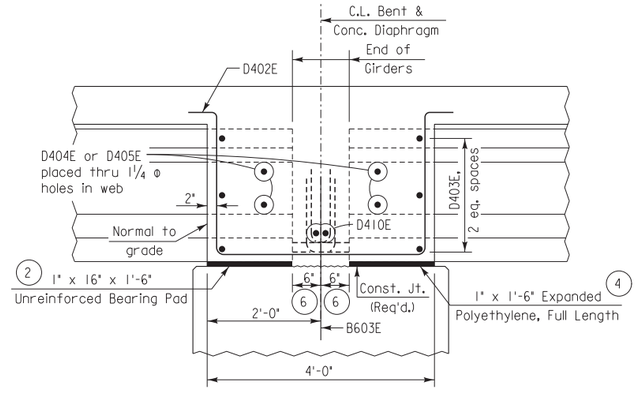


SECTION C-C
End Bent Diaphragms

For additional details of pipe underdrain, see Std. Dwg. PU-1 and Section 611. Pipe underdrains, outlet protectors, granular materials, drain pipe, filter fabric and polystyrene foam board will not be measured or paid for separately, but will be considered subsidiary to various bid items.

(6) Bars S504E thru S512E, S501E or S502E in top of slab. Bars S504E thru S512E, S402E or S502E in bottom of slab. See "REINFORCING PLAN" on Dwg. No. 65247 for bar designations (Typ. U.N.O.).

(7) Measured along C.L. Girder



SECTION B-B
Intermediate Bent Diaphragms

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 7 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_s5.dgn
SCALE: 1" = 1'-0"

BRIDGE NO. 07522 DRAWING NO. 65252

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

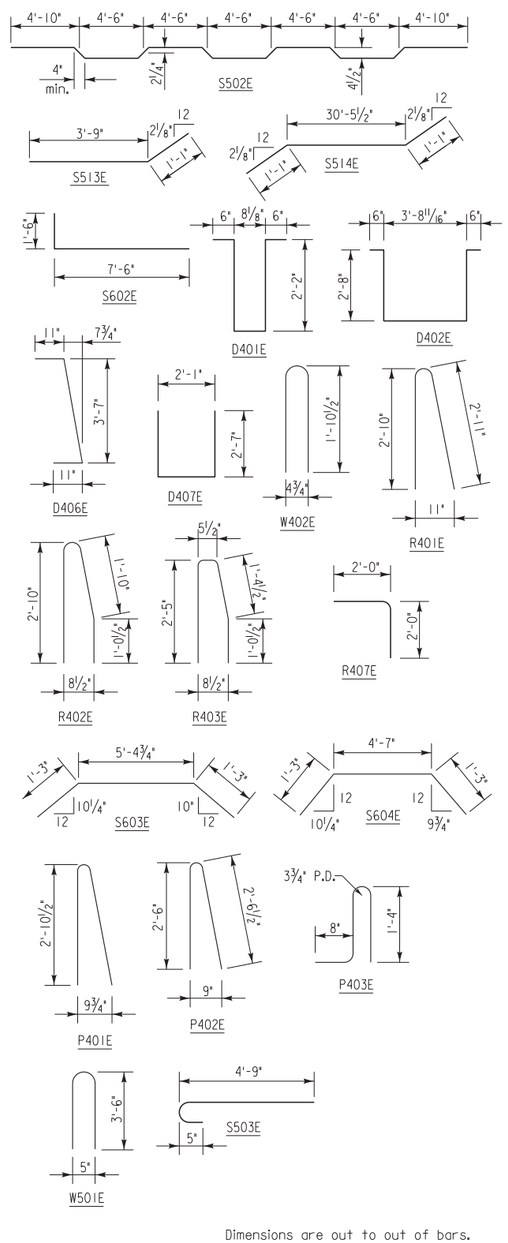
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	164	311

(1) 07522 - 119' UNIT - 65253

BAR LIST

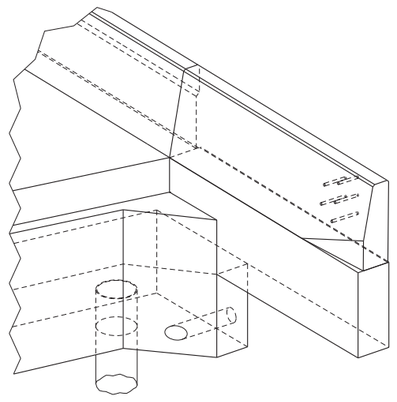
MARK	NO. REQ'D.	LENGTH	P.D.
S401E	276	41'-9"	Str.
S402E	115	32'-2"	Str.
S501E	115	32'-2"	Str.
S502E	114	33'-0"	3"
S503E	474	5'-3½"	3"
S504E	4	29'-4"	3"
S505E	4	26'-6"	3"
S506E	4	23'-8"	3"
S507E	4	20'-10"	3"
S508E	4	18'-0"	3"
S509E	4	15'-2"	3"
S510E	4	12'-4"	3"
S511E	4	9'-6"	3"
S512E	4	6'-8"	3"
S513E	4	4'-10"	3"
S514E	4	32'-7½"	3"
S515E	60	4'-0"	Str.
S601E	66	15'-0"	Str.
S602E	66	8'-10"	4½"
S603E	6	7'-10¾"	4½"
S604E	6	7'-1"	4½"
D401E	72	6'-0"	2"
D402E	98	10'-0"	2"
D403E	54	7'-3½"	Str.
D404E	32	6'-0"	Str.
D405E	16	5'-0"	Str.
D406E	12	6'-0"	2"
D407E	64	7'-1"	2"
D408E	12	1'-8"	Str.
D409E	10	32'-8"	Str.
D410E	4	31'-2"	Str.
D601E	12	5'-6"	Str.
D602E	54	7'-9½"	Str.
W401E	120	2'-9"	Str.
W402E	80	3'-11"	3¾"
W501E	32	7'-3"	3¾"
W701E	40	12'-2"	Str.
R401E	60	5'-11"	3¾"
R402E	16	5'-11"	3¾"
R403E	4	5'-2"	2"
R404E	8	9'-4"	Str.
R405E	24	9'-8"	Str.
R406E	16	4'-0"	Str.
R407E	8	3'-11"	6"
R408E	32	5'-8"	Str.
P401E	432	5'-11"	2½"
P402E	48	5'-2"	2½"
P403E	552	3'-5"	3¾"
P404E	72	5'-7"	Str.
P405E	96	7'-8"	Str.
P406E	96	11'-8"	Str.

BENDING DIAGRAMS



Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.



THREE DIMENSIONAL VIEW
OF WING AND RAIL AT END BENT
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 8 OF 8
DETAILS OF 119' INTEGRAL
PRESTRESSED CONCRETE GIRDER UNIT
VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2020
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_s6.dgn
SCALE: ⅜" = 1'-0"

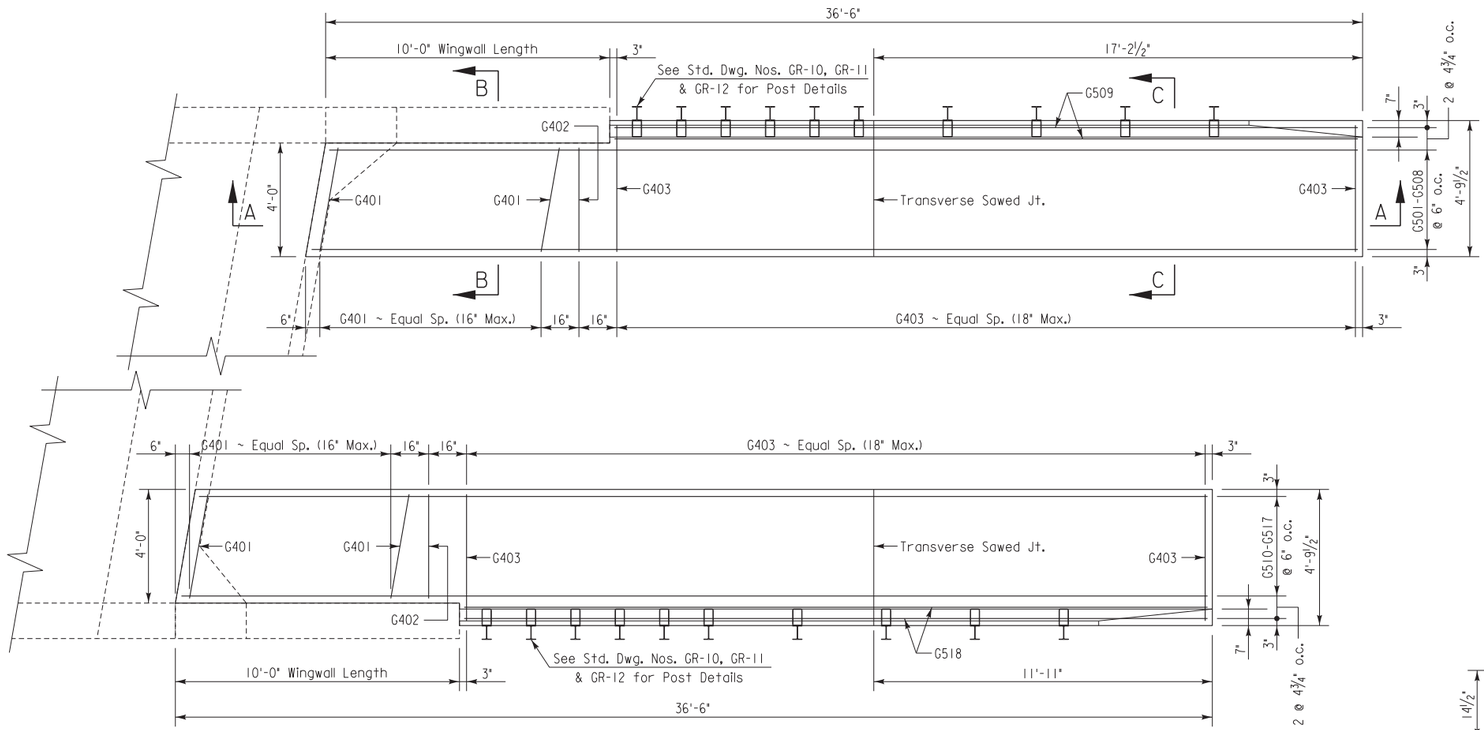
BRIDGE NO. 07522 DRAWING NO. 65253

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

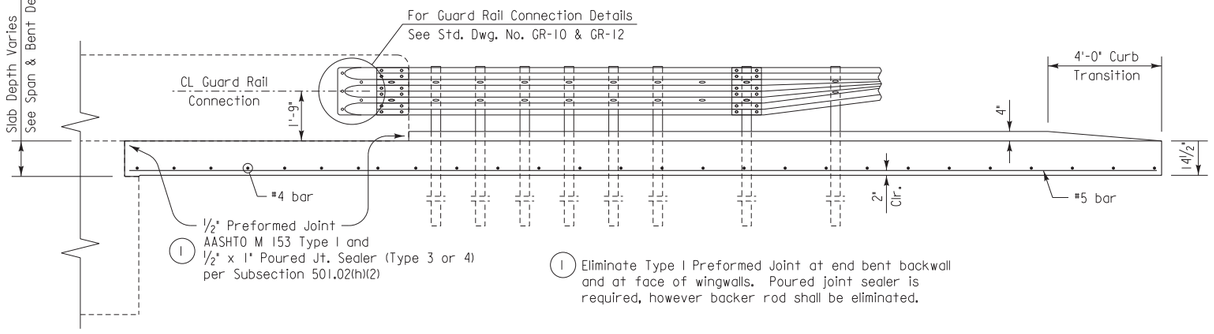
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	165	311

(1) 07522 - APPROACH GUTTERS - 65254



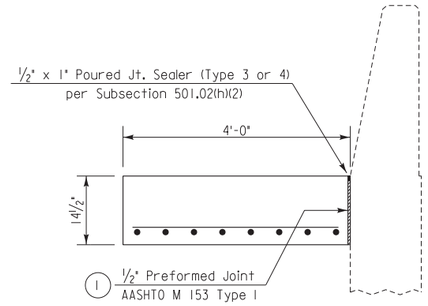
PLAN OF SKEWED APPROACH GUTTERS

⅜" = 1'-0"



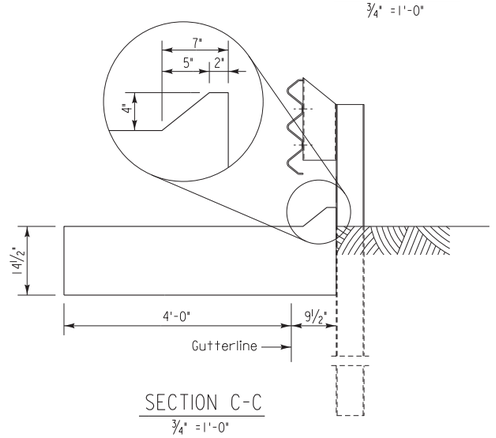
SECTION A-A

⅜" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	13	3'-8½"
G402	2	3'-8"
G403	38	4'-5½"
G501-G508	8	36'-10" to 36'-2½"
G509	2	26'-2"
G510-G517	8	35'-6" to 36'-1½"
G518	2	26'-2"

GENERAL NOTES

All concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

TABLE OF QUANTITIES FOR
ONE SET OF APPROACH GUTTERS

(FOR INFORMATION ONLY)

Reinforcing Steel	Concrete
Lbs.	Cu. Yds.
863	15.18

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH GUTTERS VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

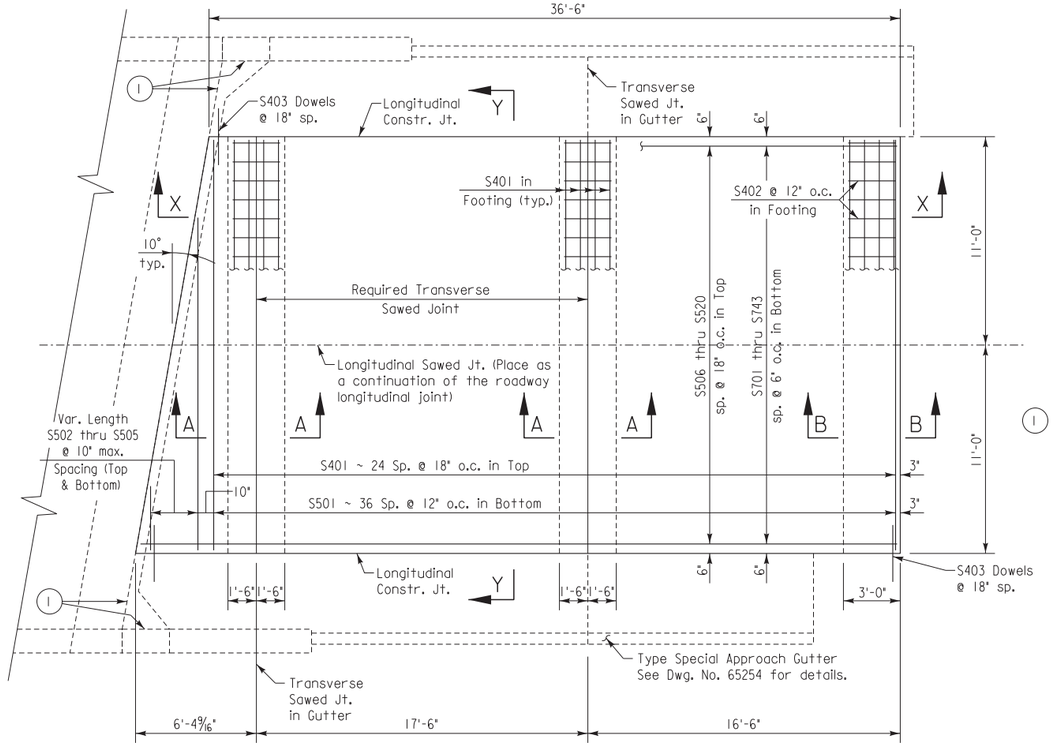
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020 FILENAME: b101054x1_g1.dgn
CHECKED BY: BKC DATE: JUN 2020 SCALE: ⅜" = 1'-0"
DESIGNED BY: KJK DATE: NOV 2020

BRIDGE NO. 07522 DRAWING NO. 65254

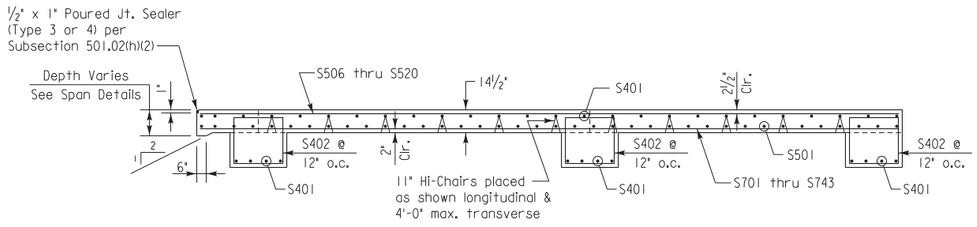
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	166	311
				(1)	07522 - APPROACH SLAB - 65255			



PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

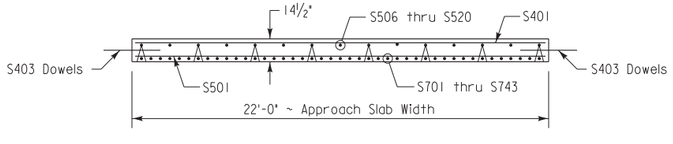
1/4" =1'-0"



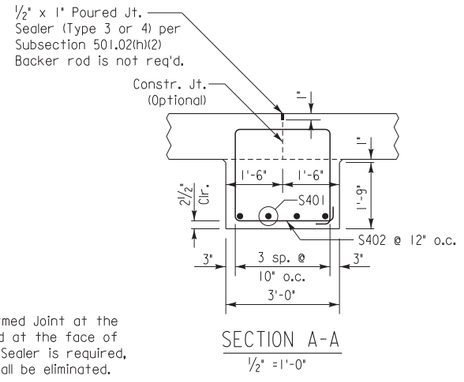
SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" =1'-0"



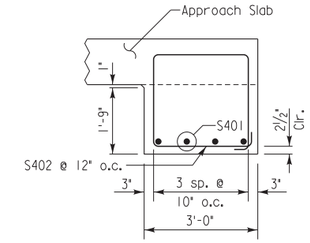
SECTION Y-Y



SECTION A-A

1/2" =1'-0"

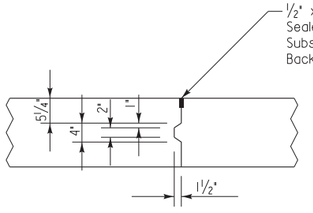
(1) Eliminate Type 1 Preformed Joint at the concrete diaphragm and at the face of wingwalls. Poured Joint Sealer is required, however backer rod shall be eliminated.



SECTION B-B

AT ASPHALT APPROACH PAVEMENT

1/2" =1'-0"

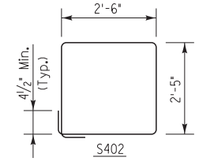


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

3/4" =1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401	37	21'-8"	Str.
S402	66	10'-4"	2"
S403	53	3'-0"	Str.
S501	37	21'-8"	Str.
S502-S505	4 top 4 bott	17'-7" to 3'-4"	Str.
S506-S520	15	39'-11" to 36'-3"	Str.
S701-S743	43	39'-11" to 36'-3"	Str.



Dimensions are out to out of bar.

TABLE OF QUANTITIES FOR ONE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel	Concrete
	Lbs.	Cu. Yds.
22'-0"	5964	51.29

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

The surface finish for Approach Slabs shall match that used on the bridge deck.

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278
07/29/2022
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH SLAB VILLAGE CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

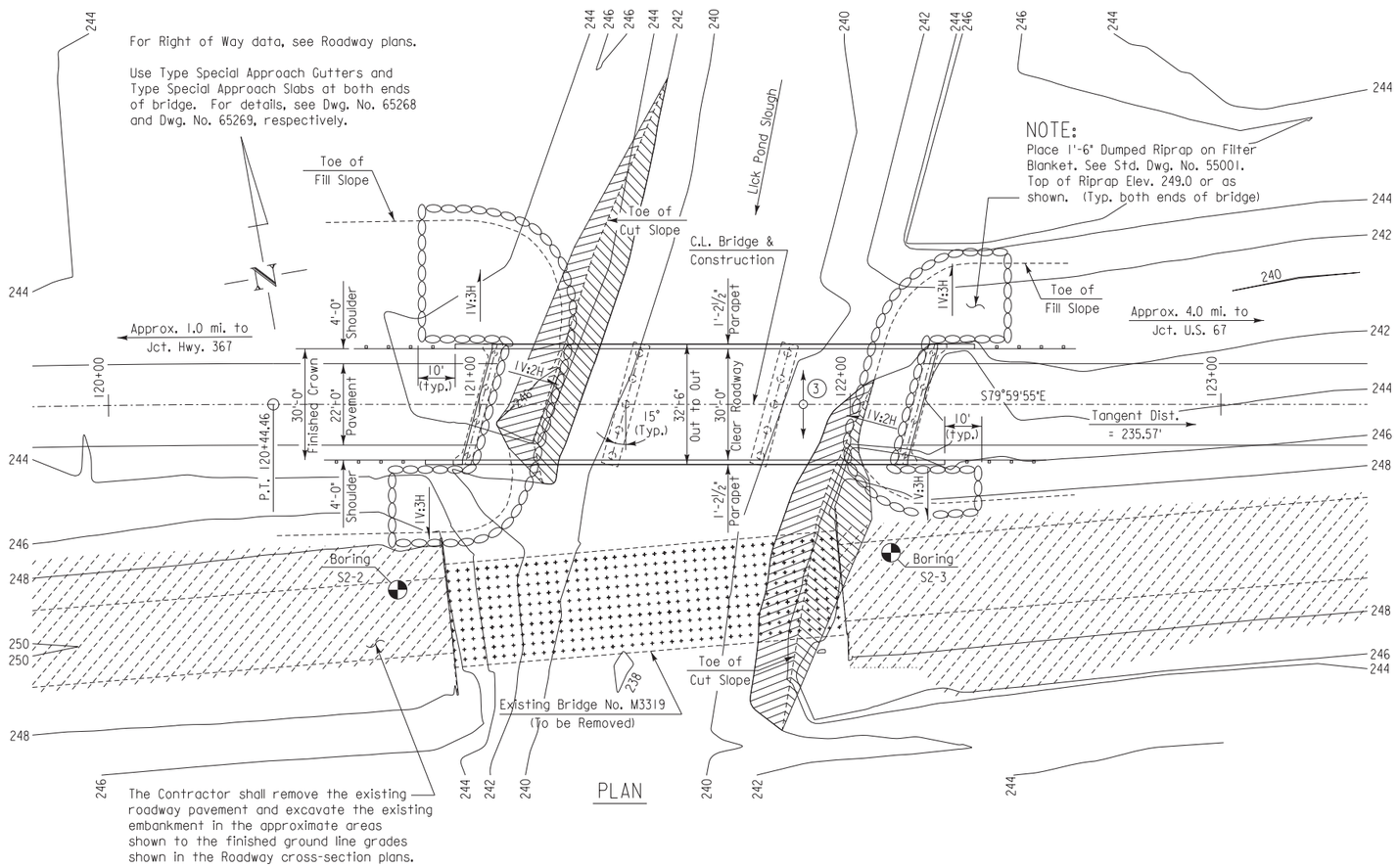
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x1_g2.dgn
SCALE: 1/4" = 1'-0"

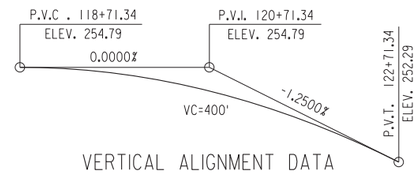
BRIDGE NO. 07522 DRAWING NO. 65255

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	167	311
				(1)	07523 - LAYOUT - 65256			

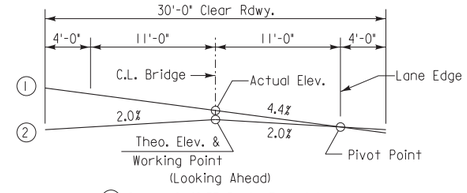


NOTE:
The Contractor shall excavate the existing embankment as shown at both ends of the bridge to Elev. 242.0. Approx. 20 cubic yards of excavation.



VERTICAL ALIGNMENT DATA
N.T.S.

(3) Cross Slope Varies - See SUPERELEVATION TRANSITION SKETCH

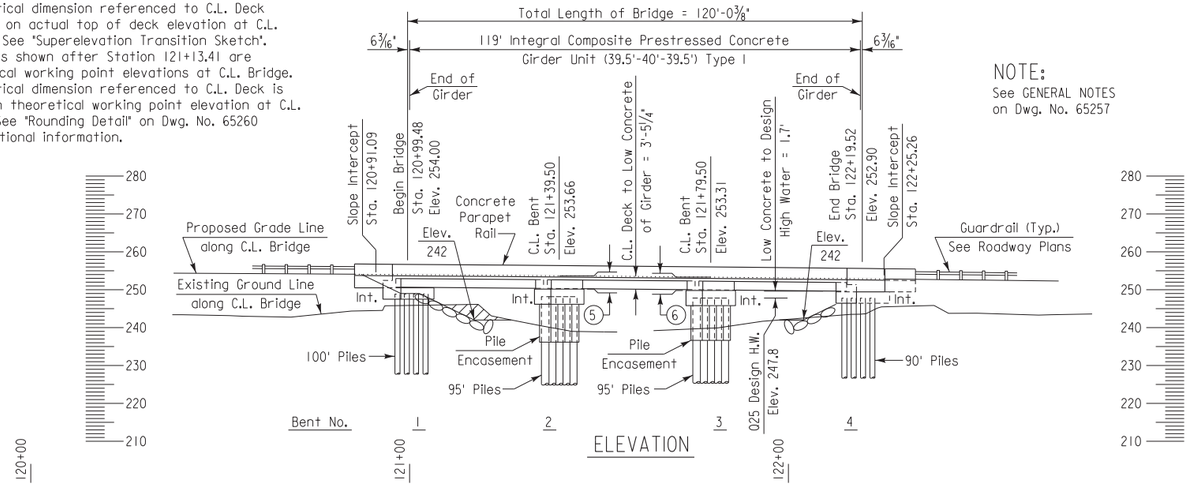


(1) Sta. 119+49.77 Begin Transition
Sta. 121+13.41 Reverse Crown
(2) Sta. 122+49.77 End Transition

SUPERELEVATION TRANSITION SKETCH

NOTE:
Stations shown are along C.L. Construction. Elevations shown at and before Station 121+13.41 are actual top of deck elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge. See "Superelevation Transition Sketch". Elevations shown after Station 121+13.41 are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See "Rounding Detail" on Dwg. No. 65260 for additional information.

(5) C.L. Deck to Low Seat Top of Cap = 3'-6"
(6) C.L. Deck to Low Seat Top of Cap = 3'-5 15/16"



NOTE:
See GENERAL NOTES on Dwg. No. 65257

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	25	1510	247.7	247.8
BASE	100	1810	248.2	248.2
EXTREME	500	2130	248.6	248.6
OVERTOPPING	>500			

Drainage Area = 43.2 square miles
Historical High Water Elev. = N.A.

*Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 248.9 feet
Proposed Low Bridge Chord Elevation = 249.5 feet
Existing Low Bridge Chord Elevation = 247.3 feet

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER LICK POND SLOUGH
HWY. 230 STRS. & APPRS. (S)
LAWRENCE COUNTY

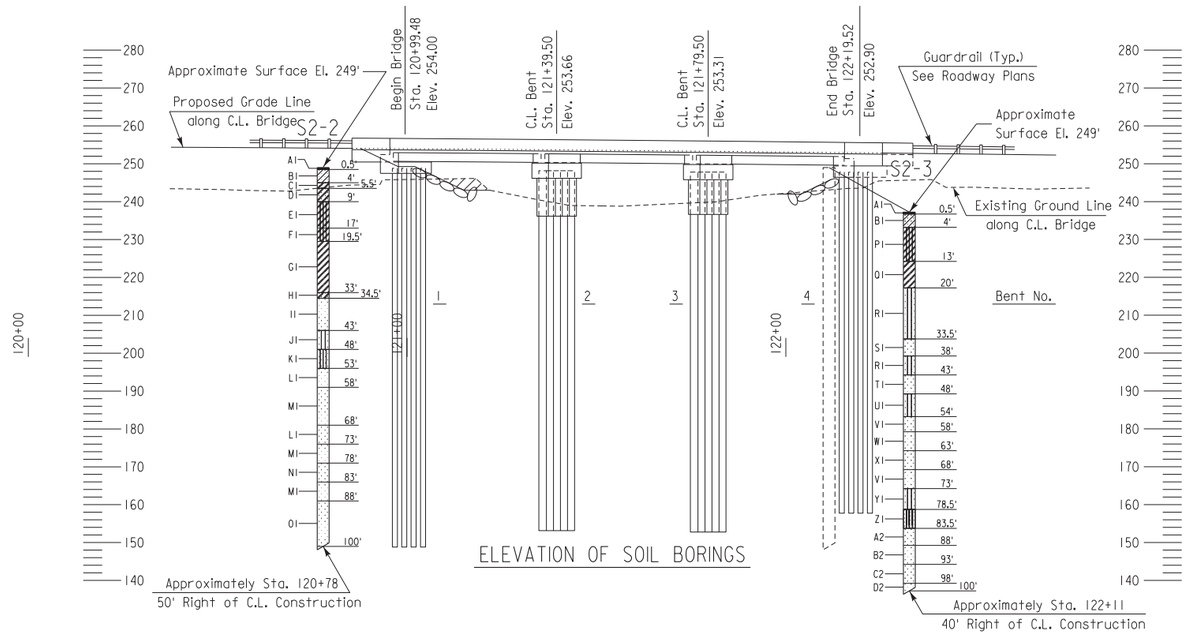
ROUTE 230 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BCK DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_l1.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07523
DRAWING NO. 65256

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	168	311
				1	07523 - LAYOUT - 65257			



NOTE: The SPT blow count 'N' values are raw values. They have not been corrected for hammer energy. A hammer energy correction factor of 1.36 applies to borings S2-1 (not shown), S2-2, S2-3 & S2-4 (not shown).

BORING LEGEND

A1-Asphalt
B1-Medium dense tan clayey sand (SC) with gravel
C1-Stiff light gray clay (CH)
D1-Stiff tan and light gray sandy clay (CL)
E1-Medium stiff light gray silty clay (CL), slightly sandy
F1-Very soft light gray silty clay (CL), slightly sandy
G1-Very soft tan and light gray clay (CH), slightly silty
H1-Medium stiff gray sandy clay (CL)
I1-Medium dense gray sand (SP)
J1-Dense gray sand (SP-SM), slightly silty
K1-Medium dense gray silty sand (SM)
L1-Dense tan and gray sand (SP)
M1-Medium dense tan and gray sand (SP)
N1-Medium dense tan and gray sand (SP) with clay pockets and seams
O1-Dense tan and gray sand (SP) with trace of gravel
P1-Soft tan and light gray silty clay (CL)
Q1-Stiff light gray clay (CH), slightly silty
R1-Medium dense light gray sand (SP-SM), slightly silty
S1-Medium dense light gray sand (SP)
T1-Dense light gray sand (SP)
U1-Dense light gray sand (SP-SM), slightly silty
V1-Medium dense light gray sand (SP) with trace of gravel
W1-Loose light gray sand (SP) with trace of gravel
X1-Dense light gray sand (SP) with trace of gravel
Y1-Medium dense light gray sand (SP-SM), slightly silty, with trace of gravel
Z1-Medium dense gray sandy silt (ML)
A2-Dense tan sand (SP)
B2-Medium dense tan sand (SP) with trace of gravel
C2-Dense tan sand (SP) with trace of gravel
D2-Very dense tan sand (SP) with trace of gravel

"N" VALUES

S2-2, Approximately Sta. 120+78
50' Right of C.L. Construction

2 - 3, N=17
39 - 40, N=23
44 - 45, N=33
49 - 50, N=21
54 - 55, N=37
59 - 60, N=27
64 - 65, N=25
69 - 70, N=33
74 - 75, N=14
79 - 80, N=22
84 - 85, N=20
89 - 90, N=35
94 - 95, N=35
99 - 100, N=33

S2-3, Approximately Sta. 122+11
40' Right of C.L. Construction

2 - 3, N=17
24 - 25, N=11
29 - 30, N=15
34 - 35, N=13
39 - 40, N=26
44 - 45, N=42
49 - 50, N=34
54 - 55, N=23
59 - 60, N=9
64 - 65, N=33
69 - 70, N=18
74 - 75, N=17
79 - 80, N=13
84 - 85, N=46
89 - 90, N=26
94 - 95, N=43
99 - 100, N=51

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions, unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 4 SD1= 0.563g Site Class = E

MATERIALS AND STRENGTHS:

Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Class S (AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322 Type A, Gr. 60)	fy = 60,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bents 1 & 4 shall be 16" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 222 tons per pile. Piling in Bents 2 & 3 shall be 24" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 240 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer to a minimum tip elevation of 151 or lower for Bents 1 & 4 and a minimum tip elevation of 155 or lower for Bents 2 & 3. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the items "STEEL SHELL PILING (16" DIA.)" and "STEEL SHELL PILING (24" DIA.)"

PREBORING: Preboring is required for all piling at Bents 1 and 4. Prebored holes shall have a diameter 6" greater than the diameter of the pile for a depth of 10' below the bottom of the cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly, but shall be considered subsidiary to the item "Preboring".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend from bottom of cap to 3' below natural ground. See Standard Dwg. No. 55021 for additional information.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for 16" piles shall be 70,000 foot pounds per blow and for 24" piles shall be 80,000 foot pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING No.
End Bents	65258
Intermediate Bents	65259
119'-0" Integral Prestressed Concrete Girder Unit	65260-65267
Concrete Filled Steel Shell Piling	55021
Type Special Approach Gutters	65268
Type Special Approach Slab	65269

EXISTING BRIDGE: Existing Bridge No. M3319 (Log Mile 0.975) is 105' in length, 30' wide and consists of one 29-foot steel girder interior span, two 19-foot timber girder interior spans and two 19-foot timber girder end spans. All spans are supported by timber caps on timber piling. The existing bridge is located an average distance of approximately 52' downstream of the new bridge alignment.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. M3319 shall be removed in accordance with Section 205. All material from the existing bridge shall become property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER LICK POND SLOUGH
HWY. 230 STRS. & APPRS. (S)
LAWRENCE COUNTY

ROUTE 230 SEC. 5

ARKANSAS STATE HIGHWAY COMMISSION

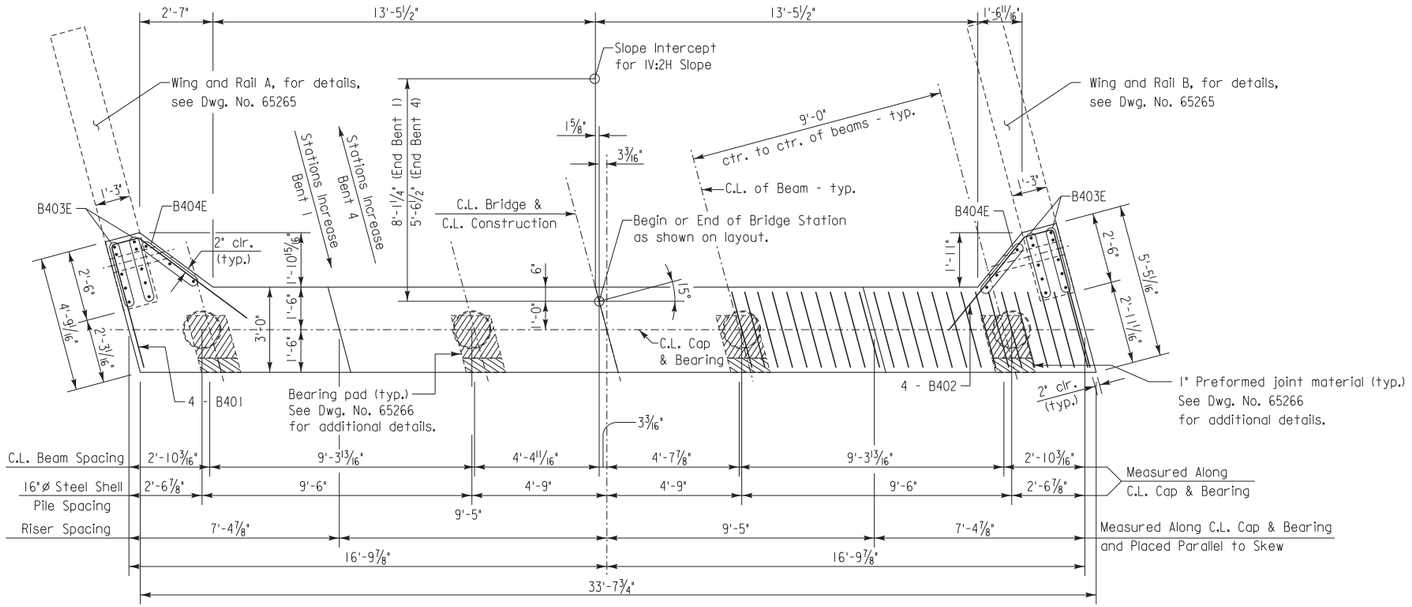
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/BCD DATE: NOV 2020
FILENAME: b101054x2_l2.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07523 DRAWING NO. 65257

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	169	311
				(1)	07523 - END BENTS - 65258			



PLAN - BENTS 1 & 4

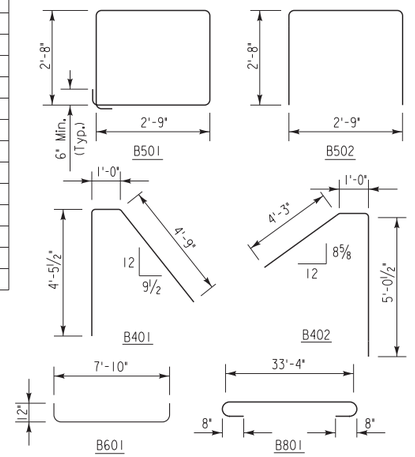
⅜" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	10'-1½"	2"
B402	4	10'-3"	2"
B403E	20	5'-9½"	Str.
B404E	6	4'-6½"	Str.
B405E	66	3'-4"	Str.
B406	18	5'-7"	2"
B407	6	10'-3"	Str.
B408	6	6'-10"	Str.
B501	56	11'-4"	2½"
B502	12	7'-10½"	2½"
B601	3	9'-6"	4½"
B602	6	33'-4"	Str.
B801	6	35'-2"	6"
B802	6	33'-4"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

(1) See Dwg. No. 65265 for additional details.

(2) B406, B407 & B408 bars required for Bent 1 only.

CONCRETE:

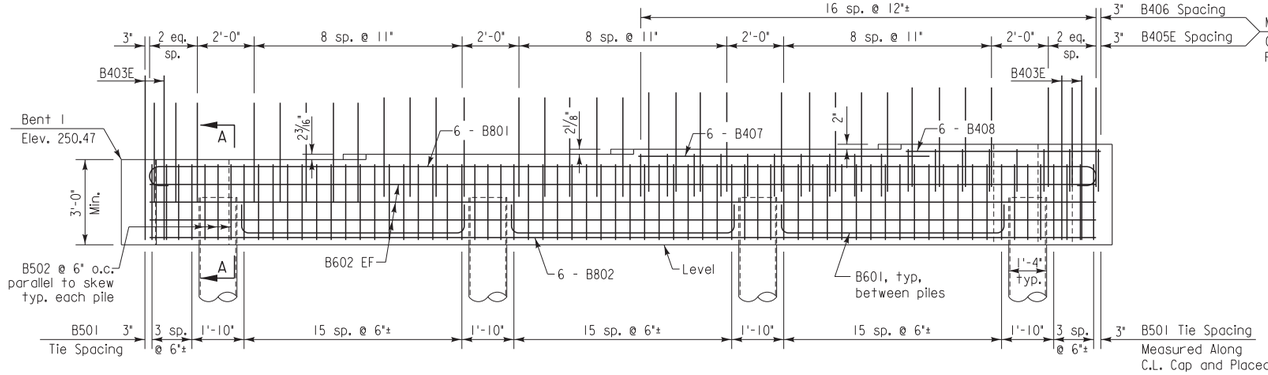
Unless otherwise noted, concrete in caps shall be Class S with a minimum 28 day compressive strength f'c = 3,500 and shall be poured in the dry.

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

All reinforcing shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

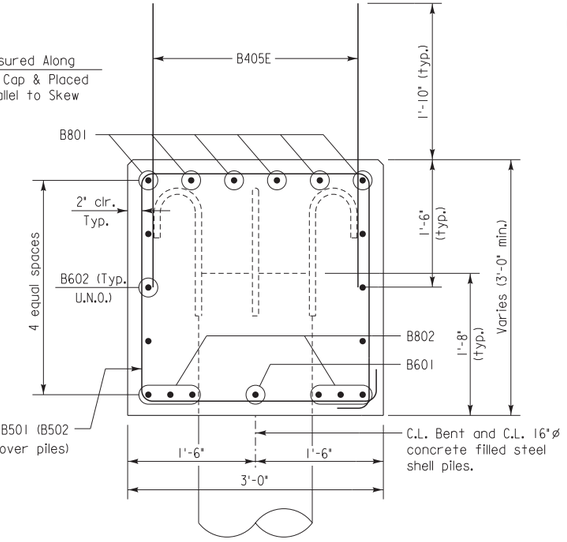
Granular Backfill and Pipe Underdrain required behind Bent, See Dwg. No. 65266 for details.



ELEVATION - BENT 1

LOOKING BACK

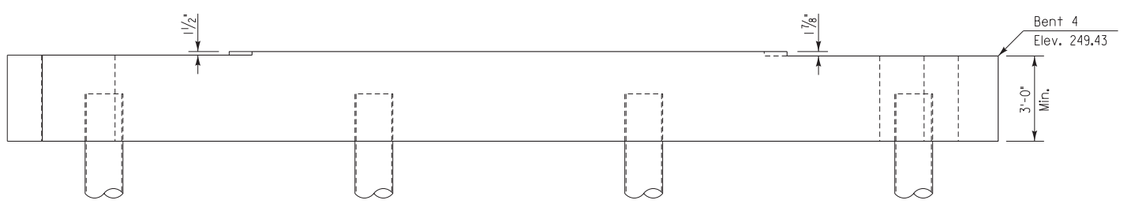
⅜" = 1'-0"



For details of concrete filled steel shell piles and pile anchorage, see Std. Dwg. No. 55021.

SECTION A-A

¾" = 1'-0"



ELEVATION - BENT 4

LOOKING AHEAD

⅜" = 1'-0"

NOTE:
Reinforcing in Bent 4 Cap Similar to Reinforcing in Bent 1 Cap. Temperature and Shrinkage Bars B406 thru B408 Are Not Required in Bent 4 Cap.

LEGEND

EF = Each Face

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

DETAILS OF END BENTS
LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020

CHECKED BY: BKC DATE: NOV 2022

DESIGNED BY: KJK/LAC DATE: NOV 2020

FILENAME: b101054x2_a1.dgn

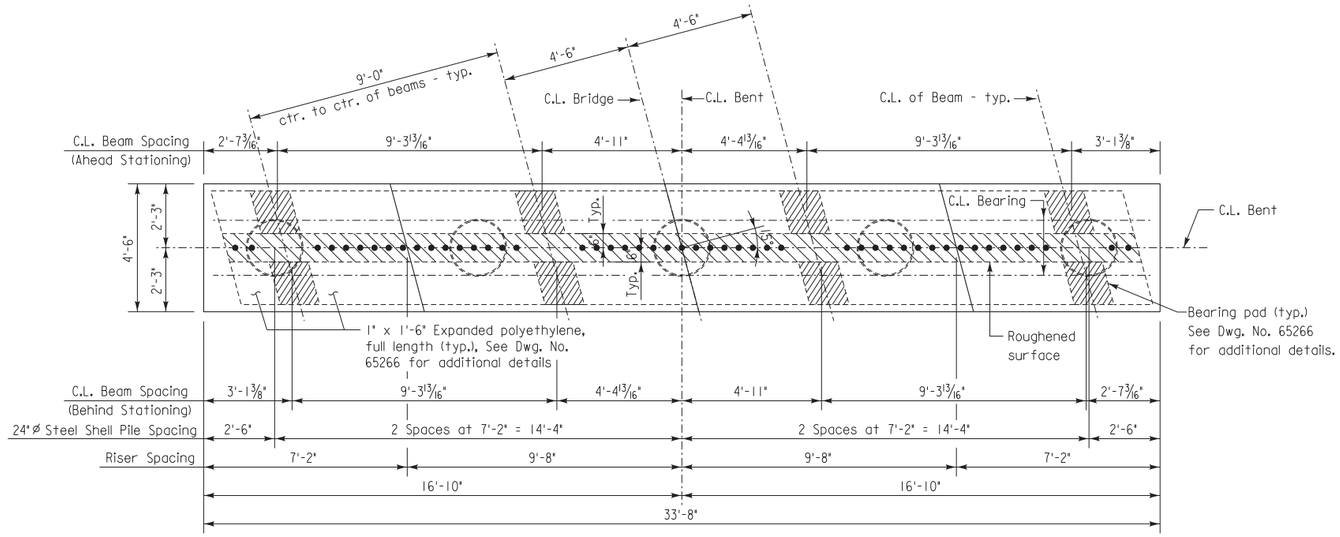
SCALE: ⅜" = 1'-0"

BRIDGE NO. 07523

DRAWING NO. 65258

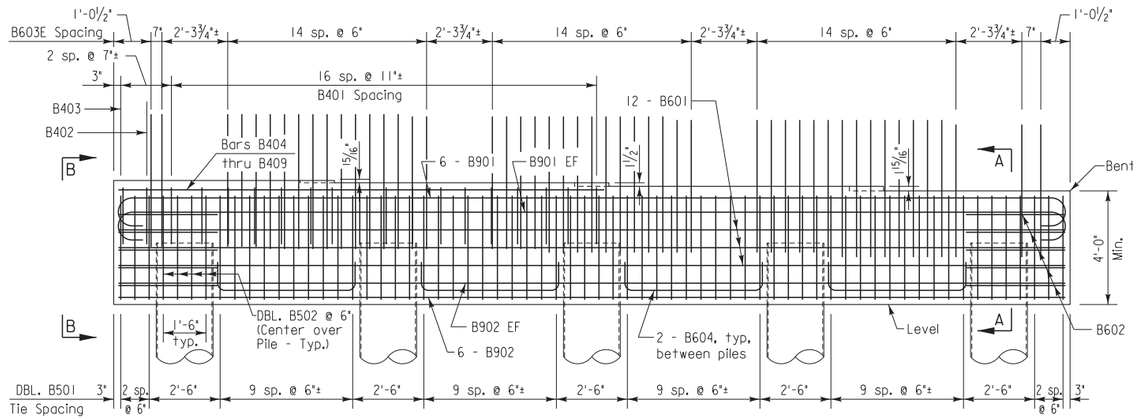
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	170	311
				07523 - INT. BENTS - 65259				



PLAN - BENTS 2 & 3

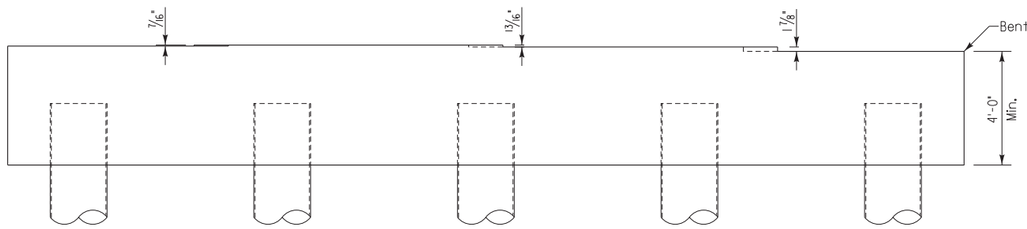
3/8" = 1'-0"



ELEVATION - BENT 2

LOOKING AHEAD

3/8" = 1'-0"



NOTE:
Reinforcing in Bent 3 Cap Similar to Reinforcing in Bent 2 Cap.

ELEVATION - BENT 3

LOOKING AHEAD

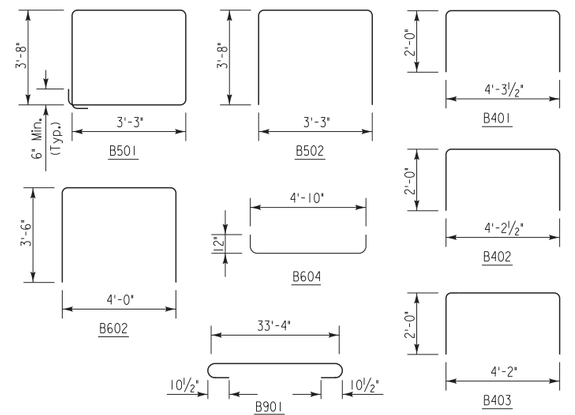
3/8" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	17	8'-1"	2"
B402	1	8'-0"	2"
B403	1	8'-0"	2"
B404	1	16'-0"	Str.
B405	1	16'-2"	Str.
B406	1	16'-5"	Str.
B407	1	16'-7"	Str.
B408	1	16'-10"	Str.
B409	1	17'-0"	Str.
B501	92	14'-3"	2 1/2"
B502	40	10'-4"	2 1/2"
B601	12	33'-4"	Str.
B602	10	10'-9"	4 1/2"
B603E	49	4'-8"	Str.
B604	8	6'-6"	4 1/2"
B901	8	35'-11"	9 1/2"
B902	8	33'-4"	Str.

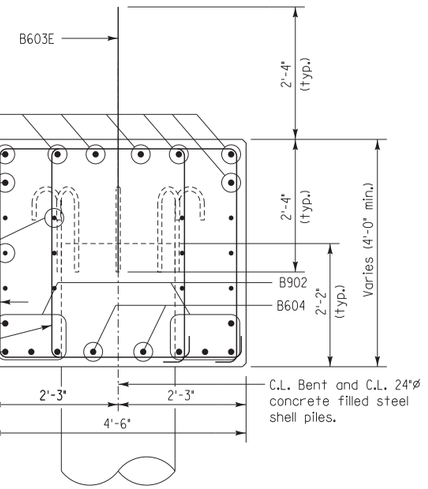
BENDING DIAGRAMS

Dimensions are out to out of bars.



Bars designated with an "E" suffix are to be epoxy coated.

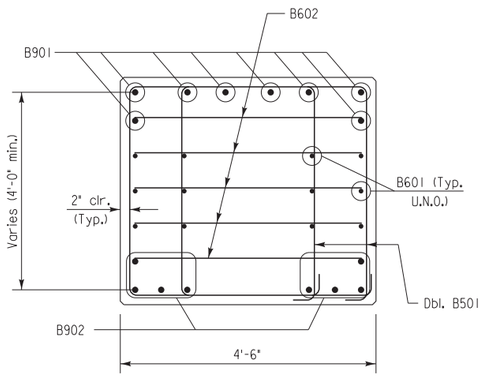
Dimensions are out to out of bars.



For details of concrete filled steel shell piles and pile anchorage, see Std. Dwg. No. 55021.

SECTION A-A

3/4" = 1'-0"



VIEW B-B

3/4" = 1'-0"

LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

CONCRETE:

Unless otherwise noted, concrete in caps 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 shall be chamfered 3/4" unless otherwise noted.

REINFORCING STEEL:

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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

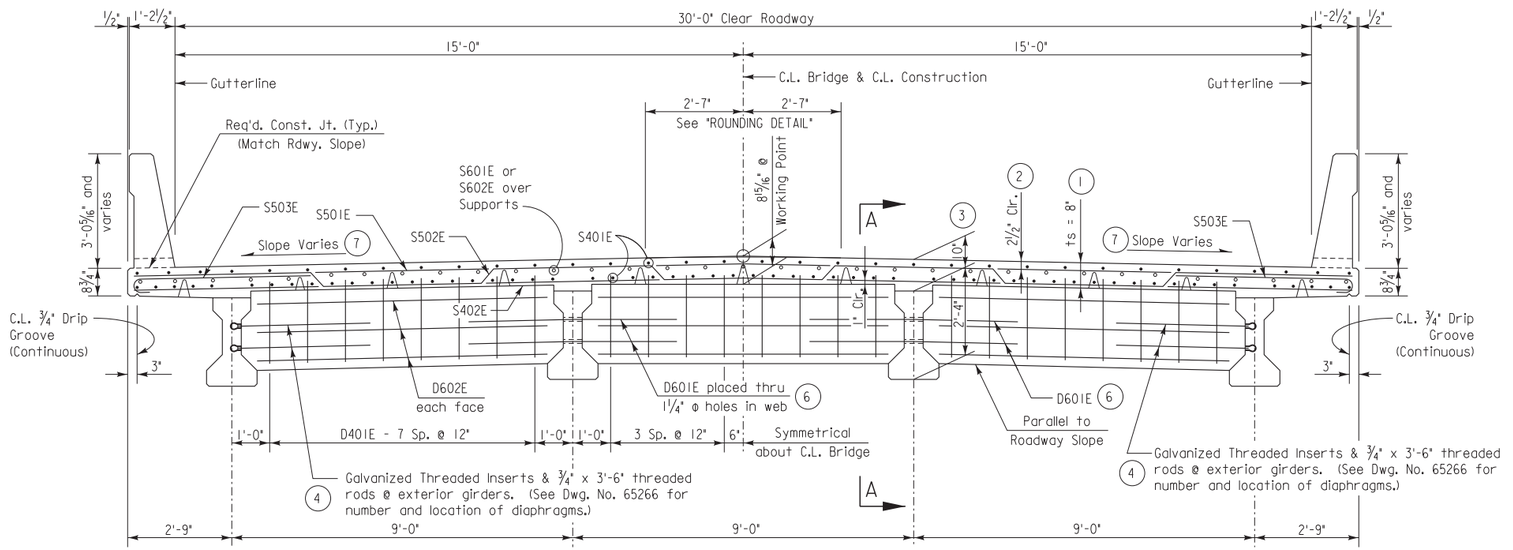
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/LAC DATE: NOV 2020
FILENAME: b101054x2_b1.dgn
SCALE: 3/8" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65259

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	171	311
				(1)	07523 - 119' UNIT - 65260			



SLAB REINFORCING

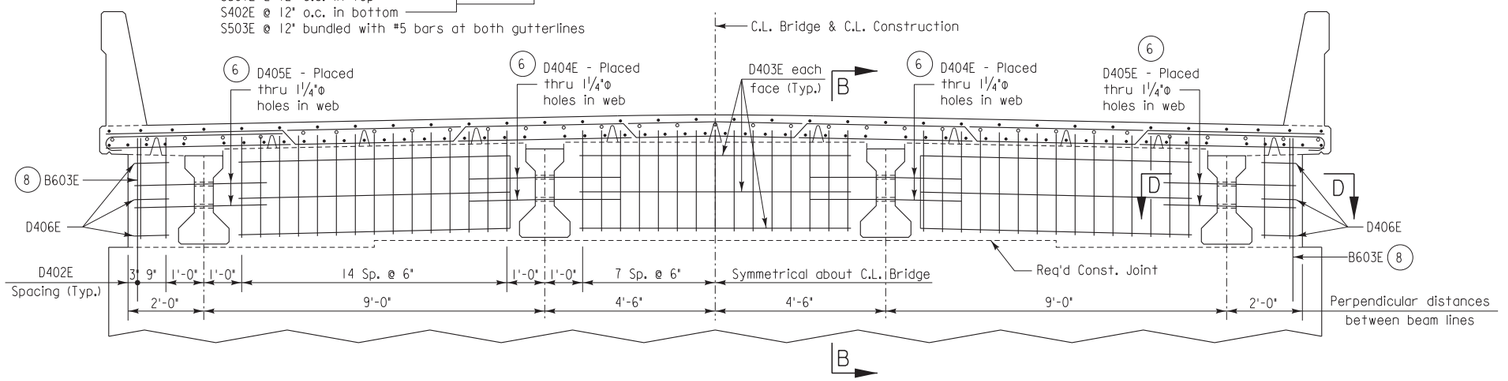
LONGITUDINAL: S401E as shown (12" max.)
S601E and S602E as shown

TRANSVERSE: S502E @ 12" o.c. bent up over girders
S501E @ 12" o.c. in top — Alternate
S402E @ 12" o.c. in bottom
S503E @ 12" bundled with #5 bars at both gutterlines

TYPICAL ROADWAY SECTION

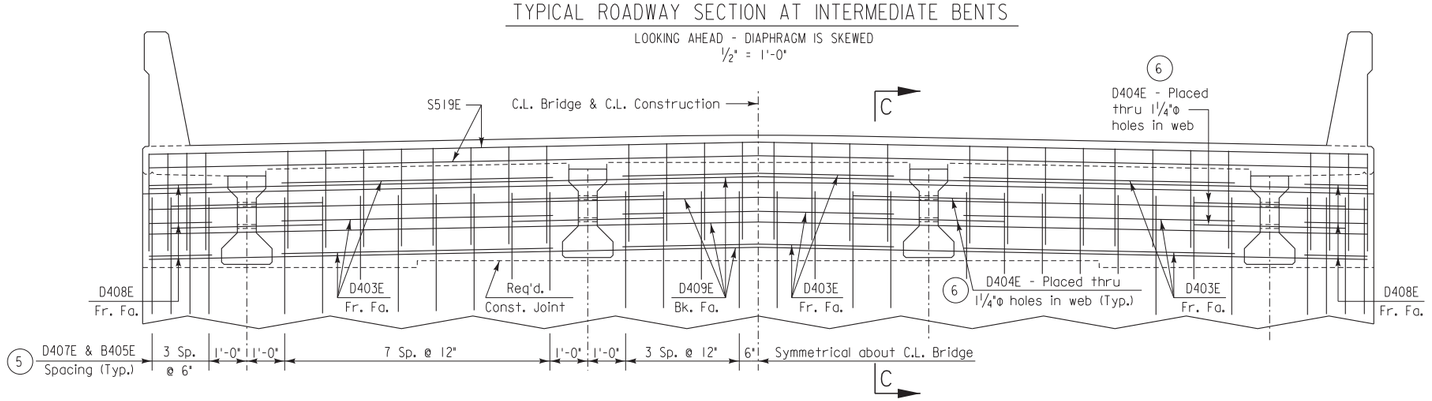
LOOKING AHEAD - DIAPHRAGM IS SKEWED
1/2" = 1'-0"

For "Section A-A", see Dwg. No. 65262.
For "Section B-B", "Section C-C" and "Section D-D", see Dwg. No. 65266.



TYPICAL ROADWAY SECTION AT INTERMEDIATE BENTS

LOOKING AHEAD - DIAPHRAGM IS SKEWED
1/2" = 1'-0"



TYPICAL ROADWAY SECTION AT END BENTS

LOOKING BACK - BENT 1, LOOKING AHEAD - BENT 4
DIAPHRAGM IS SKEWED
1/2" = 1'-0"

(1) See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65266.

(2) Tolerance: Minus = 1/4"; Plus equal the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65266.

(3) This dimension taken at C.L. Bearing & C.L. Girder.

(4) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. 3/4" ø Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232 Class C. These items will not be paid for directly, but shall be considered subsidiary to the Item "Prestressed Concrete Girders (Type II)".

(5) For additional details of B405E bars, see bent details on Dwg. No. 65258.

(6) Bars shall be centered about the girders.

(7) See "SUPERELEVATION TRANSITION SKETCH" on Dwg. No. 65256.

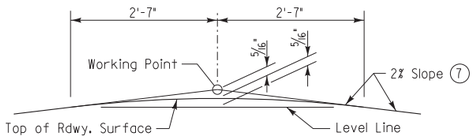
(8) Only outer limits of bars shown for clarity. For additional details of B603E bars, see bent details on Dwg. No. 65259 for spacing of bars.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or hi-chairs with full length lower runners directly on removable deck forms will not be allowed.

At the Contractor's option, two straight #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

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:
Working Point matches Theoretical Roadway Grade.

(7) Values shown are for 2% Peaked Crown. Dimension from Working Point to Top of Roadway Surface Varies from 0" at Station 121+13.41 to 1/4" near Station 122+19.52 (near End Bridge).

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT LICK POND SLOUGH

ROUTE SEC.

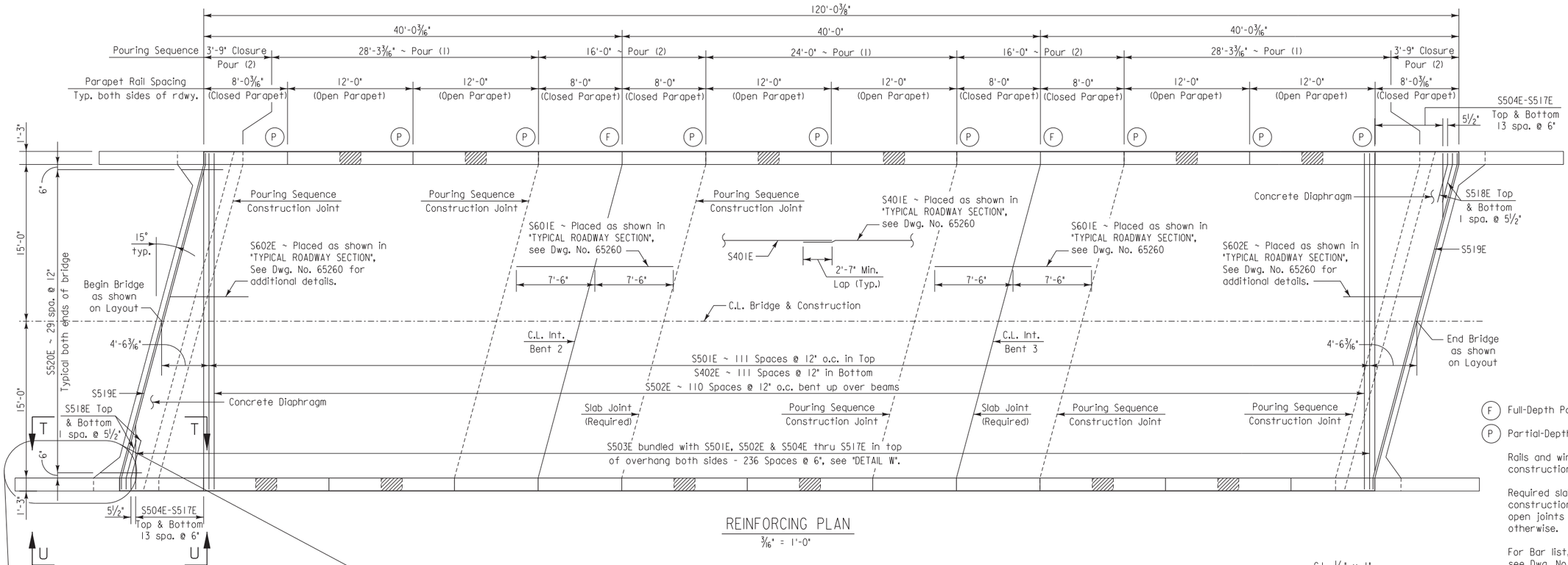
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

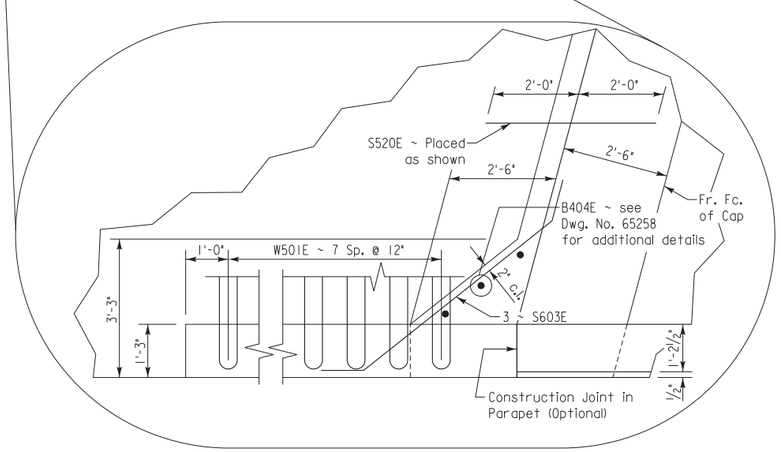
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_s1.dgn
SCALE: 1/2" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65260

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	172	311
				(1)		07523 - 119' UNIT - 65261		





REINFORCING PLAN

3/16" = 1'-0"

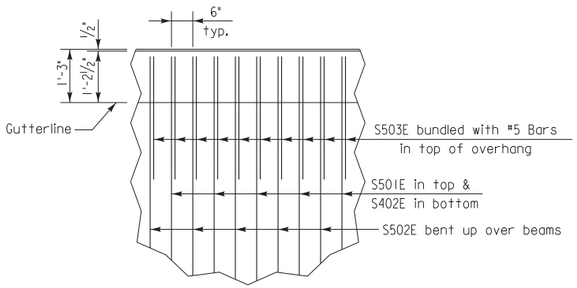
Slab Pouring Sequence Notes:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. No deviations from the pouring sequence shown will be allowed.

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 diaphragms shall not be poured prior to 90 days after release of strands for the girders.

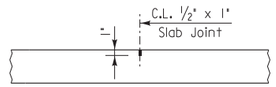
Concrete diaphragms at end bents and intermediate bents shall be poured monolithically with the deck above the diaphragm. Concrete diaphragms at mid-span shall be placed no less than 48 hours prior to deck slab pour.

Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.



DETAIL W

No Scale



Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod shall not be installed. Joint Sealer shall be measured and paid for as Class S(AE) Concrete - Bridge. Slab joints shall extend to the outside edge of the bridge deck and shall align with open joints at the front face of parapet, unless noted otherwise. Slab joint 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 as all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL

No Scale

(F) Full-Depth Parapet Joint at this location

(P) Partial-Depth Parapet Joint at this location

Rails and wings are included in span construction and included in span quantities.

Required slab joints and pouring sequence construction joints shall align with parapet open joints at the gutterline, unless noted otherwise.

For Bar list, "VIEW U-U" and "SECTION T-T", see Dwg. No. 65265.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_s2.dgn
SCALE: 3/16" = 1'-0"

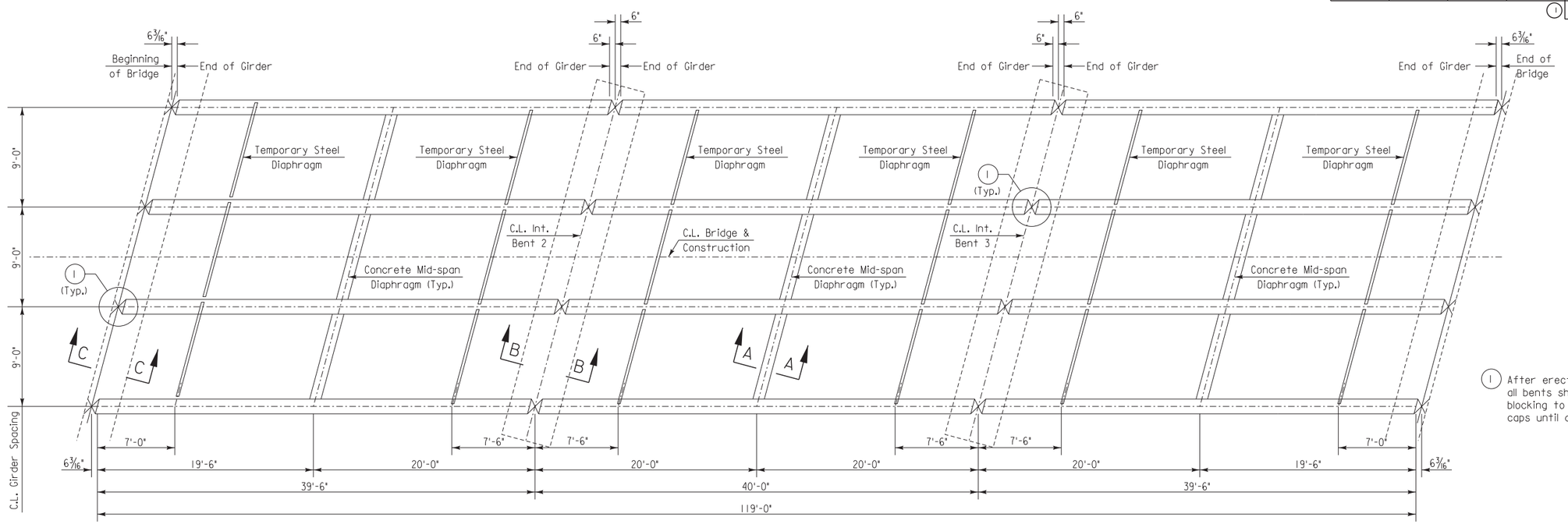
BRIDGE NO. 07523 DRAWING NO. 65261

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	173	311

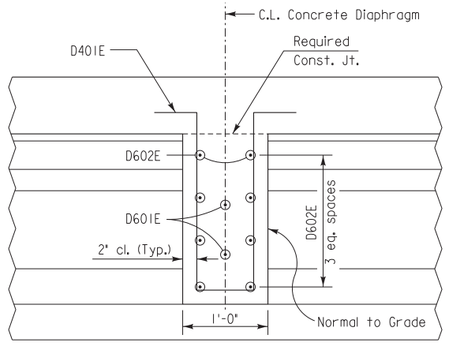
(1) 07523 - 119' UNIT - 65262



FRAMING PLAN

3/16" = 1'-0"

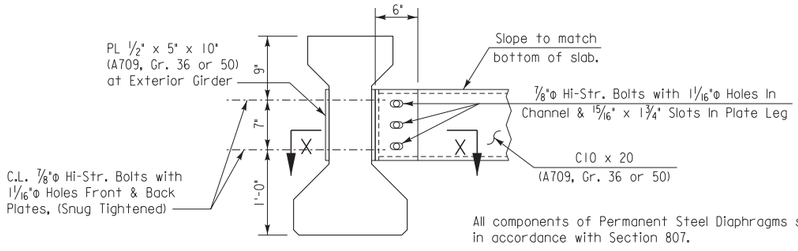
For "Section B-B" and "Section C-C", see Dwg. No. 65266.



SECTION A-A

Midspan Diaphragms

NO SCALE



Steel diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". Temporary Steel Diaphragms shall be removed upon completion of concrete set in the end bent and intermediate bent diaphragms. After they are removed, holes in webs shall be filled with a QPL approved non-shrink grout and the diaphragms and all connecting components shall remain the property of the Contractor. Temporary Diaphragm considered subsidiary to the item "Prestressed Concrete Girders (Type I)".

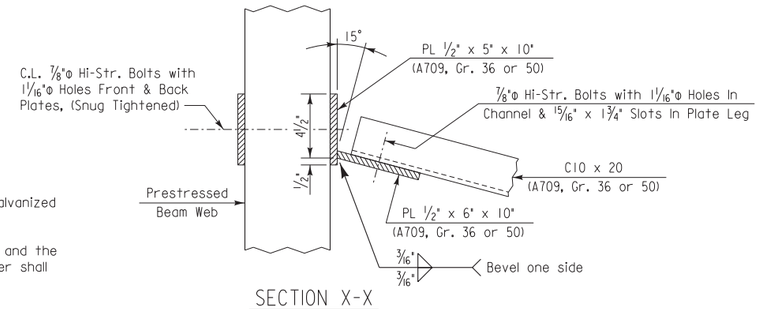
Permanent Steel Diaphragms may be used in lieu of a Concrete Diaphragm at midspan. Payment for permanent steel diaphragm and components will be based on concrete diaphragms.

All components of Permanent Steel Diaphragms shall be galvanized in accordance with Section 807.

A standard washer shall be supplied under both the nut and the head of the 7/8" dia. H.S. bolts. An additional plate washer shall cover the angle slots.

DETAILS OF STEEL DIAPHRAGM

NO SCALE



SECTION X-X

NO SCALE

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until all diaphragms are poured or connected.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

SHEET 3 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

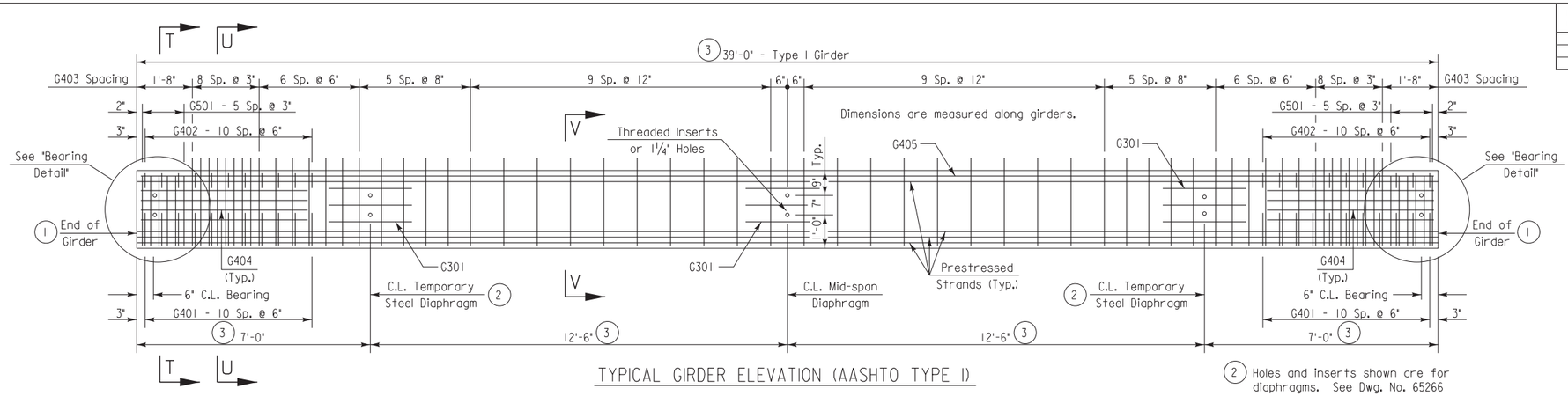
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x2_s3.dgn
SCALE: 3/16" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65262

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	174	311
				(1)		07523 - 119' UNIT - 65263		



TYPICAL GIRDER ELEVATION (AASHTO TYPE I)

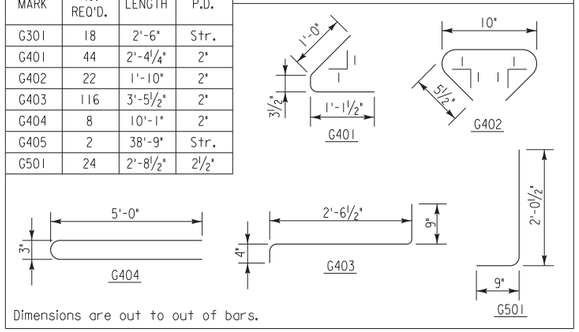
(2) Holes and inserts shown are for diaphragms. See Dwg. No. 65266 for additional details.

(3) This dimension shall be increased for effects of vertical profile on girder length to maintain 12" between ends of girders.

BAR LIST - PER GIRDER

MARK	NO. REQ'D.	LENGTH	P.D.
G301	18	2'-6"	Str.
G401	44	2'-4¼"	2"
G402	22	1'-10"	2"
G403	116	3'-5½"	2"
G404	8	10'-1"	2"
G405	2	38'-9"	Str.
G501	24	2'-8½"	2½"

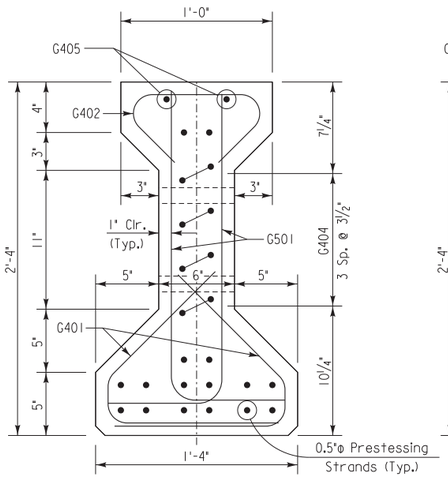
BENDING DIAGRAMS



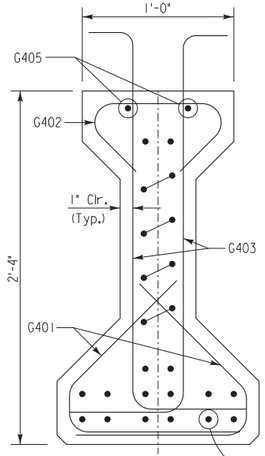
Dimensions are out to out of bars.

Note: All bars in BAR LIST shall be subsidiary to the item "39'-0" Prestressed Concrete Girders (Type I)". See span drawings for bar list of span reinforcing.

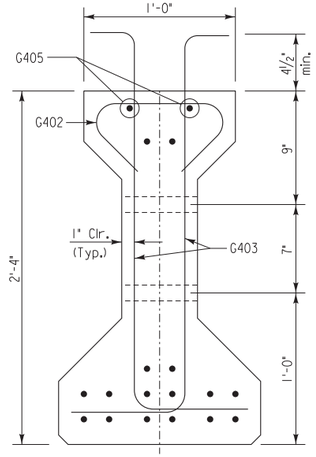
At the Contractor's option, the two G401 bars may be furnished as one bar.



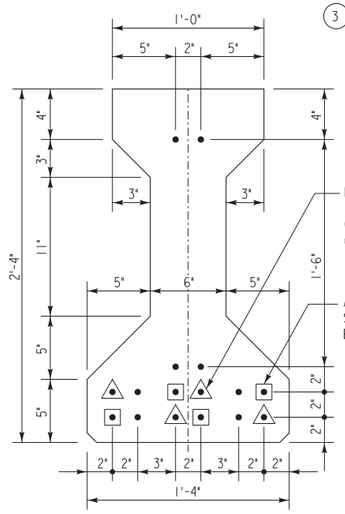
SECTION T-T



SECTION U-U



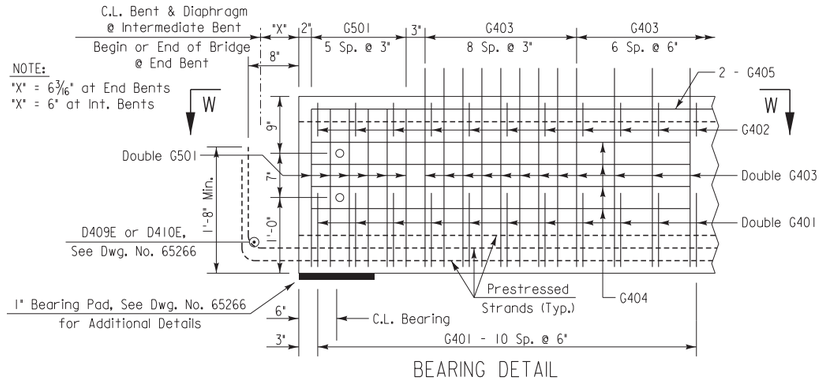
SECTION V-V



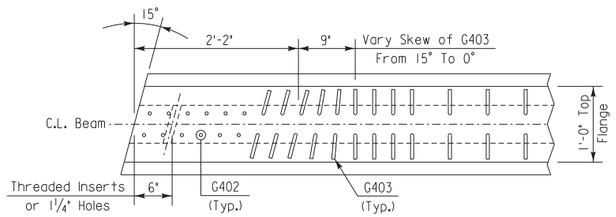
STRAND ARRANGEMENTS

(1) Saw and shop bend 4 bottom prestressing strands from each end of the girder into diaphragms as shown. Saw any remaining strands flush with the end of girder. See "Strand Arrangements" detail for alternating patterns.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands shall not be changed.



BEARING DETAIL



SECTION W-W

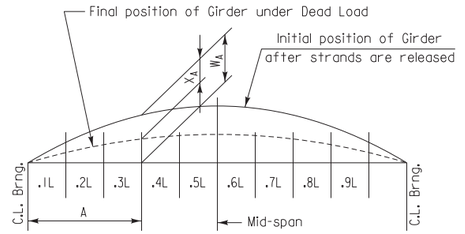
CAMBER NOTES

The camber and dead load deflection values shown are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders.
B. Estimated age of prestressed concrete girders at time of erection.
C. Profile of each girder under self weight.
D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if required.

Span Pt.	Inches	
	W_A	X_A
0.00	0	0
0.10	0.400"	0.171"
0.20	0.710"	0.305"
0.30	0.932"	0.400"
0.40	1.066"	0.457"
0.50	1.110"	0.476"
0.60	1.066"	0.457"
0.70	0.932"	0.400"
0.80	0.710"	0.305"
0.90	0.400"	0.171"
1.00	0	0



'W_A' is camber of Girder (Prestress + Dead Load of Girder @ 90 days after release)

'X_A' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

TABLE OF GIRDER VARIABLES

CAMBER & DEFLECTIONS (INCHES)

Note: 'W_A' & 'X_A' are based on the required minimum concrete strength and may vary from the dimension shown. 'W_A' & 'X_A' shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65266 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 4 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

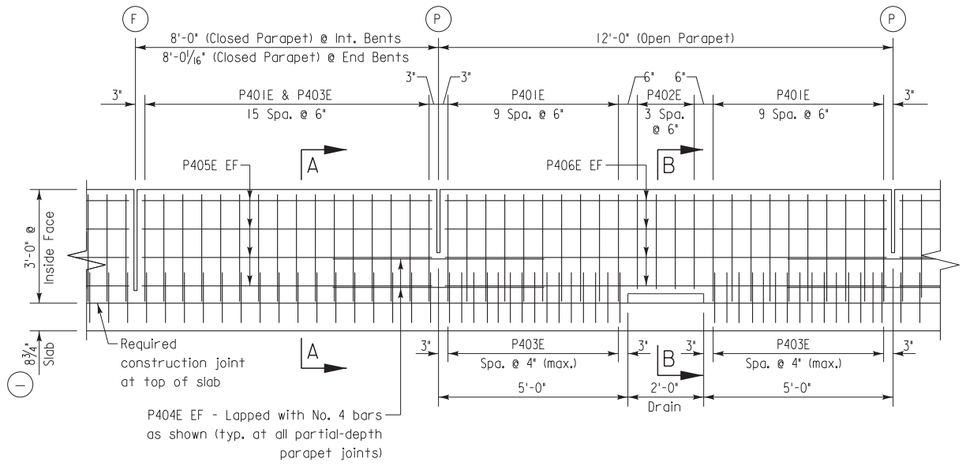
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x2_s4.dgn
SCALE: ½" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65263

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	175	311
				(1)	07523 - 119' UNIT - 65264			



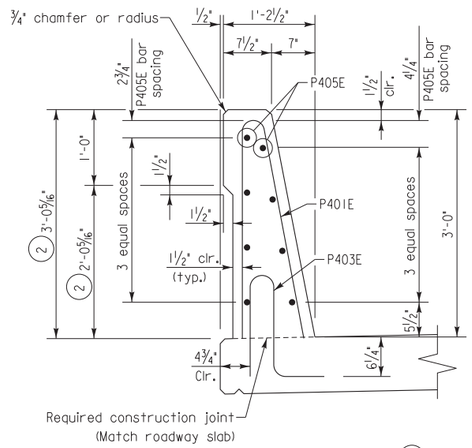
(1) Measured at edge of deck

DETAILS OF PARAPET RAIL

1/2" = 1'-0"

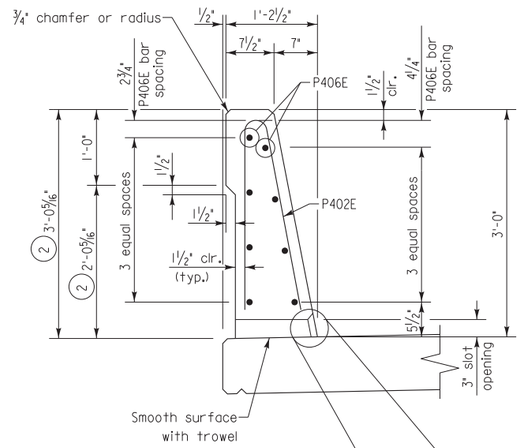
(F) C.L. Full-Depth Parapet Joint (1/4"-1" max.) Stop 4" from Top of Slab.

(P) C.L. Partial-Depth Parapet Joint (1/4"-1" max.) Stop 1-4" from Top of Slab.



SECTION A-A

1" = 1'-0"



SECTION B-B

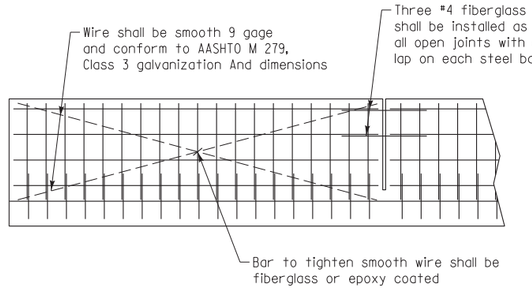
1" = 1'-0"

(2) Dimensions shown for 2% cross slope on bridge deck. Dimensions will vary per SUPERELEVATION TRANSISTION SKETCH shown on Dwg. No. 65256.

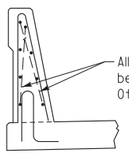
LEGEND

EF = Each Face

NOTE:
For locations of open and closed parapet panels and full-depth and partial-depth parapet joints, see 'REINFORCING PLAN' on Dwg. No. 65261.



NOTE:
For actual placement of reinforcing steel, see 'DETAILS OF PARAPET RAIL'.

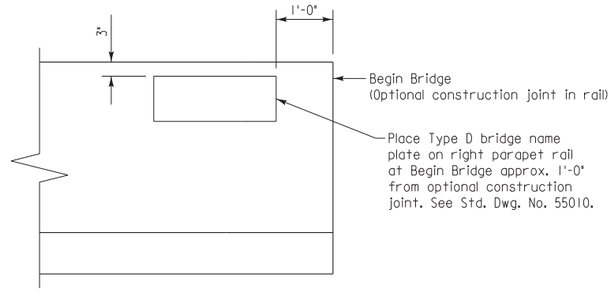


NOTE:
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the groove pattern.

NOTE:
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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face of Parapet)
No Scale

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

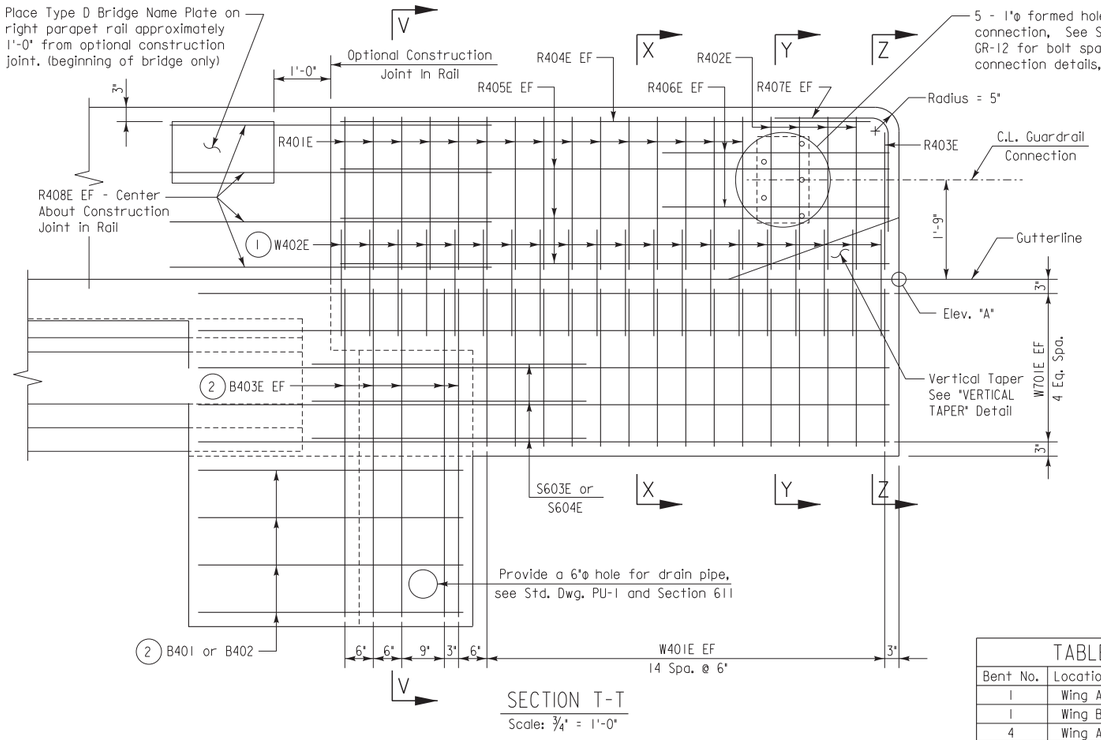
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_r1.dgn
SCALE: 1/2" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65264

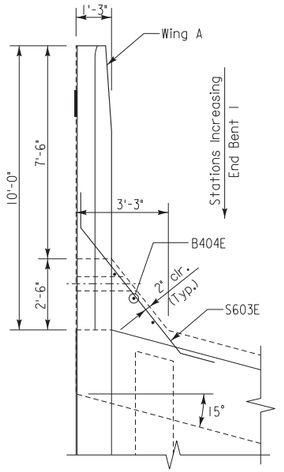
PRINT DATE: 7/29/2022

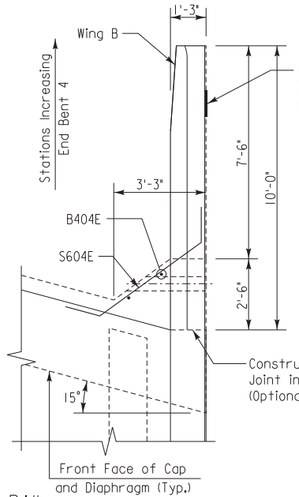
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	176	311

(1) 07523 - 119' UNIT - 65265

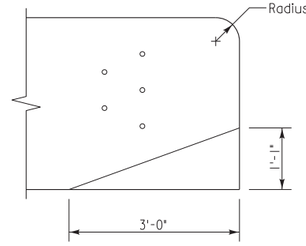


SECTION T-T
Scale: 3/4" = 1'-0"

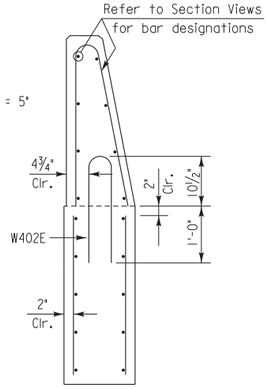




PLAN OF RAIL
Scale: 3/8" = 1'-0"



VERTICAL TAPER
Scale: 3/4" = 1'-0"



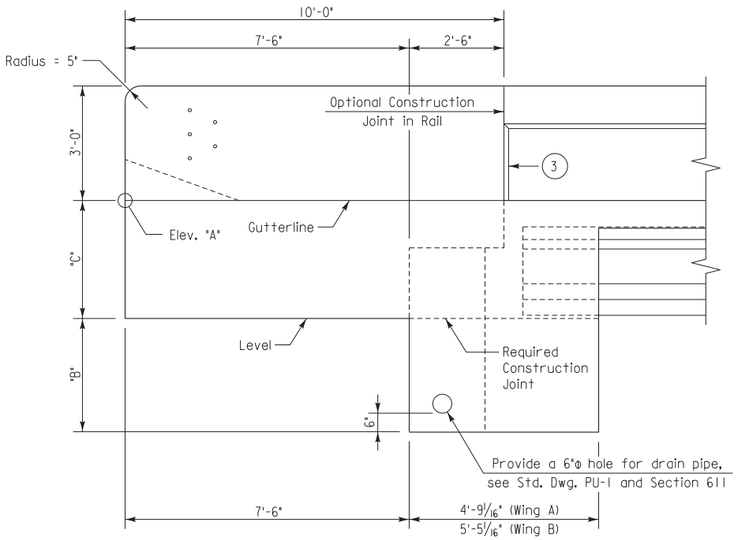
DETAIL A
Scale: 3/4" = 1'-0"

TABLE OF VARIABLES				
Bent No.	Location	Elev. "A"	"B"	"C"
1	Wing A	253.76	3'-0"	3'-3 3/16"
1	Wing B	254.39	3'-6 5/16"	3'-4 13/16"
4	Wing A	252.51	3'-0 3/8"	3'-0 5/8"
4	Wing B	252.53	3'-0"	3'-1 1/4"

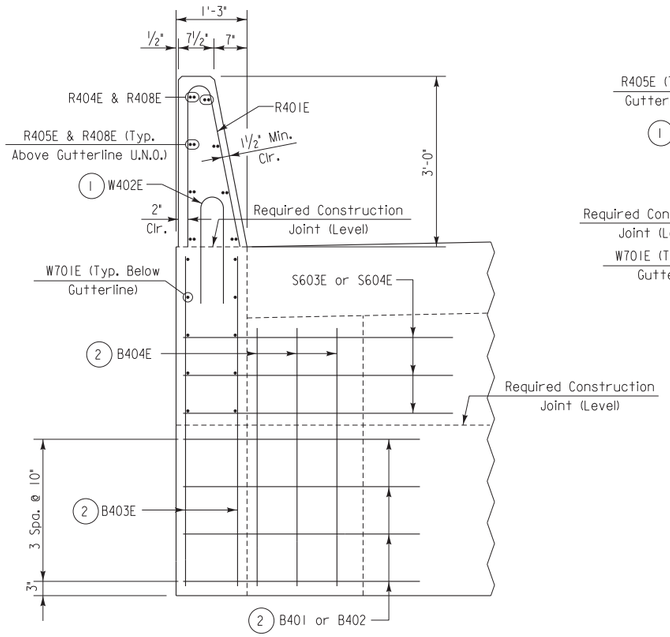
(1) See "DETAIL A" for placement of Bars W402E.

(2) See end bent details on Dwg. No. 65258 for reinforcing and additional details.

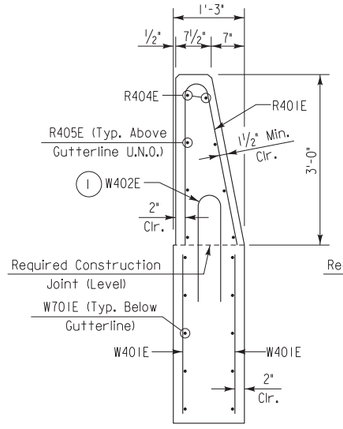
(3) Vertical chamfer not required if optional construction joint is used.



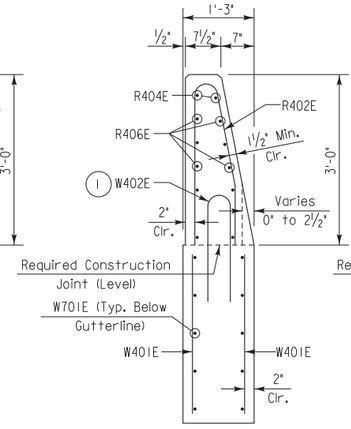
VIEW U-U
Scale: 1/2" = 1'-0"



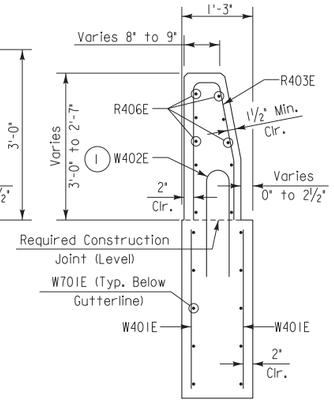
SECTON V-V
Scale: 3/4" = 1'-0"



SECTION X-X
Scale: 3/4" = 1'-0"



SECTION Y-Y
Scale: 3/4" = 1'-0"



SECTION Z-Z
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_w1.dgn
SCALE: 3/4" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65265

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	177	311
				(1)		07523 - 119' UNIT - 65266		

GENERAL NOTES

CONCRETE:

All concrete, except for prestressed girders, 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 shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removal deck forming is used and are the basis for measurement of Class S (AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

The concrete deck (roadway surface) 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. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. 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 ASTM A709 as specified in the plans. Unless otherwise noted, Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W 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.

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. All welding shall conform to Subsection 807.26.

PRESTRESSED GIRDER:

Prestressing steel shall be 0.5" Φ Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type I as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.5" Φ strand shall be 30,980 lbs. except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

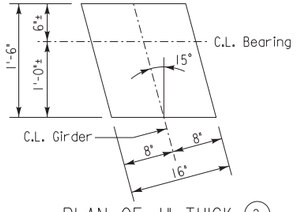
The tops of the girder shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding to the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

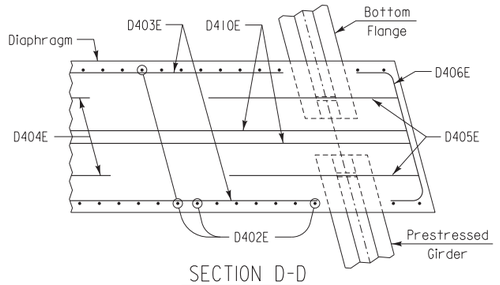
The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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.



PLAN OF 1" THICK (2) UNREINFORCED BEARING PAD



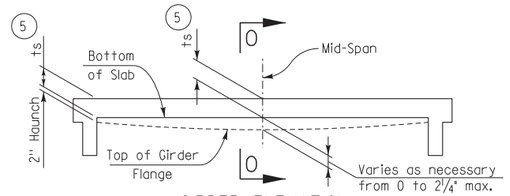
SECTION D-D

(1) For additional details, see End Bent Details, Dwg. No. 65258.

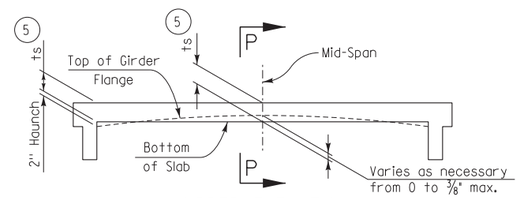
(2) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S Concrete-Bridge". Estimated pad deflection under dead load is ¼". See PLAN OF 1" THICK UNREINFORCED BEARING PAD below.

(3) Material shall conform to AASHTO M153, Type I per Subsection 501.02(h)(1).

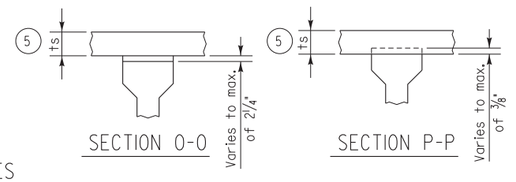
(4) Use closed-cell expanded polyethylene with a density of at least 2.1 lb/cf as determined by ASTM D3575 and with a minimum compressive stress of 9 psi at 25 percent deflection as determined by ASTM D3575.



GIRDER ELEVATION



GIRDER ELEVATION



SECTION O-O SECTION P-P

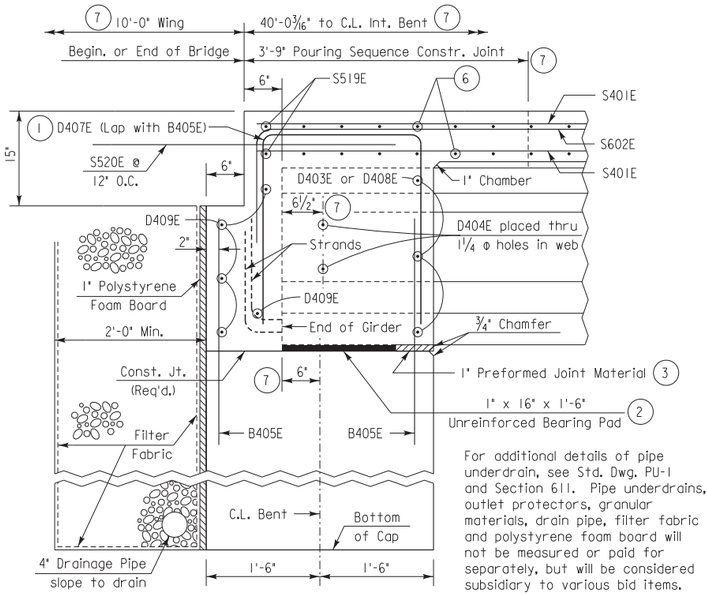
NOTES

ts = slab thickness as shown on superstructure details - See "Typical Roadway Section", Dwg. No. 65260.

(5) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

"Girder Elevation" sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ¾" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

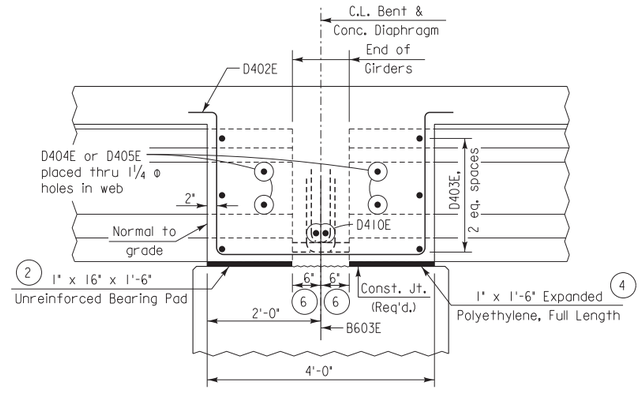


SECTION C-C
End Bent Diaphragms

For additional details of pipe underdrain, see Std. Dwg. PU-1 and Section 611. Pipe underdrains, outlet protectors, granular materials, drain pipe, filter fabric and polystyrene foam board will not be measured or paid for separately, but will be considered subsidiary to various bid items.

(6) Bars S504E thru S517E, S501E or S502E in top of slab. Bars S504E thru S517E, S402E or S502E in bottom of slab. See "REINFORCING PLAN" on Dwg. No. 65261 for bar designations (Typ. U.N.O.).

(7) Measured along C.L. Girder



SECTION B-B
Intermediate Bent Diaphragms

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278
07/29/2022
BRIDGE ENGINEER

SHEET 7 OF 8
DETAILS OF 119' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_s5.dgn
SCALE: 1" = 1'-0"

BRIDGE NO. 07523 DRAWING NO. 65266

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	178	311

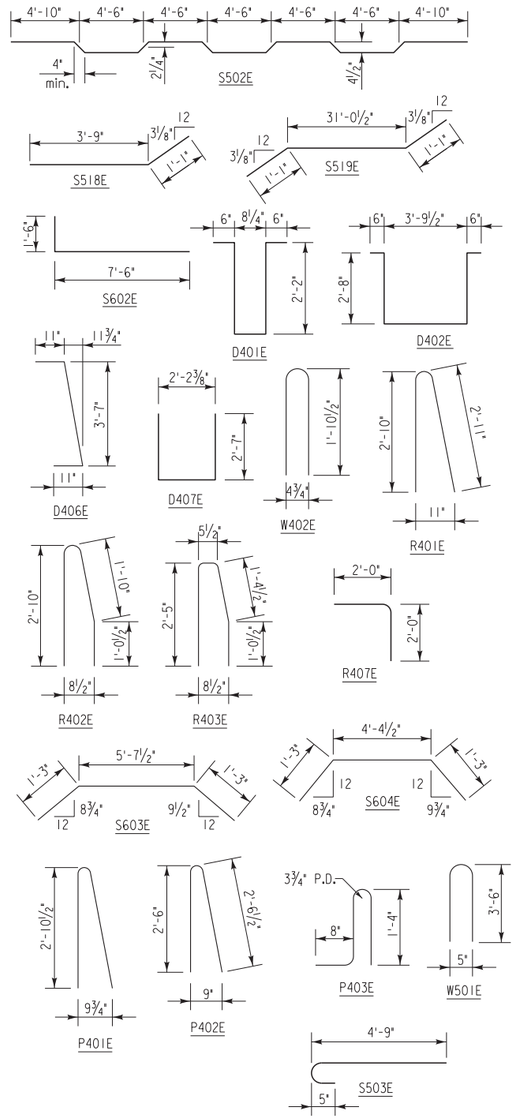
(1) 07523 - 119' UNIT - 65267

BAR LIST

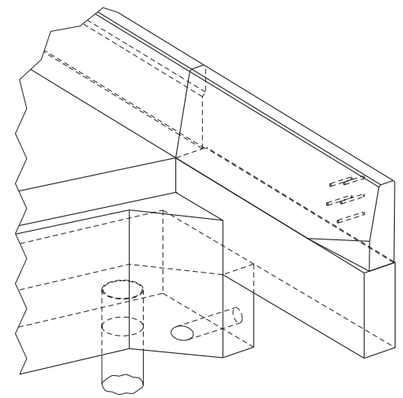
MARK	NO. REQ'D.	LENGTH	P.D.
S401E	276	41'-9"	Str.
S402E	112	32'-2"	Str.
S501E	112	32'-2"	Str.
S502E	111	33'-0"	3"
S503E	474	5'-3½"	3"
S504E	4	6'-2"	Str.
S505E	4	8'-0½"	Str.
S506E	4	9'-11"	Str.
S507E	4	11'-9½"	Str.
S508E	4	13'-7½"	Str.
S509E	4	15'-6"	Str.
S510E	4	17'-4½"	Str.
S511E	4	19'-3"	Str.
S512E	4	21'-1"	Str.
S513E	4	22'-11½"	Str.
S514E	4	24'-10"	Str.
S515E	4	26'-8½"	Str.
S516E	4	28'-7"	Str.
S517E	4	30'-5½"	Str.
S518E	8	4'-10"	3"
S519E	4	33'-2½"	3"
S520E	60	4'-0"	Str.
S601E	66	15'-0"	Str.
S602E	66	8'-10"	4½"
S603E	6	8'-1½"	4½"
S604E	6	6'-10½"	4½"
D401E	72	6'-0"	2"
D402E	98	10'-0½"	2"
D403E	54	7'-3½"	Str.
D404E	32	6'-0"	Str.
D405E	16	5'-0"	Str.
D406E	12	6'-2"	2"
D407E	64	7'-2½"	2"
D408E	12	1'-8"	Str.
D409E	10	33'-3½"	Str.
D410E	4	31'-9"	Str.
D601E	12	5'-6"	Str.
D602E	54	7'-11"	Str.
W401E	120	2'-9"	Str.
W402E	80	3'-11"	3¾"
W501E	32	7'-3"	3¾"
W701E	40	12'-2"	Str.
R401E	60	5'-11"	3¾"
R402E	16	5'-11"	3¾"
R403E	4	5'-2"	2"
R404E	8	9'-4"	Str.
R405E	24	9'-8"	Str.
R406E	16	4'-0"	Str.
R407E	8	3'-11"	6"
R408E	32	5'-8"	Str.
P401E	432	5'-11"	2½"
P402E	48	5'-2"	2½"
P403E	552	3'-5"	3¾"
P404E	72	5'-7"	Str.
P405E	96	7'-8"	Str.
P406E	96	11'-8"	Str.

Bars designated with an "E" suffix are to be epoxy coated.

BENDING DIAGRAMS



Dimensions are out to out of bars.



THREE DIMENSIONAL VIEW
OF WING AND RAIL AT END BENT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 8 OF 8
DETAILS OF 119' INTEGRAL
PRESTRESSED CONCRETE GIRDER UNIT
LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x2_s6.dgn
SCALE: ⅜" = 1'-0"

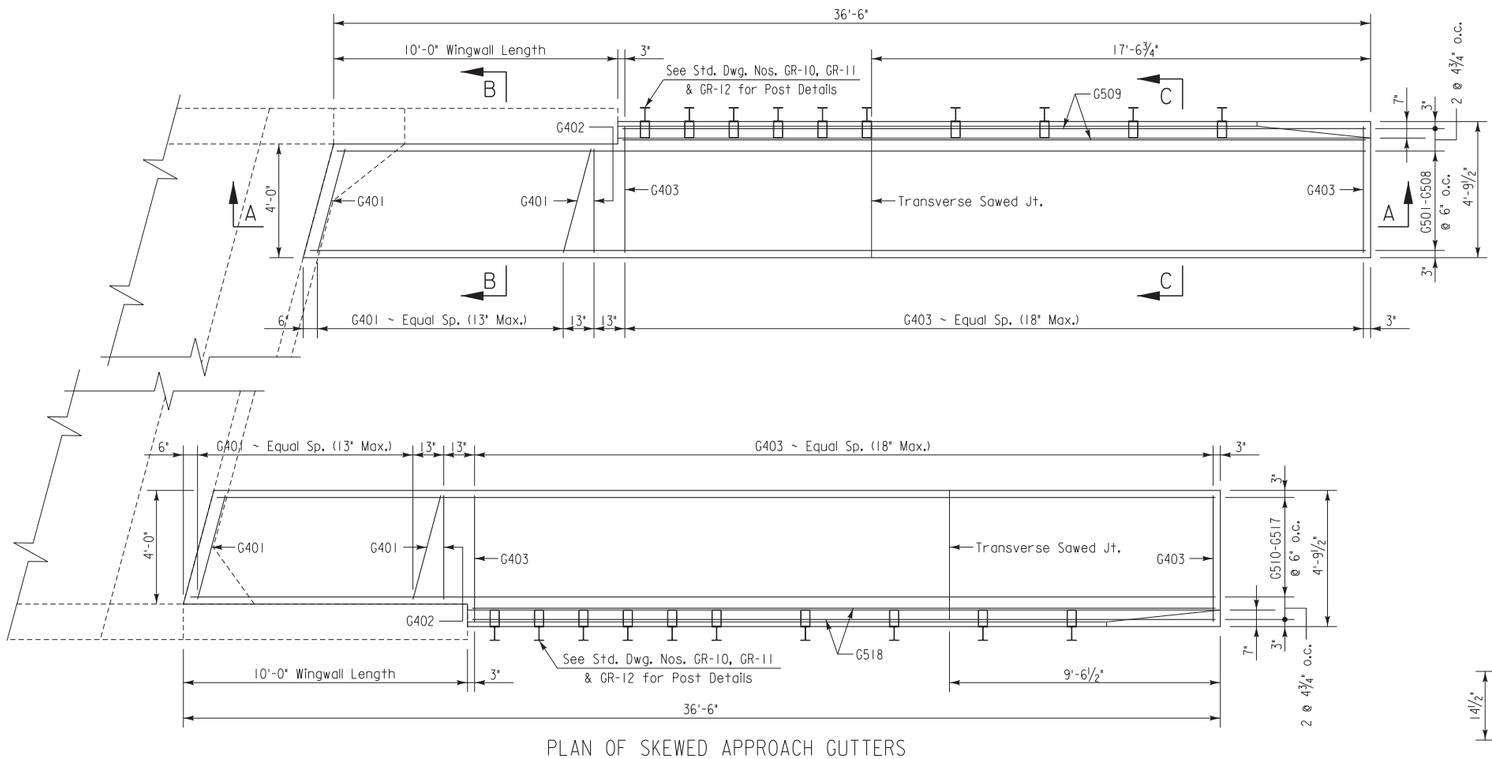
BRIDGE NO. 07523
DRAWING NO. 65267

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

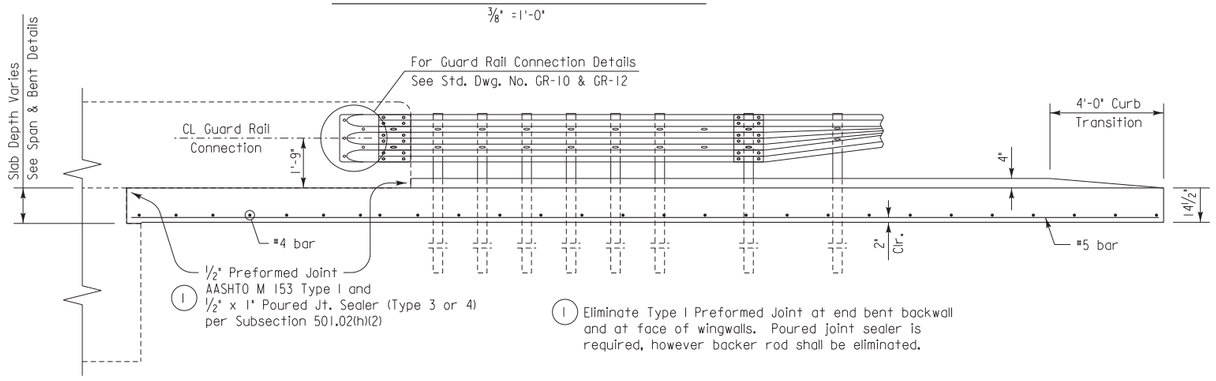
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	179	311

(1) 07523 - APPROACH GUTTERS - 65268



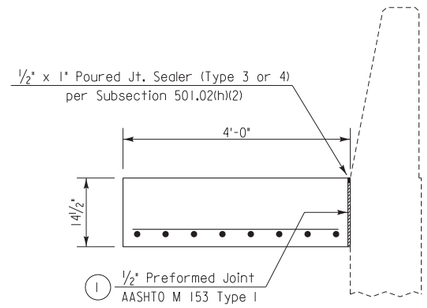
PLAN OF SKEWED APPROACH GUTTERS

⅜" = 1'-0"



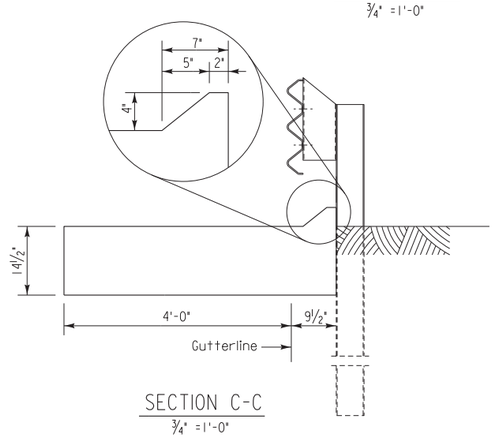
SECTION A-A

⅜" = 1'-0"



SECTION B-B

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	15	3'-9½"
G402	2	3'-8"
G403	38	4'-5½"
G501-G508	8	37'-2" to 36'-2½"
G509	2	26'-2"
G510-G517	8	35'-2" to 36'-1"
G518	2	26'-2"

GENERAL NOTES

All concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

TABLE OF QUANTITIES FOR ONE SET OF APPROACH GUTTERS

(FOR INFORMATION ONLY)

Reinforcing Steel	Concrete
Lbs.	Cu. Yds.
869	15.18

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH GUTTERS LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020 FILENAME: b101054x2_g1.dgn

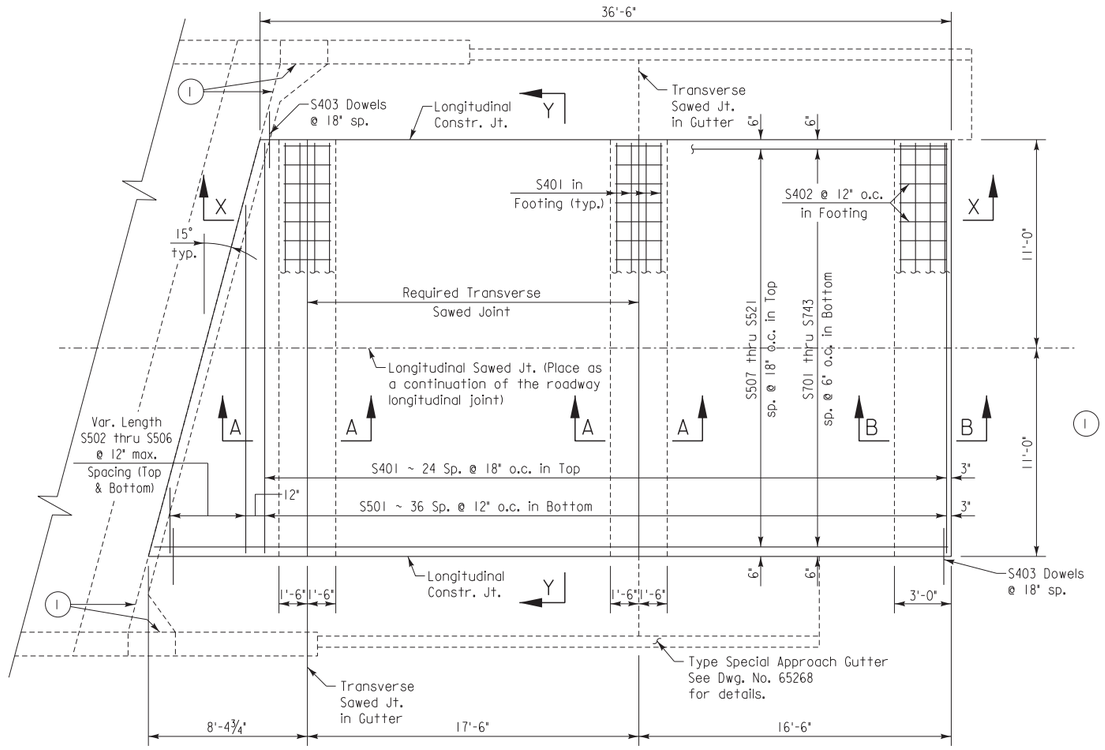
CHECKED BY: BKC DATE: JUN 2022 SCALE: ⅜" = 1'-0"

DESIGNED BY: KJK DATE: NOV 2020

BRIDGE NO. 07523 DRAWING NO. 65268

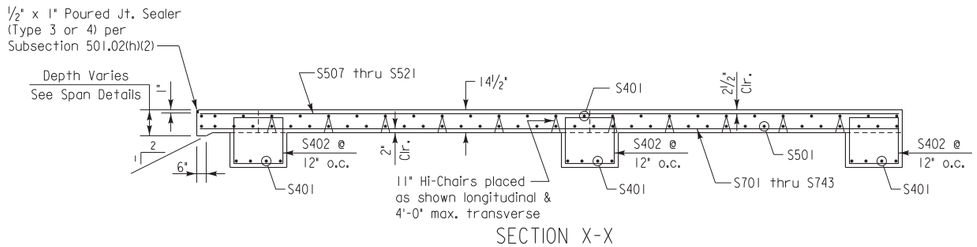
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	180	311
				(1)	07523 - APPROACH SLAB - 65269			



PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

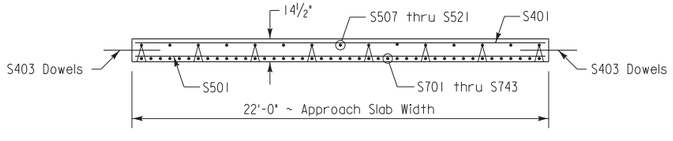
¼" =1'-0"



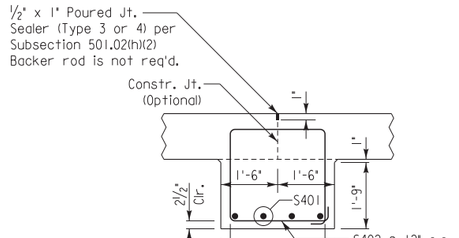
SECTION X-X

SQUARE APPROACH SLAB SHOWN

¼" =1'-0"



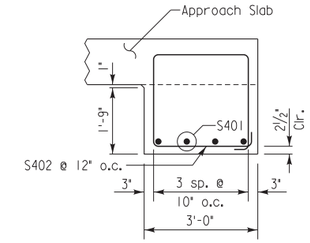
SECTION Y-Y



SECTION A-A

½" =1'-0"

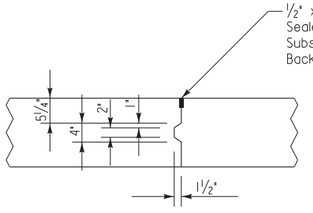
(1) Eliminate Type I Preformed Joint at the concrete diaphragm and at the face of wingwalls. Poured Joint Sealer is required, however backer rod shall be eliminated.



SECTION B-B

AT ASPHALT APPROACH PAVEMENT

½" =1'-0"

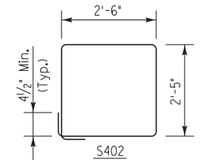


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" =1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401	37	21'-8"	Str.
S402	66	10'-4"	2"
S403	53	3'-0"	Str.
S501	37	21'-8"	Str.
S502-S506	5 top 5 bott	18'-5" to 3'-5"	Str.
S507-S521	15	41'-11" to 36'-3"	Str.
S701-S743	43	41'-11" to 36'-3"	Str.



Dimensions are out to out of bar.

TABLE OF QUANTITIES FOR ONE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel	Concrete
	Lbs.	Cu. Yds.
22'-0"	6094	52.28

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

The surface finish for Approach Slabs shall match that used on the bridge deck.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH SLAB LICK POND SLOUGH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x2_g2.dgn
SCALE: ¼" = 1'-0"

BRIDGE NO. 07523

DRAWING NO. 65269

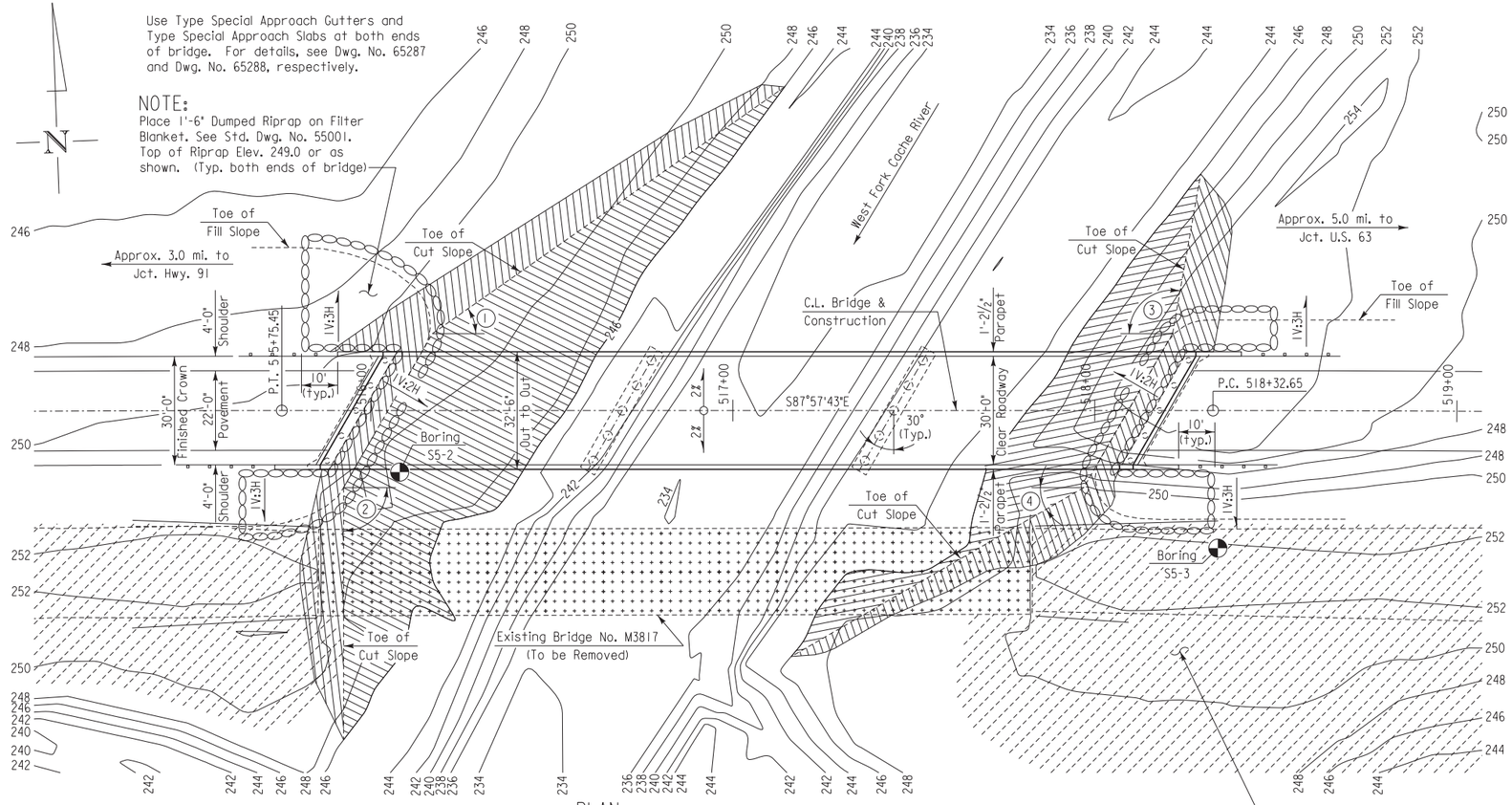
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	181	311
				(1)	07524 - LAYOUT - 65270			

For Right of Way data, see Roadway plans.

Use Type Special Approach Gutters and Type Special Approach Slabs at both ends of bridge. For details, see Dwg. No. 65287 and Dwg. No. 65288, respectively.

NOTE:
Place 1'-6" Dumped Riprap on Filter Blanket. See Std. Dwg. No. 55001. Top of Riprap Elev. 249.0 or as shown. (Typ. both ends of bridge)



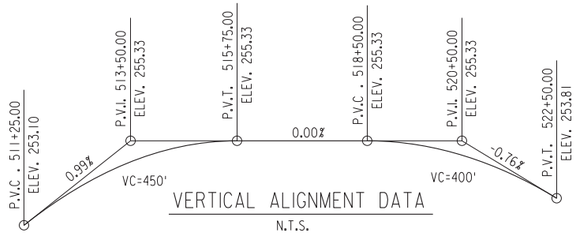
PLAN

NOTE:
Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See 'Rounding Detail' on Dwg. No. 65278 for additional information.

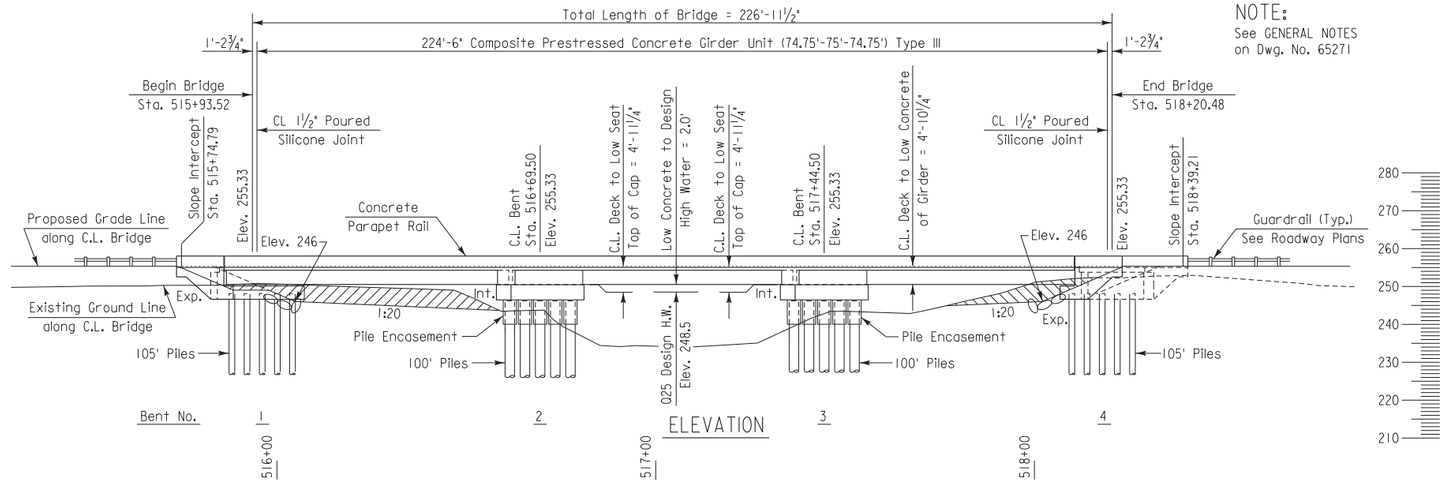
NOTE:
The Contractor shall excavate the existing embankment as shown at both ends of the bridge to Elev. 246.0. Approx. 1270 cubic yards of excavation.

Toe of cut slopes shown are parallel to the end bents out to a distance of 5.0 feet beyond the edge of the bridge deck and then transition at the angles indicated back into the channel's natural side slopes.

(1) 35° (2) 90° (3) 100° (4) 30°



VERTICAL ALIGNMENT DATA
N.T.S.



ELEVATION

NOTE:
See GENERAL NOTES on Dwg. No. 65271

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET
DESIGN	25	2674	246.8	248.5
BASE	100	3398	247.1	249.1
EXTREME	500	4246	247.4	249.7
OVERTOPPING	>500			

Drainage Area = 12.6 square miles
Historical High Water Elev. = N.A.

*Unconstricted water surface elevation without structure or roadway approaches

Q100 backwater elevation for existing structure = 249.6 feet
Proposed Low Bridge Chord Elevation = 250.5 feet
Existing Low Bridge Chord Elevation = 248.7 feet

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER
WEST FORK OF THE CACHE RIVER
HWY. 230 STRS. & APPRS. (S)
LAWRENCE COUNTY

ROUTE 230 SEC. 6

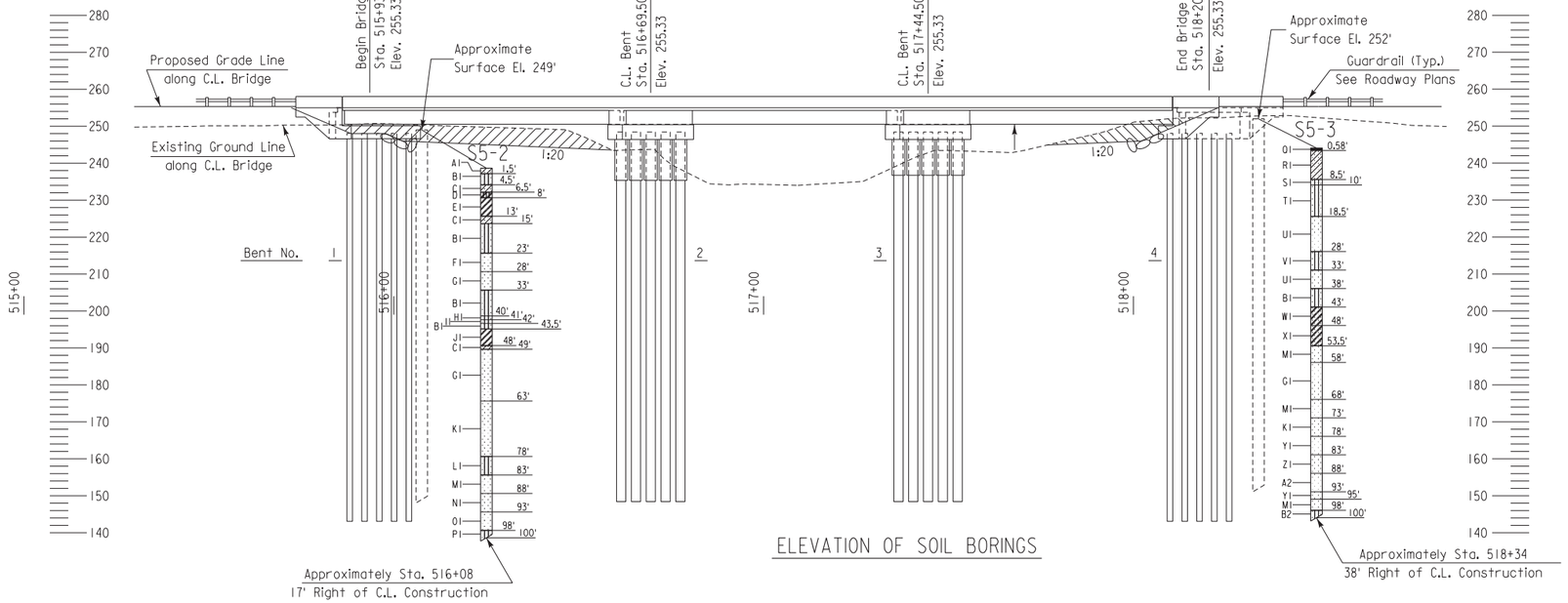
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_l1.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07524 DRAWING NO. 65270

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	182	311
				(1)		07524 - LAYOUT - 65271		



ELEVATION OF SOIL BORINGS

NOTE: The SPT blow count "N" values are raw values. They have not been corrected for hammer energy. A hammer energy correction factor of 1.36 applies to borings S5-1 (not shown), S5-2, S5-3 & S5-4 (not shown).

BORING LEGEND

AI-Medium dense gray clayey sand (SC)
BI-Medium dense tan and gray sand (SP-SM), slightly silty
CI-Medium dense tan and gray clayey sand (SC)
DI-Medium stiff light gray silty clay (CL)
EI-Stiff gray clay (CH)
FI-Loose tan and gray sand (SP)
GI-Medium dense tan and gray sand (SP)
HI-Medium dense tan and gray sand (SP-SM), slightly silty, with organics
II-Medium dense tan and gray sand (SP-SM), slightly silty, with organics and clay pockets
JI-Medium stiff tan and gray clay (CH) with sand
KI-Medium dense tan and gray sand (SP) with trace of gravel
LI-Very dense tan and gray sand (SP-SM), slightly silty, with trace of gravel
MI-Dense tan and gray sand (SP)
NI-Medium dense tan and gray sand (SP) with gravel
OI-Medium dense tan and gray sand (SP) with gravel and lignite
PI-Dense tan and gray sand (SP-SM), slightly silty
QI-Asphalt
RI-Medium dense tan and gray clayey sand (SC) with gravel
SI-Medium dense brown and tan sand (SP-SM), slightly silty, with wood fragments
TI-Medium dense brown and tan sand (SP-SM), slightly silty
UI-Medium dense tan and light gray sand (SP)
VI-Medium dense tan and light gray sand (SP-SM), slightly silty
WI-Stiff gray sandy clay (CL)
XI-Medium stiff gray sandy clay (CL)
YI-Dense tan and gray sand (SP) with trace of gravel
ZI-Loose tan and gray sand (SP) with trace of gravel
A2-Medium dense tan and gray sand (SP) with trace of gravel
B2-Very dense tan and gray sand (SP-SM), slightly silty

"N" VALUES

S5-2, Approximately Sta. 516+08
17' Right of C.L. Construction

2 - 3, N=6
6.5 - 7.5, N=6
19 - 20, N=15
24 - 25, N=9
29 - 30, N=26
34 - 35, N=29
39 - 40, N=13
54 - 55, N=11
59 - 60, N=28
64 - 65, N=18
69 - 70, N=29
74 - 75, N=20
75.5 - 76.5, N=19
79 - 80, N=80
84 - 85, N=39
89 - 90, N=16
94 - 95, N=37
99 - 100, N=47

S5-3, Approximately Sta. 518+34
38' Right of C.L. Construction

2 - 3, N=16
9 - 10, N=15
14 - 15, N=13
19 - 20, N=19
24 - 25, N=18
29 - 30, N=17
34 - 35, N=22
39 - 40, N=15
44 - 45, N=4
54 - 55, N=33
59 - 60, N=19
64 - 65, N=28
69 - 70, N=31
74 - 75, N=26
79 - 80, N=40
84 - 85, N=9
89 - 90, N=12
94 - 95, N=45
99 - 100, N=76

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions, unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 3 SDI= 0.396g Site Class = D

MATERIALS AND STRENGTHS:

Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Class S (AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322 Type A, Gr. 60)	fy = 60,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bents 1 & 4 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 234 tons per pile. Piling in Bents 2 & 3 shall be 30" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 417 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place. All piling shall have a tip elevation of 148 or lower. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the items "STEEL SHELL PILING (18" DIA.)" and "STEEL SHELL PILING (30" DIA.)"

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend from bottom of cap to 3' below natural ground. See Standard Dwg. No. 55021 for additional information.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for 18" piles shall be 70,000 foot pounds per blow and for 30" piles shall be 90,000 foot pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING No.
End Bents	65272-65274
Intermediate Bents	65275
Details of 30" Dia. Steel Shell Piles	65276
Elastomeric Bearings	65277
224.5' Prestressed Concrete Girder Unit	65278-65286
Concrete Filled Steel Shell Piling	55021
Type Special Approach Gutters	65287
Type Special Approach Slab	65288

EXISTING BRIDGE: Existing Bridge No. M3817 (Log Mile 2.900) is 198' in length, 25' wide and consists of one 82-foot steel truss interior span, two 29-foot steel girder interior spans and two 29-foot steel girder end spans. Each end of the truss span is supported by two isolated concrete caps on timber piling. The steel girder spans are supported by timber caps on timber piling. The existing bridge is located approximately 45' downstream and parallel to the new bridge alignment.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. M3817 shall be removed in accordance with Section 205. With the exception of the 82-foot steel truss span, all other material from the existing bridge shall become the property of the Contractor. The removal and ownership of the truss will be determined by ARDOT.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER
WEST FORK OF THE CACHE RIVER
HWY. 230 STRS. & APPRS. (S)
LAWRENCE COUNTY

ROUTE 230 SEC. 6

ARKANSAS STATE HIGHWAY COMMISSION

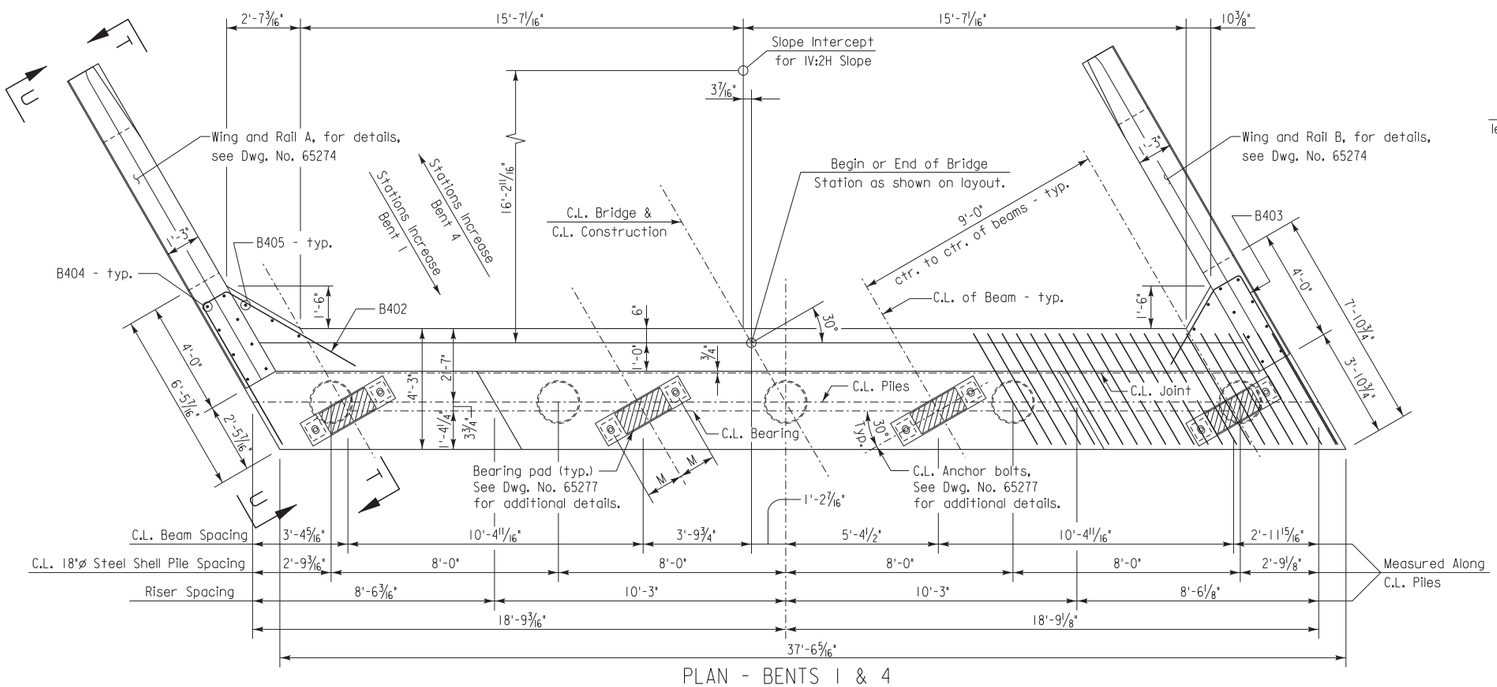
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020 FILENAME: b101054x5_l2.dgn
CHECKED BY: BKC DATE: JUN 2022 SCALE: 1" = 20'-0"
DESIGNED BY: KJK/BCD DATE: NOV 2020

BRIDGE NO. 07524 DRAWING NO. 65271

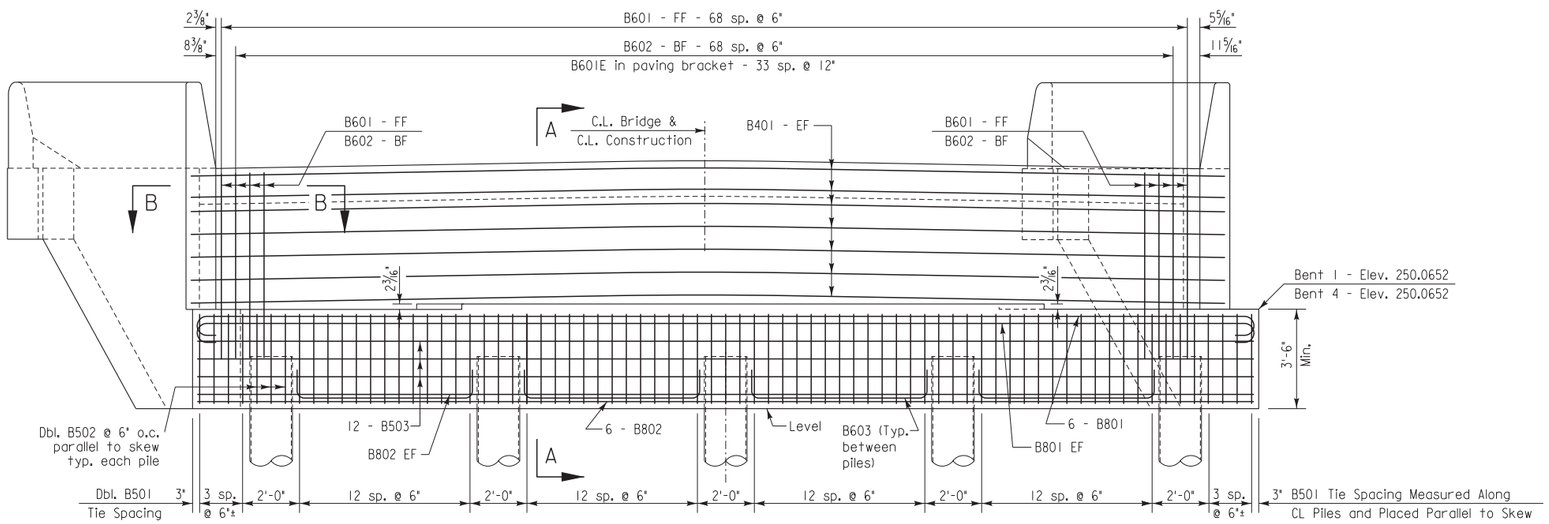
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	183	311
				1	07524 - END BENTS - 65272			



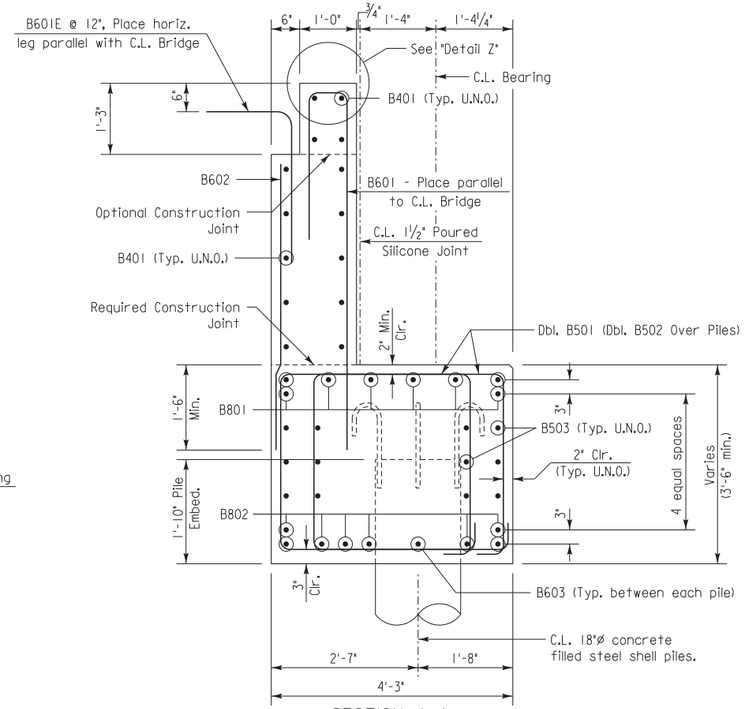
PLAN - BENTS 1 & 4

3/8" = 1'-0"



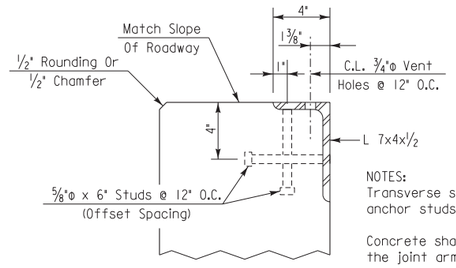
ELEVATION - BENTS 1 & 4

LOOKING BACK - BENT 1
LOOKING AHEAD - BENT 4
3/8" = 1'-0"



SECTION A-A

No Scale



NOTE: For additional joint details, see Dwg. No. 65286.

DETAIL Z

No Scale

NOTES:

Transverse spacing between vertical anchor studs and vent holes shall be 6".

Concrete shall be hand packed under the joint armor.

Special care shall be taken to properly and thoroughly consolidate the concrete in the vicinity of the expansion joint device in the backwall. See Subsection 802.09(a)(3).

NOTES:

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 shall be chamfered 3/4" unless noted otherwise.

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.

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Class 2 Protective Surface Treatment shall be applied to the top of the backwall and roadway face of concrete parapet.

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. No heavy construction equipment shall be allowed within 10 feet of the backwall until the concrete placement for the adjacent span has been completed. See "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE" on Std. Dwg. No. 55008 for additional information.

LEGEND

BF = Back Face
EF = Each Face
FF = Front Face
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278

07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS
WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/LAC DATE: NOV 2020
FILENAME: b101054x5_a1.dgn
SCALE: 3/8" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65272

PRINT DATE: 8/3/2022

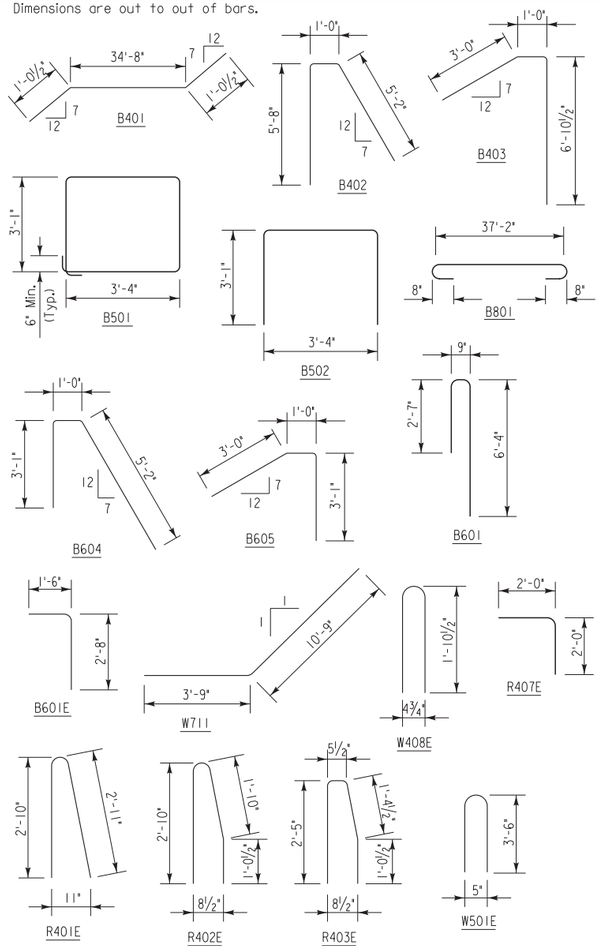
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	184	311
				(1)		07524 - END BENTS - 65273		

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	14	36'-9"	2"
B402	6	11'-9"	2"
B403	6	10'-11"	2"
B404	16	8'-1"	Str.
B405	5	6'-10"	Str.
B501	120	13'-3½"	2½"
B502	30	9'-3½"	2½"
B503	12	37'-2"	Str.
B601	69	9'-4"	4½"
B602	69	5'-2"	Str.
B603	4	7'-10½"	4½"
B604	6	9'-1"	4½"
B605	6	7'-0"	4½"
B801	8	39'-0"	6"
B802	8	37'-2"	Str.
B601E	34	4'-2"	4½"
W401	4	7'-9"	Str.
W402	4	6'-9"	Str.
W403	4	5'-9"	Str.
W404	4	4'-9"	Str.
W405	4	3'-10"	Str.
W406	4	2'-10"	Str.
W407	20	2'-2"	Str.
W408E	50	3'-11"	3¾"
W501E	18	7'-3"	2½"
R401E	40	5'-11"	3¾"
R402E	8	5'-11"	3¾"
R403E	2	5'-2"	2"
R404E	4	11'-10"	Str.
R405E	12	12'-2"	Str.
R406E	8	4'-0"	Str.
R407E	4	3'-11"	6"
W701	16	12'-2"	Str.
W702	4	9'-3"	Str.
W703	4	8'-8"	Str.
W704	4	8'-1"	Str.
W705	4	7'-6"	Str.
W706	4	6'-11"	Str.
W707	4	6'-4"	Str.
W708	4	5'-8"	Str.
W709	4	5'-1"	Str.
W710	4	4'-6"	Str.
W711	4	14'-6"	5¼"

BENDING DIAGRAMS

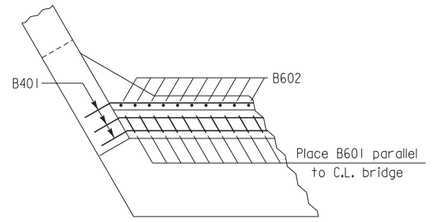
Dimensions are out to out of bars.



Bars designated with an 'E' suffix are to be epoxy coated.

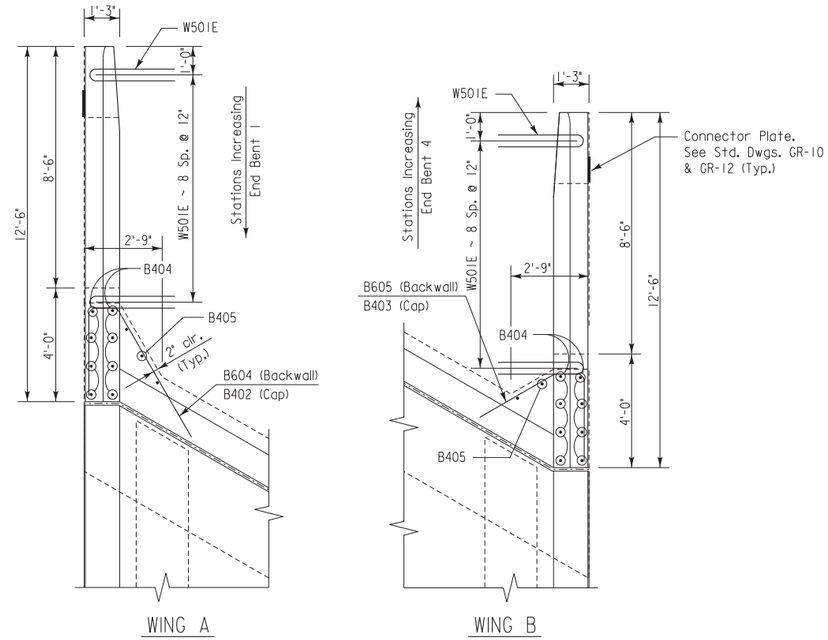
Bars designated with an 'E' suffix are to be epoxy coated.

Dimensions are out to out of bars.



SECTION B-B

No Scale



WING A

WING B

PLAN OF RAIL

Scale: ⅜" = 1'-0"

PRINT DATE: 7/29/2022

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 3

DETAILS OF END BENTS
WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

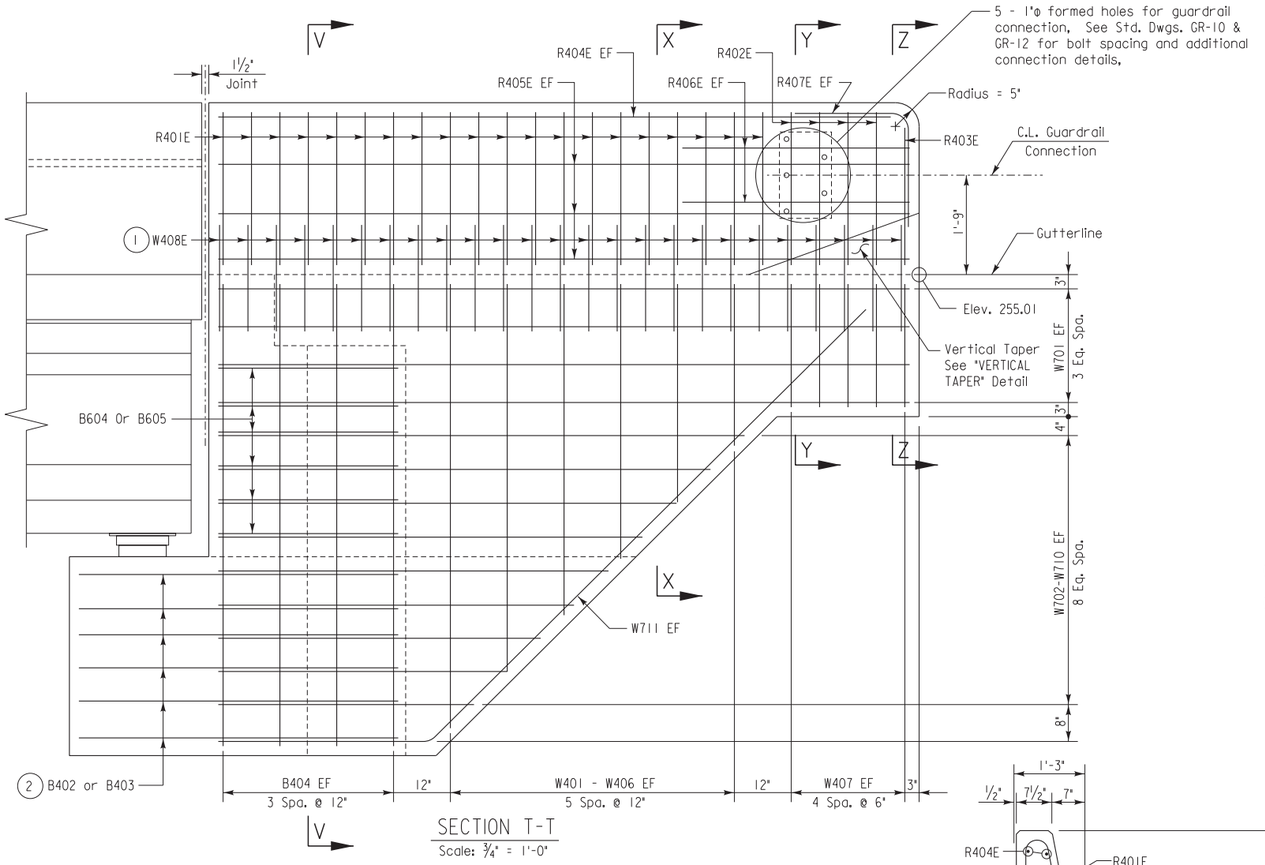
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x5_a2.dgn
SCALE: ⅜" = 1'-0"

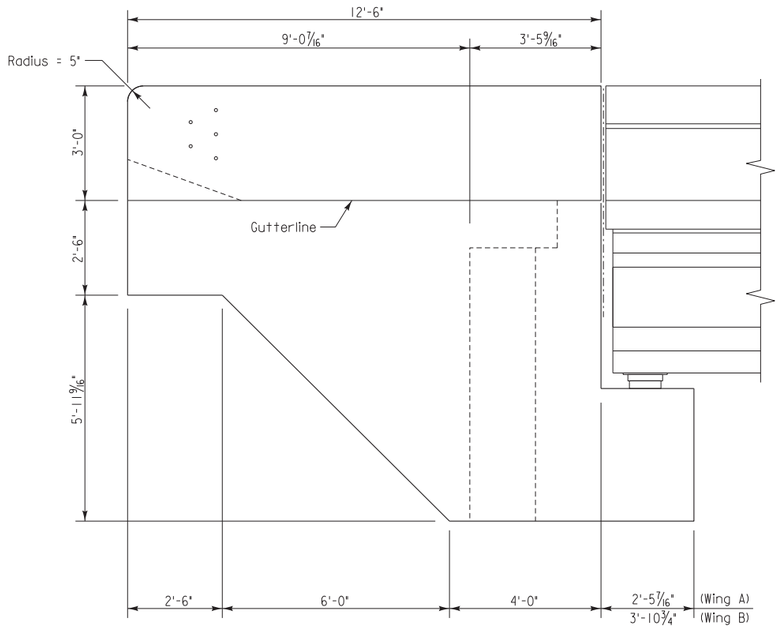
BRIDGE NO. 07524

DRAWING NO. 65273

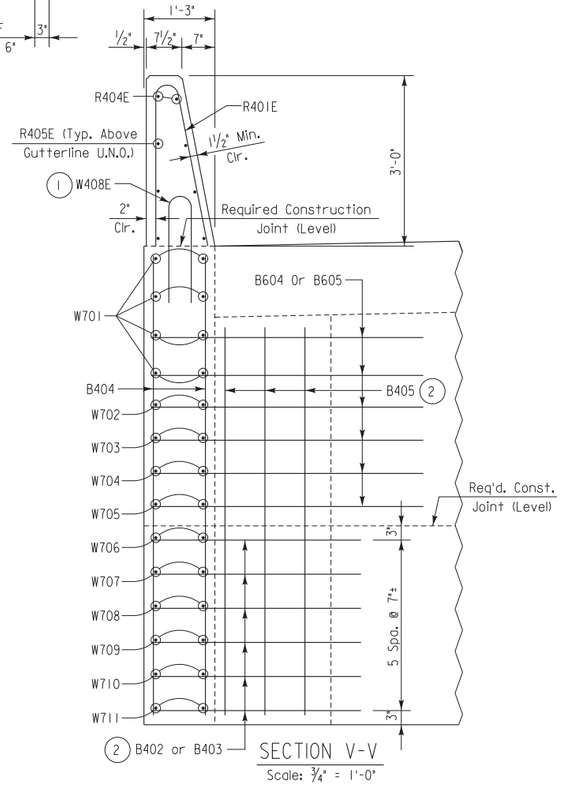
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	185	311
				(1)	07524 - END BENTS - 65274			



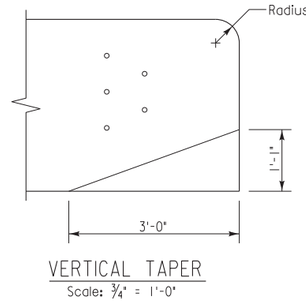
SECTION T-T
Scale: ¾" = 1'-0"



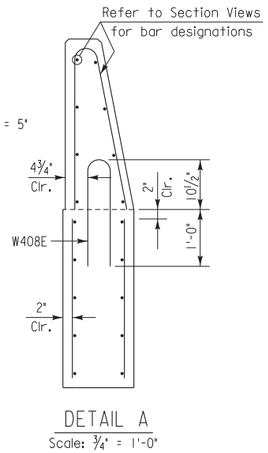
VIEW U-U
Scale: ½" = 1'-0"



SECTION V-V
Scale: ¾" = 1'-0"



VERTICAL TAPER
Scale: ¾" = 1'-0"



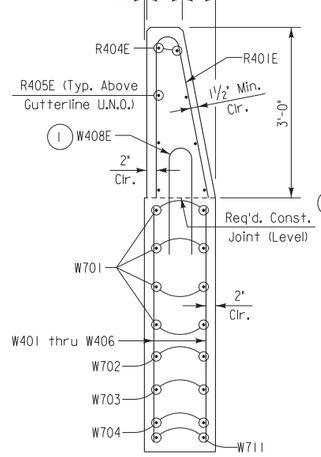
DETAIL A
Scale: ¾" = 1'-0"

(1) See "DETAIL A" for placement of Bars W408E.

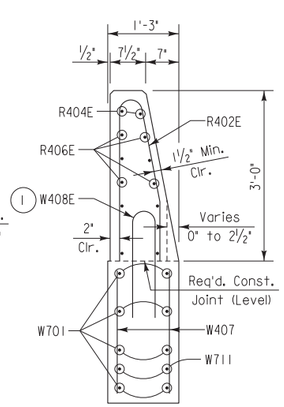
(2) See end bent details on Dwg. Nos. 65272-65273 for reinforcing and additional details.

LEGEND

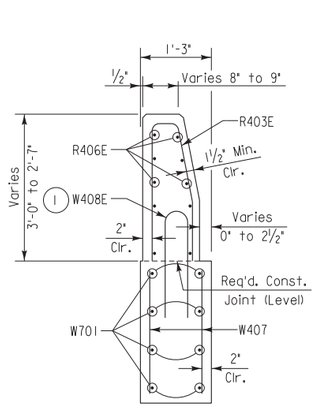
EF = Each Face



SECTION X-X
Scale: ¾" = 1'-0"



SECTION Y-Y
Scale: ¾" = 1'-0"



SECTION Z-Z
Scale: ¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS
WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x5_a3.dgn
SCALE: ¾" = 1'-0"

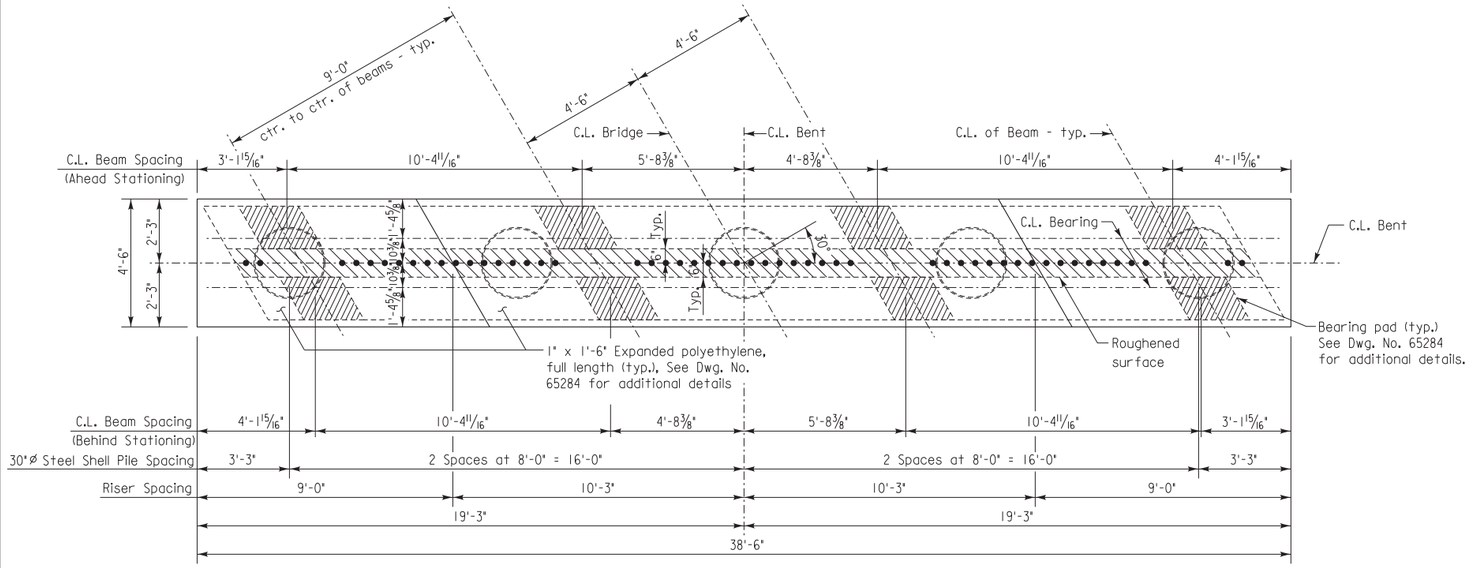
BRIDGE NO. 07524

DRAWING NO. 65274

PRINT DATE: 7/29/2022

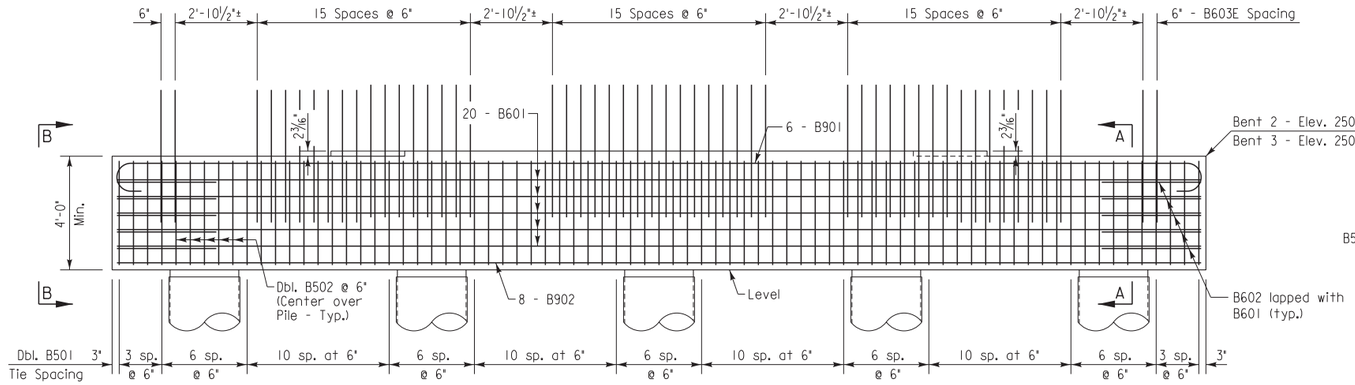
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	186	311
(1)	07524 - INT. BENTS - 65275			



PLAN - BENTS 2 & 3

3/8" = 1'-0"



ELEVATION - BENTS 2 & 3

LOOKING AHEAD

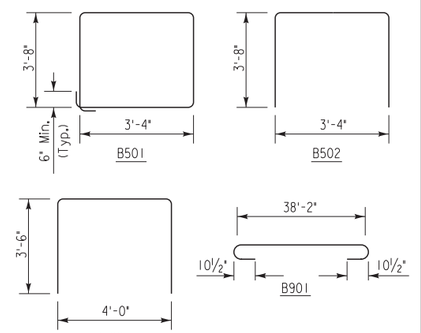
3/8" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B501	104	14'-5"	2 1/2"
B502	50	10'-5"	2 1/2"
B601	20	38'-2"	Str.
B602	10	10'-9"	4 1/2"
B603E	52	4'-8"	Str.
B901	6	40'-9"	9 1/2"
B902	8	38'-2"	Str.

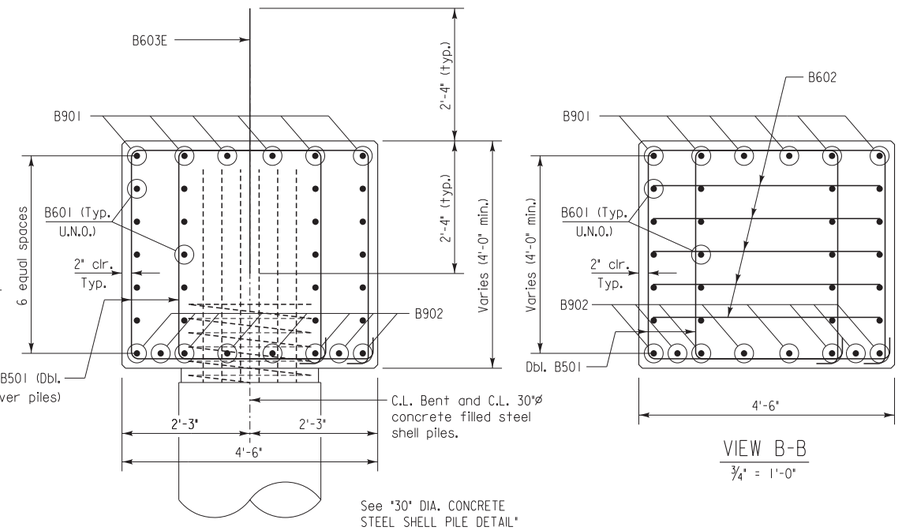
BENDING DIAGRAMS

Dimensions are out to out of bars.



Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.



SECTION A-A

3/4" = 1'-0"

See "30" DIA. CONCRETE STEEL SHELL PILE DETAIL" On Dwg. No. 65276.

VIEW B-B

3/4" = 1'-0"

LEGEND

EF = Each Face

U.N.O. = Unless Noted Otherwise

CONCRETE:

Unless otherwise noted, concrete in caps 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 shall be chamfered 3/4" unless otherwise noted.

REINFORCING STEEL:

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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020

CHECKED BY: BKC DATE: NOV 2022

DESIGNED BY: KJK/LAC DATE: NOV 2020

FILENAME: b101054x5_b1.dgn

SCALE: 3/8" = 1'-0"

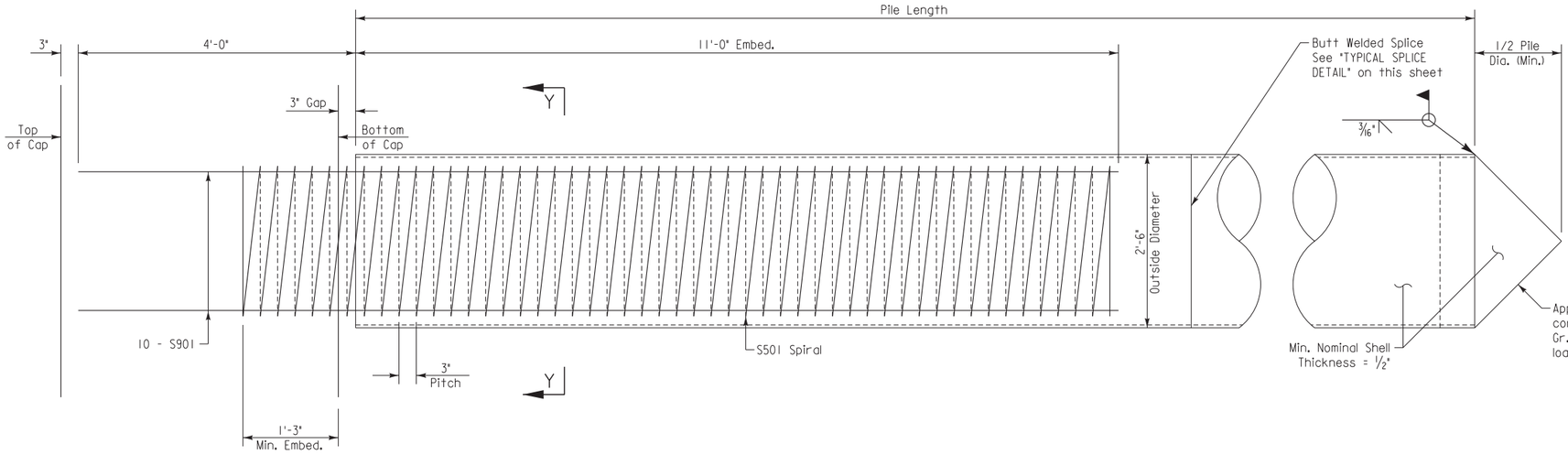
BRIDGE NO. 07524

DRAWING NO. 65275

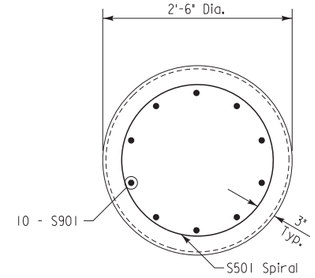
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	187	311

(1) 07524 - 30" DIA. STEEL SHELL PILES - 65276

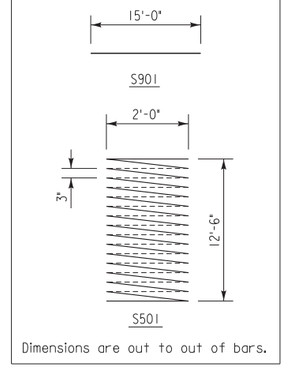


NOTE:
Steel pile tip will not be paid for directly but shall be subsidiary to the item "Steel Shell Piling".

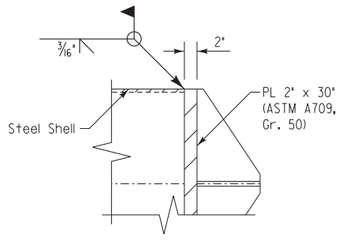


SECTION Y-Y
1" = 1'-0"

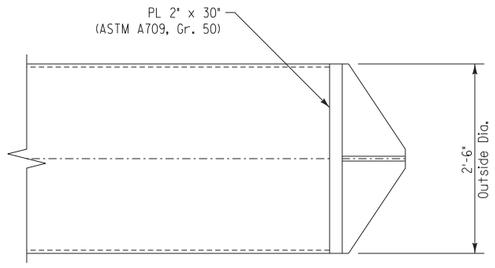
BAR BENDING DIAGRAMS



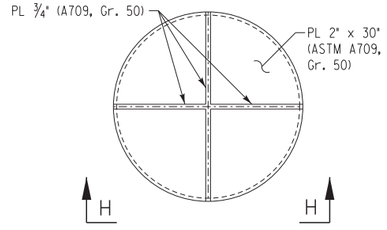
Dimensions are out to out of bars.



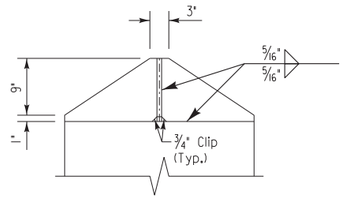
PART SECTION



ELEVATION

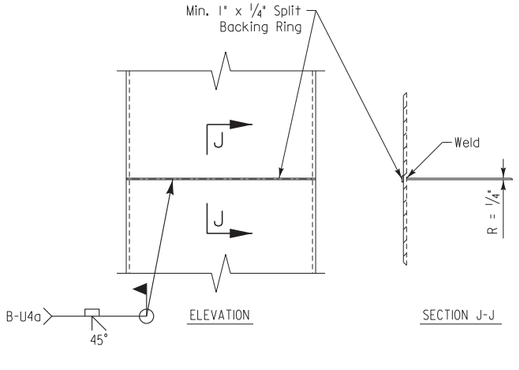


VIEW H-H



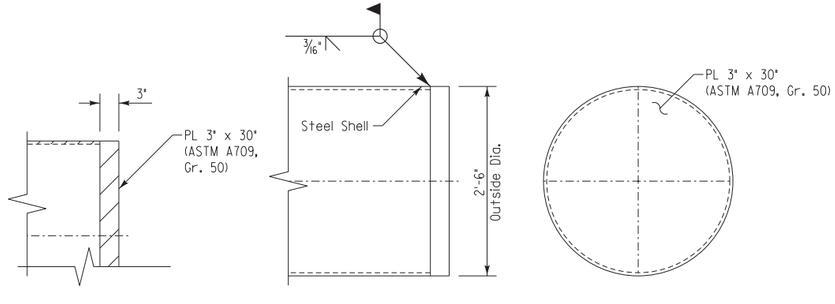
ALTERNATE VANED TIP DETAIL FOR 30" PILE

1" = 1'-0"



TYPICAL SPLICE DETAIL

1" = 1'-0"



PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL FOR 30" PILE

1" = 1'-0"

GENERAL NOTES - 30" CONCRETE FILLED STEEL SHELL PILES

Steel shells shall conform to ASTM A252, Grade 3 (Fy = 45,000 psi)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi and shall be poured in the dry.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

Steel Shell piling shall be encased with concrete in accordance with Std. Dwg. No. 55021 to the elevation shown on the Bridge Layout. Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

Concrete, structural steel, and reinforcing steel shall not be paid for directly, but shall be considered subsidiary to the item "30 DIA. STEEL SHELL PILING".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF 30" DIA. STEEL SHELL PILES WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

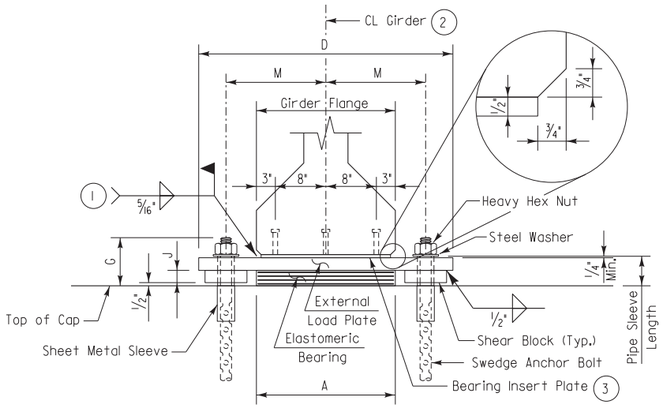
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: LAC DATE: NOV 2020
FILENAME: b101054x5_c1.dgn
SCALE: 1/2" = 1'-0"

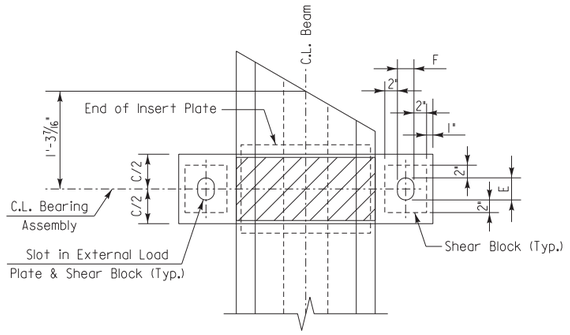
BRIDGE NO. 07524 DRAWING NO. 65276

PRINT DATE: 7/29/2022

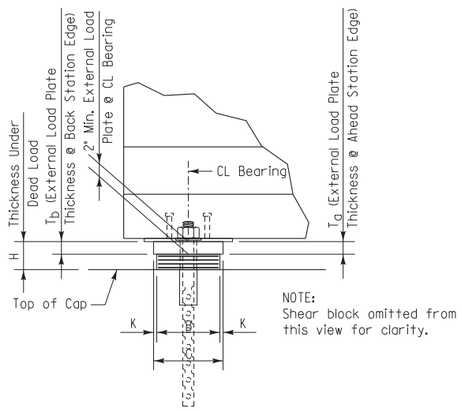
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	188	311
				(1)	07524 - ELASTOMERIC BEARINGS - 65277			



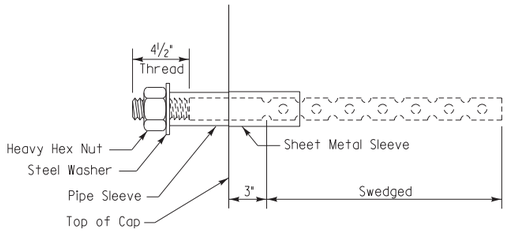
FRONT VIEW AT ABUTMENT



PLAN VIEW AT ABUTMENT



SIDE VIEW AT ABUTMENT



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

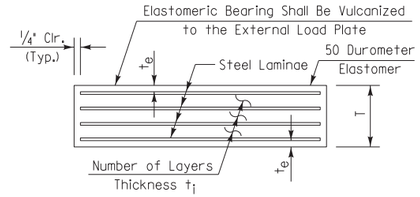
If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. 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 Beam Spans (M270, Gr. 50 W)".

(1) Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearing 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.

Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) Centerline elastomeric pad shall be aligned with centerline girder.

(3) Bearing insert plate (A709, Gr. 50W) & studs shall be considered subsidiary to the item "PRESTRESSED CONCRETE GIRDERS (TYPE III)".



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

GENERAL NOTES:

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

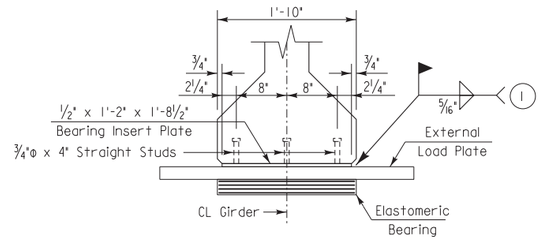
External load plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

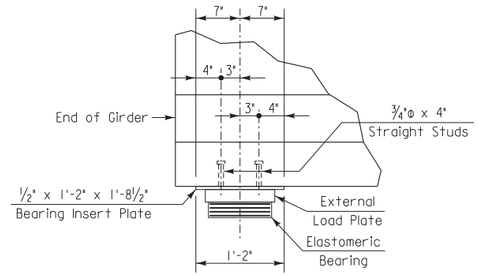
Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers, Nuts and External Load Plates will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.



FRONT VIEW



SIDE VIEW

BEARING INSERT PLATE & STUD DETAIL

Location		Bearing Type	No. Of Bearings Each Bent	*Maximum Design Load (Kips)	Elastomeric Pad								External Load Plate								Anchor Bolt				
																					Anchor Bolt		Pipe Sleeve Size	Sheet Metal Sleeve Size	Steel Washer
Bent No.	Girder No.				G	H	A	B	N	t_i	t_e	No. & Thickness Of Steel Laminae	T	C	D	E	F	J	K	M	T_a	T_b	(Dia. x L)	Grade	(Dia. x L)	(Dia. x L)	Size (O.D.)
1	All	Exp.	4	193	7 5/8"	4 7/16"	22"	10 1/2"	3	1/2"	1/4"	4 @ 12 ga.	2 7/16"	11 1/2"	40 1/4"	3 1/2"	2 5/8"	1 15/16"	1/2"	15 13/16"	2"	2"	1 3/4" x 29"	55	2" x 4 11/16"	4" x 8"	3 3/8"
4	All	Exp.	4	193	7 5/8"	4 7/16"	22"	10 1/2"	3	1/2"	1/4"	4 @ 12 ga.	2 7/16"	11 1/2"	40 1/4"	3 1/2"	2 5/8"	1 15/16"	1/2"	15 13/16"	2"	2"	1 3/4" x 29"	55	2" x 4 11/16"	4" x 8"	3 3/8"

*Maximum Design Load = LRFD Service I Limit State

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

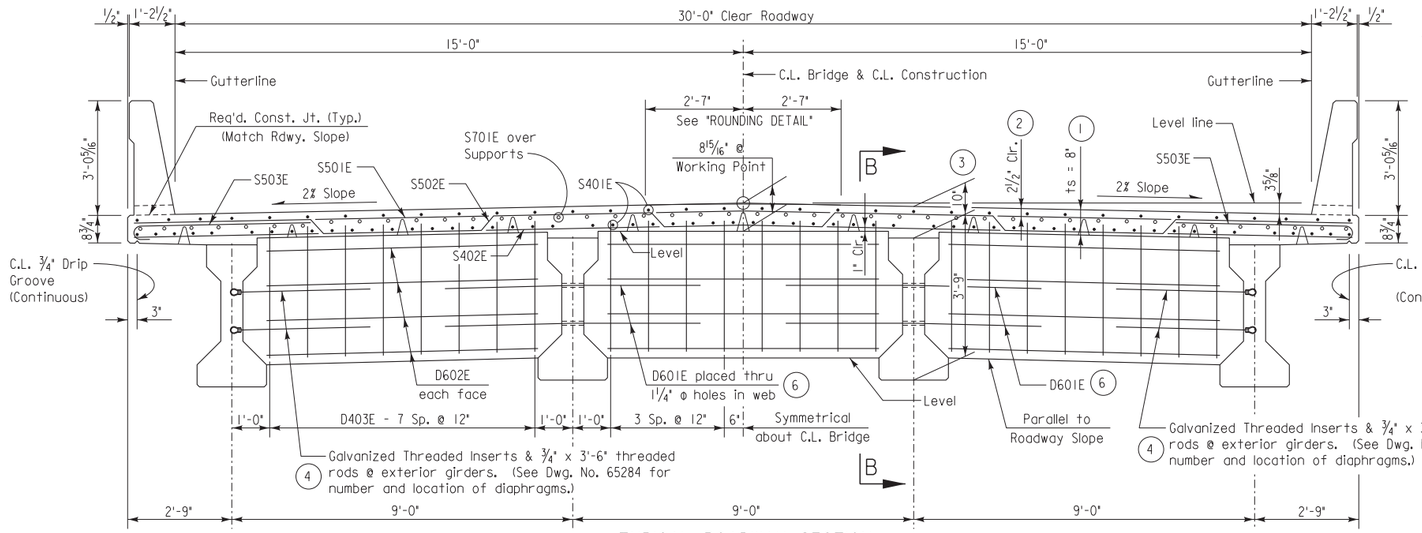
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_e1.dgn
SCALE: 1" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65277

PRINT DATE: 7/29/2022

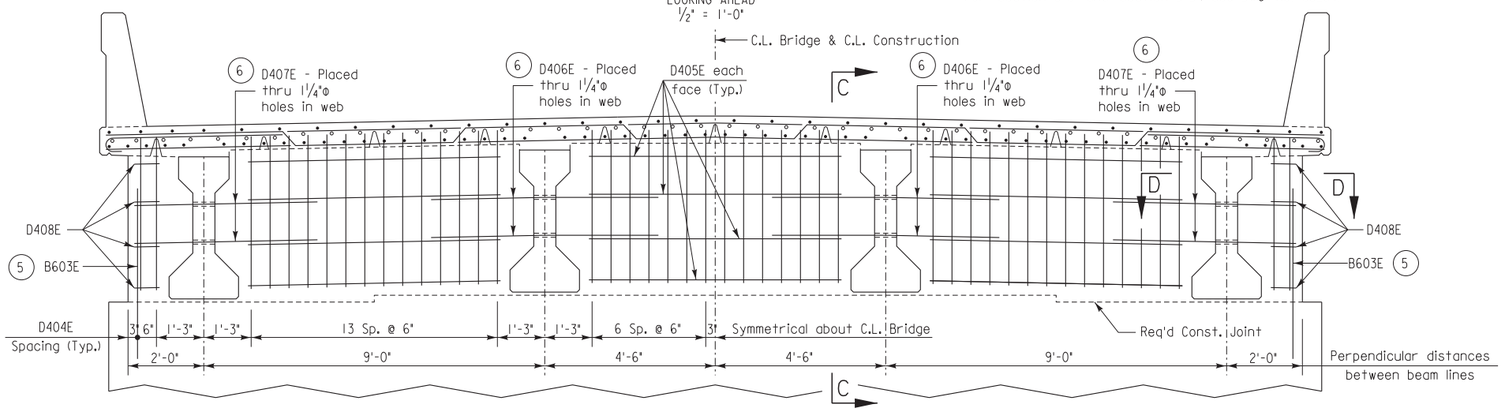
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	189	311
				(1)	07524 - 224.5' UNIT - 65278			



TYPICAL ROADWAY SECTION

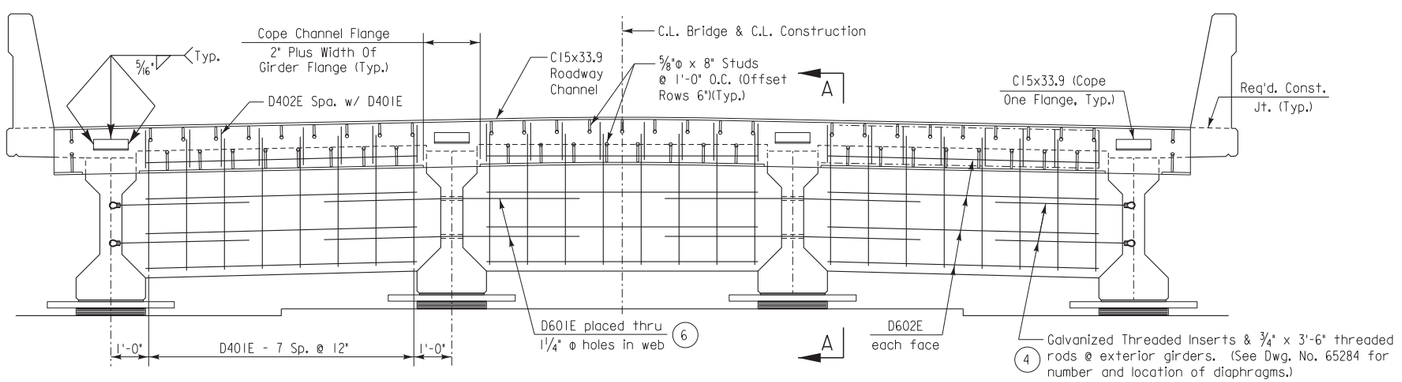
LOOKING AHEAD
½" = 1'-0"

For "Section A-A" and "Section B-B", see Dwg. No. 65280.
For "Section C-C" and "Section D-D", see Dwg. No. 65284.



TYPICAL SECTION AT INTERMEDIATE BENTS

LOOKING AHEAD - DIAPHRAGM IS SKEWED
½" = 1'-0"



TYPICAL SECTION (END OF UNIT AT JOINT)

LOOKING AHEAD - DIAPHRAGM IS SKEWED
½" = 1'-0"

SLAB REINFORCING

LONGITUDINAL: S401E as shown (12" max.)
S701E as shown

TRANSVERSE: S502E @ 12" o.c. bent up over girders
S501E @ 12" o.c. in top — Alternate
S402E @ 12" o.c. in bottom
S503E @ 12" bundled with #5 bars at both gutterlines

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or hi-chairs with full length lower runners directly on removable deck forms will not be allowed.

At the Contractor's option, two straight #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

(1) See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65284.

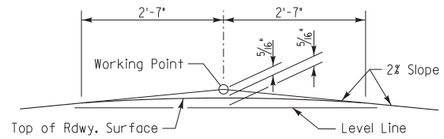
(2) Tolerance: Minus = ¼"; Plus equal the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65284.

(3) This dimension taken at C.L. Bearing & C.L. Girder.

(4) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. ¾" Φ Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232 Class C. These items will not be paid for directly, but shall be considered subsidiary to the Item "Prestressed Concrete Girders (Type III)".

(5) Only outer limits of bars shown for clarity. For additional details of B603E bars, see bent details on Dwg. No. 65275 for spacing of bars.

(6) Bars shall be centered about the girders.



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 9
DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

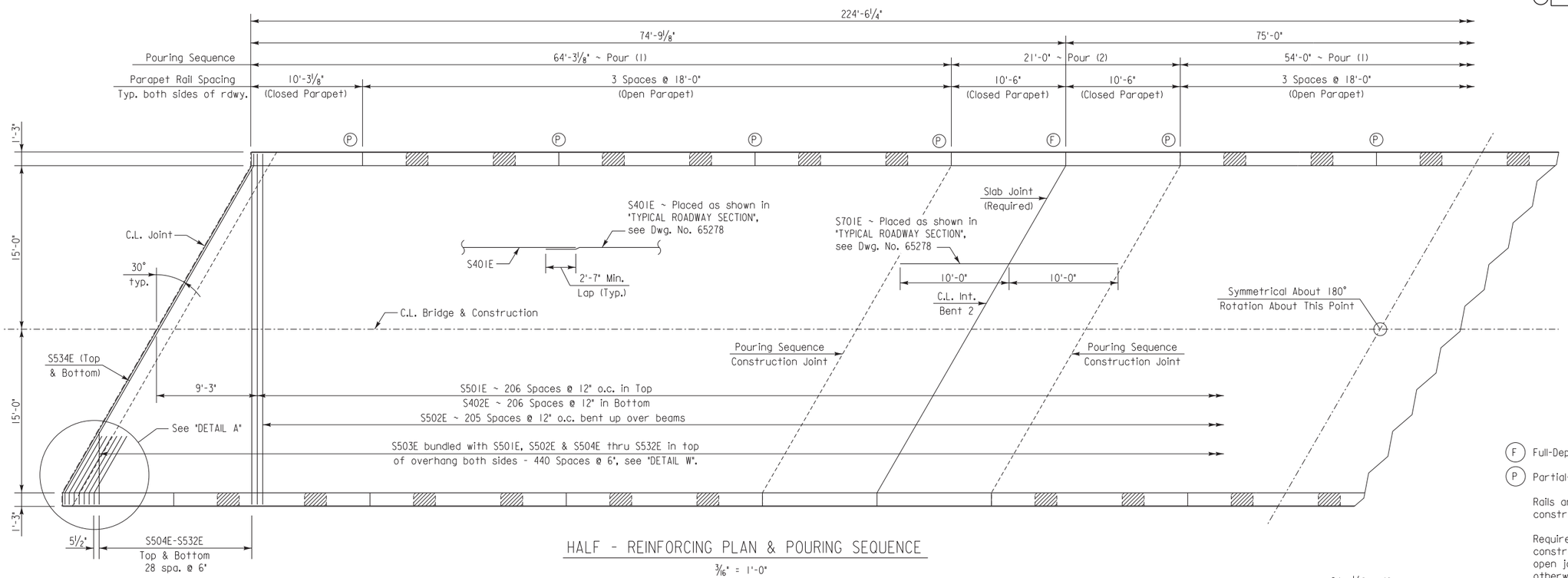
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s1.dgn
SCALE: ½" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65278

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	190	311
(1)	07524 - 224.5' UNIT - 65279			



HALF - REINFORCING PLAN & POURING SEQUENCE

3/16" = 1'-0"

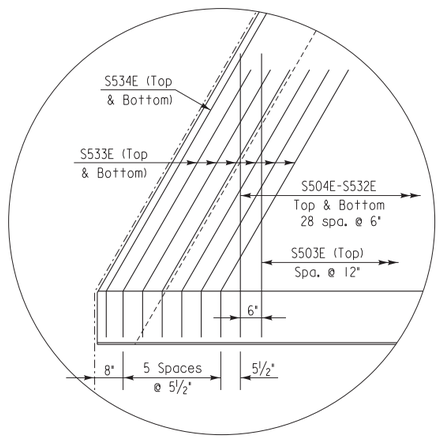
(F) Full-Depth Parapet Joint at this location

(P) Partial-Depth Parapet Joint at this location

Rails and wings are included in span construction and included in span quantities.

Required slab joints and pouring sequence construction joints shall align with parapet open joints at the gutterline, unless noted otherwise.

For Bar list, see Dwg. No. 65285.



DETAIL A

No Scale

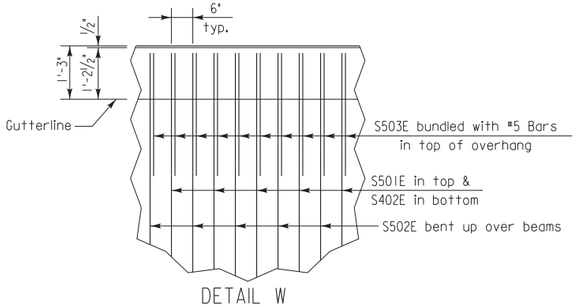
Slab Pouring Sequence Notes:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. No deviations from the pouring sequence shown will be allowed.

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 diaphragms shall not be poured prior to 90 days after release of strands for the girders.

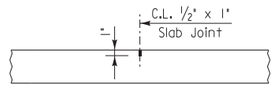
Concrete diaphragms at end bents and intermediate bents shall be poured monolithically with the deck above the diaphragm. Concrete diaphragms at mid-span shall be placed no less than 48 hours prior to deck slab pour.

Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.



DETAIL W

No Scale



Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod shall not be installed. Joint Sealer shall be measured and paid for as Class S(AE) Concrete - Bridge. Slab joints shall extend to the outside edge of the bridge deck and shall align with open joints at the front face of parapet, unless noted otherwise. Slab joint 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 as all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

SHEET 2 OF 9
DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

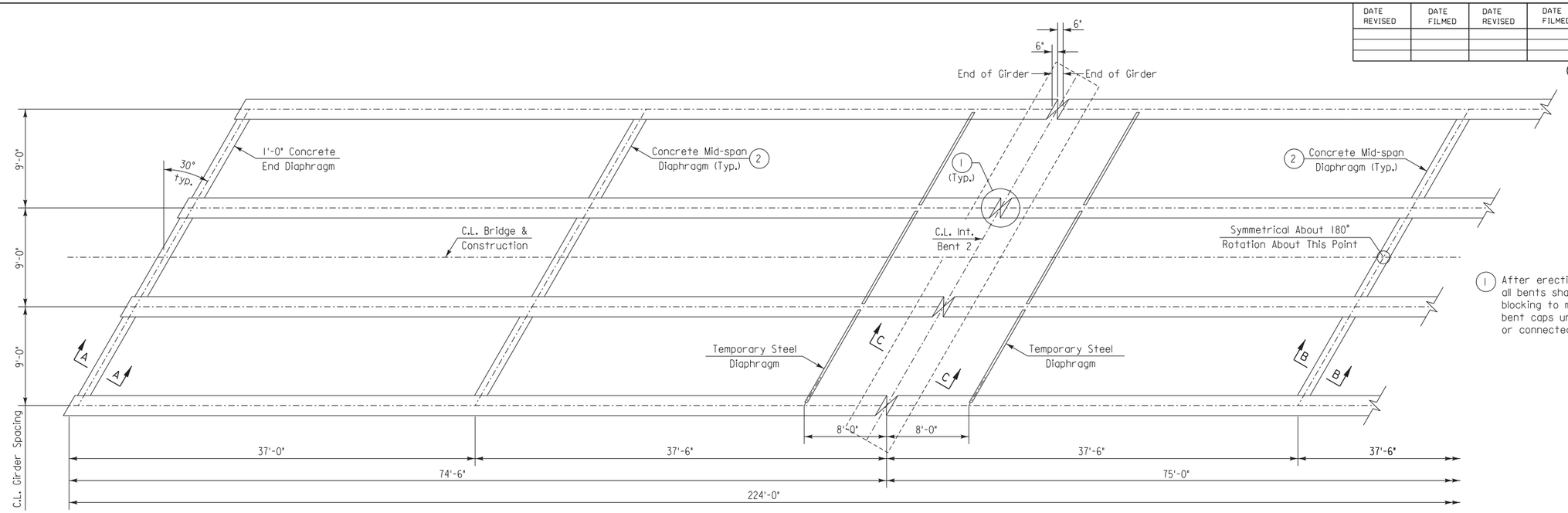
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s2.dgn
SCALE: 3/16" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65279

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	191	311
(1) 07524 - 224.5' UNIT - 65280				

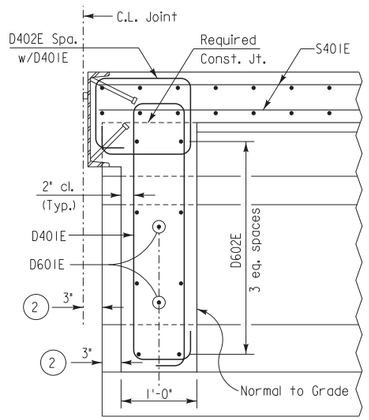


HALF FRAMING PLAN

3/16" = 1'-0"

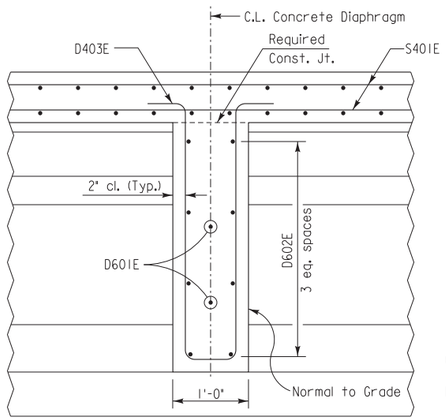
For "Section C-C", see Dwg. No. 65284.

(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until all diaphragms are poured or connected.



SECTION A-A

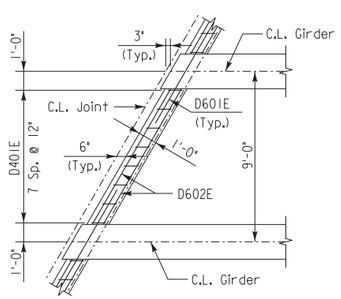
1" = 1'-0"



SECTION B-B

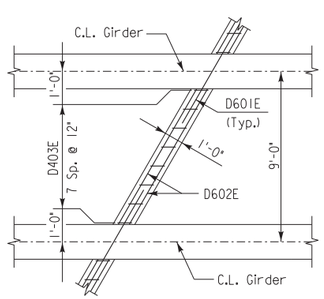
1" = 1'-0"

(2) Measured along C.L. Girder



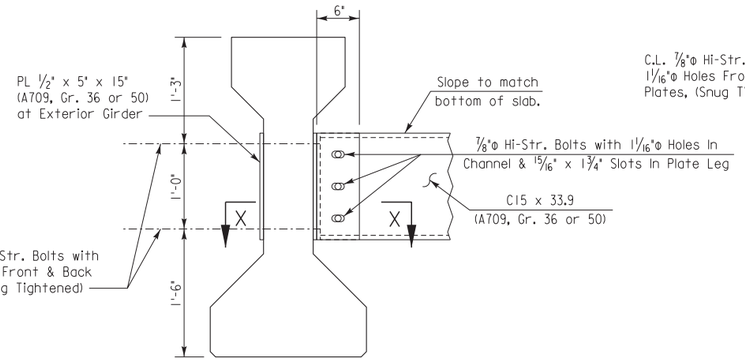
END DIAPHRAGM PLAN

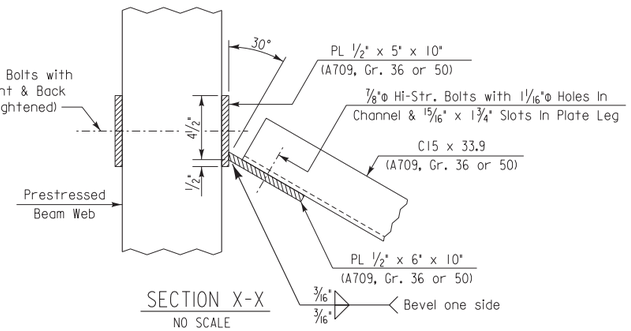
1/4" = 1'-0"



INTERMEDIATE DIAPHRAGM PLAN

1/4" = 1'-0"





SECTION X-X

NO SCALE

Steel diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". Temporary Steel Diaphragms shall be removed upon completion of concrete set in the end bent and intermediate bent diaphragms. After they are removed, holes in webs shall be filled with a QPL approved non-shrink grout and the diaphragms and all connecting components shall remain the property of the Contractor. Temporary Diaphragm considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

Permanent Steel Diaphragms may be used in lieu of a Concrete Diaphragm at midspan. Payment for permanent steel diaphragm and components will be based on concrete diaphragms.

All components of Permanent Steel Diaphragms shall be galvanized in accordance with Section 807.

A standard washer shall be supplied under both the nut and the head of the 7/8" dia. H.S. bolts. An additional plate washer shall cover the angle slots.

DETAILS OF STEEL DIAPHRAGM

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

SHEET 3 OF 9

DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

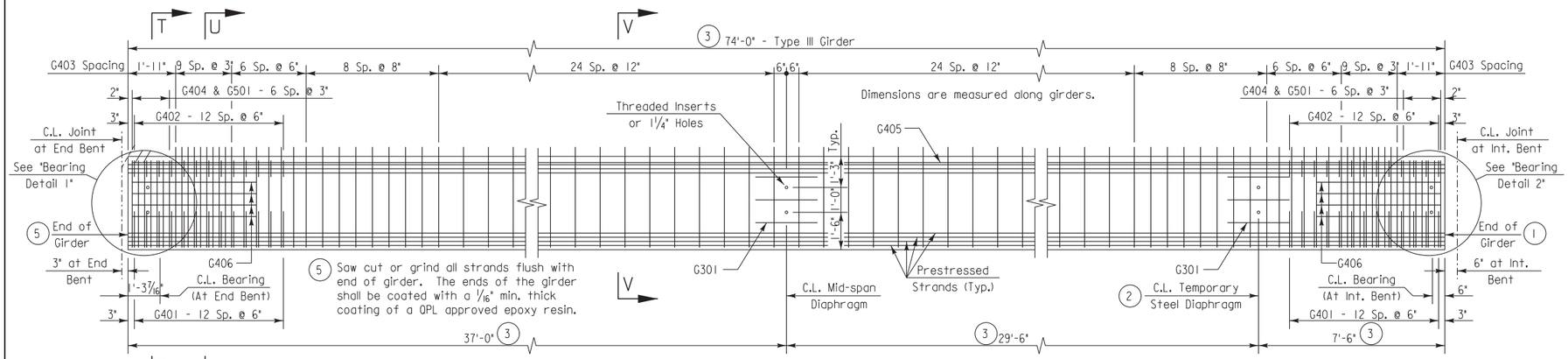
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x5_s3.dgn
SCALE: 3/16" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65280

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	192	311
				(1)	07524 - 224.5' UNIT - 65281			



(5) Saw cut or grind all strands flush with end of girder. The ends of the girder shall be coated with a 1/16" min. thick coating of a QPL approved epoxy resin.

TYPICAL GIRDER ELEVATION (AASHTO TYPE III) (END SPAN GIRDER)

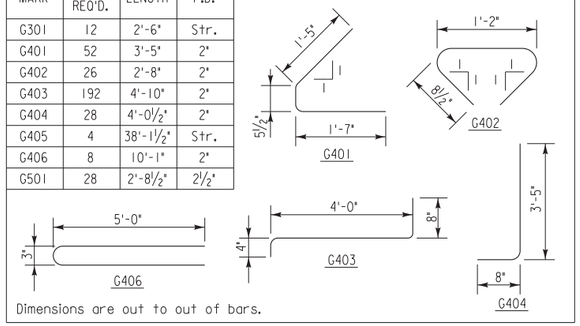
(2) Holes and inserts shown are for diaphragms. See Dwg. No. 65286 for additional details.

(3) This dimension shall be increased for effects of vertical profile on girder length to maintain 12" between ends of girders.

BAR LIST - PER GIRDER

MARK	NO. REQ'D.	LENGTH	P.D.
G301	12	2'-6"	Str.
G401	52	3'-5"	2"
G402	26	2'-8"	2"
G403	192	4'-10"	2"
G404	28	4'-0 1/2"	2"
G405	4	38'-1 1/2"	Str.
G406	8	10'-1"	2"
G501	28	2'-8 1/2"	2 1/2"

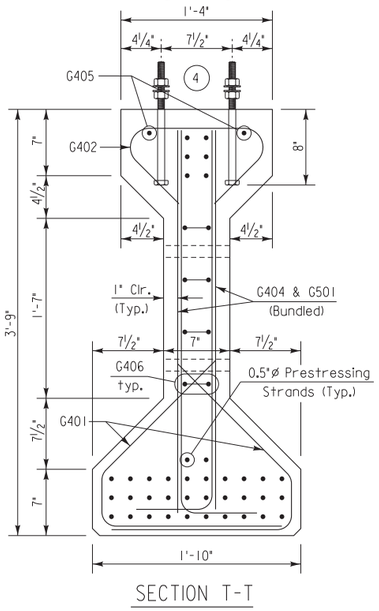
BENDING DIAGRAMS



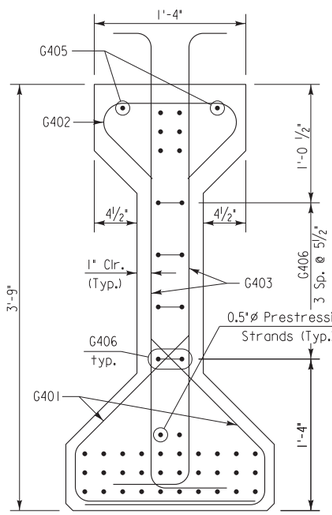
Dimensions are out to out of bars.

Note: All bars in BAR LIST shall be subsidiary to the item "74'-0" Prestressed Concrete Girders (Type III)". See span drawings for bar list of span reinforcing.

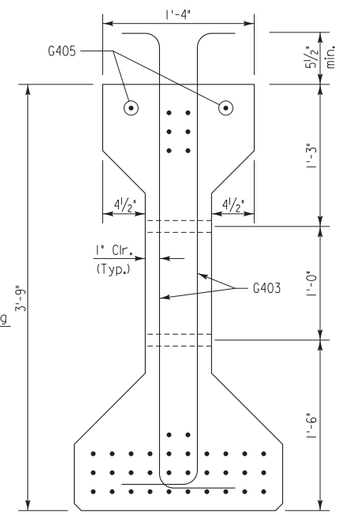
At the Contractor's option, the two G401 bars may be furnished as one bar.



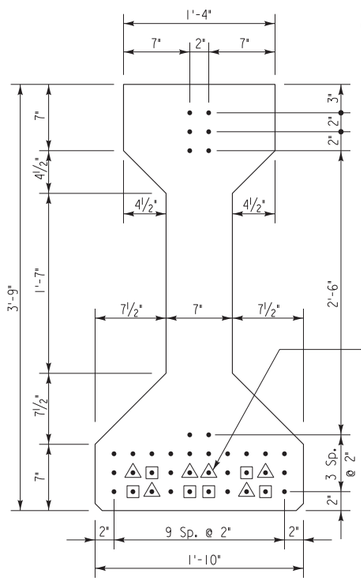
SECTION T-T



SECTION U-U



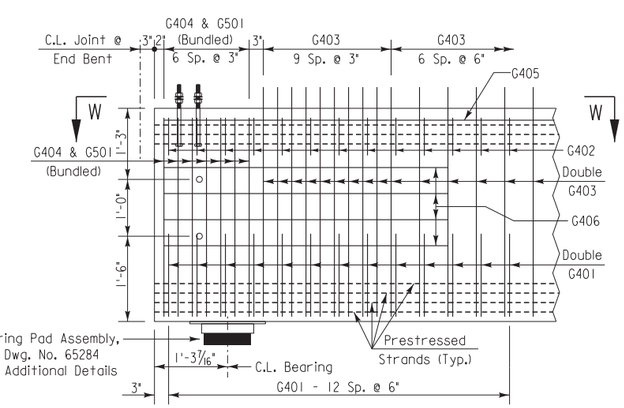
SECTION V-V



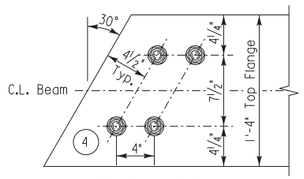
STRAND ARRANGEMENTS

(1) Saw and shop bend 6 bottom prestressing strands from each end of the girder into diaphragms as shown. Saw any remaining strands flush with the end of girder. See "Strand Arrangements" detail for alternating patterns.

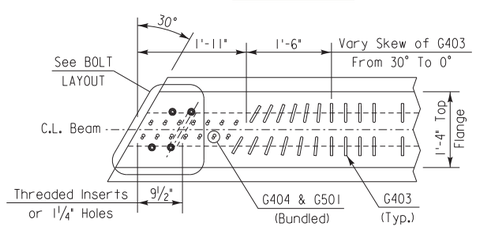
At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands shall not be changed.



BEARING DETAIL 1



BOLT LAYOUT



SECTION W-W

(4) 3/4"ø x 13" High Strength bolts shall be provided at girder ends adjacent to expansion joint. See Dwg. No. 65286 for additional information.

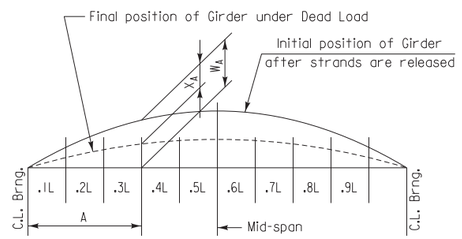
CAMBER NOTES

The camber and dead load deflection values shown are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders.
B. Estimated age of prestressed concrete girders at time of erection.
C. Profile of each girder under self weight.
D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if required.

Span Pt.	Inches	
	W_A	X_A
0.00	0.000"	0.000"
0.10	0.749"	0.436"
0.20	1.332"	0.775"
0.30	1.748"	1.017"
0.40	1.998"	1.163"
0.50	2.081"	1.211"
0.60	1.998"	1.163"
0.70	1.748"	1.017"
0.80	1.332"	0.775"
0.90	0.749"	0.436"
1.00	0.000"	0.000"



'W_A' is camber of Girder (Prestress + Dead Load of Girder @ 90 days after release)

'X_A' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

TABLE OF GIRDER VARIABLES

CAMBER & DEFLECTIONS (INCHES)

Note: 'W_A' & 'X_A' are based on the required minimum concrete strength and may vary from the dimension shown. 'W_A' & 'X_A' shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65284 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 4 OF 9
DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT
WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

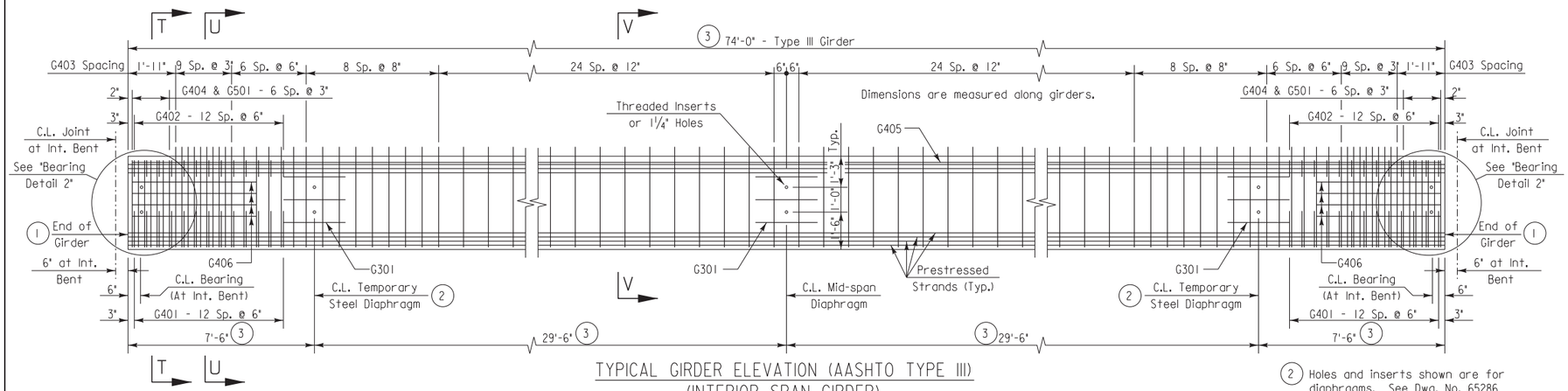
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s4.dgn
SCALE: None

BRIDGE NO. 07524 DRAWING NO. 65281

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	193	311

(1) 07524 - 224.5' UNIT - 65282



TYPICAL GIRDER ELEVATION (AASHTO TYPE III) (INTERIOR SPAN GIRDER)

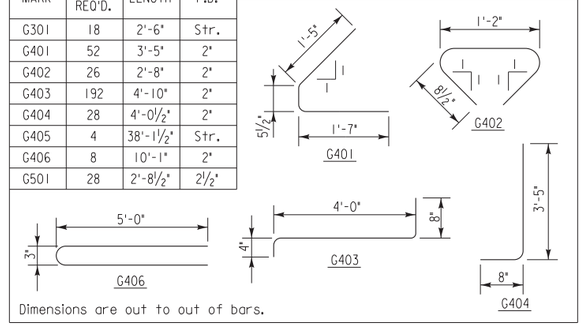
(2) Holes and inserts shown are for diaphragms. See Dwg. No. 65286 for additional details.

(3) This dimension shall be increased for effects of vertical profile on girder length to maintain 12" between ends of girders.

BAR LIST - PER GIRDER

MARK	NO. REQ'D.	LENGTH	P.D.
G301	18	2'-6"	Str.
G401	52	3'-5"	2"
G402	26	2'-8"	2"
G403	192	4'-10"	2"
G404	28	4'-0½"	2"
G405	4	38'-1½"	Str.
G406	8	10'-1"	2"
G501	28	2'-8½"	2½"

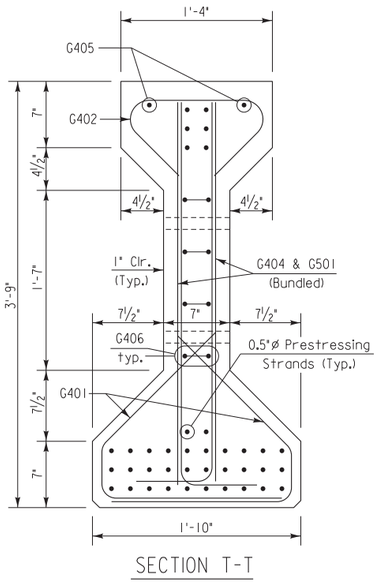
BENDING DIAGRAMS



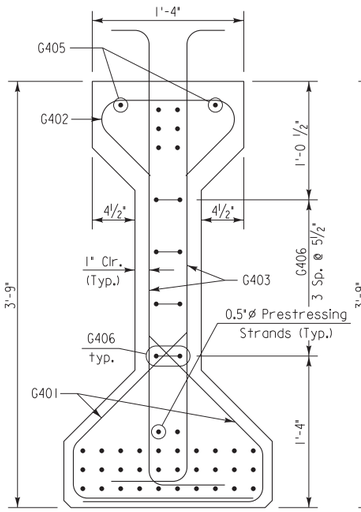
Dimensions are out to out of bars.

Note: All bars in BAR LIST shall be subsidiary to the item "74'-0" Prestressed Concrete Girders (Type III)". See span drawings for bar list of span reinforcing.

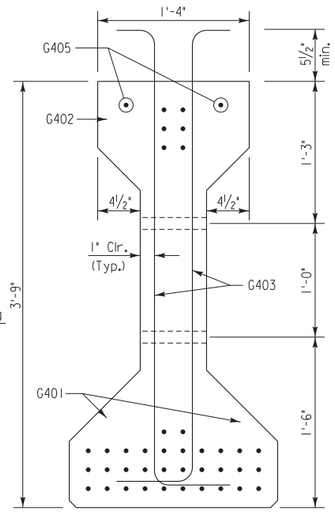
At the Contractor's option, the two G401 bars may be furnished as one bar.



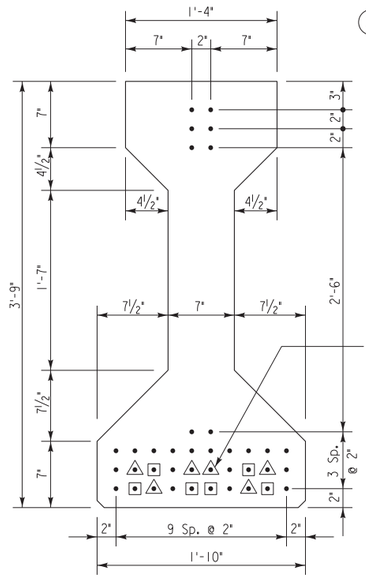
SECTION T-T



SECTION U-U



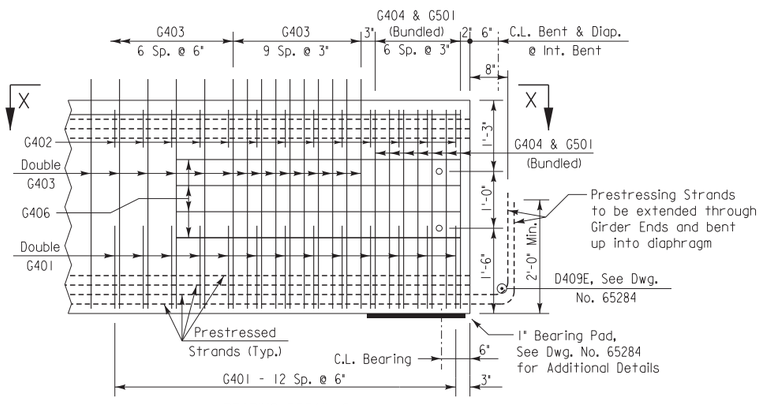
SECTION V-V



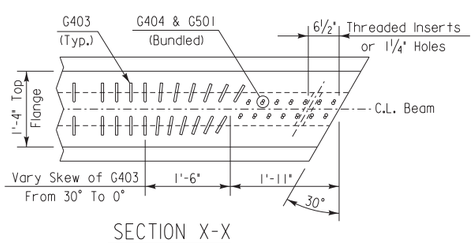
STRAND ARRANGEMENTS

(1) Saw and shop bend 6 bottom prestressing strands from each end of the girder into diaphragms as shown. Saw any remaining strands flush with the end of girder. See "Strand Arrangements" detail for alternating patterns.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands shall not be changed.



BEARING DETAIL 2



SECTION X-X

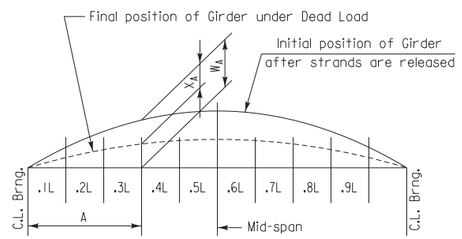
CAMBER NOTES

The camber and dead load deflection values shown are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders.
B. Estimated age of prestressed concrete girders at time of erection.
C. Profile of each girder under self weight.
D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if required.

Span Pt.	Inches	
	W_A	X_A
0.00	0.000"	0.000"
0.10	0.749"	0.436"
0.20	1.332"	0.775"
0.30	1.748"	1.017"
0.40	1.998"	1.163"
0.50	2.081"	1.211"
0.60	1.998"	1.163"
0.70	1.748"	1.017"
0.80	1.332"	0.775"
0.90	0.749"	0.436"
1.00	0.000"	0.000"



'W_A' is camber of Girder (Prestress + Dead Load of Girder @ 90 days after release)

'X_A' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

TABLE OF GIRDER VARIABLES

CAMBER & DEFLECTIONS (INCHES)

Note: 'W_A' & 'X_A' are based on the required minimum concrete strength and may vary from the dimension shown. 'W_A' & 'X_A' shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65284 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 5 OF 9

DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

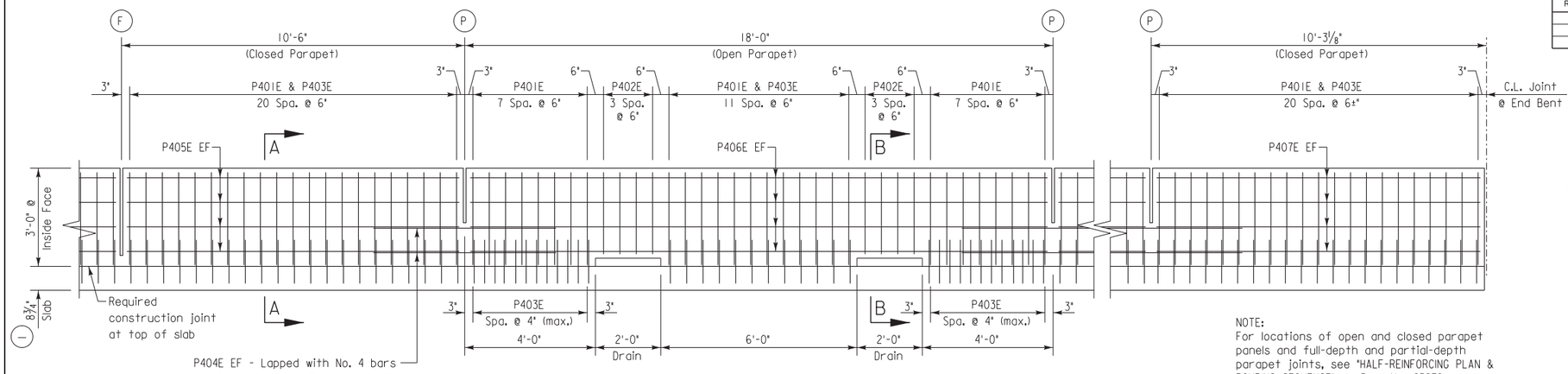
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: NOV 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s5.dgn
SCALE: None

BRIDGE NO. 07524 DRAWING NO. 65282

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	194	311
				(1)		07524 - 224.5' UNIT - 65283		



P404E EF - Lapped with No. 4 bars as shown (typ. at all partial-depth parapet joints)

(1) Measured at edge of deck

DETAILS OF PARAPET RAIL

½" = 1'-0"

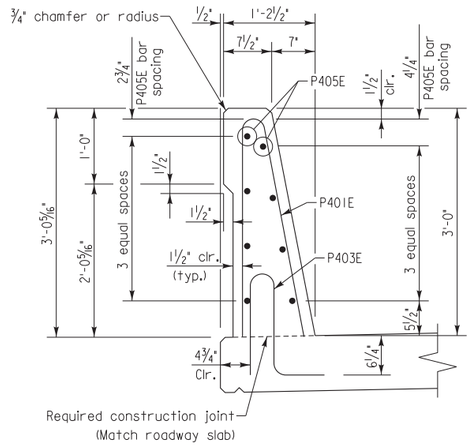
LEGEND

EF = Each Face

NOTE:
For locations of open and closed parapet panels and full-depth and partial-depth parapet joints, see "HALF-REINFORCING PLAN & POURING SEQUENCE" on Dwg. No. 65279.

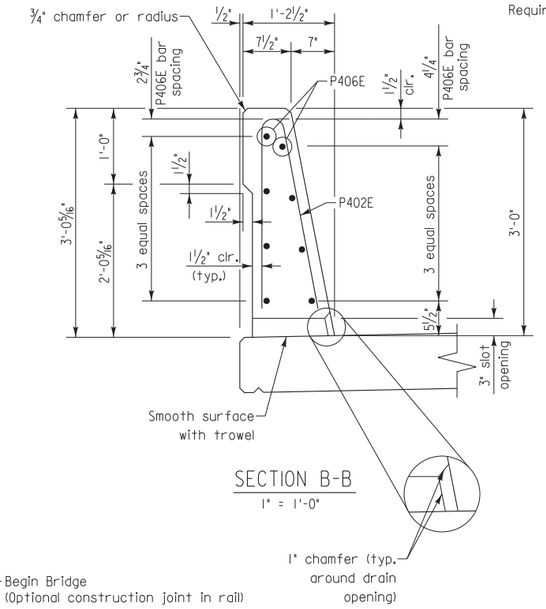
(F) C.L. Full-Depth Parapet Joint (¼"-1" max.) Stop 4" from Top of Slab.

(P) C.L. Partial-Depth Parapet Joint (¼"-1" max.) Stop 1-4" from Top of Slab.



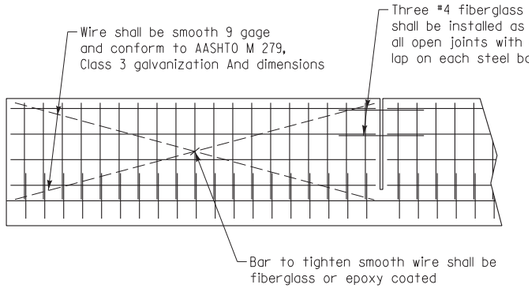
SECTION A-A

1" = 1'-0"

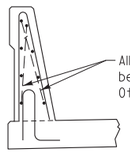


SECTION B-B

1" = 1'-0"



NOTE:
For actual placement of reinforcing steel, see "DETAILS OF PARAPET RAIL".

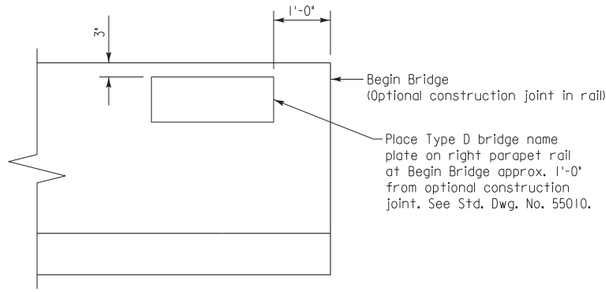


NOTE:
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the groove pattern.

NOTE:
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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale



VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face of Parapet)
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

PRINT DATE: 7/29/2022

SHEET 6 OF 9
DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_r1.dgn
SCALE: ½" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65283

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	195	311
				(1)		07524 - 224.5' UNIT - 65284		

GENERAL NOTES

CONCRETE:

All concrete, except for prestressed girders, 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 shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removal deck forming is used and are the basis for measurement of Class S (AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

The concrete deck (roadway surface) 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. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. 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 ASTM A709 as specified in the plans. Unless otherwise noted, Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W 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.

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. All welding shall conform to Subsection 807.26.

PRESTRESSED GIRDER:

Prestressing steel shall be 0.5" ϕ Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type III as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.5" ϕ strand shall be 30,980 lbs. except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

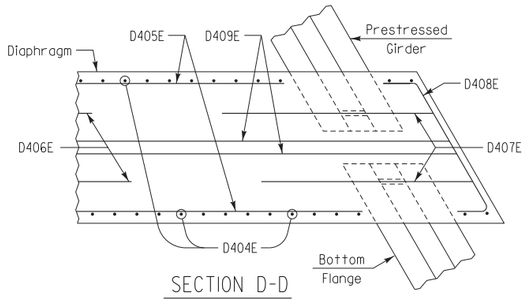
The tops of the girder shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding to the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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.

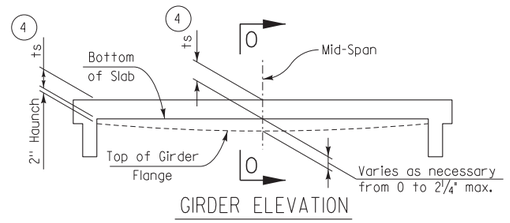


SECTION D-D

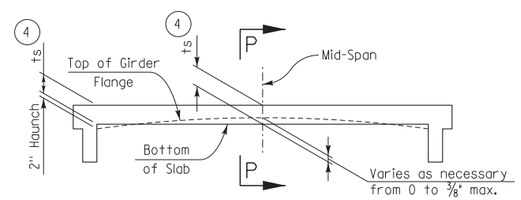
(1) For additional details, see End Bent Details, Dwg. No. 65272.

(2) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S Concrete-Bridge". Estimated pad deflection under dead load is ¼". See PLAN OF 1" THICK UNREINFORCED BEARING PAD below.

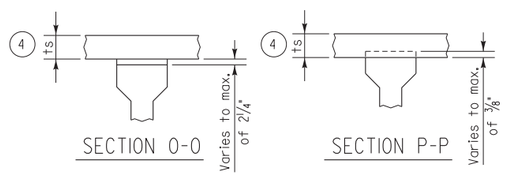
(3) Use closed-cell expanded polyethylene with a density of at least 2.1 lb/cf as determined by ASTM D3575 and with a minimum compressive stress of 9 psi at 25 percent deflection as determined by ASTM D3575.



GIRDER ELEVATION



GIRDER ELEVATION



SECTION O-O SECTION P-P

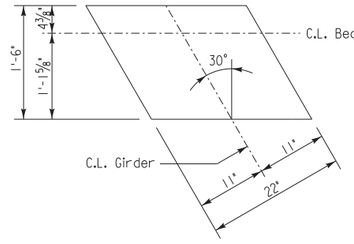
NOTES

ts = slab thickness as shown on superstructure details - See "Typical Roadway Section", Dwg. No. 65278.

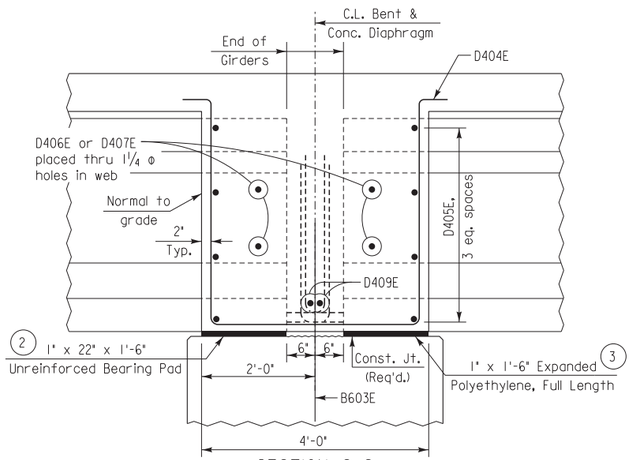
(4) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

"Girder Elevation" sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ¾" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



PLAN OF 1" THICK (2) UNREINFORCED BEARING PAD



SECTION C-C
Intermediate Bent Diaphragms

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 7 OF 9

DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT
WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s6.dgn
SCALE: 1" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65284

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	196	311

(1) 07524 - 224.5' UNIT - 65285

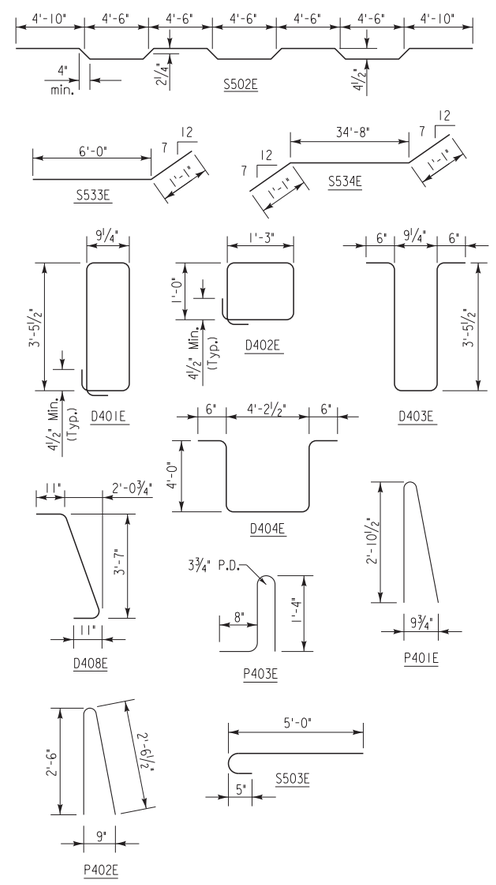
BAR LIST

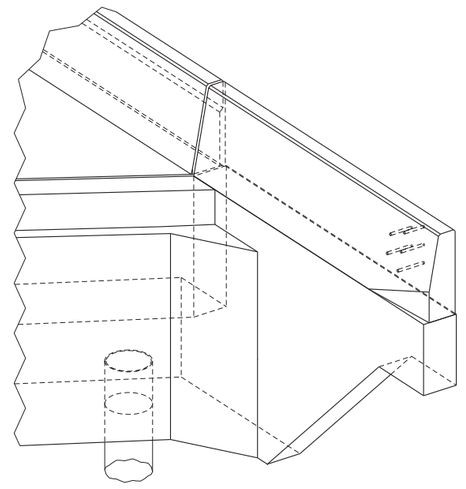
MARK	NO. REQ'D.	LENGTH	P.D.
S401E	552	39'-6"	Str.
S402E	207	32'-2"	Str.
S501E	207	32'-2"	Str.
S502E	206	33'-0"	3"
S503E	882	5'-6½"	3"
S504E	4	30'-9"	Str.
S505E	4	29'-11"	Str.
S506E	4	29'-1"	Str.
S507E	4	28'-2"	Str.
S508E	4	27'-4"	Str.
S509E	4	26'-5"	Str.
S510E	4	25'-7"	Str.
S511E	4	24'-9"	Str.
S512E	4	23'-10"	Str.
S513E	4	23'-0"	Str.
S514E	4	22'-2"	Str.
S515E	4	21'-3"	Str.
S516E	4	20'-5"	Str.
S517E	4	19'-6"	Str.
S518E	4	18'-8"	Str.
S519E	4	17'-9"	Str.
S520E	4	16'-11"	Str.
S521E	4	16'-1"	Str.
S522E	4	15'-2"	Str.
S523E	4	14'-4"	Str.
S524E	4	13'-5"	Str.
S525E	4	12'-7"	Str.
S526E	4	11'-9"	Str.
S527E	4	10'-10"	Str.
S528E	4	10'-0"	Str.
S529E	4	9'-2"	Str.
S530E	4	8'-3"	Str.
S531E	4	7'-5"	Str.
S532E	4	6'-6"	Str.
S533E	24	7'-1"	3"
S534E	4	36'-10"	3"
S701E	88	20'-0"	Str.
D401E	48	8'-9"	2"
D402E	48	4'-10"	2"
D403E	72	8'-5"	2"
D404E	92	13'-0"	2"
D405E	48	7'-10"	Str.
D406E	16	7'-0"	Str.
D407E	16	5'-7"	Str.
D408E	16	5'-9"	2"
D409E	4	35'-5"	Str.
D601E	20	6'-0"	Str.
D602E	120	8'-3"	Str.
P401E	756	5'-11"	2½"
P402E	144	5'-2"	2½"
P403E	900	3'-5"	3¾"
P404E	96	5'-7"	Str.
P405E	64	10'-2"	Str.
P406E	144	17'-8"	Str.
P407E	32	9'-10½"	Str.

Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

BENDING DIAGRAMS





THREE DIMENSIONAL VIEW
OF WING AND RAIL AT END BENT

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278
07/29/2022
BRIDGE ENGINEER

SHEET 8 OF 9
DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT
WEST FORK OF THE CACHE RIVER

ROUTE SEC.

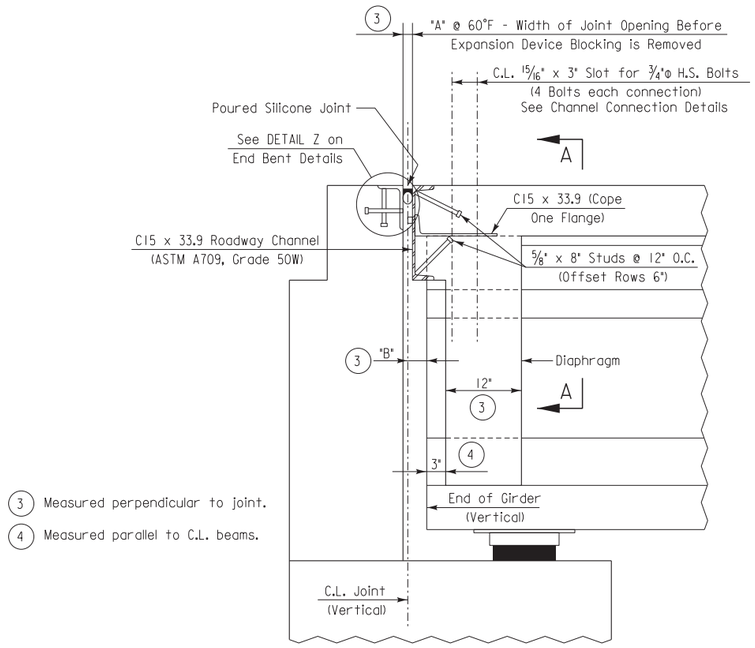
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s7.dgn
SCALE: 3/8" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65285

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	197	311
				(1)	07524 - 224.5' UNIT - 65286			

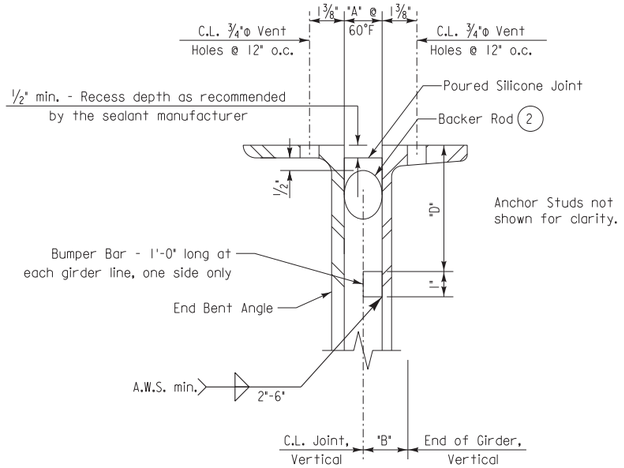


(3) Measured perpendicular to joint.

(4) Measured parallel to C.L. beams.

SECTION THRU JOINT AT END BENTS

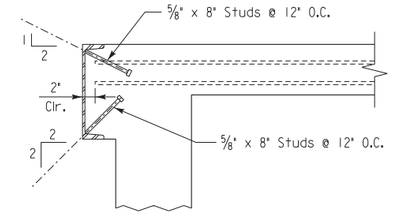
NO SCALE



DETAIL OF POURED SILICONE JOINT SEAL

NO SCALE

NOTE:
All structural steel channels, angles, bars, studs and welds associated with the expansion joint armor and the installation thereof will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Silicone Joint Sealant".



DETAIL OF ALTERNATE ANCHORS

NO SCALE

NOTE:
As an alternative to 5/8"Φ studs, 1/2"Φ x 8" studs spaced as shown may be used. Use weight of 5/8"Φ studs as basis of measurement of Structural Steel in anchors.

Location	SILICONE JOINT DATA					
	"A" Width Perpendicular To Joint At 24 Hour Average Temperature (1) Of:			"B" Perpendicular To Joint At 60°F	"D"	Bumper Plate Size
	40°F	60°F	80°F			
Bent No. 1	1 5/8"	1 1/2"	1 3/8"	2 5/8"	5"	1" x 3/4" x 12"
Bent No. 4	1 5/8"	1 1/2"	1 3/8"	2 5/8"	5"	1" x 3/4" x 12"

(1) The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

(2) BACKER ROD NOTE:

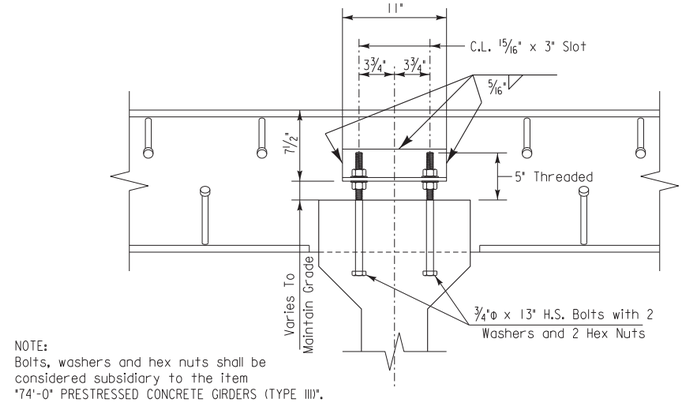
Use an appropriately sized backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing.

Except as noted, do not install more backer rod than that which can be sealed in the same day.

The Contractor shall verify separation of the backer rod than that which can be sealed in the same day.

Backer rods shall be extended beyond length of poured joint in Stages 2 & 3 so that the two pieces can be properly spliced together prior to installing sealant for Stages 3 & 4. Manufacturer's recommendations shall be followed to prevent sealant from running out of the joint during stage construction.

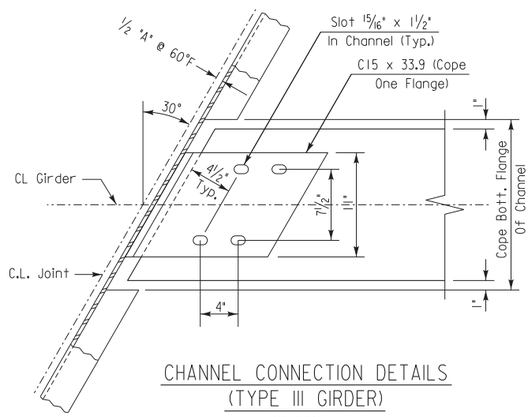
NOTE:
For "JOINT SEAL PLACEMENT AT RAIL" and "DETAILS FOR BLOCKING EXPANSION JOINT DEVICE", see Std. Dwg. No. 55008.



NOTE:
Bolts, washers and hex nuts shall be considered subsidiary to the item "74'-0" PRESTRESSED CONCRETE GIRDERS (TYPE III)".

SECTION A-A

NO SCALE



CHANNEL CONNECTION DETAILS (TYPE III GIRDER)

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 9 OF 9
DETAILS OF 224.5' PRESTRESSED CONCRETE GIRDER UNIT WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_s8.dgn
SCALE: None

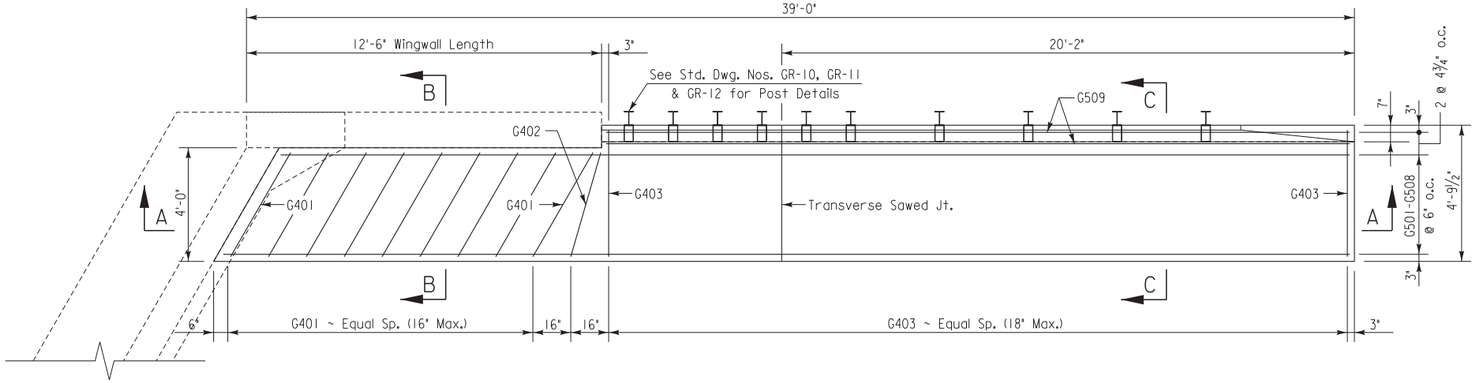
BRIDGE NO. 07524 DRAWING NO. 65286

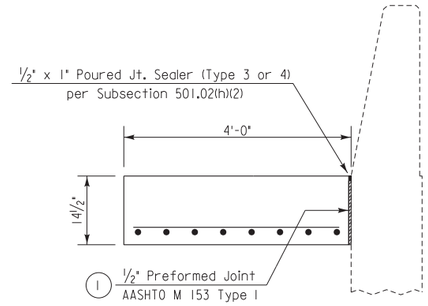
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

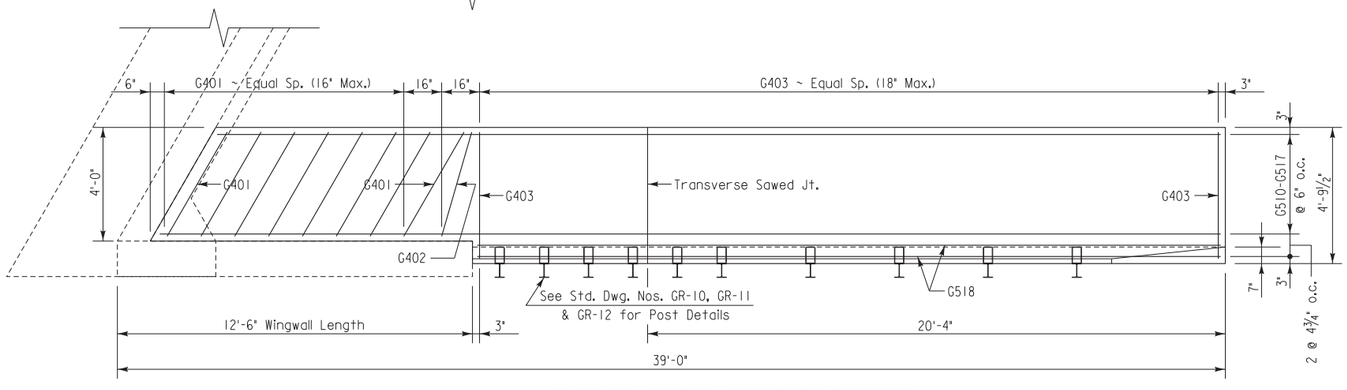
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	198	311

(1) 07524 - APPROACH GUTTERS - 65287

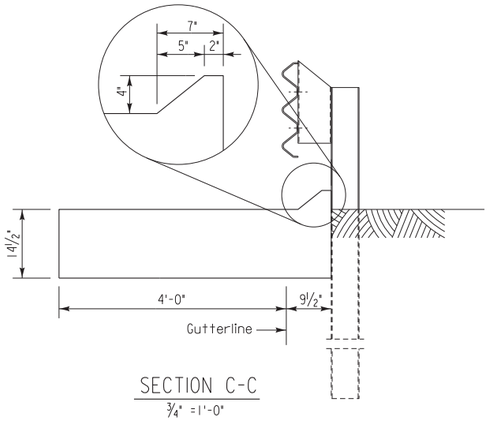




SECTION B-B
¾" =1'-0"



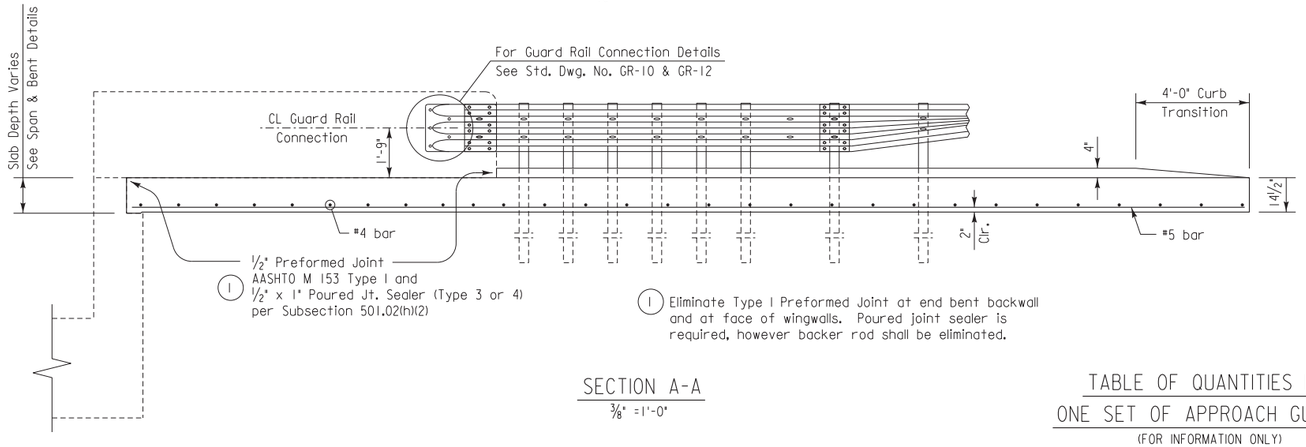
PLAN OF SKEWED APPROACH GUTTERS
⅜" =1'-0"



SECTION C-C
¾" =1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	17	4'-3"
G402	2	3'-10"
G403	38	4'-5½"
G501-G508	8	39'-8" to 37'-7½"
G509	2	26'-2"
G510-G517	8	35'-4" to 37'-4"
G518	2	26'-2"



SECTION A-A
⅜" =1'-0"

TABLE OF QUANTITIES FOR
ONE SET OF APPROACH GUTTERS
(FOR INFORMATION ONLY)

Reinforcing Steel	Concrete
Lbs.	Cu. Yds.
901	15.66

GENERAL NOTES

All concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH GUTTERS WEST FORK OF THE CACHE RIVER

ROUTE SEC.

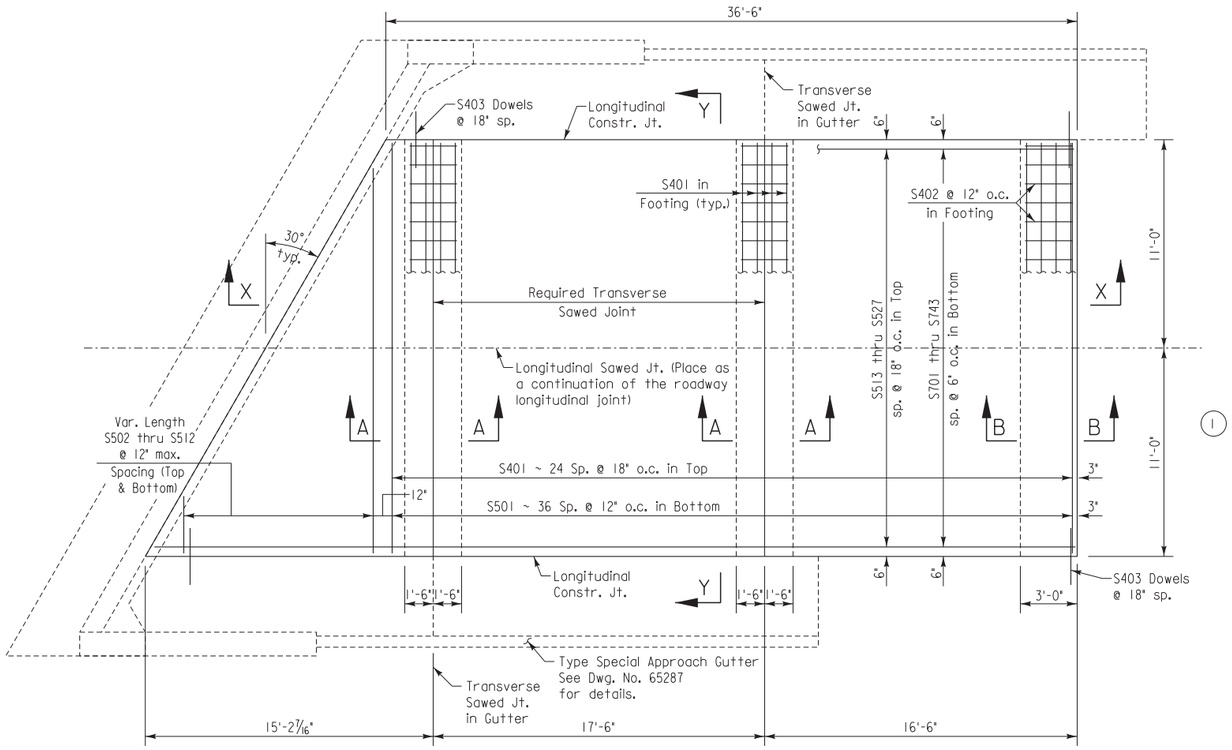
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_g1.dgn
SCALE: ⅜" = 1'-0"

BRIDGE NO. 07524 DRAWING NO. 65287

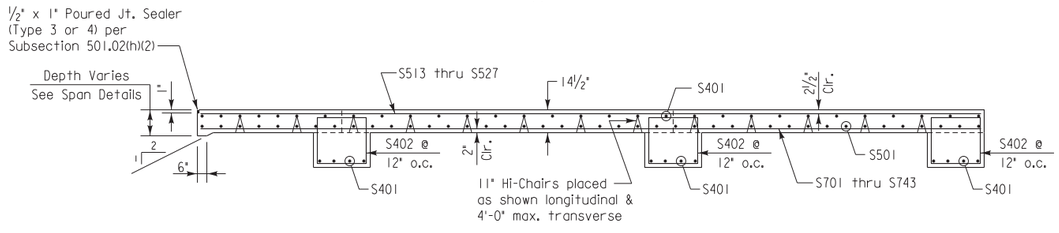
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	199	311
				(1)	07524 - APPROACH SLAB - 65288			



PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

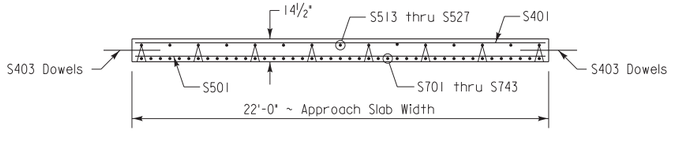
1/4" =1'-0"



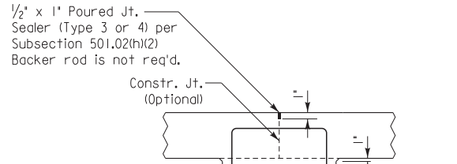
SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" =1'-0"



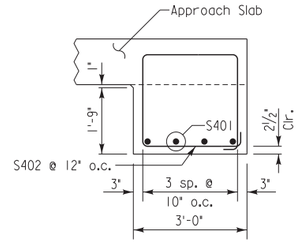
SECTION Y-Y



SECTION A-A

1/2" =1'-0"

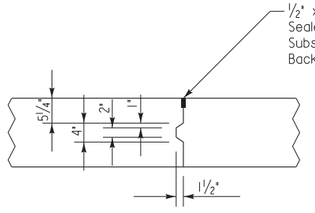
(1) Eliminate Type 1 Preformed Joint at the concrete diaphragm and at the face of wingwalls. Poured Joint Sealer is required, however backer rod shall be eliminated.



SECTION B-B

AT ASPHALT APPROACH PAVEMENT

1/2" =1'-0"

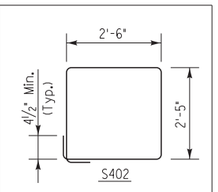


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

3/4" =1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401	37	21'-8"	Str.
S402	66	10'-4"	2"
S403	56	3'-0"	Str.
S501	37	21'-8"	Str.
S502-S512	11 top 11 bott	20'-4" to 3'-0"	Str.
S513-S527	15	48'-8" to 36'-5"	Str.
S701-S743	43	48'-8" to 36'-5"	Str.



Dimensions are out to out of bar.

TABLE OF QUANTITIES FOR ONE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel	Concrete
	Lbs.	Cu. Yds.
22'-0"	6621	55.63

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

The surface finish for Approach Slabs shall match that used on the bridge deck.

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278
07/29/2022
BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH SLAB WEST FORK OF THE CACHE RIVER

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x5_g2.dgn
SCALE: 1/4" = 1'-0"

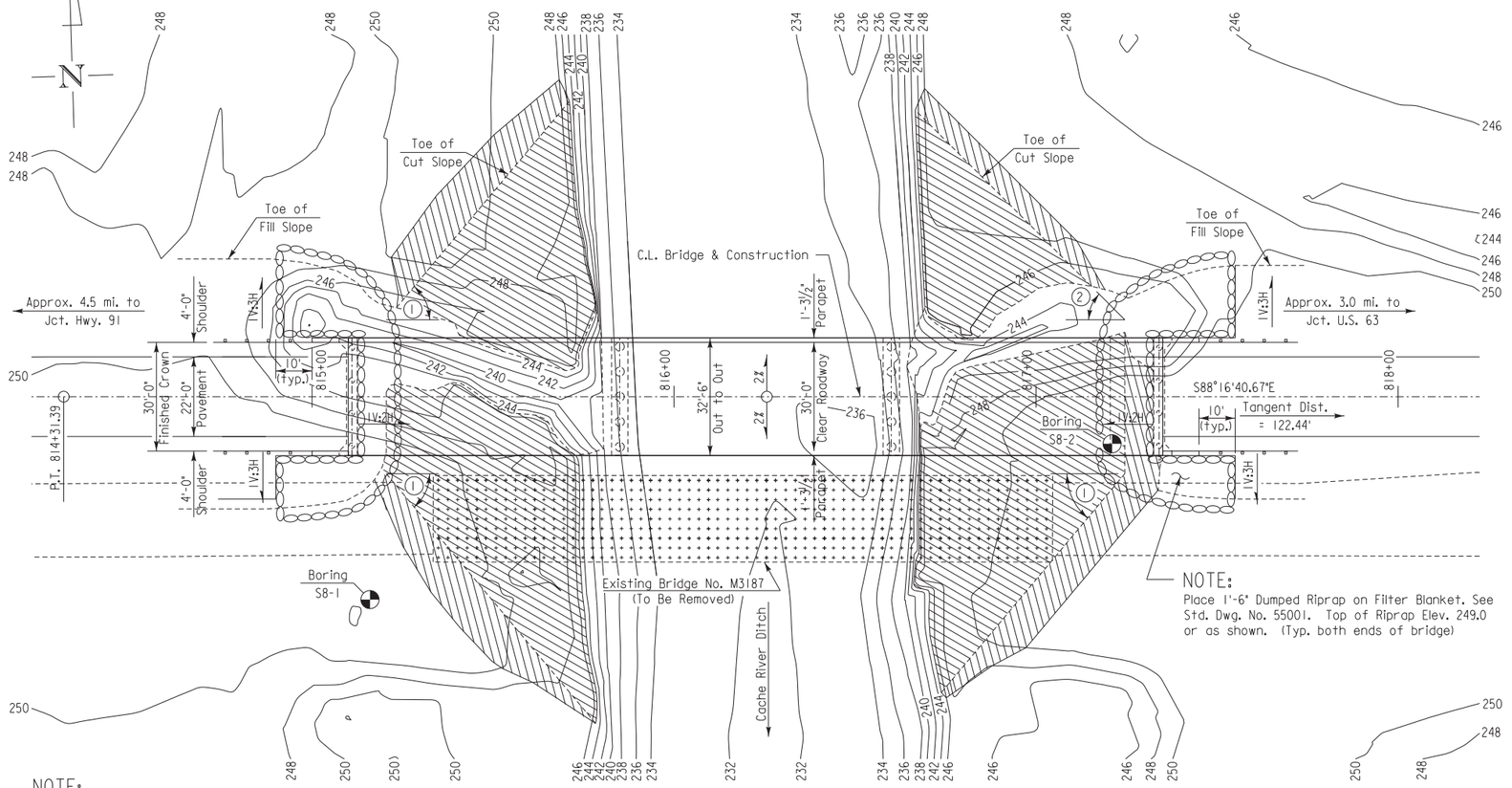
BRIDGE NO. 07524 DRAWING NO. 65288

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	200	311
				(1)		07525 - LAYOUT - 65289		

For Right of Way data, see Roadway plans.

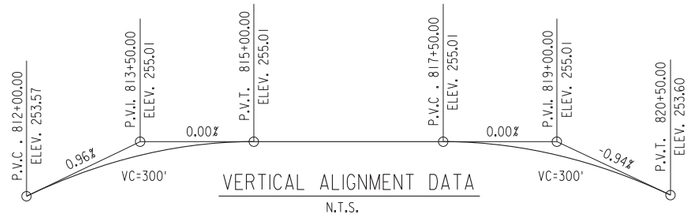
Use Type Special Approach Gutters and Type Special Approach Slabs at both ends of bridge. For details, see Dwg. No. 65302 and Dwg. No. 65303, respectively.



NOTE:
Place 1'-6" Dumped Riprap on Filter Blanket. See Std. Dwg. No. 55001. Top of Riprap Elev. 249.0 or as shown. (Typ. both ends of bridge)

NOTE:
Stations shown are along C.L. Construction. Elevations shown are theoretical working point elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on theoretical working point elevation at C.L. Bridge. See 'Rounding Detail' on Dwg. No. 65294 for additional information.

PLAN



VERTICAL ALIGNMENT DATA
N.T.S.

NOTE:
The Contractor shall excavate the existing embankment as shown at both ends of the bridge to Elev. 245.0. Approx. 1880 cubic yards of excavation.

Toe of cut slopes shown are parallel to the end bents out to a distance of 5.0 feet beyond the edge of the bridge deck and then transition at the angles indicated back into the channel's natural side slopes.

(1) 50° (2) 45°

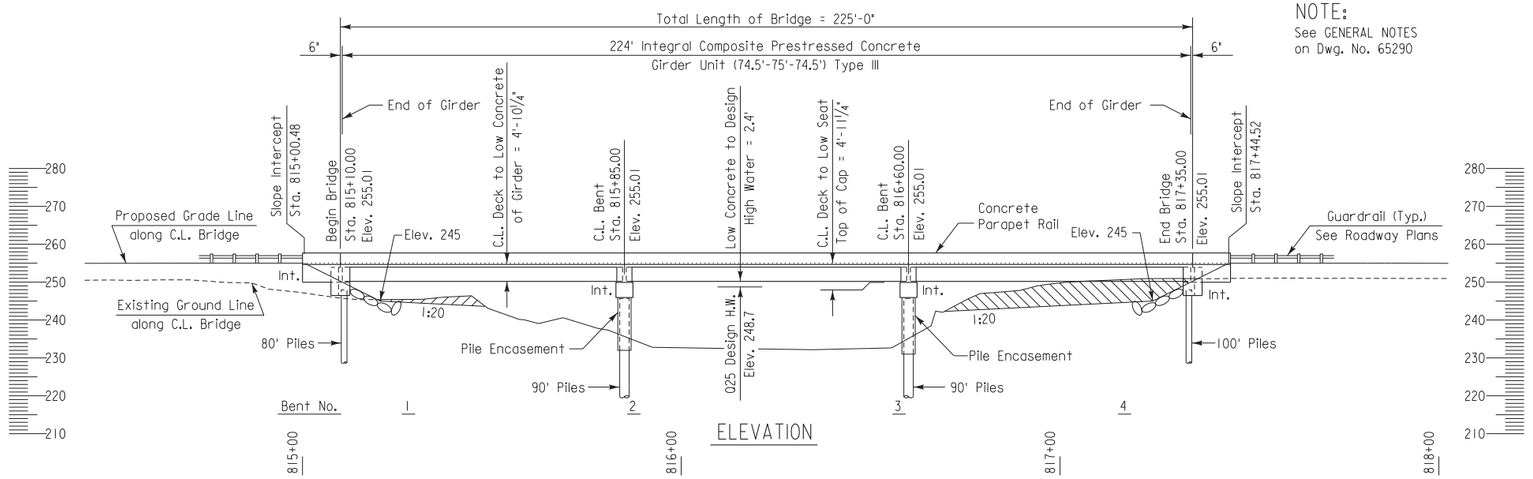
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	•DISCHARGE THIS SITE	••NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
	YEARS	CFS	FEET	FEET	FEET
DESIGN	25	12840	10977	246.5	247.7
BASE	100	15980	13185	246.8	249.2
EXTREME	500	19560	15530	247.2	249.4
OVERTOPPING	100	15980	13185	-	249.2

Drainage Area = 610 square miles
Historical High Water Elev. = 250.8

•The total discharge includes flow at relief bridges (*M2471) and (*M4019)
••Unconstricted water surface elevation without structure or roadway approaches

0100 backwater elevation for existing structure = 249.4 feet
Proposed Low Bridge Chord Elevation = 250.1 feet
Existing Low Bridge Chord Elevation = 250.0 feet



ELEVATION

NOTE:
See GENERAL NOTES on Dwg. No. 65290

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 2

LAYOUT OF BRIDGE
HIGHWAY 230 OVER CACHE RIVER DITCH
HWY. 230 STRS. & APPRS. (S)
CRAIGHEAD COUNTY

ROUTE 230 SEC. 7

ARKANSAS STATE HIGHWAY COMMISSION

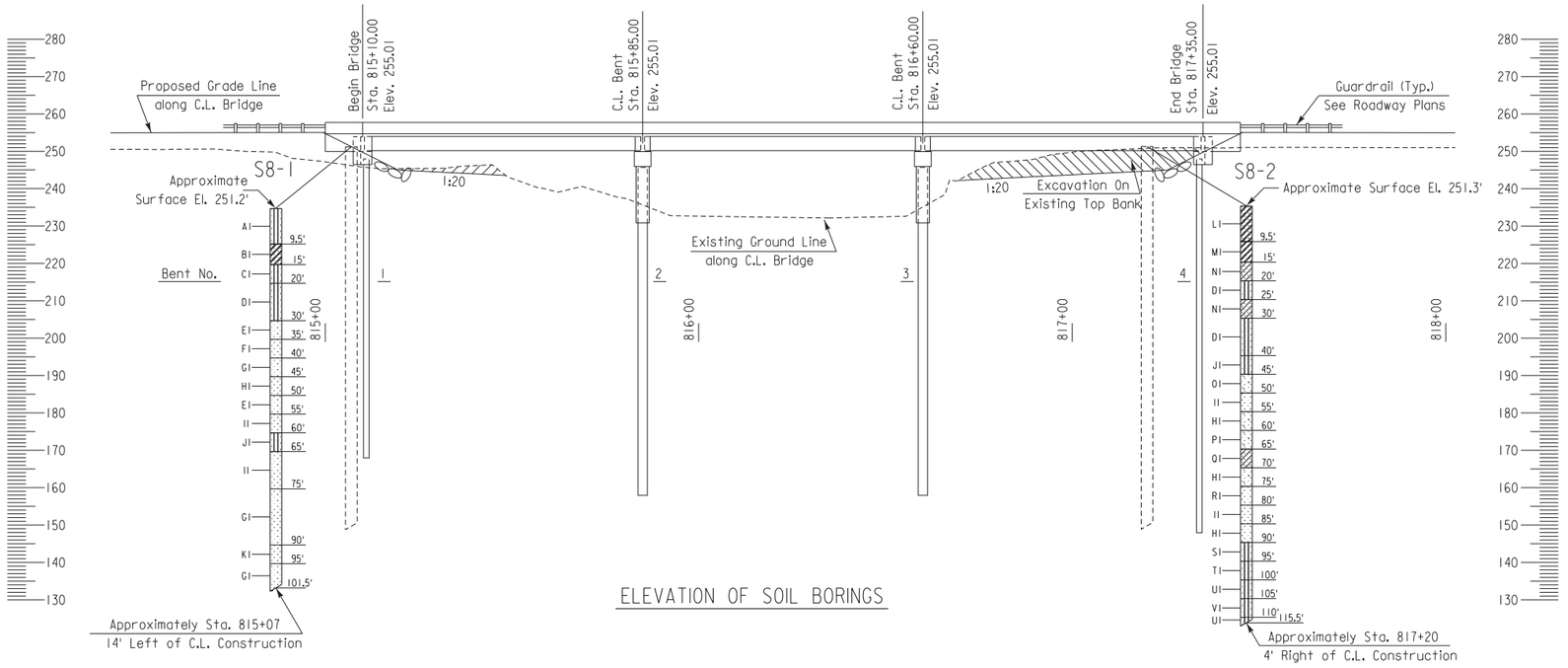
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: NOV 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x8_l1.dgn
SCALE: 1" = 20'-0"

BRIDGE NO. 07525 DRAWING NO. 65289

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	201	311
				(1)		07525 - LAYOUT - 65290		



ELEVATION OF SOIL BORINGS

NOTE: The SPT blow count "N" values are raw values. They have not been corrected for hammer energy. A hammer energy correction factor of 1.36 applies to borings S8-1 (not shown), S8-2 (not shown), and a hammer energy correction factor of 1.3 applies to borings ARDOT-1 & ARDOT-2.

BORING LEGEND

A1-Loose brown sand (SP-SM), slightly silty, with trace of gravel
B1-Stiff gray sandy clay (CL)
C1-Loose brown sand (SP-SM), slightly silty
D1-Medium dense brown sand (SP-SM), slightly silty
E1-Medium dense brown sand (SP)
F1-Very dense brown sand (SP)
G1-Dense brown sand (SP) with trace of gravel
H1-Medium dense brown sand (SP) with gravel
I1-Medium dense brown sand (SP) with trace of gravel
J1-Medium dense brown sand (SP-SM), slightly silty, with trace of gravel
K1-Very dense brown sand (SP) with trace of gravel
L1-Medium stiff brown sandy clay (CL)
M1-Medium stiff brown and gray clay (CH) with sand
N1-Loose brown clayey sand (SC)
O1-Dense brown sand (SW) with trace of gravel
P1-Medium dense brown sand (SW) with trace of gravel
Q1-Dense brown and gray clayey sand (SC)
R1-Dense brown sand (SP) with gravel
S1-Very dense brown sand (SP-SM), slightly silty, with gravel
T1-Very dense brown sand (SP-SM), slightly silty
U1-Dense brown sand (SP-SM), slightly silty, with trace of gravel
V1-Very dense brown sand (SP-SM), slightly silty, with trace of gravel

"N" VALUES

ARDOT-1, Approximately Sta. 815+07
14' Left of C.L. Construction

5 - 6, N=7
10 - 11, N=9
15.5 - 16.5, N=10
20.5 - 21.5, N=17
25.5 - 26.5, N=11
30.5 - 31.5, N=26
35.5 - 36.5, N=54
40.5 - 41.5, N=35
45.5 - 46.5, N=24
50.5 - 51.5, N=22
55.5 - 56.5, N=25
60.5 - 61.5, N=20
65.5 - 66.5, N=29
70.5 - 71.5, N=26
75.5 - 76.5, N=38
80.5 - 81.5, N=31
85.5 - 86.5, N=39
90.5 - 91.5, N=66
95.5 - 96.5, N=38
100.5 - 101.5, N=47

ARDOT-2, Approximately Sta. 817+20
4' Right of C.L. Construction

5 - 6, N=8
10 - 11, N=5
15.5 - 16.5, N=6
20.5 - 21.5, N=18
25.5 - 26.5, N=10
30.5 - 31.5, N=11
35.5 - 36.5, N=21
40.5 - 41.5, N=18
45.5 - 46.5, N=39
50.5 - 51.5, N=29
55.5 - 56.5, N=20
60.5 - 61.5, N=23
65.5 - 66.5, N=33
70.5 - 71.5, N=22
75.5 - 76.5, N=36
80.5 - 81.5, N=14
85.5 - 86.5, N=13
90.5 - 91.5, N=70
95.5 - 96.5, N=57
100.5 - 101.5, N=39
105.5 - 106.5, N=76
110.5 - 111.5, N=41

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on Survey Control Data Sheets.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions, unless otherwise noted in the plans, Section and Subsection numbers refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 3 SDI= 0.407g Site Class = D

MATERIALS AND STRENGTHS:

Class S Concrete (Prestressed Concrete Girders)	f'c = 8,000 psi
Class S (AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322 Type A, Gr. 60)	fy = 60,000 psi
Prestressing Strands (AASHTO M 203, Gr. 270)	fpu = 270,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Structural Steel (ASTM A709, Gr. 50)	Fy = 50,000 psi
Structural Steel (ASTM A709, Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring Logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL SHELL PILING: Piling in Bent 1 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 272 tons per pile. Piling in Bents 2 & 3 shall be 30" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 428 tons per pile. Piling in Bent 4 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 282 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer to a minimum tip elevation of 172 or lower at Bent 1, a minimum tip elevation of 157 or lower at Bents 2 & 3, and a minimum tip elevation of 151 or lower at Bent 4. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths are to be determined in the field. No additional payment will be made for cut-off or build-up. Test piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g). No piles will be paid for as Test Piles.

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly but shall be considered incidental to the items "STEEL SHELL PILING (18" DIA.)" and "STEEL SHELL PILING (30" DIA.)"

PREBORING: Preboring is required for all piling at Bents 1 and 4. Prebored holes shall have a diameter 6" greater than the diameter of the pile for a depth of 10' below the bottom of the cap. The void space around the pile after completion of driving shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other approved methods. Any related cost for backfilling and temporary casing will not be paid for directly, but shall be considered subsidiary to the item "Preboring".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend from bottom of cap to 3' below natural ground. See Standard Dwg. No. 55021 for additional information.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b), "Method B - Wave Equation Analysis (WEAP)". It is estimated that the minimum rated hammer energy required to obtain the minimum ultimate bearing capacity for 18" piles shall be 80,000 foot pounds per blow and for 30" piles shall be 90,000 foot pounds per blow.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

CLASS 2 PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING No.
End Bents	65291
Intermediate Bents	65292
Details of 30" Dia. Steel Sheel Piles	65293
224'-0" Integral Prestressed Concrete Girder Unit	65294-65301
Concrete Filled Steel Shell Piling	55021
Type Special Approach Gutters	65302
Type Special Approach Slab	65303

EXISTING BRIDGE: Existing Bridge No. M3187 (Log Mile 0.509) is 170' in length, 25' wide and consists of one 101-foot steel truss, two 19-foot timber girder interior spans and two 15-foot timber girder end spans. Bents 1, 2, 5 & 6 have timber caps supported by timber piling. Bents 3 & 4 have concrete caps supported by timber piling. The existing bridge is located approximately 34' downstream from the proposed new bridge.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. M3817 shall be removed in accordance with Section 205. With the exception of the 101-foot steel truss span, all material from the existing bridge shall become the property of the Contractor. The removal and ownership of the truss will be determined by ARDOT.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

PRINT DATE: 7/29/2022

SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 230 OVER CACHE RIVER DITCH
HWY. 230 STRS. & APPRS. (S)
CRAIGHEAD COUNTY

ROUTE 230 SEC. 7

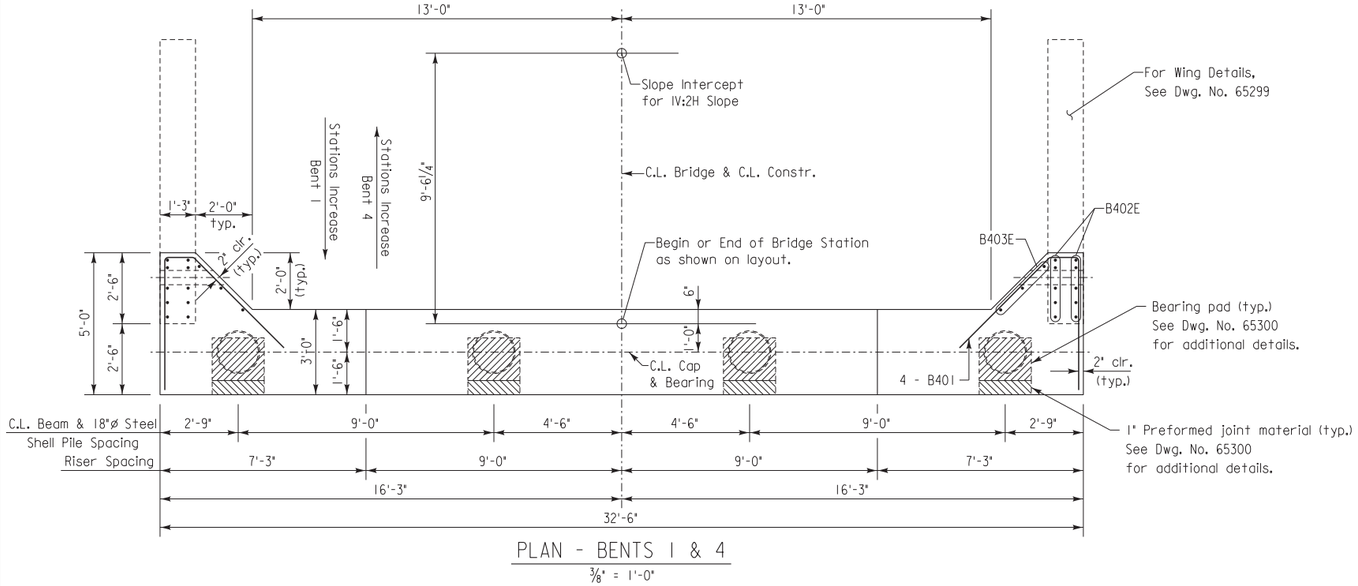
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/BCD DATE: NOV 2020
FILENAME: b101054x8_l2.dgn
SCALE: 1" = 20'-0"

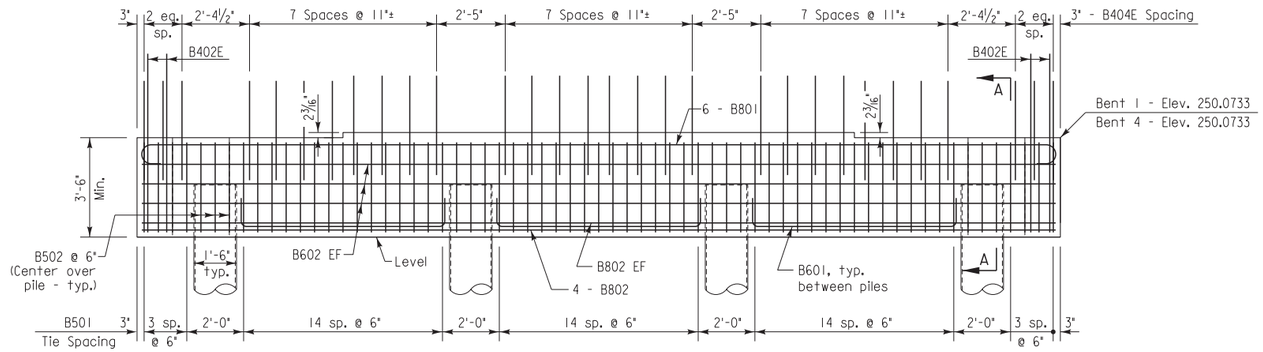
BRIDGE NO. 07525 DRAWING NO. 65290

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	202	311
				(1)		07525 - END BENTS - 65291		



PLAN - BENTS 1 & 4

⅜" = 1'-0"



ELEVATION - BENTS 1 & 4

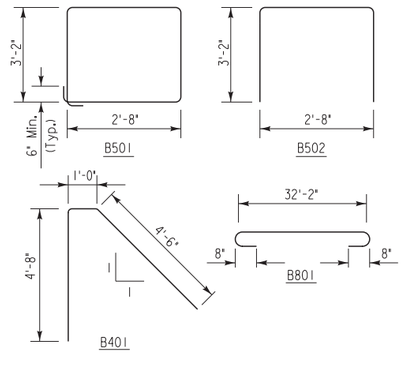
LOOKING BACK - BENT 1
LOOKING AHEAD BENT - 4
⅜" = 1'-0"

BAR LIST - PER BENT (1)

MARK	NO. REQ'D.	LENGTH	P.D.
B401	8	10'-1"	2"
B402E	20	7'-9½"	Str.
B403E	6	6'-6"	Str.
B404E	60	4'-8"	Str.
B501	53	12'-1"	2½"
B502	12	8'-9"	2½"
B601	3	8'-11"	4½"
B602	6	32'-2"	Str.
B801	6	34'-0"	6"
B802	6	32'-2"	Str.

BENDING DIAGRAMS

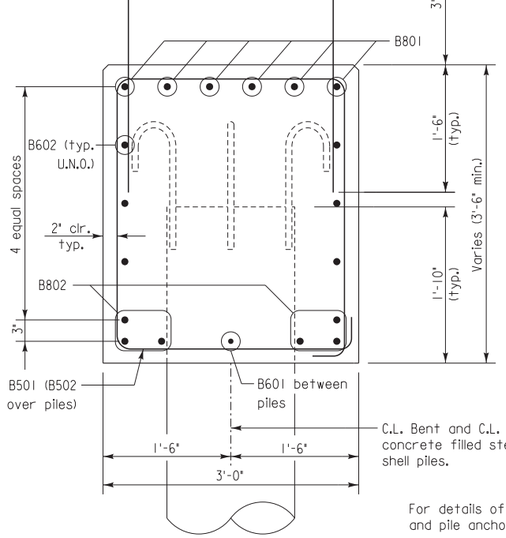
Dimensions are out to out of bars.



Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

(1) See Dwg. Nos. 65299 for additional details.



SECTION A-A

No Scale

CONCRETE:

Unless otherwise noted, concrete in caps shall be Class S with a minimum 28 day compressive strength f'c = 3,500 and shall be poured in the dry.

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

All reinforcing shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Granular Backfill and Pipe Underdrain required behind Bent, See Dwg. No. 65300 for details.

For details of concrete filled steel shell piles and pile anchorage, see Std. Dwg. No. 55021.

LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF END BENTS CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JAN 2022
DESIGNED BY: KJK/LAC DATE: NOV 2020

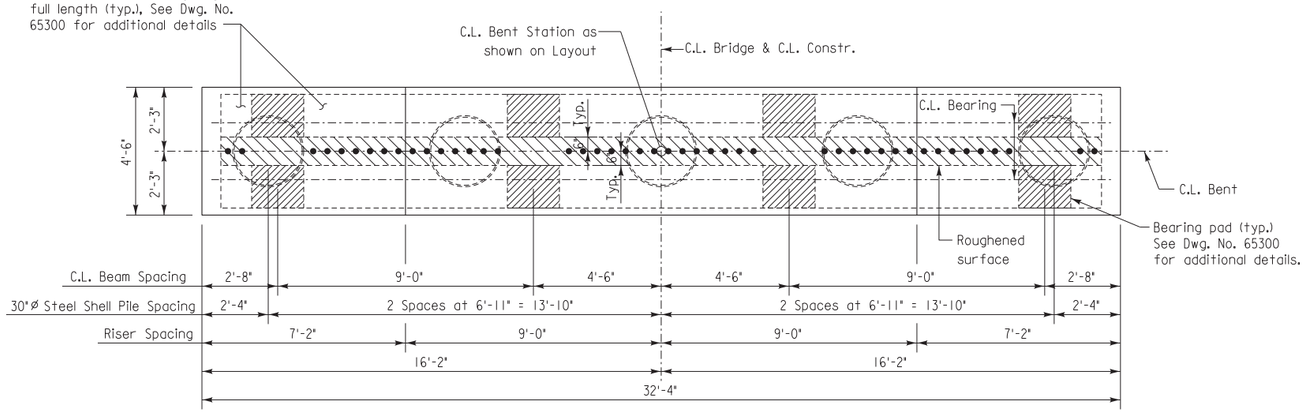
FILENAME: b101054x8_a1.dgn
SCALE: ⅜" = 1'-0"

BRIDGE NO. 07525 DRAWING NO. 65291

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	203	311
				07525 - INT. BENTS - 65292				

1" x 1'-6" Expanded polyethylene, full length (typ.), See Dwg. No. 65300 for additional details



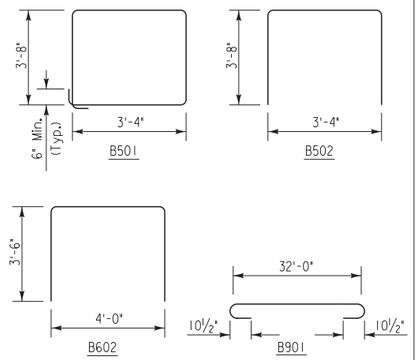
PLAN - BENTS 2 & 3
3/8" = 1'-0"

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B501	80	14'-5"	2½"
B502	50	10'-5"	2½"
B601	20	32'-0"	Str.
B602	10	10'-9"	4½"
B603E	46	4'-8"	Str.
B901	6	34'-7"	9½"
B902	6	32'-0"	Str.

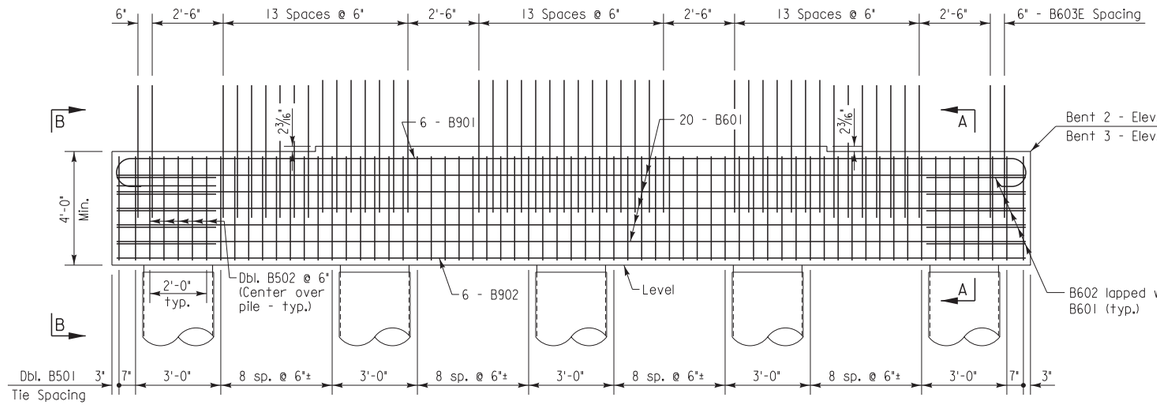
BENDING DIAGRAMS

Dimensions are out to out of bars.

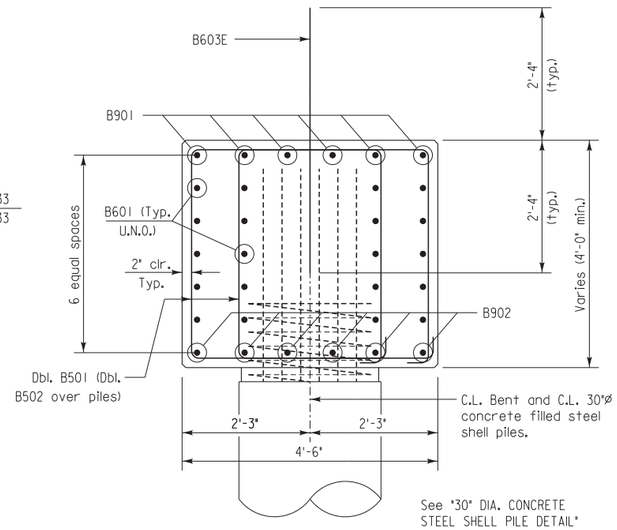


Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.

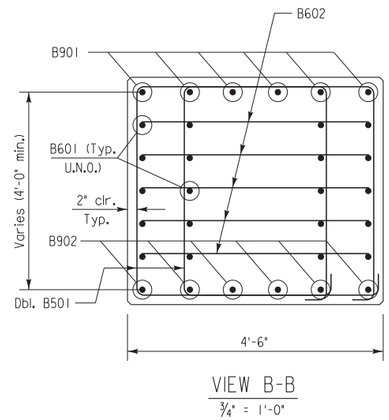


ELEVATION - BENTS 2 & 3
LOOKING AHEAD
3/8" = 1'-0"



SECTION A-A
3/4" = 1'-0"

See "30" DIA. CONCRETE STEEL SHELL PILE DETAIL" On Dwg. No. 65293.



VIEW B-B
3/4" = 1'-0"

LEGEND

EF = Each Face
U.N.O. = Unless Noted Otherwise

CONCRETE:
Unless otherwise noted, concrete in caps 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 shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:
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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

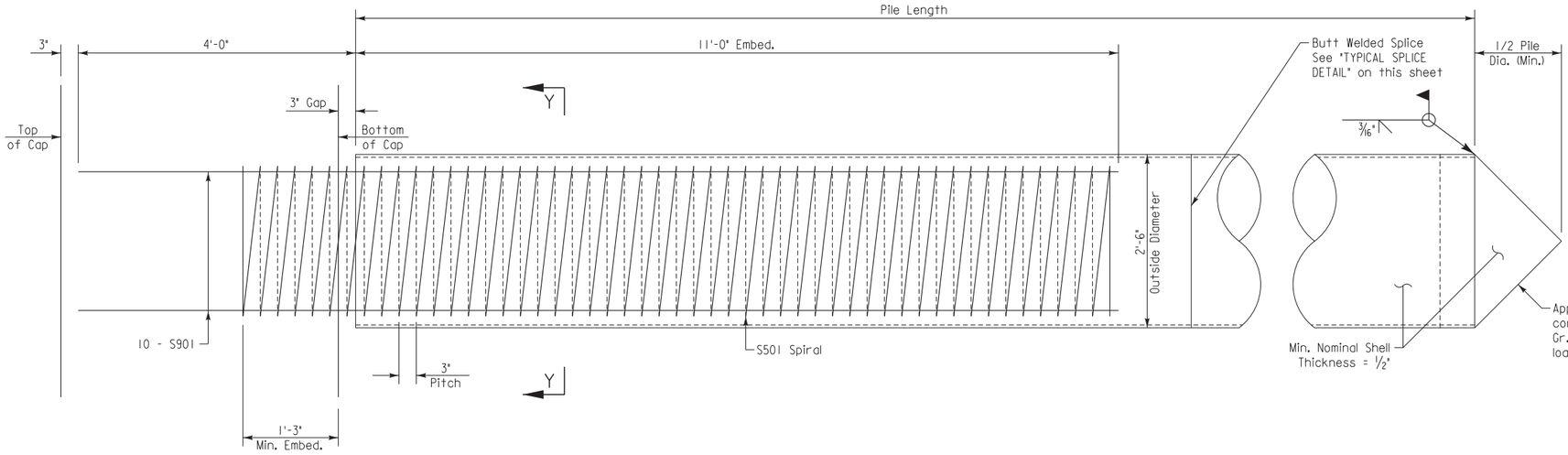
DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK/LAC DATE: NOV 2020
FILENAME: b101054x8_b1.dgn
SCALE: 3/8" = 1'-0"

BRIDGE NO. 07525 DRAWING NO. 65292

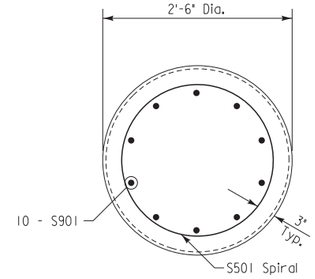
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	204	311

(1) 07525 - 30" DIA. STEEL SHELL PILES - 65293

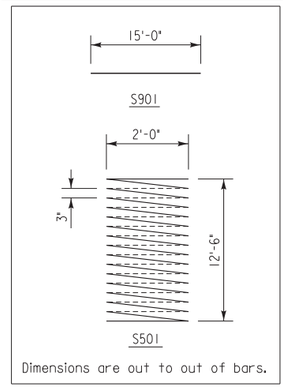


NOTE:
Steel pile tip will not be paid for directly but shall be subsidiary to the item "Steel Shell Piling".

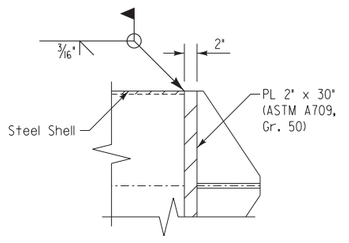


SECTION Y-Y
1" = 1'-0"

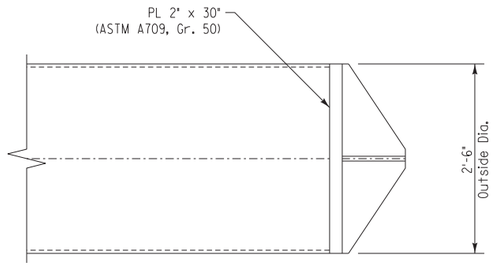
BAR BENDING DIAGRAMS



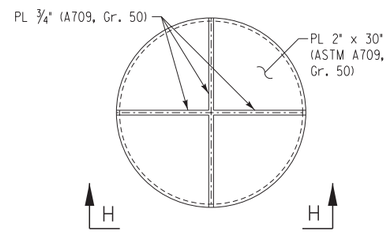
Dimensions are out to out of bars.

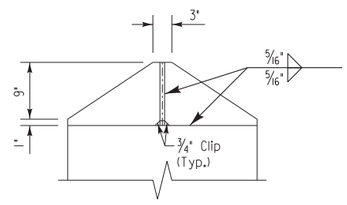


PART SECTION



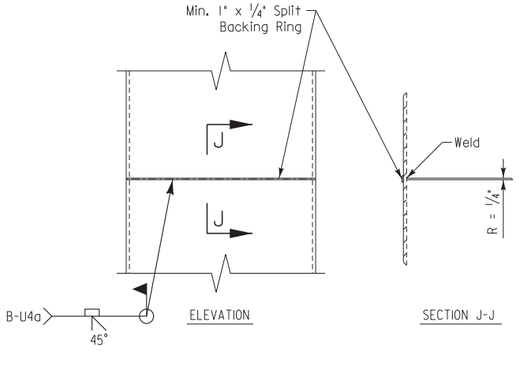
ELEVATION





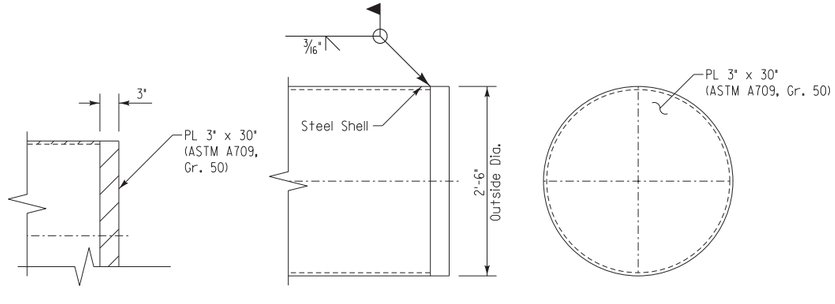
VIEW H-H

ALTERNATE VANED TIP DETAIL FOR 30" PILE
1" = 1'-0"



ELEVATION SECTION J-J

TYPICAL SPLICE DETAIL
1" = 1'-0"



PART SECTION ELEVATION

ALTERNATE FLAT TIP DETAIL FOR 30" PILE
1" = 1'-0"

GENERAL NOTES - 30" CONCRETE FILLED STEEL SHELL PILES

Steel shells shall conform to ASTM A252, Grade 3 (Fy = 45,000 psi)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi and shall be poured in the dry.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

Steel Shell piling shall be encased with concrete in accordance with Std. Dwg. No. 55021 to the elevation shown on the Bridge Layout. Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

Concrete, structural steel, and reinforcing steel shall not be paid for directly, but shall be considered subsidiary to the item "30 DIA. STEEL SHELL PILING".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

DETAILS OF 30" DIA. STEEL SHELL PILES CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

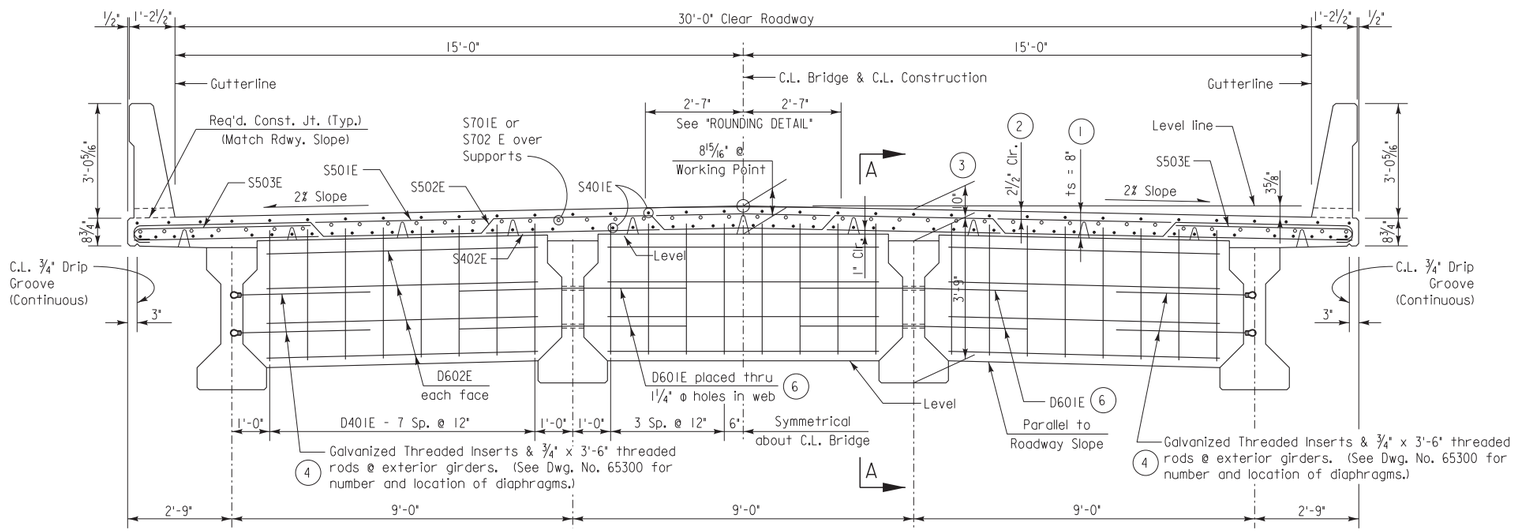
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: LAC DATE: NOV 2020
FILENAME: b101054x8_c1.dgn
SCALE: 1/2" = 1'-0"

BRIDGE NO. 07525 DRAWING NO. 65293

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	205	311
				(1)	07525 - 224' UNIT - 65294			



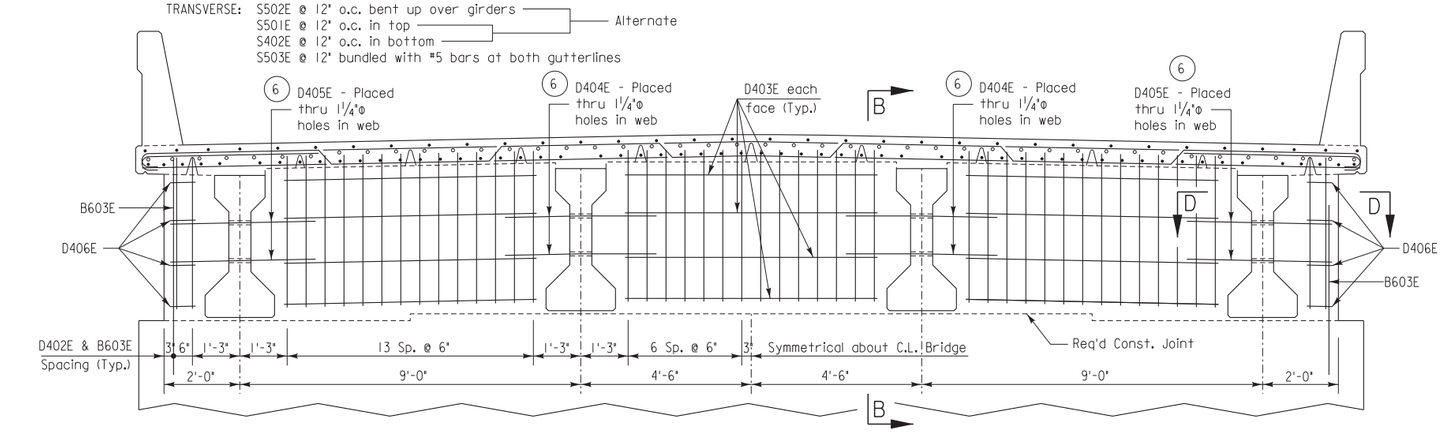
TYPICAL ROADWAY SECTION

LOOKING AHEAD
1/2" = 1'-0"

SLAB REINFORCING

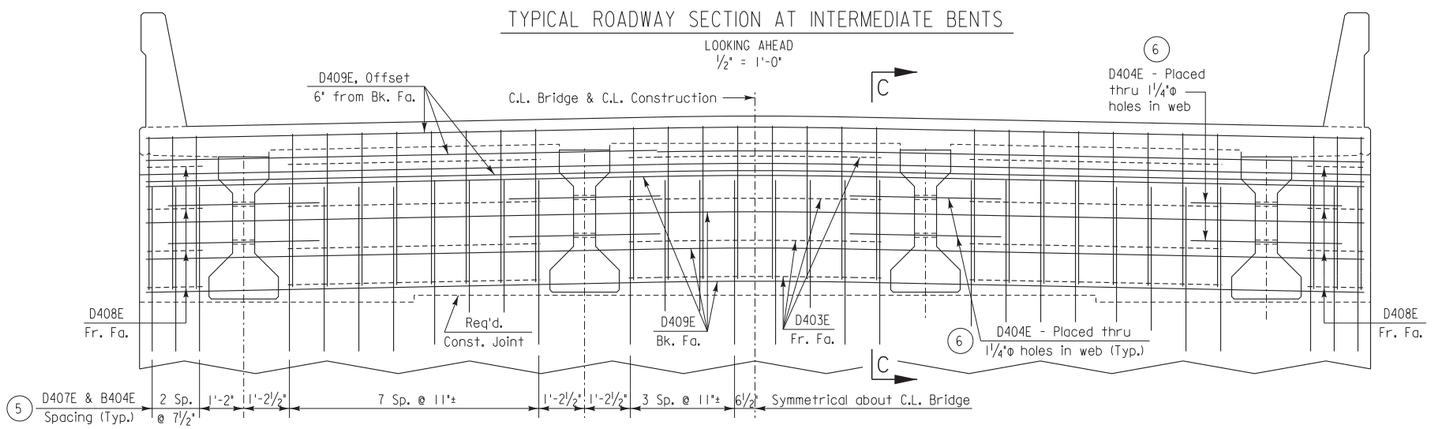
LONGITUDINAL: S401E as shown (12" max.)
S701E and S702E as shown

TRANSVERSE: S502E @ 12" o.c. bent up over girders
S501E @ 12" o.c. in top
S402E @ 12" o.c. in bottom
S503E @ 12" bundled with #5 bars at both gutterlines
— Alternate



TYPICAL ROADWAY SECTION AT INTERMEDIATE BENTS

LOOKING AHEAD
1/2" = 1'-0"



TYPICAL ROADWAY SECTION AT END BENTS

LOOKING AHEAD
1/2" = 1'-0"

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or hi-chairs with full length lower runners directly on removable deck forms will not be allowed.

At the Contractor's option, two straight #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete.

(1) See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65300.

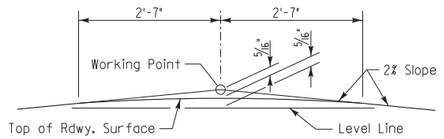
(2) Tolerance: Minus = 1/4"; Plus equal the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance" Dwg. No. 65300.

(3) This dimension taken at C.L. Bearing & C.L. Girder.

(4) Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. 3/4" φ Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M 322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232 Class C. These items will not be paid for directly, but shall be considered subsidiary to the Item "Prestressed Concrete Girders (Type III)".

(5) For additional details of B404E bars, see bent details on Dwg. No. 65291.

(6) Bars shall be centered about the girders.



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 1 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
CACHE RIVER DITCH

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x8_s1.dgn
SCALE: 1/2" = 1'-0"

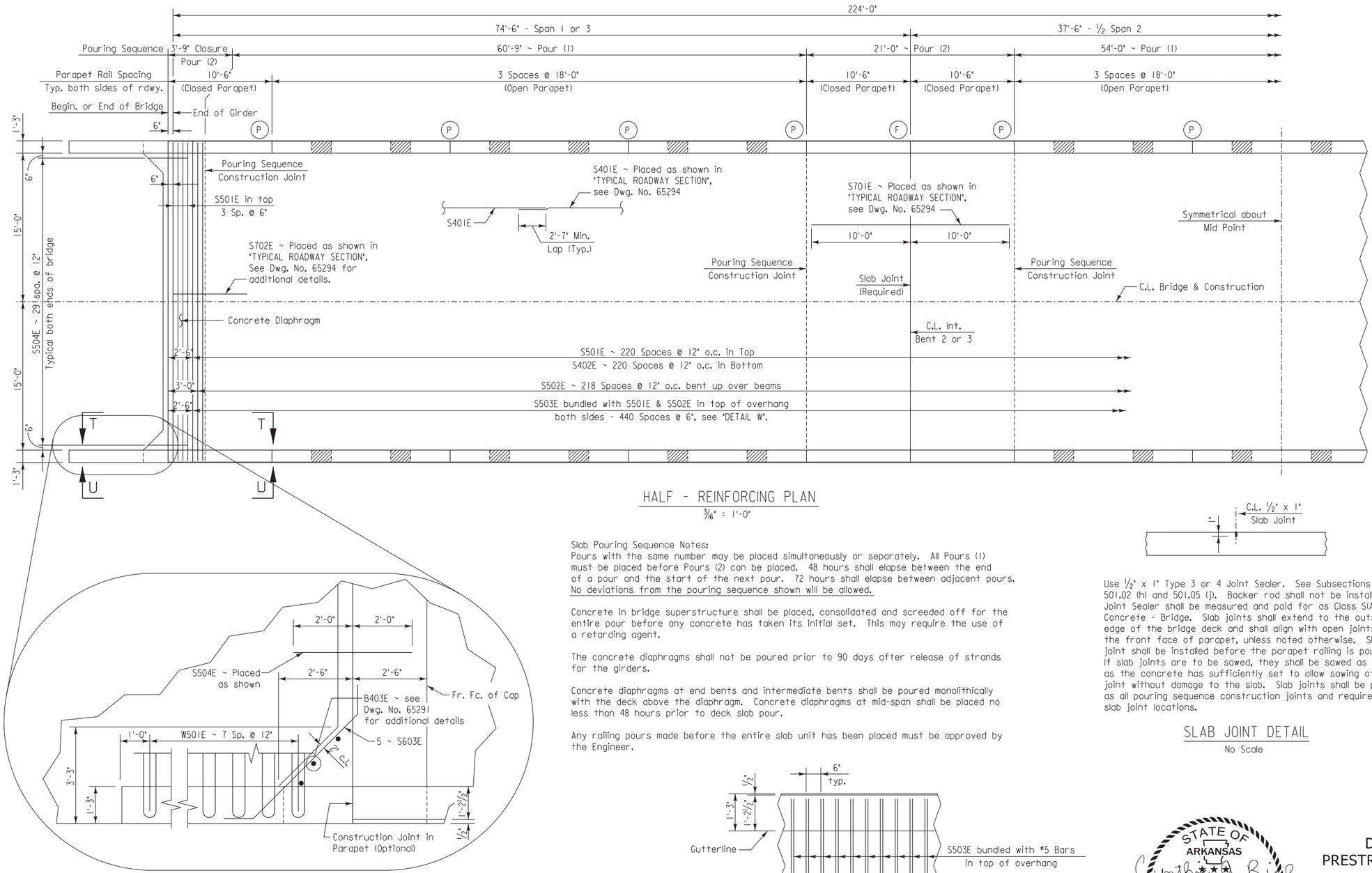
BRIDGE NO. 07525
DRAWING NO. 65294

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	206	311

(1) 07525 - 224' UNIT - 65295



HALF - REINFORCING PLAN

3/16" = 1'-0"

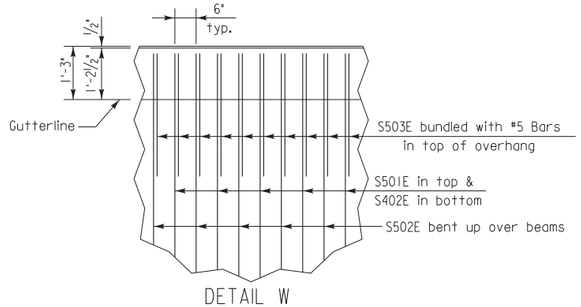
Slab Pouring Sequence Notes:
Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between adjacent pours. No deviations from the pouring sequence shown will be allowed.

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 diaphragms shall not be poured prior to 90 days after release of strands for the girders.

Concrete diaphragms at end bents and intermediate bents shall be poured monolithically with the deck above the diaphragm. Concrete diaphragms at mid-span shall be placed no less than 48 hours prior to deck slab pour.

Any railing pours made before the entire slab unit has been placed must be approved by the Engineer.



DETAIL W

No Scale

Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod shall not be installed. Joint Sealer shall be measured and paid for as Class S(AE) Concrete - Bridge. Slab joints shall extend to the outside edge of the bridge deck and shall align with open joints at the front face of parapet, unless noted otherwise. Slab joint 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 as all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL

No Scale

(F) Full-Depth Parapet Joint at this location

(P) Partial-Depth Parapet Joint at this location

Rails and wings are included in span construction and included in span quantities.

Required slab joints and pouring sequence construction joints shall align with parapet open joints at the gutterline, unless noted otherwise.

For Bar list, "VIEW U-U" and "SECTION T-T", see Dwg. No. 65299.

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 2 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x8_s2.dgn
SCALE: 3/16" = 1'-0"

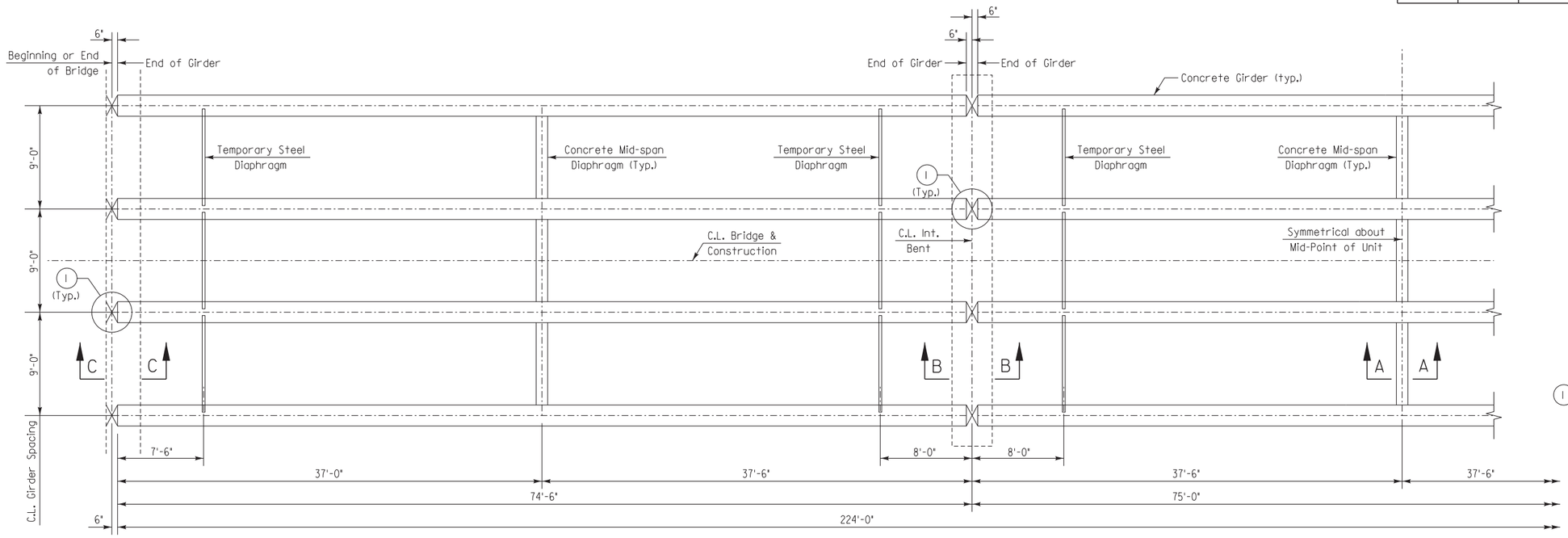
BRIDGE NO. 07525 DRAWING NO. 65295

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	207	311

(1) 07525 - 224' UNIT - 65296

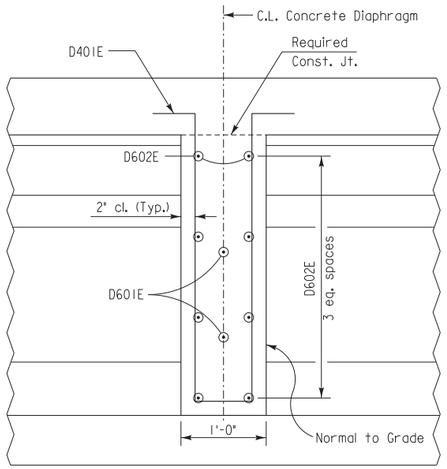


HALF - FRAMING PLAN

3/16" = 1'-0"

For "Section B-B" and "Section C-C", see Dwg. No. 65300.

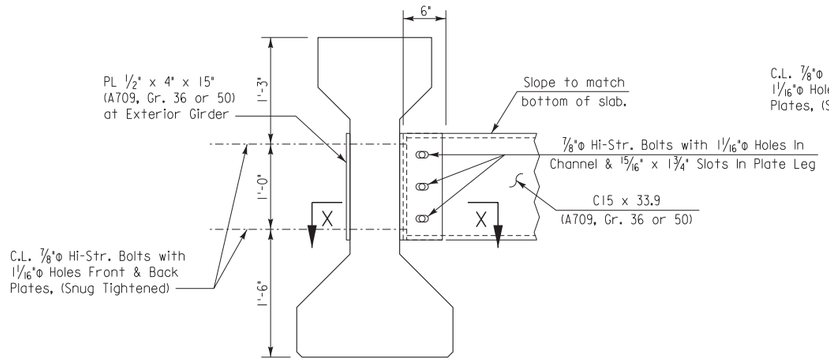
(1) After erection, the ends of girders at all bents shall be blocked using temporary blocking to maintain proper location on bent caps until all diaphragms are poured or connected.

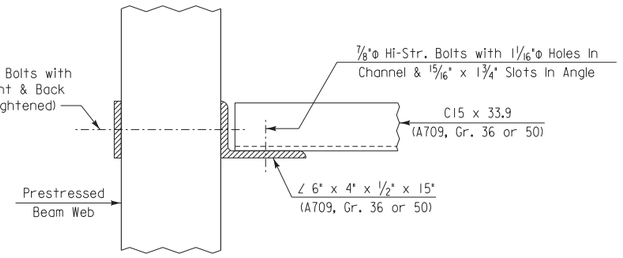


SECTION A-A

Midspan Diaphragms

NO SCALE





SECTION X-X

NO SCALE

Steel diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". Temporary Steel Diaphragms shall be removed upon completion of concrete set in the end bent and intermediate bent diaphragms. After they are removed, holes in webs shall be filled with a QPL approved non-shrink grout and the diaphragms and all connecting components shall remain the property of the Contractor. Temporary Diaphragm considered subsidiary to the item "Prestressed Concrete Girders (Type III)".

Permanent Steel Diaphragms may be used in lieu of a Concrete Diaphragm at midspan. Payment for permanent steel diaphragm and components will be based on concrete diaphragms.

All components of Permanent Steel Diaphragms shall be galvanized in accordance with Section 807.

A standard washer shall be supplied under both the nut and the head of the 7/8" dia. H.S. bolts. An additional plate washer shall cover the angle slots.

DETAILS OF STEEL DIAPHRAGM

NO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

SHEET 3 OF 8

DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020

CHECKED BY: BKC DATE: JUN 2022

DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x8_s3.dgn

SCALE: 3/16" = 1'-0"

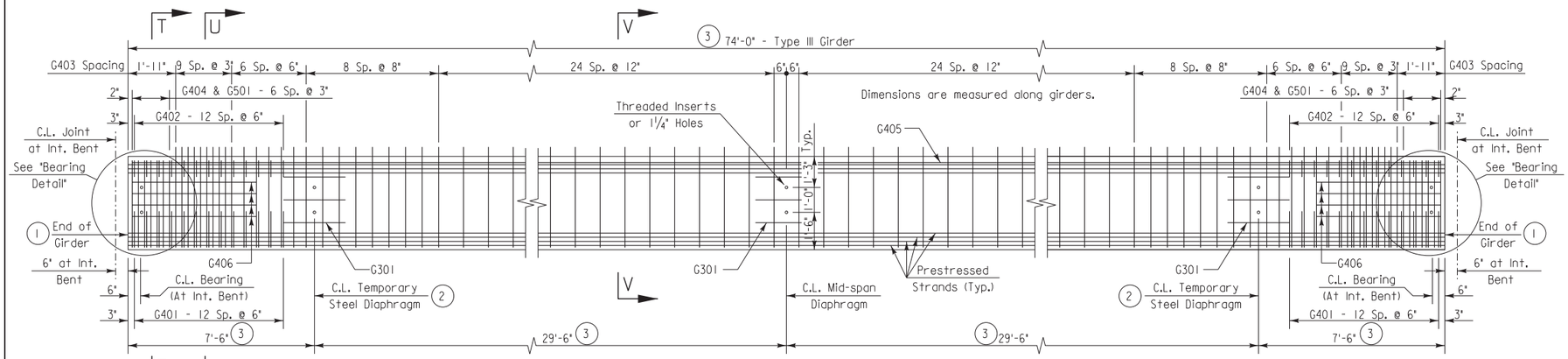
BRIDGE NO. 07525

DRAWING NO. 65296

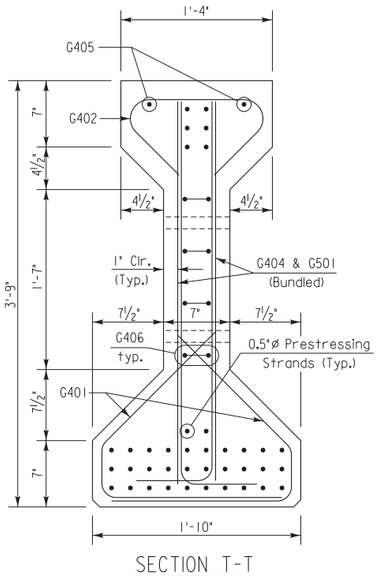
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	208	311

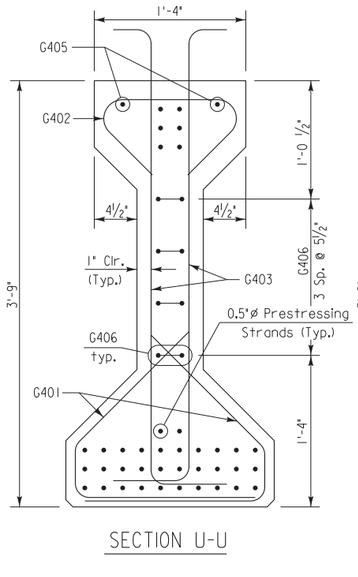
(1) 07525 - 224' UNIT - 65297



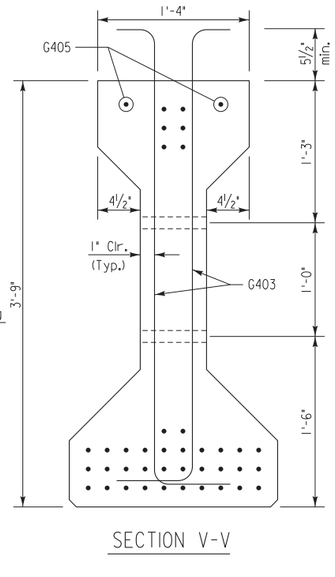
TYPICAL GIRDER ELEVATION (AASHTO TYPE III)



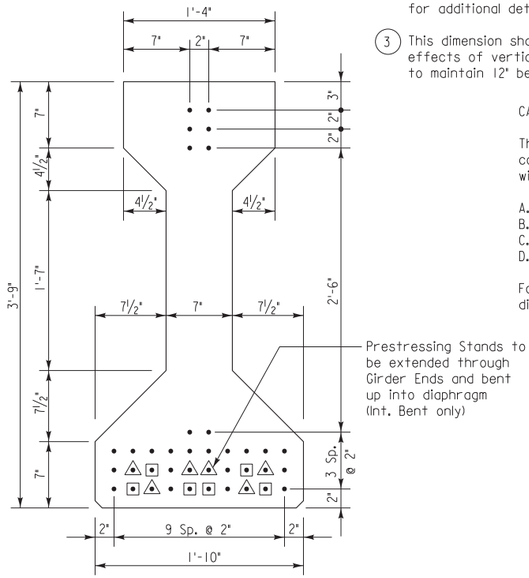
SECTION T-T



SECTION U-U



SECTION V-V



Prestressing Stands to be extended through Girder Ends and bent up into diaphragm (Int. Bent only)

STRAND ARRANGEMENTS

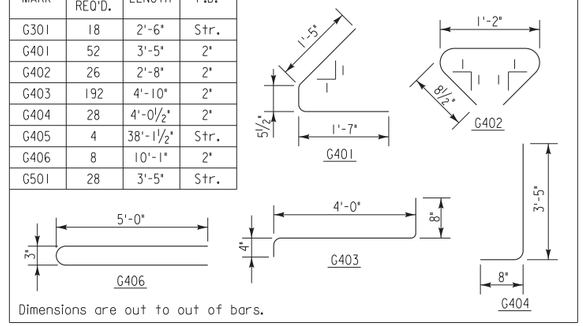
(2) Holes and inserts shown are for diaphragms. See Dwg. No. 65296 for additional details.

(3) This dimension shall be increased for effects of vertical profile on girder length to maintain 12" between ends of girders.

BAR LIST - PER GIRDER

MARK	NO. REQ'D.	LENGTH	P.D.
G301	18	2'-6"	Str.
G401	52	3'-5"	2"
G402	26	2'-8"	2"
G403	192	4'-10"	2"
G404	28	4'-0½"	2"
G405	4	38'-1½"	Str.
G406	8	10'-1"	2"
G501	28	3'-5"	Str.

BENDING DIAGRAMS



Dimensions are out to out of bars.

Note: All bars in BAR LIST shall be subsidiary to the item "74'-0" Prestressed Concrete Girders (Type III)". See span drawings for bar list of span reinforcing.

At the Contractor's option, the two G401 bars may be furnished as one bar.

CAMBER NOTES

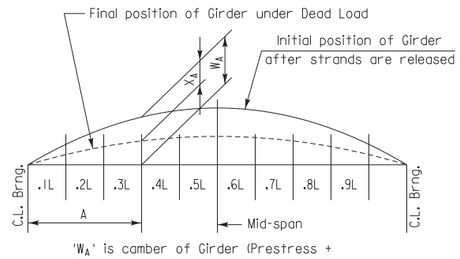
The camber and dead load deflection values shown are estimated based on the required minimum concrete strength for the prestressed concrete girders. The Contractor shall provide the Engineer with the following information:

A. Actual 28-day concrete strength of prestressed concrete girders.
B. Estimated age of prestressed concrete girders at time of erection.
C. Profile of each girder under self weight.
D. Number of days since release of strands of each girder.

Following receipt of the above data, the Engineer will provide an updated camber and deflection diagram to the Contractor, if required.

Span Pt.	Inches	
	W_A	X_A
0.00	0.000"	0.000"
0.10	0.749"	0.432"
0.20	1.332"	0.768"
0.30	1.748"	1.008"
0.40	1.998"	1.152"
0.50	2.081"	1.200"
0.60	1.998"	1.152"
0.70	1.748"	1.008"
0.80	1.332"	0.768"
0.90	0.749"	0.432"
1.00	0.000"	0.000"

TABLE OF GIRDER VARIABLES

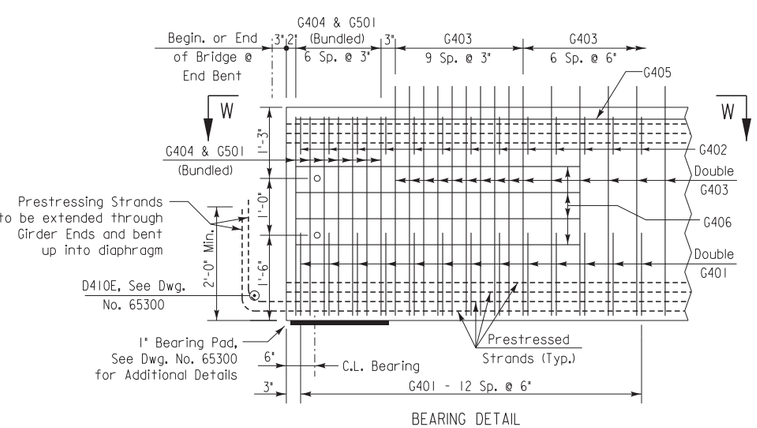


'W_A' is camber of Girder (Prestress + Dead Load of Girder @ 90 days after release)

'X_A' is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

CAMBER & DEFLECTIONS (INCHES)

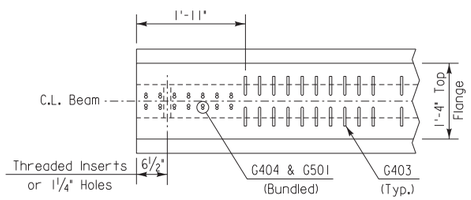
Note: 'W_A' & 'X_A' are based on the required minimum concrete strength and may vary from the dimension shown. 'W_A' & 'X_A' shall be measured along bottom of girders unless otherwise approved by the Engineer. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 65300 for limitations of the girder final position under dead load. The Contractor is responsible for any adjustment necessary to meet slab thickness tolerance and to achieve an acceptable finished grade. No payment shall be made for any additional concrete in the haunches when camber is less than shown.



BEARING DETAIL

(1) Saw and shop bend 6 bottom prestressing strands from each end of the girder into diaphragms as shown. Saw any remaining strands flush with the end of girder. See "Strand Arrangements" detail for alternating patterns.

At the Contractor's option, the location for bent up strands may be varied. The total number of bent up strands shall not be changed.



SECTION W-W

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 4 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT CACHE RIVER DITCH

ROUTE SEC.

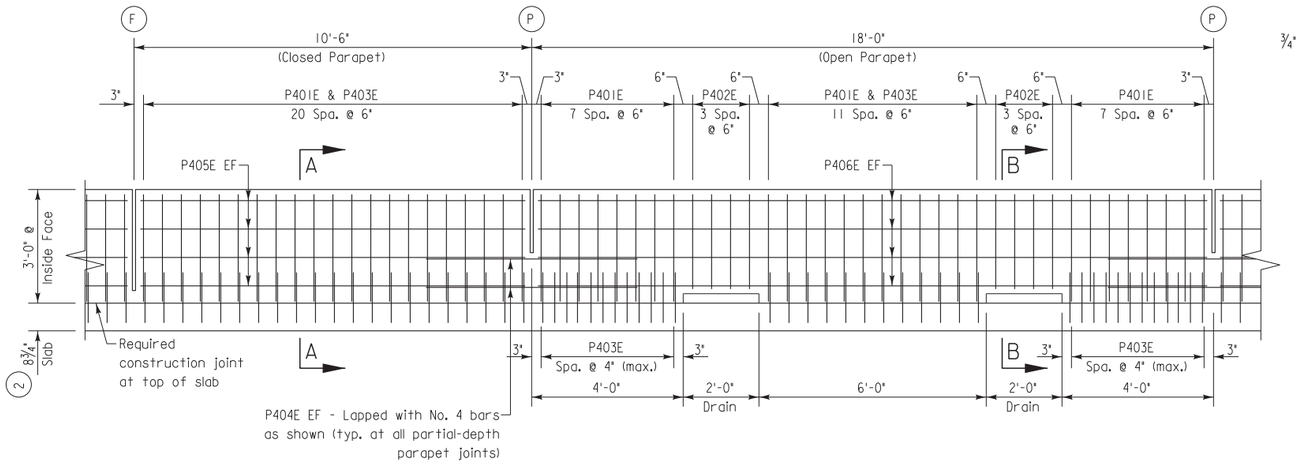
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x8_s4.dgn
SCALE: NO SCALE

BRIDGE NO. 07525 DRAWING NO. 65297

PRINT DATE: 7/29/2022

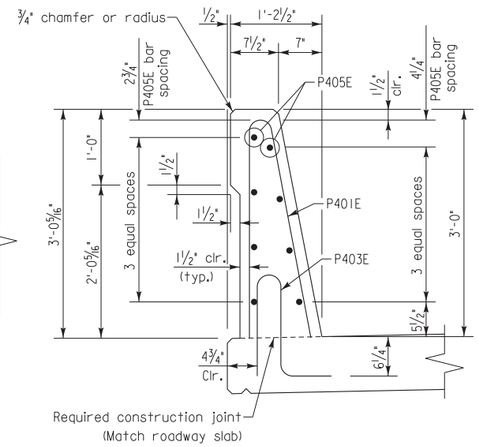
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	209	311
				(1)		07525 - 224' UNIT - 65298		



(2) Measured at edge of deck

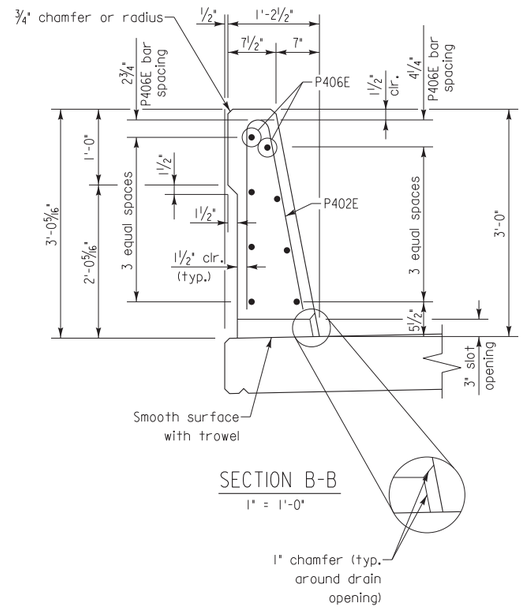
DETAILS OF PARAPET RAIL

½" = 1'-0"



SECTION A-A

1" = 1'-0"



SECTION B-B

1" = 1'-0"

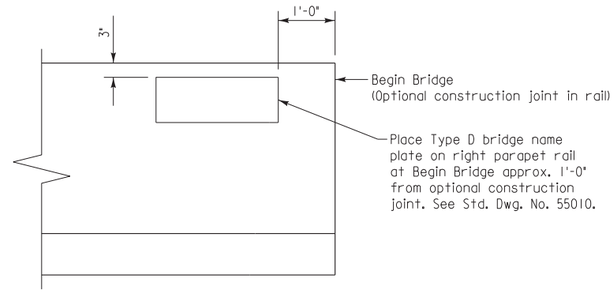
(F) C.L. Full-Depth Parapet Joint (1/4"-1" max.) Stop 4" from Top of Slab.

(P) C.L. Partial-Depth Parapet Joint (1/4"-1" max.) Stop 1-4" from Top of Slab.

NOTE:
For locations of open and closed parapet panels and full-depth and partial-depth parapet joints, see "HALF-REINFORCING PLAN" on Dwg. No. 65295.

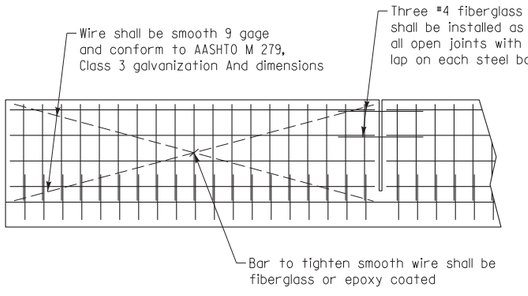
LEGEND

EF = Each Face

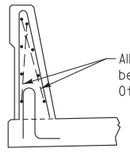


VIEW SHOWING LOCATION OF NAME PLATE

(Showing Inside Face of Parapet)
No Scale



NOTE:
For actual placement of reinforcing steel, see "DETAILS OF PARAPET RAIL".



NOTE:
All panels shall be braced as required to prevent racking. All parapet 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 groove pattern.

NOTE:
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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place of the Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 5 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
CACHE RIVER DITCH

ROUTE SEC.

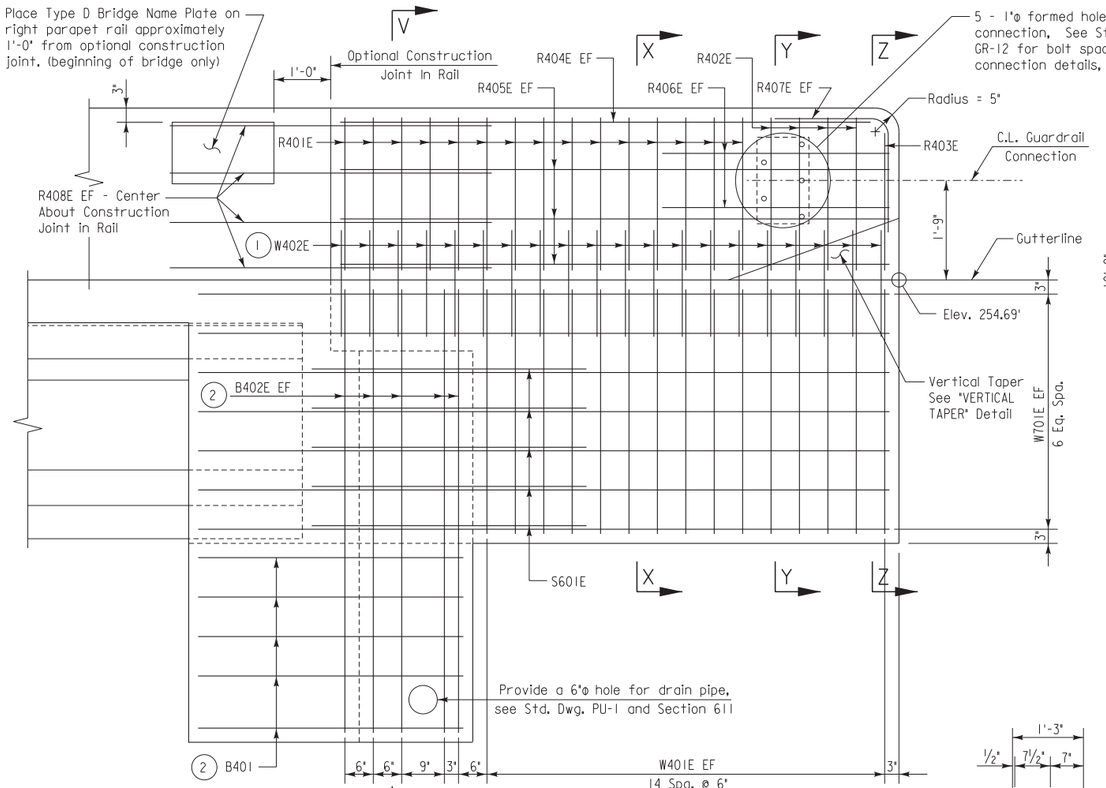
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x8_r1.dgn
SCALE: ½" = 1'-0"

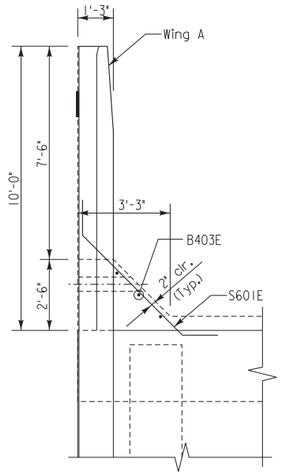
BRIDGE NO. 07525 DRAWING NO. 65298

PRINT DATE: 7/29/2022

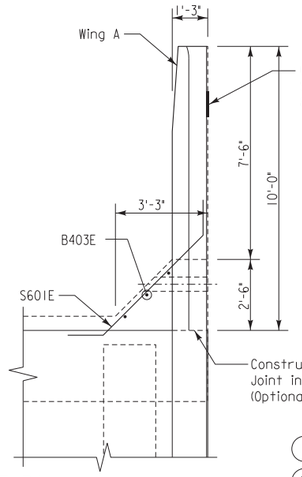
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	210	311
				(1)	07525 - 224' UNIT - 65299			

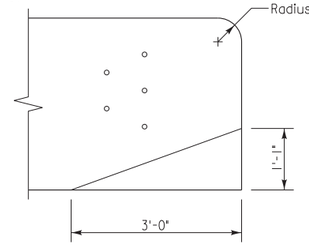


SECTION T-T
Scale: 3/4" = 1'-0"

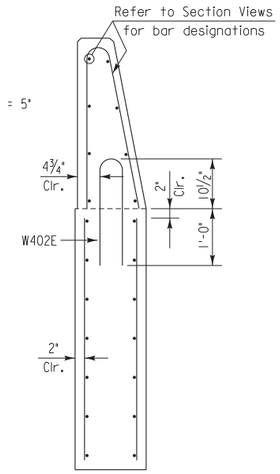


PLAN OF RAIL
Scale: 3/8" = 1'-0"





VERTICAL TAPER
Scale: 3/4" = 1'-0"

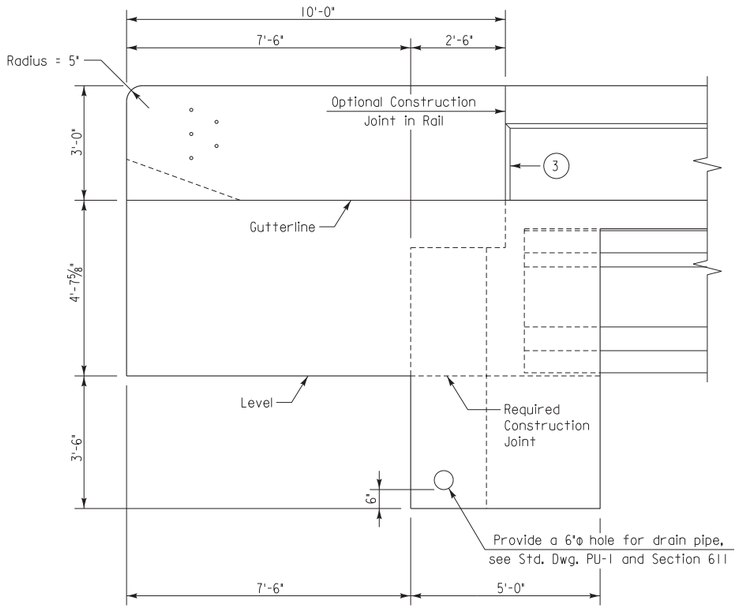


DETAIL A
Scale: 3/4" = 1'-0"

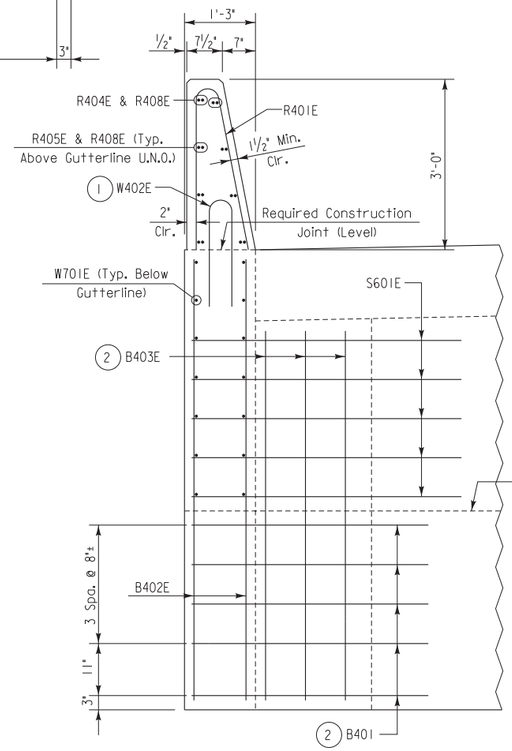
(1) See "DETAIL A" for placement of Bars W402E.

(2) See end bent details on Dwg. No. 65291 for reinforcing and additional details.

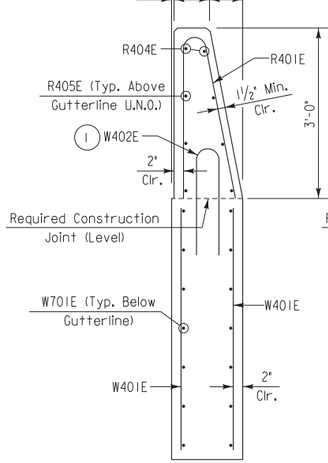
(3) Vertical chamfer not required if optional construction joint is used.



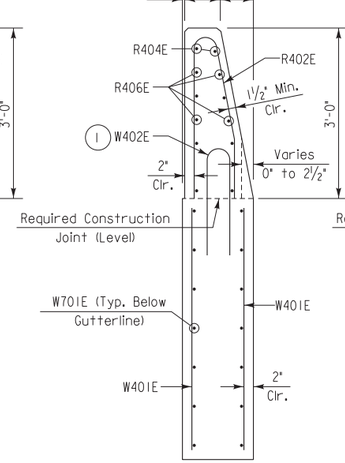
VIEW U-U
Scale: 1/2" = 1'-0"



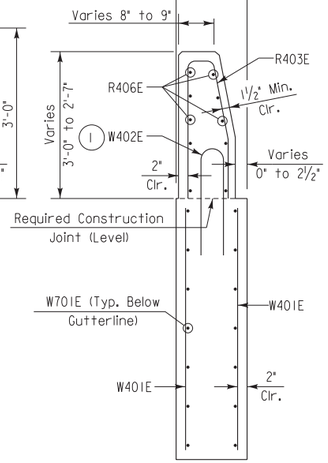
SECTON V-V
Scale: 3/4" = 1'-0"



SECTION X-X
Scale: 3/4" = 1'-0"



SECTION Y-Y
Scale: 3/4" = 1'-0"



SECTION Z-Z
Scale: 3/4" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 6 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT
CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020
FILENAME: b101054x8_w1.dgn
SCALE: 3/4" = 1'-0"

BRIDGE NO. 07525 DRAWING NO. 65299

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	211	311
				07525 - 224' UNIT - 65300				

GENERAL NOTES

CONCRETE:

All concrete, except for prestressed girders, 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 shall be chamfered ¾" unless otherwise noted.

The superstructure details shown are for use when removal deck forming is used and are the basis for measurement of Class S (AE) Concrete. See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

The concrete deck (roadway surface) 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. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. 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 ASTM A709 as specified in the plans. Unless otherwise noted, Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be ASTM A709, Gr. 36, Gr. 50 or Gr. 50W 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.

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. All welding shall conform to Subsection 807.26.

PRESTRESSED GIRDER:

Prestressing steel shall be 0.5" Φ Low Relaxation strands with a minimum ultimate strength of 270 ksi, and shall conform to AASHTO M 203.

Distances from the forms and spacing of the Prestressing Steel shall be maintained by stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

All girders shall be Type III as noted on the details and shall be the standard prestressed sections adopted by the Joint Committee of AASHTO and the Prestressed Concrete Institute. All girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Subsection 802.22.

Concrete shall be Class S and shall have a minimum 28 day compressive strength, f'c = 8,000 psi. The initial tensile force applied to each 0.5" Φ strand shall be 30,980 lbs. except as noted. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 6,000 psi.

Dimensions shown are to the center of the strands.

The Contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

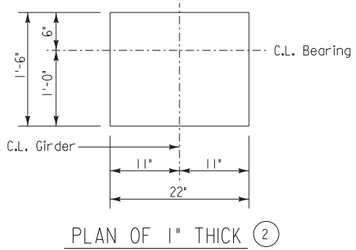
The tops of the girder shall be roughened to an amplitude of ¼" and shall be scrubbed transversely with a coarse wire brush to remove all laitance to produce an adequate surface for bonding to the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete girders. Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The Contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

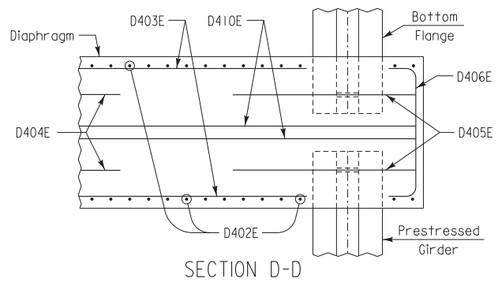
The points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final position.

The Contractor may submit alternate strand patterns with design calculations for review and approval.

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.



PLAN OF 1" THICK (2) UNREINFORCED BEARING PAD



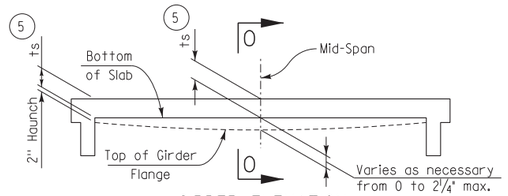
SECTION D-D

(1) For additional details, see End Bent Details, Dwg. No. 65291.

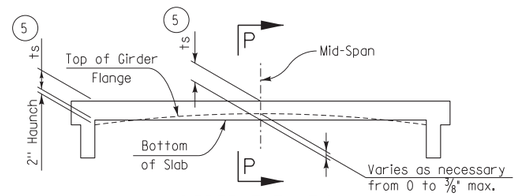
(2) Unreinforced bearing pads shall meet the requirements of Section 808 with the exception that hardness shall be 50 durometer. Unreinforced bearing pads shall not be paid for directly but shall be considered subsidiary to the item "Class S Concrete-Bridge". Estimated pad deflection under dead load is ¼".

(3) Material shall conform to AASHTO M153, Type I per Subsection 501.02(h)(1).

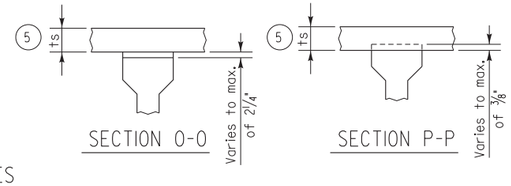
(4) Use closed-cell expanded polyethylene with a density of at least 2.1 lb/cf as determined by ASTM D3575 and with a minimum compressive stress of 9 psi at 25 percent deflection as determined by ASTM D3575.



GIRDER ELEVATION



GIRDER ELEVATION



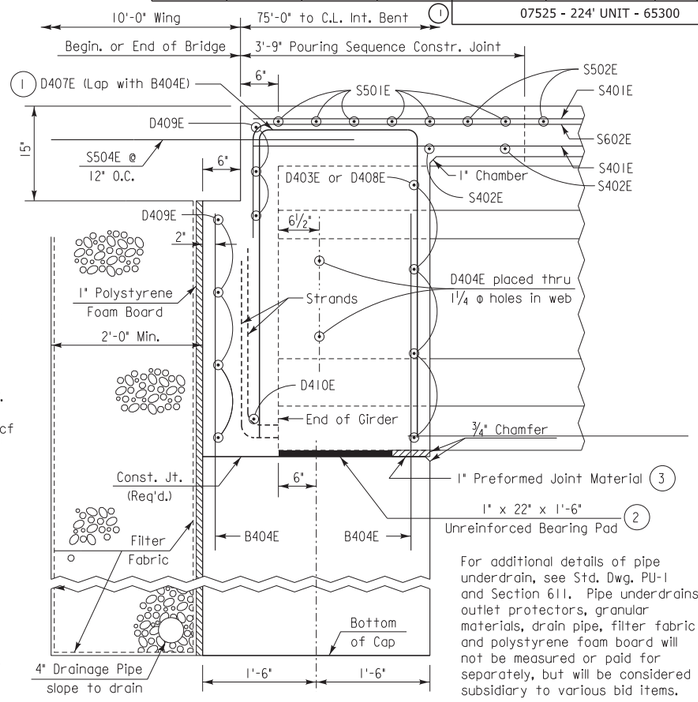
NOTES

ts = slab thickness as shown on superstructure details - See "Typical Roadway Section", Dwg. No. 65294.

(5) Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used.

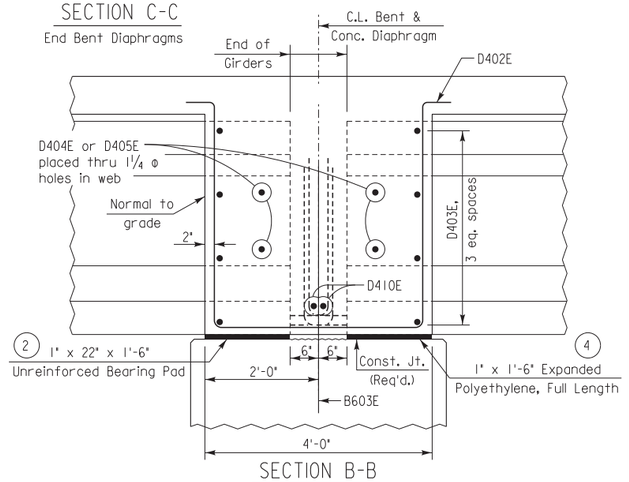
"Girder Elevation" sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ¾" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans over suitable increments so the revised grade will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



SECTION C-C

For additional details of pipe underdrain, see Std. Dwg. PU-1 and Section 611. Pipe underdrains, outlet protectors, granular materials, drain pipe, filter fabric and polystyrene foam board will not be measured or paid for separately, but will be considered subsidiary to various bid items.



SECTION B-B

Intermediate Bent Diaphragms

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022
BRIDGE ENGINEER

SHEET 7 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	KJK	DATE:	NOV 2020	FILENAME:	b101054x8_s5.dgn
CHECKED BY:	BKC	DATE:	NOV 2022	SCALE:	1" = 1'-0"
DESIGNED BY:	KJK	DATE:	NOV 2020		

BRIDGE NO. 07525 DRAWING NO. 65300

PRINT DATE: 7/29/2022

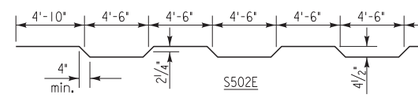
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

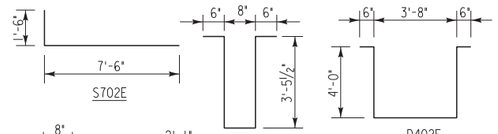
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	212	311
(1)	07525 - 224' UNIT - 65301			

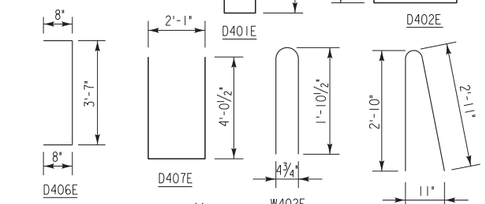
BAR LIST

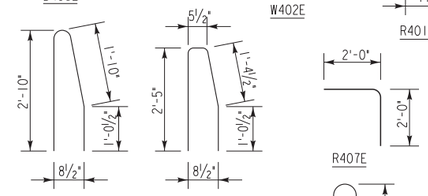
MARK	NO. REQ'D.	LENGTH	P.D.
S401E	552	39'-8"	Str.
S402E	221	32'-2"	Str.
S501E	229	32'-2"	Str.
S502E	220	33'-0"	3"
S503E	882	5'-6½"	3"
S504E	60	4'-0"	Str.
S601E	20	7'-5½"	4½"
S701E	88	20'-0"	Str.
S702E	88	8'-10"	5¼"
D401E	72	8'-4"	2"
D402E	92	12'-8"	2"
D403E	72	6'-8"	Str.
D404E	32	4'-0"	Str.
D405E	16	3'-10"	Str.
D406E	16	4'-10"	2"
D407E	60	10'-1"	2"
D408E	16	1'-6"	Str.
D409E	14	32'-2"	Str.
D410E	6	30'-8"	Str.
D601E	12	6'-0"	Str.
D602E	72	7'-2"	Str.
W401E	120	4'-3"	Str.
W402E	80	3'-11"	3¾"
W501E	32	7'-3"	3¾"
W701E	56	12'-2"	Str.
R401E	60	5'-11"	3¾"
R402E	16	5'-11"	3¾"
R403E	4	5'-2"	2"
R404E	8	9'-4"	Str.
R405E	24	9'-8"	Str.
R406E	16	4'-0"	Str.
R407E	8	3'-11"	6"
R408E	32	5'-8"	Str.
P401E	900	5'-11"	2½"
P402E	144	5'-2"	2½"
P403E	756	3'-5"	3"
P404E	96	5'-7"	Str.
P405E	96	10'-2"	Str.
P406E	144	17'-8"	Str.

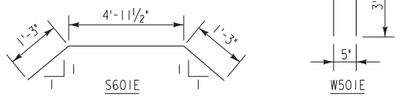
BENDING DIAGRAMS

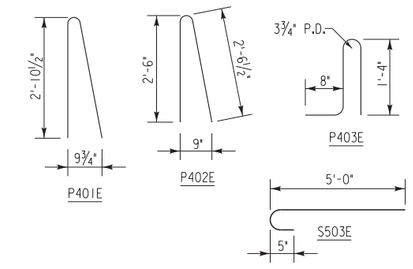






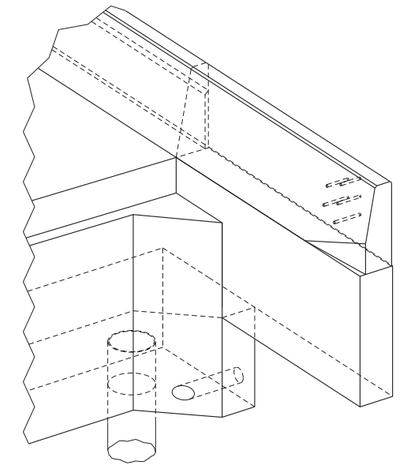






Bars designated with an "E" suffix are to be epoxy coated.

Dimensions are out to out of bars.



THREE DIMENSIONAL VIEW
OF WING AND RAIL AT END BENT

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH
07/29/2022
BRIDGE ENGINEER

SHEET 8 OF 8
DETAILS OF 224' INTEGRAL PRESTRESSED CONCRETE GIRDER UNIT CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

FILENAME: b101054x8_s6.dgn
SCALE: ⅜" = 1'-0"

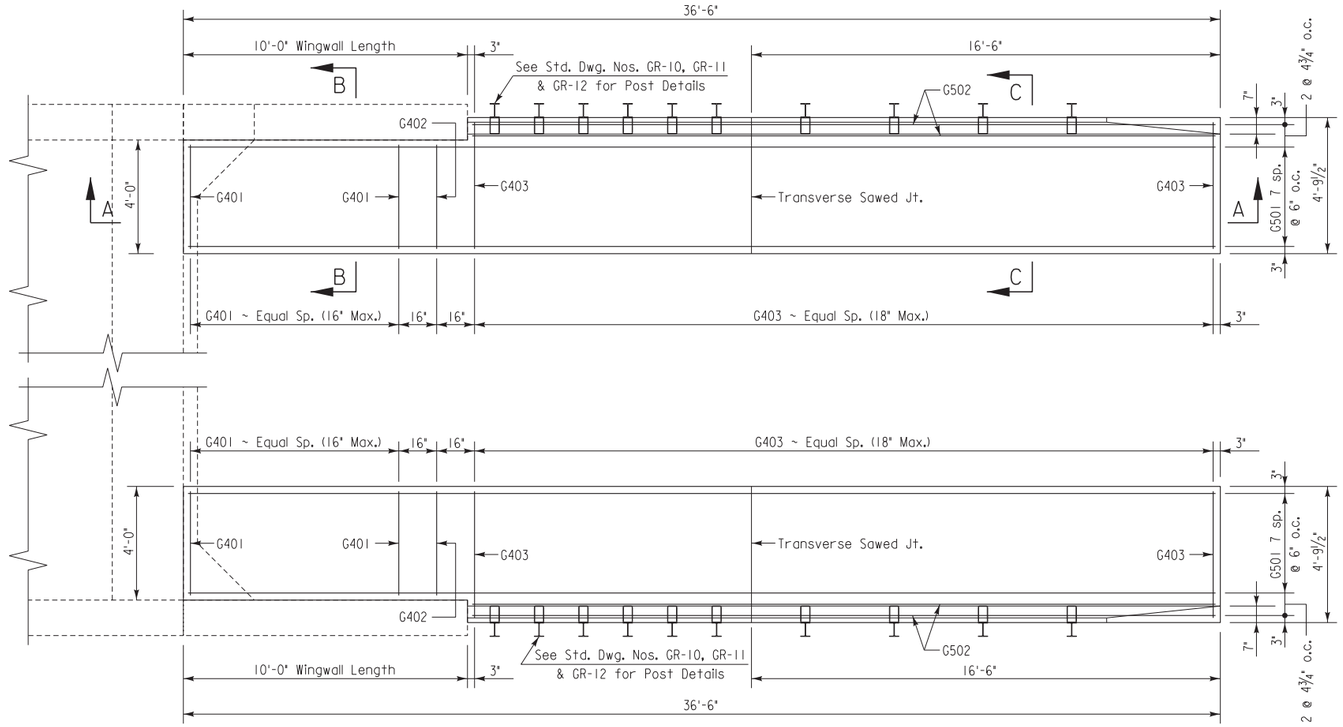
BRIDGE NO. 07525 DRAWING NO. 65301

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

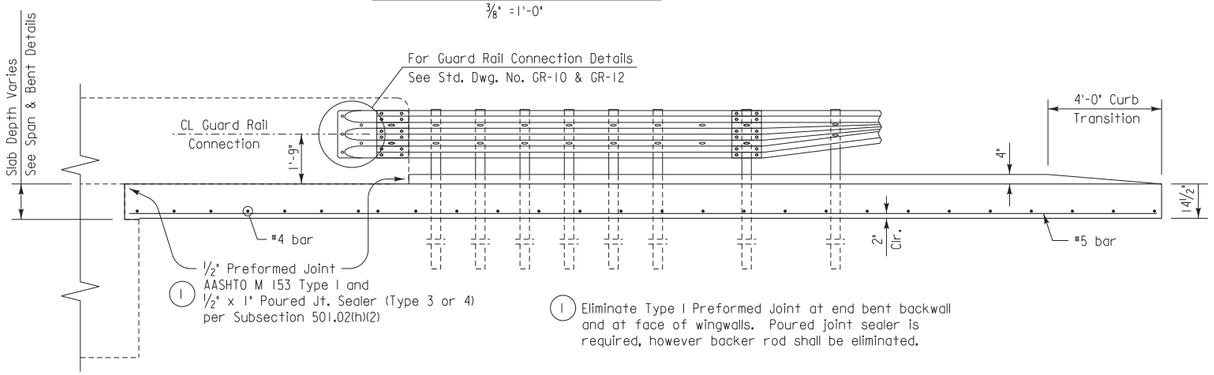
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	213	311

① 07525 - APPROACH GUTTERS - 65302



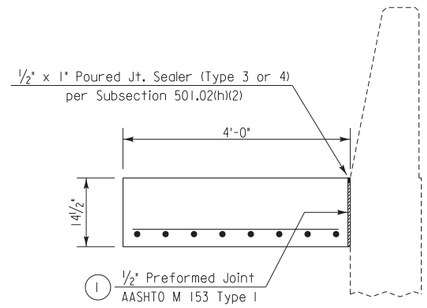
PLAN OF APPROACH GUTTERS

3/8" =1'-0"



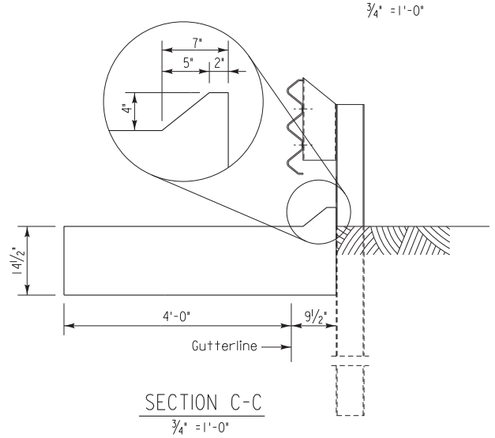
SECTION A-A

3/8" =1'-0"



SECTION B-B

¾" =1'-0"



SECTION C-C

¾" =1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	14	3'-8"
G402	2	3'-8"
G403	38	4'-5½"
G501	16	36'-2"
G502	4	26'-2"

GENERAL NOTES

All concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

TABLE OF QUANTITIES FOR
ONE SET OF APPROACH GUTTERS

(FOR INFORMATION ONLY)

Reinforcing Steel	Concrete
Lbs.	Cu. Yds.
865	15.18

STATE OF ARKANSAS
Cynthia A. Rich
LICENSED PROFESSIONAL ENGINEER
No. 19278
CYNTHIA A. RICH

07/29/2022

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH GUTTERS CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020 FILENAME: b101054x8_g1.dgn

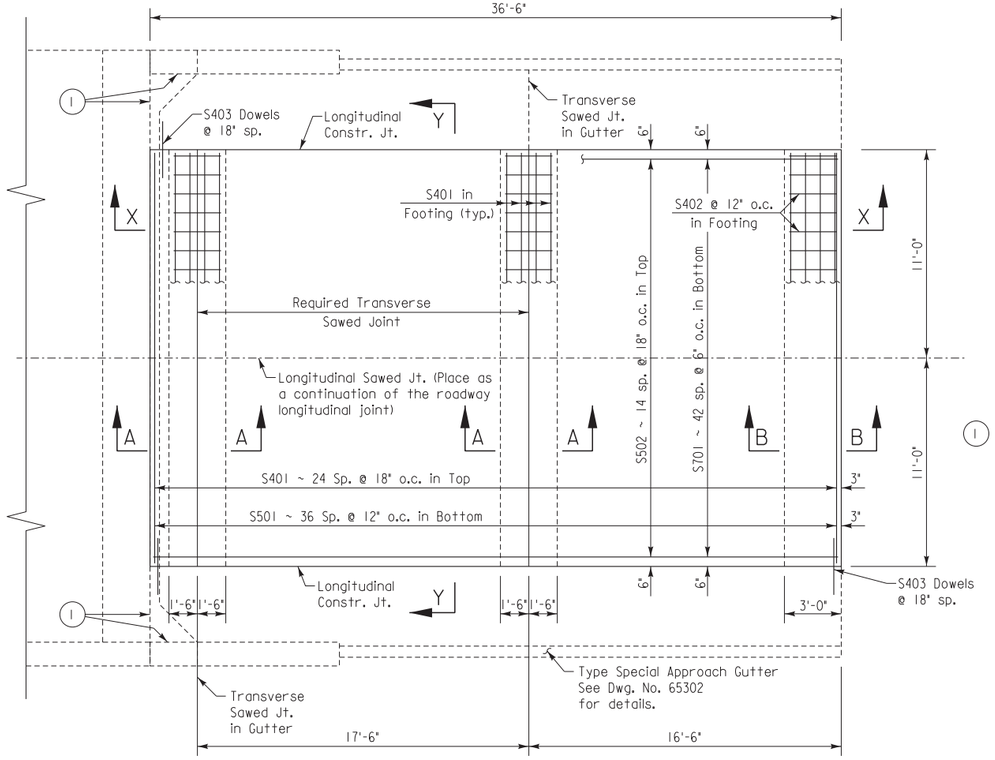
CHECKED BY: BKC DATE: JUN 2022 SCALE: 3/8" = 1'-0"

DESIGNED BY: KJK DATE: NOV 2020

BRIDGE NO. 07525 DRAWING NO. 65302

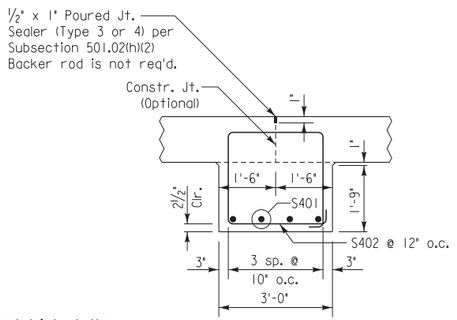
PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	214	311
				(1)	07525 - APPROACH SLAB - 65303			



PLAN - APPROACH SLAB WITH APPROACH GUTTERS

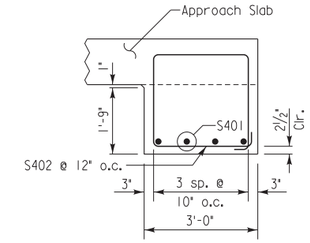
1/4" =1'-0"



SECTION A-A

1/2" =1'-0"

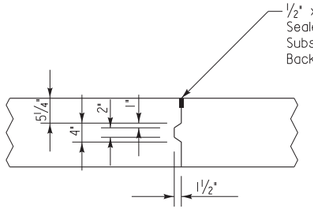
(1) Eliminate Type I Preformed Joint at the concrete diaphragm and at the face of wingwalls. Poured Joint Sealer is required, however backer rod shall be eliminated.



SECTION B-B

AT ASPHALT APPROACH PAVEMENT

1/2" =1'-0"

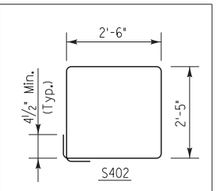


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

¾" =1'-0"

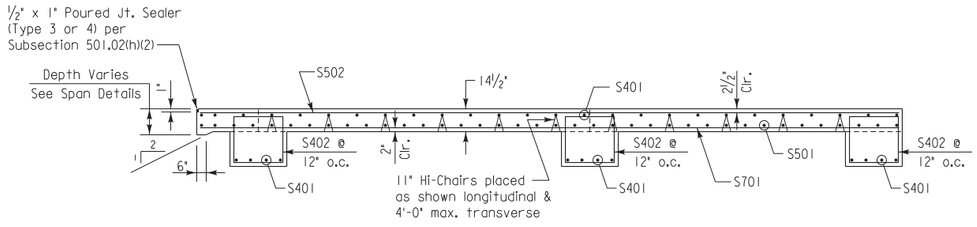
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401	37	21'-8"	Str.
S402	66	10'-4"	2"
S403	48	3'-0"	Str.
S501	37	21'-8"	Str.
S502	15	36'-2"	Str.
S701	43	36'-2"	Str.



S402

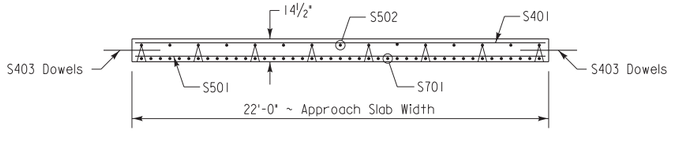
Dimensions are out to out of bar.



SECTION X-X

SQUARE APPROACH SLAB SHOWN

1/4" =1'-0"



SECTION Y-Y

TABLE OF QUANTITIES FOR ONE APPROACH SLAB

(FOR INFORMATION ONLY)

Slab Width	Reinforcing Steel	Concrete
	Lbs.	Cu. Yds.
22'-0"	5668	49.38

GENERAL NOTES

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

The surface finish for Approach Slabs shall match that used on the bridge deck.

STATE OF ARKANSAS
CYNTHIA A. RICH
LICENSED PROFESSIONAL ENGINEER
No. 19278

07/29/2022

BRIDGE ENGINEER

DETAILS OF TYPE SPECIAL APPROACH SLAB CACHE RIVER DITCH

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KJK DATE: NOV 2020
CHECKED BY: BKC DATE: JUN 2022
DESIGNED BY: KJK DATE: NOV 2020

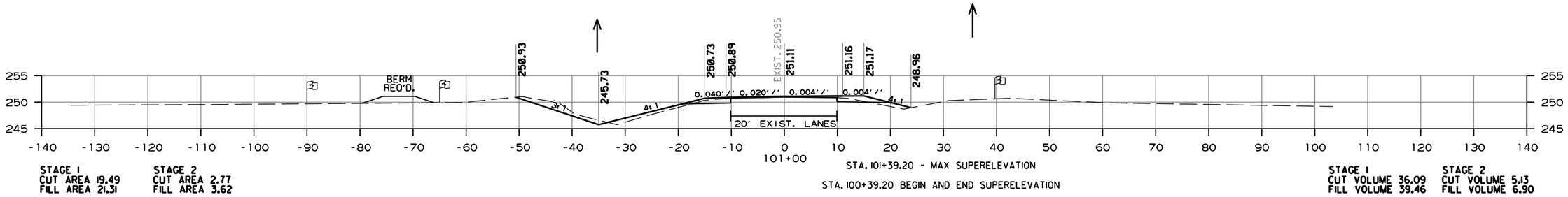
FILENAME: b101054x8_g2.dgn
SCALE: ¼" = 1'-0"

BRIDGE NO. 07525 DRAWING NO. 65303

PRINT DATE: 7/29/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	215	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1
CUT AREA 19.49
FILL AREA 21.31

STAGE 2
CUT AREA 2.77
FILL AREA 3.62

STA. 101+39.20 - MAX SUPERELEVATION

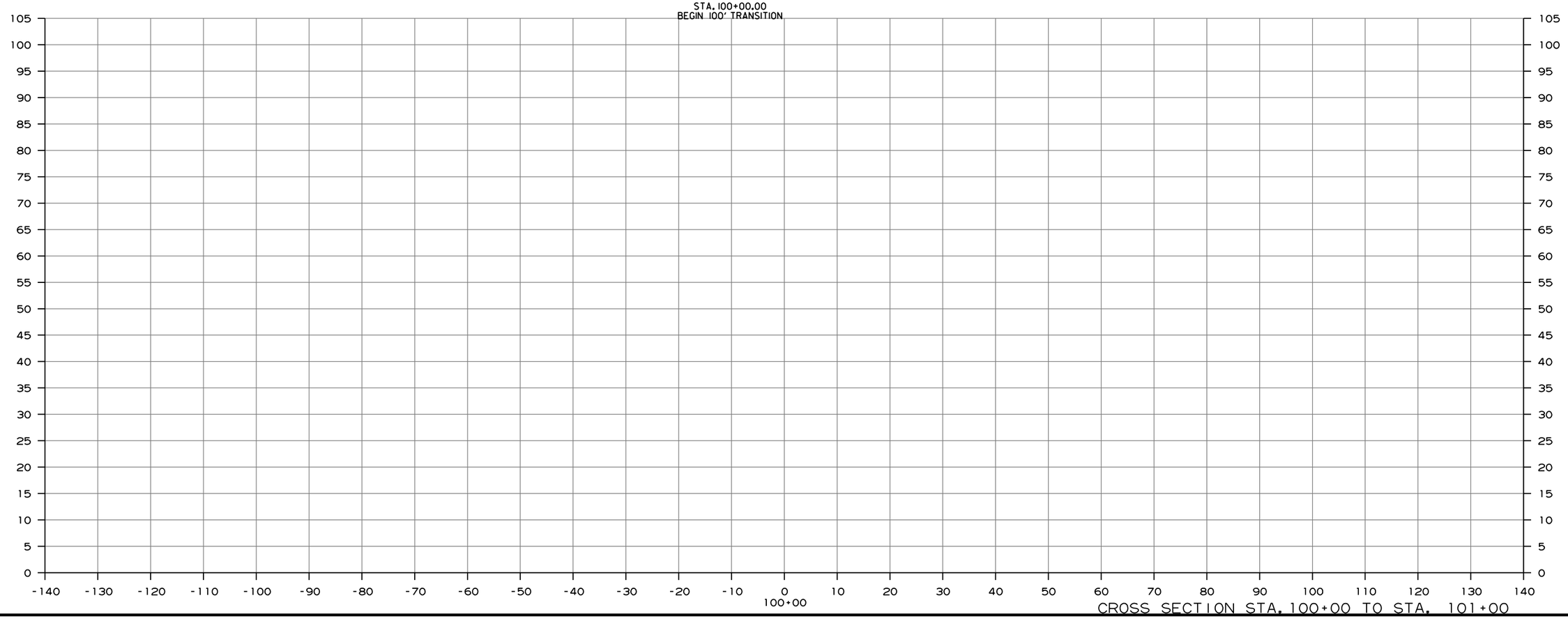
STA. 100+39.20 BEGIN AND END SUPERELEVATION

STAGE 1
CUT VOLUME 36.09
FILL VOLUME 39.46

STAGE 2
CUT VOLUME 5.13
FILL VOLUME 6.90

STA. 101+00.00
BEGIN JOB 101054
AND SITE 1 AND 2

STA. 100+00.00
BEGIN 100' TRANSITION

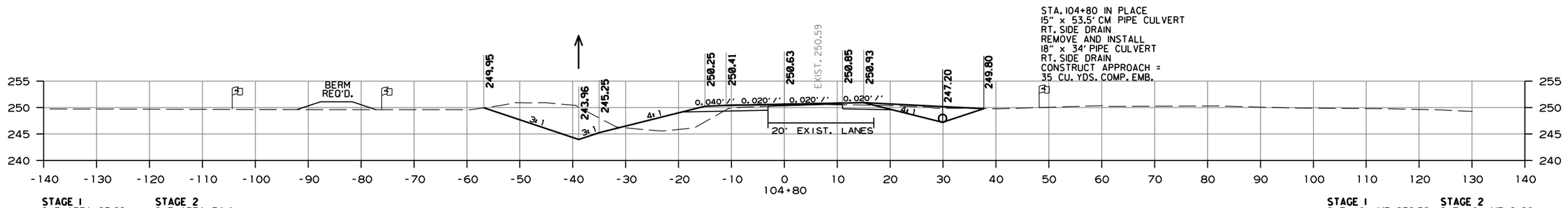


CROSS SECTION STA. 100+00 TO STA. 101+00

R101054_Site 1 and 2.dgn 8/15/2022

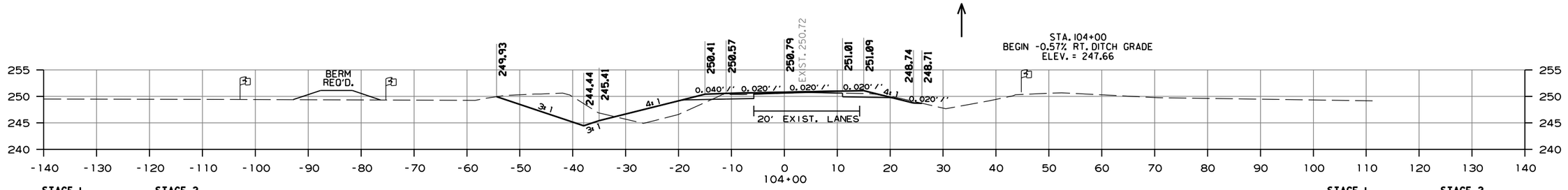
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	216	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1 CUT AREA 93.82 FILL AREA 53.05 | STAGE 2 CUT AREA 34.41 FILL AREA 0

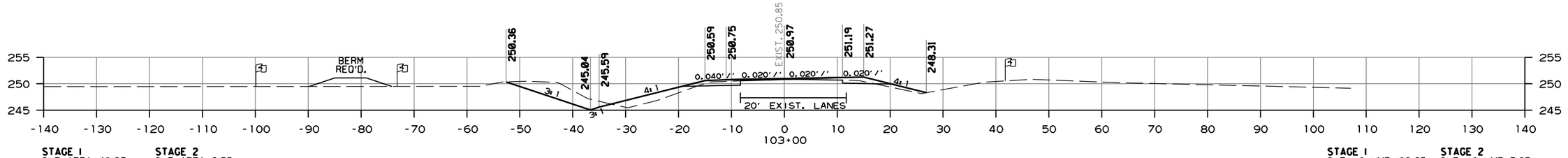
STAGE 1 CUT VOLUME 236.58 FILL VOLUME 156.24 | STAGE 2 CUT VOLUME 61.20 FILL VOLUME 0



STAGE 1 CUT AREA 65.87 FILL AREA 52.41 | STAGE 2 CUT AREA 6.90 FILL AREA 0

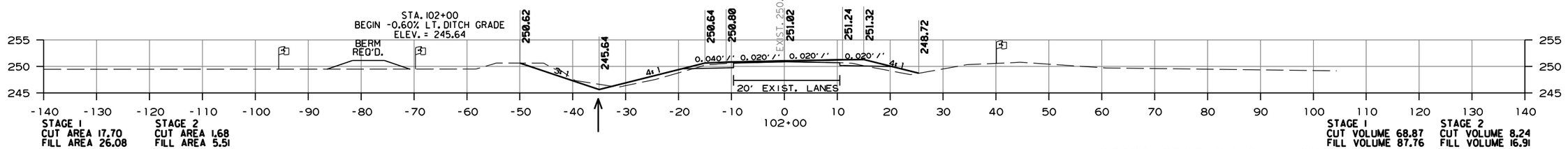
STA. 104+00.00
BEGIN PROFILE GRADE

STAGE 1 CUT VOLUME 197.85 FILL VOLUME 162.24 | STAGE 2 CUT VOLUME 17.50 FILL VOLUME 7.52



STAGE 1 CUT AREA 40.97 FILL AREA 35.20 | STAGE 2 CUT AREA 2.55 FILL AREA 4.06

STAGE 1 CUT VOLUME 108.65 FILL VOLUME 113.48 | STAGE 2 CUT VOLUME 7.83 FILL VOLUME 17.72



STAGE 1 CUT AREA 17.70 FILL AREA 26.08 | STAGE 2 CUT AREA 1.68 FILL AREA 5.51

STAGE 1 CUT VOLUME 68.87 FILL VOLUME 87.76 | STAGE 2 CUT VOLUME 8.24 FILL VOLUME 16.91

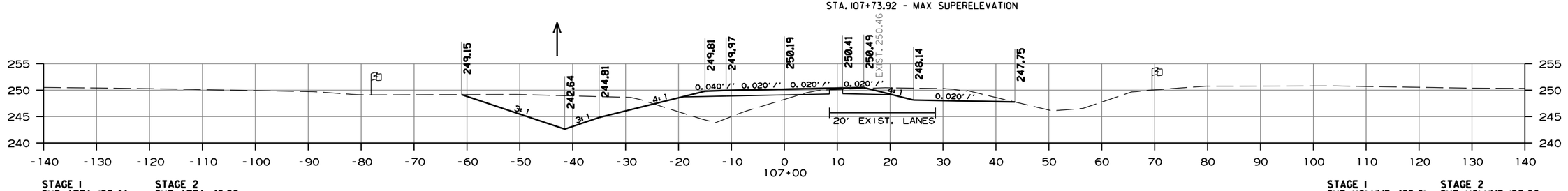
CROSS SECTION STA. 102+00 TO STA. 104+80

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	217	311

(2) CROSS SECTIONS - SITE 1 AND 2

STA. 107+73.92 - MAX SUPERELEVATION

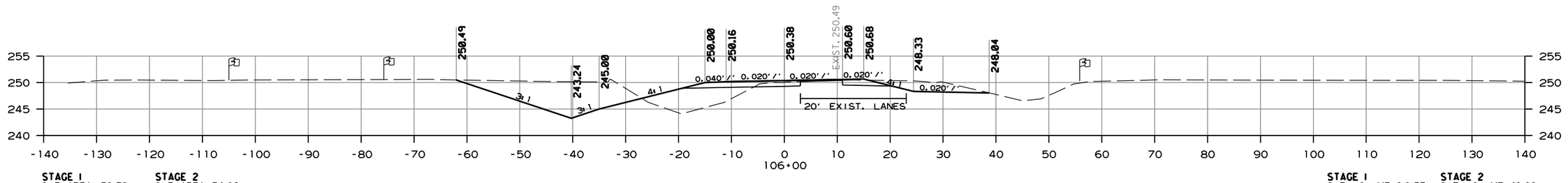


STAGE 1
CUT AREA 123.44
FILL AREA 71.48

STAGE 2
CUT AREA 48.59
FILL AREA 0

STAGE 1
CUT VOLUME 485.61
FILL VOLUME 239.24

STAGE 2
CUT VOLUME 153.06
FILL VOLUME 0



STAGE 1
CUT AREA 138.79
FILL AREA 57.71

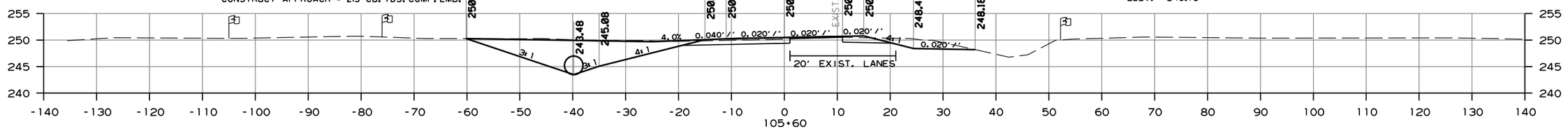
STAGE 2
CUT AREA 34.06
FILL AREA 0

STAGE 1
CUT VOLUME 218.37
FILL VOLUME 42.75

STAGE 2
CUT VOLUME 49.99
FILL VOLUME 0

STA. 105+60 IN PLACE
24" x 54.5' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
42" x 54' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 215 CU. YDS. COMP. EMB.

STA. 105+60
BEGIN -0.57% RT. DITCH GRADE
ELEV. = 246.75

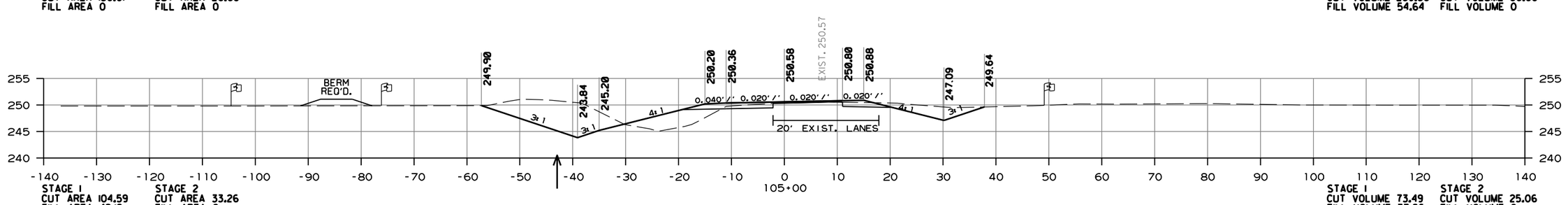


STAGE 1
CUT AREA 156.01
FILL AREA 0

STAGE 2
CUT AREA 26.68
FILL AREA 0

STAGE 1
CUT VOLUME 289.56
FILL VOLUME 54.64

STAGE 2
CUT VOLUME 66.60
FILL VOLUME 0



STAGE 1
CUT AREA 104.59
FILL AREA 49.18

STAGE 2
CUT AREA 33.26
FILL AREA 0

STAGE 1
CUT VOLUME 73.49
FILL VOLUME 37.86

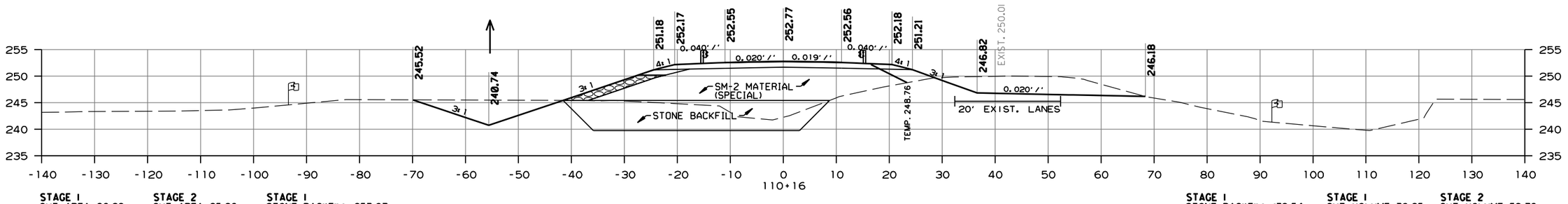
STAGE 2
CUT VOLUME 25.06
FILL VOLUME 0

CROSS SECTION STA. 105+00 TO STA. 107+00

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	218	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1
CUT AREA 66.99
FILL AREA 281.46

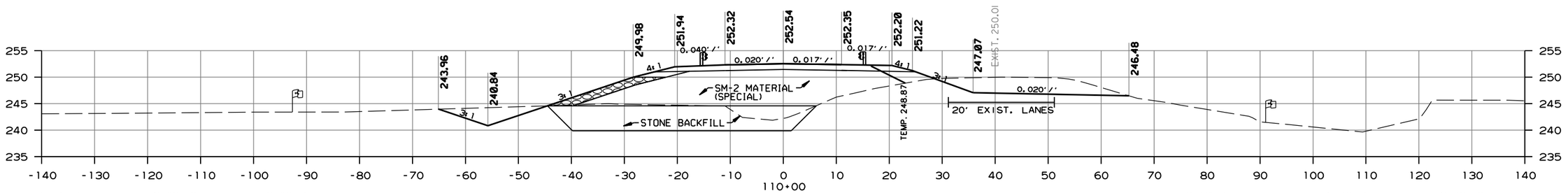
STAGE 2
CUT AREA 95.26
FILL AREA 13.52

STAGE 1
STONE BACKFILL 253.07
DUMPED RIPRAP 22.57

STAGE 1
STONE BACKFILL 139.54
DUMPED RIPRAP 14.55

STAGE 1
CUT VOLUME 30.25
FILL VOLUME 174.64

STAGE 2
CUT VOLUME 52.76
FILL VOLUME 7.52



STAGE 1
CUT AREA 35.11
FILL AREA 307.95

STAGE 2
CUT AREA 82.81
FILL AREA 11.87

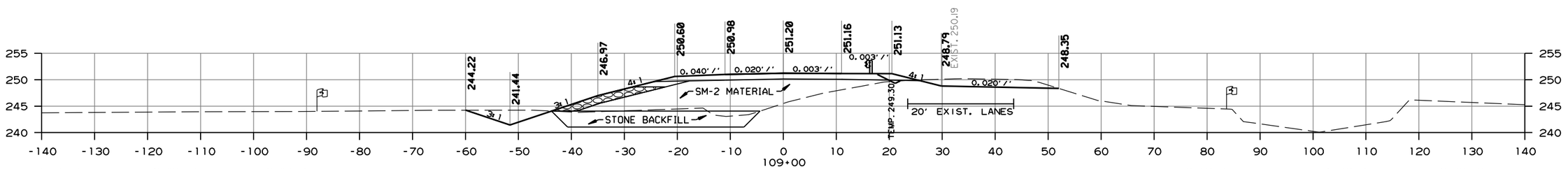
STAGE 1
STONE BACKFILL 217.89
DUMPED RIPRAP 26.54

NOTE: STA. 109+80 TO STA. 110+55
CONSTRUCT COMPACTED EMBANKMENT (SPECIAL) IN ACCORDANCE WITH SECTION 210 OF AHTD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION 2014 (SEE SPECIAL PROVISIONS AND DETAILS FOR INSTALLATION)

STAGE 1
STONE BACKFILL 606.17
DUMPED RIPRAP 95.63

STAGE 1
CUT VOLUME 108.46
FILL VOLUME 971.04

STAGE 2
CUT VOLUME 211.76
FILL VOLUME 23.30



STAGE 1
CUT AREA 23.46
FILL AREA 216.41

STAGE 2
CUT AREA 31.54
FILL AREA 0.71

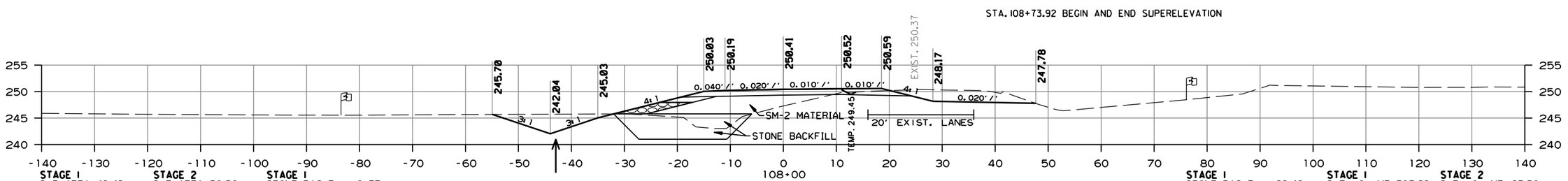
STAGE 1
STONE BACKFILL 109.44
DUMPED RIPRAP 25.10

STAGE 1
STONE BACKFILL 391.13
DUMPED RIPRAP 71.30

STAGE 1
CUT VOLUME 122.13
FILL VOLUME 542.72

STAGE 2
CUT VOLUME 151.93
FILL VOLUME 1.31

STA. 108+73.92 BEGIN AND END SUPERELEVATION



STAGE 1
CUT AREA 42.49
FILL AREA 76.66

STAGE 2
CUT AREA 50.50
FILL AREA 0

STAGE 1
STONE BACKFILL 101.77
DUMPED RIPRAP 13.40

STAGE 1
STONE BACKFILL 188.46
DUMPED RIPRAP 24.81

STAGE 1
CUT VOLUME 307.28
FILL VOLUME 274.33

STAGE 2
CUT VOLUME 183.50
FILL VOLUME 0

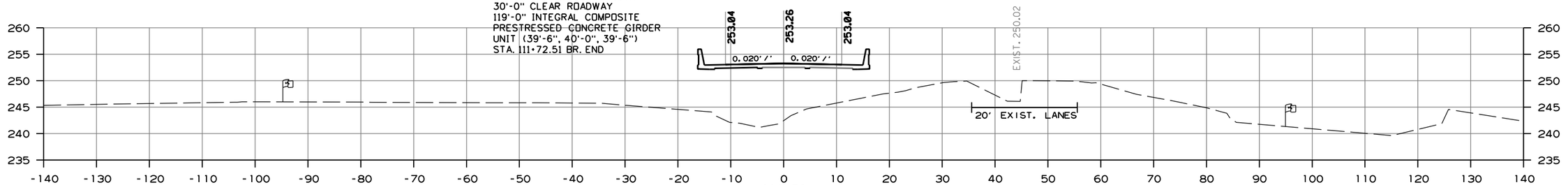
CROSS SECTION STA. 108+00 TO STA. 110+16

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	219	311

(2) CROSS SECTIONS - SITE 1 AND 2

STA. 110+52.49 BR. END
BR. NO. 07522
120'-0 1/8" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
119'-0" INTEGRAL COMPOSITE
PRESTRESSED CONCRETE GIRDER
UNIT (39'-6", 40'-0", 39'-6")
STA. 111+72.51 BR. END



STAGE 1
CUT AREA 84.14
FILL AREA 288.16

STAGE 2
CUT AREA 106.90
FILL AREA 17.16

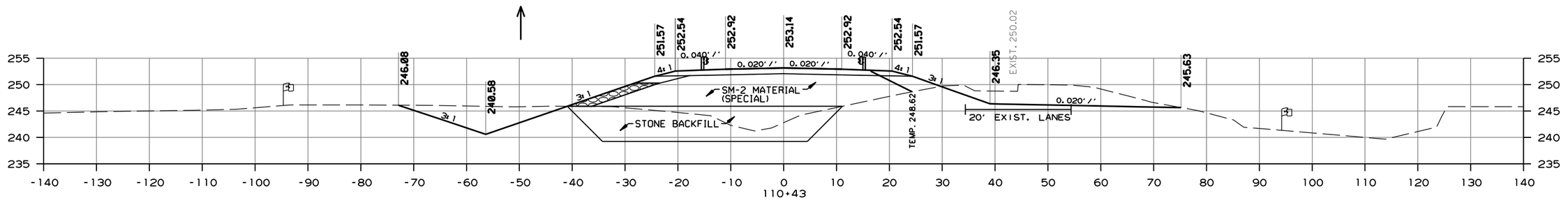
STAGE 1
STONE BACKFILL 302.34
DUMPED RIPRAP 20.22

STA. 110+73.01
END -0.60% LT. DITCH GRADE
ELEV. = 240.40

STAGE 1
STONE BACKFILL 111.98
DUMPED RIPRAP 7.49

STAGE 1
CUT VOLUME 31.16
FILL VOLUME 106.73

STAGE 2
CUT VOLUME 39.59
FILL VOLUME 6.36



STAGE 1
CUT AREA 84.14
FILL AREA 288.16

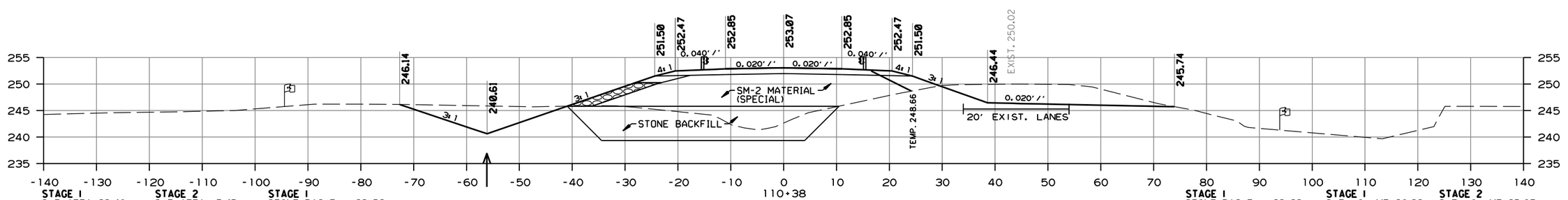
STAGE 2
CUT AREA 106.90
FILL AREA 17.16

STAGE 1
STONE BACKFILL 302.34
DUMPED RIPRAP 20.22

STAGE 1
STONE BACKFILL 54.99
DUMPED RIPRAP 3.77

STAGE 1
CUT VOLUME 15.42
FILL VOLUME 53.20

STAGE 2
CUT VOLUME 20.40
FILL VOLUME 3.09



STAGE 1
CUT AREA 82.40
FILL AREA 286.42

STAGE 2
CUT AREA 113.45
FILL AREA 16.23

STAGE 1
STONE BACKFILL 291.56
DUMPED RIPRAP 20.53

STAGE 1
STONE BACKFILL 221.89
DUMPED RIPRAP 17.56

STAGE 1
CUT VOLUME 60.86
FILL VOLUME 231.36

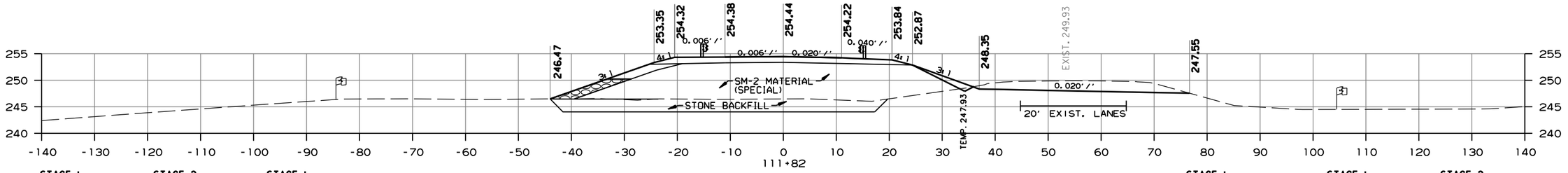
STAGE 2
CUT VOLUME 85.03
FILL VOLUME 12.12

CROSS SECTION STA. 110+38 TO STA. 110+53

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	220	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1
CUT AREA 0.78
FILL AREA 405.86

STAGE 2
CUT AREA 63.49
FILL AREA 8.02

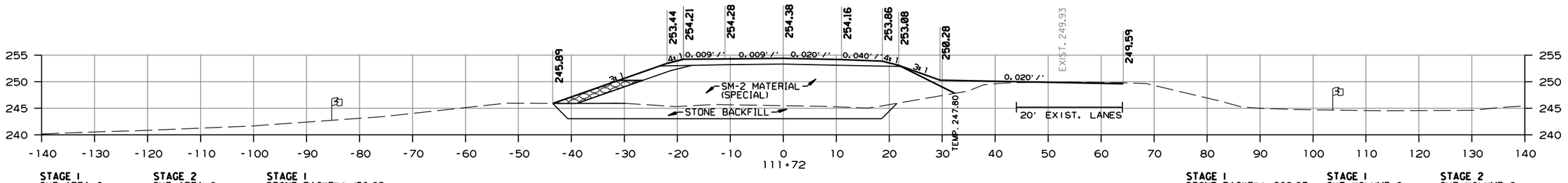
STAGE 1
STONE BACKFILL 144.66
DUMPED RIPRAP 17.15

NOTE: STA. 111+72 TO STA. 112+88
CONSTRUCT COMPACTED EMBANKMENT (SPECIAL) IN ACCORDANCE WITH SECTION 210 OF AHTD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION 2014 (SEE SPECIAL PROVISIONS AND DETAILS FOR INSTALLATION)

STAGE 1
STONE BACKFILL 55.68
DUMPED RIPRAP 6.84

STAGE 1
CUT VOLUME 0.14
FILL VOLUME 156.09

STAGE 2
CUT VOLUME 11.76
FILL VOLUME 5.51



STAGE 1
CUT AREA 0
FILL AREA 437.01

STAGE 2
CUT AREA 0
FILL AREA 21.73

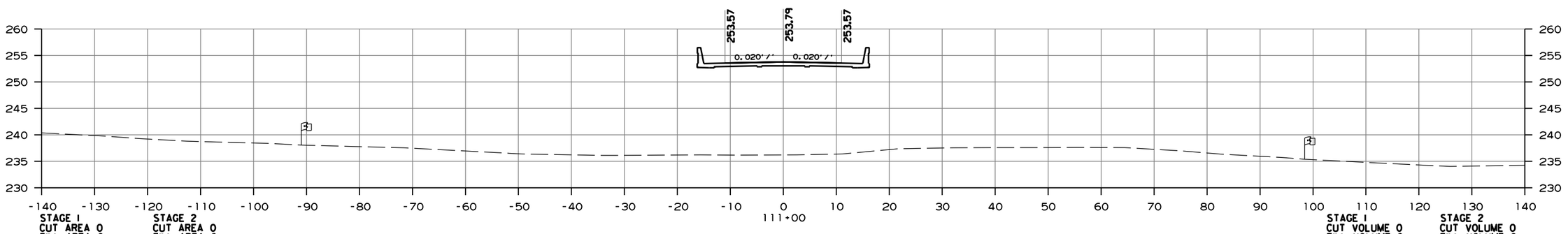
STAGE 1
STONE BACKFILL 156.02
DUMPED RIPRAP 19.79

STAGE 1
STONE BACKFILL 208.03
DUMPED RIPRAP 26.39

STAGE 1
CUT VOLUME 0
FILL VOLUME 582.68

STAGE 2
CUT VOLUME 0
FILL VOLUME 28.97

STA. 111+33.97 BEGIN AND END SUPERELEVATION



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

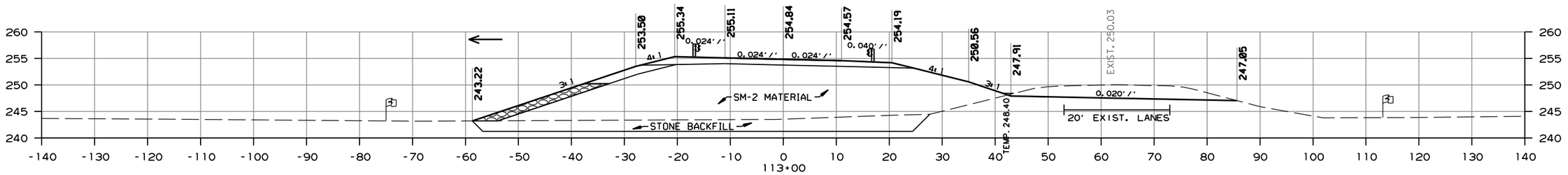
STAGE 2
CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 111+00 TO STA. 111+82

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	221	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1
CUT AREA 0
FILL AREA 733.11

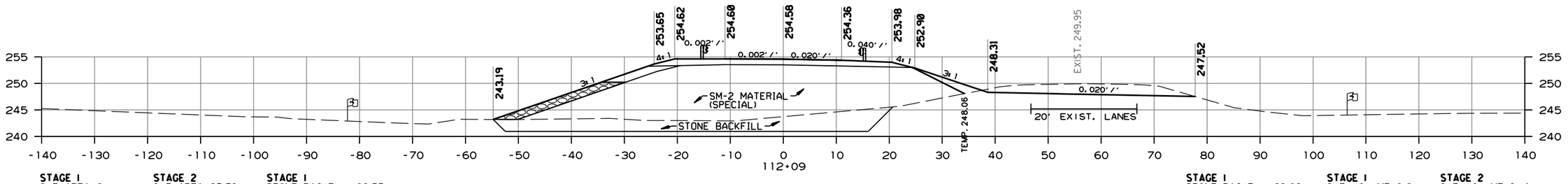
STAGE 2
CUT AREA 81.82
FILL AREA 0

STAGE 1
STONE BACKFILL 195.38
DUMPED RIPRAP 33.37

STAGE 1
STONE BACKFILL 643.59
DUMPED RIPRAP 110.92

STAGE 1
CUT VOLUME 0
FILL VOLUME 2273.64

STAGE 2
CUT VOLUME 244.59
FILL VOLUME 19.43



STAGE 1
CUT AREA 0
FILL AREA 616.08

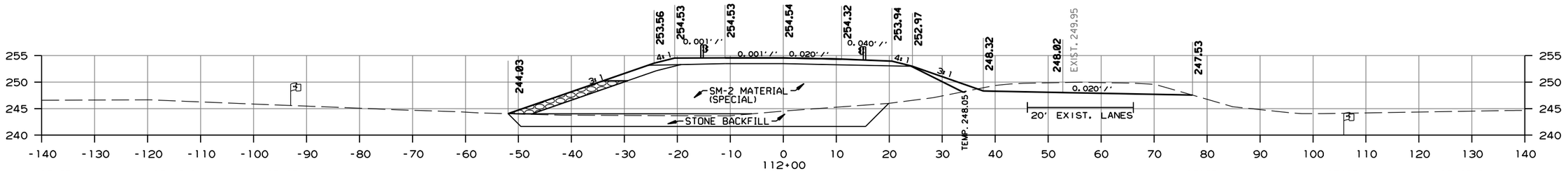
STAGE 2
CUT AREA 63.32
FILL AREA 11.53

STAGE 1
STONE BACKFILL 186.53
DUMPED RIPRAP 32.45

STAGE 1
STONE BACKFILL 62.09
DUMPED RIPRAP 10.18

STAGE 1
CUT VOLUME 0.01
FILL VOLUME 194.29

STAGE 2
CUT VOLUME 21.14
FILL VOLUME 3.58



STAGE 1
CUT AREA 0.04
FILL AREA 549.67

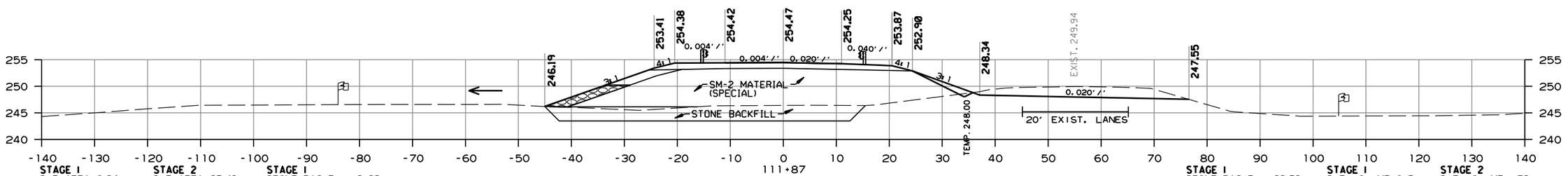
STAGE 2
CUT AREA 63.49
FILL AREA 9.95

STAGE 1
STONE BACKFILL 185.98
DUMPED RIPRAP 28.62

STAGE 1
STONE BACKFILL 83.73
DUMPED RIPRAP 11.36

STAGE 1
CUT VOLUME 0.21
FILL VOLUME 231.42

STAGE 2
CUT VOLUME 30.57
FILL VOLUME 4.29



STAGE 1
CUT AREA 0.84
FILL AREA 411.62

STAGE 2
CUT AREA 63.48
FILL AREA 7.89

STAGE 1
STONE BACKFILL 161.82
DUMPED RIPRAP 18.55

STAGE 1
STONE BACKFILL 28.38
DUMPED RIPRAP 3.31

STAGE 1
CUT VOLUME 0.15
FILL VOLUME 76.69

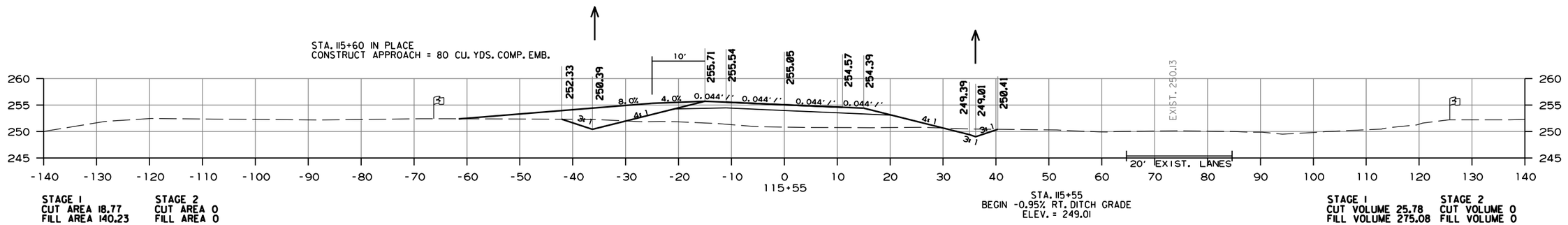
STAGE 2
CUT VOLUME 11.76
FILL VOLUME 1.47

CROSS SECTION STA. 111+87 TO STA. 113+00

R101054_Site 1 and 2.dgn 8/15/2022

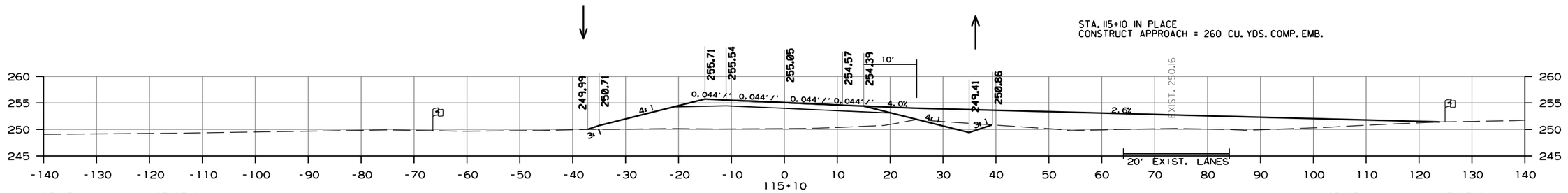
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	222	311

(2) CROSS SECTIONS - SITE 1 AND 2



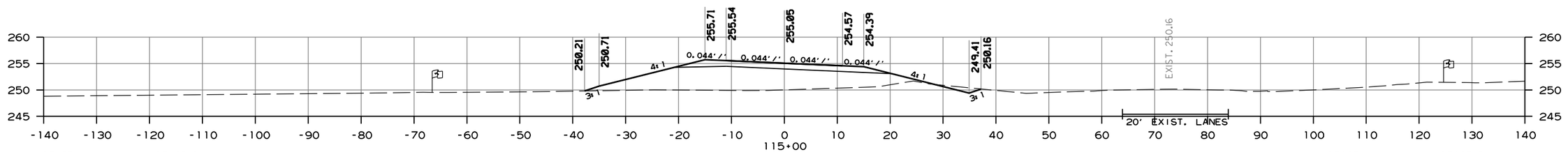
STAGE 1 CUT AREA 18.77 FILL AREA 140.23 — STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 25.78 FILL VOLUME 275.08 — STAGE 2 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 12.16 FILL AREA 189.87 — STAGE 2 CUT AREA 0 FILL AREA 0

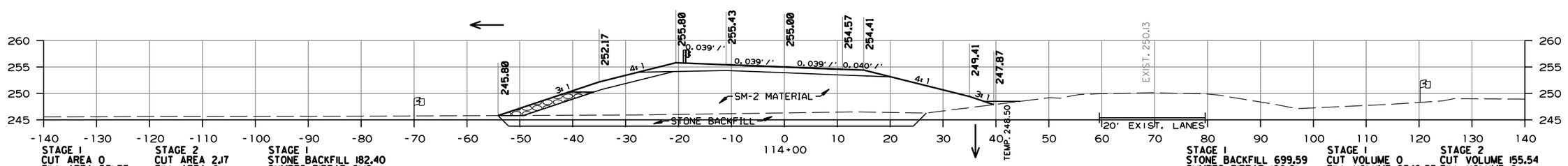
STAGE 1 CUT VOLUME 3.03 FILL VOLUME 71.86 — STAGE 2 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 4.18 FILL AREA 198.19 — STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 7.74 FILL VOLUME 1351.78 — STAGE 2 CUT VOLUME 4.02 FILL VOLUME 0

STA. 114+33.97 - MAX SUPERELEVATION



STAGE 1 CUT AREA 0 FILL AREA 531.77 — STAGE 2 CUT AREA 2.17 FILL AREA 0 — STAGE 1 STONE BACKFILL 182.40 DUMPED RIPRAP 21.12

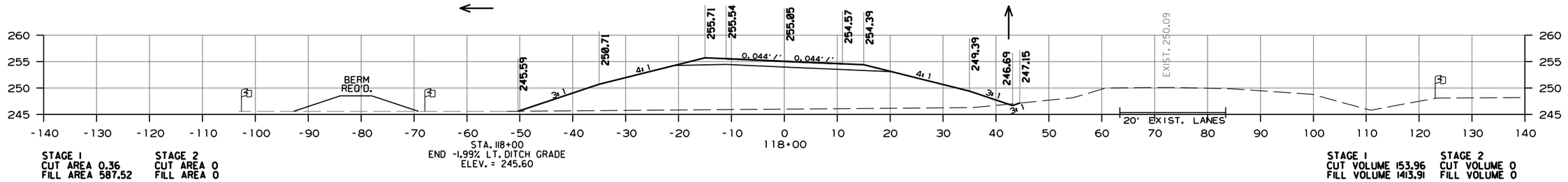
STAGE 1 STONE BACKFILL 699.59 DUMPED RIPRAP 100.91 — STAGE 1 CUT VOLUME 0 FILL VOLUME 2342.37 — STAGE 2 CUT VOLUME 155.54 FILL VOLUME 0

CROSS SECTION STA. 114+00 TO STA. 115+55

R101054_Site 1 and 2.dgn 8/15/2022

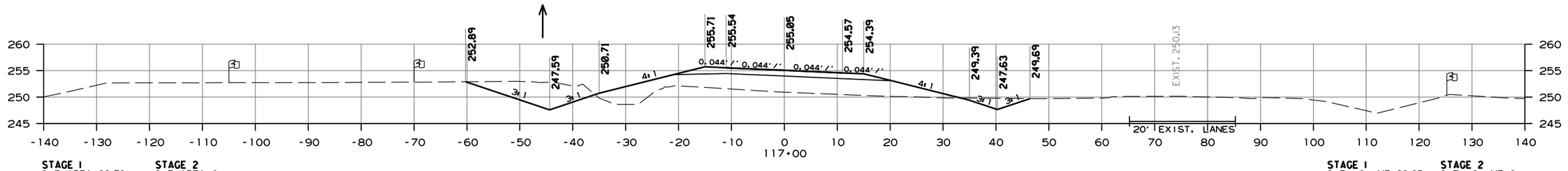
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	223	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1 CUT AREA 0.36 FILL AREA 587.52 — STAGE 2 CUT AREA 0 FILL AREA 0

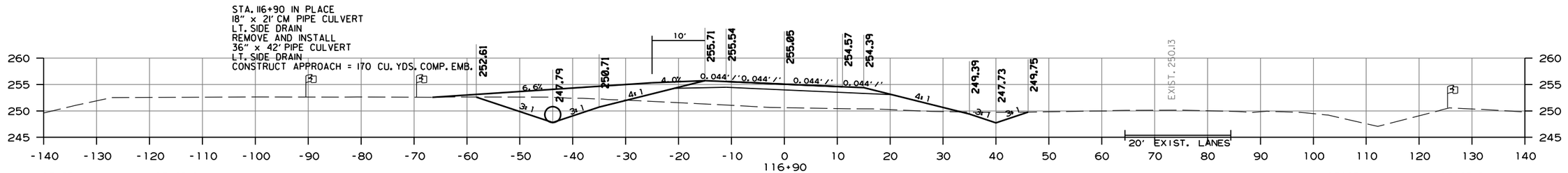
STAGE 1 CUT VOLUME 153.96 FILL VOLUME 1413.91 — STAGE 2 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 82.78 FILL AREA 175.99 — STAGE 2 CUT AREA 0 FILL AREA 0

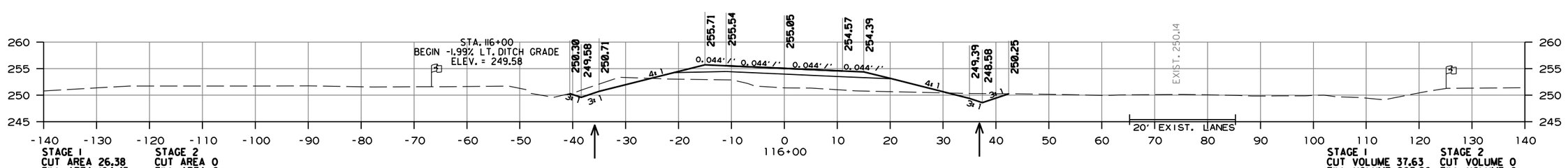
STAGE 1 CUT VOLUME 29.85 FILL VOLUME 62.34 — STAGE 2 CUT VOLUME 0 FILL VOLUME 0

STA. 116+90 IN PLACE
18" x 21' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
36" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 170 CU. YDS. COMP. EMB.



STAGE 1 CUT AREA 78.42 FILL AREA 160.64 — STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 174.67 FILL VOLUME 441.82 — STAGE 2 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 26.38 FILL AREA 104.45 — STAGE 2 CUT AREA 0 FILL AREA 0

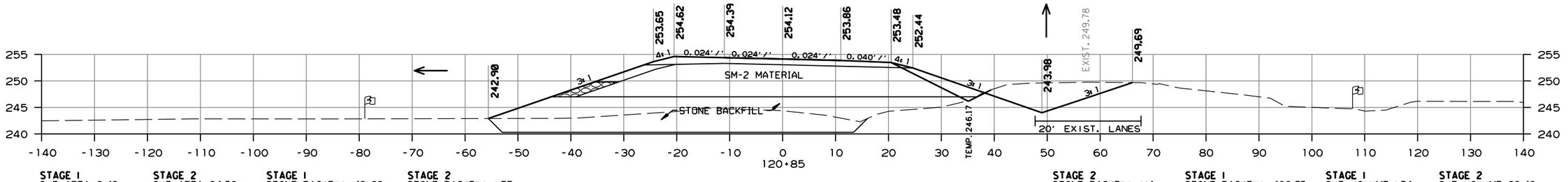
STAGE 1 CUT VOLUME 37.63 FILL VOLUME 203.90 — STAGE 2 CUT VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 116+00 TO STA. 118+00

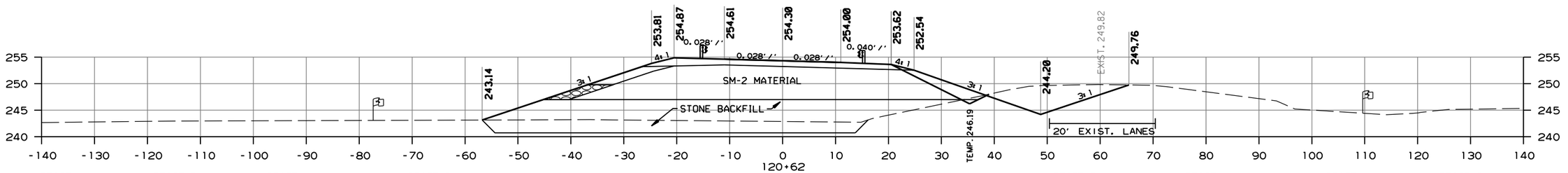
R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	224	311

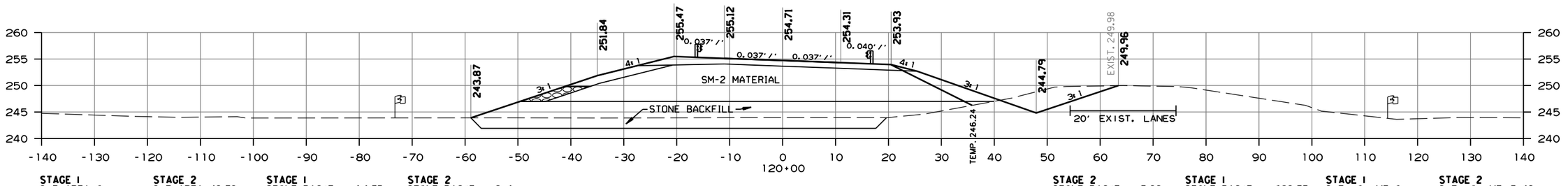
(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1 CUT AREA 0.42 FILL AREA 360.92 | STAGE 2 CUT AREA 84.50 FILL AREA 23.03 | STAGE 1 STONE BACKFILL 491.98 DUMPED RIPRAP 12.88 | STAGE 2 STONE BACKFILL 1.37 | STAGE 2 STONE BACKFILL 1.14 | STAGE 1 STONE BACKFILL 406.35 DUMPED RIPRAP 11.15 | STAGE 1 CUT VOLUME 1.34 FILL VOLUME 314.80 | STAGE 2 CUT VOLUME 68.46 FILL VOLUME 20.02

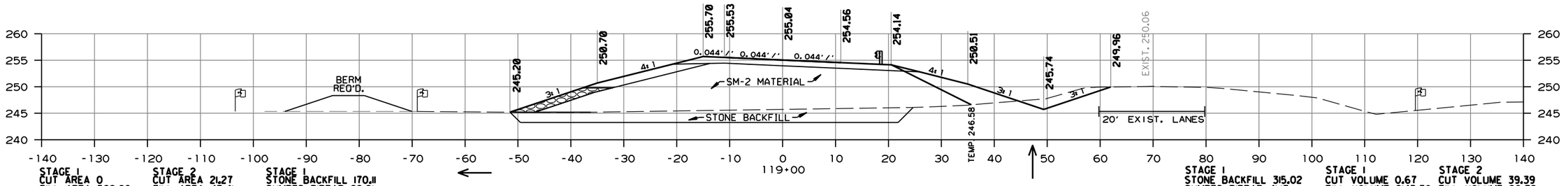


STAGE 1 CUT AREA 2.72 FILL AREA 378.18 | STAGE 2 CUT AREA 76.23 FILL AREA 23.97 | STAGE 1 STONE BACKFILL 462.05 DUMPED RIPRAP 13.30 | STAGE 2 STONE BACKFILL 1.31 | STAGE 2 STONE BACKFILL 3.96 | STAGE 1 STONE BACKFILL 1006.24 DUMPED RIPRAP 30.51 | STAGE 1 CUT VOLUME 3.12 FILL VOLUME 926.08 | STAGE 2 CUT VOLUME 144.61 FILL VOLUME 95.75



STAGE 1 CUT AREA 0 FILL AREA 428.41 | STAGE 2 CUT AREA 49.72 FILL AREA 28.07 | STAGE 1 STONE BACKFILL 414.35 DUMPED RIPRAP 13.27 | STAGE 2 STONE BACKFILL 2.14 | STAGE 2 STONE BACKFILL 3.96 | STAGE 1 STONE BACKFILL 1082.33 DUMPED RIPRAP 24.57 | STAGE 1 CUT VOLUME 0 FILL VOLUME 1848.65 | STAGE 2 CUT VOLUME 131.46 FILL VOLUME 132.37

STA. 119+69.46 - MAX SUPERELEVATION



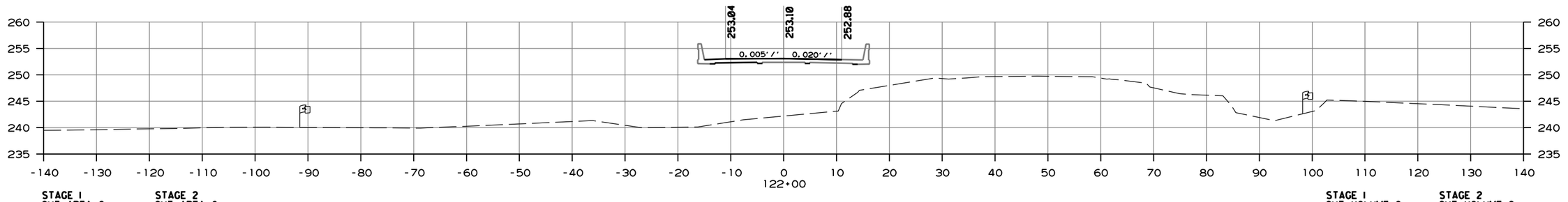
STAGE 1 CUT AREA 0 FILL AREA 569.86 | STAGE 2 CUT AREA 21.27 FILL AREA 43.41 | STAGE 1 STONE BACKFILL 170.11 DUMPED RIPRAP 22.21 | STAGE 1 STONE BACKFILL 315.02 DUMPED RIPRAP 41.13 | STAGE 1 CUT VOLUME 0.67 FILL VOLUME 2143.30 | STAGE 2 CUT VOLUME 39.39 FILL VOLUME 80.39

CROSS SECTION STA. 119+00 TO STA. 120+85

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	225	311

(2) CROSS SECTIONS - SITE 1 AND 2



STAGE 1
CUT AREA 0
FILL AREA 0

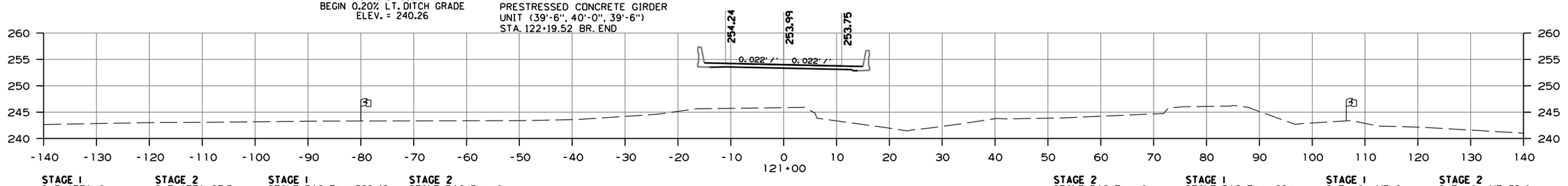
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STA. 120+99.48 BR. END
BR. NO. 07523
120'-0 3/8" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
119'-0" INTEGRAL COMPOSITE
PRESTRESSED CONCRETE GIRDER
UNIT (39'-6", 40'-0", 39'-6")
STA. 122+19.52 BR. END

STA. 121+83.67
BEGIN 0.20% LT. DITCH GRADE
ELEV. = 240.26



STAGE 1
CUT AREA 0
FILL AREA 380.48

STAGE 2
CUT AREA 87.51
FILL AREA 0

STAGE 1
STONE BACKFILL 529.49
DUMPED RIPRAP 12.87

STAGE 2
STONE BACKFILL 0

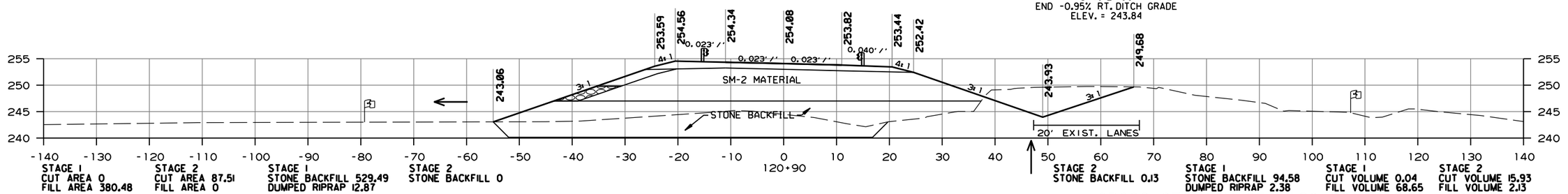
STAGE 2
STONE BACKFILL 0

STAGE 1
STONE BACKFILL 196.11
DUMPED RIPRAP 4.77

STAGE 1
CUT VOLUME 0
FILL VOLUME 140.92

STAGE 2
CUT VOLUME 32.41
FILL VOLUME 0

STA. 121+00
END -0.95% RT. DITCH GRADE
ELEV. = 243.84



STAGE 1
CUT AREA 0
FILL AREA 380.48

STAGE 2
CUT AREA 87.51
FILL AREA 0

STAGE 1
STONE BACKFILL 529.49
DUMPED RIPRAP 12.87

STAGE 2
STONE BACKFILL 0

STAGE 2
STONE BACKFILL 0.13

STAGE 1
STONE BACKFILL 94.58
DUMPED RIPRAP 2.38

STAGE 1
CUT VOLUME 0.04
FILL VOLUME 68.65

STAGE 2
CUT VOLUME 15.93
FILL VOLUME 2.13

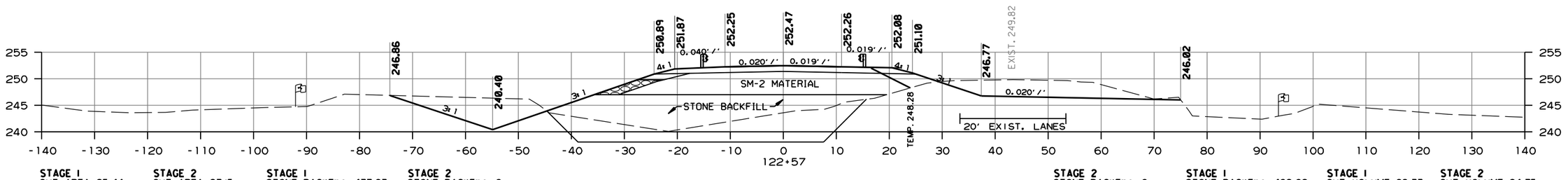
CROSS SECTION STA. 120+90 TO STA. 122+00

R101054_Site 1 and 2.dgn 8/15/2022

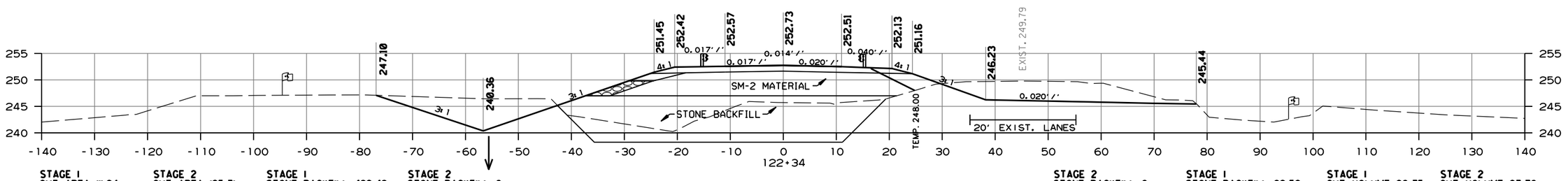
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	226	311

(2) CROSS SECTIONS - SITE 1 AND 2

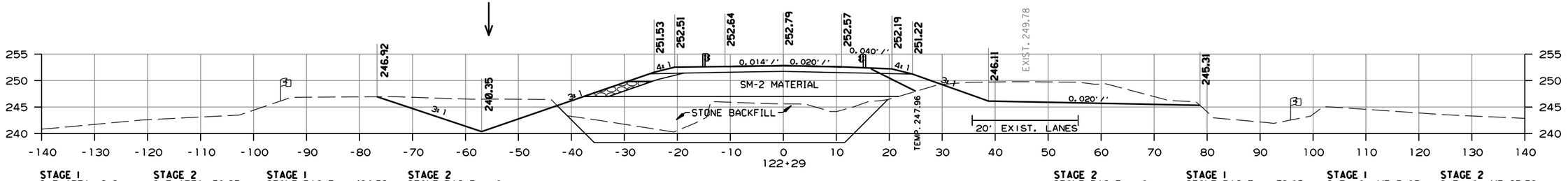
STA. 122+69.46 BEGIN AND END SUPERELEVATION



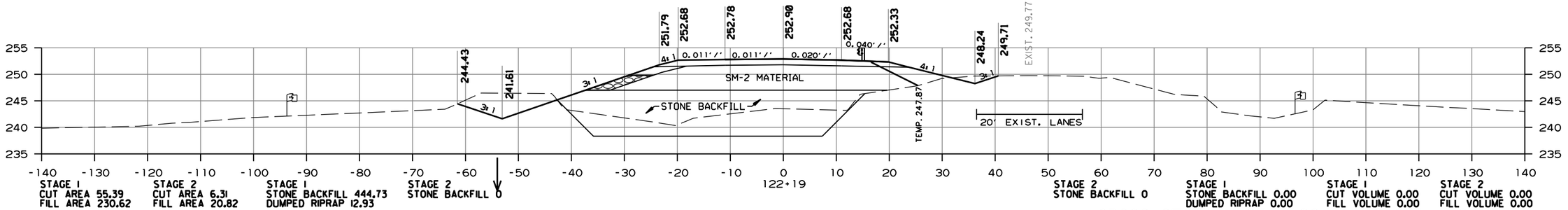
STAGE 1 CUT AREA 95.44 FILL AREA 199.51	STAGE 2 CUT AREA 97.15 FILL AREA 14.47	STAGE 1 STONE BACKFILL 477.83 DUMPED RIPRAP 12.98	STAGE 2 STONE BACKFILL 0	STAGE 2 STONE BACKFILL 0	STAGE 1 STONE BACKFILL 409.02 DUMPED RIPRAP 11.03	STAGE 1 CUT VOLUME 88.33 FILL VOLUME 179.32	STAGE 2 CUT VOLUME 94.75 FILL VOLUME 13.51	



STAGE 1 CUT AREA 111.94 FILL AREA 221.51	STAGE 2 CUT AREA 125.31 FILL AREA 17.25	STAGE 1 STONE BACKFILL 482.48 DUMPED RIPRAP 12.92	STAGE 2 STONE BACKFILL 0	STAGE 2 STONE BACKFILL 0	STAGE 1 STONE BACKFILL 89.52 DUMPED RIPRAP 2.39	STAGE 1 CUT VOLUME 20.75 FILL VOLUME 41.44	STAGE 2 CUT VOLUME 23.70 FILL VOLUME 3.26	



STAGE 1 CUT AREA 112.18 FILL AREA 226.03	STAGE 2 CUT AREA 130.63 FILL AREA 17.99	STAGE 1 STONE BACKFILL 484.36 DUMPED RIPRAP 12.93	STAGE 2 STONE BACKFILL 0	STAGE 2 STONE BACKFILL 0	STAGE 1 STONE BACKFILL 172.05 DUMPED RIPRAP 4.79	STAGE 1 CUT VOLUME 31.03 FILL VOLUME 84.56	STAGE 2 CUT VOLUME 25.36 FILL VOLUME 7.19	



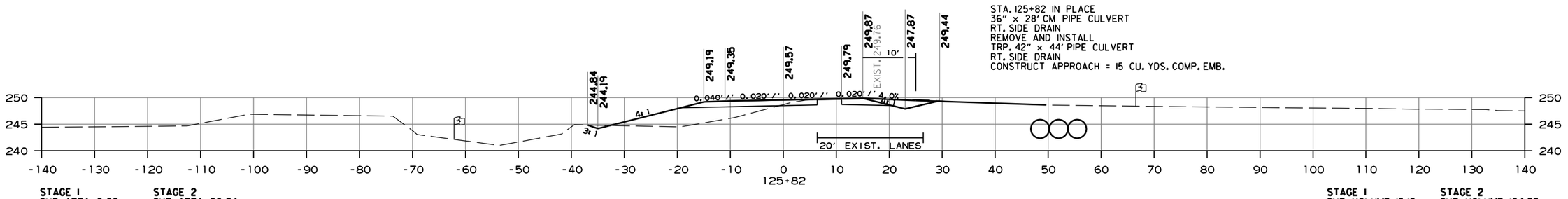
STAGE 1 CUT AREA 55.39 FILL AREA 230.62	STAGE 2 CUT AREA 6.31 FILL AREA 20.82	STAGE 1 STONE BACKFILL 444.73 DUMPED RIPRAP 12.93	STAGE 2 STONE BACKFILL 0	STAGE 2 STONE BACKFILL 0	STAGE 1 STONE BACKFILL 0.00 DUMPED RIPRAP 0.00	STAGE 1 CUT VOLUME 0.00 FILL VOLUME 0.00	STAGE 2 CUT VOLUME 0.00 FILL VOLUME 0.00	

CROSS SECTION STA. 122+19 TO STA. 122+57

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	227	311

(2) CROSS SECTIONS - SITE 1 AND 2

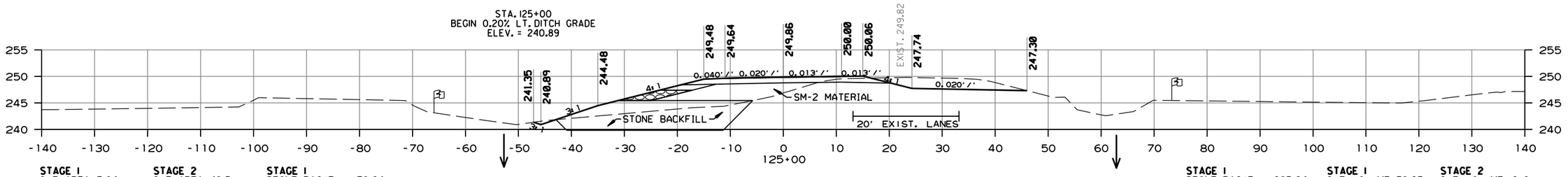


STAGE 1 CUT AREA 6.09 FILL AREA 61.70

STAGE 2 CUT AREA 20.34 FILL AREA 0

STAGE 1 CUT VOLUME 15.12 FILL VOLUME 198.33

STAGE 2 CUT VOLUME 104.55 FILL VOLUME 0



STAGE 1 CUT AREA 3.84 FILL AREA 68.91

STAGE 2 CUT AREA 48.51 FILL AREA 0

STAGE 1 STONE BACKFILL 170.24 DUMPED RIPRAP 12.08

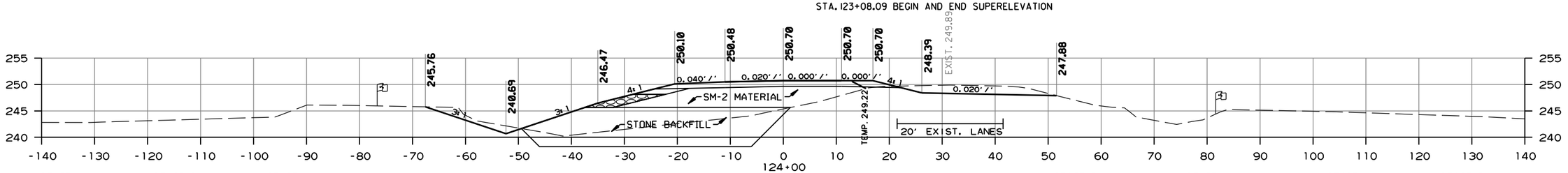
STAGE 1 STONE BACKFILL 905.24 DUMPED RIPRAP 50.22

STAGE 1 CUT VOLUME 38.93 FILL VOLUME 382.87

STAGE 2 CUT VOLUME 161.81 FILL VOLUME 0.56

STA. 124+80.09 - MAX SUPERELEVATION

STA. 123+08.09 BEGIN AND END SUPERELEVATION



STAGE 1 CUT AREA 17.15 FILL AREA 137.84

STAGE 2 CUT AREA 38.87 FILL AREA 0.30

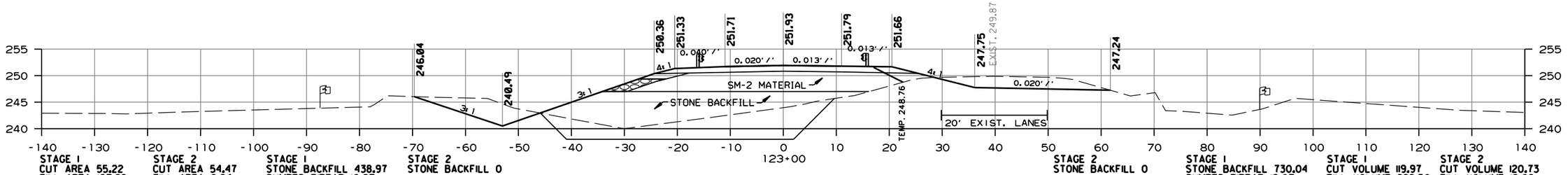
STAGE 1 STONE BACKFILL 318.59 DUMPED RIPRAP 15.04

STAGE 2 STONE BACKFILL 0

STAGE 1 STONE BACKFILL 1402.89 DUMPED RIPRAP 48.17

STAGE 1 CUT VOLUME 134.02 FILL VOLUME 566.04

STAGE 2 CUT VOLUME 172.85 FILL VOLUME 15.81



STAGE 1 CUT AREA 55.22 FILL AREA 167.82

STAGE 2 CUT AREA 54.47 FILL AREA 8.24

STAGE 1 STONE BACKFILL 438.97 DUMPED RIPRAP 10.97

STAGE 2 STONE BACKFILL 0

STAGE 2 STONE BACKFILL 0

STAGE 1 STONE BACKFILL 730.04 DUMPED RIPRAP 19.07

STAGE 1 CUT VOLUME 119.97 FILL VOLUME 292.50

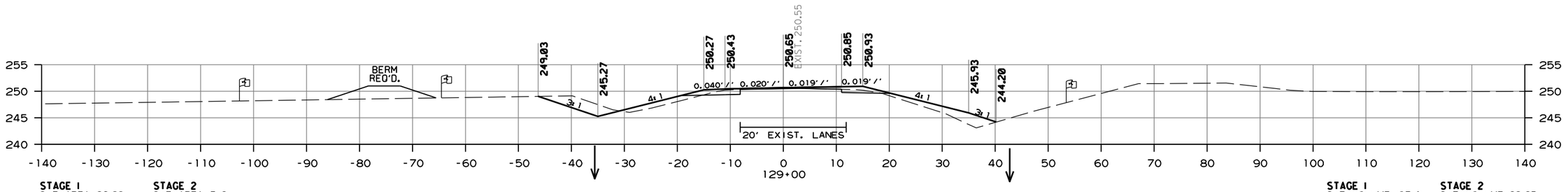
STAGE 2 CUT VOLUME 120.73 FILL VOLUME 18.08

CROSS SECTION STA. 123+00 TO STA. 125+82

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	228	311

(2) CROSS SECTIONS - SITE 1 AND 2

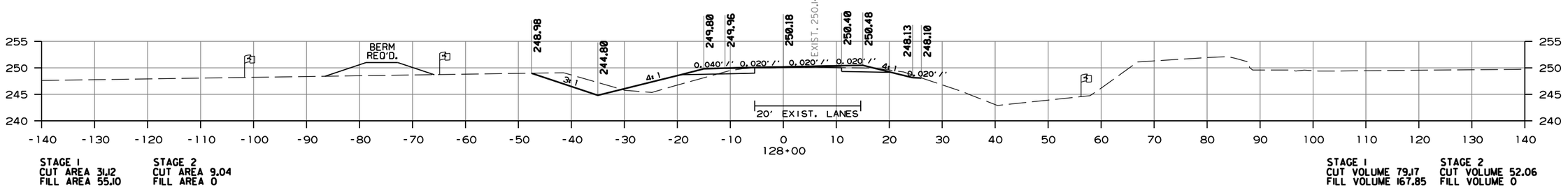


STAGE 1
CUT AREA 26.88
FILL AREA 43.50

STAGE 2
CUT AREA 3.19
FILL AREA 24.93

STAGE 1
CUT VOLUME 107.41
FILL VOLUME 182.59

STAGE 2
CUT VOLUME 22.65
FILL VOLUME 46.17

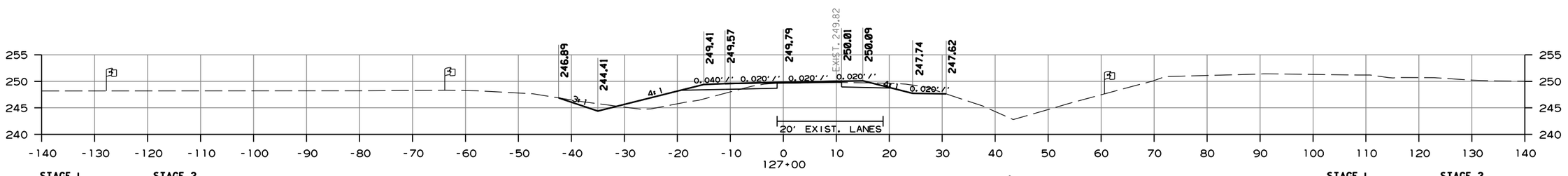


STAGE 1
CUT AREA 31.12
FILL AREA 55.10

STAGE 2
CUT AREA 9.04
FILL AREA 0

STAGE 1
CUT VOLUME 79.17
FILL VOLUME 167.85

STAGE 2
CUT VOLUME 52.06
FILL VOLUME 0

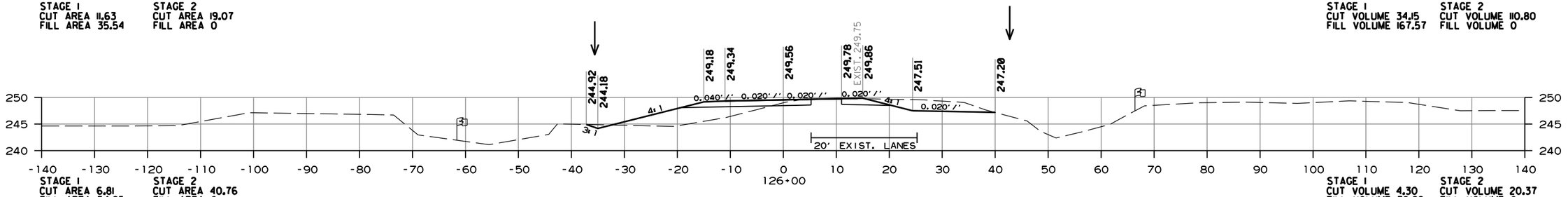


STAGE 1
CUT AREA 11.63
FILL AREA 35.54

STAGE 2
CUT AREA 19.07
FILL AREA 0

STAGE 1
CUT VOLUME 34.15
FILL VOLUME 167.57

STAGE 2
CUT VOLUME 110.80
FILL VOLUME 0



STAGE 1
CUT AREA 6.81
FILL AREA 54.95

STAGE 2
CUT AREA 40.76
FILL AREA 0

STAGE 1
CUT VOLUME 4.30
FILL VOLUME 38.88

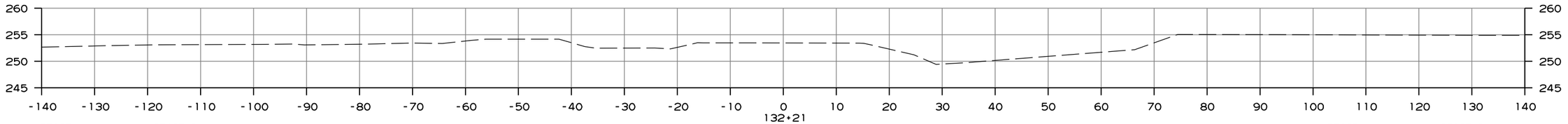
STAGE 2
CUT VOLUME 20.37
FILL VOLUME 0

CROSS SECTION STA. 126+00 TO STA. 129+00

R101054_Site 1 and 2.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	229	311

(2) CROSS SECTIONS - SITE 1 AND 2

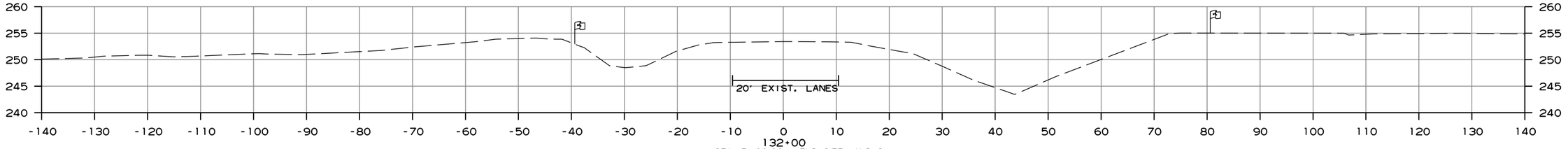


STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STA. 131+00.00 - END SITE 1 AND 2
BEGIN 100' TRANSITION

STAGE 1
CUT AREA 0
FILL AREA 0

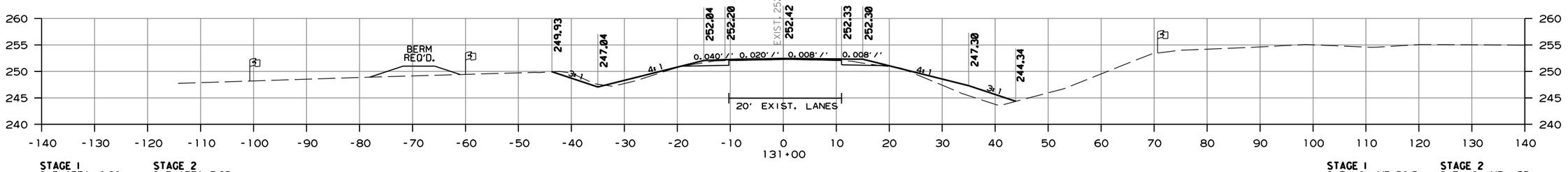
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 20.19
FILL VOLUME 49.48

STAGE 2
CUT VOLUME 6.02
FILL VOLUME 48.00

STA. 131+89.67 BEGIN AND END SUPERELEVATION

STA. 131+00.00
END 100' TRANSITION



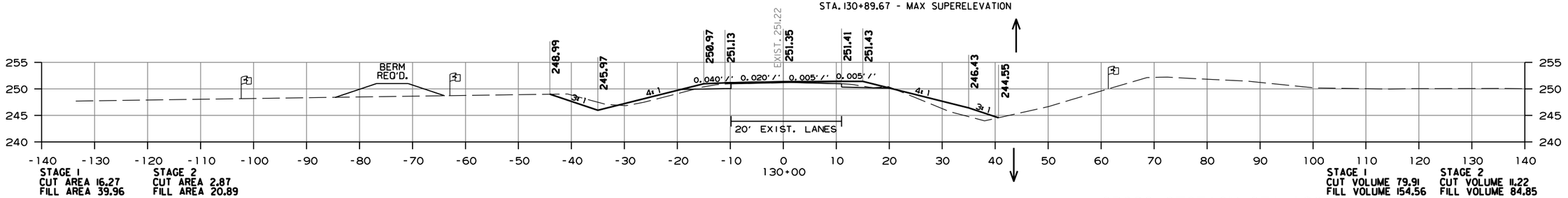
STAGE 1
CUT AREA 10.90
FILL AREA 26.72

STAGE 2
CUT AREA 3.25
FILL AREA 25.92

STAGE 1
CUT VOLUME 50.31
FILL VOLUME 123.48

STAGE 2
CUT VOLUME 11.33
FILL VOLUME 86.69

STA. 130+89.67 - MAX SUPERELEVATION



STAGE 1
CUT AREA 16.27
FILL AREA 39.96

STAGE 2
CUT AREA 2.87
FILL AREA 20.89

STAGE 1
CUT VOLUME 79.91
FILL VOLUME 154.56

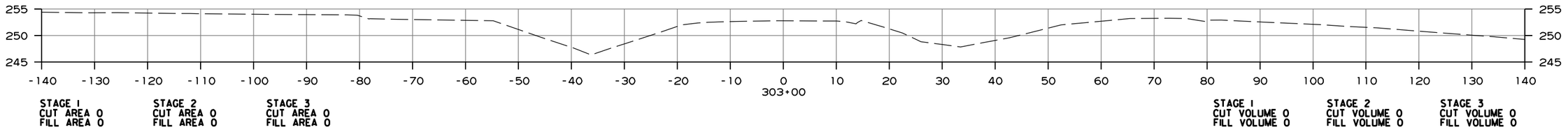
STAGE 2
CUT VOLUME 11.22
FILL VOLUME 84.85

CROSS SECTION STA. 130+00 TO STA. 132+21

R101054_Site 1 and 2.dgn 8/15/2022

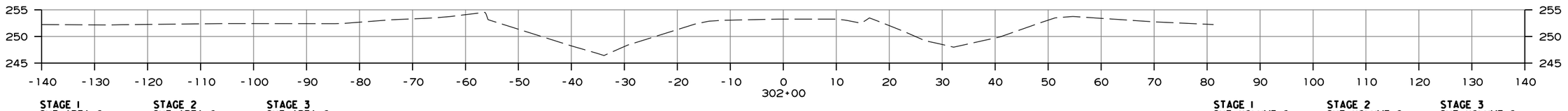
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	230	311

(2) CROSS SECTIONS - SITE 3



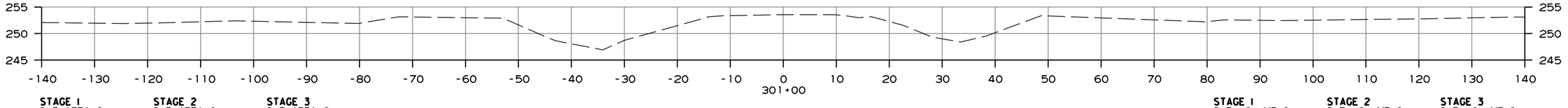
STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



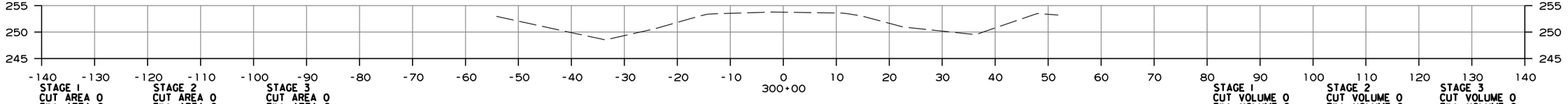
STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0

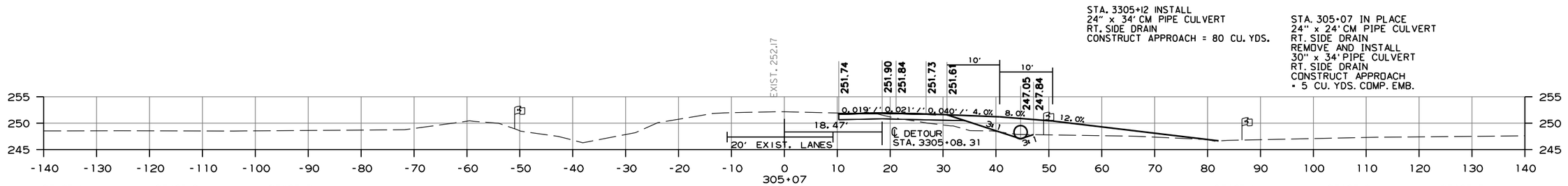
CROSS SECTION STA. 300+00 TO STA. 303+00

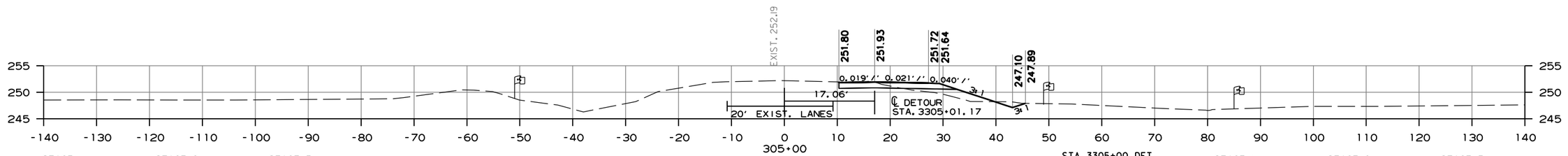
8/15/2022

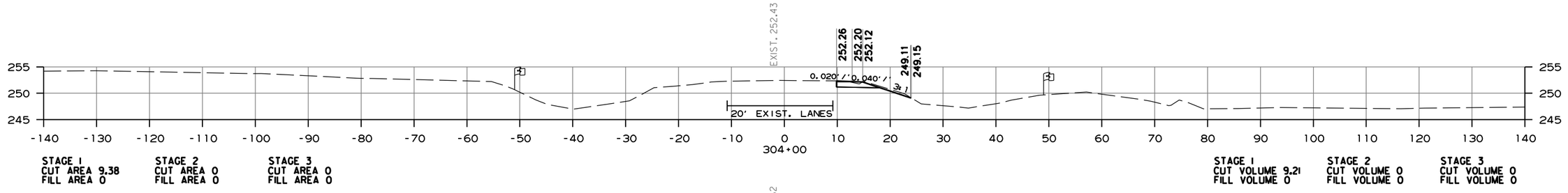
R101054_Site3.dgn

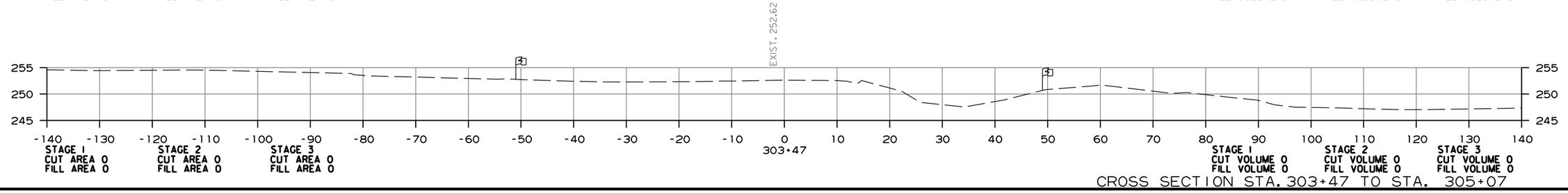
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	231	311

(2) CROSS SECTIONS - SITE 3









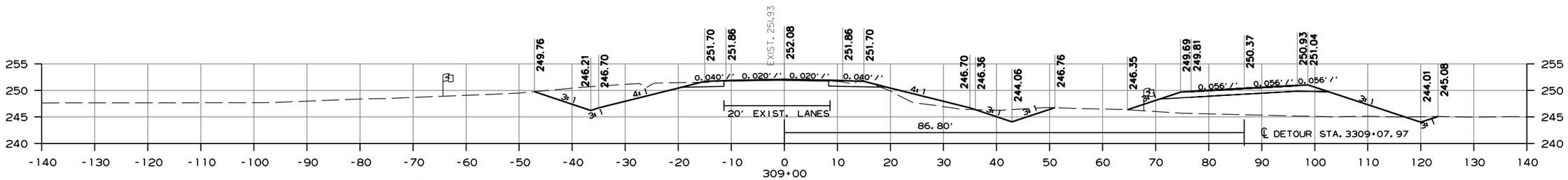
CROSS SECTION STA. 303+47 TO STA. 305+07

8/15/2022

R101054_Site3.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.		101054	232	311

(2) CROSS SECTIONS - SITE 3



STAGE 1
CUT AREA 3.20
FILL AREA 162.21

STAGE 2
CUT AREA 101.85
FILL AREA 17.08

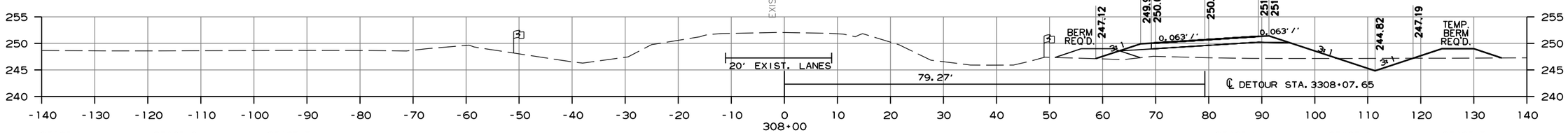
STAGE 3
CUT AREA 162.21
FILL AREA 3.20

STA. 309+00
BEGIN -2.60% LT. DITCH GRADE
ELEV. = 246.21

STAGE 1
CUT VOLUME 36.70
FILL VOLUME 504.48

STAGE 2
CUT VOLUME 188.61
FILL VOLUME 31.63

STAGE 3
CUT VOLUME 491.43
FILL VOLUME 63.22



STAGE 1
CUT AREA 16.62
FILL AREA 110.21

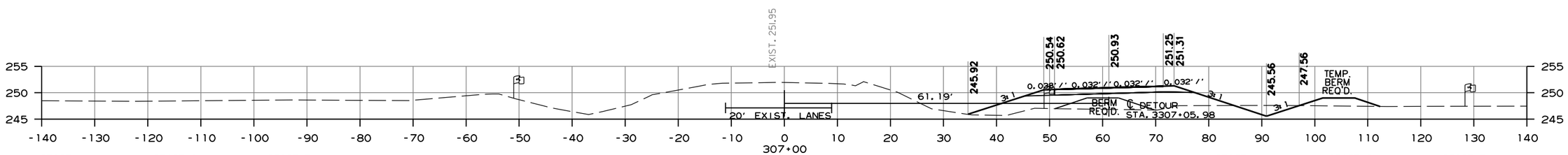
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 103.16
FILL AREA 30.94

STAGE 1
CUT VOLUME 53.78
FILL VOLUME 455.15

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 392.94
FILL VOLUME 80.30



STAGE 1
CUT AREA 12.42
FILL AREA 135.57

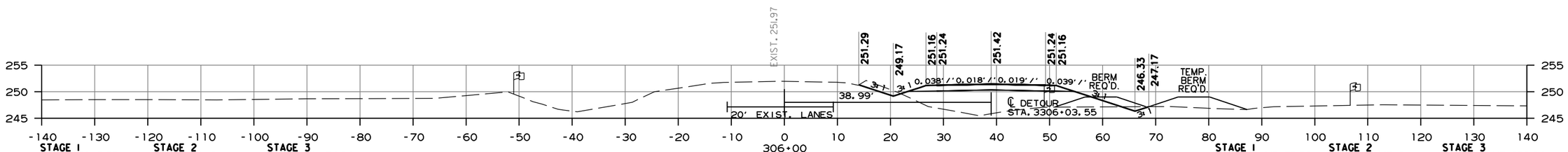
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 109.03
FILL AREA 12.42

STAGE 1
CUT VOLUME 40.78
FILL VOLUME 524.98

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 451.80
FILL VOLUME 42.98



STAGE 1
CUT AREA 9.60
FILL AREA 147.92

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 134.94
FILL AREA 10.79

STAGE 1
CUT VOLUME 39.20
FILL VOLUME 279.19

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 256.84
FILL VOLUME 22.87

CROSS SECTION STA. 306+00 TO STA. 309+00

8/15/2022

R101054_Site3.dgn

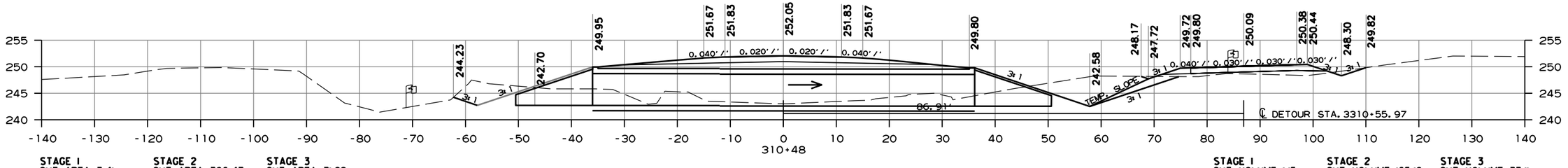
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	233	311

(2) CROSS SECTIONS - SITE 3

STA. 310+35
BEGIN 1.47% LT. DITCH GRADE
ELEV. = 242.70

STA. 310+48.00 CONSTRUCT
QUINT. 10' x 6' x 80' R.C. BOX CULVERT
ON A 25° LT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q25 = 792 CFS. D.A. = 7.10 SQ. MI.
SPAN = 47'-1"

STA. 310+60
BEGIN 2.33% RT. DITCH GRADE
ELEV. = 242.58



STAGE 1
CUT AREA 3.41
FILL AREA 17.51

STAGE 2
CUT AREA 306.47
FILL AREA 67.13

STAGE 3
CUT AREA 31.22
FILL AREA 2.81

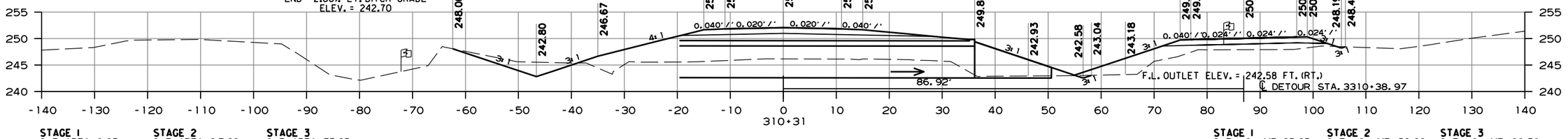
STAGE 1
CUT VOLUME 1.15
FILL VOLUME 28.79

STAGE 2
CUT VOLUME 165.10
FILL VOLUME 57.74

STAGE 3
CUT VOLUME 33.11
FILL VOLUME 0.96

STA. 310+35
END -2.60% LT. DITCH GRADE
ELEV. = 242.70

STA. 310+35
END -1.83% RT. DITCH GRADE
ELEV. = 242.58



STAGE 1
CUT AREA 0.23
FILL AREA 73.95

STAGE 2
CUT AREA 217.98
FILL AREA 116.28

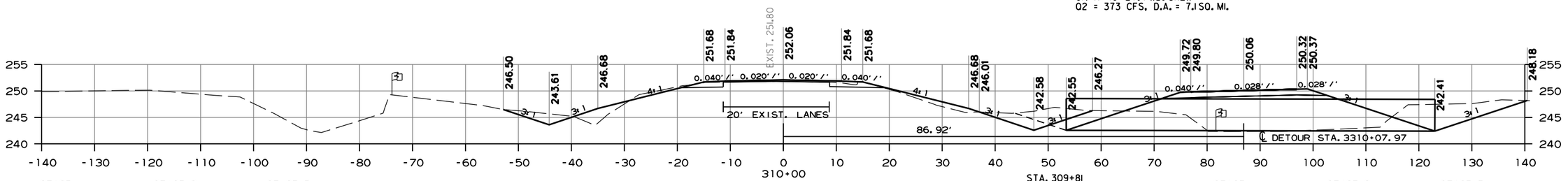
STAGE 3
CUT AREA 73.95
FILL AREA 0.23

STAGE 1
CUT VOLUME 65.65
FILL VOLUME 180.30

STAGE 2
CUT VOLUME 152.62
FILL VOLUME 81.38

STAGE 3
CUT VOLUME 180.30
FILL VOLUME 52.29

STA. 3310+00.00 - INSTALL
SEXT. 72" x 96' TEMPORARY PIPE CULVERT
ON A 40° LT. FWD. SKEW
Q2 = 373 CFS, D.A. = 7.1 SQ. MI.



STAGE 1
CUT AREA 114.12
FILL AREA 240.12

STAGE 2
CUT AREA 47.87
FILL AREA 25.47

STAGE 3
CUT AREA 240.12
FILL AREA 90.86

STA. 309+81
END -1.83% RT. DITCH GRADE
ELEV. = 242.58

STAGE 1
CUT VOLUME 214.75
FILL VOLUME 672.09

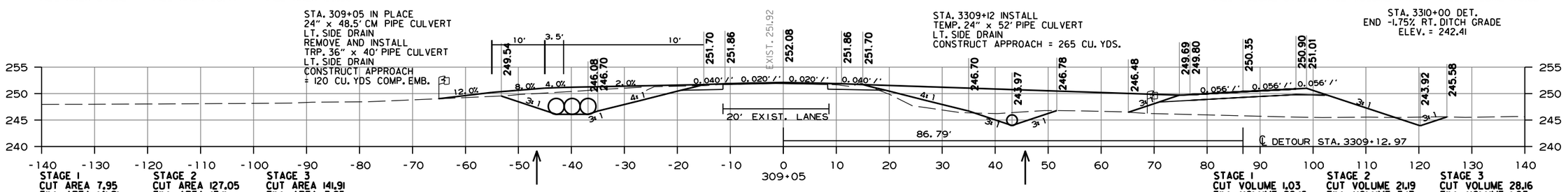
STAGE 2
CUT VOLUME 307.73
FILL VOLUME 74.91

STAGE 3
CUT VOLUME 672.09
FILL VOLUME 173.83

STA. 309+05 IN PLACE
24" x 48.5' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
TRP. 36" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH
= 120 CU. YDS COMP. EMB.

STA. 3309+12 INSTALL
TEMP. 24" x 52' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 265 CU. YDS.

STA. 3310+00 DET.
END -1.75% RT. DITCH GRADE
ELEV. = 242.41



STAGE 1
CUT AREA 7.95
FILL AREA 141.91

STAGE 2
CUT AREA 127.05
FILL AREA 17.11

STAGE 3
CUT AREA 141.91
FILL AREA 7.95

STAGE 1
CUT VOLUME 1.03
FILL VOLUME 28.16

STAGE 2
CUT VOLUME 21.19
FILL VOLUME 3.17

STAGE 3
CUT VOLUME 28.16
FILL VOLUME 1.03

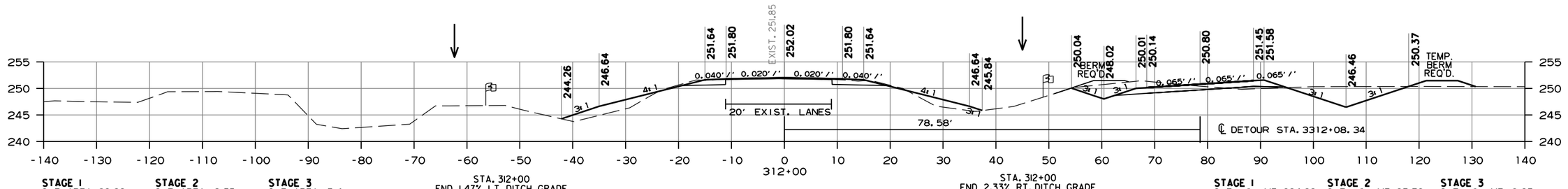
CROSS SECTION STA. 309+05 TO STA. 310+48

8/15/2022

R101054_Site3.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.		101054	234	311

(2) CROSS SECTIONS - SITE 3



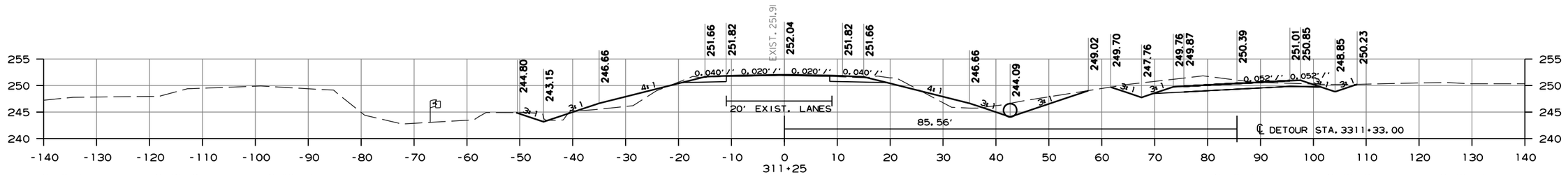
STAGE 1 CUT AREA 89.99 FILL AREA 13.41
STAGE 2 CUT AREA 16.35 FILL AREA 36.61
STAGE 3 CUT AREA 13.41 FILL AREA 95.71

STA. 312+00
END 1.47% LT. DITCH GRADE
ELEV. = 244.26

STA. 312+00
END 2.33% RT. DITCH GRADE
ELEV. = 245.84

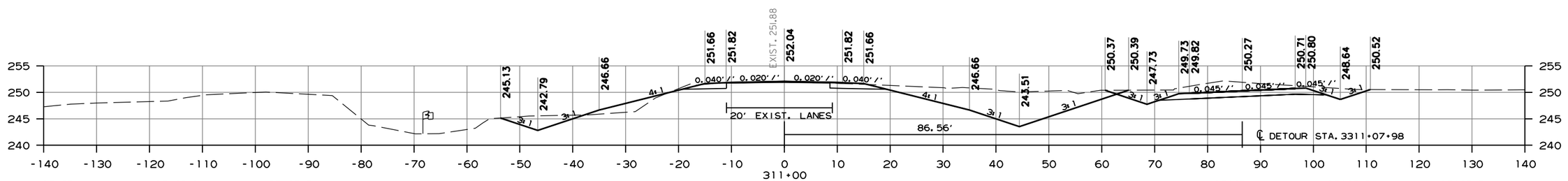
STAGE 1 CUT VOLUME 224.29 FILL VOLUME 18.63
STAGE 2 CUT VOLUME 97.76 FILL VOLUME 92.69
STAGE 3 CUT VOLUME 18.63 FILL VOLUME 232.24

STA. 3312+00 DET.
BEGIN 0.25% RT. DITCH GRADE
ELEV. = 246.45



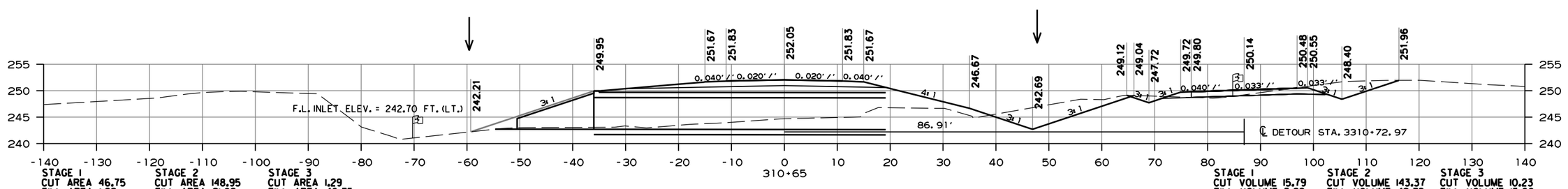
STAGE 1 CUT AREA 71.50 FILL AREA 0
STAGE 2 CUT AREA 54.04 FILL AREA 30.13
STAGE 3 CUT AREA 0 FILL AREA 71.50

STAGE 1 CUT VOLUME 77.73 FILL VOLUME 0
STAGE 2 CUT VOLUME 114.12 FILL VOLUME 21.34
STAGE 3 CUT VOLUME 0 FILL VOLUME 76.96



STAGE 1 CUT AREA 96.40 FILL AREA 0
STAGE 2 CUT AREA 192.46 FILL AREA 15.96
STAGE 3 CUT AREA 0 FILL AREA 94.74

STAGE 1 CUT VOLUME 92.78 FILL VOLUME 0.84
STAGE 2 CUT VOLUME 221.28 FILL VOLUME 69.34
STAGE 3 CUT VOLUME 0.84 FILL VOLUME 91.71



STAGE 1 CUT AREA 46.75 FILL AREA 1.29
STAGE 2 CUT AREA 148.95 FILL AREA 91.02
STAGE 3 CUT AREA 1.29 FILL AREA 46.75

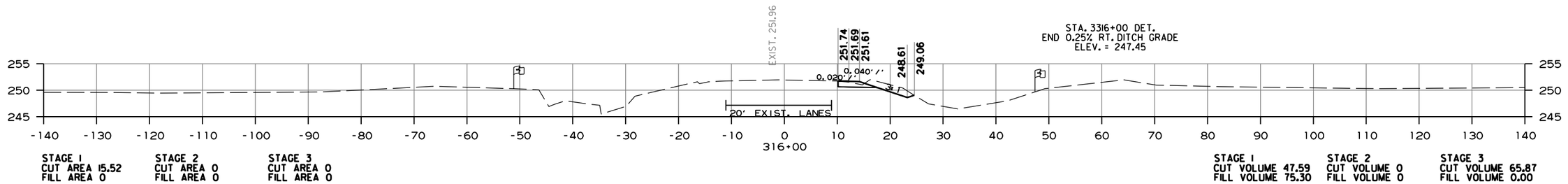
STAGE 1 CUT VOLUME 15.79 FILL VOLUME 5.92
STAGE 2 CUT VOLUME 143.37 FILL VOLUME 49.79
STAGE 3 CUT VOLUME 10.23 FILL VOLUME 15.60

CROSS SECTION STA. 310+65 TO STA. 312+00

R101054_Site3.dgn 8/15/2022

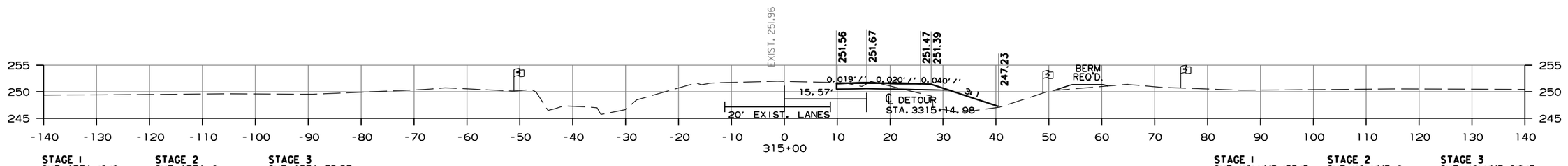
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	235	311

(2) CROSS SECTIONS - SITE 3



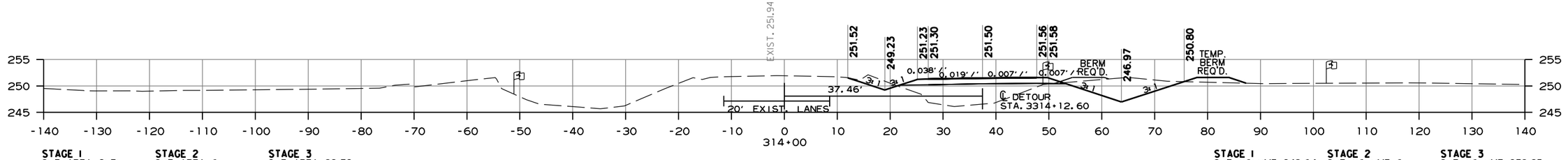
STAGE 1 CUT AREA 15.52 FILL AREA 0 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 47.59 FILL VOLUME 75.30 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 65.87 FILL VOLUME 0.00



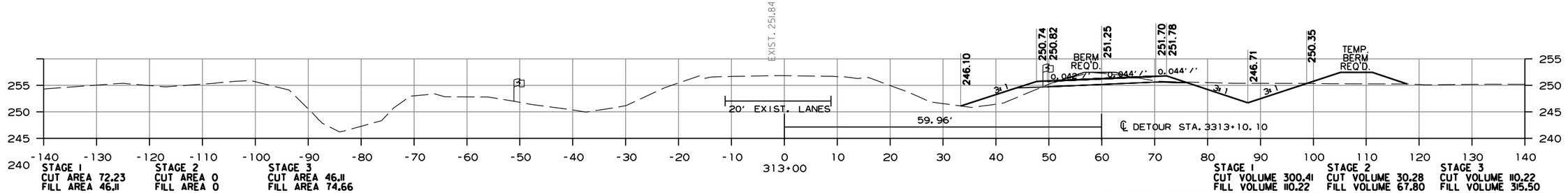
STAGE 1 CUT AREA 10.18 FILL AREA 40.66 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 35.57 FILL AREA 0

STAGE 1 CUT VOLUME 133.13 FILL VOLUME 228.56 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 219.13 FILL VOLUME 106.59



STAGE 1 CUT AREA 61.71 FILL AREA 82.76 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 82.76 FILL AREA 57.56

STAGE 1 CUT VOLUME 248.04 FILL VOLUME 238.65 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 238.65 FILL VOLUME 244.85



STAGE 1 CUT AREA 72.23 FILL AREA 46.11 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 46.11 FILL AREA 74.66

STAGE 1 CUT VOLUME 300.41 FILL VOLUME 110.22 | STAGE 2 CUT VOLUME 30.28 FILL VOLUME 67.80 | STAGE 3 CUT VOLUME 110.22 FILL VOLUME 315.50

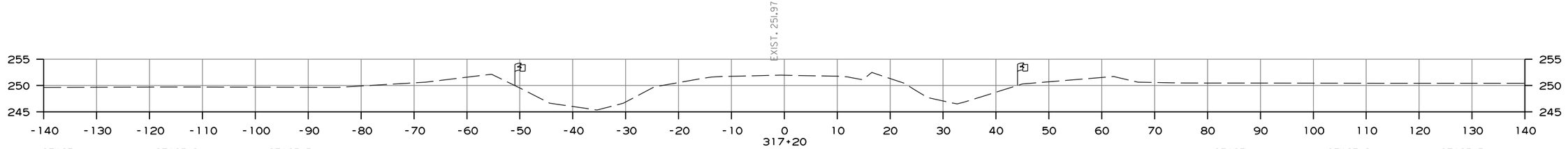
CROSS SECTION STA. 313+00 TO STA. 316+00

8/15/2022

R101054_Site3.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.		101054	236	311

(2) CROSS SECTIONS - SITE 3



STAGE 1
CUT AREA 0
FILL AREA 0

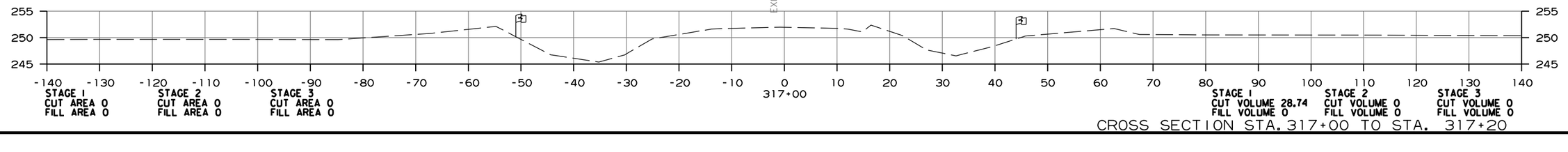
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 28.74
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 0
FILL VOLUME 0

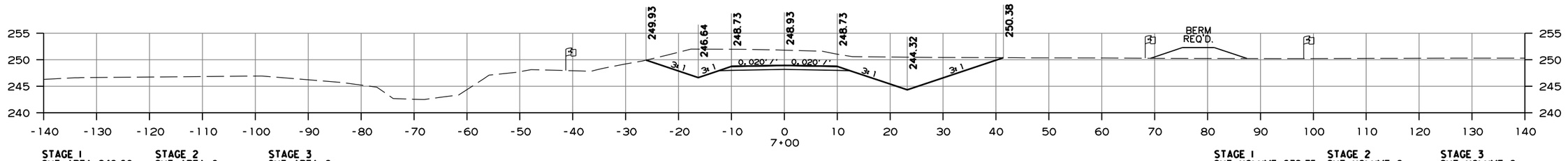
CROSS SECTION STA. 317+00 TO STA. 317+20

8/15/2022

R101054_Site3.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.		101054	237	311

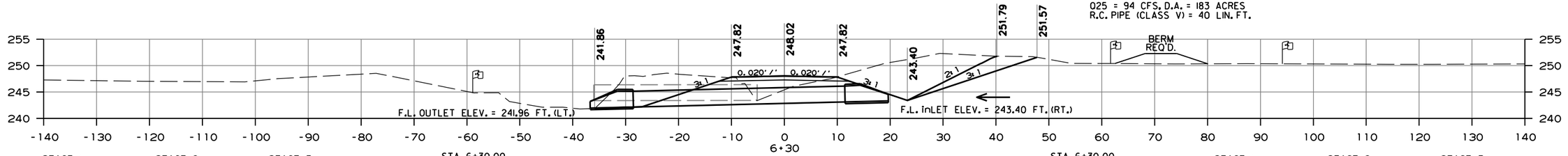
(2) CROSS SECTIONS - SITE 3 - CO. RD. 745



STAGE 1 CUT AREA 240.60 FILL AREA 24.83 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 639.75 FILL VOLUME 95.59 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0

STA. 6+30 CONSTRUCT
QUAD. 36" X 40' PIPE CULVERT
WITH FES LT. & RT.
Q25 = 94 CFS. D.A. = 183 ACRES
R.C. PIPE (CLASS V) = 40 LIN. FT.

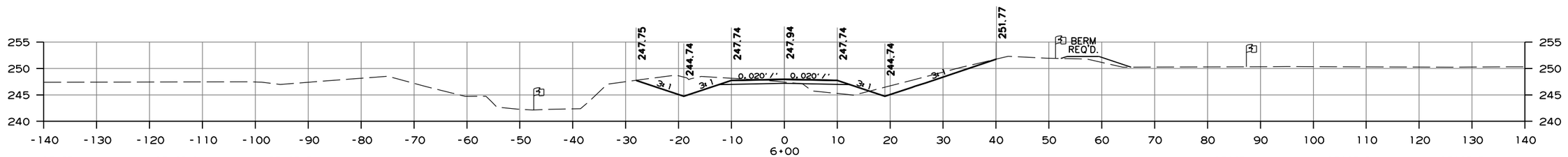


STAGE 1 CUT AREA 252.92 FILL AREA 48.91 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STA. 6+30.00
BEGIN 1.40% LT. DITCH GRADE
ELEV. = 245.66

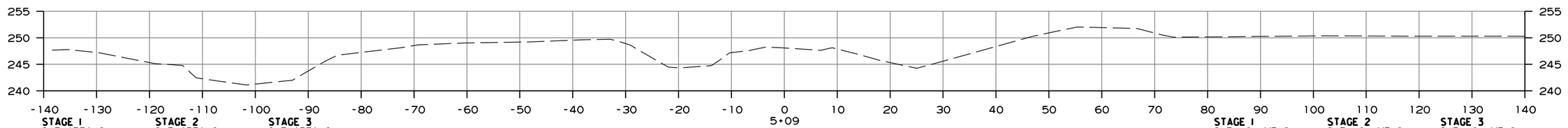
STA. 6+30.00
BEGIN 1.32% RT. DITCH GRADE
ELEV. = 243.40

STAGE 1 CUT VOLUME 177.34 FILL VOLUME 40.72 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 66.29 FILL AREA 24.38 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 79.79 FILL VOLUME 29.35 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0

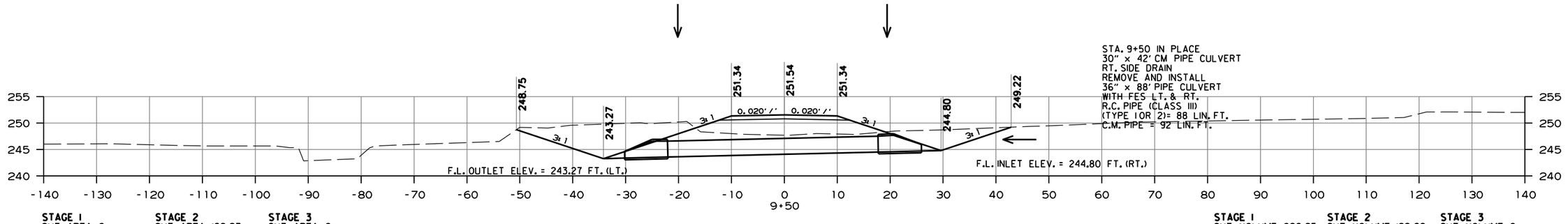
CROSS SECTION STA. 5+09 TO STA. 7+00

8/15/2022

R101054_Site3.dgn

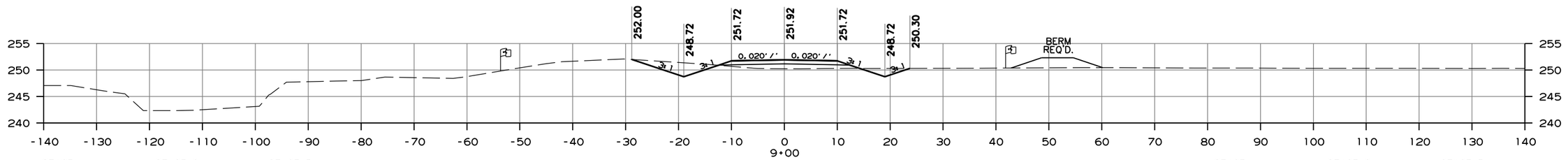
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	238	311

(2) CROSS SECTIONS - SITE 3 - CO. RD. 745



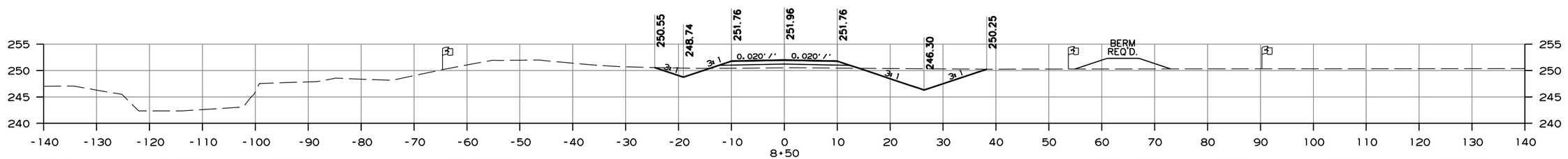
STAGE 1 CUT AREA 0 FILL AREA 0 | STAGE 2 CUT AREA 168.23 FILL AREA 84.75 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 026.85 FILL VOLUME 36.70 | STAGE 2 CUT VOLUME 182.62 FILL VOLUME 94.86 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 29.00 FILL AREA 39.64 | STAGE 2 CUT AREA 29.00 FILL AREA 17.70 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 80.10 FILL VOLUME 74.31 | STAGE 2 CUT VOLUME 26.85 FILL VOLUME 16.39 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0

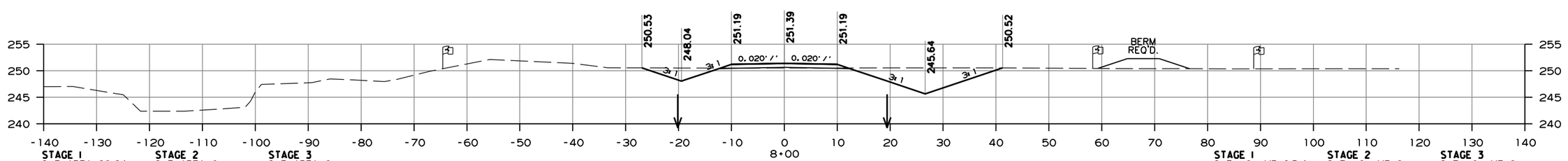


STAGE 1 CUT AREA 57.51 FILL AREA 40.61 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STA. 8+50.00
END 1.40% LT. DITCH GRADE
ELEV. = 248.74

STA. 8+50.00
END 1.32% RT. DITCH GRADE
ELEV. = 246.30

STAGE 1 CUT VOLUME 137.18 FILL VOLUME 58.87 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 90.64 FILL AREA 22.97 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 613.41 FILL VOLUME 88.52 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 8+00 TO STA. 9+50

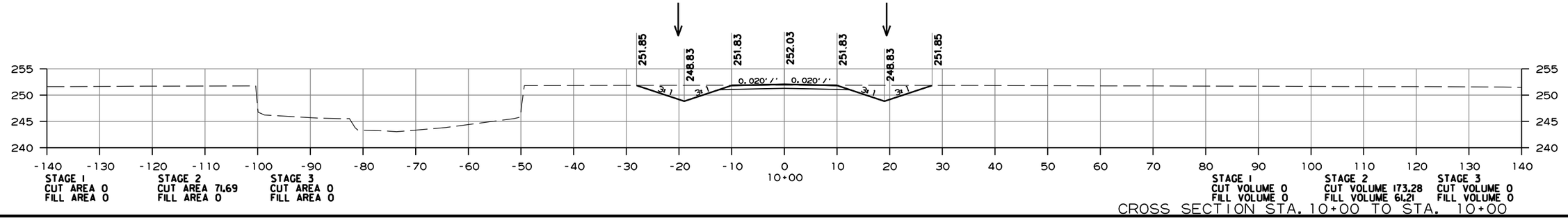
8/15/2022

R101054_Site3.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.		101054	239	311

(2) CROSS SECTIONS - SITE 3 - CO. RD. 745

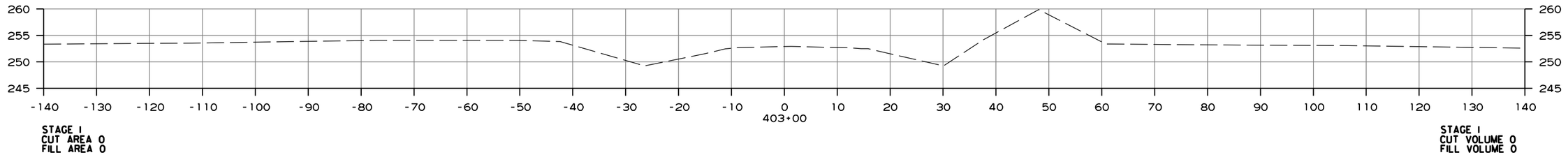


CROSS SECTION STA. 10+00 TO STA. 10+00

R101054_Site3.dgn 8/15/2022

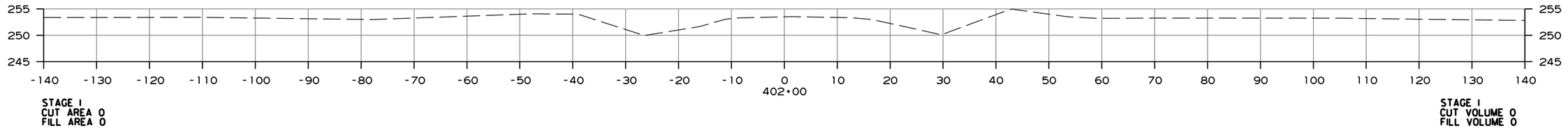
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	240	311

(2) CROSS SECTIONS - SITE 4



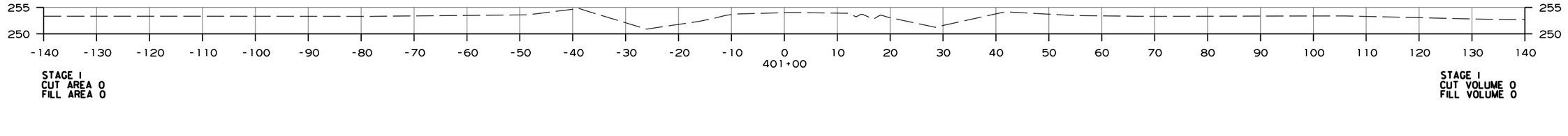
STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



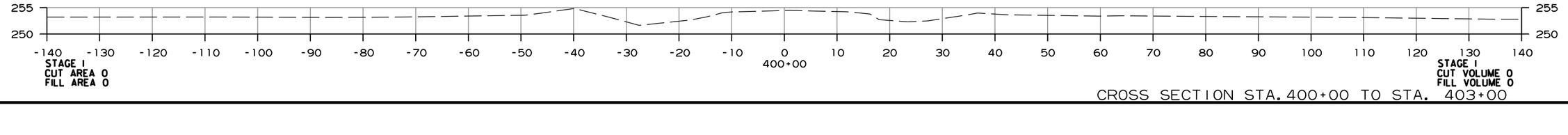
STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0

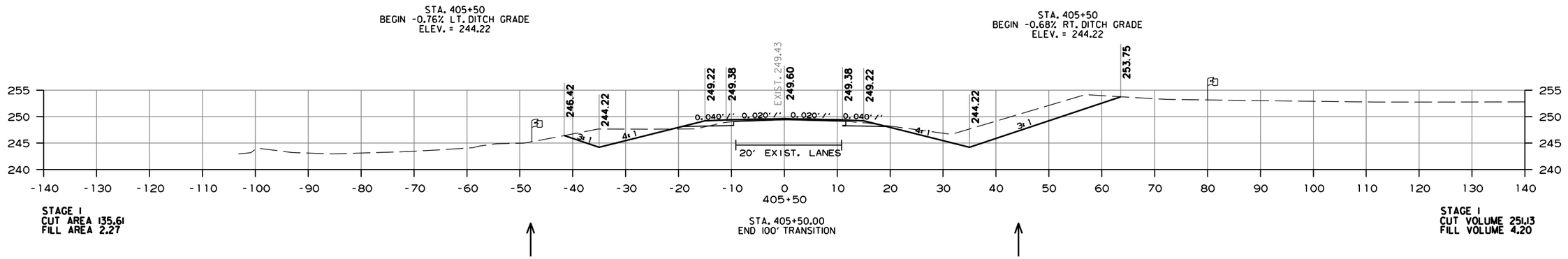
CROSS SECTION STA. 400+00 TO STA. 403+00

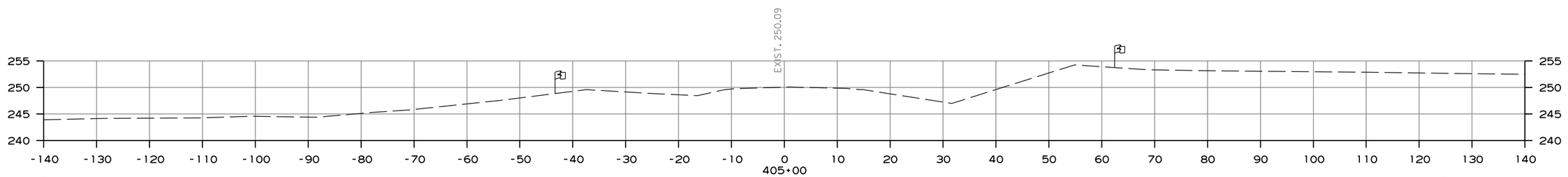
8/15/2022

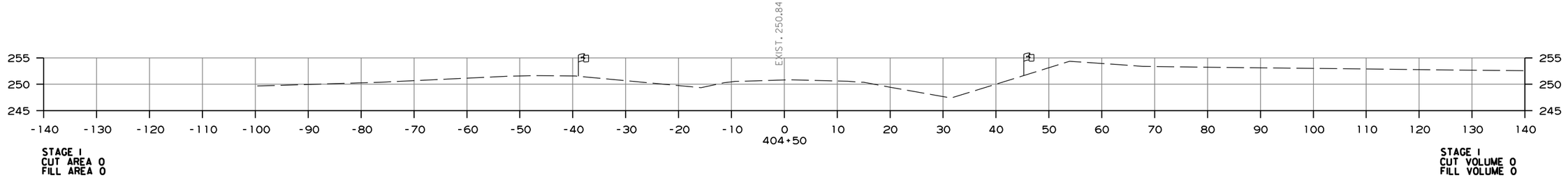
R101054_Site4.dgn

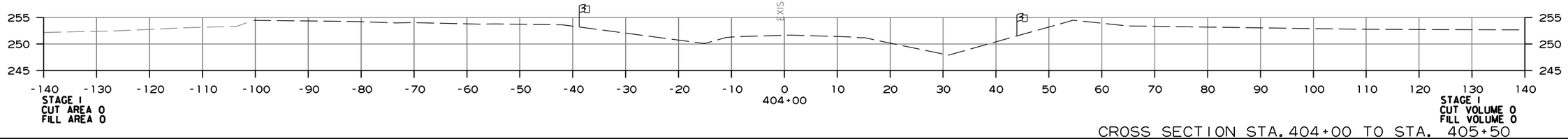
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	241	311

(2) CROSS SECTIONS - SITE 4









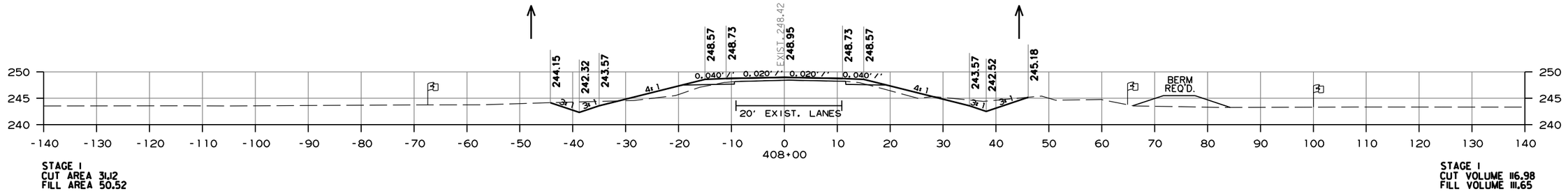
CROSS SECTION STA. 404+00 TO STA. 405+50

8/15/2022

R101054_Site4.dgn

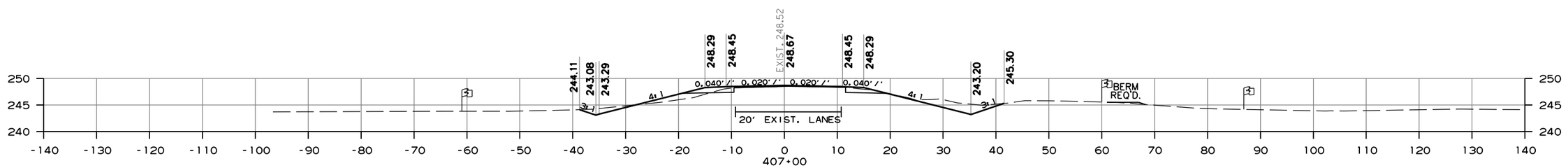
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	242	311

(2) CROSS SECTIONS - SITE 4



STAGE I
CUT AREA 31.12
FILL AREA 50.52

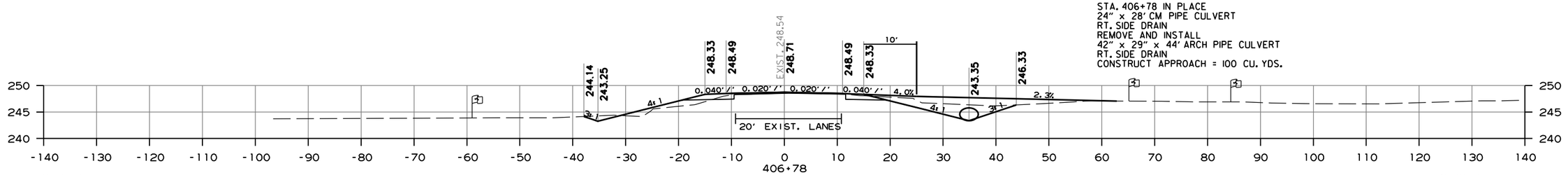
STAGE I
CUT VOLUME 116.98
FILL VOLUME 111.65



STAGE I
CUT AREA 32.05
FILL AREA 9.77

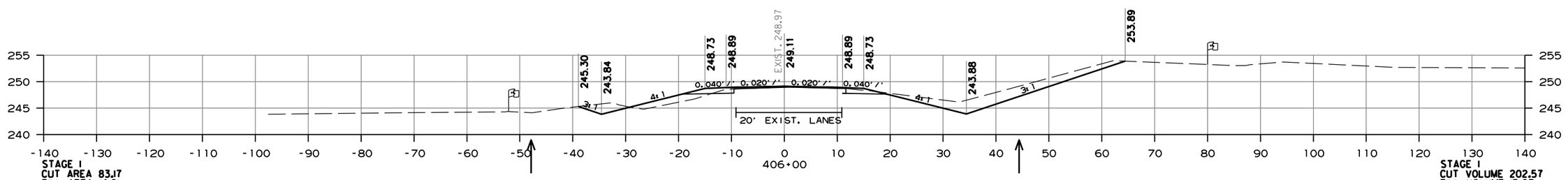
STAGE I
CUT VOLUME 33.51
FILL VOLUME 8.87

STA. 406+78 IN PLACE
24" x 28' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
42" x 29" x 44' ARCH PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 100 CU. YDS.



STAGE I
CUT AREA 50.19
FILL AREA 11.99

STAGE I
CUT VOLUME 192.63
FILL VOLUME 38.42



STAGE I
CUT AREA 83.17
FILL AREA 14.61

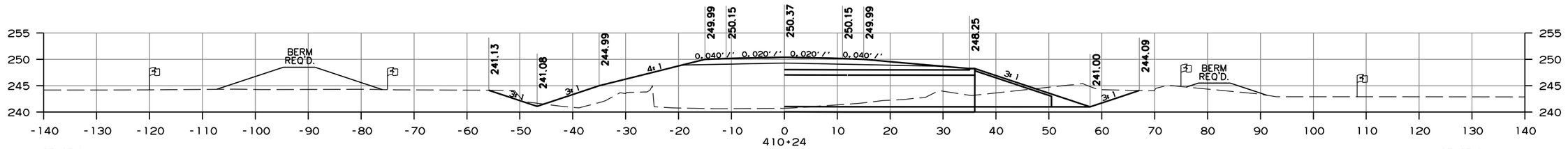
STAGE I
CUT VOLUME 202.57
FILL VOLUME 15.63

CROSS SECTION STA. 406+00 TO STA. 408+00

R101054_Site4.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	243	311

(2) CROSS SECTIONS - SITE 4



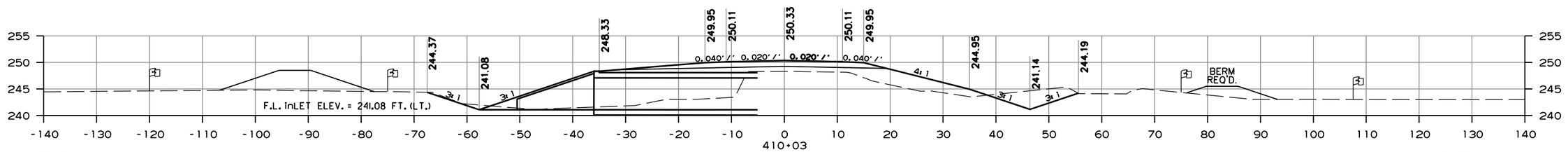
STAGE I
CUT AREA 164.71
FILL AREA 145.14

STA. 410+22.58
BEGIN 0.34% LT. DITCH GRADE
ELEV. = 241.08

STA. 410+24.54 - CONSTRUCT
TRP. 10' x 6' x 84' R.C. BOX CULVERT
ON A 30° RT. FWD. SKEW
WITH 3:1 WINGS LT. & RT.
Q25 = 592 CFS. D.A. = 2.22 SQ. MI.
SPAN = 32'-6"

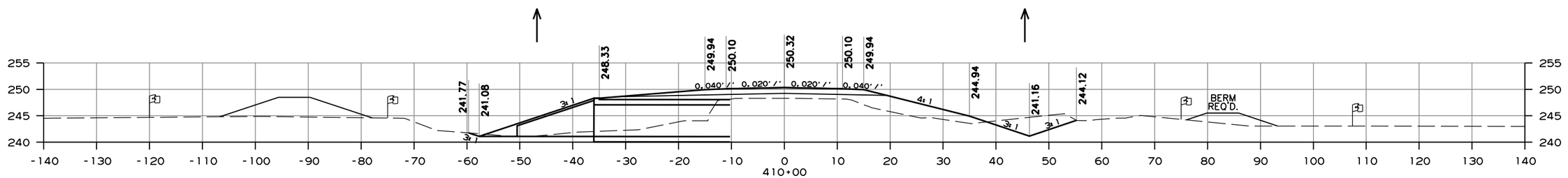
STA. 410+26.53
END -0.68% RT. DITCH GRADE
ELEV. = 241.00

STAGE I
CUT VOLUME 107.39
FILL VOLUME 126.83



STAGE I
CUT AREA 111.44
FILL AREA 181.00

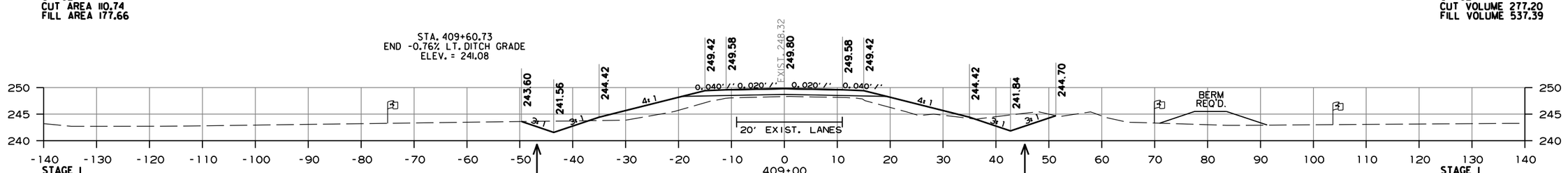
STAGE I
CUT VOLUME 12.34
FILL VOLUME 19.93



STAGE I
CUT AREA 110.74
FILL AREA 177.66

STAGE I
CUT VOLUME 277.20
FILL VOLUME 537.39

STA. 409+60.73
END -0.76% LT. DITCH GRADE
ELEV. = 241.08



STAGE I
CUT AREA 38.95
FILL AREA 112.53

STAGE I
CUT VOLUME 129.76
FILL VOLUME 301.94

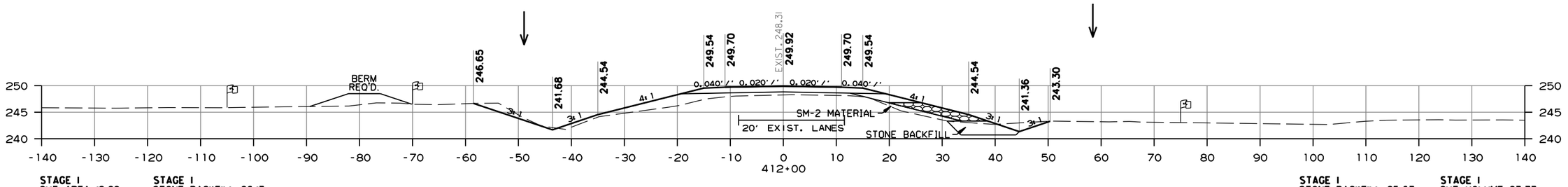
CROSS SECTION STA. 409+00 TO STA. 410+24

8/15/2022

R101054_Site4.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.		101054	244	311

(2) CROSS SECTIONS - SITE 4



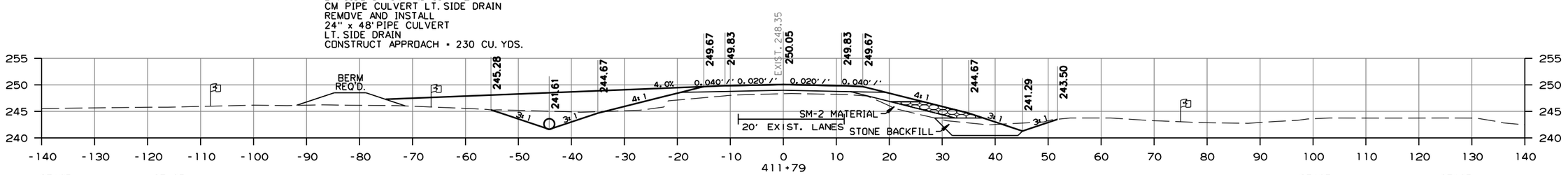
STAGE I
CUT AREA 18.28
FILL AREA 95.98

STAGE I
STONE BACKFILL 26.13
DUMPED RIPRAP 20.78

STAGE I
STONE BACKFILL 25.67
DUMPED RIPRAP 15.23

STAGE I
CUT VOLUME 23.77
FILL VOLUME 70.14

STA. 411+79 IN PLACE
24" x 28' CM PIPE CULVERT
LT. SIDE DRAIN AND 15" x 24'
CM PIPE CULVERT LT. SIDE DRAIN
REMOVE AND INSTALL
24" x 48' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH - 230 CU. YDS.

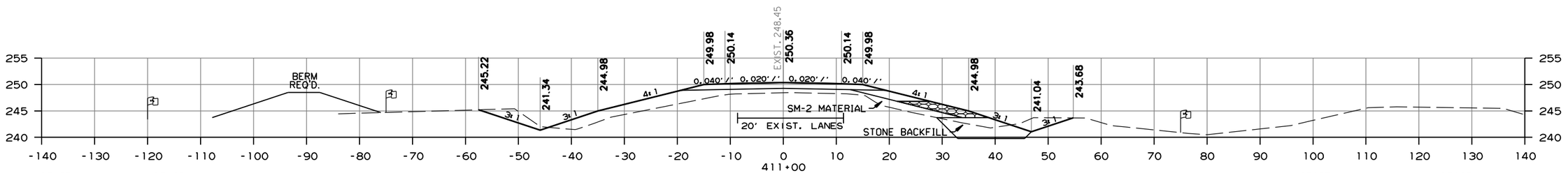


STAGE I
CUT AREA 42.83
FILL AREA 84.98

STAGE I
STONE BACKFILL 39.87
DUMPED RIPRAP 18.39

STAGE I
STONE BACKFILL 133.52
DUMPED RIPRAP 53.60

STAGE I
CUT VOLUME 108.74
FILL VOLUME 394.40



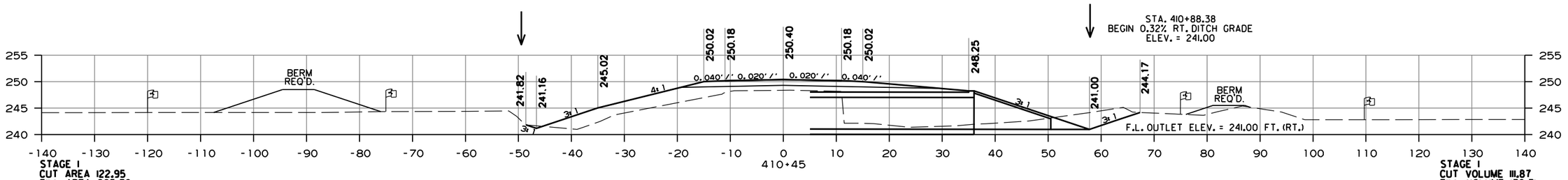
STAGE I
CUT AREA 31.50
FILL AREA 184.61

STAGE I
STONE BACKFILL 51.40
DUMPED RIPRAP 18.25

STAGE I
STONE BACKFILL 0.00
DUMPED RIPRAP 0.00

STAGE I
CUT VOLUME 157.31
FILL VOLUME 397.19

STA. 410+88.38
BEGIN 0.32% RT. DITCH GRADE
ELEV. = 241.00



STAGE I
CUT AREA 122.95
FILL AREA 205.36

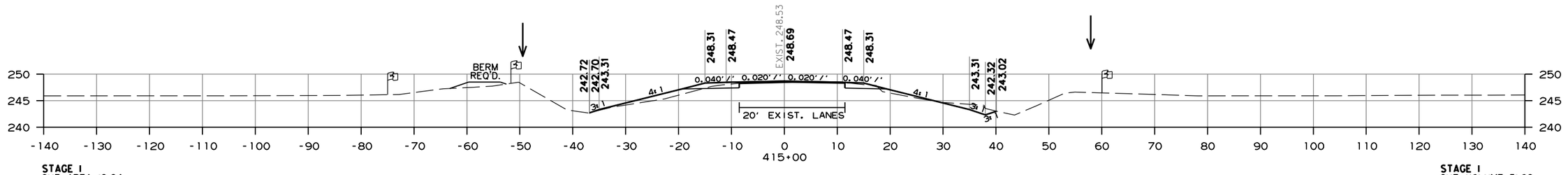
STAGE I
CUT VOLUME 111.87
FILL VOLUME 136.31

CROSS SECTION STA. 410+45 TO STA. 412+00

R101054_Site4.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	245	311

(2) CROSS SECTIONS - SITE 4



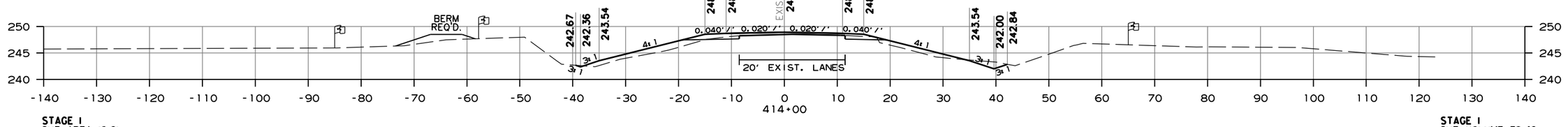
STAGE I
CUT AREA 16.64
FILL AREA 23.05

STA. 415+00
END 0.34% LT. DITCH GRADE
ELEV. = 242.70

STA. 415+00.00
BEGIN 100' TRANSITION

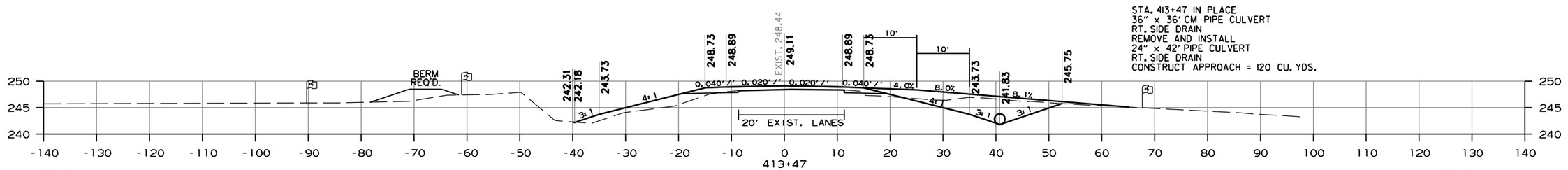
STA. 415+00
BEGIN 0.32% RT. DITCH GRADE
ELEV. = 242.32

STAGE I
CUT VOLUME 51.02
FILL VOLUME 125.24



STAGE I
CUT AREA 10.91
FILL AREA 44.58

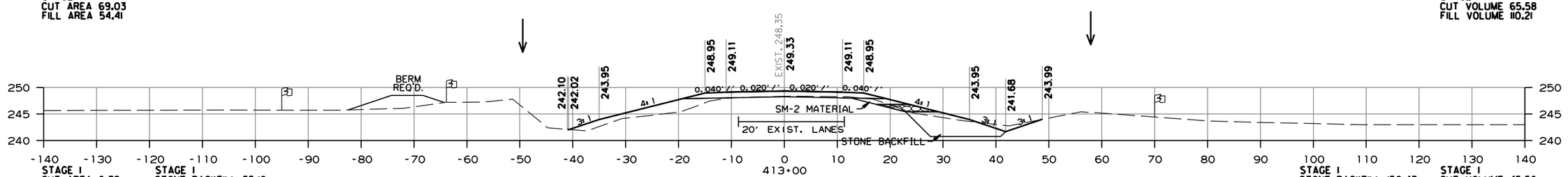
STAGE I
CUT VOLUME 78.46
FILL VOLUME 97.16



STA. 413+47 IN PLACE
36" x 36' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 120 CU. YDS.

STAGE I
CUT AREA 69.03
FILL AREA 54.41

STAGE I
CUT VOLUME 65.58
FILL VOLUME 110.21



STAGE I
CUT AREA 6.32
FILL AREA 72.21

STAGE I
STONE BACKFILL 55.10
DUMPED RIPRAP 8.48

STAGE I
STONE BACKFILL 150.43
DUMPED RIPRAP 54.19

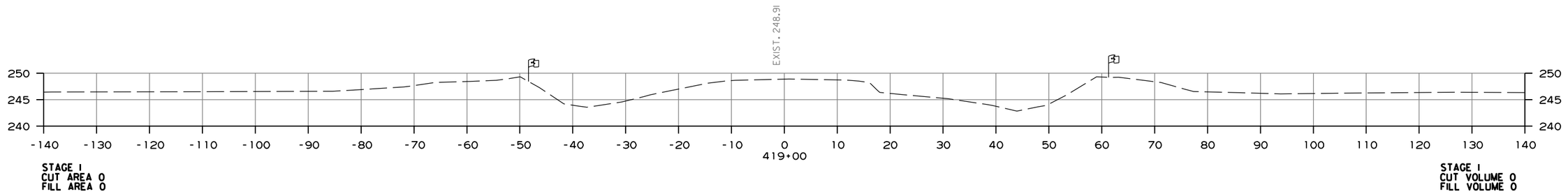
STAGE I
CUT VOLUME 45.56
FILL VOLUME 310.35

CROSS SECTION STA. 413+00 TO STA. 415+00

R101054_Site4.dgn 8/15/2022

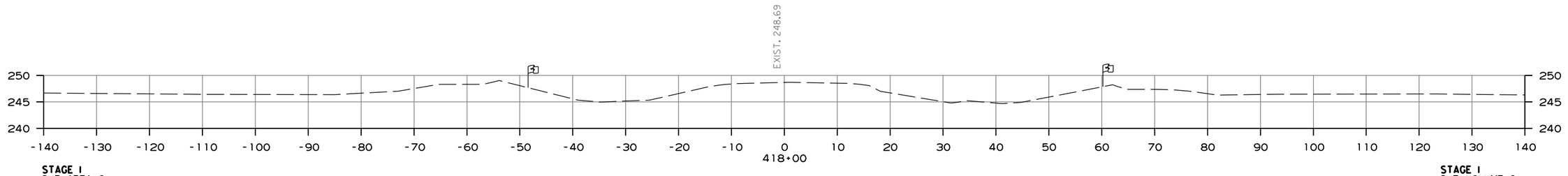
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	246	311

(2) CROSS SECTIONS - SITE 4



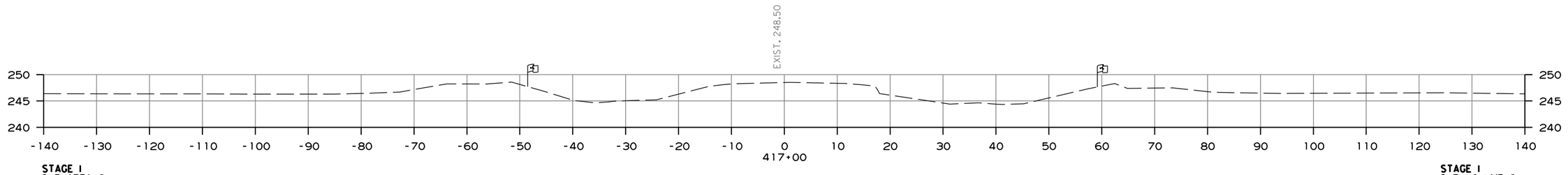
STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



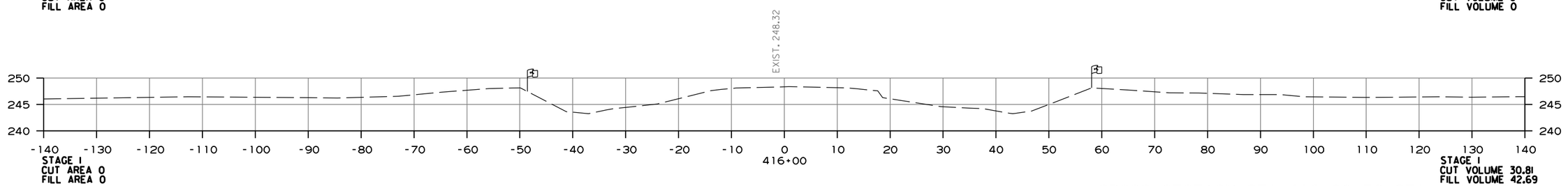
STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 30.81
FILL VOLUME 42.69

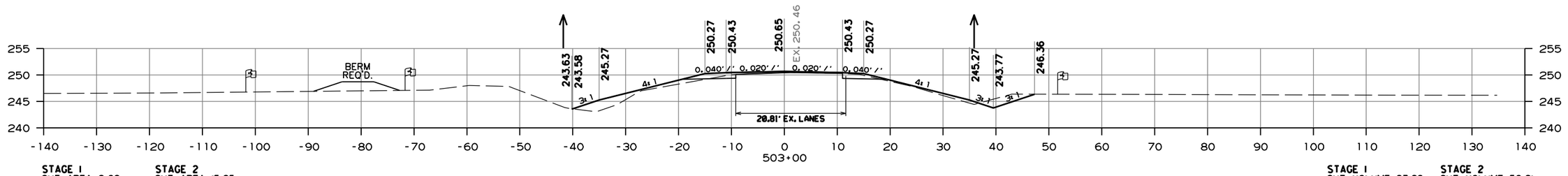
CROSS SECTION STA. 416+00 TO STA. 419+00

8/15/2022

R101054_Site4.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.		101054	247	311

(2) CROSS SECTIONS - SITE 5

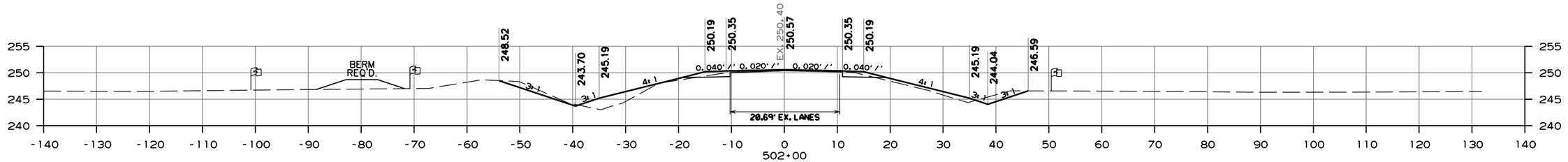


STAGE 1
CUT AREA 2.09
FILL AREA 41.42

STAGE 2
CUT AREA 15.25
FILL AREA 6.07

STAGE 1
CUT VOLUME 23.28
FILL VOLUME 155.02

STAGE 2
CUT VOLUME 50.91
FILL VOLUME 30.96

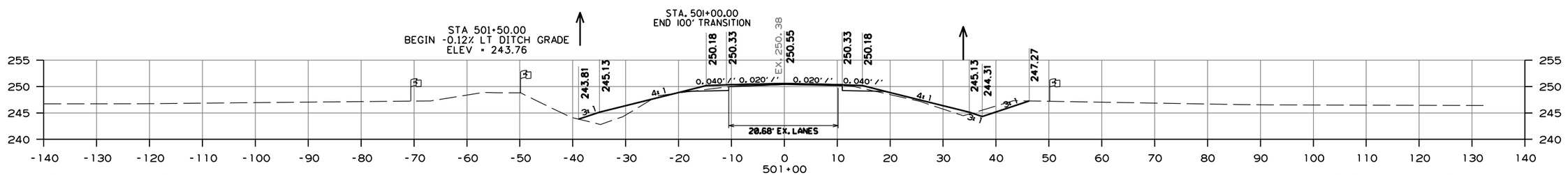


STAGE 1
CUT AREA 10.48
FILL AREA 42.29

STAGE 2
CUT AREA 12.24
FILL AREA 10.65

STAGE 1
CUT VOLUME 25.22
FILL VOLUME 115.28

STAGE 2
CUT VOLUME 46.52
FILL VOLUME 35.35

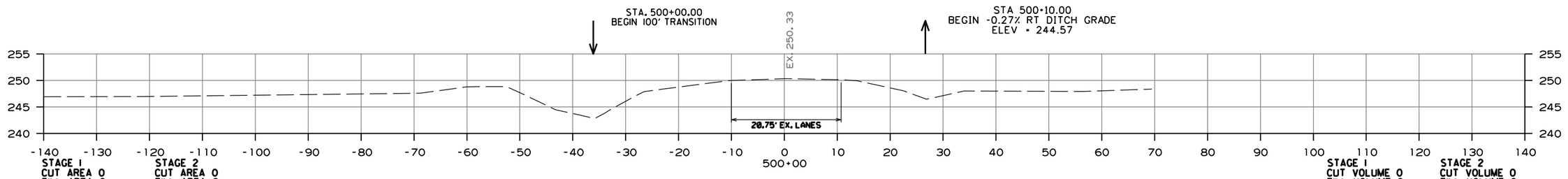


STAGE 1
CUT AREA 3.14
FILL AREA 19.96

STAGE 2
CUT AREA 12.88
FILL AREA 8.44

STAGE 1
CUT VOLUME 5.81
FILL VOLUME 36.96

STAGE 2
CUT VOLUME 23.85
FILL VOLUME 15.63



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

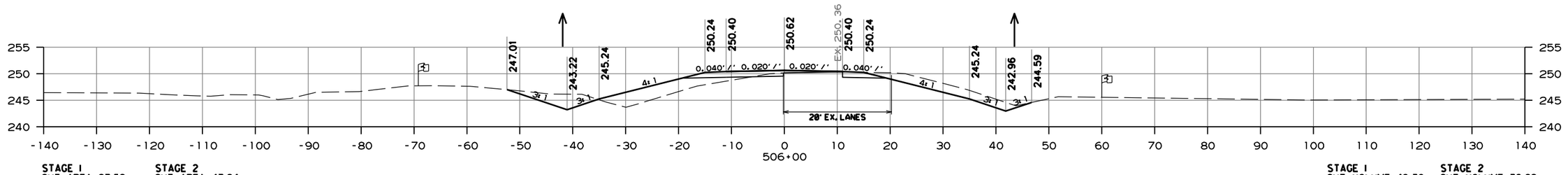
STAGE 2
CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 500+00 TO STA. 503+00

R101054_Site5.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	248	311

(2) CROSS SECTIONS - SITE 5



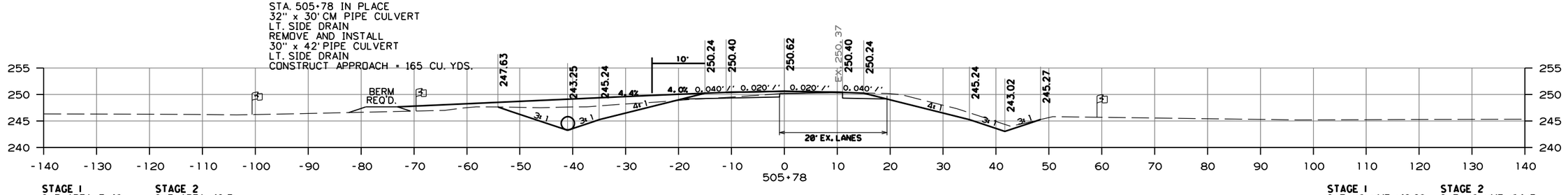
STAGE 1
CUT AREA 27.52
FILL AREA 48.71

STAGE 2
CUT AREA 47.84
FILL AREA 0

STAGE 1
CUT VOLUME 40.30
FILL VOLUME 23.52

STAGE 2
CUT VOLUME 36.89
FILL VOLUME 0

STA. 505+78 IN PLACE
32" x 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
30" x 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 165 CU. YDS.

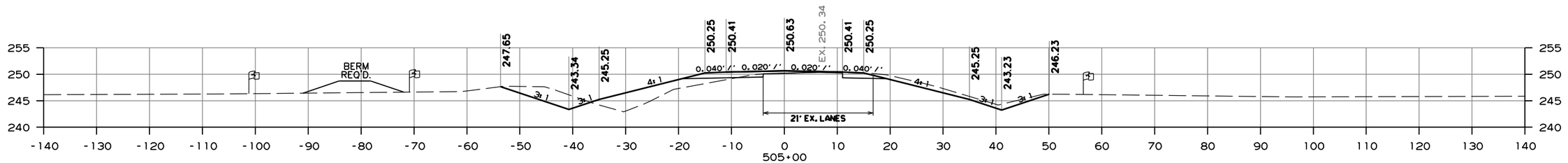


STAGE 1
CUT AREA 71.40
FILL AREA 9.01

STAGE 2
CUT AREA 42.71
FILL AREA 0

STAGE 1
CUT VOLUME 149.28
FILL VOLUME 122.73

STAGE 2
CUT VOLUME 104.17
FILL VOLUME 0

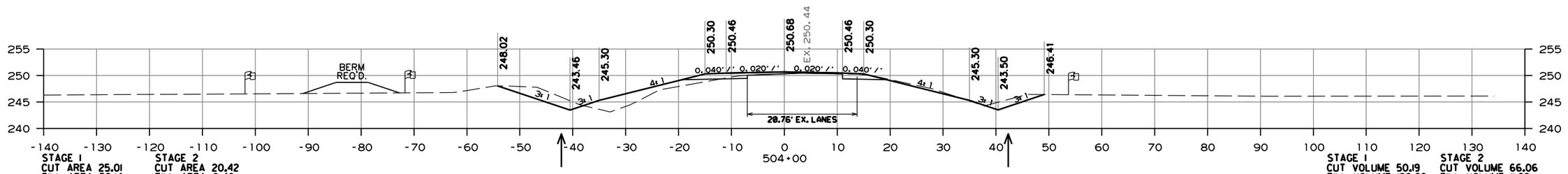


STAGE 1
CUT AREA 31.95
FILL AREA 75.96

STAGE 2
CUT AREA 29.41
FILL AREA 0

STAGE 1
CUT VOLUME 105.48
FILL VOLUME 250.19

STAGE 2
CUT VOLUME 92.28
FILL VOLUME 0.74



STAGE 1
CUT AREA 25.01
FILL AREA 59.14

STAGE 2
CUT AREA 20.42
FILL AREA 0.40

STAGE 1
CUT VOLUME 50.19
FILL VOLUME 186.22

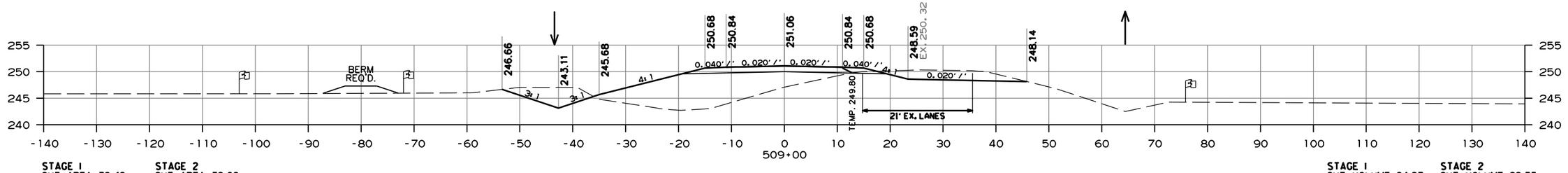
STAGE 2
CUT VOLUME 66.06
FILL VOLUME 11.98

CROSS SECTION STA. 504+00 TO STA. 506+00

R101054_Site5.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	249	311

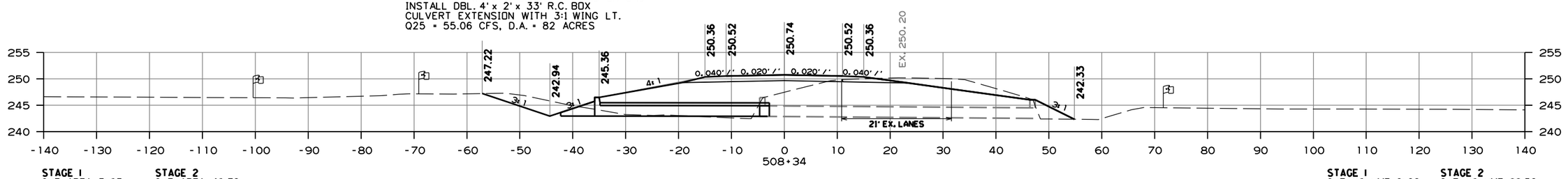
(2) CROSS SECTIONS - SITE 5



STAGE 1 CUT AREA 38.49 FILL AREA 197.91
STAGE 2 CUT AREA 39.69 FILL AREA 0

STAGE 1 CUT VOLUME 84.97 FILL VOLUME 479.42
STAGE 2 CUT VOLUME 98.33 FILL VOLUME 0

STA. 508+34 IN PLACE
DBL. 4' x 2' RC BOX CULVERT
WITH WINGS LT. & RT.
REMOVE LT WING WALL RETAIN AND EXTEND
INSTALL DBL. 4' x 2' x 33' R.C. BOX
CULVERT EXTENSION WITH 3:1 WING LT.
Q25 = 55.06 CFS, D.A. = 82 ACRES

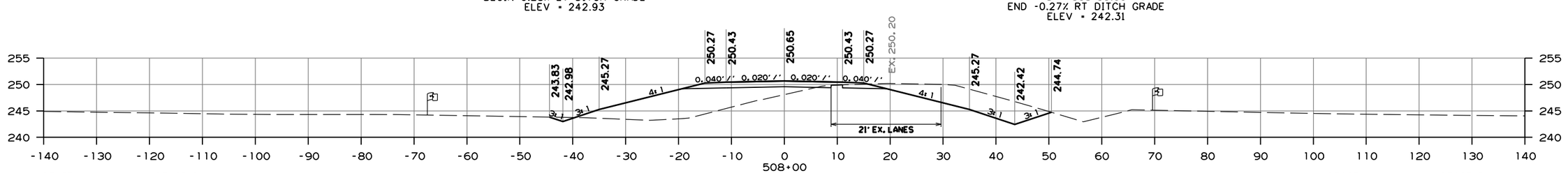


STAGE 1 CUT AREA 31.03 FILL AREA 194.34
STAGE 2 CUT AREA 40.76 FILL AREA 0

STAGE 1 CUT VOLUME 21.26 FILL VOLUME 209.33
STAGE 2 CUT VOLUME 88.56 FILL VOLUME 0

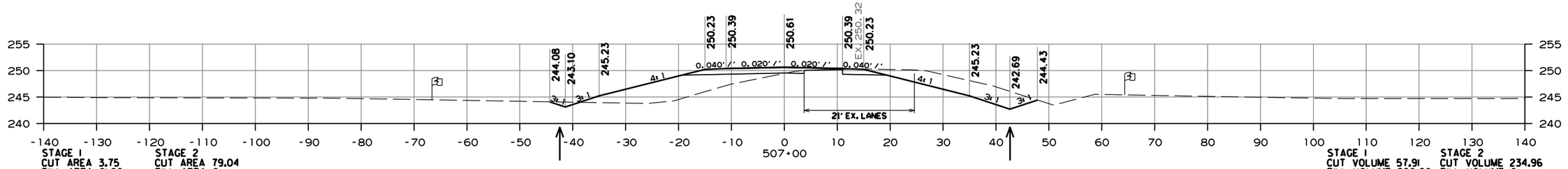
STA 508+34.07
END -0.12% LT DITCH GRADE
BEGIN 0.28% LT DITCH GRADE
ELEV = 242.93

STA 508+35.00
END -0.27% RT DITCH GRADE
ELEV = 242.31



STAGE 1 CUT AREA 2.73 FILL AREA 138.12
STAGE 2 CUT AREA 99.89 FILL AREA 0

STAGE 1 CUT VOLUME 12.00 FILL VOLUME 425.78
STAGE 2 CUT VOLUME 331.35 FILL VOLUME 0



STAGE 1 CUT AREA 3.75 FILL AREA 91.80
STAGE 2 CUT AREA 79.04 FILL AREA 0

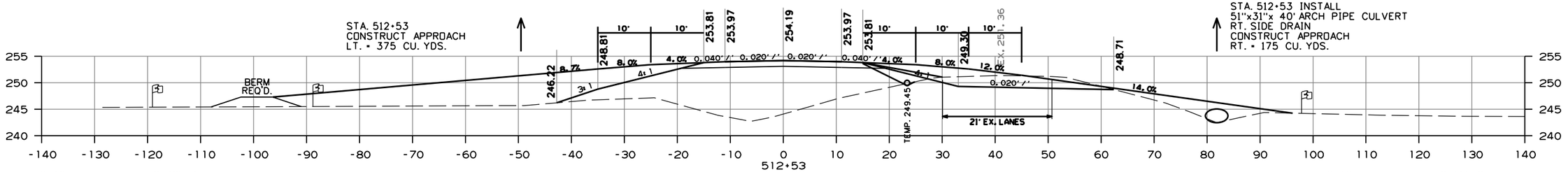
STAGE 1 CUT VOLUME 57.91 FILL VOLUME 260.20
STAGE 2 CUT VOLUME 234.96 FILL VOLUME 0

CROSS SECTION STA. 507+00 TO STA. 509+00

R101054_Site5.dgn 8/15/2022

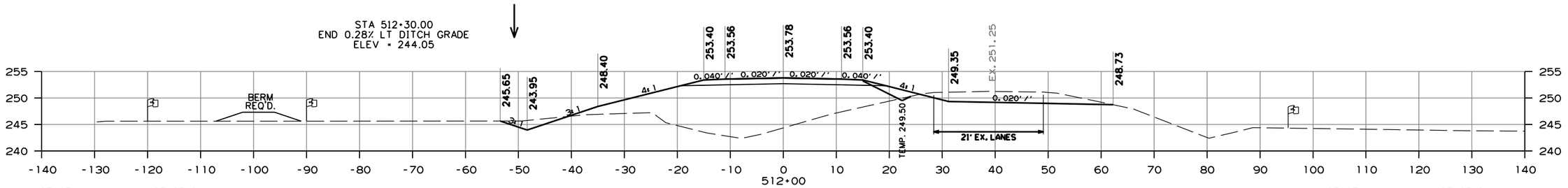
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	250	311

(2) CROSS SECTIONS - SITE 5



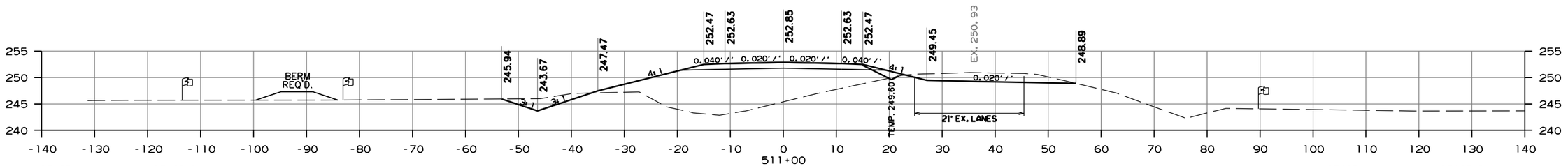
STAGE 1 CUT AREA 0.42 FILL AREA 388.93
STAGE 2 CUT AREA 59.05 FILL AREA 12.74

STAGE 1 CUT VOLUME 12.05 FILL VOLUME 742.68
STAGE 2 CUT VOLUME 113.48 FILL VOLUME 22.10



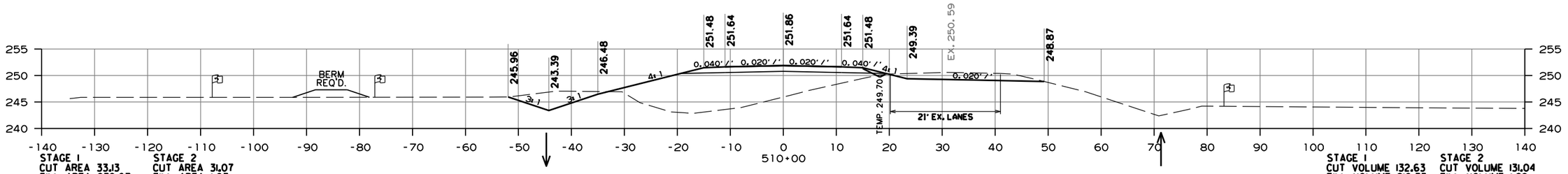
STAGE 1 CUT AREA 11.86 FILL AREA 367.76
STAGE 2 CUT AREA 56.57 FILL AREA 9.78

STAGE 1 CUT VOLUME 61.11 FILL VOLUME 1225.43
STAGE 2 CUT VOLUME 180.80 FILL VOLUME 26.94



STAGE 1 CUT AREA 21.14 FILL AREA 293.97
STAGE 2 CUT AREA 41.06 FILL AREA 4.77

STAGE 1 CUT VOLUME 100.50 FILL VOLUME 988.22
STAGE 2 CUT VOLUME 133.57 FILL VOLUME 10.81



STAGE 1 CUT AREA 33.13 FILL AREA 239.67
STAGE 2 CUT AREA 31.07 FILL AREA 1.07

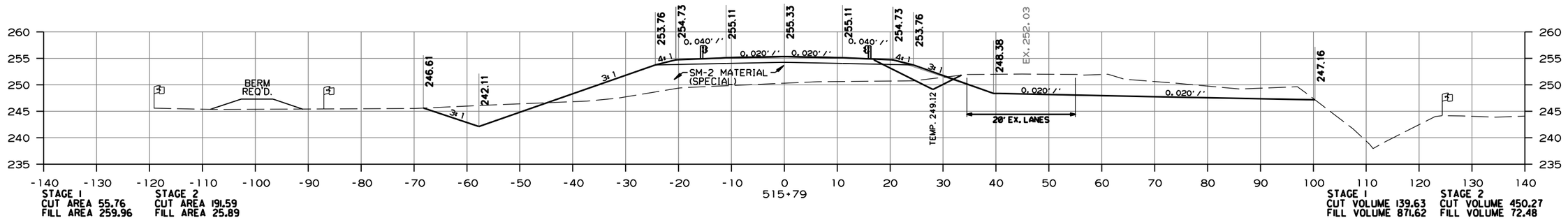
STAGE 1 CUT VOLUME 132.63 FILL VOLUME 810.33
STAGE 2 CUT VOLUME 131.04 FILL VOLUME 1.98

CROSS SECTION STA. 510+00 TO STA. 512+53

R101054_Site5.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	251	311

(2) CROSS SECTIONS - SITE 5

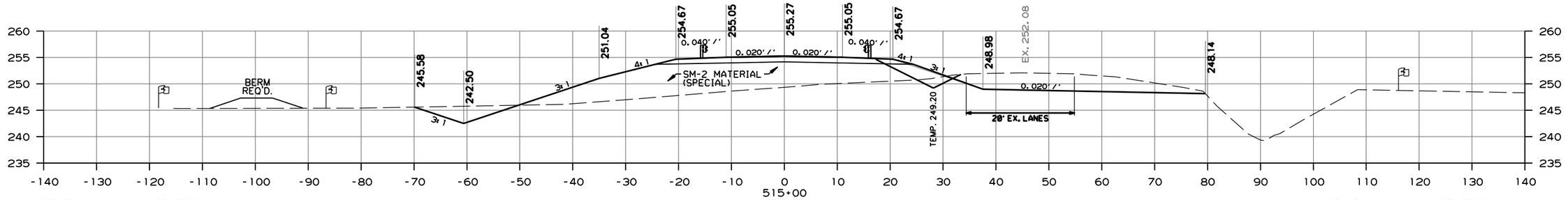


STAGE 1 CUT AREA 55.76 FILL AREA 259.96

STAGE 2 CUT AREA 191.59 FILL AREA 25.89

STAGE 1 CUT VOLUME 139.63 FILL VOLUME 871.62

STAGE 2 CUT VOLUME 450.27 FILL VOLUME 72.48



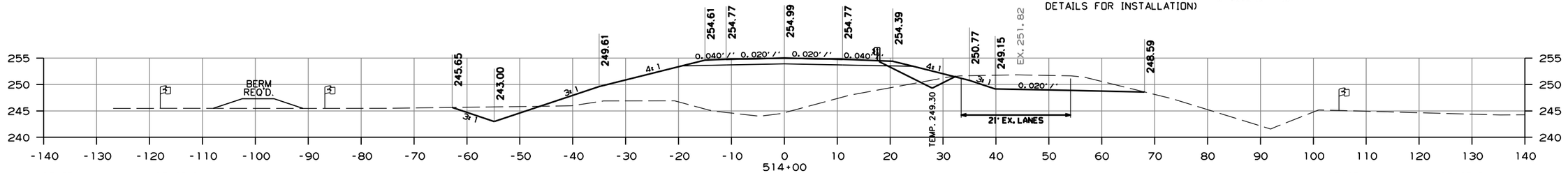
STAGE 1 CUT AREA 39.68 FILL AREA 335.83

STAGE 2 CUT AREA 116.19 FILL AREA 23.65

STAGE 1 CUT VOLUME 125.63 FILL VOLUME 1411.00

STAGE 2 CUT VOLUME 345.31 FILL VOLUME 85.56

NOTE: STA. 514+71 TO STA. 515+91
CONSTRUCT COMPACTED EMBANKMENT (SPECIAL) IN ACCORDANCE WITH SECTION 210 OF AHTD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION 2014 (SEE SPECIAL PROVISIONS AND DETAILS FOR INSTALLATION)

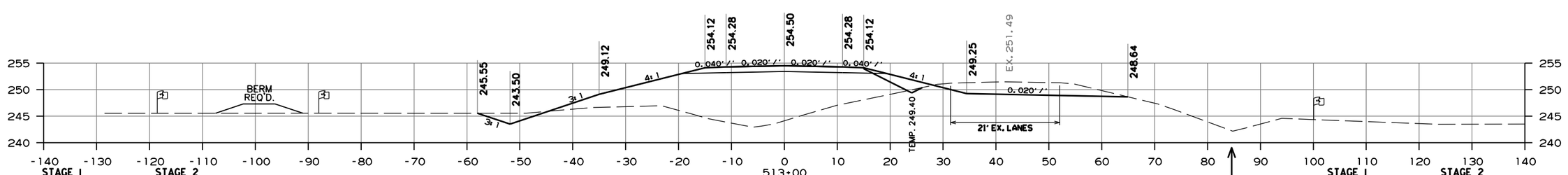


STAGE 1 CUT AREA 28.16 FILL AREA 426.11

STAGE 2 CUT AREA 70.28 FILL AREA 22.55

STAGE 1 CUT VOLUME 78.20 FILL VOLUME 1541.41

STAGE 2 CUT VOLUME 251.19 FILL VOLUME 69.15



STAGE 1 CUT AREA 14.07 FILL AREA 406.25

STAGE 2 CUT AREA 65.36 FILL AREA 14.79

STAGE 1 CUT VOLUME 12.61 FILL VOLUME 692.10

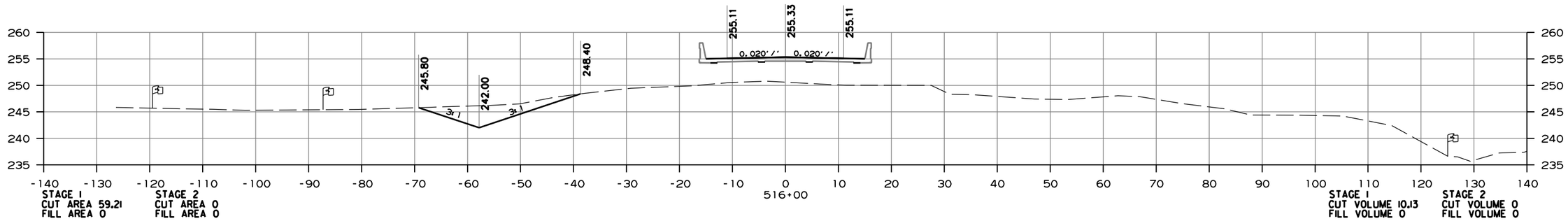
STAGE 2 CUT VOLUME 108.28 FILL VOLUME 23.96

CROSS SECTION STA. 513+00 TO STA. 515+79

R101054_Site5.dgn 9/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	252	311

(2) CROSS SECTIONS - SITE 5

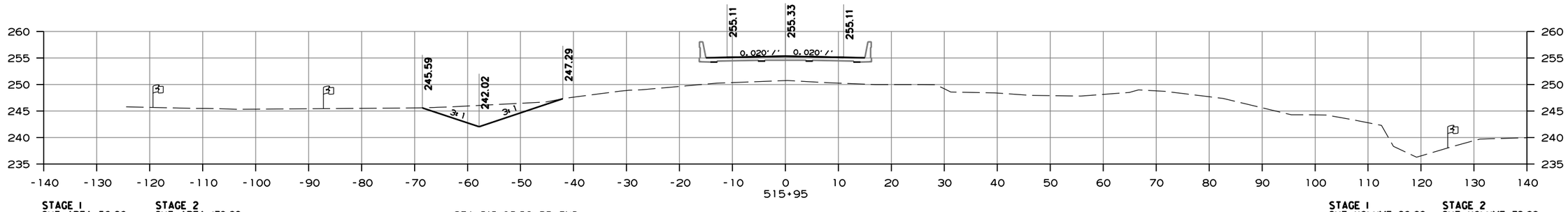


STAGE 1
CUT AREA 59.21
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 10.13
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



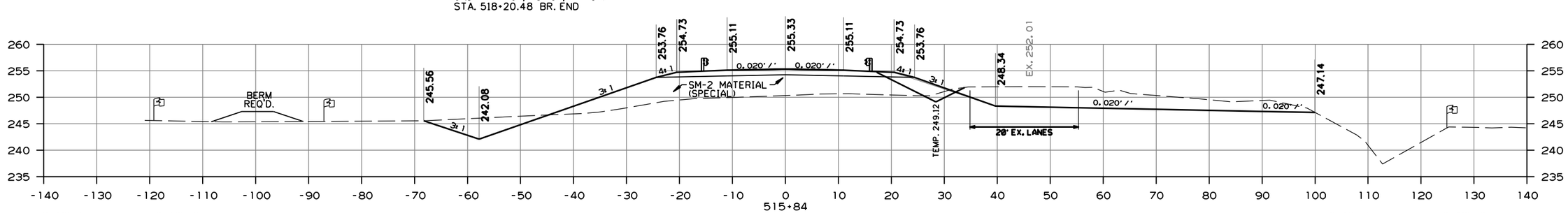
STAGE 1
CUT AREA 50.20
FILL AREA 235.18

STAGE 2
CUT AREA 178.89
FILL AREA 25.00

STA. 515+93.52 BR. END
BR. NO. 07524
226'-11 1/2" BRIDGE LENGTH
30'-0" CLEAR ROADWAY
224'-6" COMPOSITE
PRESTRESSED CONCRETE GIRDER
UNIT (74'-9", 75'-0", 74'-9")
STA. 518+20.48 BR. END

STAGE 1
CUT VOLUME 20.99
FILL VOLUME 100.44

STAGE 2
CUT VOLUME 72.88
FILL VOLUME 10.19



STAGE 1
CUT AREA 52.83
FILL AREA 257.89

STAGE 2
CUT AREA 178.89
FILL AREA 25.00

STAGE 1
CUT VOLUME 10.05
FILL VOLUME 47.95

STAGE 2
CUT VOLUME 34.30
FILL VOLUME 4.71

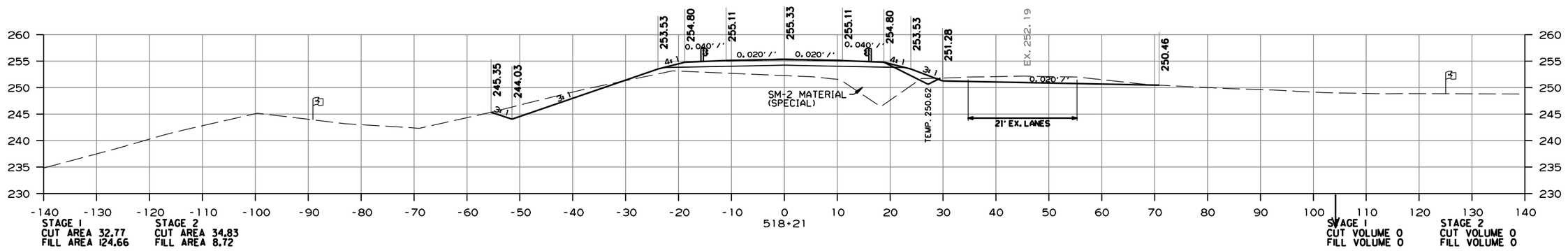
CROSS SECTION STA. 515+84 TO STA. 516+00

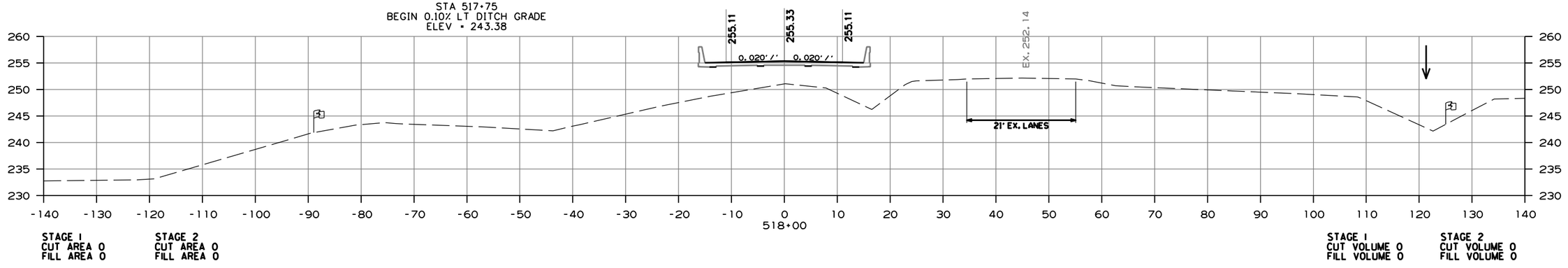
R101054_Site5.dgn 9/15/2022

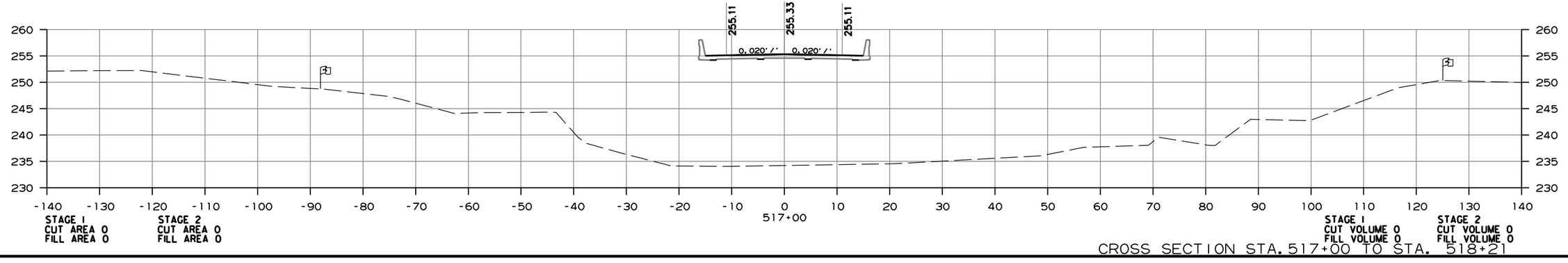
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	253	311

(2) CROSS SECTIONS - SITE 5

NOTE: STA. 518+21 TO STA. 519+71
CONSTRUCT COMPACTED EMBANKMENT (SPECIAL) IN ACCORDANCE WITH SECTION 210 OF AHTD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION 2014 (SEE SPECIAL PROVISIONS AND DETAILS FOR INSTALLATION)





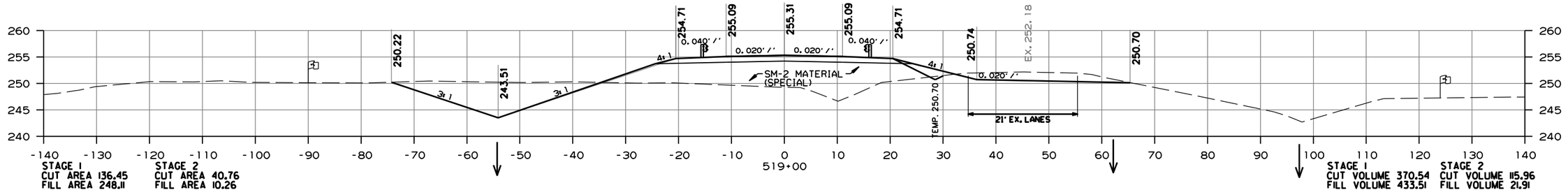


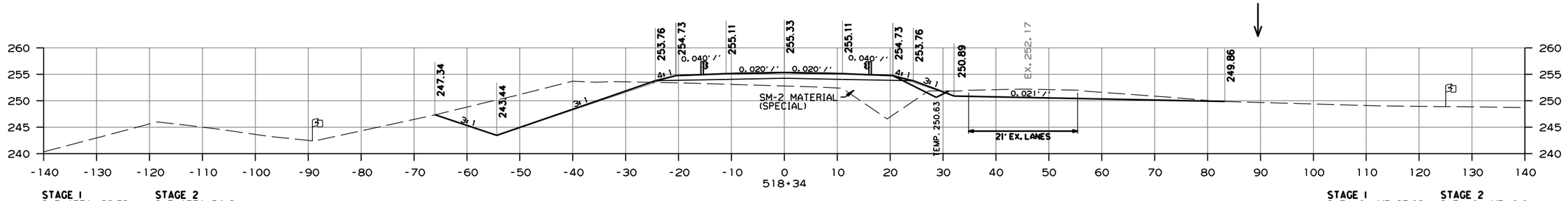
CROSS SECTION STA. 517+00 TO STA. 518+21

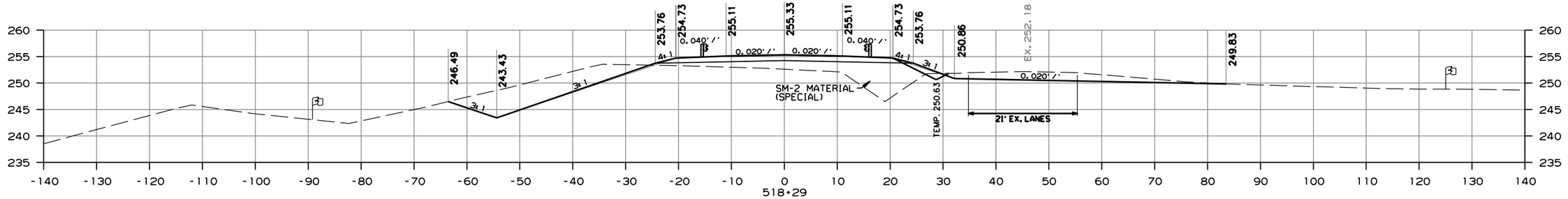
R101054_Site5.dgn 9/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	254	311

(2) CROSS SECTIONS - SITE 5





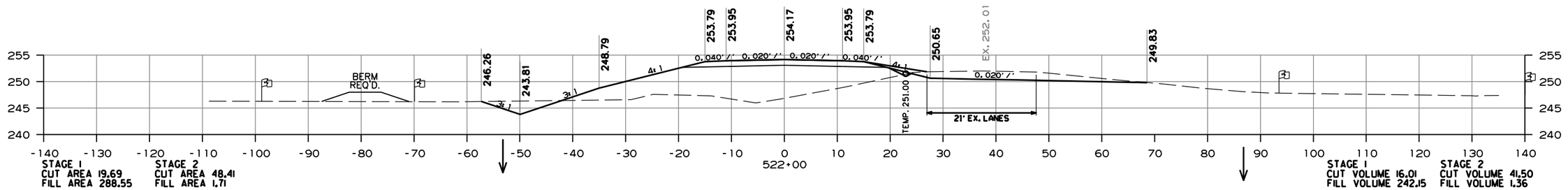


CROSS SECTION STA. 518+29 TO STA. 519+00

R101054_Site5.dgn 9/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	255	311

(2) CROSS SECTIONS - SITE 5

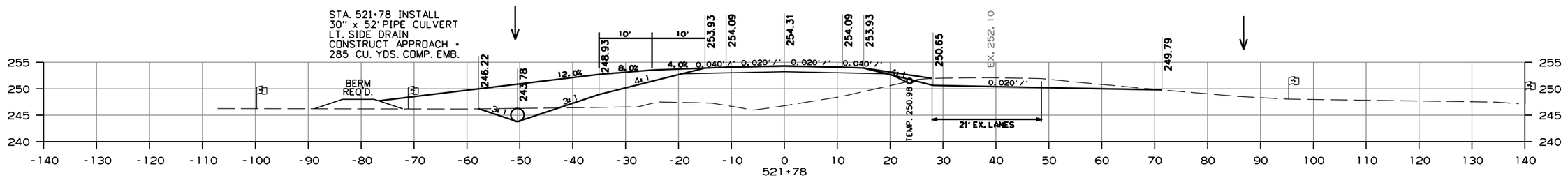


STAGE 1
CUT AREA 19.69
FILL AREA 288.55

STAGE 2
CUT AREA 48.41
FILL AREA 1.71

STAGE 1
CUT VOLUME 16.01
FILL VOLUME 242.15

STAGE 2
CUT VOLUME 41.50
FILL VOLUME 1.36

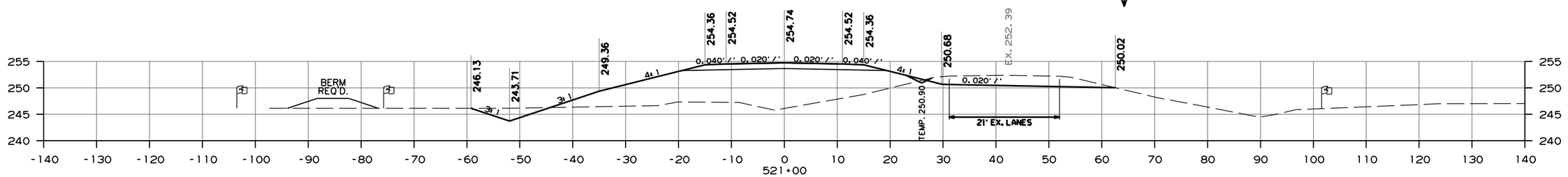


STAGE 1
CUT AREA 19.60
FILL AREA 305.82

STAGE 2
CUT AREA 53.46
FILL AREA 1.64

STAGE 1
CUT VOLUME 55.61
FILL VOLUME 954.62

STAGE 2
CUT VOLUME 157.04
FILL VOLUME 4.35

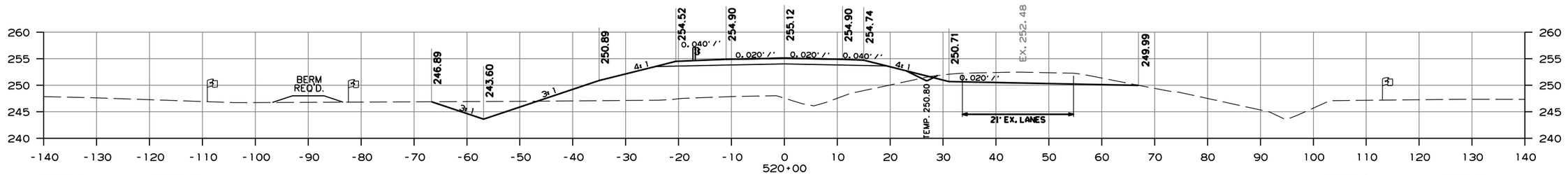


STAGE 1
CUT AREA 18.90
FILL AREA 355.07

STAGE 2
CUT AREA 55.26
FILL AREA 1.37

STAGE 1
CUT VOLUME 98.91
FILL VOLUME 1336.94

STAGE 2
CUT VOLUME 213.89
FILL VOLUME 7.06



STAGE 1
CUT AREA 34.51
FILL AREA 366.88

STAGE 2
CUT AREA 60.24
FILL AREA 2.44

STAGE 1
CUT VOLUME 316.59
FILL VOLUME 1138.87

STAGE 2
CUT VOLUME 187.04
FILL VOLUME 23.52

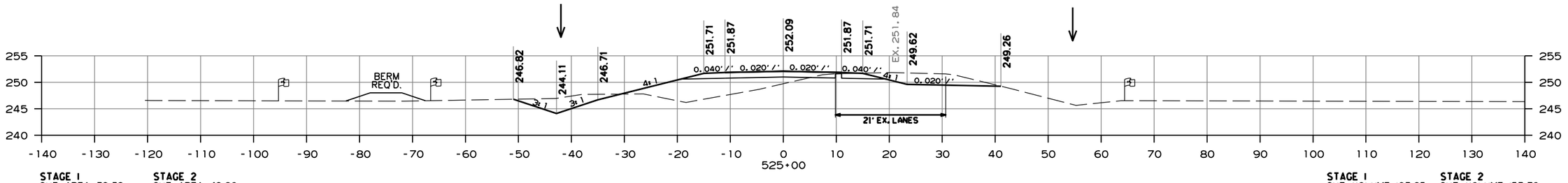
CROSS SECTION STA. 520+00 TO STA. 522+00

9/15/2022

R101054_Site5.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.		101054	256	311

(2) CROSS SECTIONS - SITE 5

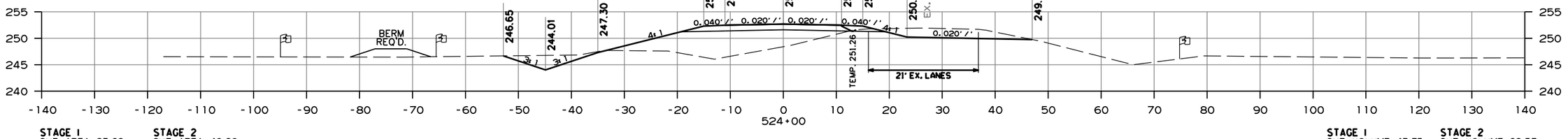


STAGE 1
CUT AREA 32.39
FILL AREA 98.82

STAGE 2
CUT AREA 42.80
FILL AREA 0

STAGE 1
CUT VOLUME 103.85
FILL VOLUME 457.13

STAGE 2
CUT VOLUME 153.70
FILL VOLUME 0.02



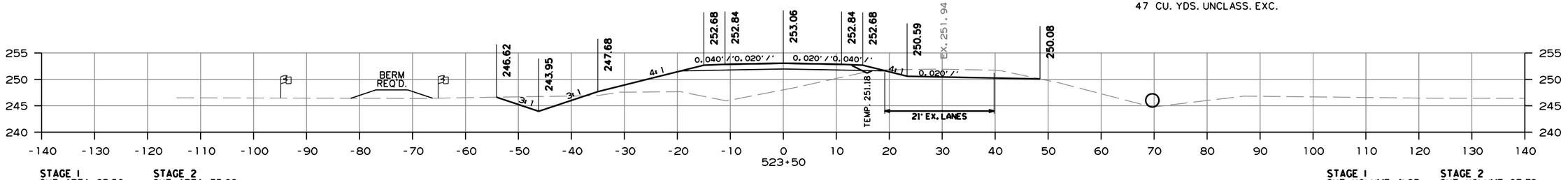
STAGE 1
CUT AREA 23.69
FILL AREA 148.03

STAGE 2
CUT AREA 40.20
FILL AREA 0.01

STAGE 1
CUT VOLUME 43.75
FILL VOLUME 302.94

STAGE 2
CUT VOLUME 68.57
FILL VOLUME 0.01

STA. 523+50 INSTALL
30" x 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH -
1196 CU. YDS. COMP. EMB.
47 CU. YDS. UNCLASS. EXC.

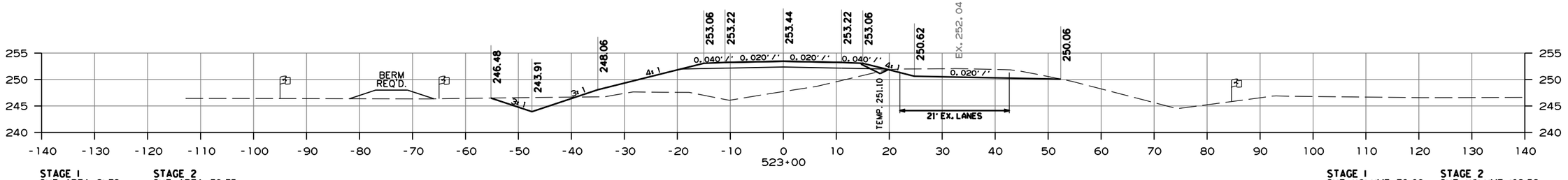


STAGE 1
CUT AREA 23.56
FILL AREA 179.15

STAGE 2
CUT AREA 33.86
FILL AREA 0.00

STAGE 1
CUT VOLUME 41.93
FILL VOLUME 362.94

STAGE 2
CUT VOLUME 67.79
FILL VOLUME 1.43



STAGE 1
CUT AREA 21.72
FILL AREA 212.83

STAGE 2
CUT AREA 39.35
FILL AREA 1.54

STAGE 1
CUT VOLUME 76.69
FILL VOLUME 928.48

STAGE 2
CUT VOLUME 162.52
FILL VOLUME 6.02

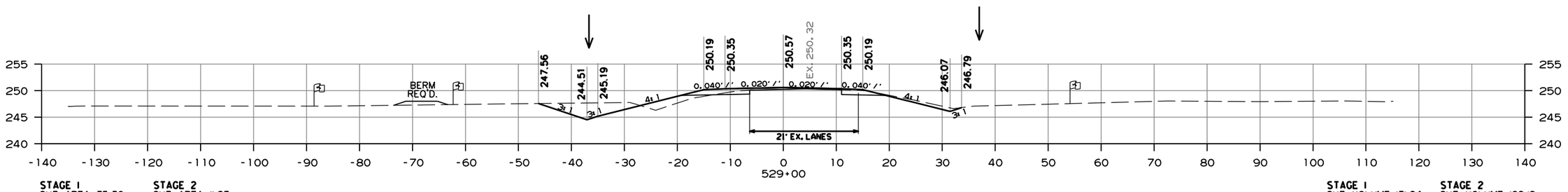
CROSS SECTION STA. 523+00 TO STA. 525+00

9/15/2022

R101054_Site5.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.		101054	257	311

(2) CROSS SECTIONS - SITE 5



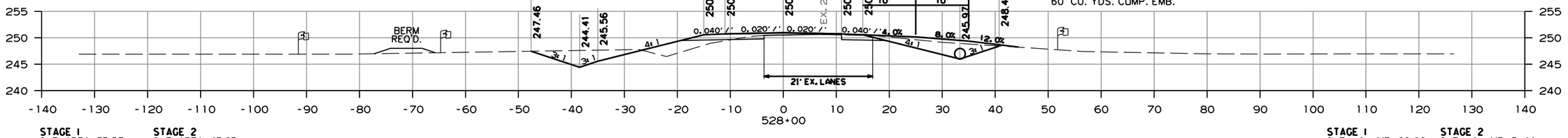
STAGE 1
CUT AREA 35.30
FILL AREA 18.09

STAGE 2
CUT AREA 11.93
FILL AREA 0

STAGE 1
CUT VOLUME 131.24
FILL VOLUME 86.85

STAGE 2
CUT VOLUME 102.19
FILL VOLUME 0

STA. 528+08 IN PLACE
18" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
24" x 44' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH -
60 CU. YDS. COMP. EMB.

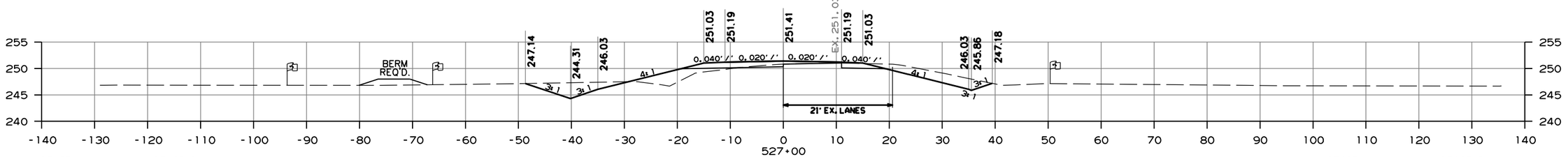


STAGE 1
CUT AREA 35.57
FILL AREA 28.81

STAGE 2
CUT AREA 43.25
FILL AREA 0

STAGE 1
CUT VOLUME 122.02
FILL VOLUME 116.24

STAGE 2
CUT VOLUME 151.44
FILL VOLUME 0

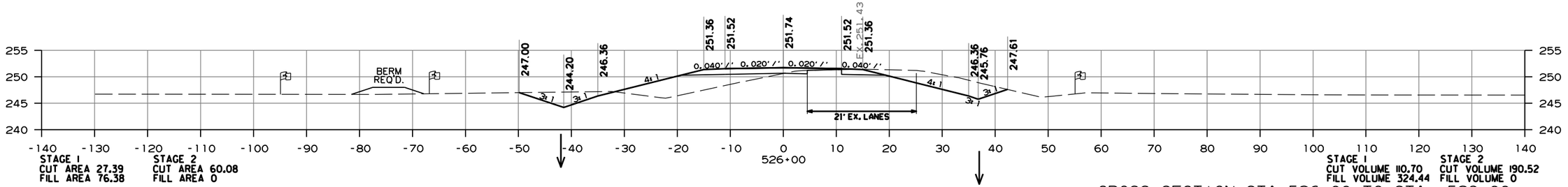


STAGE 1
CUT AREA 30.32
FILL AREA 33.96

STAGE 2
CUT AREA 38.53
FILL AREA 0

STAGE 1
CUT VOLUME 106.87
FILL VOLUME 204.33

STAGE 2
CUT VOLUME 182.61
FILL VOLUME 0



STAGE 1
CUT AREA 27.39
FILL AREA 76.38

STAGE 2
CUT AREA 60.08
FILL AREA 0

STAGE 1
CUT VOLUME 110.70
FILL VOLUME 324.44

STAGE 2
CUT VOLUME 190.52
FILL VOLUME 0

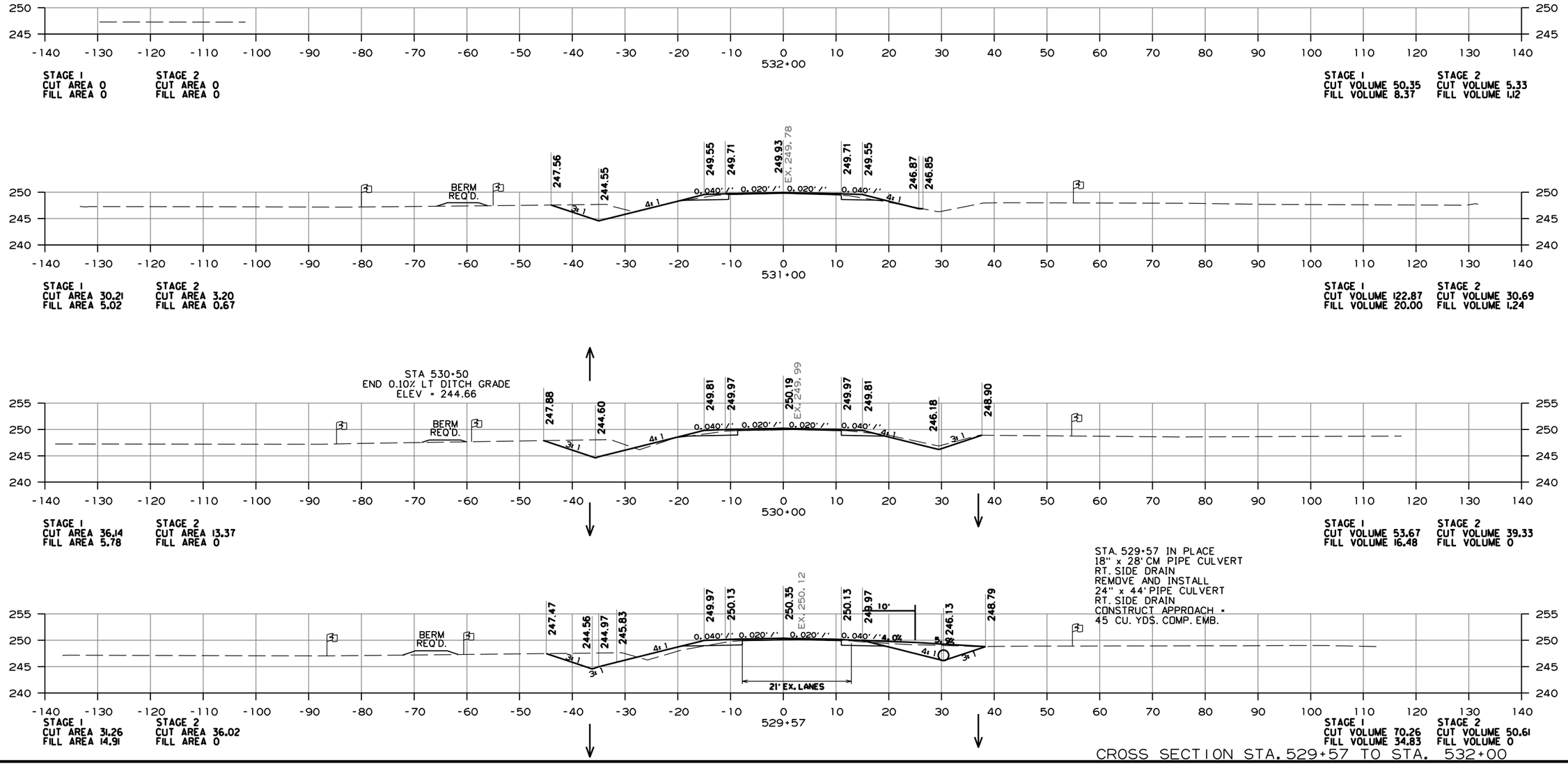
CROSS SECTION STA. 526+00 TO STA. 529+00

8/15/2022

R101054_Site5.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.		101054	258	311

(2) CROSS SECTIONS - SITE 5



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 50.35
FILL VOLUME 8.37

STAGE 2
CUT VOLUME 5.33
FILL VOLUME 1.12

STAGE 1
CUT AREA 30.21
FILL AREA 5.02

STAGE 2
CUT AREA 3.20
FILL AREA 0.67

STAGE 1
CUT VOLUME 122.87
FILL VOLUME 20.00

STAGE 2
CUT VOLUME 30.69
FILL VOLUME 1.24

STAGE 1
CUT AREA 36.14
FILL AREA 5.78

STAGE 2
CUT AREA 13.37
FILL AREA 0

STAGE 1
CUT VOLUME 53.67
FILL VOLUME 16.48

STAGE 2
CUT VOLUME 39.33
FILL VOLUME 0

STAGE 1
CUT AREA 31.26
FILL AREA 14.91

STAGE 2
CUT AREA 36.02
FILL AREA 0

STAGE 1
CUT VOLUME 70.26
FILL VOLUME 34.83

STAGE 2
CUT VOLUME 50.61
FILL VOLUME 0

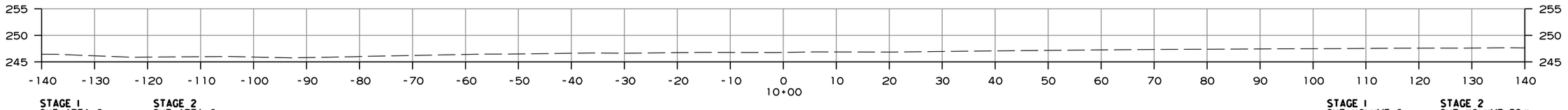
CROSS SECTION STA. 529+57 TO STA. 532+00

8/15/2022

R101054_Site5.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.		101054	259	311

(2) CROSS SECTIONS - SITE 5 DRIVE

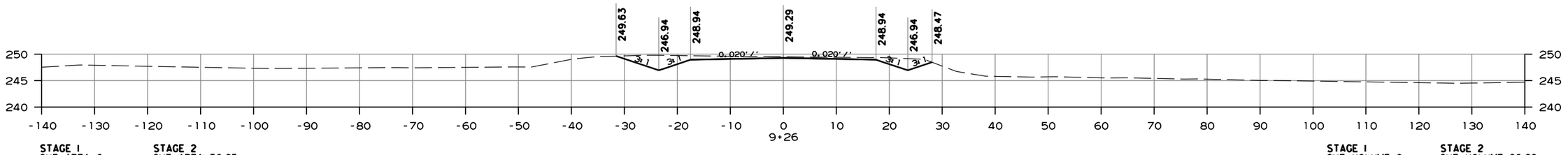


STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 52.11
FILL VOLUME 0

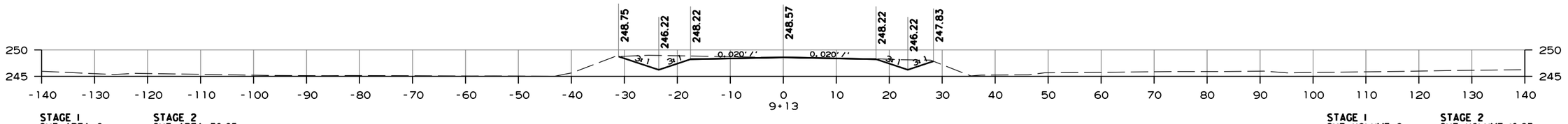


STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 50.25
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 20.92
FILL VOLUME 0

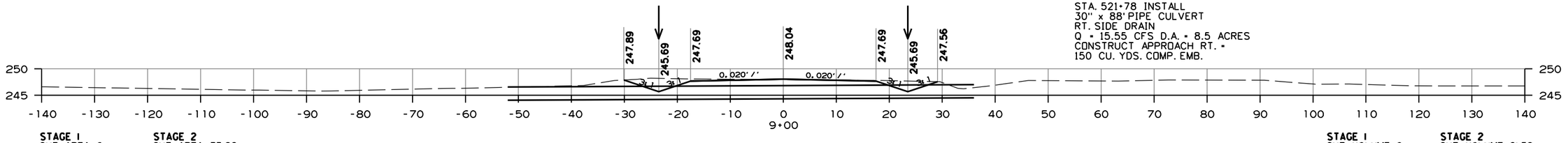


STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 36.65
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 16.83
FILL VOLUME 0



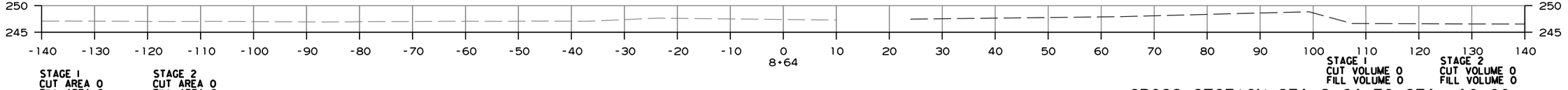
STA. 521+78 INSTALL
30" x 88' PIPE CULVERT
RT. SIDE DRAIN
Q = 15.55 CFS D.A. = 8.5 ACRES
CONSTRUCT APPROACH RT. =
150 CU. YDS. COMP. EMB.

STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 33.26
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 61.59
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

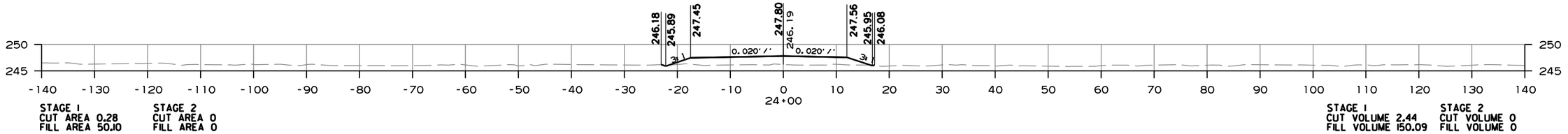
CROSS SECTION STA. 8+64 TO STA. 10+00

8/15/2022

R101054_Site5.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.		101054	260	311

(2) CROSS SECTIONS - SITE 5 DRIVE

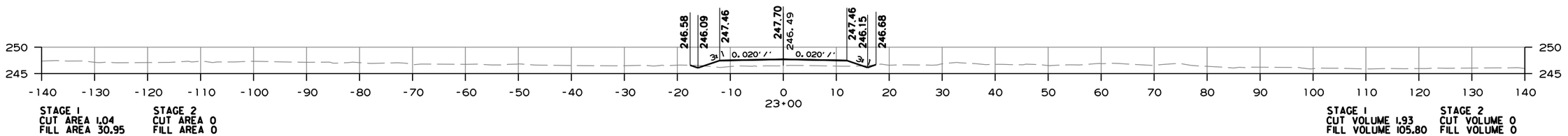


STAGE 1
CUT AREA 0.28
FILL AREA 50.10

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 2.44
FILL VOLUME 150.09

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 1.04
FILL AREA 30.95

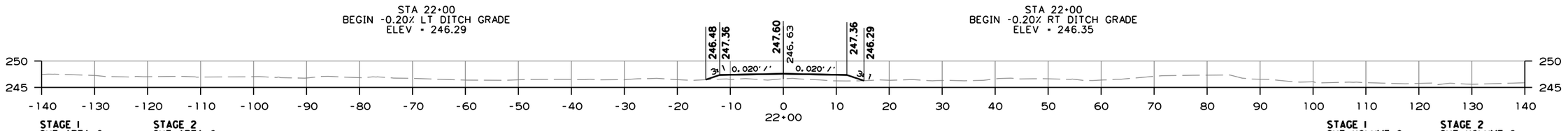
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 1.93
FILL VOLUME 105.80

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STA 22+00
BEGIN -0.20% LT DITCH GRADE
ELEV = 246.29

STA 22+00
BEGIN -0.20% RT DITCH GRADE
ELEV = 246.35

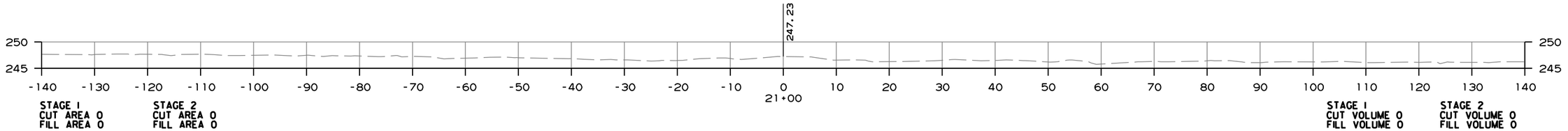


STAGE 1
CUT AREA 0
FILL AREA 26.18

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 48.48

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

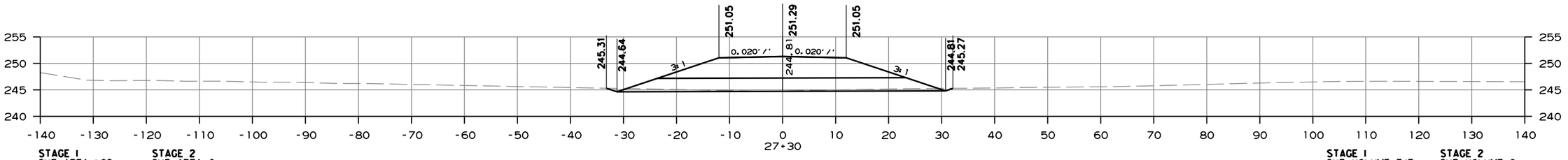
CROSS SECTION STA. 21+00 TO STA. 24+00

9/15/2022

R101054_Site5.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.		101054	261	311

(2) CROSS SECTIONS - SITE 5 DRIVE



STAGE 1
CUT AREA 1.82
FILL AREA 256.93

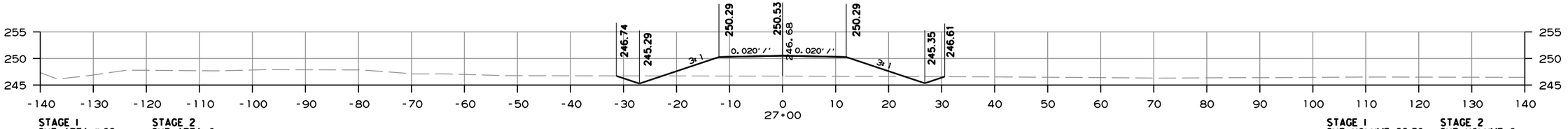
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 7.17
FILL VOLUME 214.23

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STA 27+25
END 0.20% LT DITCH GRADE
ELEV = 245.24

STA 27+25.00
END 0.20% RT DITCH GRADE
ELEV = 245.30

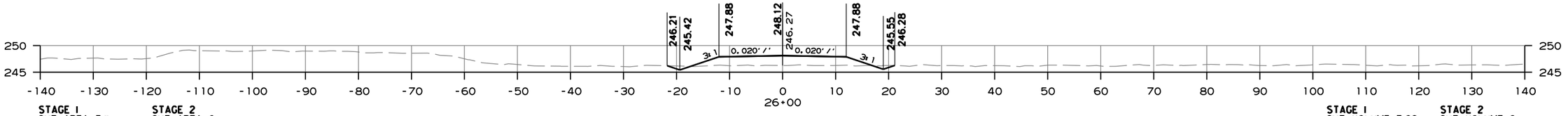


STAGE 1
CUT AREA 11.09
FILL AREA 128.69

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 26.30
FILL VOLUME 330.13

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

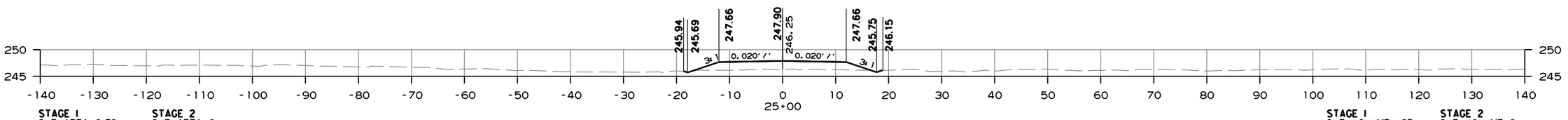


STAGE 1
CUT AREA 3.11
FILL AREA 49.58

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 7.09
FILL VOLUME 173.31

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0.72
FILL AREA 44.01

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 1.85
FILL VOLUME 174.28

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

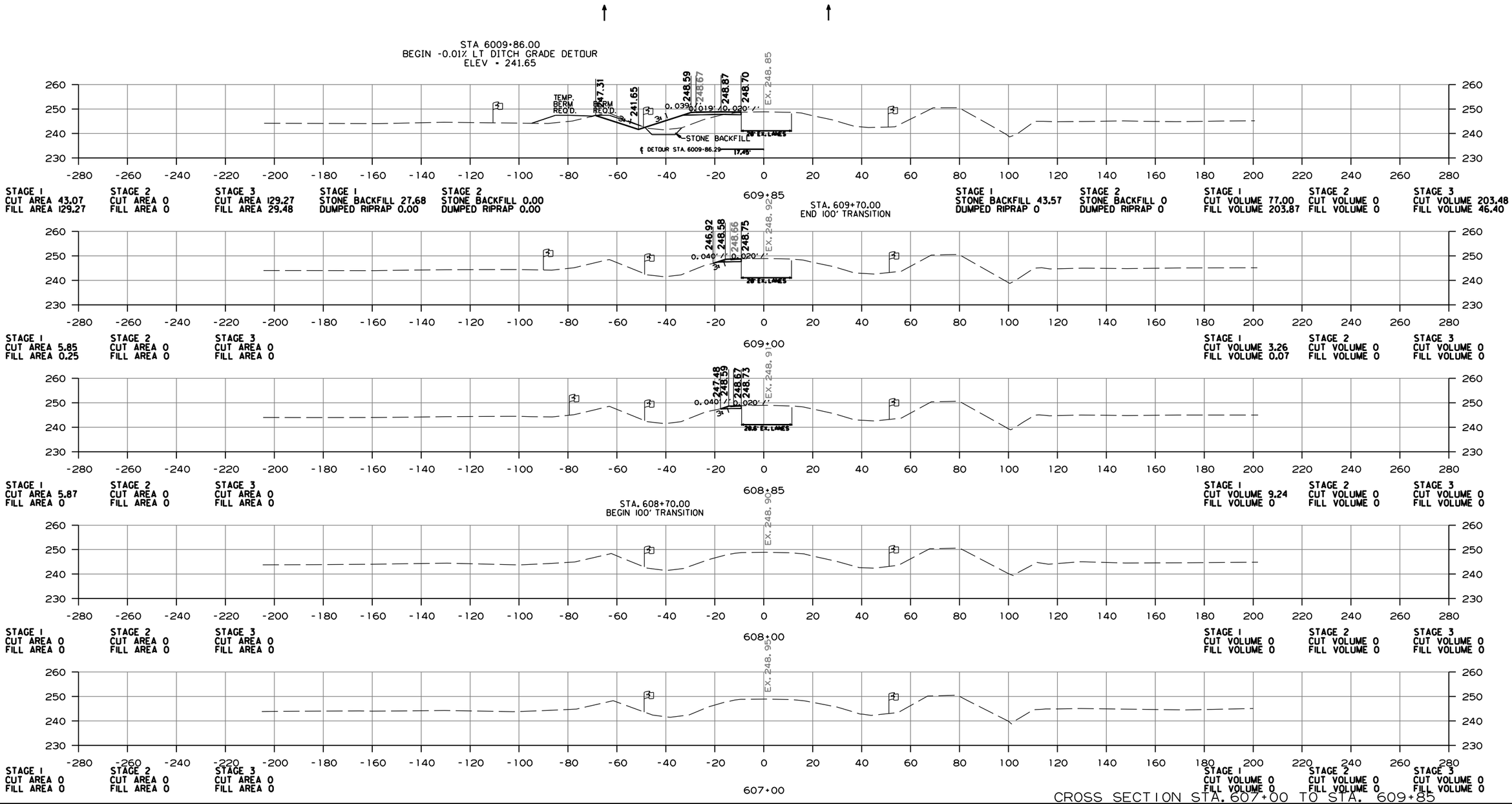
CROSS SECTION STA. 25+00 TO STA. 27+30

9/15/2022

R101054_Site5.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.		101054	262	311

(2) CROSS SECTIONS - SITE 6

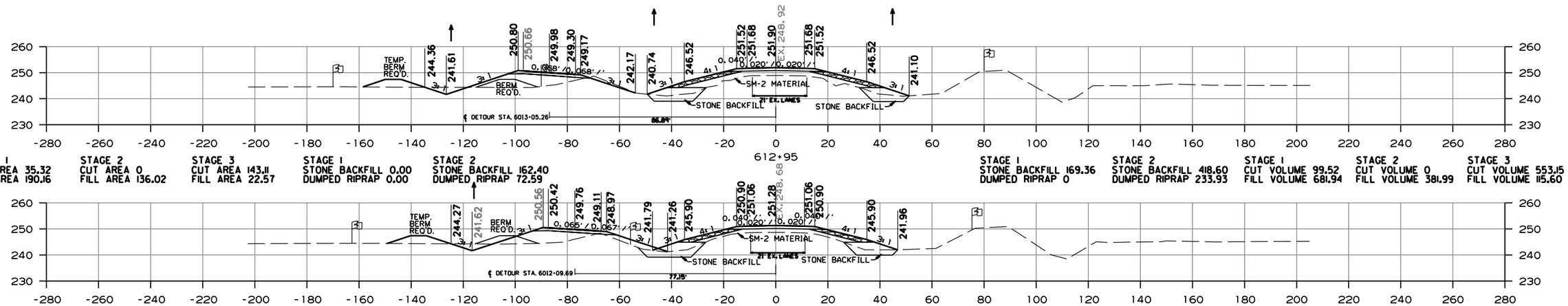


CROSS SECTION STA. 607+00 TO STA. 609+85

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	263	311

(2) CROSS SECTIONS - SITE 6



STAGE 1 CUT AREA 35.32 FILL AREA 190.16 | STAGE 2 CUT AREA 0 FILL AREA 136.02 | STAGE 3 CUT AREA 143.11 FILL AREA 22.57 | STAGE 1 STONE BACKFILL 0.00 DUMPED RIPRAP 0.00 | STAGE 2 STONE BACKFILL 162.40 DUMPED RIPRAP 72.59

612+95

STAGE 1 STONE BACKFILL 169.36 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 418.60 DUMPED RIPRAP 233.93 | STAGE 1 CUT VOLUME 99.52 FILL VOLUME 681.94 | STAGE 2 CUT VOLUME 0 FILL VOLUME 381.99 | STAGE 3 CUT VOLUME 553.15 FILL VOLUME 115.60

STAGE 1 CUT AREA 21.25 FILL AREA 197.47 | STAGE 2 CUT AREA 0 FILL AREA 81.11 | STAGE 3 CUT AREA 171.31 FILL AREA 43.14 | STAGE 1 STONE BACKFILL 96.27 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 75.54 DUMPED RIPRAP 60.38

612+00

STAGE 1 STONE BACKFILL 71.03 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 55.42 DUMPED RIPRAP 43.61 | STAGE 1 CUT VOLUME 15.40 FILL VOLUME 146.73 | STAGE 2 CUT VOLUME 0 FILL VOLUME 54.96 | STAGE 3 CUT VOLUME 131.33 FILL VOLUME 35.96

STAGE 1 CUT AREA 20.32 FILL AREA 198.69 | STAGE 2 CUT AREA 0 FILL AREA 67.29 | STAGE 3 CUT AREA 183.27 FILL AREA 53.94 | STAGE 1 STONE BACKFILL 95.50 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 74.10 DUMPED RIPRAP 57.36

611+80

STAGE 1 STONE BACKFILL 263.04 DUMPED RIPRAP 39.01 | STAGE 2 STONE BACKFILL 175.90 DUMPED RIPRAP 123.99 | STAGE 1 CUT VOLUME 68.96 FILL VOLUME 578.93 | STAGE 2 CUT VOLUME 2.55 FILL VOLUME 102.81 | STAGE 3 CUT VOLUME 555.30 FILL VOLUME 118.74

STAGE 1 CUT AREA 26.23 FILL AREA 192.09 | STAGE 2 CUT AREA 1.72 FILL AREA 2.11 | STAGE 3 CUT AREA 191.56 FILL AREA 26.21 | STAGE 1 STONE BACKFILL 82.05 DUMPED RIPRAP 26.33 | STAGE 2 STONE BACKFILL 44.63 DUMPED RIPRAP 26.33

611+00

STAGE 1 STONE BACKFILL 254.56 DUMPED RIPRAP 89.91 | STAGE 2 STONE BACKFILL 82.65 DUMPED RIPRAP 48.76 | STAGE 1 CUT VOLUME 157.96 FILL VOLUME 598.61 | STAGE 2 CUT VOLUME 10.61 FILL VOLUME 7.76 | STAGE 3 CUT VOLUME 597.63 FILL VOLUME 134.06

STAGE 1 CUT AREA 59.07 FILL AREA 131.16 | STAGE 2 CUT AREA 4.01 FILL AREA 2.08 | STAGE 3 CUT AREA 131.16 FILL AREA 46.18 | STAGE 1 STONE BACKFILL 55.41 DUMPED RIPRAP 22.22 | STAGE 2 STONE BACKFILL 0.00 DUMPED RIPRAP 0.00

610+00

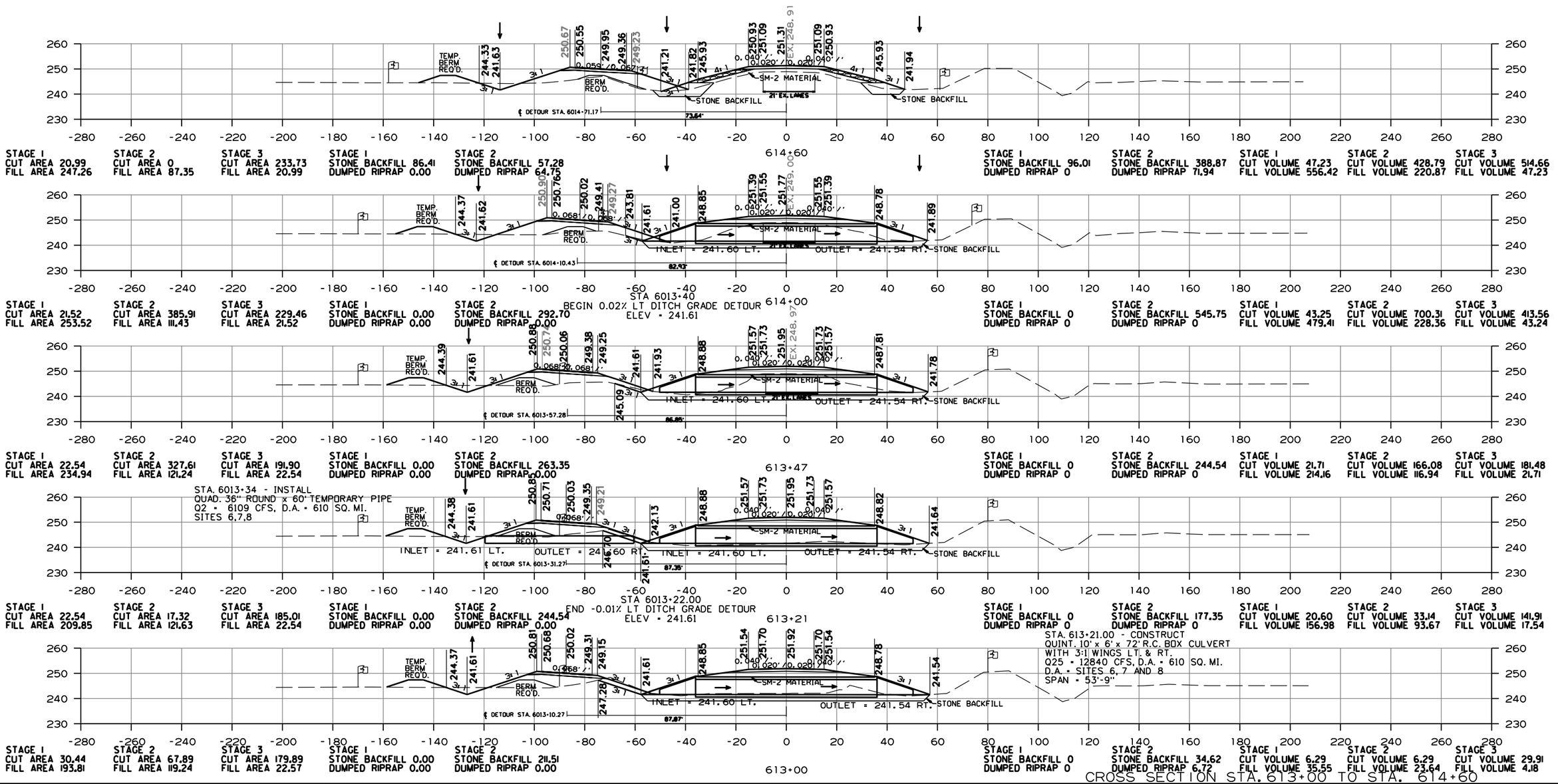
STAGE 1 STONE BACKFILL 23.08 DUMPED RIPRAP 6.17 | STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 1 CUT VOLUME 28.37 FILL VOLUME 72.34 | STAGE 2 CUT VOLUME 1.11 FILL VOLUME 0.58 | STAGE 3 CUT VOLUME 72.34 FILL VOLUME 21.02

CROSS SECTION STA. 610+00 TO STA. 612+95

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	264	311

(2) CROSS SECTIONS - SITE 6

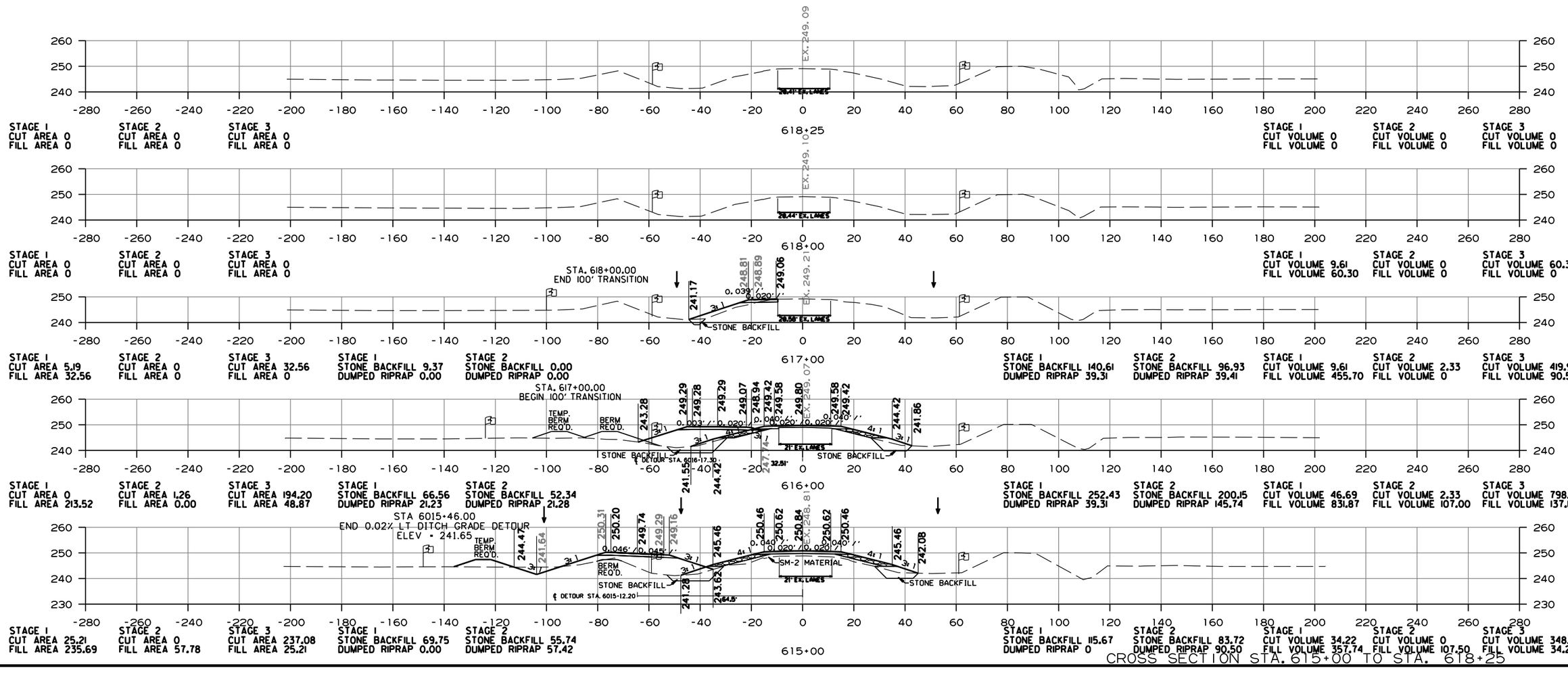


CROSS SECTION STA. 613+00 TO STA. 614+60

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	265	311

(2) CROSS SECTIONS - SITE 6

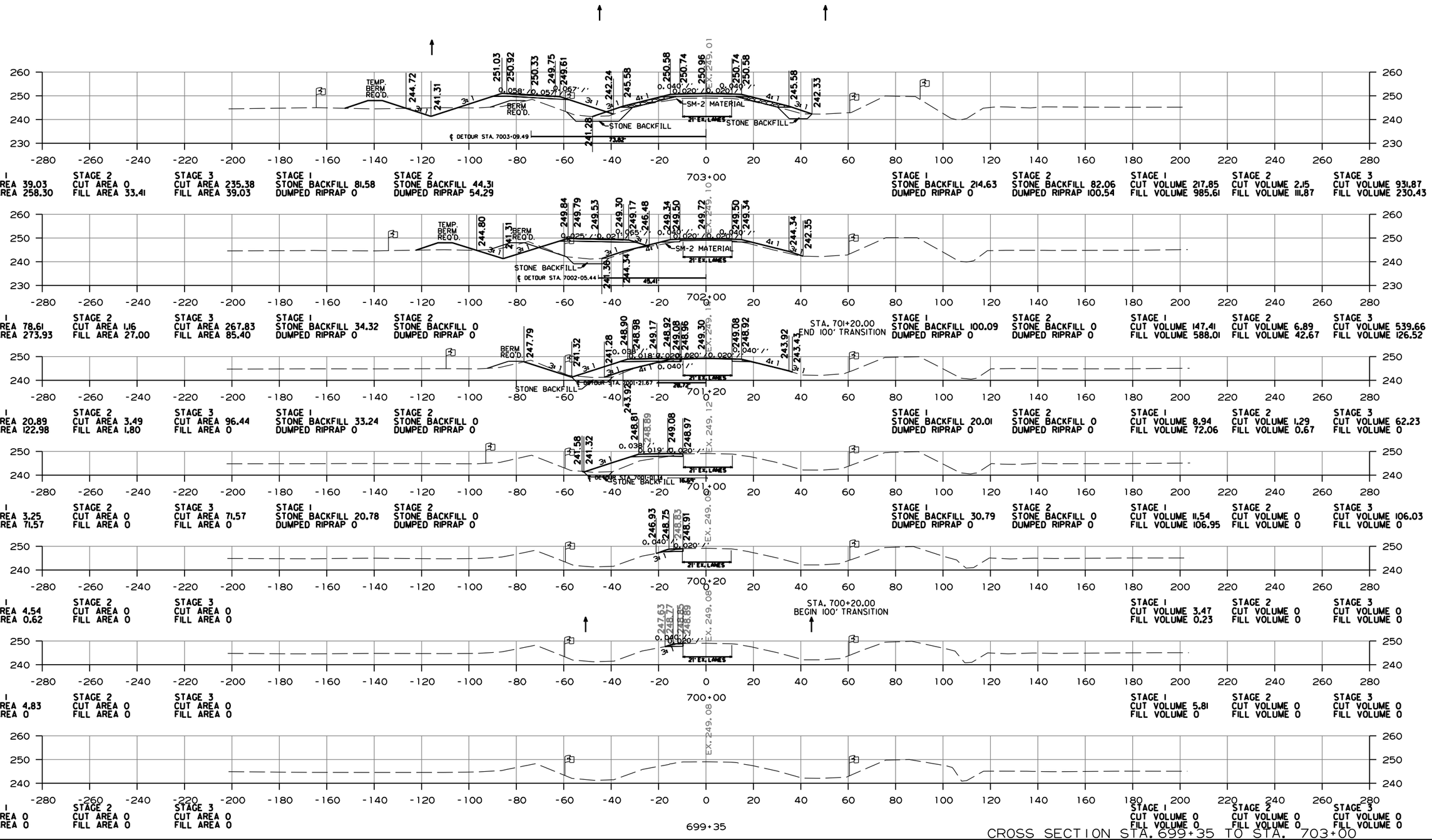


CROSS SECTION STA. 615+00 TO STA. 618+25

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	266	311

(2) CROSS SECTIONS - SITE 7



STAGE 1 CUT AREA 39.03 FILL AREA 258.30	STAGE 2 CUT AREA 0 FILL AREA 33.41	STAGE 3 CUT AREA 235.38 FILL AREA 39.03	STAGE 1 STONE BACKFILL 81.58 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 44.31 DUMPED RIPRAP 54.29						STAGE 1 STONE BACKFILL 214.63 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 82.06 DUMPED RIPRAP 100.54	STAGE 1 CUT VOLUME 217.85 FILL VOLUME 985.61	STAGE 2 CUT VOLUME 2.15 FILL VOLUME 111.87	STAGE 3 CUT VOLUME 931.87 FILL VOLUME 230.43
STAGE 1 CUT AREA 78.61 FILL AREA 273.93	STAGE 2 CUT AREA 1.16 FILL AREA 27.00	STAGE 3 CUT AREA 267.83 FILL AREA 85.40	STAGE 1 STONE BACKFILL 34.32 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0						STAGE 1 STONE BACKFILL 100.09 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0	STAGE 1 CUT VOLUME 147.41 FILL VOLUME 588.01	STAGE 2 CUT VOLUME 6.89 FILL VOLUME 42.67	STAGE 3 CUT VOLUME 539.66 FILL VOLUME 126.52
STAGE 1 CUT AREA 20.89 FILL AREA 122.98	STAGE 2 CUT AREA 3.49 FILL AREA 1.80	STAGE 3 CUT AREA 96.44 FILL AREA 0	STAGE 1 STONE BACKFILL 33.24 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0						STAGE 1 STONE BACKFILL 20.01 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0	STAGE 1 CUT VOLUME 8.94 FILL VOLUME 72.06	STAGE 2 CUT VOLUME 1.29 FILL VOLUME 0.67	STAGE 3 CUT VOLUME 62.23 FILL VOLUME 0
STAGE 1 CUT AREA 3.25 FILL AREA 71.57	STAGE 2 CUT AREA 0 FILL AREA 0	STAGE 3 CUT AREA 71.57 FILL AREA 0	STAGE 1 STONE BACKFILL 20.78 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0						STAGE 1 STONE BACKFILL 30.79 DUMPED RIPRAP 0	STAGE 2 STONE BACKFILL 0 DUMPED RIPRAP 0	STAGE 1 CUT VOLUME 11.54 FILL VOLUME 106.95	STAGE 2 CUT VOLUME 0 FILL VOLUME 0	STAGE 3 CUT VOLUME 106.03 FILL VOLUME 0
STAGE 1 CUT AREA 4.54 FILL AREA 0.62	STAGE 2 CUT AREA 0 FILL AREA 0	STAGE 3 CUT AREA 0 FILL AREA 0										STAGE 1 CUT VOLUME 3.47 FILL VOLUME 0.23	STAGE 2 CUT VOLUME 0 FILL VOLUME 0	STAGE 3 CUT VOLUME 0 FILL VOLUME 0
STAGE 1 CUT AREA 4.83 FILL AREA 0	STAGE 2 CUT AREA 0 FILL AREA 0	STAGE 3 CUT AREA 0 FILL AREA 0										STAGE 1 CUT VOLUME 5.81 FILL VOLUME 0	STAGE 2 CUT VOLUME 0 FILL VOLUME 0	STAGE 3 CUT VOLUME 0 FILL VOLUME 0
STAGE 1 CUT AREA 0 FILL AREA 0	STAGE 2 CUT AREA 0 FILL AREA 0	STAGE 3 CUT AREA 0 FILL AREA 0										STAGE 1 CUT VOLUME 0 FILL VOLUME 0	STAGE 2 CUT VOLUME 0 FILL VOLUME 0	STAGE 3 CUT VOLUME 0 FILL VOLUME 0

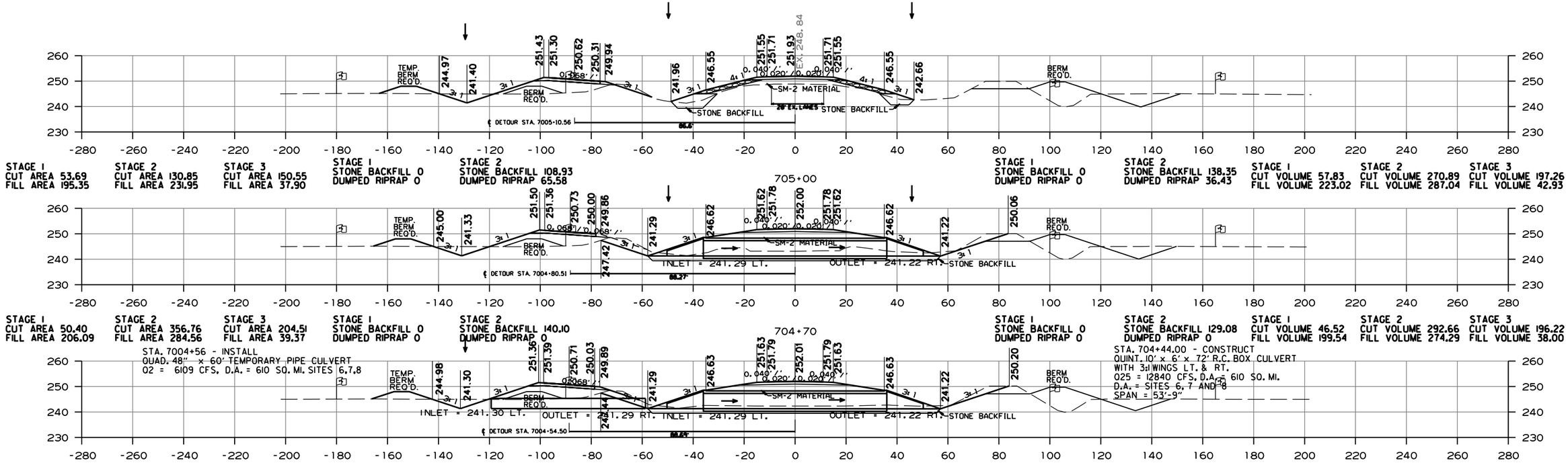
CROSS SECTION STA. 699+35 TO STA. 703+00

8/15/2022

R101054_Site 6 and 7.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.		101054	267	311

(2) CROSS SECTIONS - SITE 7



STAGE 1 CUT AREA 53.69 FILL AREA 195.35 | STAGE 2 CUT AREA 130.85 FILL AREA 231.95 | STAGE 3 CUT AREA 150.55 FILL AREA 37.90 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 108.93 DUMPED RIPRAP 65.58 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 138.35 DUMPED RIPRAP 36.43 | STAGE 1 CUT VOLUME 57.83 FILL VOLUME 223.02 | STAGE 2 CUT VOLUME 270.89 FILL VOLUME 287.04 | STAGE 3 CUT VOLUME 197.26 FILL VOLUME 42.93

STAGE 1 CUT AREA 50.40 FILL AREA 206.09 | STAGE 2 CUT AREA 356.76 FILL AREA 284.56 | STAGE 3 CUT AREA 204.51 FILL AREA 39.37 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 140.10 DUMPED RIPRAP 0 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 129.08 DUMPED RIPRAP 0 | STAGE 1 CUT VOLUME 46.52 FILL VOLUME 199.54 | STAGE 2 CUT VOLUME 292.66 FILL VOLUME 274.29 | STAGE 3 CUT VOLUME 196.22 FILL VOLUME 38.00

STA. 7004+56 - INSTALL QUAD. 48" x 60' TEMPORARY PIPE CULVERT
Q2 = 6109 CFS. D.A. = 610 SQ. MI. SITES 6,7,8

STA. 704+44.00 - CONSTRUCT QUINT. 10' x 6' x 72' R.C. BOX CULVERT WITH 31 WINGS LT. & RT.
Q25 = 12840 CFS. D.A. = 610 SQ. MI.
D.A. = SITES 6, 7 AND 8
SPAN = 53'-9"

STAGE 1 CUT AREA 46.21 FILL AREA 208.34 | STAGE 2 CUT AREA 251.08 FILL AREA 284.95 | STAGE 3 CUT AREA 203.03 FILL AREA 39.55 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 127.84 DUMPED RIPRAP 0 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 133.42 DUMPED RIPRAP 0 | STAGE 1 CUT VOLUME 40.93 FILL VOLUME 228.86 | STAGE 2 CUT VOLUME 288.84 FILL VOLUME 273.76 | STAGE 3 CUT VOLUME 208.00 FILL VOLUME 37.72

STAGE 1 CUT AREA 38.80 FILL AREA 266.98 | STAGE 2 CUT AREA 348.81 FILL AREA 283.62 | STAGE 3 CUT AREA 228.96 FILL AREA 38.80 | STAGE 1 STONE BACKFILL 0 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 149.26 DUMPED RIPRAP 0 | STAGE 1 STONE BACKFILL 31.86 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 73.35 DUMPED RIPRAP 20.56 | STAGE 1 CUT VOLUME 25.64 FILL VOLUME 175.88 | STAGE 2 CUT VOLUME 159.56 FILL VOLUME 173.70 | STAGE 3 CUT VOLUME 149.83 FILL VOLUME 25.64

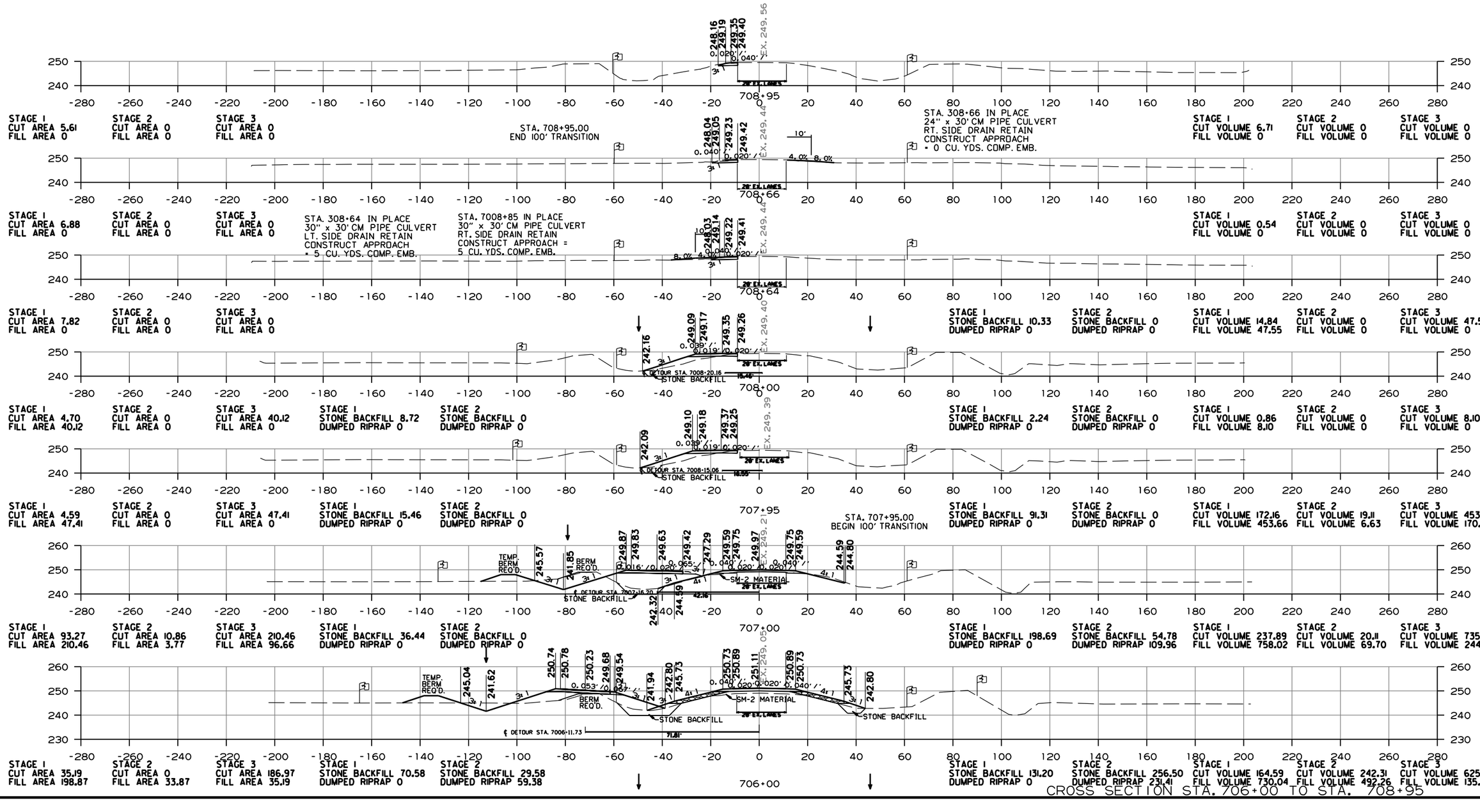
STAGE 1 CUT AREA 38.13 FILL AREA 260.67 | STAGE 2 CUT AREA 129.87 FILL AREA 237.49 | STAGE 3 CUT AREA 220.52 FILL AREA 38.13 | STAGE 1 STONE BACKFILL 95.59 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 70.79 DUMPED RIPRAP 61.68 | STAGE 1 STONE BACKFILL 328.09 DUMPED RIPRAP 0 | STAGE 2 STONE BACKFILL 213.15 DUMPED RIPRAP 214.76 | STAGE 1 CUT VOLUME 142.89 FILL VOLUME 961.06 | STAGE 2 CUT VOLUME 240.50 FILL VOLUME 501.67 | STAGE 3 CUT VOLUME 844.26 FILL VOLUME 142.89

CROSS SECTION STA. 704+00 TO STA. 705+00

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	268	311

(2) CROSS SECTIONS - SITE 7

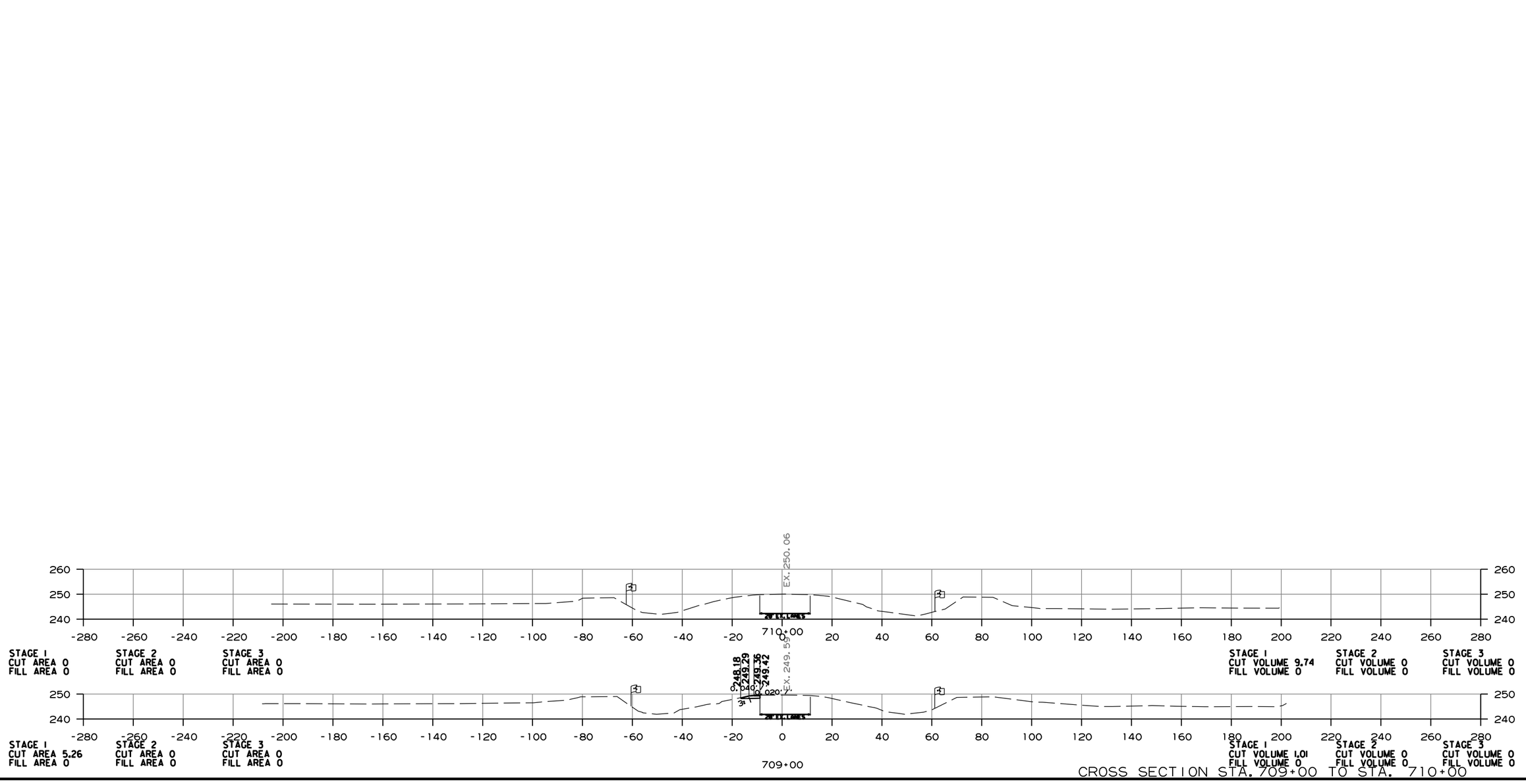


CROSS SECTION STA. 706+00 TO STA. 708+95

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	269	311

(2) CROSS SECTIONS - SITE 7

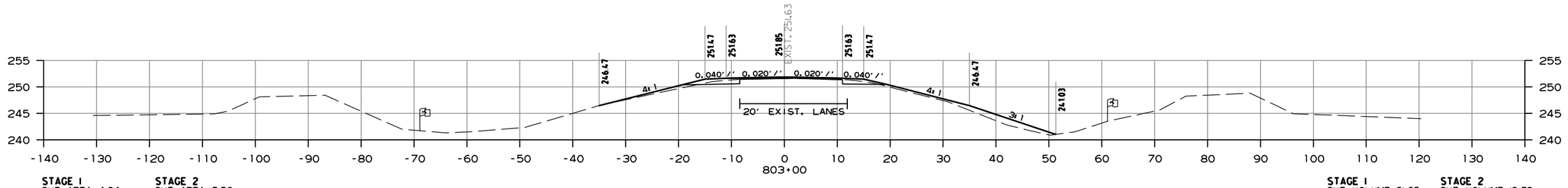


CROSS SECTION STA. 709+00 TO STA. 710+00

R101054_Site 6 and 7.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	270	311

(2) CROSS SECTIONS - SITE 8

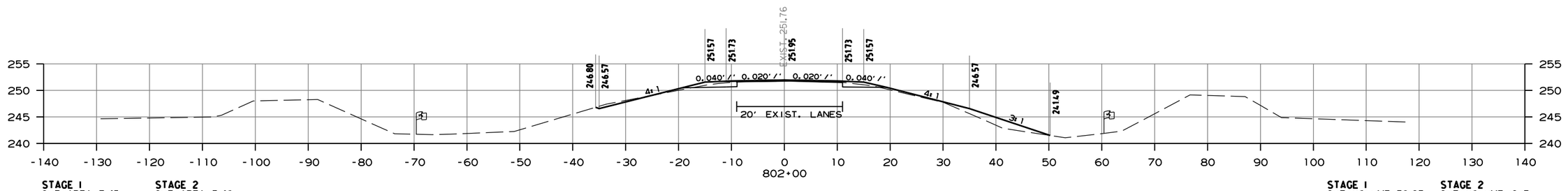


STAGE 1
CUT AREA 4.24
FILL AREA 4.93

STAGE 2
CUT AREA 3.50
FILL AREA 22.38

STAGE 1
CUT VOLUME 21.65
FILL VOLUME 11.69

STAGE 2
CUT VOLUME 12.78
FILL VOLUME 79.13



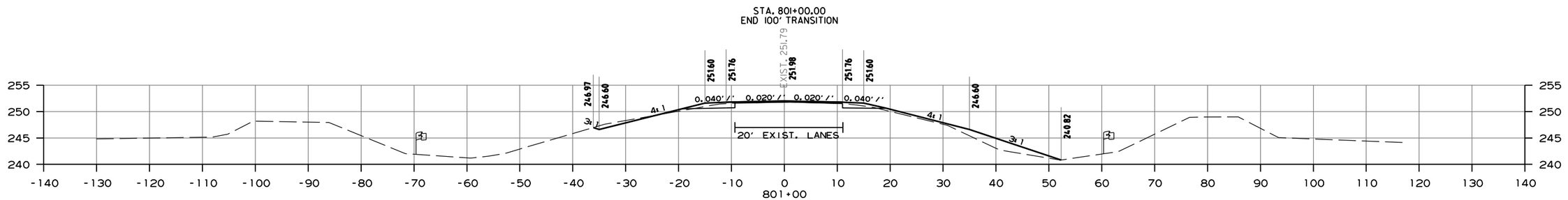
STAGE 1
CUT AREA 7.45
FILL AREA 1.38

STAGE 2
CUT AREA 3.40
FILL AREA 20.35

STAGE 1
CUT VOLUME 30.93
FILL VOLUME 4.52

STAGE 2
CUT VOLUME 12.17
FILL VOLUME 89.94

STA. 801+00.00
END 100' TRANSITION



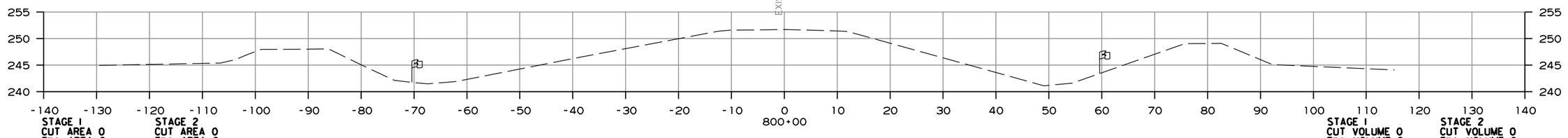
STAGE 1
CUT AREA 9.25
FILL AREA 1.06

STAGE 2
CUT AREA 3.17
FILL AREA 28.22

STAGE 1
CUT VOLUME 17.13
FILL VOLUME 1.96

STAGE 2
CUT VOLUME 5.87
FILL VOLUME 52.26

STA. 800+00.00
BEGIN 100' TRANSITION



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

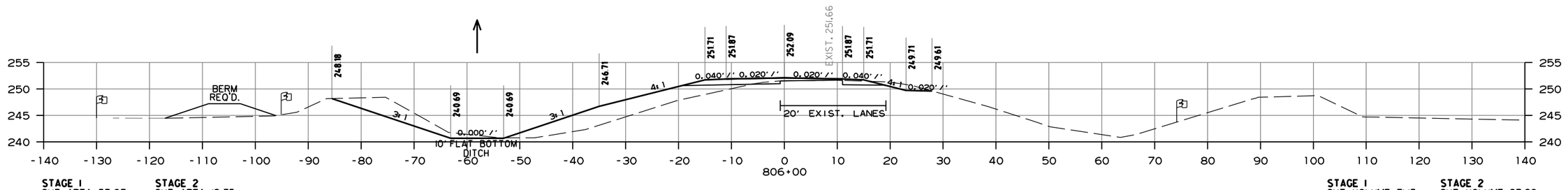
STAGE 2
CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 800+00 TO STA. 803+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	271	311

(2) CROSS SECTIONS - SITE 8

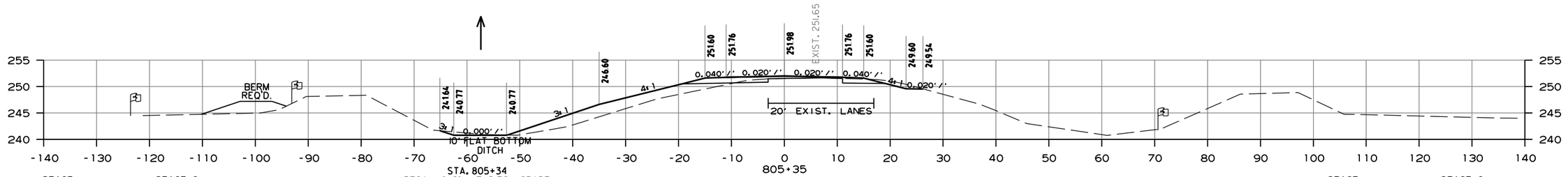


STAGE 1
CUT AREA 53.07
FILL AREA 139.51

STAGE 2
CUT AREA 12.35
FILL AREA 0

STAGE 1
CUT VOLUME 7113
FILL VOLUME 278.54

STAGE 2
CUT VOLUME 27.20
FILL VOLUME 0



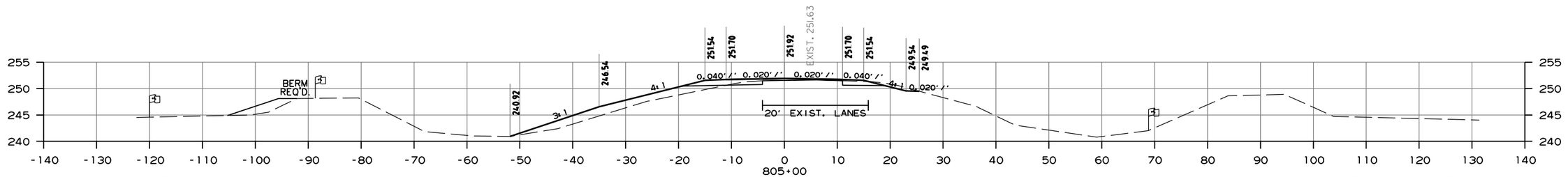
STAGE 1
CUT AREA 6.02
FILL AREA 91.89

STAGE 2
CUT AREA 10.25
FILL AREA 0

STA. 805+34
BEGIN -0.12% LT. DITCH GRADE
ELEV. = 240.77

STAGE 1
CUT VOLUME 5.96
FILL VOLUME 100.69

STAGE 2
CUT VOLUME 12.55
FILL VOLUME 0

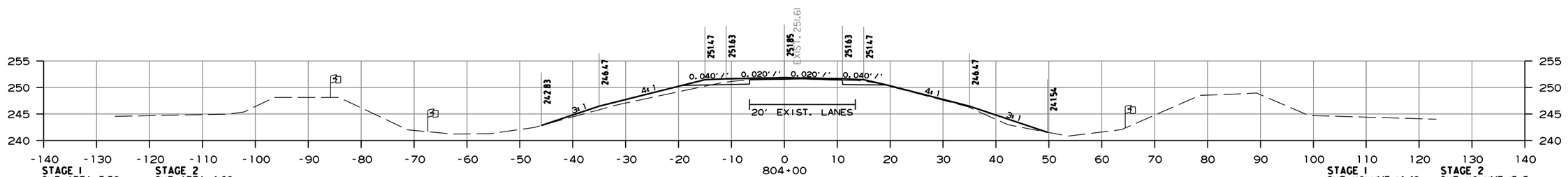


STAGE 1
CUT AREA 3.18
FILL AREA 63.46

STAGE 2
CUT AREA 9.11
FILL AREA 0

STAGE 1
CUT VOLUME 12.52
FILL VOLUME 152.54

STAGE 1
CUT VOLUME 25.54
FILL VOLUME 20.91



STAGE 1
CUT AREA 3.58
FILL AREA 18.91

STAGE 2
CUT AREA 4.68
FILL AREA 11.29

STAGE 1
CUT VOLUME 14.48
FILL VOLUME 44.15

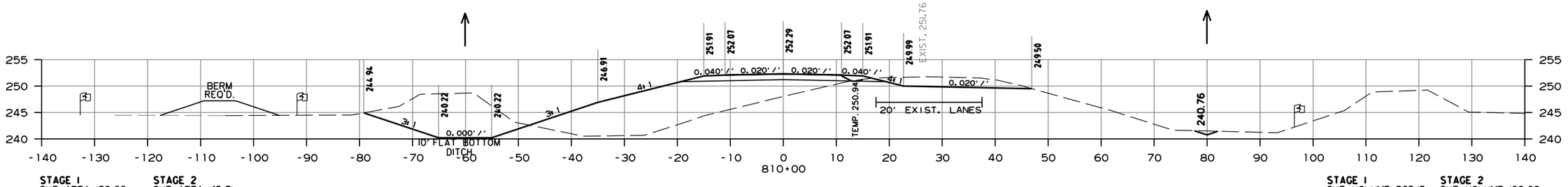
STAGE 2
CUT VOLUME 15.15
FILL VOLUME 62.35

CROSS SECTION STA. 804+00 TO STA. 806+00

R101054_Site8.dgn 8/15/2022

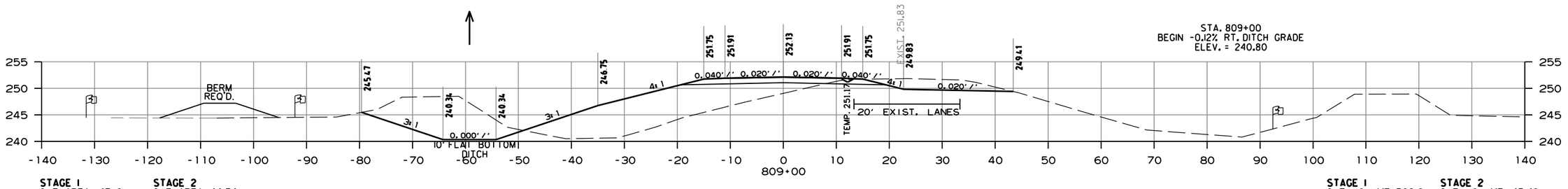
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	272	311

(2) CROSS SECTIONS - SITE 8



STAGE 1 CUT AREA 158.08 FILL AREA 329.33 | STAGE 2 CUT AREA 45.31 FILL AREA 0

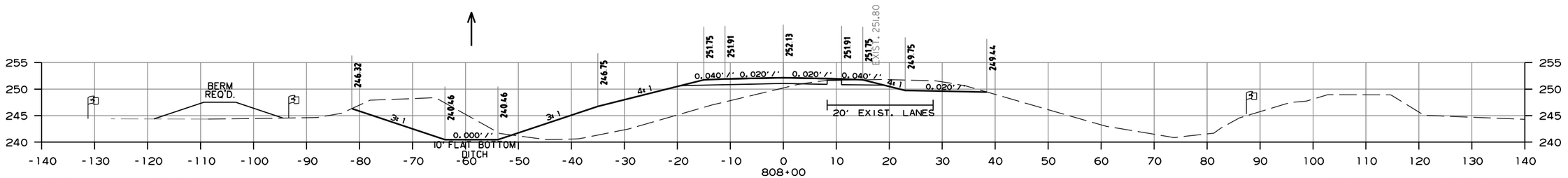
STAGE 1 CUT VOLUME 565.15 FILL VOLUME 1128.61 | STAGE 2 CUT VOLUME 166.02 FILL VOLUME 0



STA. 809+00
BEGIN -0.12% RT. DITCH GRADE
ELEV. = 240.80

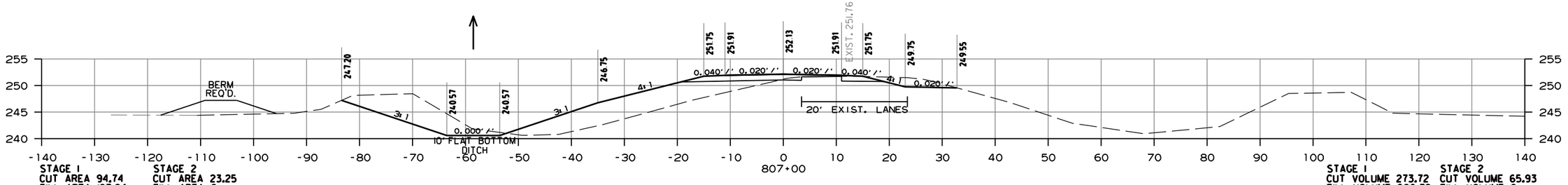
STAGE 1 CUT AREA 147.10 FILL AREA 280.12 | STAGE 2 CUT AREA 44.34 FILL AREA 0

STAGE 1 CUT VOLUME 502.81 FILL VOLUME 975.85 | STAGE 2 CUT VOLUME 147.48 FILL VOLUME 0



STAGE 1 CUT AREA 124.42 FILL AREA 246.84 | STAGE 2 CUT AREA 35.30 FILL AREA 0

STAGE 1 CUT VOLUME 405.85 FILL VOLUME 805.15 | STAGE 2 CUT VOLUME 108.43 FILL VOLUME 0



STAGE 1 CUT AREA 94.74 FILL AREA 187.94 | STAGE 2 CUT AREA 23.25 FILL AREA 0

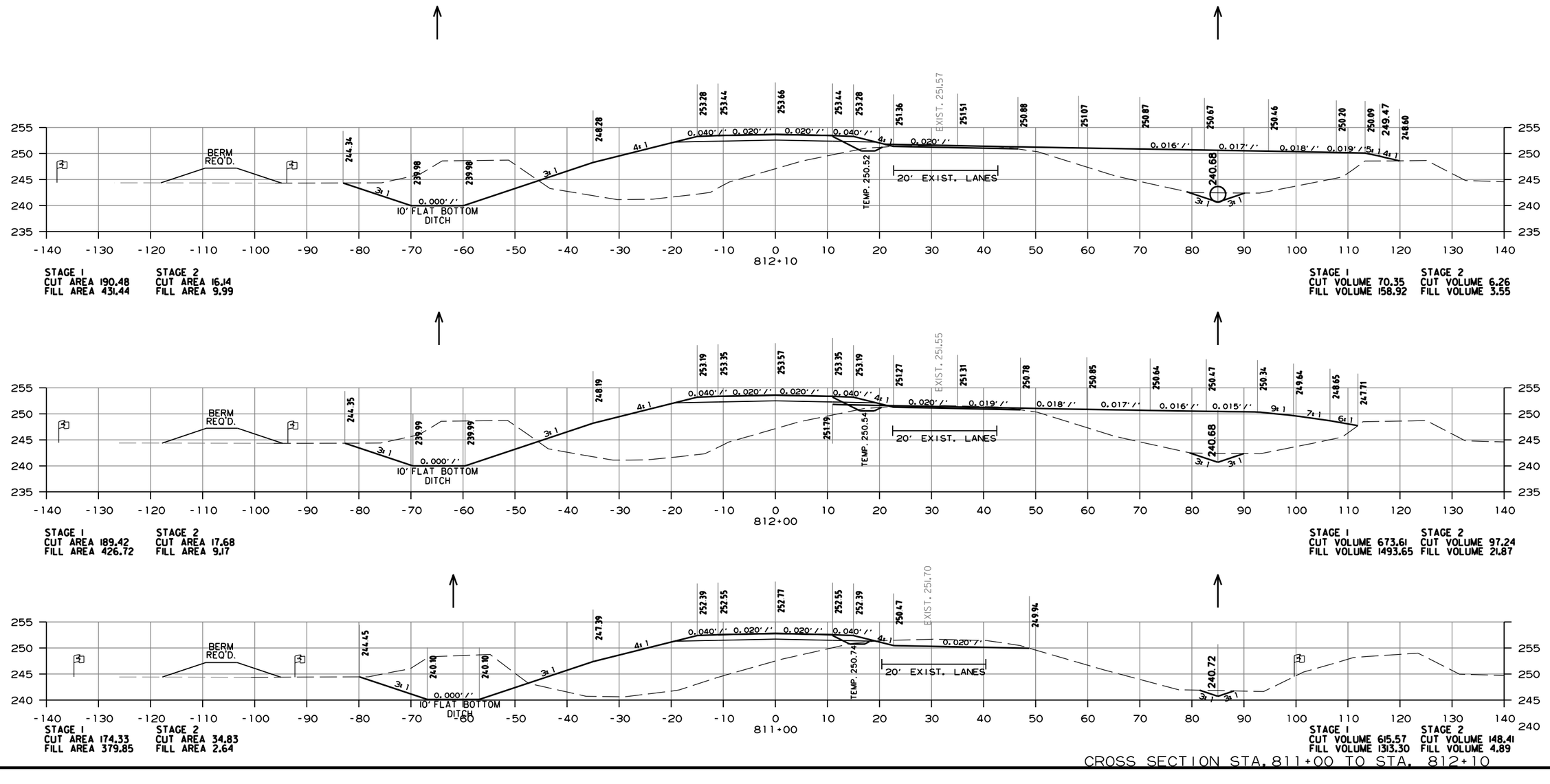
STAGE 1 CUT VOLUME 273.72 FILL VOLUME 606.39 | STAGE 2 CUT VOLUME 65.93 FILL VOLUME 0

CROSS SECTION STA. 807+00 TO STA. 810+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	273	311

(2) CROSS SECTIONS - SITE 8

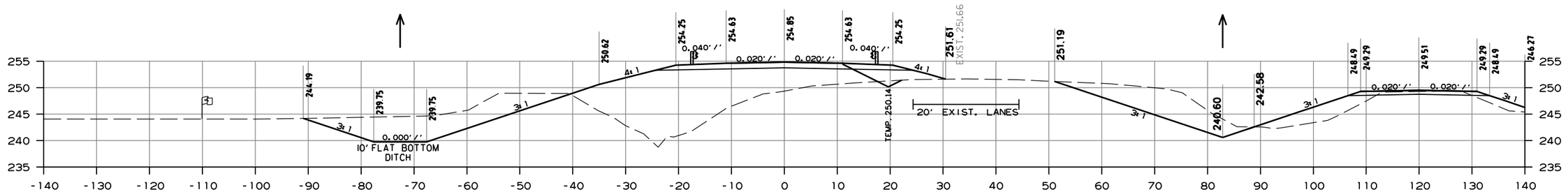


CROSS SECTION STA. 811+00 TO STA. 812+10

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	274	311

(2) CROSS SECTIONS - SITE 8

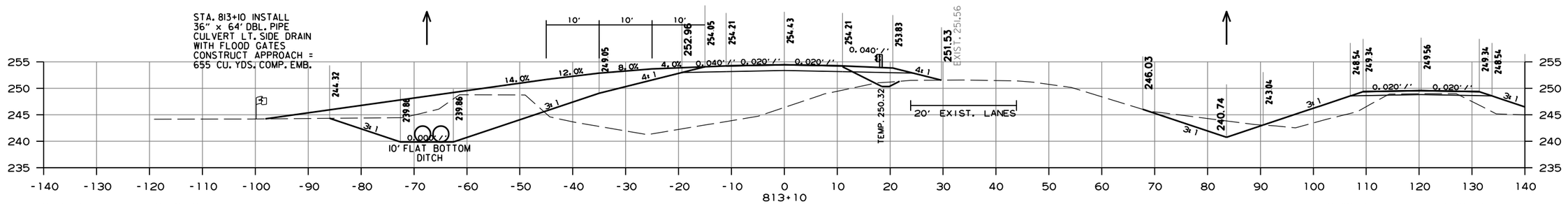


STAGE 1
CUT AREA 168.86
FILL AREA 372.80

STAGE 2
CUT AREA 122.01
FILL AREA 26.92

STAGE 1
CUT VOLUME 595.72
FILL VOLUME 1328.47

STAGE 2
CUT VOLUME 258.92
FILL VOLUME 82.62

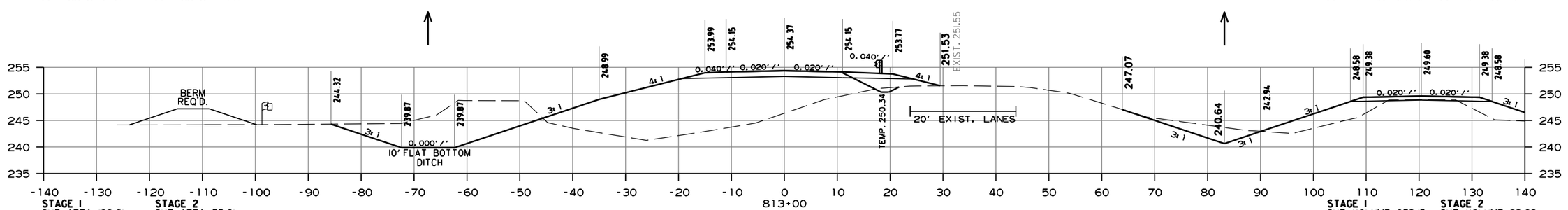


STAGE 1
CUT AREA 188.57
FILL AREA 424.28

STAGE 2
CUT AREA 33.34
FILL AREA 22.65

STAGE 1
CUT VOLUME 69.89
FILL VOLUME 165.46

STAGE 2
CUT VOLUME 12.40
FILL VOLUME 8.22



STAGE 1
CUT AREA 188.81
FILL AREA 469.20

STAGE 2
CUT AREA 33.61
FILL AREA 21.74

STAGE 1
CUT VOLUME 632.15
FILL VOLUME 1501.07

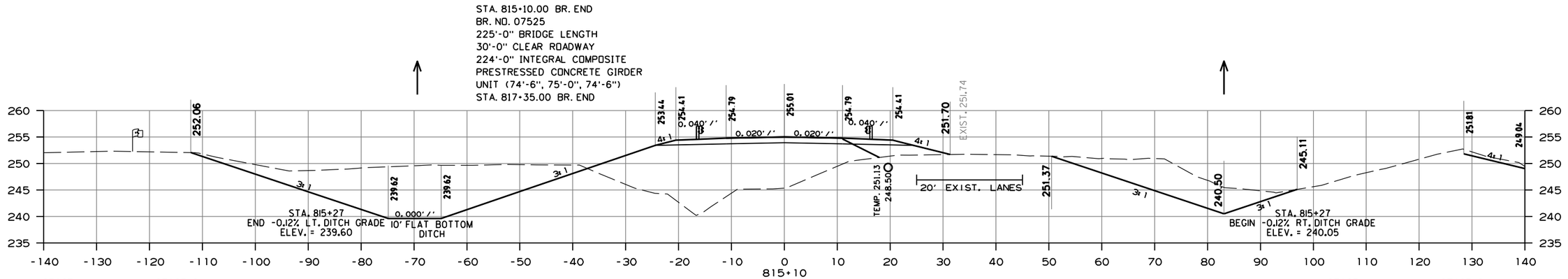
STAGE 2
CUT VOLUME 82.92
FILL VOLUME 52.88

CROSS SECTION STA. 813+00 TO STA. 814+00

R101054_Site8.dgn 8/15/2022

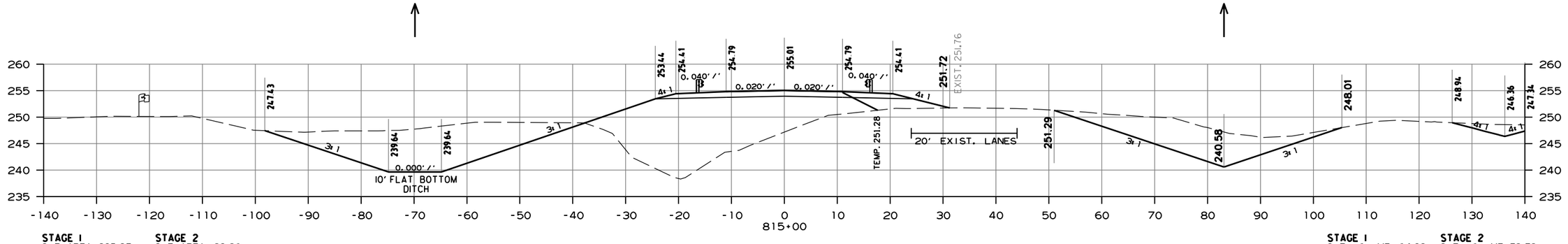
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	275	311

(2) CROSS SECTIONS - SITE 8



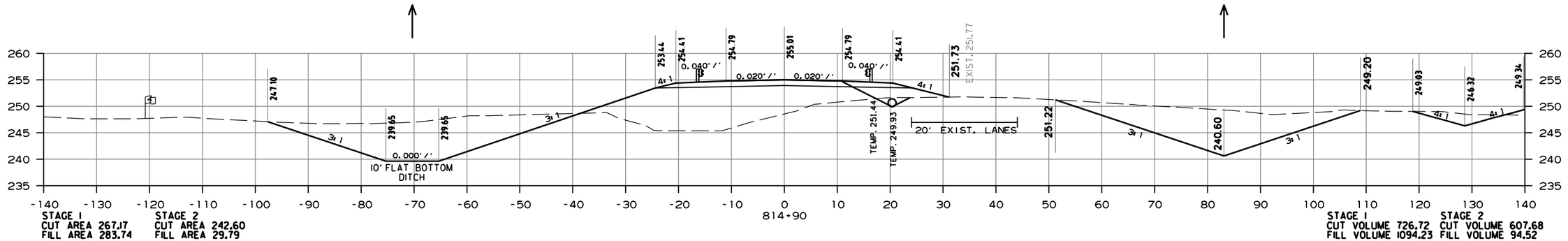
STAGE 1 CUT AREA 390.15 FILL AREA 389.99
STAGE 2 CUT AREA 161.49 FILL AREA 25.73

STAGE 1 CUT VOLUME 127.06 FILL VOLUME 132.07
STAGE 2 CUT VOLUME 63.76 FILL VOLUME 9.36



STAGE 1 CUT AREA 295.97 FILL AREA 423.17
STAGE 2 CUT AREA 182.80 FILL AREA 24.80

STAGE 1 CUT VOLUME 104.29 FILL VOLUME 130.91
STAGE 2 CUT VOLUME 78.78 FILL VOLUME 10.11



STAGE 1 CUT AREA 267.17 FILL AREA 283.74
STAGE 2 CUT AREA 242.60 FILL AREA 29.79

STAGE 1 CUT VOLUME 726.72 FILL VOLUME 1094.23
STAGE 2 CUT VOLUME 607.68 FILL VOLUME 94.52

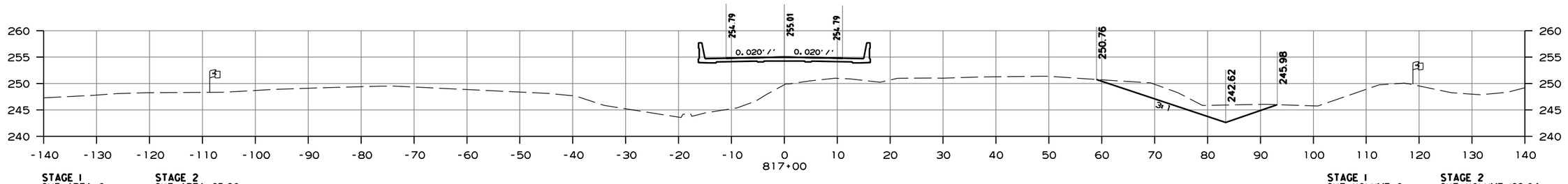
CROSS SECTION STA. 814+90 TO STA. 815+16

8/15/2022

R101054_Site8.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.		101054	276	311

(2) CROSS SECTIONS - SITE 8

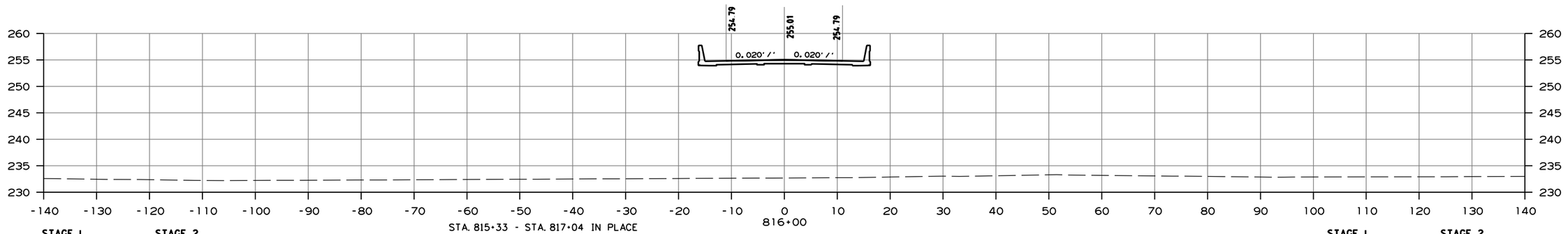


STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 65.90
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 122.04
FILL VOLUME 0



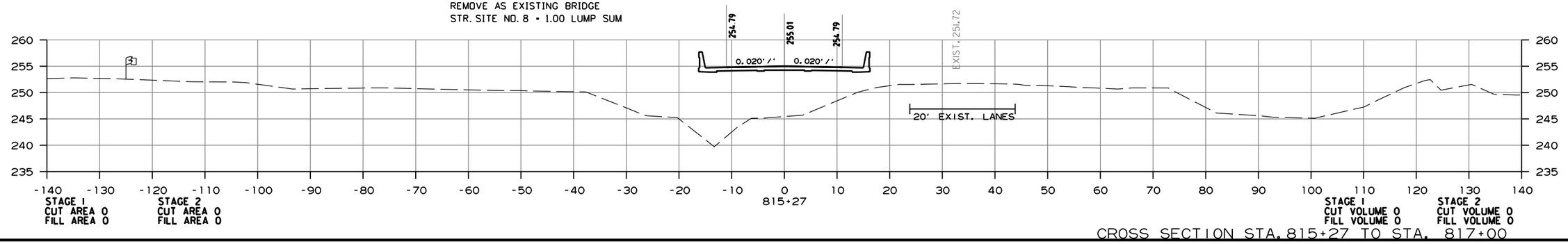
STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STA. 815+33 - STA. 817+04 IN PLACE
BR. NO. M3187
171' x 24' WOOD STRINGER
SUPPORTED BY WOOD PILE BENTS WITH
TIMBER AND CONCRETE CAPS
REMOVE AS EXISTING BRIDGE
STR. SITE NO. 8 - 1.00 LUMP SUM

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

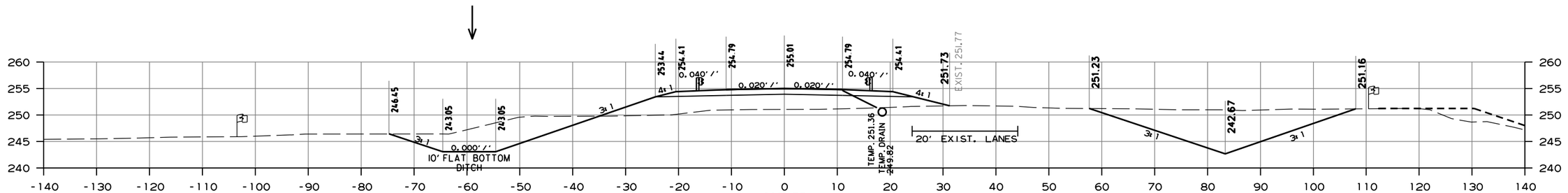
CROSS SECTION STA. 815+27 TO STA. 817+00

8/15/2022

R101054_Site8.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.		101054	277	311

(2) CROSS SECTIONS - SITE 8

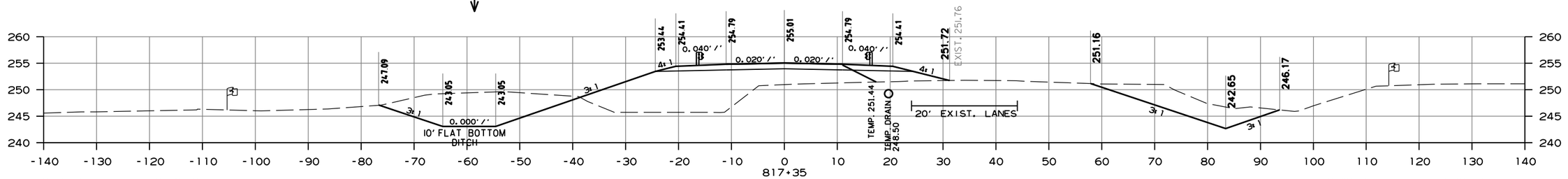


STAGE 1
CUT AREA 121.93
FILL AREA 131.73

STAGE 2
CUT AREA 207.83
FILL AREA 25.22

STAGE 1
CUT VOLUME 103.13
FILL VOLUME 144.79

STAGE 2
CUT VOLUME 113.00
FILL VOLUME 18.54



STAGE 1
CUT AREA 156.52
FILL AREA 259.21

STAGE 2
CUT AREA 97.18
FILL AREA 24.83

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 105.70
FILL VOLUME 0

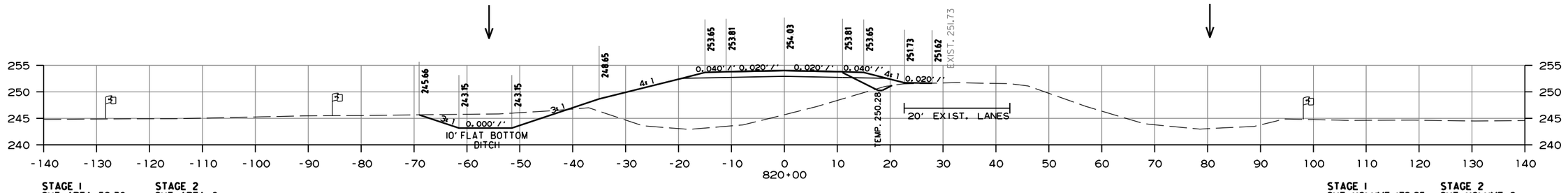
STA. 817+18
BEGIN 0.01% LT. DITCH GRADE
ELEV. = 243.05

R101054_Site8.dgn 8/15/2022

CROSS SECTION STA. 817+18 TO STA. 817+55

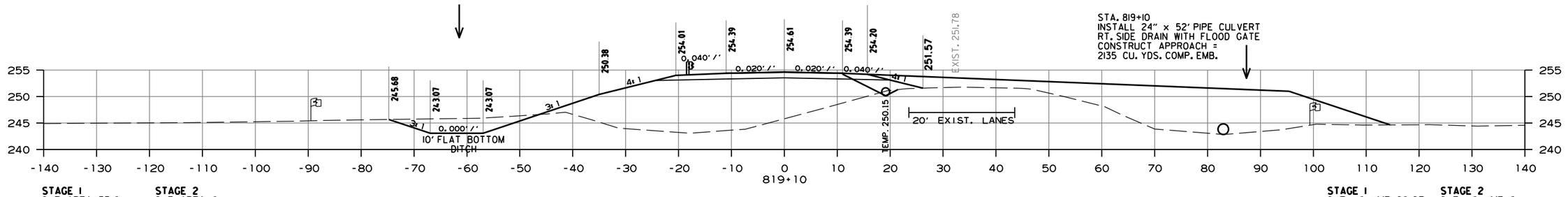
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	278	311

(2) CROSS SECTIONS - SITE 8



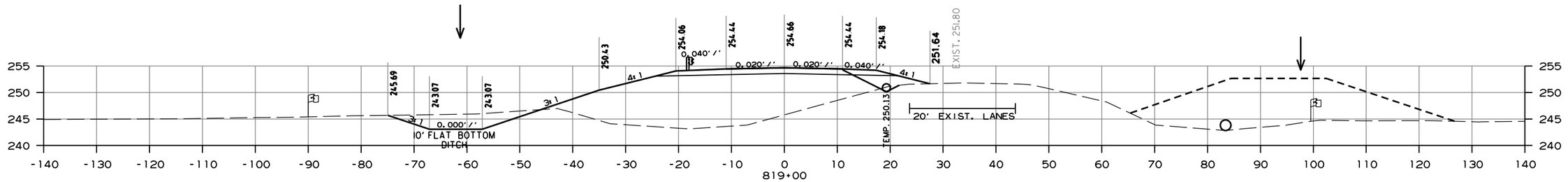
STAGE 1 CUT AREA 52.30 FILL AREA 355.65
STAGE 2 CUT AREA 0 FILL AREA 12.68

STAGE 1 CUT VOLUME 178.85 FILL VOLUME 1295.12
STAGE 2 CUT VOLUME 0 FILL VOLUME 50.87



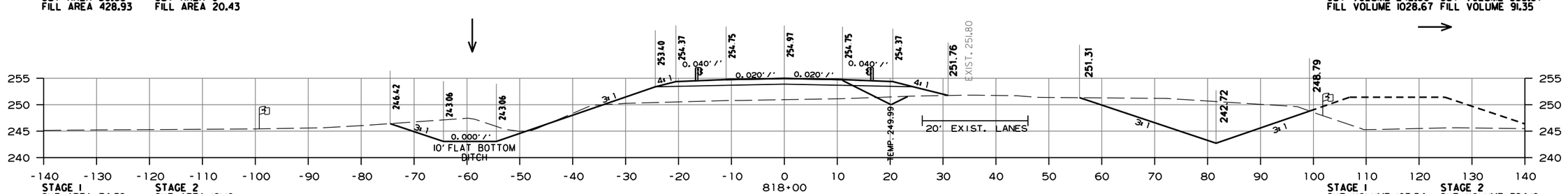
STAGE 1 CUT AREA 55.01 FILL AREA 421.42
STAGE 2 CUT AREA 0 FILL AREA 17.84

STAGE 1 CUT VOLUME 20.67 FILL VOLUME 157.47
STAGE 2 CUT VOLUME 0 FILL VOLUME 7.09



STAGE 1 CUT AREA 56.63 FILL AREA 428.93
STAGE 2 CUT AREA 0 FILL AREA 20.43

STAGE 1 CUT VOLUME 242.50 FILL VOLUME 1028.67
STAGE 2 CUT VOLUME 335.37 FILL VOLUME 91.35



STAGE 1 CUT AREA 74.32 FILL AREA 126.55
STAGE 2 CUT AREA 181.10 FILL AREA 28.90

STAGE 1 CUT VOLUME 163.54 FILL VOLUME 215.23
STAGE 2 CUT VOLUME 324.19 FILL VOLUME 45.10

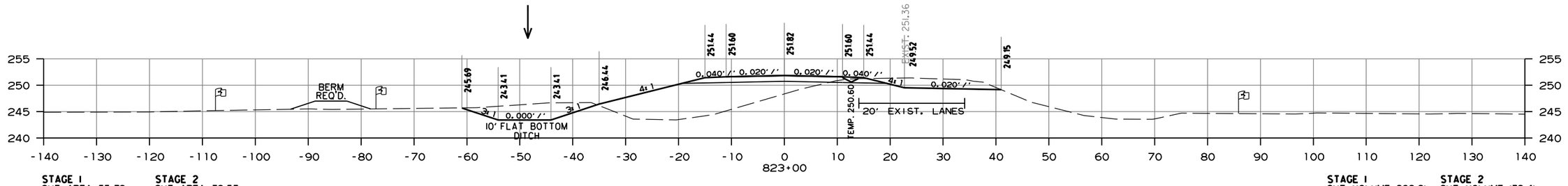
CROSS SECTION STA. 818+00 TO STA. 820+00

8/15/2022

R101054_Site8.dgn

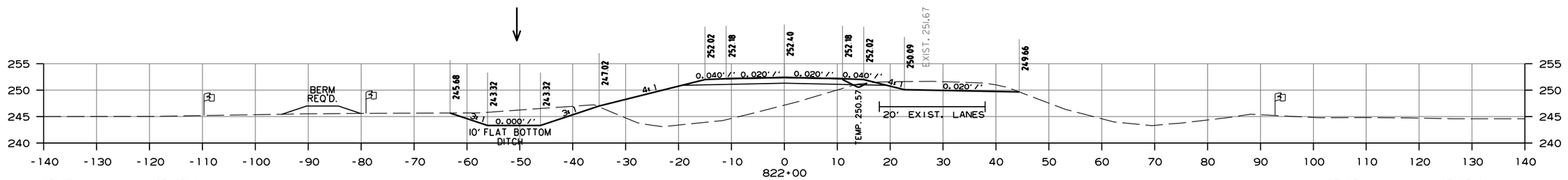
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	279	311

(2) CROSS SECTIONS - SITE 8



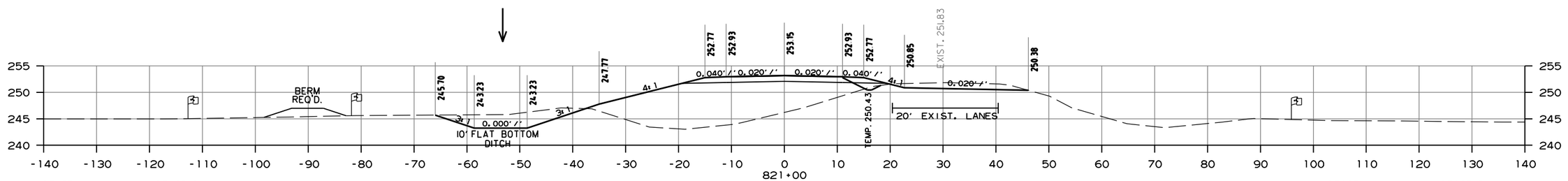
STAGE 1 CUT AREA 55.78 FILL AREA 188.83
STAGE 2 CUT AREA 38.53 FILL AREA 0

STAGE 1 CUT VOLUME 208.81 FILL VOLUME 788.28
STAGE 2 CUT VOLUME 138.41 FILL VOLUME 1.04



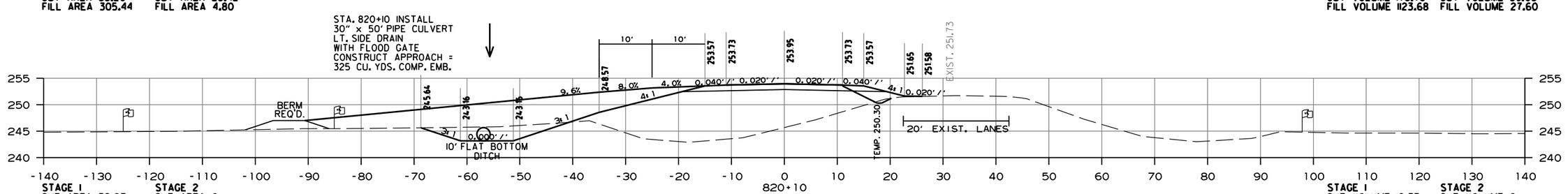
STAGE 1 CUT AREA 56.98 FILL AREA 236.84
STAGE 2 CUT AREA 36.21 FILL AREA 0.56

STAGE 1 CUT VOLUME 207.74 FILL VOLUME 1004.22
STAGE 2 CUT VOLUME 110.43 FILL VOLUME 9.93



STAGE 1 CUT AREA 55.20 FILL AREA 305.44
STAGE 2 CUT AREA 23.42 FILL AREA 4.80

STAGE 1 CUT VOLUME 178.78 FILL VOLUME 1123.68
STAGE 2 CUT VOLUME 39.03 FILL VOLUME 27.60



STAGE 1 CUT AREA 52.07 FILL AREA 368.77
STAGE 2 CUT AREA 0 FILL AREA 11.76

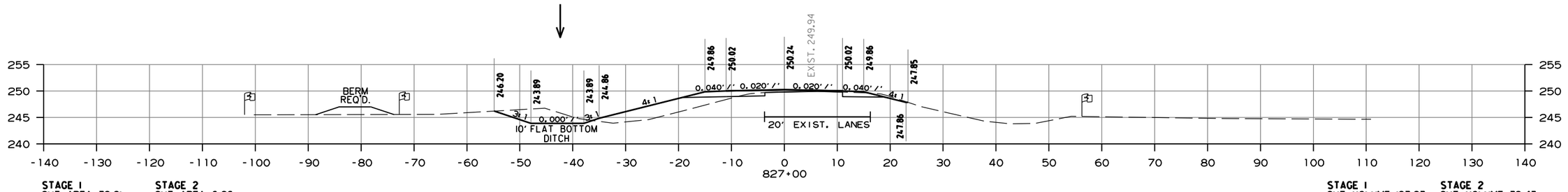
STAGE 1 CUT VOLUME 19.33 FILL VOLUME 134.15
STAGE 2 CUT VOLUME 0 FILL VOLUME 4.53

CROSS SECTION STA. 820+10 TO STA. 823+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	280	311

(2) CROSS SECTIONS - SITE 8



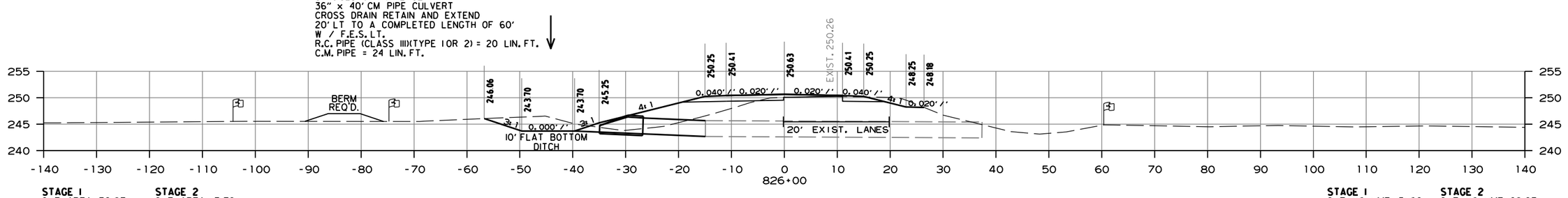
STAGE 1 CUT AREA 32.21 FILL AREA 62.68

STAGE 2 CUT AREA 6.96 FILL AREA 0

STAGE 1 CUT VOLUME 127.93 FILL VOLUME 280.48

STAGE 2 CUT VOLUME 38.43 FILL VOLUME 0

STA. 825+67 IN PLACE
36" x 40' CM PIPE CULVERT
CROSS DRAIN RETAIN AND EXTEND
20' LT TO A COMPLETED LENGTH OF 60'
W / F.E.S. LT.
R.C. PIPE (CLASS III)(TYPE 1 OR 2) = 20 LIN. FT.
C.M. PIPE = 24 LIN. FT.

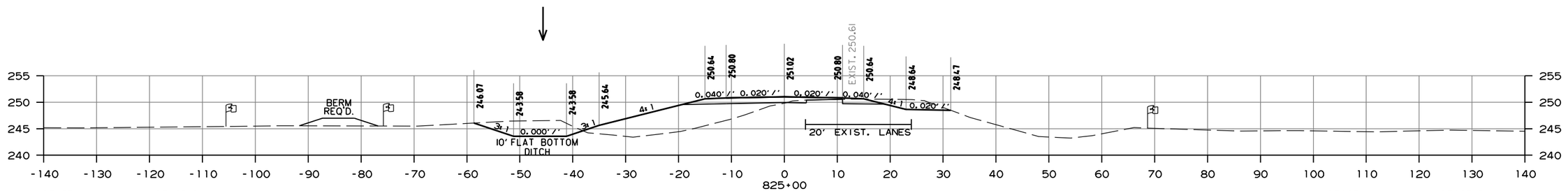


STAGE 1 CUT AREA 36.87 FILL AREA 88.78

STAGE 2 CUT AREA 13.79 FILL AREA 0

STAGE 1 CUT VOLUME 151.09 FILL VOLUME 401.96

STAGE 2 CUT VOLUME 68.93 FILL VOLUME 0

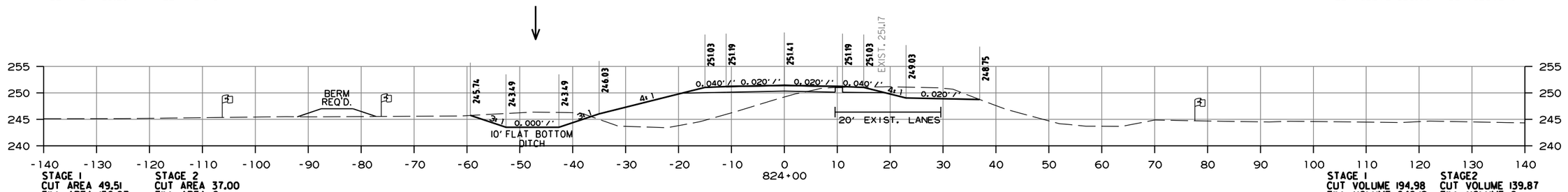


STAGE 1 CUT AREA 44.72 FILL AREA 128.28

STAGE 2 CUT AREA 23.43 FILL AREA 0

STAGE 1 CUT VOLUME 174.50 FILL VOLUME 528.06

STAGE 2 CUT VOLUME 111.91 FILL VOLUME 0



STAGE 1 CUT AREA 49.51 FILL AREA 156.87

STAGE 2 CUT AREA 37.00 FILL AREA 0

STAGE 1 CUT VOLUME 194.98 FILL VOLUME 640.19

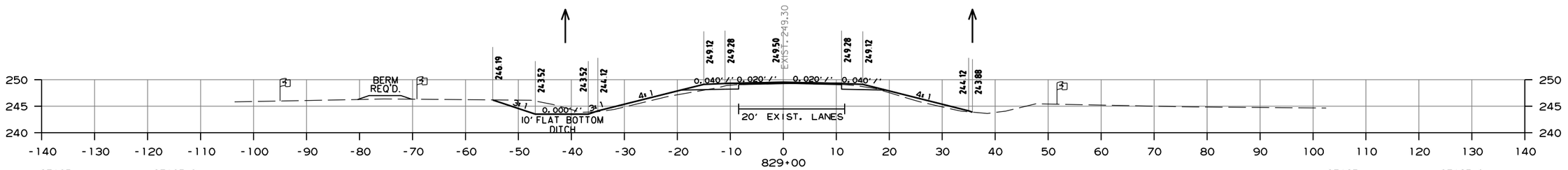
STAGE2 CUT VOLUME 139.87 FILL VOLUME 0

CROSS SECTION STA. 824+00 TO STA. 827+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	281	311

(2) CROSS SECTIONS - SITE 8



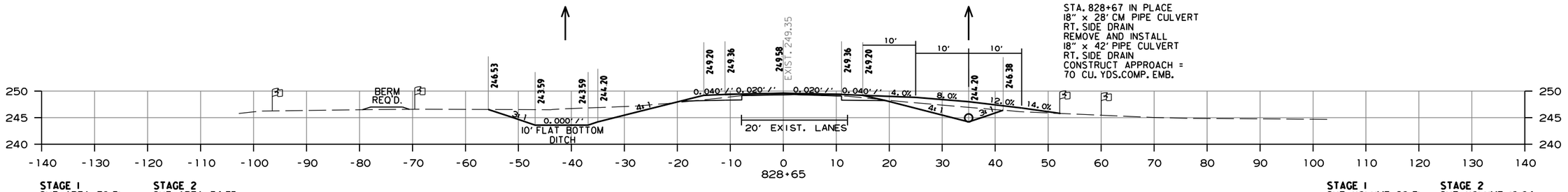
STAGE 1 CUT AREA 26.76 FILL AREA 15.56

STAGE 2 CUT AREA 4.24 FILL AREA 7.46

STAGE 1 CUT VOLUME 62.92 FILL VOLUME 12.63

STAGE 2 CUT VOLUME 25.27 FILL VOLUME 4.84

STA. 828+67 IN PLACE
18" x 28' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
18" x 42' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
70 CU. YDS.COMP. EMB.



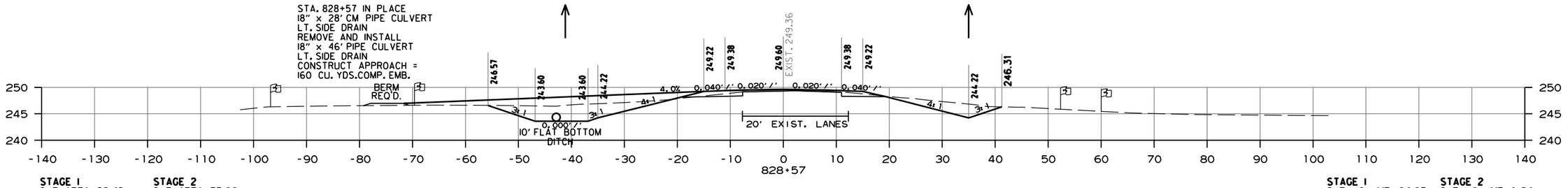
STAGE 1 CUT AREA 70.31 FILL AREA 3.93

STAGE 2 CUT AREA 34.75 FILL AREA 0

STAGE 1 CUT VOLUME 20.71 FILL VOLUME 1.13

STAGE 2 CUT VOLUME 10.04 FILL VOLUME 0

STA. 828+57 IN PLACE
18" x 28' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" x 46' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
160 CU. YDS.COMP. EMB.

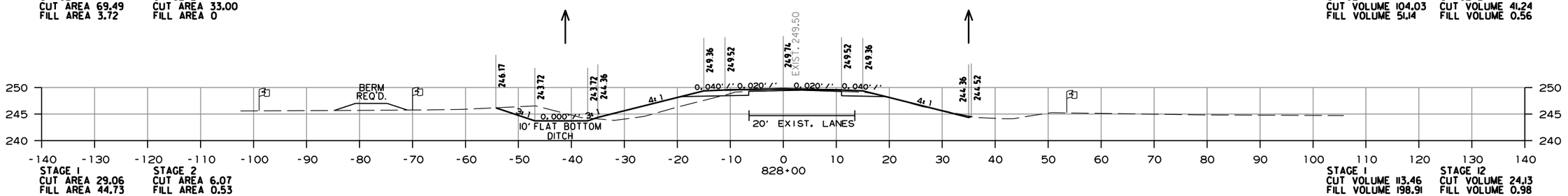


STAGE 1 CUT AREA 69.49 FILL AREA 3.72

STAGE 2 CUT AREA 33.00 FILL AREA 0

STAGE 1 CUT VOLUME 104.03 FILL VOLUME 51.14

STAGE 2 CUT VOLUME 41.24 FILL VOLUME 0.56



STAGE 1 CUT AREA 29.06 FILL AREA 44.73

STAGE 2 CUT AREA 6.07 FILL AREA 0.53

STAGE 1 CUT VOLUME 113.46 FILL VOLUME 198.91

STAGE 12 CUT VOLUME 24.13 FILL VOLUME 0.98

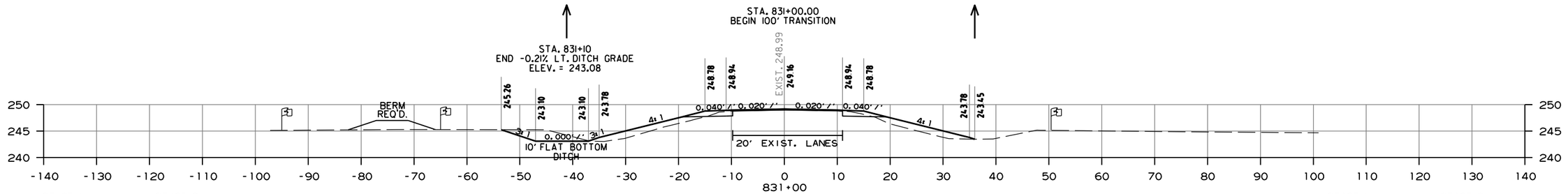
CROSS SECTION STA. 828+00 TO STA. 829+00

8/15/2022

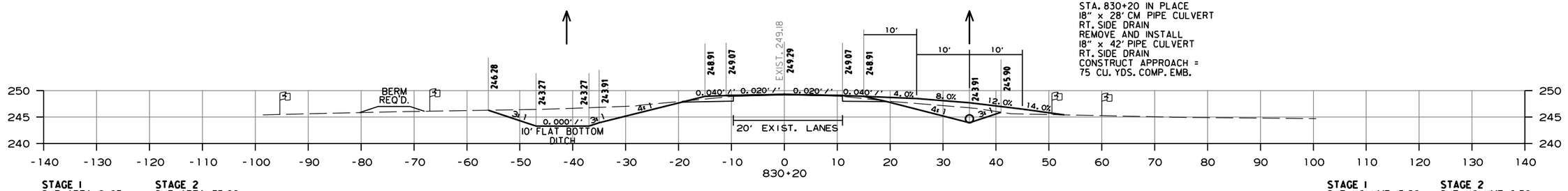
R101054_Site8.dgn

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.		101054	282	311

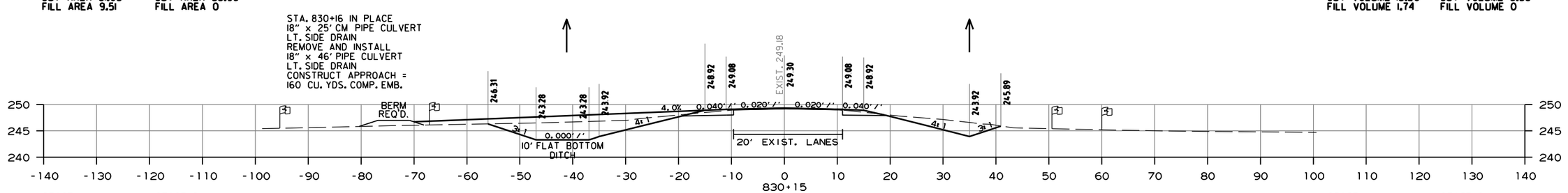
(2) CROSS SECTIONS - SITE 8



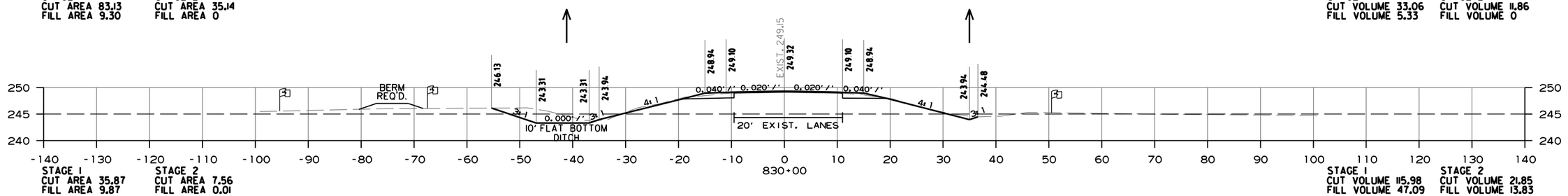
STAGE 1 CUT AREA 22.98 FILL AREA 40.83
STAGE 2 CUT AREA 3.17 FILL AREA 18.50
STAGE 1 CUT VOLUME 154.12 FILL VOLUME 74.58
STAGE 2 CUT VOLUME 57.97 FILL VOLUME 27.41



STAGE 1 CUT AREA 81.05 FILL AREA 9.51
STAGE 2 CUT AREA 35.96 FILL AREA 0
STAGE 1 CUT VOLUME 15.20 FILL VOLUME 1.74
STAGE 2 CUT VOLUME 6.58 FILL VOLUME 0



STAGE 1 CUT AREA 83.13 FILL AREA 9.30
STAGE 2 CUT AREA 35.14 FILL AREA 0
STAGE 1 CUT VOLUME 33.06 FILL VOLUME 5.33
STAGE 2 CUT VOLUME 11.86 FILL VOLUME 0



STAGE 1 CUT AREA 35.87 FILL AREA 9.87
STAGE 2 CUT AREA 7.56 FILL AREA 0.01
STAGE 1 CUT VOLUME 115.98 FILL VOLUME 47.09
STAGE 2 CUT VOLUME 21.85 FILL VOLUME 13.83

CROSS SECTION STA. 830+00 TO STA. 831+00

8/15/2022

R101054_Site8.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.		101054	283	311

(2) CROSS SECTIONS - SITE 8

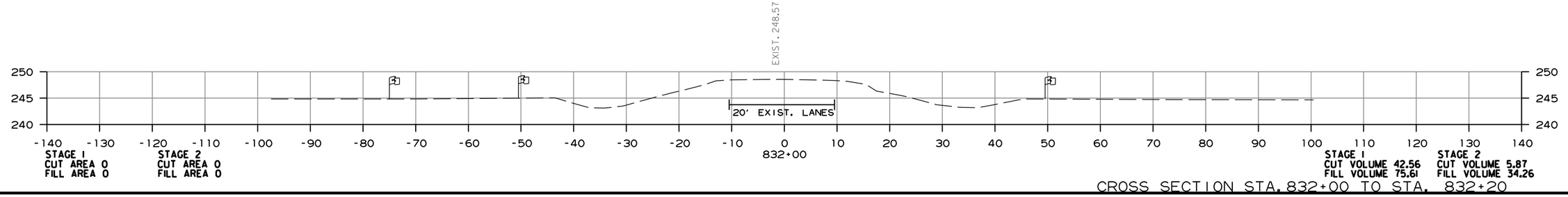
STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STA. 832+00.00
END 100' TRANSITION



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 42.56
FILL VOLUME 75.61

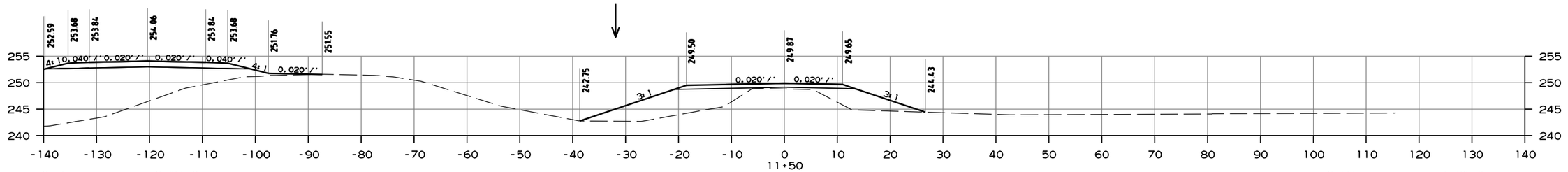
STAGE 2
CUT VOLUME 5.87
FILL VOLUME 34.26

CROSS SECTION STA. 832+00 TO STA. 832+20

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	284	311

(2) CROSS SECTIONS - SITE 8 CO. RD. 194

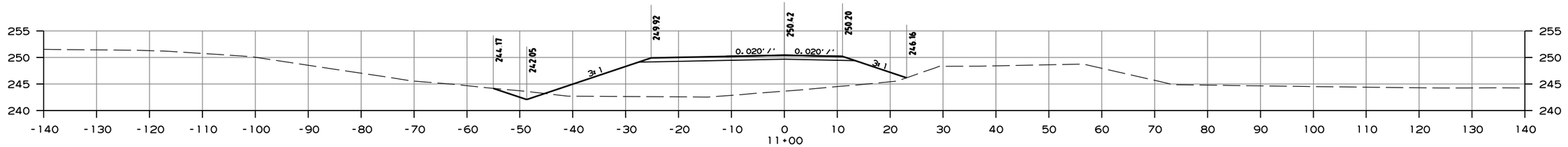


STAGE 1
CUT AREA 0
FILL AREA 147.43

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 6.94
FILL VOLUME 448.55

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

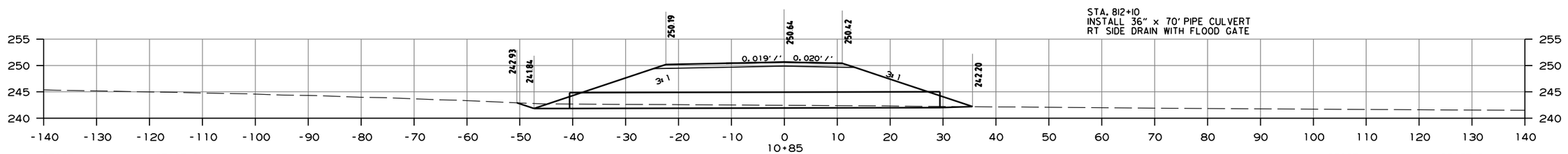


STAGE 1
CUT AREA 7.49
FILL AREA 337.00

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 2.85
FILL VOLUME 210.96

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

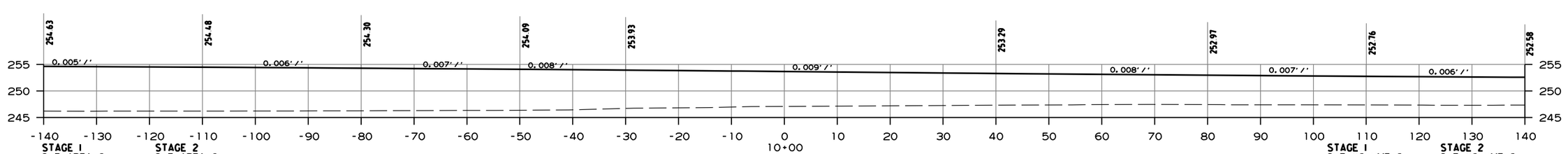


STAGE 1
CUT AREA 2.76
FILL AREA 422.45

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 4.34
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

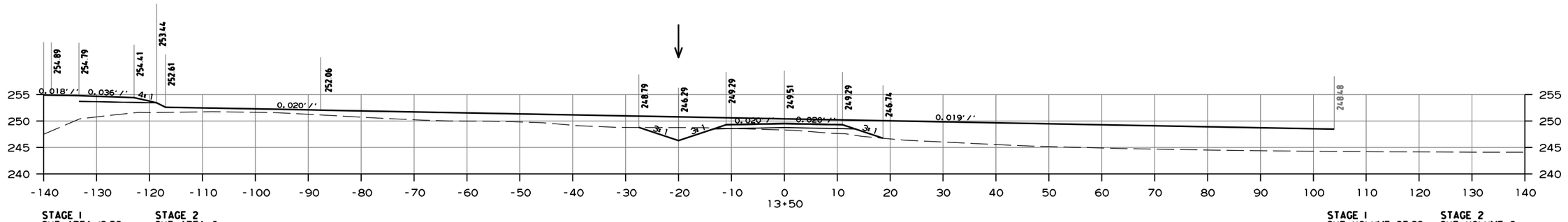
CROSS SECTION STA. 10+00 TO STA. 11+50

8/15/2022

R101054_Site8.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.		101054	285	311

(2) CROSS SECTIONS - SITE 8 CO. RD. 194

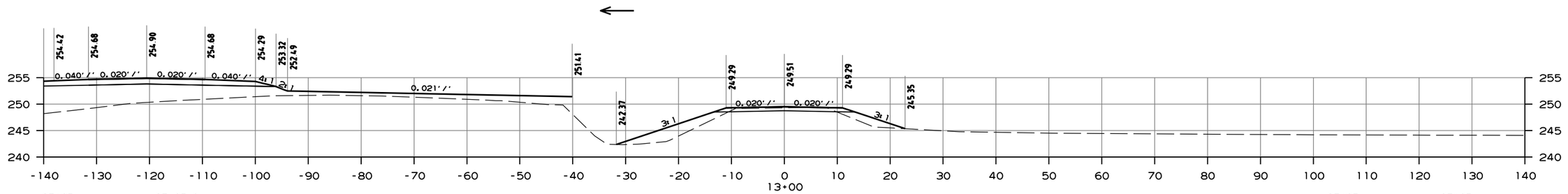


STAGE 1
CUT AREA 18.58
FILL AREA 15.79

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 27.92
FILL VOLUME 57.00

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

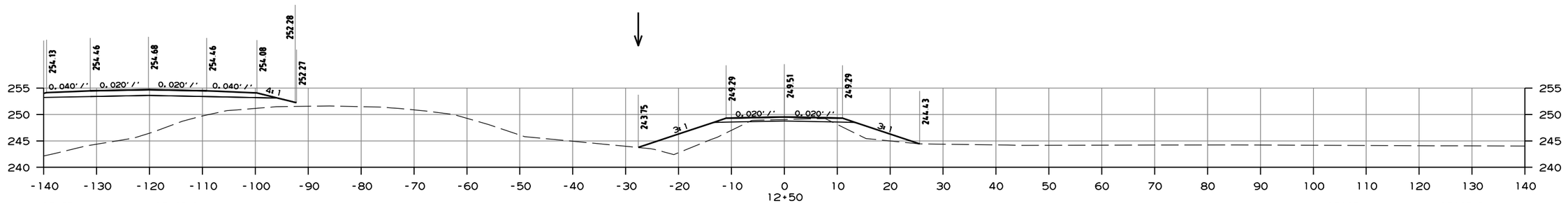


STAGE 1
CUT AREA 11.57
FILL AREA 45.77

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 15.87
FILL VOLUME 105.09

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

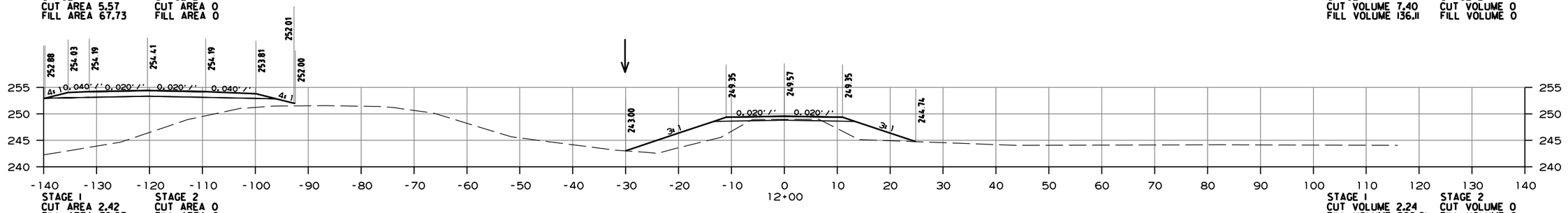


STAGE 1
CUT AREA 5.57
FILL AREA 67.73

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 7.40
FILL VOLUME 136.11

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 2.42
FILL AREA 79.27

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 2.24
FILL VOLUME 209.91

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

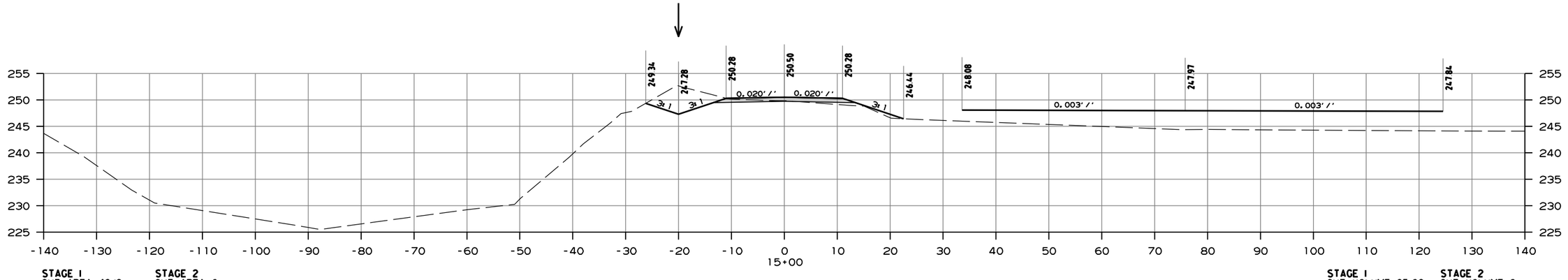
CROSS SECTION STA. 12+00 TO STA. 13+50

8/15/2022

R101054_Site8.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.		101054	286	311

(2) CROSS SECTIONS - SITE 8 CO. RD. 194

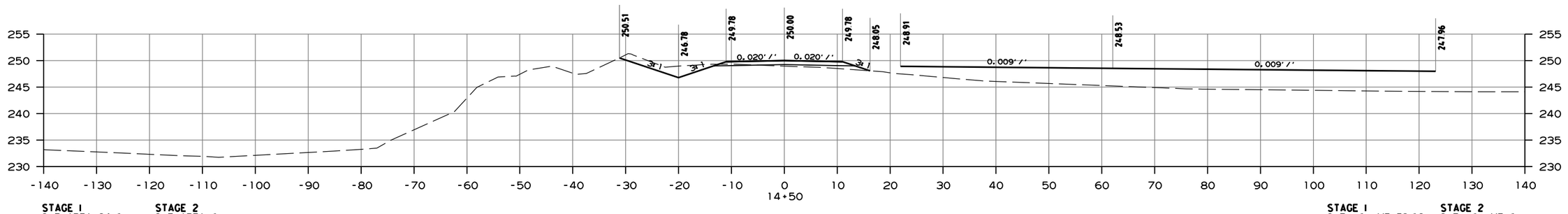


STAGE 1
CUT AREA 46.12
FILL AREA 6.71

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 65.02
FILL VOLUME 13.63

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

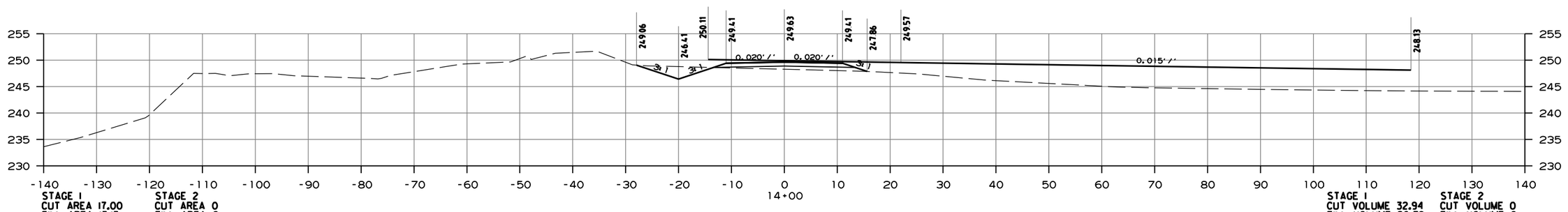


STAGE 1
CUT AREA 24.10
FILL AREA 8.01

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 38.06
FILL VOLUME 19.57

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 17.00
FILL AREA 13.13

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 32.94
FILL VOLUME 26.78

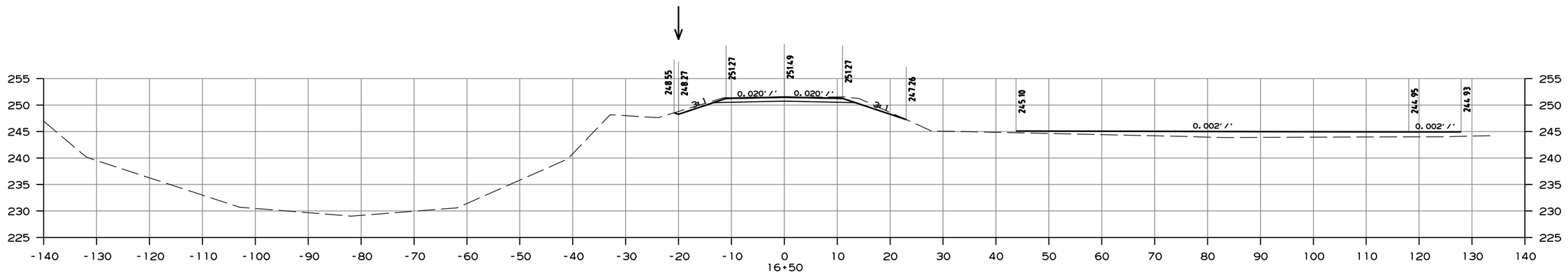
STAGE 2
CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 14+00 TO STA. 15+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	287	311

(2) CROSS SECTIONS - SITE 8 CO. RD. 194

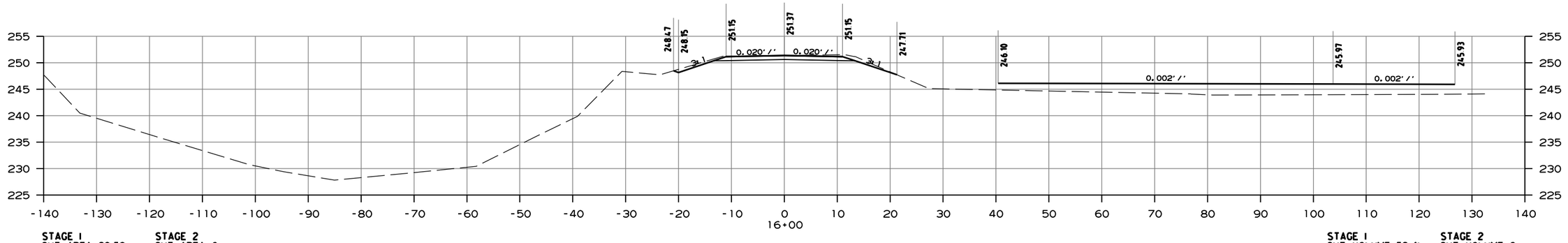


STAGE 1
CUT AREA 30.88
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 55.98
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

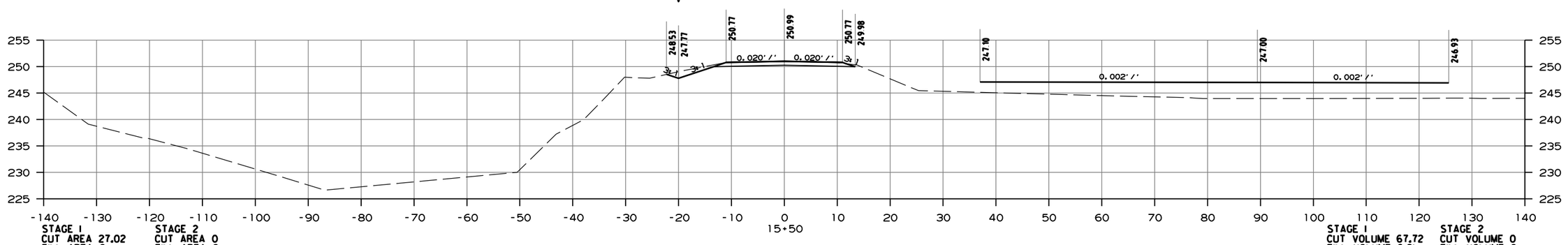


STAGE 1
CUT AREA 29.58
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 52.41
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 27.02
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 67.72
FILL VOLUME 6.21

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

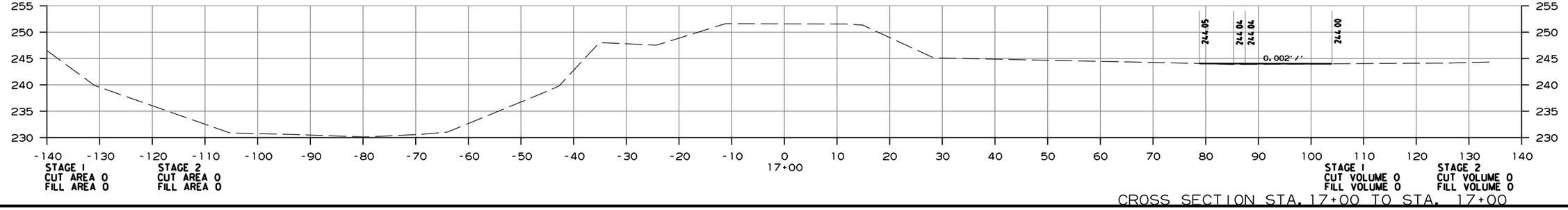
CROSS SECTION STA. 15+50 TO STA. 16+50

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	288	311

(2) CROSS SECTIONS - SITE 8 CO. RD. 194

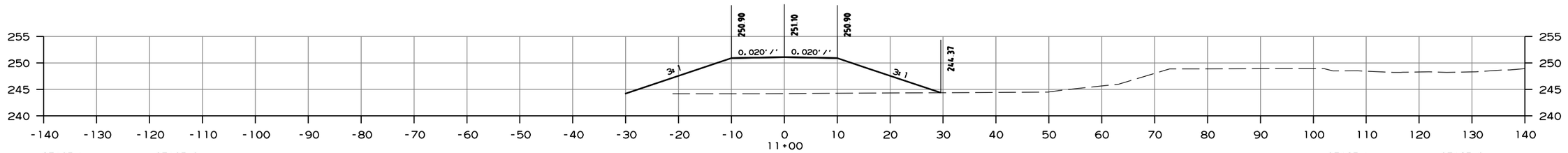


CROSS SECTION STA. 17+00 TO STA. 17+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	289	311

(2) CROSS SECTIONS - SITE 8 DRIVE

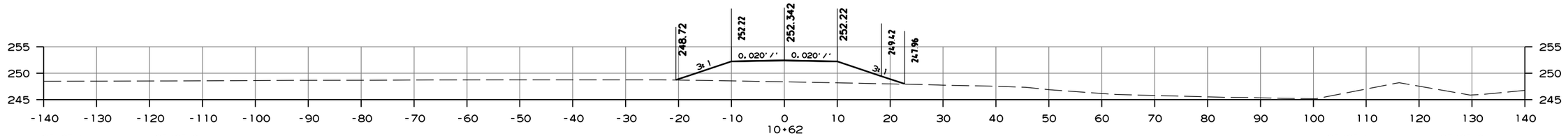


STAGE 1
CUT AREA 0
FILL AREA 268.11

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 276.08

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

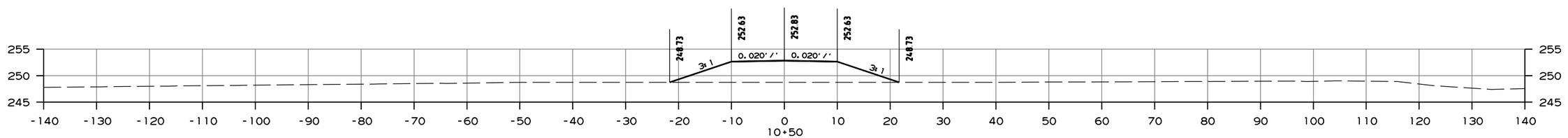


STAGE 1
CUT AREA 0
FILL AREA 124.21

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 55.56

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

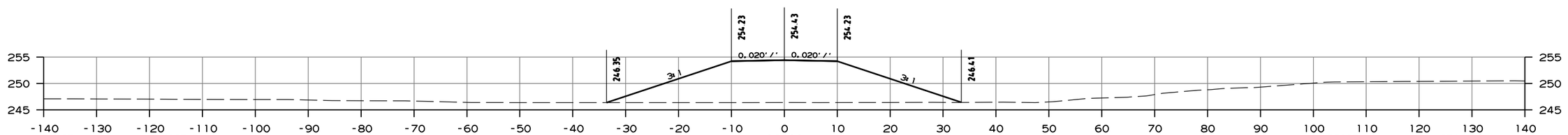


STAGE 1
CUT AREA 0
FILL AREA 125.79

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 435.28

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 344.31

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

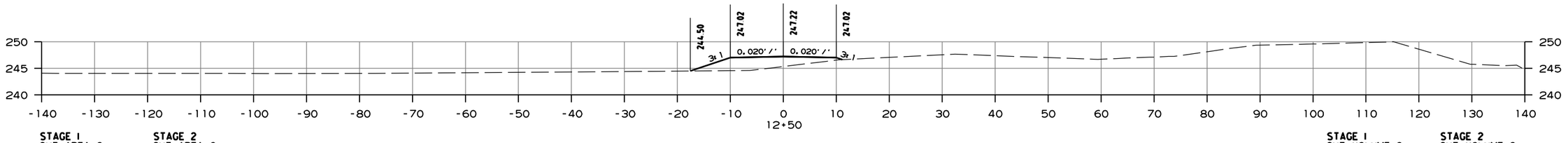
CROSS SECTION STA. 10+00 TO STA. 11+00

8/15/2022

R101054_Site8.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.		101054	290	311

(2) CROSS SECTIONS - SITE 8 DRIVE

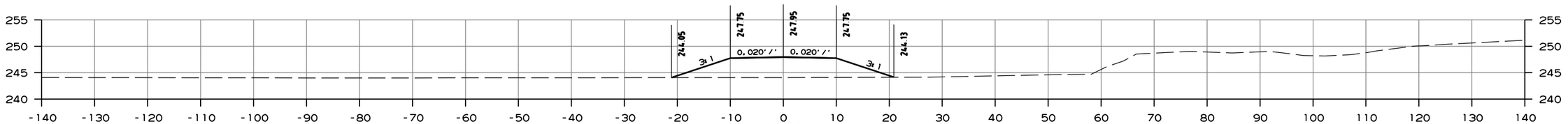


STAGE 1
CUT AREA 0
FILL AREA 44.40

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 148.28

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

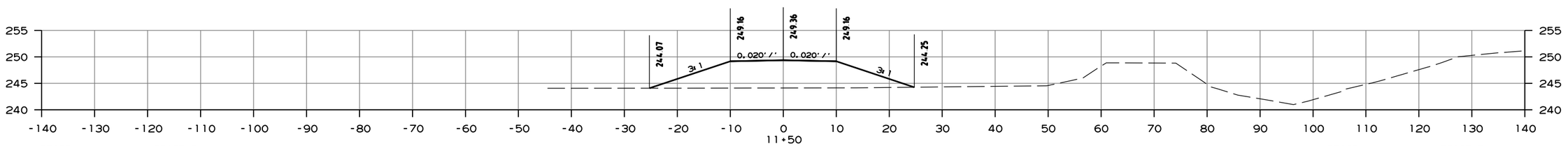


STAGE 1
CUT AREA 0
FILL AREA 115.74

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 273.06

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

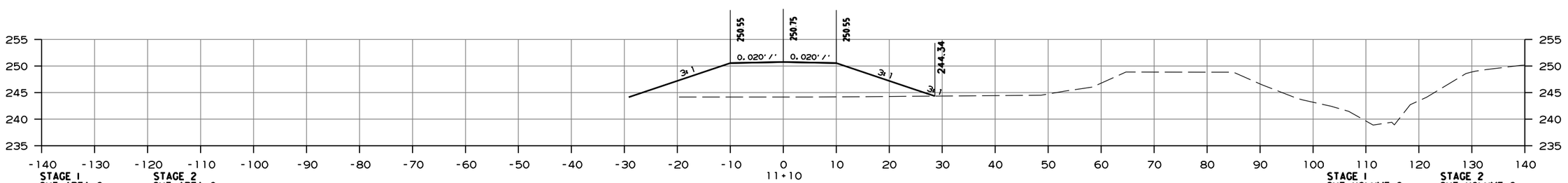


STAGE 1
CUT AREA 0
FILL AREA 179.17

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 317.77

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 249.82

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 95.91

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

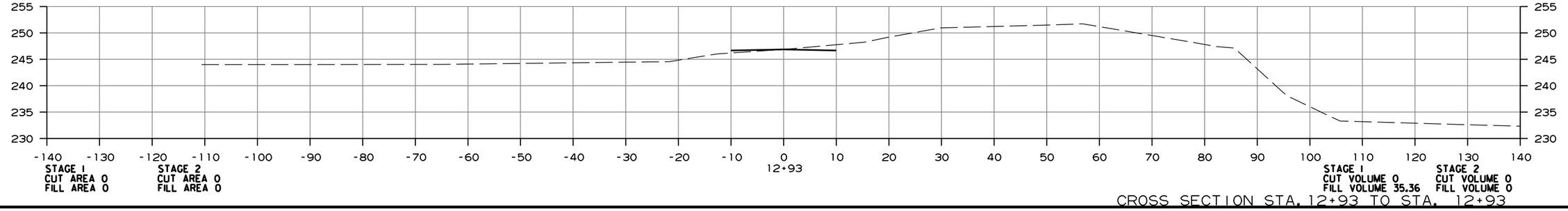
CROSS SECTION STA. 11+10 TO STA. 12+50

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		101054	291	311

(2) CROSS SECTIONS - SITE 8 DRIVE

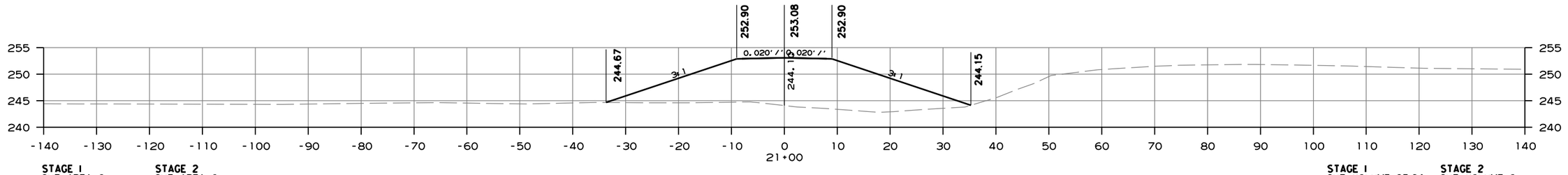


CROSS SECTION STA. 12+93 TO STA. 12+93

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	292	311

(2) CROSS SECTIONS - SITE 8 DRIVE

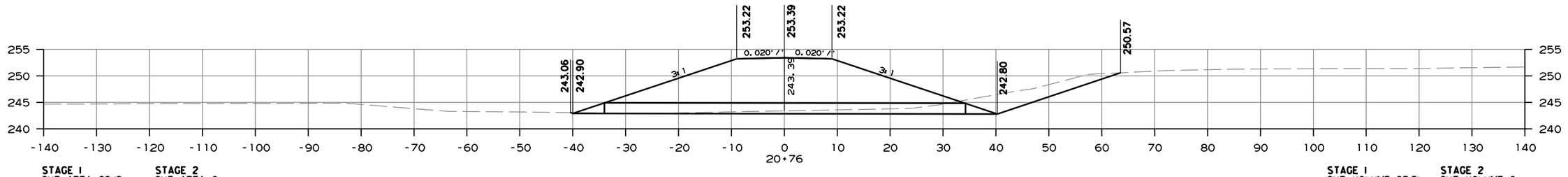


STAGE 1
CUT AREA 0
FILL AREA 399.28

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 27.64
FILL VOLUME 382.35

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

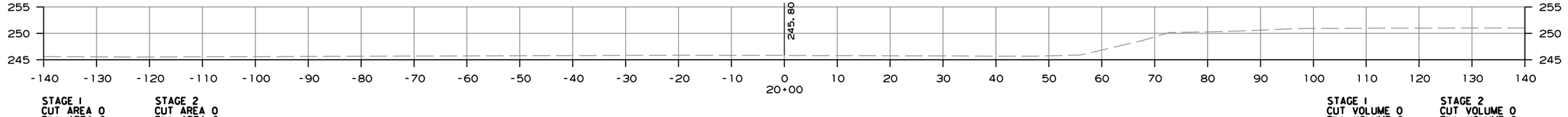


STAGE 1
CUT AREA 62.18
FILL AREA 461.00

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 87.51
FILL VOLUME 648.81

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

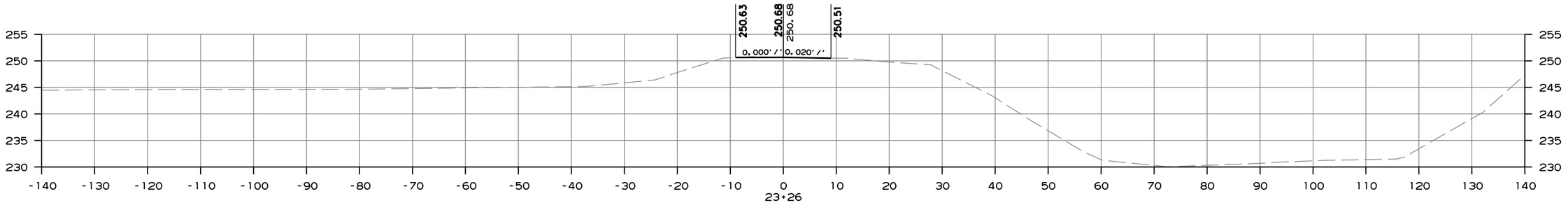
CROSS SECTION STA. 20+00 TO STA. 21+00

9/15/2022

R101054_Site8.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.		101054	293	311

(2) CROSS SECTIONS - SITE 8 DRIVE

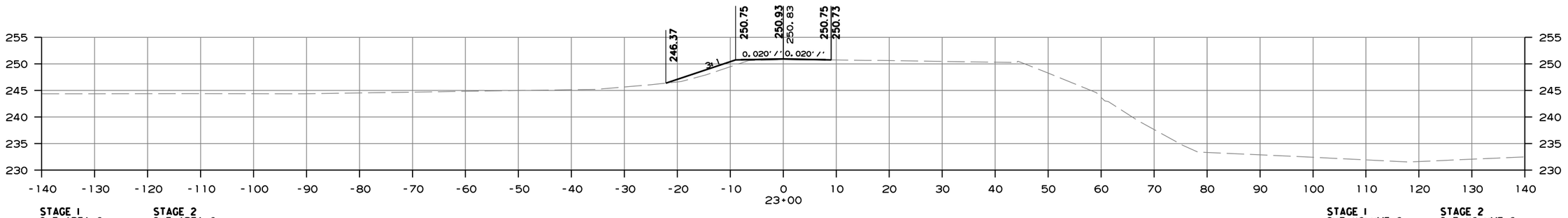


STAGE 1
CUT AREA 0
FILL AREA 0

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 6.15

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

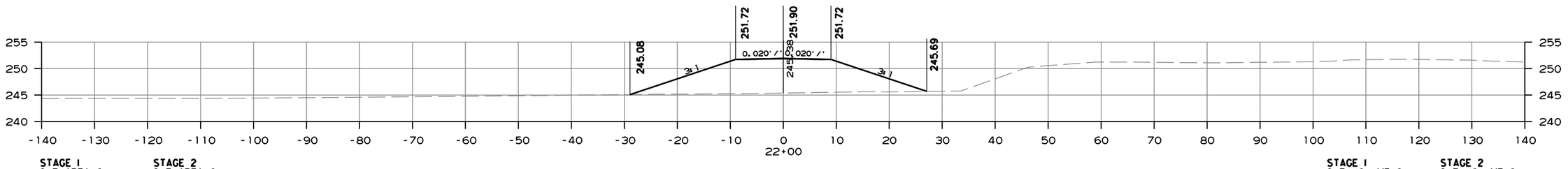


STAGE 1
CUT AREA 0
FILL AREA 12.77

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 460.98

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 236.16

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 1176.74

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

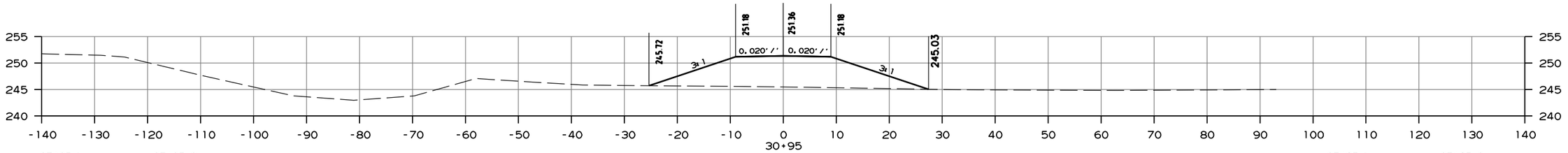
CROSS SECTION STA. 22+00 TO STA. 23+26

9/15/2022

R101054_Site8.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.		101054	294	311

(2) CROSS SECTIONS - SITE 8 DRIVE

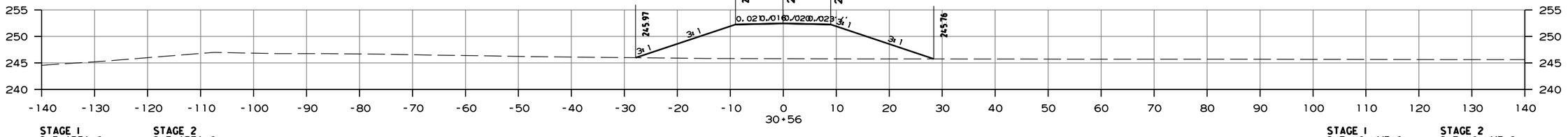


STAGE 1
CUT AREA 0
FILL AREA 204.19

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 322.11

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

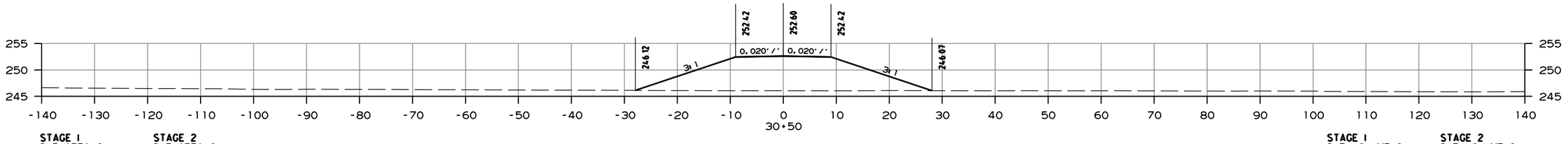


STAGE 1
CUT AREA 0
FILL AREA 241.81

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 53.19

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

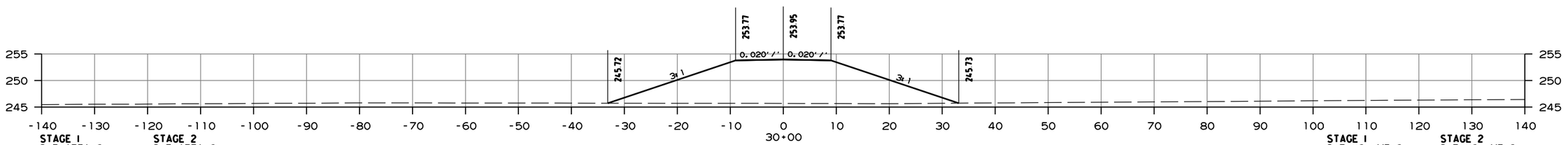


STAGE 1
CUT AREA 0
FILL AREA 236.92

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 537.21

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 343.27

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 0

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

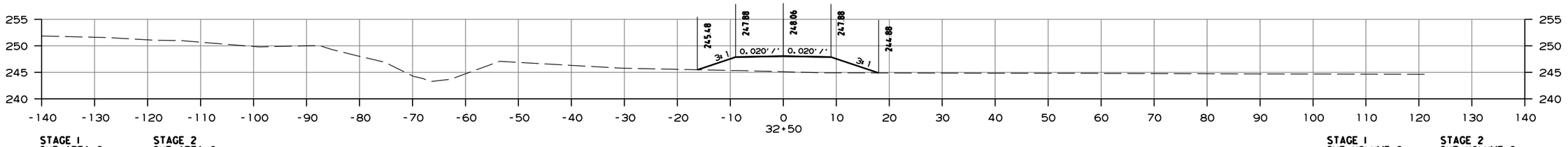
CROSS SECTION STA. 30+00 TO STA. 30+95

8/15/2022

R101054_Site8.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.		101054	295	311

(2) CROSS SECTIONS - SITE 8 DRIVE

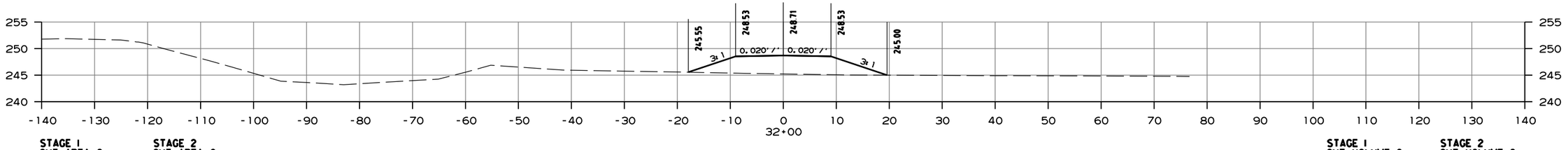


STAGE 1 CUT AREA 0 FILL AREA 74.23

STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 155.25

STAGE 2 CUT VOLUME 0 FILL VOLUME 0

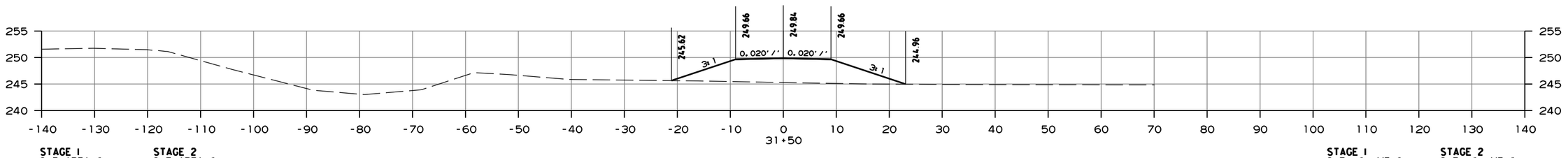


STAGE 1 CUT AREA 0 FILL AREA 93.44

STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 214.69

STAGE 2 CUT VOLUME 0 FILL VOLUME 0

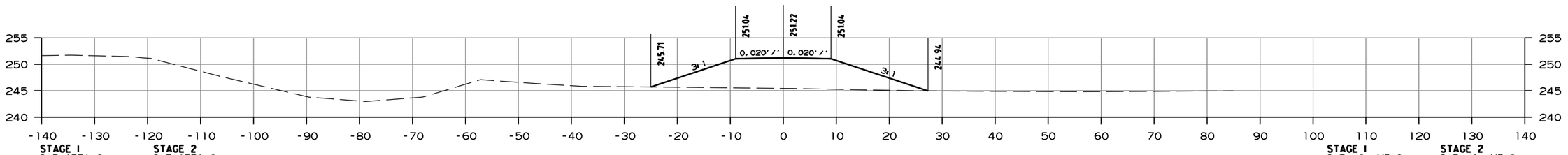


STAGE 1 CUT AREA 0 FILL AREA 138.42

STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 312.78

STAGE 2 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 199.38

STAGE 2 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 37.37

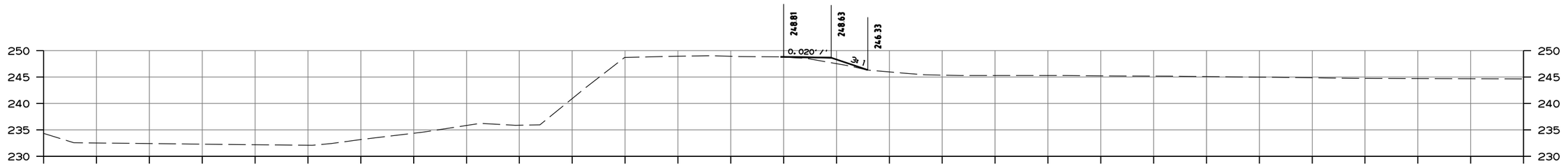
STAGE 2 CUT VOLUME 0 FILL VOLUME 0

CROSS SECTION STA. 31+00 TO STA. 32+50

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	296	311

(2) CROSS SECTIONS - SITE 8 DRIVE

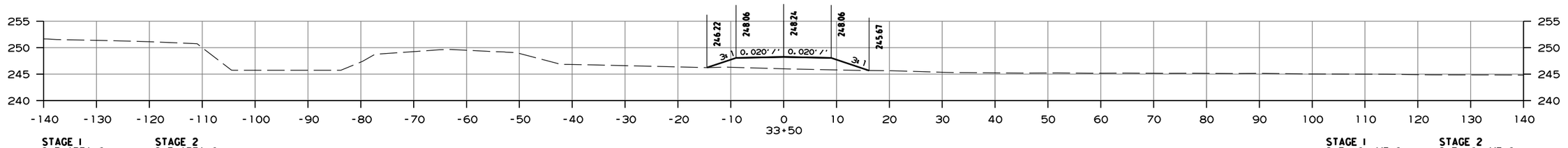


STAGE 1
CUT AREA 0
FILL AREA 6.16

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 53.50

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

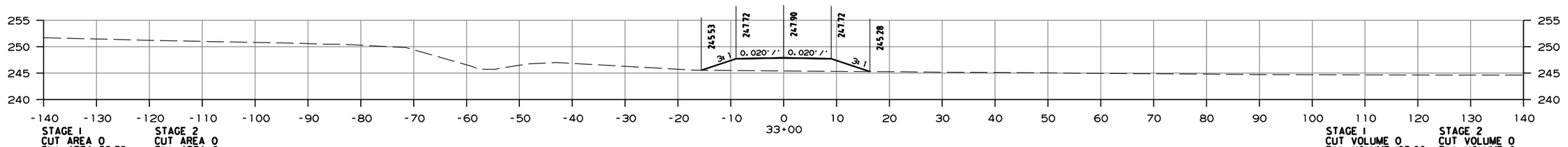


STAGE 1
CUT AREA 0
FILL AREA 51.62

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 102.72

STAGE 2
CUT VOLUME 0
FILL VOLUME 0



STAGE 1
CUT AREA 0
FILL AREA 59.32

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0
FILL VOLUME 123.66

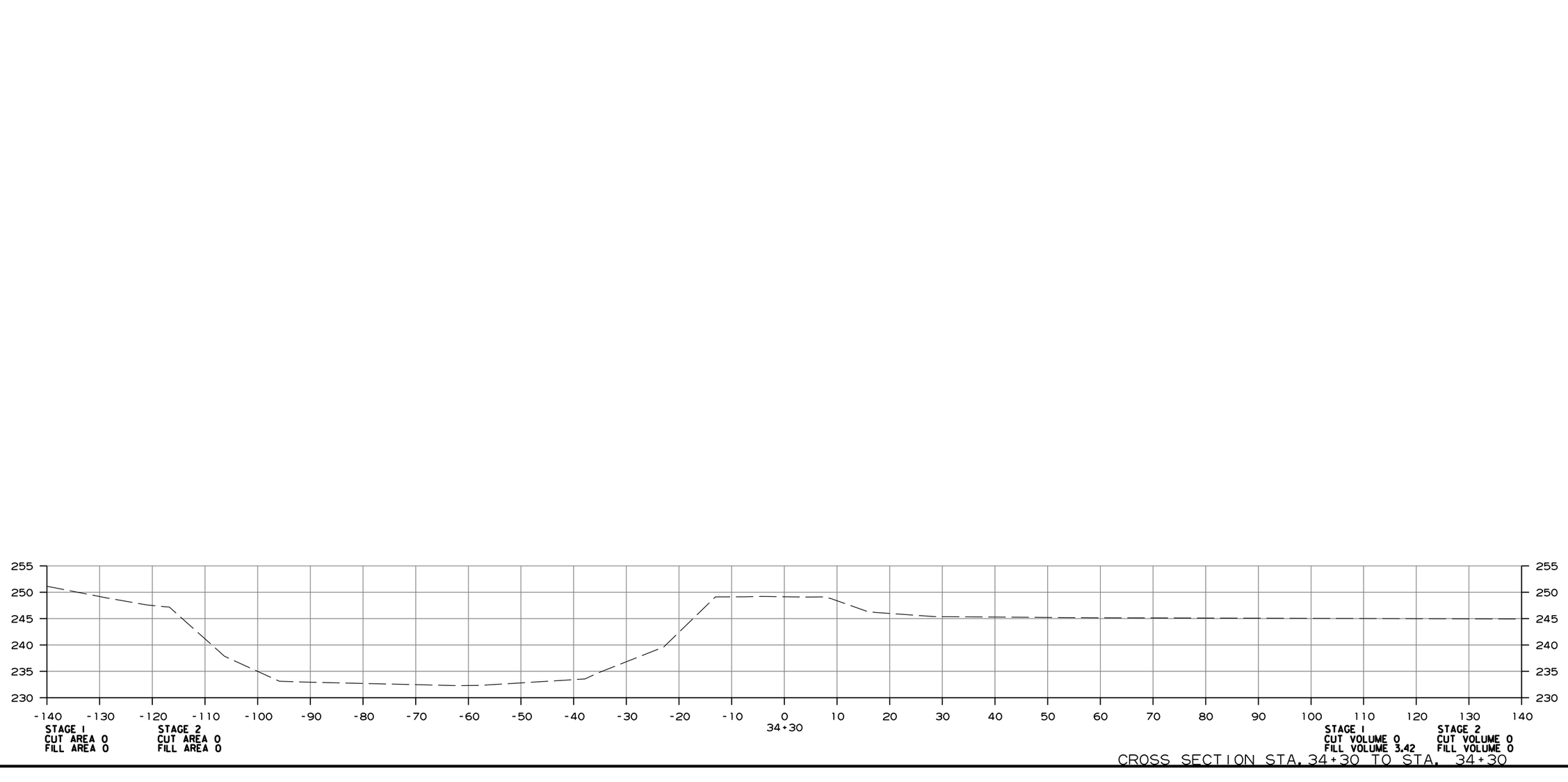
STAGE 2
CUT VOLUME 0
FILL VOLUME 0

CROSS SECTION STA. 33+00 TO STA. 34+00

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	297	311

(2) CROSS SECTIONS - SITE 8 DRIVE

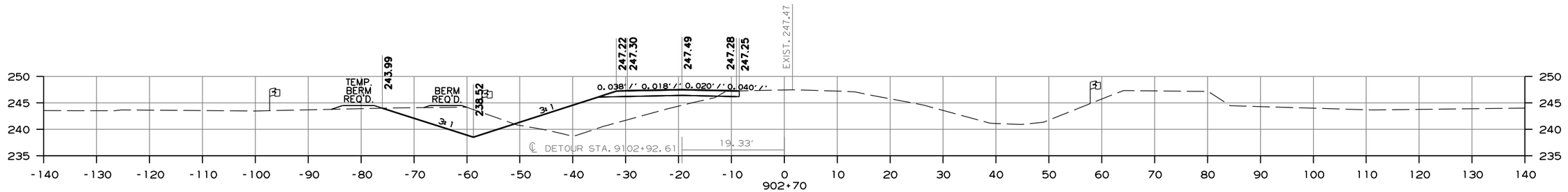


CROSS SECTION STA. 34+30 TO STA. 34+30

R101054_Site8.dgn 8/15/2022

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	298	311

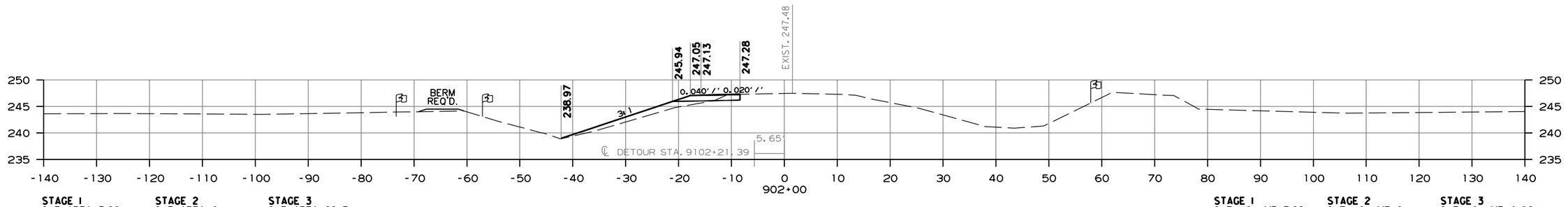
(2) CROSS SECTIONS - SITE 9



STAGE 1 CUT AREA 72.22 FILL AREA 132.12
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 132.12 FILL AREA 71.44

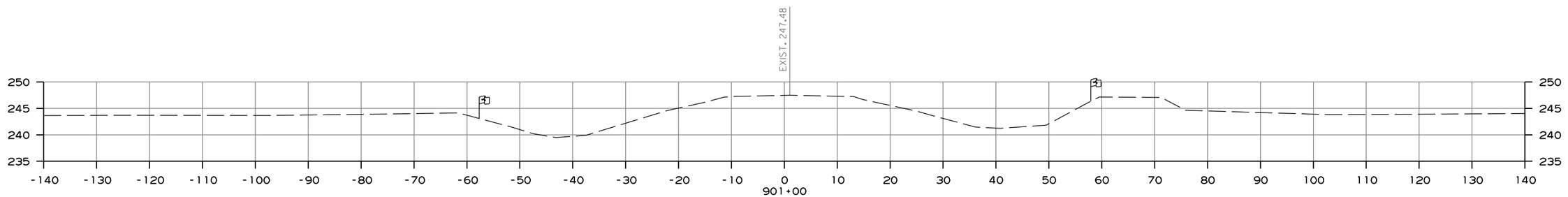
STA. 902+70
BEGIN 100' TRANSITION

STAGE 1 CUT VOLUME 98.67 FILL VOLUME 204.08
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 200.01 FILL VOLUME 92.61



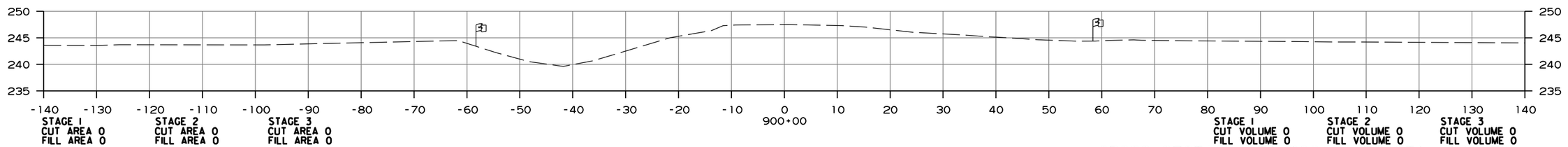
STAGE 1 CUT AREA 3.90 FILL AREA 25.31
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 22.17 FILL AREA 0

STAGE 1 CUT VOLUME 7.22 FILL VOLUME 46.87
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 41.06 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0

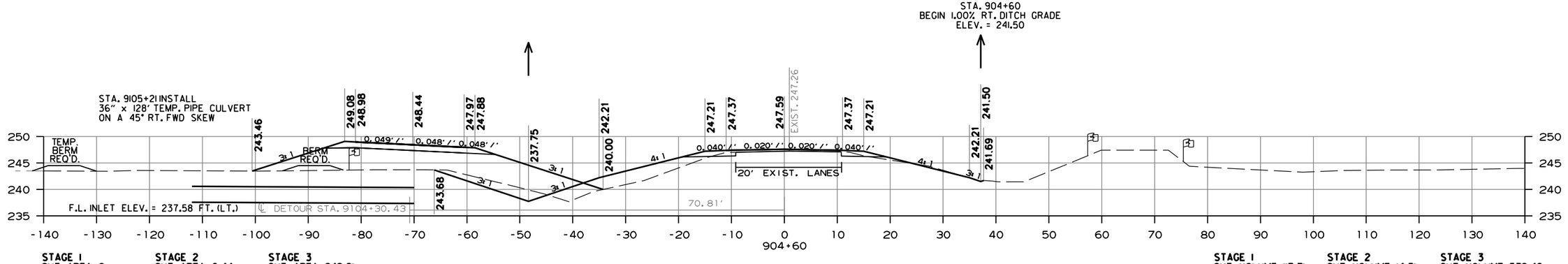
CROSS SECTION STA. 900+00 TO STA. 902+70

8/15/2022

R100869_Site9.dgn

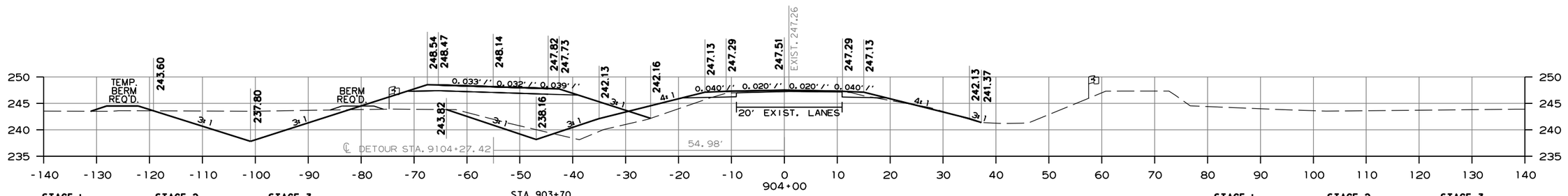
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	299	311

(2) CROSS SECTIONS - SITE 9



STAGE 1 CUT AREA 0 FILL AREA 246.06 | STAGE 2 CUT AREA 6.44 FILL AREA 46.98 | STAGE 3 CUT AREA 249.21 FILL AREA 0

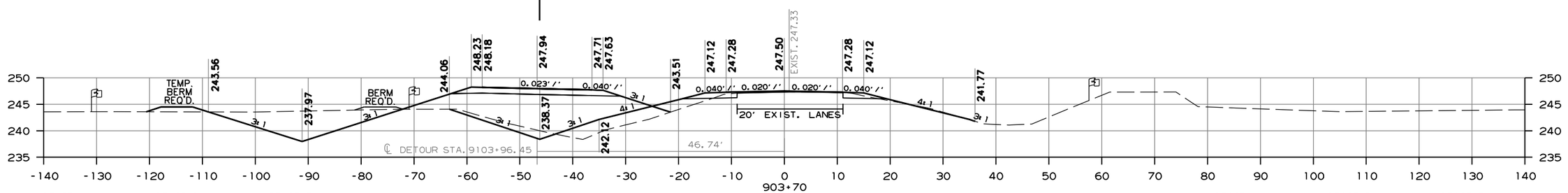
STAGE 1 CUT VOLUME 117.71 FILL VOLUME 553.66 | STAGE 2 CUT VOLUME 14.31 FILL VOLUME 79.53 | STAGE 3 CUT VOLUME 539.46 FILL VOLUME 120.53



STAGE 1 CUT AREA 105.94 FILL AREA 252.23 | STAGE 2 CUT AREA 6.44 FILL AREA 24.60 | STAGE 3 CUT AREA 236.30 FILL AREA 108.48

STAGE 1 CUT VOLUME 116.88 FILL VOLUME 275.17 | STAGE 2 CUT VOLUME 7.79 FILL VOLUME 21.30 | STAGE 3 CUT VOLUME 252.81 FILL VOLUME 120.50

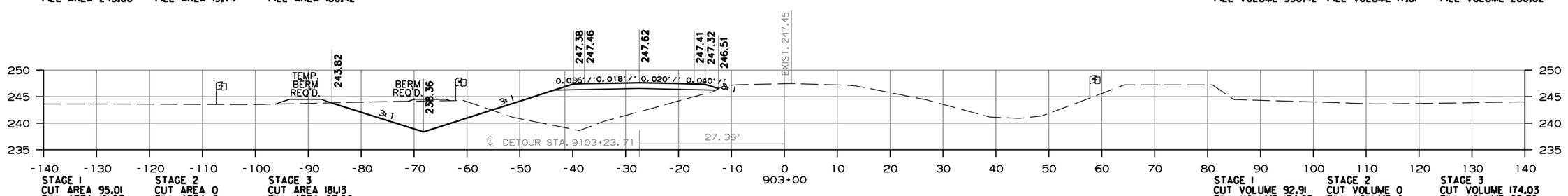
STA. 903+70
BEGIN 0.69% LT. DITCH GRADE
ELEV. = 238.37



STA. 903+70
END 100' TRANSITION

STAGE 1 CUT AREA 104.44 FILL AREA 243.08 | STAGE 2 CUT AREA 7.59 FILL AREA 13.74 | STAGE 3 CUT AREA 218.75 FILL AREA 108.42

STAGE 1 CUT VOLUME 258.55 FILL VOLUME 550.42 | STAGE 2 CUT VOLUME 9.84 FILL VOLUME 17.81 | STAGE 3 CUT VOLUME 518.36 FILL VOLUME 266.62



STAGE 1 CUT AREA 95.01 FILL AREA 181.53 | STAGE 2 CUT AREA 0 FILL AREA 0 | STAGE 3 CUT AREA 181.13 FILL AREA 97.26

STAGE 1 CUT VOLUME 92.91 FILL VOLUME 174.25 | STAGE 2 CUT VOLUME 0 FILL VOLUME 0 | STAGE 3 CUT VOLUME 174.03 FILL VOLUME 93.72

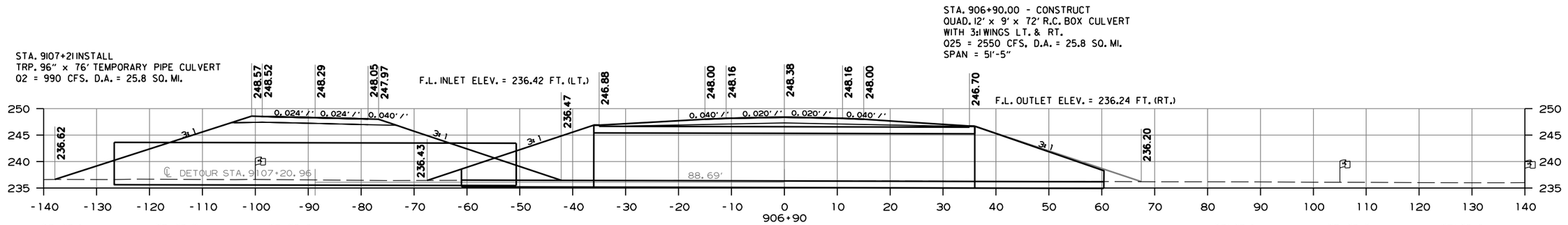
CROSS SECTION STA. 903+00 TO STA. 904+60

8/15/2022

R100869_Site9.dgn

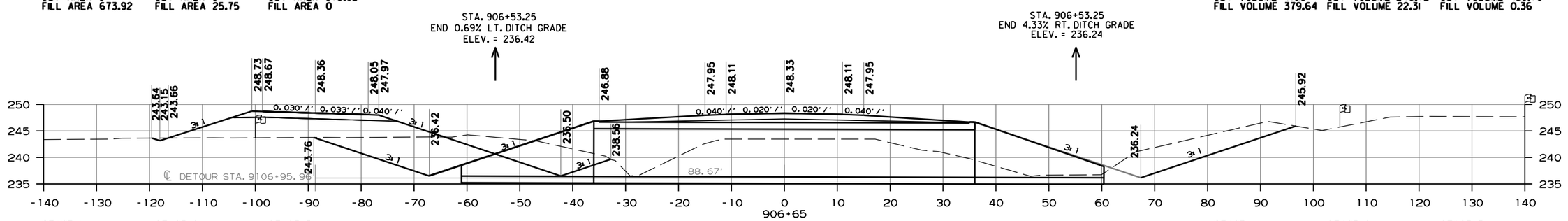
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	300	311

(2) CROSS SECTIONS - SITE 9



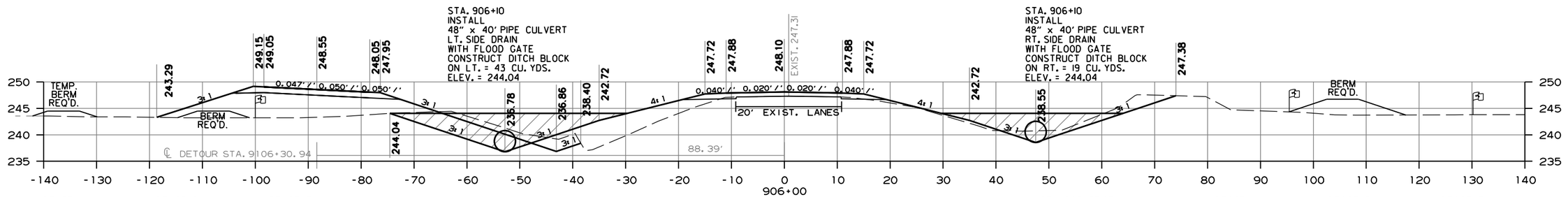
STAGE 1 CUT AREA 0 FILL AREA 673.92 | STAGE 2 CUT AREA 0 FILL AREA 25.75 | STAGE 3 CUT AREA 673.92 FILL AREA 0

STAGE 1 CUT VOLUME 47.15 FILL VOLUME 379.64 | STAGE 2 CUT VOLUME 246.72 FILL VOLUME 22.31 | STAGE 3 CUT VOLUME 439.70 FILL VOLUME 0.36



STAGE 1 CUT AREA 102.63 FILL AREA 146.11 | STAGE 2 CUT AREA 532.91 FILL AREA 22.43 | STAGE 3 CUT AREA 275.83 FILL AREA 0.77

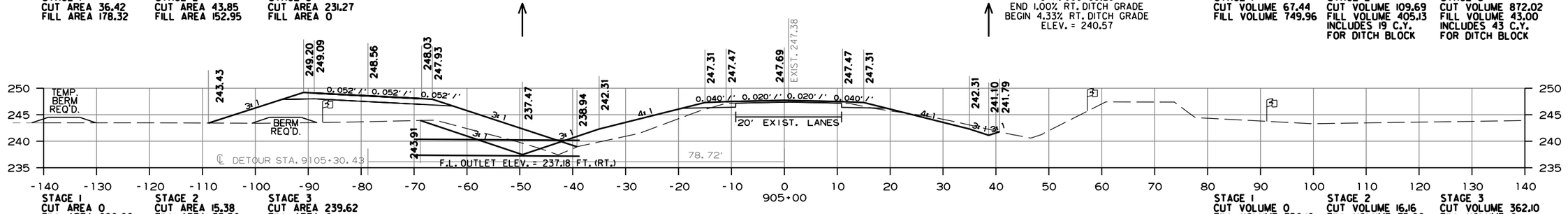
STAGE 1 CUT VOLUME 167.38 FILL VOLUME 390.52 | STAGE 2 CUT VOLUME 694.25 FILL VOLUME 211.11 | STAGE 3 CUT VOLUME 610.40 FILL VOLUME 0.93



STAGE 1 CUT AREA 36.42 FILL AREA 178.32 | STAGE 2 CUT AREA 43.85 FILL AREA 152.95 | STAGE 3 CUT AREA 231.27 FILL AREA 0

STA. 905+53.25
END 1.00% RT. DITCH GRADE
BEGIN 4.33% RT. DITCH GRADE
ELEV. = 240.57

STAGE 1 CUT VOLUME 67.44 FILL VOLUME 749.96 | STAGE 2 CUT VOLUME 109.69 FILL VOLUME 405.13 INCLUDES 19 C.Y. FOR DITCH BLOCK | STAGE 3 CUT VOLUME 872.02 FILL VOLUME 43.00 INCLUDES 43 C.Y. FOR DITCH BLOCK



STAGE 1 CUT AREA 0 FILL AREA 226.66 | STAGE 2 CUT AREA 15.38 FILL AREA 55.56 | STAGE 3 CUT AREA 239.62 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 350.16 | STAGE 2 CUT VOLUME 16.16 FILL VOLUME 75.96 | STAGE 3 CUT VOLUME 362.10 FILL VOLUME 0

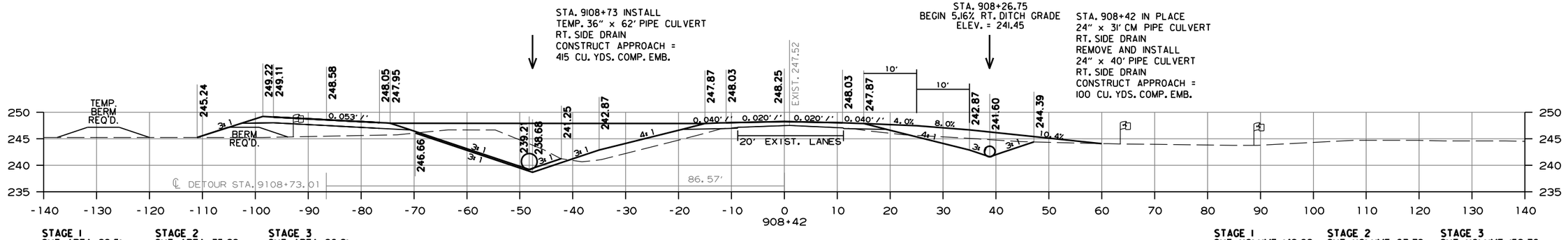
CROSS SECTION STA. 905+00 TO STA. 906+90

8/15/2022

R100869_Site9.dgn

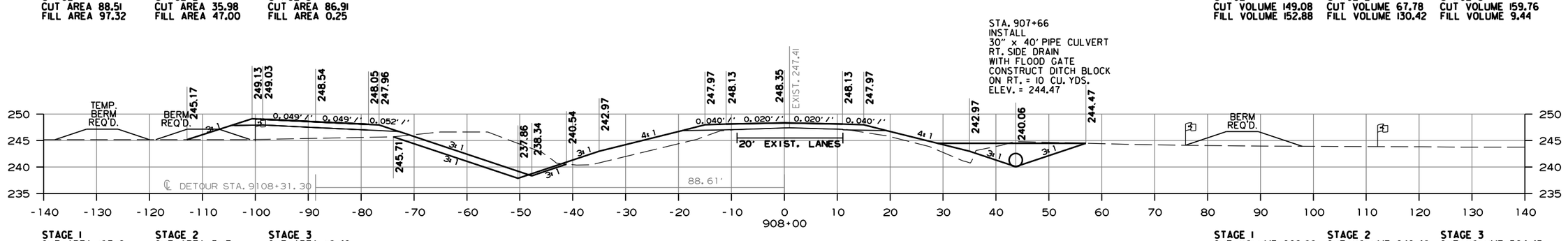
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	301	311

(2) CROSS SECTIONS - SITE 9



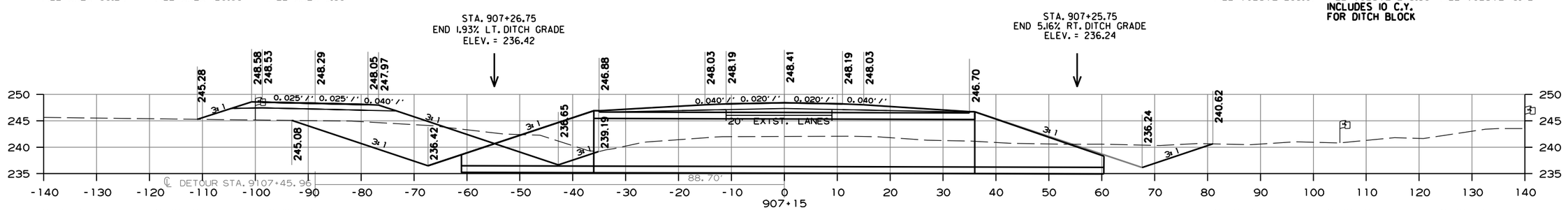
STAGE 1 CUT AREA 88.51 FILL AREA 97.32 | STAGE 2 CUT AREA 35.98 FILL AREA 47.00 | STAGE 3 CUT AREA 86.91 FILL AREA 0.25

STAGE 1 CUT VOLUME 149.08 FILL VOLUME 152.88 | STAGE 2 CUT VOLUME 67.78 FILL VOLUME 130.42 | STAGE 3 CUT VOLUME 159.76 FILL VOLUME 9.44



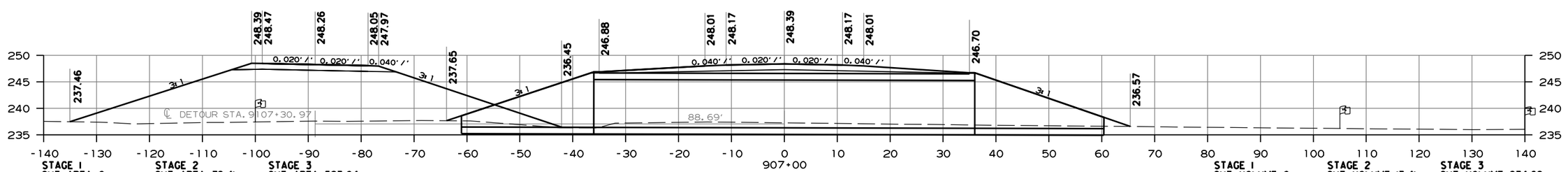
STAGE 1 CUT AREA 103.16 FILL AREA 99.24 | STAGE 2 CUT AREA 51.17 FILL AREA 120.68 | STAGE 3 CUT AREA 118.49 FILL AREA 11.89

STAGE 1 CUT VOLUME 269.88 FILL VOLUME 293.01 | STAGE 2 CUT VOLUME 942.40 FILL VOLUME 243.58 INCLUDES 10 C.Y. FOR DITCH BLOCK | STAGE 3 CUT VOLUME 564.45 FILL VOLUME 18.72



STAGE 1 CUT AREA 68.29 FILL AREA 86.91 | STAGE 2 CUT AREA 547.53 FILL AREA 27.71 | STAGE 3 CUT AREA 240.10 FILL AREA 0

STAGE 1 CUT VOLUME 18.97 FILL VOLUME 188.88 | STAGE 2 CUT VOLUME 172.21 FILL VOLUME 15.28 | STAGE 3 CUT VOLUME 231.43 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 593.04 | STAGE 2 CUT AREA 72.41 FILL AREA 27.31 | STAGE 3 CUT AREA 593.04 FILL AREA 0

STAGE 1 CUT VOLUME 0 FILL VOLUME 234.62 | STAGE 2 CUT VOLUME 13.41 FILL VOLUME 9.83 | STAGE 3 CUT VOLUME 234.62 FILL VOLUME 0

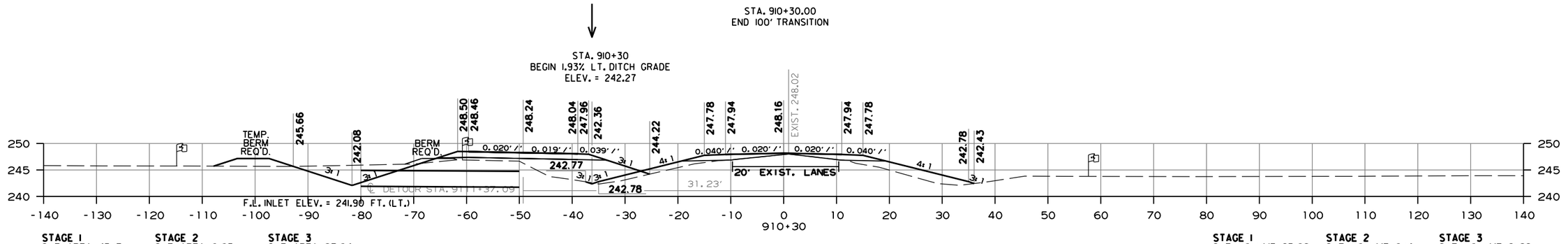
CROSS SECTION STA. 907+00 TO STA. 908+42

8/15/2022

R100869_Site9.dgn

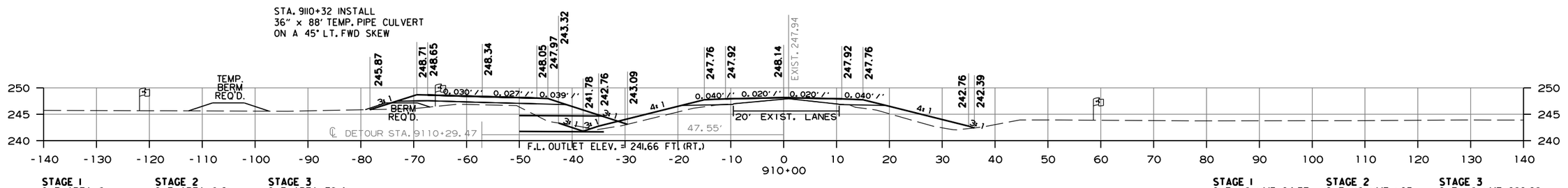
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	302	311

(2) CROSS SECTIONS - SITE 9



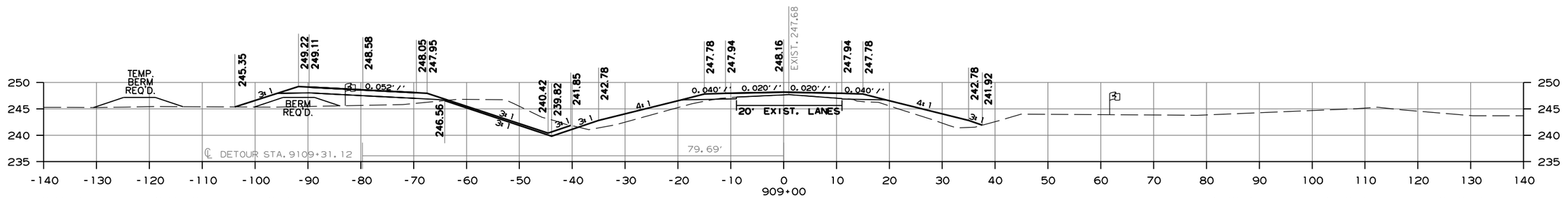
STAGE 1 CUT AREA 45.17 FILL AREA 96.58 | **STAGE 2** CUT AREA 0.05 FILL AREA 40.86 | **STAGE 3** CUT AREA 87.04 FILL AREA 47.78

STAGE 1 CUT VOLUME 25.09 FILL VOLUME 103.45 | **STAGE 2** CUT VOLUME 0.14 FILL VOLUME 46.56 | **STAGE 3** CUT VOLUME 91.92 FILL VOLUME 27.19



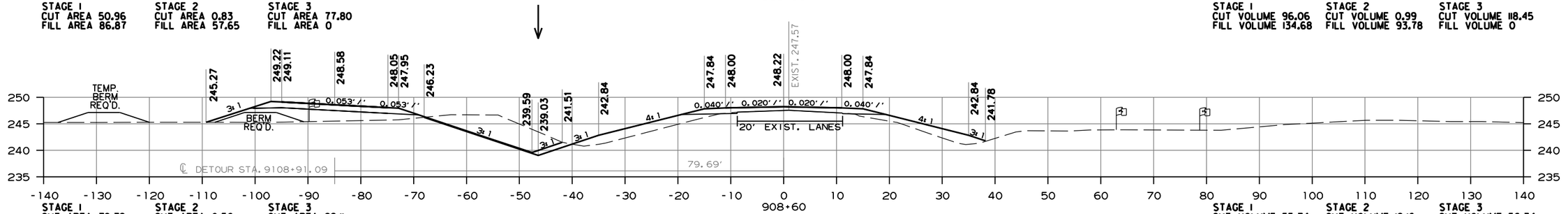
STAGE 1 CUT AREA 0 FILL AREA 88.62 | **STAGE 2** CUT AREA 0.21 FILL AREA 42.94 | **STAGE 3** CUT AREA 78.41 FILL AREA 1.17

STAGE 1 CUT VOLUME 94.37 FILL VOLUME 326.83 | **STAGE 2** CUT VOLUME 1.93 FILL VOLUME 186.28 | **STAGE 3** CUT VOLUME 289.28 FILL VOLUME 2.17



STAGE 1 CUT AREA 50.96 FILL AREA 86.87 | **STAGE 2** CUT AREA 0.83 FILL AREA 57.65 | **STAGE 3** CUT AREA 77.80 FILL AREA 0

STAGE 1 CUT VOLUME 96.06 FILL VOLUME 134.68 | **STAGE 2** CUT VOLUME 0.99 FILL VOLUME 93.78 | **STAGE 3** CUT VOLUME 118.45 FILL VOLUME 0



STAGE 1 CUT AREA 78.72 FILL AREA 94.95 | **STAGE 2** CUT AREA 0.50 FILL AREA 68.95 | **STAGE 3** CUT AREA 82.11 FILL AREA 0

STAGE 1 CUT VOLUME 55.74 FILL VOLUME 64.09 | **STAGE 2** CUT VOLUME 12.16 FILL VOLUME 38.65 | **STAGE 3** CUT VOLUME 56.34 FILL VOLUME 0.08

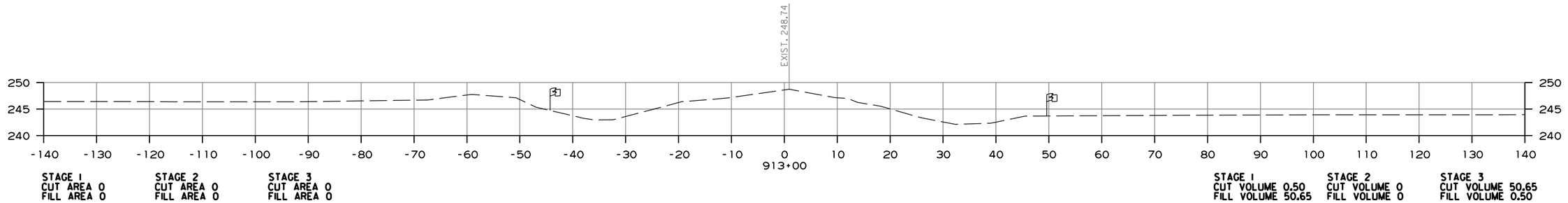
CROSS SECTION STA. 908+60 TO STA. 910+30

8/15/2022

R100869_Site9.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.		101054	303	311

(2) CROSS SECTIONS - SITE 9



STAGE 1
CUT AREA 0
FILL AREA 0

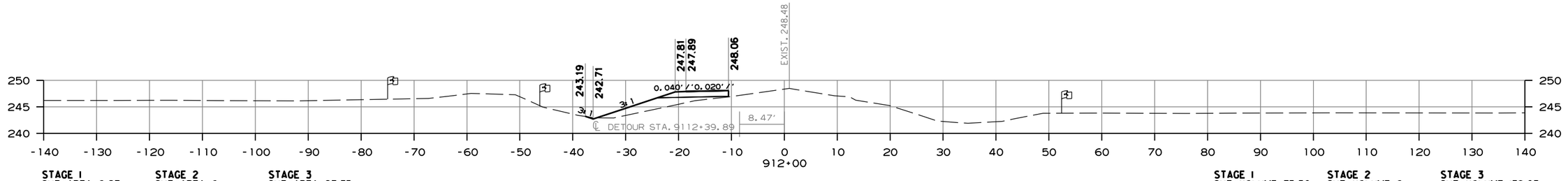
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 0
FILL AREA 0

STAGE 1
CUT VOLUME 0.50
FILL VOLUME 50.65

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 50.65
FILL VOLUME 0.50



STAGE 1
CUT AREA 0.27
FILL AREA 27.35

STAGE 2
CUT AREA 0
FILL AREA 0

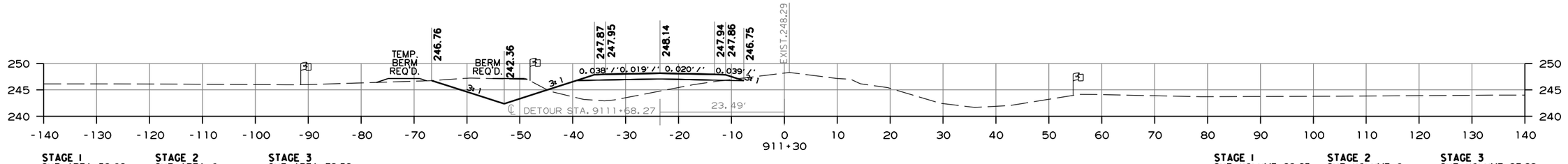
STAGE 3
CUT AREA 27.35
FILL AREA 0.27

STAGE 1
CUT VOLUME 75.56
FILL VOLUME 138.63

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 138.63
FILL VOLUME 76.29

STA. 911+30.00
BEGIN 100' TRANSITION



STAGE 1
CUT AREA 58.02
FILL AREA 79.59

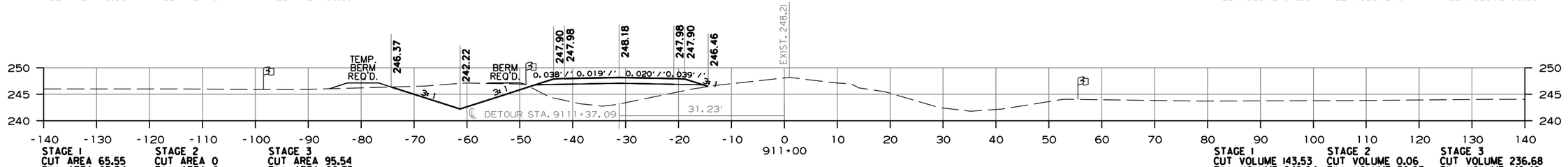
STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 79.59
FILL AREA 58.58

STAGE 1
CUT VOLUME 68.65
FILL VOLUME 97.29

STAGE 2
CUT VOLUME 0
FILL VOLUME 0

STAGE 3
CUT VOLUME 97.29
FILL VOLUME 69.63



STAGE 1
CUT AREA 65.55
FILL AREA 95.54

STAGE 2
CUT AREA 0
FILL AREA 0

STAGE 3
CUT AREA 95.54
FILL AREA 66.75

STAGE 1
CUT VOLUME 143.53
FILL VOLUME 249.04

STAGE 2
CUT VOLUME 0.06
FILL VOLUME 52.97

STAGE 3
CUT VOLUME 236.68
FILL VOLUME 148.46

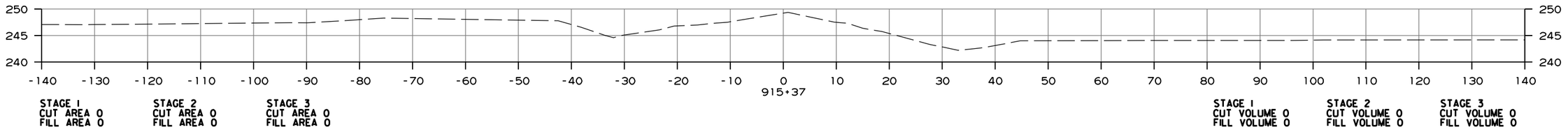
CROSS SECTION STA. 911+00 TO STA. 913+00

8/15/2022

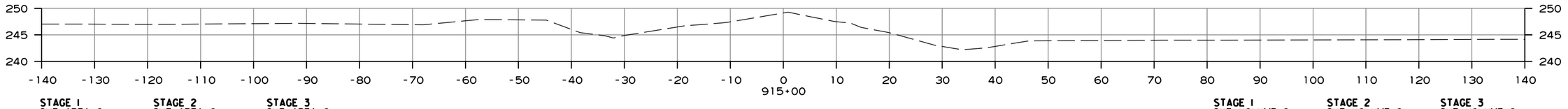
R100869_Site9.dgn

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.		101054	304	311

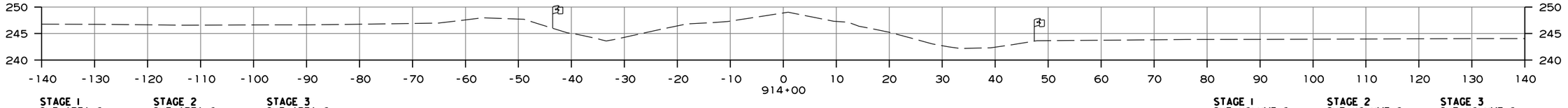
(2) CROSS SECTIONS - SITE 9



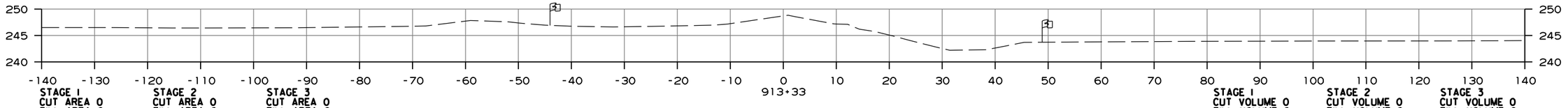
STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0
STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0
STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0
STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0



STAGE 1 CUT AREA 0 FILL AREA 0
STAGE 2 CUT AREA 0 FILL AREA 0
STAGE 3 CUT AREA 0 FILL AREA 0
STAGE 1 CUT VOLUME 0 FILL VOLUME 0
STAGE 2 CUT VOLUME 0 FILL VOLUME 0
STAGE 3 CUT VOLUME 0 FILL VOLUME 0

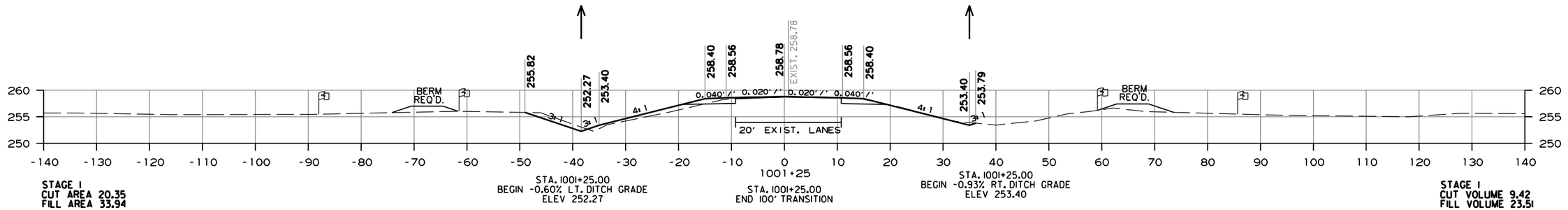
CROSS SECTION STA. 913+33 TO STA. 915+37

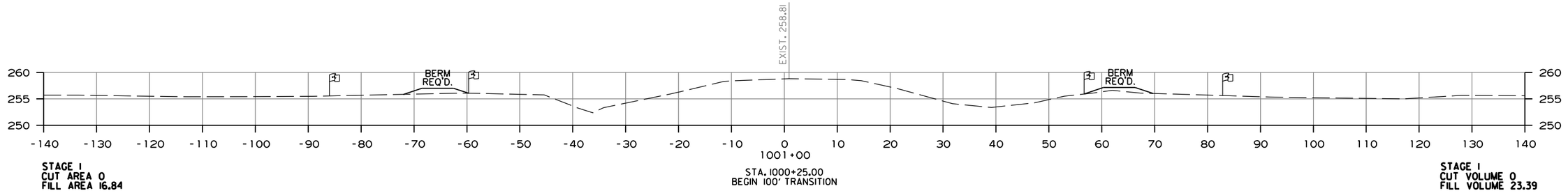
8/15/2022

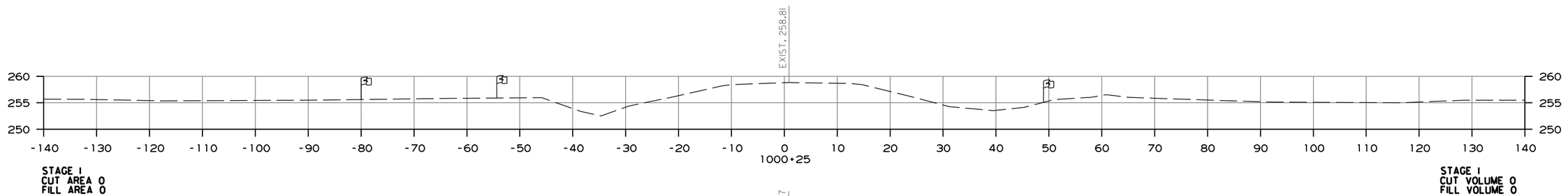
R100869_Site9.dgn

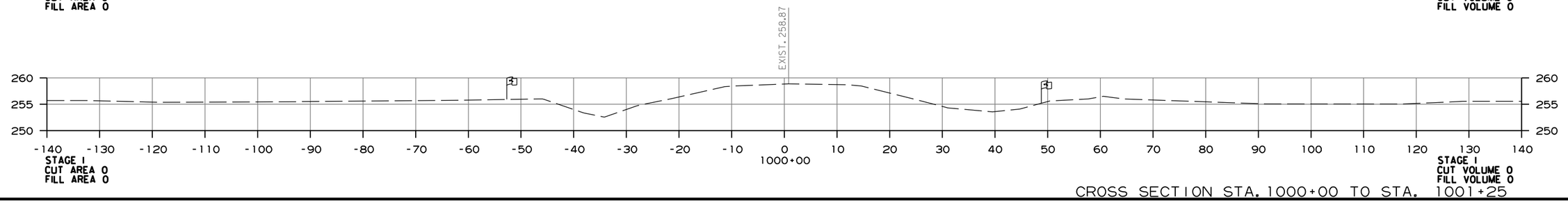
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	305	311

(2) CROSS SECTIONS - SITE 10









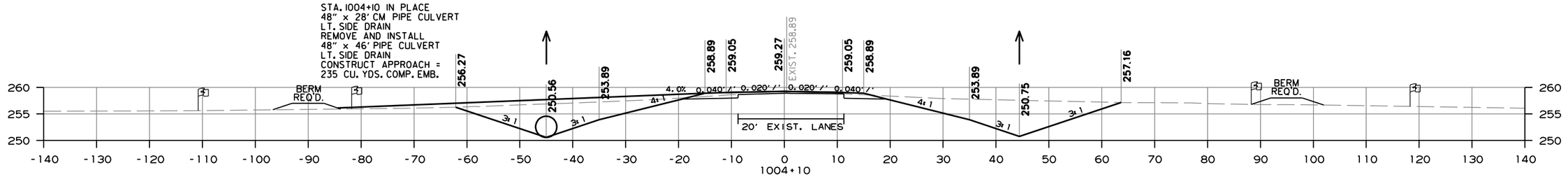
CROSS SECTION STA. 1000+00 TO STA. 1001+25

8/15/2022

R100869_Site10.dgn

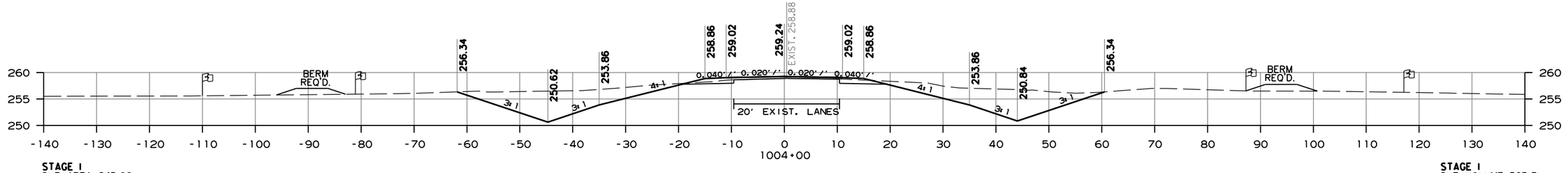
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	306	311

(2) CROSS SECTIONS - SITE 10



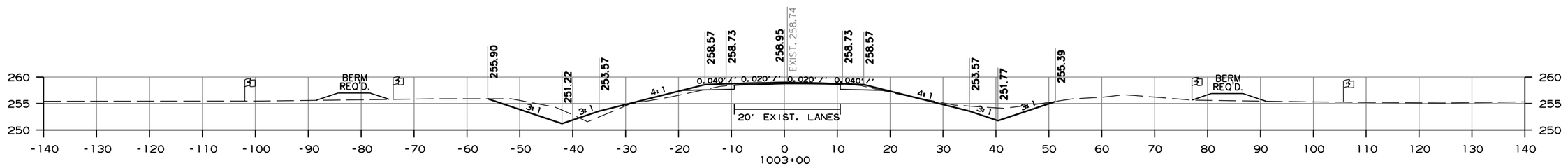
STAGE I
CUT AREA 290.87
FILL AREA 23.36

STAGE I
CUT VOLUME 99.24
FILL VOLUME 8.69



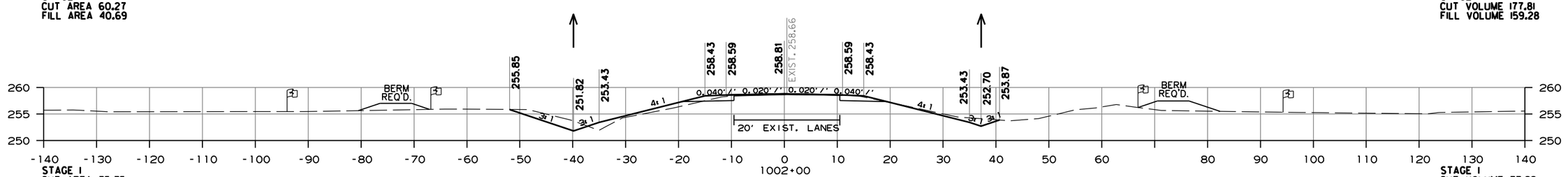
STAGE I
CUT AREA 245.00
FILL AREA 23.58

STAGE I
CUT VOLUME 565.31
FILL VOLUME 119.02



STAGE I
CUT AREA 60.27
FILL AREA 40.69

STAGE I
CUT VOLUME 177.81
FILL VOLUME 159.28



STAGE I
CUT AREA 35.75
FILL AREA 45.32

STAGE I
CUT VOLUME 77.92
FILL VOLUME 110.08

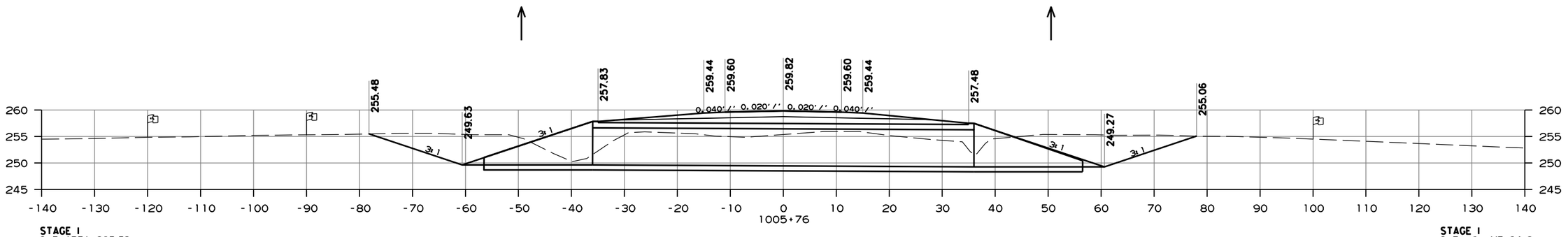
CROSS SECTION STA. 1002+00 TO STA. 1004+10

8/15/2022

R100869_Site10.dgn

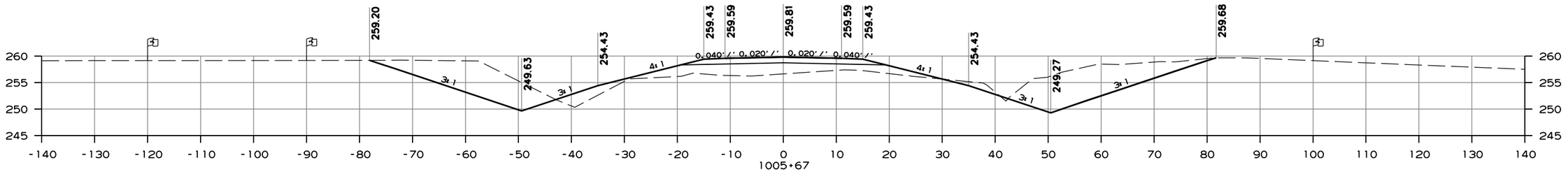
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	307	311

(2) CROSS SECTIONS - SITE 10



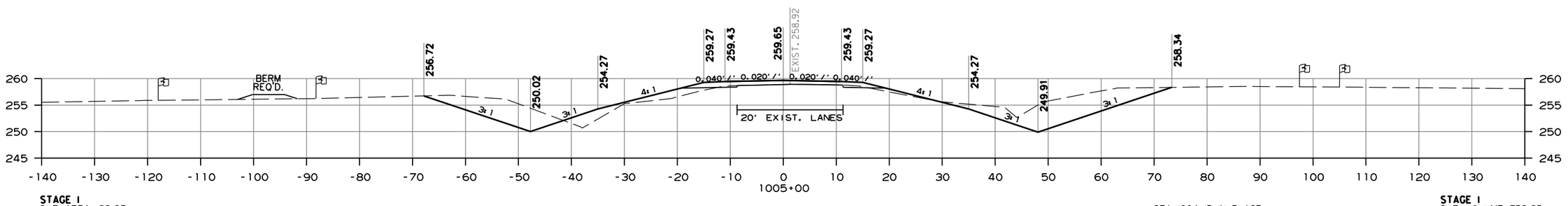
STAGE I
CUT AREA 203.39
FILL AREA 301.72

STAGE I
CUT VOLUME 84.18
FILL VOLUME 68.71



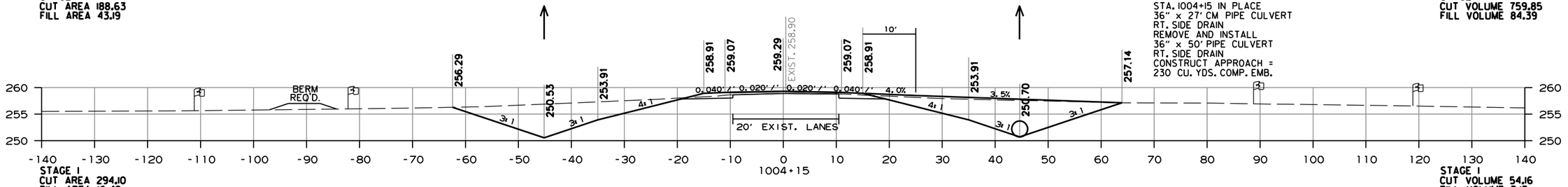
STAGE I
CUT AREA 301.71
FILL AREA 110.52

STAGE I
CUT VOLUME 608.38
FILL VOLUME 190.71



STAGE I
CUT AREA 188.63
FILL AREA 43.19

STAGE I
CUT VOLUME 759.85
FILL VOLUME 84.39



STAGE I
CUT AREA 294.10
FILL AREA 10.42

STA. 1004+15 IN PLACE
36" x 27' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
36" x 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
230 CU. YDS. COMP. EMB.

STAGE I
CUT VOLUME 54.16
FILL VOLUME 3.13

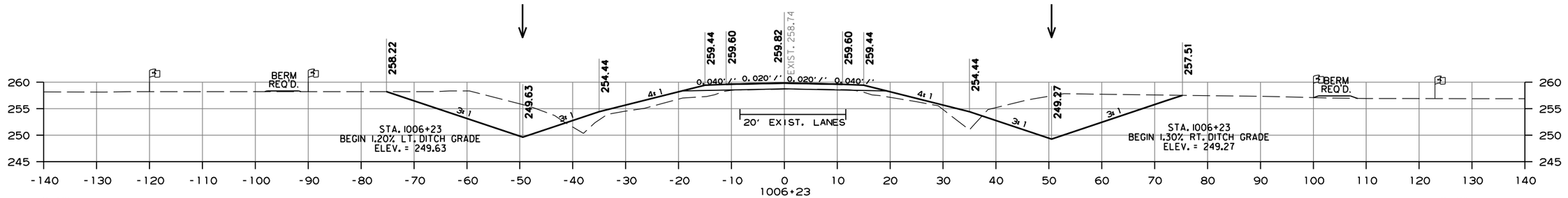
CROSS SECTION STA. 1004+15 TO STA. 1005+76

8/15/2022

R100869_Site10.dgn

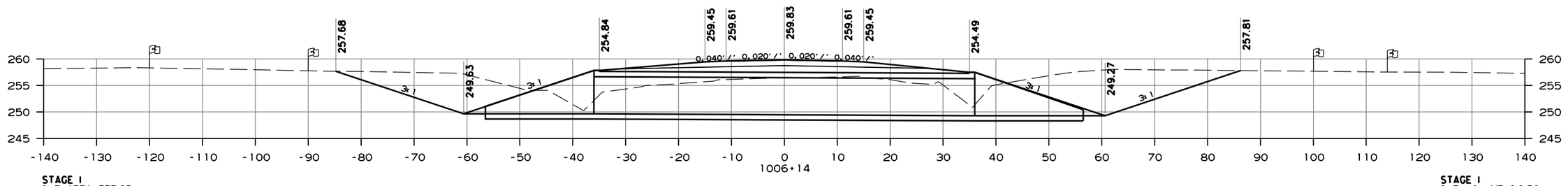
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	308	311

(2) CROSS SECTIONS - SITE 10



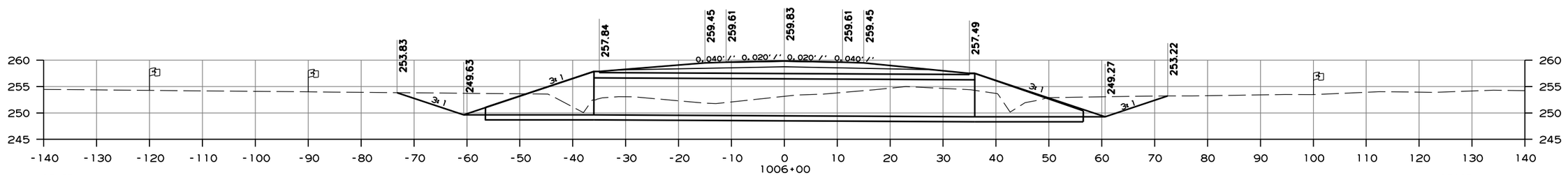
STAGE I
CUT AREA 293.70
FILL AREA 71.47

STAGE I
CUT VOLUME 105.27
FILL VOLUME 55.38



STAGE I
CUT AREA 337.93
FILL AREA 260.78

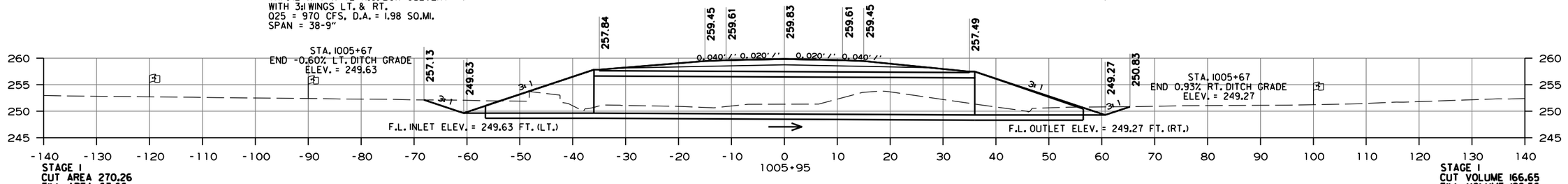
STAGE I
CUT VOLUME 216.50
FILL VOLUME 84.13



STAGE I
CUT AREA 497.16
FILL AREA 63.71

STAGE I
CUT VOLUME 71.06
FILL VOLUME 11.79

STA. 1005+95.00 - CONSTRUCT
TRP. 12' x 7' x 72' R.C. BOX CULVERT
WITH 3:1 WINGS LT. & RT.
Q25 = 970 CFS, D.A. = 1.98 SQ.MI.
SPAN = 38-9"



STAGE I
CUT AREA 270.26
FILL AREA 63.66

STAGE I
CUT VOLUME 166.65
FILL VOLUME 128.56

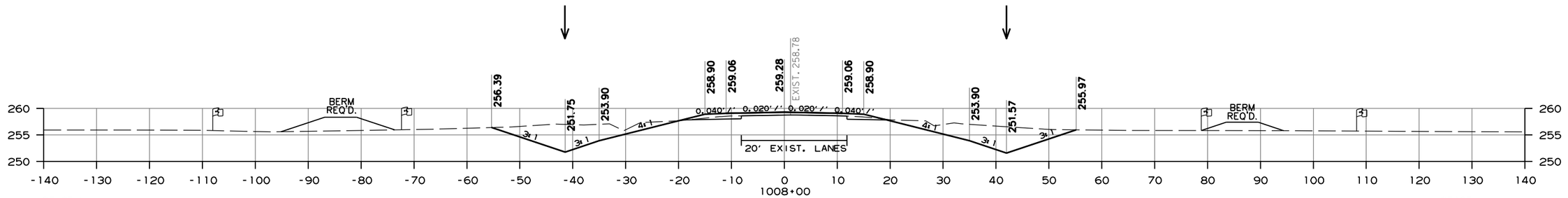
CROSS SECTION STA. 1005+95 TO STA. 1006+23

8/15/2022

R100869_Site10.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.		101054	309	311

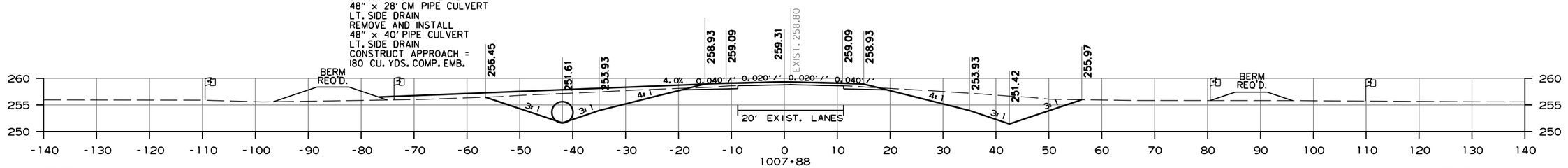
(2) CROSS SECTIONS - SITE 10



STAGE I
CUT AREA 173.24
FILL AREA 52.86

STAGE I
CUT VOLUME 83.90
FILL VOLUME 23.53

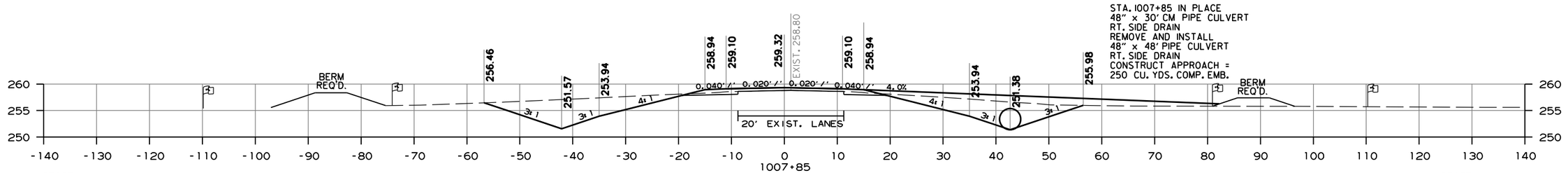
STA. 1007+88 IN PLACE
48" x 28' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
48" x 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH =
180 CU. YDS. COMP. EMB.



STAGE I
CUT AREA 204.31
FILL AREA 53.04

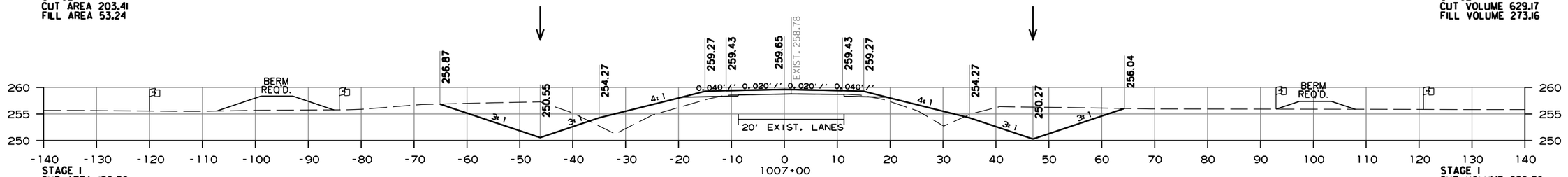
STAGE I
CUT VOLUME 22.65
FILL VOLUME 5.90

STA. 1007+85 IN PLACE
48" x 30' CM PIPE CULVERT
RT. SIDE DRAIN
REMOVE AND INSTALL
48" x 48' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH =
250 CU. YDS. COMP. EMB.



STAGE I
CUT AREA 203.41
FILL AREA 53.24

STAGE I
CUT VOLUME 629.17
FILL VOLUME 273.16



STAGE I
CUT AREA 196.30
FILL AREA 120.30

STAGE I
CUT VOLUME 698.70
FILL VOLUME 273.45

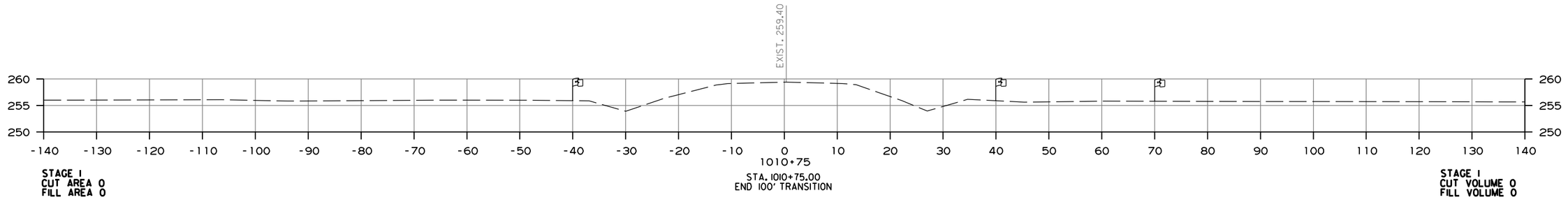
CROSS SECTION STA. 1007+00 TO STA. 1008+00

8/15/2022

R100869_Site10.dgn

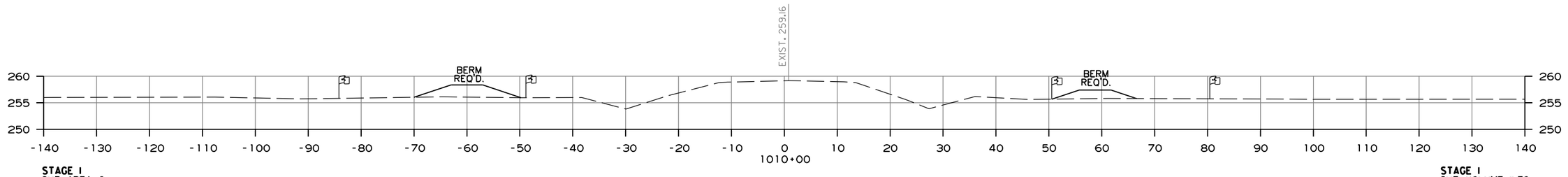
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101054	310	311

(2) CROSS SECTIONS - SITE 10



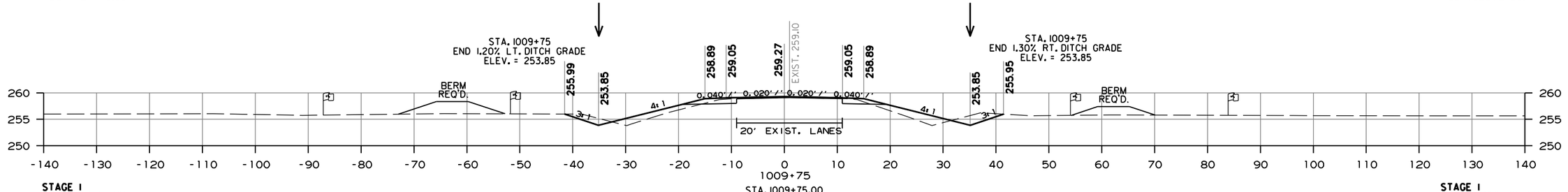
STAGE I
CUT AREA 0
FILL AREA 0

STAGE I
CUT VOLUME 0
FILL VOLUME 0



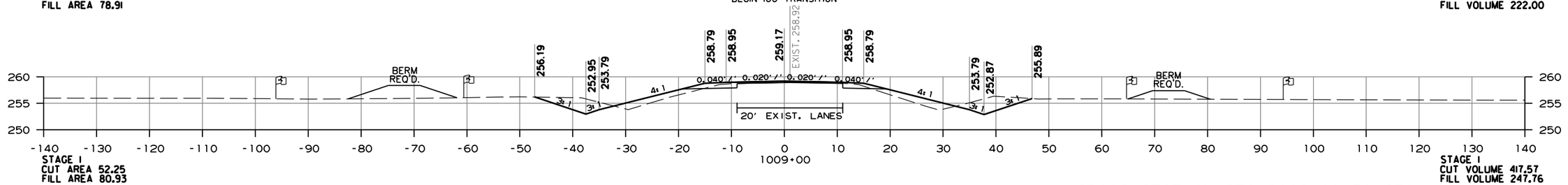
STAGE I
CUT AREA 0
FILL AREA 48.03

STAGE I
CUT VOLUME 11.70
FILL VOLUME 58.77



STAGE I
CUT AREA 25.28
FILL AREA 78.91

STAGE I
CUT VOLUME 107.68
FILL VOLUME 222.00



STAGE I
CUT AREA 52.25
FILL AREA 80.93

STAGE I
CUT VOLUME 417.57
FILL VOLUME 247.76

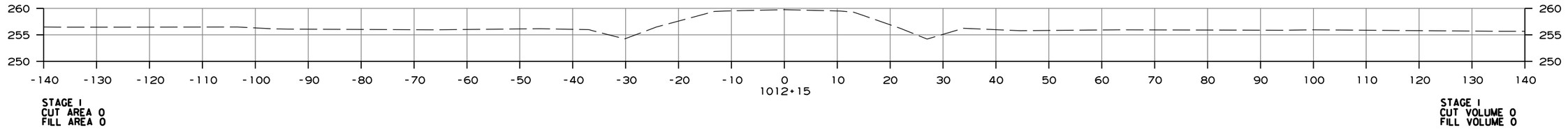
CROSS SECTION STA. 1009+00 TO STA. 1010+75

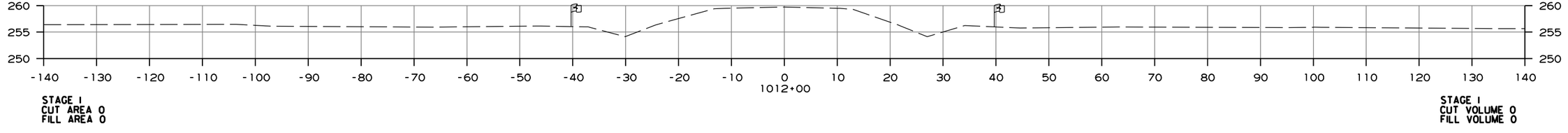
8/15/2022

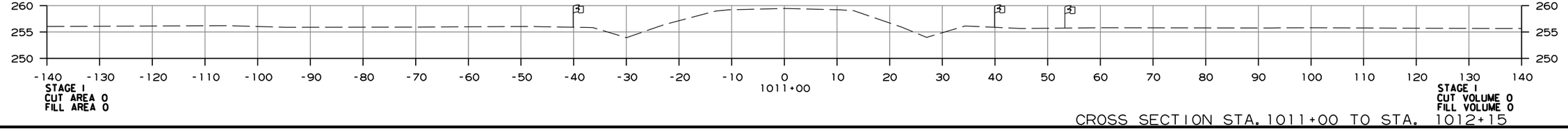
R100869_Site10.dgn

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.		101054	311	311

(2) CROSS SECTIONS - SITE 10





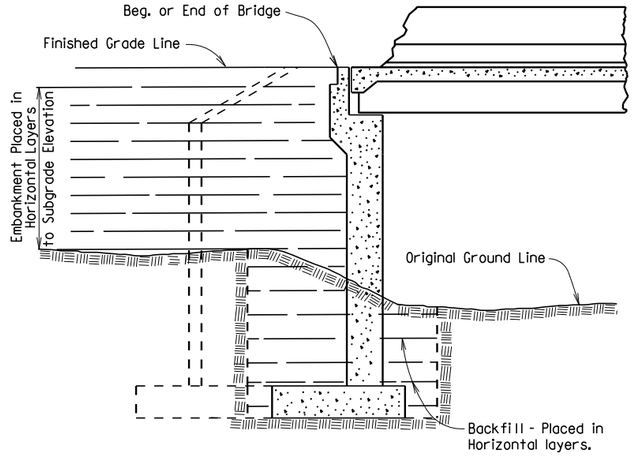


CROSS SECTION STA. 1011+00 TO STA. 1012+15

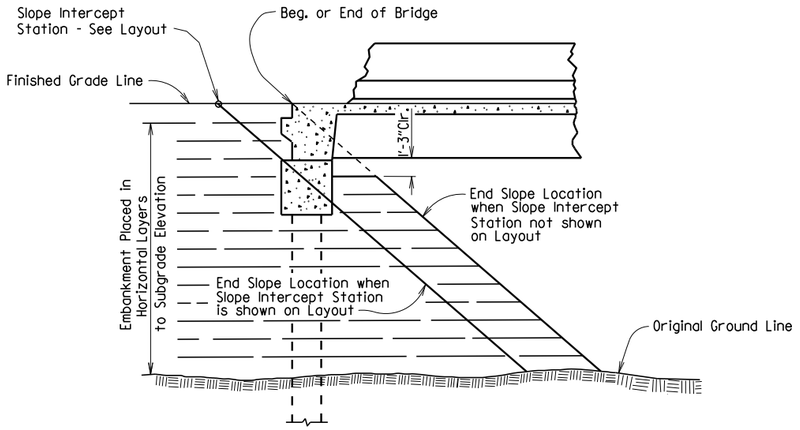
8/15/2022

R100869_Site10.dgn

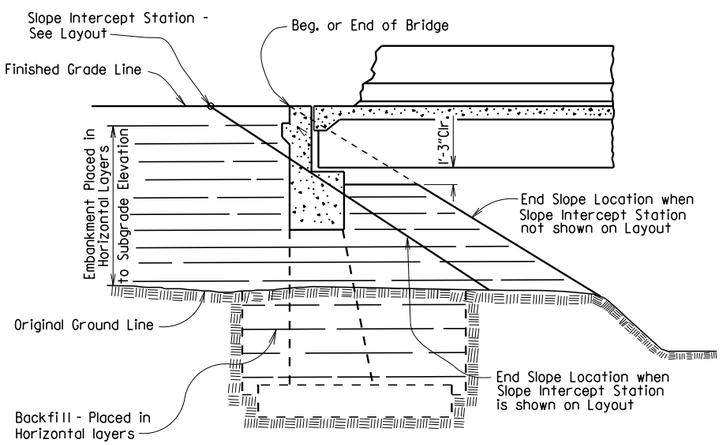
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				(1) EMBANKMENT & BACKFILL 55000				



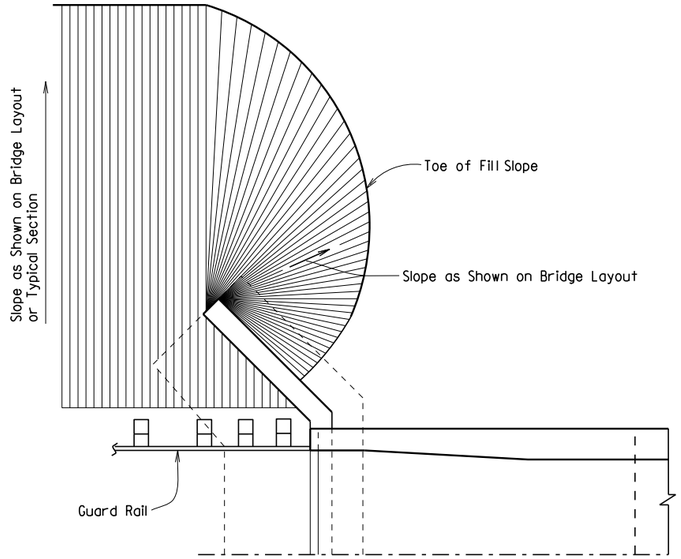
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



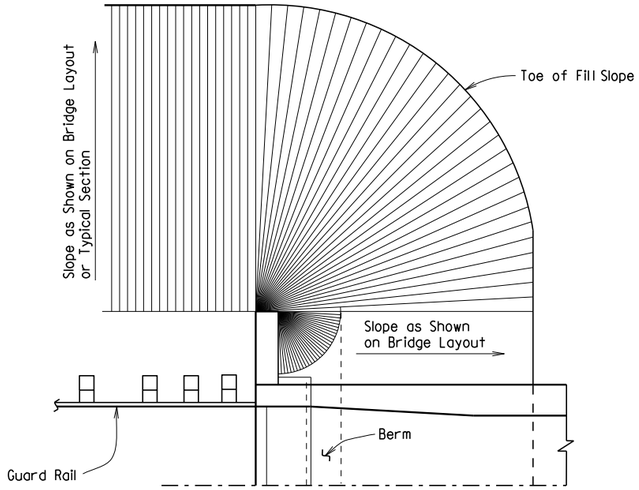
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



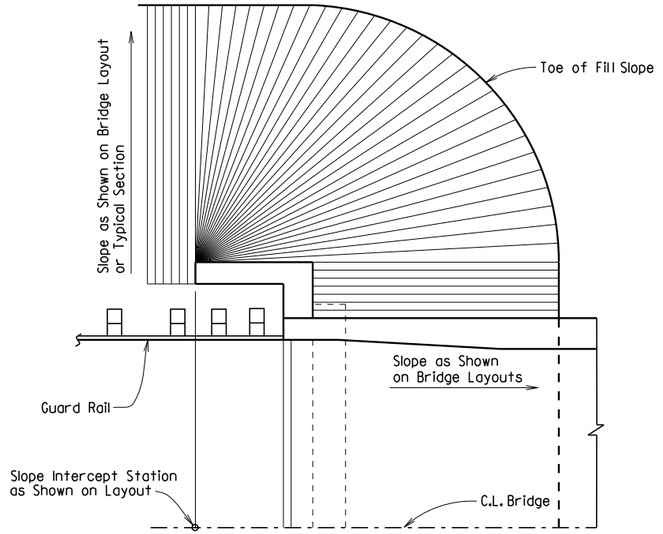
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



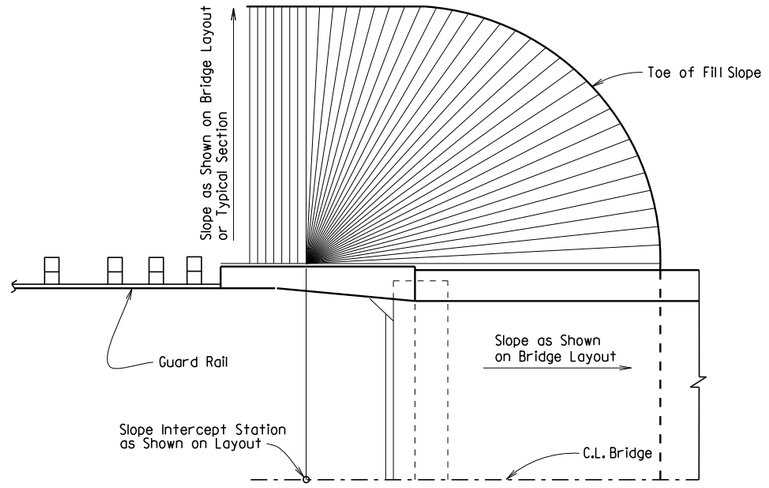
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

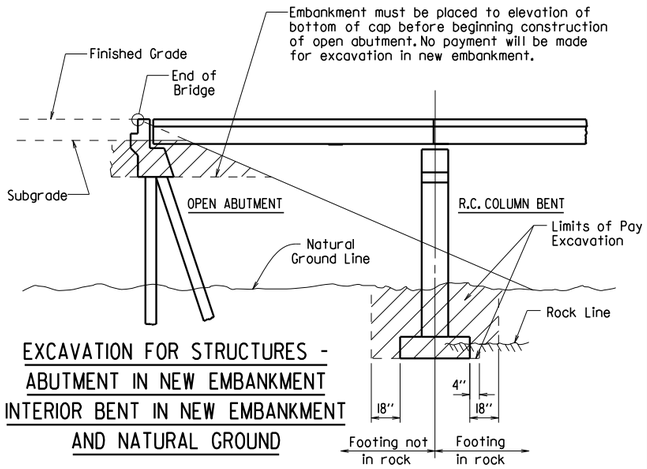
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

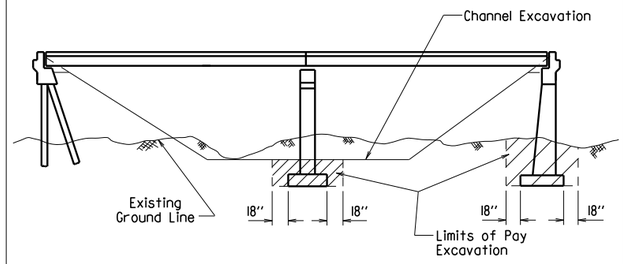
DRAWING NO. 55000

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

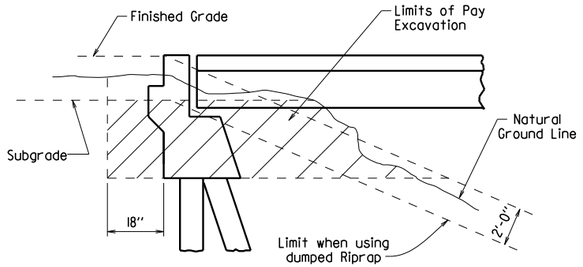
(1) RIPRAP & EXCAV. 55001



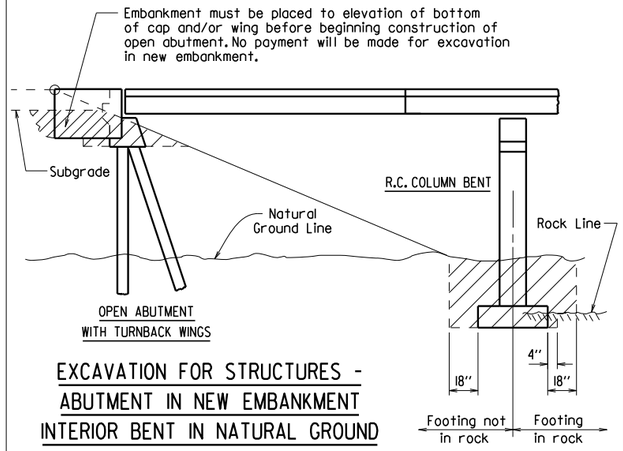
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



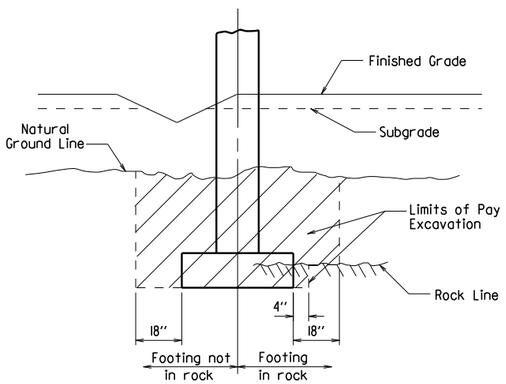
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



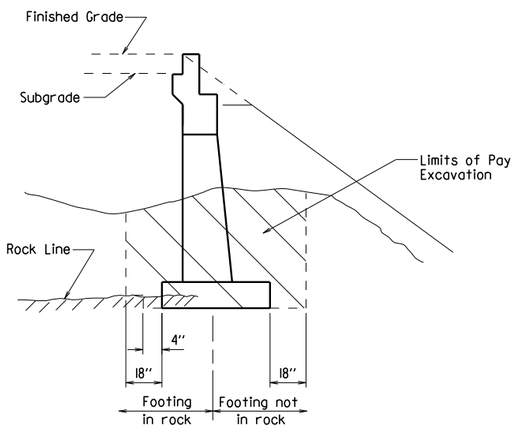
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



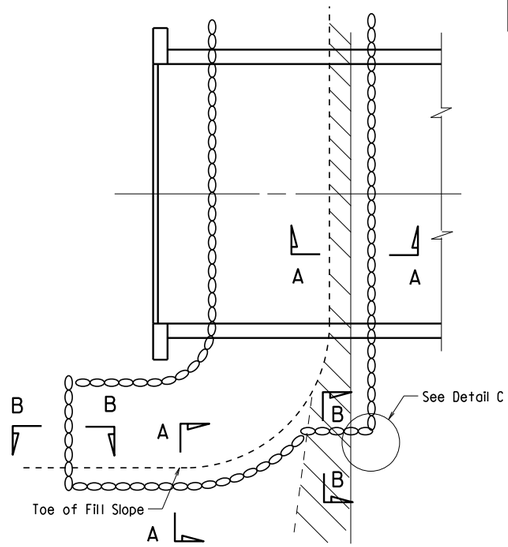
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



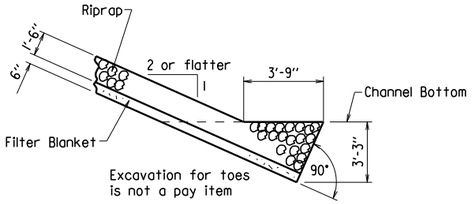
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

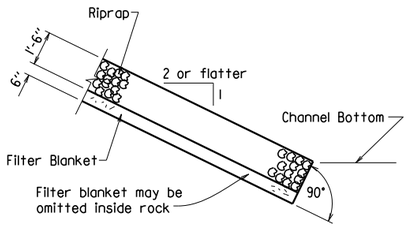


PLAN OF DUMPED RIPRAP



SECTION A-A

(Toe Excavation in Soil)



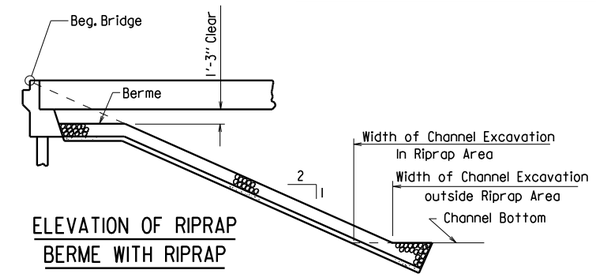
SECTION A-A

(Toe Excavation in Rock)

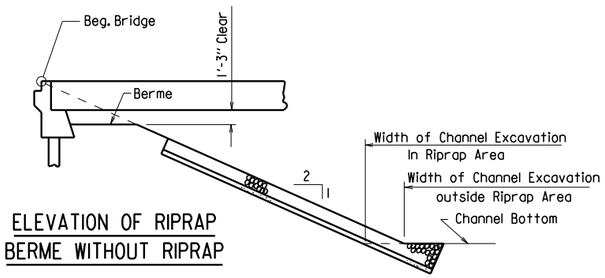
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

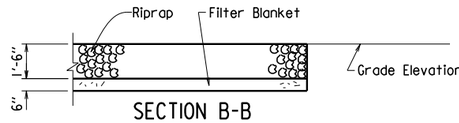
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



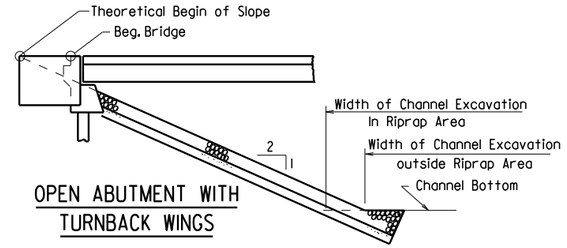
ELEVATION OF RIPRAP BERME WITH RIPRAP



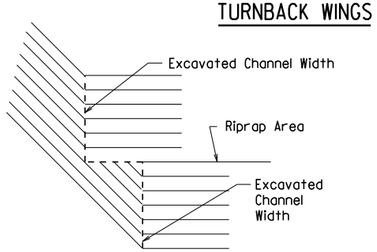
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

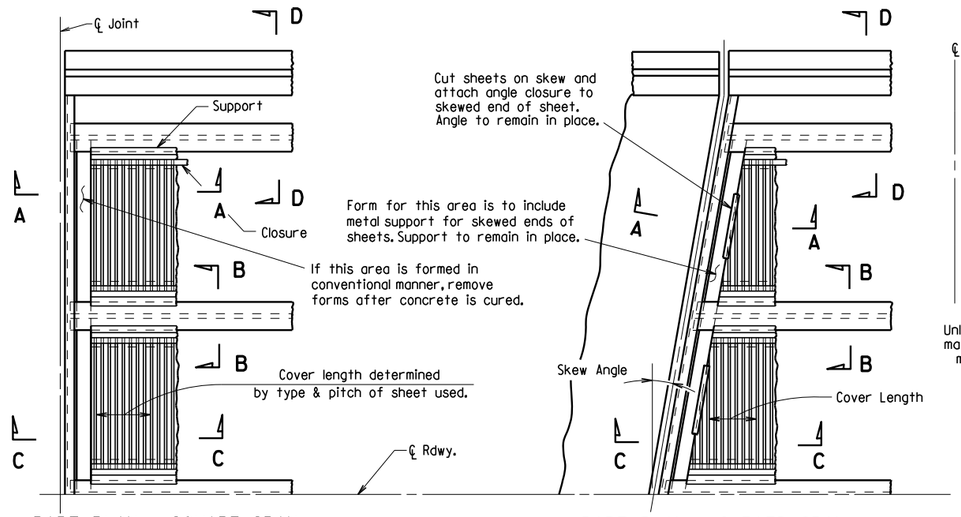
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				①	BRIDGE DECK FORMS		55005	

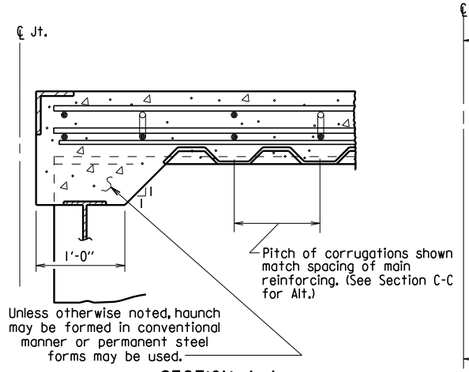


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

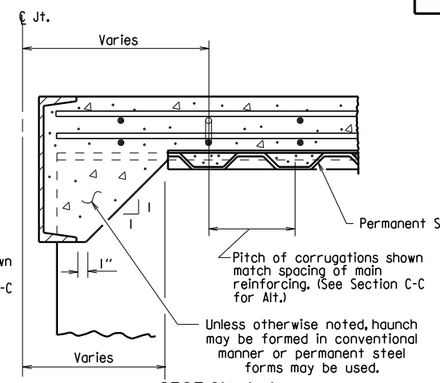
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



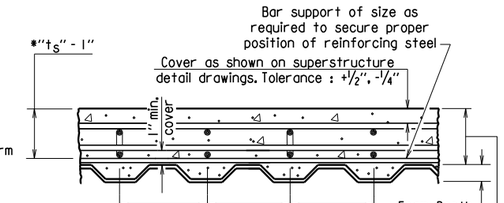
SECTION A-A

N.T.S.
(Angle at end of span)



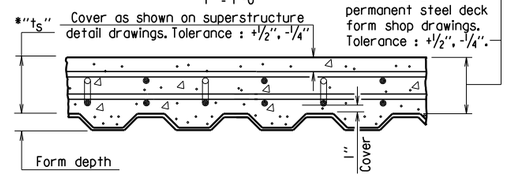
SECTION A-A

N.T.S.
(Channel at end of span)



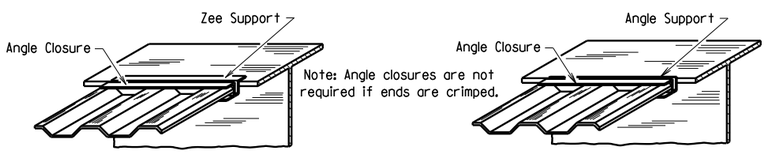
SECTION C-C

1" = 1'-0"



SECTION C-C - ALTERNATE

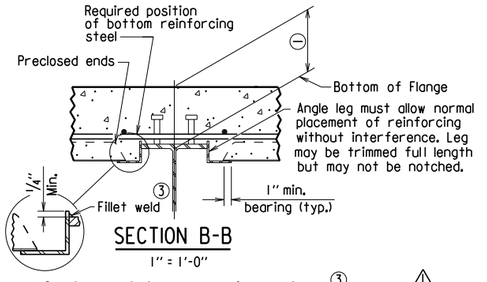
1" = 1'-0"
(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

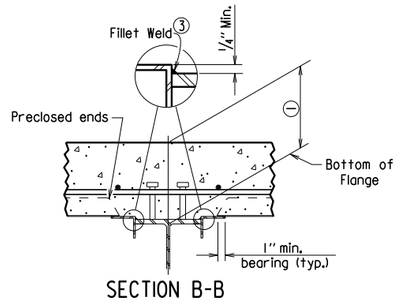
*t_s = slab thickness as shown on superstructure detail drawings.



SECTION B-B

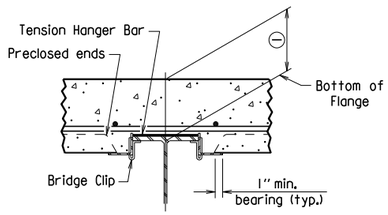
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



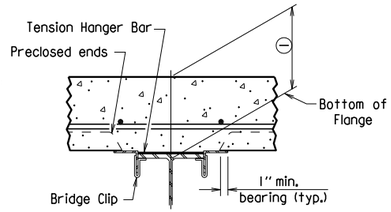
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



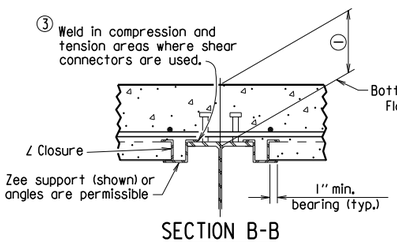
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



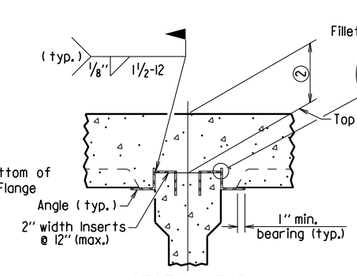
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



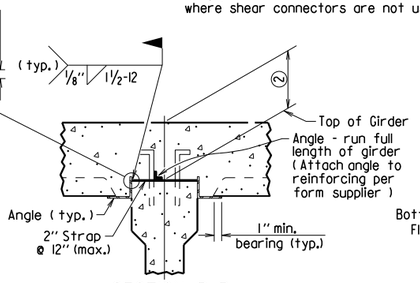
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



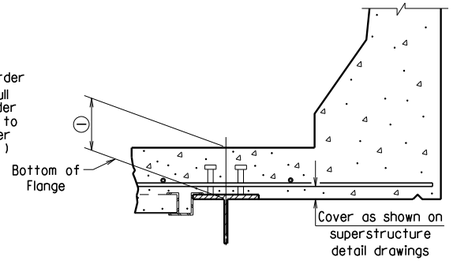
SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Insert cast in girder)



SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Strap)



SECTION D-D

1" = 1'-0"
Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 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 weld dimension by KWY, Ck'd. by BEF, 3/24/16.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

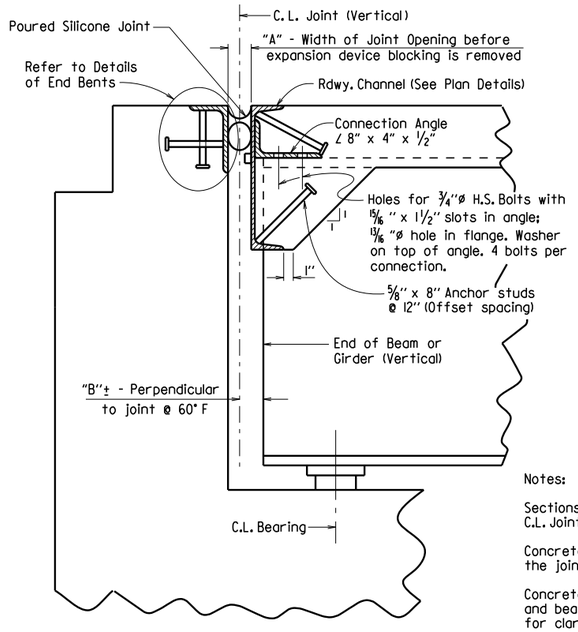
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	POURED SILICONE JOINT			55008



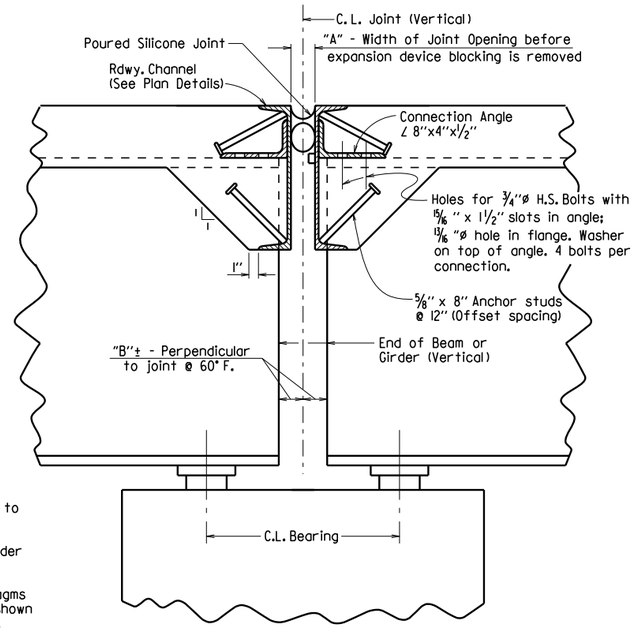
SECTION THRU JOINT AT END BENT

Notes:

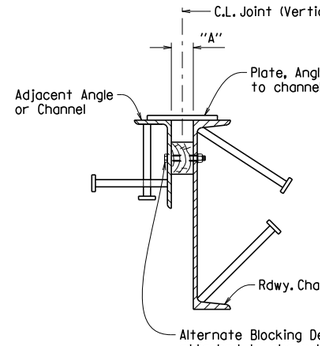
Sections are taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragms, steel diaphragms and bearing stiffeners are not shown for clarity. See plans for details.



SECTION THRU JOINT AT INTERMEDIATE 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:

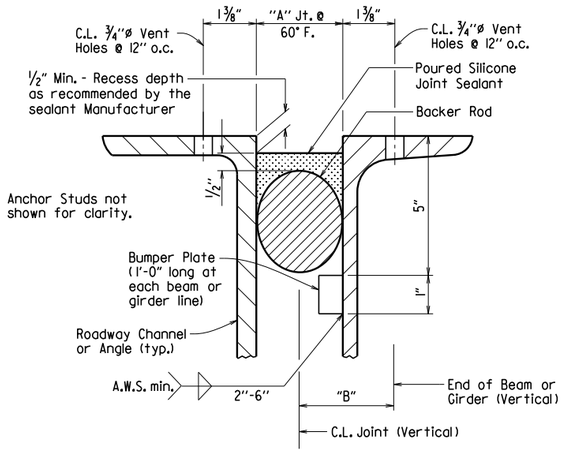
1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams or girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders 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.



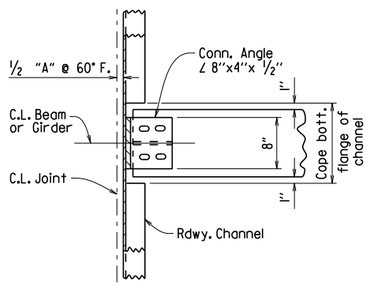
DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. 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.

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. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

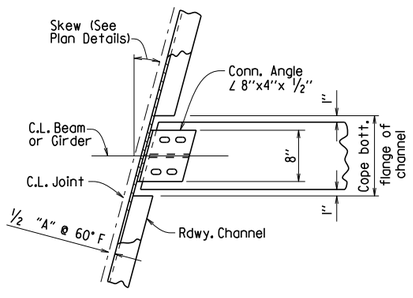
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

When bridge deck is constructed in stages, backer rods shall be extended beyond length of poured joint in initial construction stage so that the two pieces can be properly spliced together prior to installing sealant in subsequent stages. Manufacturer's recommendations shall be followed to prevent sealant from "running out of joint" during stage construction.



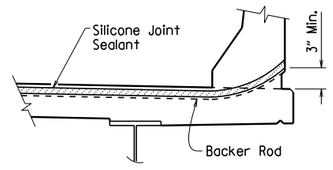
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW

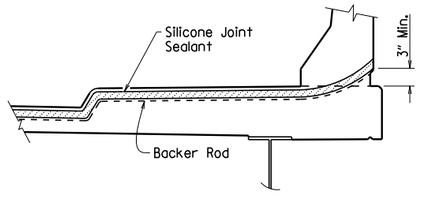


CHANNEL CONNECTION DETAIL

BENTS WITH SKEW



JOINT SEAL PLACEMENT AT RAIL



JOINT SEAL PLACEMENT AT SIDEWALK

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS. SEE "TABLE OF SILICONE JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A" AND "B", AND BUMPER PLATE SIZE.

STANDARD DETAILS FOR POURED SILICONE JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55008.dgn

CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale

DESIGNED BY: STD. DATE: —

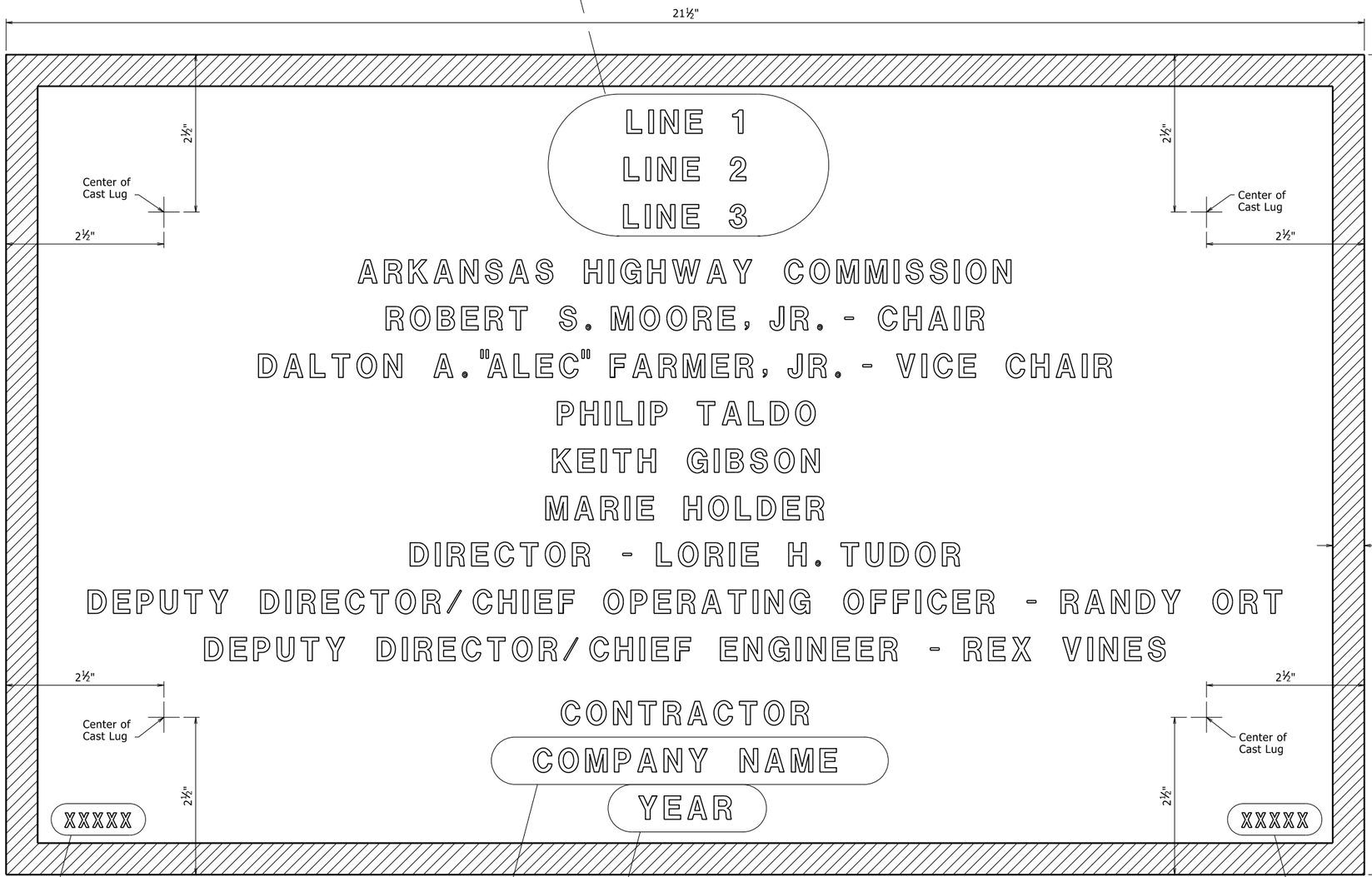
DRAWING NO. 55008

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14		1-15-19		6	ARK.			
1-14-15		3-24-2020						
1-17-17		5-11-2021		JOB NO.				

1 TYPE D NAME PLATE - 55010

The name of the bridge as shown on the plans shall be placed on Lines 1-3 using ⅛" raised letters and numerals ⅜" 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	



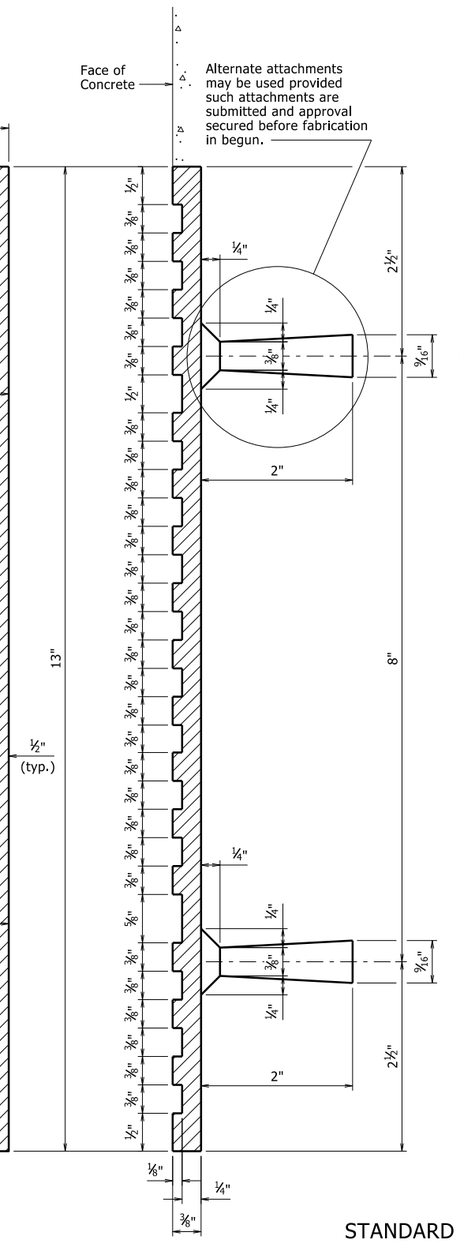
Place the design live loading here using ⅛" raised letters and numerals ¼" high. Examples: HS20, HL-93

Place the Year in which Contract was awarded here using ⅛" raised numerals ⅜" high. Example: 2001

Place the name of the company awarded the construction contract here using ⅛" raised letters and numerals ⅜" high. Example: ABCD CONSTRUCTION, INC.

Place the Bridge number here using ⅛" raised letters and numerals ¼" high. Examples: A1234, 05432

TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be ¼" thick and shall include four tapering cone lugs ⅜" to ⅝" x 2" long. The border and all lettering shall be raised ⅛" 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.

6 Revised Deputy Director/ Chief Engineer
5-11-2021 CGP Checked By: CRE

5 Revised Director, Deputy Director/Chief Operating Officer, Chair, Vice Chair and added New Commissioner
3-24-2020 CGP Checked By: CRE

4 Revised Chair and Vice Chair Added New Commissioner
1-15-19 CGP Checked By: CRE

3 Added New Commissioner
1-17-17 KDH Checked By: CRE

2 Revised Chair and Vice Chair Added New Commissioner
1-14-15 KDH Checked By: CRE

1 Revised Deputy Director/ Chief Engineer Added Deputy Director/ Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR
TYPE D BRIDGE NAME PLATE

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

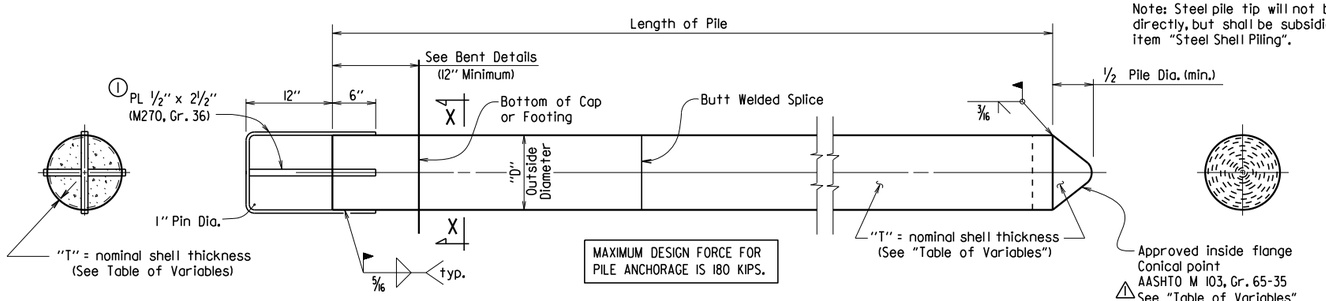
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55010

PRINT DATE: 5/11/2021

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				

(1) STEEL SHELL PILES 55021

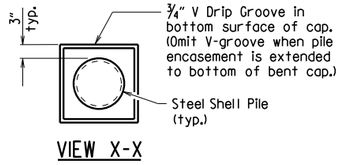


Note: Steel pile tip will not be paid for directly, but shall be subsidiary to the item "Steel Shell Piling".

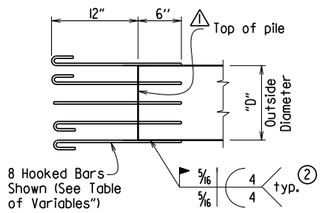
CONCRETE FILLED STEEL SHELL PILE

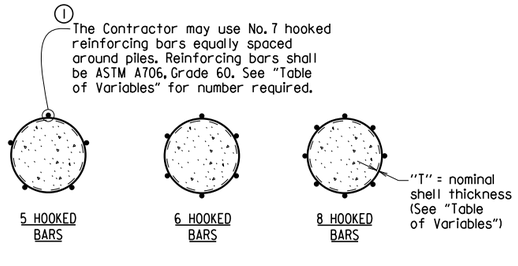
(1) Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.

(2) Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



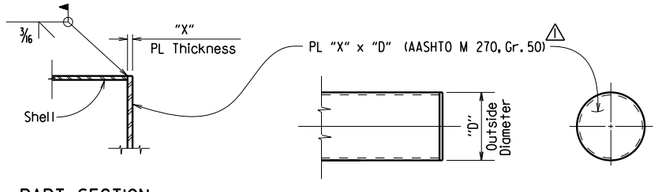
VIEW X-X





ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

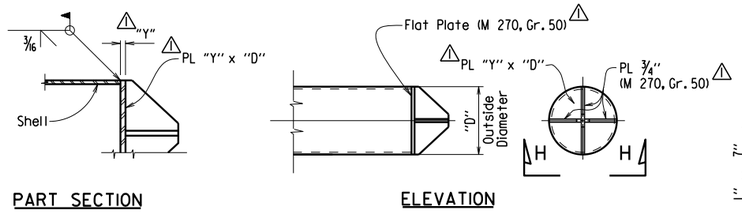


PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL

Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.

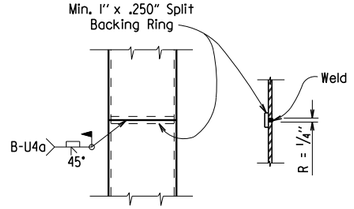


PART SECTION

ELEVATION

VIEW H-H

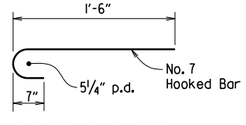
ALTERNATE VANED TIP DETAIL



TYPICAL SPLICE DETAILS

TABLE OF VARIABLES

OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	PLATE THICKNESS "X"	PLATE THICKNESS "Y"	NO. OF HOOKED BARS FOR ALTERNATE PILE ANCHORAGE	MINIMUM CONICAL TIP DESIGN LOAD (KIPS)
14"	0.50"	2 1/4"	1 1/2"	5	859
16"	0.50"	2 1/4"	1 1/2"	5	986
18"	0.50"	2 1/2"	1 1/2"	6	1,114
20"	0.50"	2 1/2"	1 3/4"	6	1,241
24"	0.50"	2 3/4"	1 3/4"	8	1,495



HOOKED BAR DETAIL

GENERAL NOTES FOR CONCRETE FILLED STEEL SHEEL PILES:

Steel shells shall conform ASTM A252, Grade 3 (Fy = 45,000 psi.)

Concrete used for filling of steel shell shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

Steel shell piling that extends above the ground and is not protected by pile encasement shall be painted in accordance with Subsection 805.02.

See Bridge Layout for size and estimated length of steel shell piles and for driving information.

Concrete, structural steel, reinforcing steel (including welding), and painting shall not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling".

⚠ Revised and added various details by KWY, Ck'd. by BEF, 3/24/16.

GENERAL NOTES FOR PILE ENCASEMENTS:

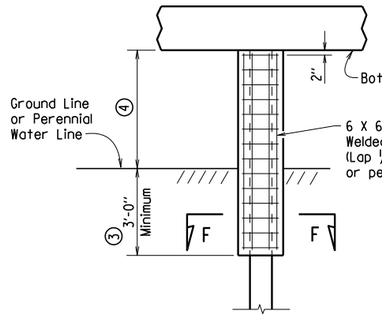
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

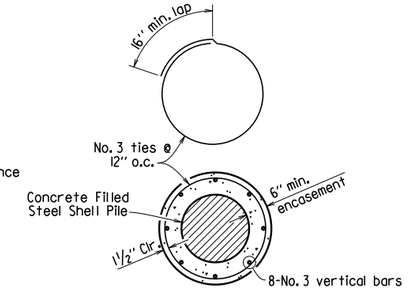
Concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

Welded wire fabric shall conform to AASHTO M 55 or M 221.

Concrete, welded wire fabric or reinforcing steel, and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".





SECTION F-F (REINF. ALTERNATE)

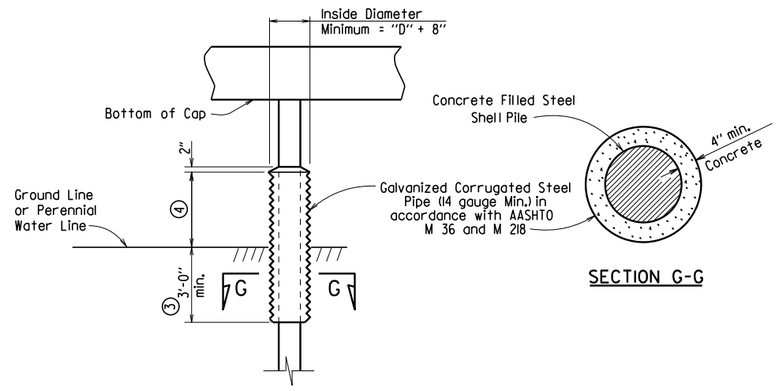
PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(5) (Shown with Encasement to Bottom of Cap)

(3) Unless otherwise noted on Bridge Layout.

(4) See Bridge Layout for height of pile encasement (3'-0" Minimum).

(5) Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Partial Height Encasement)

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

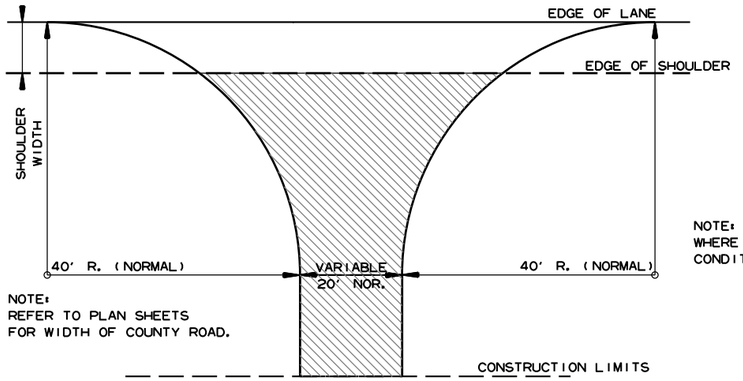
STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	A.M.S.	DATE:	2/27/2014	FILENAME:	b55021.dgn
CHECKED BY:	B.E.F.	DATE:	2/27/2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	—		

DRAWING NO. 55021

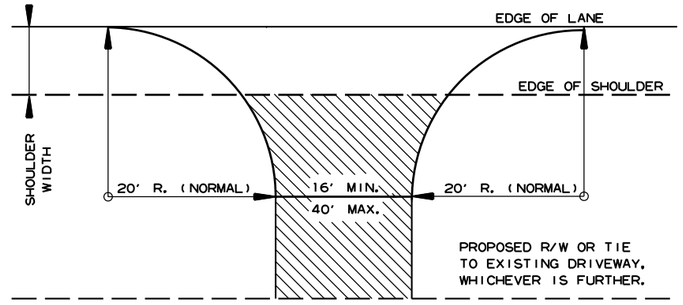


NOTE:
REFER TO PLAN SHEETS
FOR WIDTH OF COUNTY ROAD.

NOTE: TURNOUTS SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH, UNLESS OTHERWISE SPECIFIED IN PLANS.

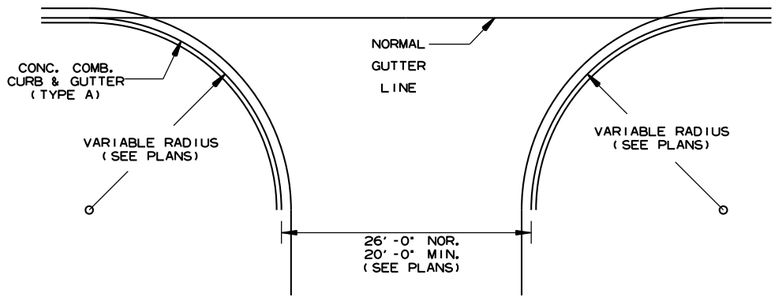
DETAIL FOR COUNTY ROAD TURNOUTS OPEN SHOULDER SECTION



NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

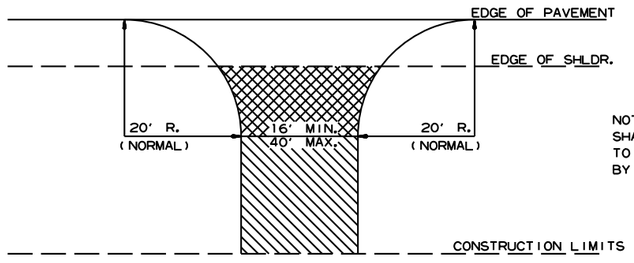
ACHM SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT OR GRAVEL DRIVE EXISTING; OR 6" CONCRETE IF CONCRETE DRIVE EXISTING.

DETAIL FOR DRIVEWAY TURNOUTS OPEN SHOULDER SECTION (ARTERIALS)



NOTE:
PAVEMENT STRUCTURE FOR STATE HIGHWAYS, CITY STREETS, & COUNTY ROADS TO BE SAME AS MAIN LANES.

DETAIL OF TURNOUTS, ASPHALT STREETS, COUNTY ROADS & STATE HIGHWAYS CURB & GUTTER SECTION



NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

ASPHALT CONCRETE HOT MIX SURFACE COURSE (220 LBS. PER SQ. YD.) AGGREGATE BASE COURSE (CLASS 7) 7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR 6" CONCRETE IF CONCRETE DRIVE EXIST.

AGGREGATE BASE COURSE (CLASS 7) 9" COMP. DEPTH OR CONFORM TO EXISTING DRIVEWAY

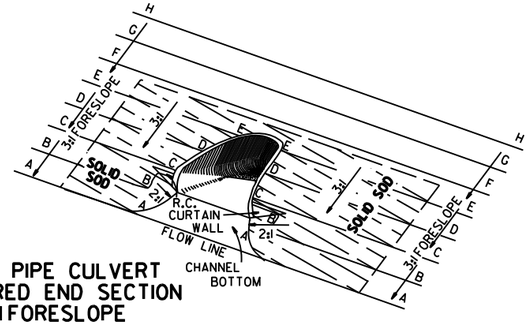
DETAIL FOR DRIVEWAY TURNOUTS (COLLECTORS)

5-19-22		ISSUED
DATE REV	DATE FILMED	DESCRIPTION

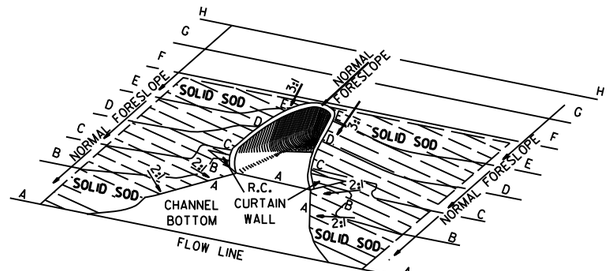
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & STREET TURNOUTS

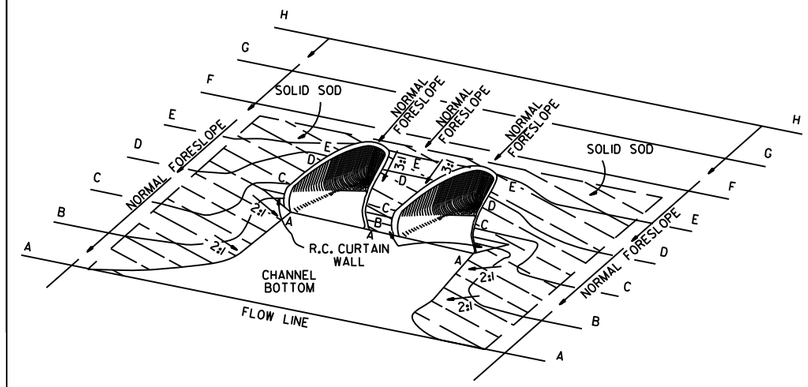
STANDARD DRAWING DR-2



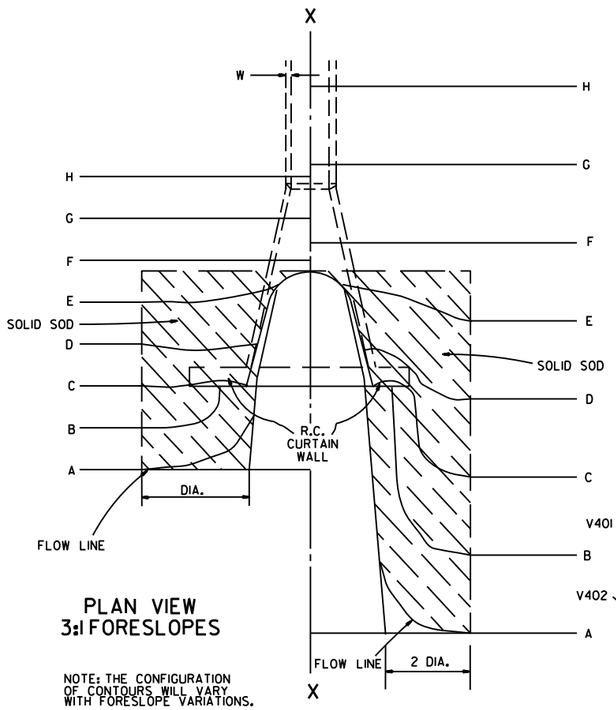
TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& 3:1 FORESLOPE



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT
WITH FLARED END SECTIONS
& FLATTENED ADJACENT SLOPES



PLAN VIEW
3:1 FORESLOPES

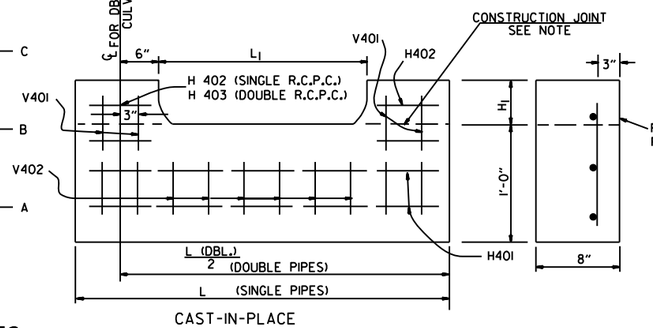
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

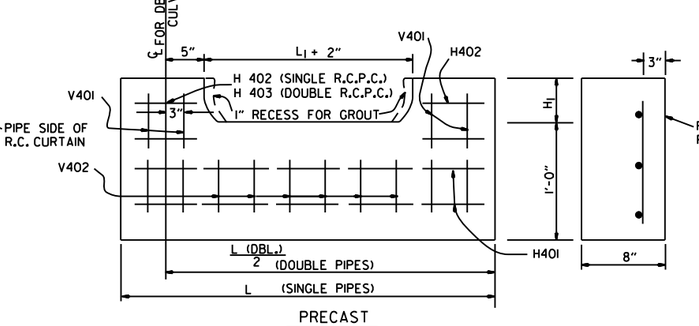
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9½"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

R.C. CURTAIN WALL DETAILS

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								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.

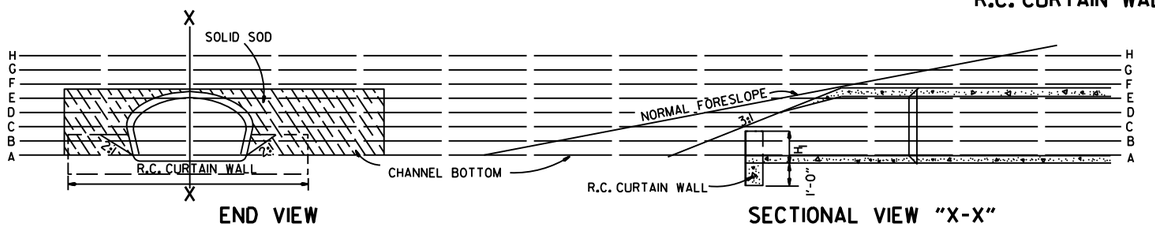
SOLID SODDING

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"	36	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

GENERAL NOTES

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETE: FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

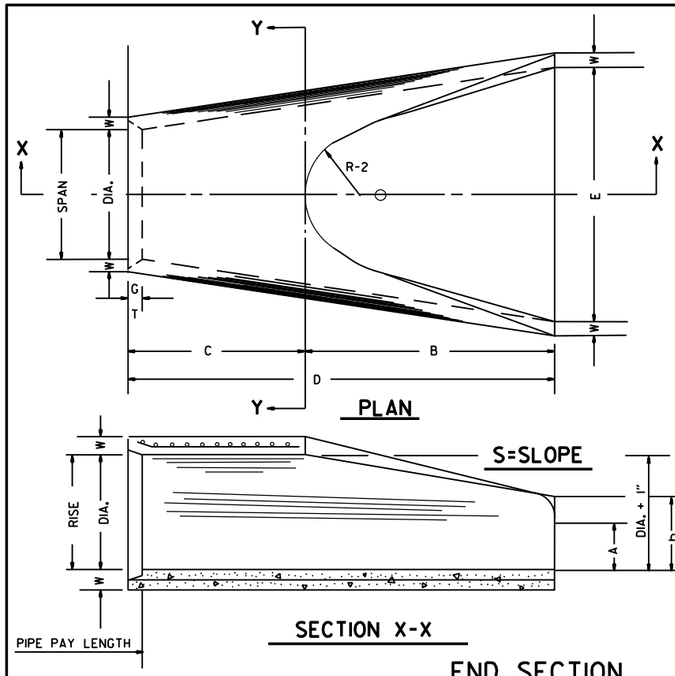
SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	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

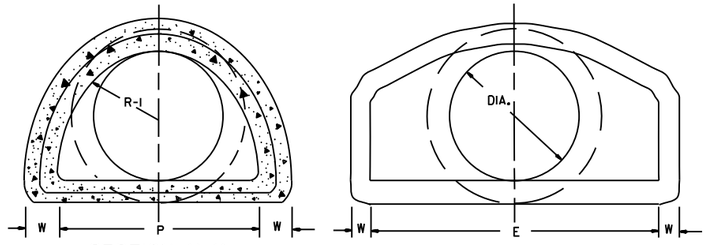
STANDARD DRAWING FES-1



END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS

TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + I"	P	R-I	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3:1	25"	33 3/16"	16 11/16"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3:1	31"	37"	18½"	15"	¾"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3:1	37"	47 13/16"	24 5/16"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53⅜"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72½"	36 11/16"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 13/16"	38 5/16"	24"	5"	13250	4'-6"

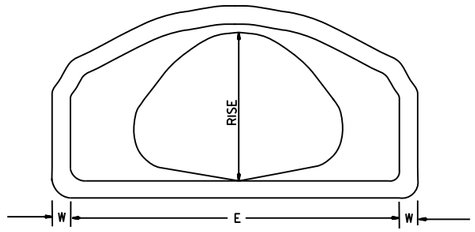


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

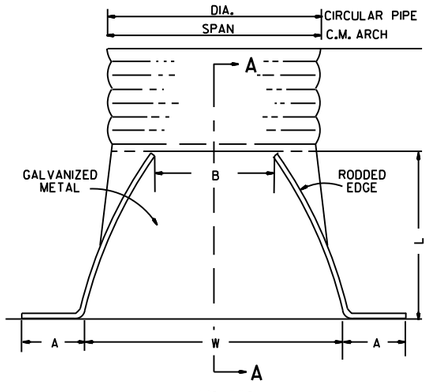
ARCH PIPE

EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½:1
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½:1
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½:1
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 11/16"	15"	2½"	2½:1
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47 13/16"	20"	3"	2½:1
36	43¾	44	26⅝	27	4"	10½"	4'-0"	2'-1½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½:1
42	51⅛	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½:1
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70 5/16"	24"	4¼"	2½:1
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/16"	24"	4¾"	2¼:1
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅛"	24"	5"	2¼:1

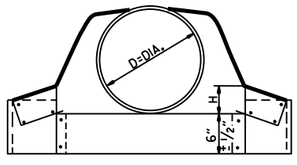
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



END VIEW
CONCRETE ARCH PIPE



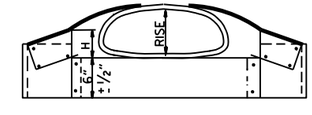
NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.



CIRCULAR PIPE

CIRCULAR PIPE

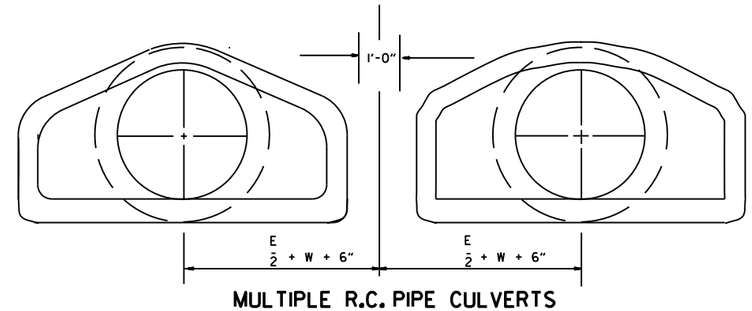
D. DIA.	GAUGE	A I" ±	B. MAX.	H I" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½:1
15	16	7	8	6	26	30	2½:1
18	16	8	10	6	31	36	2½:1
21	16	9	12	6	36	42	2½:1
24	16	10	13	6	41	48	2½:1
30	14	12	16	8	51	60	2½:1
36	14	14	19	9	60	72	2½:1
42	12	16	22	11	69	84	2½:1
48	12	18	27	12	78	90	2½:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1¾:1
66	12	18	36	12	87	120	1½:1
72	12	18	39	12	87	126	1 1/3:1



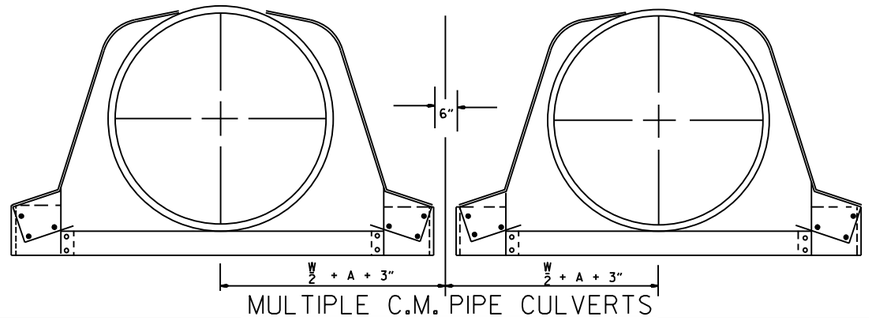
C.M. ARCH PIPE

C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A I" ±	B MAX.	H I" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½:1	16
18"	21	15	7	10	6	23	36	2½:1	16
21"	24	18	8	12	6	28	42	2½:1	16
24"	28	20	9	14	6	32	48	2½:1	16
30"	35	24	10	16	6	39	60	2½:1	14
36"	42	29	12	18	8	46	75	2½:1	14
42"	49	33	13	21	9	53	85	2½:1	12
48"	57	38	18	26	12	63	90	2½:1	12
54"	64	43	18	30	12	70	102	2¼:1	12
60"	71	47	18	33	12	77	114	2¼:1	12



MULTIPLE R.C. PIPE CULVERTS



MULTIPLE C.M. PIPE CULVERTS

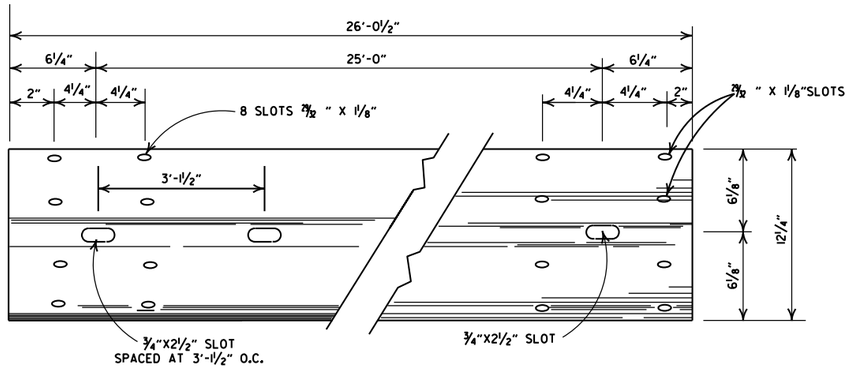
DATE	REVISION	FILMED
10-18-96	REVISED ASTM REF. TO AASHTO	
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

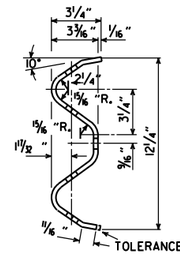
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-2

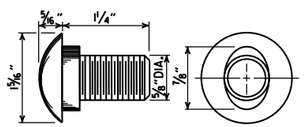
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS



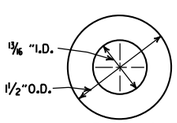


DETAILS OF
W-BEAM GUARDRAIL

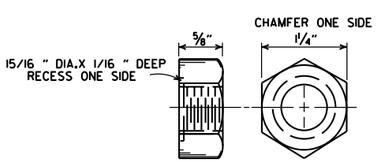
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



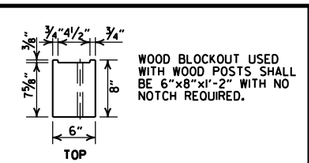
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

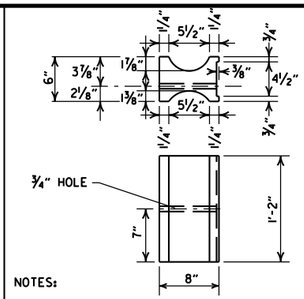


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

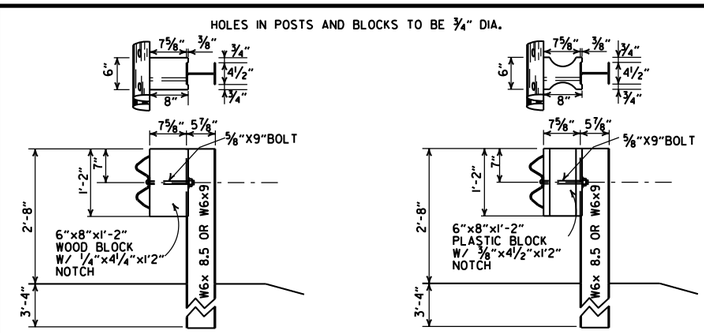
WOOD BLOCKOUT
(W-BEAM)



NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

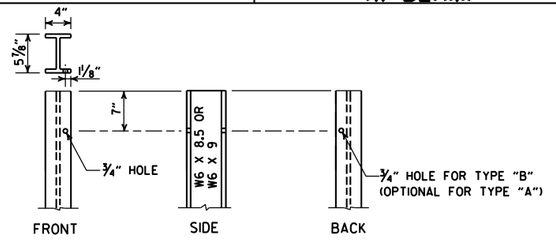
PLASTIC BLOCKOUT
(W-BEAM)



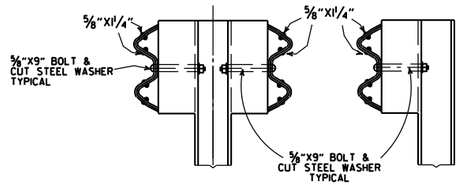
WOOD BLOCKOUT CONNECTIONS

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 ¾" BEYOND IT.

WHERE W-BEAM GUARDRAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

W-BEAM GUARDRAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL 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 9.7f (1400 f) OR NO.1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

DELINEATORS SHALL BE MOUNTED AT 37.5' SPACING ON THE FRONT FACE OF THE GUARDRAIL. SPACING MAY BE REDUCED IN CURVES, AS DIRECTED BY THE ENGINEER. 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 GUARDRAIL.

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

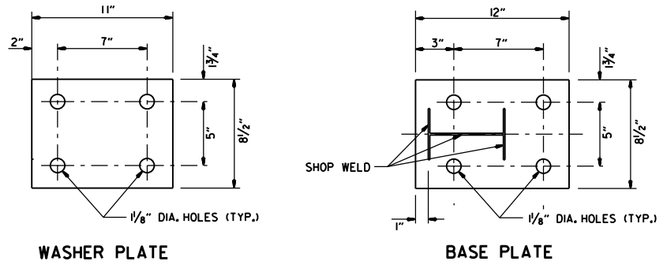
DETAILS OF WOOD LINE POST CONNECTIONS
(W-BEAM)

DATE	REVISION	FILMED
05-19-22	REVISED GENERAL NOTES	
11-07-19	RENUMBERED AND RENAMED	
11-16-17	REVISED GENERAL NOTES AND RAISED GUARDRAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARDRAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARDRAIL REPLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

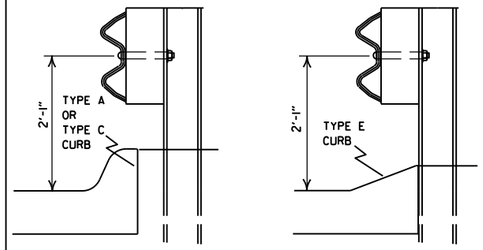
STANDARD DRAWING GR-6



WASHER PLATE

BASE PLATE

Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.



FOR DESIGN SPEEDS OF 50 MPH OR LESS

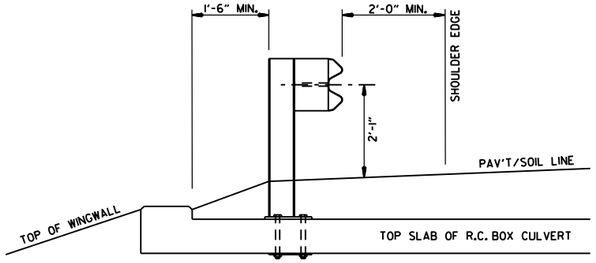
ALIGN FACE OF GUARDRAIL WITH FACE OF CURB.

FOR DESIGN SPEEDS OF 55 MPH OR MORE

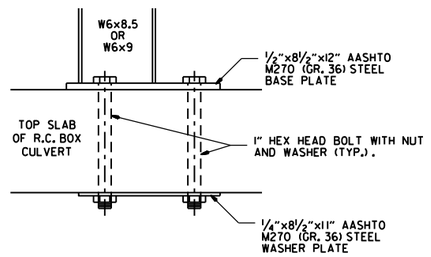
PLACE GUARDRAIL POSTS AGAINST BACK OF CURB.

DETAIL OF GUARDRAIL 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.

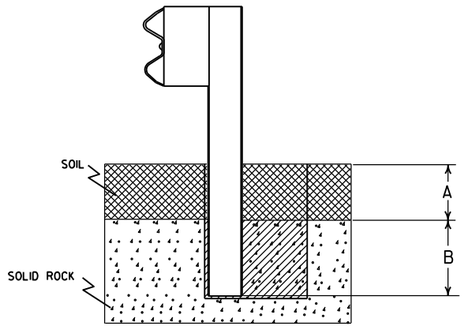


SECTION A-A

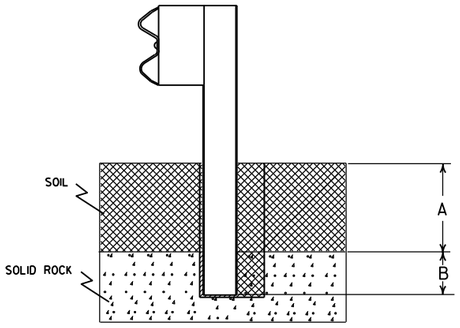


DETAIL OF CONNECTION

Case 1

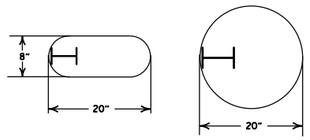


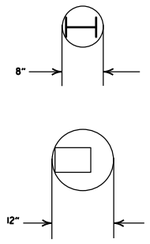
Case 2



Plan View Steel Posts

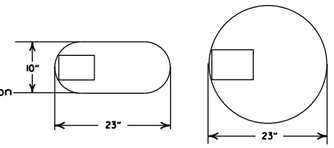
Either hole configuration acceptable





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".

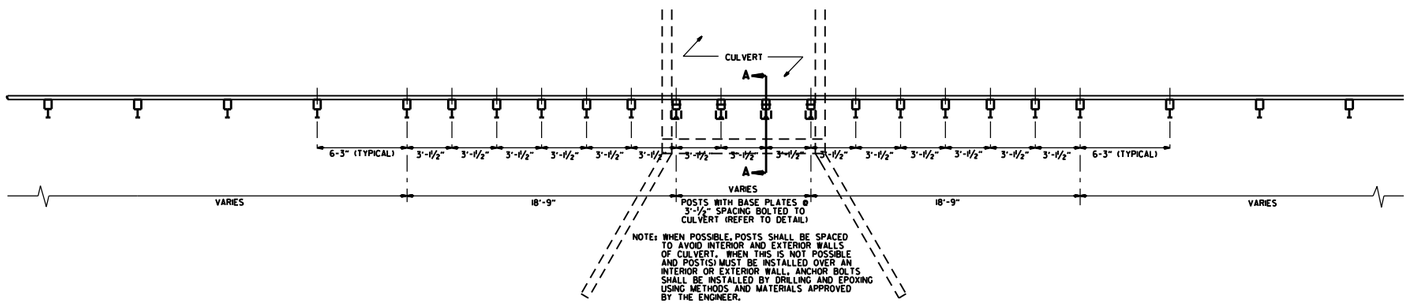
Zone A:
Backfill according to Section 617.03(a).

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)



PLAN LAYOUT OF TYPE A GUARDRAIL AT LOW-FILL CULVERTS

NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARDRAIL POSTS AS SHOWN ON STD. DWG. GR-6.

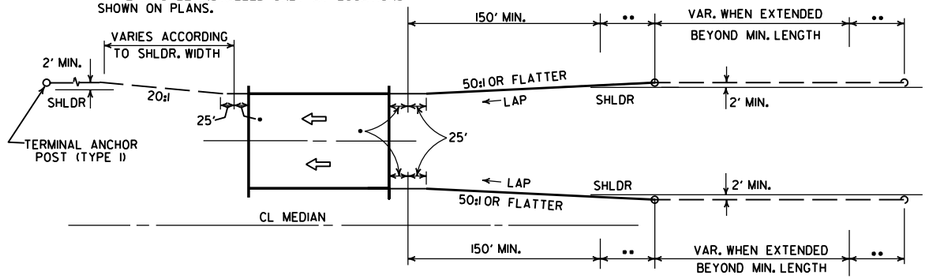
DATE	REVISION	FILMED
11-07-19	RENUMBERED, RENAMED, REVISED REFERENCE	
11-16-17	REVISED GUARDRAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
04-12-07	REVISED DETAIL OF GUARDRAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARDRAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARDRAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADDED DET. OF GUARDRAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARDRAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

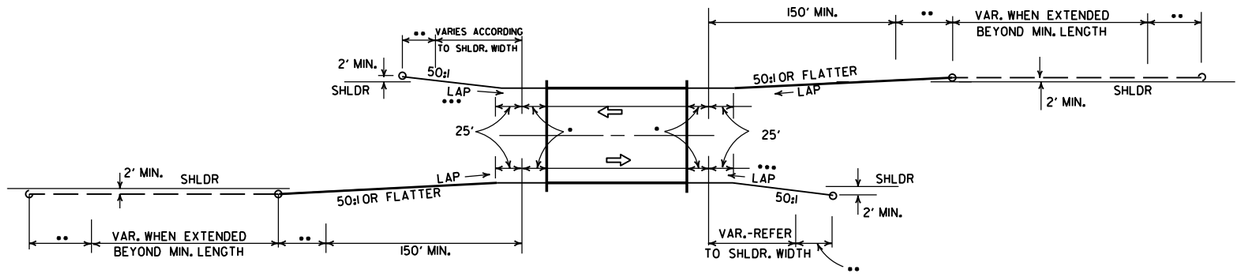
STANDARD DRAWING GR-7

NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

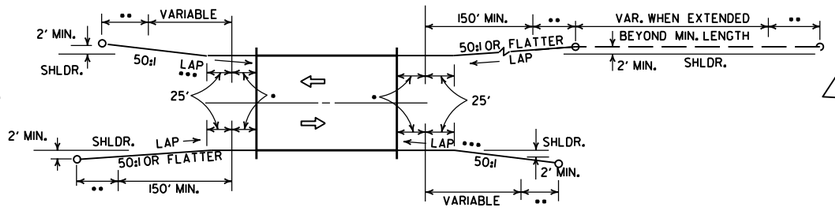
••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

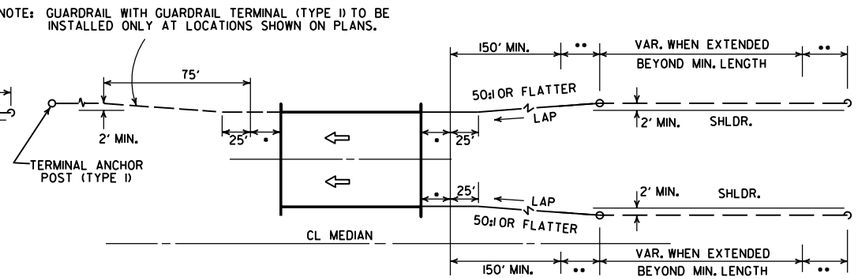
METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

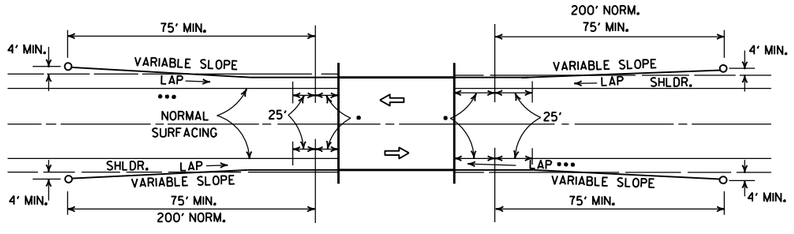
NOTE: GUARDRAIL WITH GUARDRAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

••• LAP OF GUARDRAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



LEGEND

- • THRIE BEAM GUARDRAIL TERMINAL
- •• GUARDRAIL TERMINAL (TYPE 2)

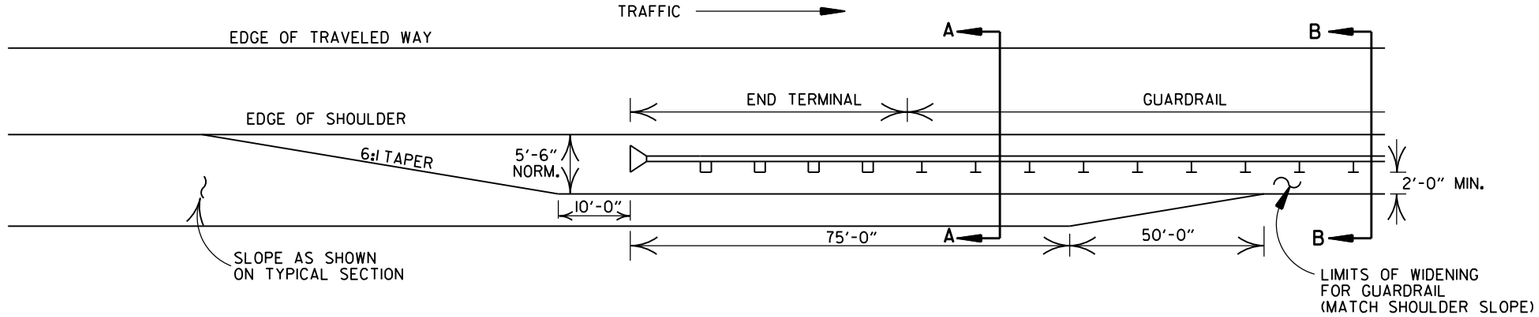
METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE I) (FULL SHOULDER WIDTH OR LESS BRIDGES)

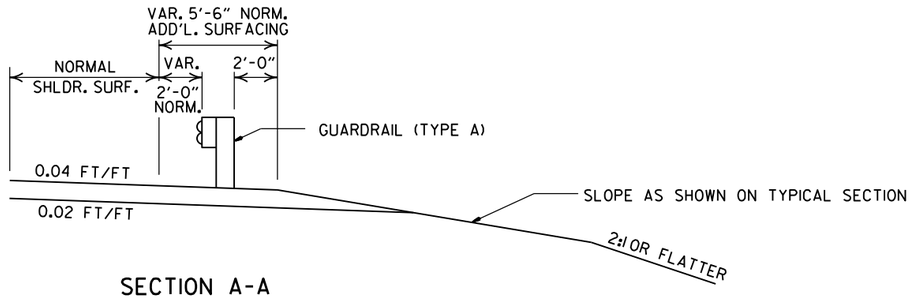
DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

ARKANSAS STATE HIGHWAY COMMISSION

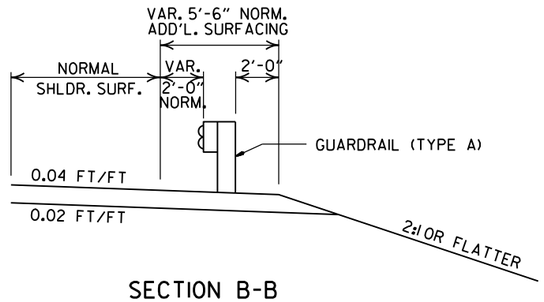
GUARDRAIL DETAILS

STANDARD DRAWING GR-8



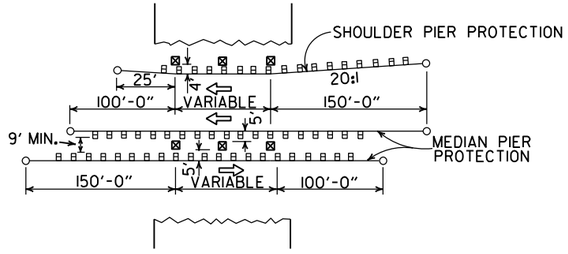


SECTION A-A



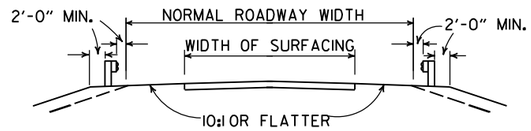
SECTION B-B

DETAILS OF WIDENING FOR GUARDRAIL

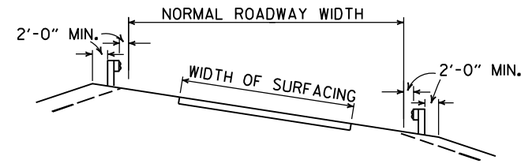


METHOD OF INSTALLATION OF GUARDRAIL AT FIXED OBSTACLE

NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARDRAIL.



SECTION ON TANGENT



SECTION ON CURVE

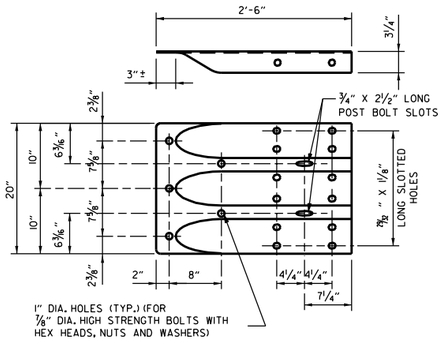
DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY

DATE	REVISION	DATE FILM
11-07-19	RENUMBERED AND RENAMED	
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

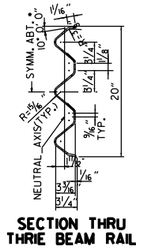
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

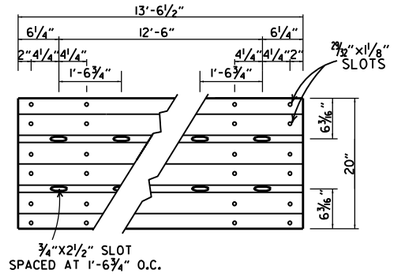
STANDARD DRAWING GR-9



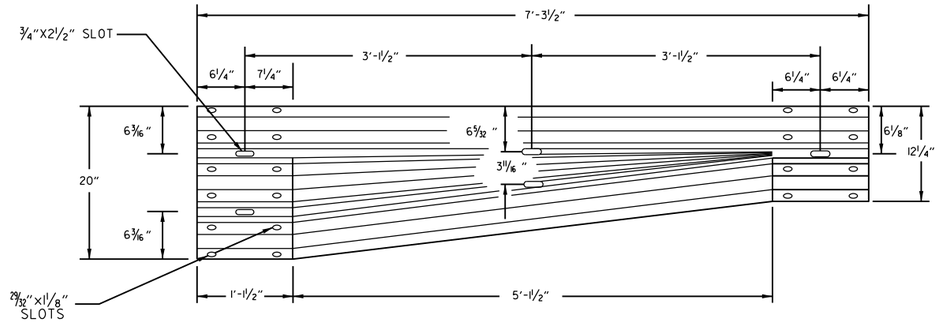
SPECIAL END SHOE



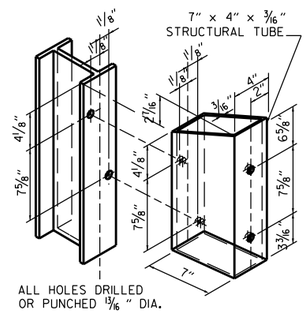
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL

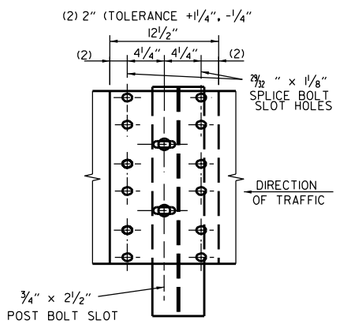


TRANSITION SECTION

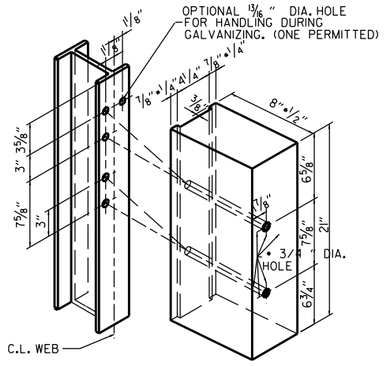


ATTACH BLOCKOUT TO POST USING 5/8" DIA. HEX HEAD BOLTS WITH 1 1/2" O.D. CUT STEEL WASHERS AND NUT.

STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



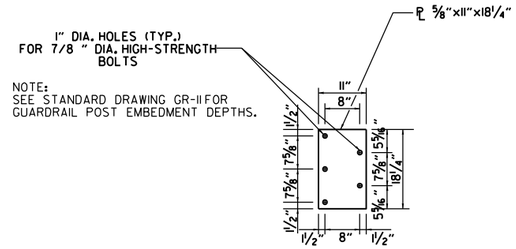
THRIE BEAM RAIL SPLICE AT POST



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.



NOTE:
SEE STANDARD DRAWING GR-11 FOR GUARDRAIL POST EMBEDMENT DEPTHS.

CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING 7/8" 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.

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 I.

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 3"4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

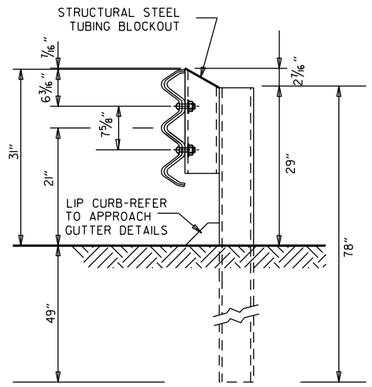
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	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	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

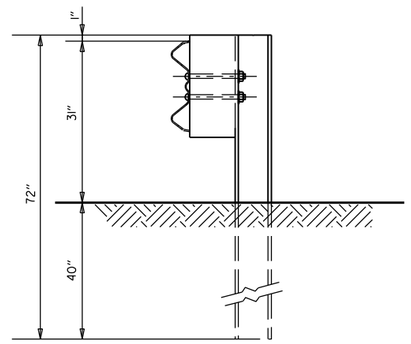
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

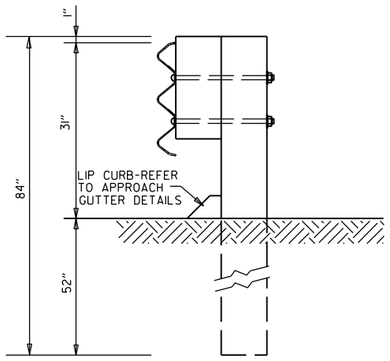
STANDARD DRAWING GR-10



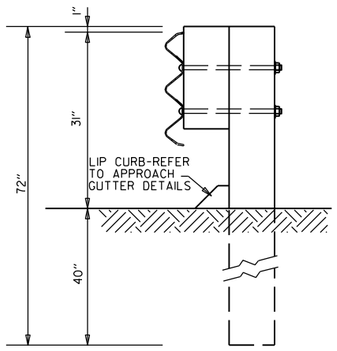
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



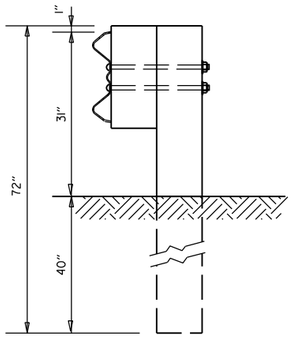
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL
WITH WOOD OR PLASTIC
BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM
TRANSITION RAIL WITH WOOD OR
PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:

RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.

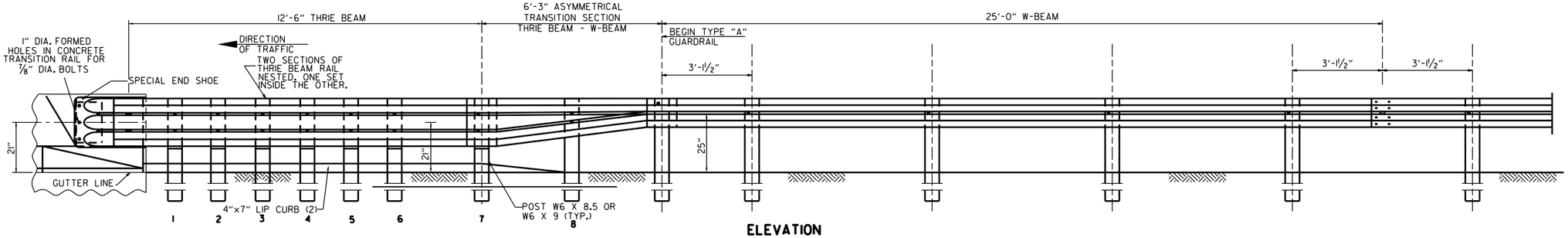
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED	
11-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

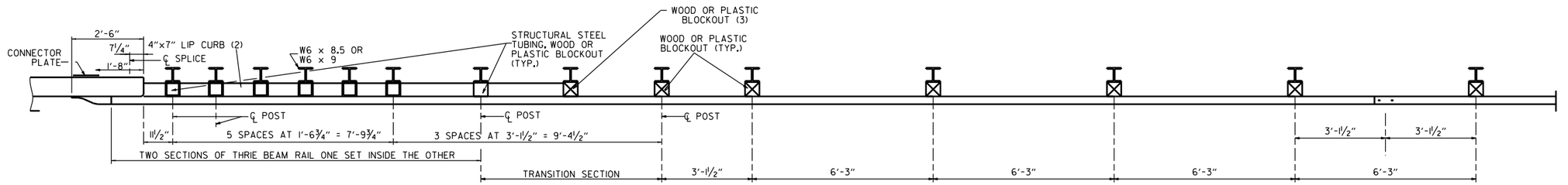
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

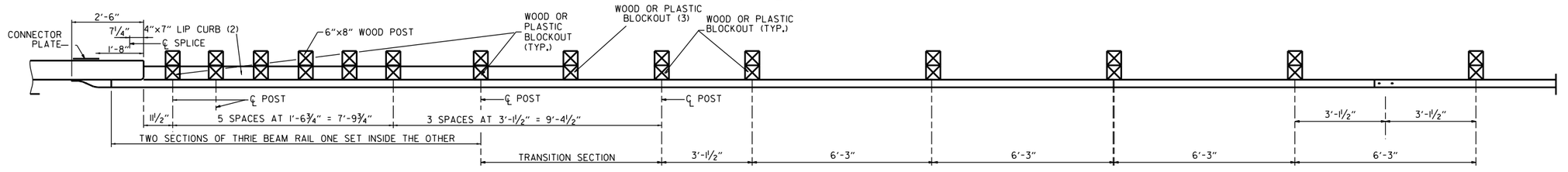
STANDARD DRAWING GR-11



ELEVATION



PLAN



PLAN

(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 GUARDRAIL 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 I.

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 3/4" BEYOND IT.

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

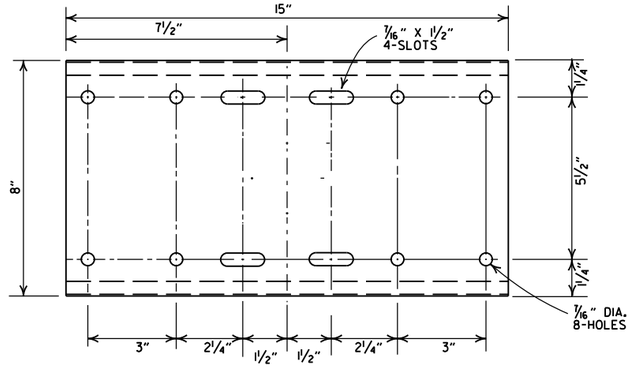
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

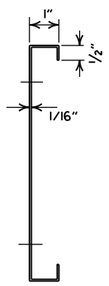
ARKANSAS STATE HIGHWAY COMMISSION

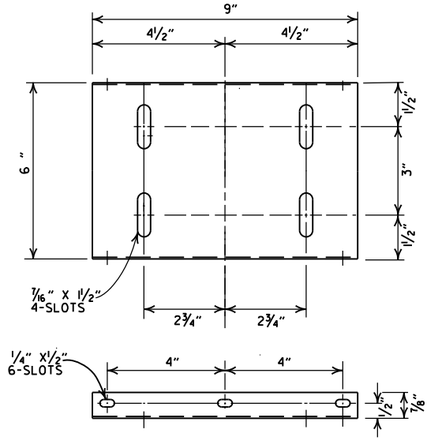
GUARDRAIL DETAILS

STANDARD DRAWING GR-12

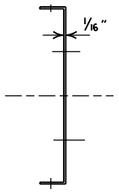


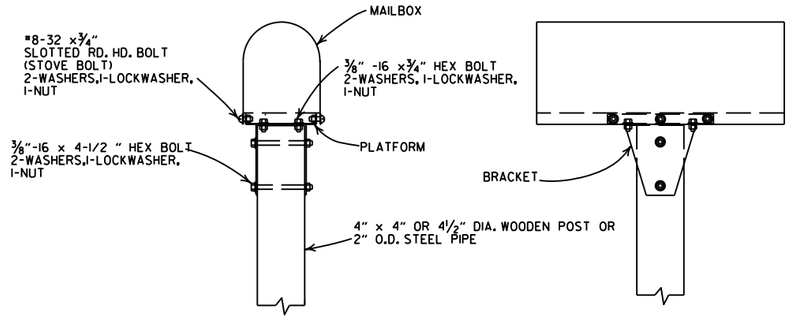
SHELF



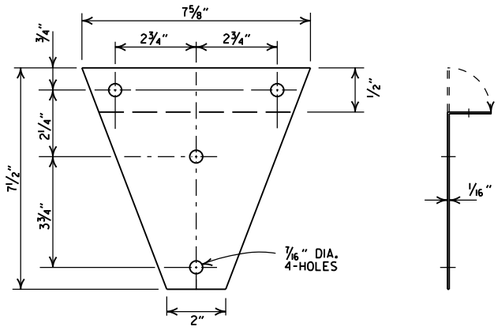


PLATFORM





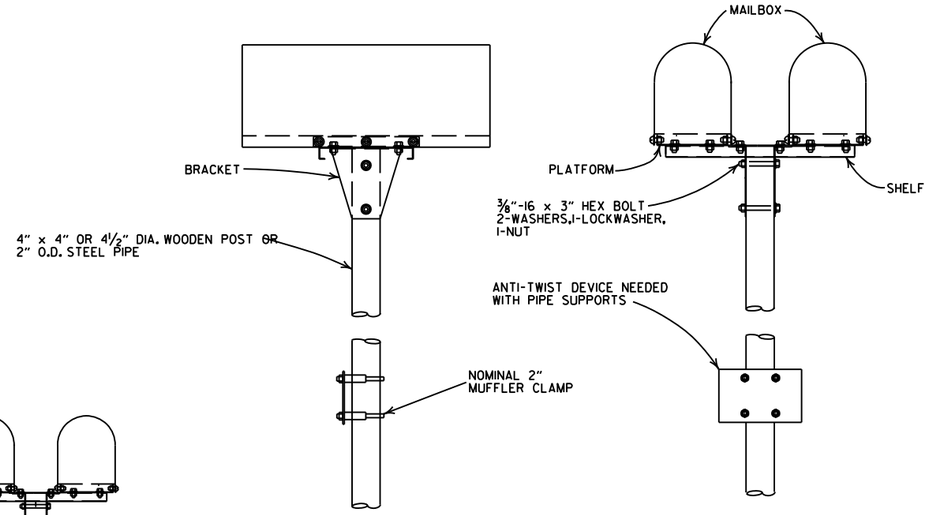
SINGLE INSTALLATION



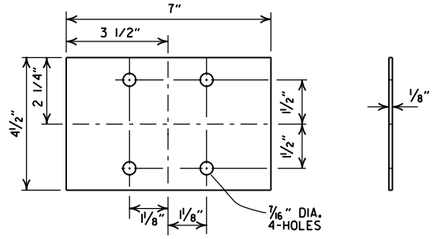
BRACKET

GENERAL NOTES

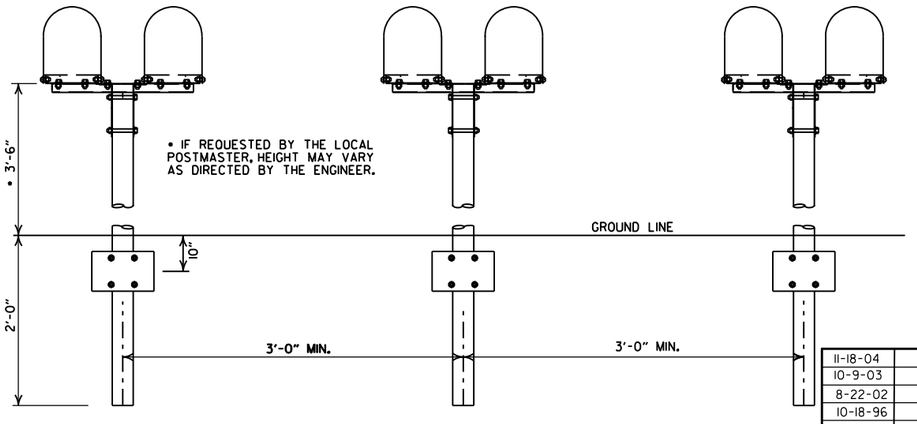
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF 3/4" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X 3/4" 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 ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



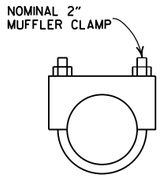
DOUBLE INSTALLATION



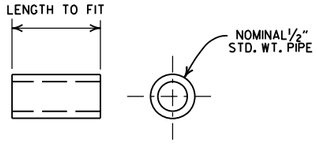
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



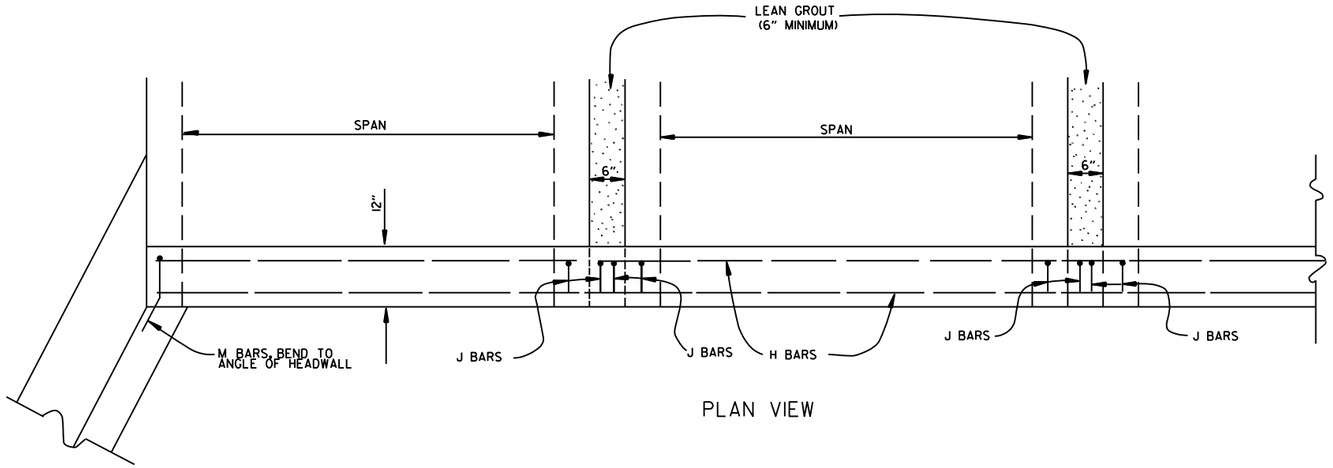
SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

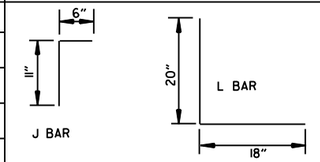
STANDARD DRAWING MB-1



PLAN VIEW

BAR LIST

BAR	NO.	SIZE	LENGTH	BAR BENDING DIAGRAM
H	2	#4	•	
I	•	#4	•	
J	•	#4	1'-5"	
L	•	#4	3'-2"	
M	•	#4	1'-8"	



• NOTE: LENGTH AND NUMBER OF BARS VARIES WITH SIZE OF CULVERT

GENERAL NOTES

WINGS, CURTAIN WALLS AND APRONS SHALL BE TIED TO THE PRECAST CULVERT SECTION BY CASTING BARS IN CULVERT END SECTIONS AS SHOWN OR BY DOWELING AND GROUTING. J BARS AND M BARS SHALL BE EMBEDDED A MINIMUM OF 10" IN PRECAST BOX.

WINGS, FOOTINGS, APRONS AND CURTAIN WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE WING DRAWING. STEEL AND CONCRETE QUANTITIES WILL BE ADJUSTED TO FIT THE IN-PLACE WIDTH & HEIGHT OF THE PRECAST CONCRETE BOX CULVERTS.

ALL EXPOSED CORNERS TO HAVE ¾" CHAMFERS.

WINGWALLS AND FOOTINGS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

ALL CONCRETE, REINFORCING STEEL, LEAN GROUT, MEMBRANE WATERPROOFING, DRAINAGE FILL MATERIAL, GEOTEXTILE FILTER FABRIC, LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLING PRECAST BOX CULVERTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR THE ITEMS AS SPECIFIED IN SECTION 607 OF THE STANDARD SPECIFICATIONS.

LEAN GROUT SHALL CONSIST OF A SAND CEMENT MIXTURE MEETING THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT SHALL BE TYPE I AND SHALL MEET THE REQUIREMENTS OF AASHTO M 85.
SAND SHALL MEET THE REQUIREMENTS OF FINE AGGREGATE AS SPECIFIED IN SECTION 802.02 OF THE STANDARD SPECIFICATIONS.
THE SAND CEMENT MIXTURE SHALL CONSIST OF NOT LESS THAN 1.5 SACKS OF PORTLAND CEMENT PER TON OF MATERIAL MIXTURE.
THE MIXTURE SHALL CONTAIN SUFFICIENT WATER TO HYDRATE THE CEMENTS. THE SAND CEMENT MIXTURE SHALL BE PLACED IN MAXIMUM 8 INCH THICK LIFTS, LOOSE MEASURE, AND THOROUGHLY RODDED AND TAMPED AROUND BOX TO THOROUGHLY FILL ALL VOIDS.

MEMBRANE WATERPROOFING CONFORMING TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED TO ALL BOX CULVERT JOINTS.

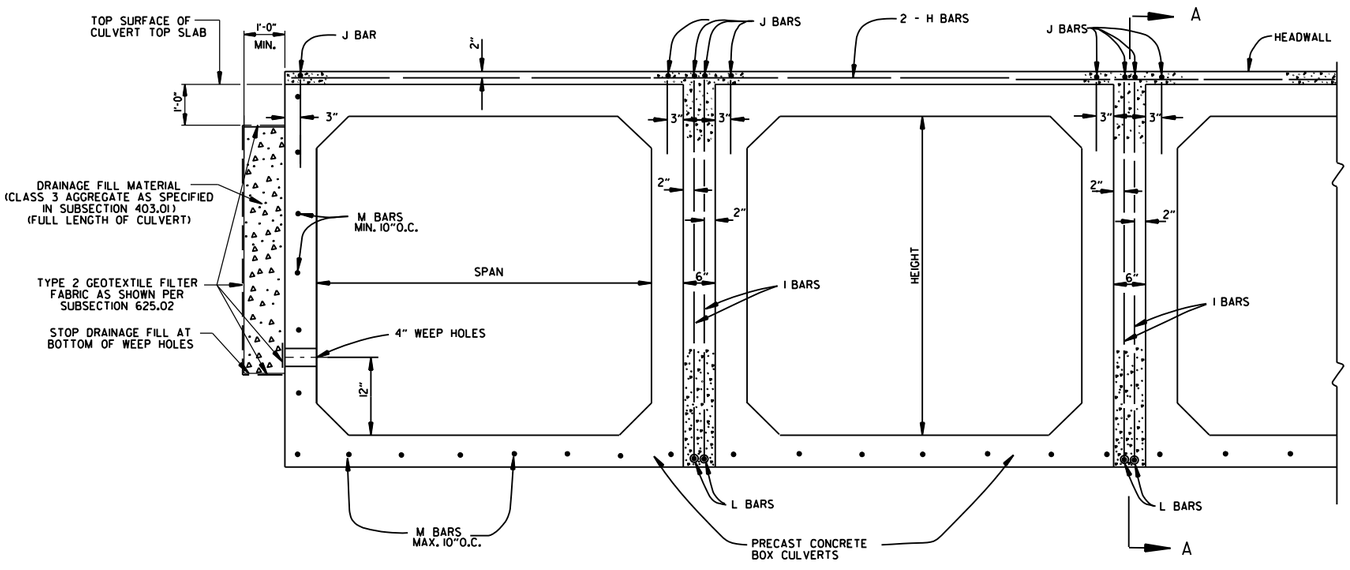
THE MEMBRANE WATERPROOFING WILL BE REQUIRED ON THE TOP EXTERNAL JOINT AND SHALL EXTEND 1 FOOT DOWN THE SIDES OF THE CULVERT.

IN OUTER BARRELS, ONE WEEP HOLE IS REQUIRED IN EXTERIOR WALLS OF EACH PRECAST CULVERT SECTION. WEEP HOLES SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" IN THE ASSEMBLED CULVERT AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

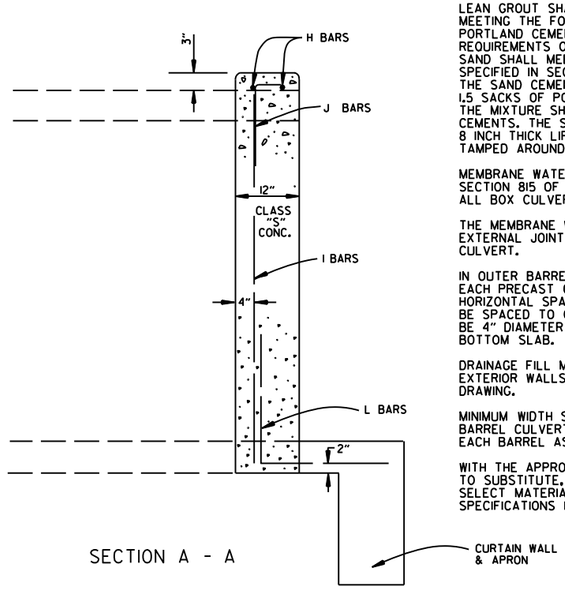
DRAINAGE FILL MATERIAL WITH GEOTEXTILE FABRIC IS REQUIRED AT THE EXTERIOR WALLS OF THE ASSEMBLED CULVERT. SEE DETAILS ON THIS DRAWING.

MINIMUM WIDTH SHALL BE 12" (6" ON EACH SIDE OF JOINT). ON MULTIPLE BARREL CULVERTS, MEMBRANE WATERPROOFING SHALL BE APPLIED TO EACH BARREL AS DESCRIBED ABOVE.

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, FLOWABLE SELECT MATERIAL CONFORMING TO SECTION 206 OF THE STANDARD SPECIFICATIONS IN LIEU OF LEAN GROUT.



END VIEW



SECTION A - A

DATE	REVISION	DATE FILMED
1-28-15	REVISED GEOTEXTILE FABRIC PLACEMENT	
12-15-11	ADDED NOTE & DTLS FOR WEEP HOLE AND DRAINAGE FILL	
10-15-09	ADDED GENERAL NOTE	
11-10-05	REVISED SPACING OF "M" BARS	
4-10-03	REVISED GENERAL NOTES	
10-18-96	CORRECTED AASHTO REF.	
10-1-92	ADDED NOTE FOR MEMBRANE WATERPROOFING	
8-15-91	ADDED NOTE FOR LEAN GROUT	
11- 8-90	REVISED FOR 1991 SPECS	
11-30-89	ISSUED: JABE	

ARKANSAS STATE HIGHWAY COMMISSION

PRECAST CONCRETE BOX CULVERTS

STANDARD DRAWING PBC-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

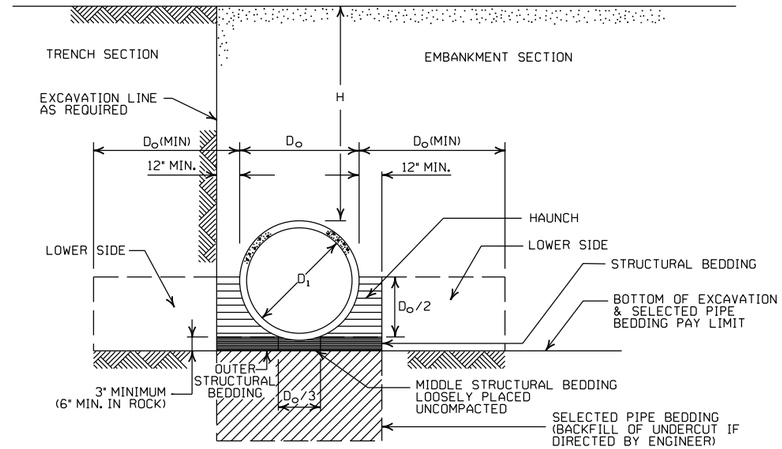
- LEGEND -

D_1 = 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 DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

NOTE: FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM OF 12" OF PAVEMENT AND/OR BASE.

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8

CORRUGATED METAL PIPE ARCHES

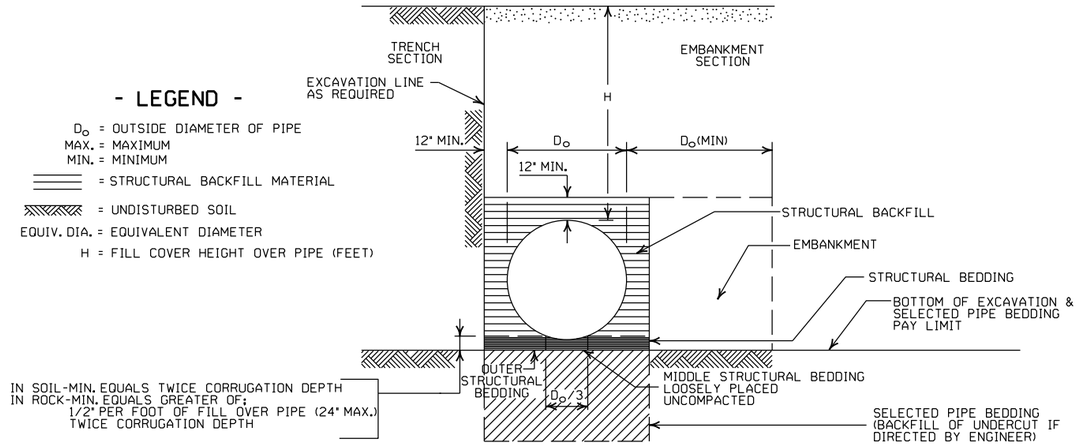
EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (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			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION TYPE 2	INSTALLATION TYPE 1		INSTALLATION TYPE 2	INSTALLATION TYPE 1
36	40x31	5	0.079	3	2		12	15
42	46x36	6	0.079	3	2		13	15
48	53x41	7	0.079	3	2		13	15
54	60x46	8	0.079	3	2		13	15
60	66x51	9	0.079	3	2		13	15
66	73x55	12	0.079	3	2		15	15
72	81x59	14	0.079	3	2		15	15
78	87x63	14	0.079	3	2		15	15
84	95x67	16	0.109	3	2		15	15
90	103x71	16	0.109	3	2		15	15
96	112x75	18	0.109	3	2		15	15
102	117x79	18	0.109	3	2		15	15
108	128x83	18	0.138	3	2		15	15

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

- LEGEND -

D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
= STRUCTURAL BACKFILL MATERIAL
= UNDISTURBED SOIL
EQUIV. DIA. = EQUIVALENT DIAMETER
H = FILL COVER HEIGHT OVER PIPE (FEET)



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

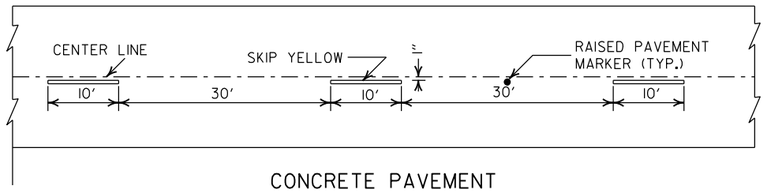
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

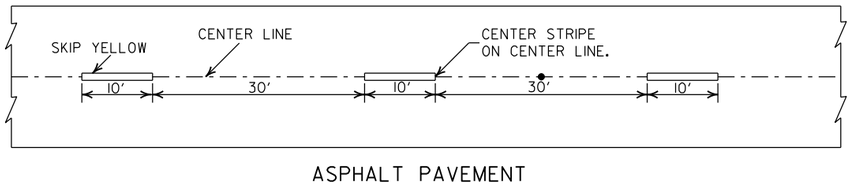
METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

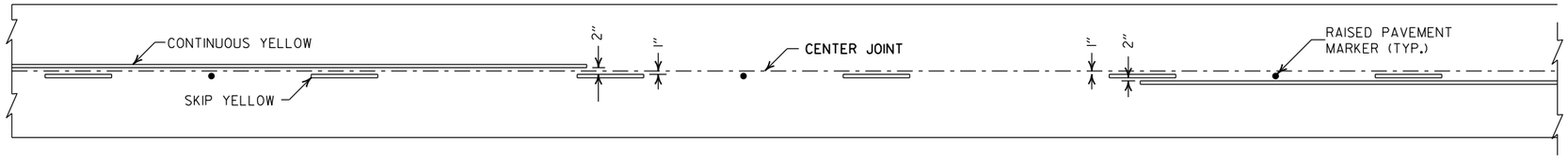


CONCRETE PAVEMENT

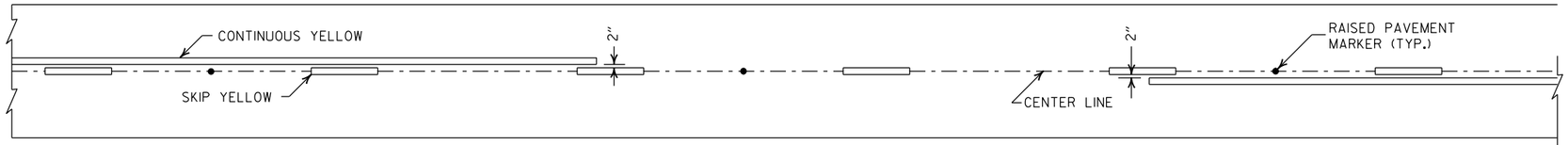


ASPHALT PAVEMENT

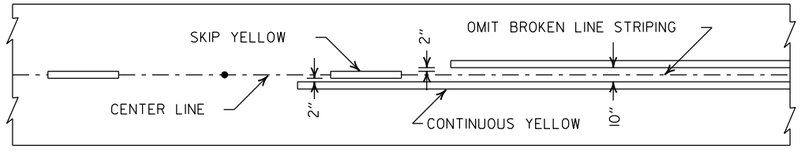
BROKEN LINE STRIPING



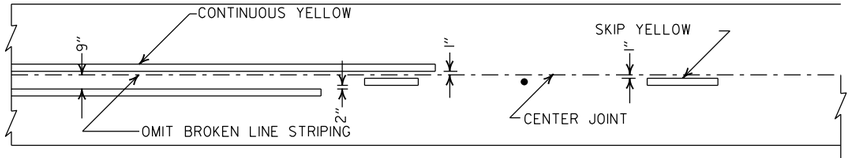
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

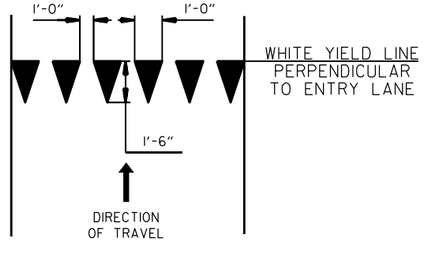


ASPHALT PAVEMENT

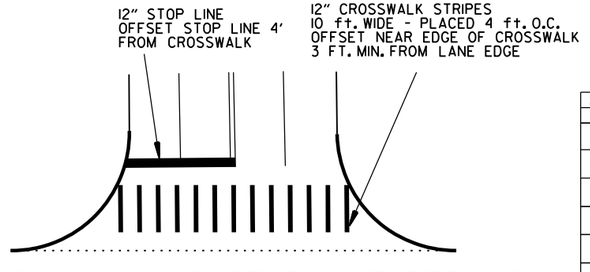


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

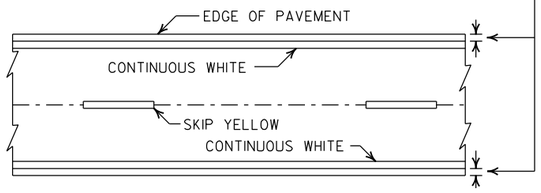


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

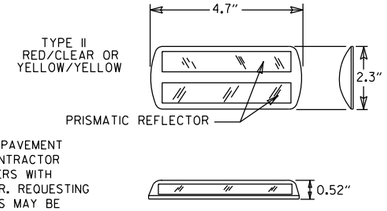
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

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 ARDOT QUALIFIED PRODUCTS LIST.



DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	
2-27-20	REVISED STOP LINE DETAILS	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
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
		FILMED

ARKANSAS STATE HIGHWAY COMMISSION

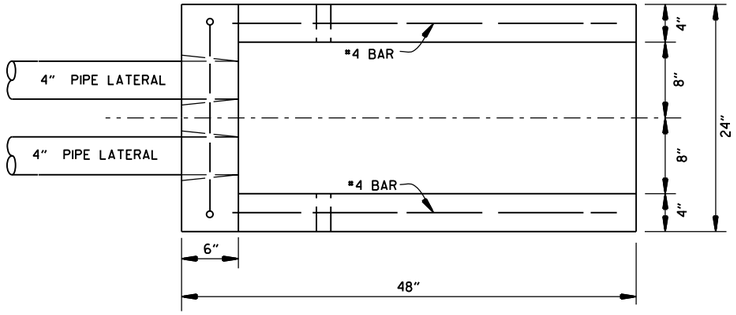
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

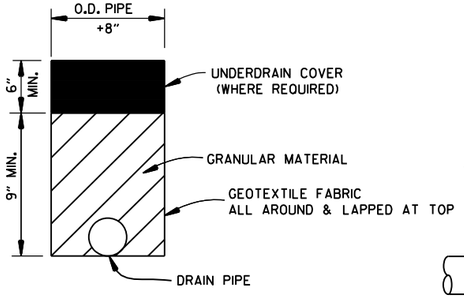
NOTE:

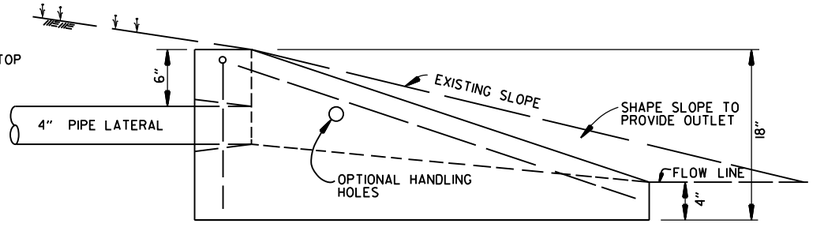
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

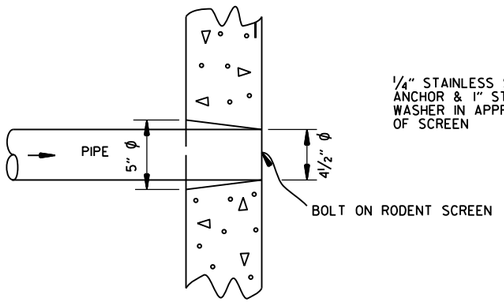


PLAN VIEW

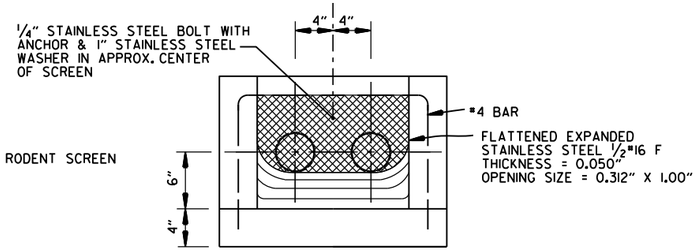




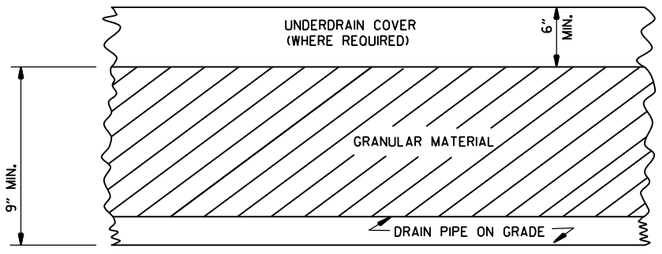
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

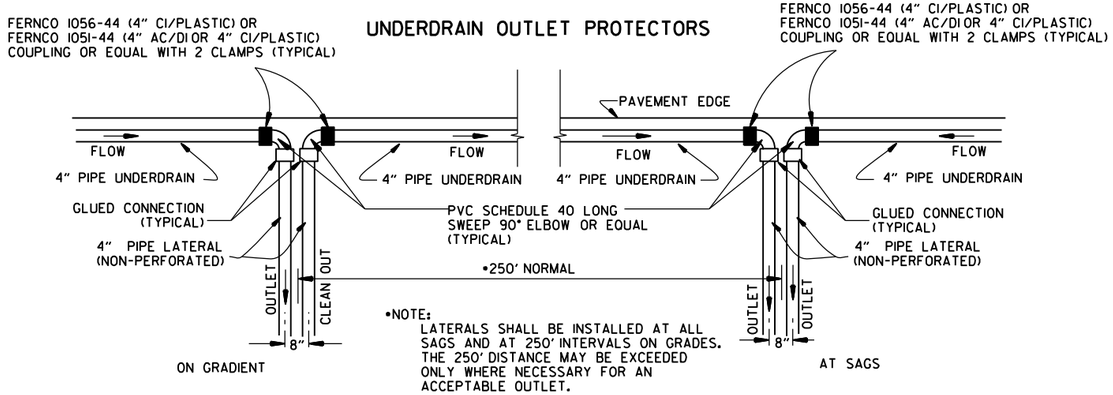


FRONT VIEW
(DETAIL OF RODENT SCREEN)



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.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE 1. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
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

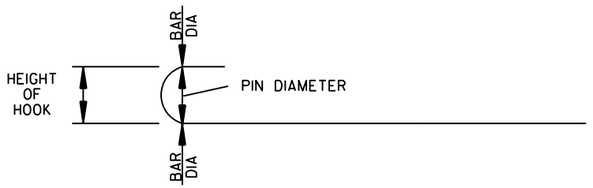
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

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

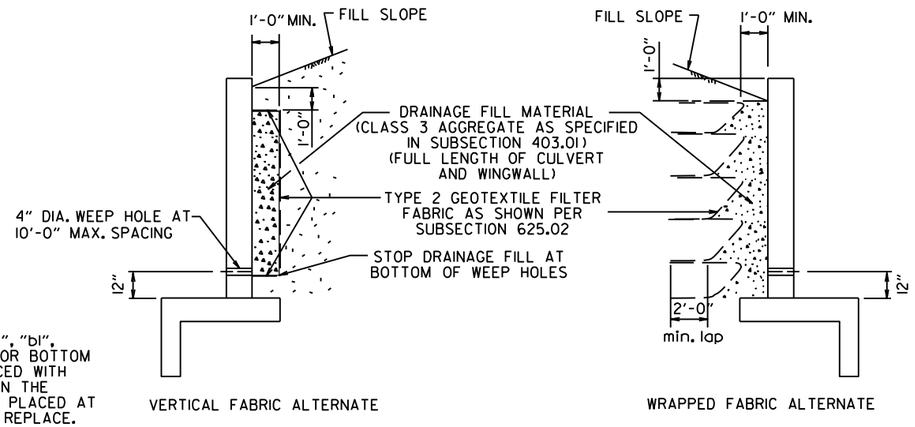
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

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.

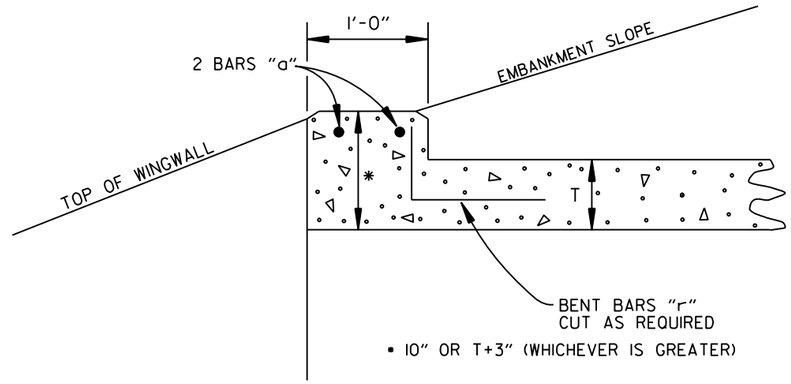
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

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.

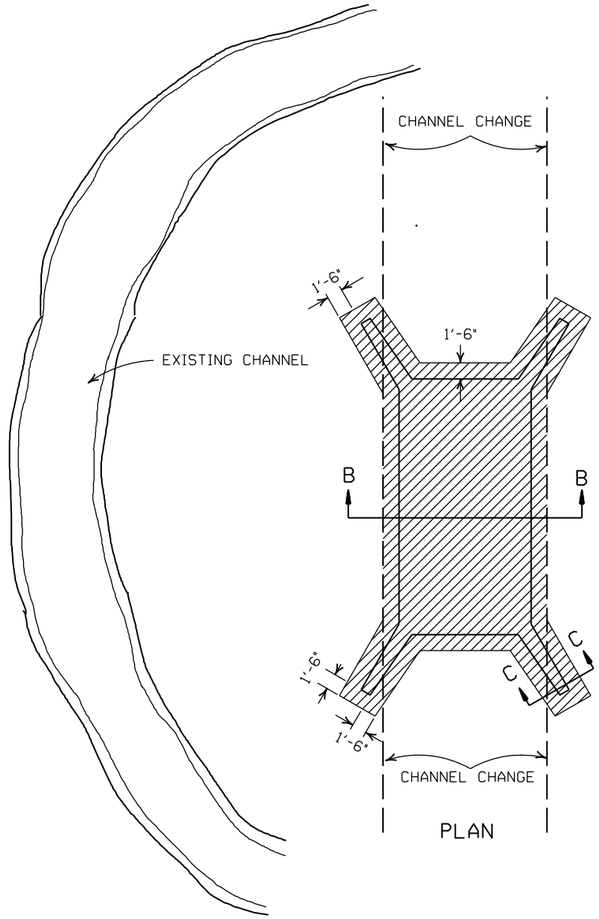
R.C. BOX CULVERT HEADWALL MODIFICATIONS

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

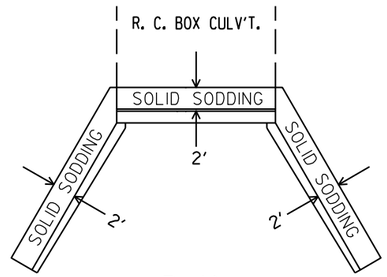
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

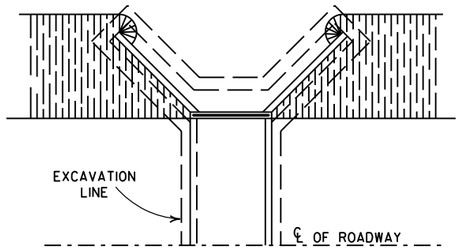
SOLID SODDING



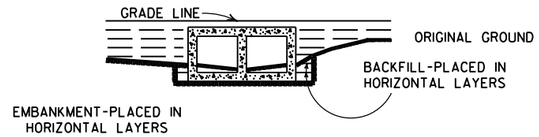
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

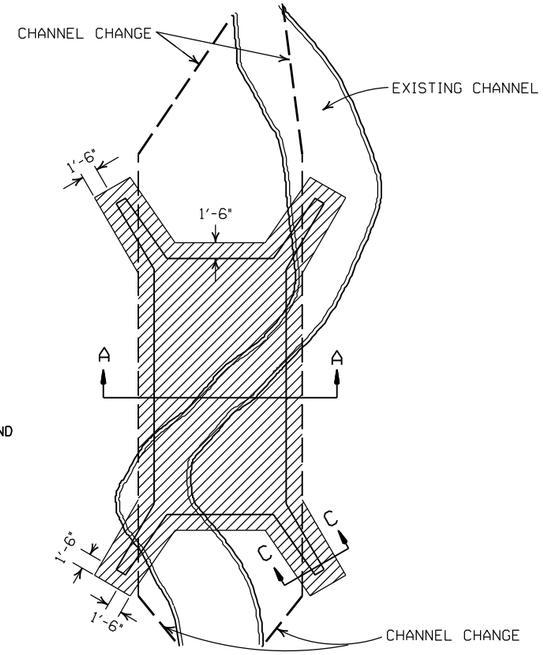


PLAN

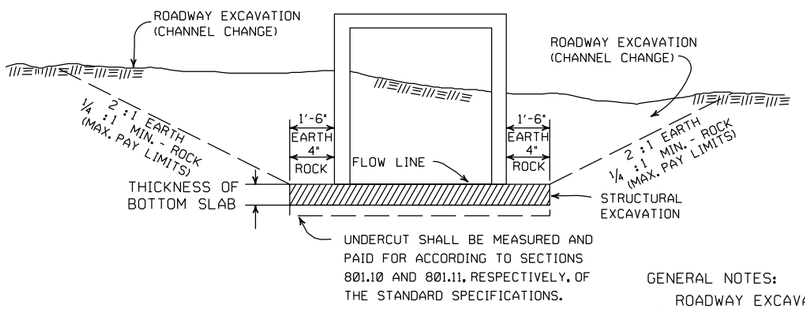


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

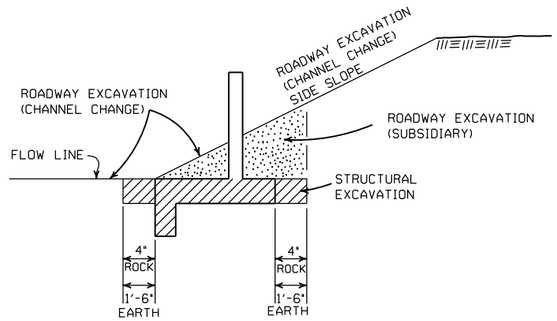


PLAN

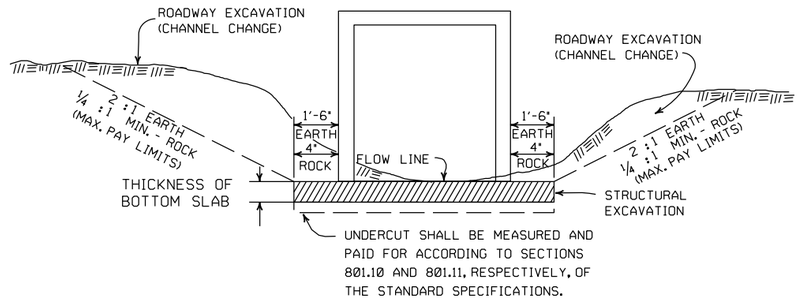


SECTION B-B

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.

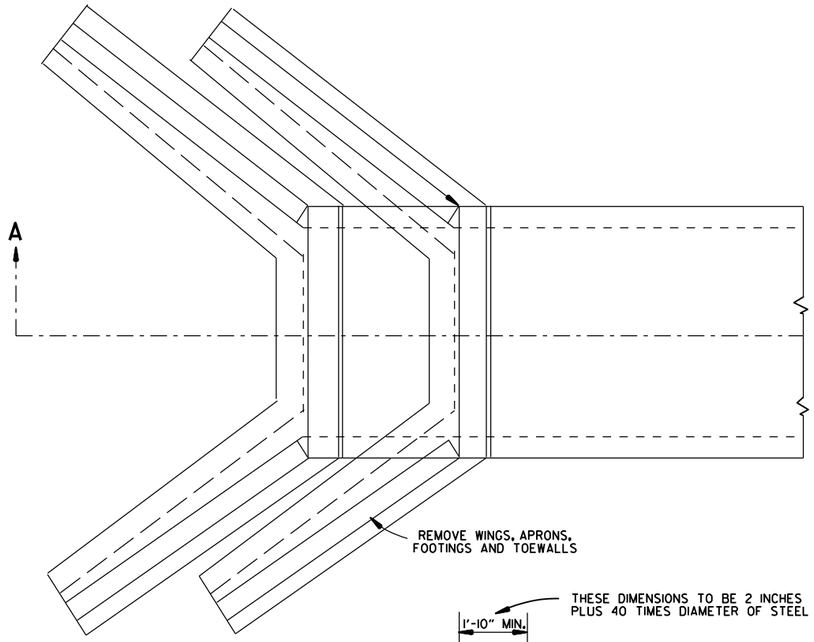
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

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

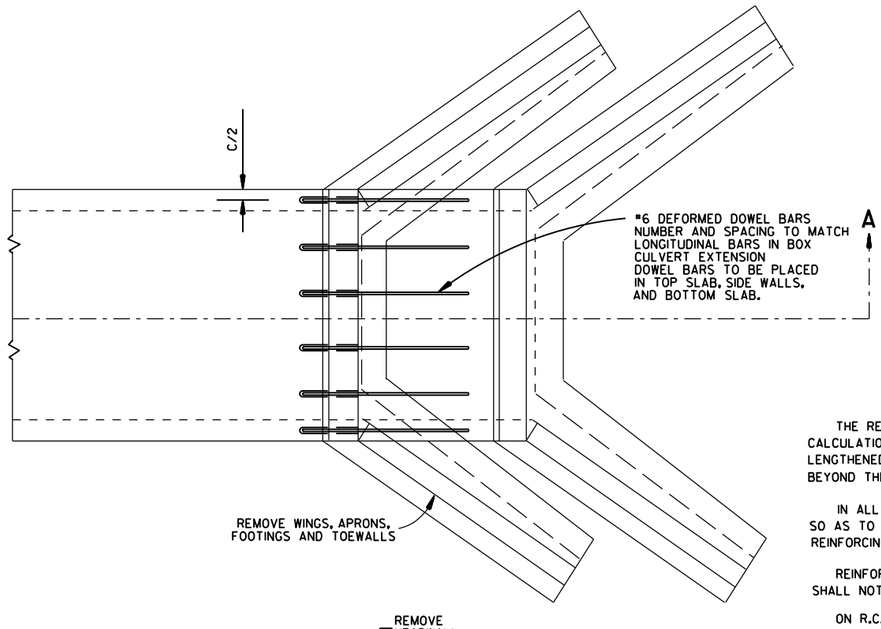
STANDARD DRAWING RCB-2



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 TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139		0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158	300	0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168	300	0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	350
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178	300	0.062	197		0.070	216		0.078	235	350	0.088	259	
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187		0.068	211		0.076	230		0.086	254		0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178	250	0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187		0.068	211		0.078	235		0.088	259		0.098	283	400	D MAX = 2° 45'		
3° 15'	0.028	86		0.036	109		0.044	134	200	0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.100	288		D MAX = 3° 30'		
3° 30'	0.030	90		0.038	113		0.046	139		0.056	171		0.066	206		0.076	230		0.086	254		0.096	278	350						
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274		0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278	350	D MAX = 4° 15'								
4° 30'	0.036	100	200	0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104		0.048	133		0.060	168		0.070	203	250	0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274	350	D MAX = 5° 15'											
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221		0.088	259	300	0.098	283													
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288		D MAX = 6° 30'											
6° 30'	0.050	126		0.062	160		0.074	198	250	0.086	239		0.096	278																
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283																
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252	300	0.100	288																
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		D MAX = 8° 25'																	
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																			
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																			
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																			
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																				
11° 00'	0.070	162		0.084	203		0.096	244																						
12° 00'	0.074	169		0.088	211	250	0.098	248																						
13° 00'	0.076	173		0.090	215		0.100	252	300																					
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																							
15° 00'	0.082	184		0.096	226																									
16° 00'	0.086	191		0.098	230																									
17° 00'	0.088	194		0.100	234																									
18° 00'	0.090	198	250	D MAX = 19° 30'																										
19° 00'	0.092	202																												
20° 00'	0.094	205																												
21° 00'	0.096	209																												
22° 00'	0.096	209																												
23° 00'	0.098	212																												
24° 00'	0.098	212																												
25° 00'	0.100	216																												
D MAX = 28° 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.)

GENERAL NOTES

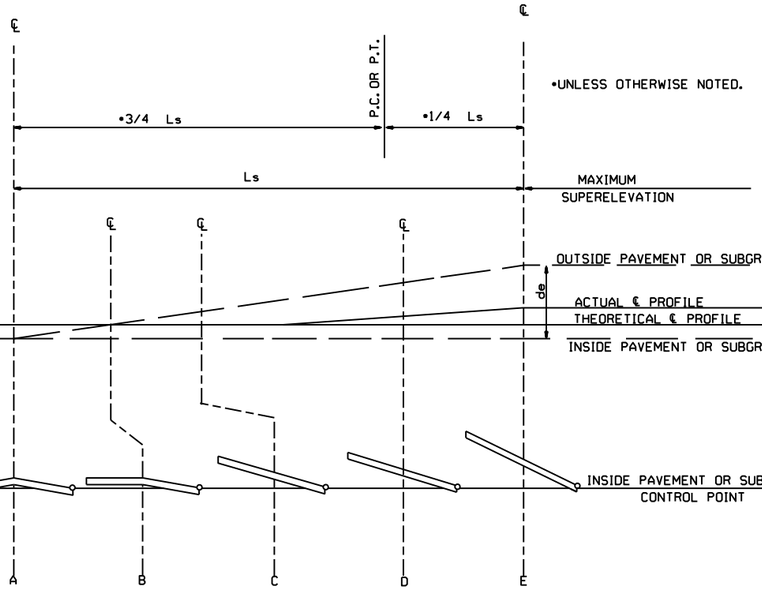
1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED 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.

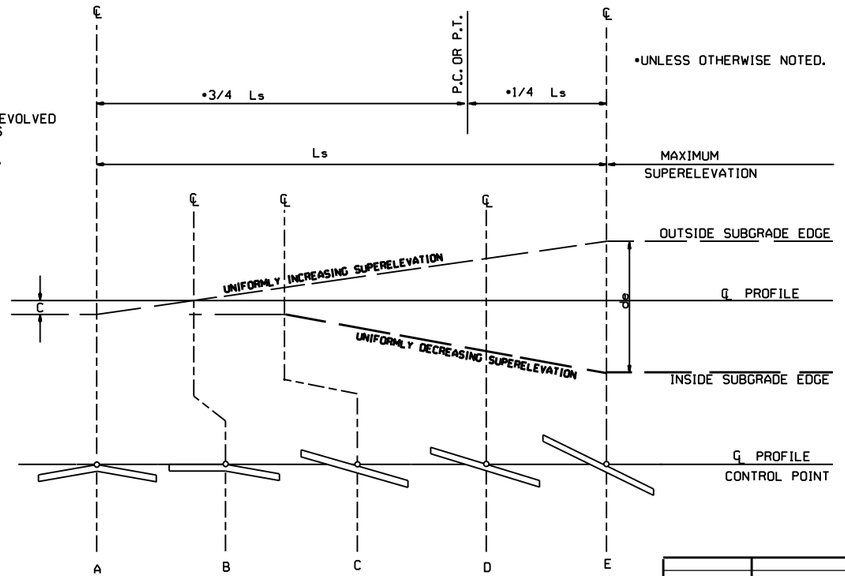
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

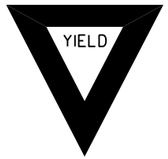
TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

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"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

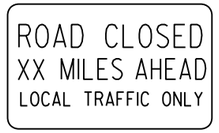
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

R11-2

48"X30"

R11-3A



60"X30"

R11-4

60"X30"

W21-5a

STD. 36"X36"
FWY. 48"X48"

W1-1

STD. 36"X36"
FWY. 48"X48"

W1-2

STD. 36"X36"
FWY. 48"X48"

W1-3

STD. 48"X48"

W1-4

STD. 48"X48"

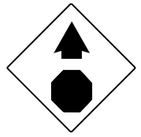
W1-6

STD. 48"X24"
SPECIAL 60"X30"

W1-8

STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1

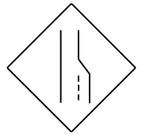


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

W13-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

W1-4b

STD. 48"X48"

R56-1

STD. 18"X18"

W8-11

STD. 36"X36"
FWY. 48"X48"

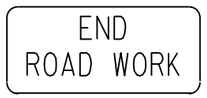
W8-9

STD. 36"X36"
FWY. 48"X48"

G20-1

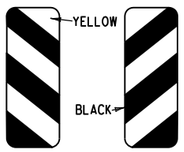
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

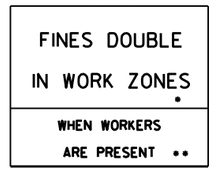
M4-9

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	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

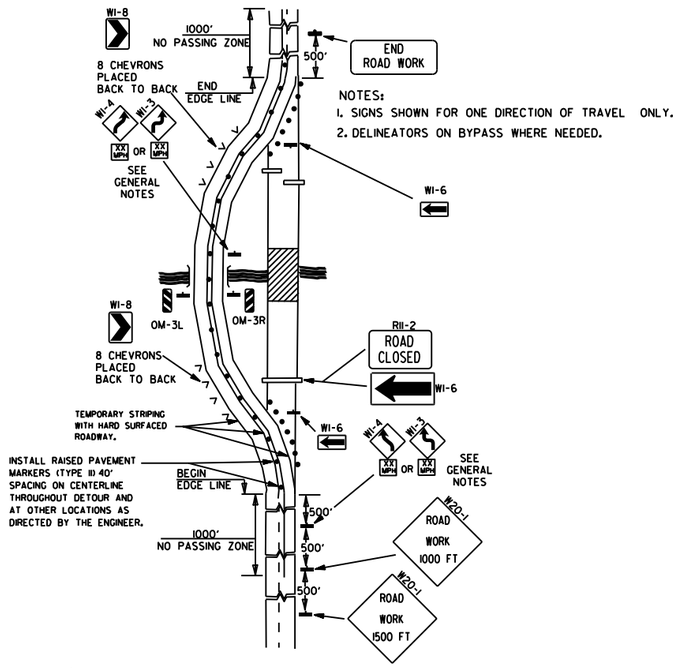
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
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

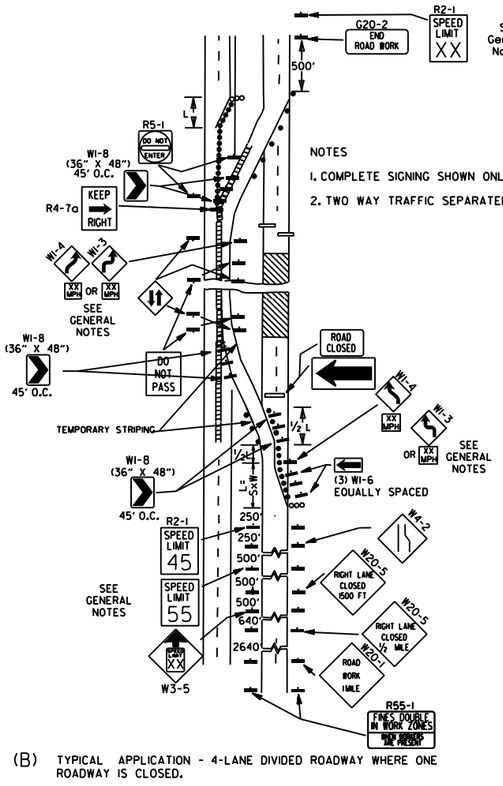
STANDARD DRAWING TC-1



NOTES:

1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

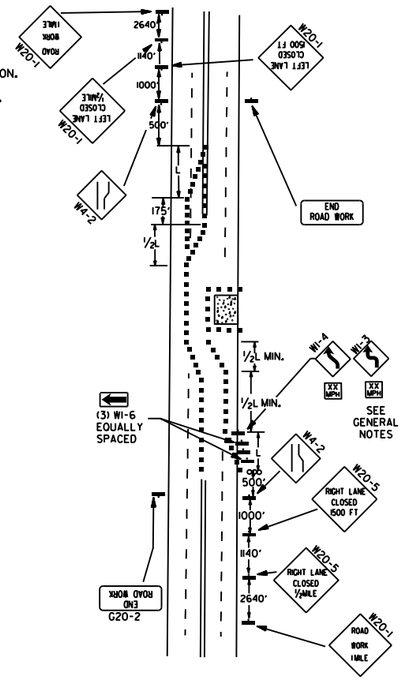
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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.

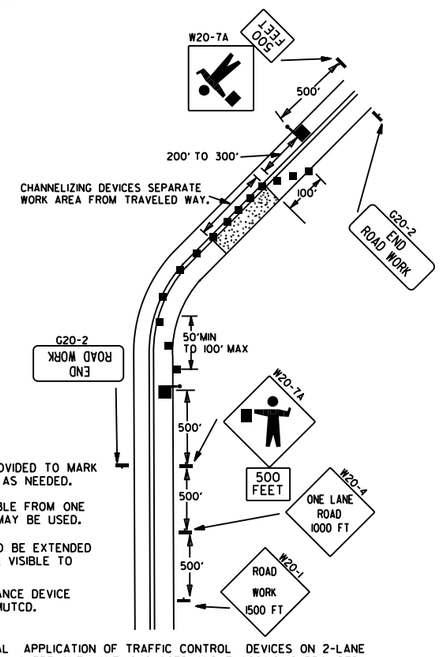


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

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.

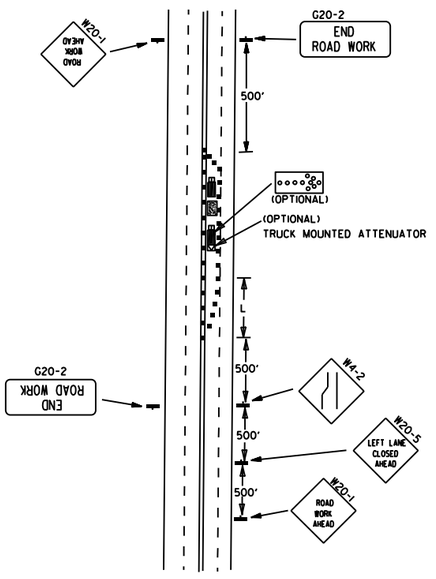
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



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.

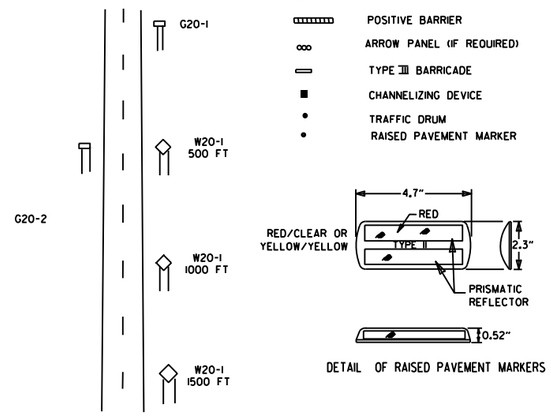
(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.



(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

KEY:

- FLAGGER
- POSITIVE BARRIER
- ARROW PANEL (IF REQUIRED)
- TYPE III BARRICADE
- CHANNELIZING DEVICE
- TRAFFIC DRUM
- RAISED PAVEMENT MARKER



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

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:

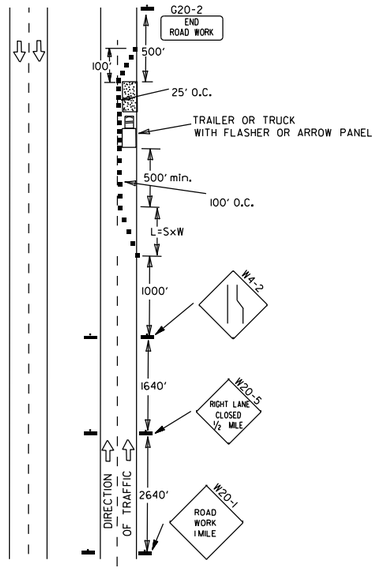
1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 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. 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. 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 ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
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 W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

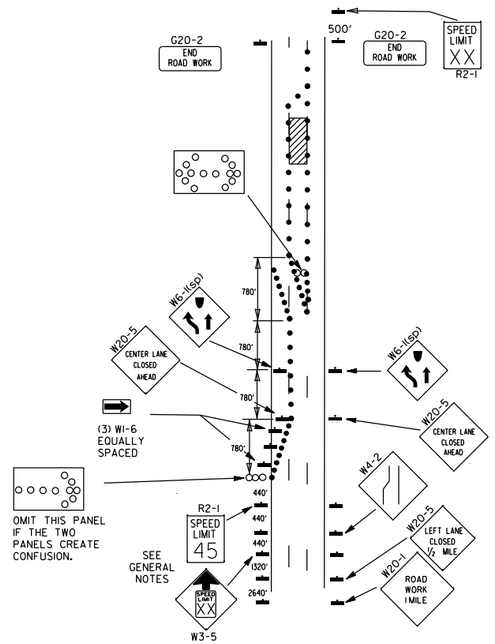
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.

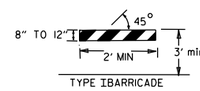


(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

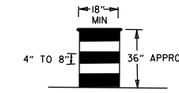
CHANNELIZING DEVICES

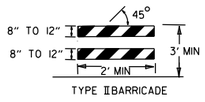
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

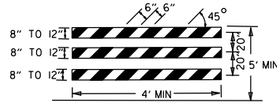
CONES



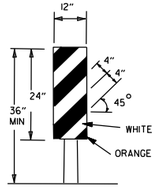
PLASTIC DRUM



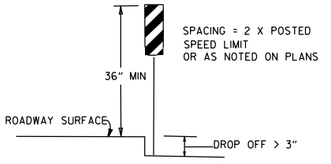




NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT



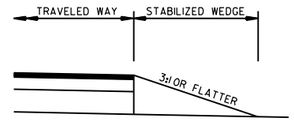
TRAFFIC CONTROL DEVICES			
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS[3]
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[4] & EDGE LINES	PRECAST CONCRETE BARRIER[4] & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:

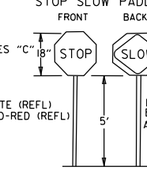
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

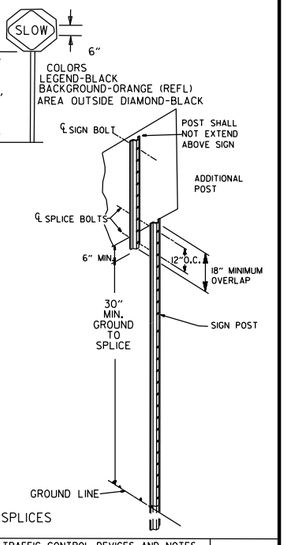


STABILIZED WEDGE

NOTE:
MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

STOP SLOW PADDLE

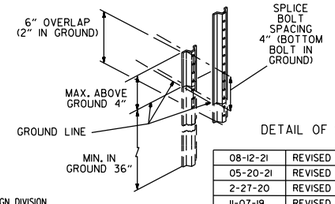




NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

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.



DETAIL OF SPLICES

FLAG SHALL BE OF GOOD GRADE RED MATERIAL

KEY:

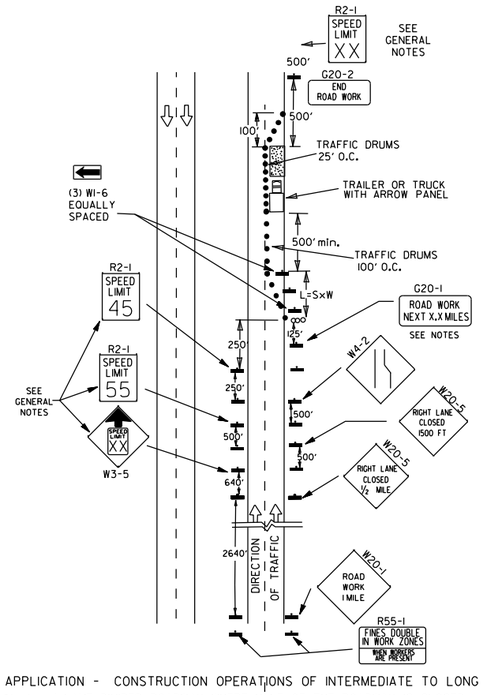
ooo ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

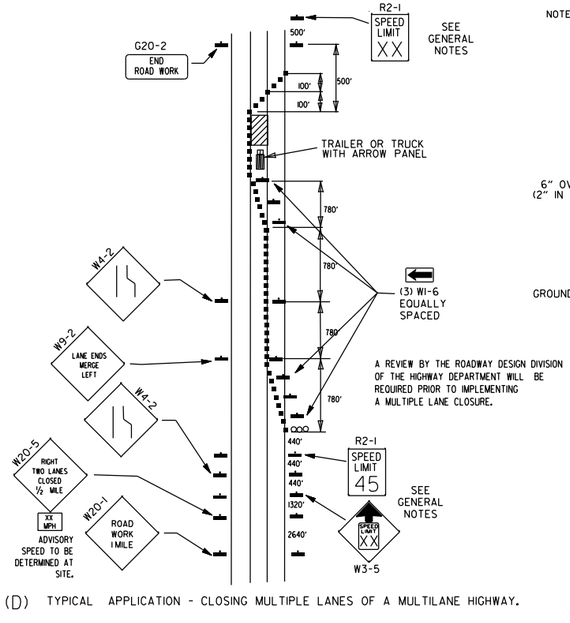
● TRAFFIC DRUM

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 W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
11. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



(C) TYPICAL APPLICATION - CONSTRUCTION OPERATIONS OF INTERMEDIATE TO LONG TERM DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

08-12-21	REVISED TRAFFIC CONTROL DEVICES AND NOTES	
05-20-21	REVISED NOTE 10	
2-27-20	REVISED TRAFFIC CONTROL DEVICES DETAILS	
11-07-19	REVISED NOTE 9, ADDED NOTE 11	
7-25-19	REVISED TRAFFIC CONTROL DEVICES DETAILS	
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
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	
DATE	REVISION	FILMED

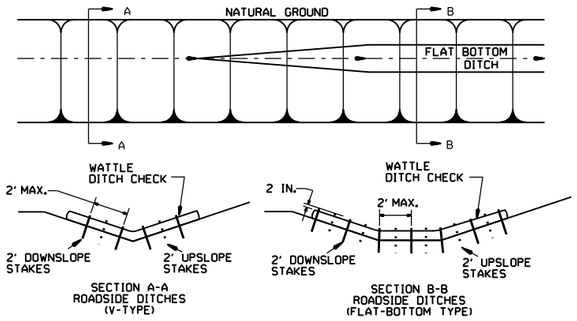
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

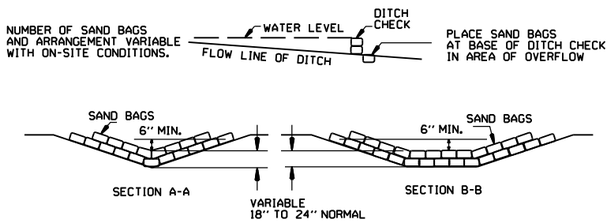
STANDARD DRAWING TC-3

GENERAL NOTES

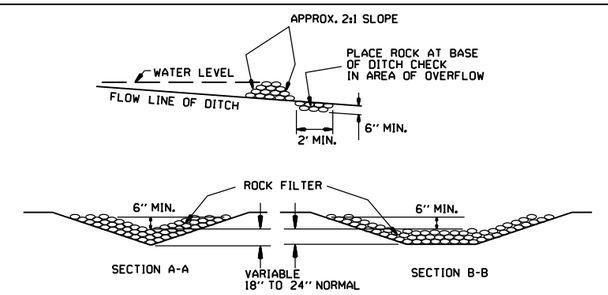
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

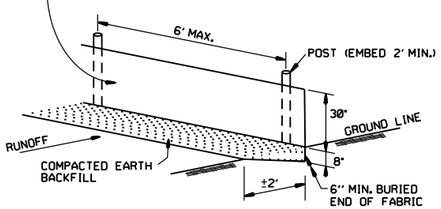


ROCK DITCH CHECK (E-6)

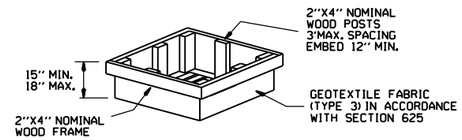
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

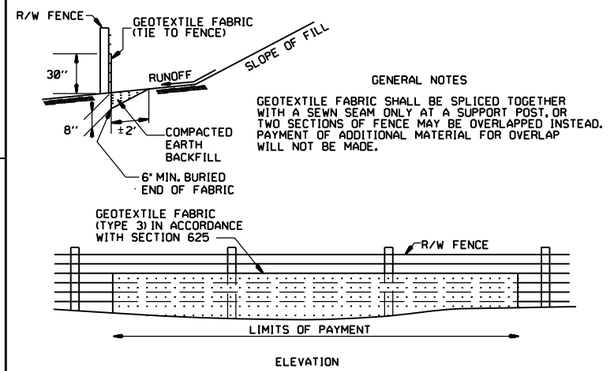
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



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.

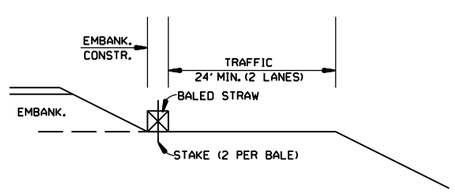
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

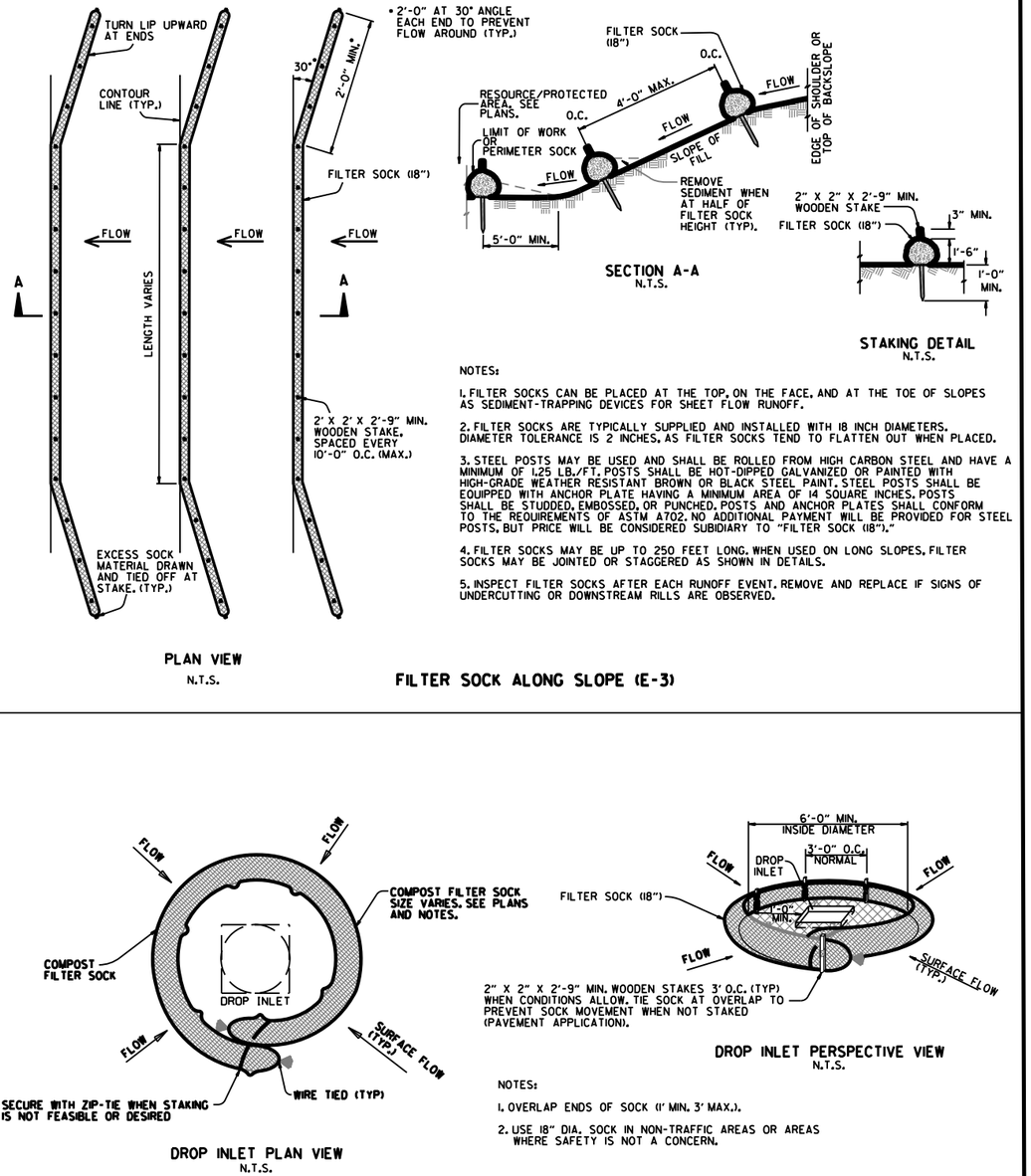
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES. AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)

DROP INLET PLAN VIEW
N.T.S.

DROP INLET PERSPECTIVE VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

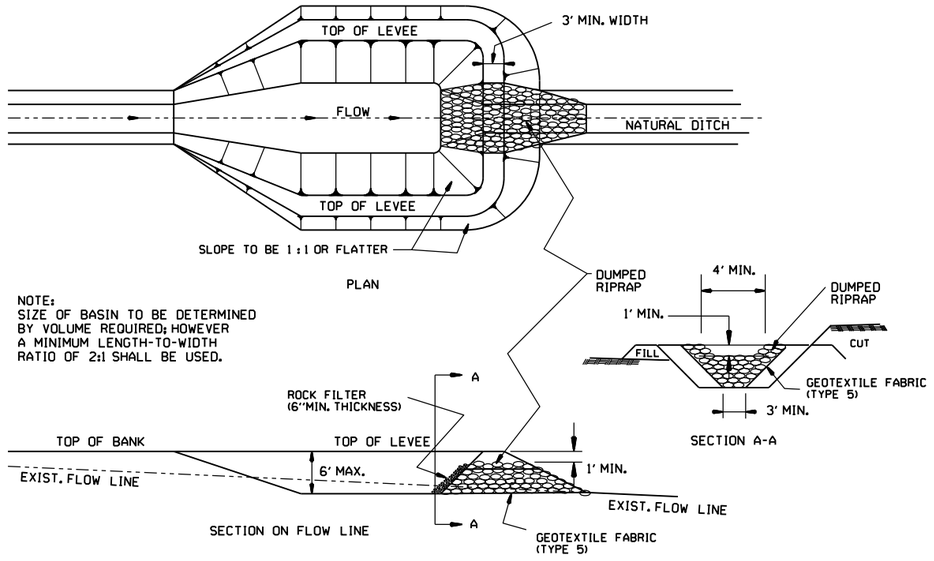
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

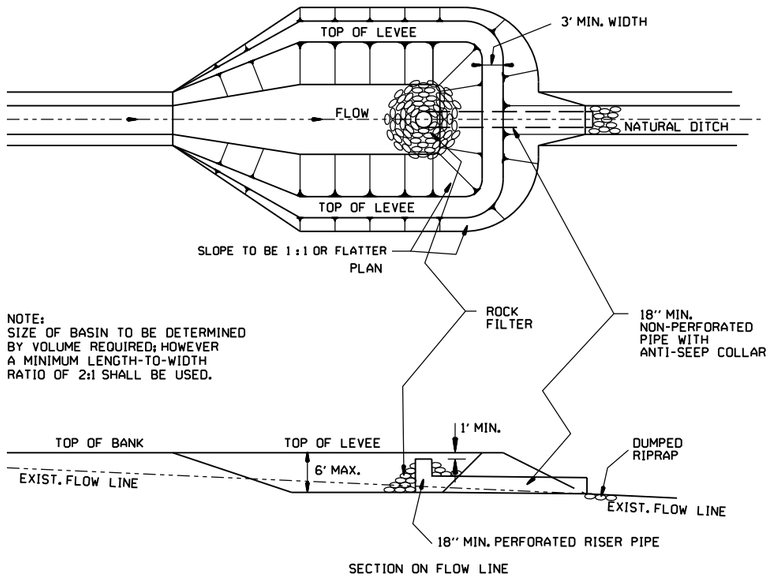
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

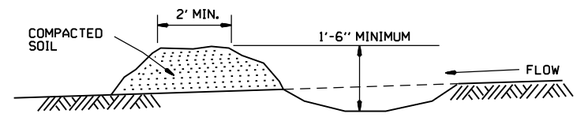
STANDARD DRAWING TEC-1



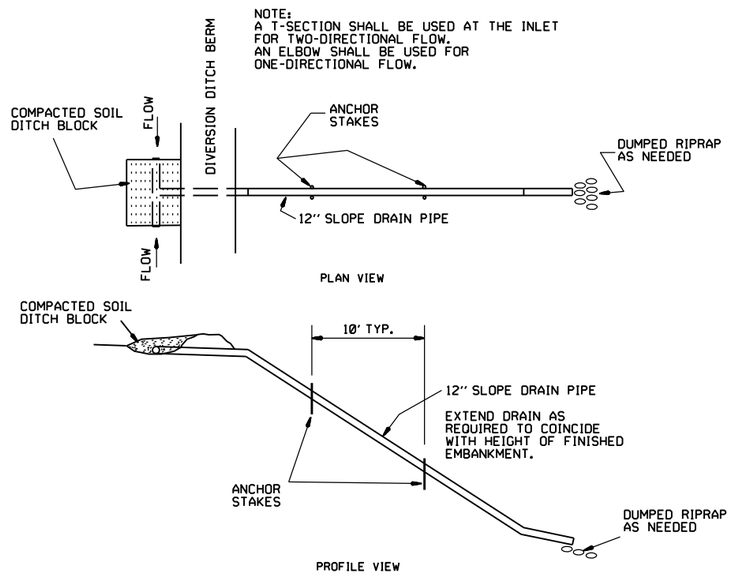
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



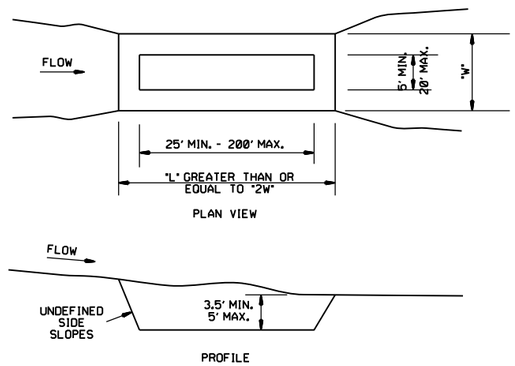
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

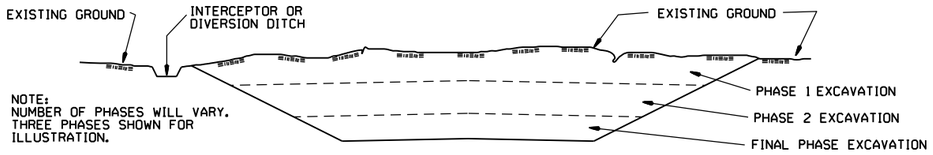
STANDARD DRAWING TEC-2

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



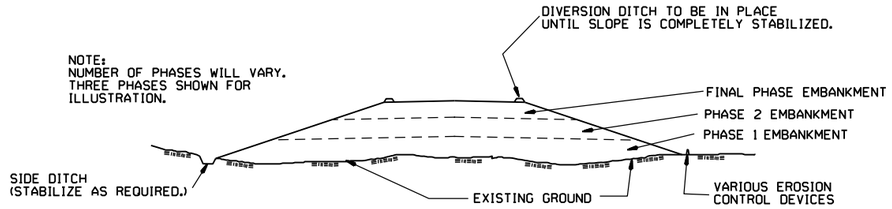
GENERAL NOTE

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

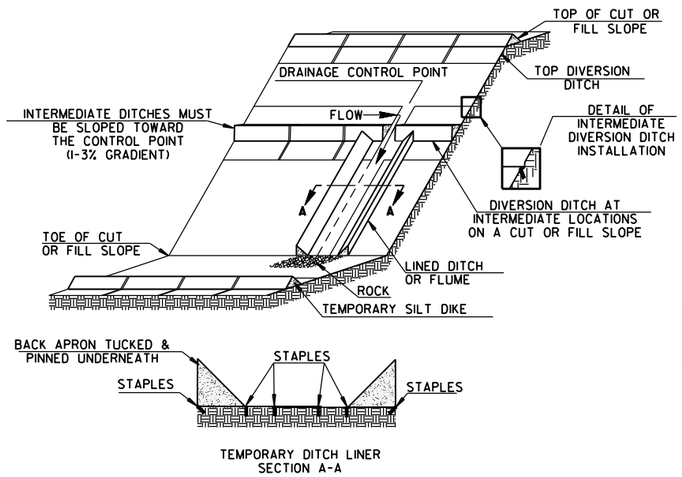
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

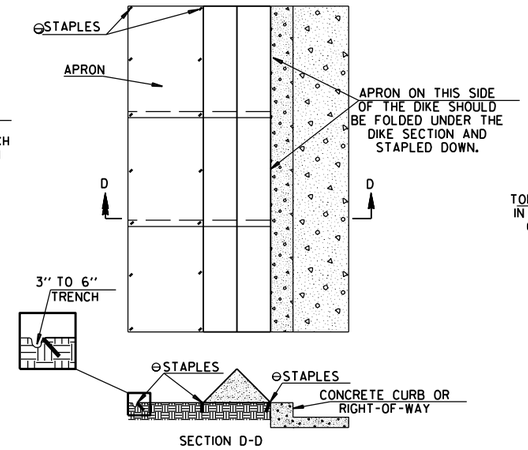
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



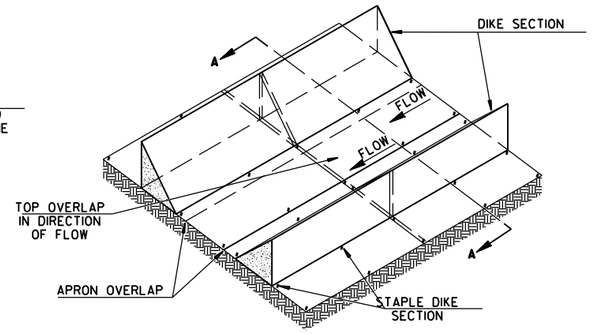
TEMPORARY DITCH LINER
SECTION A-A

TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER

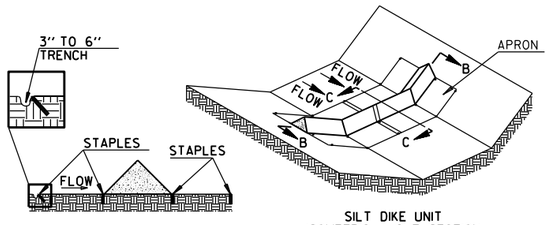


SECTION D-D

TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER

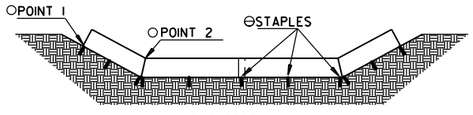


TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER



SILT DIKE UNIT
ISOMETRIC / CUT SECTION

SECTION C-C

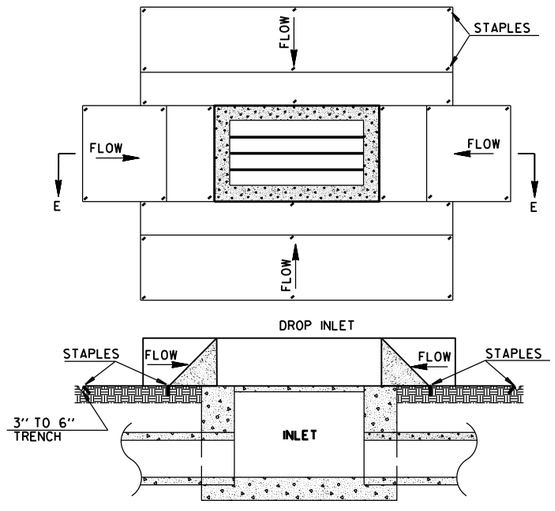


DIKE SECTION
SECTION B-B

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.



SECTION E-E

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.

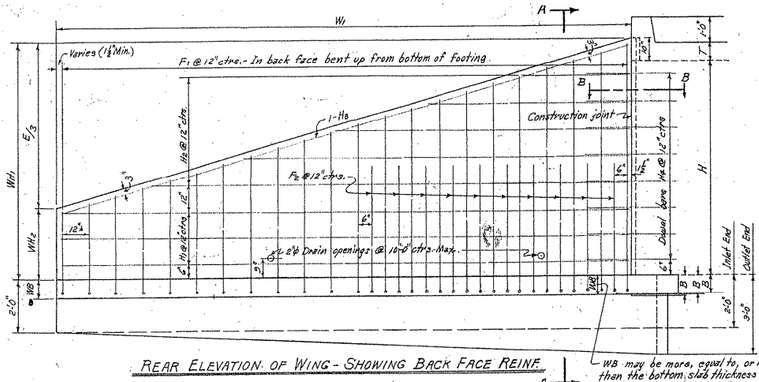
DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

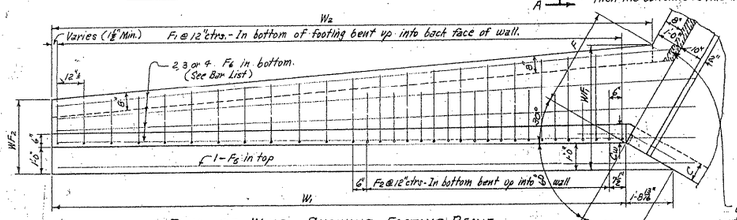
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4

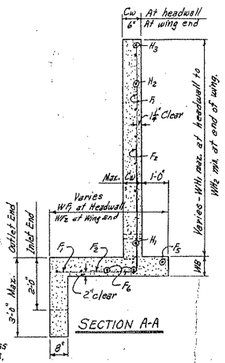
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



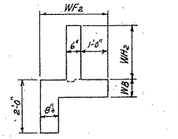
REAR ELEVATION OF WING - SHOWING BACK FACE REINF.



PLAN OF WING - SHOWING FOOTING REINF.

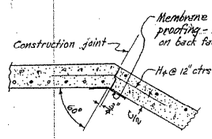


SECTION A-A

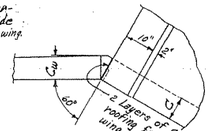


END VIEW OF WING

When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.



"F" SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

NOTE:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING AT HEADWALL = C	WINGWALL HEIGHTS AT HEADWALL	WINGWALL HEIGHTS AT END OF WING	WIDTHS OF WING FOOTINGS AT HEADWALL	WIDTHS OF WING FOOTINGS AT END OF WING	PERPENDICULAR FOOTING DIMENSION F	PERPENDICULAR DIST. FROM HDWL. TO END OF WING E	LENGTH OF WING WALLS W1	INSIDE FOOTING DIMENSION W2	* QUANTITY PER WING CLASS S CONCRETE INLET END	* QUANTITY PER WING CLASS S CONCRETE OUTLET END
H	WB	Cw	WH1	WH2	WF1	WF2	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-4"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1½"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-2"	1'-1⅜"	6'-6"	9'-0½"	8'-3½"	1.330	1.466
4'	7"	6"	4'-10"	1'-2"	3'-0"	2'-3"	1'-3"	10'-6"	12'-1½"	12'-1½"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-4"	2'-6½"	2'-1⅜"	12'-6"	14'-5½"	13'-7½"	2.478	2.668
		7"	5'-10"	1'-8"	3'-5"	2'-4½"	2'-1⅜"	12'-6"	14'-5½"	13'-7½"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-4⅝"	14'-6"	16'-9"	15'-7½"	3.440	3.661
		7⅞"	6'-10"	2'-0"	3'-8"	2'-6"	2'-4⅝"	14'-6"	16'-9"	17'-1½"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-4⅝"	14'-6"	16'-9"	17'-1½"	3.582	3.803
7'	8⅝"	7⅞"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅜"	16'-6"	19'-0⅝"	19'-8⅜"	4.505	4.758
		8"	7'-10"	2'-4"	4'-2"	2'-7½"	3'-1⅜"	16'-6"	19'-0⅝"	19'-8⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-5"	18'-6"	21'-4½"	22'-2"	5.761	6.097

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

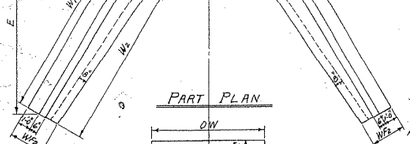
W3 = (OW - 2F)

CLEAR SPAN S	CLEAR HEIGHT H	2 x FOOTING DIMENSION 2F	SINGLE BARREL CULVERT OW	SINGLE BARREL CULVERT W3	DOUBLE BARREL CULVERT OW	DOUBLE BARREL CULVERT W3	TRIPLE BARREL CULVERT OW	TRIPLE BARREL CULVERT W3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE BARREL CULVERT W3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE BARREL CULVERT W3
4'	2'	1'-11⅞"	5'-0"	3'-0⅛"	9'-8"	7'-8⅛"	14'-4"	12'-4⅛"	19'-0"	17'-0⅛"	23'-8"	21'-8⅛"
	3'	2'-8⅜"	5'-0"	2'-3⅜"	9'-8"	6'-11⅛"	14'-4"	11'-7⅛"	19'-0"	16'-3⅛"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅜"	9'-8"	5'-4⅜"	14'-4"	10'-0⅜"	19'-0"	14'-8⅜"	23'-8"	19'-4⅜"
	6'	5'-0⅛"	5'-2"	0'-1⅞"	9'-11"	4'-10⅛"	14'-8"	9'-7⅛"	19'-5"	14'-4⅛"	24'-2"	19'-1⅛"
5'	3'	2'-8⅜"	6'-0"	3'-3⅜"	11'-8"	8'-11⅛"	17'-4"	14'-7⅛"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅜"	11'-8"	7'-4⅜"	17'-4"	13'-0⅜"	23'-0"	18'-8⅜"	28'-8"	24'-8⅜"
	6'	5'-0⅛"	6'-2"	1'-1⅞"	11'-11"	6'-10⅛"	17'-8"	12'-7⅛"	23'-5"	18'-4⅛"	29'-2"	24'-1⅛"
	7'	6'-2⅝"	6'-5"	0'-0¾"	12'-1"	5'-10⅝"	17'-11"	11'-8⅝"	23'-9"	17'-8⅝"	29'-7"	23'-6⅝"
6'	3'	2'-8⅜"	7'-0"	4'-3⅜"	13'-8"	10'-11⅛"	20'-4"	17'-7⅛"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅜"	13'-8"	9'-4⅜"	20'-4"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-4⅜"
	6'	5'-0⅛"	7'-2"	2'-1⅞"	13'-11"	8'-10⅛"	20'-8"	15'-7⅛"	27'-5"	22'-2⅛"	34'-2"	29'-1⅛"
	7'	6'-2⅝"	7'-5"	1'-0¾"	14'-1"	7'-10⅝"	20'-11"	14'-8⅝"	27'-9"	21'-4⅝"	34'-7"	28'-4⅝"
	8'	7'-1"	7'-8"	0'-0"	14'-2"	6'-11"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-8"
7'	4'	3'-6"	8'-0"	4'-6"	15'-6"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3⅜"	8'-0"	3'-8⅜"	15'-8"	11'-4⅜"	23'-4"	19'-0⅜"	31'-0"	26'-8⅜"	38'-8"	34'-8⅜"
	6'	5'-0⅛"	8'-2"	3'-1⅞"	15'-11"	10'-10⅛"	23'-8"	18'-7⅛"	31'-5"	26'-2⅛"	39'-2"	34'-1⅛"
	7'	6'-2⅝"	8'-5"	2'-0¾"	16'-1"	9'-10⅝"	23'-11"	17'-8⅝"	31'-9"	25'-4⅝"	39'-7"	33'-4⅝"
	8'	7'-1"	8'-8"	1'-0"	16'-2"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-8"
8'	4'	3'-6"	9'-0"	5'-6"	17'-6"	13'-2"	26'-4"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-10⅜"	17'-11"	12'-7⅜"	26'-8"	22'-0⅜"	35'-5"	30'-11⅜"	44'-2"	39'-7⅜"
	6'	5'-0⅛"	9'-2"	4'-1⅞"	17'-11"	11'-10⅛"	26'-8"	21'-1⅞"	35'-5"	30'-0⅛"	44'-2"	38'-11⅛"
	7'	6'-2⅝"	9'-5"	3'-0¾"	18'-1"	10'-10⅝"	26'-11"	20'-0⅝"	35'-9"	29'-0⅝"	44'-7"	37'-10⅝"
	8'	7'-1"	9'-8"	2'-0"	18'-2"	10'-0"	27'-0"	19'-0"	35'-10"	28'-6"	44'-8"	37'-2"
9'	5'	4'-3⅜"	10'-2"	5'-10⅜"	19'-11"	14'-7⅜"	29'-8"	25'-4⅜"	39'-5"	35'-0⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅛"	10'-3"	5'-2⅛"	20'-1"	13'-7⅛"	29'-11"	24'-4⅛"	39'-9"	34'-0⅛"	49'-7"	43'-11⅛"
	7'	6'-2⅝"	10'-5"	4'-0¾"	20'-1"	12'-8⅝"	29'-11"	23'-3⅝"	39'-9"	33'-0⅝"	49'-7"	42'-11⅝"
	8'	7'-1"	10'-8"	3'-0"	20'-2"	12'-0"	30'-0"	22'-3"	39'-10"	32'-6"	49'-8"	42'-2"
10'	6'	5'-0⅛"	11'-2"	6'-2⅛"	22'-1"	15'-7⅛"	32'-2"	28'-6⅛"	43'-5"	39'-1⅛"	54'-2"	49'-10⅛"
	7'	6'-2⅝"	11'-5"	5'-0¾"	22'-1"	14'-8⅝"	32'-2"	27'-5⅝"	43'-5"	38'-2⅝"	54'-7"	48'-11⅝"
	8'	7'-1"	11'-8"	4'-0"	22'-2"	14'-0"	32'-3"	26'-5"	43'-6"	37'-6"	54'-8"	48'-2"
11'	6'	5'-0⅛"	12'-2"	7'-2⅛"	24'-2"	17'-1⅛"	34'-6"	30'-11⅛"	47'-10"	43'-1⅛"		
	7'	6'-2⅝"	12'-5"	6'-0¾"	24'-2"	16'-2⅝"	34'-6"	29'-10⅝"	47'-10"	42'-2⅝"		
	8'	7'-1"	12'-8"	5'-0"	24'-3"	15'-6"	34'-7"	28'-10"	47'-10"	41'-6"		
12'	6'	5'-0⅛"	13'-1"	8'-3⅛"	26'-2"	21'-1⅛"	36'-10"	33'-11⅛"	51'-10"	46'-1⅛"		
	7'	6'-2⅝"	13'-4"	7'-1¾"	26'-2"	19'-11⅝"	36'-10"	32'-10⅝"	51'-10"	45'-1⅝"		
	8'	7'-1"	13'-8"	6'-0"	26'-3"	18'-10"	36'-11"	31'-10"	51'-10"	44'-6"		

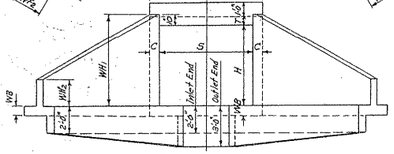
QUANTITIES

CLEAR SPAN	CLEAR HEIGHT	THICKNESS OF WING AT HEADWALL	THICKNESS OF WING FOOTING	REINFORCING STEEL @ - LBS. PER 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS: SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.96	6.92	7.38	8.34
	3'	6"	7"	169.0	6.24	7.81	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.9	6.97	7.68	8.79	9.96	11.12
	4'	6"	7"	259.6	8.54	9.70	10.87	10.03	13.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7⅞"	8⅝"	1139.6	18.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	164.9	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.14	11.49	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7⅞"	8⅝"	1139.6	19.16	20.58	22.00	23.43	24.86
	8'	8"	9"	1925.6	25.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.58	16.15	17.76
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.64
	7'	7⅞"	8⅝"	1139.6	19.38	21.02	22.69	24.28	25.92
	8'	8"	9"	1925.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.34
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7⅞"	8⅝"	1139.6	19.59	21.96	23.30	25.16	26.98
	8'	8"	9"	1925.6	24.54	26.91	28.29	30.11	31.96
9'	5'	7"	7"	357.8	12.26	14.34	16.87	18.45	20.97
	6'	7"	8"	583.1	15.96	18.04	20.09	22.19	24.23
	7'	7⅞"	8⅝"	1139.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1925.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.99	14.80	17.05	19.24	21.52
	6'	7⅞"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7⅞"	8⅝"	1139.6	20.04	22.37	24.64	26.87	29.15
	8'	8"	9"	1925.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	9"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8½"	1139.6	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"	1139.6	20.87	23.69	26.90	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.

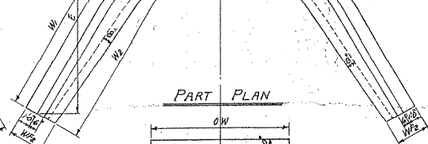


PART PLAN

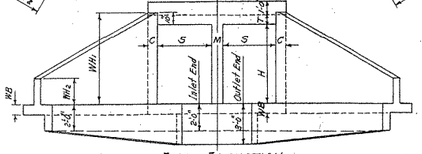


END ELEVATION

SINGLE BARREL CULVERT



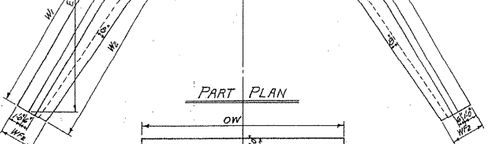
PART PLAN



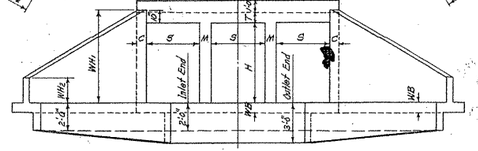
END ELEVATION

DOUBLE BARREL CULVERT

NOTE:- Plans and Elevations are not to scale.

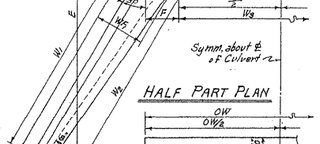


PART PLAN

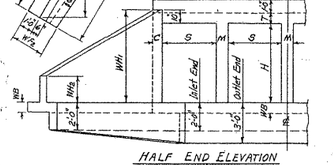


END ELEVATION

TRIPLE BARREL CULVERT

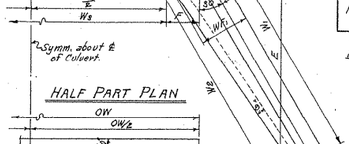


HALF PART PLAN

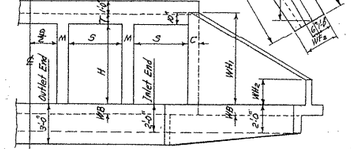


HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN



HALF END ELEVATION

QUINTUPLE BARREL CULVERT

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings of waterproofing asphalt and two intermediate 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	F1 Bent: In bottom of footing, bent up into back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.	F2 Bent: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE	SPACING	NO. REQ'D	LENGTH	X	Y	F5 Straight: Longitudinal in top of wing footing heel. SIZE	NO. REQ'D	LENGTH	F4 Straight: Longitudinal in bottom of wing footing toe. SIZE	NO. REQ'D	LENGTH	H1 Straight: Horizontal in back face of wing. SIZE	SPACING	NO. REQ'D	LENGTH	H2 Straight: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	NO. REQ'D	LENGTHS VARY MAX.	LENGTHS VARY MIN.	H3 Straight: In back face of wing at top-on slope. SIZE	NO. REQ'D	LENGTH	H4 Bent: Dowels thru construction joint at headwall. SIZE	SPACING	NO. REQ'D	LENGTH	X	QUANTITY REINFORCING STEEL PER WING LB.
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	0'-1"	2'-11"	—	—	—	—	—	—	#3	1	9'-8"	#3	2	8'-6"	#3	12"	1	7'-2"	#3	12"	1	—	9'-0"	#8	1	7'-9"	#3	12"	2	2'-8"	1'-9"	27.0
3'	#3	12"	10	2'-2"	5'-2"	0'-11"	1'-3"	1'-5"	4'-0"	—	—	—	—	—	—	#3	1	12'-0"	#3	2	11'-0"	#3	12"	1	9'-6"	#3	12"	2	7'-6"	9'-0"	#8	1	9'-9"	#9	12"	3	2'-8"	1'-9"	41.1
4'	#3	12"	13	2'-11"	6'-6"	0'-11"	1'-7"	1'-6"	5'-0"	—	—	—	—	—	—	#3	1	14'-9"	#3	3	13'-6"	#3	12"	1	11'-10"	#3	12"	3	10'-11"	9'-0"	#3	1	10'-2"	#3	12"	4	2'-8"	1'-9"	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"	#8	12"	2	14'-2"	#3	12"	3	10'-11"	9'-0"	#3	1	19'-7"	#3	12"	5	2'-8"	1'-9"	89.5
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-3"	2'-5"	7'-1"	#3	12"	4	4'-6"	1'-4"	3'-3"	#3	1	19'-0"	#3	3	18'-6"	#3	12"	2	16'-4"	#3	12"	4	14'-5"	9'-0"	#3	1	17'-0"	#3	12"	6	2'-8"	1'-9"	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"	3	18'-9"	#4	12"	5	17'-9"	9'-0"	#4	1	19'-5"	#4	12"	7	3'-6"	1'-9"	283.7
8'	#4	12"	22	4'-1"	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"	3	21'-1"	#4	12"	5	17'-9"	9'-0"	#4	1	21'-10"	#4	12"	8	3'-6"	1'-9"	356.4

BAR BENDING DIAGRAMS

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62. Checked By:- RMS - 1-9-63
Drawn By:- W.C.H. 12-4-62. Checked By:- RMS - 1-31-63
Quantities By:- W.C.H. 12-14-62. Rechecked By:- RMS - 3-29-63

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾ chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H= 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1

MYLAR

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH

| DEPTH OF COVER D | CLEAR SPAN S | CLEAR HEIGHT H | "a" bars STRAIGHT In Top and Bottom Slab of Barrel. & 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 below. In Bottom of Top Slab bent up over Division Wall - hooked. Alternate with "a" and "c" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | X | Y | Z | "b2" bars BENT - See Diagram below. In Top of Bottom Slab bent down under Division Wall - hooked. Alternate with "a" and "c" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | "c" bars STRAIGHT In Top and Bottom Slab of Barrel. Alternate with "b" and "b2" bars. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH | "d" bars Longitudinal in Top Slab of Barrel. SIZE | SPACING | NO. REQ'D | LENGTH | "d1" bars STRAIGHT Longitudinal in Sidewalls and Division Walls. SIZE | SPACING | NO. REQ'D | LENGTH | "e" bars Longitudinal in Bottom Slab of Barrel. SIZE | SPACING | NO. REQ'D | LENGTH | "f" bars STRAIGHT Vertical in Sidewalls and Division Walls. SIZE | SPACING | NUMBER REQ'D 3:1 | NUMBER REQ'D 4:1 | LENGTH |
|---|---|---|---|---|---