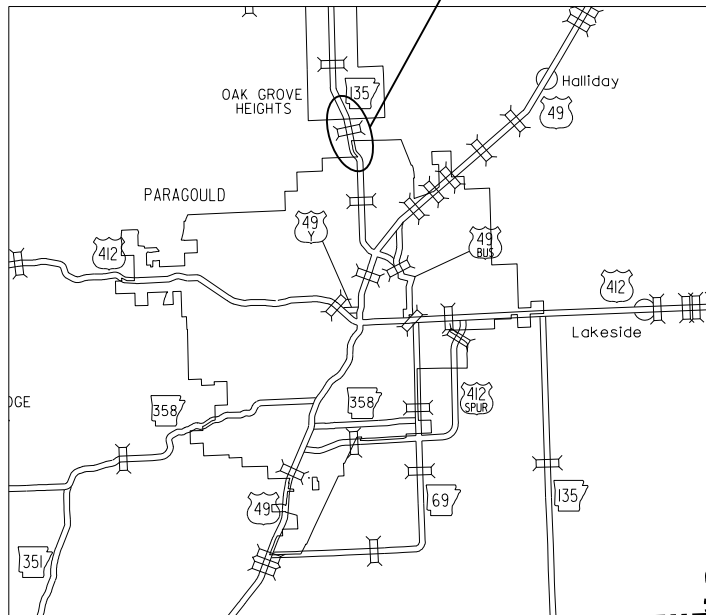


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REVISED DATE:

PROJECT
LOCATION



VICINITY MAP

ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR STATE HIGHWAY

JACKS CREEK STR. & APPRS. (S)

GREENE COUNTY

ROUTE 135 SECTION 5

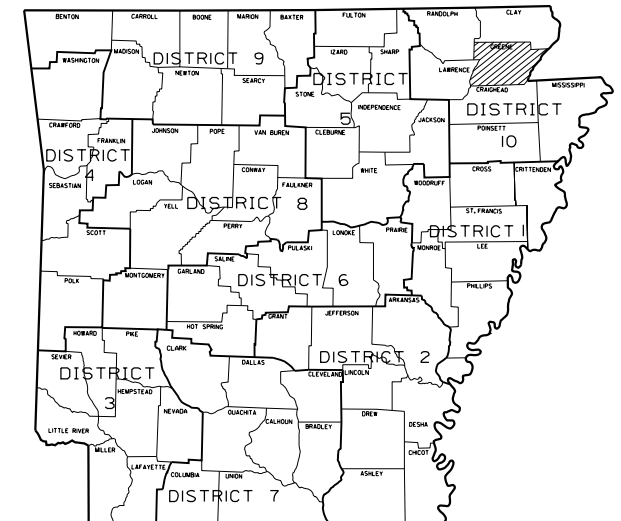
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FED. AID PROJ. NHPP-0028(54)

NOT TO SCALE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	101013	1
								70

② JACKS CREEK STR. & APPRS. (S)



ARKANSAS HIGHWAY DISTRICT 10

BRIDGE CONSTRUCTION DATA

- ① STA. 116+20.00 BRIDGE END
BRIDGE NO. 07514 OVER JACKS CREEK
159'-0" INTEGRAL PRESTRESSED
BOX BEAM UNIT (49.50', 60', 49.50')
40'-0" CLEAR ROADWAY
160'-0" BRIDGE LENGTH
STA. 117+80.00 BRIDGE END

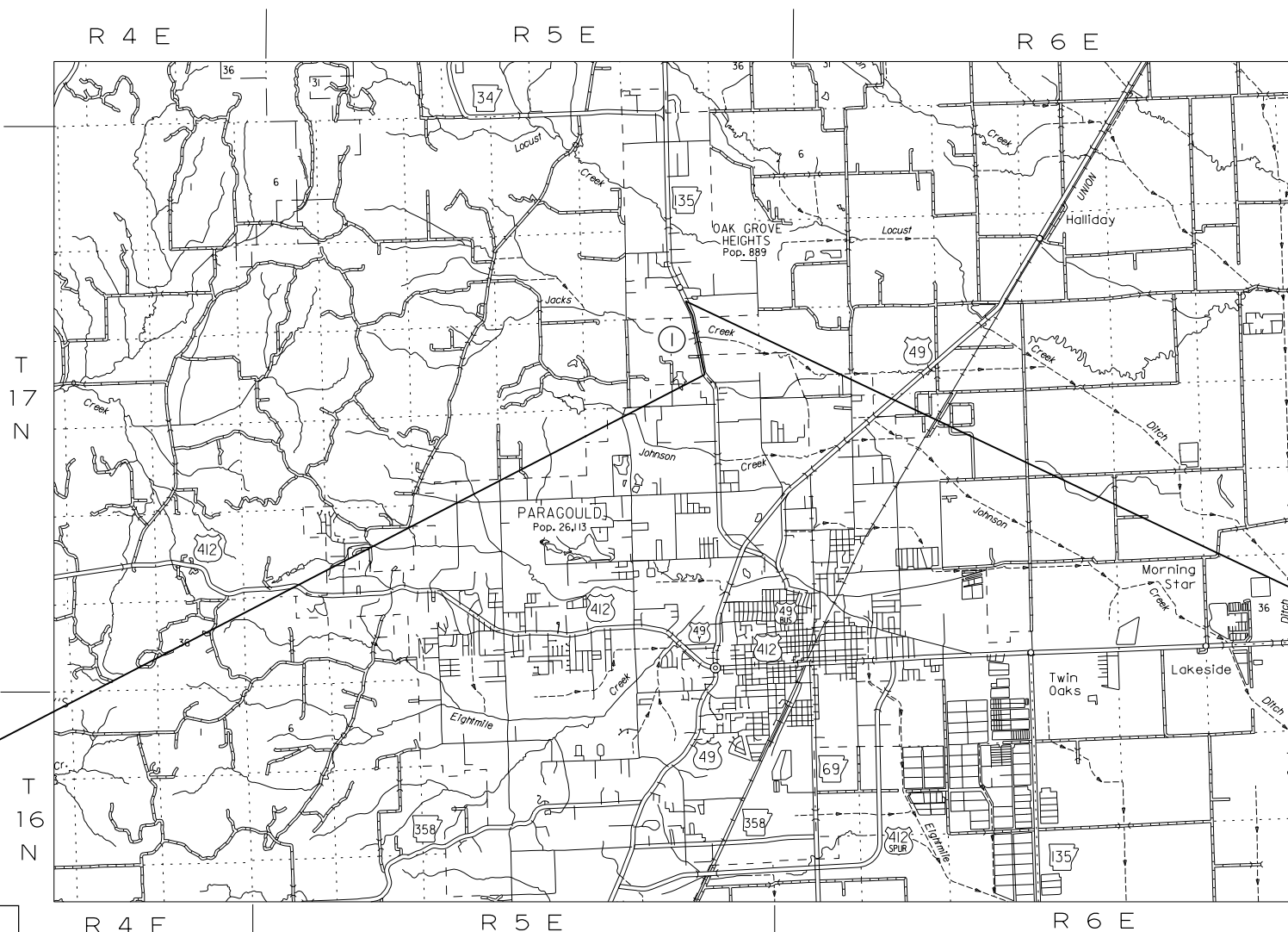
DESIGN TRAFFIC DATA

DESIGN YEAR ----- 2043
2023 ADT ----- 7,400
2043 ADT ----- 8,200
2043 DHV ----- 902
DIRECTIONAL DISTRIBUTION ----- 60%
TRUCKS ----- 5%
DESIGN SPEED ----- 60 MPH

STA. 102+50.00
BEGIN JOB 101013
L.M. 2.76

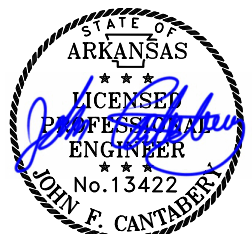
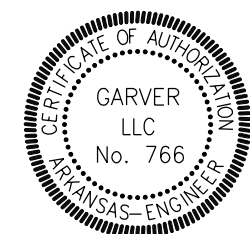
PROJECT COORDINATES

	BEGIN	MID-POINT	END
LATITUDE	N 36°06'13"	N 36°06'26"	N 36°06'39"
LONGITUDE	W 90°30'18"	W 90°30'20"	W 90°30'23"
STATION	102+50.00	116+05.00	129+60.00



GROSS LENGTH OF PROJECT 2710.00 FEET OR 0.513 MILES
NET " " ROADWAY 2550.00 " " 0.483 MILES
NET " " BRIDGES 160.00 " " 0.030 MILES
NET " " PROJECT 2710.00 " " 0.513 MILES

STA. 129+60.00
END JOB 101013



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	2	70
				②	INDEX OF SHEETS AND STANDARD DRAWINGS			



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INDEX OF SHEETS			
SHEET NO.	TITLE	BRIDGE NO.	DRWG.NO.
1	TITLE SHEET		
2	INDEX OF SHEETS AND STANDARD DRAWINGS		
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES		
4 - 5	TYPICAL SECTIONS OF IMPROVEMENT		
6 - 8	SPECIAL DETAILS		
9 - 14	TEMPORARY EROSION CONTROL DETAILS		
15 - 19	MAINTENANCE OF TRAFFIC DETAILS		
20 - 21	PERMANENT PAVEMENT MARKING DETAILS		
22	SOIL BORING LOG		
23 - 26	QUANTITIES		
27	SCHEDULE OF BRIDGE QUANTITIES	07154	63787
28	SUMMARY OF QUANTITIES AND REVISIONS		
29 - 31	SURVEY CONTROL DETAILS		
32 - 34	PLAN AND PROFILE SHEETS		
35	LAYOUT OF BRIDGE HIGHWAY 135 OVER JACKS CREEK (SHEET 1 OF 2)	07154	63788
36	LAYOUT OF BRIDGE HIGHWAY 135 OVER JACKS CREEK (SHEET 2 OF 2)	07154	63789
37	DETAILS OF END BENTS (SHEET 1 OF 2)	07154	63790
38	DETAILS OF END BENTS (SHEET 2 OF 2)	07154	63791
39	DETAILS OF INTERMEDIATE BENTS (SHEET 1 OF 2)	07154	63792
40	DETAILS OF INTERMEDIATE BENTS (SHEET 2 OF 2)	07154	63793
41	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 1 OF 12)	07154	63794
42	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 2 OF 12)	07154	63795
43	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 3 OF 12)	07154	63796
44	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 4 OF 12)	07154	63797
45	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 5 OF 12)	07154	63798
46	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 6 OF 12)	07154	63799
47	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 7 OF 12)	07154	63800
48	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 8 OF 12)	07154	63801
49	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 9 OF 12)	07154	63802
50	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 10 OF 12)	07154	63803
51	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 11 OF 12)	07154	63804
52	DETAILS OF 159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT (SHEET 12 OF 12)	07154	63805
53	DETAILS OF TYPE SPECIAL APPROACH GUTTERS	07154	63806
54 - 70	CROSS SECTIONS		

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
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	04-14-23
55021	STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS	03-24-16
55040C1	STANDARD DETAILS FOR TYPE C1 APPROACH SLAB	02-27-14

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-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
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCP-1	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)	02-27-14
PCP-2	PLASTIC PIPE CULVERT (PVC F949)	02-27-14
PCP-3	PLASTIC PIPE CULVERT (POLYPROPYLENE)	02-27-20
PM-1	PAVEMENT MARKING DETAILS	02-27-20
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-2	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC DETAILS	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
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
TC-5	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	11-07-19
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
WF-4	WIRE FENCE TYPE C AND D	08-22-02

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-19-23				6	ARK.			
				JOB NO.		101013	3	70

2 GOVERNING SPECIFICATIONS AND GENERAL NOTES

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 - 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
409-2	ASPHALT LABORATORY FACILITY
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
416-1	RECYCLED ASPHALT PAVEMENT
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)
617-2	GUARDRAIL DELINEATORS
620-1	MULCH COVER
800-1	STRUCTURES
802-3	CONCRETE FOR STRUCTURES
802-4	CEMENT
804-2	REINFORCING STEEL FOR STRUCTURES
JOB 101013	BIDDING REQUIREMENTS AND CONDITIONS
JOB 101013	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 101013	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 101013	BUY AMERICA - CONSTRUCTION MATERIALS
JOB 101013	CARGO PREFERENCE ACT REQUIREMENTS
JOB 101013	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 101013	COLD MILLING - COUNTY PROPERTY
JOB 101013	CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB 101013	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 101013	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
JOB 101013	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB 101013	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 101013	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB 101013	EXCAVATION AND EMBANKMENT
JOB 101013	EXTENSION FOR PIPE CULVERTS
JOB 101013	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 101013	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB 101013	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB 101013	MANDATORY ELECTRONIC CONTRACT
JOB 101013	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 101013	NESTING SITES OF MIGRATORY BIRDS
JOB 101013	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB 101013	PARTNERING REQUIREMENTS
JOB 101013	PLASTIC PIPE
JOB 101013	PRESTRESSED CONCRETE MEMBERS
JOB 101013	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 101013	PRICE ADJUSTMENT FOR FUEL
JOB 101013	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB 101013	SHORING
JOB 101013	SHORING FOR CULVERTS
JOB 101013	SOIL STABILIZATION
JOB 101013	SPECIAL CLEARING PUP SEASON REQUIREMENTS
JOB 101013	STORM WATER POLLUTION PREVENTION PLAN
JOB 101013	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 101013	TOTAL SOLAR ECLIPSE
JOB 101013	UTILITY ADJUSTMENTS
JOB 101013	VALUE ENGINEERING
JOB 101013	WARM MIX ASPHALT
JOB 101013	WATER GATES



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GENERAL NOTES

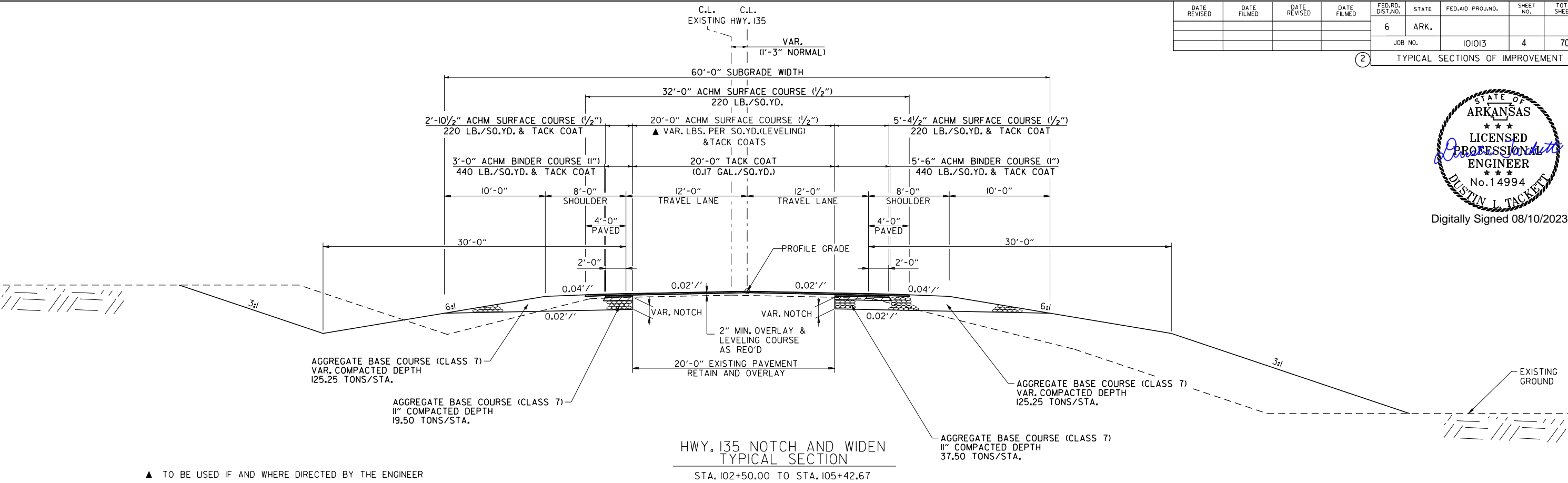
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- 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.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- 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.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- 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.
- THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 23 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

GOVERNING SPECIFICATIONS AND GENERAL NOTES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101013	4	70	
TYPICAL SECTIONS OF IMPROVEMENT								



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▲ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTE:
DIMENSIONS SHOWN REPRESENT AVERAGE WIDTHS. ACTUAL DIMENSIONS VARY WITHIN THE NOTCH AND WIDEN STATION RANGE.

NOTES:

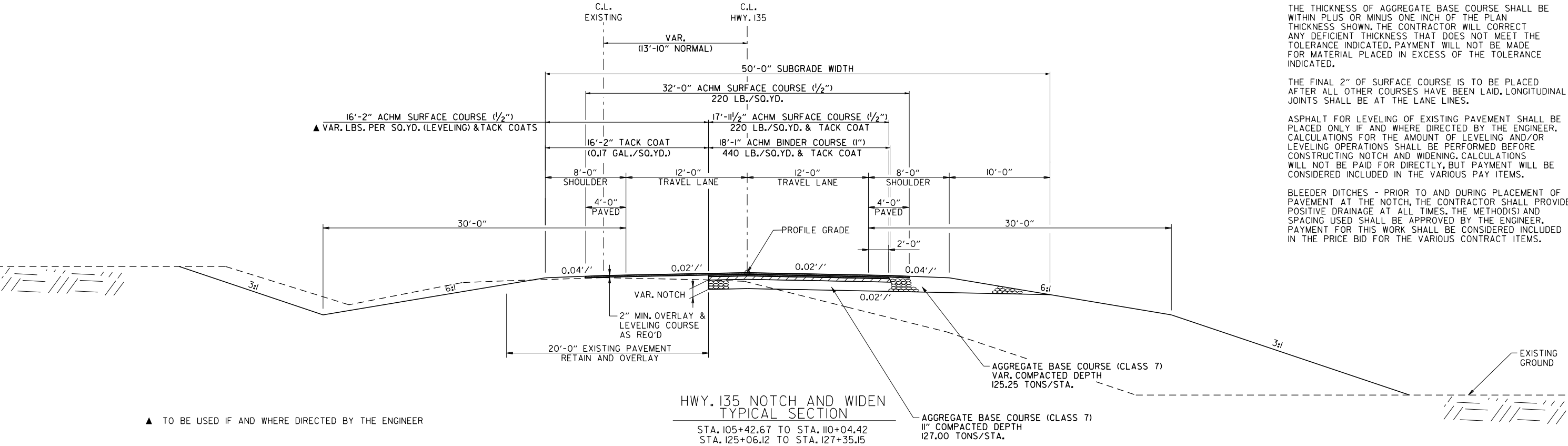
REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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 THE 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 THE 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.

BLEEDER DITCHES - PRIOR TO AND DURING PLACEMENT OF PAVEMENT AT THE NOTCH, THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES. THE METHOD(S) AND SPACING USED SHALL BE APPROVED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



▲ TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTE:
DIMENSIONS SHOWN REPRESENT AVERAGE WIDTHS. ACTUAL DIMENSIONS VARY WITHIN THE NOTCH AND WIDEN STATION RANGE.

TYPICAL SECTIONS OF IMPROVEMENT

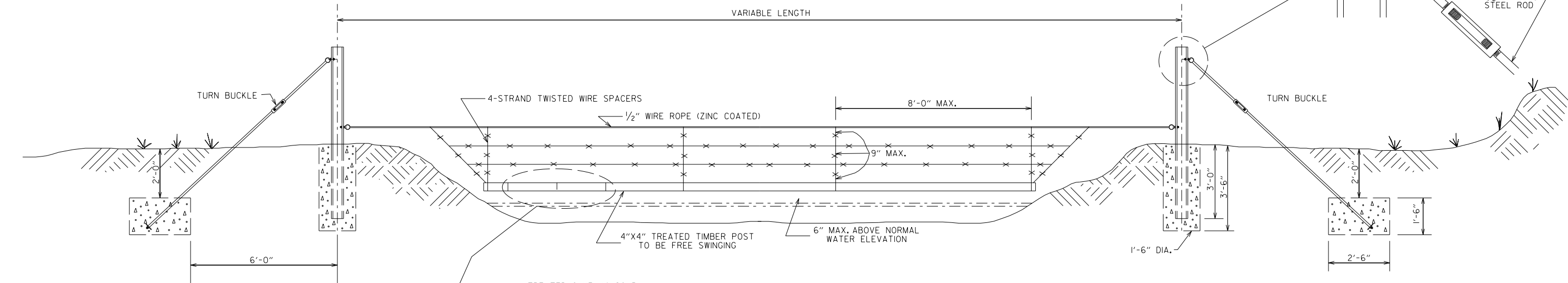
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				JOB NO.		101013	7	70
2 SPECIAL DETAILS								



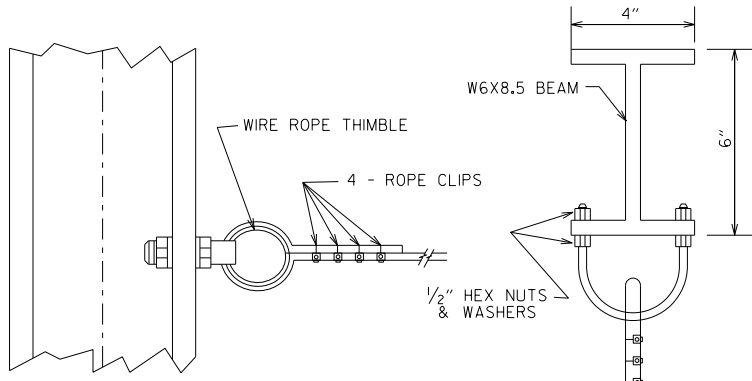
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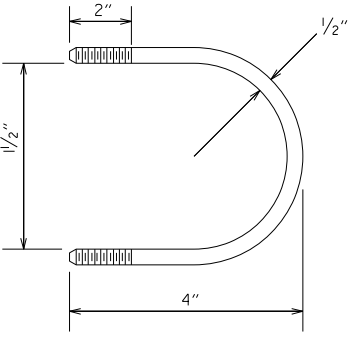
TOP VIEW



PLAN VIEW



U-BOLT DETAIL & METHOD OF ATTACHING 1/2" WIRE ROPE TO POST

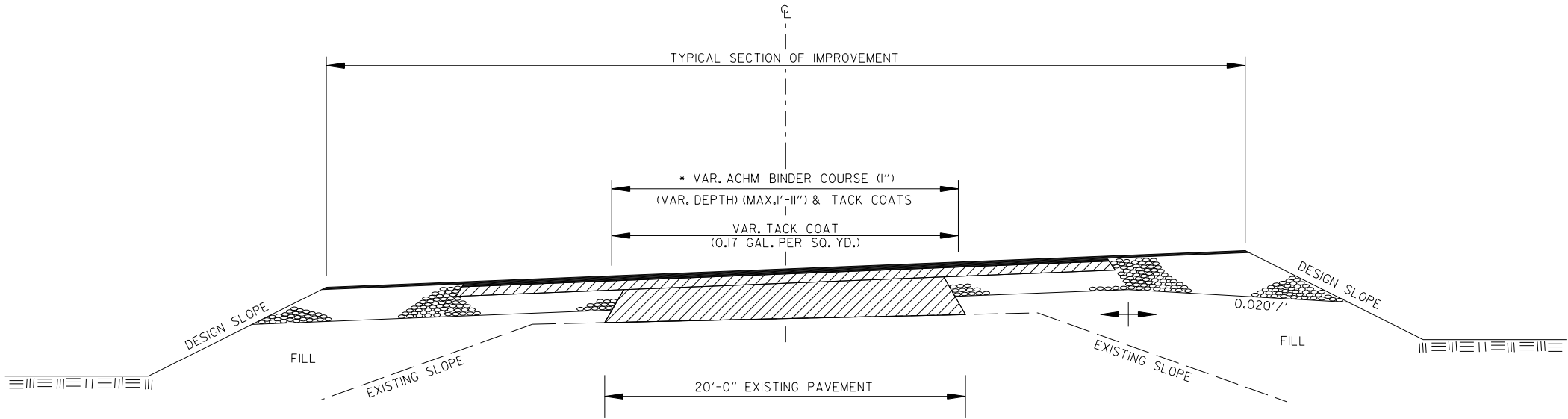


SPECIAL DETAILS

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.		101013	8	70
2 SPECIAL DETAILS								



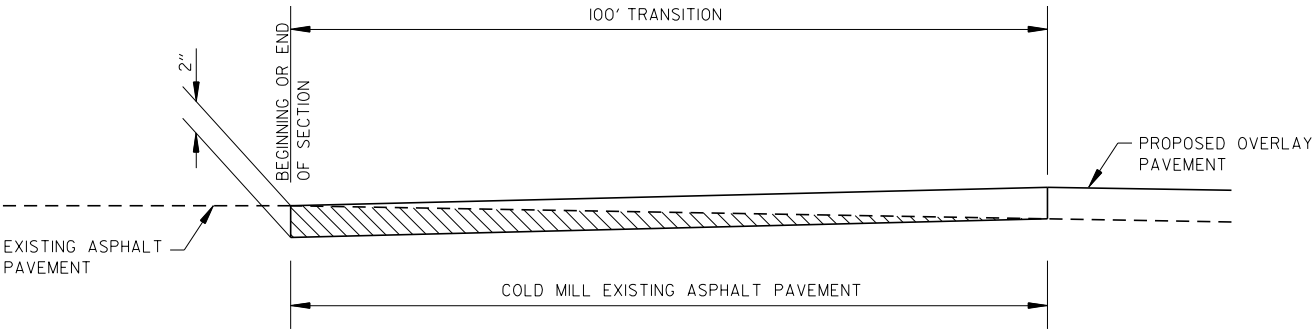
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• 11" AGGREGATE BASE COURSE (CLASS 7)
TO BE REPLACED WITH ACHM BINDER COURSE (1")

METHOD OF RAISING GRADE

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



DETAIL FOR TRANSITIONS

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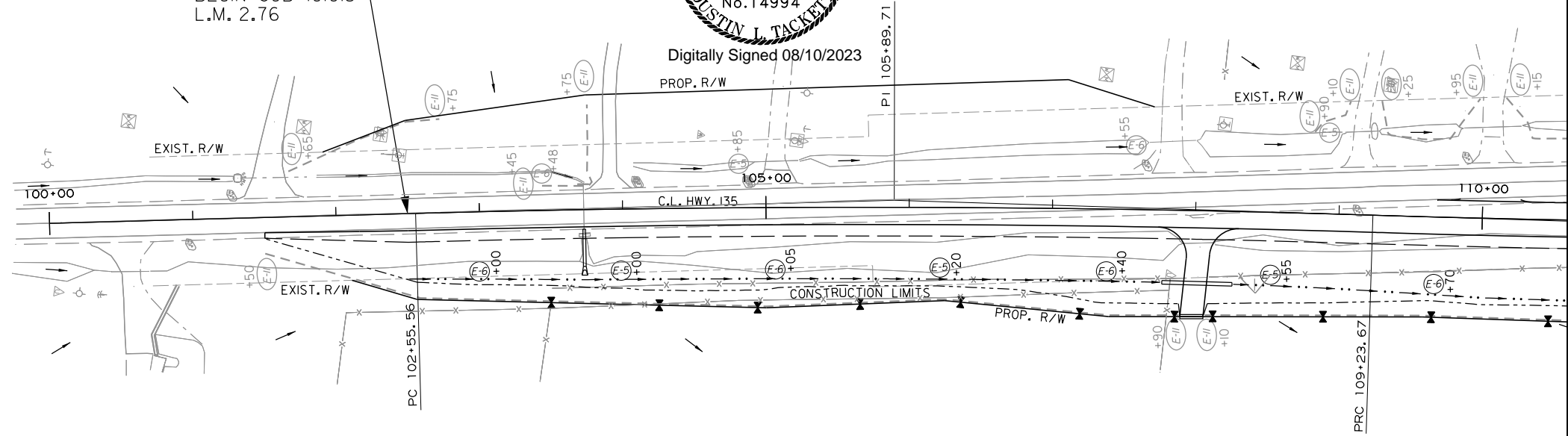
HWY. 135

SILT FENCE	(E-11)	LIN. FT.
STA. 101+50 TO 107+90	RT.	RETAINED
STA. 101+65 TO 102+75	LT.	RETAINED
STA. 103+45 TO 103+75	LT.	RETAINED
STA. 103+55 TO 103+90	RT.	RETAINED
STA. 108+10 TO 110+70	RT.<.	RETAINED
STA. 108+90 TO 109+10	LT.	RETAINED
STA. 109+25 TO 109+95	LT.	RETAINED
STA. 110+15 TO 111+45	LT.	RETAINED
STA. 120+85 TO 127+30	RT.<.	RETAINED
STA. 121+15 TO 127+00	RT.	RETAINED
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 104+00	RT.	—
STA. 104+85	LT.	RETAINED
STA. 106+20	RT.	—
STA. 108+55	RT.	—
STA. 108+90	LT.	RETAINED
STA. 111+30	LT.	RETAINED
STA. 113+00	RT.	—
STA. 122+05	RT.	—
ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 104+00	RT.	—
STA. 104+48	LT.	RETAINED
STA. 105+05	RT.	—
STA. 107+40	RT.	—
STA. 107+55	LT.	RETAINED
STA. 107+80	RT.	RETAINED
STA. 109+70	RT.	—
STA. 116+50	LT.	RETAINED
STA. 116+65	RT.	RETAINED
STA. 116+75	RT.	—
STA. 117+30	RT.	—
STA. 117+45	LT.	RETAINED
STA. 122+75	RT.	—

STA. 102+50.00
BEGIN JOB 101013
L.M. 2.76



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		11	70
				JOB NO.	101013			
				TEMPORARY EROSION CONTROL DETAILS				



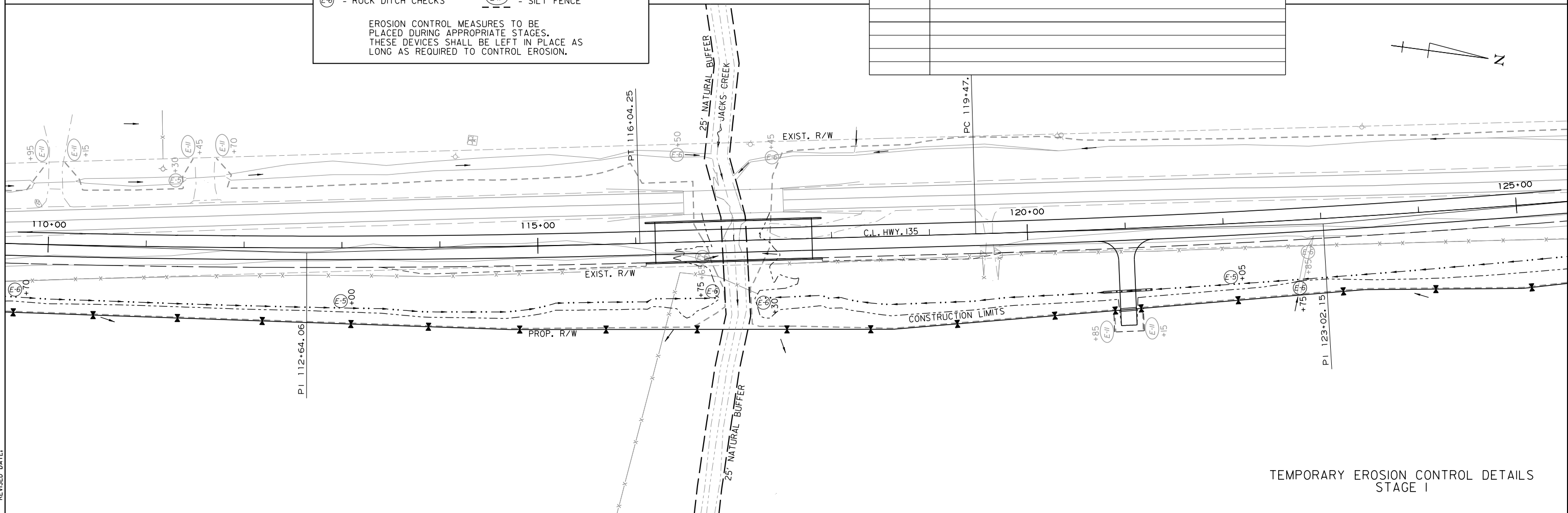
REVISIONS

DATE	REVISION

LEGEND

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

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

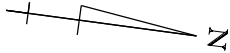


TEMPORARY EROSION CONTROL DETAILS
STAGE 1

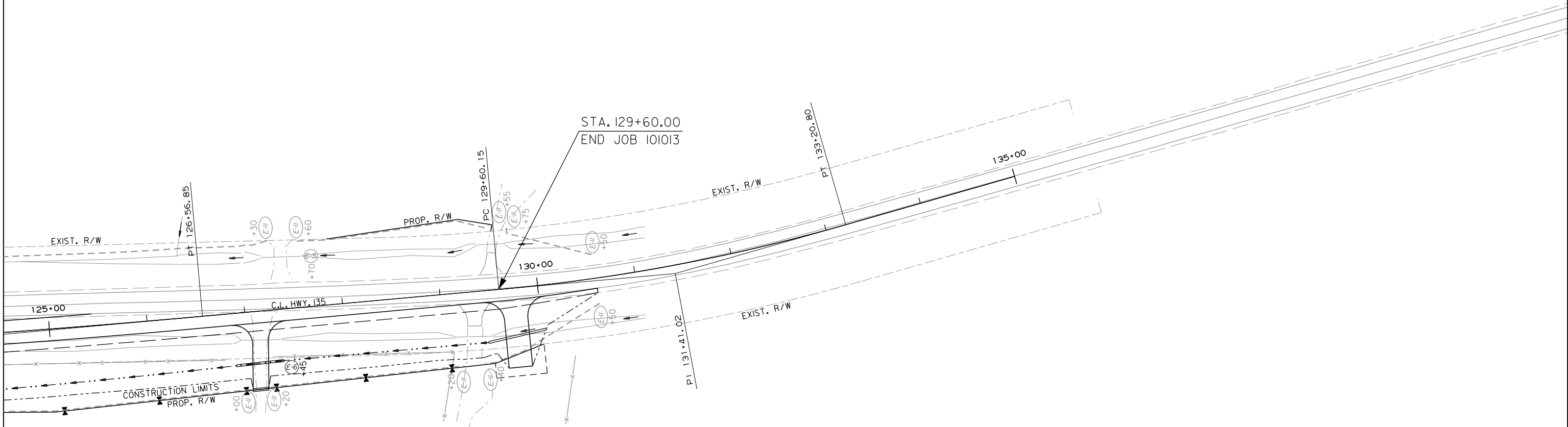
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				6	ARK.			
						JOB NO.	101013	12 70
2 TEMPORARY EROSION CONTROL DETAILS								

HWY. 135

SILT FENCE		LIN. FT.
STA. 127+20 TO 129+20	RT.	RETAINED
STA. 127+60 TO 129+55	LT.	RETAINED
STA. 129+40 TO 130+50	RT.	RETAINED
STA. 129+75 TO 130+50	LT.	RETAINED
SAND BAG DITCH CHECK	E-5	INSTALLATION
STA. 127+70	LT.	RETAINED
ROCK DITCH CHECK	E-6	INSTALLATION
STA. 127+45	RT.	RETAINED



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LEGEND

E-5 = SAND BAG DITCH CHECKS

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

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

REVISIONS

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS
STAGE I

HWY. 135

SILT FENCE	(E-11)	LIN. FT.
STA. 101+50 TO 107+90	RT.	RETAINED
STA. 101+65 TO 102+75	LT.	RETAINED
STA. 103+75 TO 103+75	LT.	IO
STA. 103+55 TO 103+90	RT.	RETAINED
STA. 108+10 TO 110+70	RT.<.	RETAINED
STA. 108+90 TO 109+10	LT.	RETAINED
STA. 109+25 TO 109+95	LT.	RETAINED
STA. 110+15 TO 111+45	LT.	RETAINED
STA. 120+85 TO 127+30	RT.<.	RETAINED
STA. 121+15 TO 127+00	RT.	RETAINED

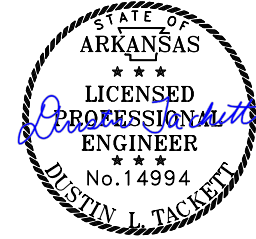
SAND BAG DITCH CHECK	(E-5)	INSTALLATION
STA. 104+30	LT.	—
STA. 105+85	LT.	—
STA. 106+20	RT.	RETAINED
STA. 108+55	RT.	RETAINED
STA. 108+95	LT.	—
STA. 111+30	LT.	RETAINED
STA. 113+00	LT.	RETAINED
STA. 120+80	RT.	—
STA. 122+05	RT.	RETAINED

ROCK DITCH CHECK	(E-6)	INSTALLATION
STA. 104+00	RT.	RETAINED
STA. 104+70	LT.	—
STA. 105+05	RT.	RETAINED
STA. 106+60	LT.	—
STA. 107+40	RT.	RETAINED
STA. 109+70	RT.	RETAINED
STA. 116+50	LT.	RETAINED
STA. 116+65	RT.	RETAINED
STA. 116+75	RT.	RETAINED
STA. 117+30	RT.	RETAINED
STA. 117+45	LT.	RETAINED
STA. 117+60	LT.	—
STA. 122+75	LT.	RETAINED
STA. 124+00	RT.	—

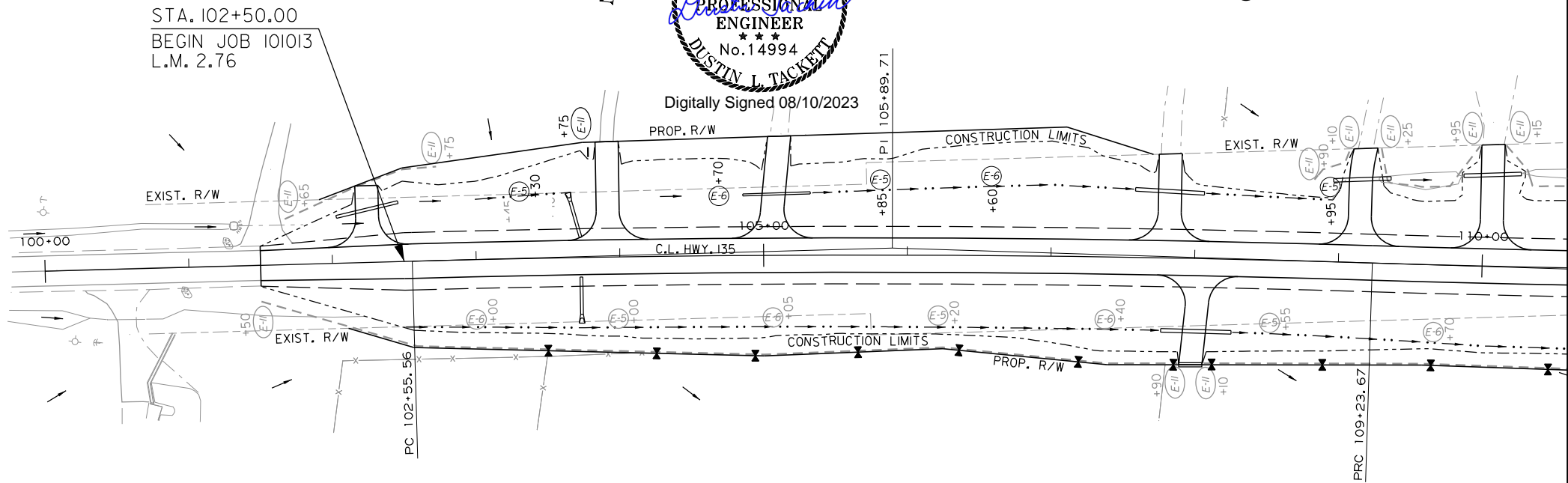
LEGEND

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

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

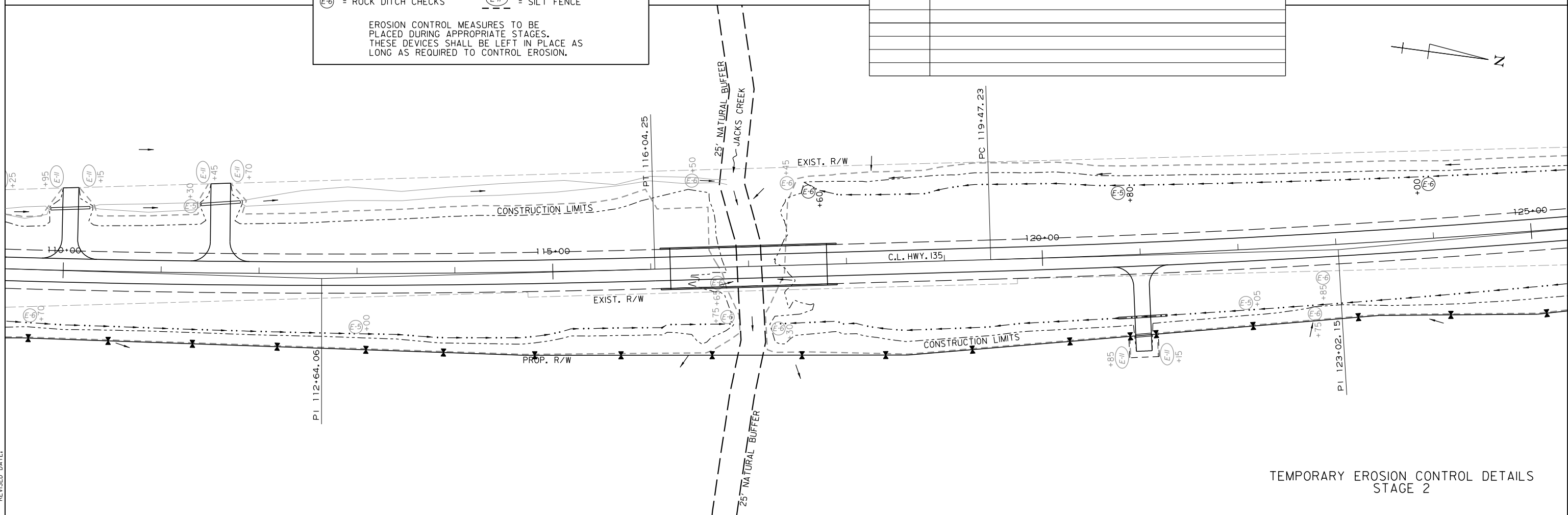


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101013		13	70
TEMPORARY EROSION CONTROL DETAILS								



REVISIONS

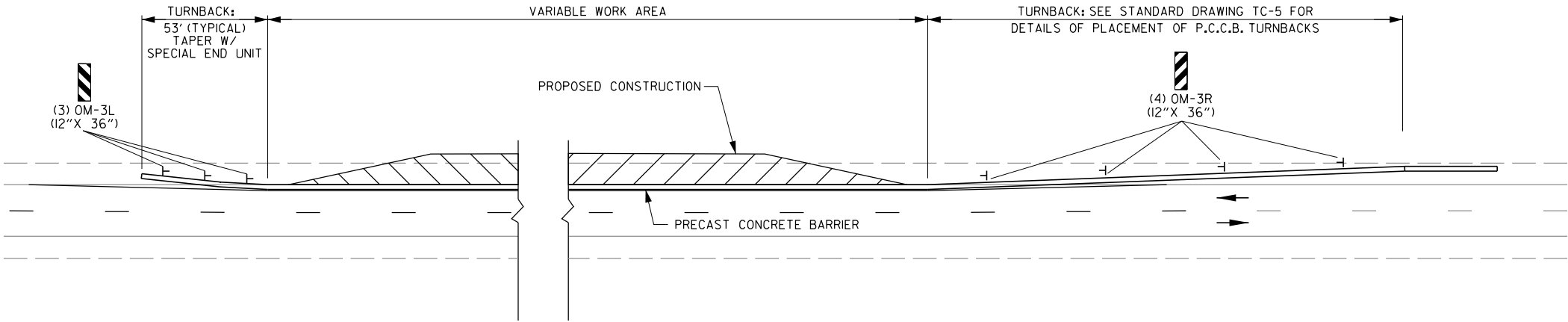
DATE	REVISION



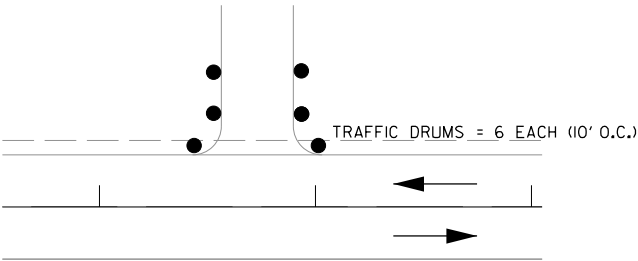
TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	15	70
				MAINTENANCE OF TRAFFIC DETAILS				

2



DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS



DRIVEWAY/TRAFFIC DRUM DETAIL



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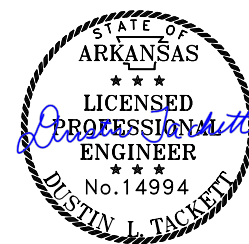
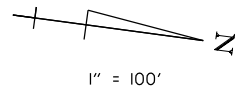
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WORKSPACE: AHTD
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REVISED DATE:

STAGE I
CONSTRUCTION SEQUENCE NOTES

1. MAINTAIN TRAFFIC ON EXISTING LANES.
2. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
3. CONSTRUCT HWY. 135 AS SHOWN.
4. PLACE CONSTRUCTION PAVEMENT MARKINGS SHOWN FOR STAGE 2 TRAFFIC CONFIGURATION PRIOR TO SWITCHING TRAFFIC.

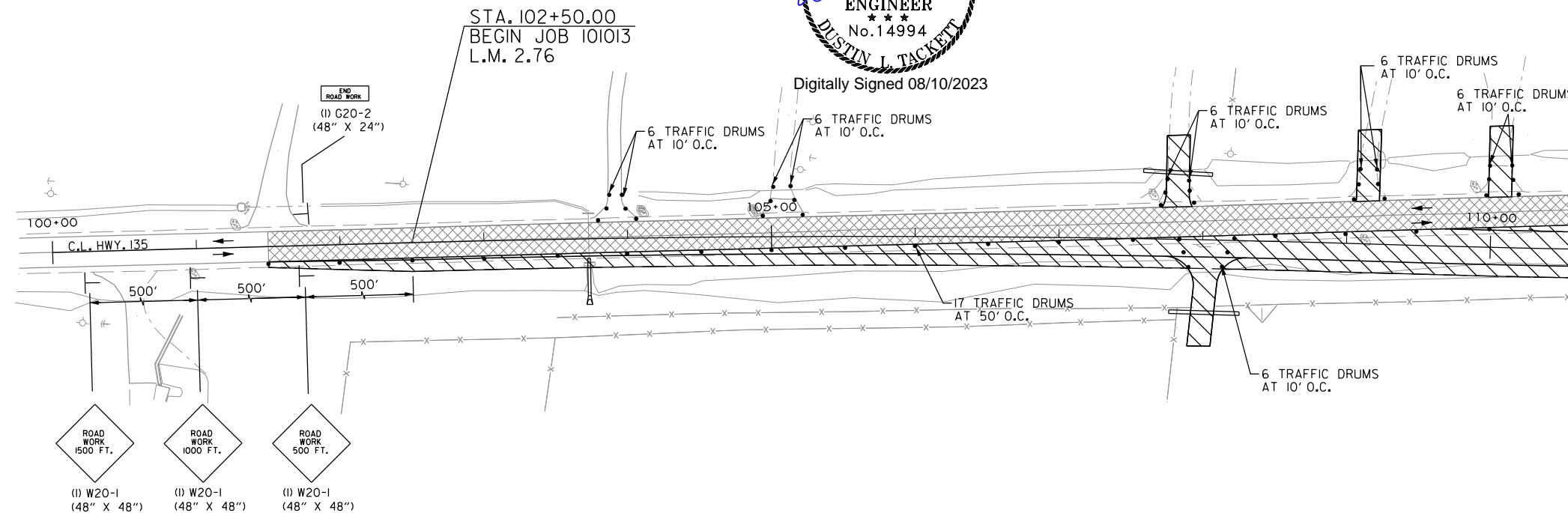
CONSTRUCTION PAVEMENT MARKINGS

TRAFFIC DRUMS = 12/EACH



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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101013	16	70	
MAINTENANCE OF TRAFFIC DETAILS								



STAGE I CONSTRUCTION

STAGE I OVERLAY OR METHOD OF RAISING GRADE UNDER TRAFFIC

STAGE I TRAFFIC

TRAFFIC DRUMS

VERTICAL PANELS

PRECAST CONCRETE BARRIER (P.C.C.B.)

TEMPORARY IMPACT ATTENUATION BARRIER (T.I.A.B.)

BUMP (4) W8-1 (30" X 30")

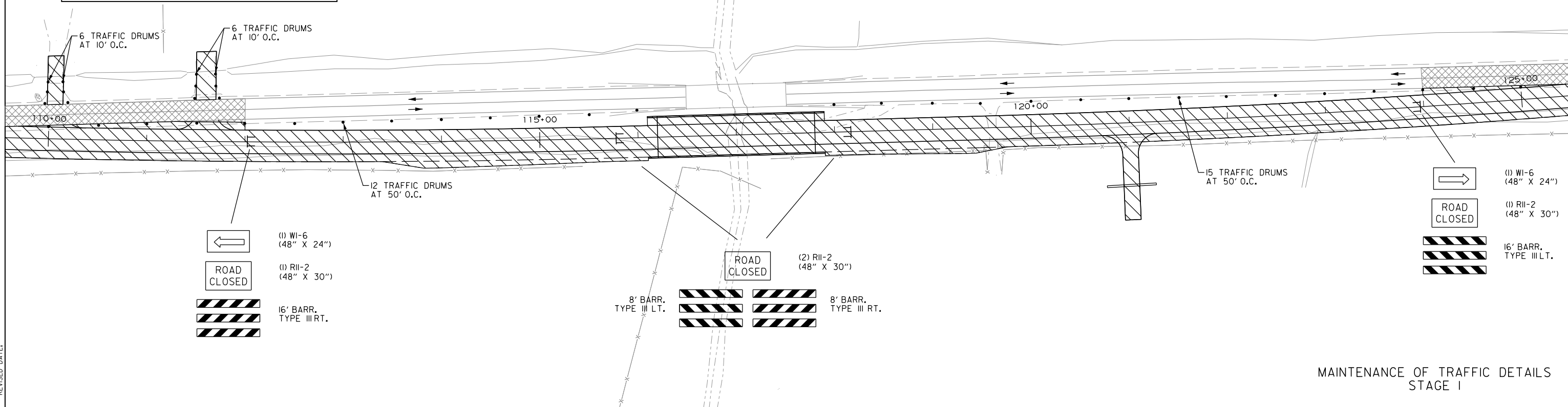
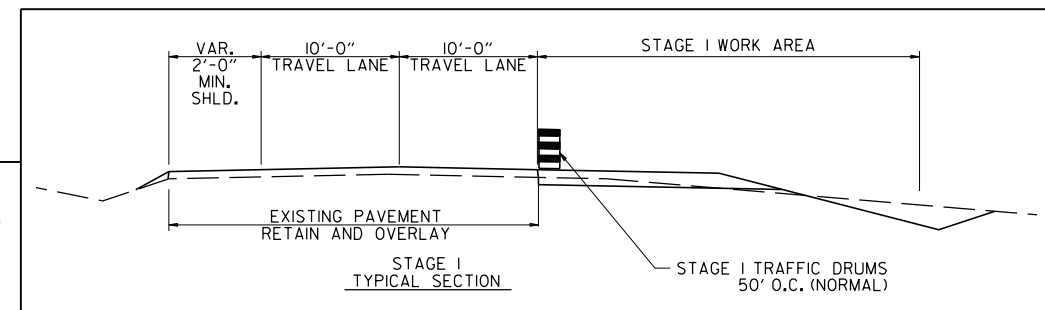
DO NOT PASS (4) R4-1 (24" X 30")

RIGHT SHOULDER CLOSED (4) W21-5a (36" X 36")

SHOULDER DROP-OFF (4) W8-17 (36" X 36")

(4) W8-17P (24" X 18")

TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



MAINTENANCE OF TRAFFIC DETAILS
STAGE I

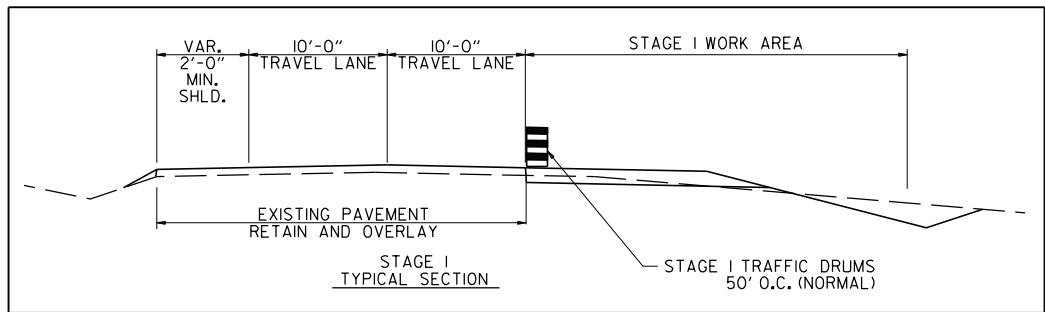
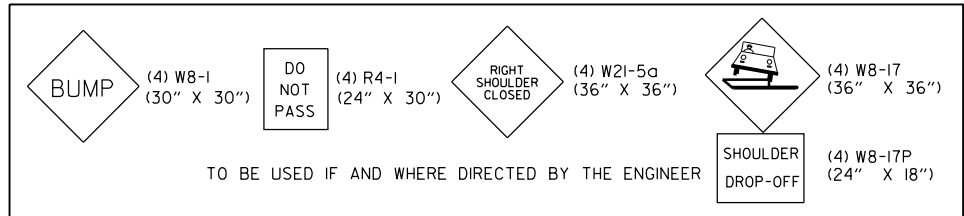
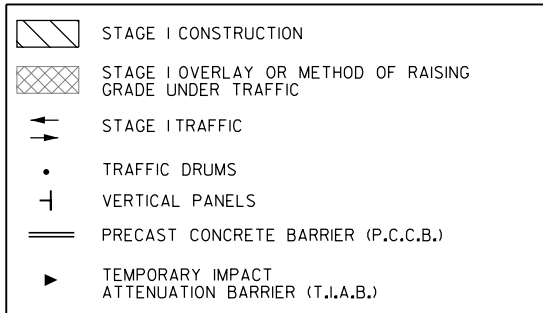
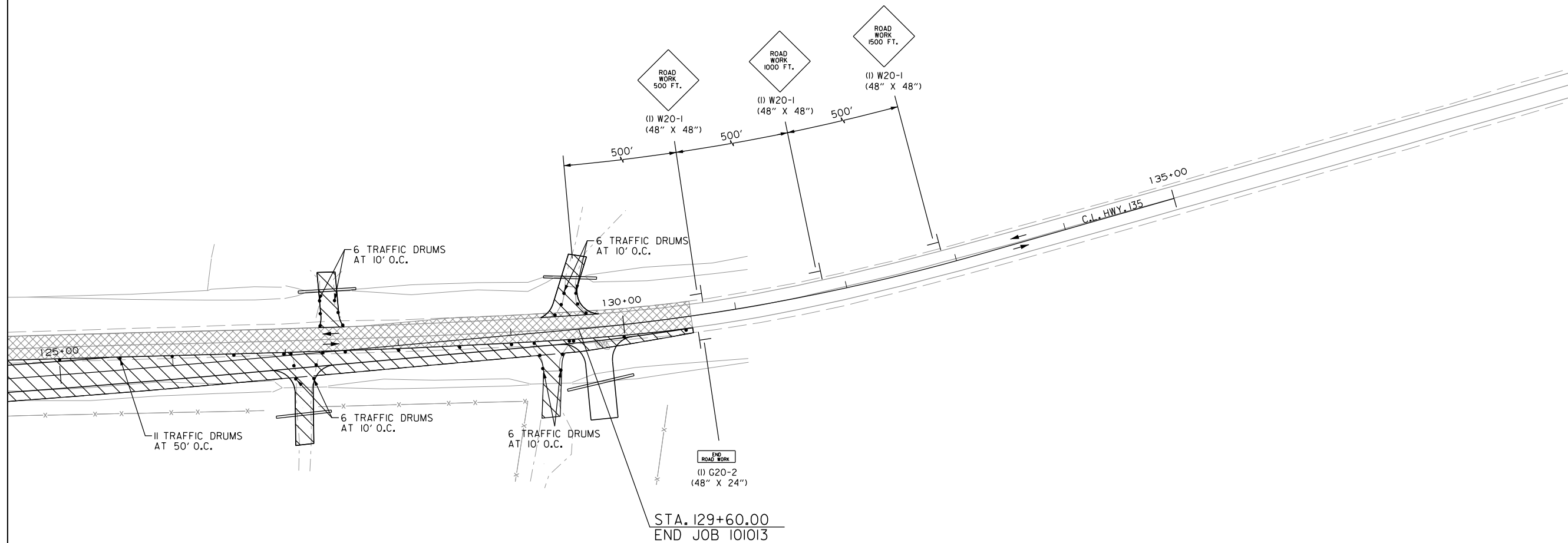
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DKAdcock
WORKSPACE: AHTD
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REVISED DATE:

1" = 100'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	17	70
				MAINTENANCE OF TRAFFIC DETAILS				



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MAINTENANCE OF TRAFFIC DETAILS
STAGE I

8/10/2023 9:06:02 AM
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REVISED DATE:

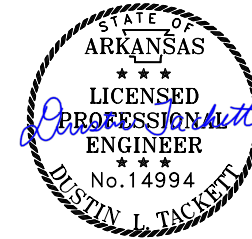
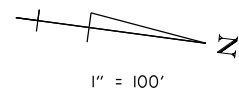
STAGE 2
CONSTRUCTION SEQUENCE NOTES

1. INSTALL ADVANCE WARNING SIGNS AS SHOWN.
2. SHIFT TRAFFIC TO THE PROPOSED ALIGNMENT.
3. CONSTRUCT HWY.135 AS SHOWN AND FINISH GRADING THE LEFT FORESLOPE AND DITCHES. REMOVE THE EXISTING BRIDGE STRUCTURE.
4. CONSTRUCT THE FINAL 2" OF ACHM SURFACE COURSE ON HWY.135 AND INSTALL GUARDRAIL.
5. PLACE THE FINAL PERMANENT PAVEMENT MARKINGS.

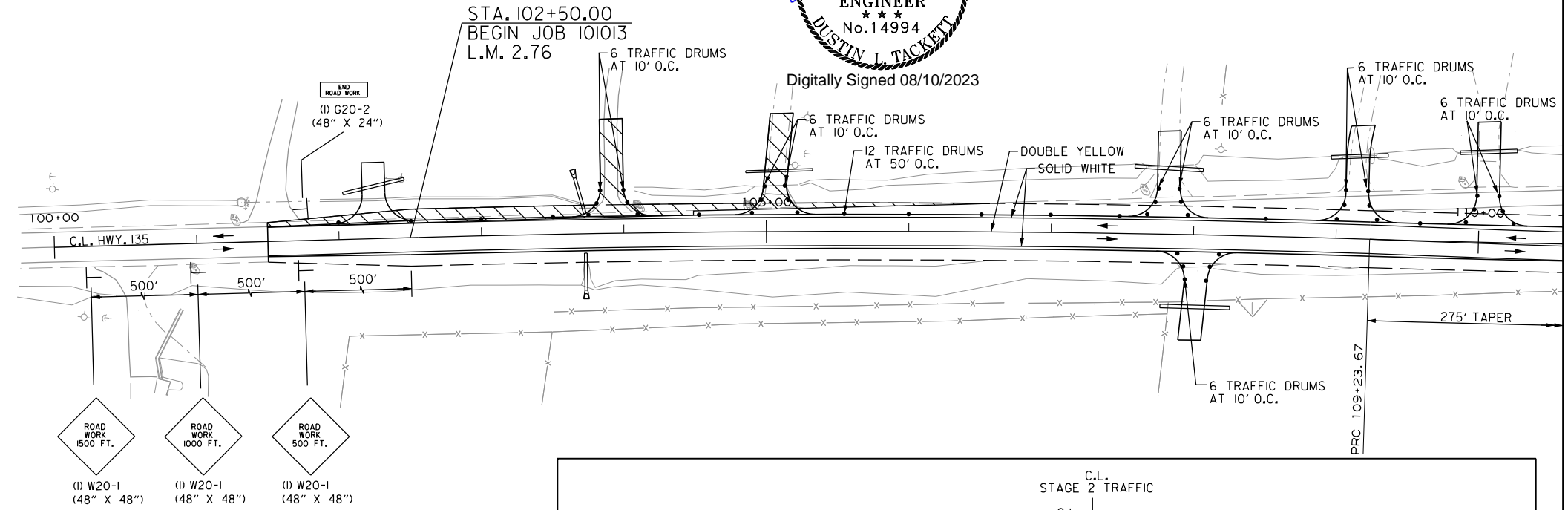
CONSTRUCTION PAVEMENT MARKINGS

DOUBLE YELLOW CENTERLINE = 3354 LIN.FT.
WHITE SOLID LINE = 3354 LIN.FT.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS = 932 LIN.FT.

TRAFFIC DRUMS = 98 EACH
FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER = 1460 LIN.FT.
TEMPORARY IMPACT ATTENUATION BARRIER = 2 EACH



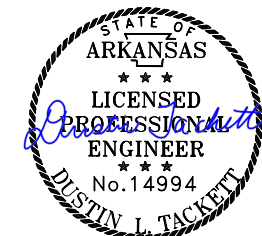
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101013	18	70	
MAINTENANCE OF TRAFFIC DETAILS								



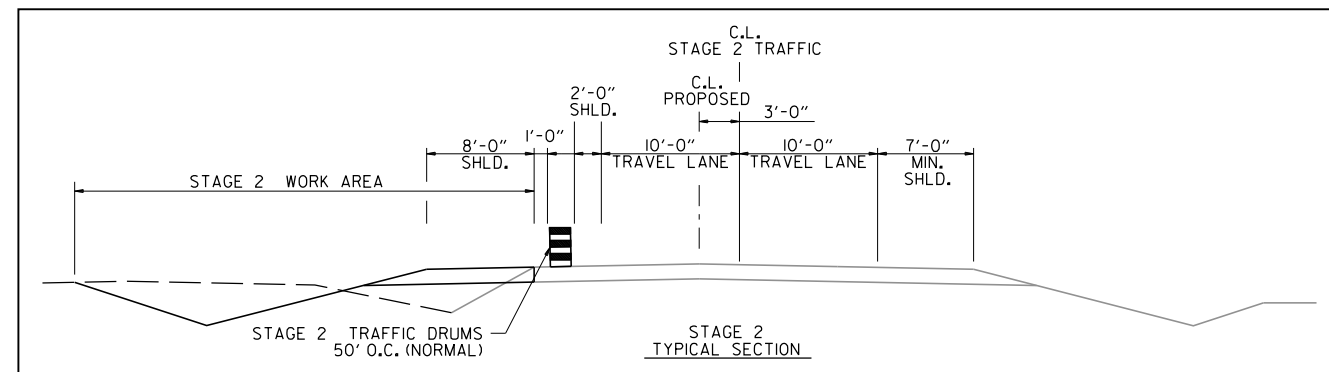
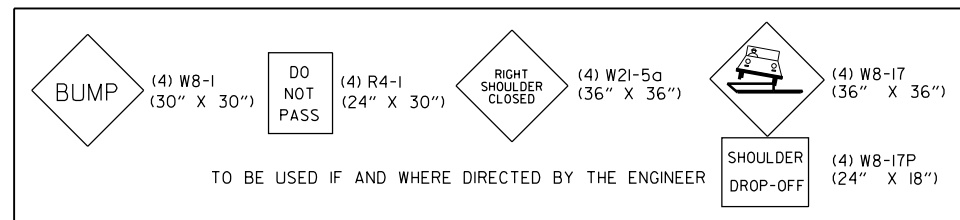
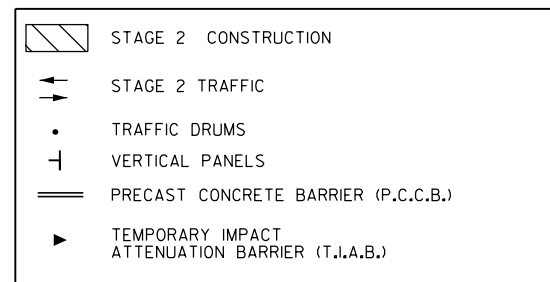
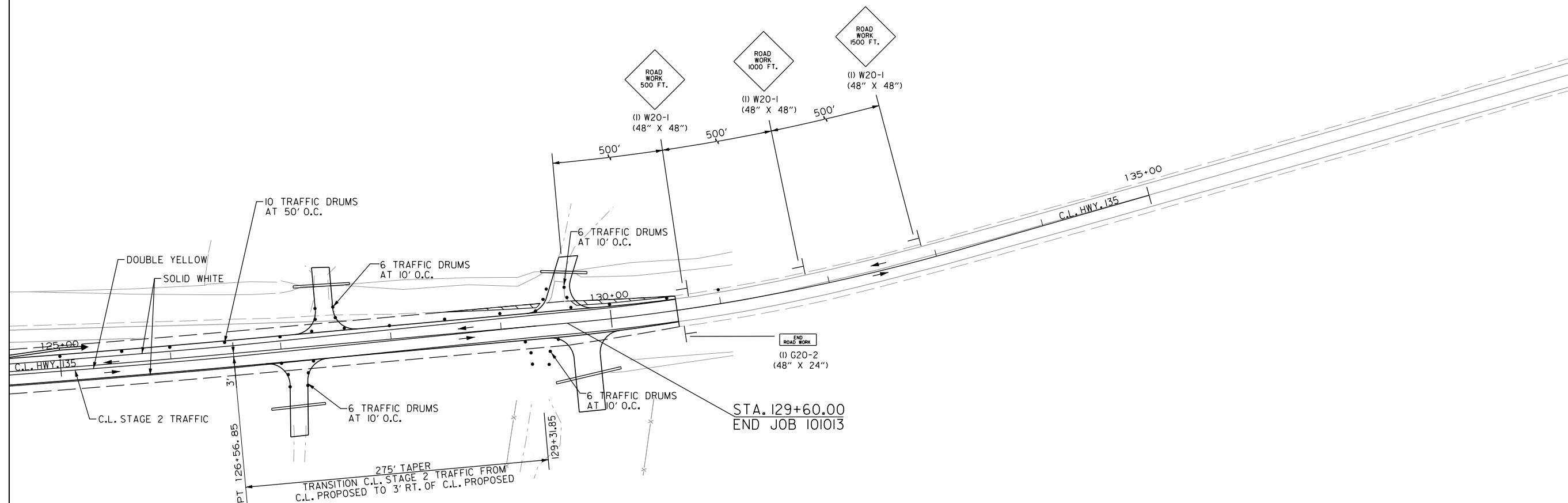
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DKAdcock
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REVISED DATE:

1" = 100'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101013	19	70	
MAINTENANCE OF TRAFFIC DETAILS								

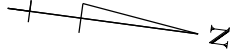


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MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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WORKSPACE: AHTD
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REVISED DATE:



6" WHITE THERMOPLASTIC PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
101+50.00	110+00.00	LT.	850
101+50.00	110+00.00	RT.	850

6" YELLOW THERMOPLASTIC PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
101+50.00	110+00.00	C.L.	850

TYPE II (YELLOW/YELLOW) RAISED PAVEMENT MARKERS AT 80' SPACING			
STA.	STA.	LOCATION	EA.
101+50.00	110+00.00	C.L.	11



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STA. 102+50.00
BEGIN JOB 101013
L.M. 2.76

100+00

105+00

C.L. HWY. 135

PI 105+89.71

6" WHITE THERMOPLASTIC
PAVEMENT MARKING

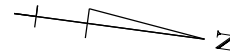
110+00

PC 102+55.56

* 6" DOUBLE YELLOW THERMOPLASTIC
PAVEMENT MARKING W/TYPE II (YELLOW/YELLOW)
RAISED PAVEMENT MARKERS AT 80' SPACING

PRC 109+23.67

* 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.



6" WHITE THERMOPLASTIC PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
110+00.00	125+00.00	LT.	1500
110+00.00	125+00.00	RT.	1500

6" YELLOW THERMOPLASTIC PAVEMENT MARKING			
STA.	STA.	LOCATION	LIN. FT.
110+00.00	125+00.00	C.L.	3000

TYPE II (YELLOW/YELLOW) RAISED PAVEMENT MARKERS AT 80' SPACING			
STA.	STA.	LOCATION	EA.
110+00.00	125+00.00	C.L.	19

PT 116+04.25

6" WHITE THERMOPLASTIC
PAVEMENT MARKING

PC 119+47.23

C.L. HWY. 135

120+00

125+00

* 6" DOUBLE YELLOW THERMOPLASTIC
PAVEMENT MARKING W/TYPE II (YELLOW/YELLOW)
RAISED PAVEMENT MARKERS AT 80' SPACING

PI 123+02.15

* 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.

PERMANENT PAVEMENT MARKING DETAILS

DKAdcock 8/10/2023 9:06:06 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	22	70
2 SOIL BORING LOG								



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SOIL BORING LOG									
BORING or TEST PIT NO.	APPROX. STATION	SAMPLE DEPTH (ft)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200, %	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
1	115+62, 36' LT	6		----	----	----	94	ML	A-4
1	115+62, 36' LT	8.5		----	----	----	98	ML	A-4
1	115+62, 36' LT	13		25	22	3	77	ML	A-4
1	115+62, 36' LT	23		35	22	13	81	CL	A-6
1	115+62, 36' LT	33.5		21	16	5	42	SC-SM	A-4
1	115+62, 36' LT	58.5		31	16	15	82	CL	A-6
3	118+43, 34' LT	3.5		37	21	16	74	CL	A-6
3	118+43, 34' LT	6		----	----	----	77	ML	A-4
3	118+43, 34' LT	8.5		----	----	----	81	ML	A-4
3	118+43, 34' LT	13.5		28	20	8	86	CL	A-4
3	118+43, 34' LT	18.5		48	21	27	95	CL	A-7-6
3	118+43, 34' LT	23.5		----	----	----	29	SM	A-2-4
3	118+43, 34' LT	28.5		35	22	13	99	CL	A-6
3	118+43, 34' LT	38.5		----	----	----	4	SP	A-1-b
3	118+43, 34' LT	48.5		----	----	----	32	SM	A-2-4
3	118+43, 34' LT	98.5		24	13	11	81	CL	A-6

SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMIT SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

8/10/2023 9:06:08 AM
DKAdcock
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	23	70
QUANTITIES								

2

DESCRIPTION	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKING	
					TYPE II (YELLOW/YELLOW) EACH	WHITE	YELLOW
					6" LIN. FT.		
CONSTRUCTION PAVEMENT MARKINGS	6708		6708				
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	932			932			
RAISED PAVEMENT MARKERS TYPE II (YELLOW/YELLOW)		37			37		
THERMOPLASTIC PAVEMENT MARKING WHITE (6")		5820				5820	
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		4970					4970
TOTALS:			6708	932	37	5820	4970

NOTE: THIS IS A HIGH 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.



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ADVANCE WARNING SIGNS AND DEVICES														
SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	
			LIN. FT. - EACH			NO.	SQ. FT.		EACH	RIGHT				LEFT
										LIN. FT.				EACH
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							
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							
OM-3L	OBJECT MARKER	12"x36"		6	6	6	18.0							
OM-3R	OBJECT MARKER	12"x36"		8	8	8	24.0							
W1-6	LARGE ARROW	48"x24"	2	2	2	2	16.0							
R4-1	DO NOT PASS	24"x30"	4	4	4	4	20.0							
W21-5a	RIGHT SHOULDER CLOSED	36"x36"	4	4	4	4	36.0							
W8-1	BUMP	30"x30"	4	4	4	4	25.0							
W8-17	SHOULDER DROP-OFF	36"X36"	4	4	4	4	36.0							
W8-17P	SHOULDER DROP-OFF	24"X18"	4	4	4	4	12.0							
	TRAFFIC DRUMS		121	98	121			121						
	TYPE III BARRICADE-RT. (8')		1	1	1				8					
	TYPE III BARRICADE-LT. (8')		1	1	1					8				
	TYPE III BARRICADE-RT. (16')		1	1	1				16					
	TYPE III BARRICADE-LT. (16')		1	1	1					16				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1460	1460						1460			
	TEMPORARY IMPACT ATTENUATION BARRIER			3	3							3		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)			3	3								3	
TOTALS:							339.0	121	24	24	1460	3	3	

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

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
101+50	130+60	HWY. 135	30	30
TOTALS:			30	30

STATION	STATION	LOCATION	FENCE	GATES
			LIN. FT.	EACH
103+49	107+82	HWY. 135 RT.	450	
107+83	109+00	HWY. 135 RT.	117	1
108+32	108+53	HWY. 135 RT.	31	
109+00	115+43	HWY. 135 RT.	644	
116+28	117+24	HWY. 135 RT.	142	
117+34	124+00	HWY. 135 RT.	727	1
124+00	129+05	HWY. 135 RT.	510	2
TOTALS:			2621	4

STATION	DESCRIPTION	PIPE CULVERTS
		EACH
105+03	HWY. 135 LT. - 18" SIDE DRAIN	1
107+82	HWY. 135 LT. - 18" SIDE DRAIN	1
108+05	HWY. 135 RT. - 18" SIDE DRAIN	1
109+14	HWY. 135 LT. - 18" SIDE DRAIN	1
110+06	HWY. 135 LT. - 30" SIDE DRAIN	1
111+60	HWY. 135 LT. - 30" SIDE DRAIN	1
127+16	HWY. 135 RT. - 24" SIDE DRAIN	1
127+42	HWY. 135 LT. - 24" SIDE DRAIN	1
129+31	HWY. 135 RT. - 24" SIDE DRAIN	1
129+42	HWY. 135 LT. - 24" SIDE DRAIN	1
TOTAL:		10

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

STATION	STATION	LOCATION	MAILBOXES	GUARDRAIL	SIGNS
			EACH	LIN. FT.	EACH
103+73		HWY. 135 LT.			
103+73		HWY. 135 RT.			
103+80		HWY. 135 LT.	1		
104+10		HWY. 135 LT.	2		
104+87		HWY. 135 LT.	2		
107+65		HWY. 135 LT.	1		
108+43		HWY. 135 RT.			1
109+12		HWY. 135 RT.	1		
109+87		HWY. 135 LT.	1		
115+70	116+50	HWY. 135 LT.		80	
115+70	116+50	HWY. 135 RT.		80	
117+52	118+32	HWY. 135 RT.		80	
117+52	118+32	HWY. 135 LT.		80	
129+77		HWY. 135 LT.	1		
129+81		HWY. 135 RT.	1		
TOTALS:			10	320	1

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.

QUANTITIES

8/10/2023 9:06:03 AM
WORKSPACE: AHTD
L:\2017\07616 - 10013 Jocks Creek Str-Apprs\Drawings\10013_QTY_01.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	24	70
				QUANTITIES				

2

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YDS.	
ENTIRE	PROJECT	STAGE 1 - HWY. 135	2616	23641
ENTIRE	PROJECT	STAGE 2 - HWY. 135	7904	988
ENTIRE	PROJECT	DRIVEWAYS	130	695
TOTALS:			10650	25324

NOTE: EARTHWORK QUANTITIES SHALL BE PAID AS PLAN QUANTITY

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
ENTIRE PROJECT		4
TOTAL:		4

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



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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"	
			FEET	SQ. YD.	TON	TON	LIN. FT.			
102+25	LT.	HWY. 135	16	93.24	10.26	38.07		44		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
103+92	LT.	HWY. 135	16	140.36	15.44	57.31				PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
105+03	LT.	HWY. 135	16	146.05	16.07	59.64	47			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
107+82	LT.	HWY. 135	16	126.27	13.89	51.56			48	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
108+05	RT.	HWY. 135	16	130.26	14.33	53.19			49	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
109+14	LT.	HWY. 135	16	139.47	15.34	56.95			40	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
110+06	LT.	HWY. 135	16	148.05	16.29	60.45			40	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
111+60	LT.	HWY. 135	20	195.74	21.53	79.93			40	PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
121+00	RT.	HWY. 135	16	173.30	19.06	70.76		50		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
127+16	RT.	HWY. 135	16	140.20	15.42	57.25		49		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
127+42	LT.	HWY. 135	16	122.68	13.49	50.09		51		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
129+42	LT.	HWY. 135	16	117.73	12.95	48.07		42		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
129+75	RT.	HWY. 135	24	202.80	22.31	82.81		60		PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
ENTIRE PROJECT TEMPORARY DRIVES					10.00	100.00				
TOTALS				1876.15	216.38	866.08	47	296	217	

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.9% MIN. AGGR.....5.1% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

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

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

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
101+50.00	102+50.00	HWY. 135	26.00	288.89
128+60.00	129+60.00	HWY. 135	26.00	288.89
TOTAL:				577.78

NOTE: AVERAGE MILLING DEPTH 1".

COORDINATE COLD MILLING STOCKPILE LOCATIONS WITH DISTRICT ENGINEER.
STOCKPILE LOCATIONS SHALL BE NO FURTHER THAN FIVE MILES FROM EACH SITE.

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	12	24
TOTALS:		24

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.

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE SPECIAL)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
115+83.50	116+20.00	HWY. 135		49.15	5775	28.00
115+83.50	116+20.00	HWY. 135 LT.	14.20		768	
115+83.50	116+20.00	HWY. 135 RT.	14.20		768	
117+80.00	118+16.50	HWY. 135		49.15	5775	28.00
117+80.00	118+16.50	HWY. 135 LT.	14.20		768	
117+80.00	118+16.50	HWY. 135 RT.	14.20		768	
TOTALS:			56.80	98.30	14622	56.00

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT	FLARED END SECTIONS FOR R.C. PIPE CULVERTS	TEMPORARY CULVERTS	SOLID SODDING	WATER	STD. DWG. NOS.
		(CLASS III)					
		24"	24"	12"			
		LIN. FT.	EACH	LIN. FT.	SQ.YD.	M.GAL.	
103+73	HWY. 135 EXTEND 24" PIPE CULVERT	52	2		16	0.20	FES-1, FES-2, PCC-1
ENTIRE PROJECT				60			PCC-1, PCM-1, PCP-1, PCP-2, PCP-3
TOTALS:		52	2	60	16	0.20	

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	10
TOTAL:	10

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

SOIL STABILIZATION

STATION	STATION	LOCATION / DESCRIPTION	SOIL STABILIZATION
			TON
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100
TOTAL:			100

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 WHERE DIRECTED BY THE ENGINEER			500	4
TOTALS:			500	4

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

QUANTITIES

DKAdcock 8/10/2023 9:06:09 AM
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	25	70
2QUANTITIES								



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FENCING					
STATION	STATION	LOCATION	WIRE FENCE	* 16'-0" GATES	WATER GATE
			(TYPE D-1)		
			LIN. FT.	EACH	EACH
102+10	107+90	HWY. 135 RT.	580	1	
108+06	120+85	HWY. 135 RT.	1290	1	1
121+15	127+01	HWY. 135 RT.	596		
127+17	130+00	HWY. 135 RT.	285	1	
TOTALS:			2751	3	1

* DENOTES ALTERNATE BID ITEM.

GUARDRAIL					
STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
113+91.85	116+10.60	HWY. 135 RT.	150	1	1
114+66.85	116+10.60	HWY. 135 LT.	75	1	1
117+89.40	119+33.15	HWY. 135 RT.	75	1	1
117+89.40	120+08.15	HWY. 135 LT.	150	1	1
TOTALS:			450	4	4

EROSION CONTROL																
STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	(E-5) BAG	(E-6) CU.YD.	(E-11) LIN. FT.	(E-14) CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING									132	105	5565			206
ENTIRE	PROJECT	STAGE 1									110	105				
ENTIRE	PROJECT	STAGE 2									110	60	10			1
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			5.41	10.82	5.41	551.8	5.41	5.41	5.41	110.4		75		100	100	100
TOTALS:			5.41	10.82	5.41	551.8	5.41	5.41	5.41	110.4	352	345	5575	100	100	307

BASIS OF ESTIMATE:

LIME2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....15 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.

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

EROSION CONTROL MATTING				
STATION	STATION	LOCATION	LENGTH	CLASS 3
			LIN. FT.	SQ. YD.
102+50.00	103+83.00	HWY. 135 LT.	133.00	118.22
102+50.00	107+77.00	HWY. 135 RT.	527.00	466.44
104+00.00	104+86.00	HWY. 135 LT.	86.00	76.44
105+33.00	107+58.00	HWY. 135 LT.	225.00	200.00
108+06.00	108+95.00	HWY. 135 LT.	89.00	79.11
108+26.00	116+84.00	HWY. 135 RT.	858.00	762.67
109+35.00	109+86.00	HWY. 135 LT.	51.00	45.33
110+26.00	111+40.00	HWY. 135 LT.	114.00	101.33
117+20.00	120+75.00	HWY. 135 RT.	355.00	315.56
117+59.00	127+16.00	HWY. 135 LT.	957.00	850.67
121+26.00	126+87.00	HWY. 135 RT.	561.00	498.67
127+36.00	129+06.00	HWY. 135 RT.	170.00	151.11
127+67.00	129+33.00	HWY. 135 LT.	166.00	147.56
129+56.00	129+80.00	HWY. 135 RT.	24.00	21.33
TOTAL:				3836.44

NOTE: AVERAGE WIDTH = 8'-0"

BENCH MARKS		
STATION	LOCATION	BENCH MARKS
		EACH
116+10	SW CORNER OF BRIDGE NO. 07514	1
TOTAL:		1

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

MAILBOXES			
LOCATION	MAILBOXES	MAILBOX SUPPORTS	
		(SINGLE)	(DOUBLE)
	EACH		
ENTIRE PROJECT	10	6	2
TOTALS:	10	6	2

QUANTITIES

8/10/2023 9:06:22 AM
DKAdcock
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	26	70
② QUANTITIES								



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BASE AND SURFACING																									
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.)			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
				TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON	FEET	TON														
MAIN LANES																									
101+50.00	102+50.00	HWY. 135 - TRANSITION	100.00	VAR.	120.00												29.94	332.67	220.00	36.59					36.59
102+50.00	105+42.67	HWY. 135 - NOTCH AND WIDEN	292.67	307.50	899.96	16.75	544.69	27.23	20.00	650.38	110.56	137.79	8.50	276.41	440.00	60.81	32.00	1040.60	220.00	114.47	8.25	268.28	220.00	29.51	143.98
105+42.67	110+04.42	HWY. 135 - NOTCH AND WIDEN	461.75	252.25	1164.76	36.04	1849.05	92.45	16.17	829.61	141.03	233.48	18.08	927.60	440.00	204.07	32.00	1641.78	220.00	180.60	17.96	921.45	220.00	101.36	281.96
110+04.42	115+83.50	HWY. 135 - FULL DEPTH	579.08	450.25	2607.31	56.75	3651.42	182.57				182.57	28.50	1833.75	440.00	403.43	32.00	2058.95	220.00	226.48	28.25	1817.67	220.00	199.94	426.42
118+16.50	125+06.12	HWY. 135 - FULL DEPTH	689.62	450.25	3105.01	56.75	4348.44	217.42				217.42	28.50	2183.80	440.00	480.44	32.00	2451.98	220.00	269.72	28.25	2164.64	220.00	238.11	507.83
125+06.12	127+35.15	HWY. 135 - NOTCH AND WIDEN	229.03	252.25	577.73	36.04	917.14	45.86	16.17	411.49	69.95	115.81	18.08	460.10	440.00	101.22	32.00	814.33	220.00	89.58	17.96	457.04	220.00	50.27	139.85
127+35.15	129+60.00	HWY. 135 - NOTCH AND WIDEN	224.85	317.75	714.46	19.21	479.93	24.00	24.58	614.09	104.40	128.40	9.67	241.59	440.00	53.15	32.00	799.47	220.00	87.94	9.54	238.34	220.00	26.22	114.16
129+60.00	130+60.00	HWY. 135 - TRANSITION	100.00	VAR.	120.00												30.09	334.33	220.00	36.78					36.78
ADDITIONAL FOR LEVELING																									
102+50.00	105+42.67	HWY. 135	292.67			20.00	650.38	32.52				32.52					20.00	650.38	VAR.	86.83					86.83
105+42.67	110+04.42	HWY. 135	461.75			16.17	829.61	41.48				41.48					16.17	829.61	VAR.	240.51					240.51
125+06.12	127+35.15	HWY. 135	229.03			16.17	411.49	20.57				20.57					16.17	411.49	VAR.	105.14					105.14
127+35.15	129+60.00	HWY. 135	224.85			24.58	614.09	30.70				30.70					24.58	614.09	VAR.	66.52					66.52
ADDITIONAL FOR SUPERELEVATION																									
127+35.15	129+60.00	HWY. 135	224.85	VAR.	496.41																				
ADDITIONAL FOR METHOD OF RAISING GRADE																									
102+50.00	105+42.67	HWY. 135	292.67			20.00	650.38	32.52				32.52	20.00	650.38	VAR.	65.16									
105+42.67	110+04.42	HWY. 135	461.75			16.17	829.61	41.48				41.48	16.17	829.61	VAR.	25.80									
125+06.12	127+35.15	HWY. 135	229.03			16.17	411.49	20.57				20.57	16.17	411.49	VAR.	89.82									
127+35.15	129+60.00	HWY. 135	224.85			24.58	614.09	30.70				30.70	24.58	614.09	VAR.	4.10									
ADDITIONAL FOR GUARDRAIL WIDENING																									
113+48.85	116+10.60	HWY. 135	261.75	VAR.	132.76												VAR.	256.35	220.00	28.20					28.20
114+23.85	116+10.60	HWY. 135	186.75	VAR.	81.12												VAR.	159.35	220.00	17.53					17.53
117+89.40	119+76.15	HWY. 135	186.75	VAR.	81.35												VAR.	158.93	220.00	17.48					17.48
117+89.40	120+51.15	HWY. 135	261.75	VAR.	132.80												VAR.	257.09	220.00	28.28					28.28
ADDITIONAL FOR MOT VERTICAL TRANSITIONS																									
102+50.00	114+00.00	HWY. 135	1150.00			24.00	3066.67	153.33	24.00	3066.67	521.33	674.66					24.00	3066.67	VAR.	529.57					529.57
122+75.00	129+60.00	HWY. 135	685.00			24.00	1826.67	91.33	24.00	1826.67	310.53	401.86					24.00	1826.67	VAR.	359.06					359.06
TOTALS:					10233.67		21695.15	1084.73		7398.91	1257.80	2342.53		8428.82		1488.00		17704.74		2521.28		5867.42		645.41	3166.69

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.9% MIN. AGGR.....5.1% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.9% MIN. AGGR.....4.1% 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.

QUANTITIES

8/10/2023 11:22:26 AM
WORKSPACE: ARDOT BHEG (2019)
L:\2017\17017616 - 101013 Jacks Creek Str-Apprs\Drawings\101013_5001_QT.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	27	70
				07514		QUANTITIES		63787

SCHEDULE OF BRIDGE QUANTITIES - JOB. NO. 101013

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SP, SS, & 802	SP, SS, & 802	SP, SS, & 802	SP & 803	SS & 804	SS & 804	SS & 805	SS & 805	SS & 805	SS & 805	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 BOX BEAMS (27"x48")	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 (20" DIA.) ①②	PILE ENCASEMENT	PREBORING	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	LIN. FT.	SQ. YD.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	SQ. YD.	CU. YD.
07514	HIGHWAY 135 OVER JACKS CREEK				11	20.70				6,310	1,602	320		50		361	192	
		BENT NO. 2				25.00				7,925	606		370	34				
		BENT NO. 3				25.00				7,925	606		370	29				
		BENT NO. 4			17	20.70				6,310	1,602	335		50		309	165	
		159'-0" INTEGRAL PRESTRESSED CONCRETE BOX BEAM UNIT					265.00	785.0	859.9		66,544					1		
		SITE NO. 1 (EXISTING BR. NO. 02717)	1															
	TOTALS FOR JOB NO. 101013			28	91.40	265.00	785.0	859.9	28,470	70,960	655	740	63	100	1	670	357	

- ① Steel shell piles shall conform to ASTM A252, Grade 3, Fy = 45 ksi.
- ② The top of the 20" steel shell piling shall be fitted with an Annular Ring Plate in accordance with the details shown on Dwg. No. 63793. The cost of all labor and materials required to fabricate and install the Annular Ring will not be paid for directly but shall be considered subsidiary to the item "STEEL SHELL PILING (20" DIA)".



SCHEDULE OF BRIDGE QUANTITIES
JACKS CREEK STR. & APPRS. (S)
GREENE COUNTY
ROUTE 135 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JME DATE: JUNE 2020 FILENAME: b101013_q1.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: JUNE 2020
BRIDGE NO. 07514 DRAWING NO. 63787

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	30	STATION
201	GRUBBING	30	STATION
202	REMOVAL AND DISPOSAL OF FENCE	2621	LIN.FT.
202	REMOVAL AND DISPOSAL OF GATES	4	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	10	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	320	LIN.FT.
202	REMOVAL AND DISPOSAL OF SIGNS	1	EACH
202	REMOVAL AND DISPOSAL OF MAILBOXES	10	EACH
SS & 206	FLOWABLE SELECT MATERIAL	4	CU.YD.
SP, SS, & 210	UNCLASSIFIED EXCAVATION	10650	CU.YD.
SP & 210	COMPACTED EMBANKMENT	25324	CU.YD.
SP & 210	SOIL STABILIZATION	100	TON
SP, SS, & 303	AGGREGATE BASE COURSE (CLASS 7)	11156	TON
SS & 401	TACK COAT	2367	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	1427	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	61	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	3211	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	173	TON
SP & 412	COLD MILLING ASPHALT PAVEMENT	578	SQ.YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	12	TON
SP, SS, & 415	ACHM PATCHING OF EXISTING ROADWAY	100	TON
SP, SS, & 504	APPROACH SLABS	98.30	CU.YD.
SP, SS, & 504	APPROACH GUTTERS	56.80	CU.YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	12" TEMPORARY CULVERT	60	LIN.FT.
SS & 604	SIGNS	339	SQ.FT.
SS & 604	BARRICADES	48	LIN.FT.
SS & 604	TRAFFIC DRUMS	121	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	1460	LIN.FT.
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	6708	LIN.FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	932	LIN.FT.
SS & 606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	52	LIN.FT.
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	47	LIN.FT.
SP, SS, & 606	18" SIDE DRAIN	296	LIN.FT.
SP, SS, & 606	24" SIDE DRAIN	217	LIN.FT.
SS & 606	30" SIDE DRAIN	2	EACH
SS & 606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	10	CU.YD.
SS & 606	SELECTED PIPE BEDDING	500	LIN.FT.
SS & 611	4" PIPE UNDERDRAINS	4	EACH
SS & 611	UNDERDRAIN OUTLET PROTECTORS	450	LIN.FT.
SS & 617	GUARDRAIL (TYPE A)	4	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	4	EACH
SS & 617	THREE BEAM GUARDRAIL TERMINAL	4	EACH
SS & 619	WIRE FENCE (TYPE D-1)	2751	LIN.FT.
SP	WATER GATE	1	EACH
SS & 619	16" STEEL GATES	3	EACH
SS & 619	16" ALUMINUM GATES	3	EACH
620	LIME	11	TON
620	SEEDING	5.41	ACRE
SS & 620	MULCH COVER	10.82	ACRE
620	WATER	682.4	M. GAL.
621	TEMPORARY SEEDING	5.41	ACRE
621	SILT FENCE	5575	LIN.FT.
621	SAND BAG DITCH CHECKS	352	BAG
621	SEDIMENT BASIN	100	CU.YD.
621	OBLITERATION OF SEDIMENT BASIN	100	CU.YD.
621	SEDIMENT REMOVAL AND DISPOSAL	307	CU.YD.
621	ROCK DITCH CHECKS	345	CU.YD.
623	SECOND SEEDING APPLICATION	5.41	ACRE
624	SOLID SODDING	16	SQ.YD.
626	EROSION CONTROL MATTING (CLASS 3)	3836	SQ.YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOXES	10	EACH
637	MAILBOX SUPPORTS (SINGLE)	6	EACH
637	MAILBOX SUPPORTS (DOUBLE)	2	EACH
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	5820	LIN.FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	4970	LIN.FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	37	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	3	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	3	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	14622	POUND
STRUCTURES OVER 20' SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	28	CU.YD.
SP, SS, & 802	CLASS S CONCRETE-BRIDGE	91.40	CU.YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	285.00	CU.YD.
SP, SS, & 802	PRESTRESSED CONCRETE BOX BEAMS (27"x48")	785.0	LIN.FT.
SP & 803	CLASS 2 PROTECTIVE SURFACE TREATMENT	859.9	SQ.YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	28470	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	70960	POUND
SS & 805	STEEL SHELL PILING (16" DIAMETER)	655	LIN.FT.
SS & 805	STEEL SHELL PILING (20" DIAMETER)	740	LIN.FT.
SS & 805	PILE ENCASEMENT	63	LIN.FT.
SS & 805	PREBORING	100	LIN.FT.
812	BRIDGE NAME PLATE (TYPE D)	1	EACH
SS & 816	FILTER BLANKET	670	SQ.YD.
SS & 816	DUMPED RIPRAP	357	CU.YD.
* DENOTES ALTERNATE BID ITEMS.			

REVISIONS

DATE	REVISION	SHEET NUMBER
10-19-2023	ADDED "CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS" SPECIAL PROVISION.	3 & 28

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-19-23				6	ARK.			
				JOB NO.		101013	28	70
SUMMARY OF QUANTITIES & REVISIONS								



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WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	29	70
				2 SURVEY CONTROL DETAILS				



Digitally Signed 08/10/2023

SURVEY CONTROL COORDINATES

Project Name: s101013
Date: 6/6/2019
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	647397.5609	1754027.7157	327.427	CTL	STD ARDOT CAP STAMPED PN: 1
2	648242.2626	1753930.9805	311.856	CTL	STD ARDOT CAP STAMPED PN: 2
3	649074.4669	1753790.7918	310.914	CTL	STD ARDOT CAP STAMPED PN: 3
4	650137.3731	1753580.1429	309.027	CTL	STD ARDOT CAP STAMPED PN: 4
5	651047.7496	1753323.9664	308.485	CTL	STD ARDOT CAP STAMPED PN: 5
900	645376.4225	1757446.1735	307.653	TBM	SQUARE CUT N EDGE DI
901	646422.9614	1756133.2782	356.242	TBM	X CUT ON BOLT OF FH
902	647581.4387	1753993.1455	322.831	TBM	SQUARE CUT E EDGE CA
903	648369.4041	1753817.6537	313.102	TBM	X CUT IN BOLT OF FH
904	649186.3163	1753773.4183	311.815	TBM	SQUARE CUT ON NE CRNR BR
905	650351.2368	1753499.4932	310.352	TBM	X CUT IN BOLT OF FH
906	650914.6332	1753340.9480	308.024	TBM	SQUARE CUT CNTR W HW
999	645308.2159	1760115.0616	296.450	BM	USGS DISK STMPD R 188 PARAGOULD

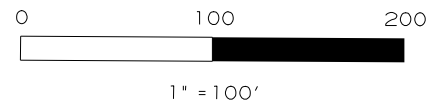
*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT
A PROJECT CAF OF 0.999966999 HAS BEEN USED TO COMPUTE 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 s101013gi.ctb
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

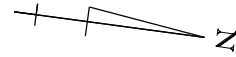
BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
DETERMINED FROM STATIC GPS OBSERVATIONS
CONVERGENCE ANGLE: 00-52-10 RIGHT AT LAT N 36-06-26 LON W090-30-20
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

ALIGNMENT NAME: HWY. 135				
POINT	STATION	TYPE	NORTHING	EASTING
8000	100+00.00	POB	647455.1955	1754039.4459
8001	102+55.56	PC	647707.4310	1753998.3714
8002	109+23.67	PRC	648369.6114	1753910.2682
8003	116+04.25	PT	649044.1018	1753820.1535
8004	119+47.23	PC	649382.5639	1753764.6594
8005	126+56.85	PT	650078.8265	1753628.2426
8006	129+60.15	PC	650374.5253	1753560.7389
8007	133+20.80	PT	650716.4887	1753447.8494
8008	135+00.00	POE	650880.5980	1753375.8824

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REVISED DATE:



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



PN:1
PD:STD ARDOT CAP
STAMPED PN:1



POB
8000

N 9°14'56" W
255.56'

PN:902
PD:SQUARE CUT E EDGE CA

N 06°31'59" W
850.22'

SURVEY
BASELINE

PC
8001

PC 102+55.56

STA. 102+50.00
BEGIN JOB 101013
L.M. 2.76

C.L. HWY. 135

C.L. HWY. 135
PI = 105+89.71
Δ = 3°20'26" RT.
D = 0°30'00"
T = 334.15'
L = 668.11'
PC = 102+55.56
PRC = 109+23.67
e = NO SUPER

PI 105+89.71

105+00

N 9°14'56" W
334.15'

N 5°54'30" W
334.15'

PN:2
PD:STD ARDOT CAP
STAMPED PN:2



PRC
8002

PRC 109+23.67

110+00

N 5°54'30" W
340.39'

N 09°33'43" W
843.93'

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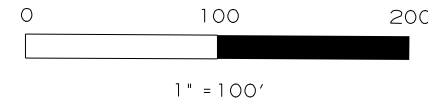


PN:903
PD:X CUT IN BOLT OF FH



2

SURVEY CONTROL DETAILS



ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



PN:3
PD:STD ARDOT CAP
STAMPED PN:3



PT 116+04.25

PT
8003

N 9°18'41" W
340.39'

N 9°18'41" W
342.98'

PN:904
PD:SQUARE CUT ON NE CRNR BR

N 9°18'41" W

PC 119+47.23

PC
8004

SURVEY
BASELINE

120+00

C.L. HWY. 135

N 9°18'41" W
354.92'

N 11°12'35" W
1083.58'

125+00

N 12°51'34" W
354.92'

PN:4
PD:STD ARDOT CAP
STAMPED PN:4

PT 126+56.85

PT
8005

N 12°51'34" W
303.31'

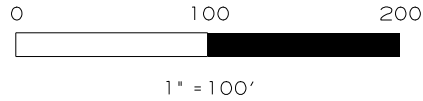
C.L. HWY. 135
PI = 112+64.06
Δ = 3°24'11" LT.
D = 0°30'00"
T = 340.39'
L = 680.58'
PRC = 109+23.67
PT = 116+04.25
e = NO SUPER

C.L. HWY. 135
PI = 123+02.15
Δ = 3°32'53" LT.
D = 0°30'00"
T = 354.92'
L = 709.61'
PC = 119+47.23
PT = 126+56.84
e = NO SUPER

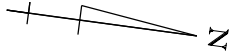
PI 123+02.15

SURVEY CONTROL DETAILS

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REVISED DATE:



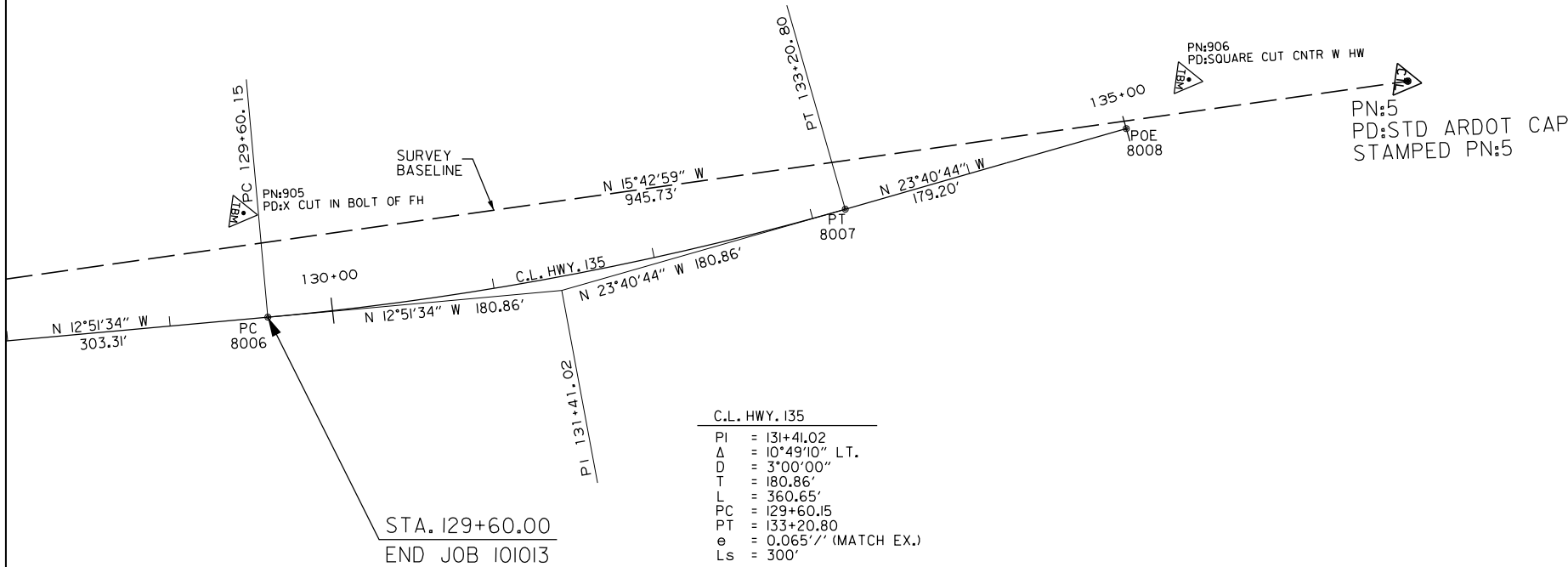
ALL BEARINGS ARE GRID
BASED ON GPS
ALL DISTANCES ARE GROUND



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	101013		31	70
2 SURVEY CONTROL DETAILS								



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SURVEY CONTROL DETAILS

PI = 105+89.71
 Δ = 3°20'26" R
D = 0°30'00"
T = 334.15'
L = 668.11'
PC = 102+55.56
PRC = 109+23.67
e = NO SUPER

STA. 110+06 IN PLACE
30" X 40' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
30" X 40' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 30 CU. YDS.

PI = 112+64.06
 Δ = 3°24'11" LT
D = 0°30'00"
T = 340.39'
L = 680.58'
PRC = 109+23.67
PT = 116+04.25
e = NO SUPER

STA. III+60 IN PLACE
30" X 40' CM PIPE CULVERT
L.T. SIDE DRAIN
REMOVE AND INSTALL
30" X 40' PIPE CULVERT
L.T. SIDE DRAIN
CONSTRUCT APPROACH = 35 CU. YDS.

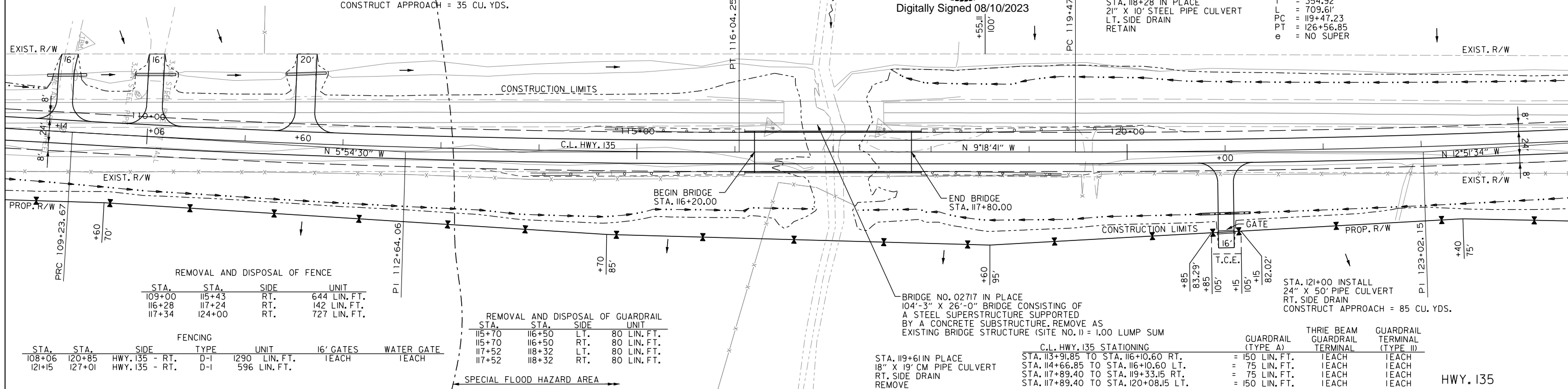
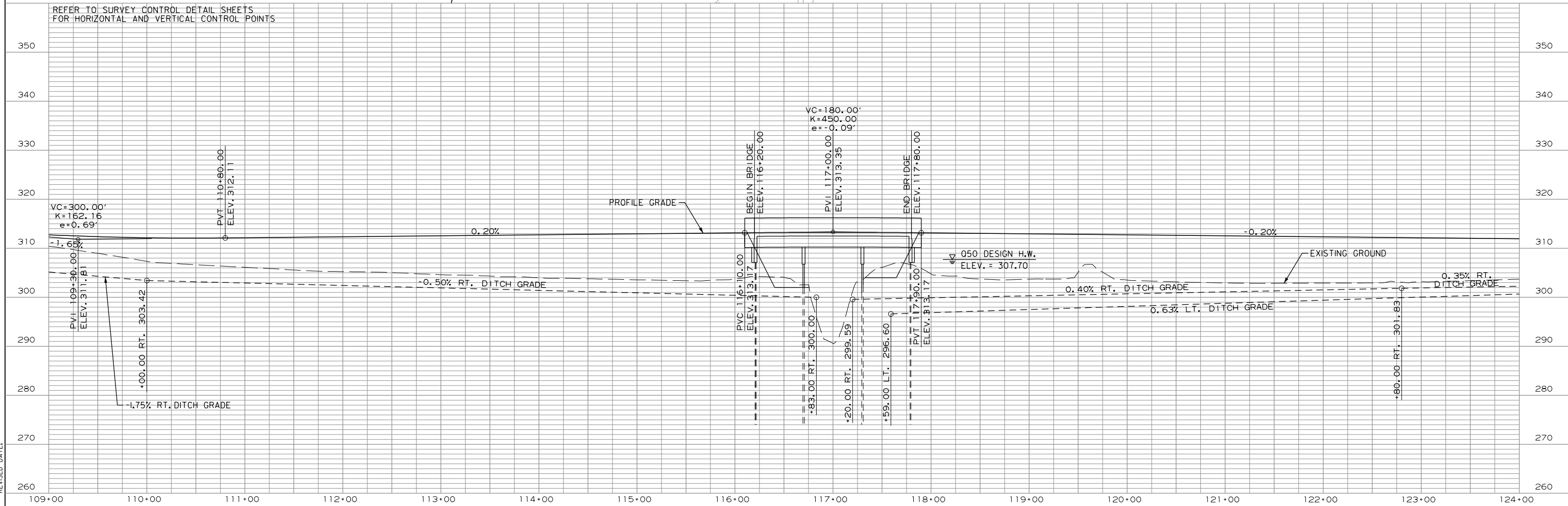
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STA. 118+28 IN PLACE
21" X 10' STEEL PIPE CULVERT
LT. SIDE DRAIN
RETAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	33	70
				PLAN & PROFILE - HIGHWAY 135				

C.L. HWY. 135

PI	=	123+02.15
Δ	=	3°32'53" LT.
D	=	0°30'00"
T	=	354.92'
L	=	709.61'
PC	=	119+47.23
PT	=	126+56.85
e	=	NO SUPER

[illegible]

PI = 123+02.15
Δ = 3°32'53" LT.
D = 0°30'00"
T = 354.92'
L = 709.61'
PC = 119+47.23
PT = 126+56.85
e = NO SUPER

STA. 127+42 IN PLACE
24" X 40' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 51' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

STA. 129+42 IN PLACE
24" X 28' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 42' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 55 CU. YDS.

C.L. HWY. 135

PI = 131+41.02
Δ = 10°49'10" LT.
D = 3°00'00"
T = 180.86'
L = 360.65'
PC = 129+60.15
PT = 133+20.80
e = 0.065'/' (MATCH EX.)
Ls = 300'

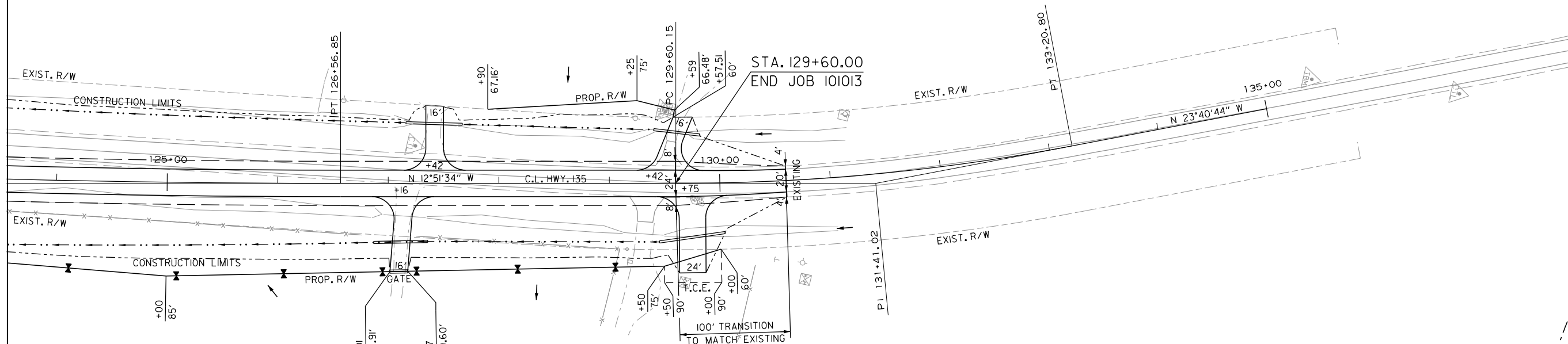
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				6	ARK.			
				JOB NO.		101013	34	70
				PLAN & PROFILE - HIGHWAY 135				

(2)

PLAN & PROFILE - HIGHWAY 135



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REMOVAL AND DISPOSAL OF FENCE			
STA.	STA.	SIDE	UNIT
124+00	129+05	RT.	510 LIN. FT.

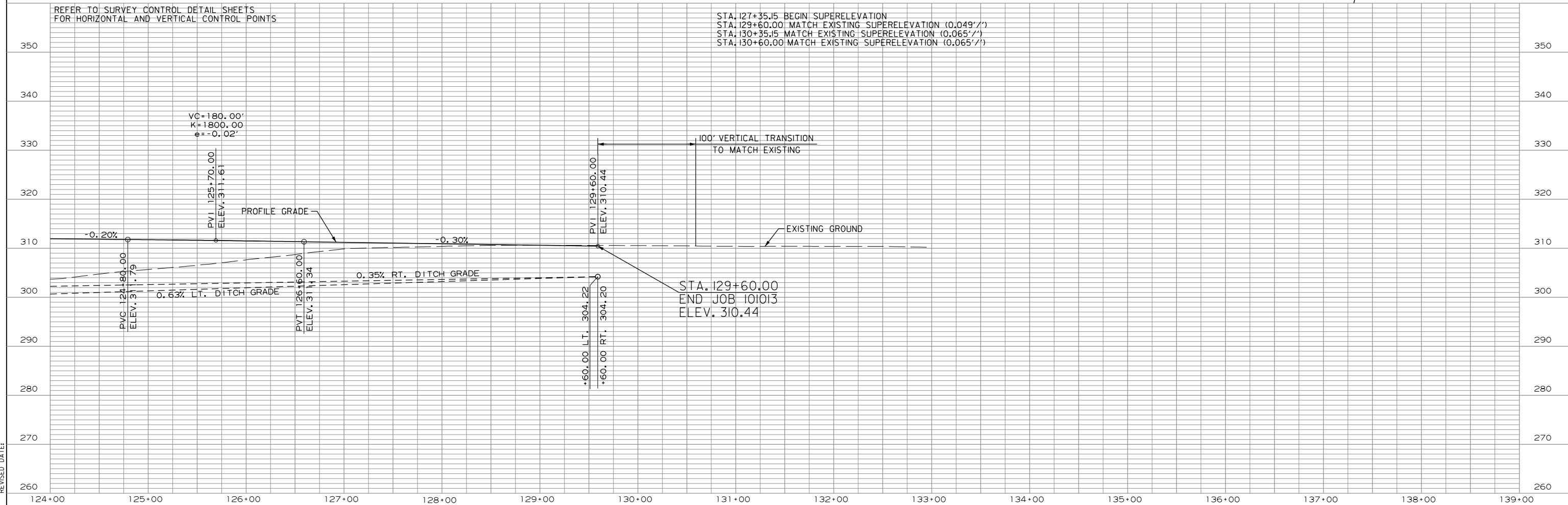
FENCING					
STA.	STA.	SIDE	TYPE	UNIT	16' GATE
127+17	130+00	HWY. 135 - RT.	D-I	285 LIN. FT.	1 EACH

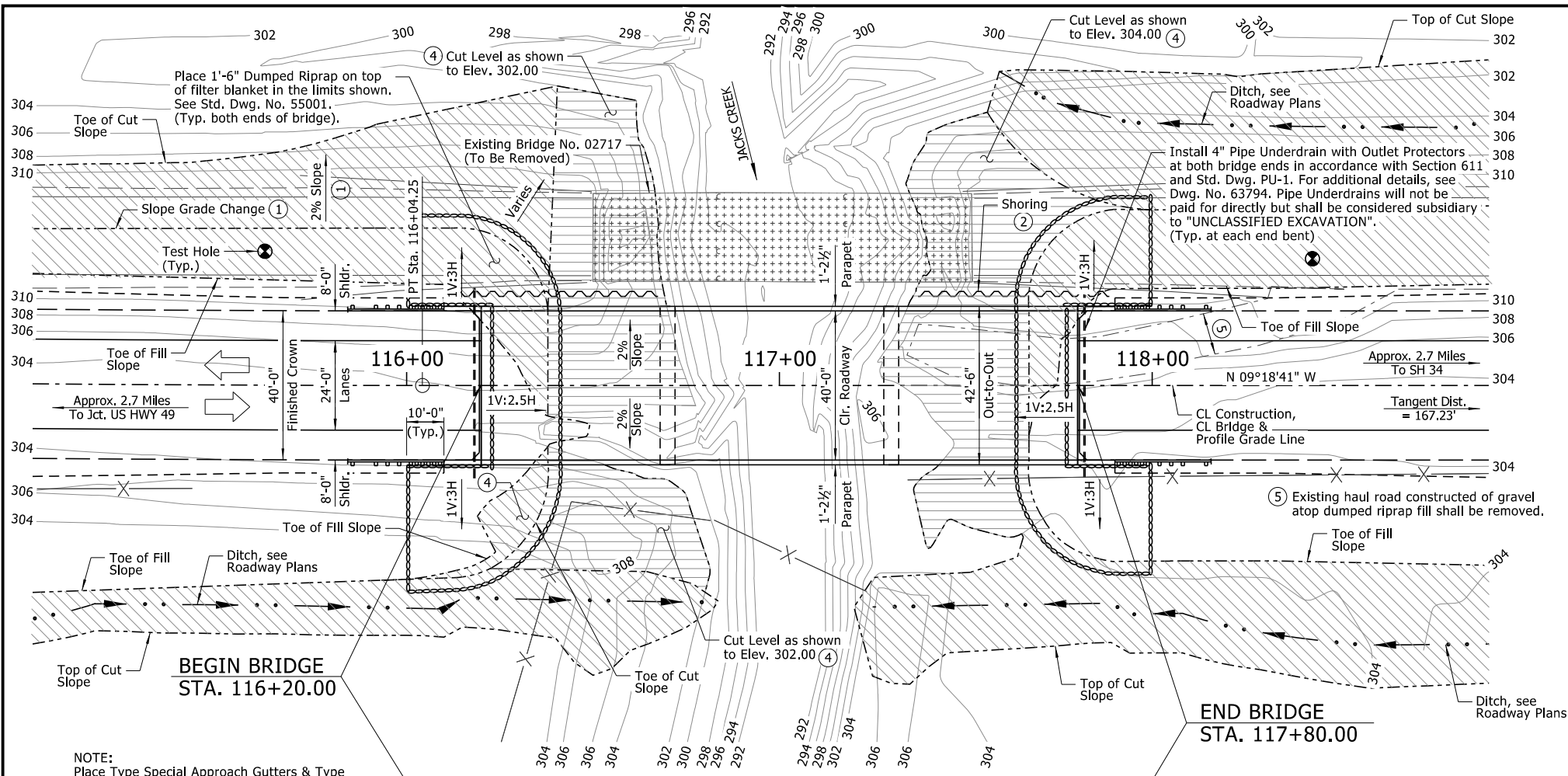
SPECIAL FLOOD HAZARD AREA

HWY. 135

REFER TO SURVEY CONTROL DETAIL SHEETS	
FOR HORIZONTAL AND VERTICAL CONTROL POINTS	

	STA. 127+35.15 BEGIN SUPERELEVATION
	STA. 129+60.00 MATCH EXISTING SUPERELEVATION (0.049'/'')
	STA. 130+35.15 MATCH EXISTING SUPERELEVATION (0.065'/'')
	STA. 130+60.00 MATCH EXISTING SUPERELEVATION (0.065'/'')





GENERAL NOTES:

BENCH MARK: Vertical Control Data shown on the 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 refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2017, 8th Edition)

LIVE LOADING: HL-93

SEISMIC ZONE: 3 $S_{D1} = 0.44g$ Site Class = D

SEISMIC OPERATIONAL CLASSIFICATION: Essential

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure) $f'_c = 4,000$ psi
Class S Concrete (Prestressed Concrete Box Beams) $f'_c = 8,000$ psi
Class S Concrete (Substructure) $f'_c = 3,500$ psi
Prestressing Strands (AASHTO M 203, Gr. 270) $f_{pu} = 270,000$ psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A) $f_y = 60,000$ psi
Structural Steel (ASTM A709, Gr. 50) $F_y = 50,000$ psi
Structural Steel (ASTM A709, Gr. 36) $F_y = 36,000$ 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 185 tons and 230 tons per pile, respectively, and to a minimum tip elevation of 250 or lower. Piling in Bents 2 & 3 shall be 20" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 375 tons per pile and to a minimum tip elevation of 250 or lower. 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.

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 (20" 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 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".

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 at Bents 1 & 4 shall be 42,000 and 50,000 foot pounds per blow, respectively, and for 20" piles at Bents 2 & 3 shall be 71,000 foot pounds per blow.

PILE ENCASEMENT: Pile Encasement for Bents 2 and 3 shall extend from bottom of cap to 3 feet below natural ground. See Std. Dwg. No. 55021 for additional information.

BRIDGE DECK: The concrete bridge deck shall be given a tine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

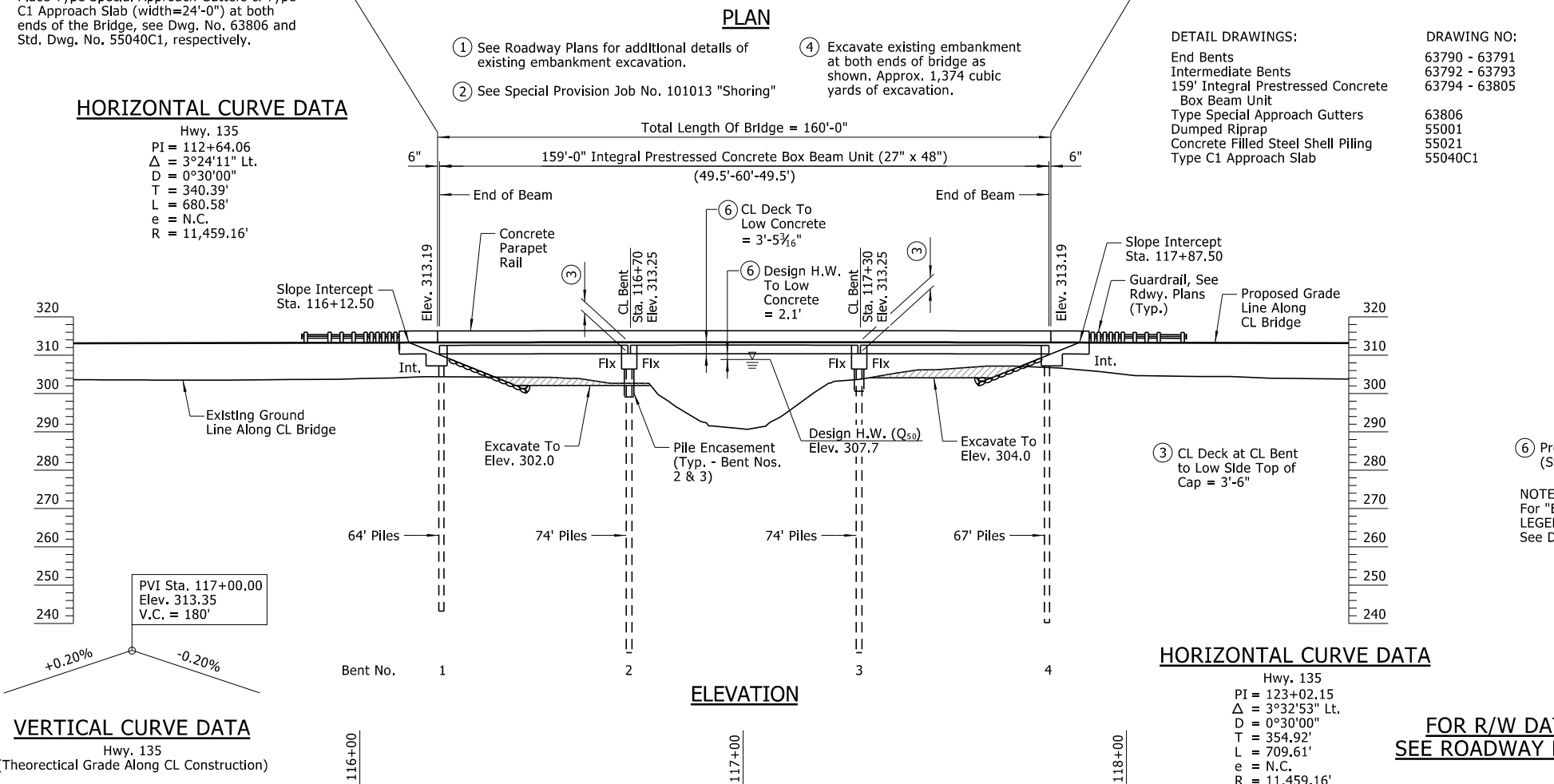
PROTECTIVE SURFACE TREATMENT: Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail in accordance with Section 803.

EXISTING BRIDGE: Existing Bridge No. 02717 (Log Mile 3.08) is 105.0' in length, 26.8' wide (24.0' clear roadway) and consists of a concrete slab on I-beam spans (3 spans total) supported by concrete pile bents. Plans of the existing structure, if available, may be obtained upon request to the Construction Contract Procurement Section of the Program Management Division.

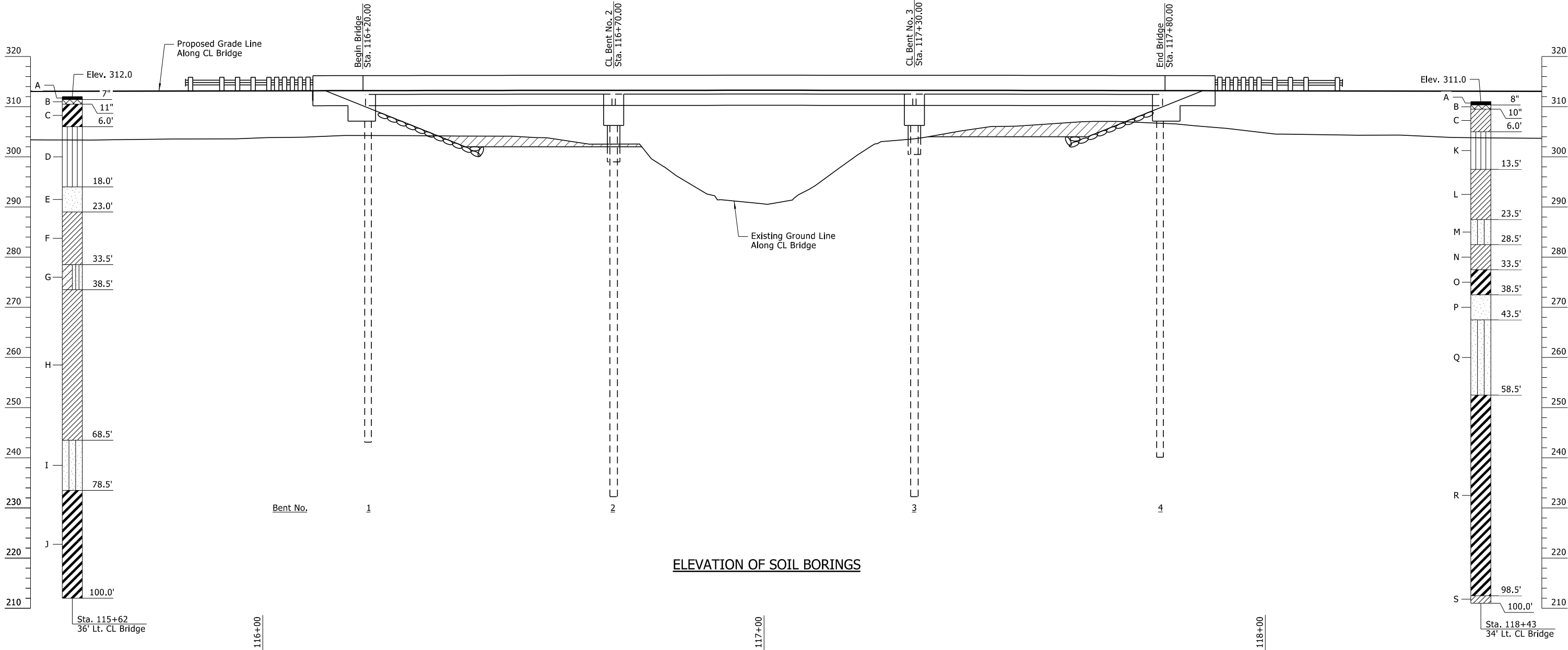
REMOVAL AND SALVAGE: After the new bridge is open to traffic, the Contractor shall remove existing Bridge No. 02717, including existing haul road and any exposed substructures from previous construction in accordance with Section 205. Exposed substructures from previous construction shall be removed to a depth of 2' below subgrade or final ground surface. All material from the existing haul road, previous construction, and existing bridge shall become property of the Contractor except the steel beams, including diaphragms and all accessories, which shall remain the property of the Department. The Contractor shall notify the Department prior to removal to coordinate with the Engineer for removal and delivery of the salvage items to District 10 Headquarters, 2510 West Kingshighway, Paragould, AR 72450. This work shall be considered incidental to the item "REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)".

MAINTENANCE OF TRAFFIC: See Roadway Plans.

NOTE: Stations shown are along CL Construction. Elevations shown are theoretical working point elevations at CL Bridge. Any vertical dimension referenced to CL Deck is based on theoretical working point elevation at CL Bridge. See "ROUNDING DETAIL" on Dwg. No. 63794 for additional information.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	101013	36
								70
				07514	LAYOUT	63789		



ELEVATION OF SOIL BORINGS

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	① NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEVATION WITH BACKWATER
			FEET	FEET
DESIGN	50	4,934	307.6	307.7
BASE	100	5,996	307.7	308.4
EXTREME	500	8,797	307.8	309.9
OVERTOPPING	>500	N/A	N/A	N/A

① Unconstricted water surface elevation without structure or roadway approaches
Q100 backwater elevation for existing structure = 308.4

Proposed Low Bridge Chord Elev. = 309.76 (Sta. 116+23.00 & Sta. 117+77.00)
Existing Low Bridge Chord Elev. = 308.75 (survey shot)

Drainage Area = 8.38 square miles.
Historical high water Elev. = N/A

BORING LEGEND

- A - Asphalt
- B - Base Materials
- C - Very stiff, brown and gray, FAT CLAY
- D - Hard to stiff, brown and gray SILT
- E - Gray sand
- F - Medium stiff to stiff, gray to brown and gray, LEAN CLAY
- G - Medium dense, gray, SILTY CLAYEY SAND
- H - Stiff to hard, brown to gray, LEAN CLAY
- I - Very dense, gray and orange, SILTY SAND, fat clay seams
- J - Hard, brown to gray, FAT CLAY
- K - Stiff to soft, brown and gray, SILT
- L - Soft to stiff, brown and gray, LEAN CLAY
- M - Medium dense, gray, SILTY SAND, trace clay
- N - Soft to stiff, gray, LEAN CLAY
- O - Stiff, tan and gray, sandy, FAT CLAY
- P - Medium dense to dense, gray and tan SAND, trace silt
- Q - Medium dense, tan to brown and gray, SILTY SAND
- R - Hard, gray to brown, FAT CLAY
- S - Hard, brown and gray, LEAN CLAY, little sand

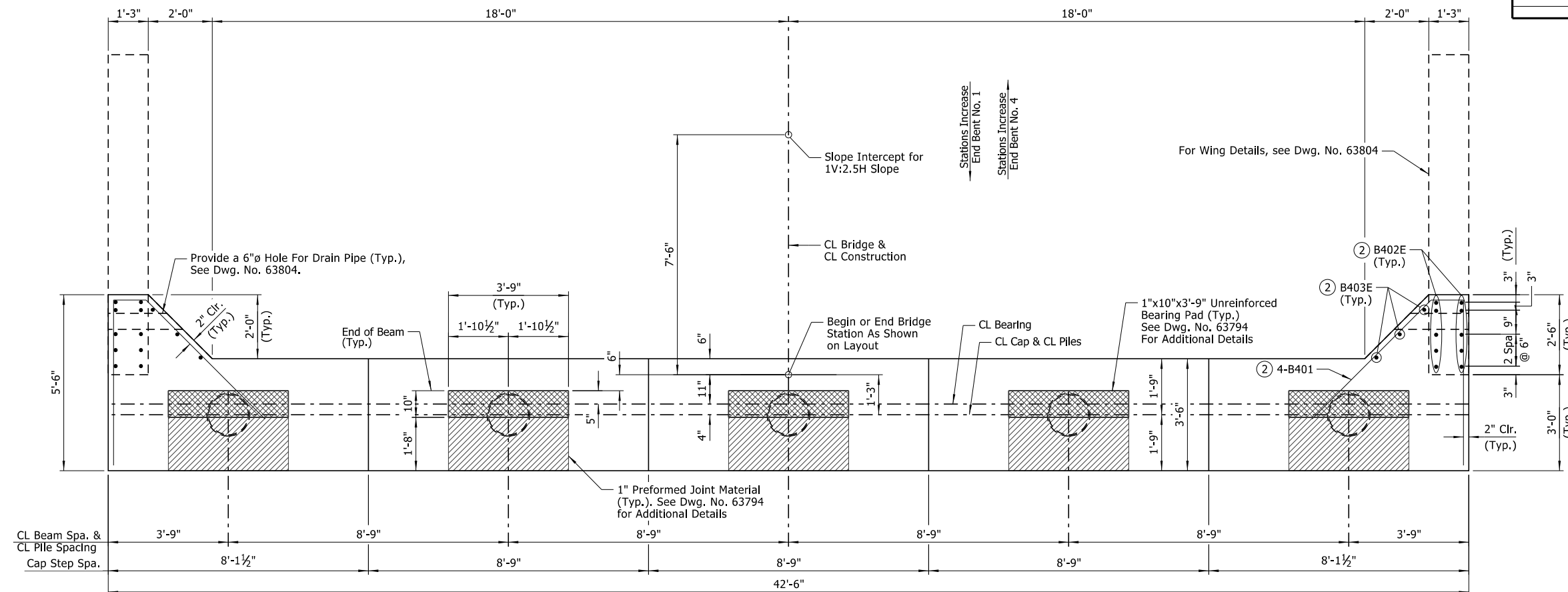
N-VALUES

Sta. 115+62 Offset 36' Rt.	Sta. 118+43 Offset 34' Rt.
1.5-3.0, N=23	1.5-3.0, N=14
6.0-7.5, N=36	3.5-5.0, N=11
8.5-10.0, N=10	6.0-7.5, N=11
28.5-30.0, N=10	8.5-10.0, N=4
33.5-35.0, N=14	13.5-15.0, N=4
38.5-40.0, N=11	23.5-25.0, N=13
43.5-45.0, N=23	28.5-30.0, N=4
48.5-50.0, N=14	33.5-35.0, N=13
53.5-55.0, N=42	38.5-40.0, N=27
58.5-60.5, N=50/5"	43.5-45.0, N=24
68.5-70.0, N=50/5"	48.5-50.0, N=11
78.5-80.5, N=50/5"	58.5-60.0, N=39
88.5-90.0, N=45	68.5-70.0, N=50/1"
98.5-100.0, N=36	78.5-80.5, N=50/3"
	88.5-90.0, N=50/6"
	98.5-100.0, N=55

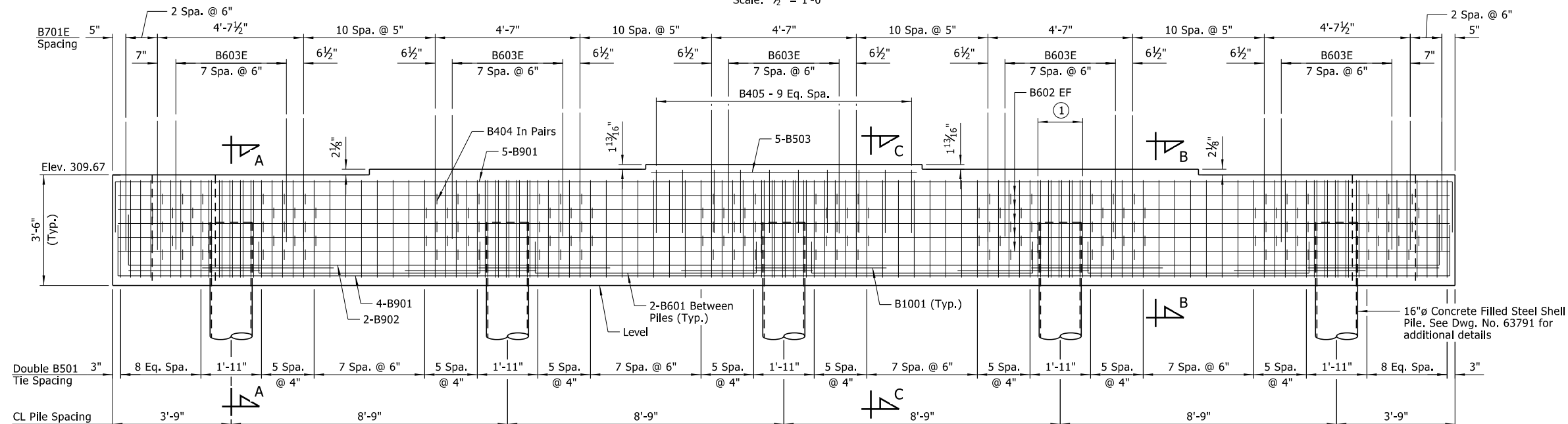


SHEET 2 OF 2
LAYOUT OF BRIDGE
HIGHWAY 135 OVER JACKS CREEK
JACKS CREEK STR. & APPRS. (S)
GREENE COUNTY
ROUTE 135 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_L2.dgn
CHECKED BY: JES DATE: MAY 2020 SCALE: 1"=10'-0"
DESIGNED BY: JHR DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63789

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	37	70
				07514	END BENTS		63790	

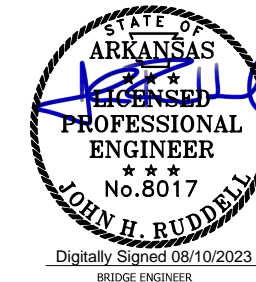


PLAN - END BENT NOS. 1 & 4
Scale: $\frac{1}{2}" = 1'-0"$



ELEVATION - END BENT NOS. 1 & 4
(Looking Back End Bent No. 1
Looking Ahead End Bent No. 4)
Scale: $\frac{1}{2}" = 1'-0"$

NOTE:
For "SECTION A-A", "SECTION B-B", "SECTION
C-C", bar lists and bar bending diagrams, see
Dwg. No. 63791.



SHEET 1 OF 2
DETAILS OF END BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b101013_a1.dgn
 CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
 DESIGNED BY: RH DATE: JUNE 2020
 BRIDGE NO. **07514** DRAWING NO. **63790**

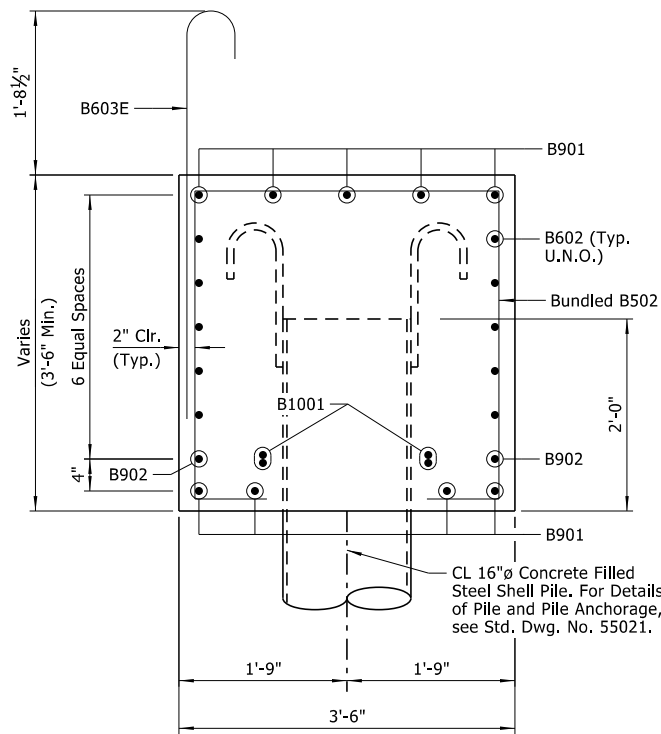
NOTES:
Concrete shall be Class "S" with a minimum 28 day compressive strength $f'c = 3,500$ psi and shall be poured in the dry. All exposed corners shall be chamfered $\frac{3}{4}$ " unless noted otherwise.

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.

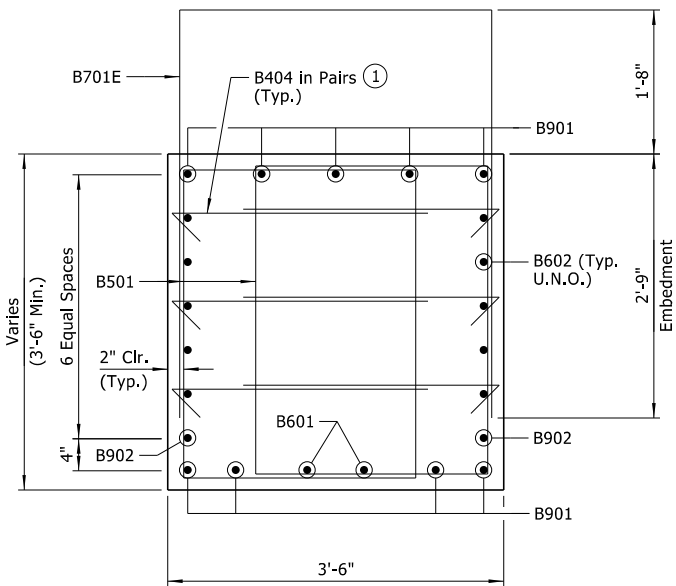
Granular backfill and pipe underdrain required behind end bent caps. See Dwg. No. 63794 for details.

For additional information, see "Layout" on Dwg. No. 63788.

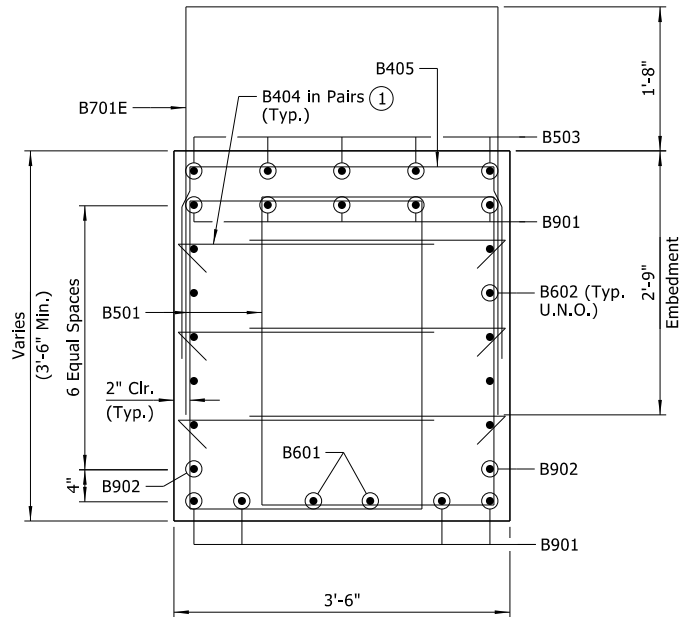
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				6	ARK.			
				JOB NO.		101013	38	70
				07514	END BENTS		63791	



SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"



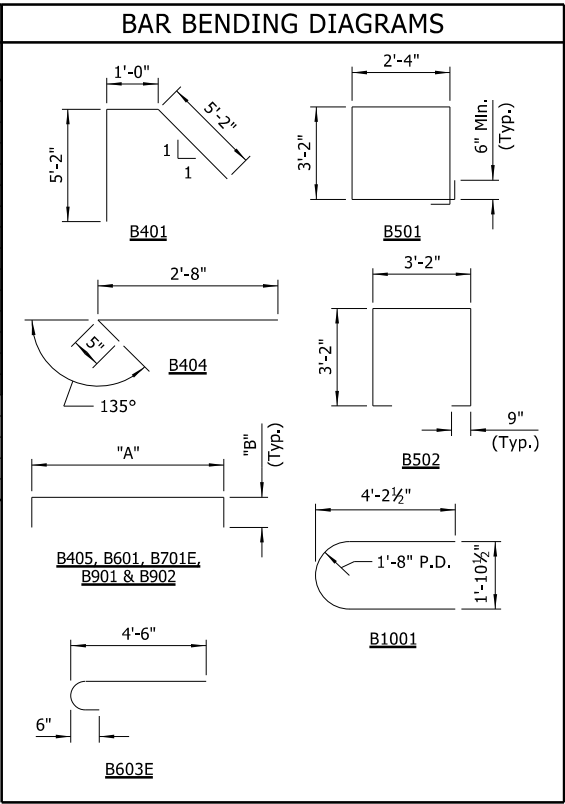
SECTION C-C
Scale: 1" = 1'-0"

① See "ELEVATION - END BENTS NOS. 1 & 4" on Dwg. No. 63790 for placement.

LEGEND

U.N.O. - Unless Noted Otherwise

BAR LIST (PER BENT)					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	8	11'-3"			2"
B402E	20	6'-3"			Str.
B403E	6	5'-0"			Str.
B404	300	3'-2"			3"
B405	10	7'-0"	3'-2"	2'-0"	2"
B501	180	11'-6"			2 1/2"
B502	50	10'-7"			2 1/2"
B503	5	8'-5"			Str.
B601	8	8'-9"	7'-0"	1'-0"	4 1/2"
B602	10	42'-2"			Str.
B603E	40	5'-2"			4 1/2"
B701E	50	11'-7 1/2"	3'-2"	4'-5"	5 1/4"
B901	9	44'-10"	42'-2"	1'-7 1/4"	9"
B902	2	44'-2"	41'-6"	1'-7 1/4"	9"
B1001	10	9'-4"			1'-8"

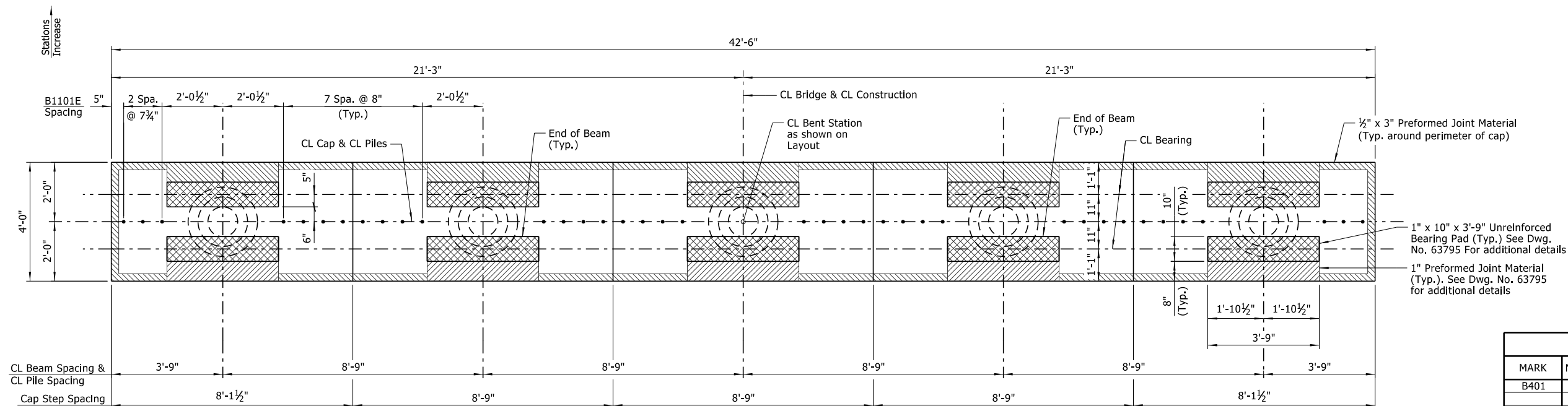


NOTE:
Dimensions of bars are out-to-out.
Bars designated with "E" suffix shall be epoxy coated.



SHEET 2 OF 2
DETAILS OF END BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b101013_a2.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: RH DATE: JUNE 2020
BRIDGE NO. 07514 DRAWING NO. 63791

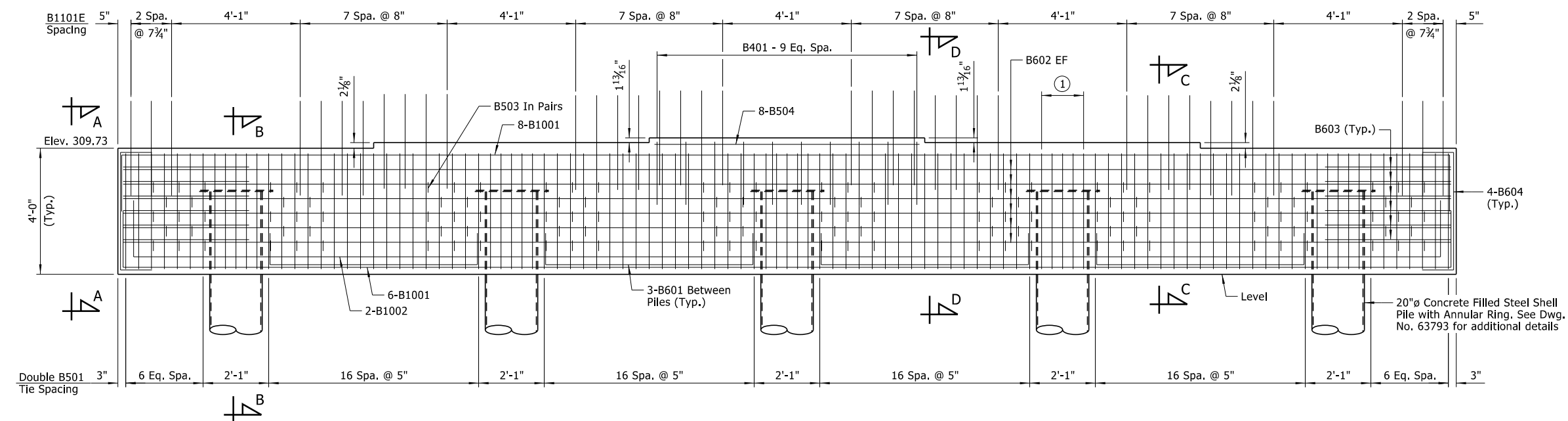
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	39	70
				07514	INT. BENTS		63792	



PLAN - INT. BENT NOS. 2 & 3

Scale: $\frac{1}{2}" = 1'-0"$

① B502 - 4 Spa. @ 4" centered over each pile (Typ.)



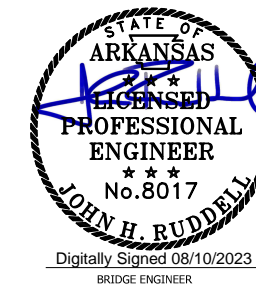
ELEVATION - INT. BENT NOS. 2 & 3

(Looking Ahead)
Scale: $\frac{1}{2}" = 1'-0"$

NOTE:
For "VIEW A-A", "SECTION B-B", "SECTION C-C"
and "SECTION D-D", see Dwg. No. 63793.

LEGEND

EF = Each Face



SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b101013_b1.dgn
 CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
 DESIGNED BY: RH DATE: JUNE 2020
 BRIDGE NO. **07514** DRAWING NO. **63792**

NOTE:
Dimensions of bars are out-to-out.

Bars designated with "E" suffix shall be epoxy coated.

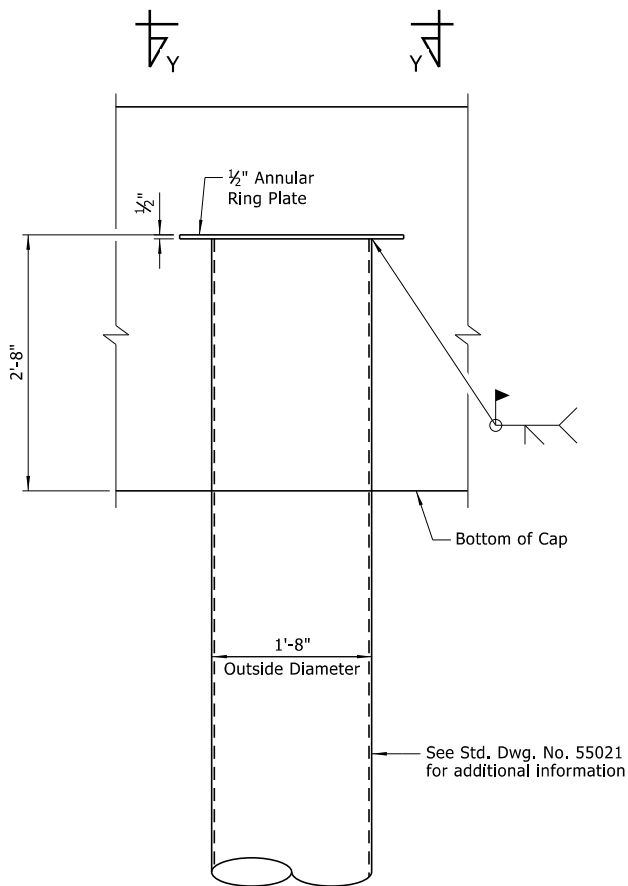
NOTES:
Concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 3,500$ psi and shall be poured in the dry. All exposed corners shall be chamfered $\frac{3}{4}$ " unless noted otherwise.

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.

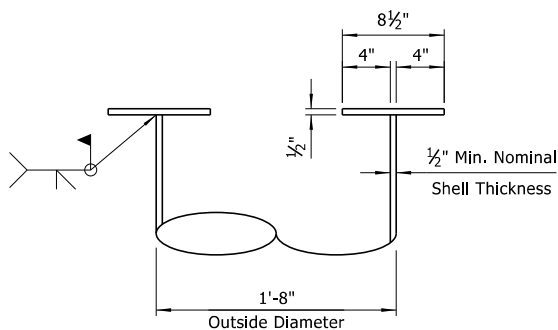
For additional information, see "Layout" on Dwg. No. 63788.

aball 8/10/2023 11:22:29 AM
WORKSPACE: ARDOT Bridge (2019)
L:\2017\17017616 - 101013 Jacks Creek Str-Apprs\Draw
REVISED DATE:

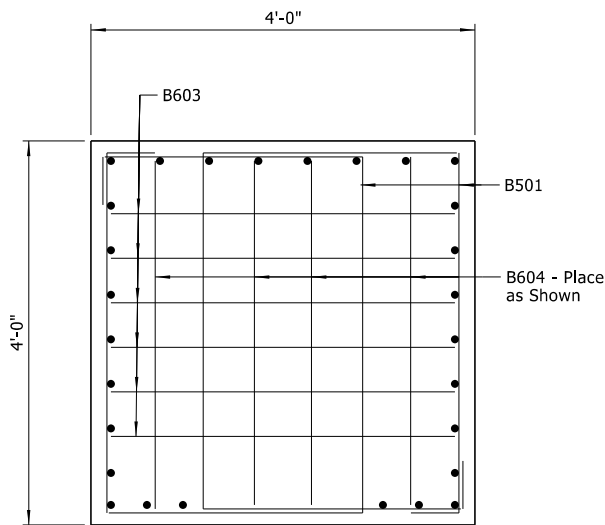
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						101013	40	70
				JOB NO.	INT. BENTS		63793	



ANNULAR RING DETAIL
Scale: 1" = 1'-0"

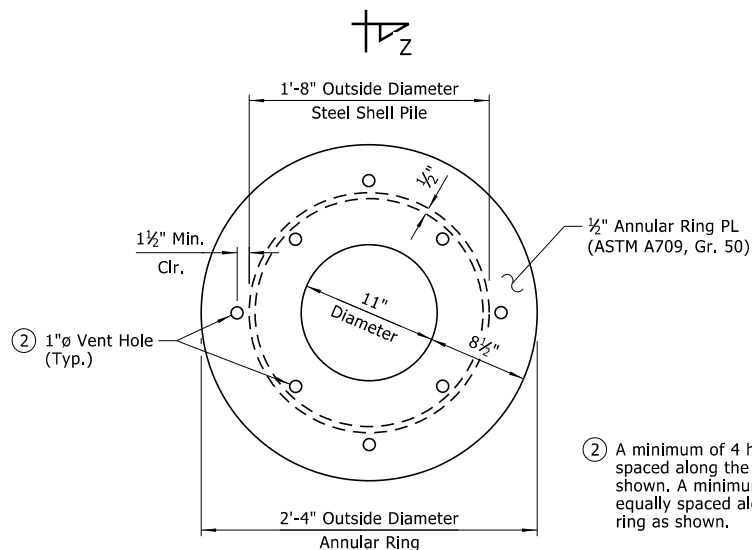


SECTION Z-Z
Scale: 1 1/2" = 1'-0"



VIEW A-A
Scale: 1" = 1'-0"

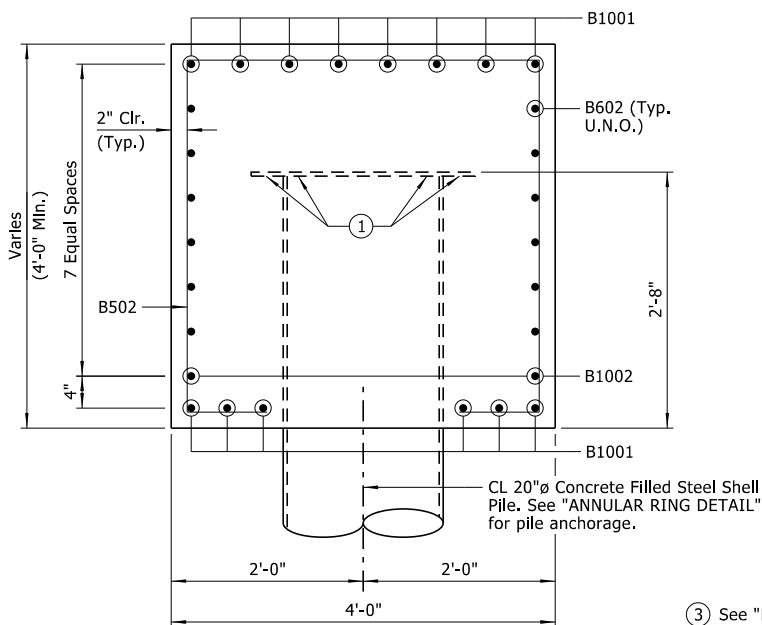
NOTE:
The cost of all labor and materials required to fabricate and install the Annular Ring will not be paid for directly but shall be considered subsidiary to the item "STEEL SHELL PILING (20" DIA)".



SECTION Y-Y
Scale: 1 1/2" = 1'-0"

② A minimum of 4 holes shall be equally spaced along the outside of the ring as shown. A minimum of 4 holes shall be equally spaced along the inside of the ring as shown.

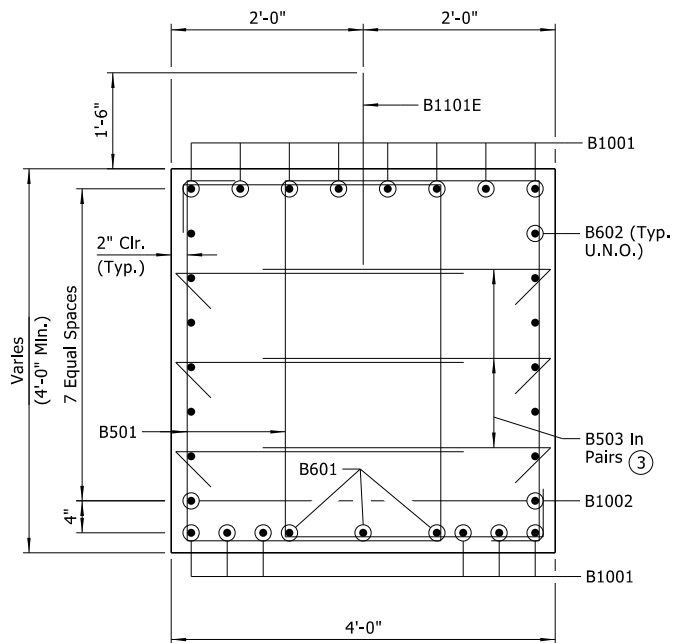
① Contractor shall ensure that concrete in this area is in full and complete contact with annular ring.



SECTION B-B
Scale: 1" = 1'-0"

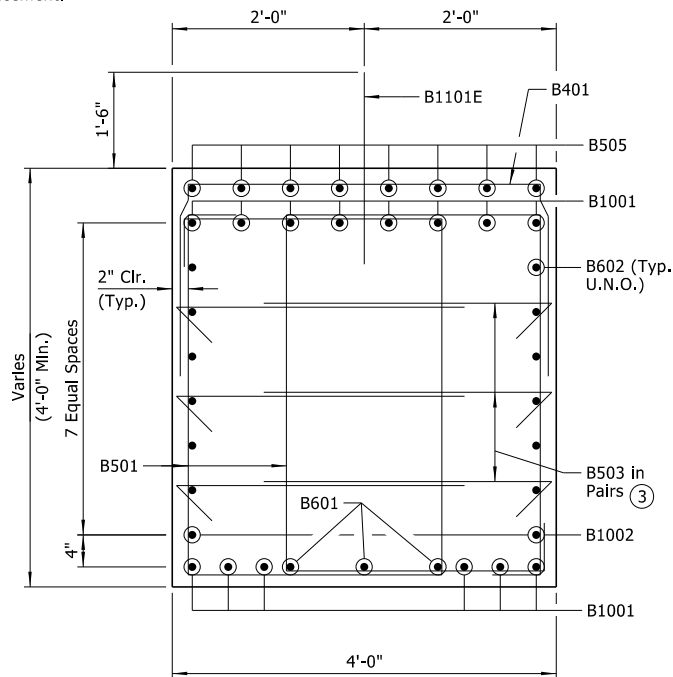
LEGEND

U.N.O. = Unless Noted Otherwise



SECTION C-C
Scale: 1" = 1'-0"

③ See "ELEVATION - INT. BENT NOS. 2 & 3" for placement.



SECTION D-D
Scale: 1" = 1'-0"

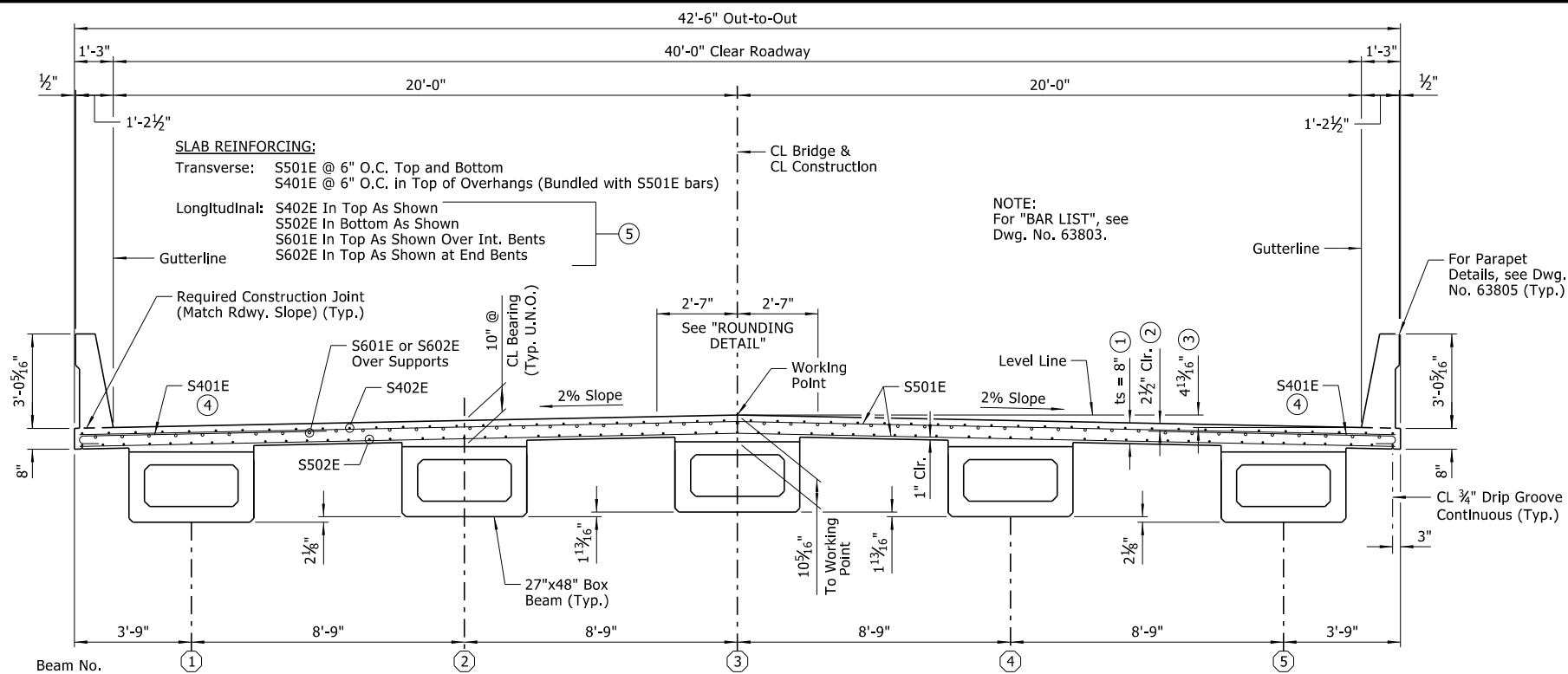


SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: HEW DATE: JUNE 2020 FILENAME: b101013_b2.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: RH DATE: JUNE 2020
BRIDGE NO. 07514 DRAWING NO. 63793

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	41	70

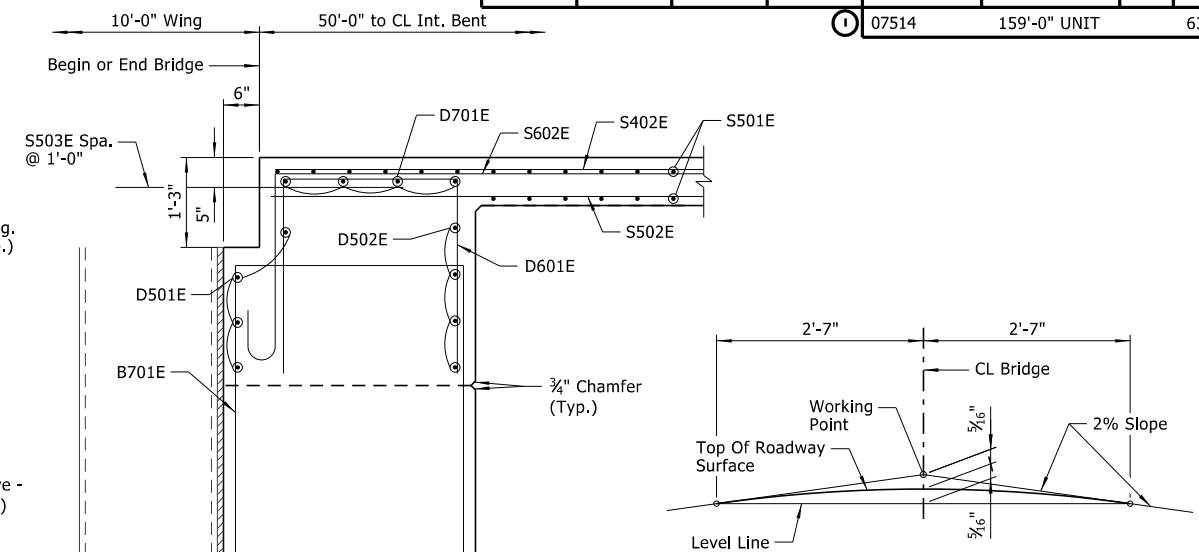
Bent _____

① 07514 159'-0" UNIT 63794



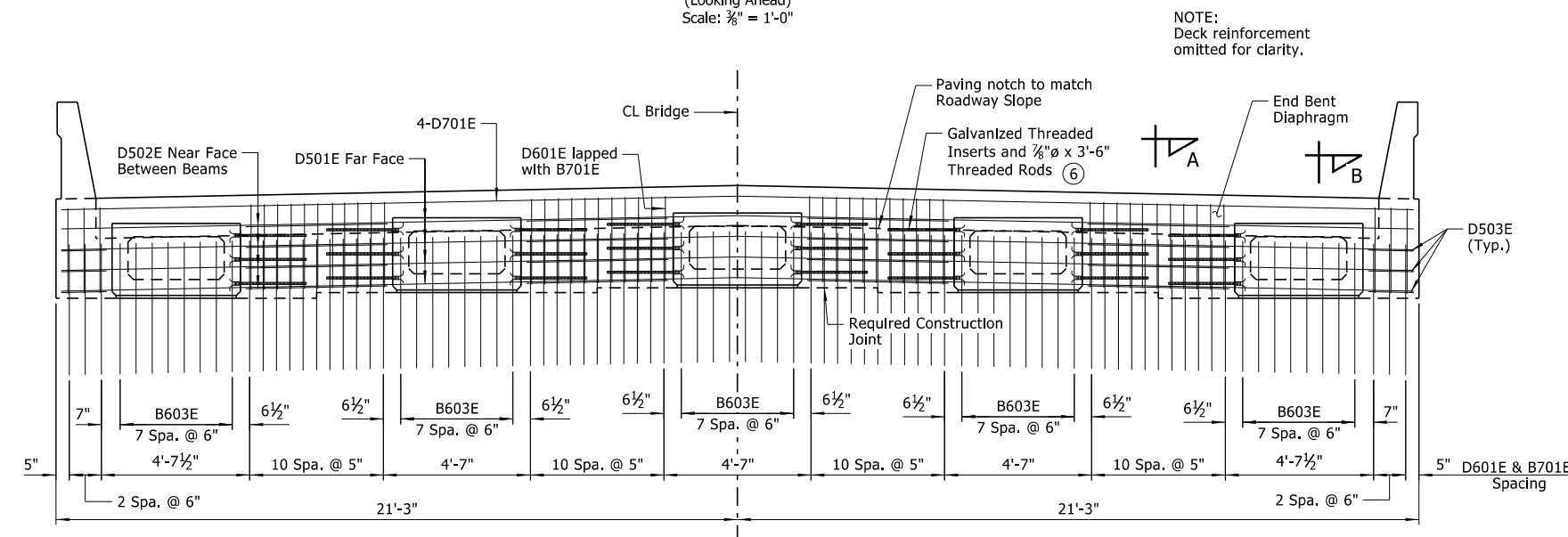
TYPICAL ROADWAY SECTION

(Looking Ahead)
Scale: $\frac{3}{8}" = 1'-0"$



ROUNDING DETAIL

No Scale



TYPICAL ROADWAY SECTION AT END BENTS

Looking Back, Bent No. 1
Looking Ahead, Bent No. 4
Scale: $\frac{3}{8}" = 1'-0"$

- ① See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 63802.
- ② Tolerance: Minus = $\frac{1}{4}"$
Plus = to the amount of slab thickening used to meet slab thickness tolerance.
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Dwg. No. 63802.
- ③ Working Point to Gutterline
- ④ Bundle with S501E bars in top. Rotate as needed to avoid interference with bottom mat of deck reinforcement.
- ⑤ See "HALF REINFORCING PLAN & DECK POURING SEQUENCE" on Dwg. No. 63797.
- ⑥ Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal, $\frac{7}{8}" \varnothing$ 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 or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE BOX BEAMS (27"x48")".
- ⑦ 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 5(AE) CONCRETE - BRIDGE".
- ⑧ Preformed Joint Material shall conform to AASHTO M 153 Type I. See "PLAN - END BENT NOS. 1 & 4" on Dwg. No. 63790.
- ⑨ See End Bent Details on Dwg. Nos. 63790 and 63791.

NOTES:
Limits of the concrete End Bent Diaphragm shall match plan dimension of End Bent Cap.

Preformed Joint Material will not be paid for directly, but shall be considered subsidiary to the Item "CLASS S(AE) CONCRETE - BRIDGE".

For additional details of pipe underdrain see Std. Dwg. PU-1 and Section 611. Pipe underdrains will not be measured or paid for separately, but shall be considered subsidiary to the unit price bid for "UNCLASSIFIED EXCAVATION".

1" Polystyrene Foam Board, Filter Fabric and Granular Material shall not be paid for directly, but shall be considered subsidiary to the various bid items.

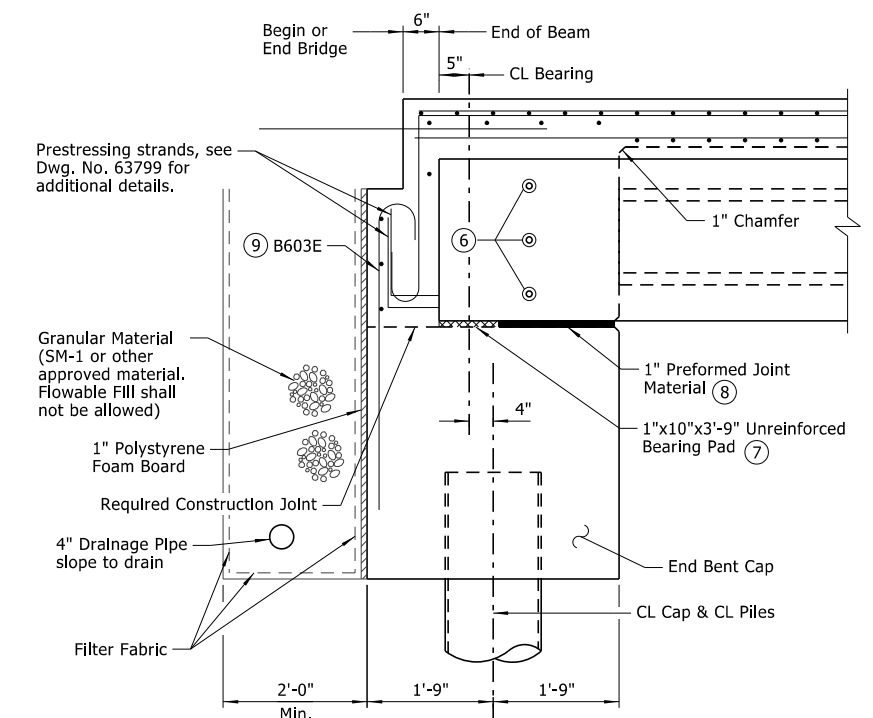
Class 2 Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

Bar positions and clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices sufficient in size and number to prevent displacement during construction, 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.

For "GENERAL NOTES - SUPERSTRUCTURE", see Dwg. No. 63802.

LEGEND

U.N.O. = Unless Noted Otherwise



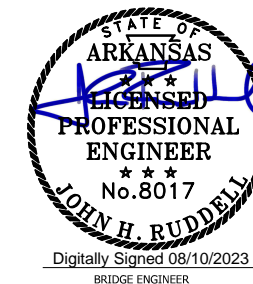
SECTION B-B

Scale: $\frac{3}{4}" = 1'-0"$

SHEET 1 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s1.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown

DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. **07514** DRAWING NO. **63794**



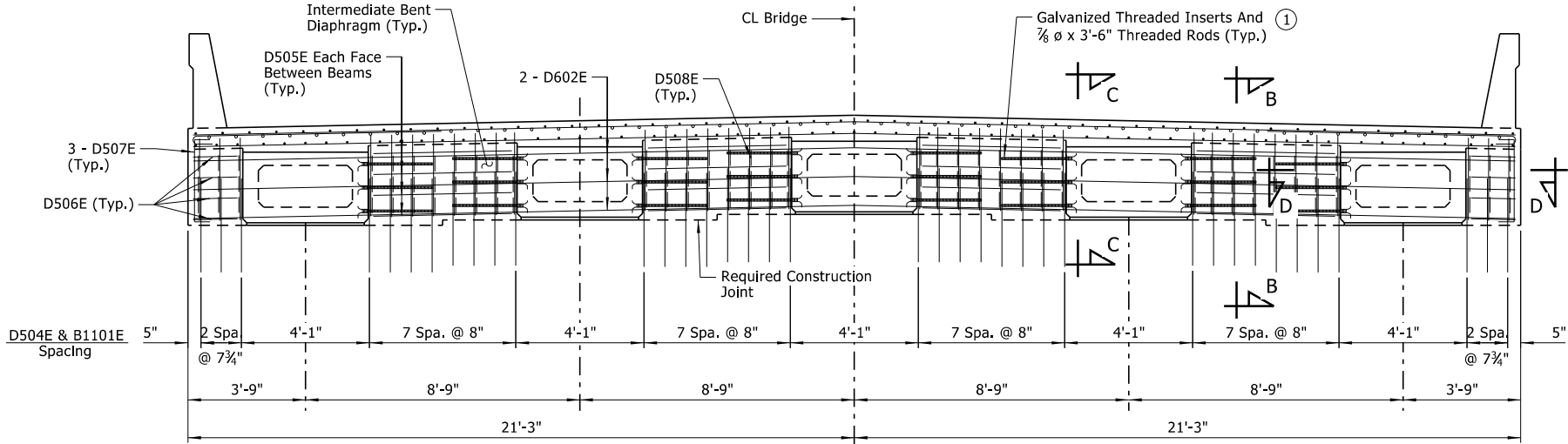
abhall 8/10/2023 11:22:30 AM
WORKSPACE: ARDOT Bridge (2019)
L:\1:2017\17017616 - 101013 Jacks Creek Str-Apprs\Drawings\101013_S301_SX.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	42	70
				07514		159'-0" UNIT		63795

- ① Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferule Inserts or approved equal. $\frac{7}{8}$ " \varnothing Galvanized Threaded Rods shall be ASTM A709, Grade 36 or AASHTO M 31 or M322 Type A, Grade 60. Galvanizing shall be in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE BOX BEAMS (27"x48")".
- ② For additional details of B1101E bars, see Dwg. No. 63792.
- ③ 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(AE) CONCRETE - BRIDGE".
- ④ Preformed Joint Material shall conform to AASHTO M 153 Type 1. See "PLAN - INT. BENT NOS. 2 & 3" on Dwg. No. 63792.

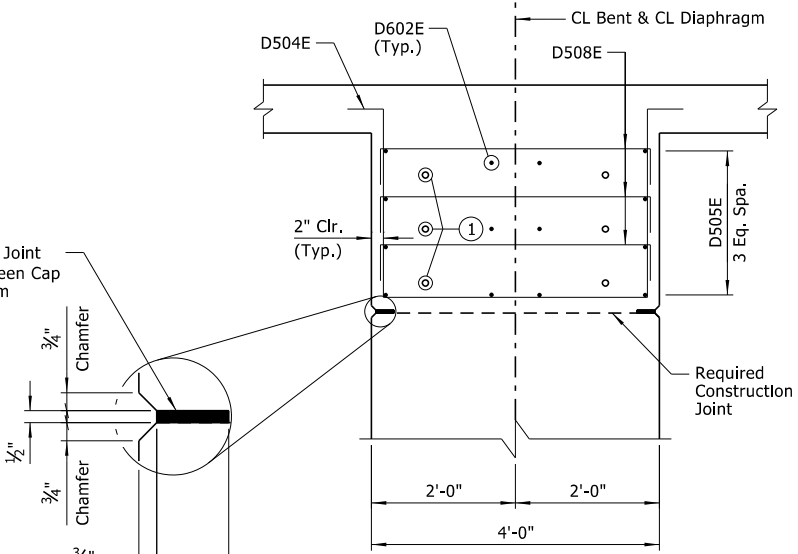
NOTES:
Limits of Intermediate Bent Diaphragm shall match plan dimension of Intermediate Bent Cap.

Preformed Joint Material will not be paid for directly, but shall be considered subsidiary to the item "CLASS S(AE) CONCRETE-BRIDGE".



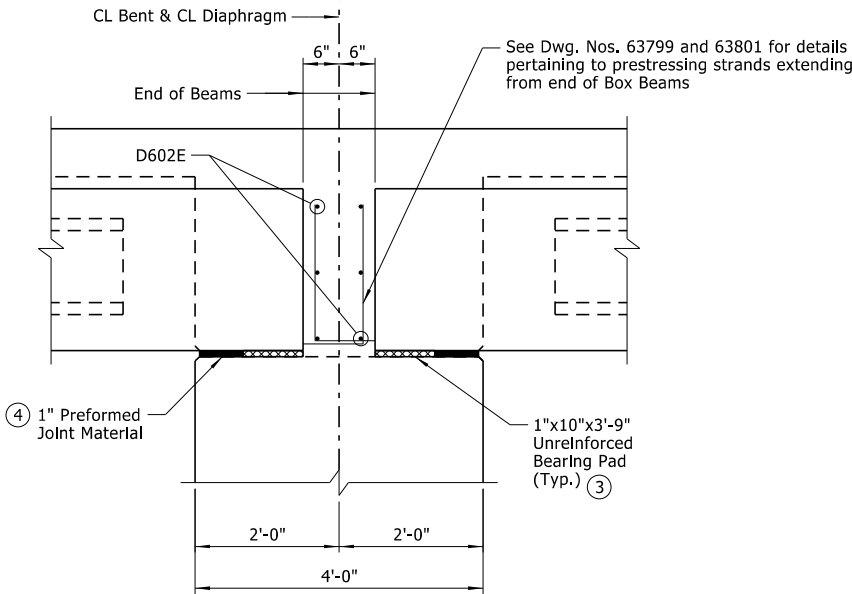
TYPICAL ROADWAY SECTION AT INTERMEDIATE BENTS

(Looking Ahead)
Scale: $\frac{3}{8}$ " = 1'-0"



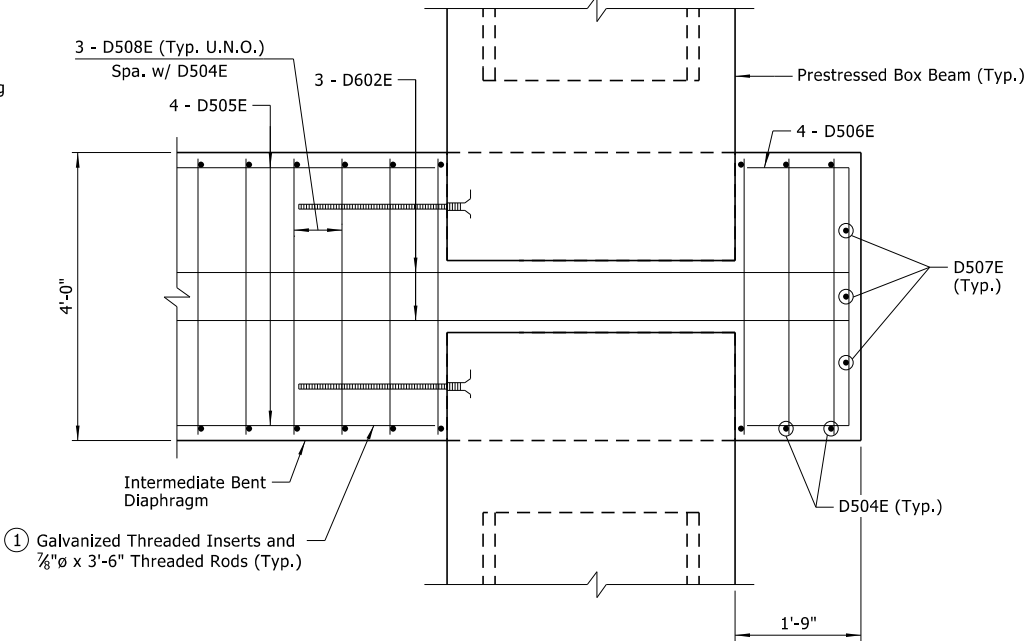
SECTION B-B

Scale: $\frac{3}{4}$ " = 1'-0"



SECTION C-C

Scale: $\frac{3}{4}$ " = 1'-0"



SECTION D-D

Scale: $\frac{3}{4}$ " = 1'-0"

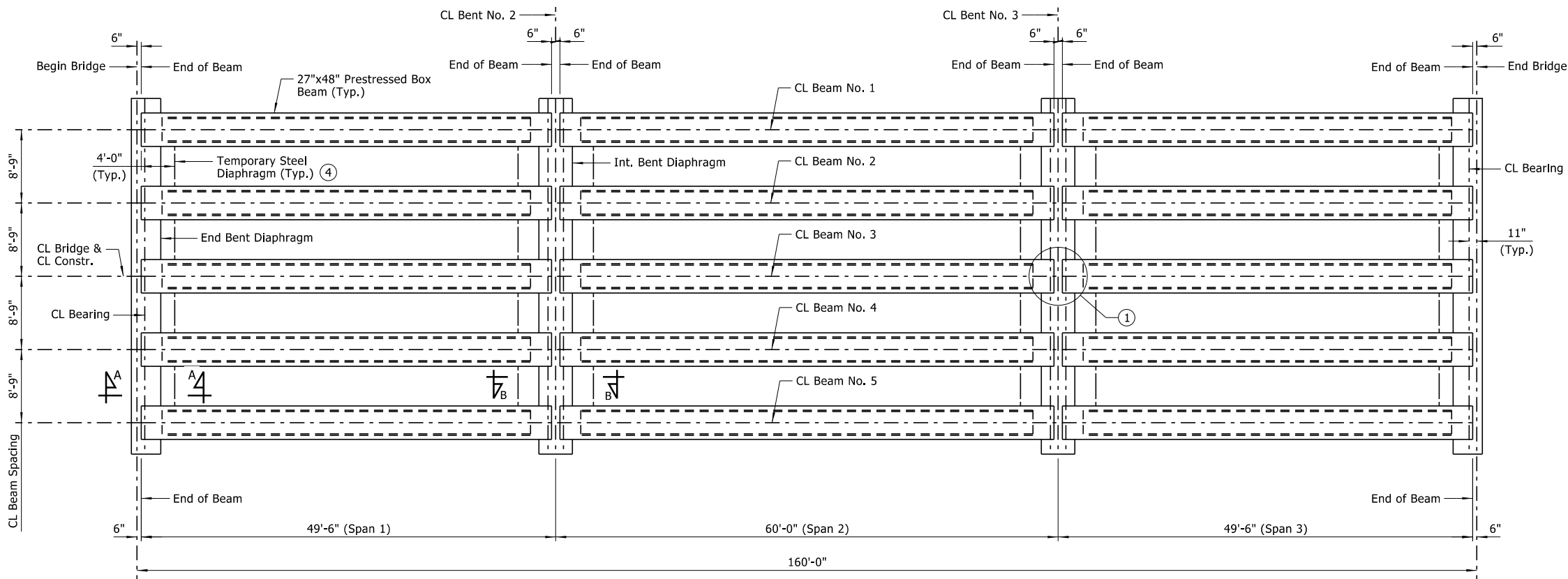
LEGEND
U.N.O. = Unless Noted Otherwise



SHEET 2 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s2.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63795

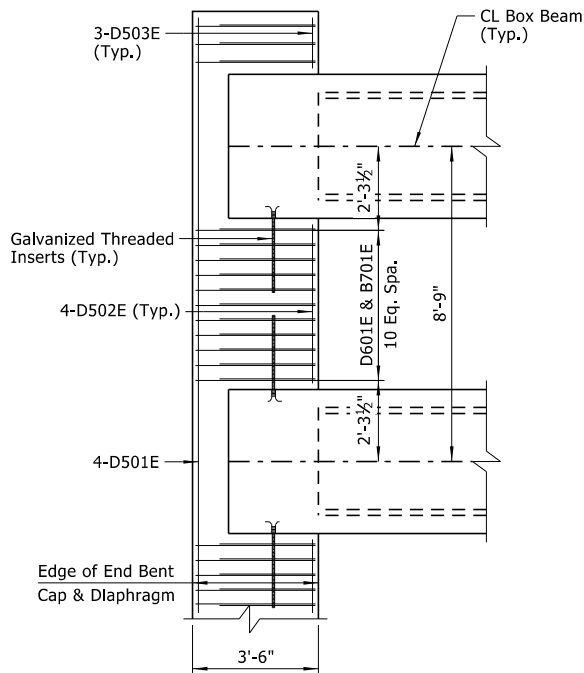
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						101013	43	70
				JOB NO.				
				07514		159'-0" UNIT		63796



FRAMING PLAN

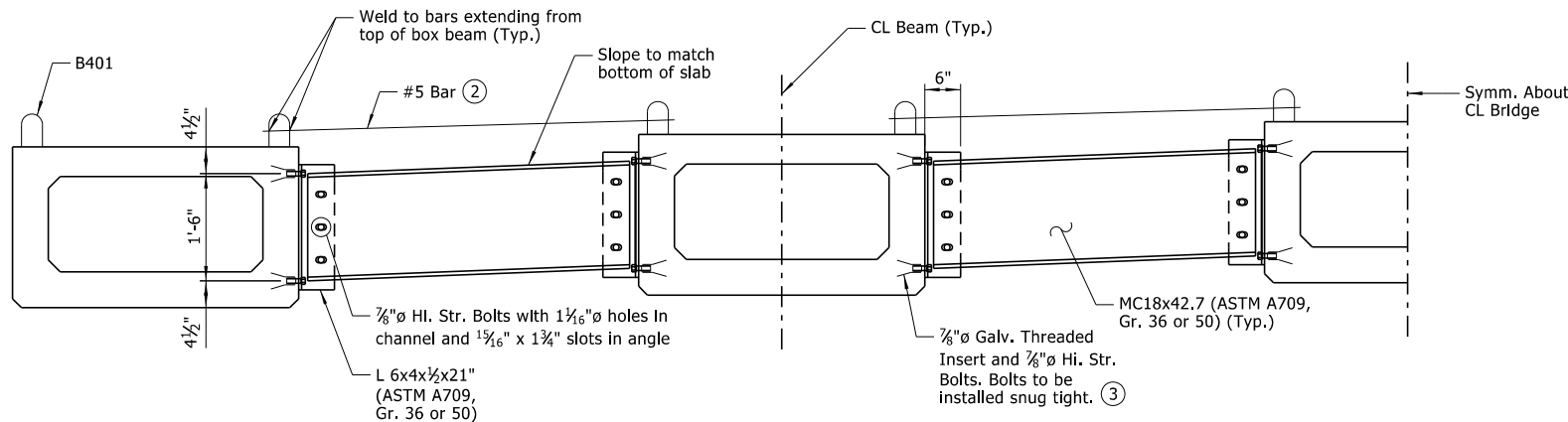
Scale: $\frac{1}{8}$ " = 1'-0"

A standard washer shall be supplied under both the nut and the head of the $\frac{7}{8}$ " ϕ Hi. Str. Bolts. An additional plate washer shall cover the angle slots.



PLAN OF END BENT DIAPHRAGM

Scale: $\frac{3}{8}$ " = 1'-0"



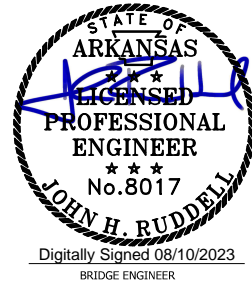
TEMPORARY STEEL DIAPHRAGM

Scale: $\frac{3}{4}$ " = 1'-0"

Steel Diaphragms shall be used at locations noted as "Temporary Steel Diaphragm". The Temporary Steel Diaphragm and components will not be paid for directly, but shall be considered subsidiary to the item "PRESTRESSED CONCRETE BOX BEAM (27"x48")".

All components of Temporary Steel Diaphragms shall be galvanized. Channels and angles shall be galvanized in accordance with Subsection 807.19.

- After erection, the ends of the beams at all bents shall be blocked using temporary blocking to maintain proper location on bent caps. The ends of beams shall remain blocked until the temporary steel diaphragms are installed.
- The #5 bar shall be connected to Bar B401 within the limits of the End or Int. Bent Diaphragm.
- Galvanized Threaded Inserts shall be Dayton-Richmond F-42 Loop Ferrule Inserts or approved equal. $\frac{7}{8}$ " ϕ Galvanized Bolts shall be Hi. Str. bolts galvanized in accordance with AASHTO M 232, Class C or ASTM B695, Class 50. These items will not be paid for directly but shall be considered subsidiary to the item "PRESTRESSED CONCRETE BOX BEAM (27"x48")".
- The Temporary Steel Diaphragms shall be installed prior to commencing deck forming. After the concrete deck construction and curing are complete, the temporary steel diaphragms and connecting elements may remain in place or be removed and become property of the contractor and the holes in the box beam web filled with a QPL approved non-shrink epoxy grout.

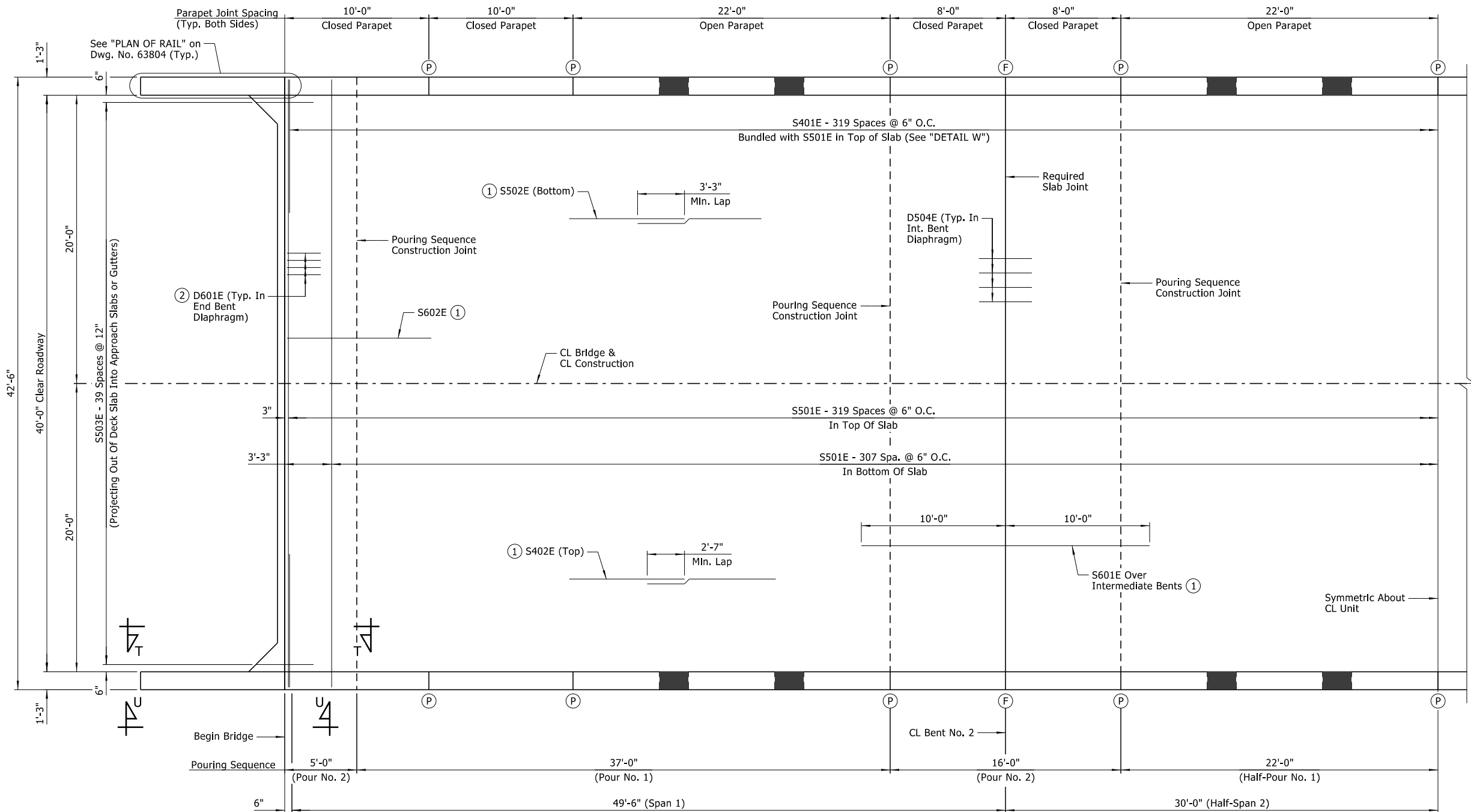


SHEET 3 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s3.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63796

8/10/2023 11:22:31 AM
WORKSPACE: ARDOT BHEge (2019)
L:\2017\17017616 - 101013 Jacks Creek St-Appra\Drawings\101013_S504_SB (Slab Plan).dgn
REVISID DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	44	70
				07514		159'-0" UNIT		63797



- ① Placed as shown in "TYPICAL ROADWAY SECTION" on Dwg. No. 63794.
- ② Placed as shown in "TYPICAL ROADWAY SECTION AT END BENTS" on Dwg. No. 63794.
- ③ Placed as shown in "TYPICAL ROADWAY SECTION AT INTERMEDIATE BENTS" on Dwg. No. 63795.

NOTES:
Parapet rail spacing and joint depth shown are typical for both sides of roadway. For reinforcing details, see Dwg. No. 63805.

Rails and wings are included in span construction and are included in span quantities.

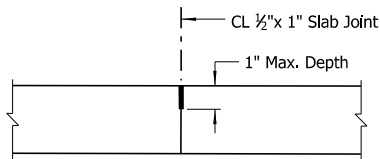
Required slab joints and pouring sequence construction joints shall align with parapet open joints at the gutterline, unless noted otherwise.

For "GENERAL NOTES - SUPERSTRUCTURE", see Dwg. No. 63802.

For "BAR LIST" and "BAR BENDING DIAGRAMS", see Dwg. No. 63803.

For "SECTION T-T" and "VIEW U-U", see Dwg. No. 63804.

- Ⓟ Partial-Depth Parapet Joint at this location
- Ⓡ Full-Depth Parapet Joint at this location



SLAB JOINT DETAIL
No Scale

Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as "CLASS S(AE) CONCRETE-BRIDGE". Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet except at end bent diaphragms. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

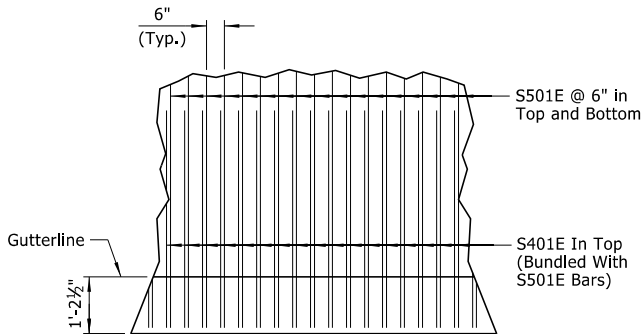
Slab Pouring Sequence Notes:
Pours with the same number may be placed simultaneously or separately. All Pour(s) 1 must be placed before Pour(s) 2 can be placed. A minimum of 48 hours shall elapse between the end of a pour and the start of the next pour. A minimum of 72 hours shall elapse between the end of a pour and the start of an adjacent pour.

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 End Bent and Intermediate Bent diaphragms shall not be poured prior to 90 days after release of strands for the box beams and shall be poured monolithically with the portion of the slab poured in Pour (2).

A minimum of 72 hours shall elapse between completion of the slab and the pouring of the bridge railing. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence(s) shown.

Scale: 1/4" = 1'-0"



DETAIL W
No Scale



SHEET 4 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s4.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63797

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						101013	45	70
				JOB NO.				
				07514		159'-0" UNIT		63798

- ① CL $\frac{7}{8}$ " \varnothing Threaded Inserts at interior face of exterior beams and both faces of interior beams. See Dwg. Nos. 63794 and 63795 for additional details.
- ② See "END OF BEAM VIEW AT BENT NOS. 1 & 4 - 49'-0" BEAM" and "END OF BEAM VIEW AT BENT NOS. 2 & 3 - 49'-0" BEAM" on Dwg. No. 63799 for details of reinforcing extending from end of beam.
- ③ B601 required at Bent Nos. 1 and 4 only
- ④ CL $\frac{7}{8}$ " \varnothing Threaded Inserts for Temporary Steel Diaphragms. See Dwg. No. 63796 for additional details.

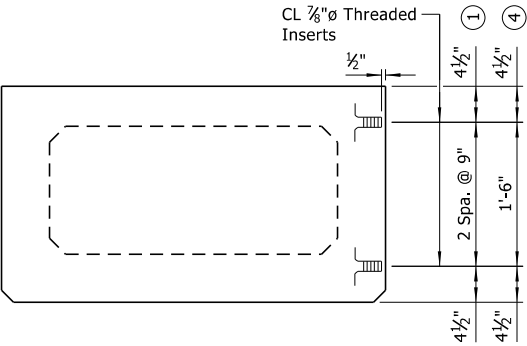
NOTES:
Dimensions are measured along CL Beam.

Prestressing strands and PVC pipe will not be paid for directly, but will be considered subsidiary to the item "PRESTRESSED CONCRETE BOX BEAMS (27"x48")".

Prestressing strands shall be bonded along the entire length of beam.

See Dwg. No. 63799 for "VIEW B-B", "SECTION C-C", "SECTION D-D", and "SECTION E-E".

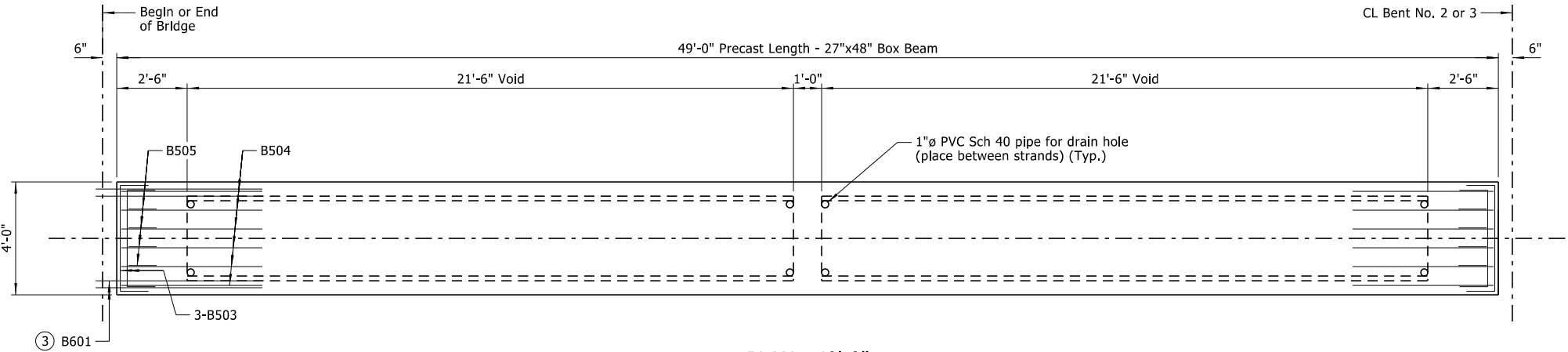
For "GENERAL NOTES - SUPERSTRUCTURE", see Dwg. No. 63802.



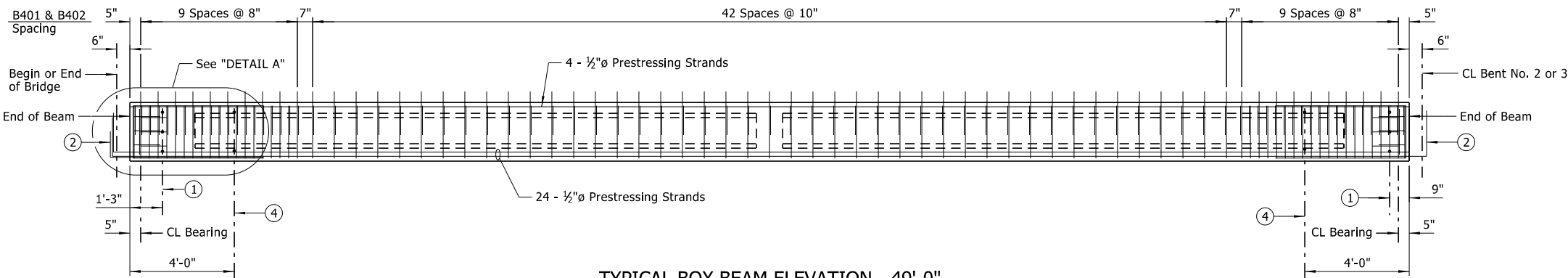
INSERT DETAIL
Scale: 1" = 1'-0"

SHEET 5 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

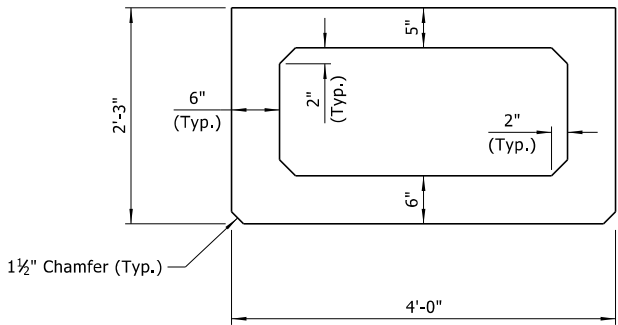
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CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63798



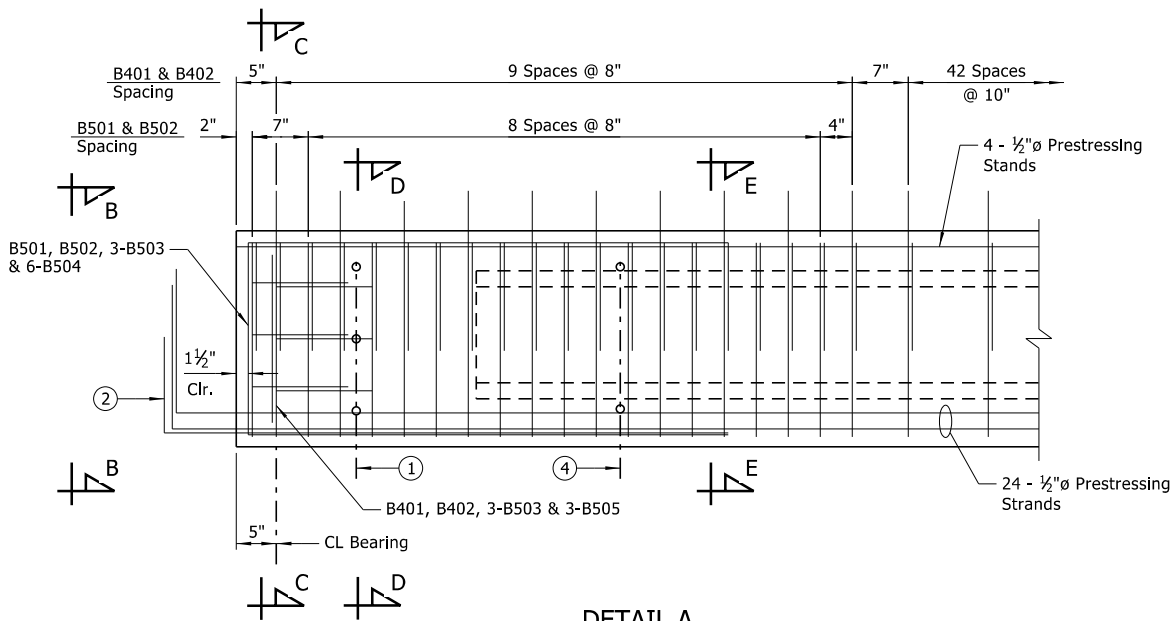
PLAN - 49'-0"
(Span 1 or 3)
Scale: $\frac{3}{8}$ " = 1'-0"



TYPICAL BOX BEAM ELEVATION - 49'-0"
(Span 1 or 3)
Scale: $\frac{3}{8}$ " = 1'-0"



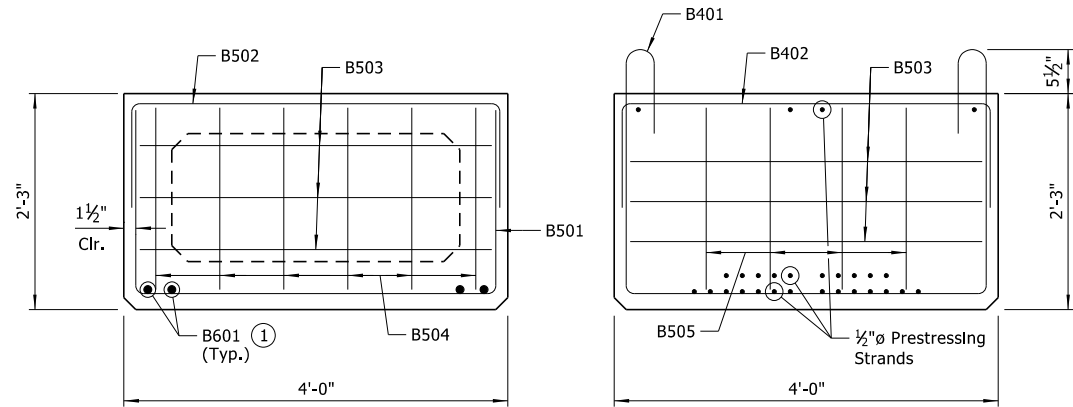
27"x48" BOX BEAM DIMENSIONS
Scale: 1" = 1'-0"



DETAIL A
Scale: 1" = 1'-0"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	46	70
				07514		159'-0" UNIT		63799

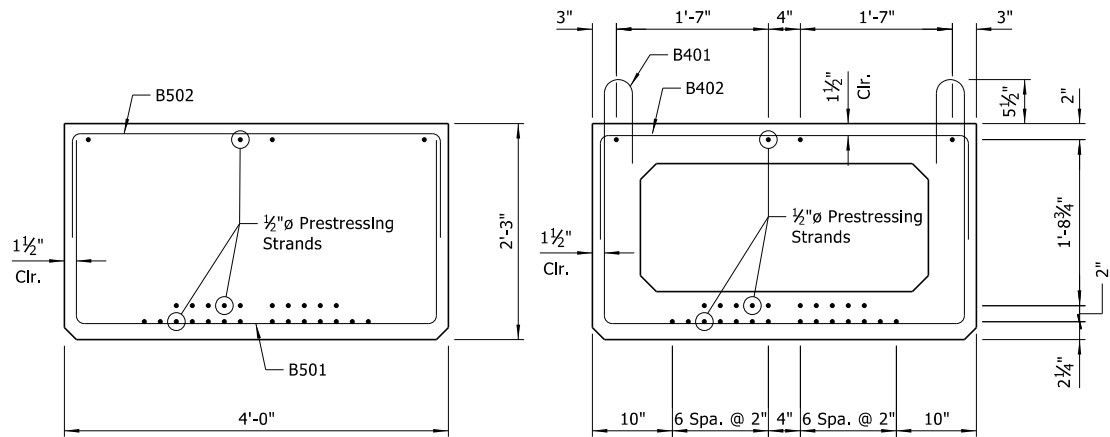
① B601 required at End Bent only



VIEW B-B
Scale: 1" = 1'-0"

SECTION C-C
Scale: 1" = 1'-0"

NOTE:
Extended strands omitted
from this view for clarity.

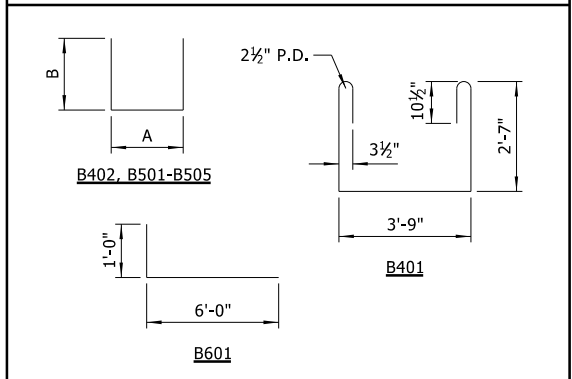


SECTION D-D
Scale: 1" = 1'-0"

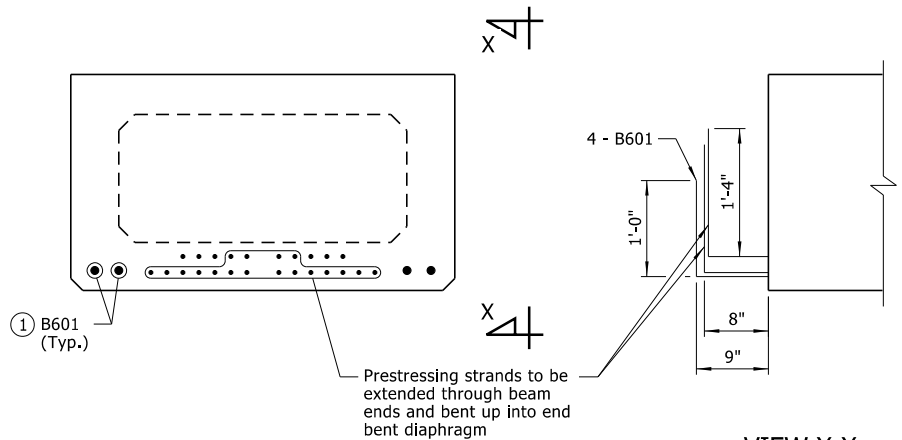
SECTION E-E
(Showing spacing of prestressing strands)
Scale: 1" = 1'-0"

BAR LIST - PER BEAM					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	63	10'-8½"			2"
B402	63	6'-7"	3'-9"	1'-6"	2"
B501	20	7'-6½"	3'-9"	2'-0"	2½"
B502	20	7'-0½"	3'-9"	1'-9"	2½"
B503	12	5'-5"	3'-7½"	1'-0"	2½"
B504	12	11'-8"	1'-10½"	5'-0"	2½"
B505	8	3'-8"	1'-10½"	1'-0"	2½"
B601	4	6'-10"			4½"

BAR BENDING DIAGRAMS



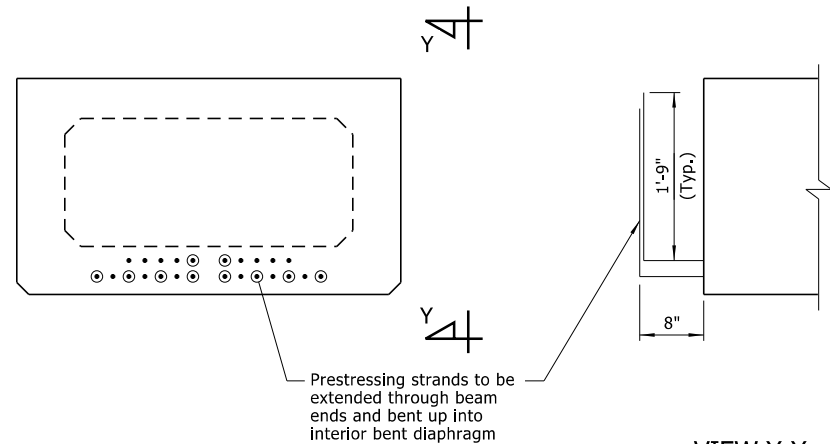
NOTE:
All bars in the Bar List will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Box Beams (27"x48")".



END OF BEAM VIEW AT BENT
NOS. 1 & 4 - 49'-0" BEAM
Scale: 1" = 1'-0"

Prestressing strands to be
extended through beam
ends and bent up into
bent diaphragm

NOTE:
At End Bents, saw and shop bend 18
prestressing strands as shown. Cut or grind
remaining strands to within 1" of the end of
beam.

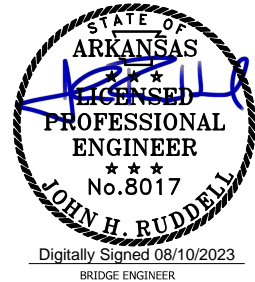


END OF BEAM VIEW AT BENT
NOS. 2 & 3 - 49'-0" BEAM
Scale: 1" = 1'-0"

Prestressing strands to be
extended through beam
ends and bent up into
interior bent diaphragm

NOTE:
At Intermediate Bents, saw and shop bend 10
bottom prestressing strands from end of beam
into intermediate bent diaphragm as shown.

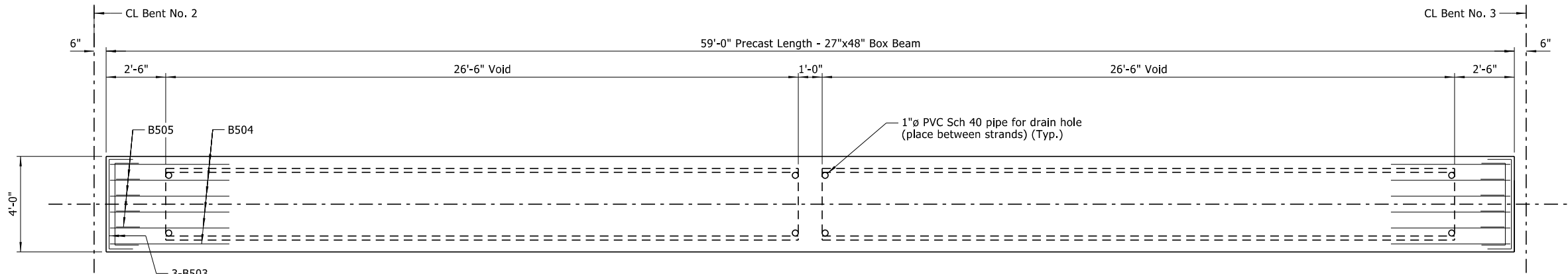
NOTE:
Details on this drawing are applicable
to Spans 1 & 3.



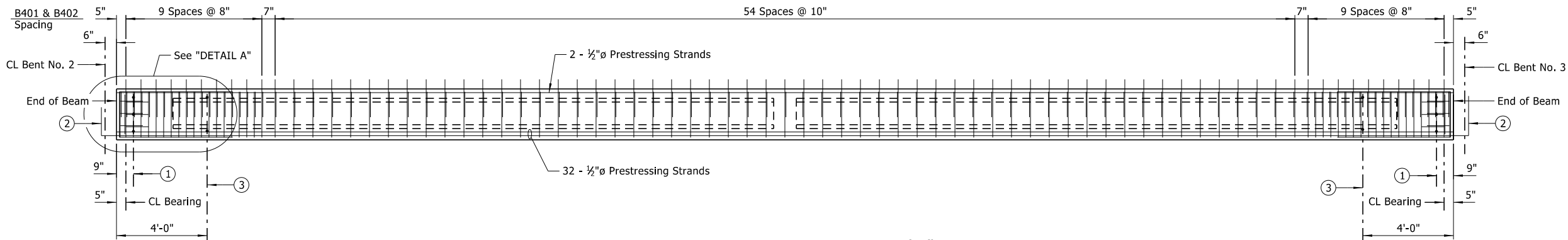
SHEET 6 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s6.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63799

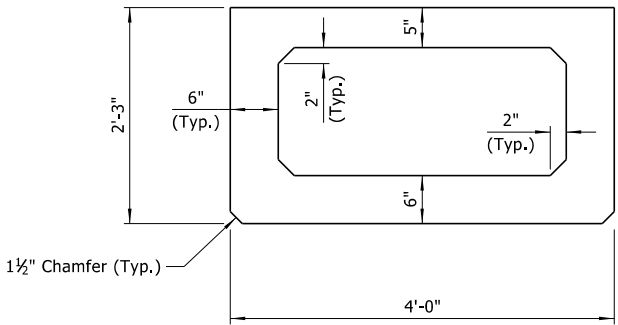
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						101013	47	70
				JOB NO.				
				07514		159'-0" UNIT		63800



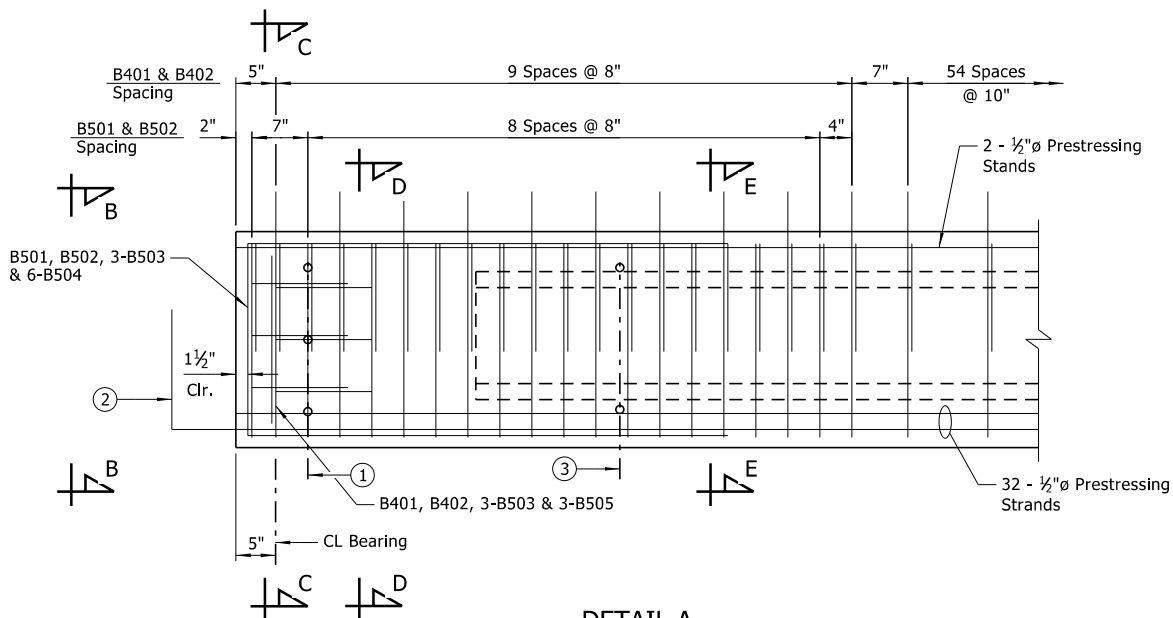
PLAN - 59'-0"
(Span 2)
Scale: $\frac{3}{8}$ " = 1'-0"



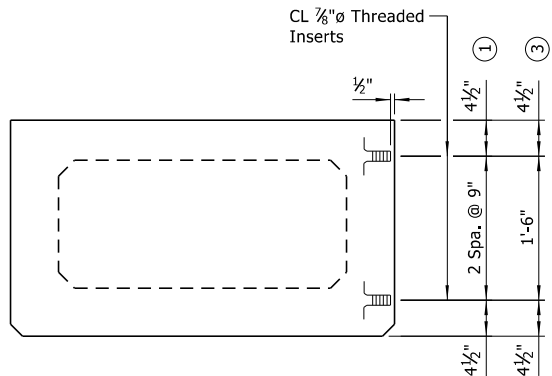
TYPICAL BOX BEAM ELEVATION - 59'-0"
(Span 2)
Scale: $\frac{3}{8}$ " = 1'-0"



27"x48" BOX BEAM DIMENSIONS
Scale: 1" = 1'-0"



DETAIL A
Scale: 1" = 1'-0"



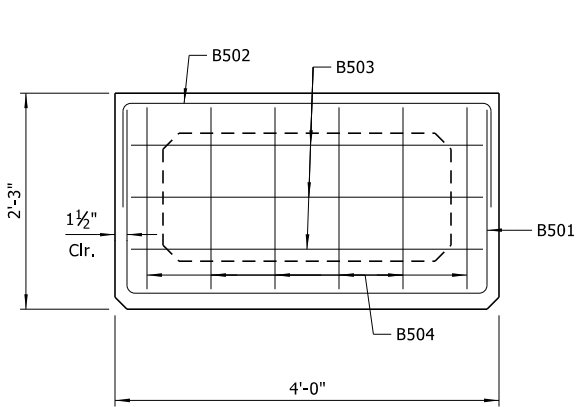
INSERT DETAIL
Scale: 1" = 1'-0"

SHEET 7 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s7.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63800

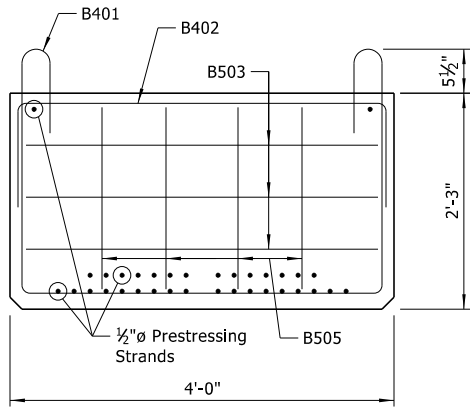


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						101013	48	70
				JOB NO.				
				07514		159'-0" UNIT		63801

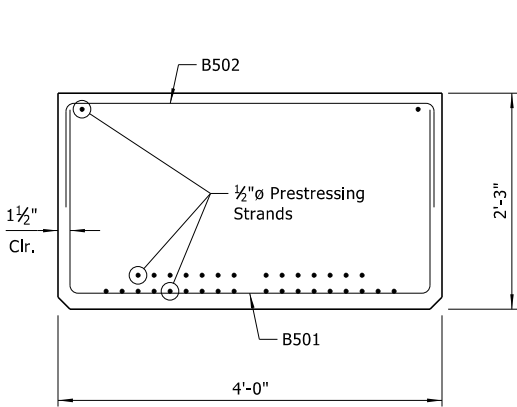


VIEW B-B
Scale: 1" = 1'-0"

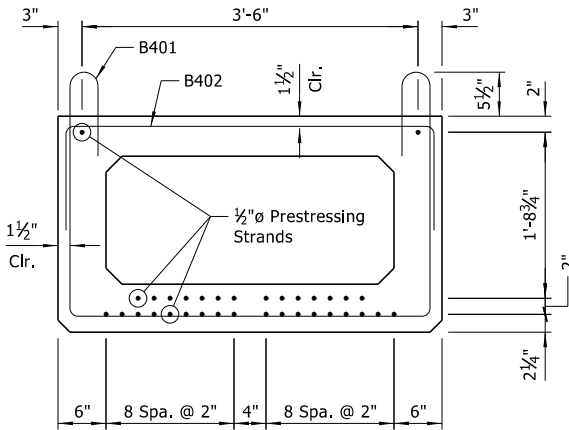
NOTE:
Extended strands omitted
from this view for clarity.



SECTION C-C
Scale: 1" = 1'-0"

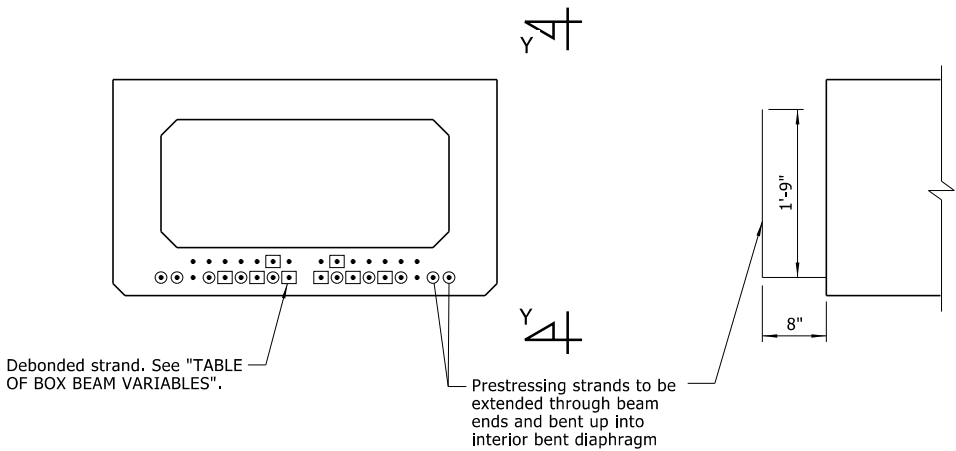


SECTION D-D
Scale: 1" = 1'-0"



SECTION E-E
(Showing spacing of prestressing strands)
Scale: 1" = 1'-0"

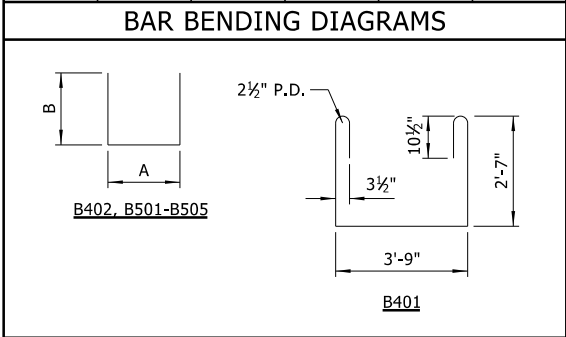
BAR LIST - PER BEAM					
MARK	NO. REQ'D	LENGTH	"A"	"B"	P.D.
B401	75	10'-8 1/2"			2"
B402	75	6'-7"	3'-9"	1'-6"	2"
B501	20	7'-6 1/2"	3'-9"	2'-0"	2 1/2"
B502	20	7'-0 1/2"	3'-9"	1'-9"	2 1/2"
B503	12	5'-5"	3'-7 1/2"	1'-0"	2 1/2"
B504	12	11'-8"	1'-10 1/2"	5'-0"	2 1/2"
B505	8	3'-8"	1'-10 1/2"	1'-0"	2 1/2"



END OF BEAM VIEW AT BENT
NOS. 2 & 3 - 59'-0" BEAM
Scale: 1" = 1'-0"

VIEW Y-Y
Scale: 1" = 1'-0"

NOTE:
At Intermediate Bents, saw and shop bend 10
prestressing strands from end of beam into
intermediate bent diaphragm as shown.



NOTE:
All bars in the Bar List will not be paid for directly, but will be considered
subsidiary to the item "Prestressed Concrete Box Beams (27"x48")".

NOTE:
Details of this drawing are
applicable to Span 2.

TABLE OF BOX BEAM VARIABLES

STRAND DESIGNATION		VARIABLES OF BONDING/DEBONDING		
ROW	LINE	"A"	"B"	"C"
1	A,B,C,D,F,H,K,M,O,P,Q,R	59'-0"		
1	G,I,J,L		3'-0"	53'-0"
1	E,N		6'-0"	47'-0"
2	C,D,E,F,G,I,J,L,M,N,O,P	59'-0"		
2	H,K		6'-0"	47'-0"
3	A',R'	59'-0"		

BONDING/DEBONDING DIAGRAM



SHEET 8 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s8.dgn
CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63801

8/10/2023 11:22:33 AM
WORKSPACE: ARDOT BHEg (2019)
L:\2017\1701013-Jacks Creek St-Appra\Drawings\101013_S309_MD.dgn
REVISION DATE:

GENERAL NOTES - SUPERSTRUCTURE

PRESTRESSED CONCRETE BOX BEAMS:

Pretensioning steel shall be ½"ø 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 beams shall be 27" x 48" Box Beams as noted on the details. All beams shall be cast In 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 ½" dia. strand shall be 31,000 lbs. except as noted. Transfer of this tensioning load to the beam 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 beams.

Holes and inserts shall be cast into the beams. Field drilling of holes shall not be permitted.

The tops of the beams shall be rough floated at approximately the time of set. This portion of the tops of beams shall be scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface with an amplitude of ¼" to produce an adequate surface for bonding the slab.

Extreme care shall be exercised in handling and moving precast prestressed concrete beams. Beams must be maintained in an upright position at all times and must be picked up from points near the beam ends. Disregard of this requirement may lead to collapse of the beam. The contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The 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.

Beam lengths shown on the design plans are net lengths measured horizontally along the beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep, and shrinkage.

Reinforcing steel shall be AASHTO M 31 or M 322, Type A (fy = 60,000 psi) with mill test reports.

After detensioning, saw cut, grind, or bend up strands as designated by the plans. Heat-cutting or bending methods shall not be used within 6" of the beam.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22.

Void filler shall be non-absorptive cellular polystyrene according to ASTM C578, designed to withstand the forces imposed during fabrication without substantial deformation or collapsing. Cardboard void filler will not be allowed. The outside dimensions of void filler shall be as shown in the plans. When two or more sections of void filler are used to make up a required length, the individual sections shall be effectively taped or spliced together.

Drawings show general features of design only. Shop drawings shall be made in accordance with specifications, submitted, and approved before fabrication is begun.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M 31 or M 322, Type A (fy = 60,000 psi) 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)".

CONCRETE:

All concrete in slab, parapet and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength, f'c = 4,000 psi. Concrete shall be poured in the dry, and all exposed corners shall be chamfered ¾" unless otherwise noted. All end bent and intermediate bent diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Removable forms shall be used when pouring diaphragms. The slab and diaphragms shall not be poured prior to 90 days following release of the prestressed beam strands.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of the item "CLASS S(AE) CONCRETE - BRIDGE". See Standard Drawing No. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck (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 beam. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment in the strike-off to account for future dead load deflection due to parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the engineer.

STRUCTURAL STEEL:

All structural steel shall be ASTM A709, Gr. 36 or 50 unless noted otherwise.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on approved shop drawings. Shapes and materials shown in the plans will be the basis of payment, and no additional compensation will be made for any adjustments due to substitutions.

Drawings show general features of design only. Shop drawings shall be prepared in accordance with the specifications, submitted and approved before fabrication is begun.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

SPECIAL CAMBER NOTES

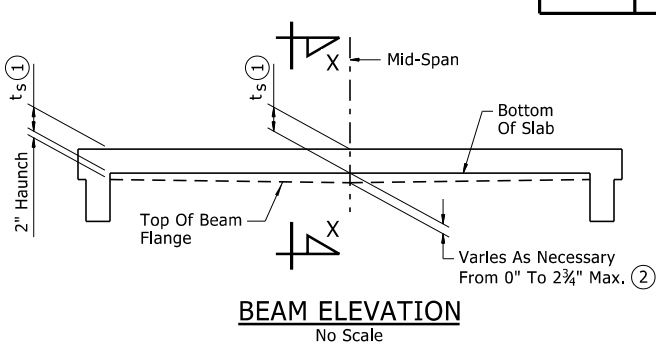
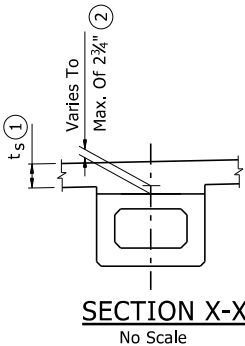
The camber and dead load deflection values shown on the plans are estimated based on the required minimum concrete strength for the prestressed concrete beams. The contractor shall provide the Engineer with the following information:

A. Actual 28-Day concrete strength of prestressed concrete beams

B. Estimated age of prestressed concrete beams at time of erection which shall not be less than 90 days from release.

C. Profile of each beam under its own weight in final position.

Following receipt of the above data, the Engineer will evaluate the dead load and, if necessary, will provide an updated deflection diagram to the contractor.



t_s = slab thickness as shown on superstructure details.
See "TYPICAL ROADWAY SECTION" on Dwg. No. 63794.

① 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.

The "BEAM ELEVATION" sketch shows the range of acceptability of the top of beam relative to bottom of slab after the placement of the slab. When the top corner of the beam projects more than ⅜" into the slab, a raise in grade will be necessary. Beams shall be set in a sufficient number of spans over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

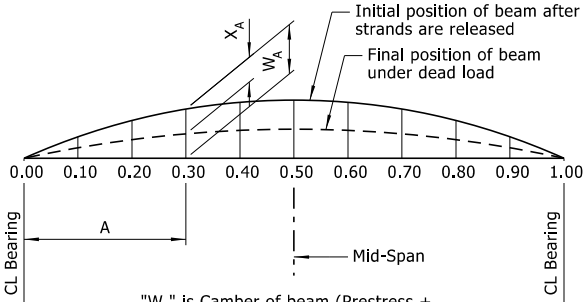
② Haunch dimensions are measured at CL Beam.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

SPAN PT.	INCHES	
	W _A	X _A
0.00	0.000	0.000
0.10	0.292	0.112
0.20	0.508	0.219
0.30	0.652	0.302
0.40	0.734	0.355
0.50	0.761	0.372

Table symmetric about mid-span

③ Note: Camber and Deflection Values shown are based on a concrete beam strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES".



"W_A" is Camber of beam (Prestress + Dead Load of beam @ 90 Days After Release)

"X_A" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

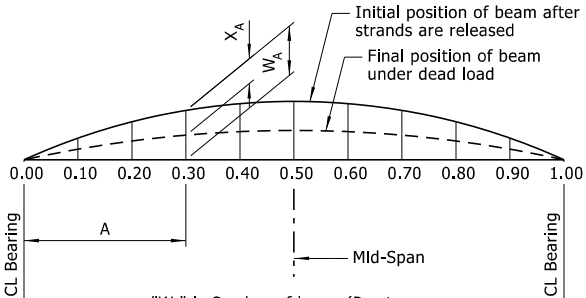
③ CAMBER & DEFLECTIONS (INCHES) - 49'-0" BEAM

No Scale

SPAN PT.	INCHES	
	W _A	X _A
0.00	0.000	0.000
0.10	0.614	0.232
0.20	1.093	0.455
0.30	1.413	0.629
0.40	1.597	0.740
0.50	1.657	0.779

Table symmetric about mid-span

④ Note: Camber and Deflection Values shown are based on a concrete beam strength, f'c = 8000 psi. Greater strengths may require adjustments. See "SPECIAL CAMBER NOTES".



"W_A" is Camber of beam (Prestress + Dead Load of beam @ 90 Days After Release)

"X_A" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load

④ CAMBER & DEFLECTIONS (INCHES) - 59'-0" BEAM

No Scale



SHEET 9 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s9.dgn
CHECKED BY: JHR DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020

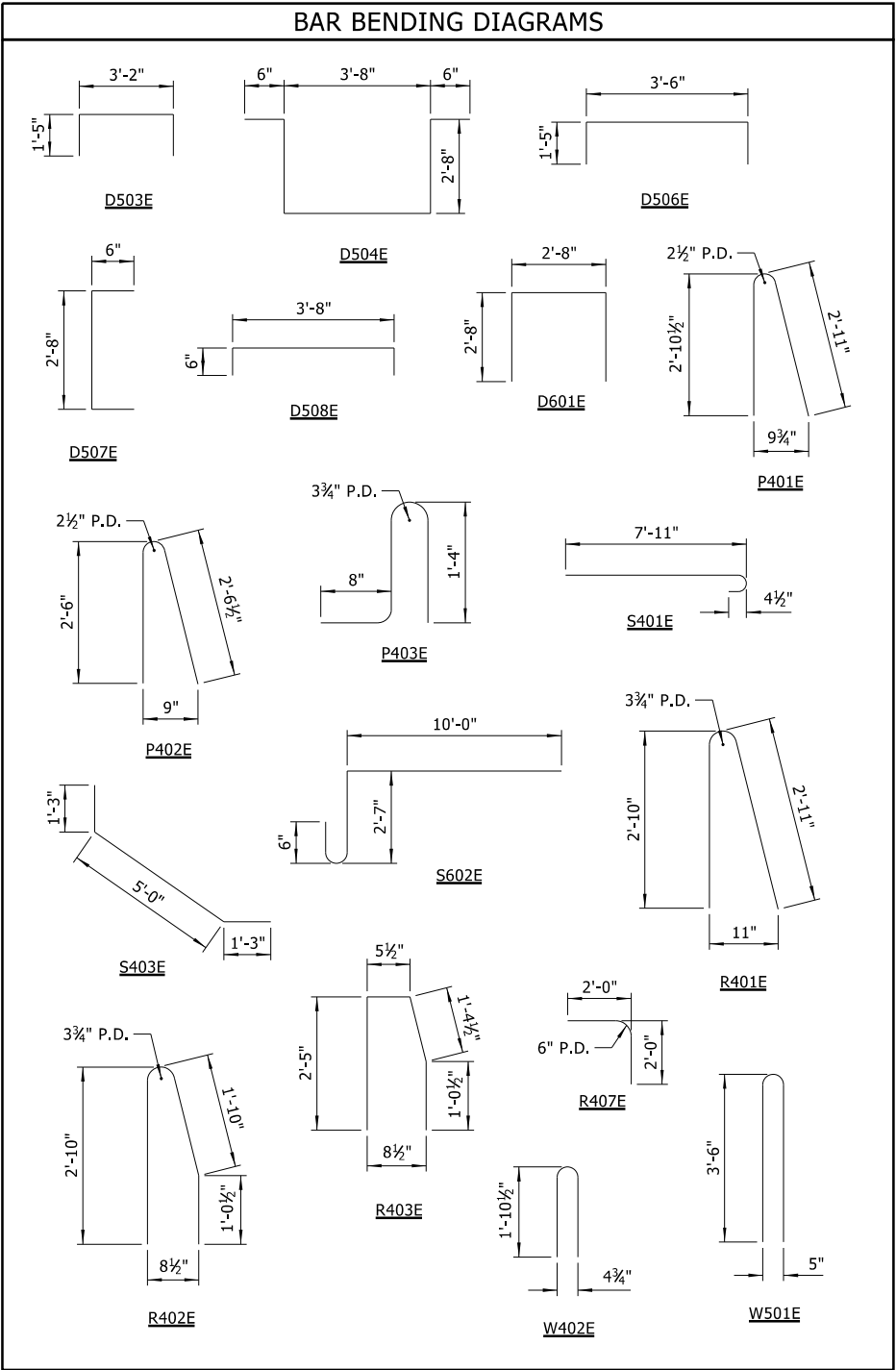
BRIDGE NO. 07514

DRAWING NO. 63802

8/10/2023 11:22:34 AM
WORKSPACE: ARDOT BHEg (2019)
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	50	70
				07514		159'-0" UNIT	63803	

BAR LIST				
	MARK	NO. REQ'D	LENGTH	P.D.
END BENT DIAPHRAGM	D501E	8	42'-2"	Str.
	D502E	32	4'-5"	Str.
	D503E	12	5'-10"	2½"
	D601E	100	7'-8"	4½"
INT. BENT DIAPHRAGM	D701E	8	42'-2"	Str.
	D504E	76	9'-7"	2½"
	D505E	64	4'-5"	Str.
	D506E	16	6'-2"	2½"
PARAPET	D507E	12	3'-6"	2½"
	D508E	228	4'-6"	2½"
	D602E	12	42'-2"	Str.
SLAB	P401E	576	5'-11"	2½"
	P402E	64	5'-2"	2½"
	P403E	576	3'-5"	3"
	P404E	72	5'-7"	Str.
	P405E	64	9'-8"	Str.
WINGWALLS	P406E	64	21'-8"	Str.
	P407E	64	7'-8"	Str.
	S401E	640	8'-5"	3"
	S402E	250	34'-0"	Str.
	S501E	628	42'-2"	Str.
	S502E	236	42'-6"	Str.
	S503E	80	4'-0"	Str.
	S601E	98	20'-0"	Str.
	S602E	98	13'-1"	4½"
	R401E	60	5'-11"	3¾"
	R402E	16	5'-10"	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.
	S403E	12	7'-6"	3"
	W401E	120	2'-9"	Str.
	W402E	80	3'-11"	3¾"
	W501E	32	7'-3"	3¾"
	W801E	40	12'-8"	Str.

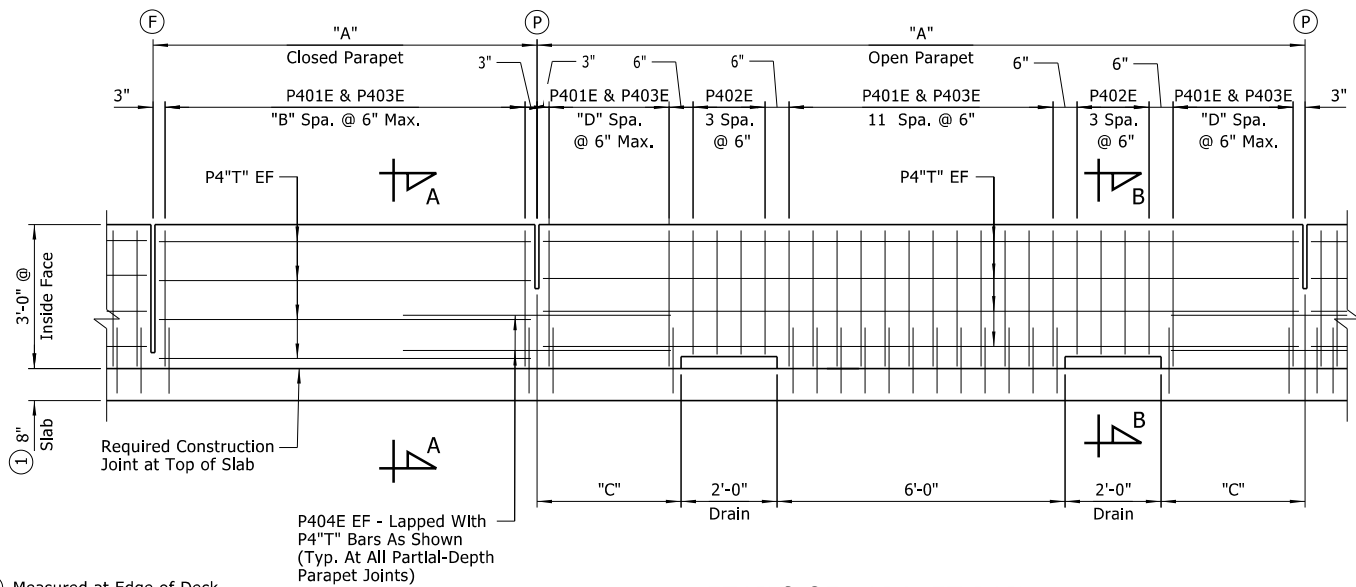


NOTES:
Dimensions of bars are out-to-out.
Bar designations ending with "E" indicate epoxy coated bars.



SHEET 10 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_s10.dgn
CHECKED BY: JHR DATE: JULY 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63803

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	101013	52
								70
				07514	159'-0" UNIT	63805		



① Measured at Edge of Deck

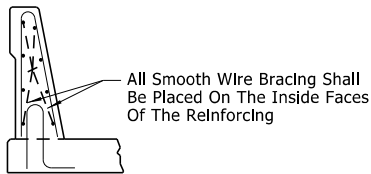
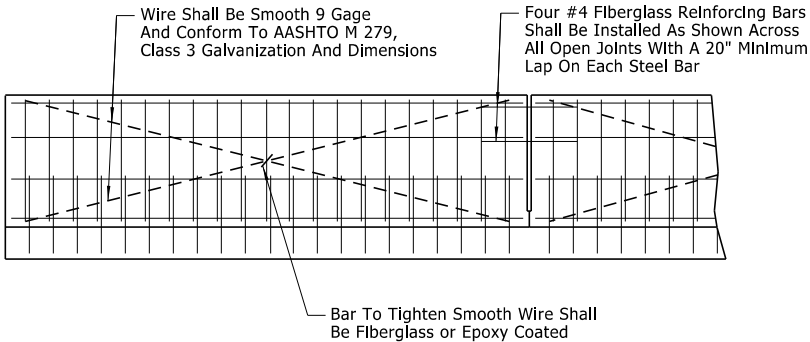
DETAILS OF PARAPET RAIL
Scale: 1/2" = 1'-0"

TABLE OF PARAPET VARIABLES				
PANEL LENGTH		CLOSED PARAPET	OPEN PARAPET	
"A"	"T"	"B"	"C"	"D"
10'-0"	05E	19	-	-
22'-0"	06E	-	6'-0"	11
8'-0"	07E	15	-	-

LEGEND
EF = Each Face

- ① CL Full-Depth Parapet Joint (1/4"-1" max.)
Stop 6" from Top of Slab.
- ② CL Partial-Depth Parapet Joint (1/4"-1" max.)
Stop 16" 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 & DECK POURING SEQUENCE" on Dwg. No. 63797.

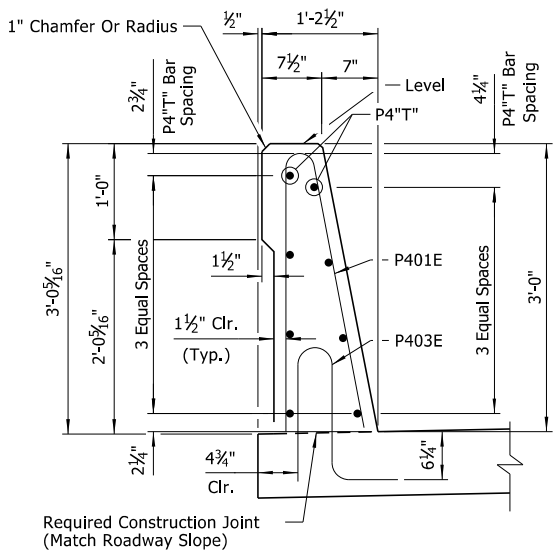


NOTE:
For actual placement of reinforcing steel, see "DETAILS OF PARAPET RAIL".

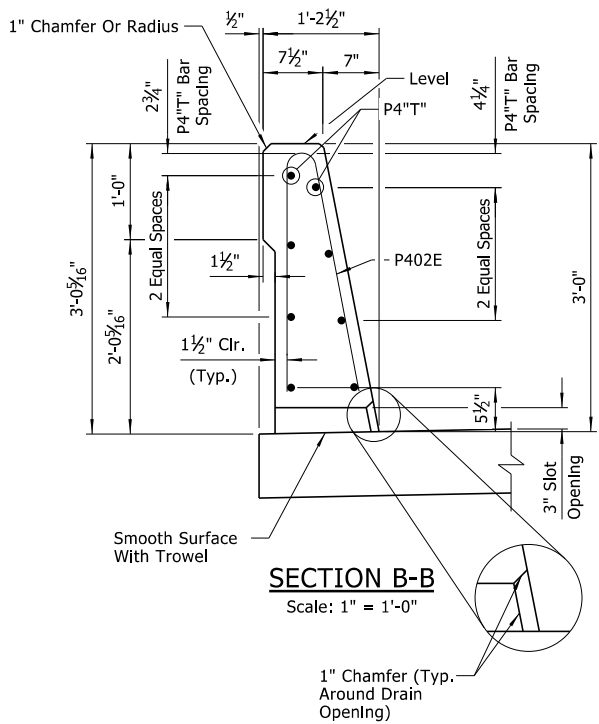
NOTE:
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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.

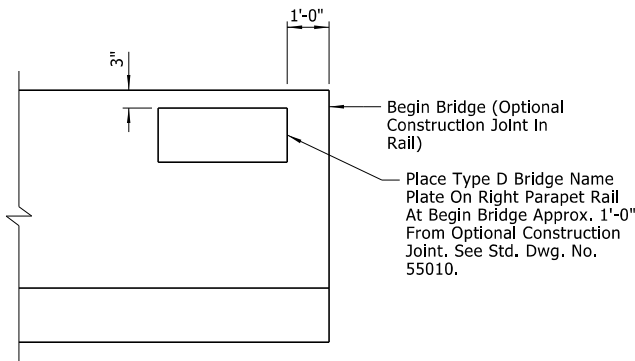
DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
No Scale



SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"



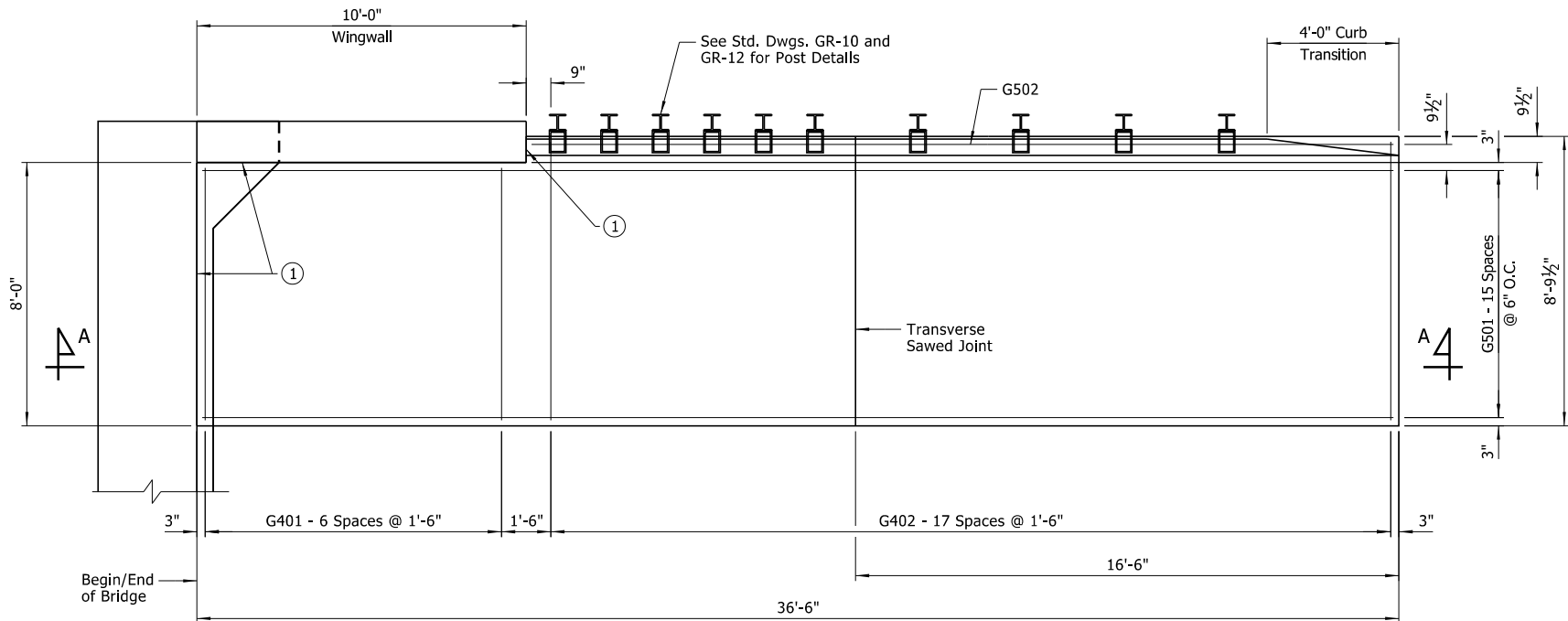
VIEW SHOWING LOCATION OF NAME PLATE
(Showing Inside Face Of Parapet)
No Scale



SHEET 12 OF 12
DETAILS OF 159'-0" INTEGRAL
PRESTRESSED CONCRETE BOX BEAM UNIT
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

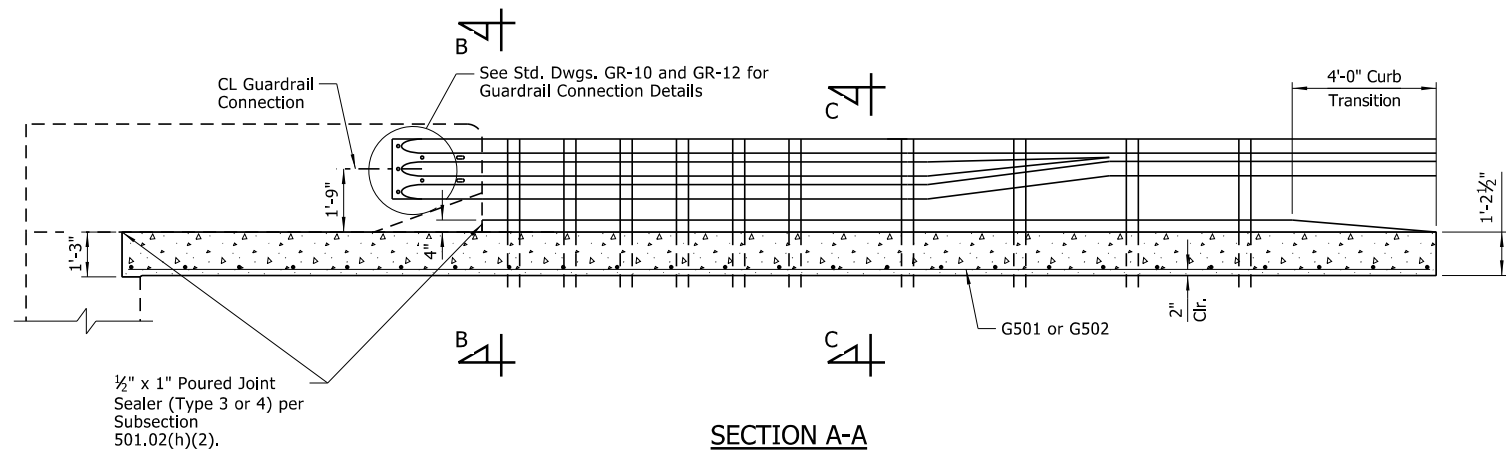
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CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown
DESIGNED BY: JME DATE: MAY 2020
BRIDGE NO. 07514 DRAWING NO. 63805

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						101013	53	70
				JOB NO.				
				07514	APPR. GUTTER			63806



HALF PLAN OF TYPE SPECIAL APPROACH GUTTERS

Scale: 3/8" = 1'-0"



SECTION A-A

Scale: 3/8" = 1'-0"

QUANTITIES FOR ONE TYPE SPECIAL APPROACH GUTTER

(FOR INFORMATION ONLY)

Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
768	14.20

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.

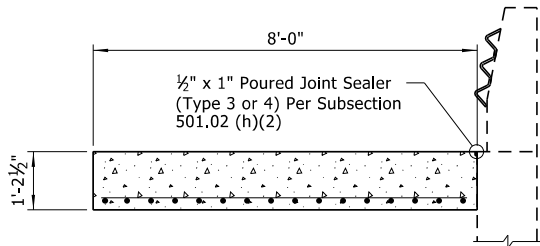
All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Gutters will be measured and paid for in accordance with Section 504.

BAR LIST FOR ONE TYPE SPECIAL APPROACH GUTTER

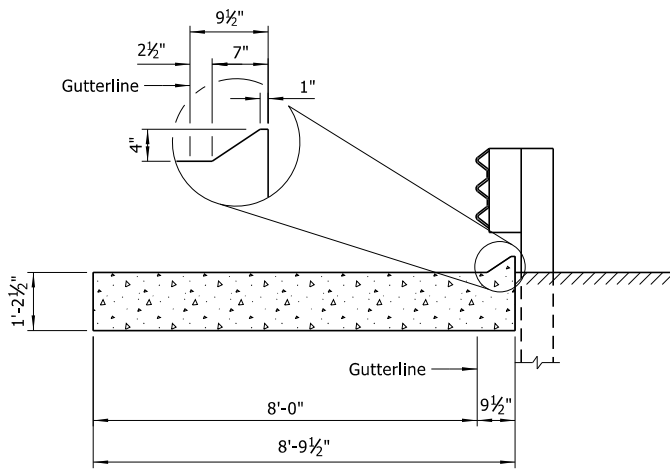
MARK	NO. REQ'D	LENGTH
G401	7	7'-8"
G402	18	8'-5"
G501	16	36'-2"
G502	1	26'-2"

NOTE:
Quantities Shown are for One Type Special Approach Gutter. Four Type Special Approach Gutters are Required.



SECTION B-B

Scale: 1/2" = 1'-0"



SECTION C-C

Scale: 1/2" = 1'-0"

DETAILS OF TYPE SPECIAL APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: CWT DATE: MAY 2020 FILENAME: b101013_AG1.dgn

CHECKED BY: JHR DATE: JUNE 2020 SCALE: As Shown

DESIGNED BY: JME DATE: MAY 2020

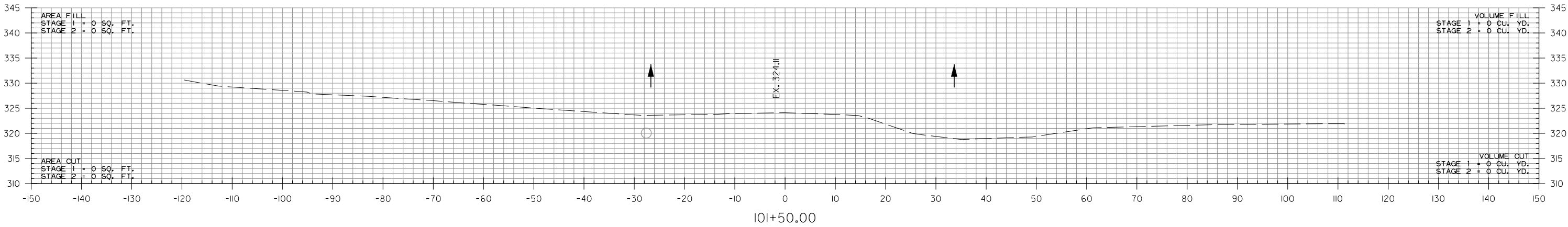
BRIDGE NO. 07514

DRAWING NO. 63806

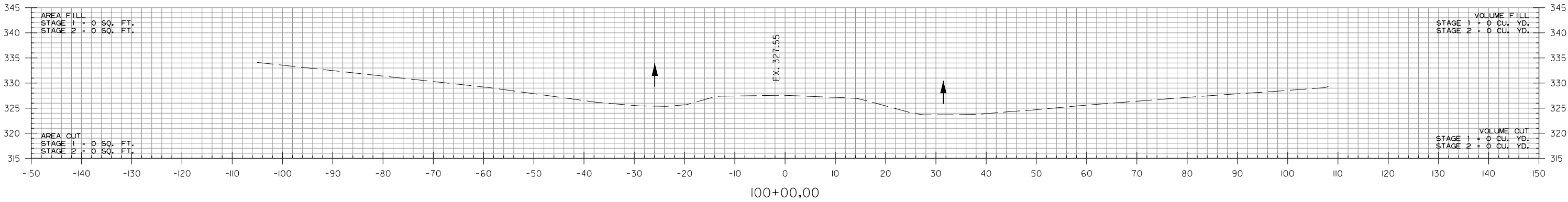
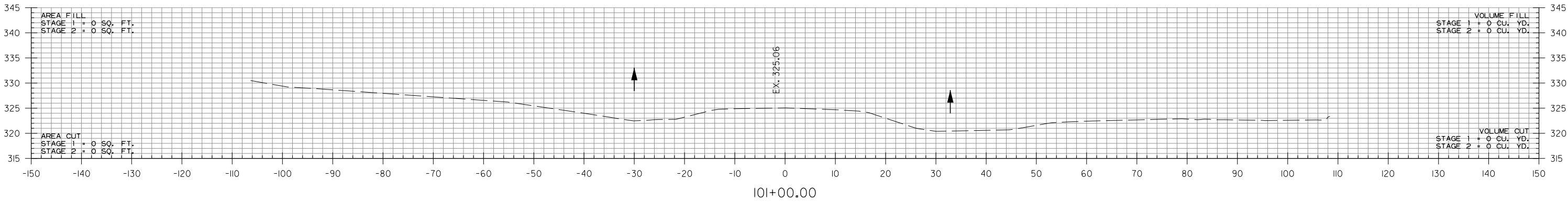


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REVISED DATE:

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				JOB NO.		101013	54	70
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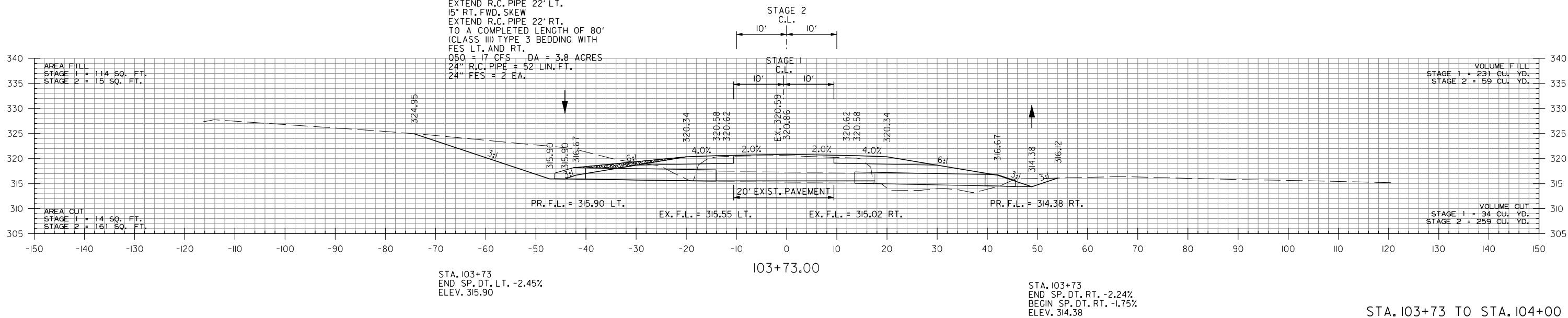
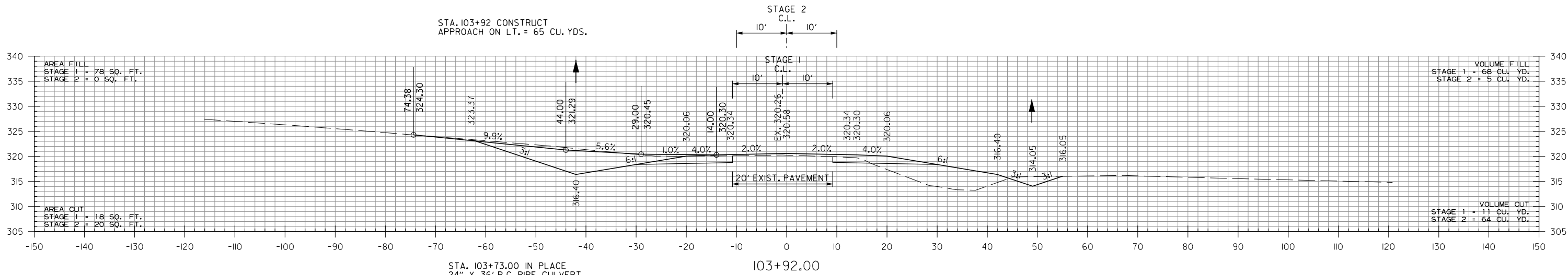
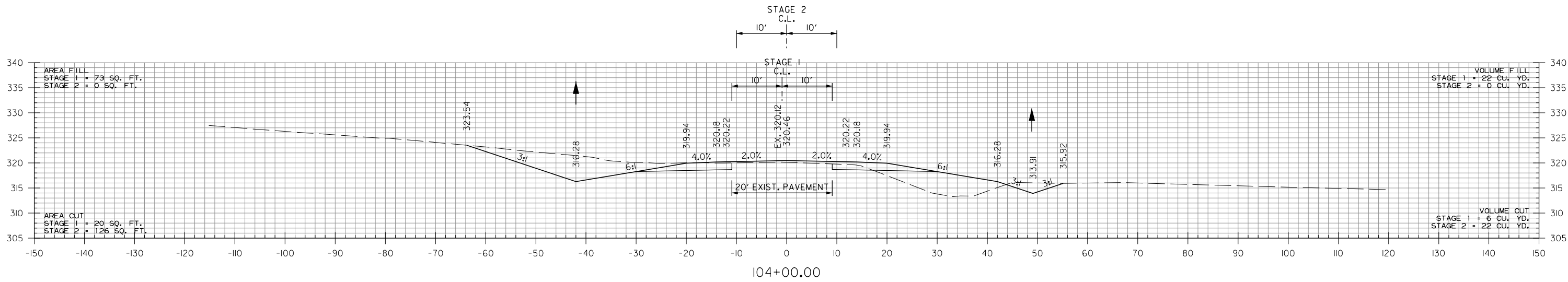
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STA. 100+00 TO STA. 101+50

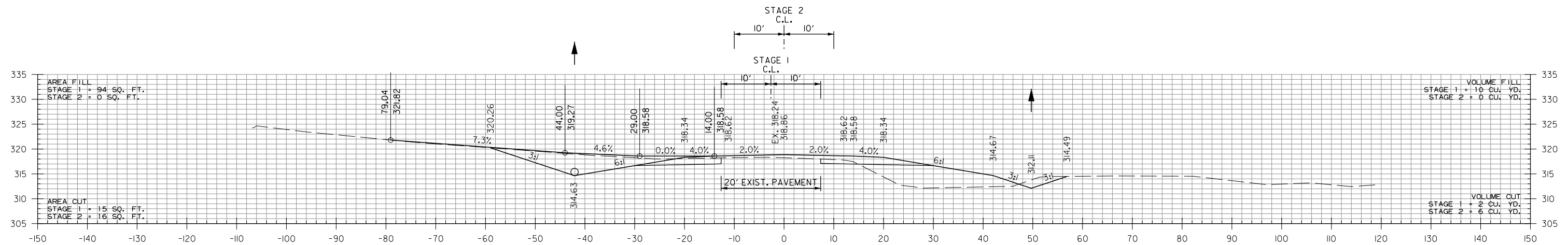
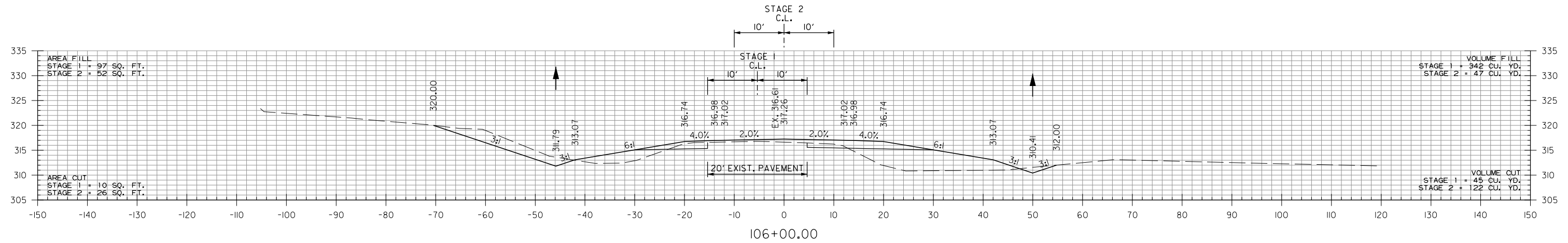
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REVISED DATE:

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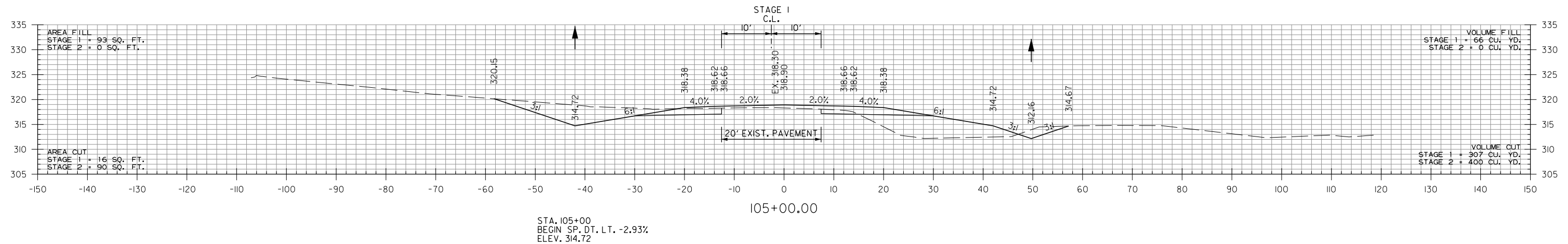


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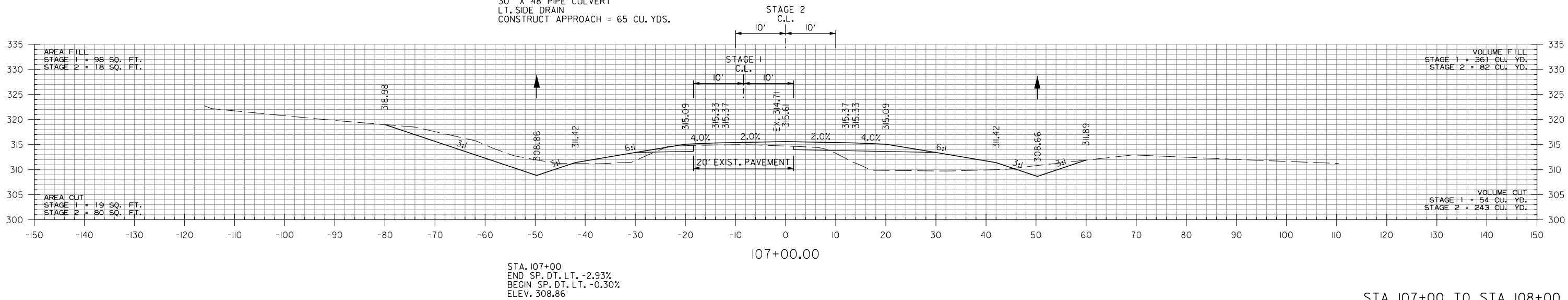
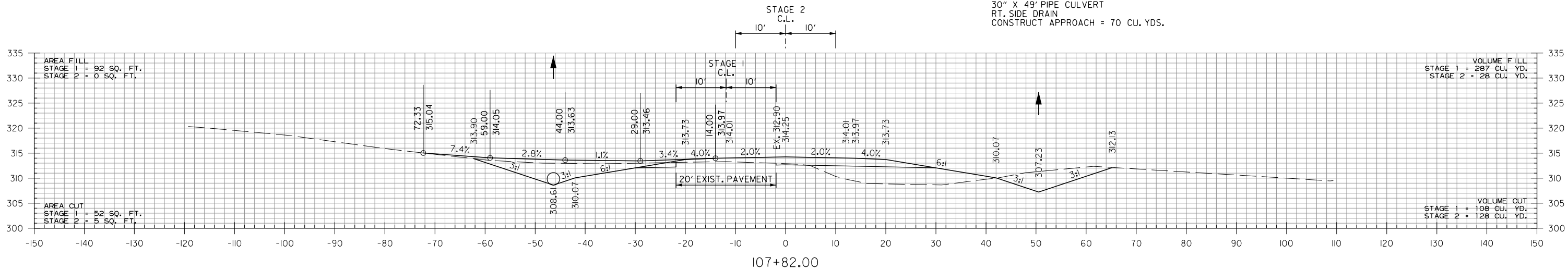
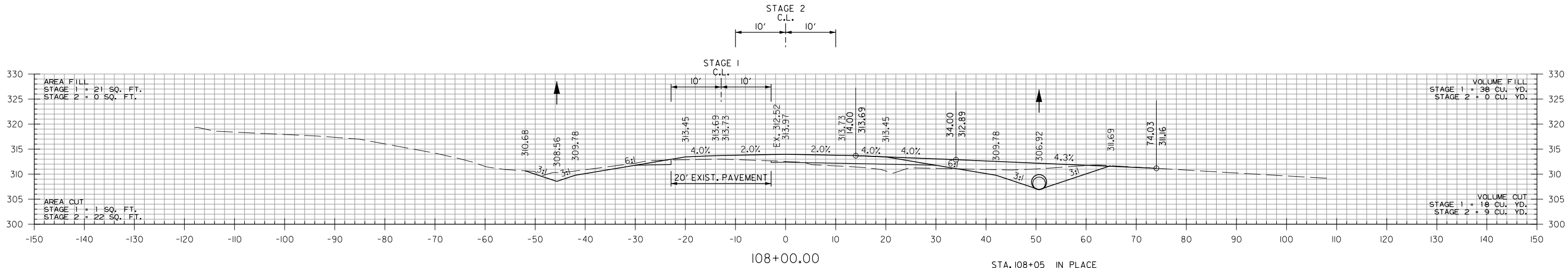
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18" X 30' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
18" X 47' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 60 CU. YDS.



STA. 105+00
BEGIN SP. DT. LT. -2.93%
ELEV. 314.72

8/10/2023 9:06:50 AM
DKAdcock
WORKSPACE: AHTD
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REVISED DATE:

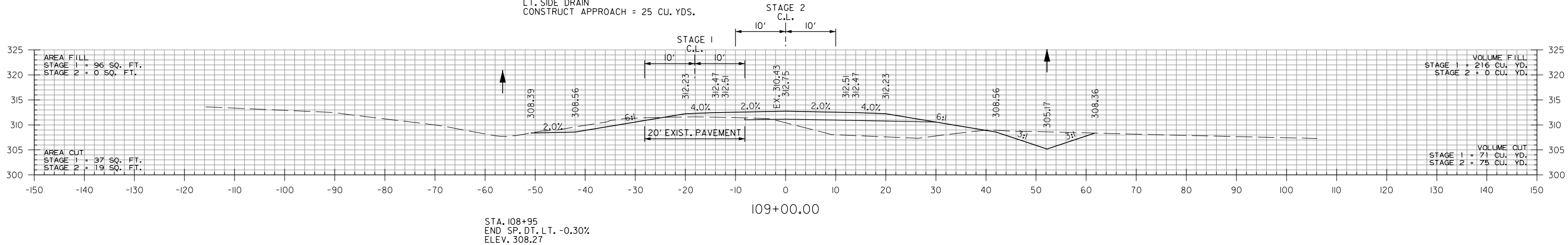
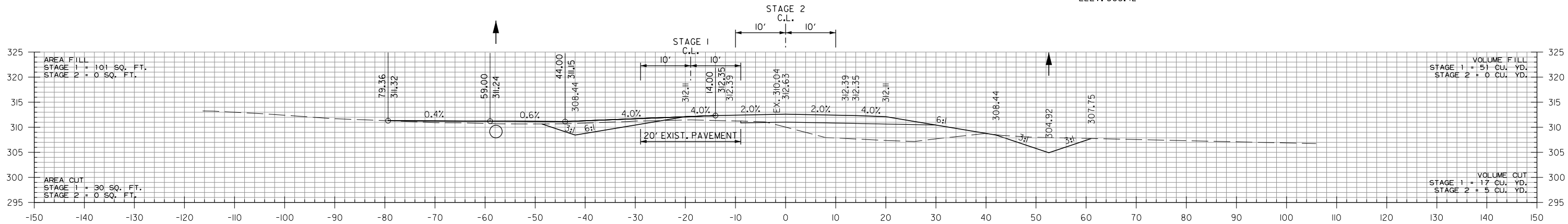
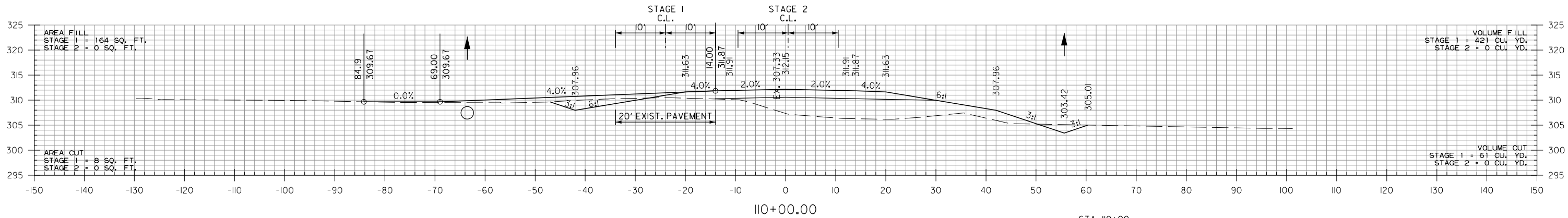
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2 CROSS SECTIONS								



STA. 107+00 TO STA. 108+00

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DKAdcock
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REVISED DATE:

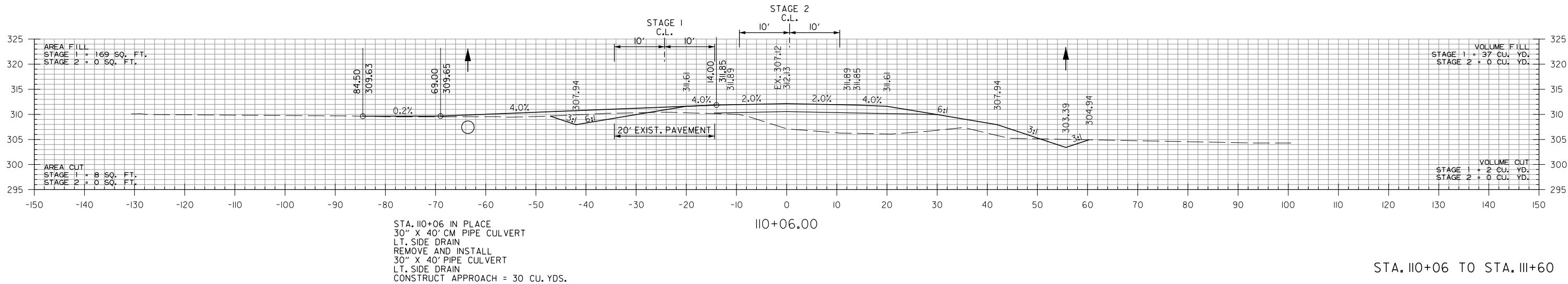
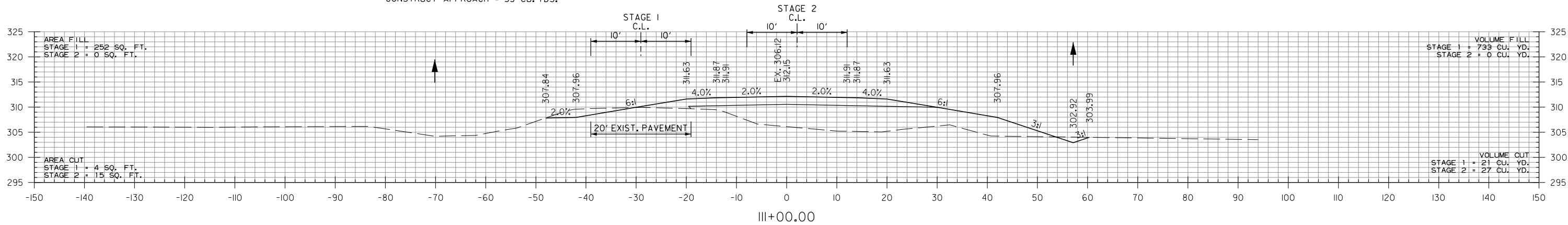
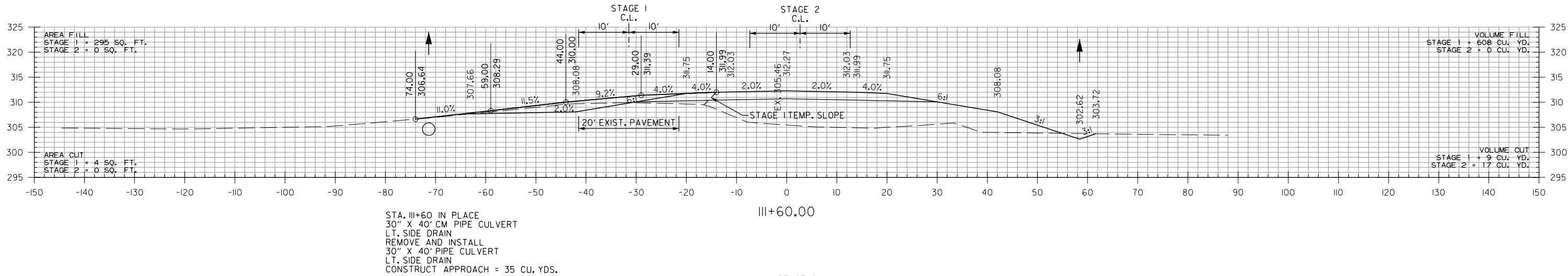
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2 CROSS SECTIONS								



STA. 109+00 TO STA. 110+00

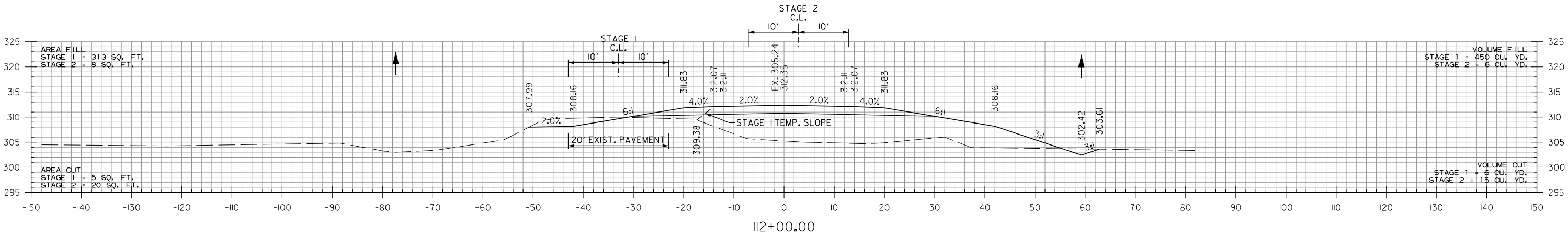
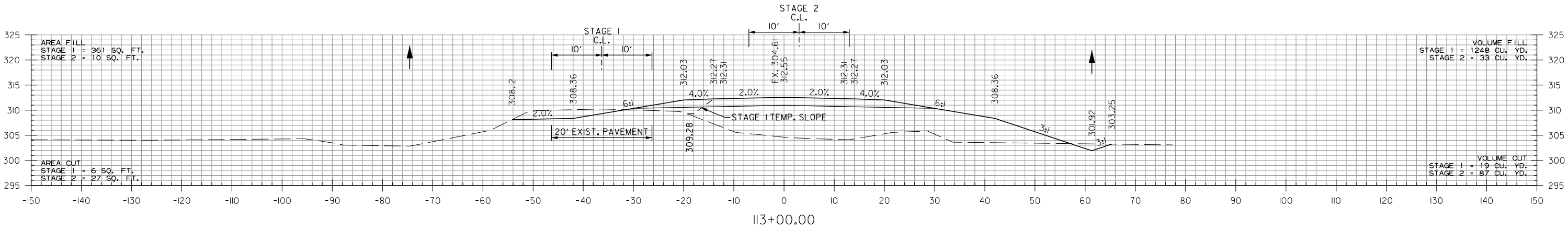
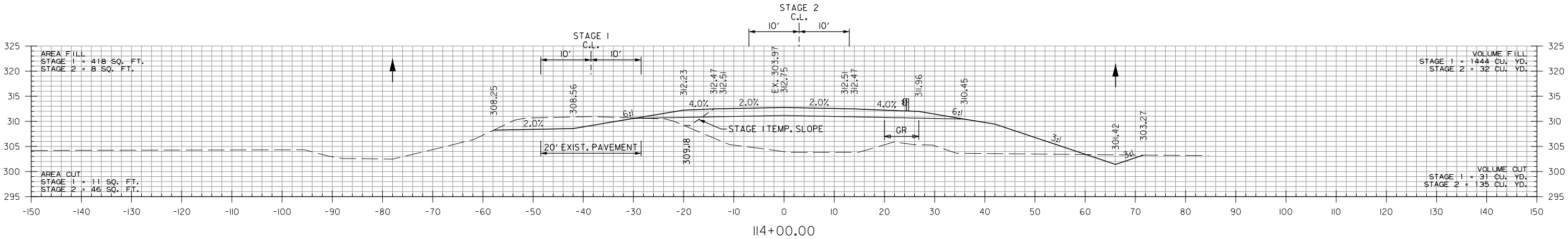
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				6	ARK.			
				JOB NO.		101013	60	70
2 CROSS SECTIONS								



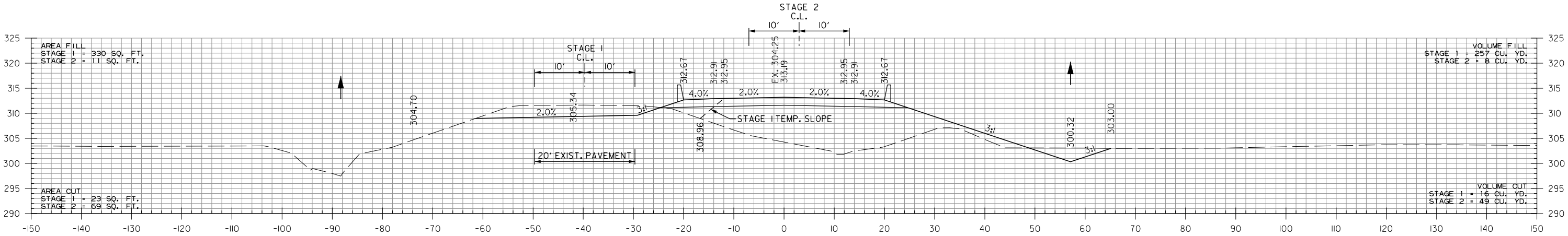
STA. III+06 TO STA. III+60

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		101013	61	70
2 CROSS SECTIONS								

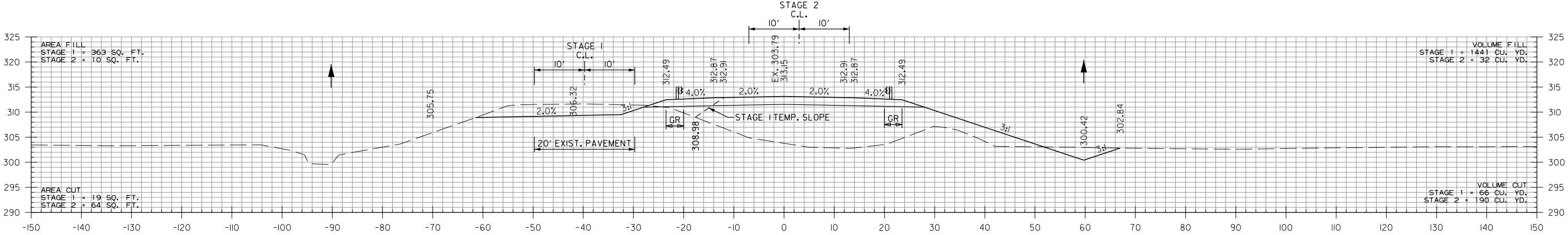


STA. 112+00 TO STA. 114+00

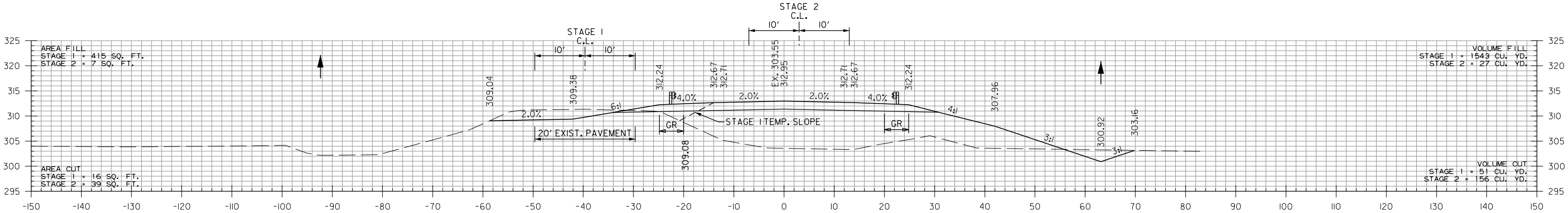
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				JOB NO.		101013	62	70
2 CROSS SECTIONS								



116+20.00
STA. 116+20.00 BEGIN BRIDGE



116+00.00

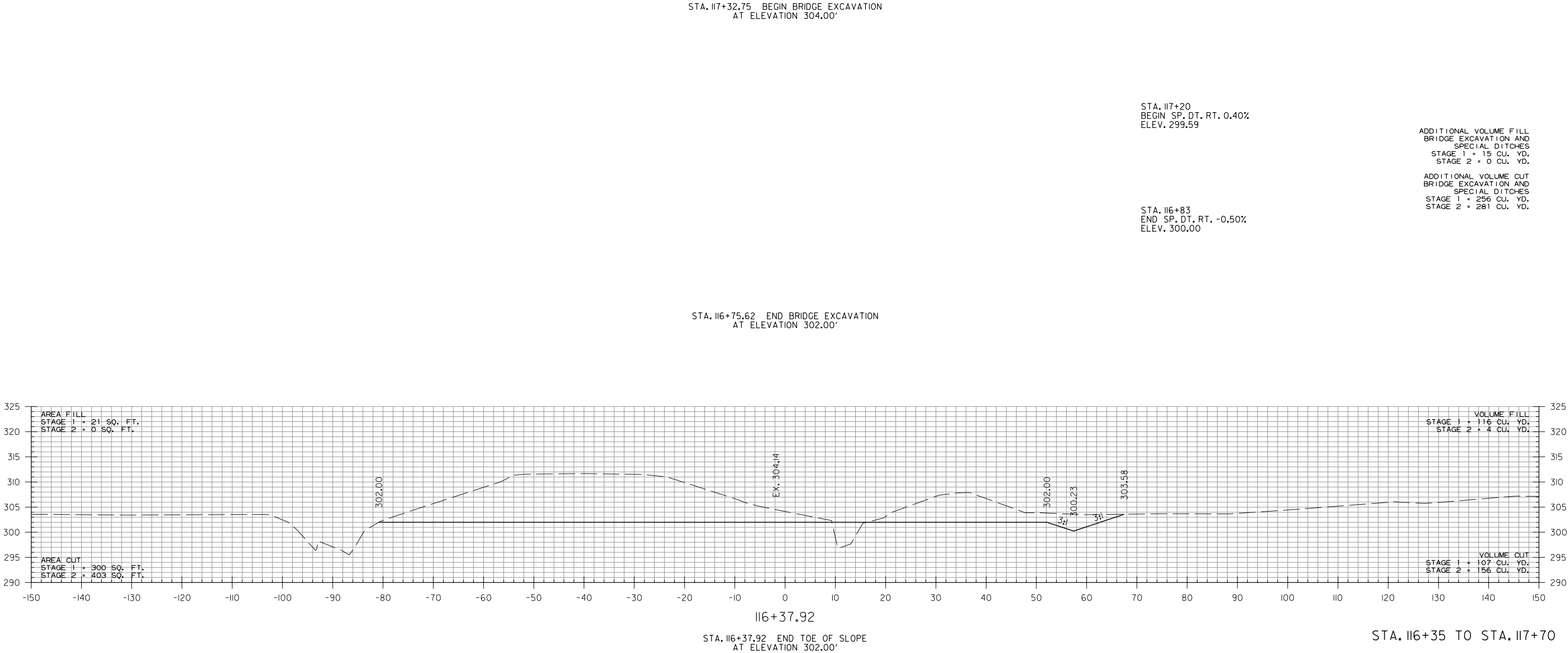
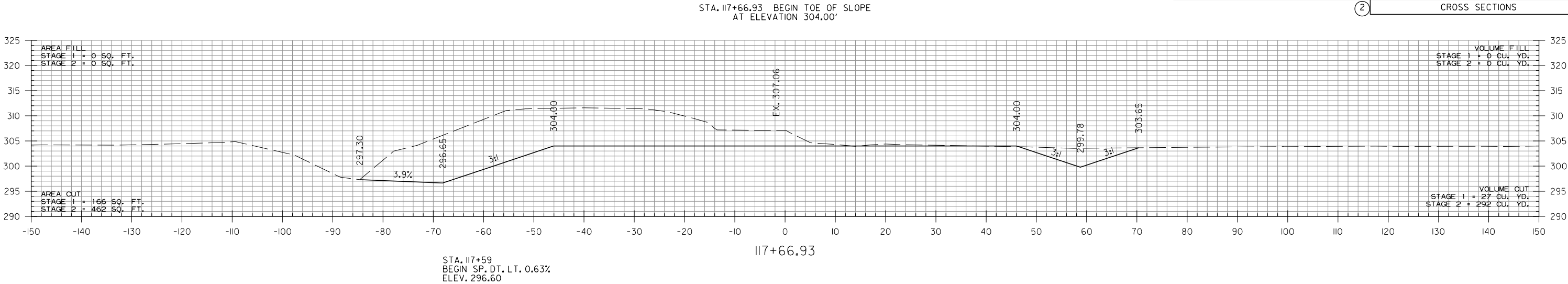


115+00.00

STA. 115+00 TO STA. 116+20

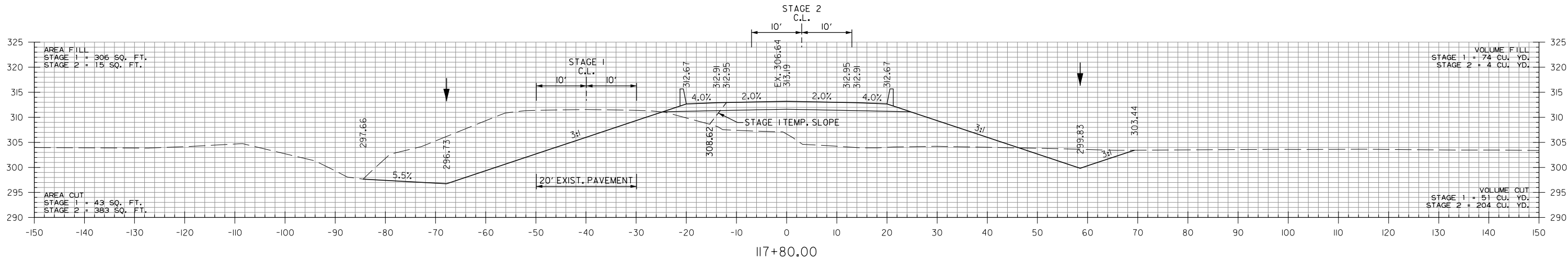
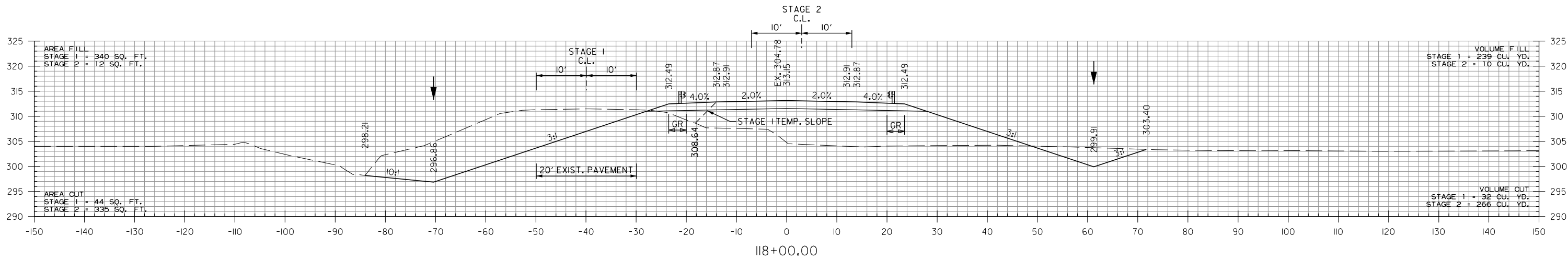
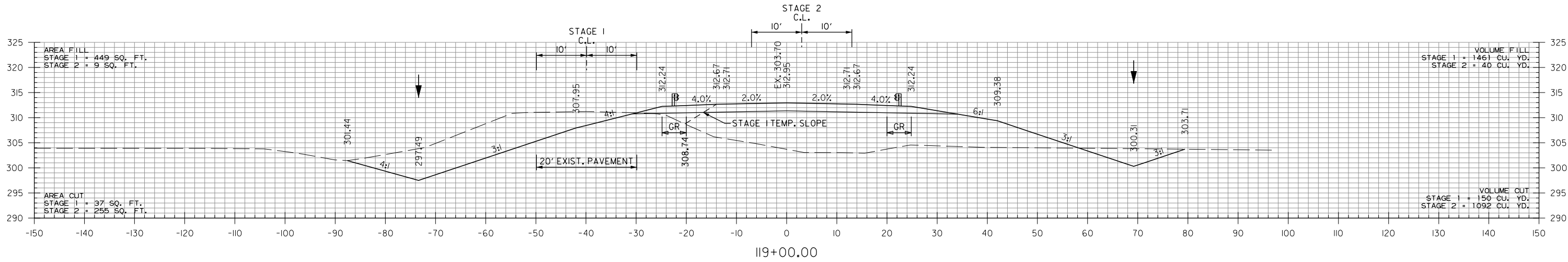
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				JOB NO.		101013	63	70
CROSS SECTIONS								



8/10/2023 9:06:51 AM
DKAdcock
WORKSPACE: AHTD
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REVISED DATE:

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2 CROSS SECTIONS								

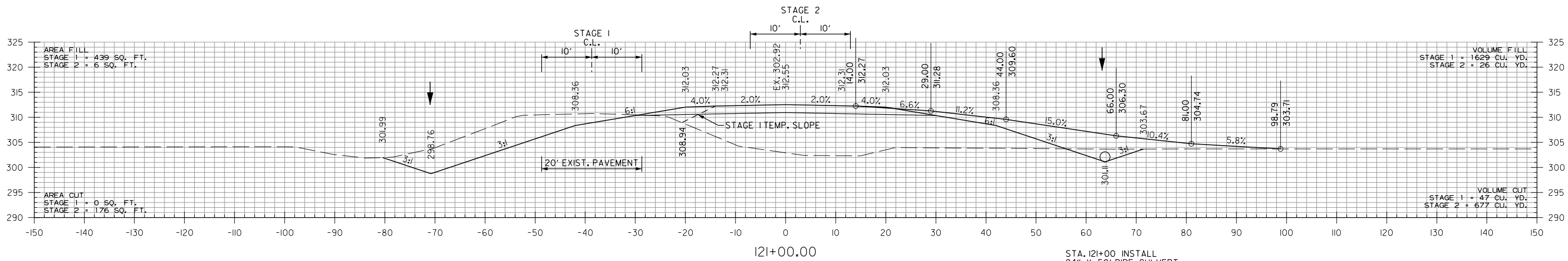
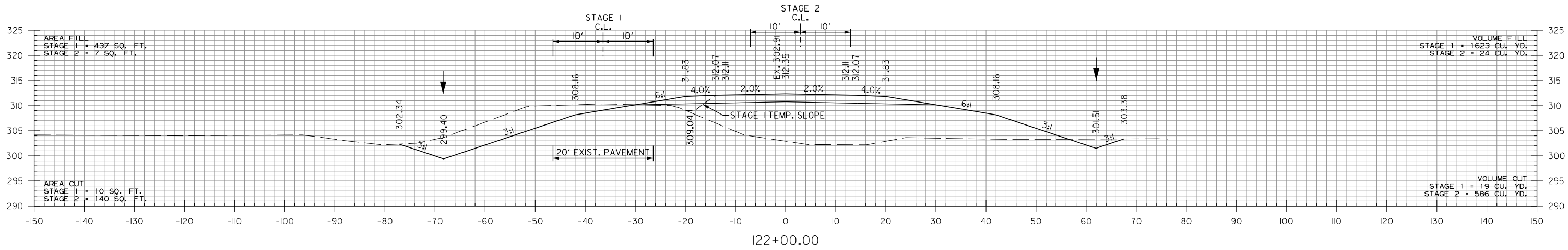


STA. 117+80.00 END BRIDGE

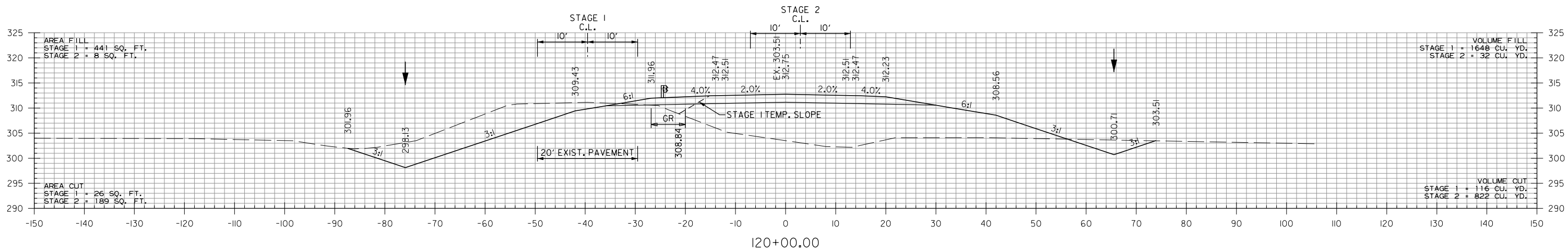
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		101013	65	70
2 CROSS SECTIONS								

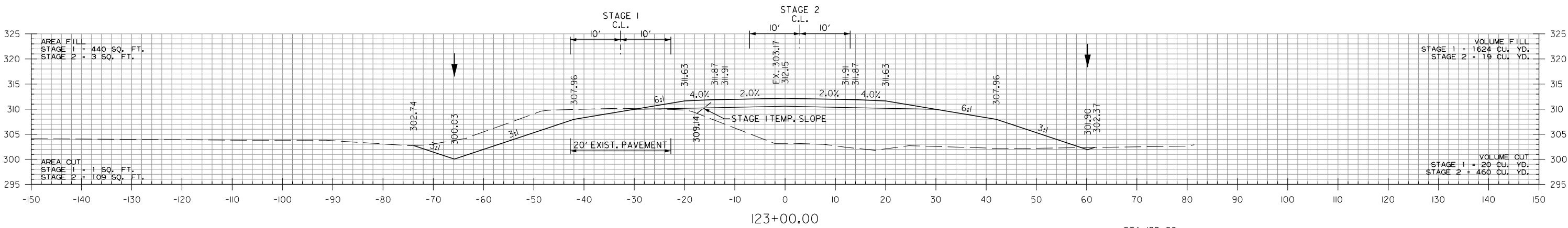
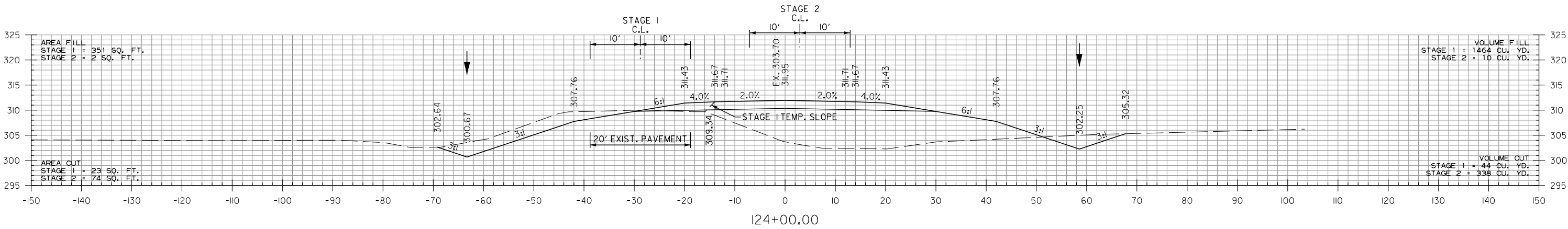
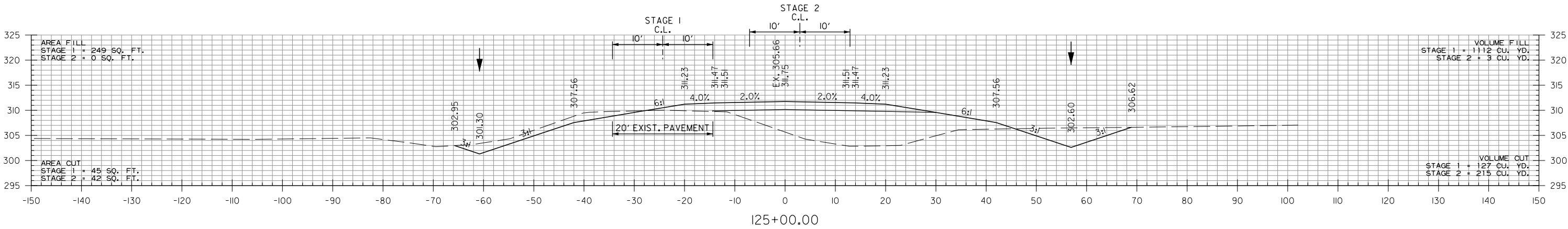


STA. 121+00 INSTALL
24" X 50' PIPE CULVERT
RT. SIDE DRAIN
CONSTRUCT APPROACH = 85 CU. YDS.



STA. 120+00 TO STA. 122+00

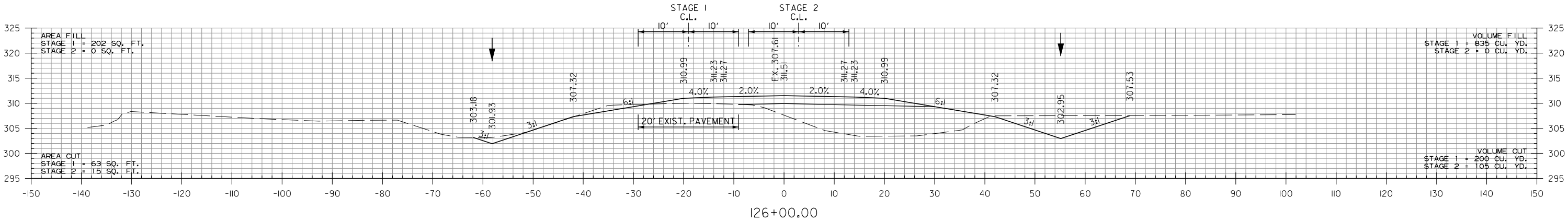
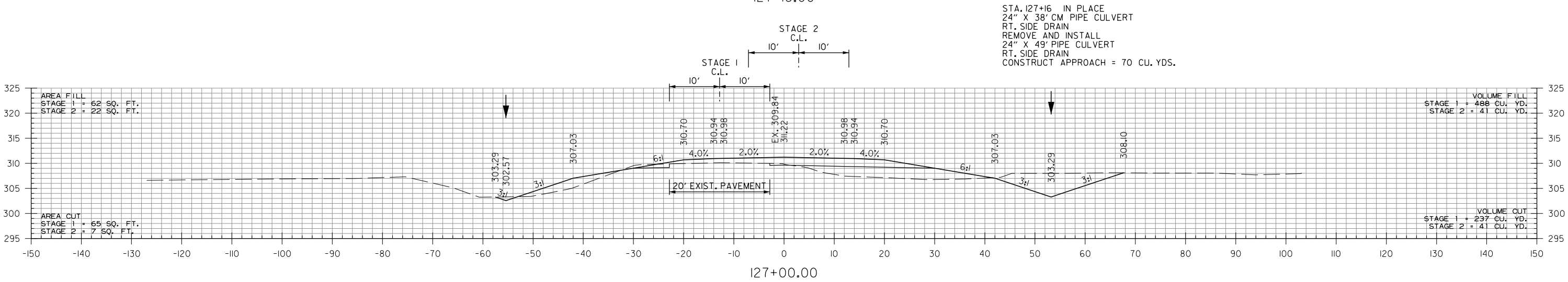
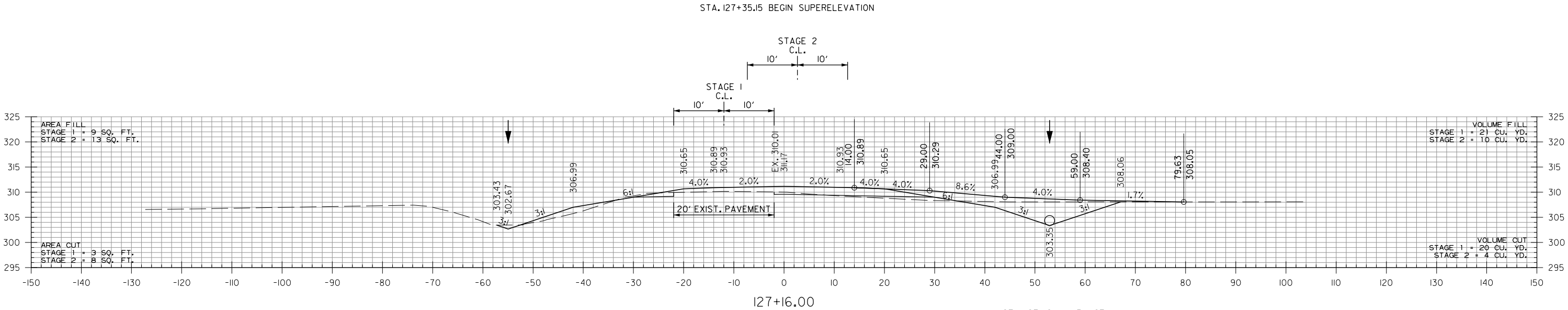
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	66	70
2 CROSS SECTIONS								



STA. 122+80
END SP. DT. RT. 0.40%
BEGIN SP. DT. RT. 0.35%
ELEV. 301.83

STA. 123+00 TO STA. 125+00

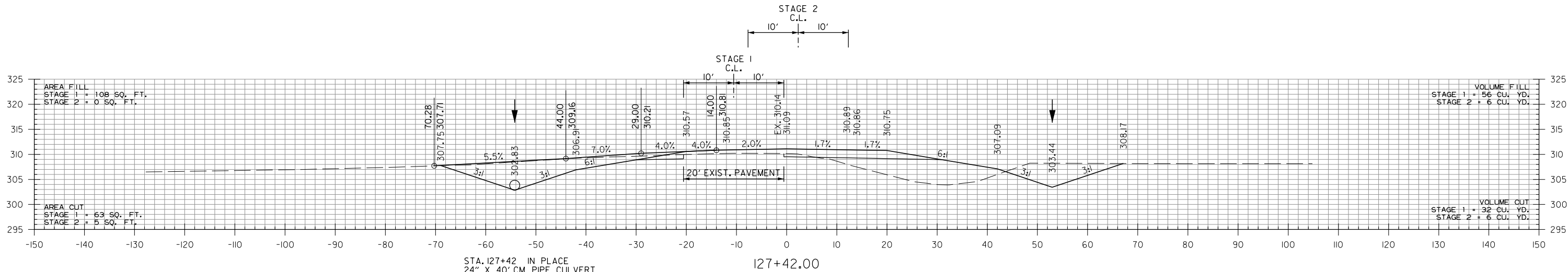
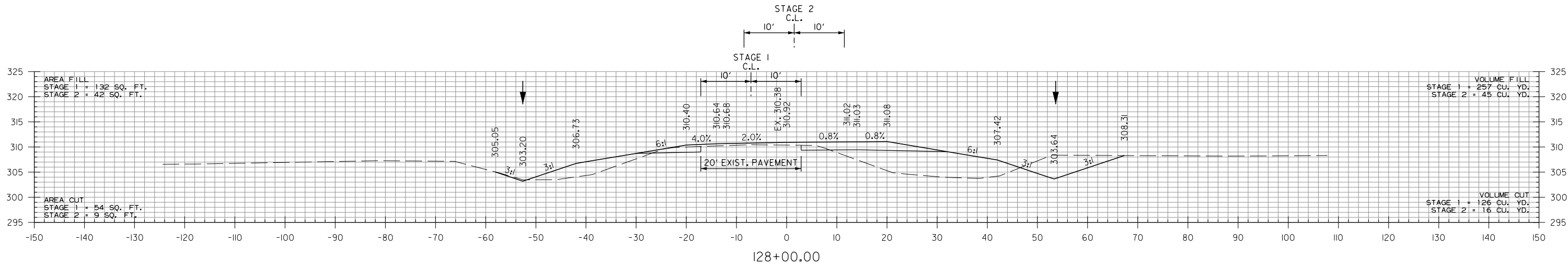
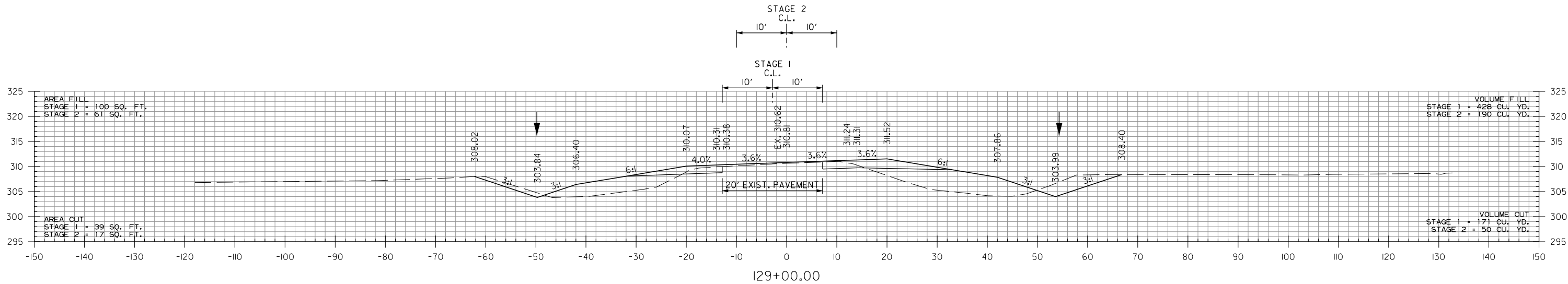
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	67	70
2 CROSS SECTIONS								



STA. 126+00 TO STA. 127+16

8/10/2023 9:06:52 AM
DKAdcock
WORKSPACE: AHTD
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		101013	68	70
2 CROSS SECTIONS								

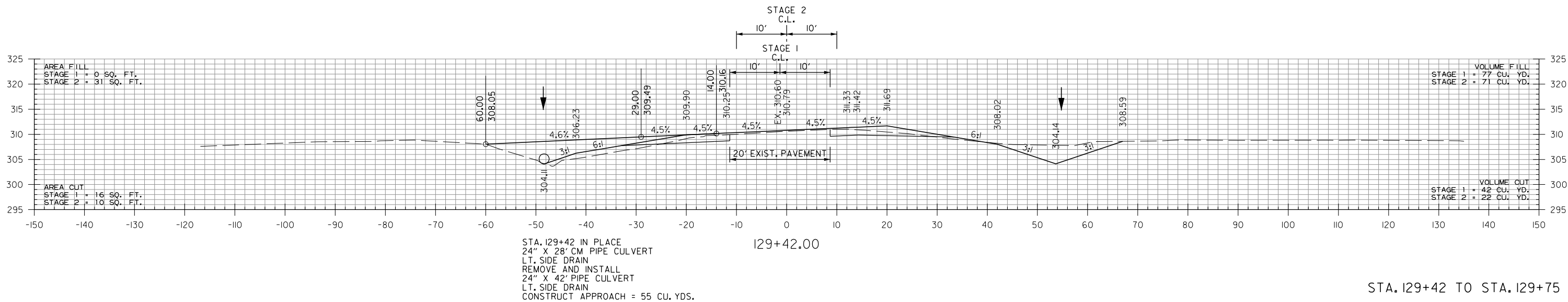
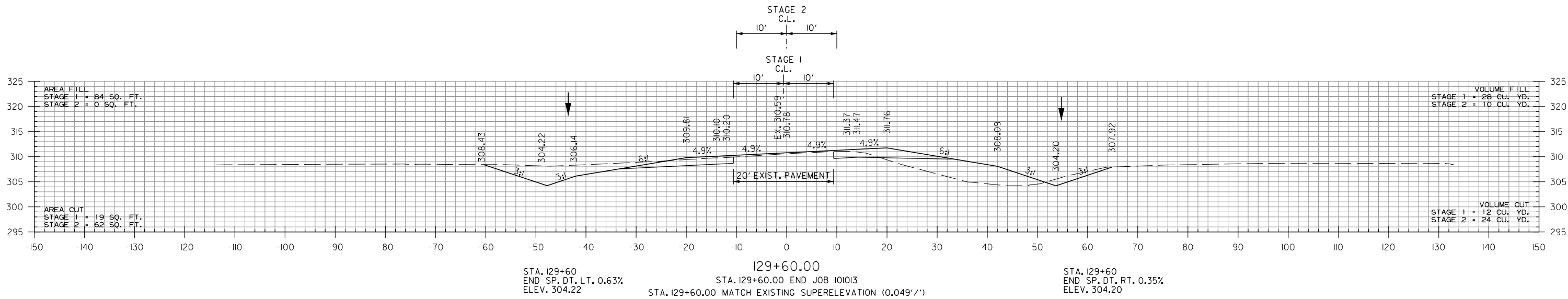
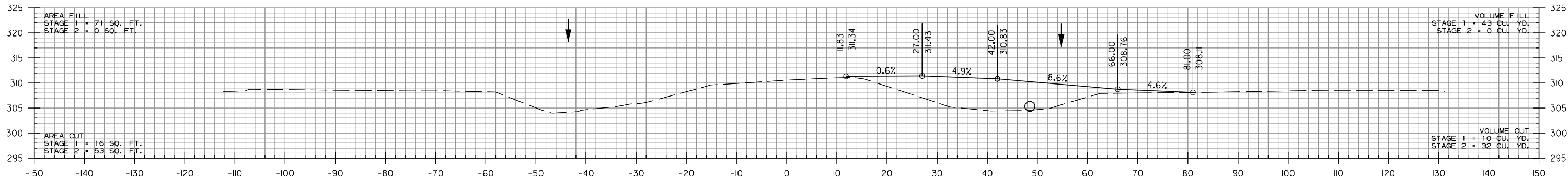


STA. 127+42 IN PLACE
24" X 40' CM PIPE CULVERT
LT. SIDE DRAIN
REMOVE AND INSTALL
24" X 51' PIPE CULVERT
LT. SIDE DRAIN
CONSTRUCT APPROACH = 75 CU. YDS.

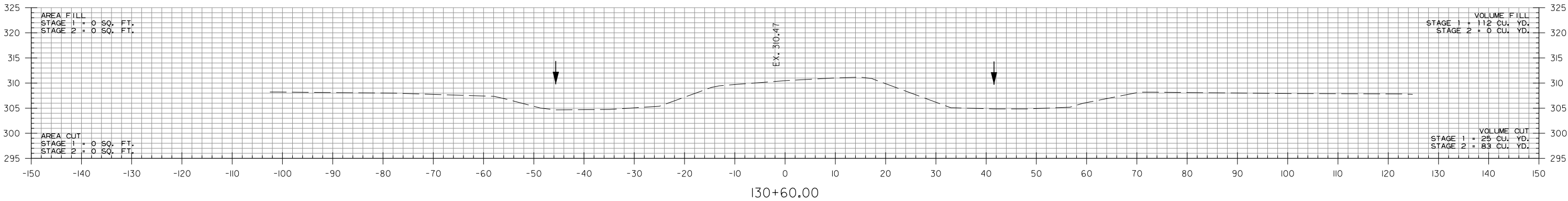
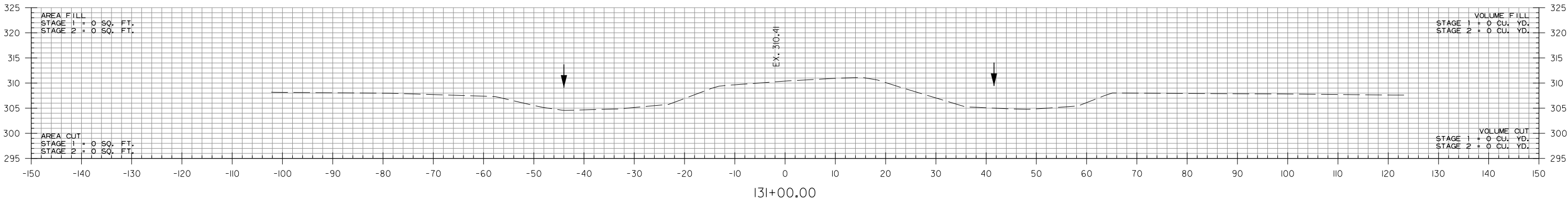
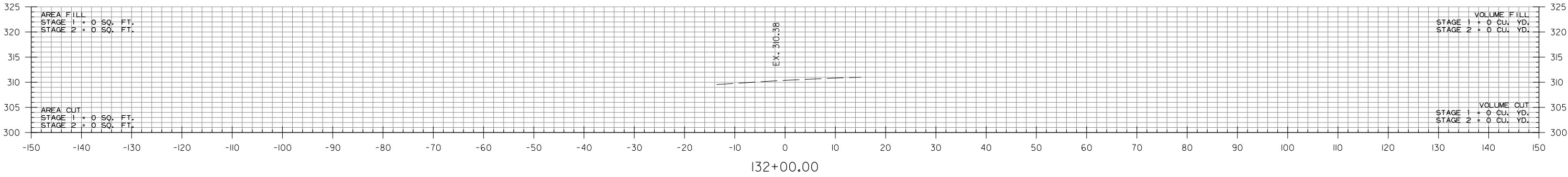
STA. 127+42 TO STA. 129+00

8/10/2023 9:06:52 AM
DKAdcock
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REVISED DATE:

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				JOB NO.		101013	69	70
2 CROSS SECTIONS								



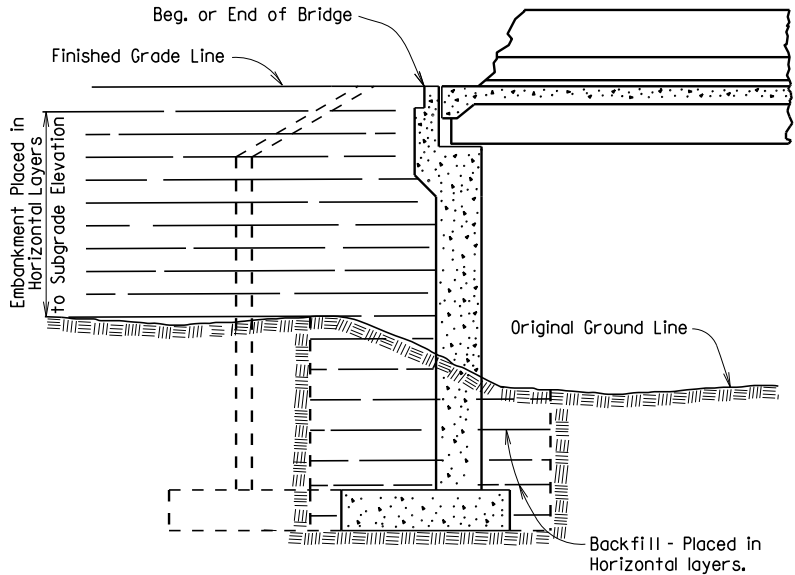
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2 CROSS SECTIONS								



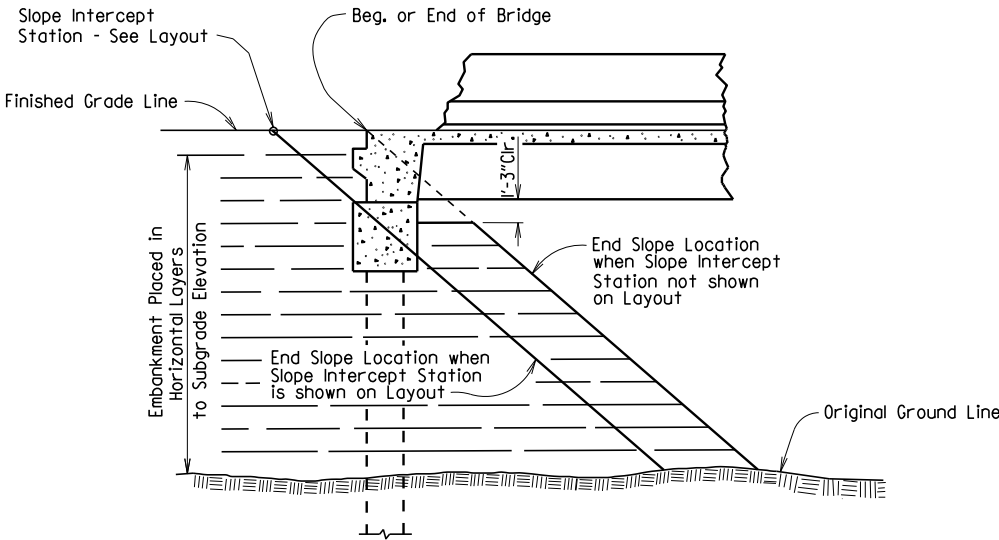
STA. 130+60.00 END 100' TRANSITION
STA. 130+60.00 MATCH EXISTING SUPERELEVATION (0.065'/'')

STA. 130+60 TO STA. 132+00

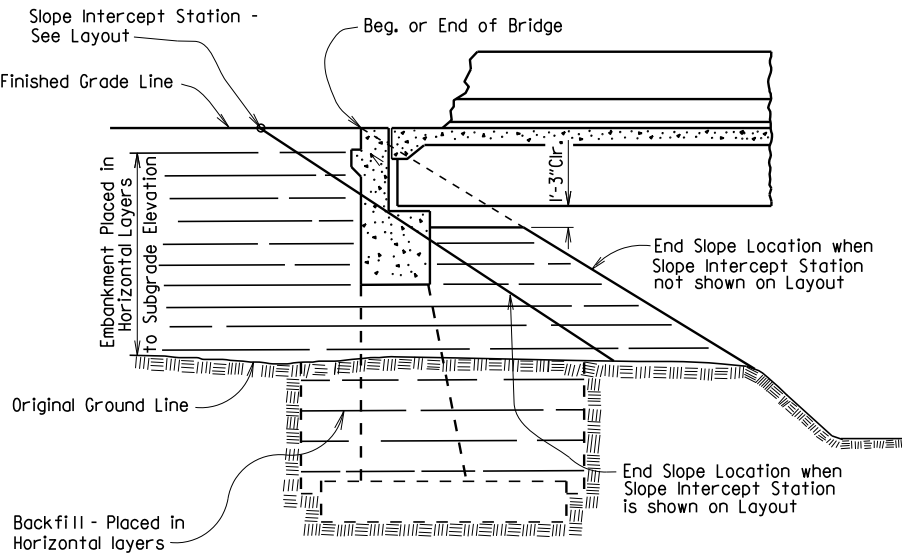
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				JOB NO.				
				1 EMBANKMENT & BACKFILL			55000	



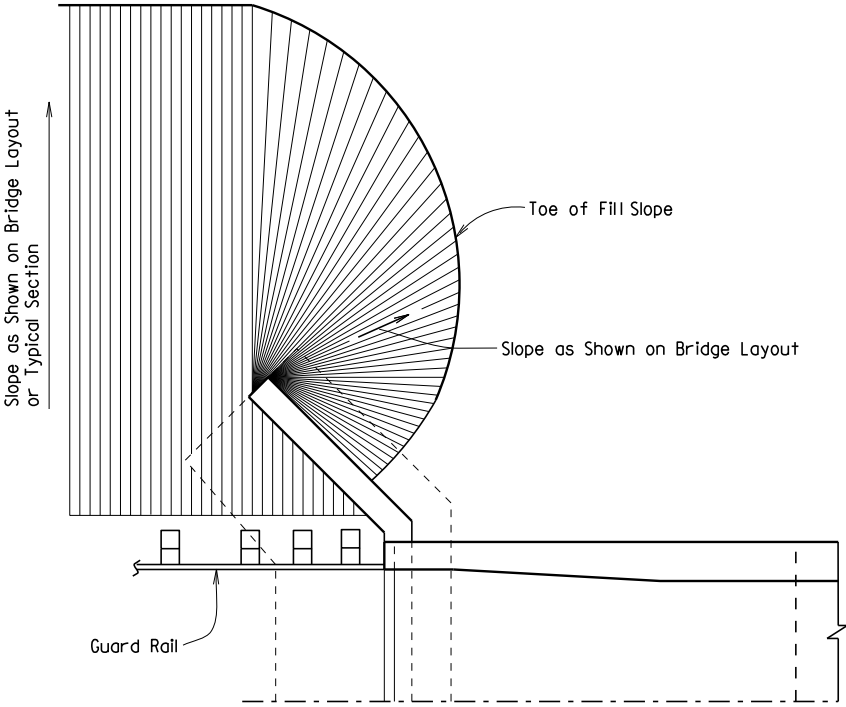
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT VERTICAL WALL ABUTMENTS



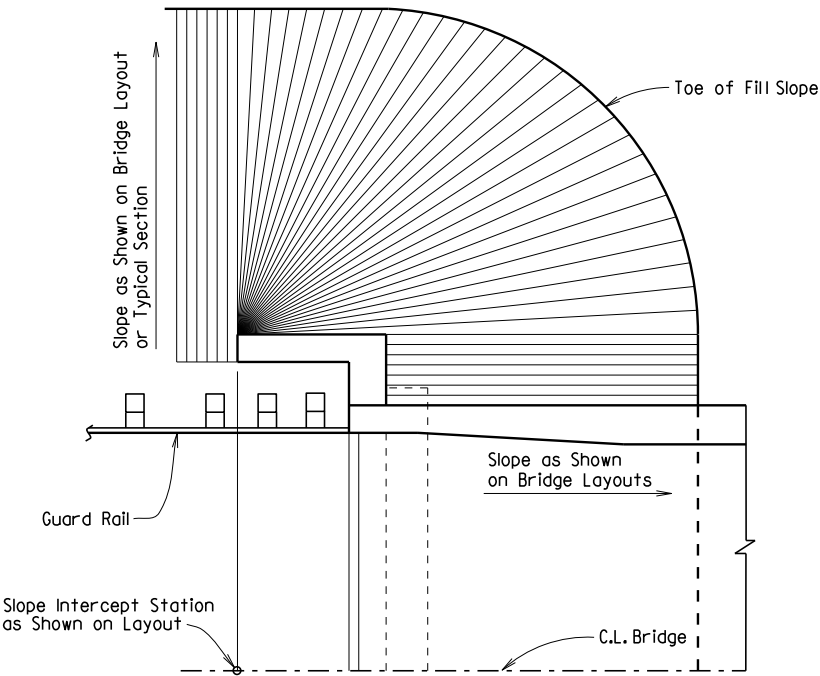
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH
PILE END BENTS



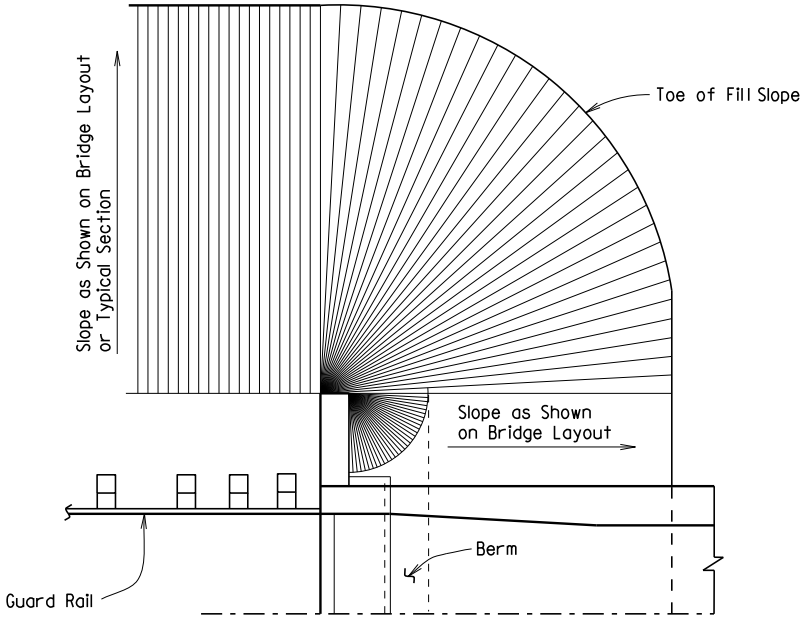
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL
AT SPILL-THROUGH END BENTS



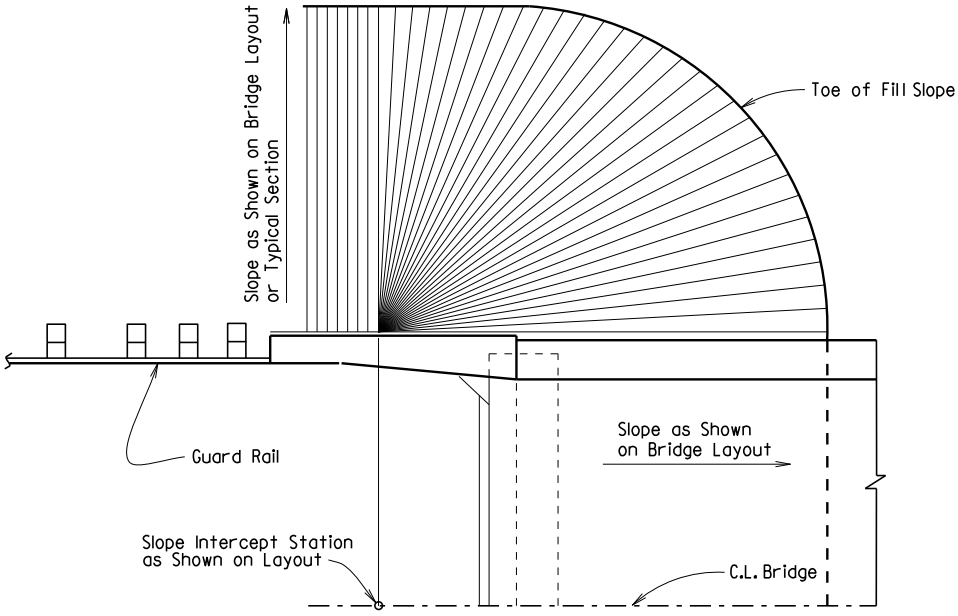
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB 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

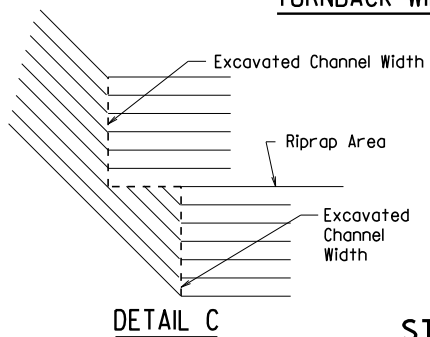
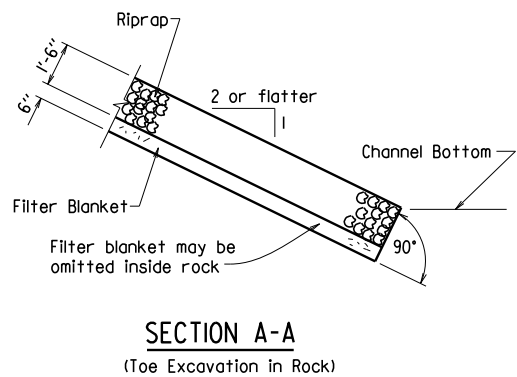
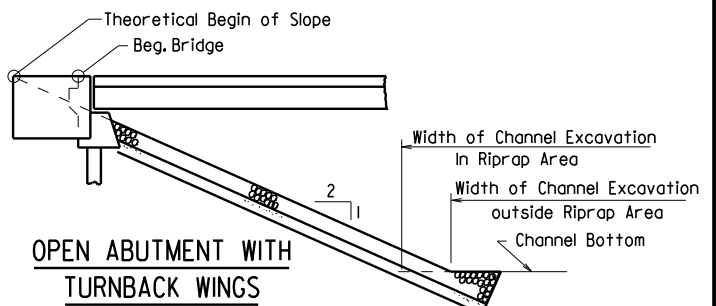
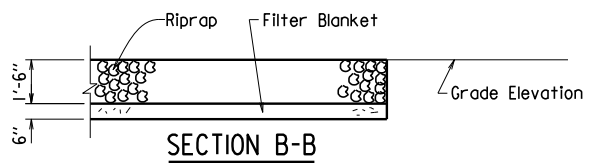
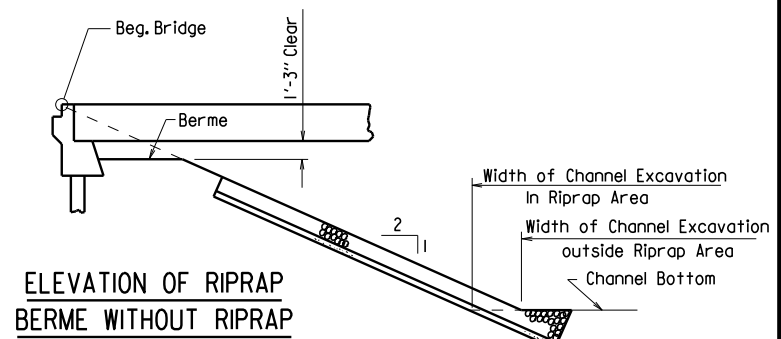
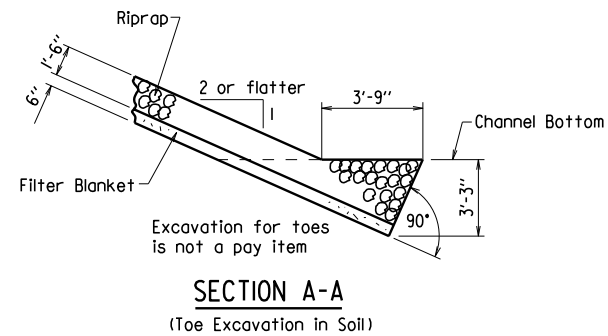
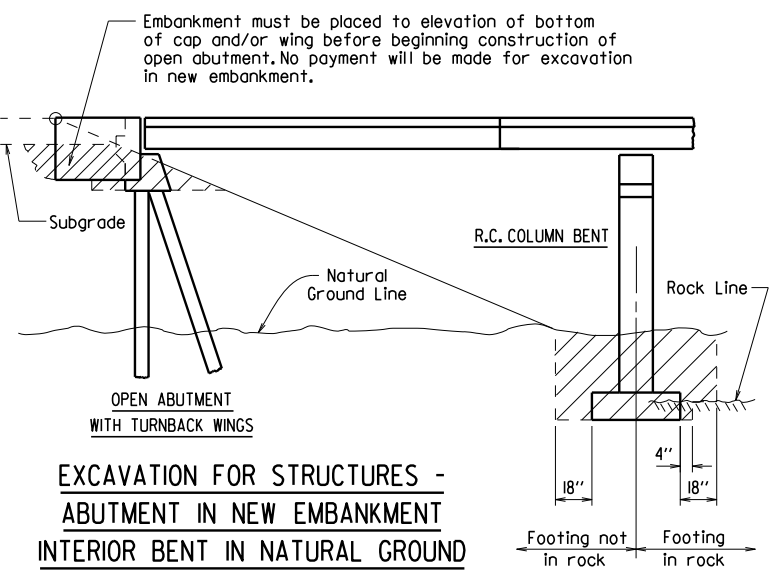
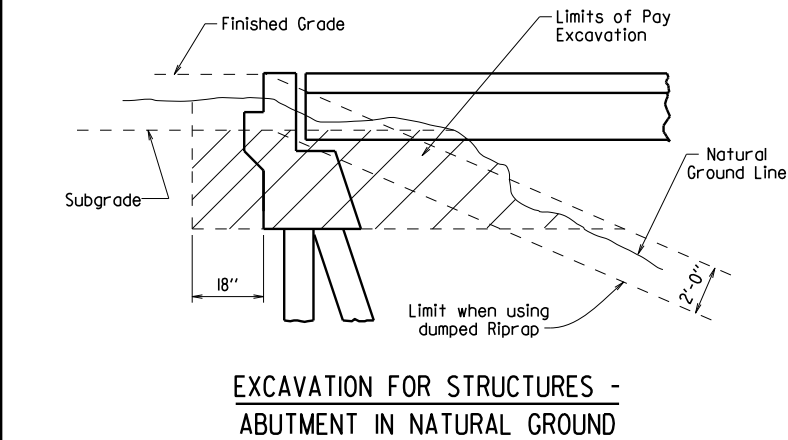
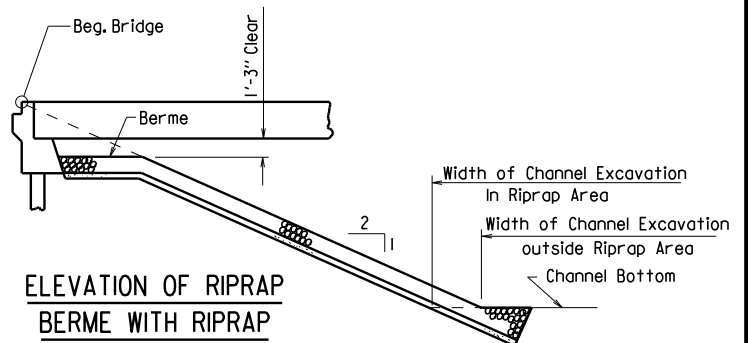
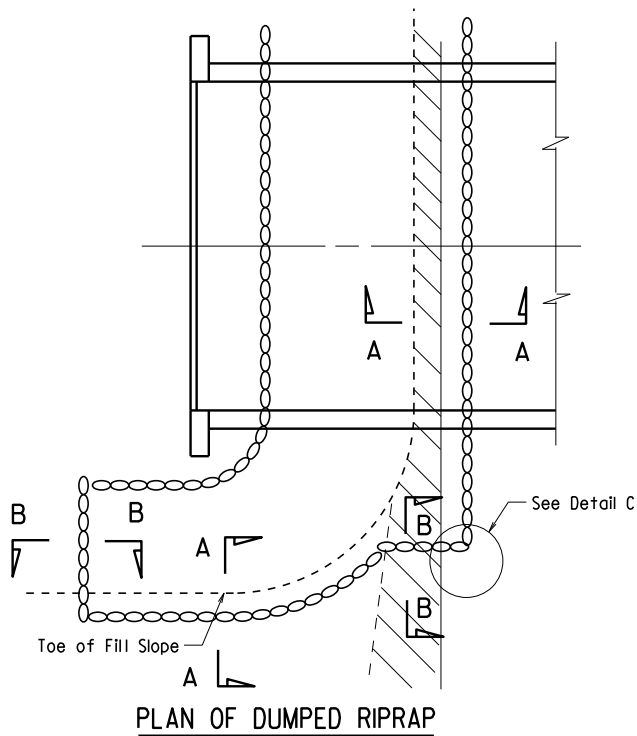
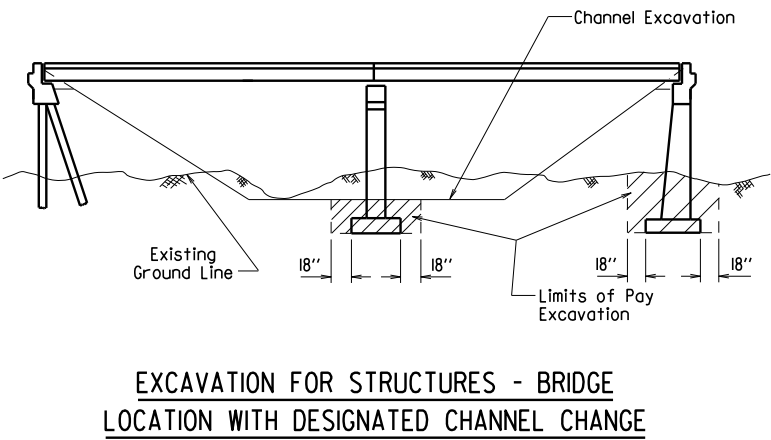
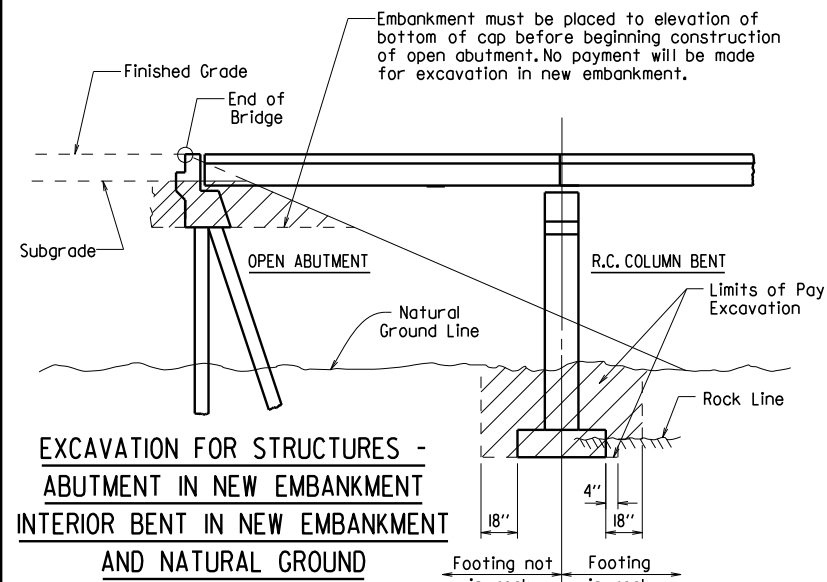
ARKANSAS STATE HIGHWAY COMMISSION

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.	RIPRAP & EXCAV. 5500I			



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.

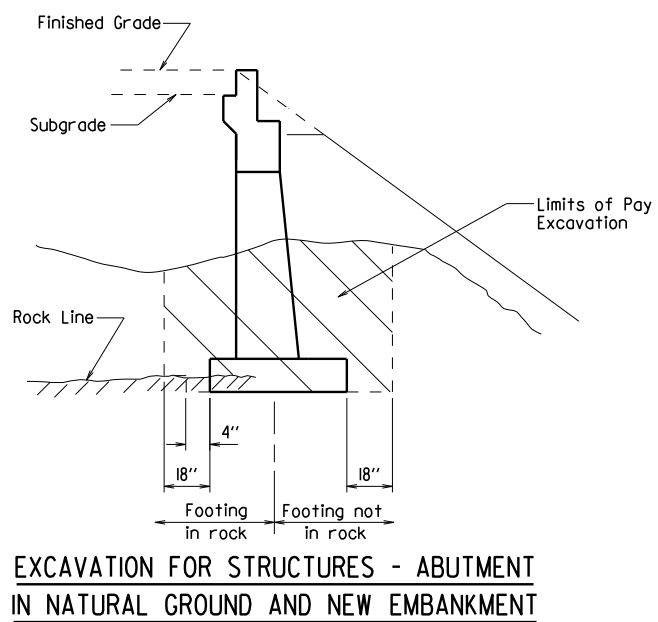
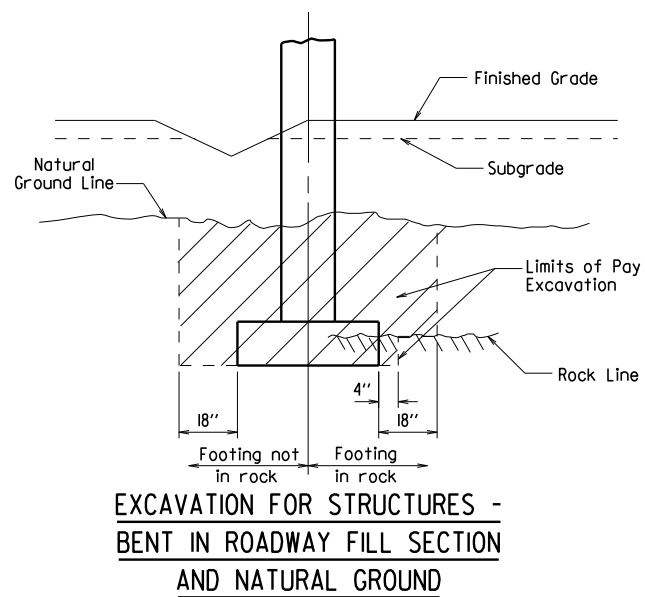
Note: Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.

STANDARD DETAILS FOR
DUMPED RIPRAP AND FILTER BLANKET
AND COMPUTING
EXCAVATION FOR STRUCTURES
ARKANSAS STATE HIGHWAY COMMISSION

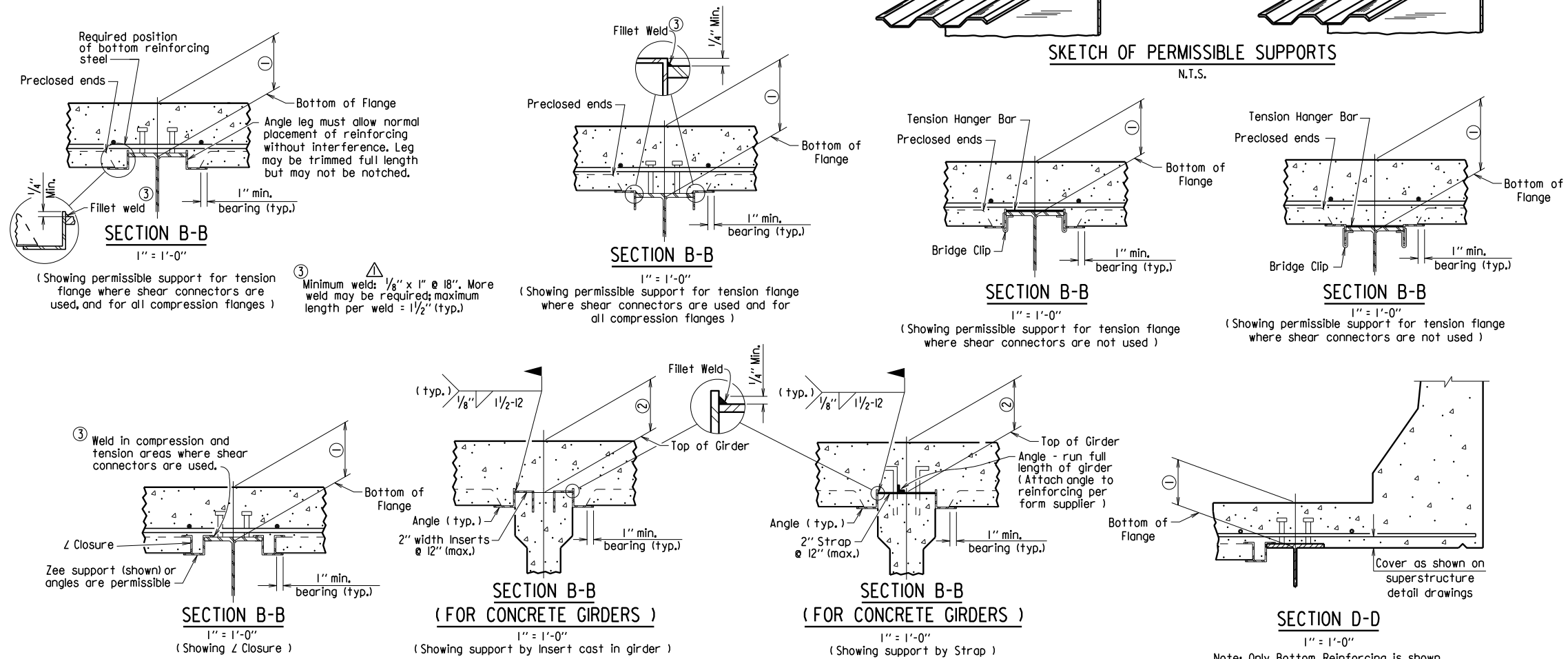
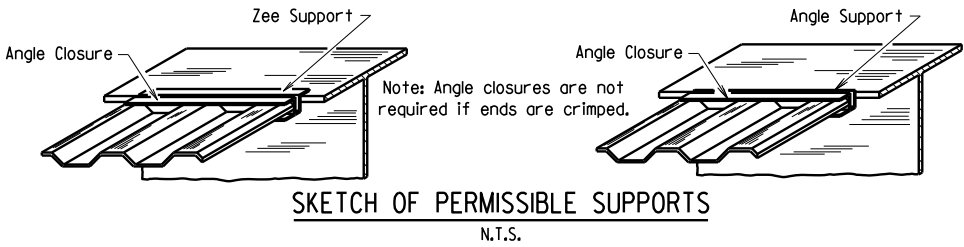
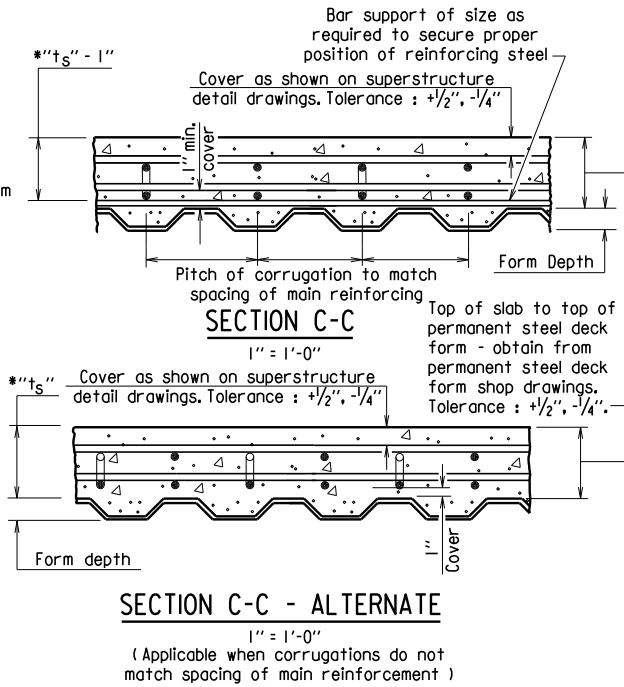
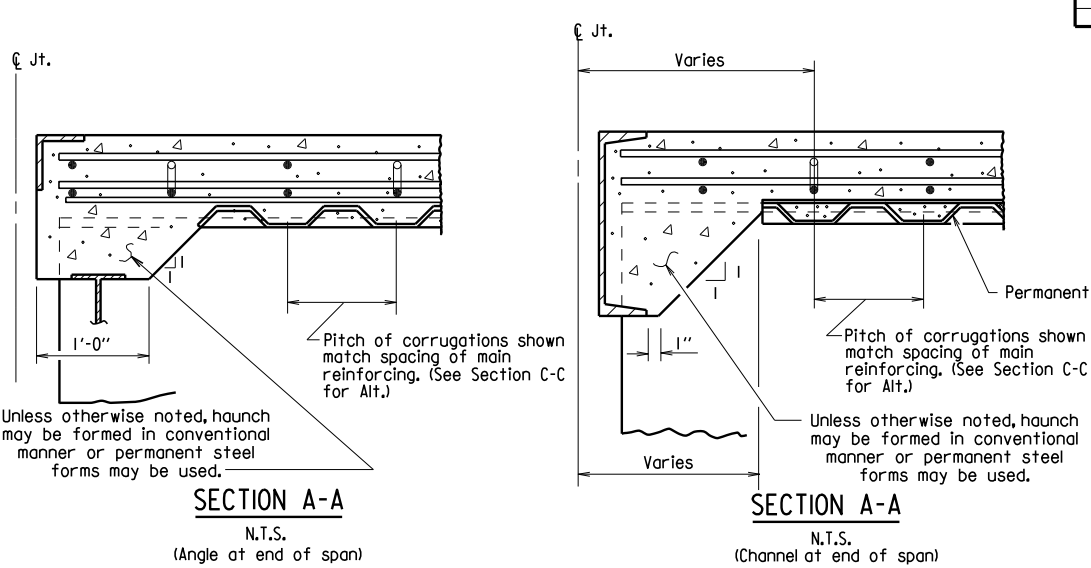
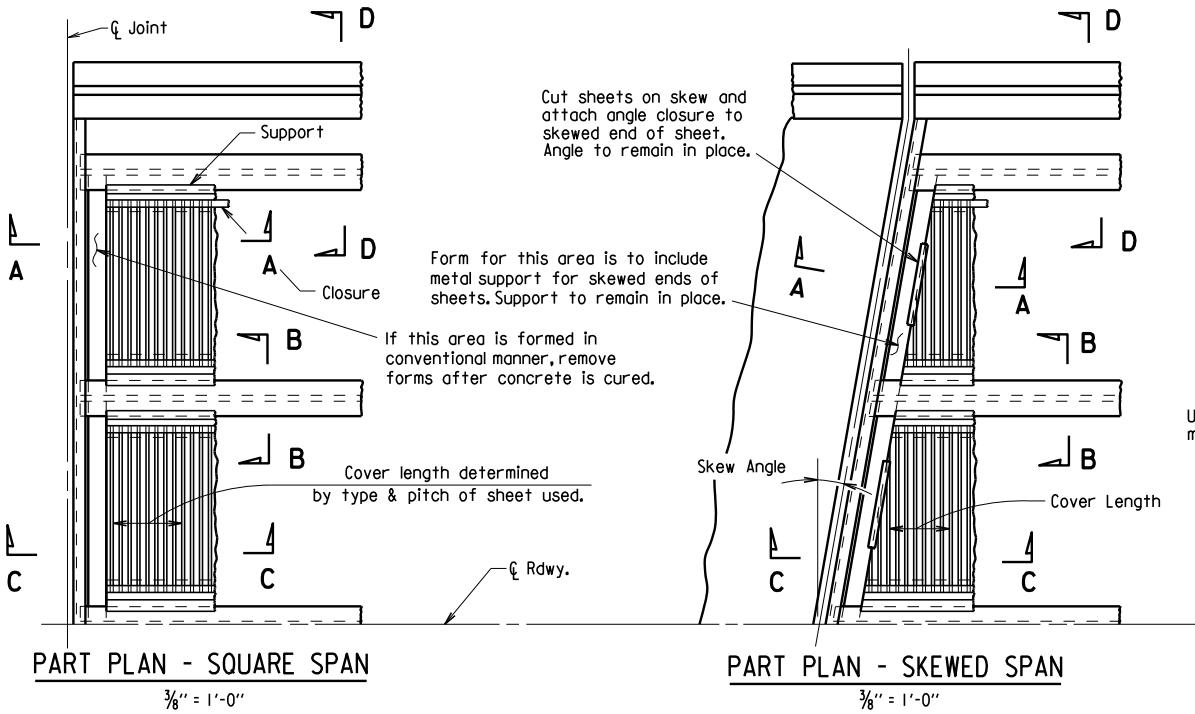
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b5500I.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 5500I



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.	BRIDGE DECK FORMS 55005			



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 L 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: —

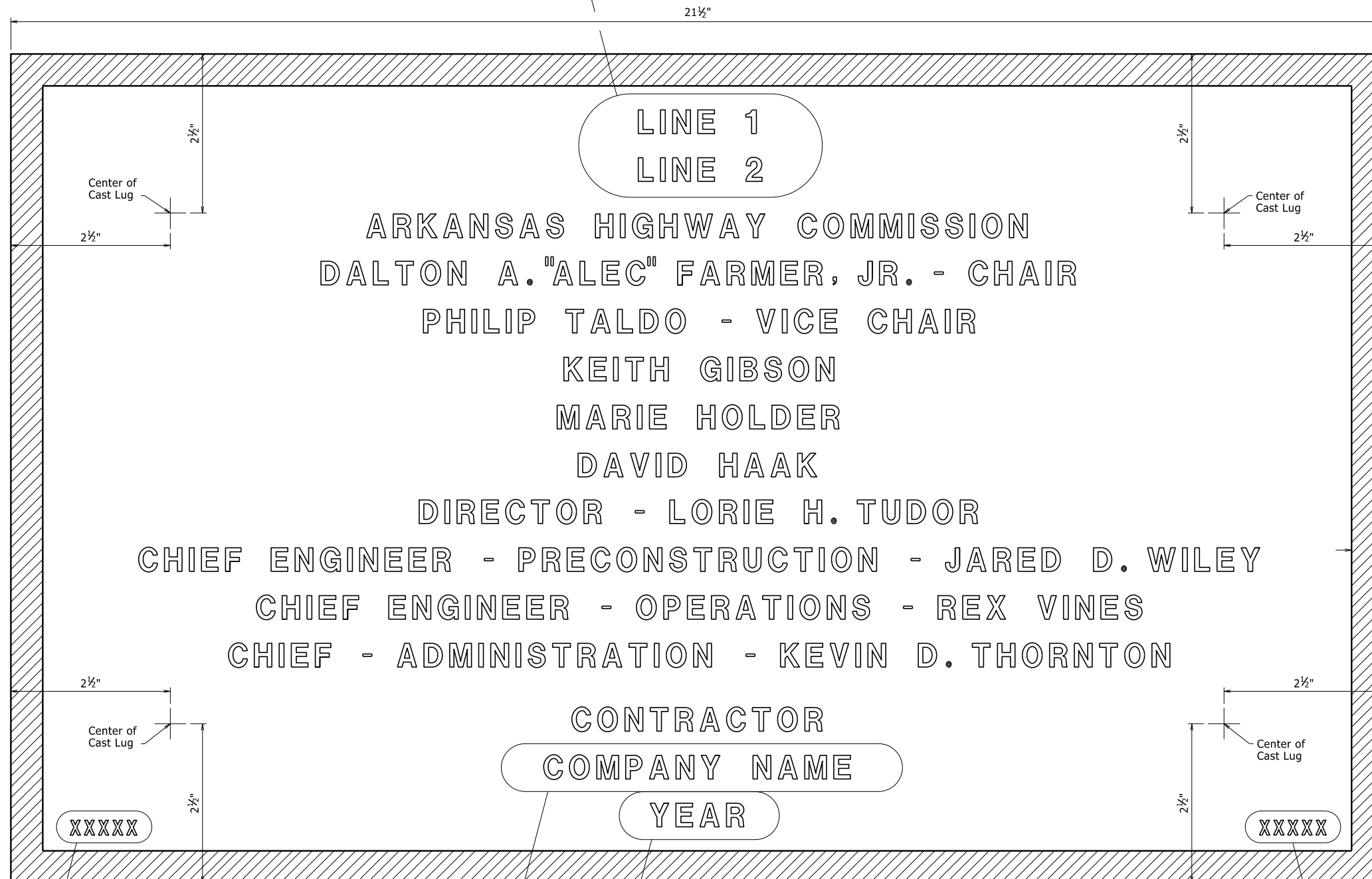
DRAWING NO. 55005

Revised weld dimension by KWH, Ck'd by BEF, 3/24/16.

DATE REVISED	DATE REVISED	FED. RD. DIST. NO.	STATE	JOB NO.	SHEET NO.	TOTAL SHEETS
4-14-23		6	ARK.			
		TYPE D NAME PLATE - 55010				

- The name of the bridge as shown on the plans shall be placed on Lines 1 & 2 using $\frac{1}{8}$ " raised letters and numerals $\frac{3}{8}$ " high.

	<u>Example 1</u>	<u>Example 2</u>	<u>Example 3</u>	<u>Example 4</u>
Line 1	RED RIVER	SOUTHERN RAILROAD	SALINE RIVER	HIGHWAY 5
Line 2	RELIEF	OVERPASS	RELIEF	



GENERAL NOTES

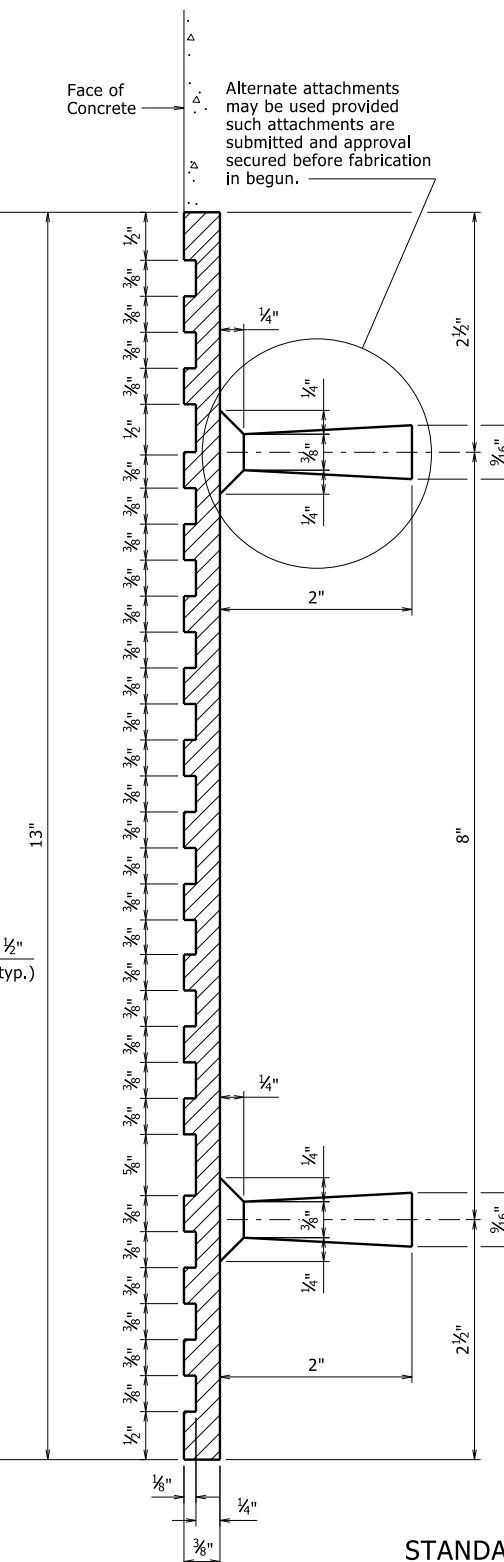
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812.

Body of plate shall be $\frac{1}{4}$ " thick and shall include four tapering cone lugs $\frac{3}{8}$ " to $\frac{9}{16}$ " x 2" long. The border and all lettering shall be raised $\frac{1}{8}$ " above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.



1 Revised and Redrawn
4-14-23 CGP 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

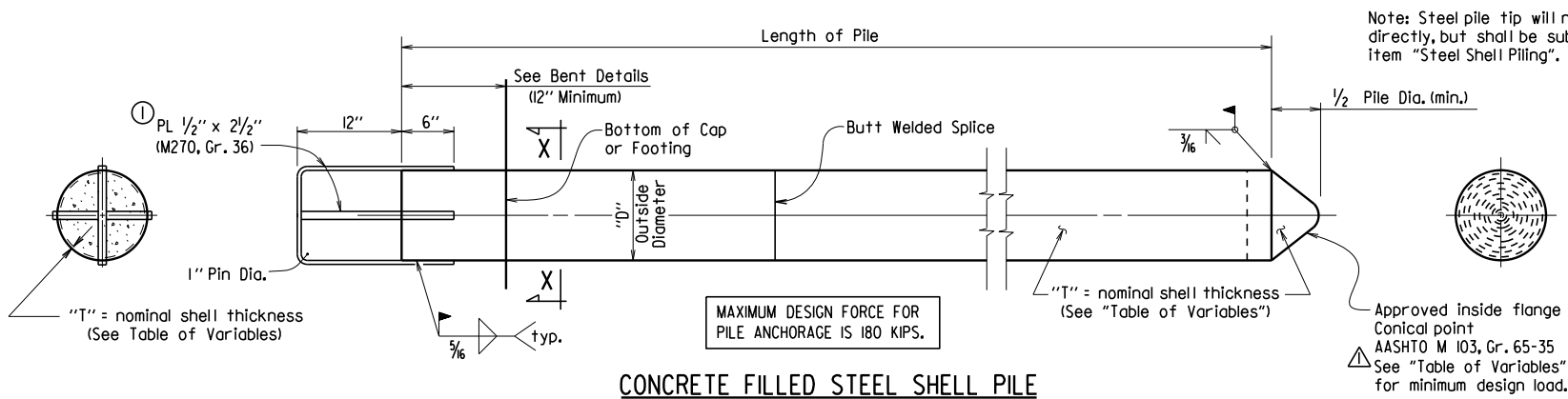
TYPICAL BRIDGE NAME PLATE

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples: A1234
05432

— Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples: HS20
HL-93

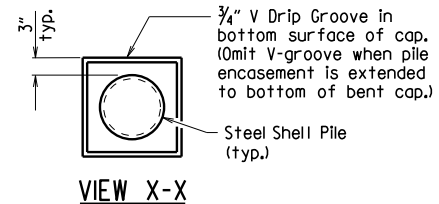
— Place the name of the company awarded the construction contract here using $\frac{1}{8}$ " raised letters and numerals $\frac{3}{8}$ " high. Example: ABCD CONSTRUCTION, INC.

PRINT DATE: 4/20/2023



CONCRETE FILLED STEEL SHELL PILE

- Pile anchorage shall be placed to minimize interference with anchor bolts and reinforcing in cap or footing.
- Welding shall comply with ANSI/AWS D1.4 Structural Welding Code-Reinforcing Steel and applicable portions of ANSI/AWS D1.5 Bridge Welding Code.



GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES:

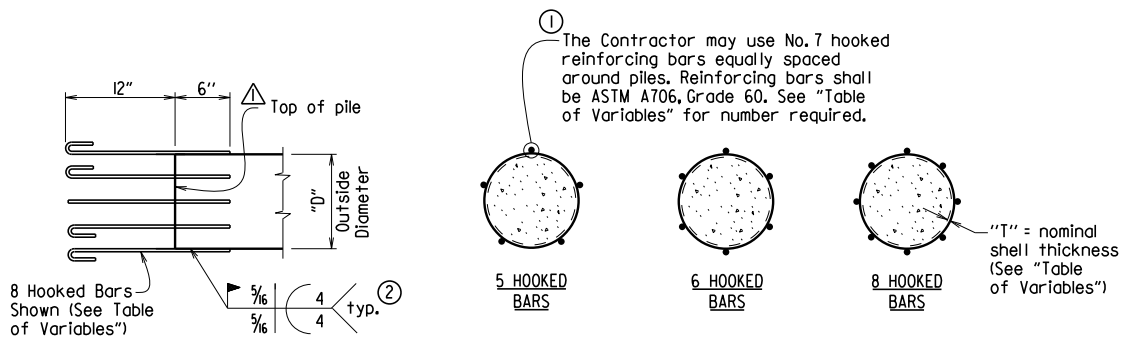
Steel shells shall conform ASTM A252, Grade 3 ($F_y = 45,000$ psi.)

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.

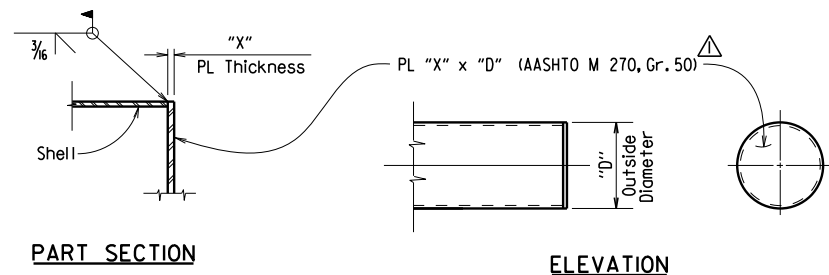
See Bridge Layout for size and estimated length of steel shell piles and for driving information.

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".



ALTERNATE PILE ANCHORAGE DETAIL

Note: Hooked bars shall be oriented to provide the required concrete clearances shown in the plans.

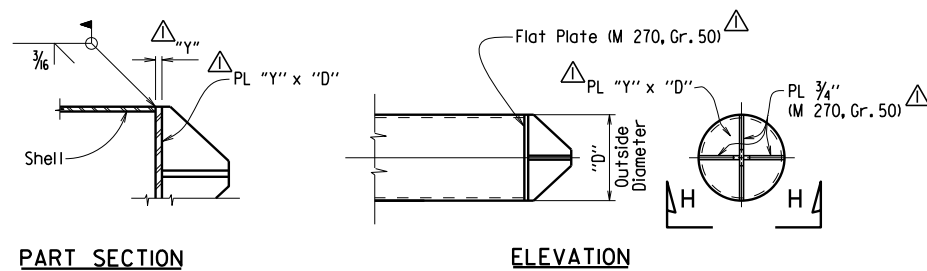


PART SECTION

ELEVATION

ALTERNATE FLAT TIP DETAIL

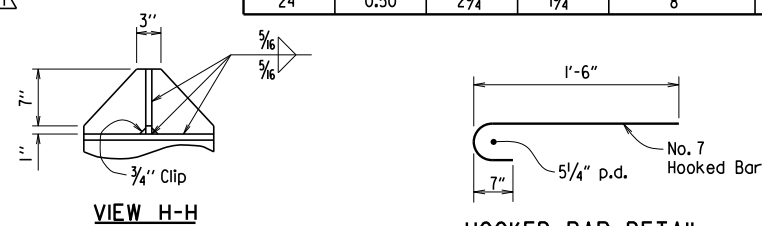
Note: The alternate flat tip detail shall not be used on steel shell piling to be driven through embankments constructed with internal geosynthetic reinforcement.



PART SECTION

ELEVATION

ALTERNATE VANED TIP DETAIL



VIEW H-H

HOOKED BAR DETAIL

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

Revised and added various details by KWy, Ck'd. by BEF, 3/24/16.

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.				
							STEEL SHELL PILES	55021

GENERAL NOTES FOR PILE ENCASEMENTS:

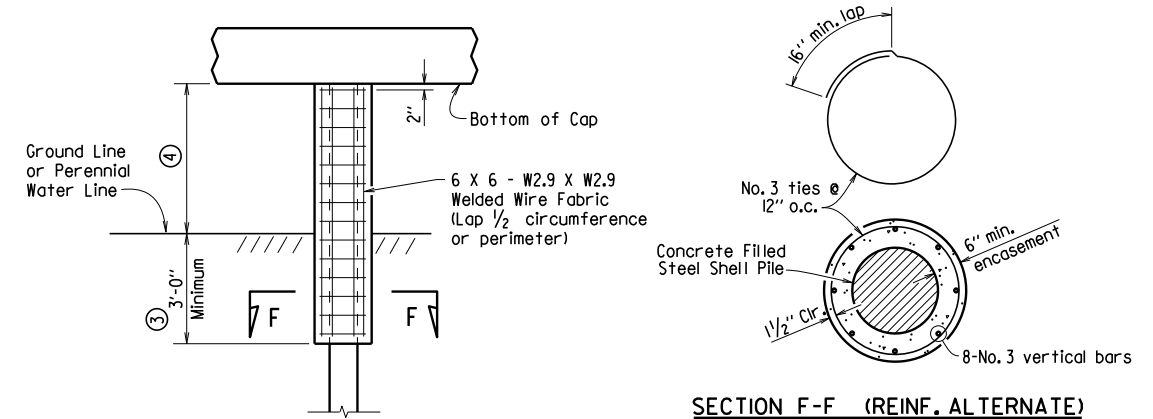
See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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".

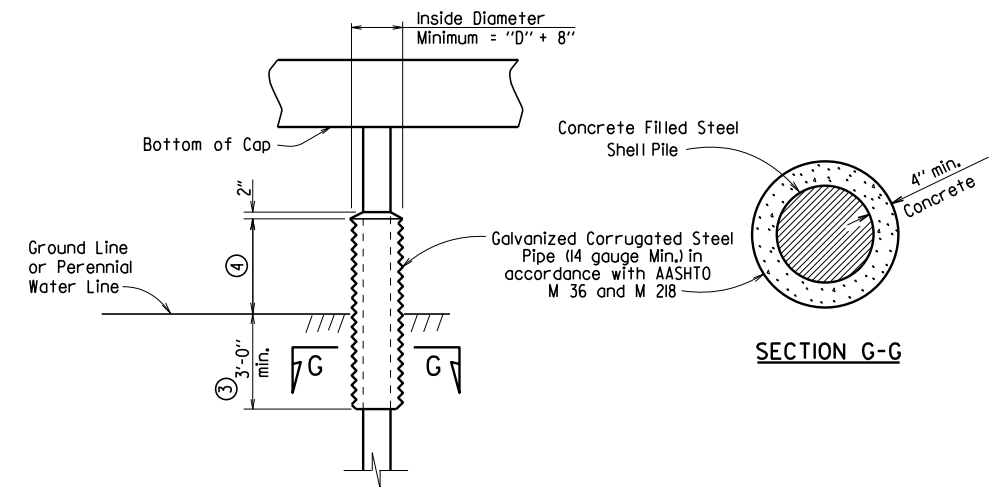


PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES

(Shown with Encasement to Bottom of Cap)

- Unless otherwise noted on Bridge Layout.
- See Bridge Layout for height of pile encasement (3'-0" Minimum).

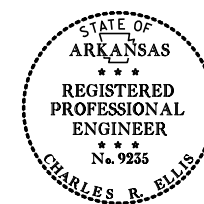
- Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



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.



BRIDGE ENGINEER

STANDARD DETAILS FOR CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

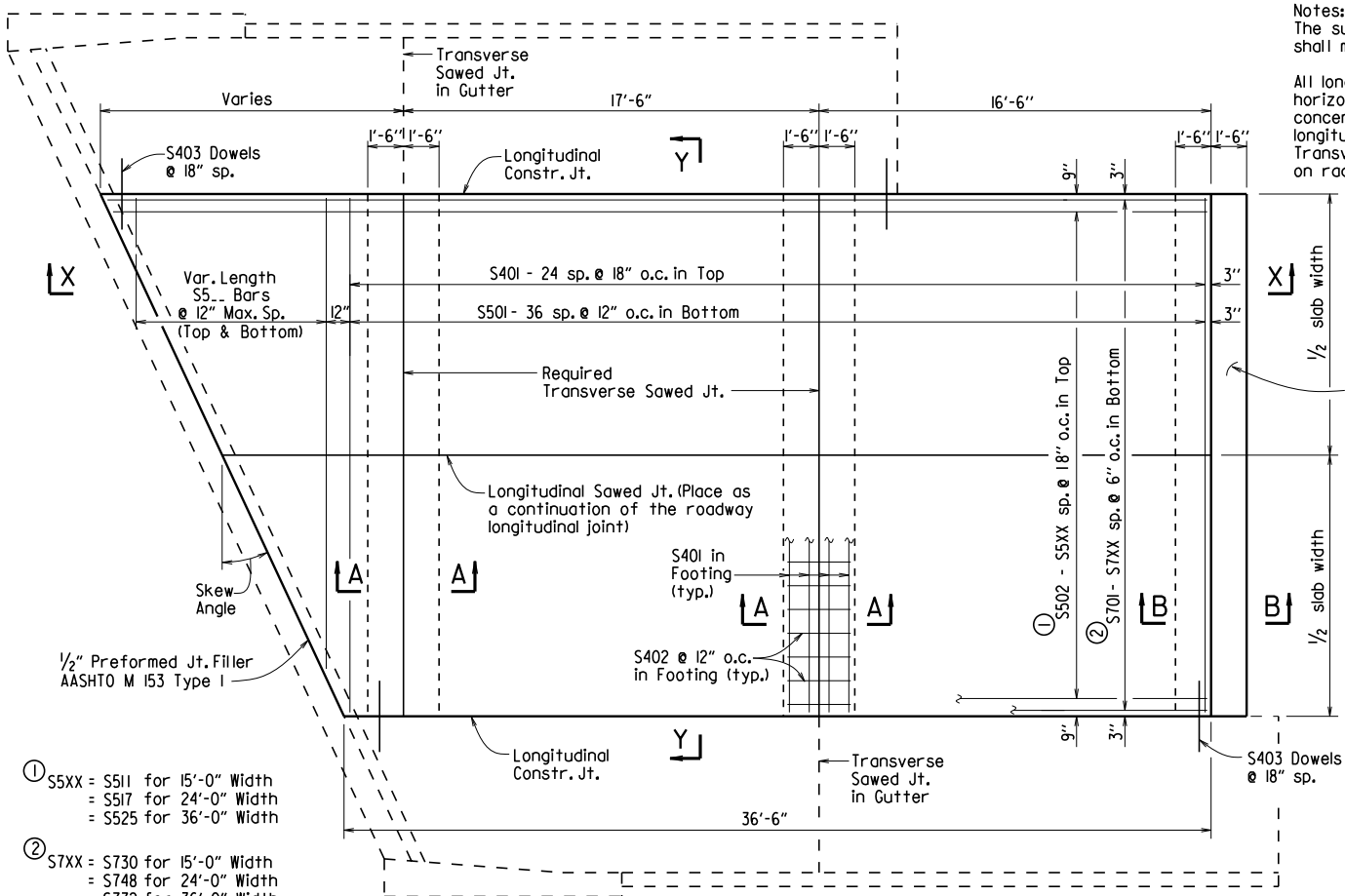
ARKANSAS STATE HIGHWAY COMMISSION

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
TYPE CI APPROACH SLAB 55040CI								



PLAN - SKEWED APPROACH SLAB WITH APPROACH GUTTERS

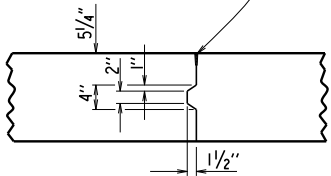
BAR LIST

(Square & Skewed Approach Slabs)

	Square			Skewed		
	Mark	No. Req'd.	Length	No. Req'd.	Length	
15'-0" Slab Width	S401	33	14'-8"	37	14'-8"	
	S402	30	2'-8"	45	2'-8"	
	S403	50	3'-0"	*	3'-0"	
	S501	37	14'-8"	37	14'-8"	
	S502	10	36'-2"	—	—	
	S502 - S511	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 14.25' (tan skew angle)	
	S5...	—	—	2 Ea.	14.7' - 0.75'/(tan skew angle) to 2'-0" Min.	
	S701	30	36'-2"	—	—	
	S701 - S730	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 14.75' (tan skew angle)	
	S701 - S730	—	—	—	—	
24'-0" Slab Width	S401	33	23'-8"	37	23'-8"	
	S402	48	2'-8"	72	2'-8"	
	S403	50	3'-0"	*	3'-0"	
	S501	37	23'-8"	37	23'-8"	
	S502	16	36'-2"	—	—	
	S502 - S517	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 23.25' (tan skew angle)	
	S5...	—	—	2 Ea.	23.7' - 0.75'/(tan skew angle) to 2'-0" Min.	
	S701	48	36'-2"	—	—	
	S701 - S748	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 23.75' (tan skew angle)	
	S701 - S748	—	—	—	—	
36'-0" Slab Width	S401	33	35'-8"	37	35'-8"	
	S402	72	2'-8"	108	2'-8"	
	S403	50	3'-0"	*	3'-0"	
	S501	37	35'-8"	37	35'-8"	
	S502	24	36'-2"	—	—	
	S502 - S525	—	—	1 Ea.	36.1' + 0.75' (tan skew angle) to 36.1' + 35.25' (tan skew angle)	
	S5...	—	—	2 Ea.	35.7' - 0.75'/(tan skew angle) to 2'-0" Min.	
	S701	72	36'-2"	—	—	
	S701 - S772	—	—	1 Ea.	36.1' + 0.25' (tan skew angle) to 36.1' + 35.75' (tan skew angle)	
	S701 - S772	—	—	—	—	

* Varies with skew angle

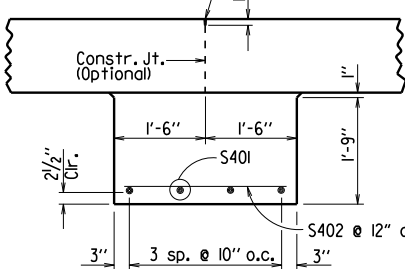
1/2" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

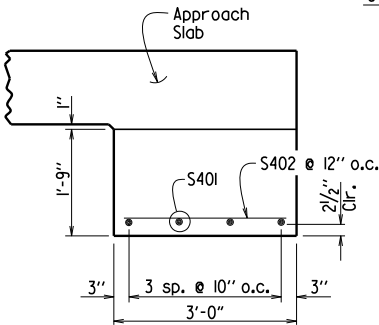
3/4" = 1'-0"

1/2" x 1" Poured Jt. Sealer (Type 3 or 4) per Subsection 501.02(h)(2) Backer rod is not required.



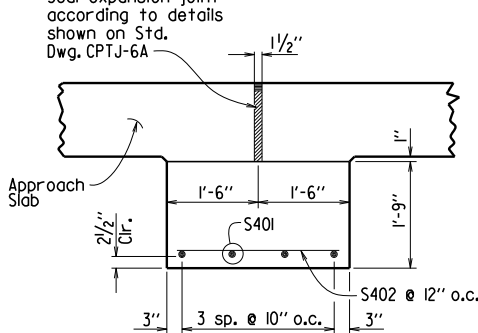
SECTION A-A

N.T.S.



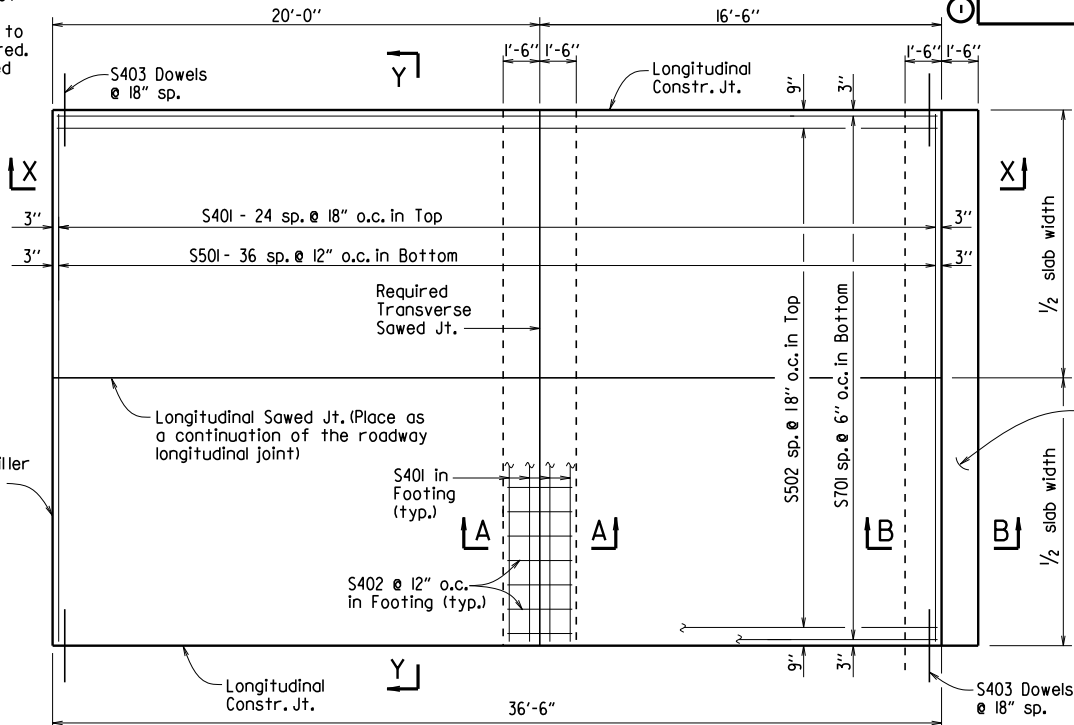
SECTION B-B

AT ASPHALT APPROACH PAVEMENT N.T.S.

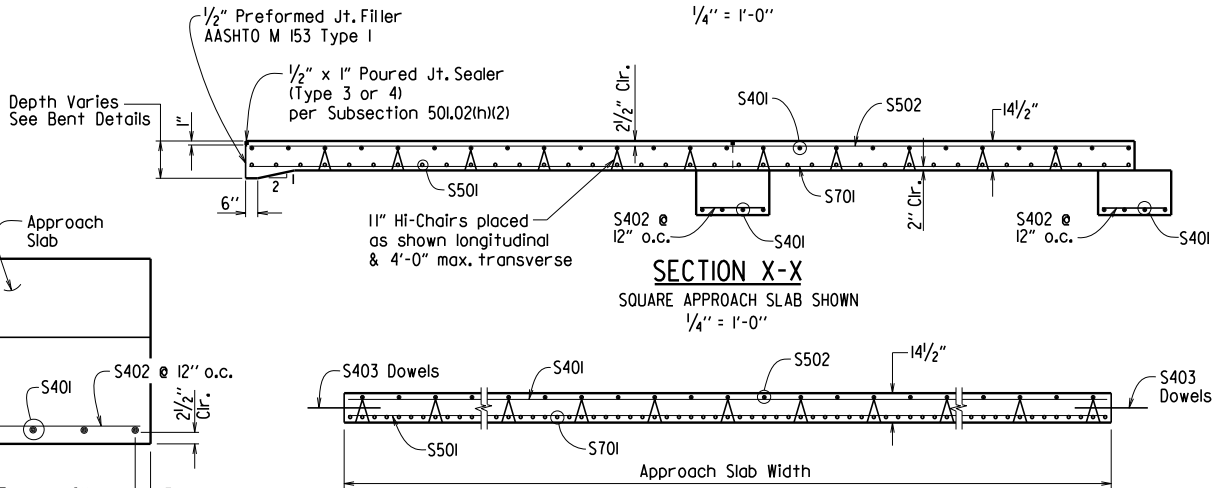


SECTION B-B

AT CONCRETE APPROACH PAVEMENT N.T.S.

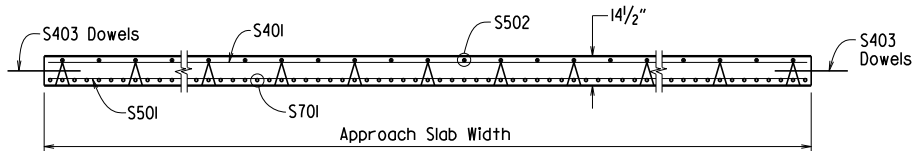


PLAN - SQUARE APPROACH SLAB



SECTION X-X

SQUARE APPROACH SLAB SHOWN 1/4" = 1'-0"



SECTION Y-Y

N.T.S.

GENERAL NOTES

This drawing shall be used for Approach Slabs in Seismic Performance Zone I and for the maximum skew angles shown below:

15'-0" Slab Width: Maximum Skew Angle = 50°
24'-0" Slab Width: Maximum Skew Angle = 40°
36'-0" Slab Width: Maximum Skew Angle = 30°

All concrete shall be Class S (AE) with a minimum 28 day compressive strength f'c = 4,000 psi and shall be poured in the dry.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M 31 or M 322, Type A, with mill test reports.

Approach Slabs will be measured and paid for in accordance with Section 504.

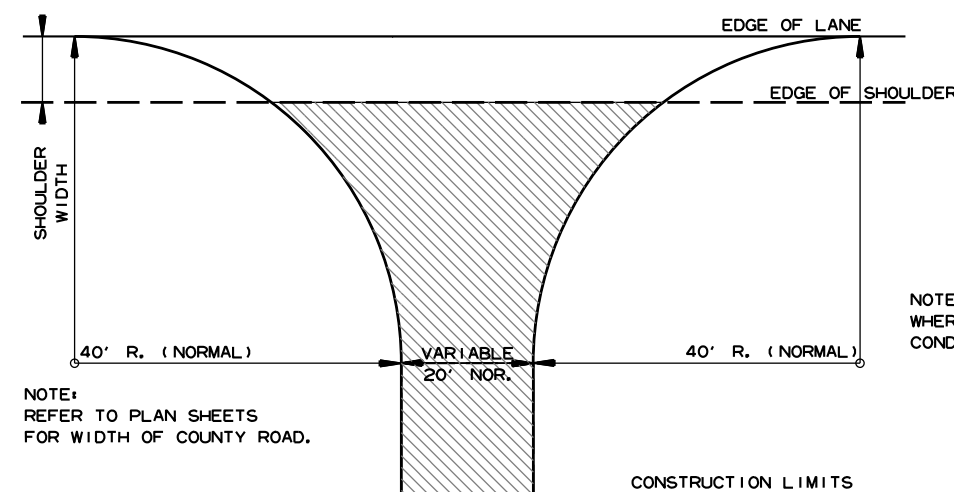
STANDARD DETAILS FOR TYPE CI APPROACH SLAB

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

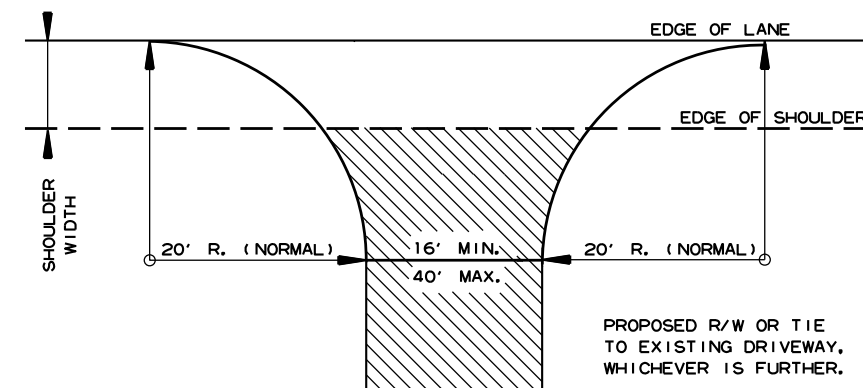
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55040ci.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: STD. DATE:

DRAWING NO. 55040CI



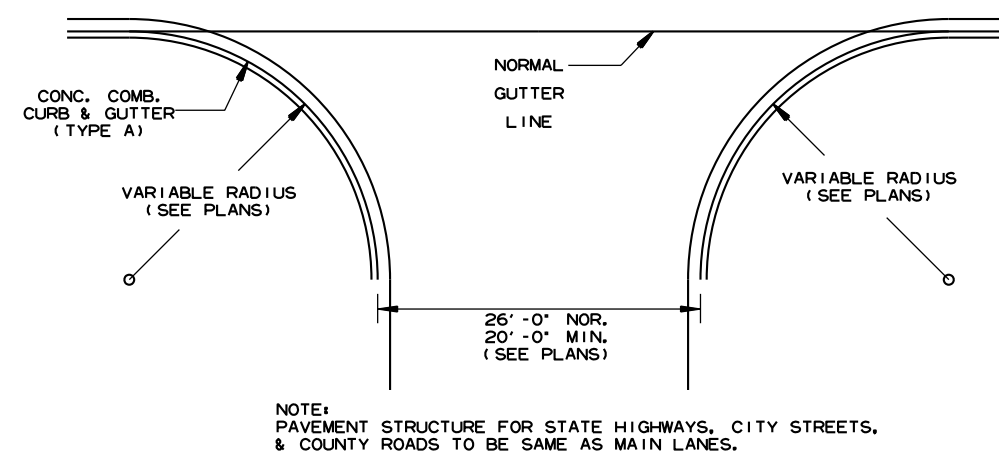
DETAIL FOR COUNTY ROAD TURNOUTS
OPEN SHOULDER SECTION

ACHM SURFACE COURSE (1/2")
(220 LBS. PER SQ. YD.) AND
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH, UNLESS OTHERWISE
SPECIFIED IN PLANS.

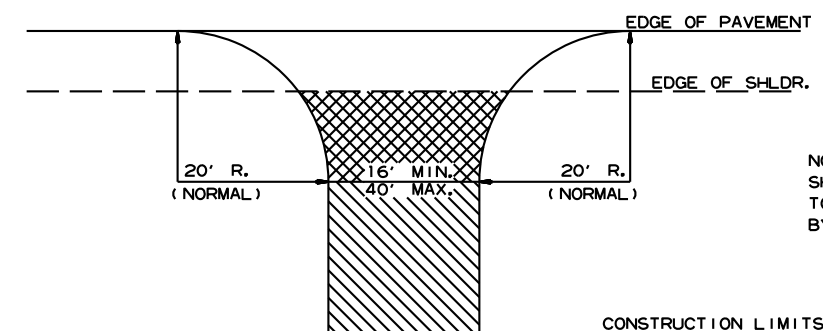


DETAIL FOR DRIVEWAY TURNOUTS
OPEN SHOULDER SECTION
(ARTERIALS)

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 OF TURNOUTS, ASPHALT STREETS,
COUNTY ROADS & STATE HIGHWAYS
CURB & GUTTER SECTION



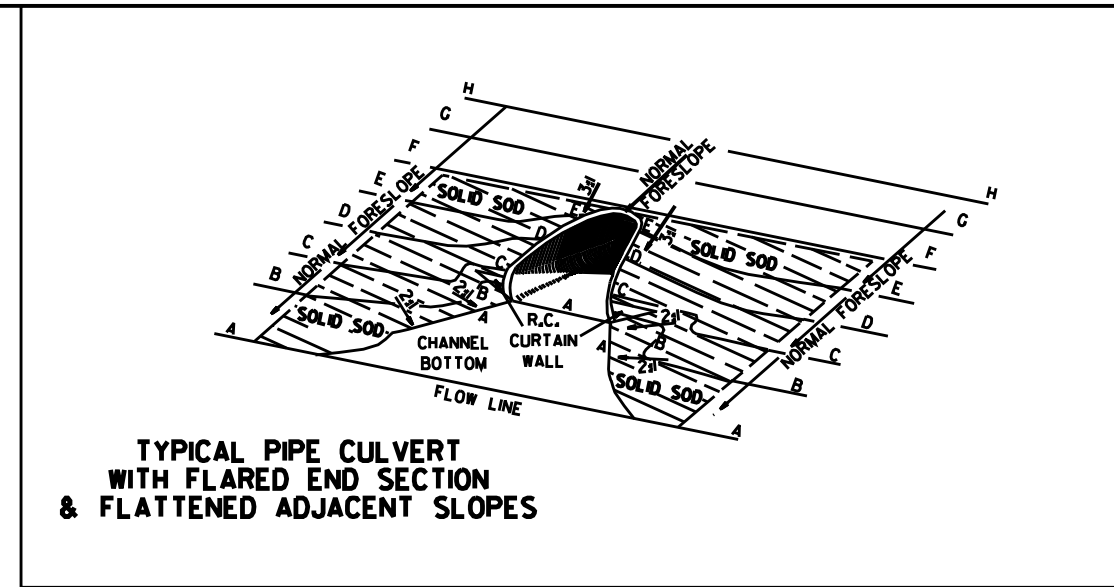
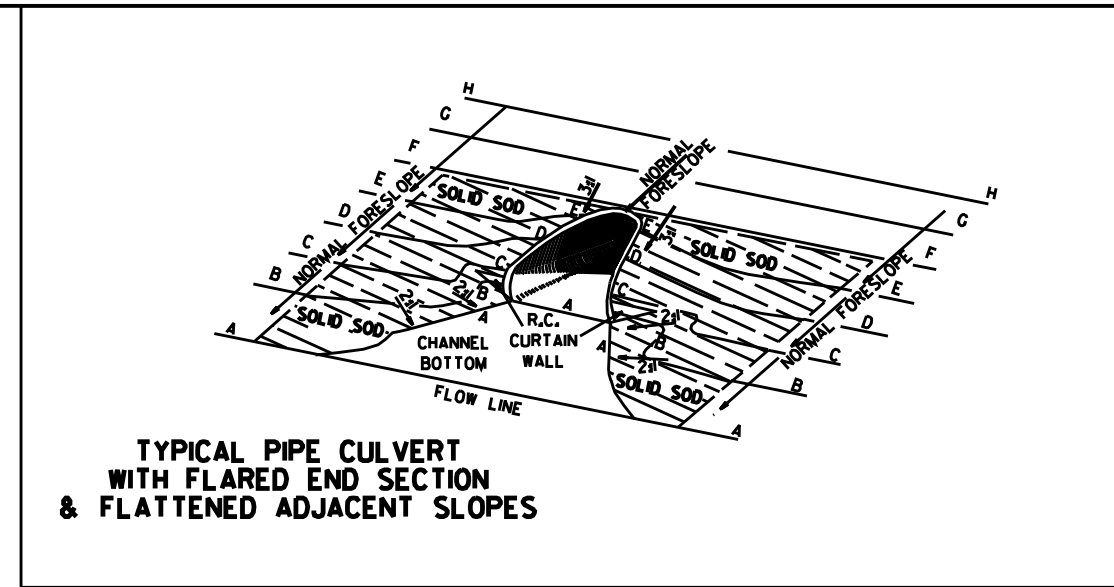
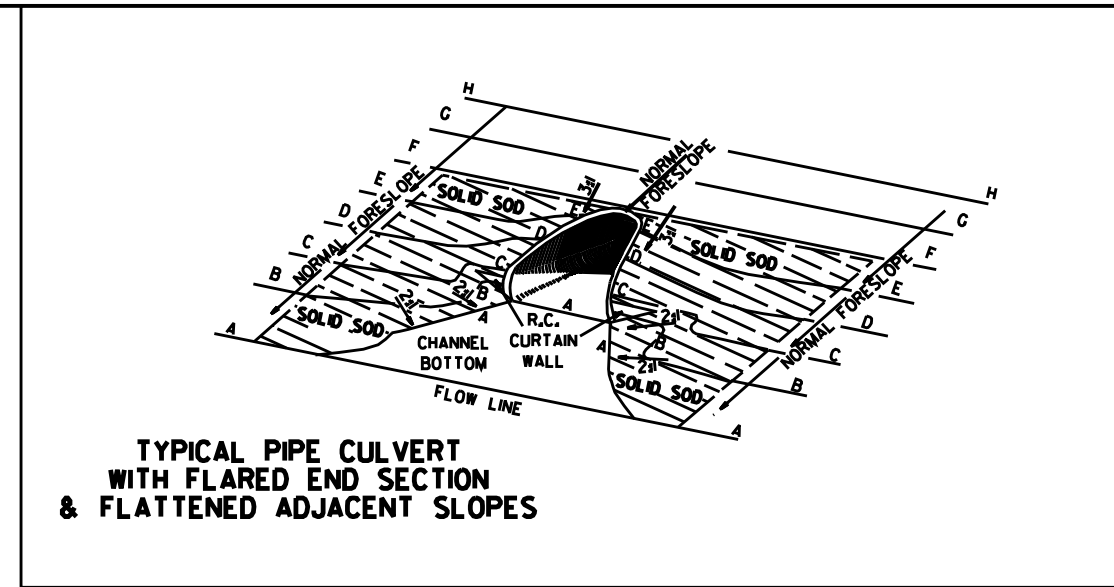
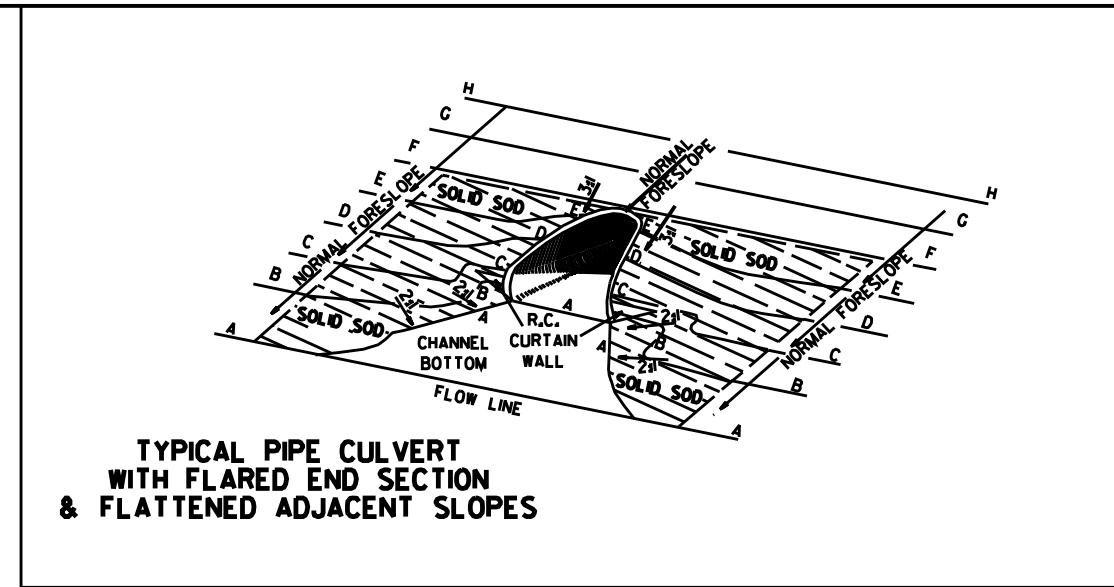
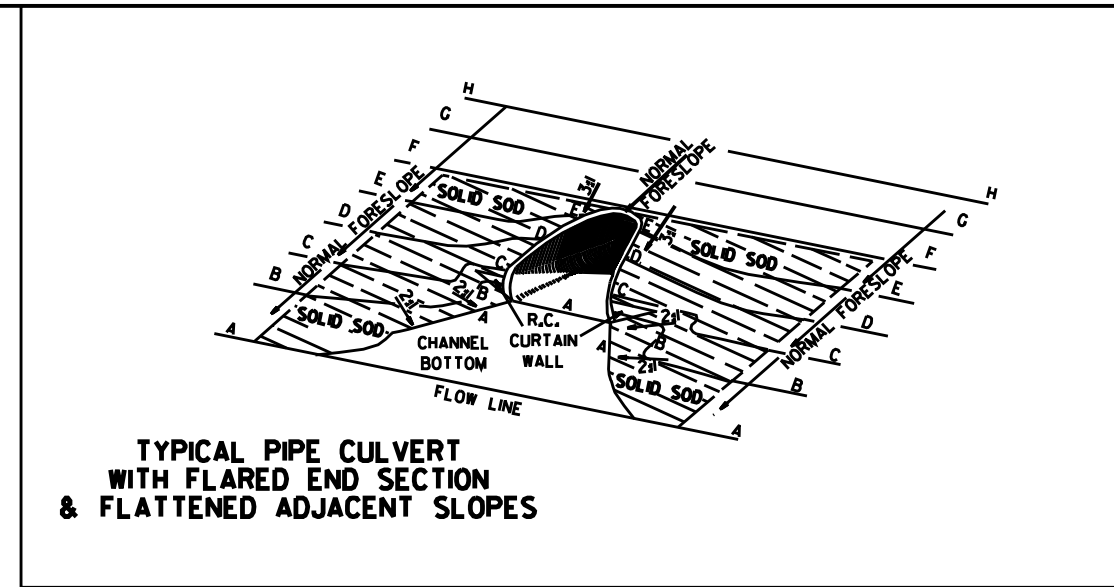
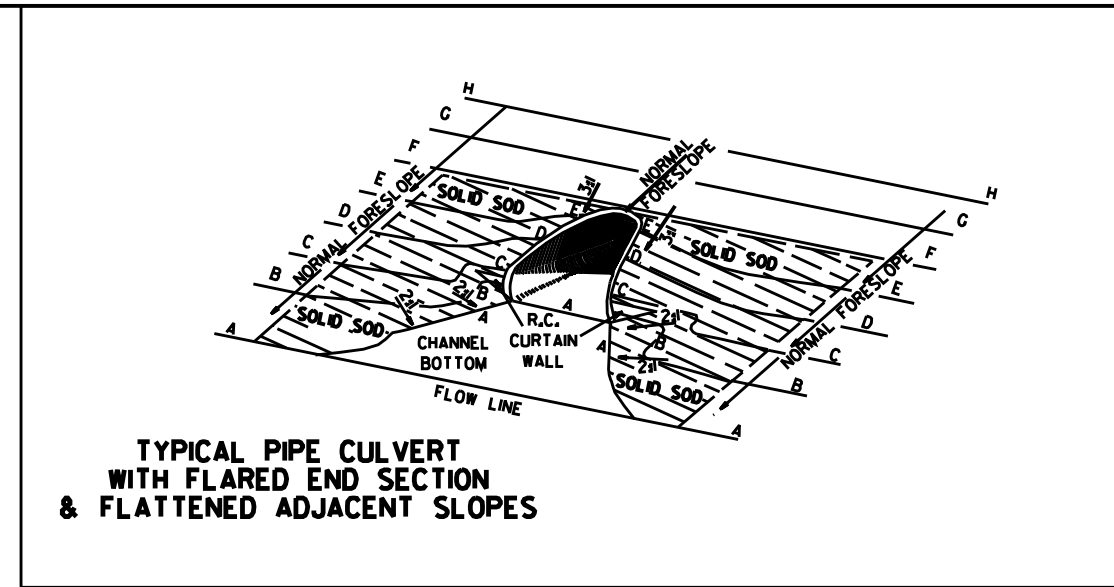
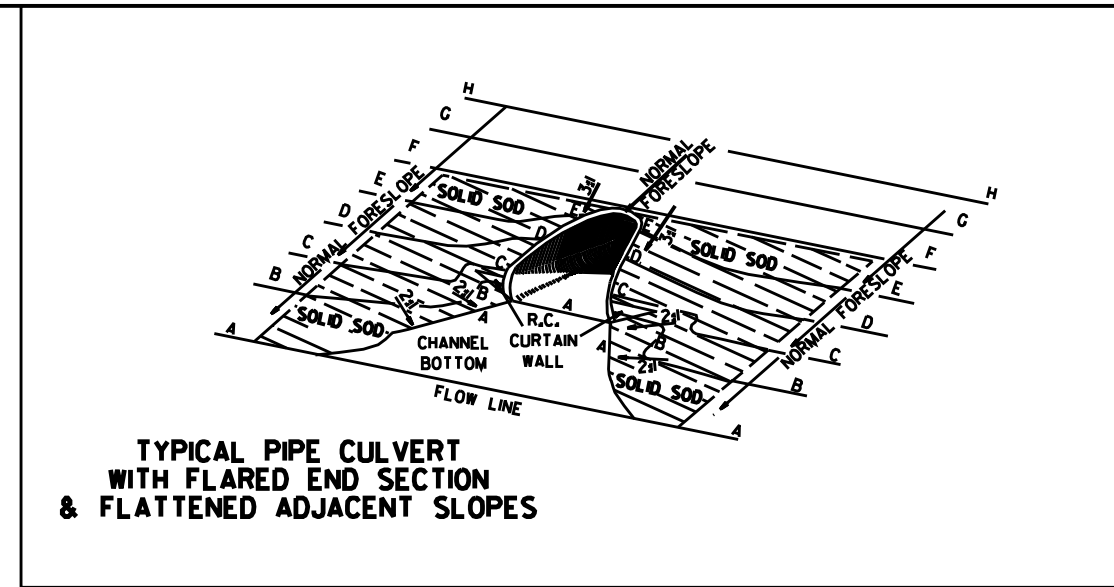
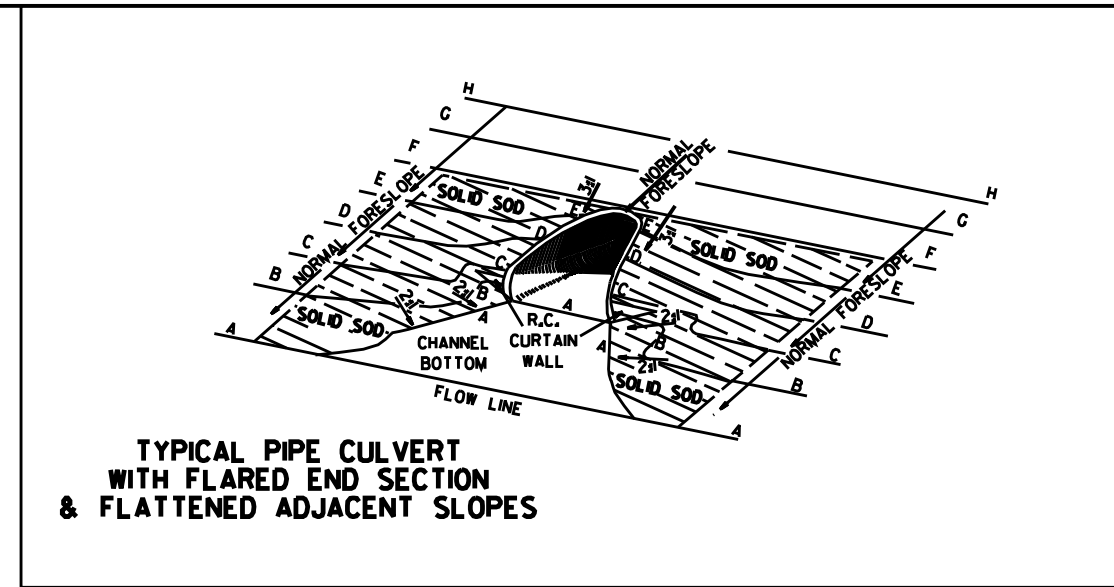
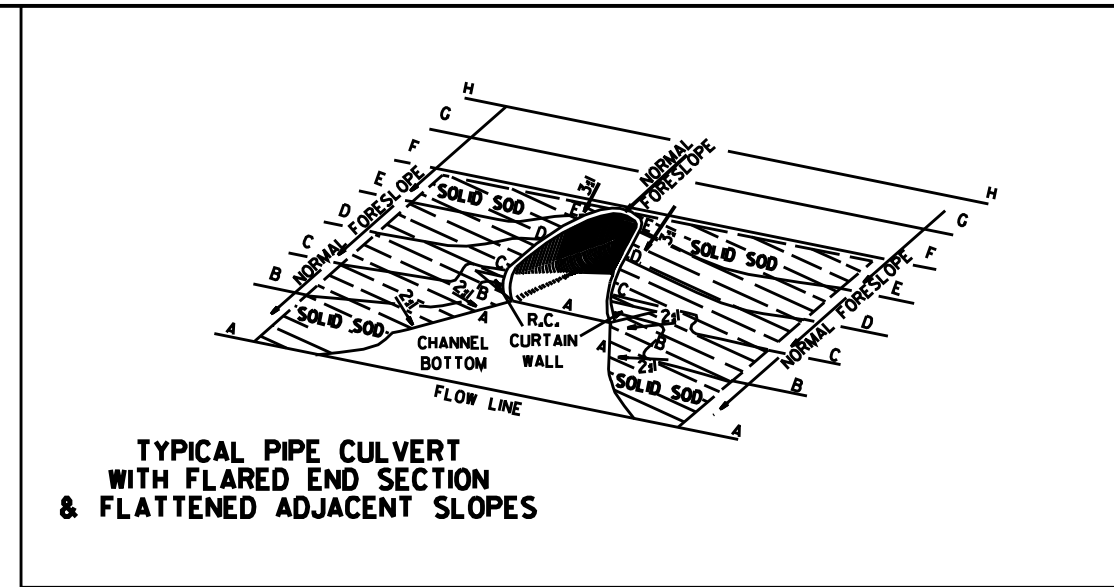
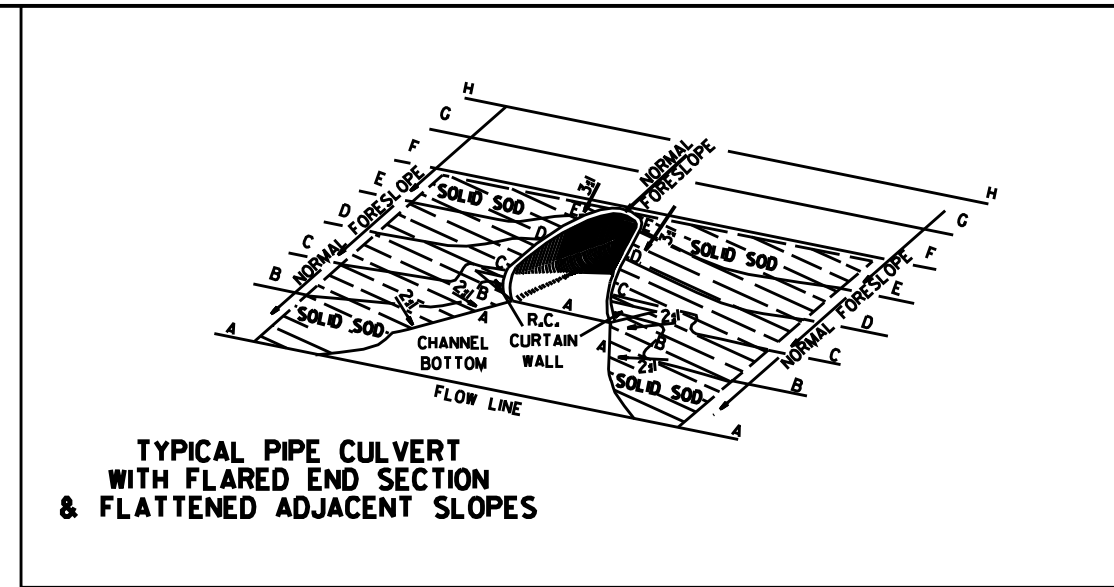
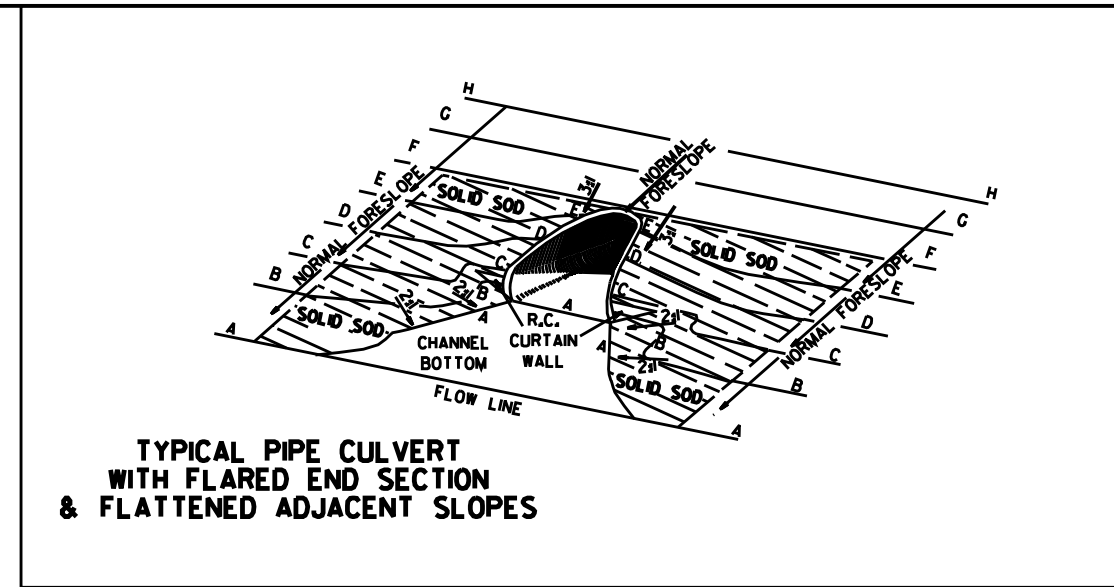
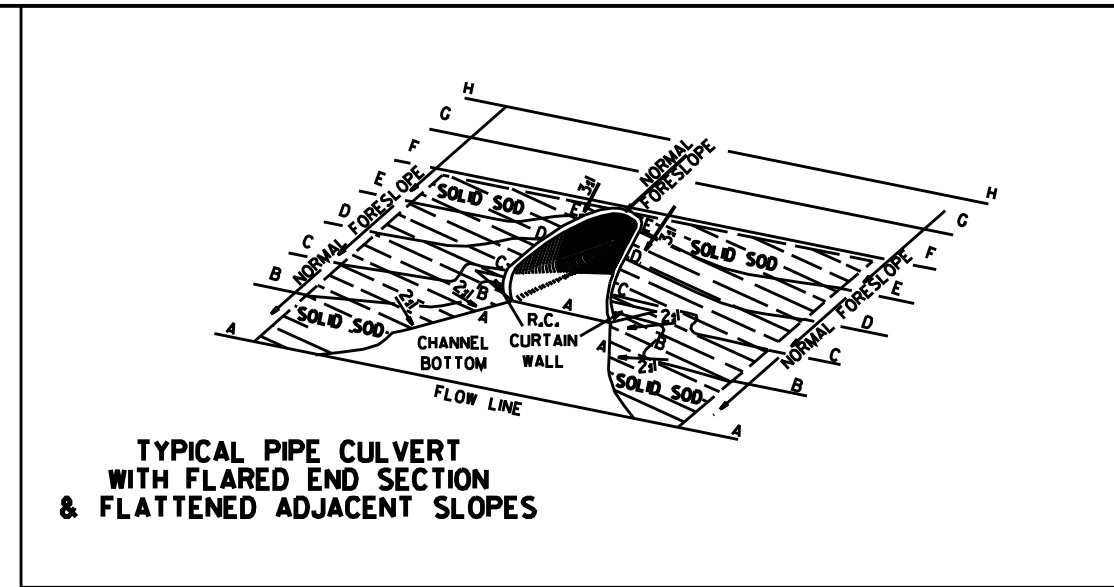
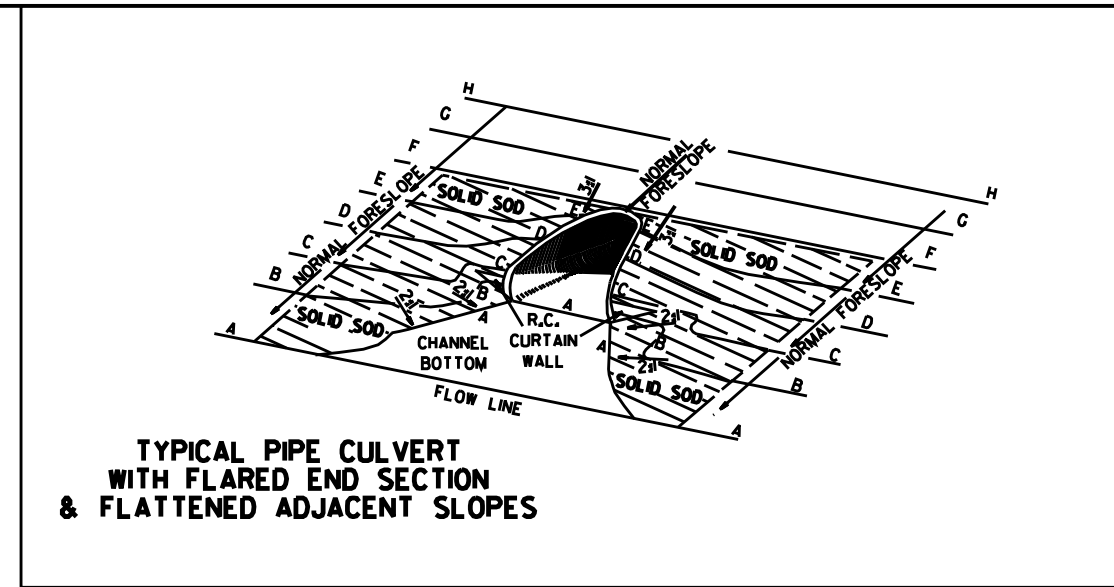
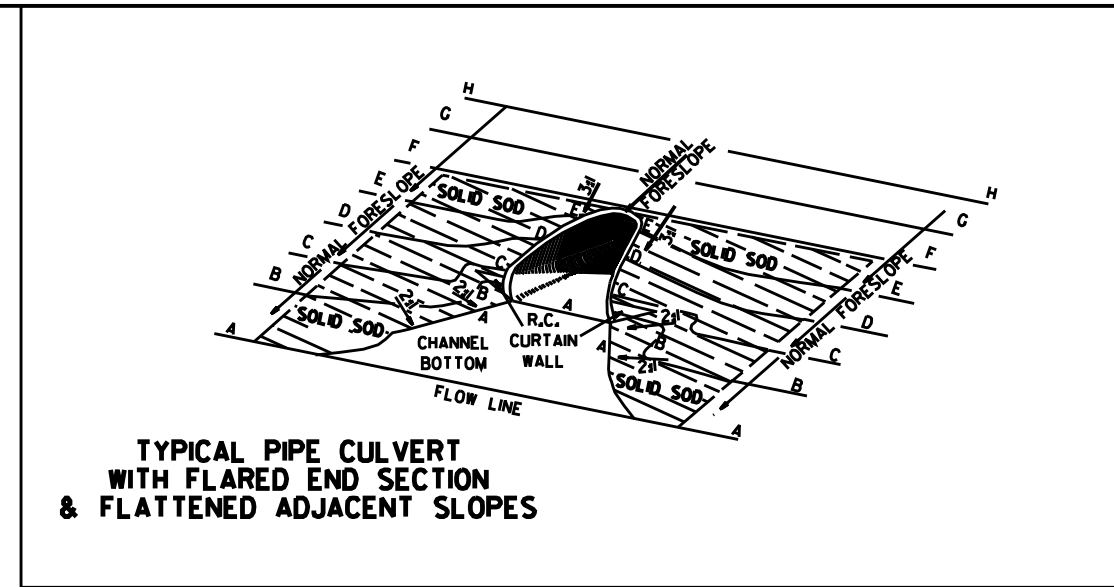
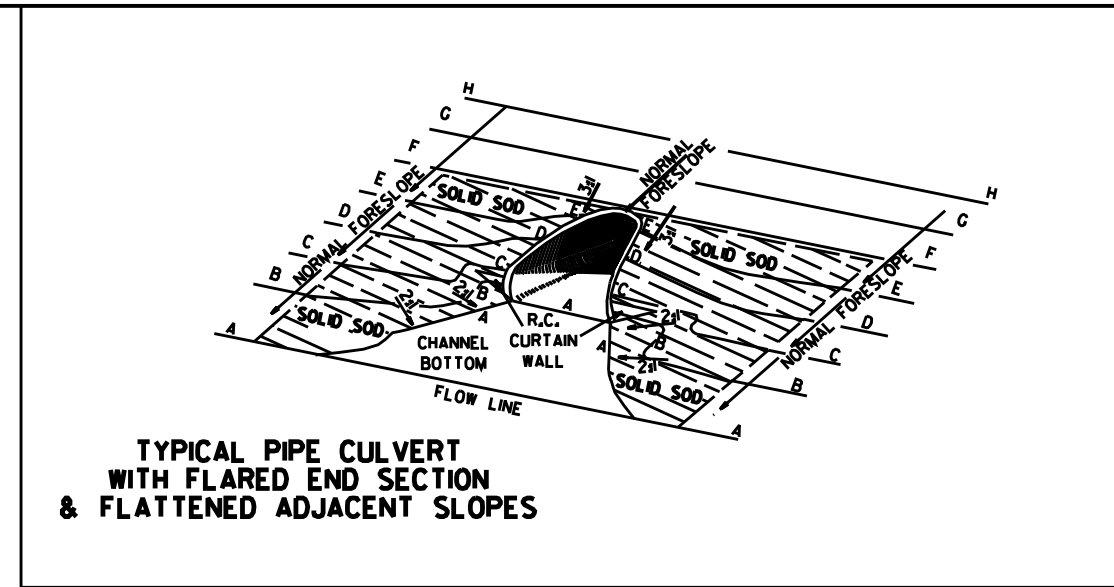
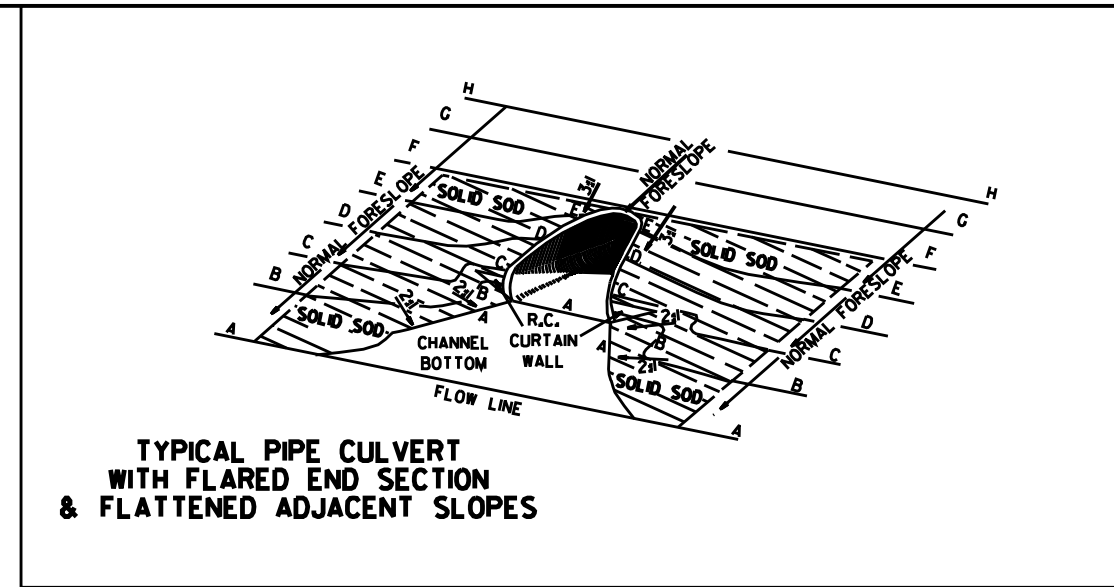
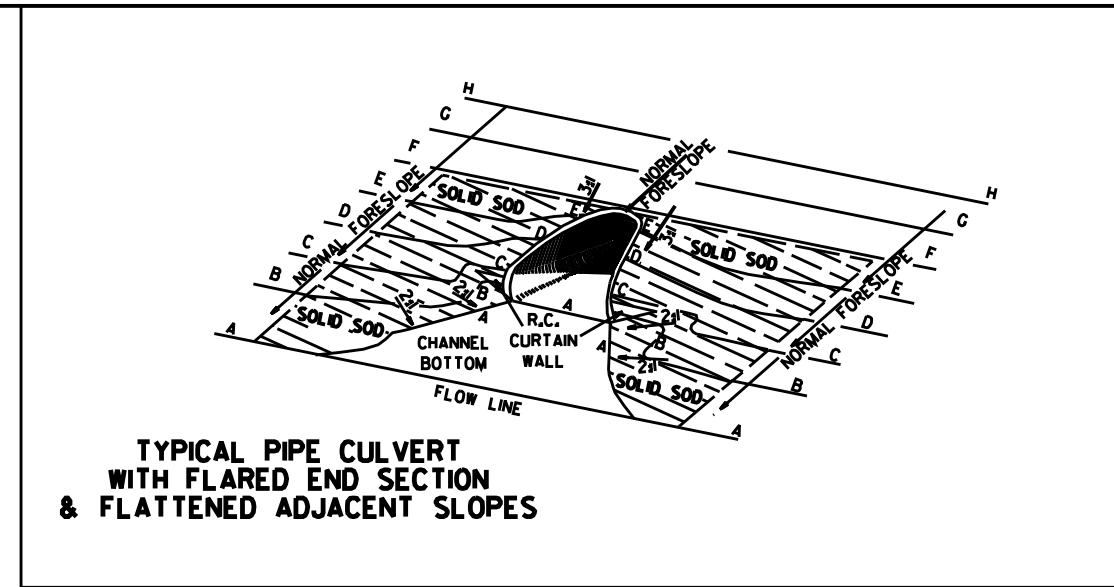
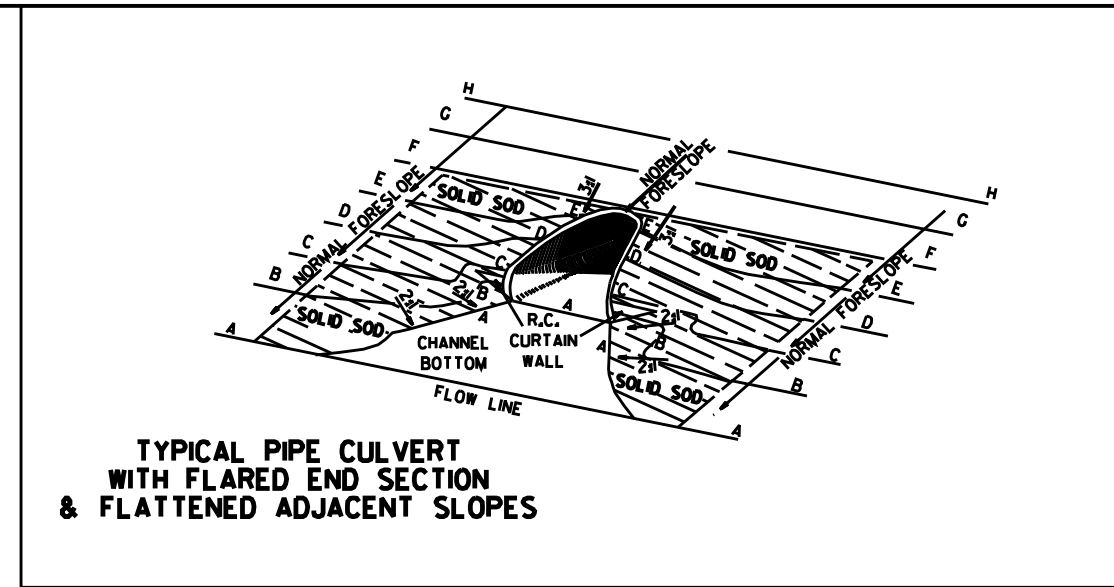
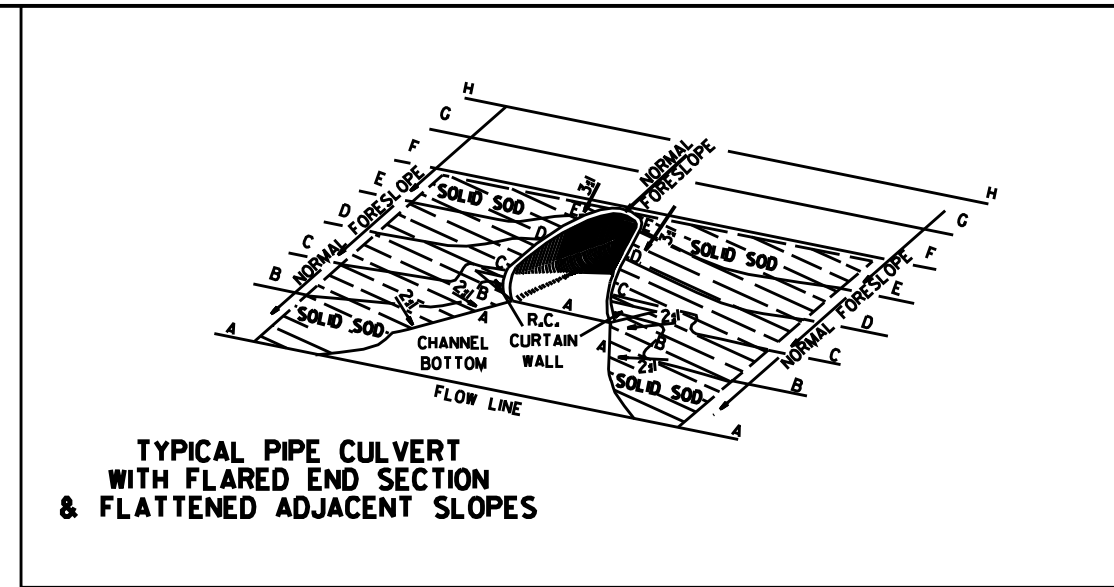
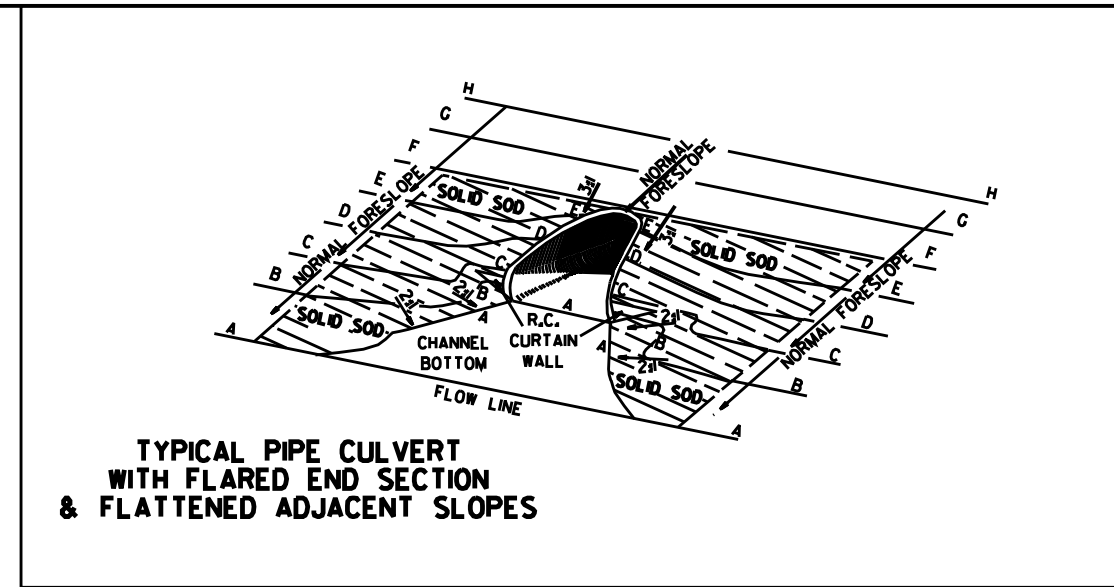
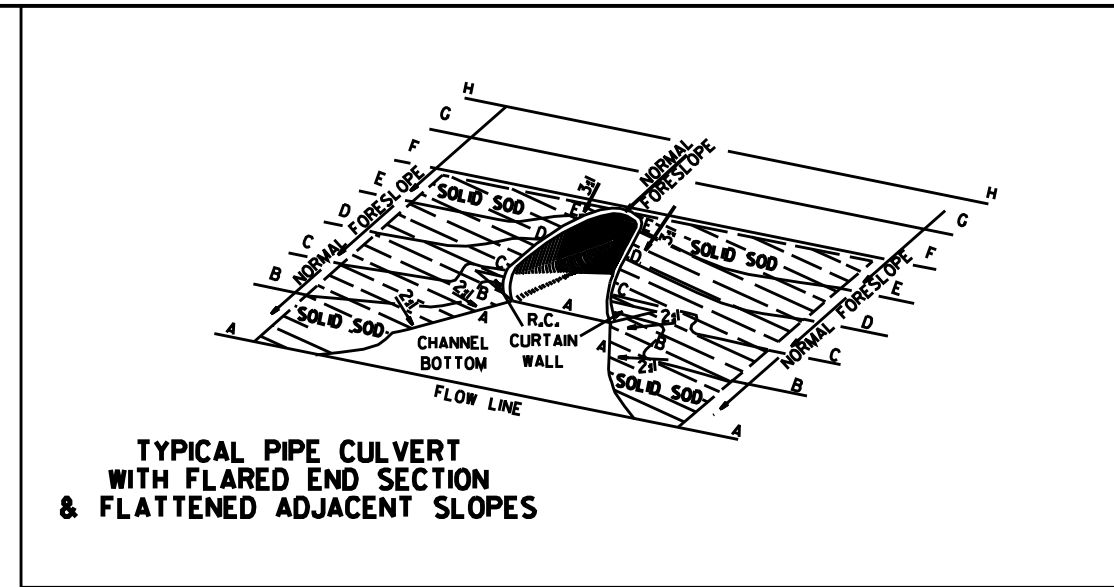
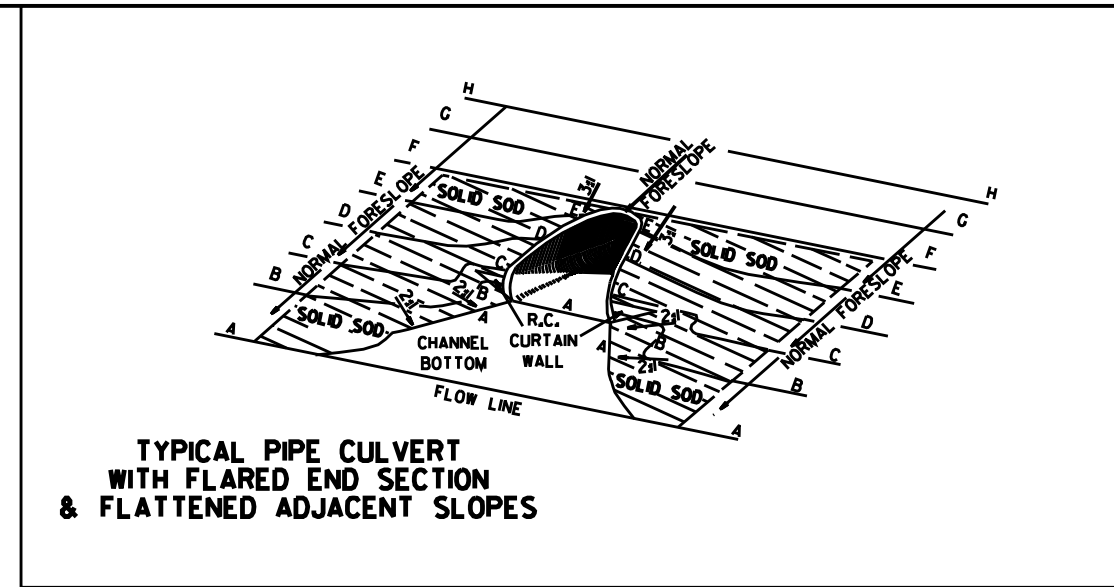
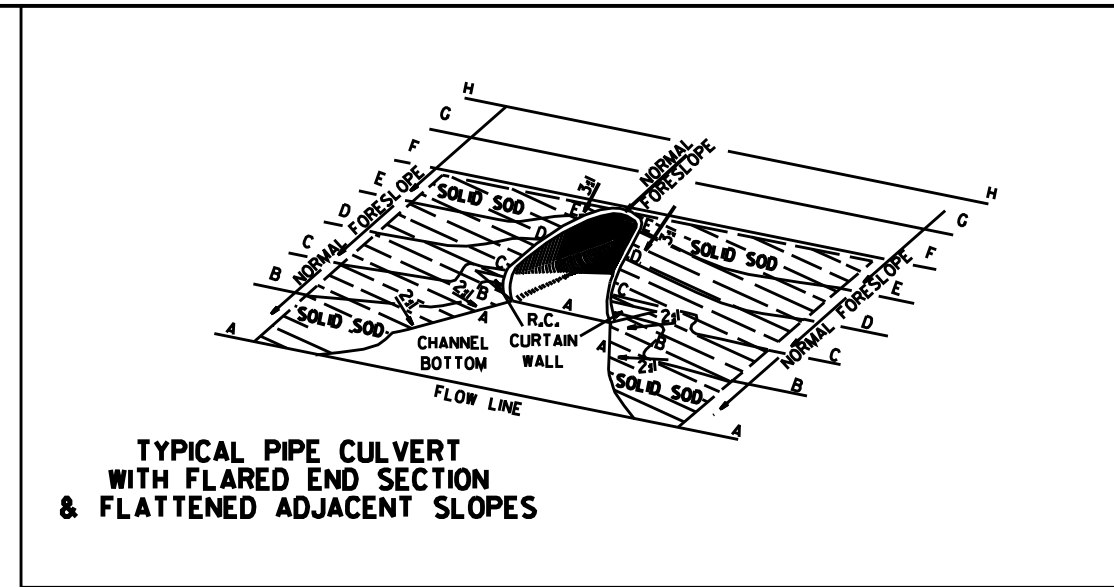
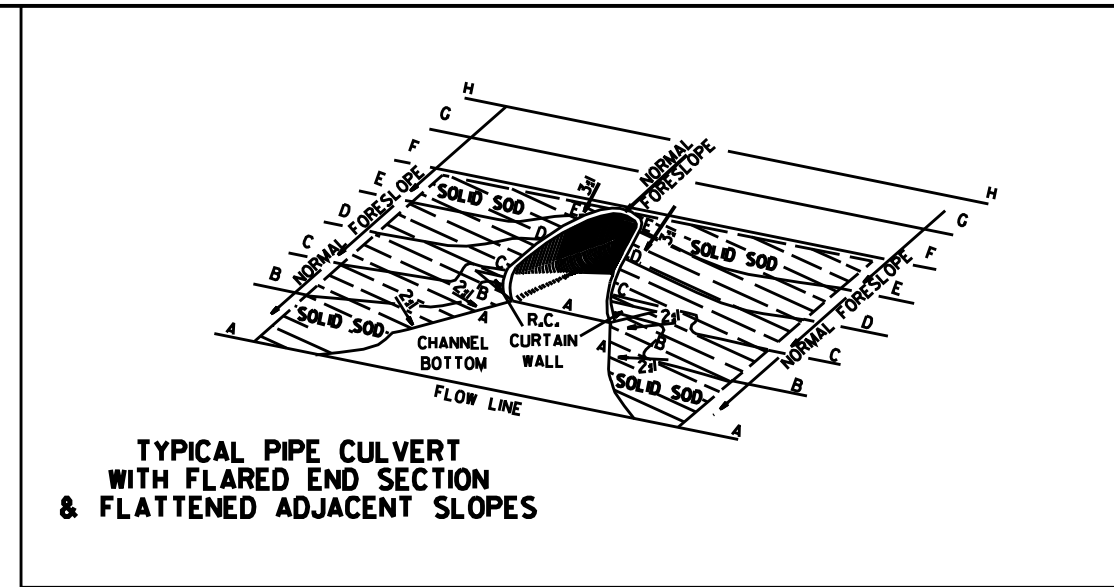
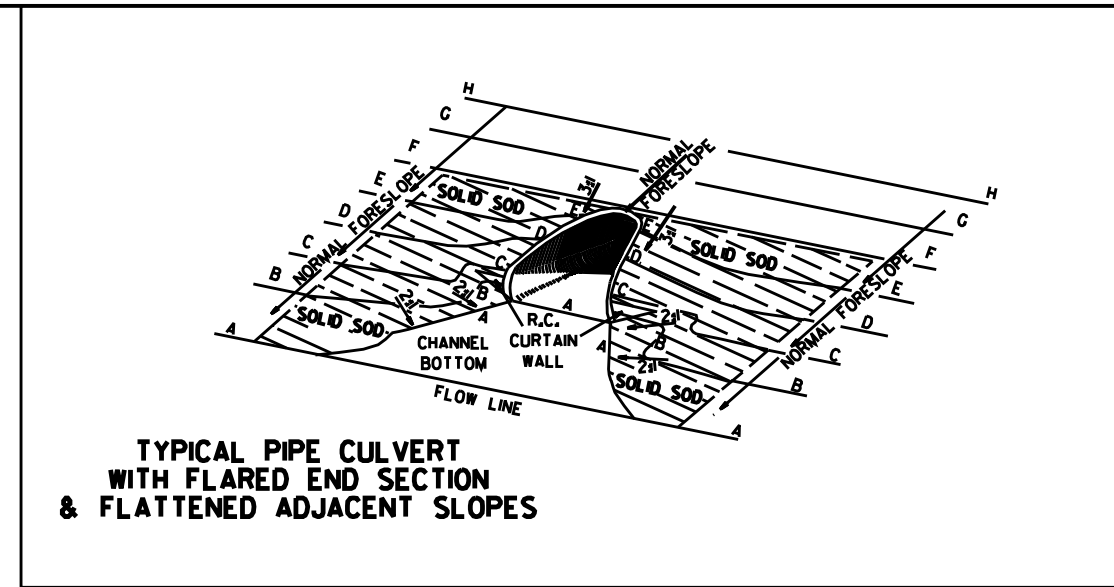
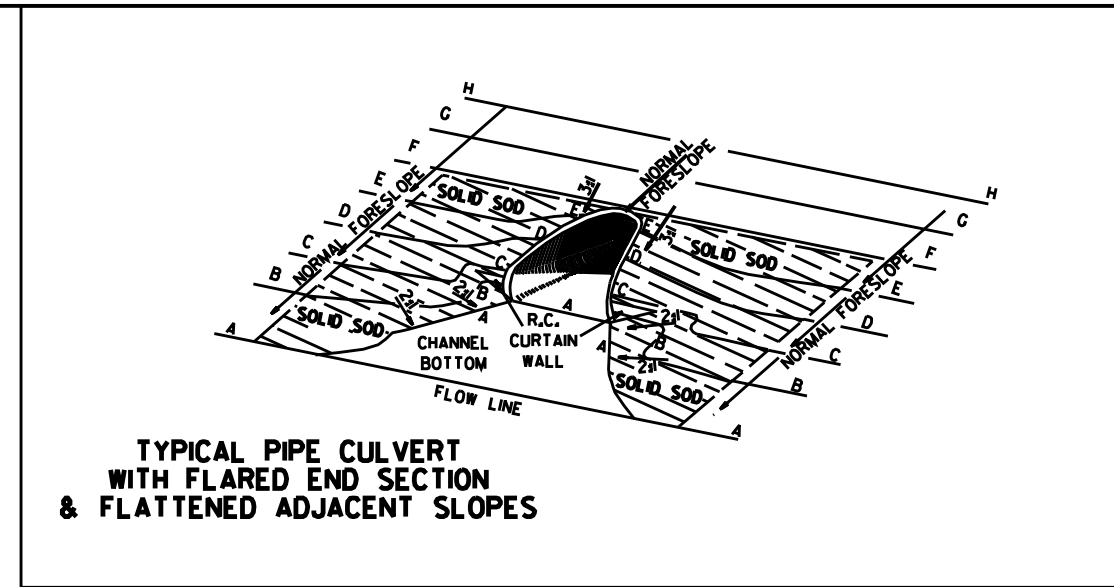
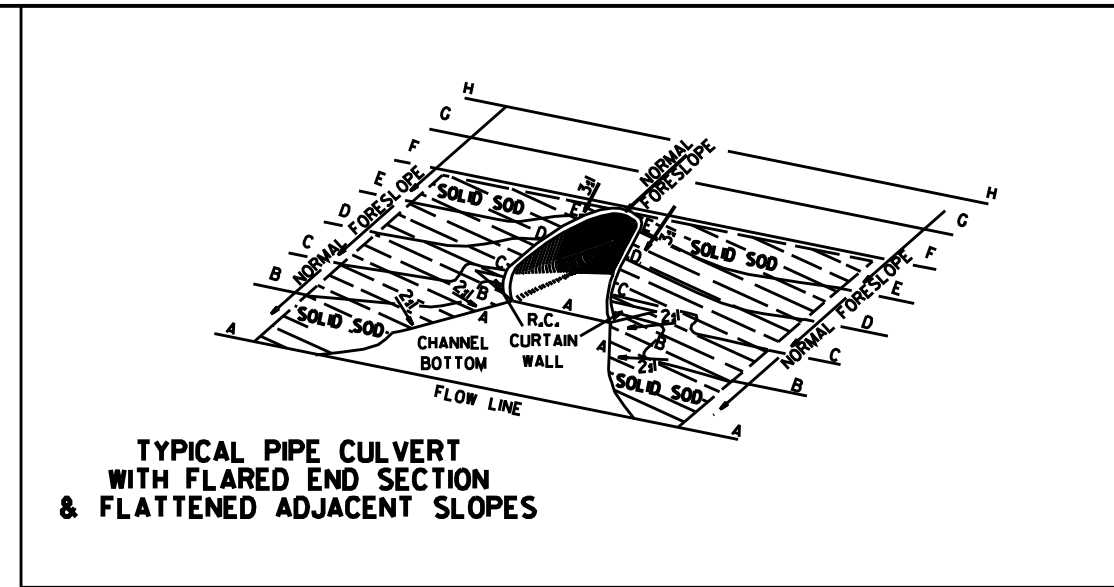
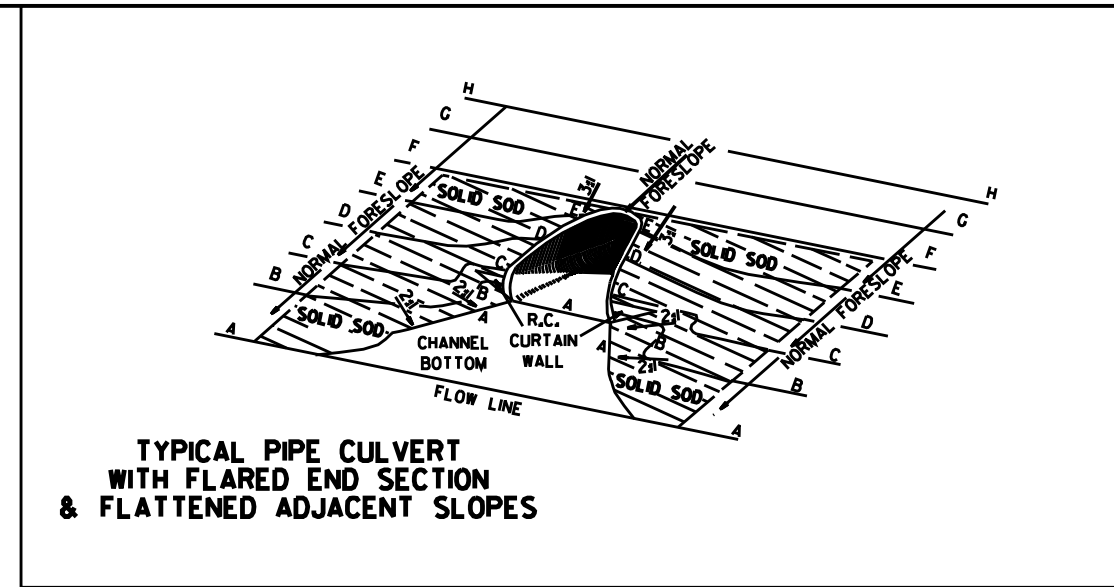
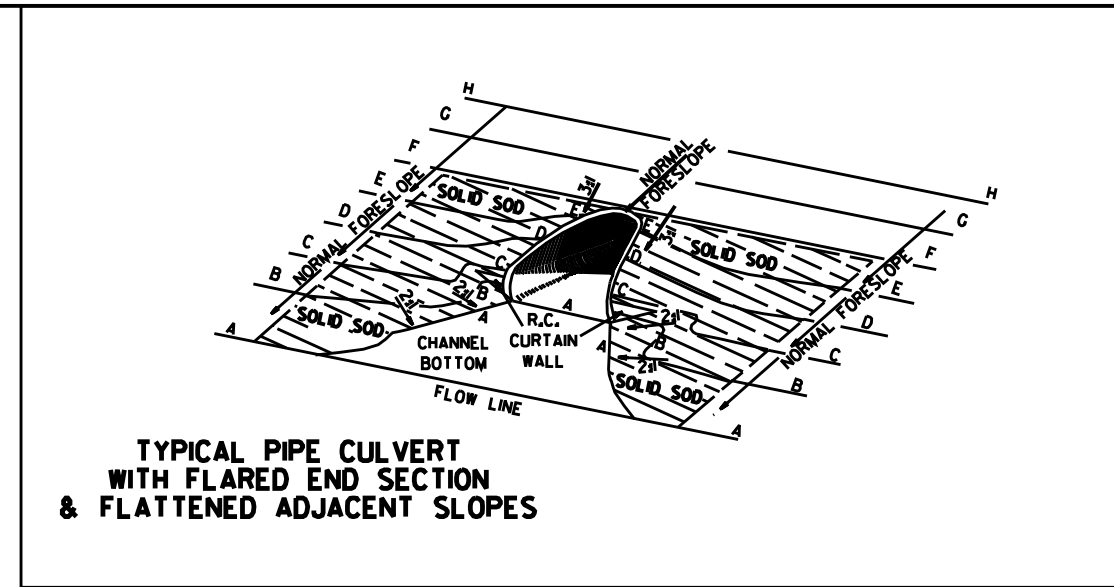
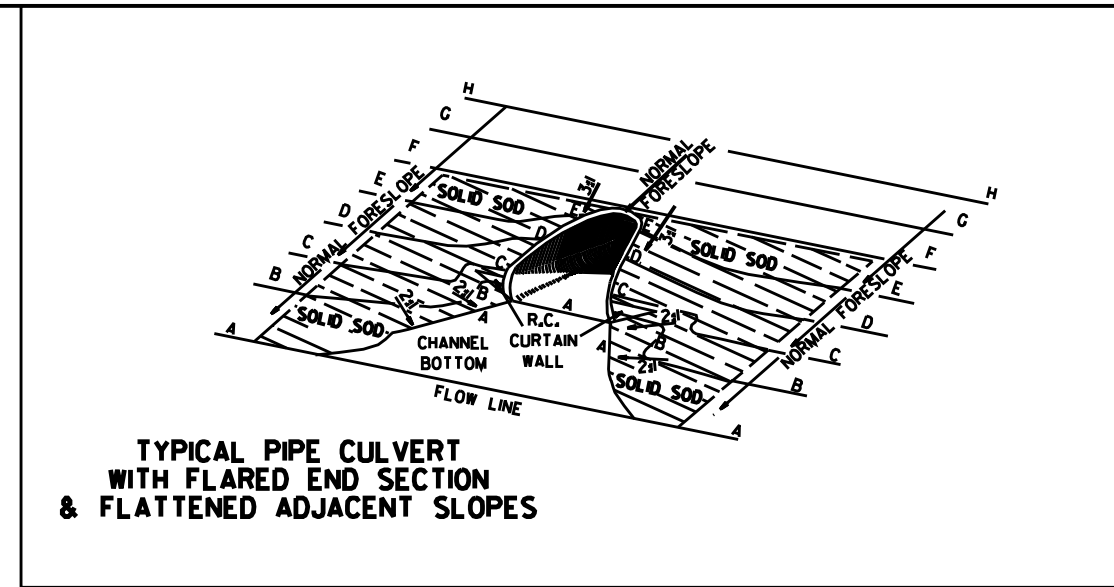
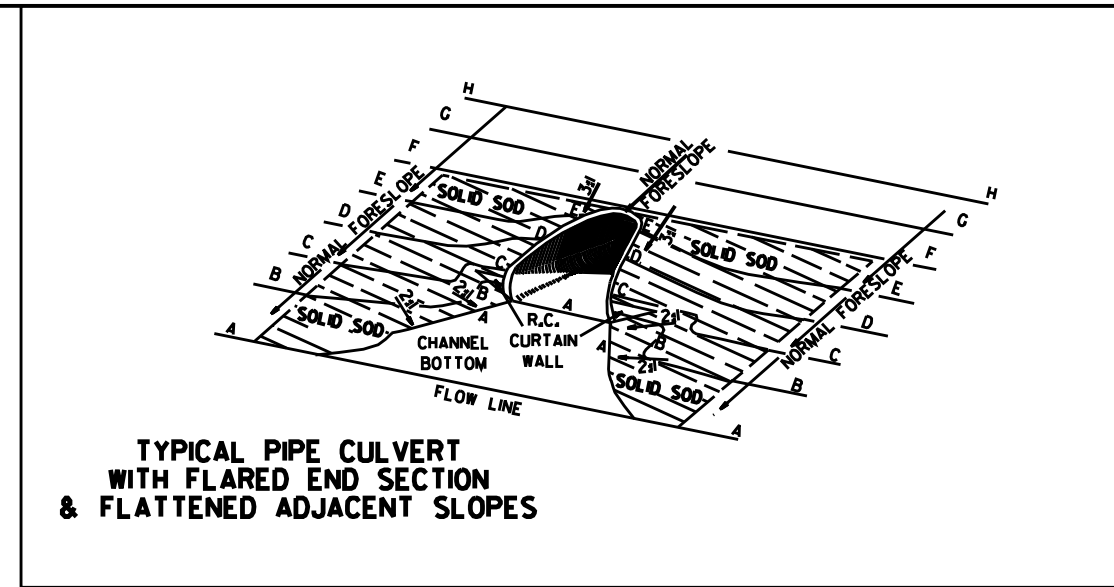
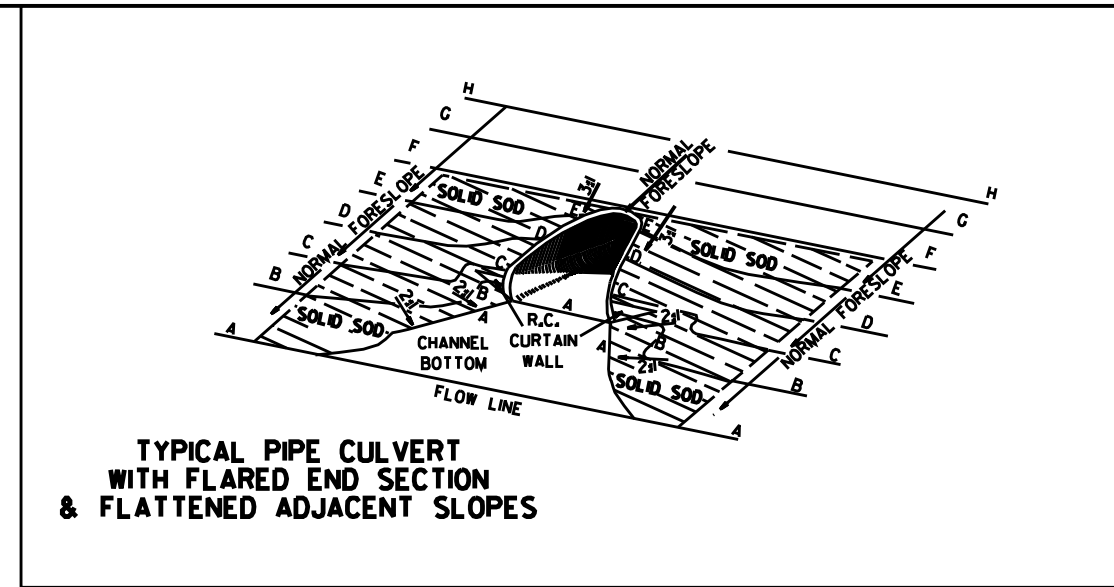
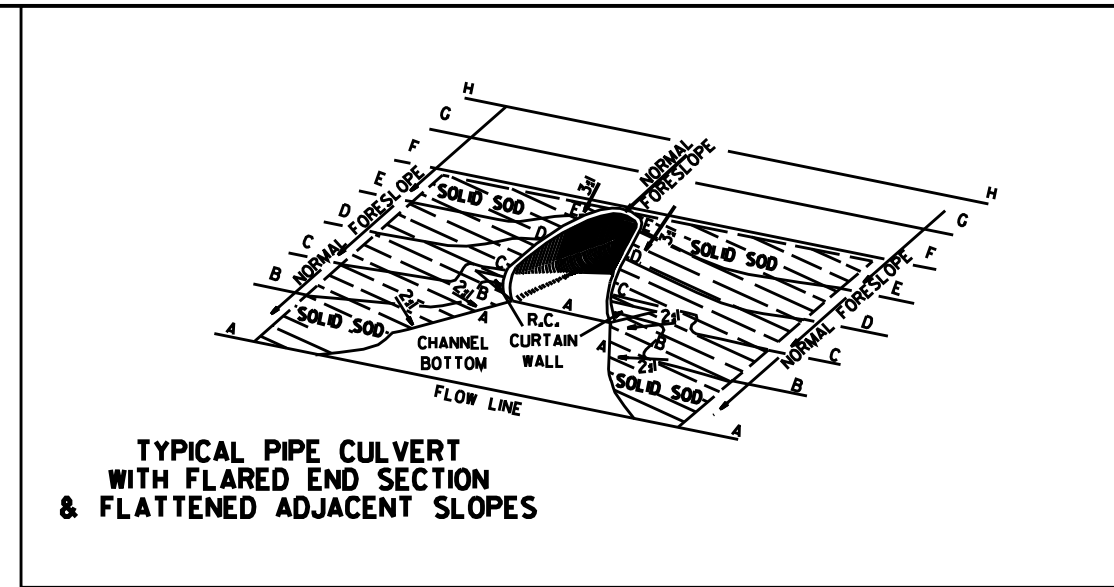
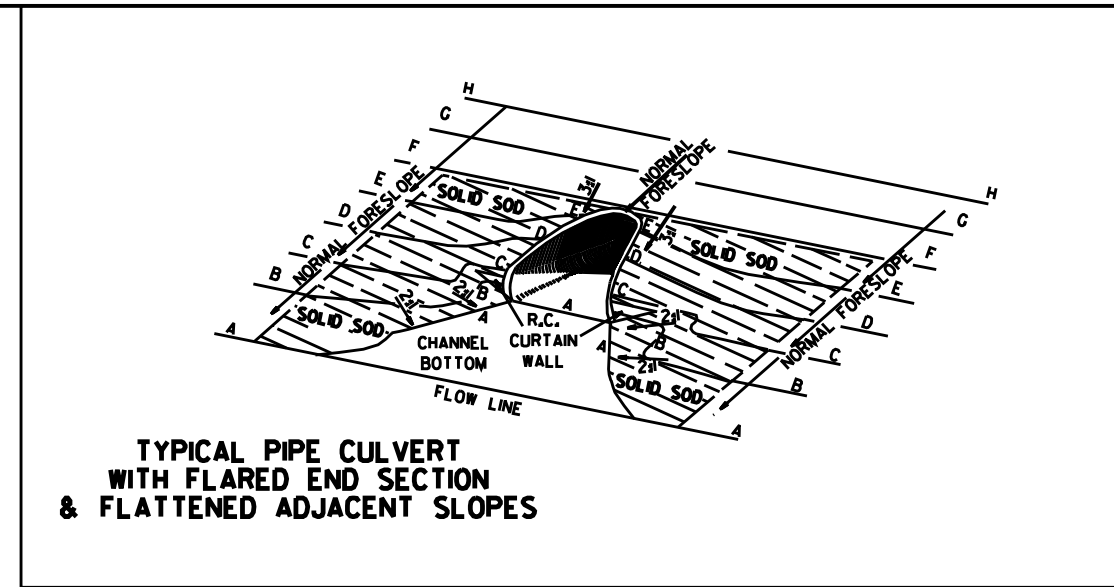
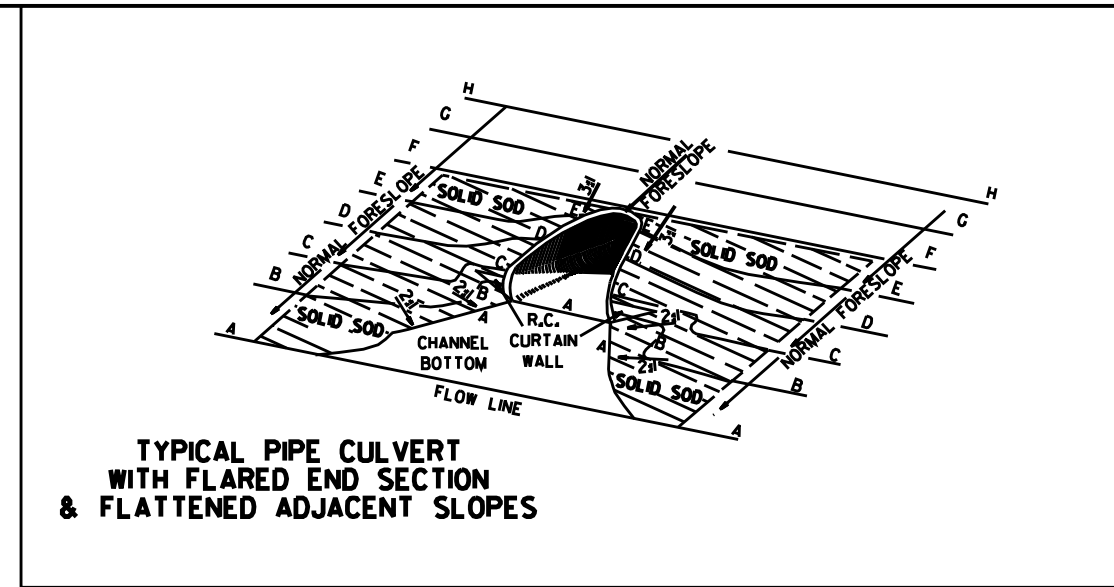
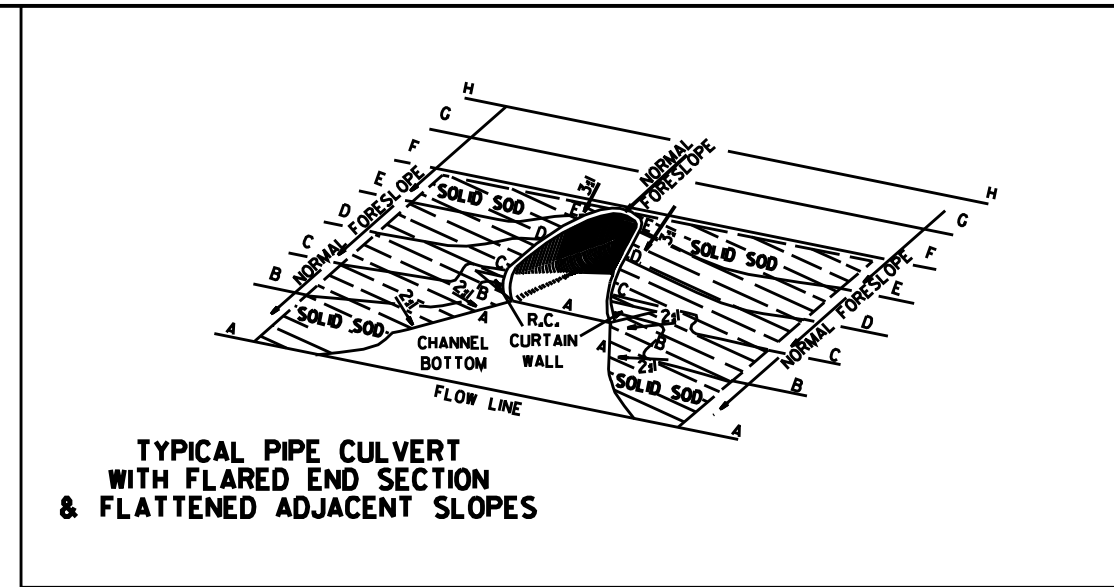
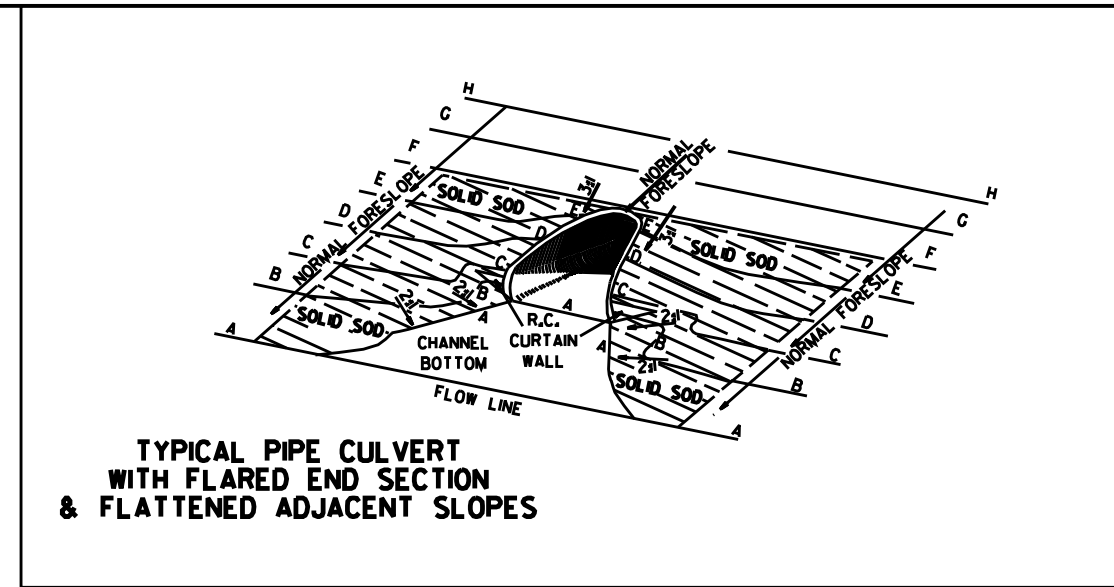
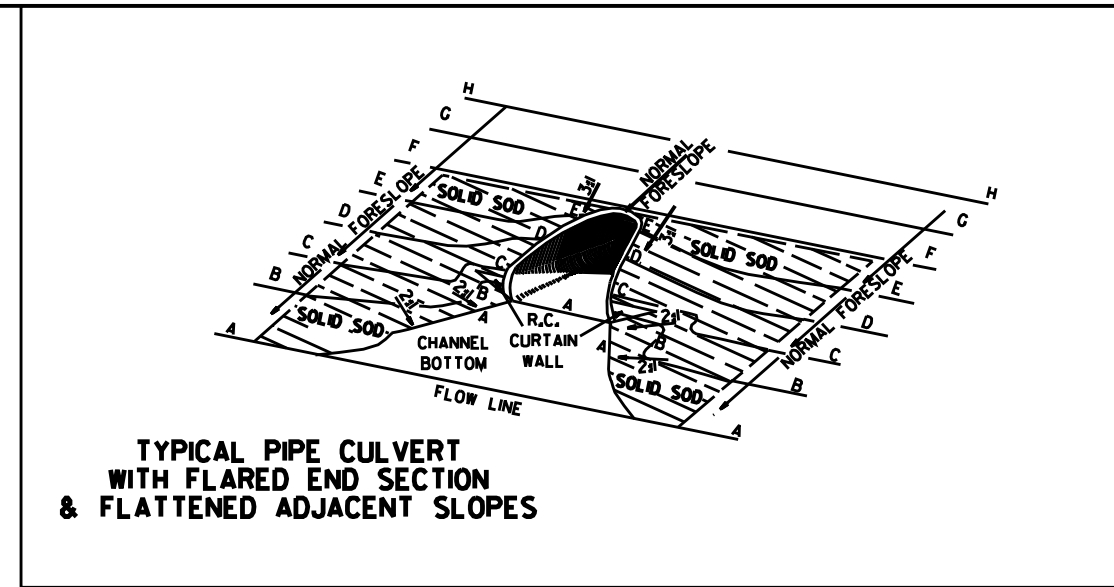
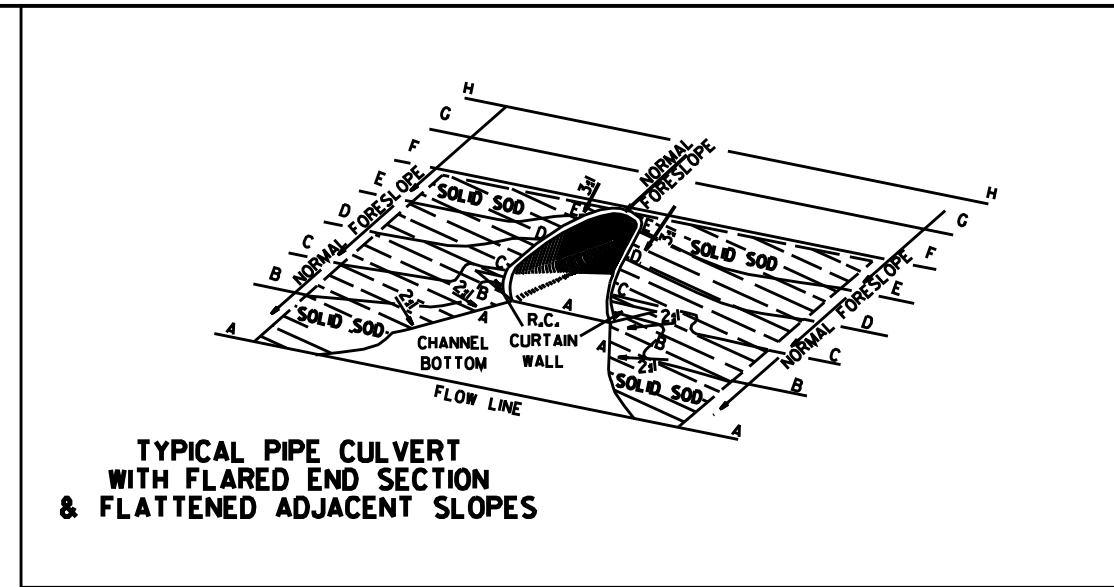
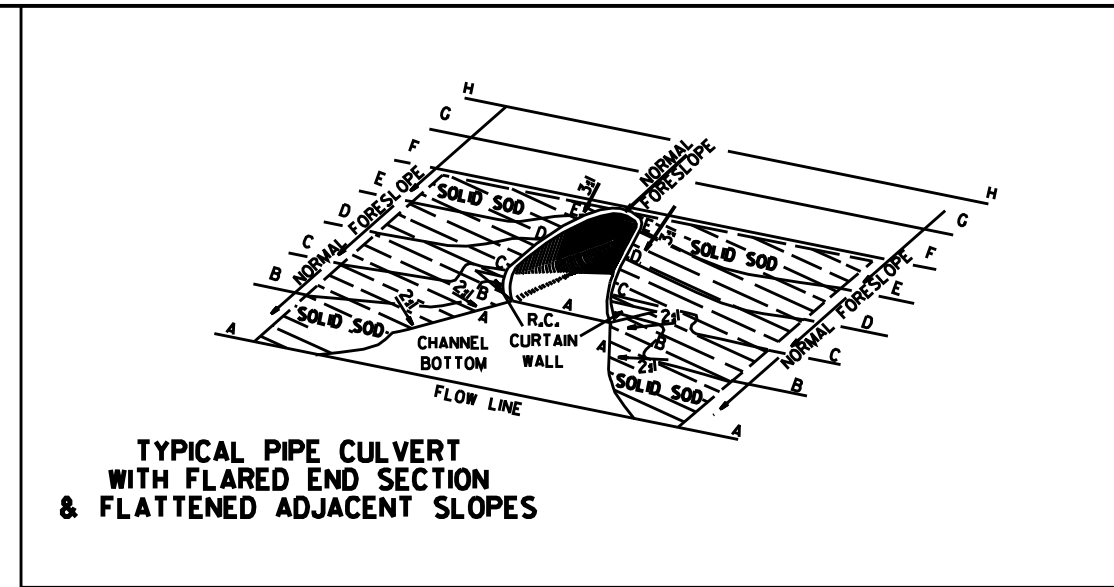
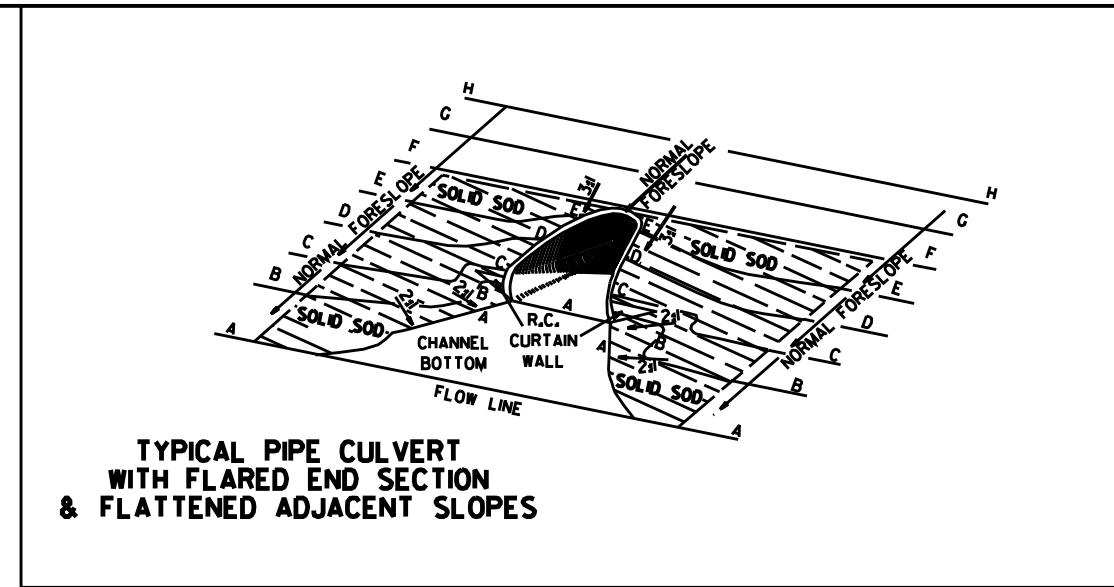
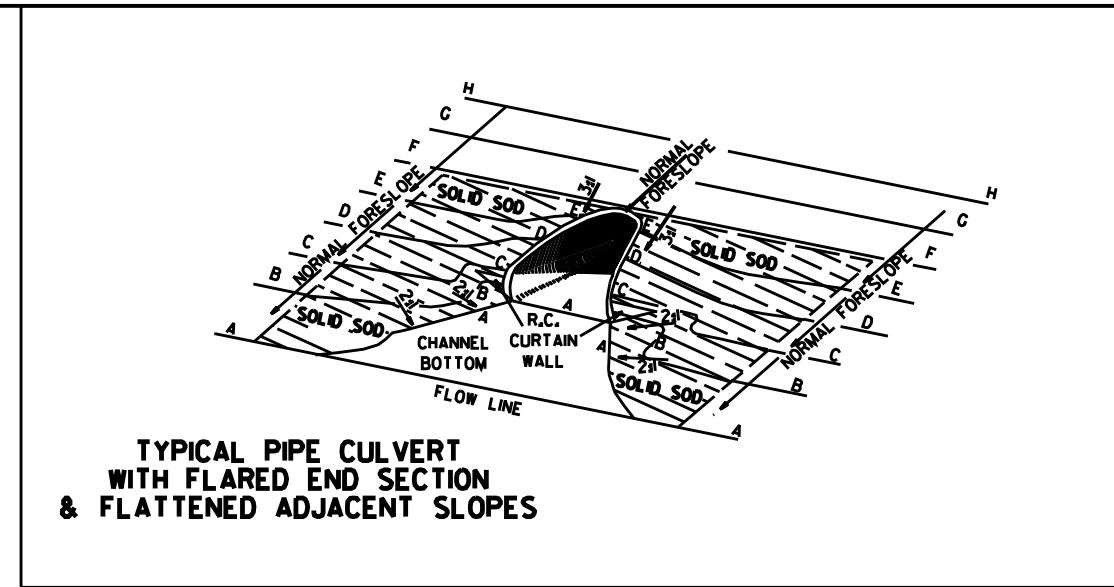
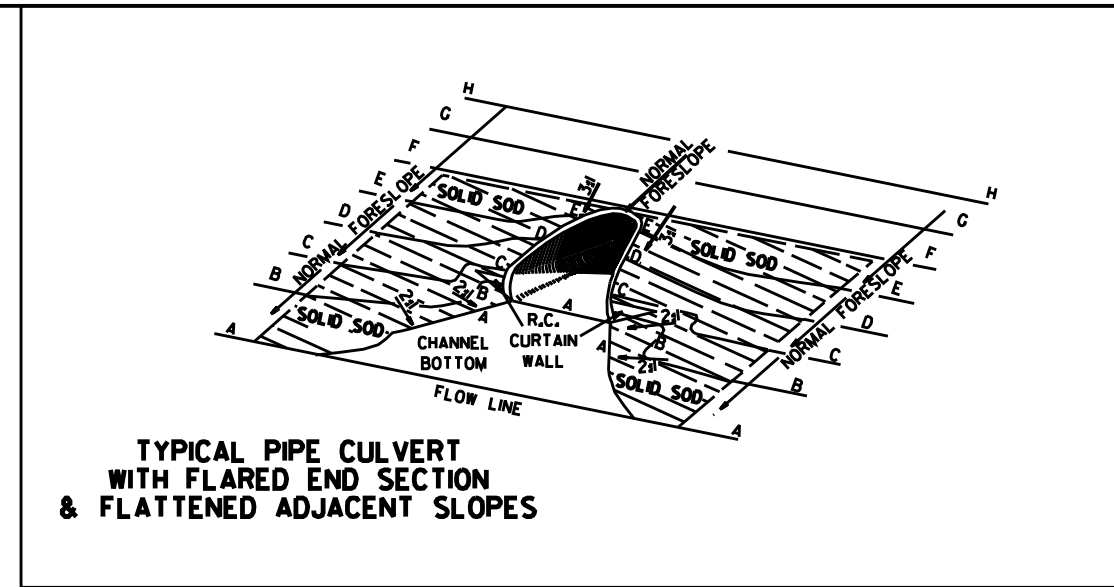
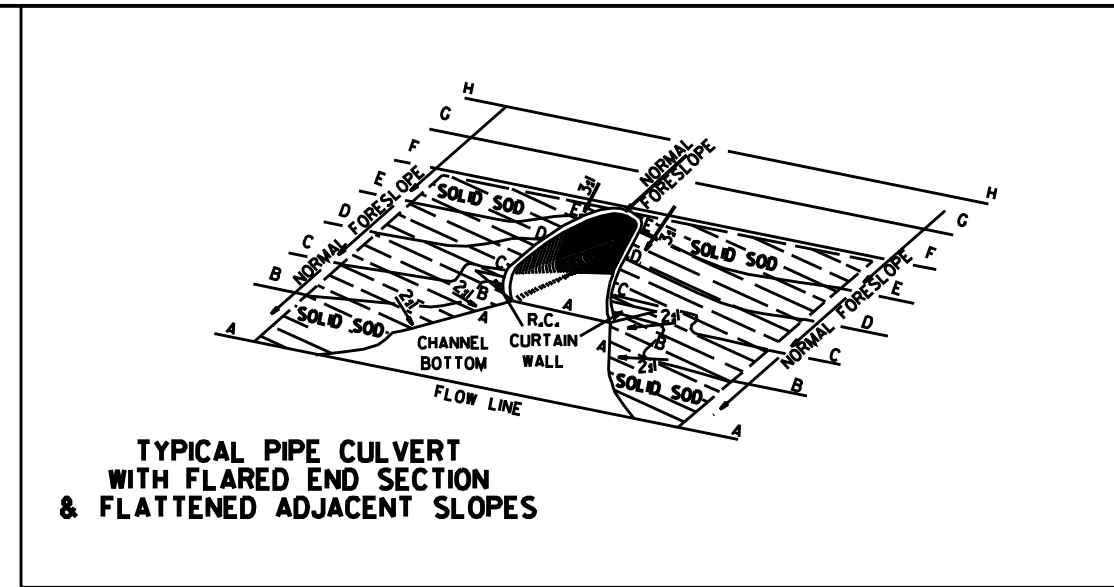
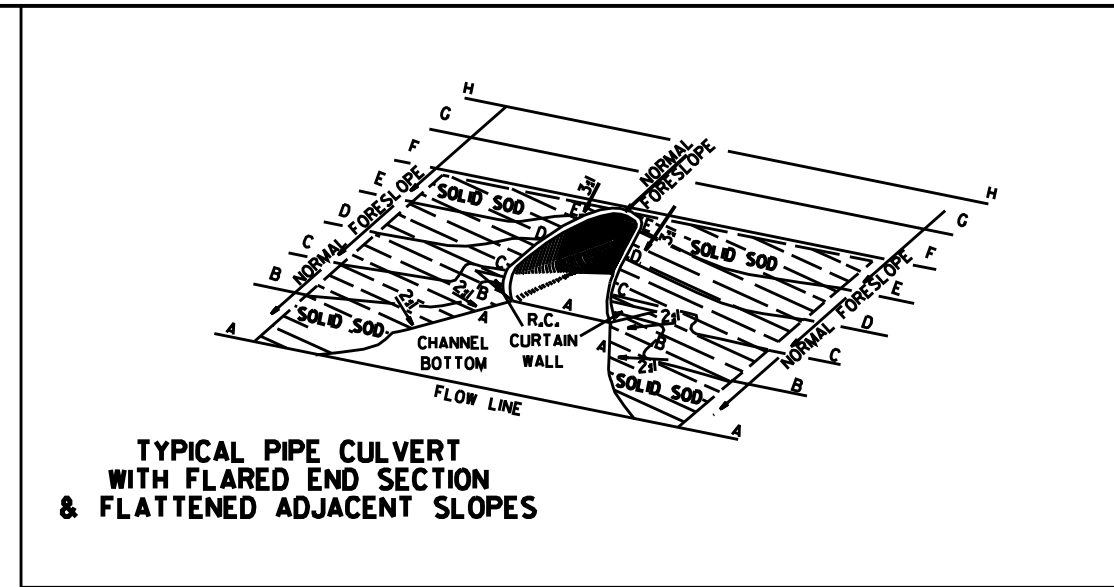
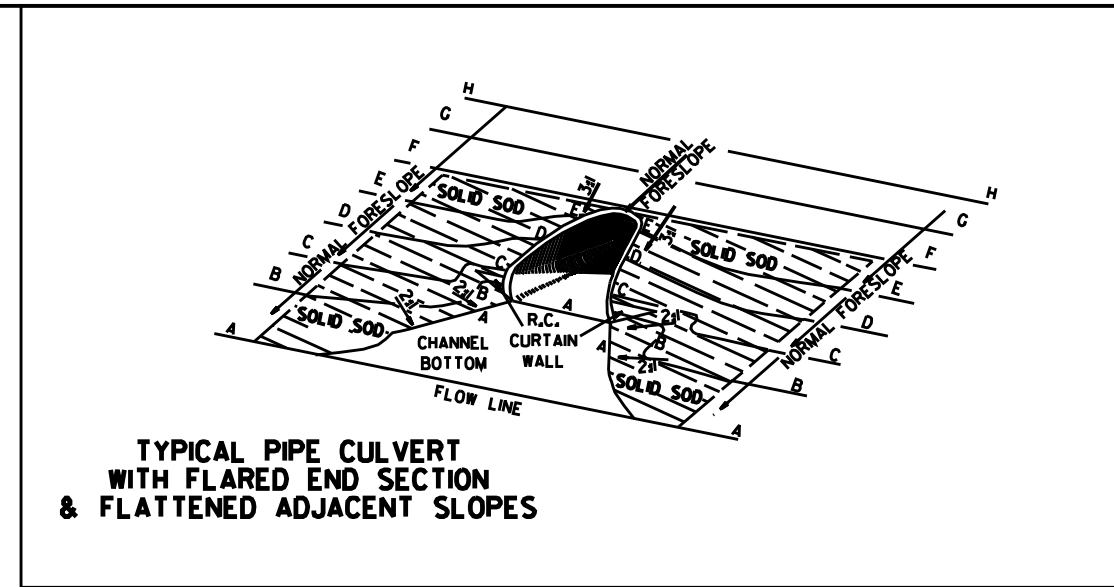
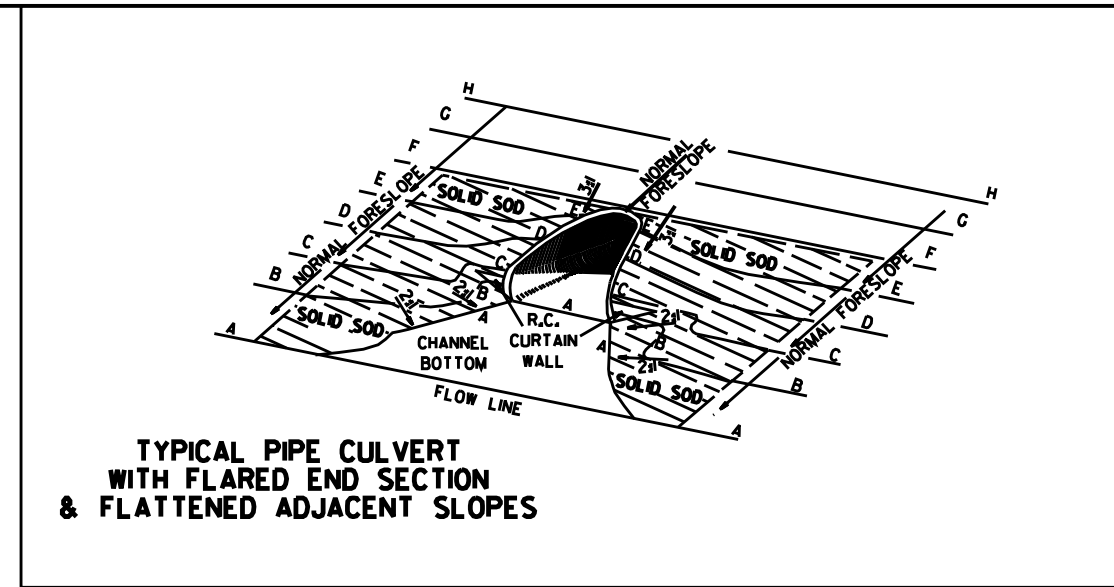
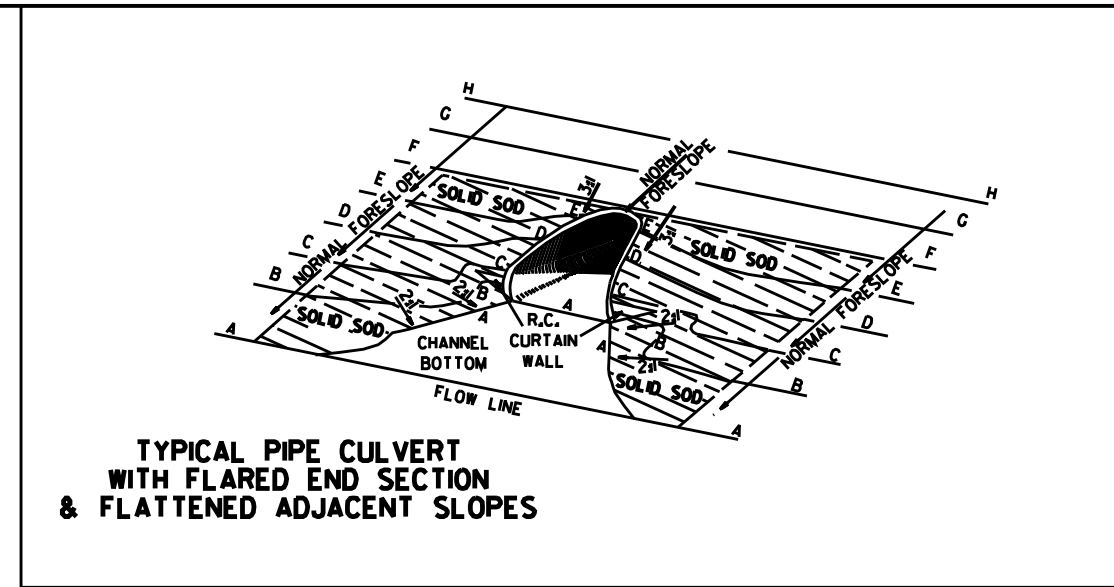
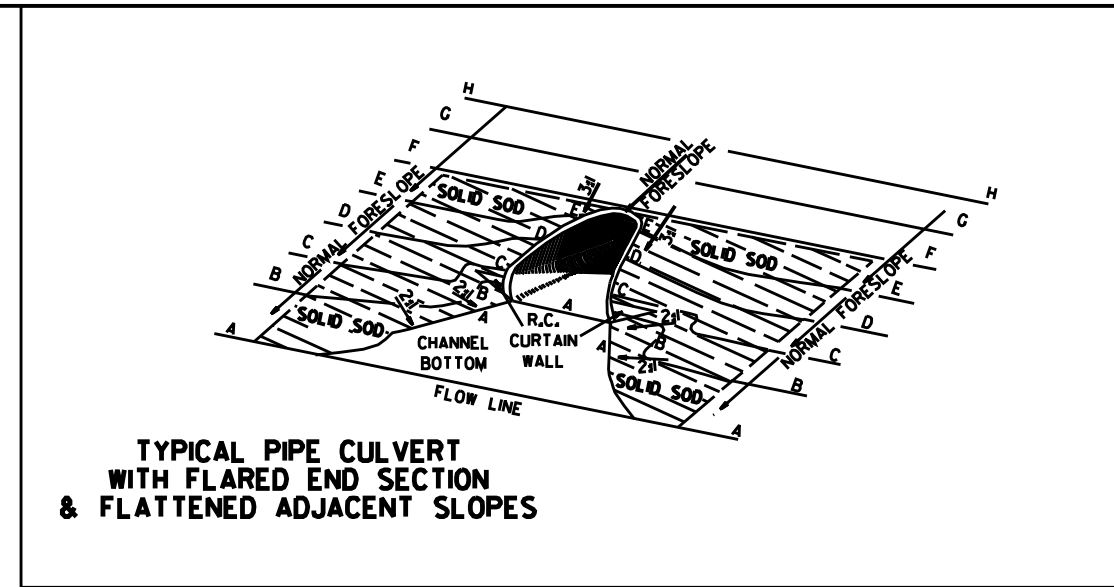
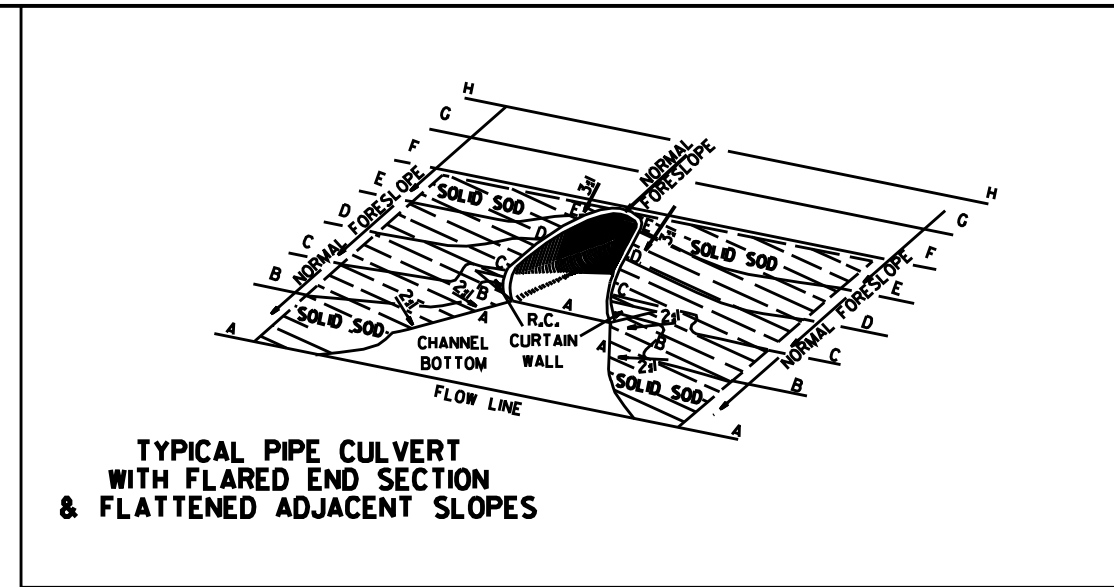
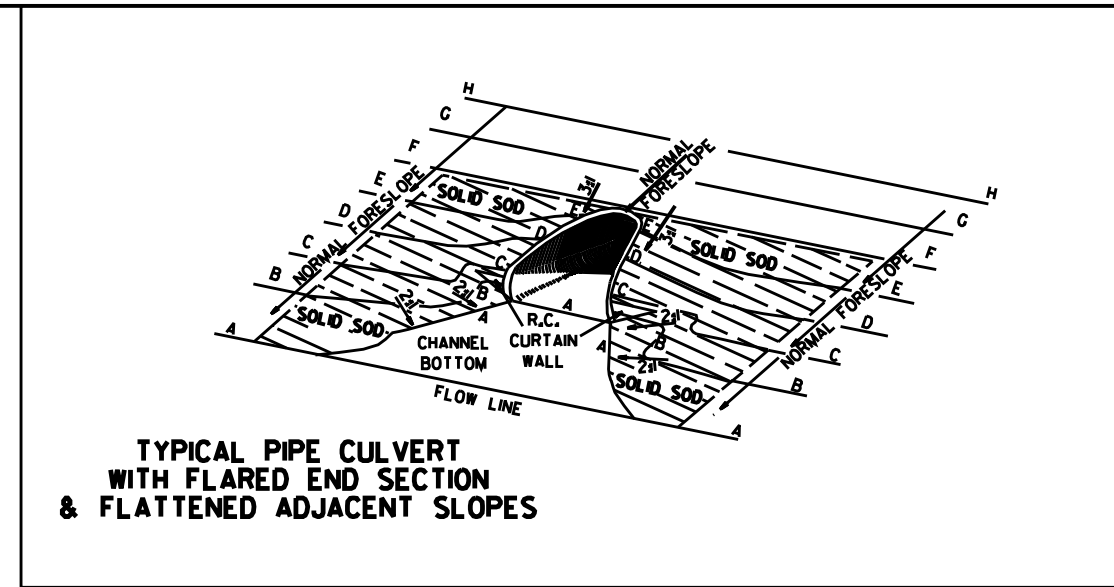
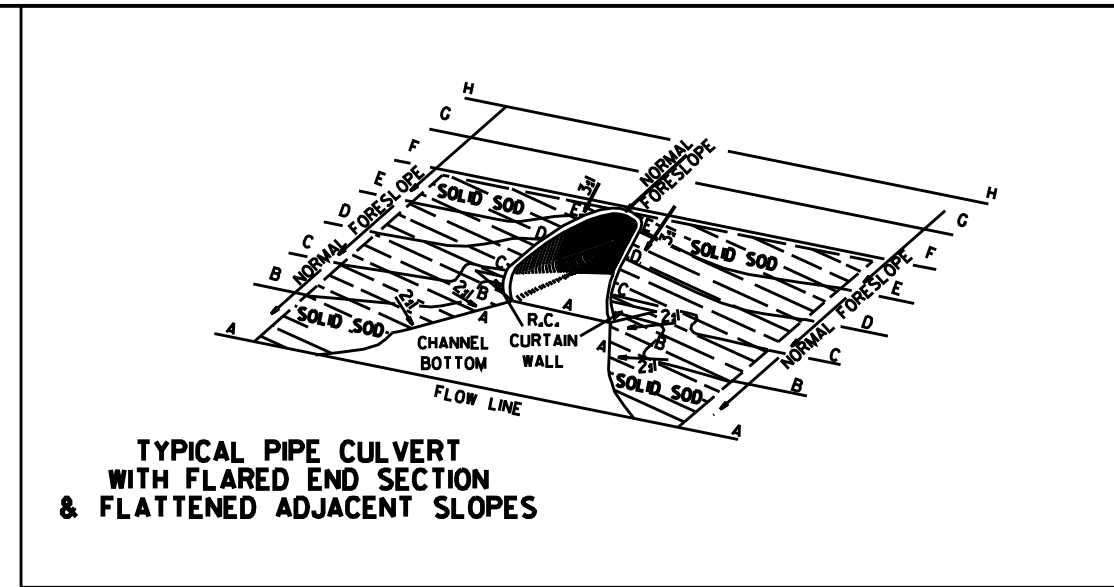
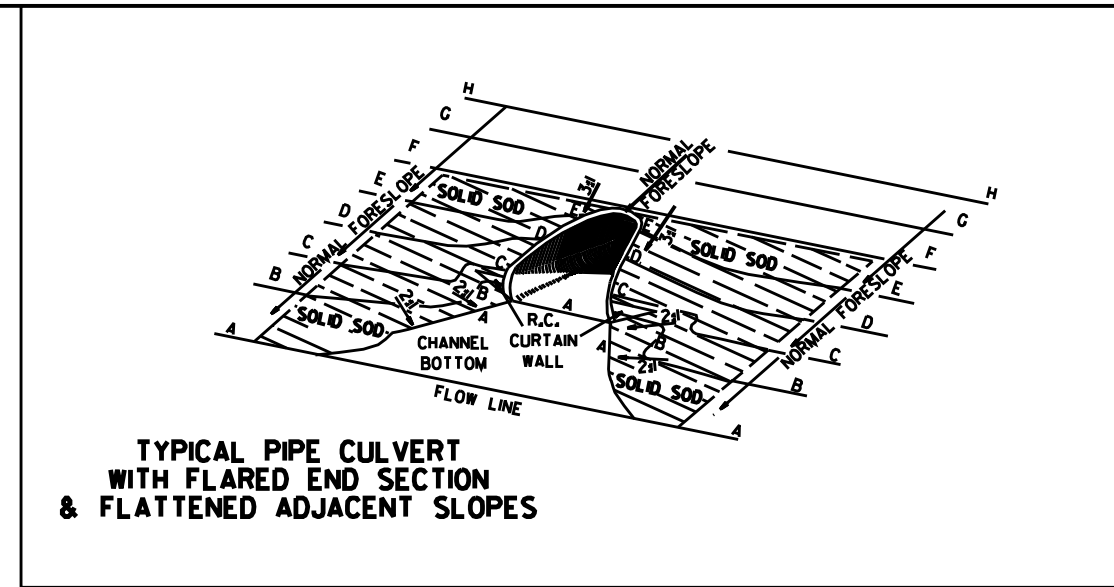
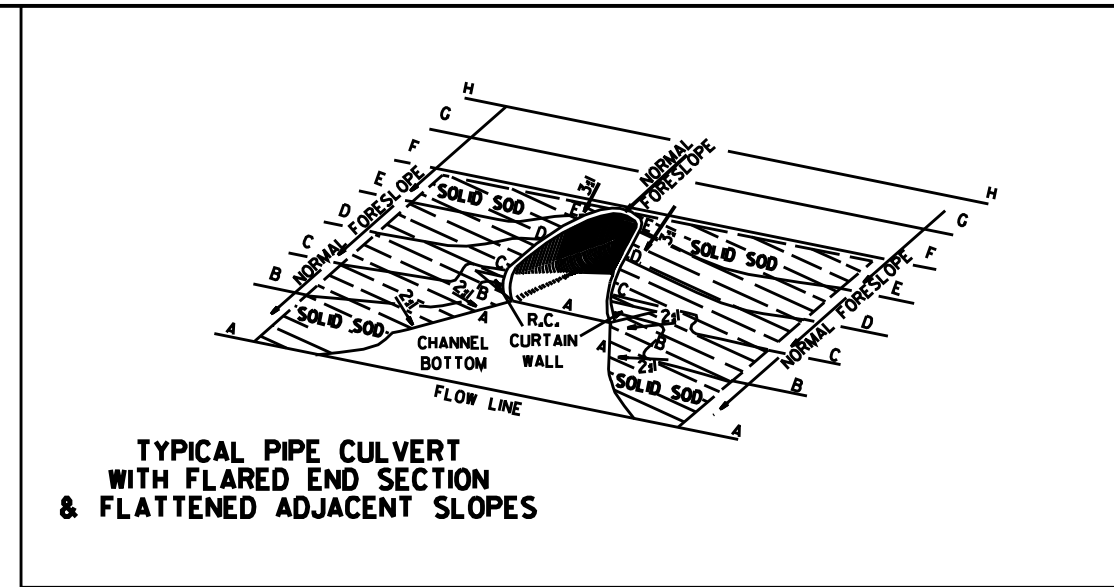
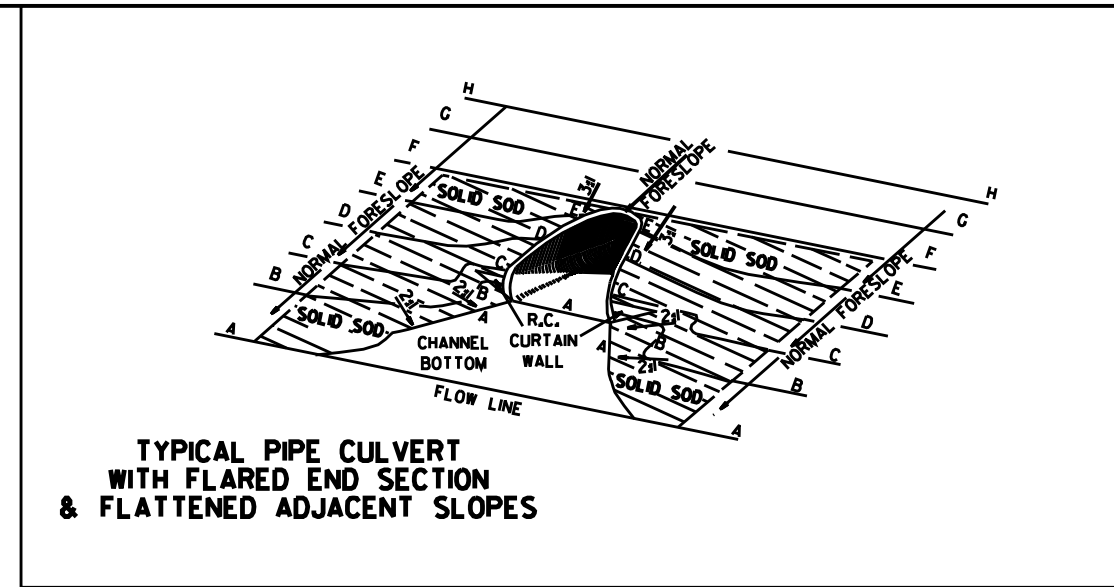
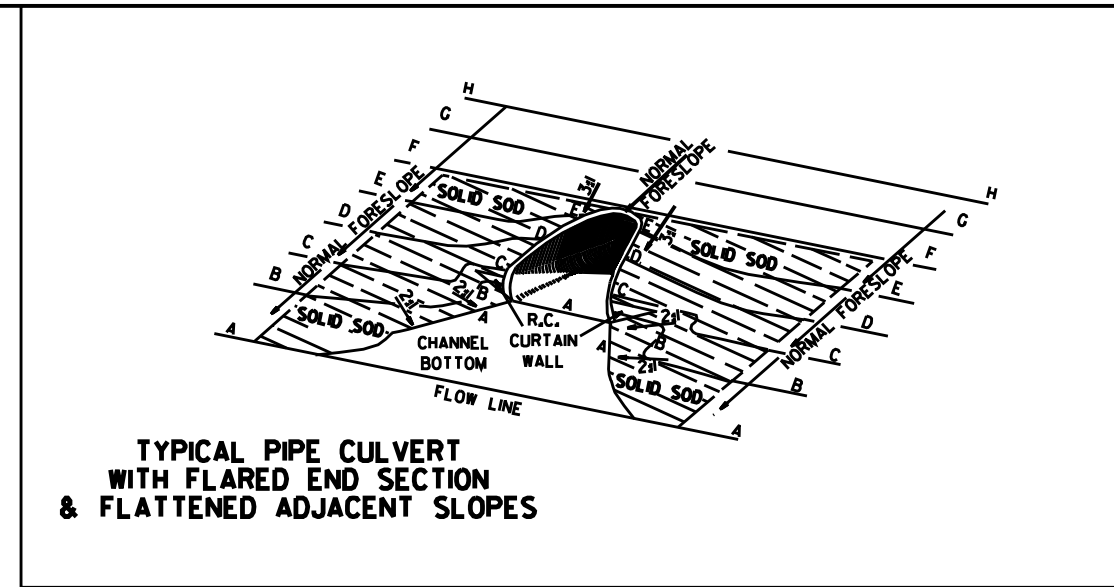
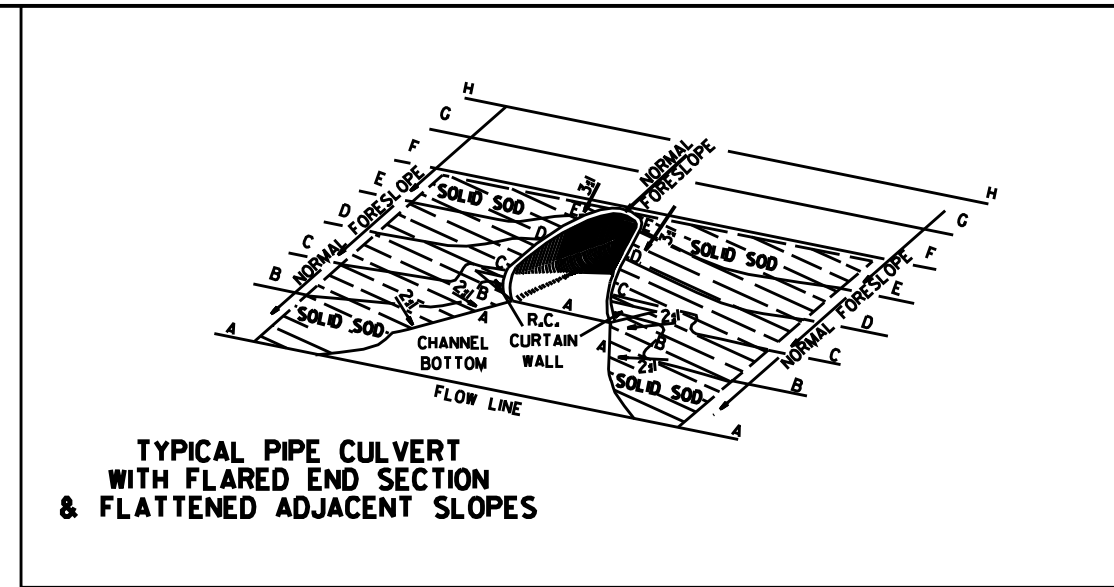
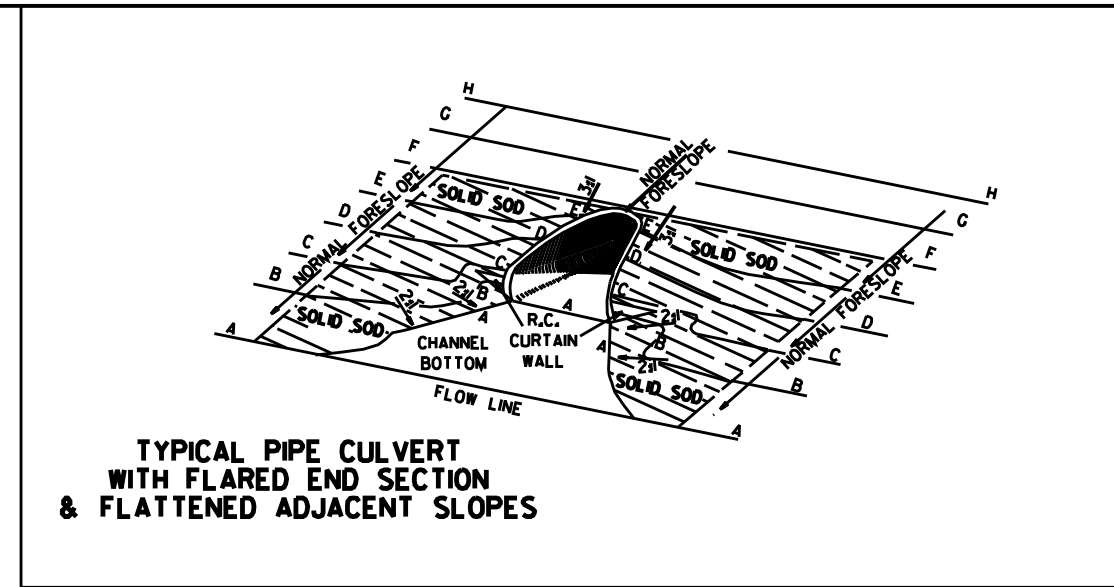
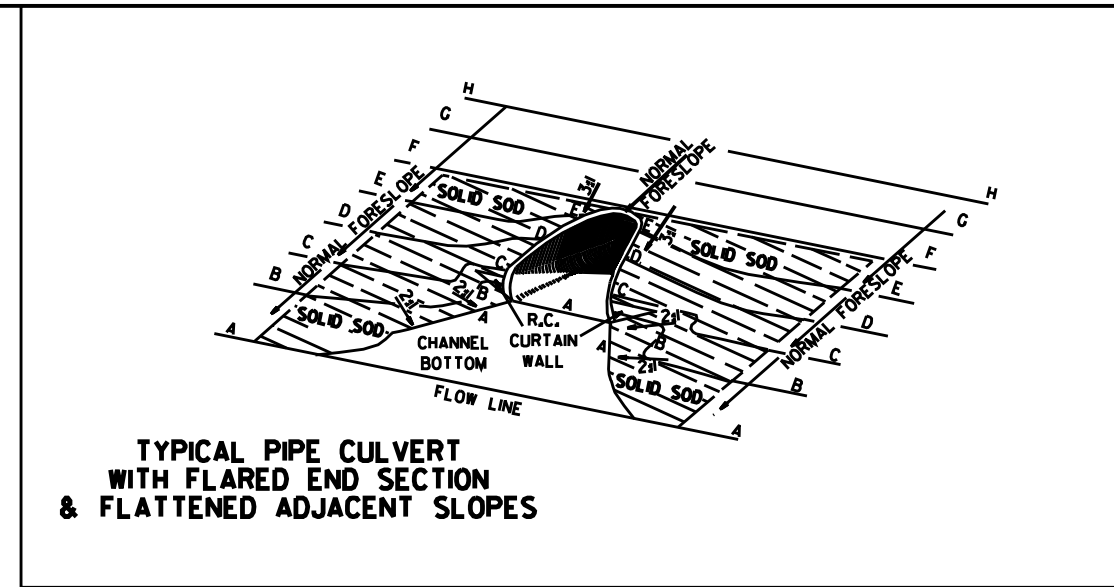
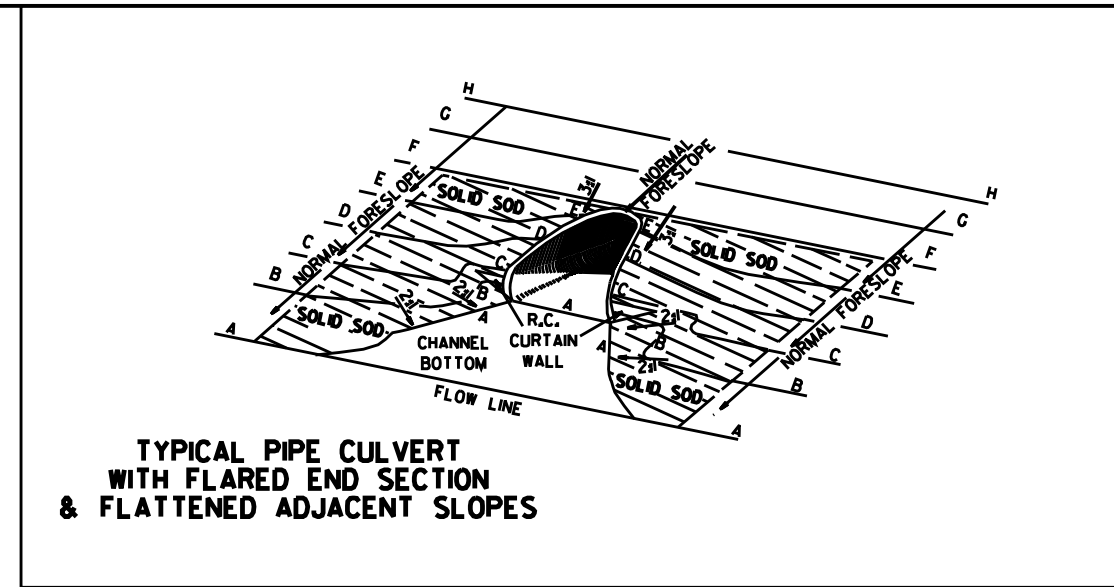
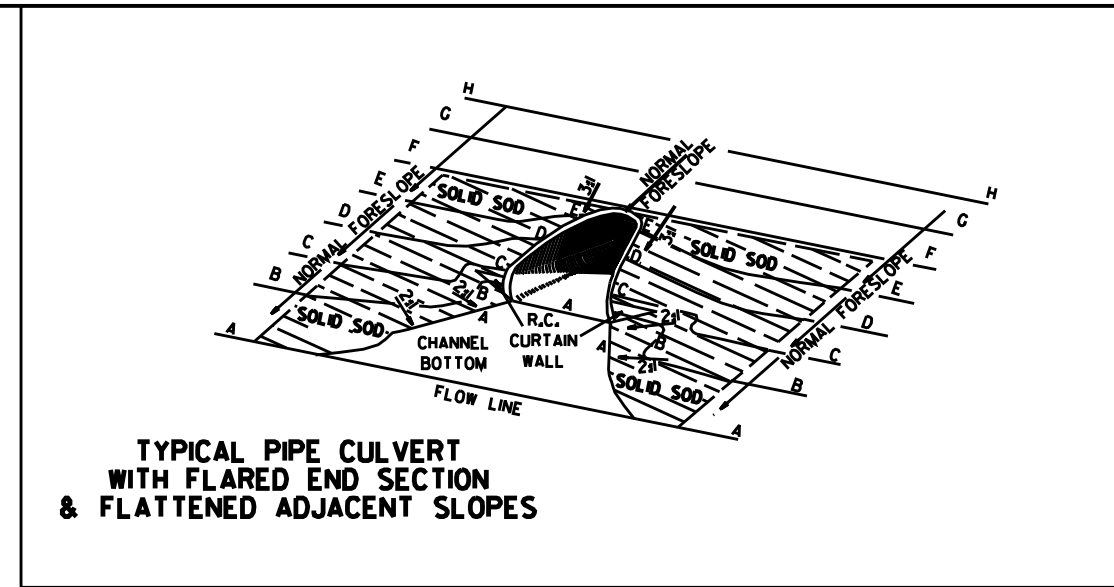
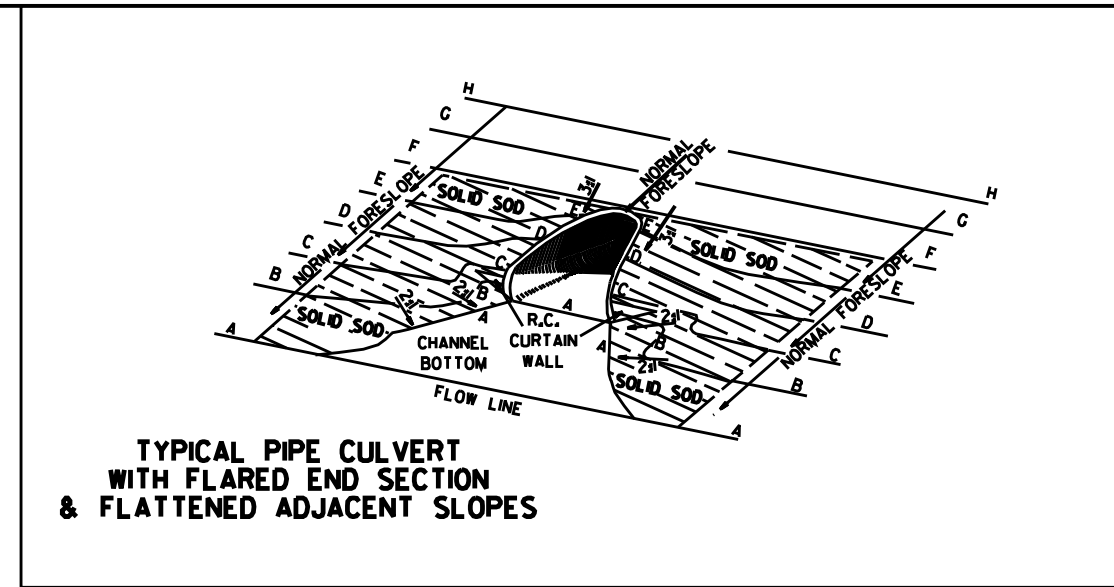
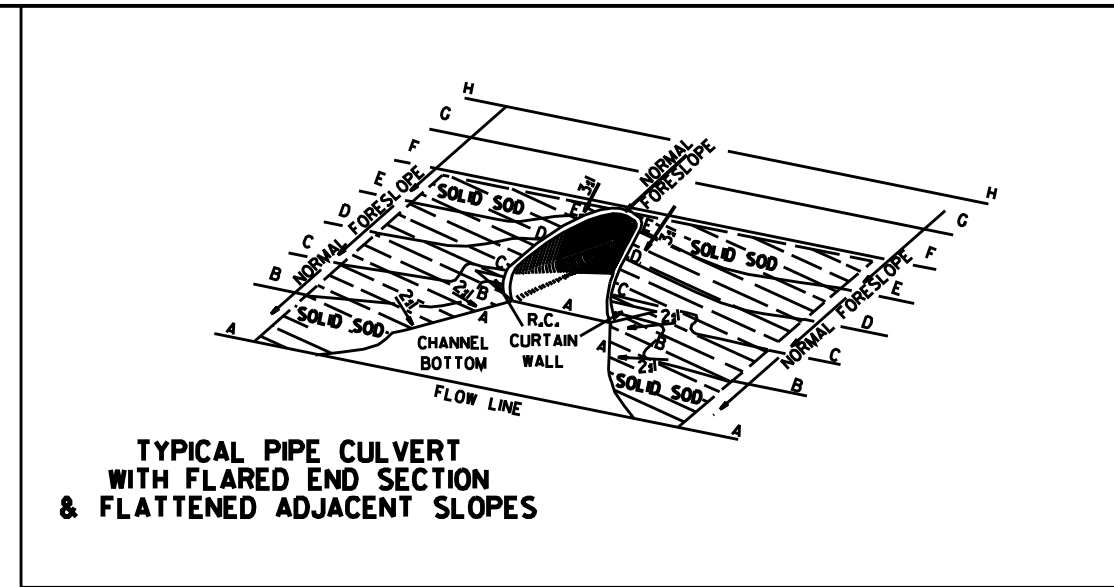
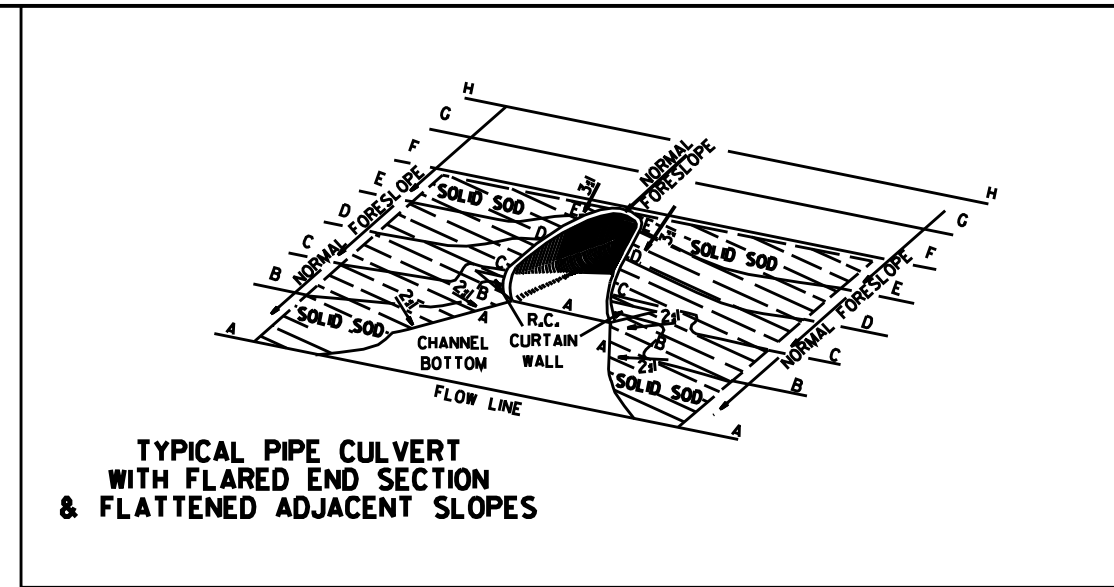
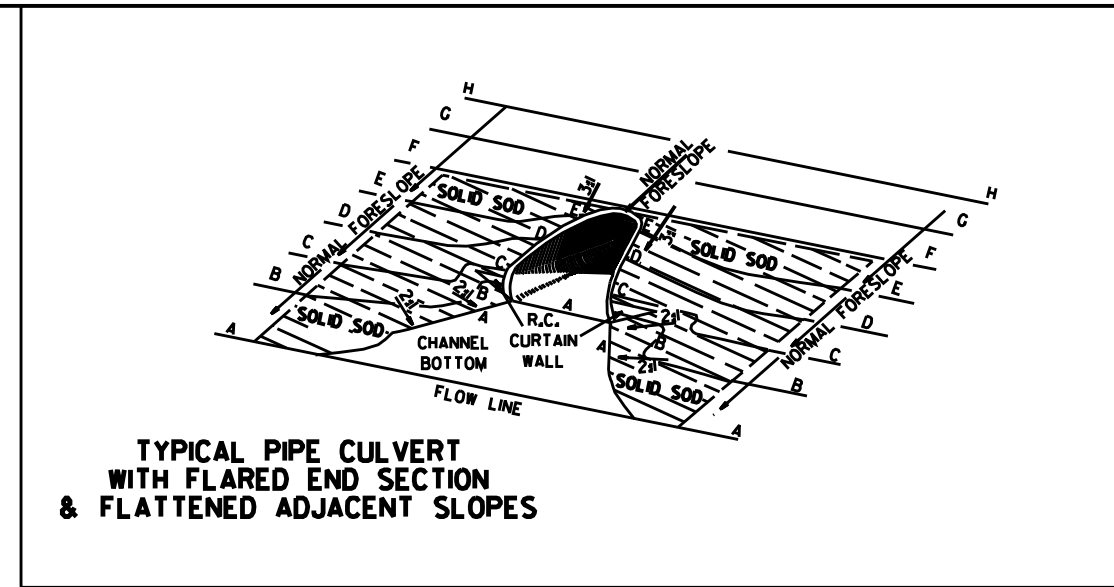
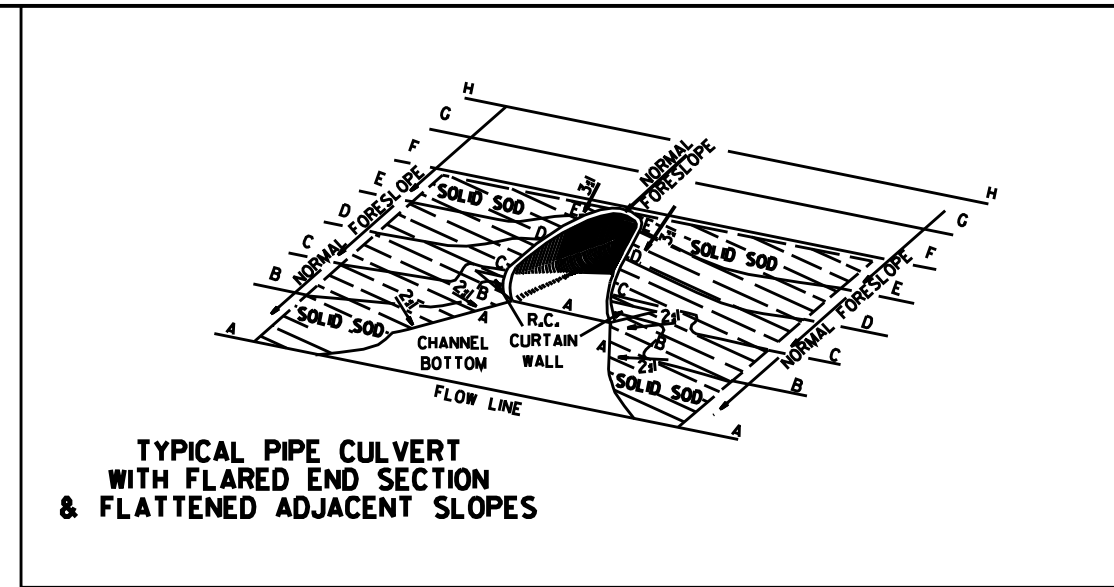
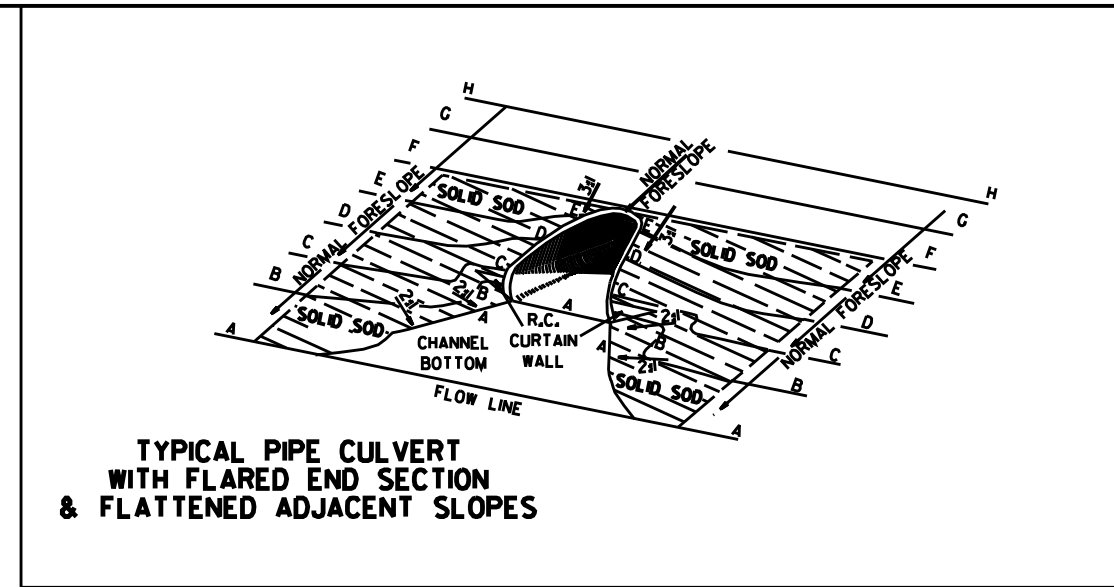
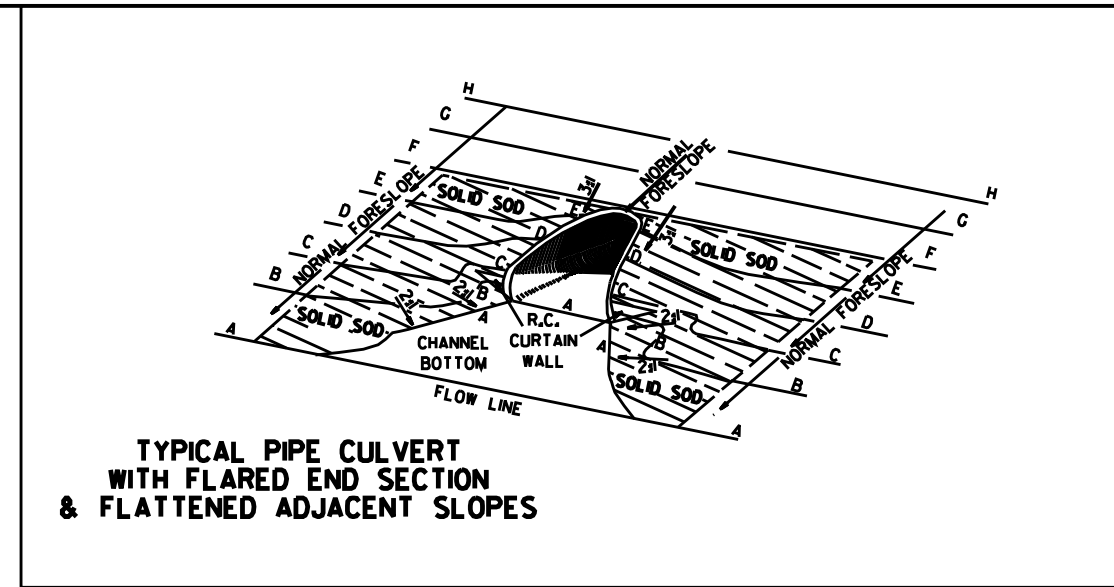
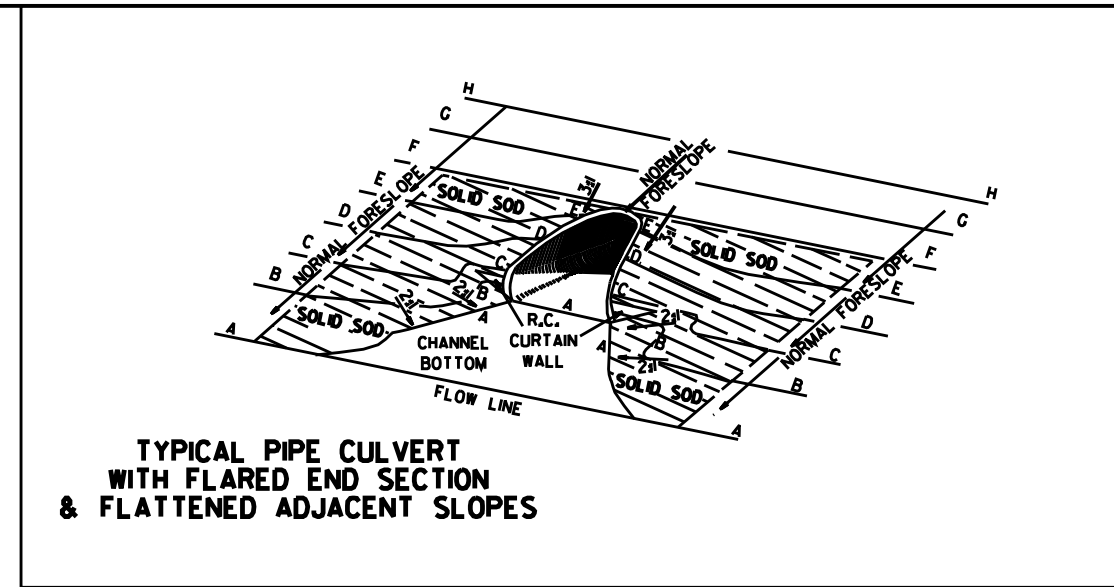
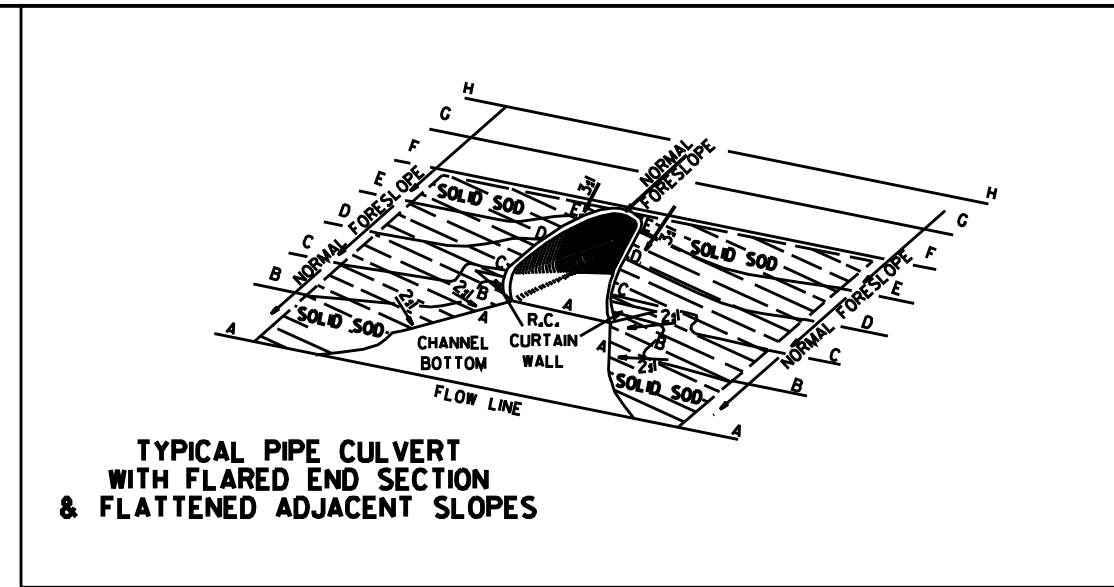
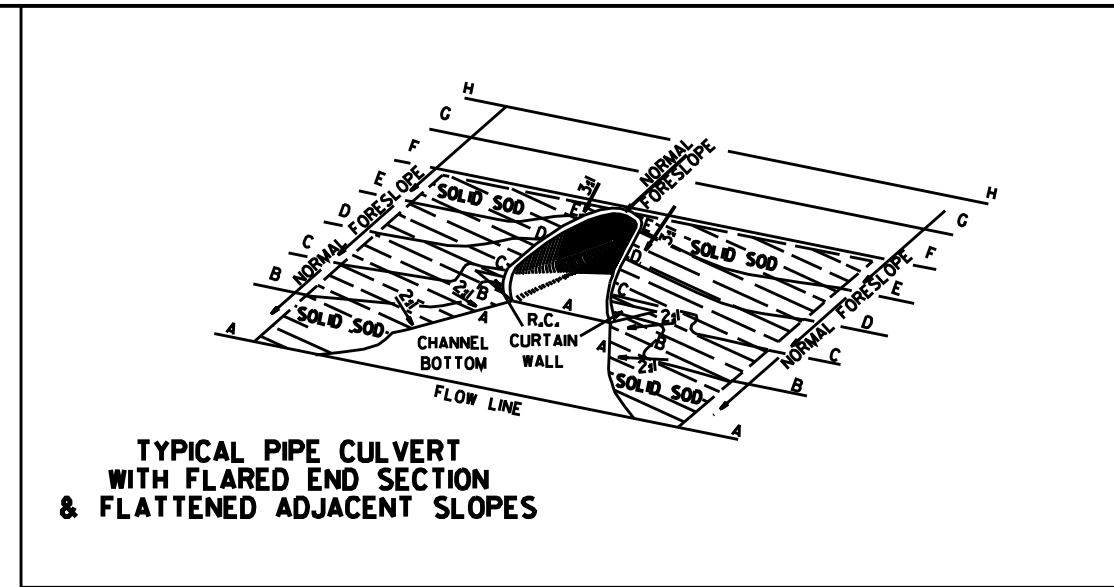
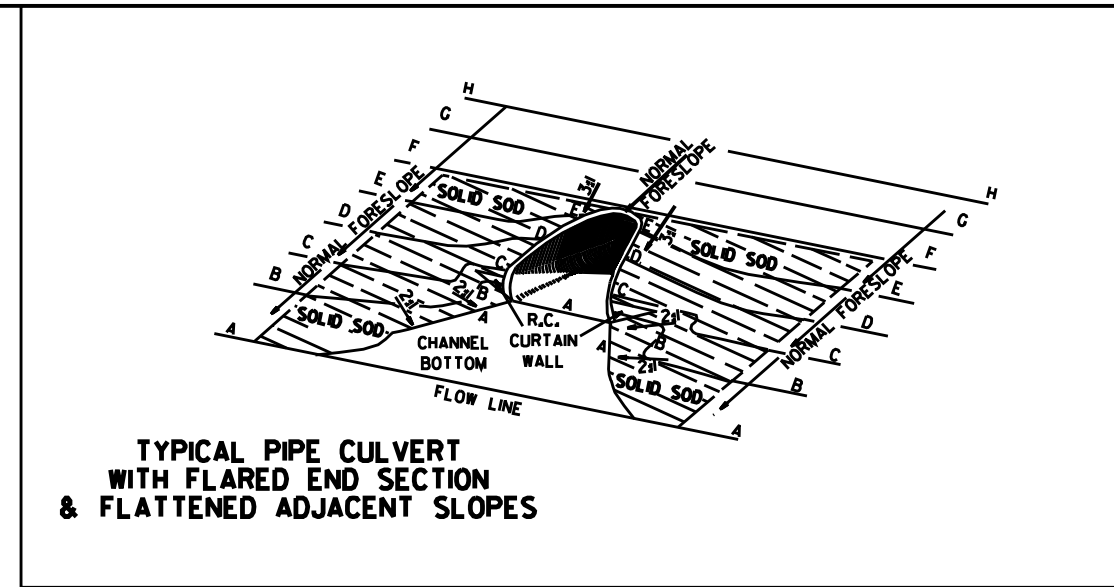
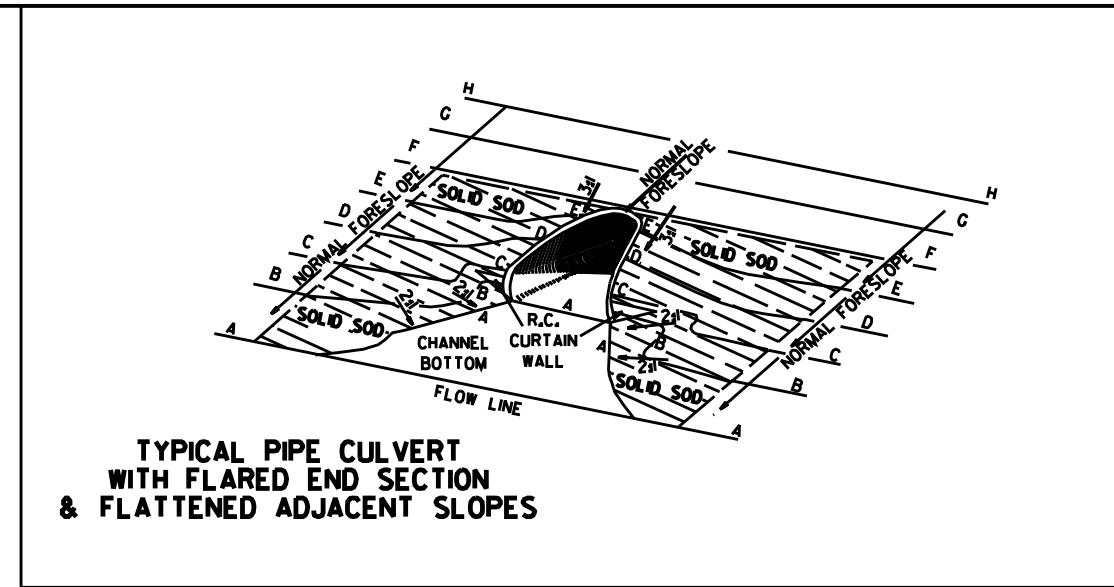
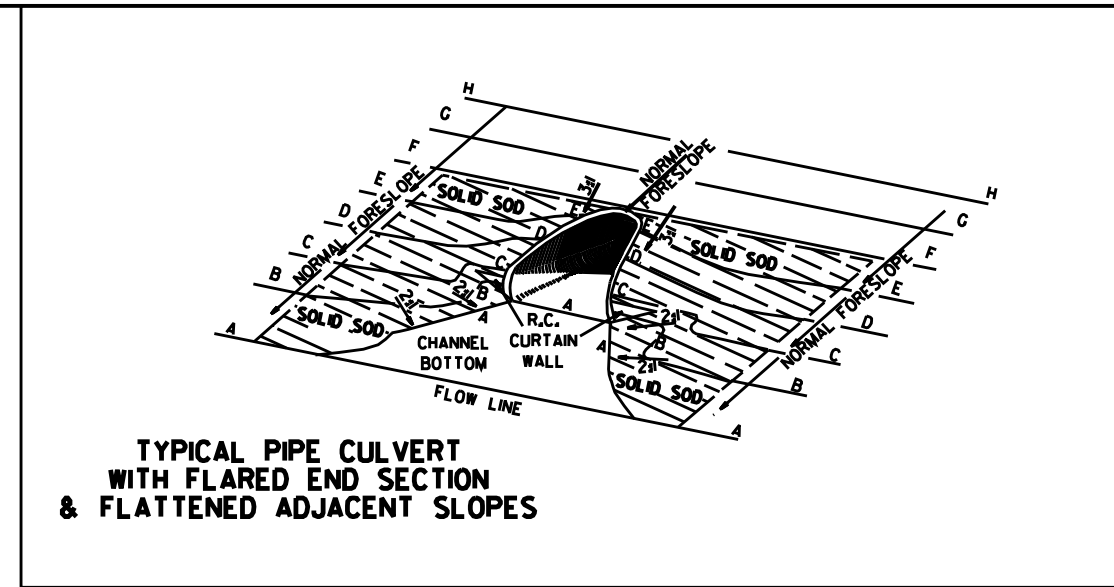
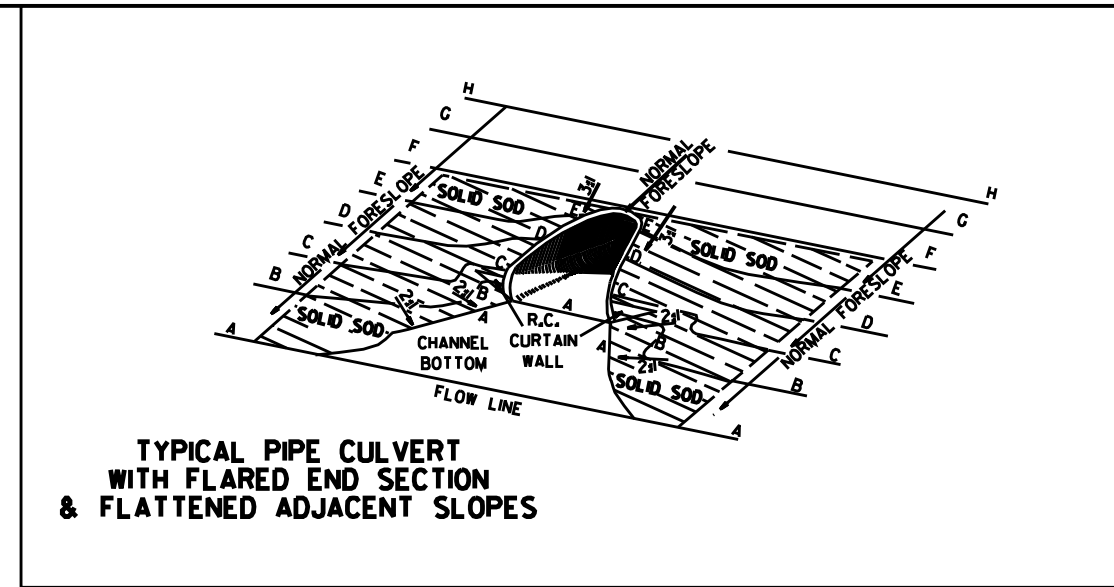
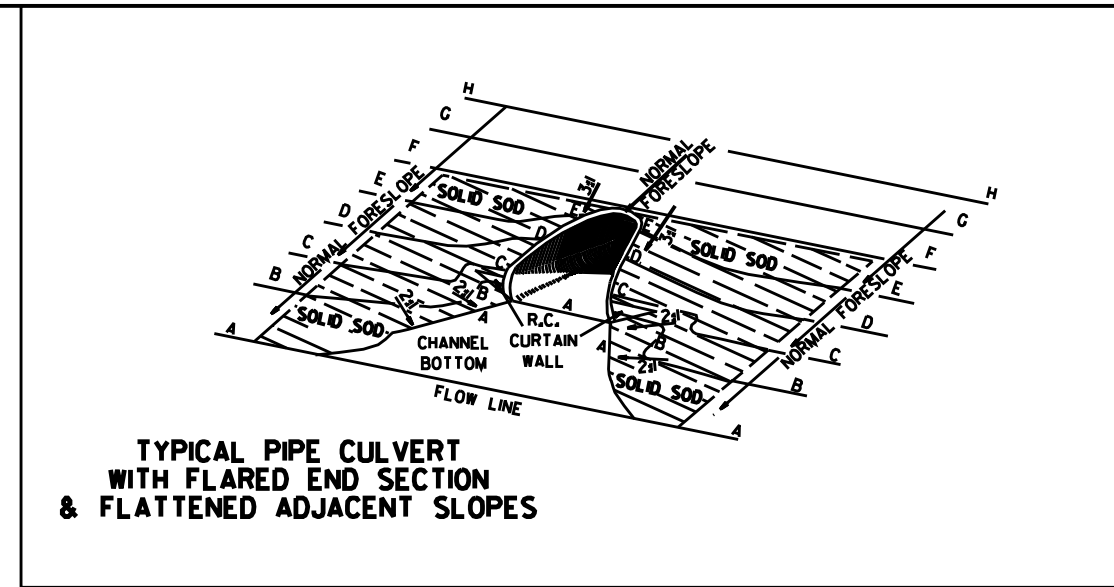
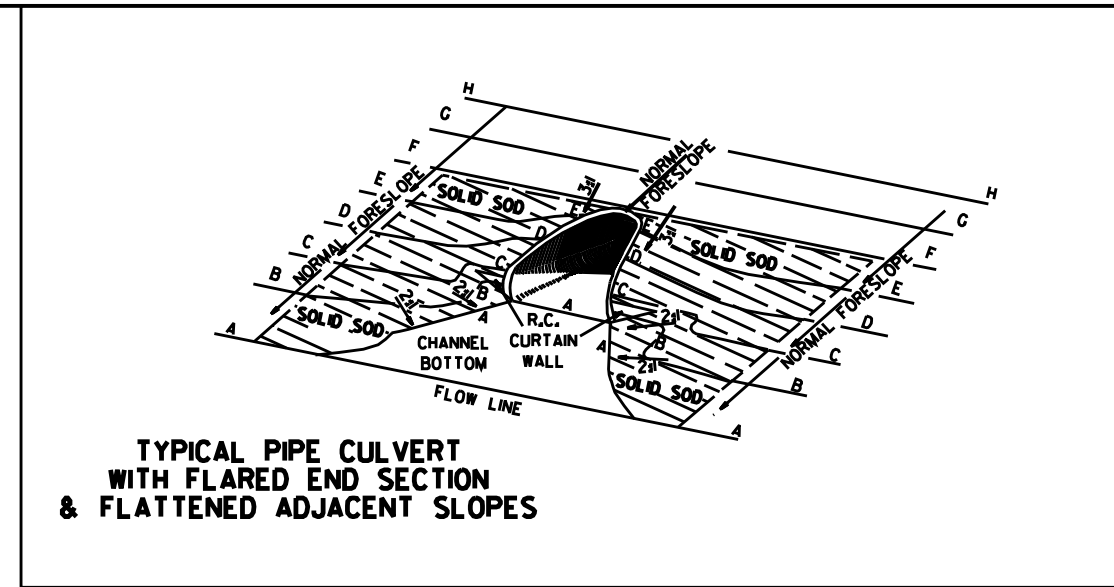
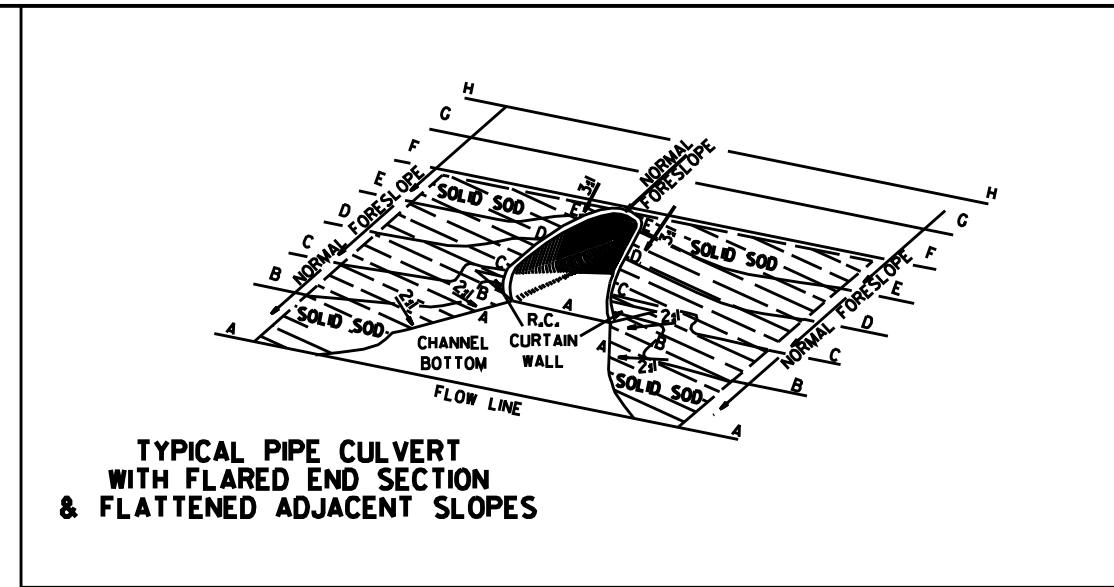
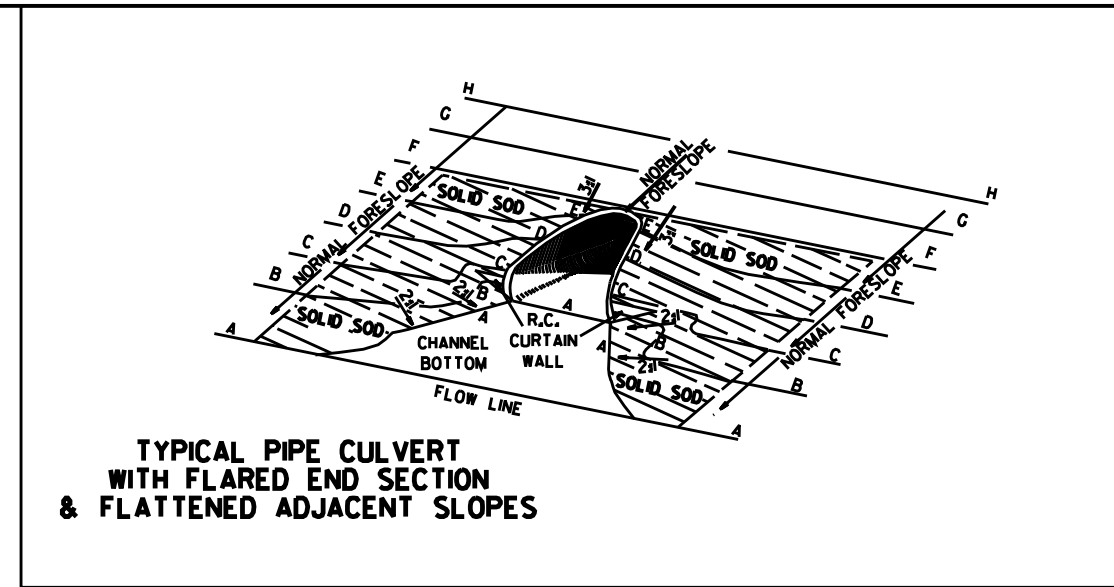
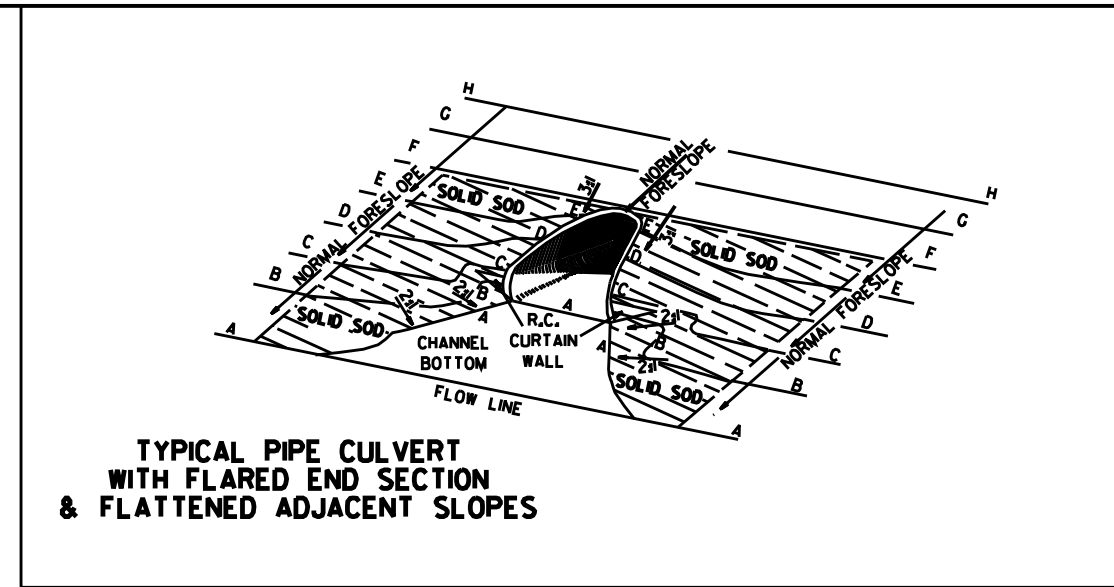
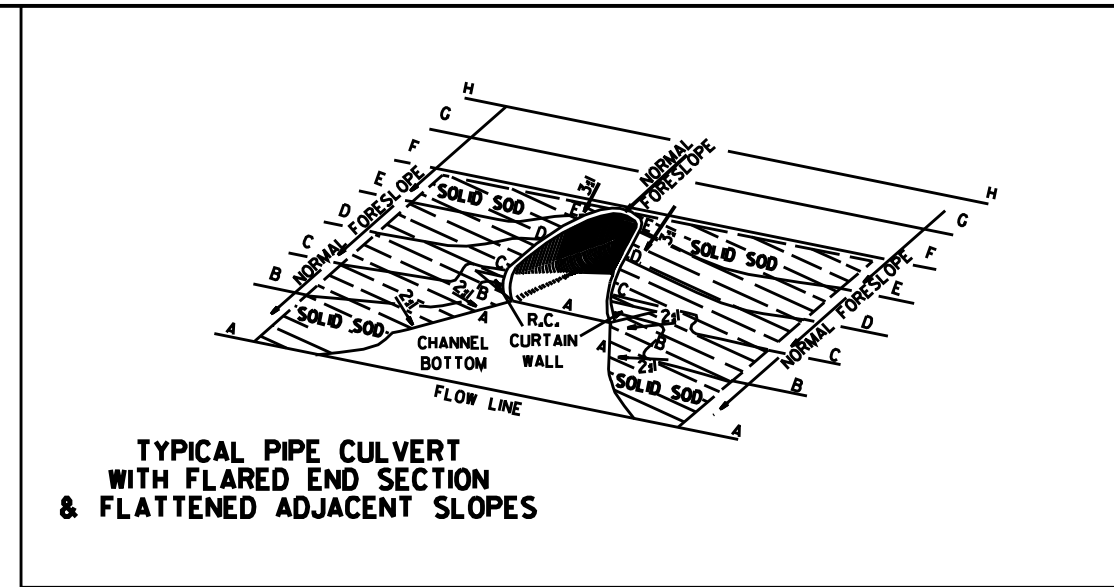
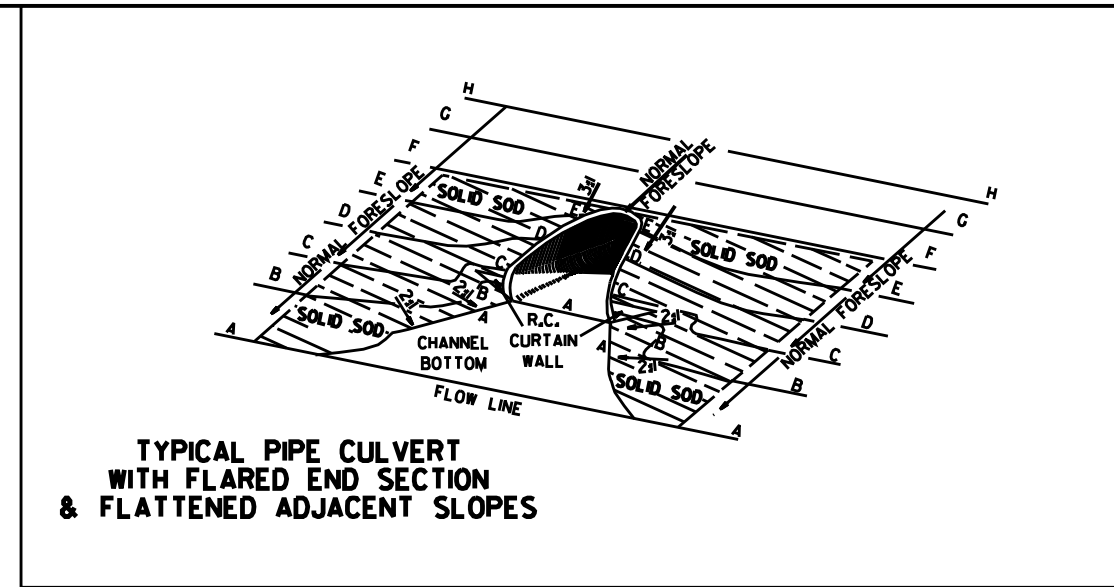
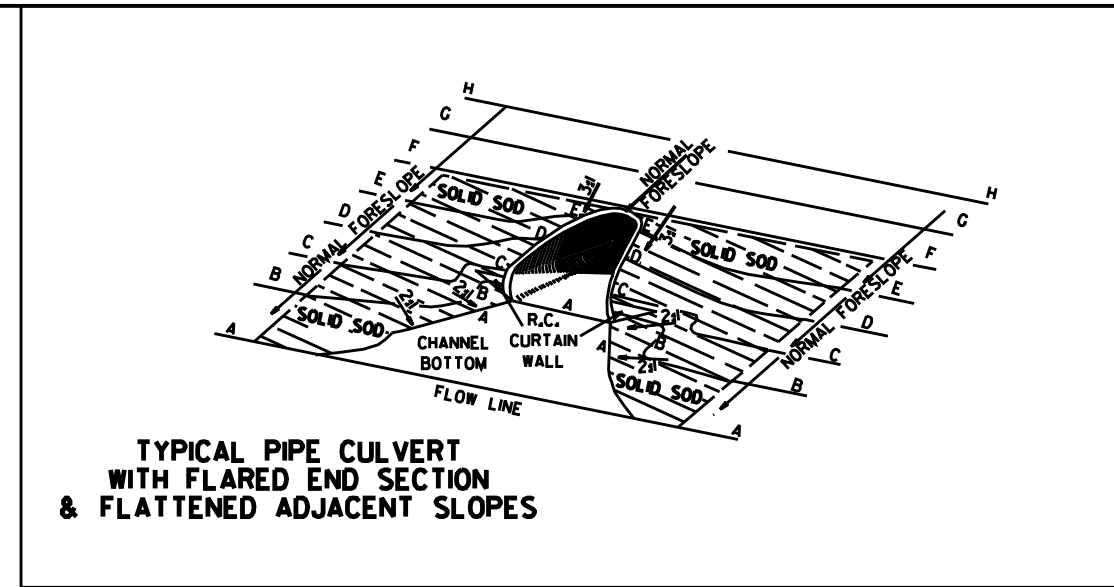
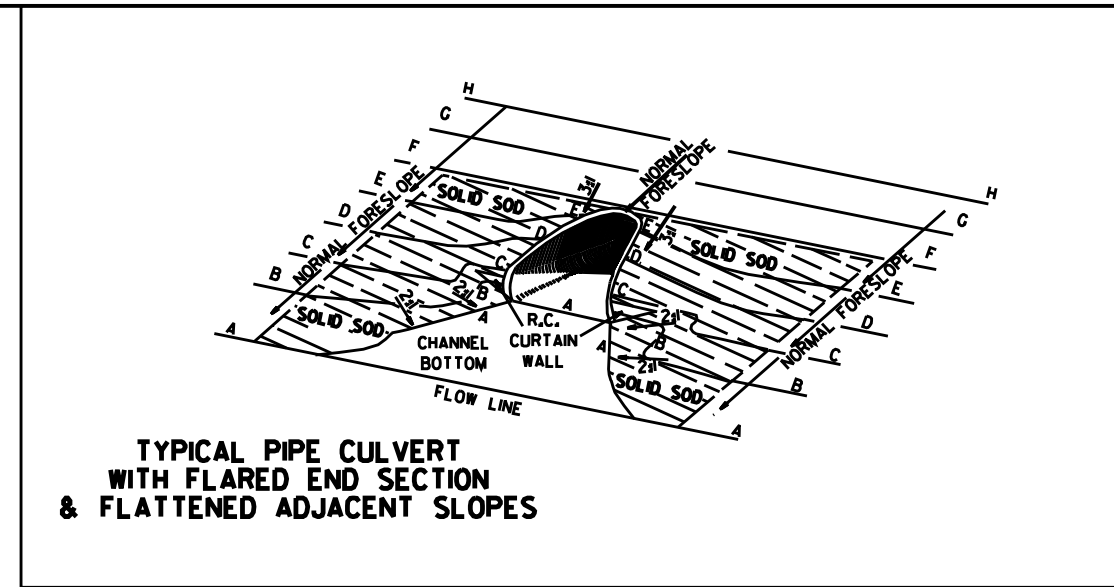
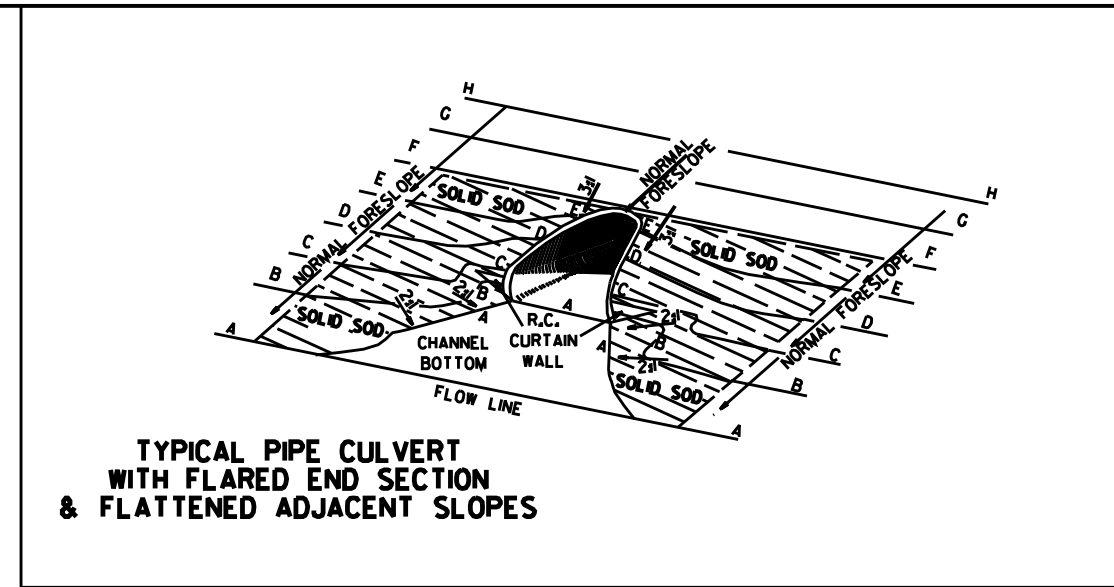
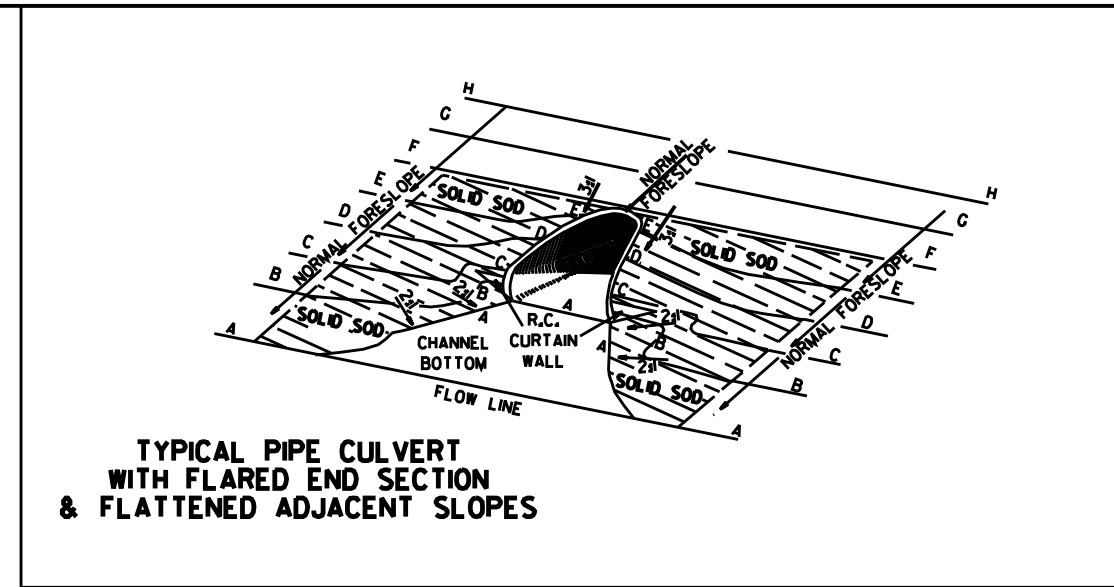
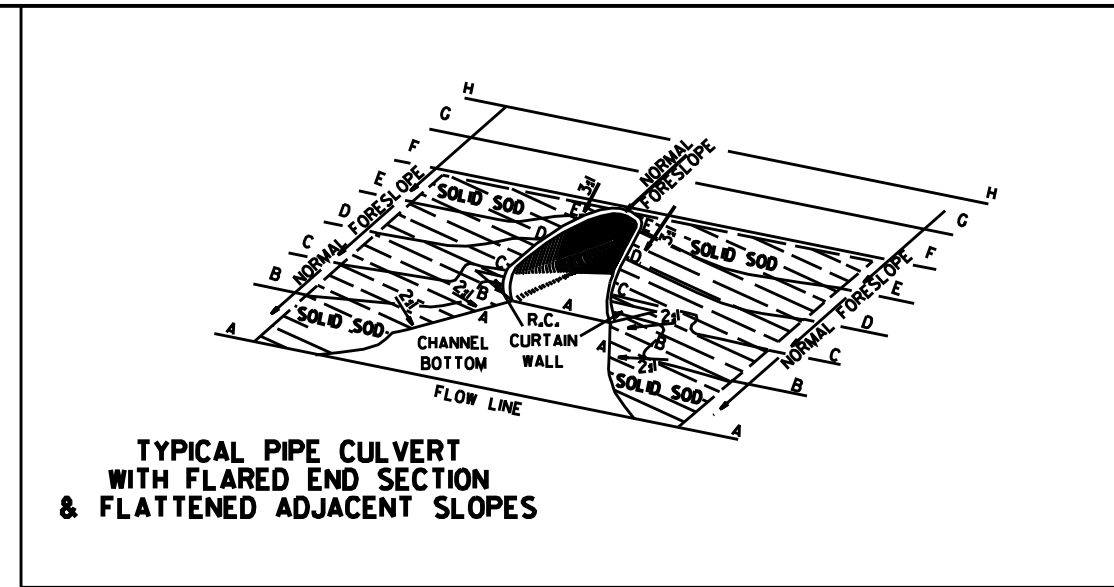
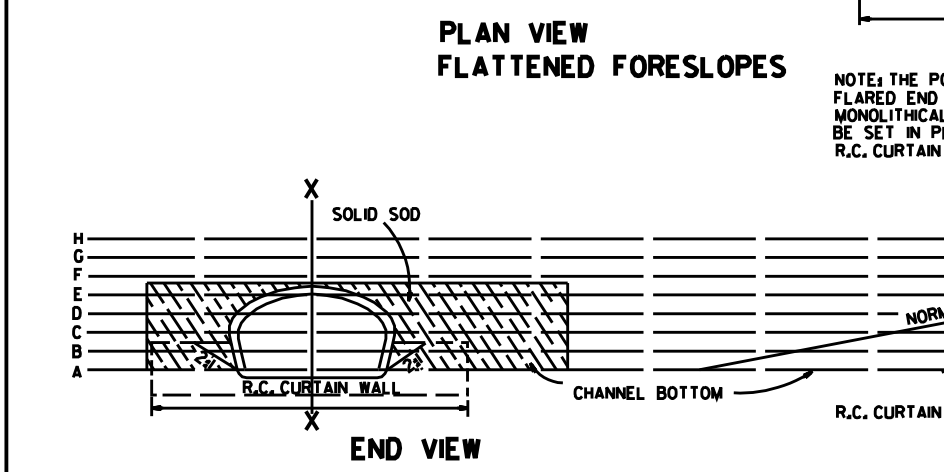
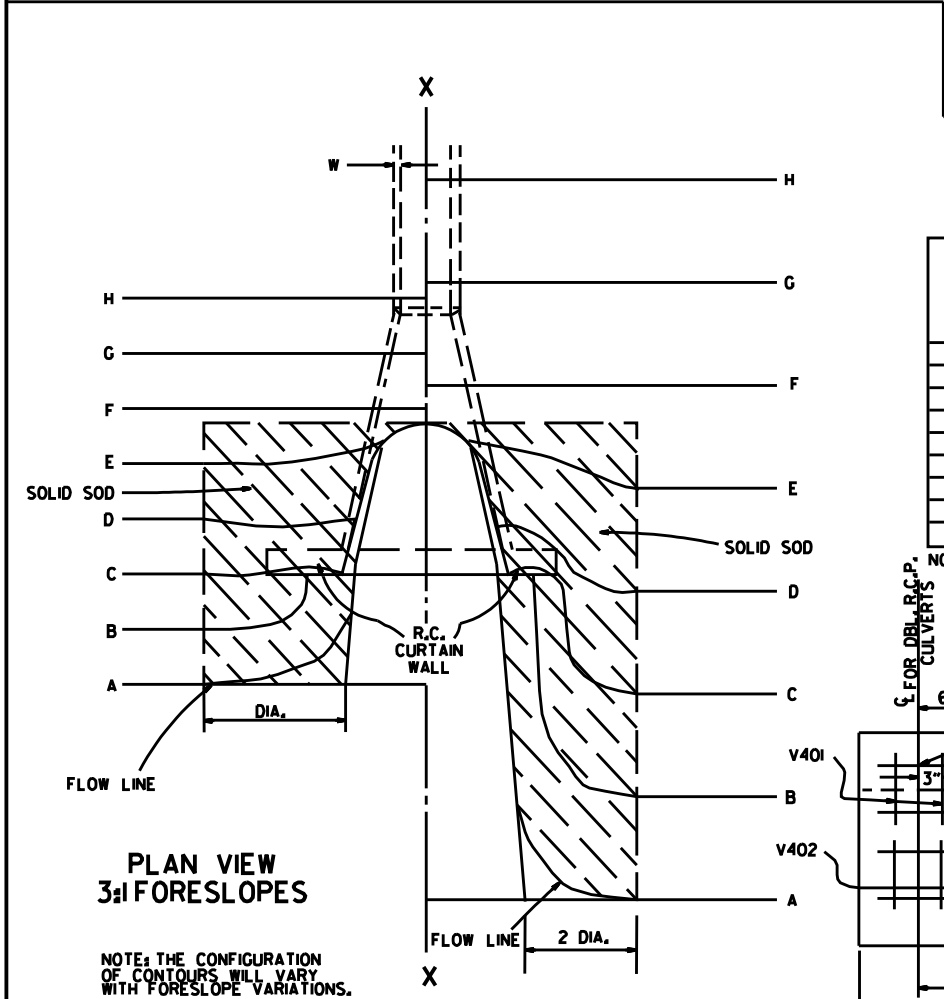
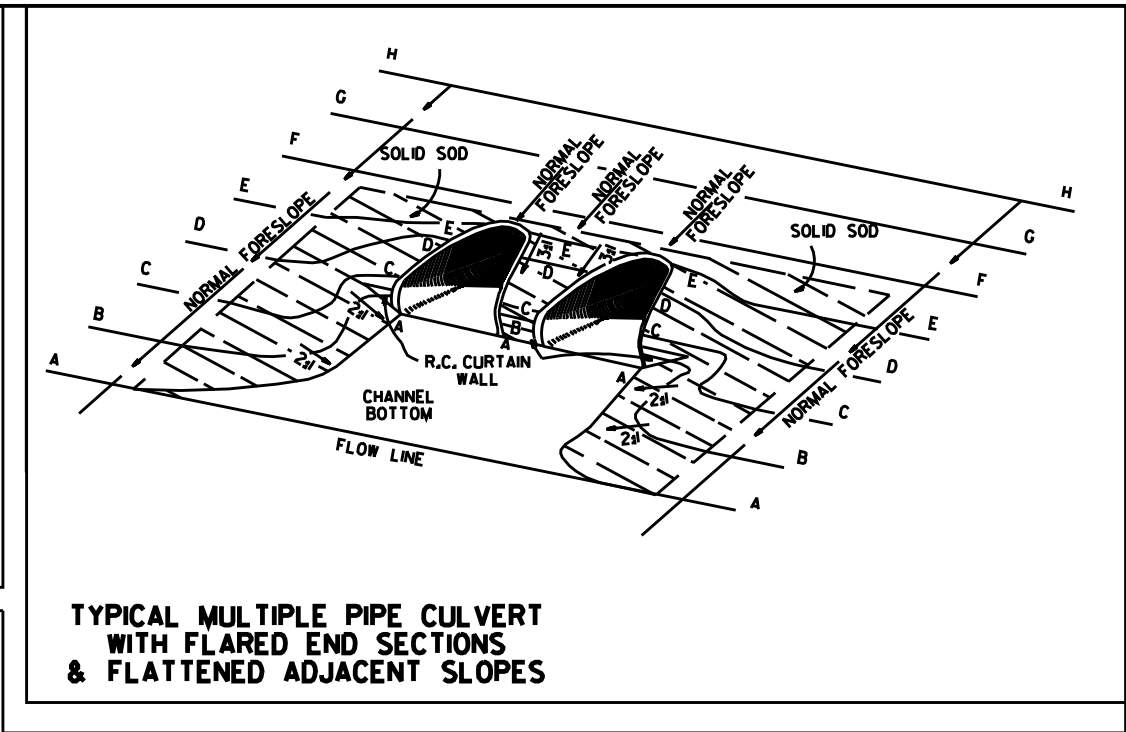
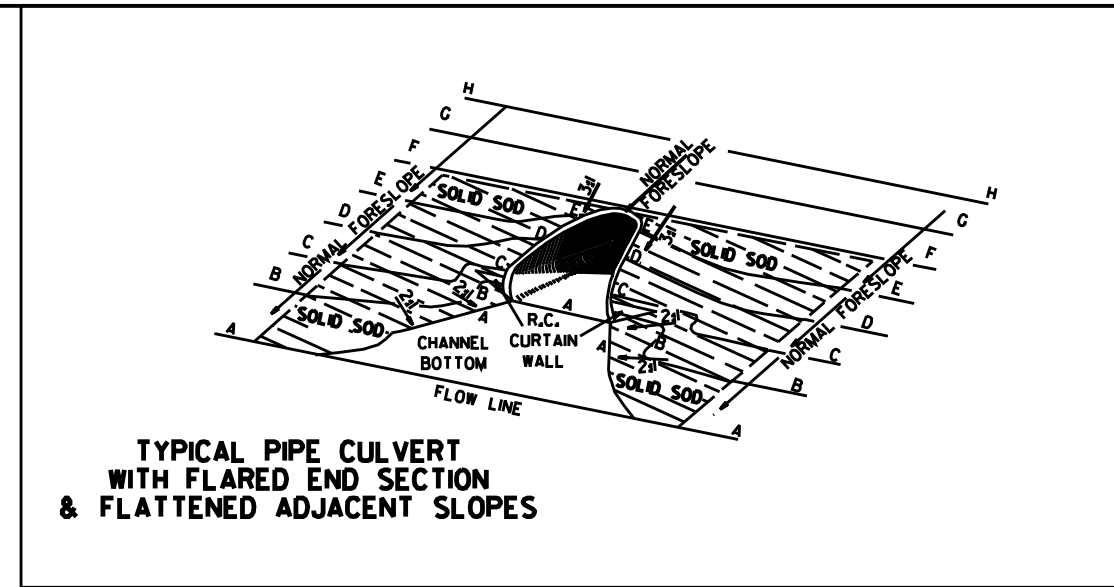
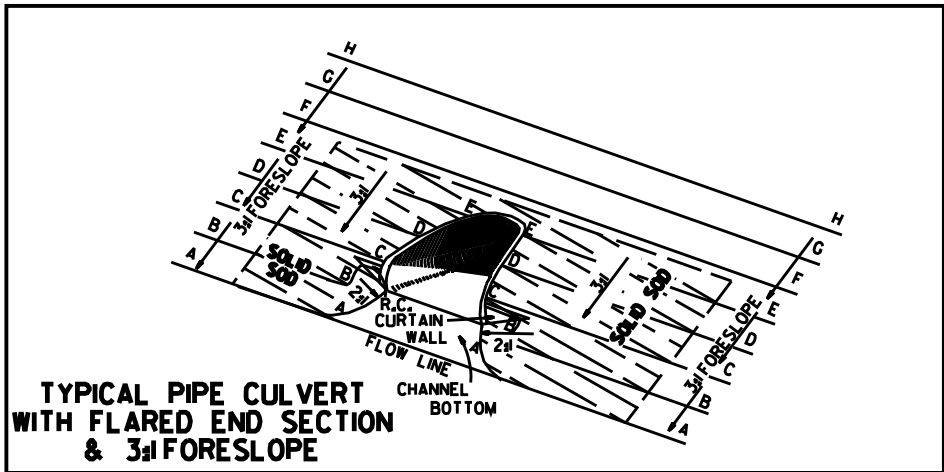
ASPHALT CONCRETE HOT MIX SURFACE
COURSE (220 LBS. PER SQ. YD.)
AGGREGATE BASE COURSE (CLASS 7)
7" COMP. DEPTH IF ASPHALT DRIVE EXIST OR
6" CONCRETE IF CONCRETE DRIVE EXIST.

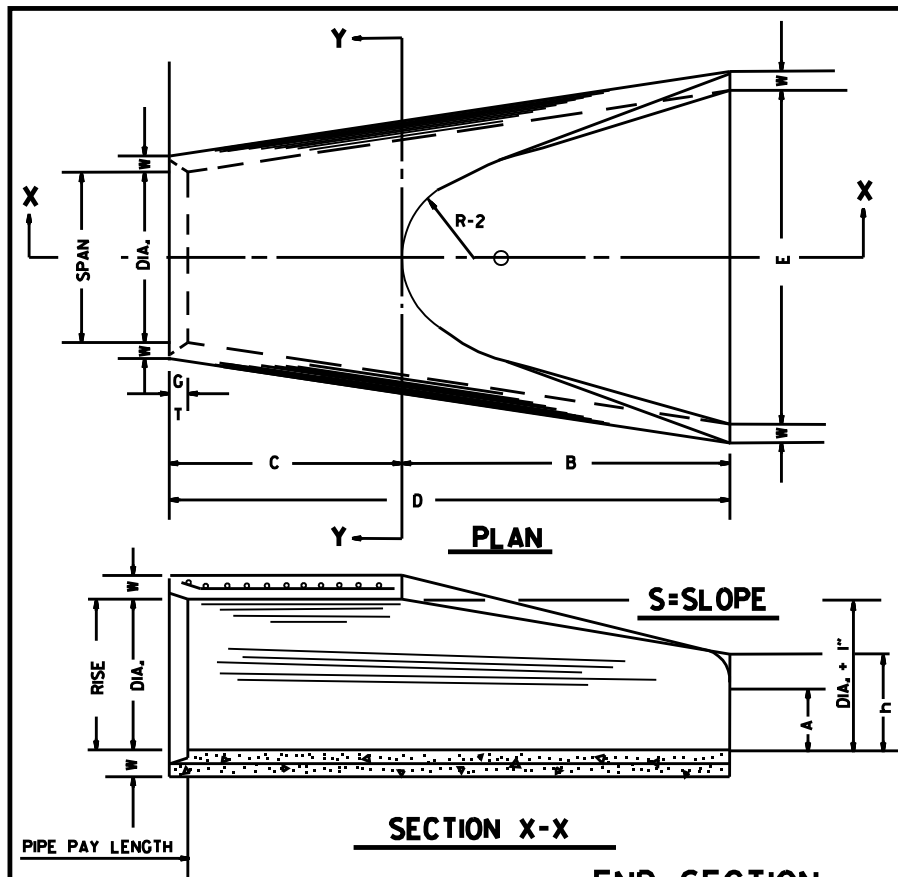
AGGREGATE BASE COURSE (CLASS 7)
9" COMP. DEPTH OR CONFORM
TO EXISTING DRIVEWAY

DETAIL FOR DRIVEWAY TURNOUTS
(COLLECTORS)

5-19-22		ISSUED
DATE REV	DATE FILMED	DESCRIPTION

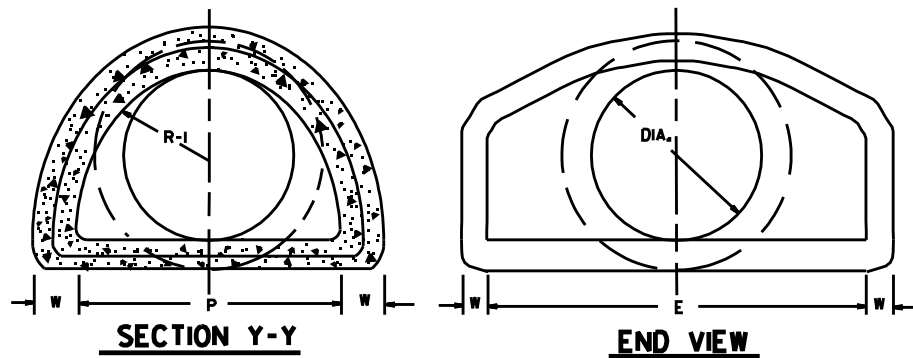
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & STREET
TURNOUTS
STANDARD DRAWING DR-2





END SECTION
FOR REINFORCED CONCRETE PIPE CULVERTS

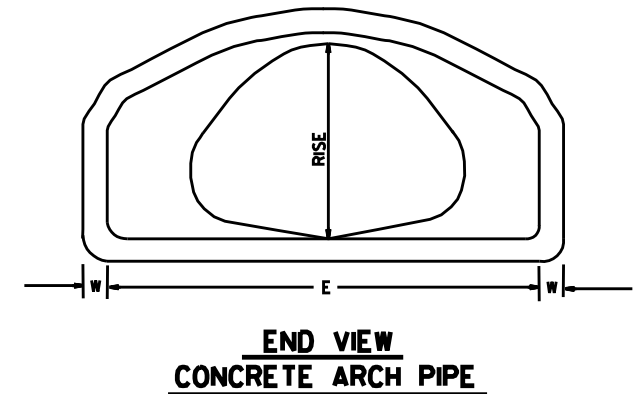
DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3d	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3d	25"	33 3/8"	16 1/4"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 1/4"	6'-1 3/4"	5'-0"	3d	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 1/4"	8'-1 1/2"	6'-0"	3d	37"	47 1/4"	24 1/4"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3d	43"	53 3/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3d	49"	56 1/2"	28 1/2"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3d	55"	65 1/2"	33 3/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3d	61"	72 1/2"	36 1/4"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3d	73"	77 1/4"	38 3/8"	24"	5"	13250	4'-6"



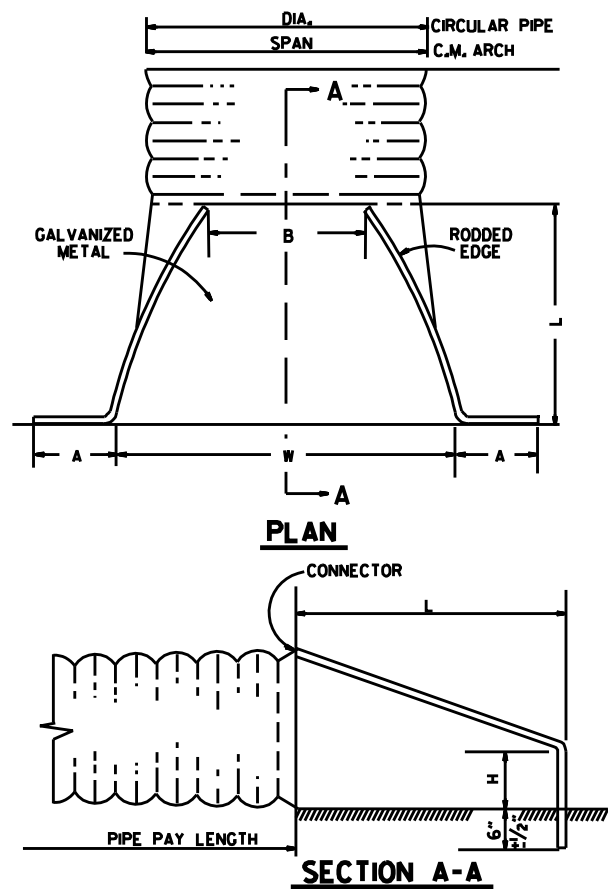
NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

EQUIV. DIA.	• SPAN		• RISE		W	A	B	C	D	E	P	R2	G-T	S
	AASHTO M 206	AHD NOMINAL	AASHTO M 206	AHD NOMINAL										
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1 1/2"	2 1/2d
18	22	22	13 1/2	14	2 1/2"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32 1/8"	13"	2 1/2"	2 1/2d
21	26	26	15 1/2	16	2 3/4"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34 1/8"	14"	2 1/2"	2 1/2d
24	28 1/2	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36 1/8"	15"	2 1/2"	2 1/2d
30	36 1/4	36	22 1/2	23	3 1/2"	10"	3'-1"	3'-0 1/2"	6'-1 1/2"	6'-0"	47 1/8"	20"	3"	2 1/2d
36	43 3/4	44	26 1/2	27	4"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	6'-6"	54 1/8"	22"	3 1/2"	2 1/2d
42	51 1/8	51	31 1/2	31	4 1/2"	11 1/2"	4'-7"	1'-10 1/4"	6'-5 1/4"	7'-2"	59 1/2"	23"	3 3/4"	2 1/2d
48	58 1/2	59	36	36	5"	1'-3"	5'-3"	2'-10 1/4"	8'-1 1/4"	7'-10"	70 1/8"	24"	4 1/4"	2 1/2d
54	65	65	40	40	5 1/2"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72 1/8"	24"	4 3/4"	2 1/2d
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77 1/8"	24"	5"	2 1/2d

* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT
FROM THE VALUES SPECIFIED BY AASHTO M 206.



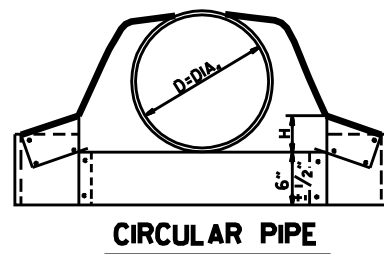
END VIEW
CONCRETE ARCH PIPE



NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD
PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

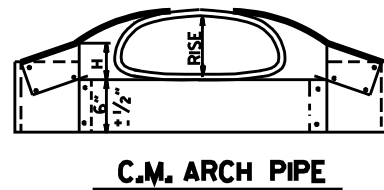
END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

CIRCULAR PIPE									
D. DIA.	GAUGE	A 1" ±	B MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S		
12	16	6	6	6	21	24	2 1/2d		
15	16	7	8	6	26	30	2 1/2d		
18	16	8	10	6	31	36	2 1/2d		
21	16	9	12	6	36	42	2 1/2d		
24	16	10	13	6	41	48	2 1/2d		
30	14	12	16	8	51	60	2 1/2d		
36	14	14	19	9	60	72	2 1/2d		
42	12	16	22	11	69	84	2 1/2d		
48	12	18	27	12	78	90	2 1/2d		
54	12	18	30	12	84	102	2 1/2d		
60	12	18	33	12	87	114	1 1/2d		
66	12	18	36	12	87	120	1 1/2d		
72	12	18	39	12	87	126	1 1/3d		

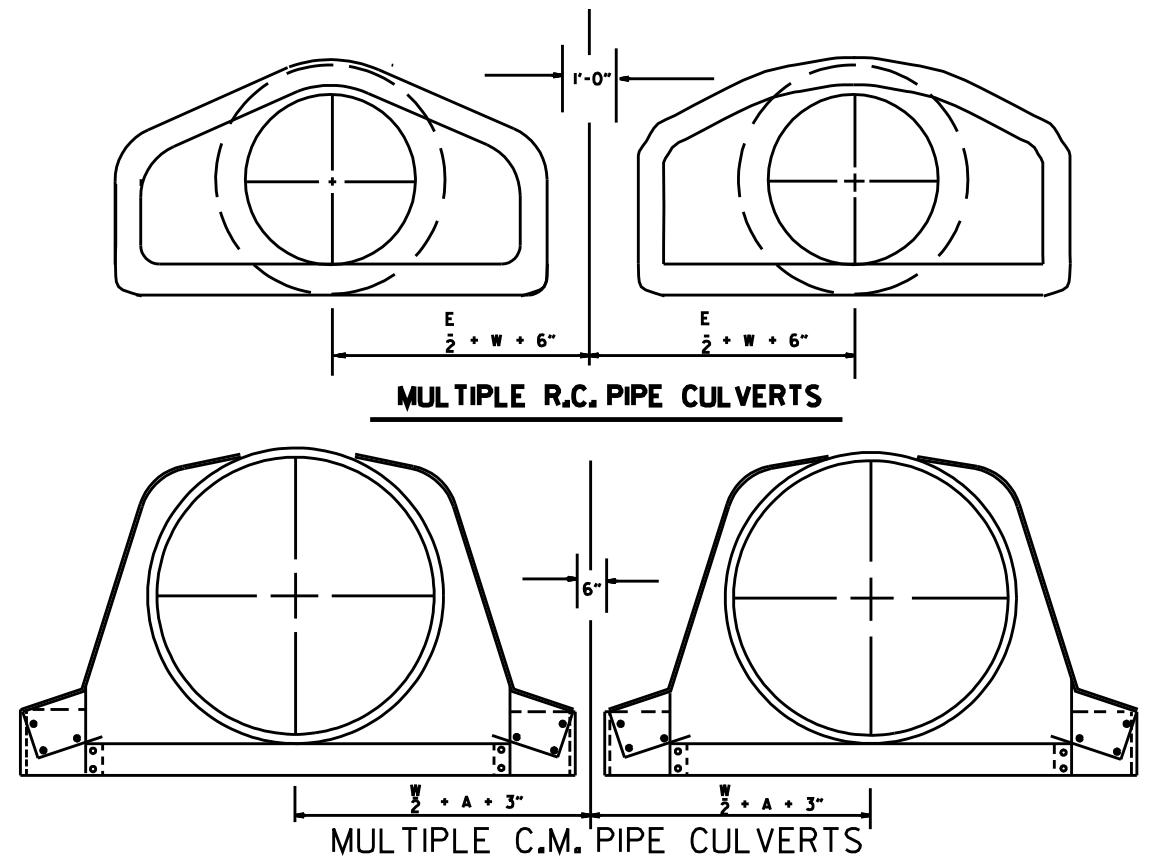


CIRCULAR PIPE

C.M. ARCH PIPE									
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1 1/2" ±	W 2" ±	S	GAUGE
15"	17	13	7	9	6	19	30	2 1/2d	16
18"	21	15	7	10	6	23	36	2 1/2d	16
21"	24	18	8	12	6	28	42	2 1/2d	16
24"	28	20	9	14	6	32	48	2 1/2d	16
30"	35	24	10	16	6	39	60	2 1/2d	14
36"	42	29	12	18	8	46	75	2 1/2d	14
42"	49	33	13	21	9	53	85	2 1/2d	12
48"	57	38	18	26	12	63	90	2 1/2d	12
54"	64	43	18	30	12	70	102	2 1/2d	12
60"	71	47	18	33	12	77	114	2 1/2d	12



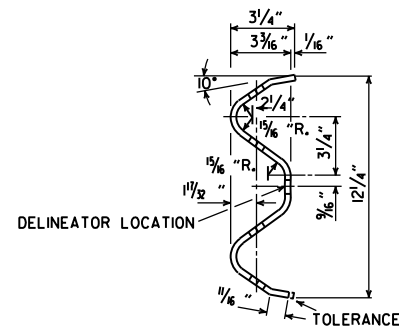
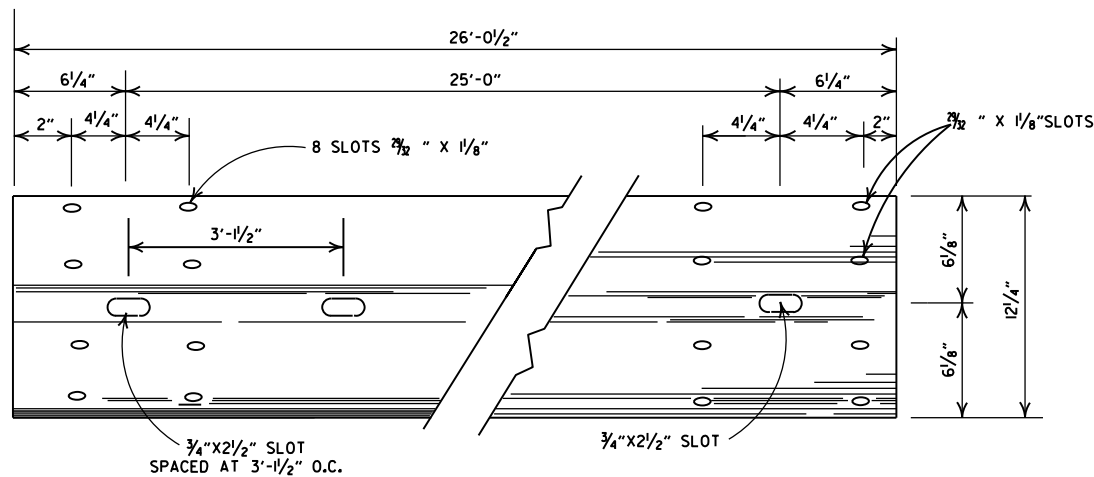
C.M. ARCH PIPE



MULTIPLE R.C. PIPE CULVERTS

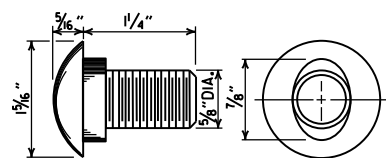
MULTIPLE C.M. PIPE CULVERTS

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		ARKANSAS STATE HIGHWAY COMMISSION
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		FLARED END SECTION
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		STANDARD DRAWING FES-2
DATE	REVISION	FIGURE		

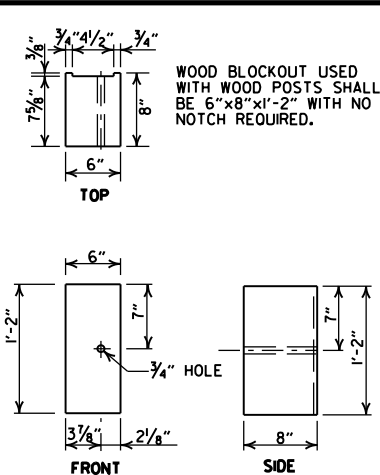
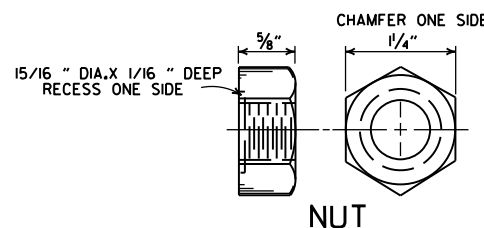
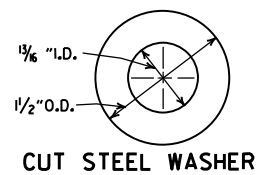


DETAILS OF W-BEAM GUARDRAIL

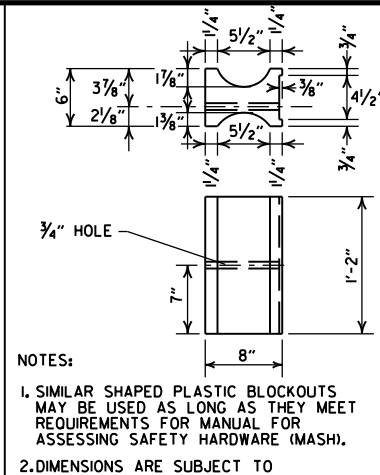
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



SPLICE BOLT POST BOLT - SAME EXCEPT LENGTH

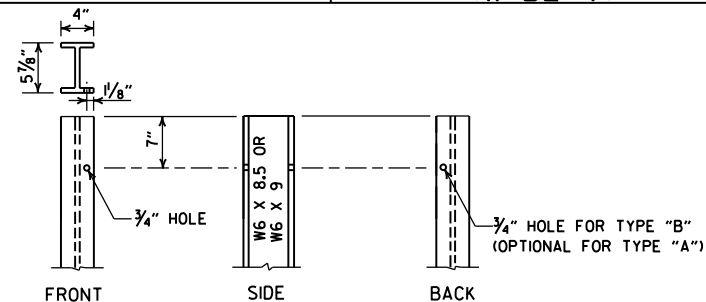


WOOD BLOCKOUT (W-BEAM)

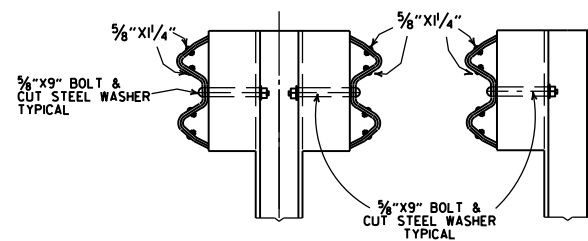


PLASTIC BLOCKOUT (W-BEAM)

- 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.



STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.

WHERE W-BEAM 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.

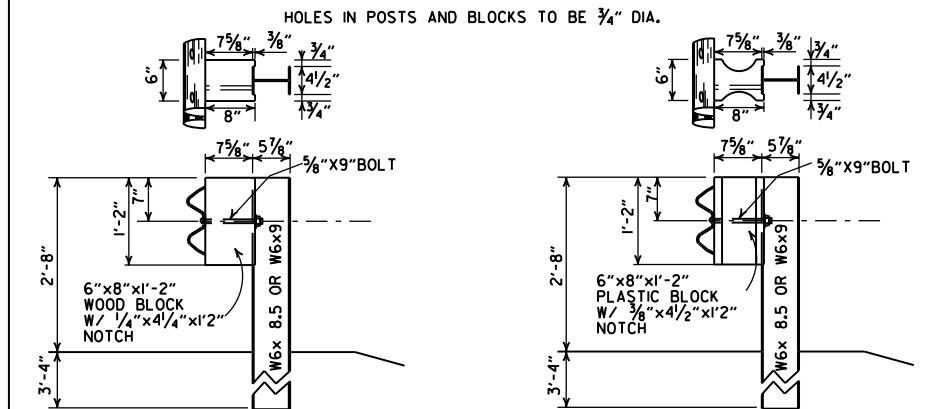
USE W-BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARDRAIL, W-BEAM GUARDRAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.

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. 1 350 f SOUTHERN PINE.

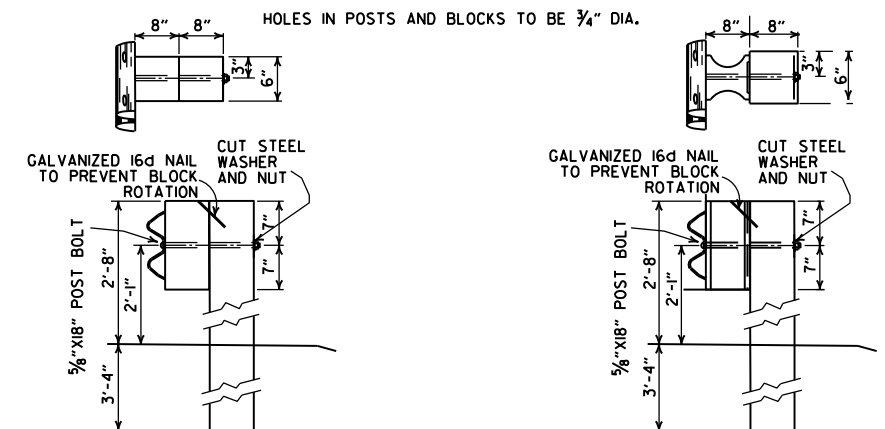
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARDRAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARDRAIL.

DELINATORS 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

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



POSTS AND BLOCKS TO BE ROUGH SAWN 6" X 8" WITH A TOLERANCE OF + OR - 1/4".

WOOD BLOCKOUT CONNECTIONS

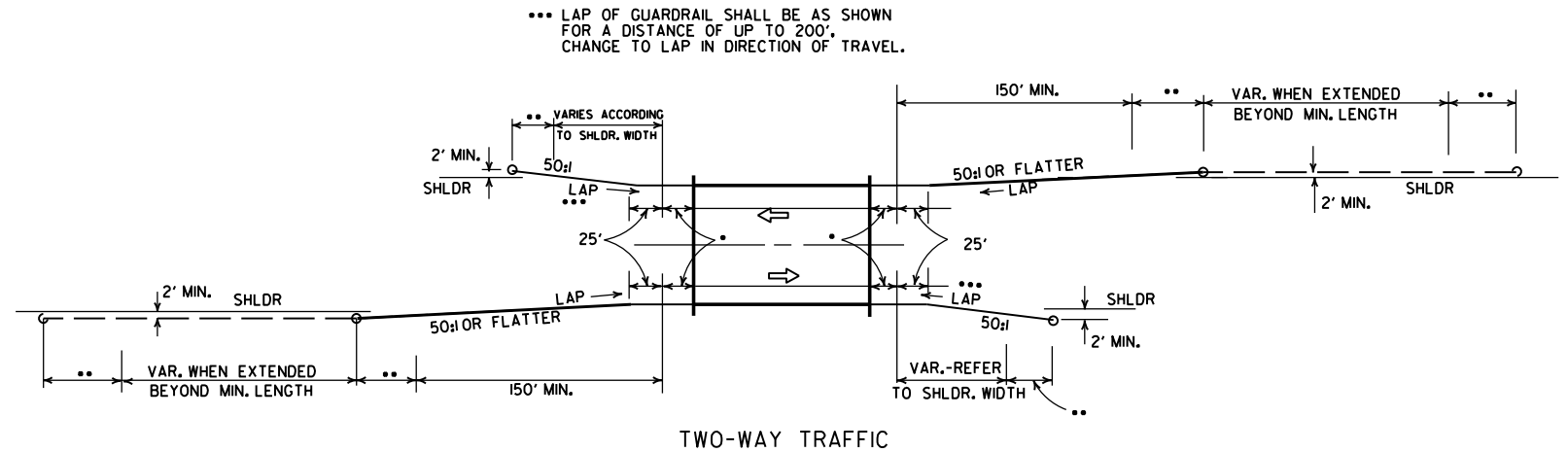
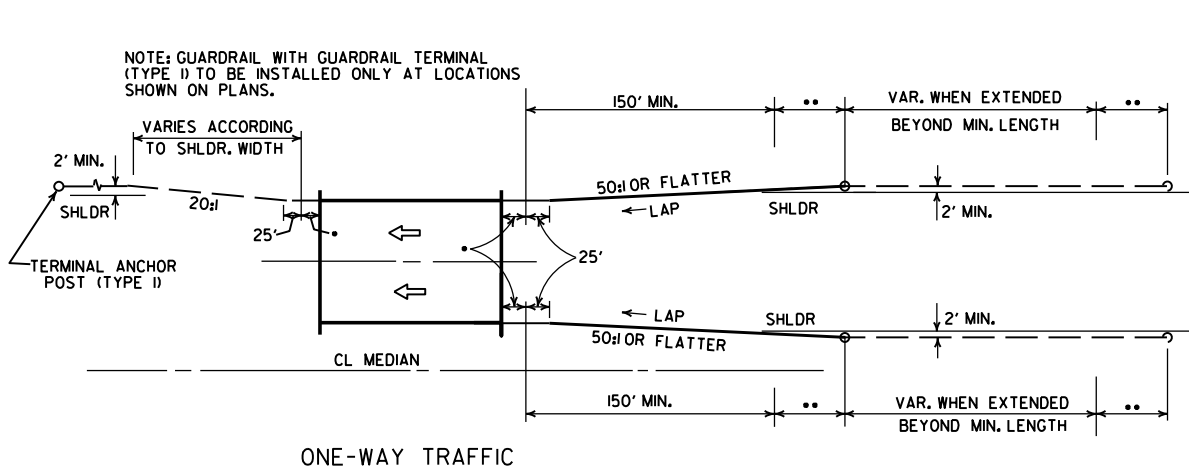
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

05-19-22	REVISED GENERAL NOTES, ADDED DELINATOR LOCATION.	
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
DATE	REVISION	FILMED

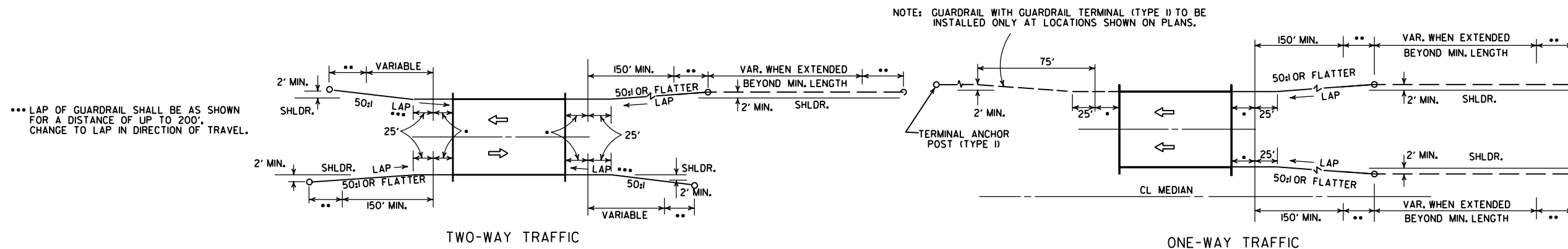
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

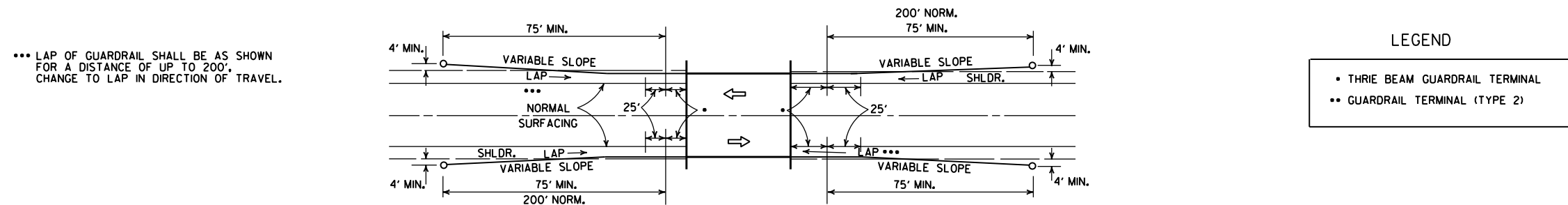
STANDARD DRAWING GR-6



METHODS OF INSTALLATION OF GUARDRAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

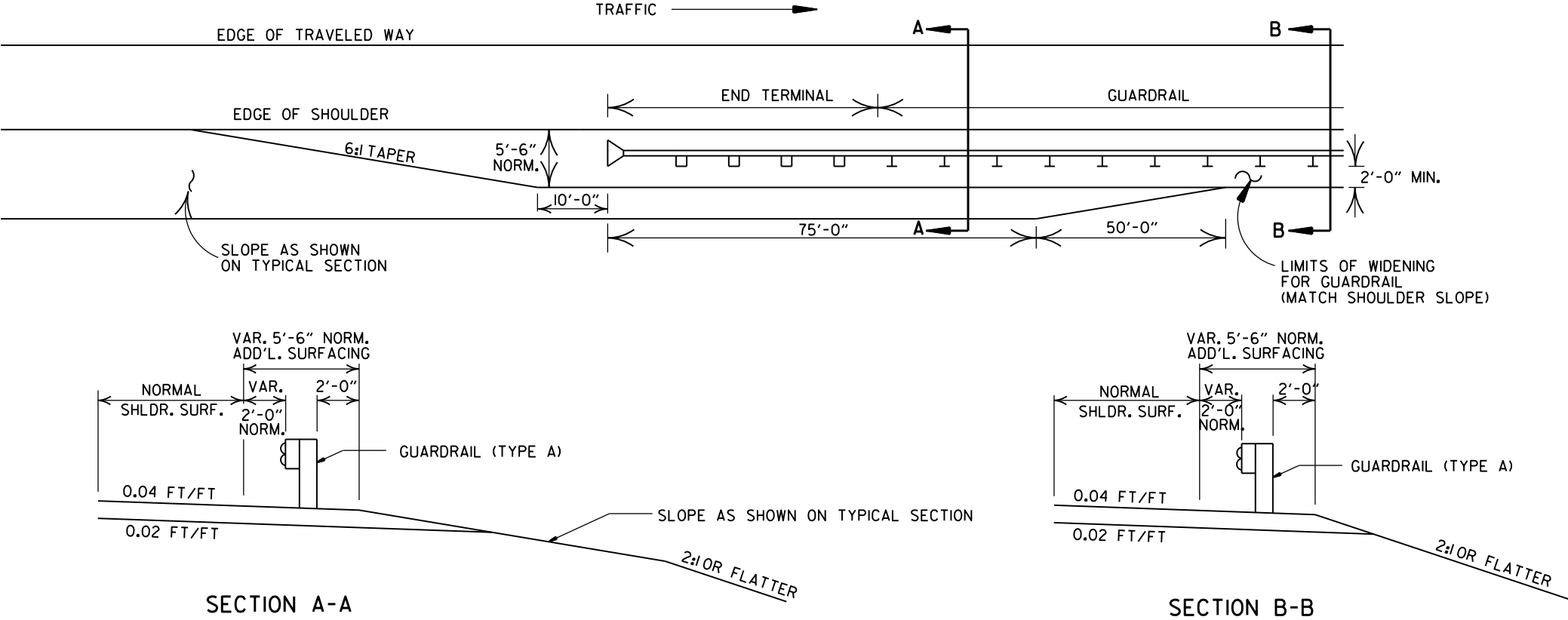


METHOD OF INSTALLATION OF GUARDRAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARDRAIL TERMINAL (TYPE 2)

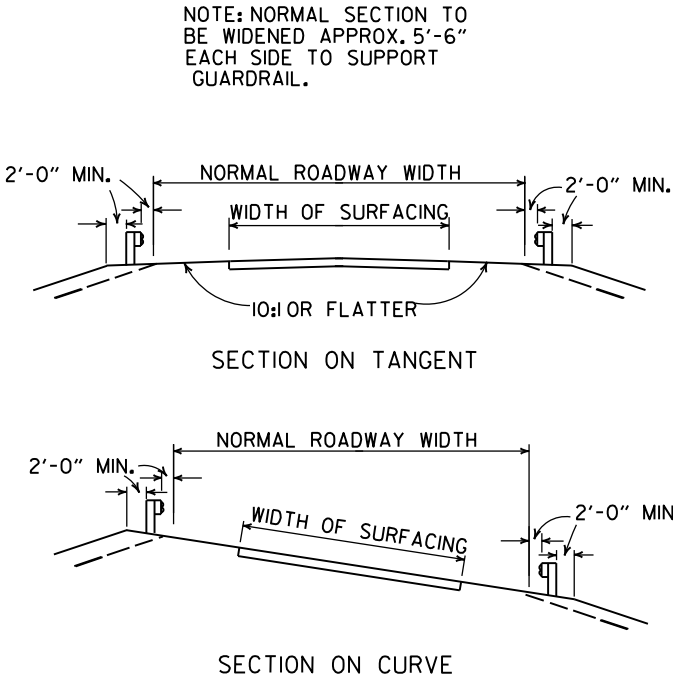


METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

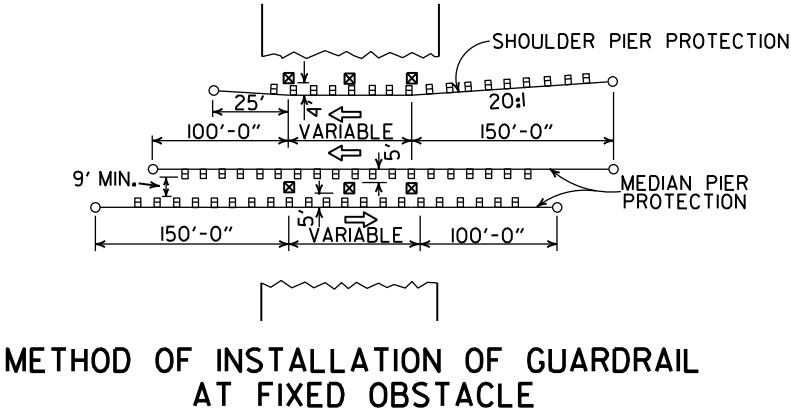
			ARKANSAS STATE HIGHWAY COMMISSION
11-07-19	RENUMBERED AND RENAMED		GUARDRAIL DETAILS
4-17-08	REVISED LAYOUTS		
11-10-05	REMOVED GUARDRAIL NOTES AND DETAILS		
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARDRAIL USING GUARDRAIL TERM. (TY. 1)		
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00	STANDARD DRAWING GR-8
6-26-97	REVISED LAYOUT		
10-1-92	REDRAWN & REVISED	10-1-92	
10-9-87	ADDED NOTE		
DATE	REVISION	DATE	FILM



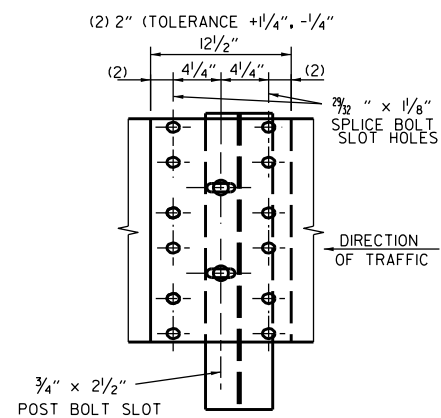
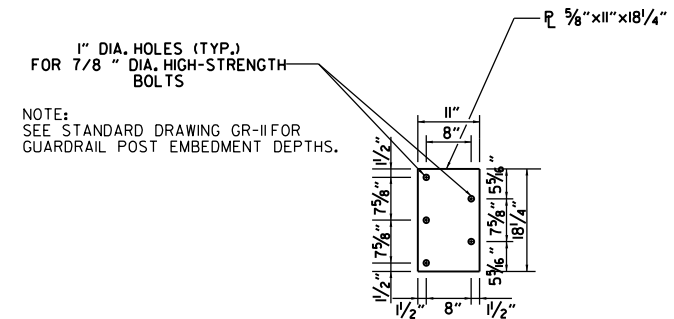
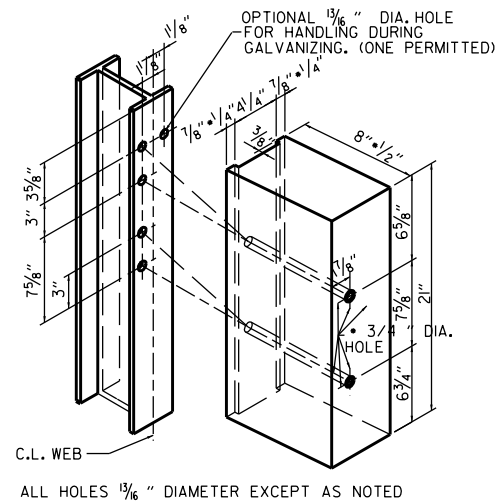
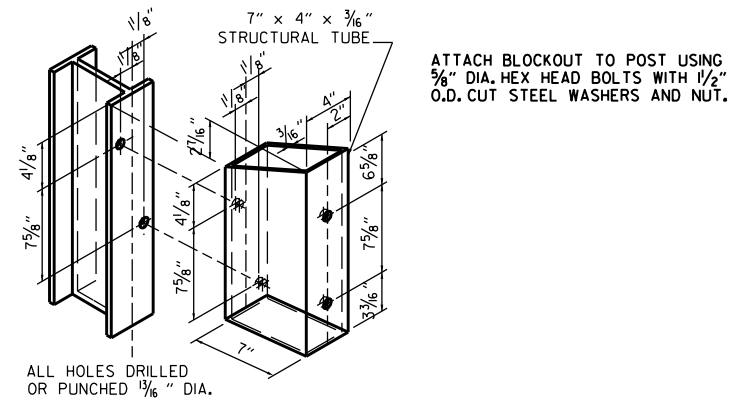
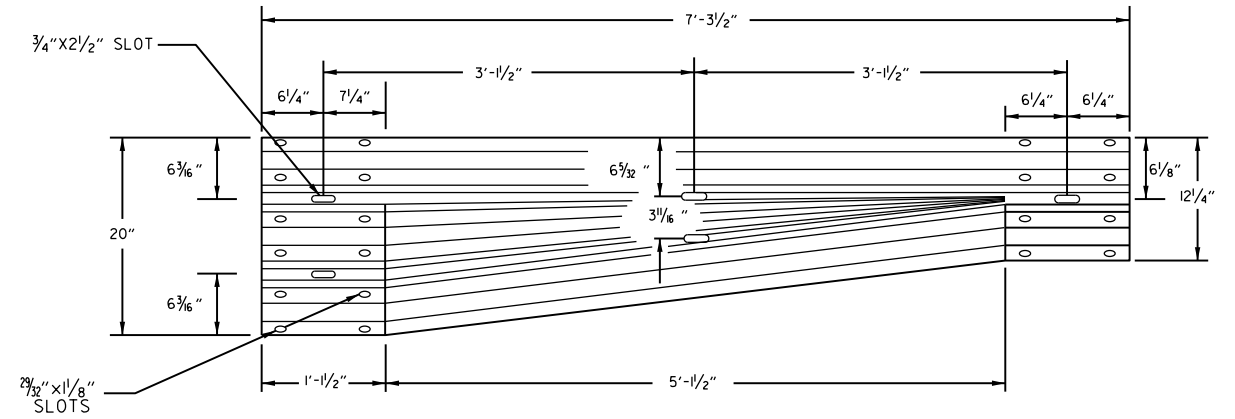
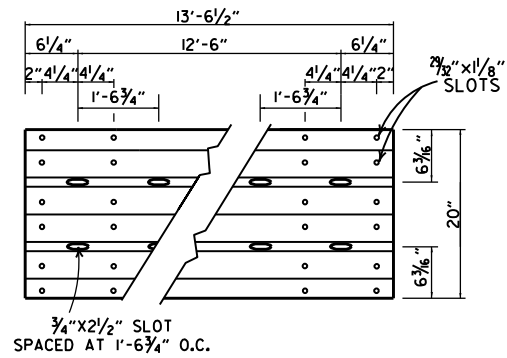
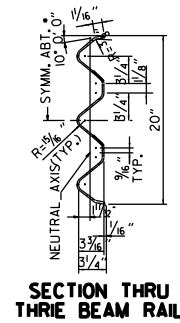
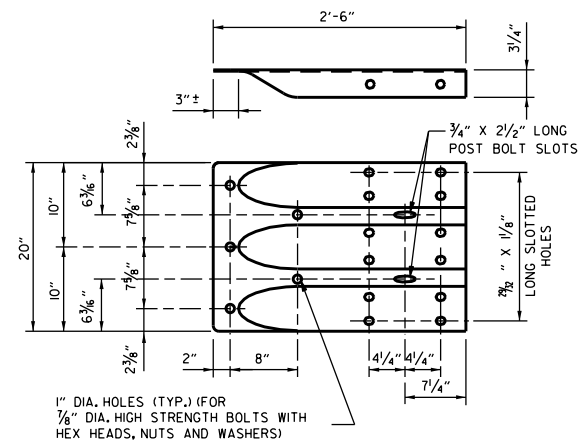
DETAILS OF WIDENING FOR GUARDRAIL



DETAILS SHOWING POSITION OF GUARDRAIL ON HIGHWAY



			ARKANSAS STATE HIGHWAY COMMISSION
			GUARDRAIL DETAILS
			STANDARD DRAWING GR-9
II-07-19	RENUMBERED AND RENAMED		
4-17-08	MINOR REVISION		
II-10-05	DRAWN		
DATE	REVISION	DATE FILM	



GENERAL NOTES:

THE THREE 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.

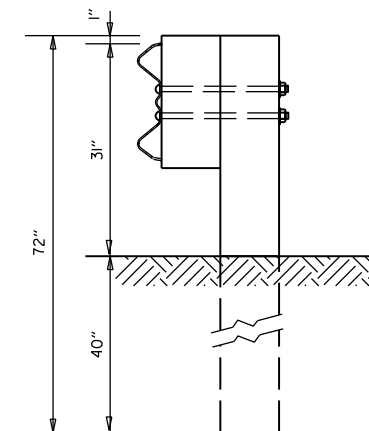
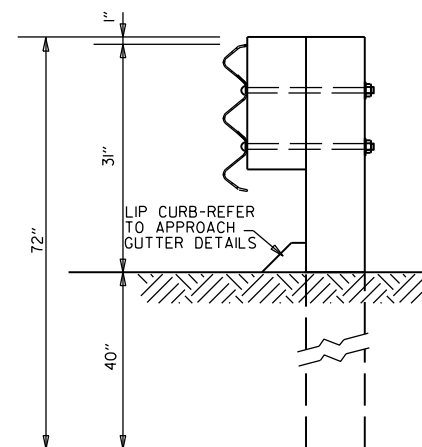
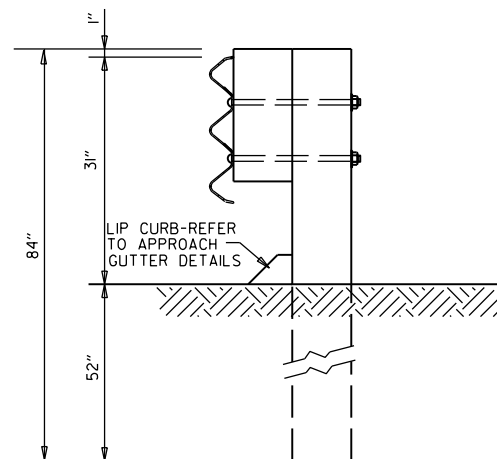
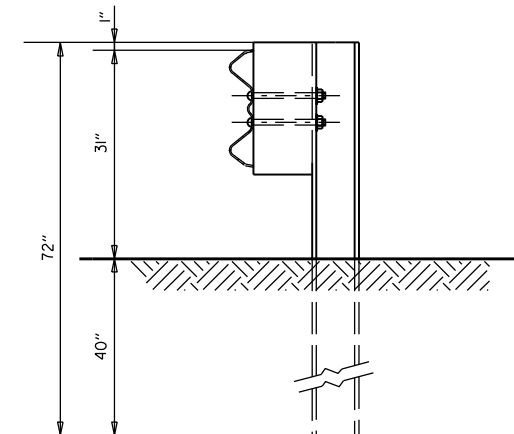
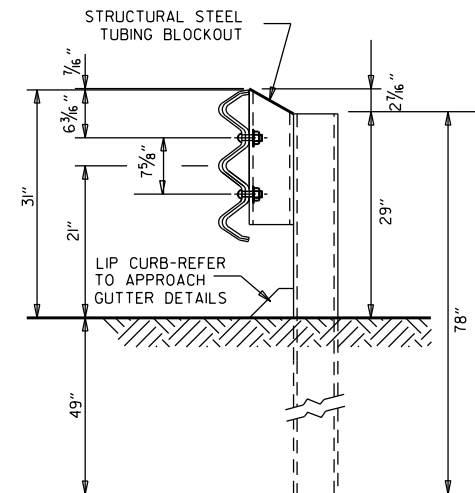
REFER TO STD. DRWG. GR-II FOR POST DETAILS.

USE THREE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THREE 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 9.7f (1400 f) OR NO. 1 350 f SOUTHERN PINE.

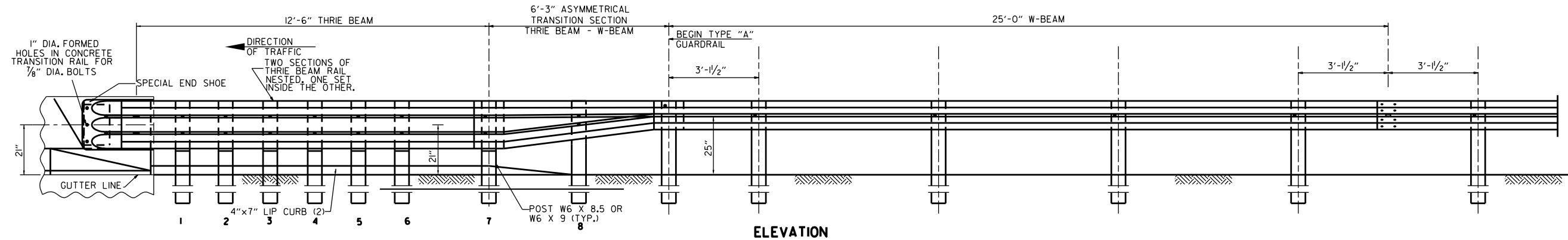
II-07-19	RENAMED AND REVISED REFERENCES		
II-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12		
07-14-10	RAISED HEIGHT OF W-BEAM 1"		
II-29-07	ADDED PLASTIC BLOCKOUTS		
II-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT		ARKANSAS STATE HIGHWAY COMMISSION
II-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		
DATE	REVISION	FILMED	STANDARD DRAWING GR-10



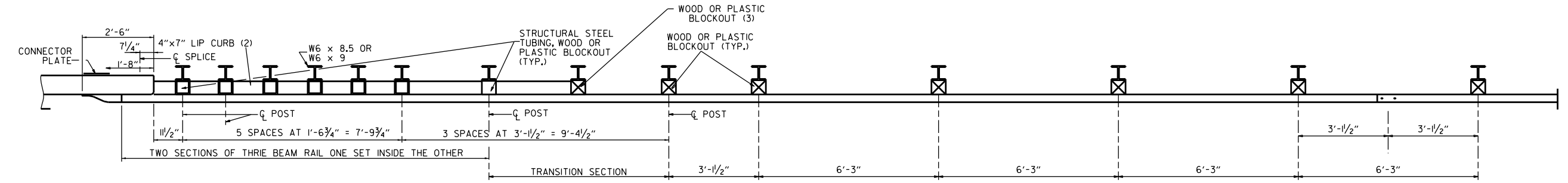
GENERAL NOTES:
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND
VERTICALLY IN CROSS SECTION.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

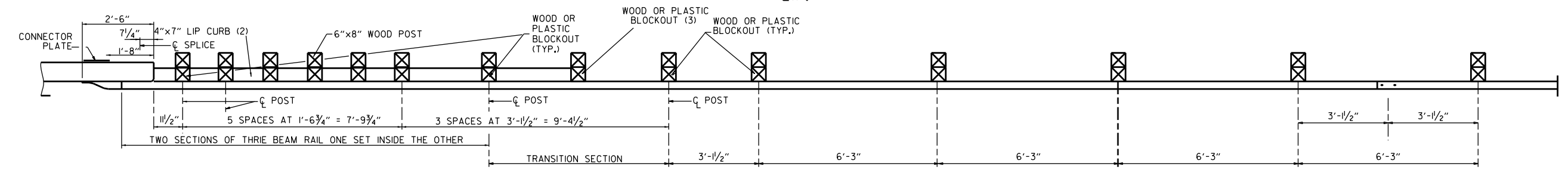
			ARKANSAS STATE HIGHWAY COMMISSION
II-07-19	RENAMED		GUARDRAIL DETAILS
II-16-17	REVISED GUARDRAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-II		
07-14-10	REVISED POST & DIMENSIONS		
II-29-07	ADDED PLASTIC BLOCKOUTS		
08-22-02	REVISED LIP CURB NOTE		
03-30-00	DRAWN & ISSUED		
DATE	REVISION	FILMED	STANDARD DRAWING GR-II



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.

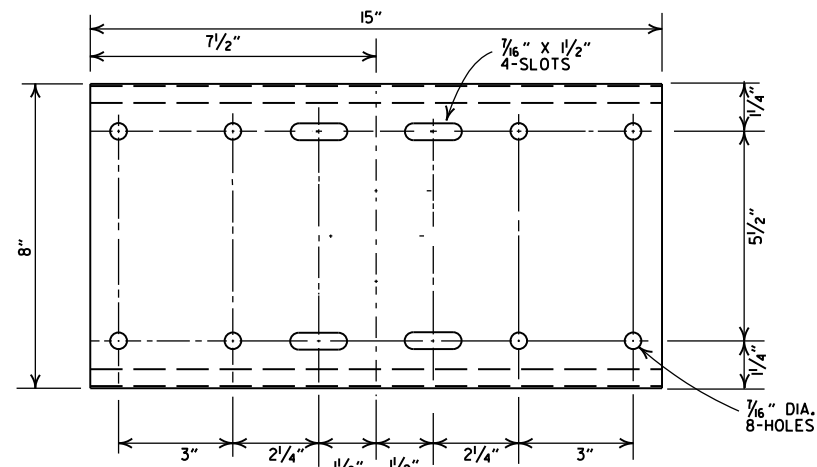
USE THRIE BEAM GUARDRAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB.

THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

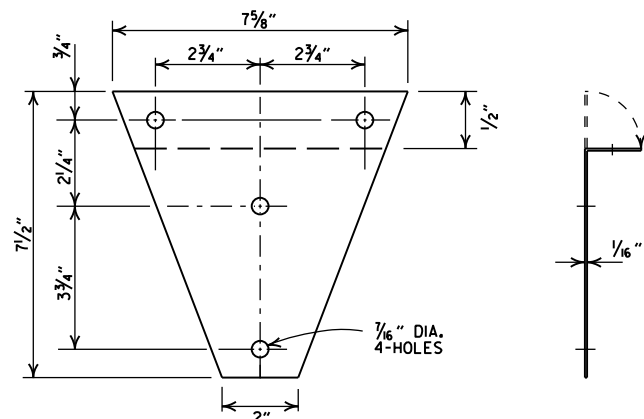
POSTS SHALL NOT BE PLACED AT SPLICE LOCATIONS ALONG W-BEAM RAILS.

WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9,7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

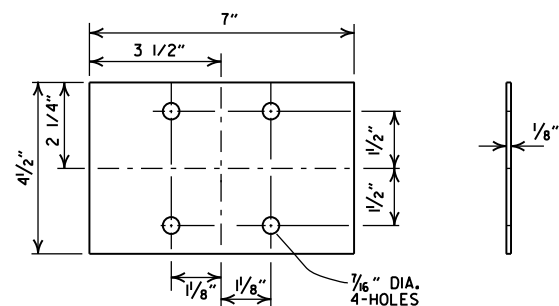
			ARKANSAS STATE HIGHWAY COMMISSION
			GUARDRAIL DETAILS
			STANDARD DRAWING GR-12
05-14-20	REVISED NOTES		
11-07-19	RENAMED & REVISED REFERENCES		
11-16-17	RE-DRAWN FROM STD. DRWG. GR-10 & ISSUED		
DATE	REVISION	FILMED	



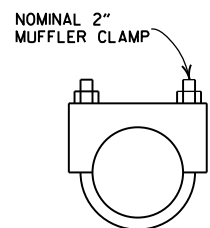
SHELF



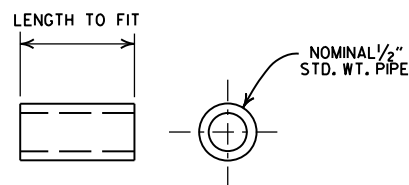
BRACKET



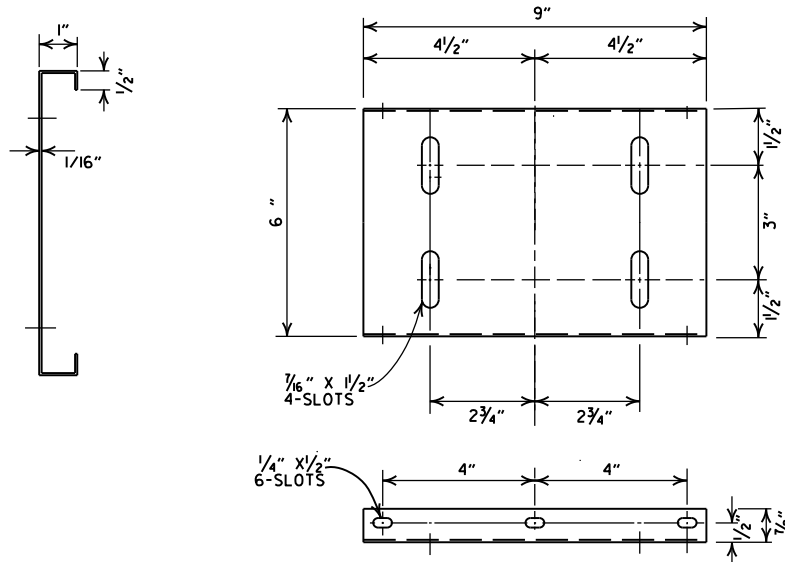
ANTI-TWIST PLATE



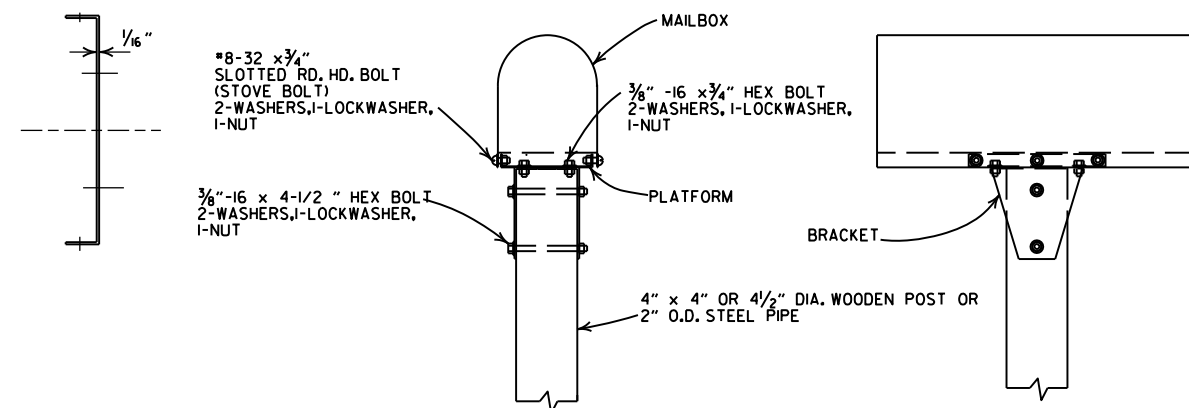
CLAMP



SPACER

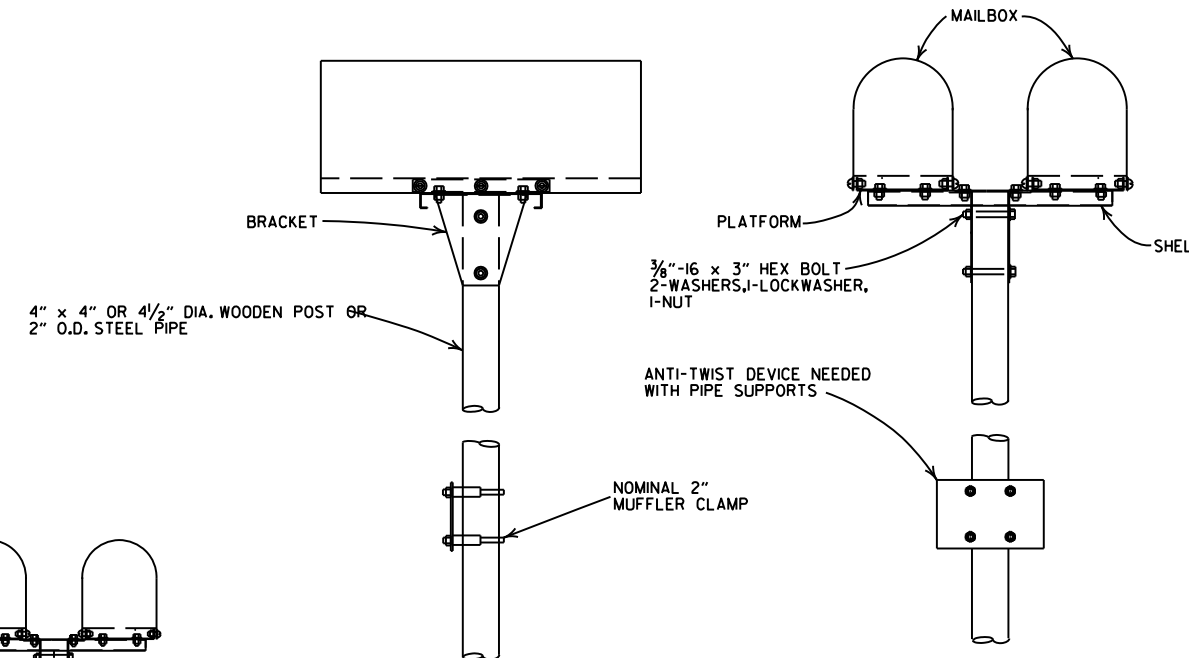


PLATFORM

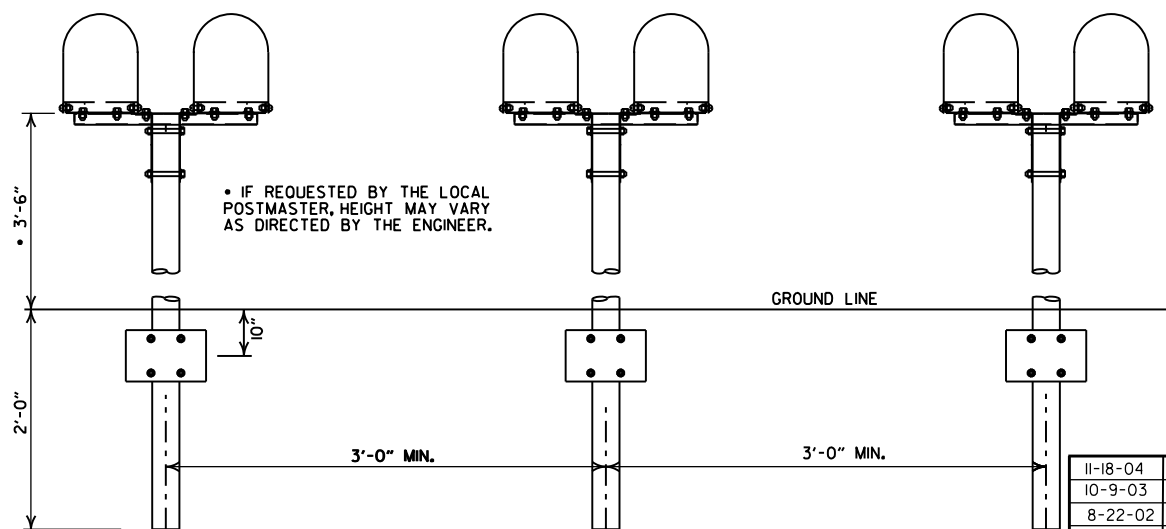


SINGLE INSTALLATION

- 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



SPACING FOR MULTIPLE POST INSTALLATION

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	120-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-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	43¾	44	26¾	27
42	51½	51	31½	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87½	87
120	154	154	96¾	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)(i).

NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

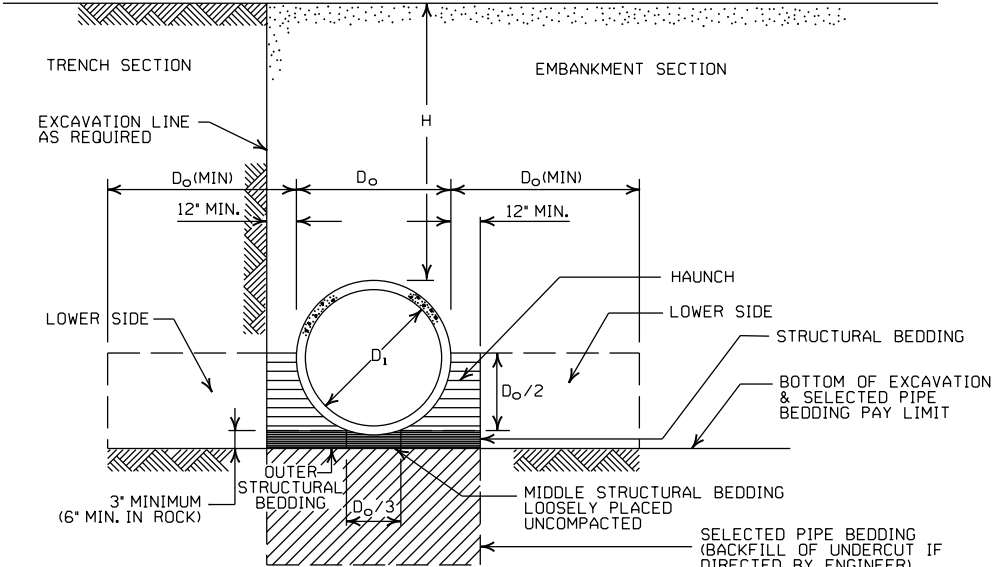
- LEGEND -

D_i = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL*
TYPE 3**	AASHTO CLASSIFICATION A-1 THRU A-6 SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

* SM-3 WILL NOT BE ALLOWED.

** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS
OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

1. MATERIAL IN THE HAUNCH AND OUTER STRUCTURAL BEDDING SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. FOR TRENCHES WITH WALLS OF NATURAL SOIL, THE DENSITY OF THE SOIL IN THE LOWER SIDE ZONE SHALL BE AS FIRM AS THE 95% DENSITY REQUIRED FOR THE HAUNCH. IF THE EXISTING SOIL DOES NOT MEET THIS CRITERIA, IT SHALL BE REMOVED AND RECOMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OF MATERIAL USED.
3. FOR EMBANKMENTS, THE MATERIAL IN THE LOWER SIDE ZONE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS 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.

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 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.

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.

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	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1



CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM 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
2 3/8 INCH BY 1/2 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 MINIMUM 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 5/8 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM				
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION		INSTALLATION		INSTALLATION		INSTALLATION	
				TYPE 1		TYPE 1		TYPE 1		TYPE 1	
			2 5/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM				2 5/8 INCH BY 1/2 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	3 1/2	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				① FOR MINIMUM COVER VALUES, "H" SHALL ② WHERE THE STANDARD 2 2/3" x 1/2" COR WITH A 3" x 1" OR 5" x 1" CORRUGATION OR GREATER THAN THE MAXIMUM FILL				
			INSTALLATION		INSTALLATION						
			TYPE 2		TYPE 1	TYPE 2	TYPE 1				
36	40x31	5	0.079	3	2	12	15				
42	46x36	6	0.079	3	2	13	15				
48	53x41	7	0.079	3	2	13	15				
54	60x46	8	0.079	3	2	13	15				
60	66x51	9	0.079	3	2	13	15				
66	73x55	12	0.079	3	2	15	15				
72	81x59	14	0.079	3	2	15	15				
78	87x63	14	0.079	3	2	15	15				
84	95x67	16	0.109	3	2	15	15				
90	103x71	16	0.109	3	2	15	15				
96	112x75	18	0.109	3	2	15	15				
102	117x79	18	0.109	3	2	15	15				
108	128x83	18	0.138	3	2	15	15				

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT EXCEED 24 INCHES OR 1/3 THE SIZE OF THE PIPE, WHICHEVER IS LESS.

NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL ③

③ SM-3 WILL NOT BE ALLOWED.

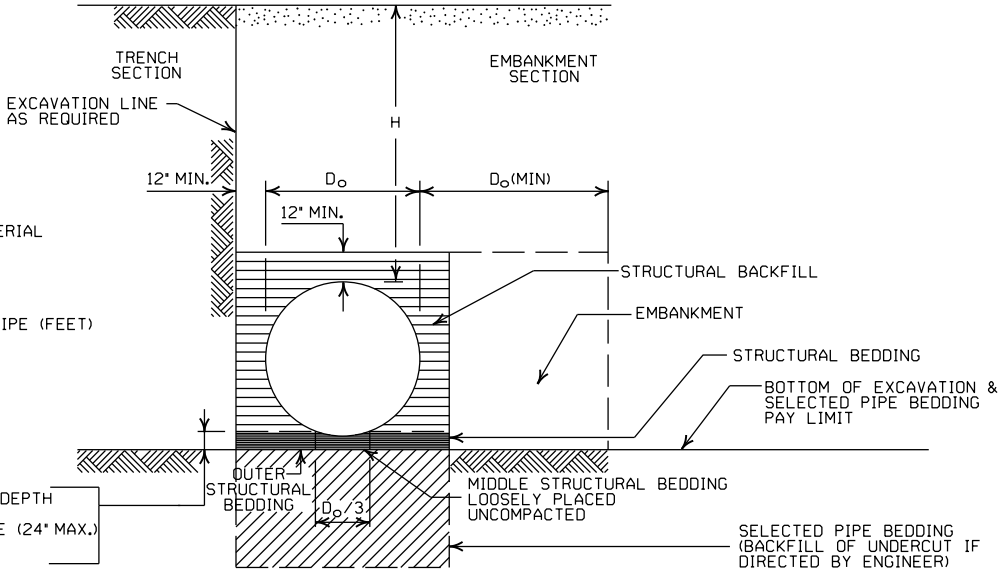
EQUIVALENT METAL THICKNESSES AND GAUGES

METAL THICKNESS IN INCHES			GAUGE NUMBER
STEEL		ALUMINUM	
ZINC COATED	UNCOATED		
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

- 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)

IN SOIL - MIN. EQUALS TWICE CORRUGATION DEPTH
IN ROCK - MIN. EQUALS GREATER OF:
1/2" PER FOOT OF FILL OVER PIPE (24" MAX.)
TWICE CORRUGATION DEPTH



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. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" X 1/2" 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."

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3" x 1/2" 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.

2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1



INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2 OR SM-4)

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.
- SM3 WILL NOT BE ALLOWED.
- STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/2 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF HDPE PIPE.

MINIMUM TRENCH WIDTH
BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"

①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

MINIMUM COVER VALUES, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR
CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

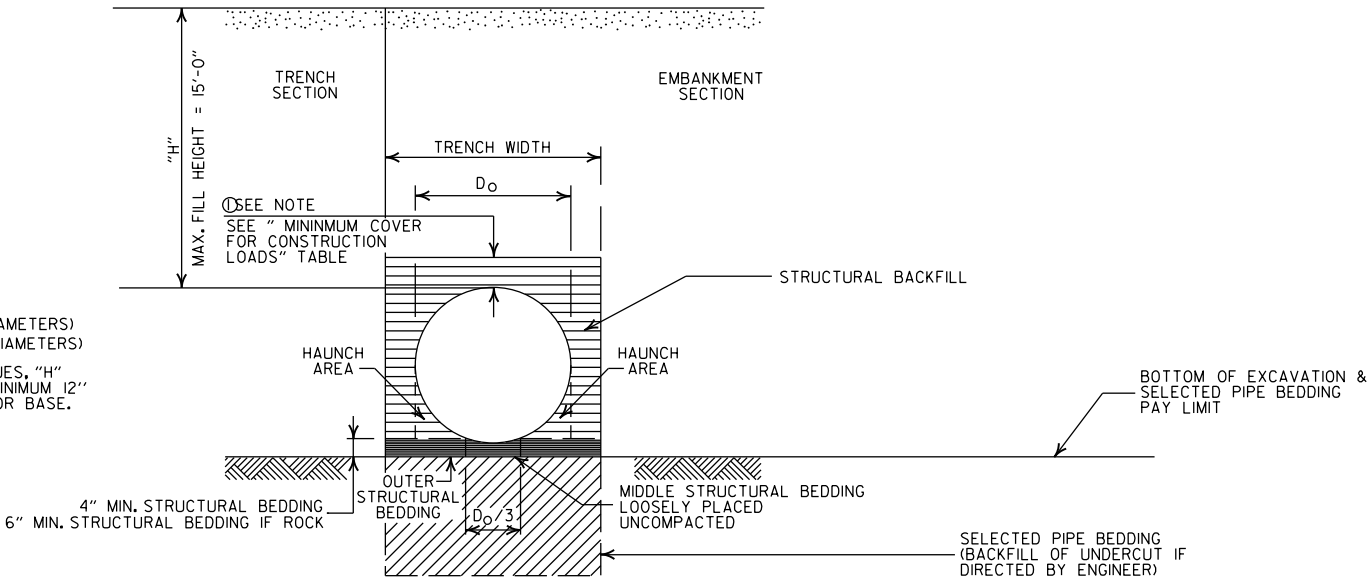
②MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.

MULTIPLE INSTALLATION OF
HIGH DENSITY POLYETHYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M294, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. HIGH DENSITY POLYETHYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR HDPE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

===== STRUCTURAL BACKFILL MATERIAL
// // // // // UNDISTURBED SOIL

2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED GENERAL NOTES & MINIMUM COVER NOTE	
11-17-10	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION
PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)
STANDARD DRAWING PCP-1

INSTALLATION TYPE	•• MATERIAL REQUIREMENTS FOR STRUCTURAL BACKFILL AND STRUCTURAL BEDDING
TYPE 2	•SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4)

- AGGREGATE BASE COURSE (CLASS 4, 5, 6, OR 7) MAY BE USED IN LIEU OF SELECTED MATERIAL.

SM3 WILL NOT BE ALLOWED.

- STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1/4 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF PVC PIPE.

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" ≥ 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"

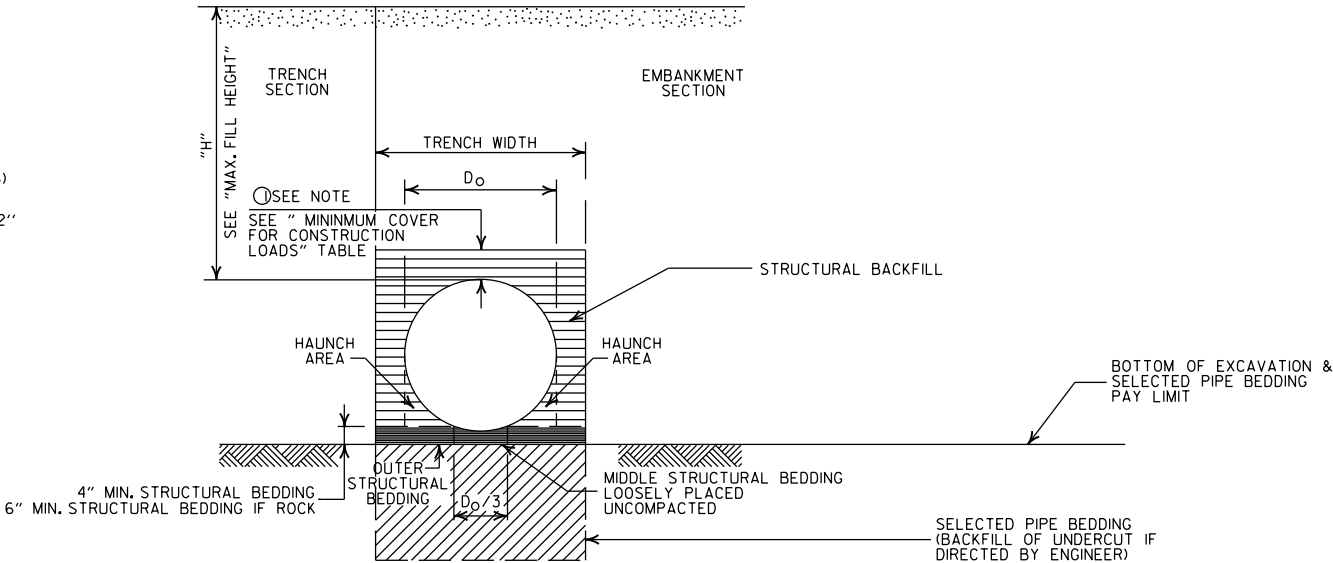
MULTIPLE INSTALLATION OF PVC PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

- ① NOTE:
12" MIN. (18" - 36" DIAMETERS)
MINIMUM COVER VALUE, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

- PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
- INSTALL PIPE TO GRADE.
- COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
- THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
- PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

===== = STRUCTURAL BACKFILL MATERIAL
||||||| = UNDISTURBED SOIL

GENERAL NOTES

- PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
- PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
- THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
- 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.
- 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."
- WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
- FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
- PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
- JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REV GENERAL NOTES & MINIMUM COVER NOTE; DELETED SM3 MATERIAL	
11-17-10	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT
(PVC F949)

STANDARD DRAWING PCP-2



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

* SM3 WILL NOT BE ALLOWED.

** STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 1 INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF POLYPROPYLENE PIPE.

MULTIPLE INSTALLATION OF POLYPROPYLENE PIPES

PIPE DIAMETER	CLEAR DISTANCE BETWEEN PIPES
18"	1'-6"
24"	2'-0"
30"	2'-6"
36"	3'-0"
42"	3'-6"
48"	4'-0"
60"	5'-0"

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

PIPE DIAMETER	TRENCH WIDTH (FEET)	
	"H" < 10'-0"	"H" >OR= 10'-0"
18"	4'-6"	4'-6"
24"	5'-0"	6'-0"
30"	5'-6"	7'-6"
36"	6'-0"	9'-0"
42"	7'-0"	10'-6"
48"	8'-0"	12'-0"
60"	10'-0"	15'-0"

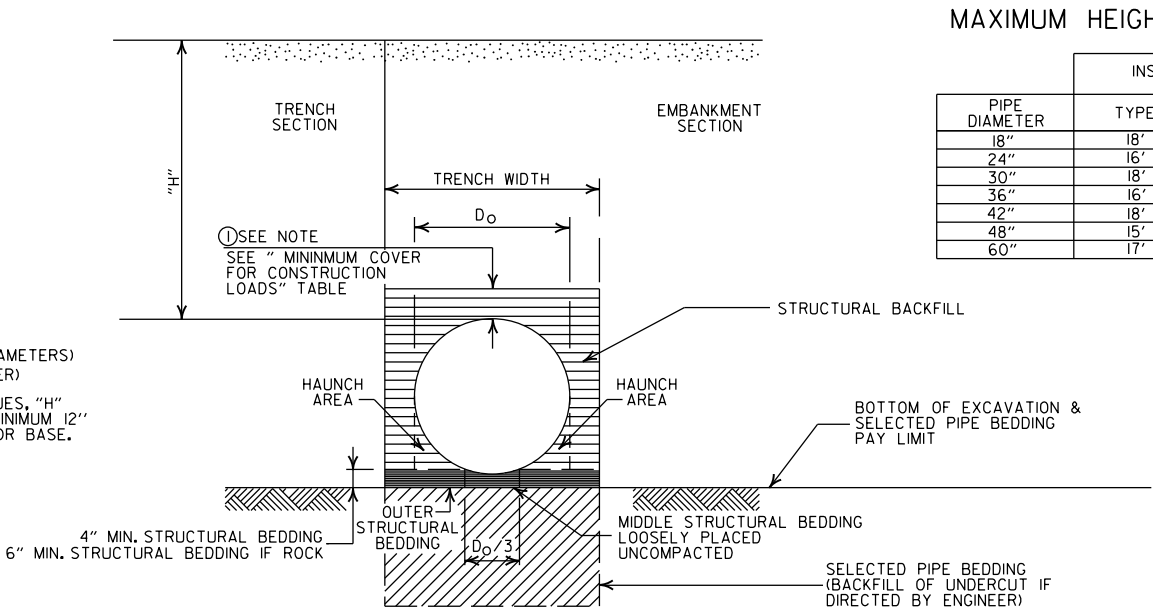
① NOTE:
12" MIN. (18" - 42" DIAMETERS)
24" MIN. (60" DIAMETER)

MINIMUM COVER VALUES, "H"
SHALL INCLUDE A MINIMUM 12"
OF PAVEMENT AND/OR BASE.

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-150.0 (KIPS)
36" OR LESS	2'-0"	2'-6"	3'-0"	3'-0"
42" OR GREATER	3'-0"	3'-0"	3'-6"	4'-0"

② MINIMUM COVER SHALL BE MEASURED FROM TOP OF PIPE TO TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE. THE SURFACE SHALL BE MAINTAINED.



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. THE STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 8". THE LAYERS SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY TO THE ELEVATION OF THE MINIMUM COVER.
5. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

GENERAL NOTES

1. PIPE SHALL CONFORM TO AASHTO M330, TYPE S. INSTALLATION SHALL CONFORM TO JOB SPECIAL PROVISION "PLASTIC PIPE" AND SECTION 606 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).
2. PLASTIC PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SIXTH EDITION (2012) WITH 2013 INTERIMS.
3. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PLUS A SUFFICIENT WIDTH TO ENSURE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT HAUNCHING AND OTHER BACKFILL MATERIAL.
4. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
5. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
6. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."
7. FOR PIPE TYPES THAT ARE NOT SMOOTH ON THE OUTSIDE (CORRUGATED OR PROFILE WALLS), BACKFILL GRADATIONS SHOULD BE SELECTED THAT WILL PERMIT THE FILLING OF THE CORRUGATION OR PROFILE VALLEY.
8. POLYPROPYLENE PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR POLYPROPYLENE PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN SECTION 26.4.2.4 AND 30.4.2 OF THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS 3RD EDITION (2010) WITH 2012 INTERIMS. JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

MAXIMUM HEIGHT OF FILL "H"

PIPE DIAMETER	INSTALLATION TYPE	
	TYPE 1	TYPE 2
18"	18'	14'
24"	16'	12'
30"	18'	14'
36"	16'	12'
42"	18'	13'
48"	15'	11'
60"	17'	12'

- LEGEND -

H = FILL HEIGHT (FT.)
D_o = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM

===== = STRUCTURAL BACKFILL MATERIAL
===== = UNDISTURBED SOIL

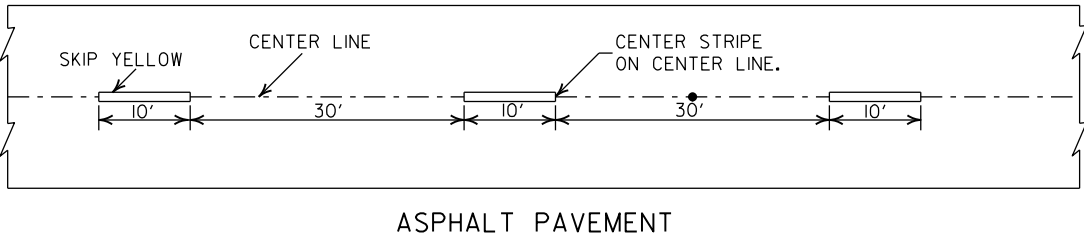
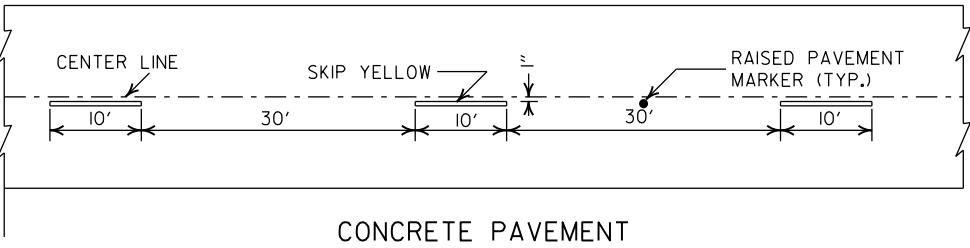
02-27-20	REVISED	
11-07-19	ISSUED	
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

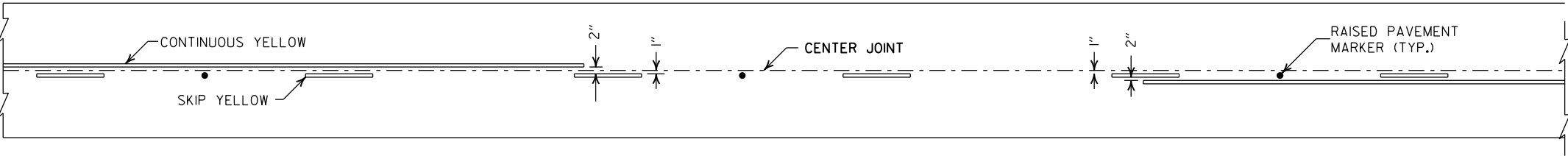
PLASTIC PIPE CULVERT
(POLYPROPYLENE)

STANDARD DRAWING PCP-3

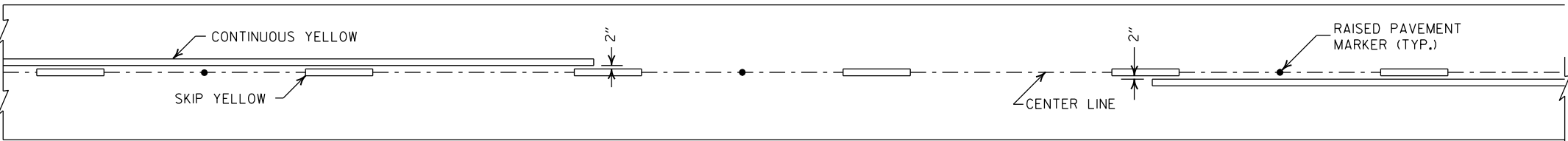




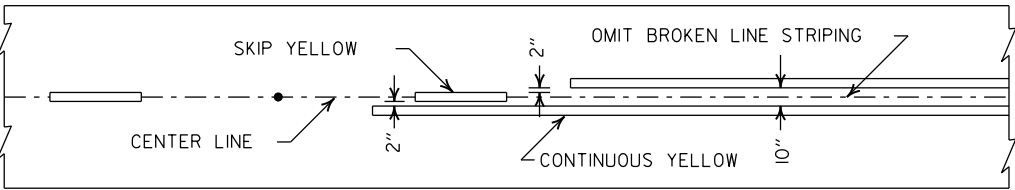
BROKEN LINE STRIPING



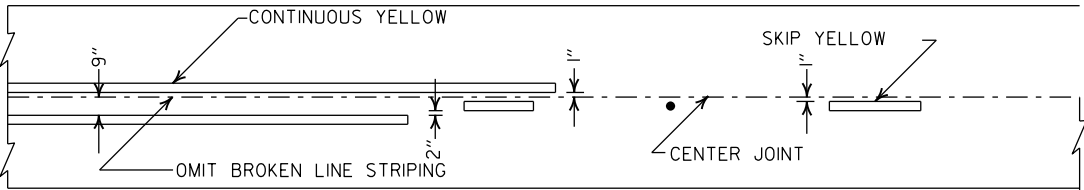
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

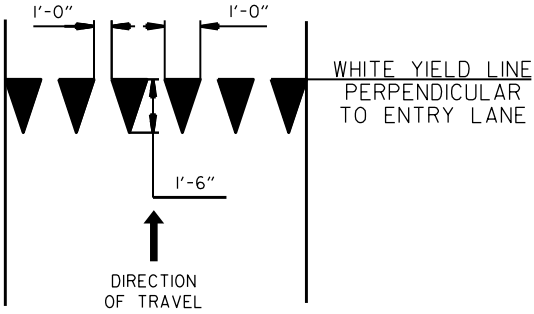


ASPHALT PAVEMENT

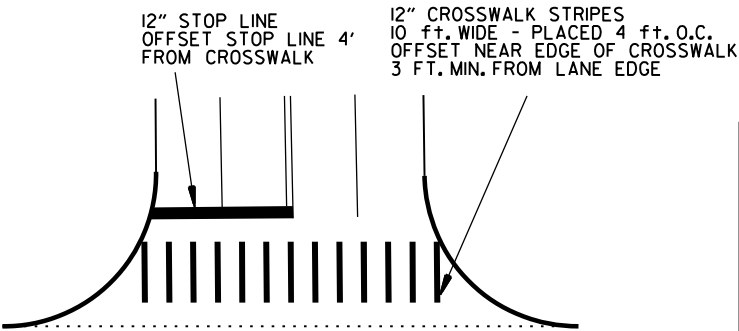


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

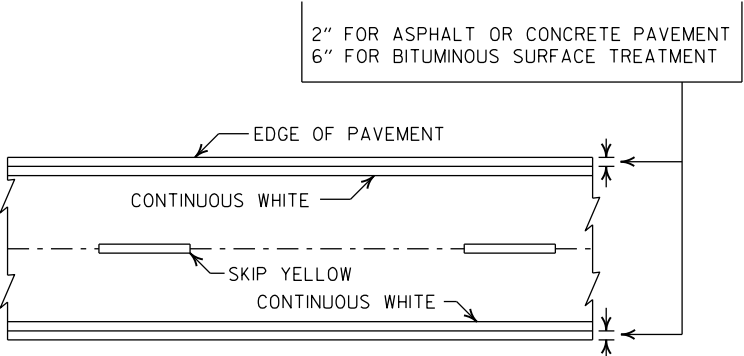


YIELD LINE DETAIL

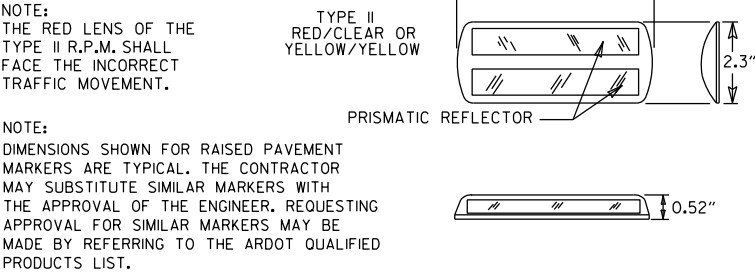


CROSSWALK AND STOP LINE DETAILS

- 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.



PAVEMENT EDGE LINE MARKING



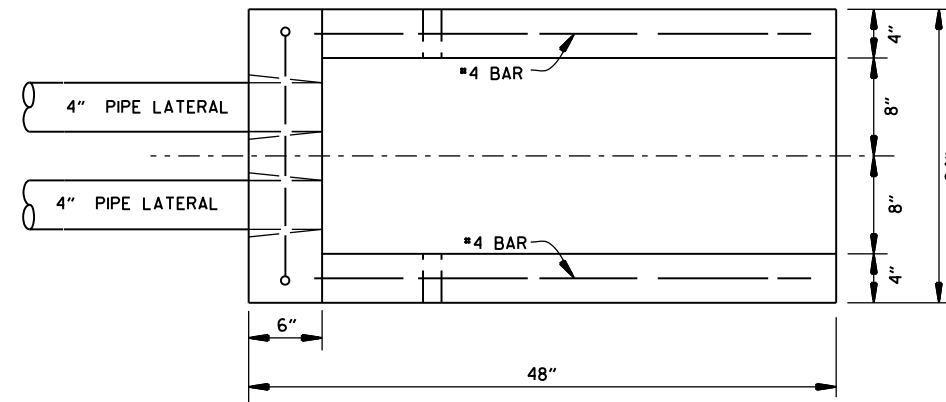
DETAIL OF STANDARD RAISED PAVEMENT MARKERS

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
DATE	REVISION	FILMED

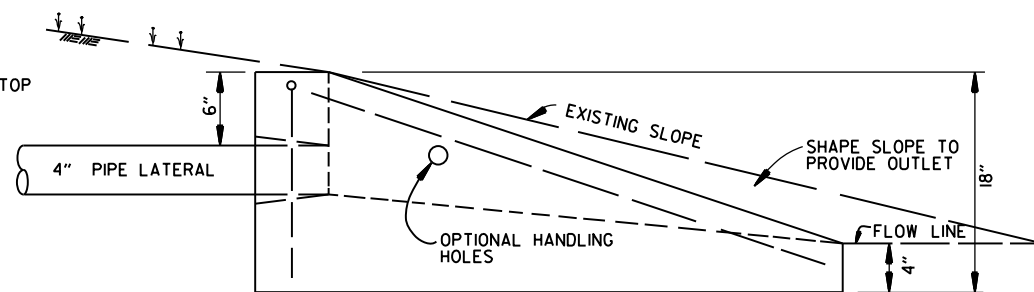
ARKANSAS STATE HIGHWAY COMMISSION
PAVEMENT MARKING DETAILS
STANDARD DRAWING PM-1

1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

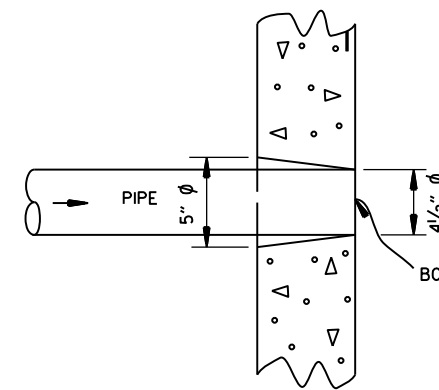
2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



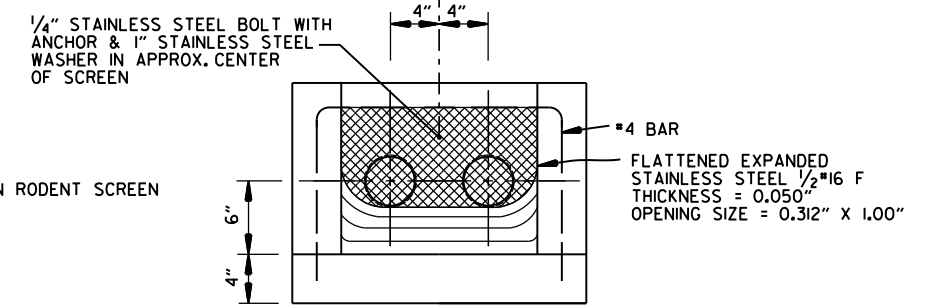
PLAN VIEW



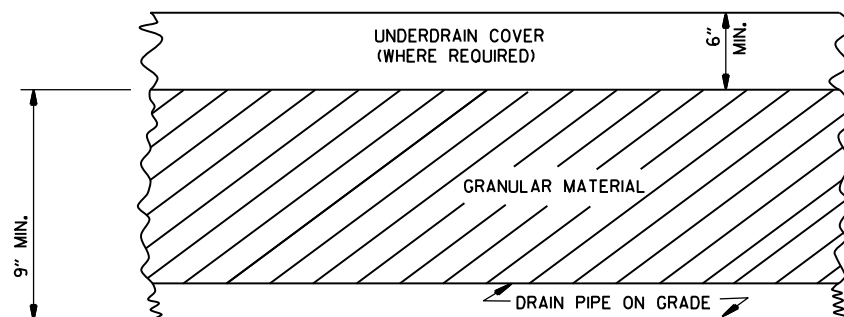
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)

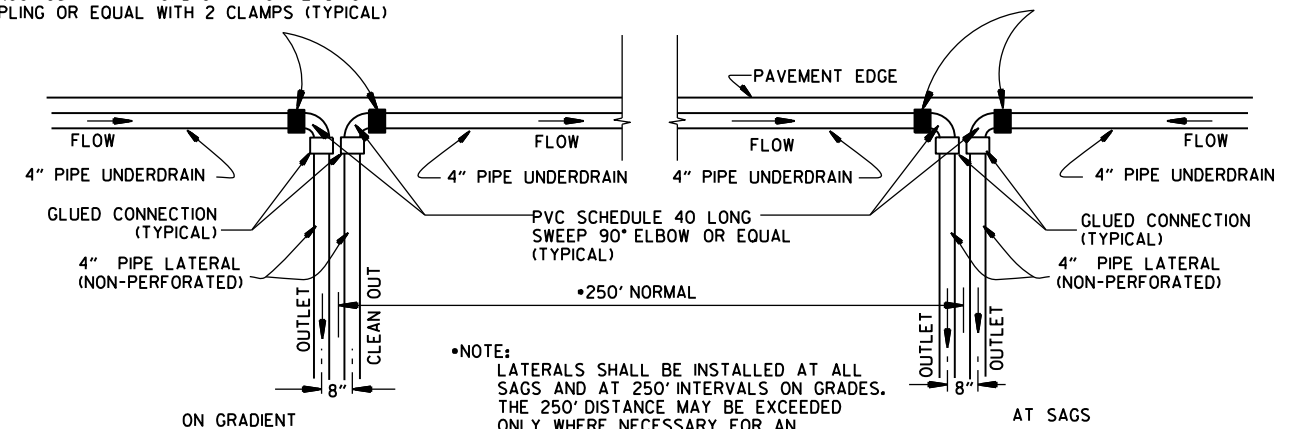


DETAILS OF PIPE UNDERDRAIN

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)

UNDERDRAIN OUTLET PROTECTORS

FERNCO 1056-44 (4" CI/PLASTIC) OR
FERNCO 1051-44 (4" AC/DIOR 4" CI/PLASTIC)
COUPLING OR EQUAL WITH 2 CLAMPS (TYPICAL)



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.

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.

12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE IFOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
I-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
II-18-98	REVISED NOTE	
IO-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
II-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
II- 3-94	REVISED FOR DUAL LATERALS	II- 3-94
IO- 1-92	SUBSTITUTED GEOTEXTILE	IO- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
II- 8-90	DELETED ALTERNATE NOTE	II- 8-90
I-25-90	ADDED 4" SNAP ADAPTER	I-25-90
II-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	II-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88
DATE	REVISION	DATE FILED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-I

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		RC	96	
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	
1° 15'	NC			NC			NC			0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158		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		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		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		0.078	235	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178		0.062	197		0.072	221		0.078	235		0.086	254	
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		0.082	245		0.092	269	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149		0.054	178		0.064	202		0.072	221		0.082	245		0.088	259		0.098	283	
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		0.100	288	
3° 15'	0.028	86		0.036	109		0.044	134		0.052	162		0.062	197		0.072	221		0.082	245		0.092	269		0.098	283		0.100	288	
3° 30'	0.030	90		0.038	113		0.046	139	200	0.056	171		0.066	206		0.076	230		0.086	254		0.096	278		0.098	283		0.100	288	
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.096	278		0.098	283		0.100	288	
4° 00'	0.034	97		0.042	121		0.052	151		0.062	185		0.072	221		0.084	250		0.094	274		0.098	283		0.100	288		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		0.098	283		0.100	288		0.100	288	
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283		0.098	283		0.100	288		0.100	288	
4° 45'	0.038	104		0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.098	283		0.098	283		0.100	288		0.100	288	
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		0.098	283		0.098	283		0.100	288		0.100	288	
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221		0.088	259		0.098	283		0.098	283		0.098	283		0.100	288		0.100	288	
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278		0.098	283		0.098	283		0.098	283		0.100	288		0.100	288	
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283		0.098	283		0.098	283		0.098	283		0.100	288		0.100	288	
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
8° 30'	0.060	144		0.072	179		0.086	223		0.096	261		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
10° 00'	0.066	155		0.080	195		0.094	240		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
11° 00'	0.070	162		0.084	203		0.096	244		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
12° 00'	0.074	169		0.088	211		0.098	248		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
13° 00'	0.076	173		0.090	215		0.100	252	300	0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
14° 00'	0.080	180		0.094	222		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
15° 00'	0.082	184		0.096	226		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
16° 00'	0.086	191		0.098	230		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
17° 00'	0.088	194		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
18° 00'	0.090	198		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
19° 00'	0.092	202		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
20° 00'	0.094	205		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
21° 00'	0.096	209		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
22° 00'	0.096	209		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
23° 00'	0.098	212		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
24° 00'	0.098	212		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	
25° 00'	0.100	216		0.100	234		0.100	252		0.100	270		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288		0.100	288	

- GENERAL NOTES
- ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
 - SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
 - LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
 - PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:

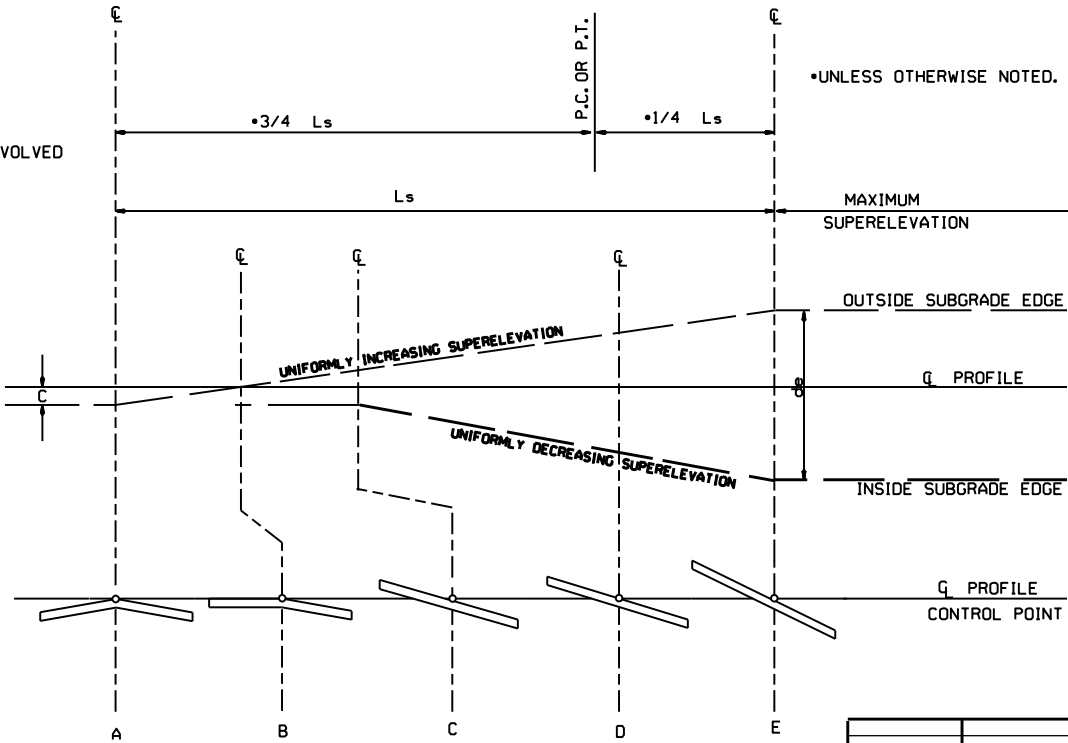
3 LANE UNDIVIDED - - - - +20%
4 LANE UNDIVIDED - - - - +50%
5 LANE UNDIVIDED - - - - +80%
6 LANE UNDIVIDED - - - - +100%

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.
RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

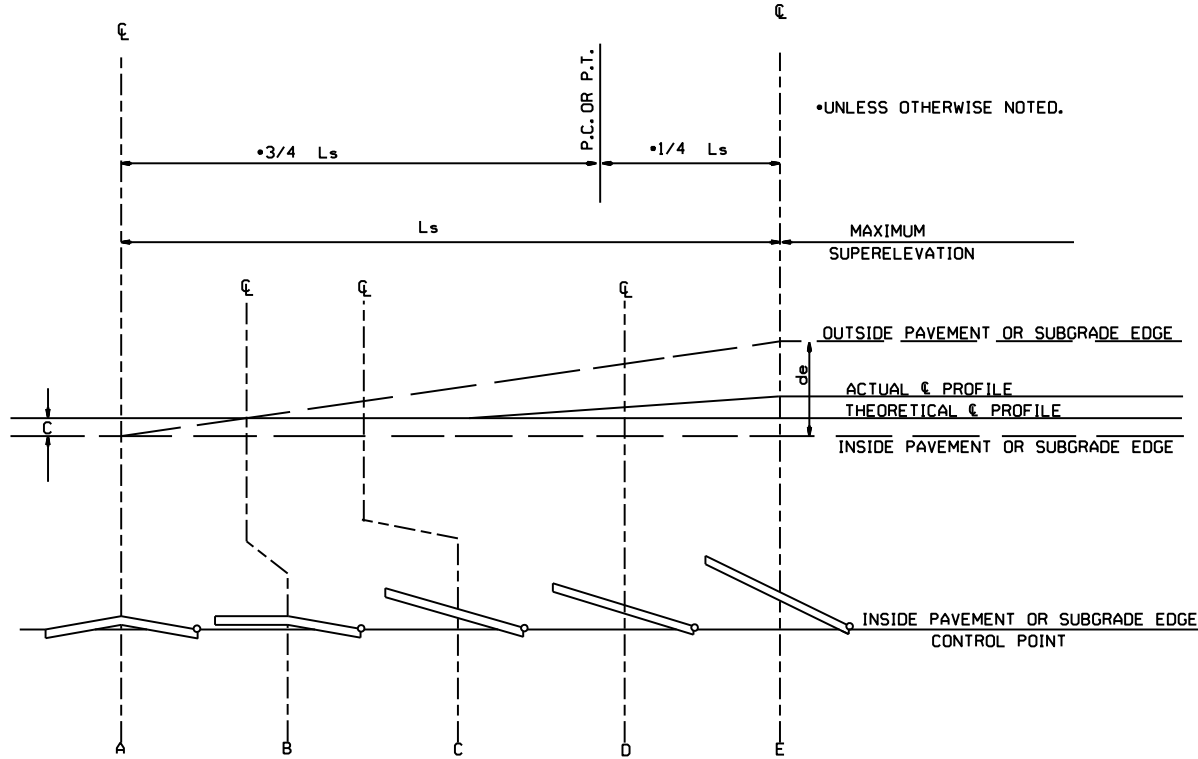
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

ABBREVIATIONS


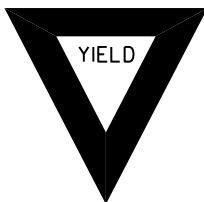



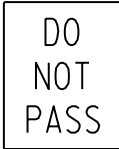



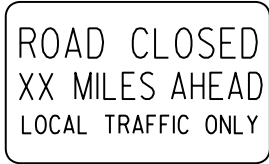


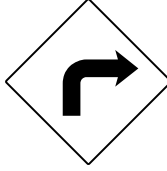





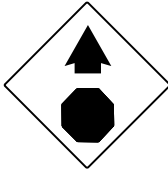
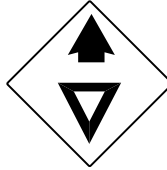
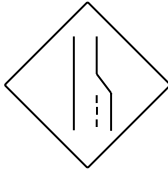

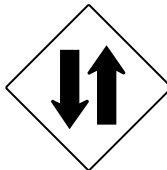

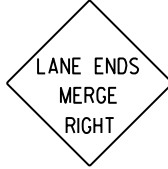









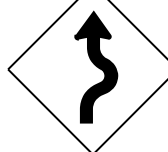



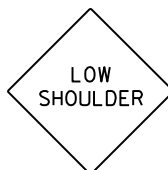

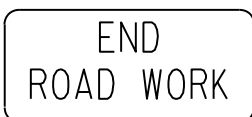
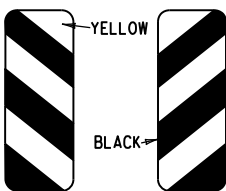


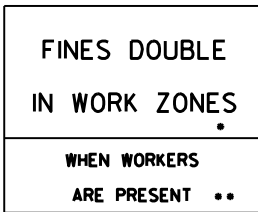
NC - NORMAL CROWN
RC - REVERSE CROWN, SUPERELEVATION AT NORMAL CROWN SLOPE
e - RATE OF SUPERELEVATION (FT. PER FT.)
Ls - LENGTH OF SUPERELEVATION TRANSITION (FT.)
L - DISTANCE FROM BEGINNING OF SUPERELEVATION TRANSITION TO ANY POINT (FT.)
d - WIDTH OF PAVEMENT (FT.) OR WIDTH OF SUBGRADE (FT.)
C - NORMAL CROWN (FT.)



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

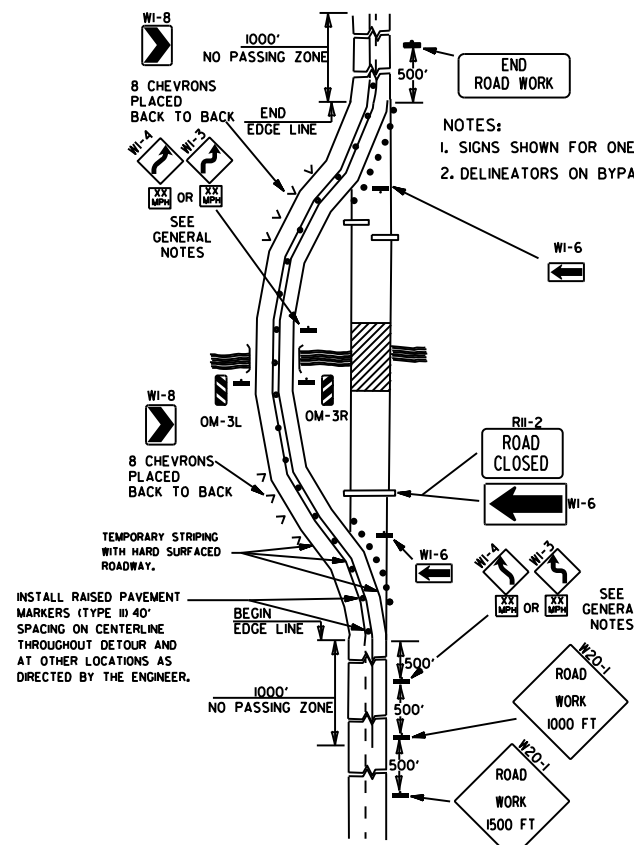


STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND INNER SUBGRADE POINT OR INNER PAVEMENT

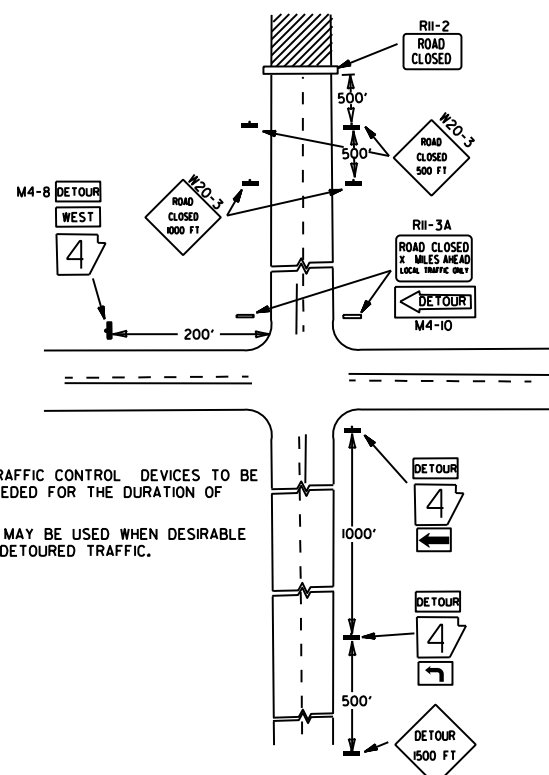
<div>RI-1</div> <div></div> <div>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</div>	<div>RI-2</div> <div></div> <div>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</div>	<div>R2-1</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div>	<div>W3-5</div> <div></div> <div>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</div>	<div>W3-5a</div> <div></div> <div>STD. 36"x36" EXPWY. 48"x48" FWY. 48"x48"</div>	<div>R4-1</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div>	<div>R4-2</div> <div></div> <div>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</div>	<div>ADVANCE DISTANCES (XXXX)</div> <div>500 FT 1/2 MILE 1000 FT 3/4 MILE 1500 FT 1 MILE AHEAD</div> <div>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 SO. 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 1MILE 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.</div>
<div>R5-1</div> <div></div> <div>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</div>	<div>R11-2</div> <div></div> <div>48"x30"</div>	<div>R11-3A</div> <div></div> <div>60"x30"</div>	<div>R11-4</div> <div></div> <div>60"x30"</div>	<div>W21-5a</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W1-1</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W1-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	
<div>W1-3</div> <div></div> <div>STD. 48"x48"</div>	<div>W1-4</div> <div></div> <div>STD. 48"x48"</div>	<div>W1-6</div> <div></div> <div>STD. 48"x24" SPECIAL 60"x30"</div>	<div>W1-8</div> <div></div> <div>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</div>	<div>W3-1</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div>	<div>W3-2</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div>	<div>W4-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	
<div>W5-1</div> <div></div> <div>STD. 36"x36" SPECIAL 48"x48"</div>	<div>W6-3</div> <div></div> <div>EXPWY. 36"x36" SPECIAL 48"x48"</div>	<div>W8-7</div> <div></div> <div>EXPWY. 36"x36" FWY. 48"x48"</div>	<div>W9-2</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W13-1</div> <div></div> <div>STD. 24"x24"</div>	<div>W20-1</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-2</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-3</div> <div></div> <div>STD. 48"x48"</div>
<div>W20-4</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-5</div> <div></div> <div>STD. 48"x48"</div>	<div>W20-7a</div> <div></div> <div>18" 500 FEET 24" W16-2 STD. 36"x36" FWY. 48"x48"</div>	<div>W21-2</div> <div></div> <div>STD. 30"x30" SPECIAL 36"x36"</div>	<div>W21-5</div> <div></div> <div>STD. 30"x30" SPECIAL 36"x36"</div>	<div>W24-1</div> <div></div> <div>STD. 36"x36"</div>	<div>W1-4b</div> <div></div> <div>STD. 48"x48"</div>	<div>R56-1</div> <div></div> <div>STD. 18"x18"</div>
<div>W8-11</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>W8-9</div> <div></div> <div>STD. 36"x36" FWY. 48"x48"</div>	<div>G20-1</div> <div></div> <div>60"x24"</div>	<div>G20-2</div> <div></div> <div>48"x24"</div>	<div>OM-3L OM-3R</div> <div></div> <div>12"x36"</div>	<div>M4-9</div> <div></div> <div>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</div>	<div>M4-10</div> <div></div> <div>48"x18"</div>	<div>R55-1</div> <div></div> <div>36"x60" • USE 6" C LETTERS •• USE 4" D LETTERS</div>

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	
DATE	REVISION	FILMED

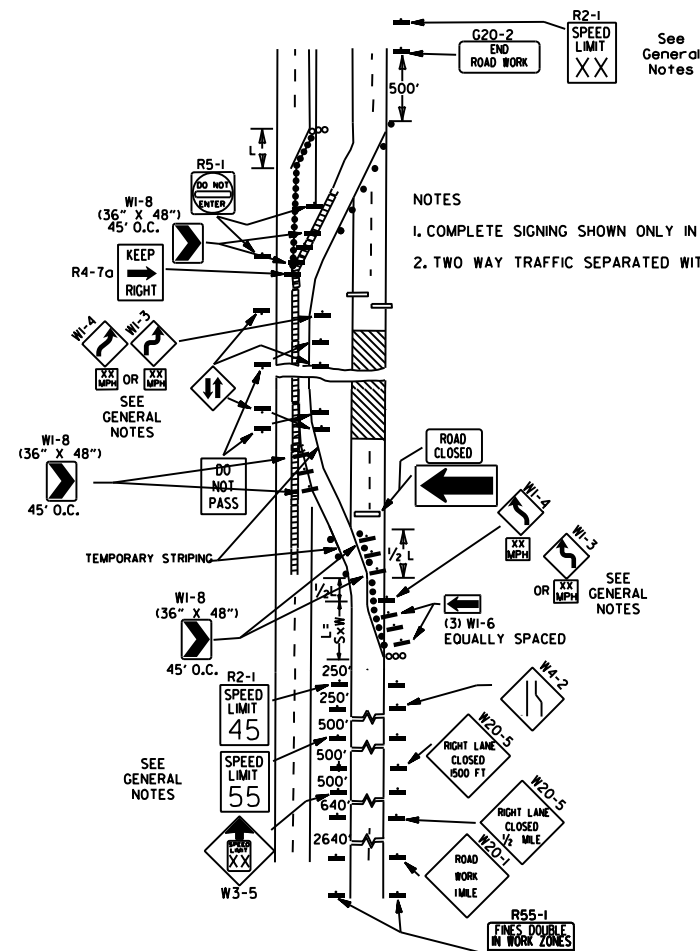
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-1



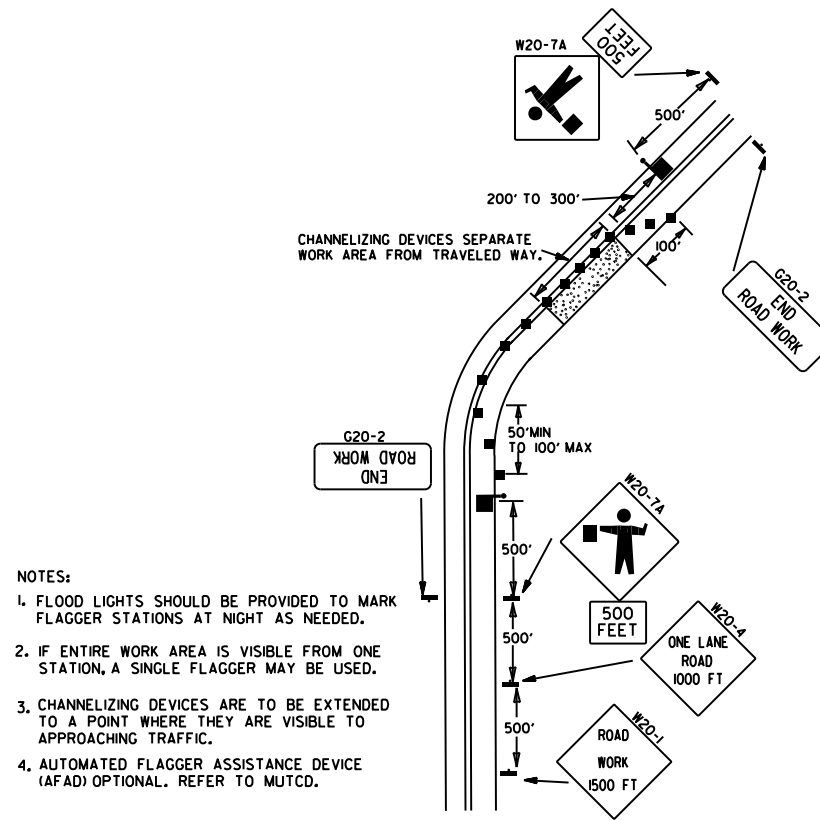
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



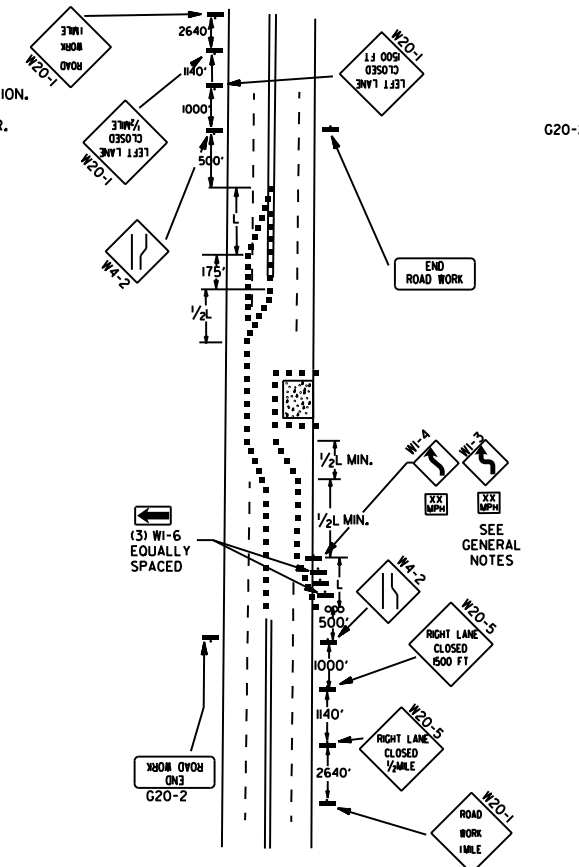
(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.



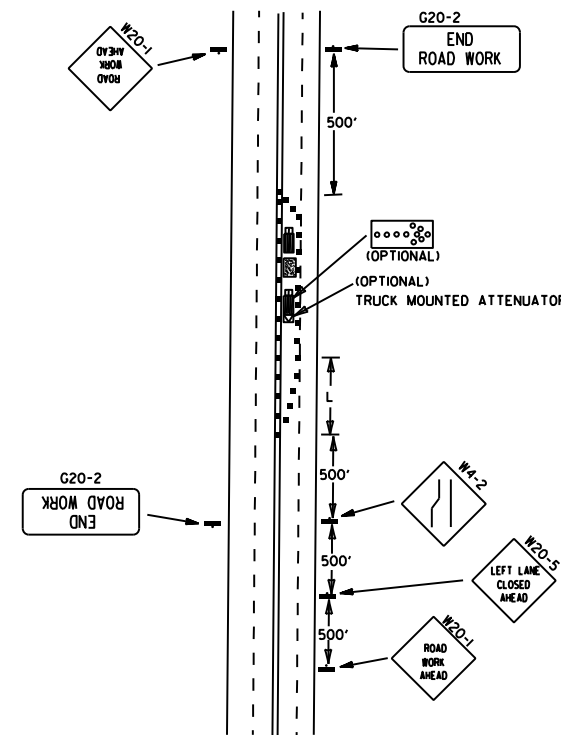
(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.



(E) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE ONE LANE IS CLOSED AND FLAGGING IS PROVIDED.

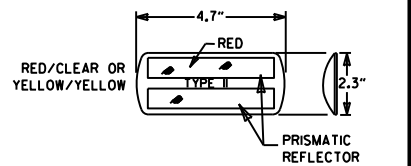


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(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.

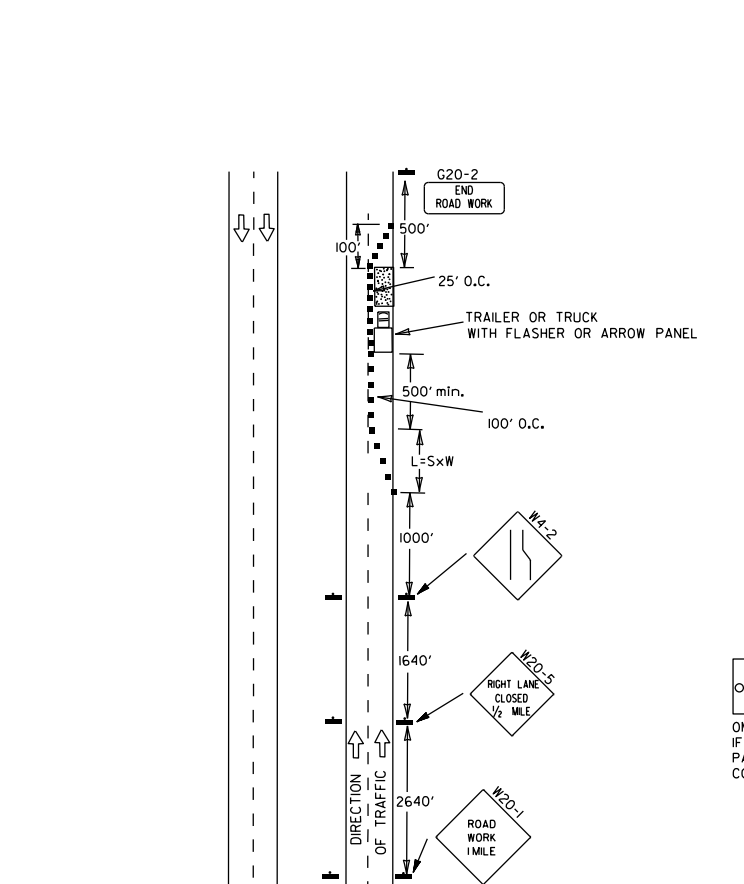
WHERE:
L = MINIMUM LENGTH OF TAPER.

S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.

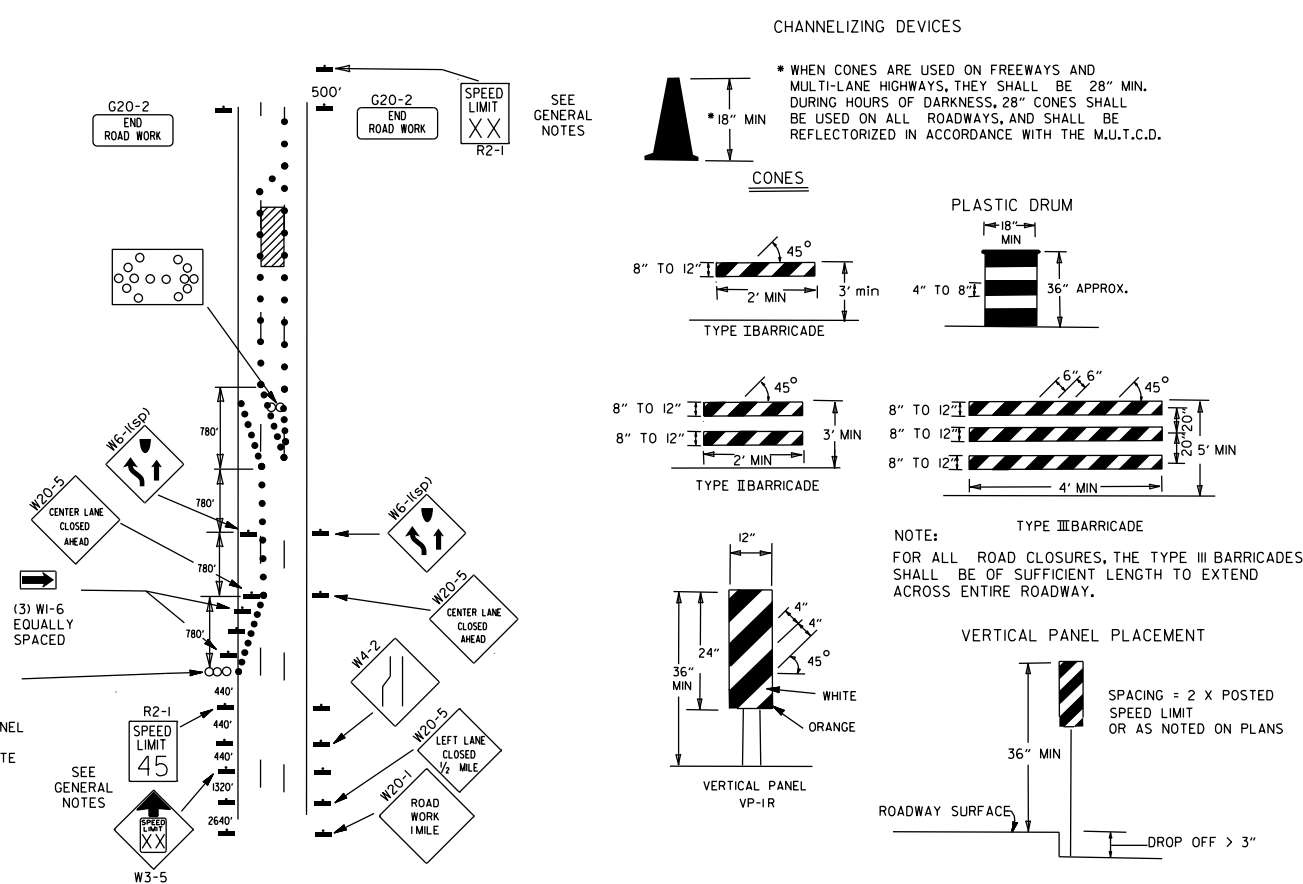
W = WIDTH OF OFFSET.

- GENERAL NOTES:
- 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.
 - WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-145 SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-145 SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 - WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-145 SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/2 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-155 SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
 - 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.
 - WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 - PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
 - 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.
 - 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.
 - 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).

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	
DATE	REVISION	FILMED



(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.

KEY:

- ARROW PANEL (IF REQUIRED)
- CHANNELIZING DEVICE
- TRAFFIC DRUM

GENERAL NOTES:

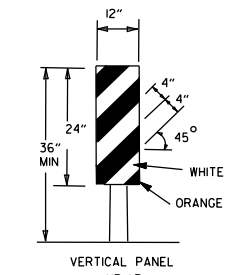
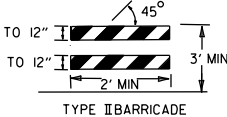
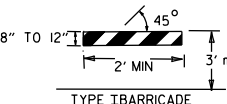
1. A SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL 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(65) 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.

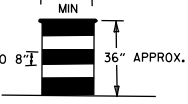
CHANNELIZING DEVICES

* 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



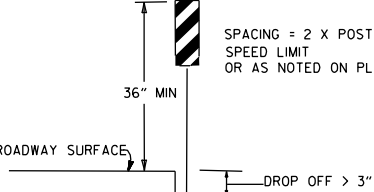
PLASTIC DRUM



NOTE:

FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.

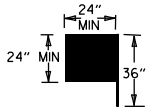
VERTICAL PANEL PLACEMENT



SPACING = 2 X POSTED SPEED LIMIT OR AS NOTED ON PLANS

DROP OFF > 3"

FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

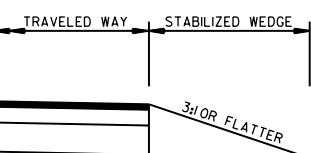
(D) TYPICAL APPLICATION - CLOSING MULTIPLE LANES OF A MULTILANE HIGHWAY.

TRAFFIC CONTROL DEVICES

VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		NON-INTERSTATE	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1"	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"	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"	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"	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"	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



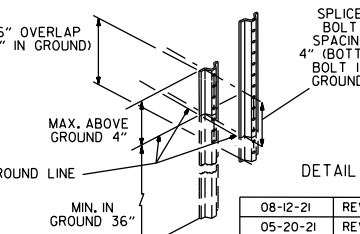
STABILIZED WEDGE

NOTE: MATERIALS FOR THE STABILIZED WEDGE SHALL MEET THE REQUIREMENTS PROVIDED IN SECTION 603.02 OF THE STANDARD SPECIFICATIONS.

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

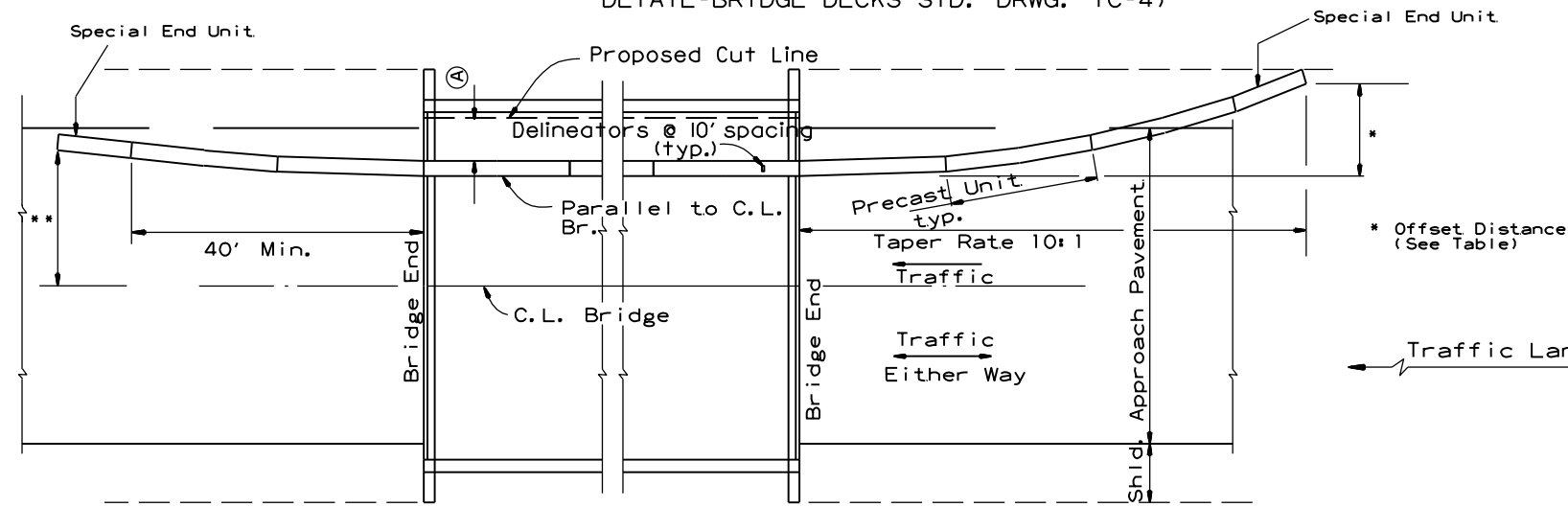
SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.



DATE	REVISION	REVISOR	FILED
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		

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STANDARD DRAWING TC-3

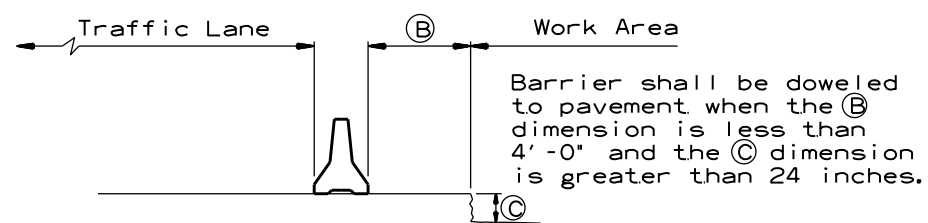
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

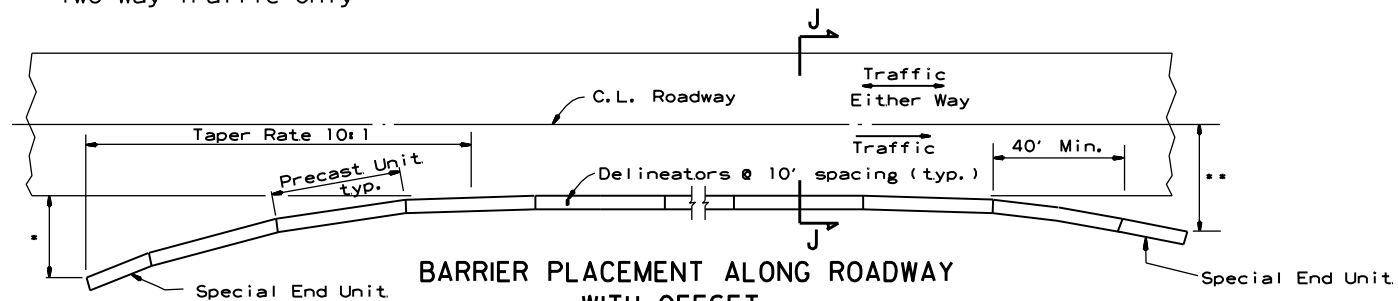
No Scale

** Offset Distance for Two Way Traffic Only



SECTION J-J

No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

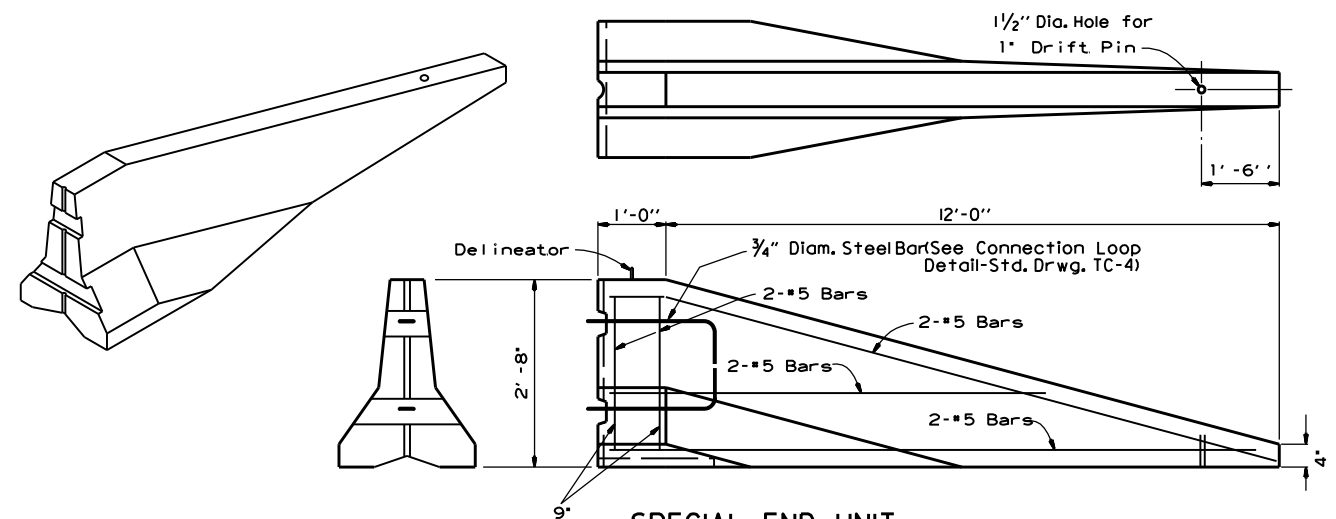
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

Offset Distance Table

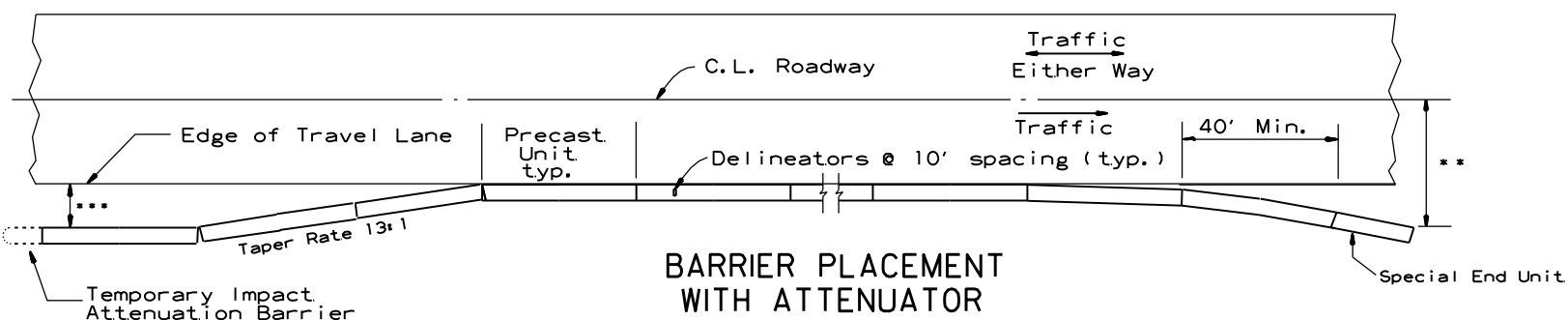
Speed (MPH)	Offset Distance (FT.)
≤ 45	12
> 45	18

If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.



SPECIAL END UNIT

No Scale



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

** Offset Distance For Two Way Traffic Only

***Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

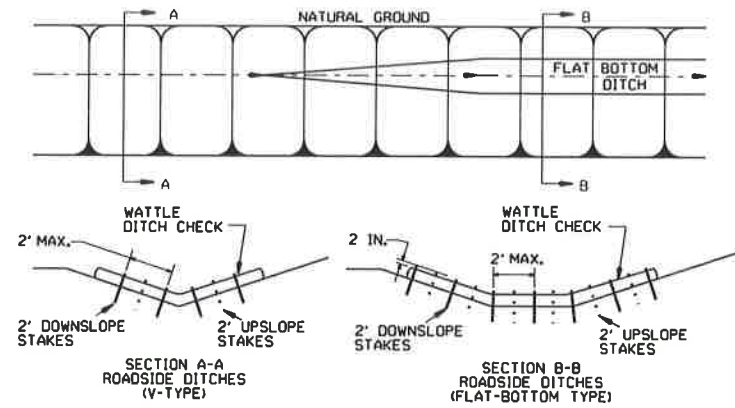
General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

			ARKANSAS STATE HIGHWAY COMMISSION	
			STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER	
			STANDARD DRAWING TC-5	
11-07-19	REVISED NOTE			
10-15-09	ADDED REFERENCE TO MASH			
5-25-06	REVISED BARRIER PLACEMENT			
8-22-02	ISSUED NEW DRAWING			
DATE	REVISION	FILMED		

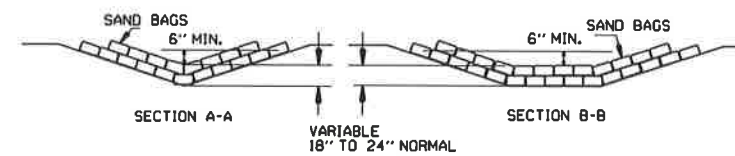
GENERAL NOTES

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

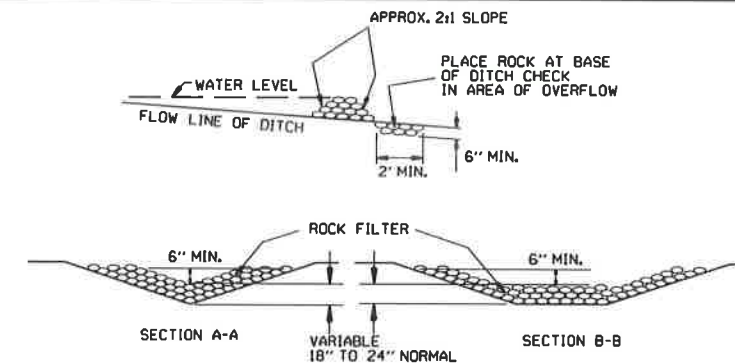


WATTLE DITCH CHECK (E-1)

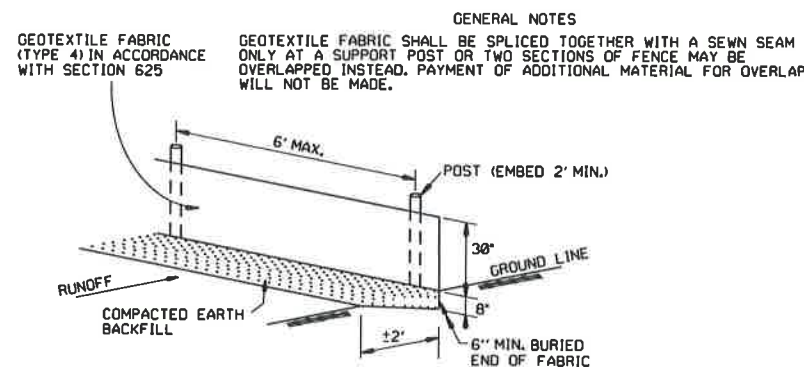
NUMBER OF SAND BAGS AND ARRANGEMENT VARIABLE WITH ON-SITE CONDITIONS. PLACE SAND BAGS AT BASE OF DITCH CHECK IN AREA OF OVERFLOW.



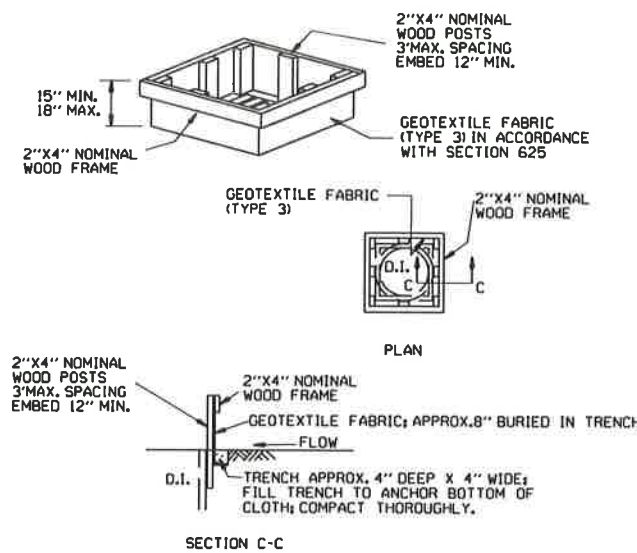
SAND BAG DITCH CHECK (E-5)



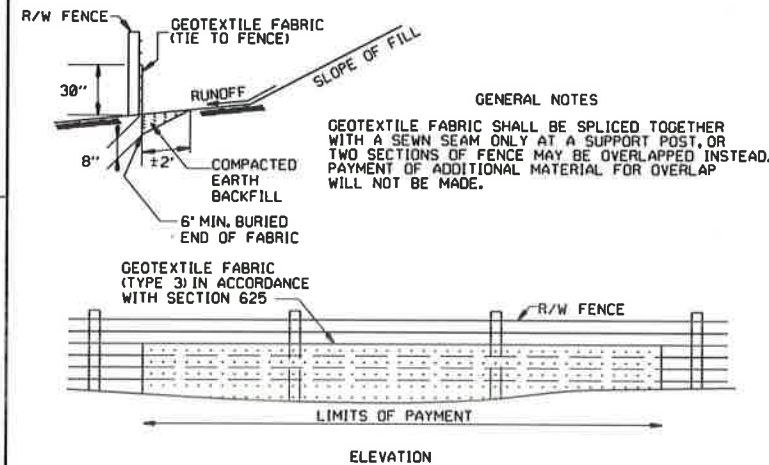
ROCK DITCH CHECK (E-6)



SILTS FENCE (E-11)

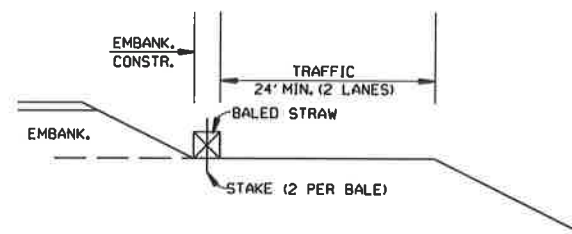


DROP INLET SILTS FENCE (E-7)

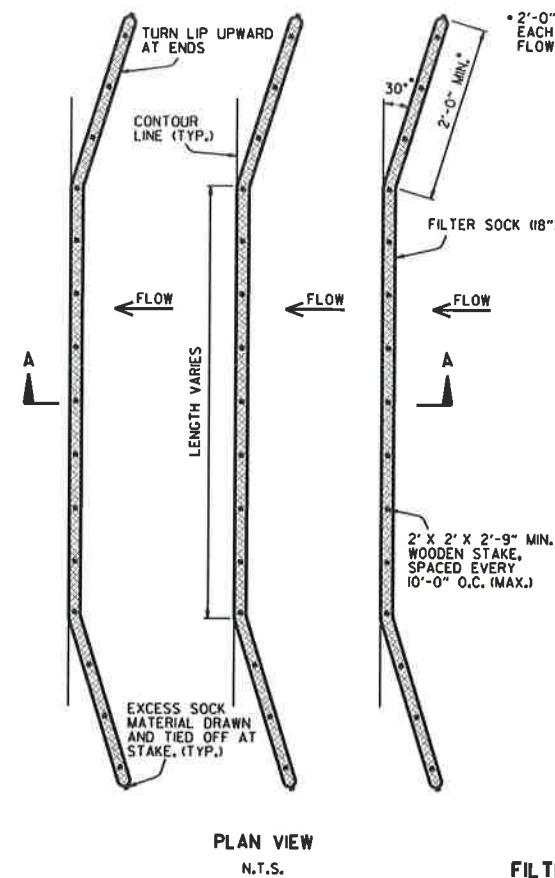


SILTS FENCE ON R/W FENCE (E-4)

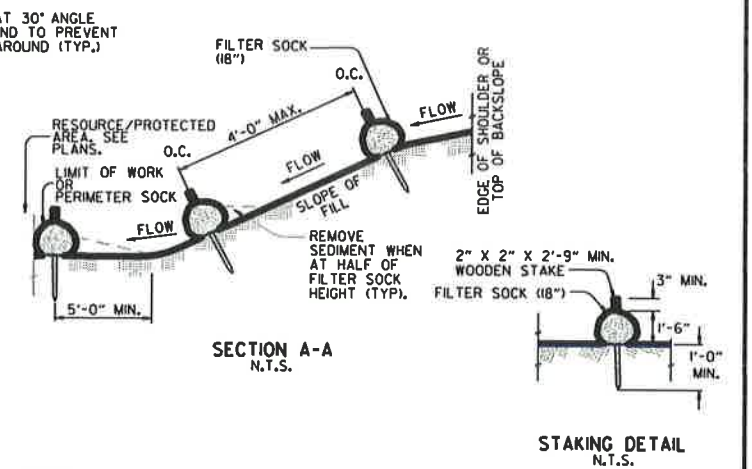
GENERAL NOTES
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.
2. NO GAPS SHALL BE LEFT BETWEEN BALES.
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL 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.



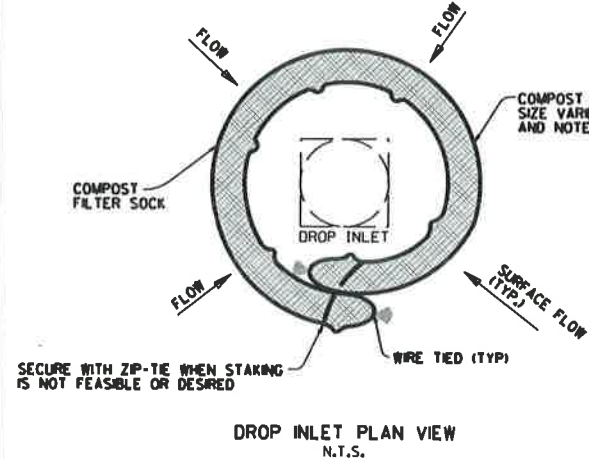
BALED STRAW FILTER BARRIER (E-2)



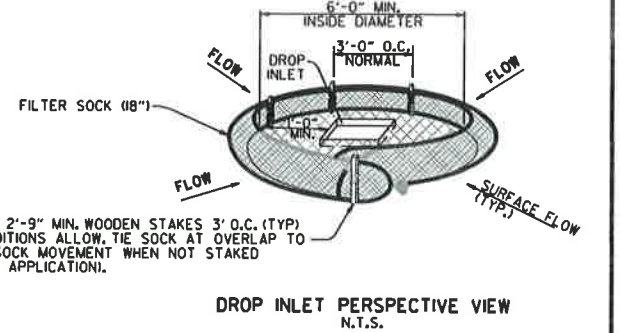
FILTER SOCK ALONG SLOPE (E-3)



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 SUBSIDIARY 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.



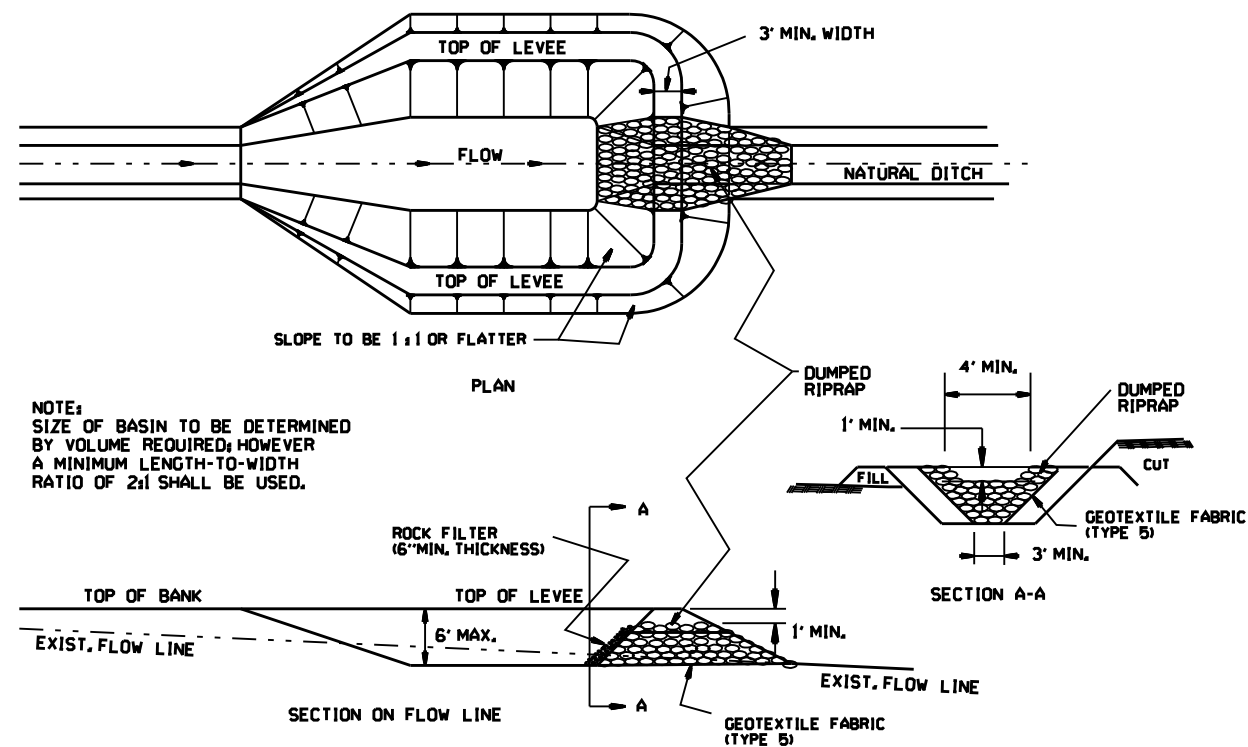
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)



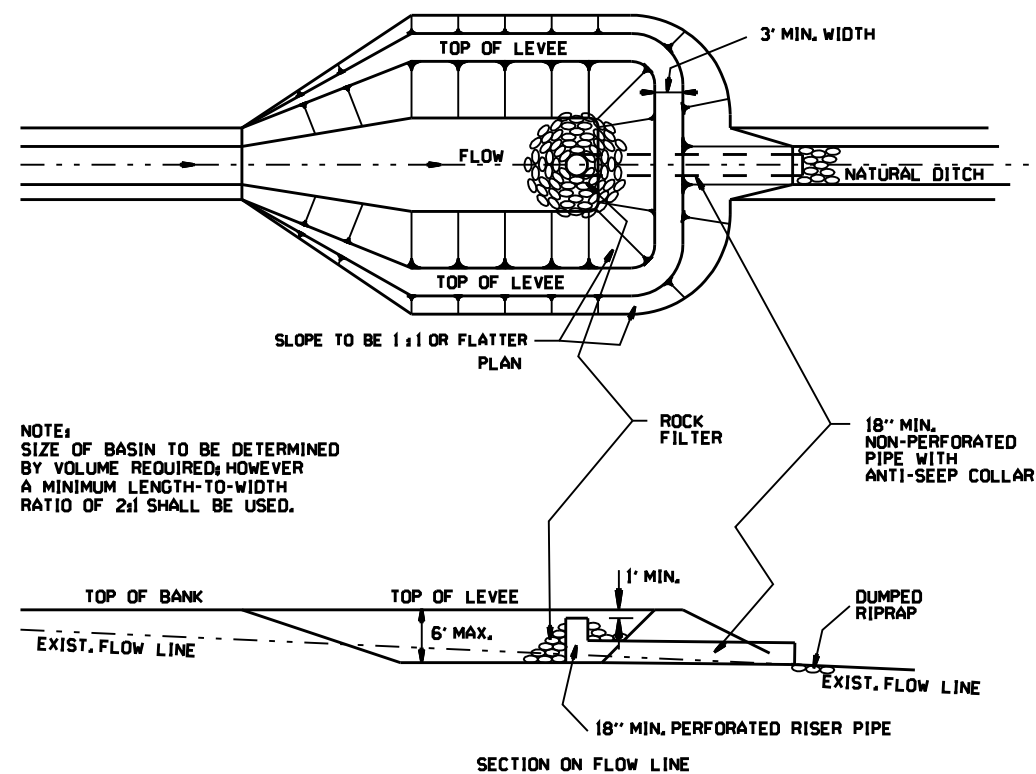
NOTES:
1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).
2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
4-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILTS 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.O.M.	298-7-28-76
DATE	REVISION	FILMED

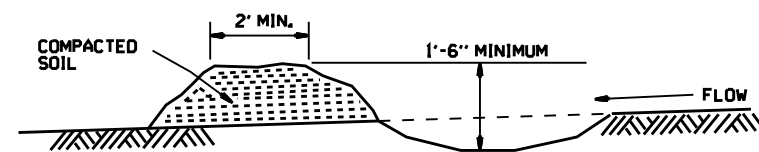
ARKANSAS STATE HIGHWAY COMMISSION
TEMPORARY EROSION
CONTROL DEVICES
STANDARD DRAWING TEC-1



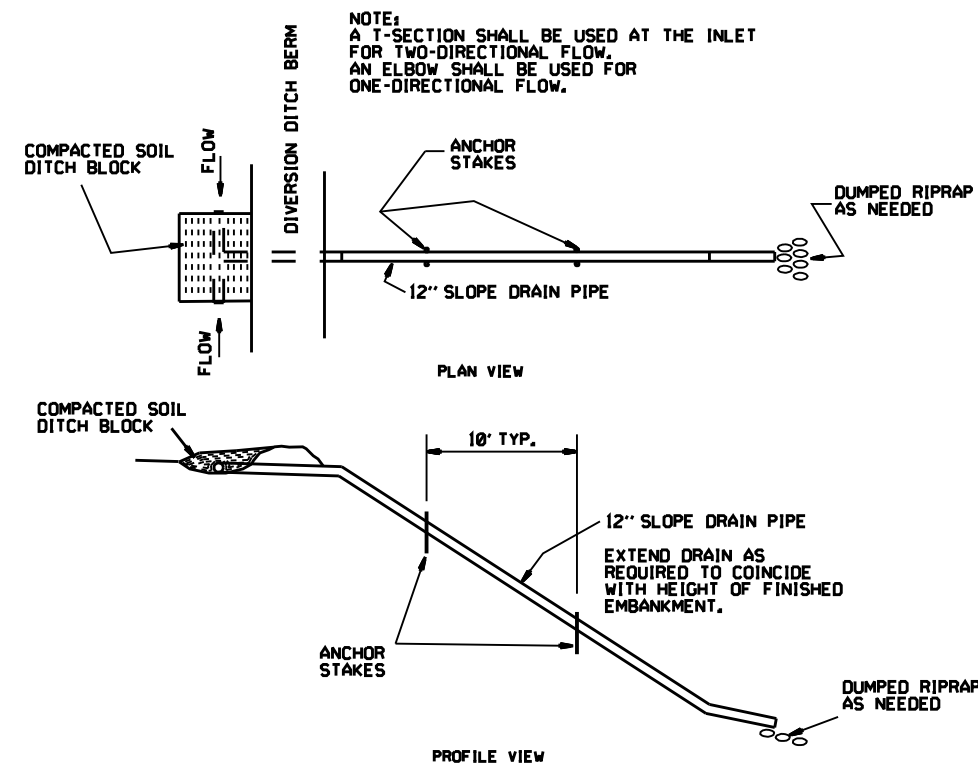
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



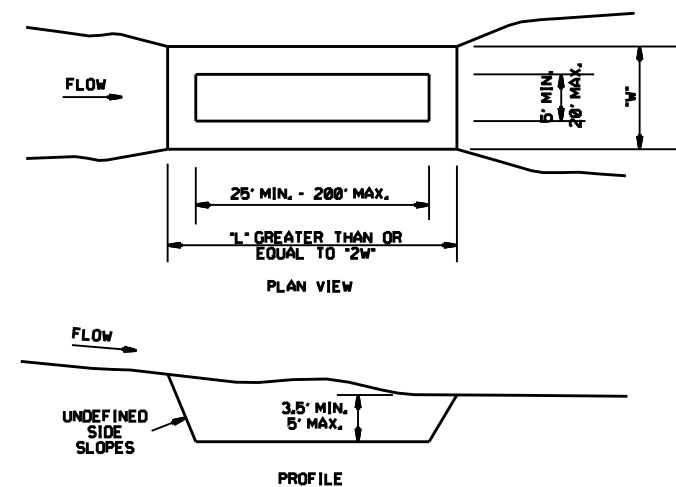
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



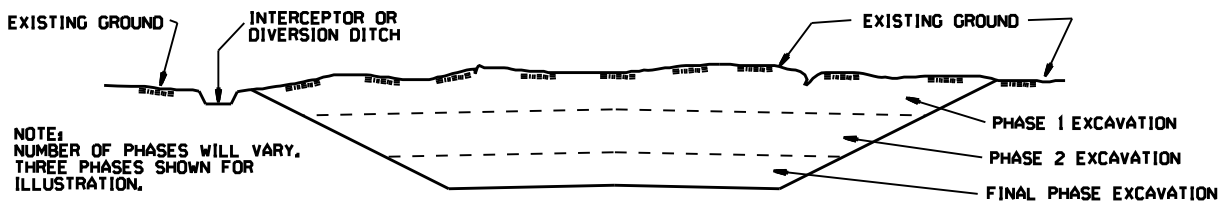
SEDIMENT BASIN (E-14)

ARKANSAS STATE HIGHWAY COMMISSION			
TEMPORARY EROSION CONTROL DEVICES			
STANDARD DRAWING TEC-2			
6-2-94	Revised E-8 & E-12r Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

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

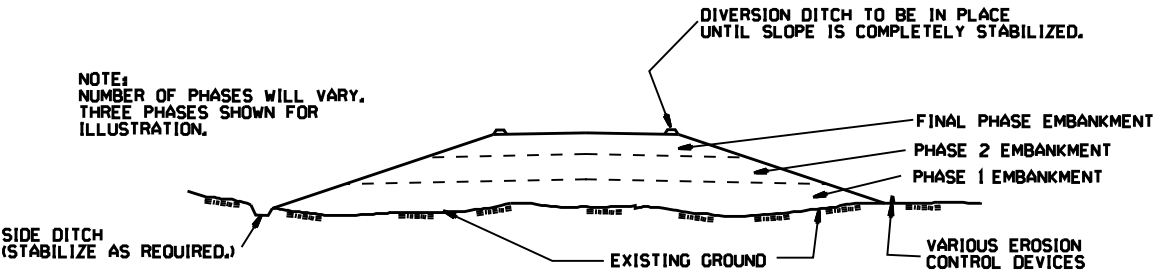


GENERAL NOTE

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

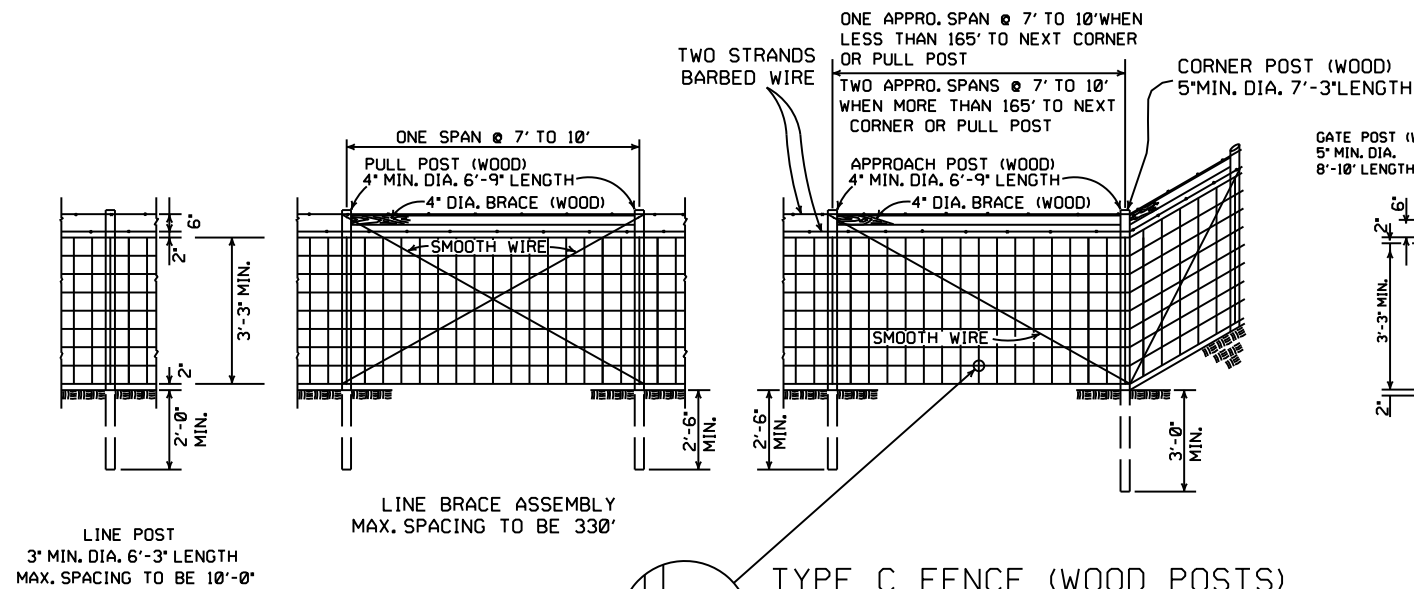


GENERAL NOTE

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.

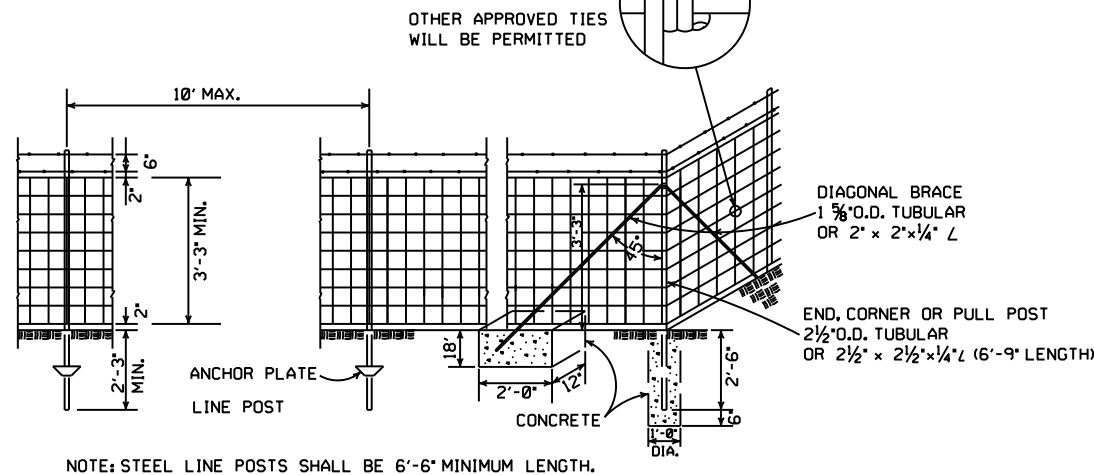
			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
			STANDARD DRAWING TEC-3
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILED	



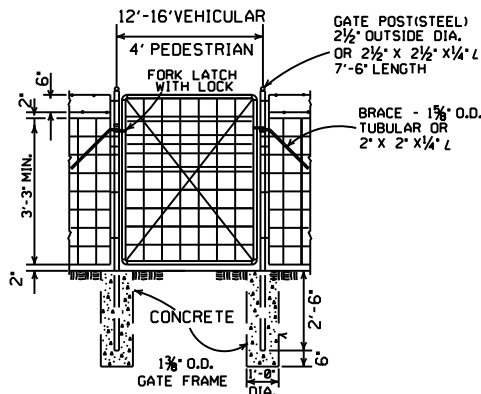
LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"

LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

TYPE C FENCE (WOOD POSTS)



TYPE C FENCE (STEEL POSTS)



GENERAL NOTES:

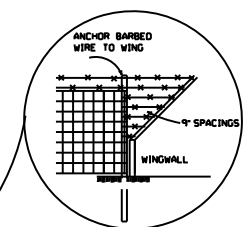
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE. AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE -1' TO +2'. TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.

AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

NOTE: USE 3/8" X 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.

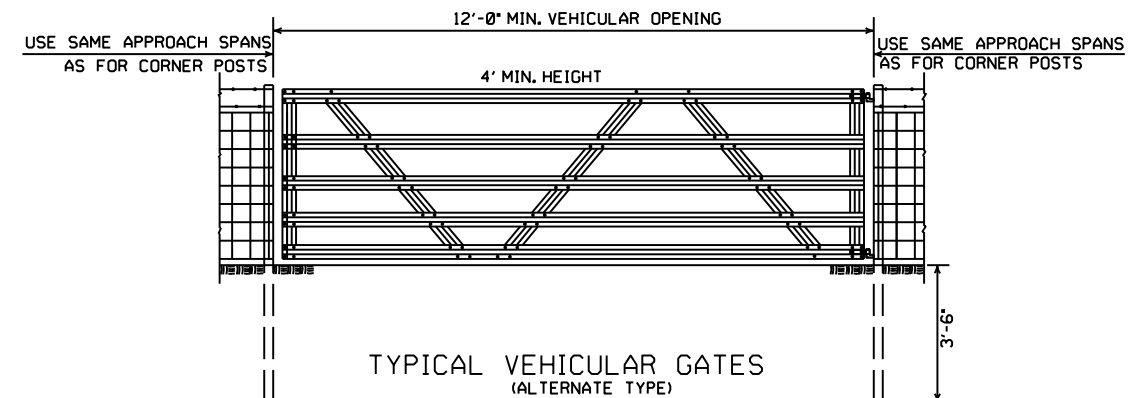
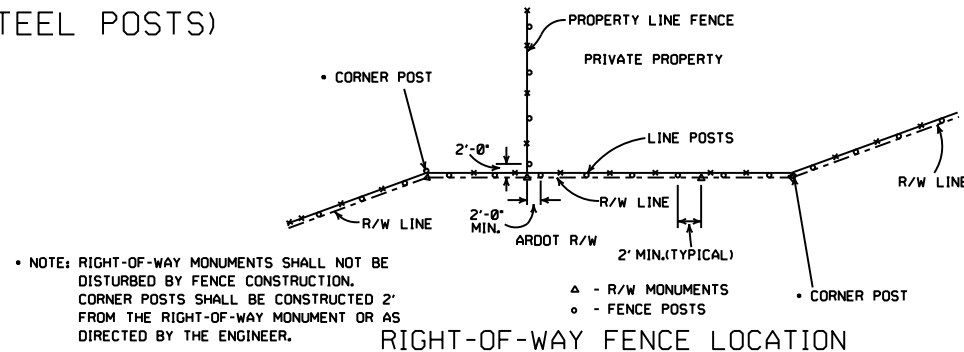


SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'EYE METHOD' AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRES A MINIMUM OF 4 TIMES FOR EACH WIRE LOOP.

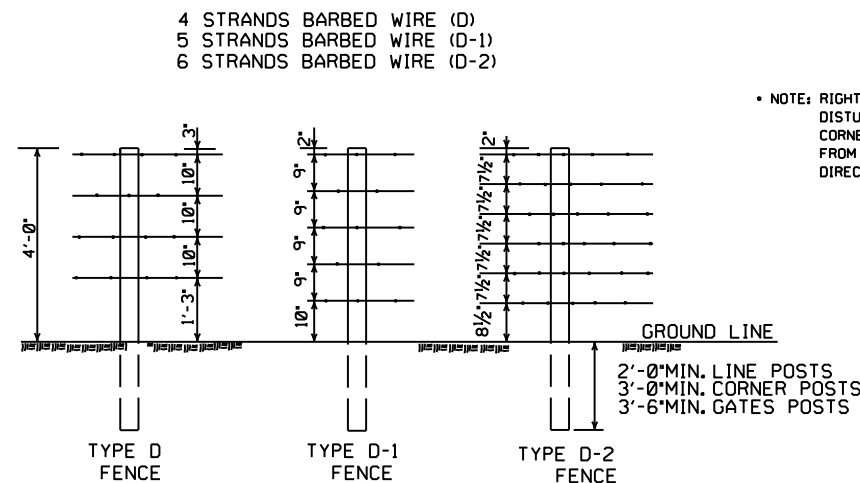
SPLICE FOR WOVEN WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

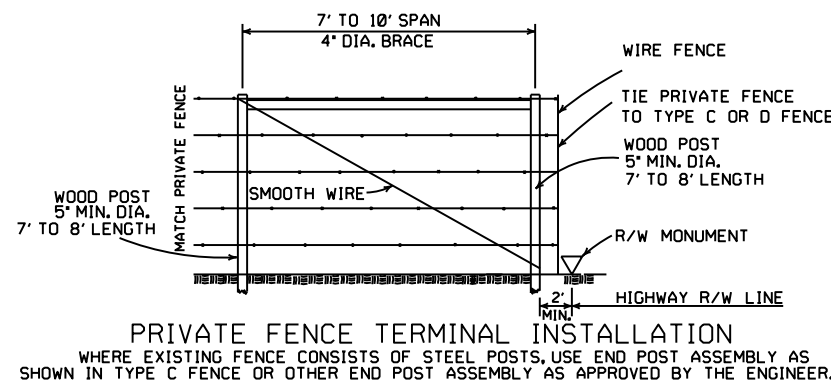
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)



OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.



NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	REVISED BARB WIRE AND ADDED CORNER POST NOTES	6-2-94
8-5-93	REVISED R/W INSTALLATION FENCE	8-5-93
10-1-92	ADDED STAPLE NOTE	10-1-92
8-15-91	ADDED TYPE D-2 FENCE	8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
7-15-88	ADDED SPLICE NOTE	700-7-15-88
10-30-87	GENERAL REVISIONS	549-10-30-87
11-1-84	MAX. POST SPACING MIN. WIRE GAUGE	507-11-1-84
1-4-83	MIN. DIA. LINE POST	648-1-4-83
3-2-81	TOLERANCE FOR POST LENGTH	722-3-2-81
12-1-72	ADDED D-1 & FENCE INSTALLATION	564-12-1-72
10-2-72	REVISED AND REDRAWN	540-10-2-72
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4