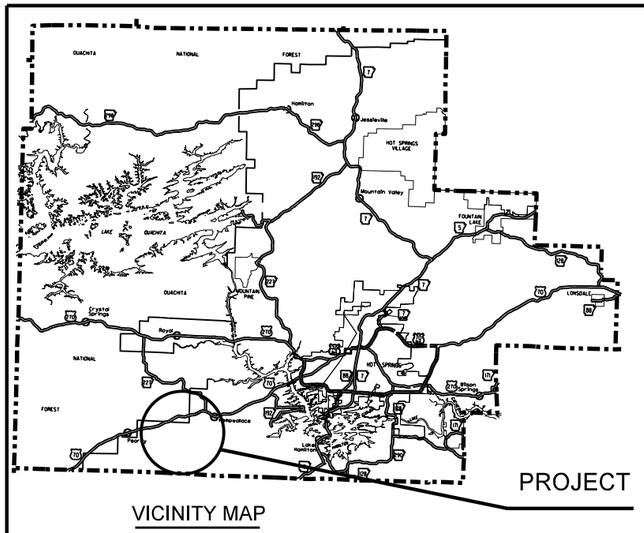
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-25-21				6	ARK.			
				JOB NO.		BR2605	1	83
				4	LOST CR. & S. FORK LITTLE MAZARN CR. STRS. & APPRS. (S)			

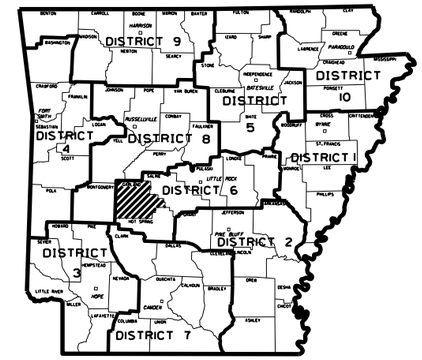
ARKANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

LOST CR. & S. FORK LITTLE MAZARN CR. STRS. & APPRS. (S)
CO. RD. 63
GARLAND COUNTY
JOB BR2605
FED. AID PROJECT - STPB-0026(36)

NOT TO SCALE



VICINITY MAP



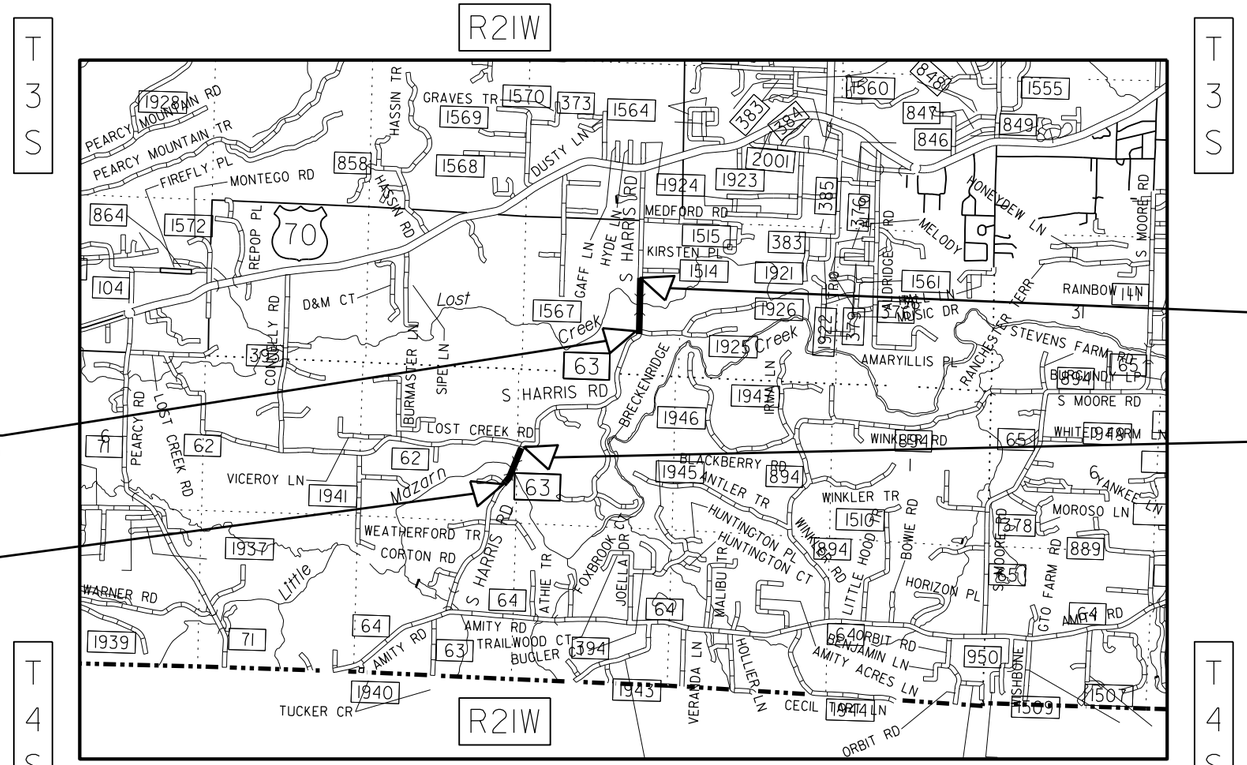
ARKANSAS HIGHWAY DISTRICT 6

(1) STRUCTURES OVER 20'-0" SPAN

STATION 110+10.58 - BRIDGE END
PROPOSED 171'-7 1/8"
169' - 0" CONTINUOUS W-BEAM UNIT
BRIDGE NO. 04946
28'-0" CLEAR ROADWAY
STATION 111+82.18 - BRIDGE END

(2) STRUCTURES OVER 20'-0" SPAN

STATION 208+11.50 - BRIDGE END
PROPOSED 121'-0"
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
BRIDGE NO. 04947
28'-0" CLEAR ROADWAY
STATION 209+32.50 - BRIDGE END



STATION 200+00.00
BEGIN JOB BR2605 - SECTION 2

STATION 105+00.00
BEGIN JOB BR2605 - SECTION 1

STATION 219+65.65
END JOB BR2605 - SECTION 2

STATION 120+00.00
END JOB BR2605 - SECTION 1

APPROVED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10045
KELVIN REX VINES

Dec 8 2021 2:37 PM

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DEPUTY DIRECTOR
AND CHIEF ENGINEER

DESIGN TRAFFIC DATA

DESIGN YEAR	2042
2022 ADT	1205
2042 ADT	1305
2042 DHV	196
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	3%
DESIGN SPEED	40 MPH

PROJECT COORDINATES

	BEGIN	MID-POINT	END
LAT.	N34°24'47"	N34°25'14"	N34°25'58"
LONG.	W93°14'54"	W93°14'17"	W93°14'00"

LENGTH OF PROJECT CALCULATED ALONG CL CONSTRUCTION

GROSS LENGTH OF PROJECT			3465.65	FEET OR	0.656	MILES
NET " "	ROADWAY		3173.06	" "	0.601	"
NET " "	BRIDGES		292.59	" "	0.055	"
NET " "	PROJECT		3465.65	" "	0.656	"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-25-21				6	ARK.			
				JOB NO.		BR2605	2	83

(4) INDEX OF SHEETS AND STANDARD DRAWINGS

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRWG. NO.
1	TITLE SHEET		
2	INDEX OF SHEETS AND STANDARD DRAWINGS		
3	GOVERNING SPECIFICATIONS		
4	GENERAL NOTES		
5 - 6	TYPICAL SECTIONS OF IMPROVEMENT		
7	SPECIAL DETAILS		
8 - 11	TEMPORARY EROSION CONTROL DETAILS		
12 - 15	RIGHT OF WAY		
16 - 20	QUANTITIES		
21	SCHEDULE OF BRIDGE QUANTITIES		
22	SUMMARY OF QUANTITIES AND REVISIONS		
23 - 27	SURVEY CONTROL DETAILS		
28 - 31	PLAN AND PROFILE SHEETS		
32	SHEET 1 OF 2 LAYOUT OF BRIDGE COUNTY ROAD 63 OVER SOURTH FORK LITTLE MAZARN CREEK	4946	61781
33	SHEET 2 OF 2 LAYOUT OF BRIDGE COUNTY ROAD 63 OVER SOUTH FORK LITTLE MAZARN CREEK	4946	61782
34	SHEET 1 OF 3 DETAILS OF END BENTS SOUTH FORK LITTLE MAZARN CREEK	4946	61783
35	SHEET 2 OF 3 DETAILS OF END BENTS SOUTH FORK LITTLE MAZARN CREEK	4946	61784
36	SHEET 3 OF 3 DETAILS OF END BENTS SOUTH FORK LITTLE MAZARN CREEK	4946	61785
37	DETAILS OF INTERMEDIATE BENTS SOUTH FORK LITTLE MAZARN CREEK	4946	61786
38	DETAILS OF ELASTOMERIC BEARINS SOUTH FORK LITTLE MAZARN CREEK	4946	61787
39	SHEET 1 OF 5 DETAILS OF 169' - 0" CONTINUOUS W-BEAM UNIT SOUTH FORK LITTLE MAZARN CREEK	4946	61788
40	SHEET 2 OF 5 DETAILS OF 169' - 0" CONTINUOUS W-BEAM UNIT SOUTH FORK LITTLE MAZARN CREEK	4946	61789
41	SHEET 3 OF 5 DETAILS OF 169' - 0" CONTNUOUS W-BEAM UNIT SOUTH FORK LITTLE MAZARN CREEK	4946	61790
42	SHEET 4 OF 5 DETAILS OF 169' - 0" CONTINUOUS W-BEAM UNIT SOUTH FORK LITTLE MAZARN CREEK	4946	61791
43	SHEET 5 OF 5 DETAILS OF 169' - 0" CONTINUOUS W-BEAM UNIT SOURTH FORK LITTLE MAZARN CREEK	4946	61792
44	SHEET 1 OF 2 LAYOUT OF BRIDGE COUNTY ROAD 63 OVER LOST CREEK	4947	61793
45	SHEET 2 OF 2 LAYOUT OF BRIDGE COUNTY ROAD 63 OVER LOST CREEK	4947	61794
46	DETAILS OF END BENTS LOST CREEK	4947	61795
47	DETAILS OF INTERMEDIATE BENTS LOST CREEK	4947	61796
48	DETAILS OF ELASTOMERIC BEARINGS LOST CREEK	4947	61797
49	SHEET 1 OF 6 DETAILS OF 120' - 0" INTEGRAL W-BEAM UNIT LOST CREEK	4947	61798
50	SHEET 2 OF 6 DETAILS OF 120' - 0" INTEGRAL W-BEAM UNIT LOST CREEK	4947	61799
51	SHEET 3 OF 6 DETAILS OF 120' - 0" INTEGRAL W-BEAM UNIT LOST CREEK	4947	61800
52	SHEET 4 OF 6 DETAILS OF 120' - 0" INTEGRAL W-BEAM UNIT LOST CREEK	4947	61801
53	SHEET 5 OF 6 DETAILS OF 120' - 0" INTEGRAL W-BEAM UNIT LOST CREEK	4947	61802
54	SHEET 6 OF 6 DETAILS OF 120' - 0" INTEGRAL W-BEAM UNIT LOST CREEK	4947	61803
55	DETAILS OF TYPE 1 & 2 SPECIAL APPROACH GUTTERS	04946 & 04947	61803A
56	DETAILS OF TYPE SPECIAL APPROACH SLAB	4947	61803B
57 - 83	CROSS SECTIONS		

NOTE: CROSS SECTIONS NOT INCLUDED IN PROSPECTIVE BIDDERS' PLANS MAY BE OBTAINED UPON REQUEST.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
STEVEN MORGAN
11/2/2021

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
55006	STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES	09-02-15
55007	STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES	02-11-16
55008	STANDARD DETAILS FOR POURED SILICONE JOINTS	02-11-16
55011	STANDARD DETAILS FOR TYPE C BRIDGE NAME PLATES	02-27-20
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16

ROADWAY STANDARD DRAWINGS

DRWG. NO.	TITLE	DATE
GR-10	GUARD RAIL DETAILS	11-07-19
GR-12	GUARD RAIL DETAILS	05-14-20
GRT-1	GUARD RAIL DETAILS	11-07-19
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	11-07-19
SHS-1	STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES	09-12-13
SHS-2	U-CHANNEL POST ASSEMBLIES	07-25-19
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	11-07-19
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	05-20-21
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	08-12-21
TEC-1	TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2	TEMPORARY EROSION CONTROL DEVICES	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-3	CHAIN LINK FENCE	11-17-10
WF-4	WIRE FENCE TYPE C AND D	08-22-02

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-14-2021			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BR2605	3	83

4 GOVERNING SPECIFICATIONS

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMISSION STANDARD SPECFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
12/14/2021
STEVEN MORGAN

NUMBER	TITLE
ERRATA_____	ERRATA FOR THE BOOKS 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 OPPORTUNITIY - 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- REVISIONS OF FHWA-WAGE RATE DETERMINATION
100-3_____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2_____	ISSUANCE OF PROPOSALS
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
400-1_____	TACK COATS
400-4_____	DESIGN QUALITY CONTROL OF ASPHALT MIXTURES
400-5_____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6_____	LIQUID ANTI-STRIP ADDITIVE
400-7_____	TRACKLESS TACK
404-3_____	DESIGN OF ASPHALT MIXTURES
410-1_____	CONSTRUCTION REQUIREMENTS AND ACC EPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
410-2_____	DEVICE'S FOR MEASURING DENSITY FOR ROLLING PATTERNS
600-2_____	INCIDENTAL CONSTRUCTION
604-1_____	RETROFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-3_____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
606-1_____	PIPE CULVERTS FOR SIDE DRAINS
620-1_____	MULCH COVER
621-1_____	FILTER SOCKS
723-1_____	GENERAL REQUIREMENTS FOR SIGNS
729-1_____	CHANNEL POST SIGN SUPPORT
800-1_____	STRUCTURES
802-3_____	CONCRETE FOR STRUCTURES
804-2_____	REINFORCING STEEL FOR STRUCTURES
807-2_____	STEEL STRUCTURES
808-1_____	INSTALLATION OF ELASTOMERIC BEARINGS
808-2_____	ELASTOMERIC BEARINGS
JOB BR2605_____	BIDDING REQUIREMENTS AND CONDITIONS
JOB BR2605_____	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB BR2605_____	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB BR2605_____	CARGO PREFERENCE ACT REQUIREMENTS
JOB BR2605_____	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB BR2605_____	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB BR2605_____	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB BR2605_____	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBLITIES
JOB BR2605_____	ESTABLISHING CONTRACT TIME - WORKING DAY CONTRACT
JOB BR2605_____	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB BR2605_____	MAINTENANCE OF TRAFFIC
JOB BR2605_____	MANDATORY ELECTRONIC CONTRACT
JOB BR2605_____	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB BR2605_____	NESTING SITES OF MIGRATORY BIRDS
JOB BR2605_____	OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB BR2605_____	PLASTIC PIPE
JOB BR2605_____	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES AND EQUIPMENT
JOB BR2605_____	RECYCLED ASPHALT SHINGLES
JOB BR2605_____	SHORING FOR CULVERTS
JOB BR2605_____	STORM WATER POLLUTION PREVENTION PLAN
JOB BR2605_____	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB BR2605_____	UTILITY ADJUSTMENTS
JOB BR2605_____	WARM MIX ASPHALT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	4	83

(4) GENERAL NOTES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

Jan 22 2021 11:33 AM

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GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.

2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS.

3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.

4. THE ROAD IS CLOSED TO THRU TRAFFIC IN SECTION 1 DURING CONSTRUCTION OF THE PROPOSED BRIDGE AND APPROACHES IN SECTION 1 AND IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC SPECIAL PROVISION. ONCE THE ROAD IN SECTION 1 IS OPEN TO THRU TRAFFIC, THE ROAD WILL BE CLOSED TO THRU TRAFFIC IN SECTION 2 DURING CONTSTRUCTION OF THE PROPOSED BRIDGE AND APPROACHES IN SECTION 2 AND IN ACCORDANCE WITH THE MAINTENANCE OF TRAFFIC SPECIAL PROVISION. THE CONTRACTOR SHALL NOTIFY THE GARLAND COUNTY JUDGE 7 DAYS PRIOR TO CLOSURE OF SECTION 1 AND CLOSURE OF SECTION 2.

5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.

6. THIS JOB IS PERMITTED UNDER A SECTION 404 NATIONWIDE 14 PERMIT, REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.

7. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED IF AND WHERE DIRECTED BY THE ENGINEER, CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED, WIREFENCE MAY CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.

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

10. THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVMENT 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.

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

12. EXISTING BRIDGE NO. 13151 SHALL BE REMOVED IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS, EDITION 2014, PRIOR TO CONSTRUCTION OF THE NEW BRIDGE. ALL MATERIAL FROM THE EXISITNG BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR, EXCEPT THE METAL GUARDRAIL WHICH SHALL REMAIN THE PROPERTY OF GARLAND COUNTY.

13. EXISTING BRIDGE NO. 13152 SHALL BE REMOVED IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS, EDITION 2014, PRIOR TO CONSTRUCTION OF THE NEW BRIDGE. ALL MATERIAL FROM THE EXISITNG BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR, EXCEPT GUARDRAIL WHICH SHALL REMAIN THE PROPERTY OF GARLAND COUNTY.

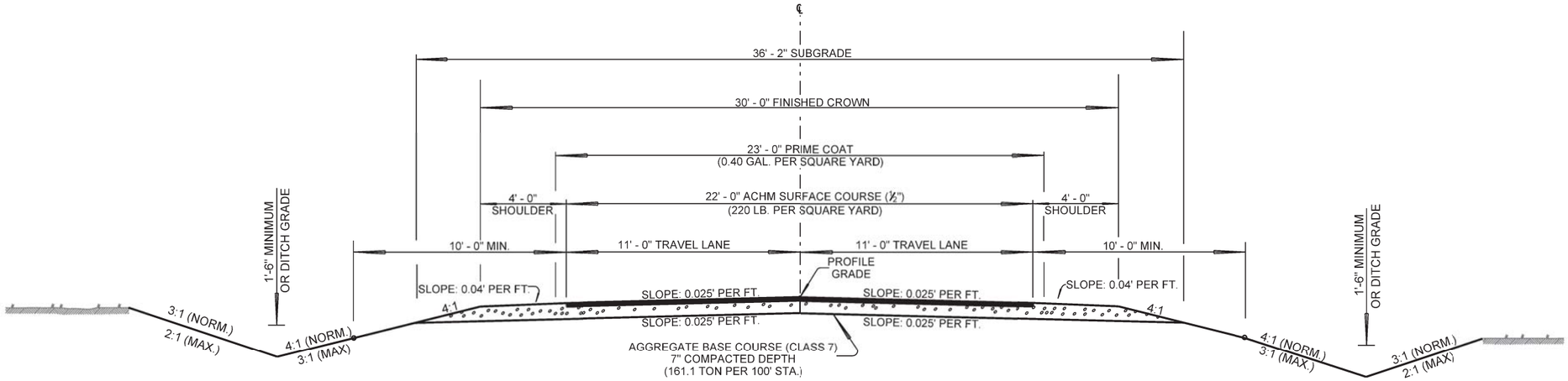
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						BR2605	5	83

TYPICAL SECTIONS OF IMPROVEMENT

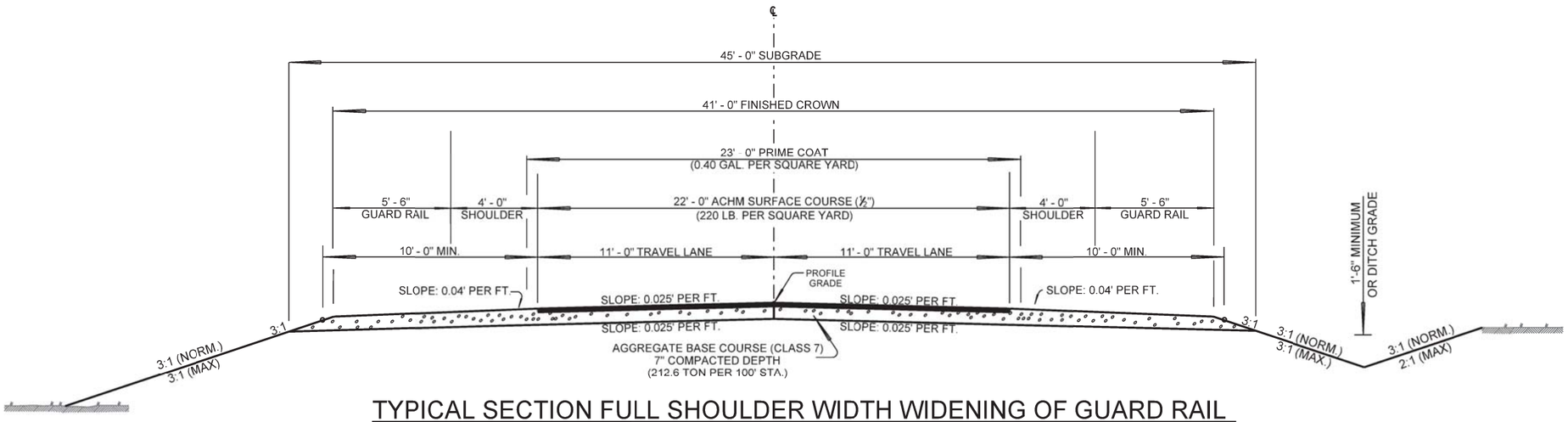
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

Sep 1 2020 3:24 PM

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TYPICAL SECTION OF IMPROVEMENT



TYPICAL SECTION FULL SHOULDER WIDTH WIDENING OF GUARD RAIL

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

THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS 1" OF PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

SKETCHES NOT TO SCALE.

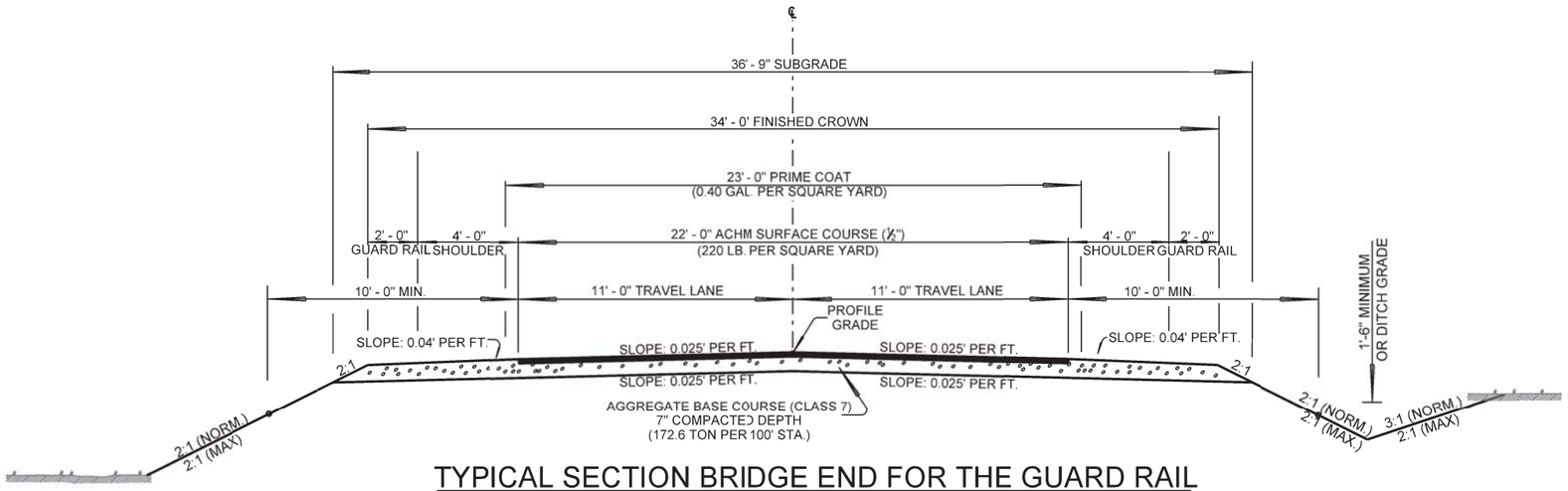
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				6	ARK.			
				JOB NO.		BR2605	6	83

4 TYPICAL SECTIONS OF IMPROVEMENT

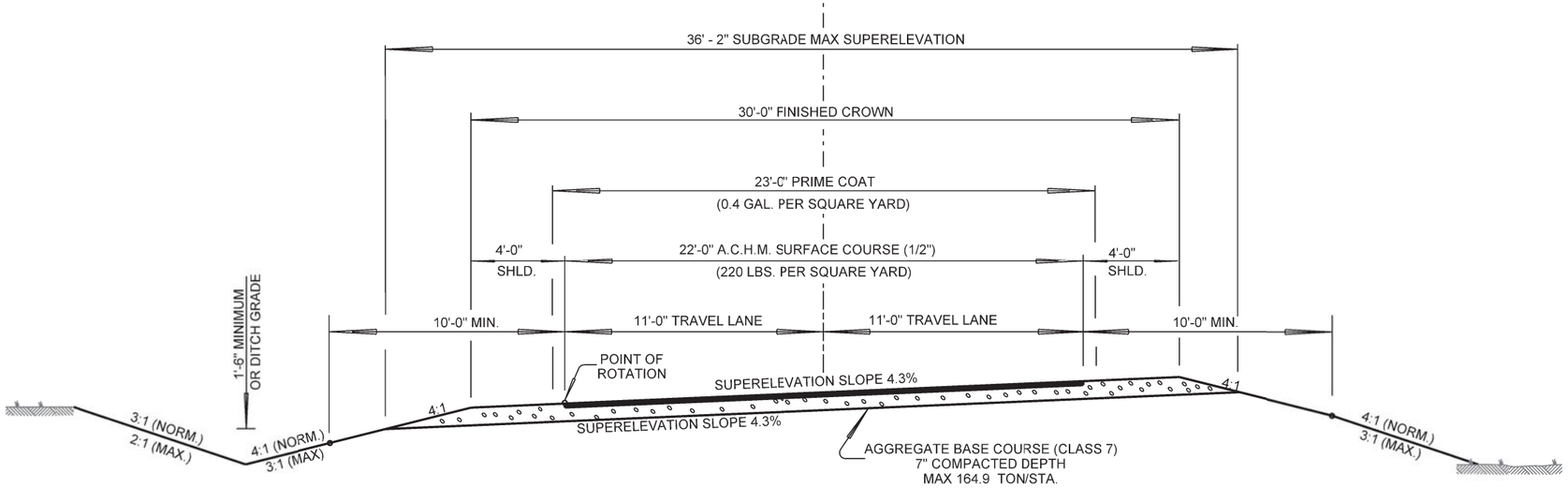
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

Sep 1 2020 3:24 PM

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TYPICAL SECTION BRIDGE END FOR THE GUARD RAIL



SUPERELEVATED SECTION OF IMPROVEMENT

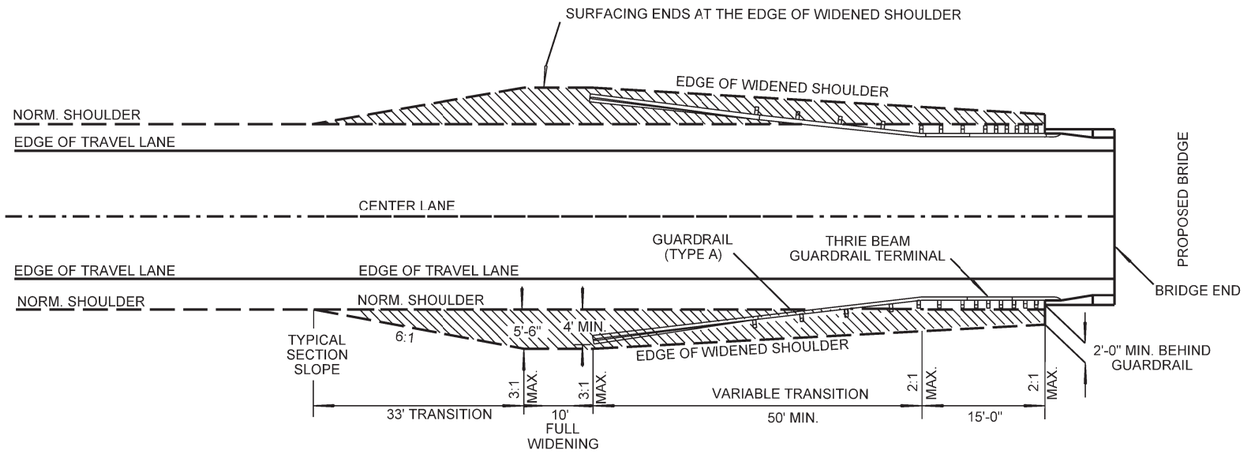
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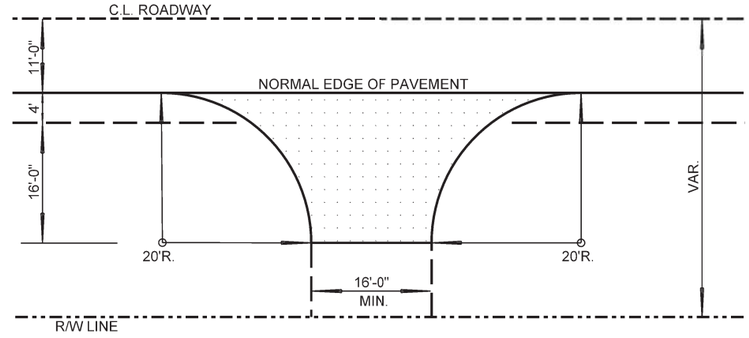
SKETCHES NOT TO SCALE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
2/05/2016				6	ARK.			
				JOB NO.		BR2605	7	83

4 SPECIAL DETAILS

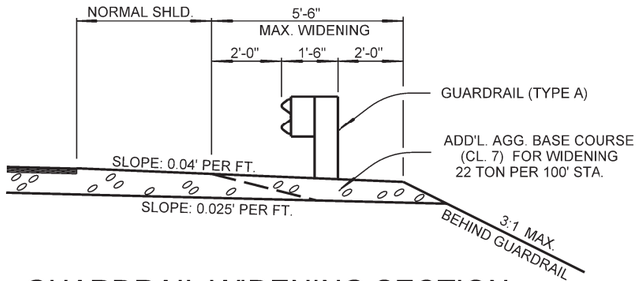


DETAILS OF ROADWAY WIDENING FOR GUARDRAIL

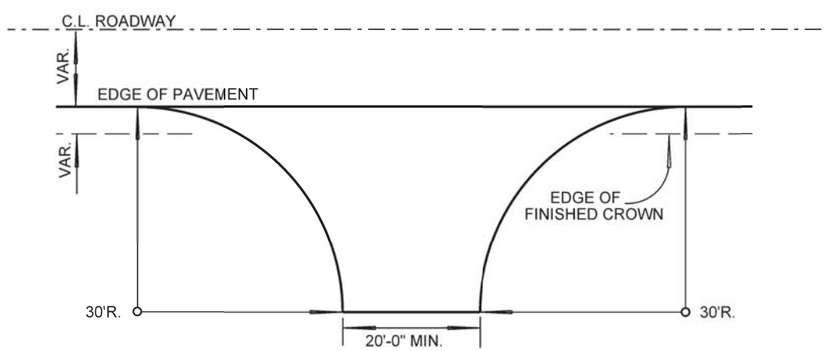


DETAIL OF SURFACING FOR PRIVATE ENTRANCE

ADD'L. SURFACING AREA = 54.6 SQ. YD.

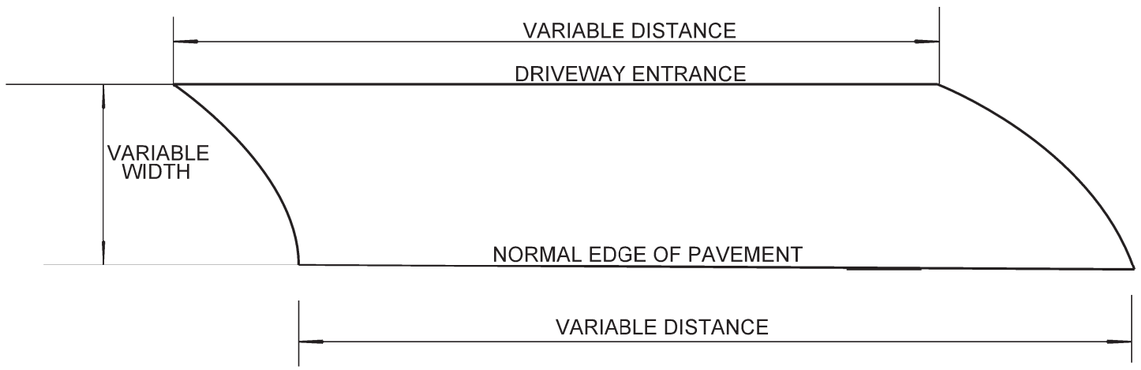


GUARDRAIL WIDENING SECTION



TYPICAL COUNTY RD. TURNOUT 30' RADIUS

ADD'L. SURFACING AREA = 109.6 SQ. YD.



SPECIAL DRIVEWAY ENTRANCE

APPROXIMATE ADDITIONAL SURFACING AREA = 205.08 SQ. YD.
STATIONS 112+92.00 - 113+54.00 AT DRIVEWAY EDGE
STATIONS 113+14.00 - 113+76.00 AT NORMAL EDGE OF PAVEMENT
ON LEFT SIDE
SKETCH NOT TO SCALE

NOTE: THE ABOVE DETAILS MAY BE MODIFIED TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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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.		BR2605	8	83

4 EROSION CONTROL - SECTION 1 - LITTLE MAZARN CREEK

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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WETLAND

ROCK DITCH CHECKS (E-6)
109+50 LT. & RT. = 6.0 CU. YD.
112+00 LT. & RT. = 6.0 CU. YD.

SEDIMENT REMOVAL & DISPOSAL
2.0 CU. YD.
2.0 CU. YD.

STATION 105+00 BEGIN JOB
SECTION 1 - LITTLE MAZARN CREEK

POB100+00.00
PI102+98.55
100
N 25°13'50.2" E
183.38'
STREAM
STREAM
PC101+83.38
PT104+12.70
105
N 38°22'09.9" E
386.04'
PC107+98.74
E-5
E-11
E-6
P.I. - 110+97.04
Lt. - 19°40'04.72" Lt.
D - 19°14'.97
Rad. - 298.50'
T - 51.61'
L - 100.25'
25 FT. BUFFER ZONE
POND
STREAM
PT113+90.04
115
N 19°42'05.2" E
208.12'
E-3
PI110+97.04
25 FT. BUFFER ZONE
P.I. - 100+98.55
Lt. - 19°08'56.74" Rt.
D - 5°43'46.48"
Rad. - 1001.80'
T - 167.15'
L - 334.32'

SAND BAG DITCH CHECKS (E-5)
105+50 LT. & RT. = 44.0 BAG
107+00 LT. = 22.0 BAG
113+93 LT. = 22.0 BAG
115+00 RT. = 22.0 BAG
117+00 LT. & RT. = 44.0 BAG
119+00 RT. = 22.0 BAG
120+00 LT. & RT. = 44.0 BAG

SEDIMENT REMOVAL & DISPOSAL
2.0 CU. YD.
1.0 CU. YD.
1.0 CU. YD.
1.0 CU. YD.
2.0 CU. YD.
1.0 CU. YD.
2.0 CU. YD.

FILTER SOCK (E-3)
STA. 112+20 - 114+60 RT. = 480 LIN. FT.
STA. 112+20 - 118+65 RT. = 330 LIN. FT.

SEDIMENT REMOVAL & DISPOSAL
18 CU. YD.
12 CU. YD.

E 3 FILTER SOCK
E 5 SAND BAG DITCH CHECKS
E 6 ROCK DITCH CHECKS
E 11 SILT FENCE
EROSION CONTROL LEGEND

SILT FENCE (E-11)
STA. 106+00 - 109+00 RT. = 300 LIN. FT.
STA. 112+00 - 113+00 LT. = 100 LIN. FT.

SEDIMENT REMOVAL & DISPOSAL
11 CU. YD.
4 CU. YD.

REVISIONS

DATE	REVISION

0 100 200
SCALE IN FEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	9	83

4 EROSION CONTROL - SECTION 1 - LITTLE MAZARN CREEK

ROCK DITCH CHECKS (E-6)
109+50 LT. & RT. = 6.0 CU. YD.
112+00 LT. & RT. = 6.0 CU. YD.

SEDIMENT REMOVAL & DISPOSAL
2.0 CU. YD.
2.0 CU. YD.

SAND BAG DITCH CHECKS (E-5)
105+50 LT. & RT. = 44.0 BAG
107+00 LT. = 22.0 BAG
113+93 LT. = 22.0 BAG
115+00 RT. = 22.0 BAG
117+00 LT. & RT. = 44.0 BAG
119+00 RT. = 22.0 BAG
120+00 LT. & RT. = 44.0 BAG

SEDIMENT REMOVAL & DISPOSAL
2.0 CU. YD.
1.0 CU. YD.
1.0 CU. YD.
1.0 CU. YD.
2.0 CU. YD.
1.0 CU. YD.
2.0 CU. YD.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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WETLAND

25 FT. BUFFER ZONE

POND

STREAM

STREAM

25 FT. BUFFER ZONE

STATION 120+00 END JOB
SECTION 1 - LITTLE MAZARN CREEK

PC107+98.74

P.I. 110+97.04
180.00' Rt.
38°04'32"
61.72' Lt.
175.

PT113+90.04

P117+53.95

N 21°55'57.9" E
132.11

N 19°42'05.2" E
208.12

PC115+98.16

PT119+09.71

POE120+41.82

P.I. 117+53.95
180.00' Rt.
38°04'32"
61.72' Lt.
175.55

P110+97.04

E-3 E-5 E-6 E-11 FILTER SOCK, SAND BAG DITCH CHECKS, ROCK DITCH CHECKS, SILT FENCE

EROSION CONTROL LEGEND

0 100 200
SCALE IN FEET

REVISIONS

DATE	REVISION

FILTER SOCK (E-3)
STA. 112+20 - 114+60 RT. = 480 LIN. FT.
STA. 112+20 - 118+65 RT. = 330 LIN. FT.

SEDIMENT REMOVAL & DISPOSAL
18 CU. YD.
12 CU. YD.

SILT FENCE (E-11)
STA. 106+00 - 109+00 RT. = 300 LIN. FT.
STA. 116+20 - 113+00 LT. = 100 LIN. FT.

SEDIMENT REMOVAL & DISPOSAL
11 CU. YD.
4 CU. YD.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-25-21				6	ARK.			
				JOB NO.		BR2605	10	83

(4) EROSION CONTROL - SECTION 2 - LOST CREEK

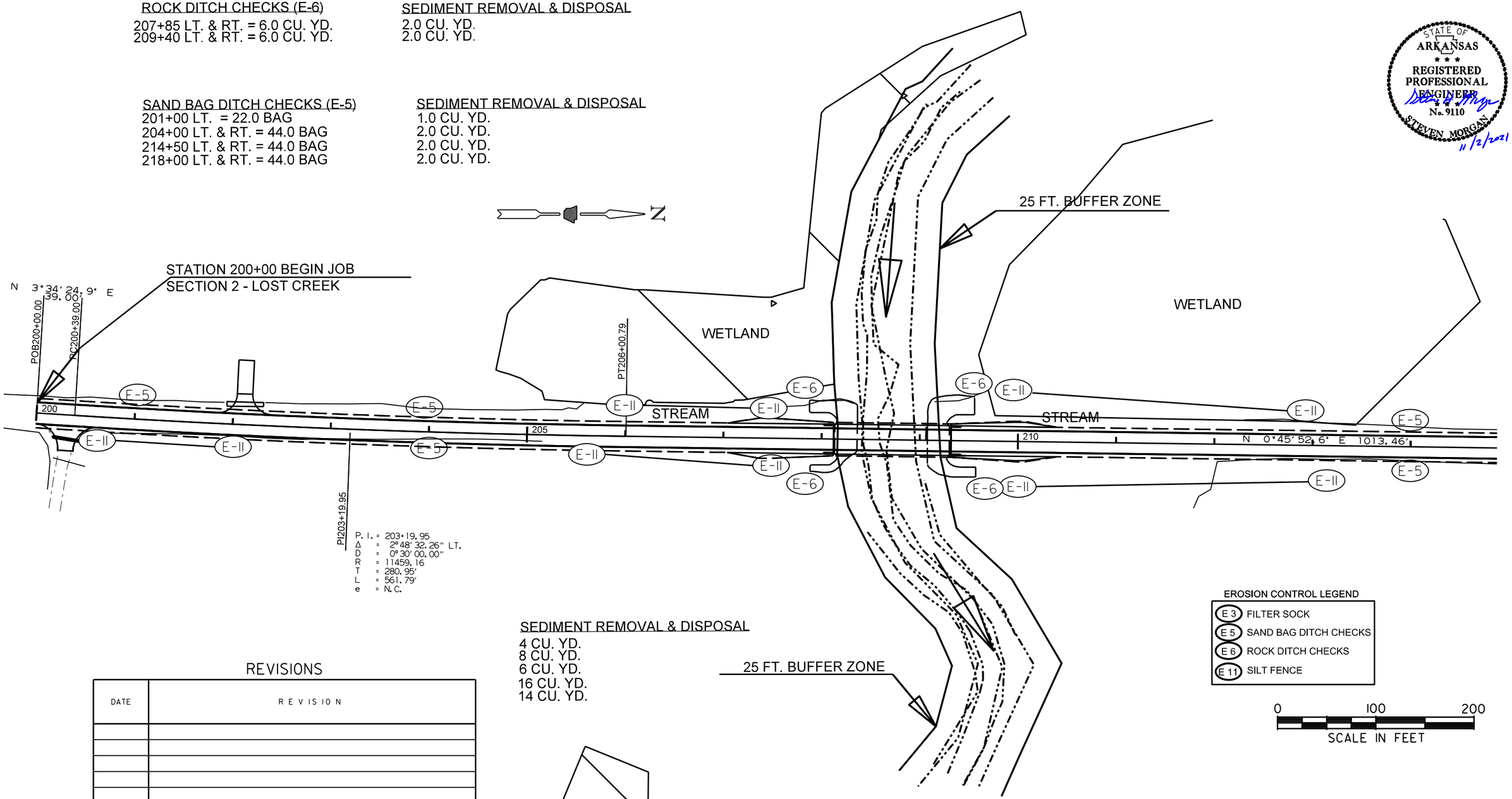
ROCK DITCH CHECKS (E-6)
207+85 LT. & RT. = 6.0 CU. YD.
209+40 LT. & RT. = 6.0 CU. YD.

SEDIMENT REMOVAL & DISPOSAL
2.0 CU. YD.
2.0 CU. YD.

SAND BAG DITCH CHECKS (E-5)
201+00 LT. = 22.0 BAG
204+00 LT. & RT. = 44.0 BAG
214+50 LT. & RT. = 44.0 BAG
218+00 LT. & RT. = 44.0 BAG

SEDIMENT REMOVAL & DISPOSAL
1.0 CU. YD.
2.0 CU. YD.
2.0 CU. YD.
2.0 CU. YD.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
STEVEN MORGAN
11/2/2021

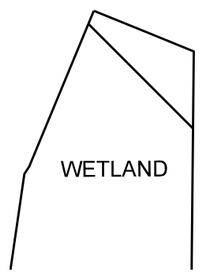


EROSION CONTROL LEGEND

E 3	FILTER SOCK
E 5	SAND BAG DITCH CHECKS
E 6	ROCK DITCH CHECKS
E 11	SILT FENCE

0 100 200
SCALE IN FEET

SEDIMENT REMOVAL & DISPOSAL
4 CU. YD.
8 CU. YD.
6 CU. YD.
16 CU. YD.
14 CU. YD.



SILT FENCE (E-11)
STA. 200+00 - 201+00 RT. = 100 LIN. FT.
STA. 205+50 - 207+75 RT. = 225 LIN. FT.
STA. 206+00 - 207+75 LT. = 175 LIN. FT.
STA. 209+75 - 214+00 LT. = 425 LIN. FT.
STA. 210+25 - 214+00 LT. = 375 LIN. FT.

REVISIONS

DATE	REVISION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	11	83

4 EROSION CONTROL - SECTION 2 - LOST CREEK

ROCK DITCH CHECKS (E-6)
207+85 LT. & RT. = 6.0 CU. YD.
209+40 LT. & RT. = 6.0 CU. YD.

SEDIMENT REMOVAL & DISPOSAL
2.0 CU. YD.
2.0 CU. YD.

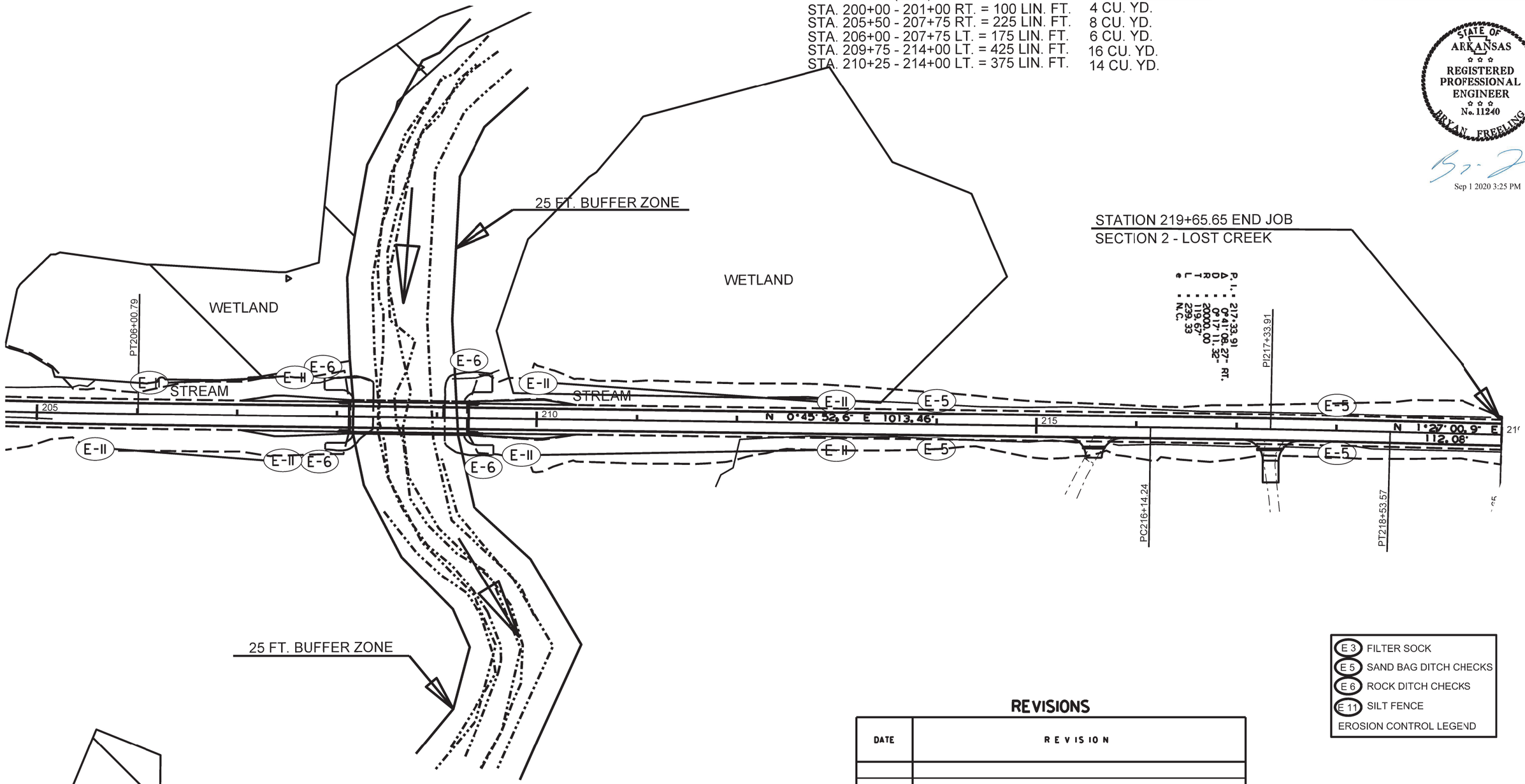
SILT FENCE (E-11)
STA. 200+00 - 201+00 RT. = 100 LIN. FT.
STA. 205+50 - 207+75 RT. = 225 LIN. FT.
STA. 206+00 - 207+75 LT. = 175 LIN. FT.
STA. 209+75 - 214+00 LT. = 425 LIN. FT.
STA. 210+25 - 214+00 LT. = 375 LIN. FT.

SEDIMENT REMOVAL & DISPOSAL
4 CU. YD.
8 CU. YD.
6 CU. YD.
16 CU. YD.
14 CU. YD.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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STATION 219+65.65 END JOB
SECTION 2 - LOST CREEK



SAND BAG DITCH CHECKS (E-5)
201+00 LT. = 22.0 BAGS
204+00 LT. & RT. = 44.0 BAG
214+50 LT. & RT. = 44.0 BAG
218+00 LT. & RT. = 44.0 BAG

SEDIMENT REMOVAL & DISPOSAL
1.0 CU. YD.
2.0 CU. YD.
2.0 CU. YD.
2.0 CU. YD.

E 3 FILTER SOCK
E 5 SAND BAG DITCH CHECKS
E 6 ROCK DITCH CHECKS
E 11 SILT FENCE
EROSION CONTROL LEGEND

REVISIONS

DATE	REVISION

0 100 200
SCALE IN FEET

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	12	83

4 RIGHT OF WAY - MAZARN CREEK

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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WETLAND AREA

KEITH SMITH CO INC.

ROBERT A MURPHY

RICHARD & BEVERLY SADOWSKI

BEGIN JOB BR2605 SECTION 1
STATION 105+00.00

POB100+00.00

PI102+98.55

100

N 25° 13' 50.2" E
183.38'

STREAM

PC101+83.38

PT104+12.70

105

N 38° 22' 09.9" E
386.04'

PC107+98.74

RIGHT OF WAY

STREAM

RONALD & JUDY MAGNESS
DAVID & RHONDA ISOM

CONSTRUCTION LIMITS

PI110+97.04

POND

PT113+90.04

EXISTING ROW

115

N 19° 42' 05.2" E
208.12'

PC115+98.1

RONALD & JUDY MAGNESS
DAVID & RHONDA ISOM

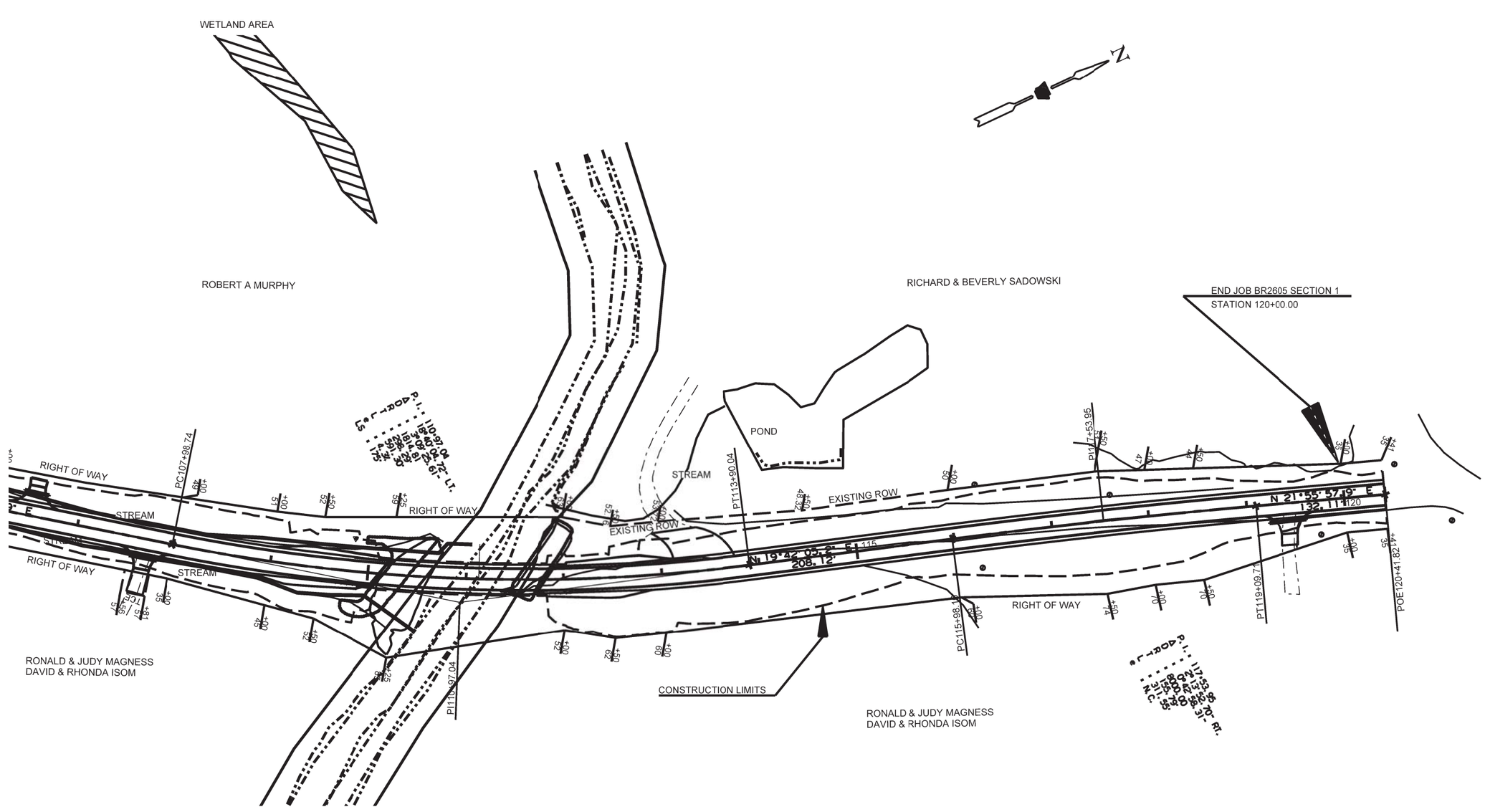
0 100 200
SCALE IN FEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	13	83

4 RIGHT OF WAY - MAZARN CREEK

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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10-25-21				6	ARK.			
				JOB NO.		BR2605	14	83

4 RIGHT OF WAY - LOST CREEK

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
STEVEN MORGAN
11/2/2021

BEGIN JOB BR2605 SECTION 2
STATION 200+00.00

N 3° 34' 24.9" E
39.00'

POB200+00.00
PC200+39.00
PT206+00.79
PI203+19.95

P. I. = 203+19.95
Δ = 2° 48' 32.26" LT.
D = 0° 30' 00.00"
R = 11459.16
T = 280.95'
L = 561.79'
e = N.C.

P. I. = 217
Δ = 0°
D = 0°
R = 200
T = 119.
L = 239.
e = N.C.

STANLEY E & JESSICA L RHODES

STANLEY E & JESSICA L RHODES

WETLAND AREA

WETLAND AREA

RIGHT OF WAY

RIGHT OF WAY

RIGHT OF WAY

RIGHT OF WAY

RIGHT OF WAY

RIGHT OF WAY

STREAM

N 0° 45' 52.6" E 1013.46'

CONSTRUCTION LIMITS

PC216+14.24

WISE COPELAND, LLC.

KENNETH B & GWENDOLYN ORRELL

WETLAND AREA

0 100 200
SCALE IN FEET

RIGHT OF WAY - LOST CREEK - SECTION 2- SHEET 1 OF 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID PROJ.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	15	83

4 RIGHT OF WAY - LOST CREEK

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
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N

STANLEY E & JESSICA L RHODES

WETLAND AREA

PT206+00.79

RIGHT OF WAY

205

P.I. = 203+19.95
Δ = 2°48'32.26" Lt.
D = 1°45'10.00"
R = 1632.16
T = 280.95

WISE COPELAND, LLC.

WETLAND AREA

STANLEY E & JESSICA L RHODES

WETLAND AREA

RIGHT OF WAY

STREAM

210

N 0°45'52.6" E 1013.46'

215

RIGHT OF WAY

CONSTRUCTION LIMITS

KENNETH B & GWENDOLYN ORRELL

P.I. = 217+33.91
Δ = 0°41'06.27" Rt.
D = 0°17'11.32"
T = 233.33
R = 2000.00
L = 466.57
N.C.

PI217+33.91

END JOB BR2605 SECTION 2
STATION 219+65.65

219

N 1°27'00.9" E
112.08'

RIGHT OF WAY

PC216+14.24

PT218+53.57

POE219+65.65

WETLAND AREA

0 100 200
SCALE IN FEET

RIGHT OF WAY - LOST CREEK - SECTION 2- SHEET 2 OF 2

REMOVAL AND DISPOSAL ITEM

STATION	STATION	DESCRIPTION	REMOVAL AND DISPOSAL OF PIPE CULVERTS	REMOVAL AND DISPOSAL OF FENCE	REMOVAL AND DISPOSAL OF GATES	REMOVAL AND DISPOSAL OF SIGNS	REMOVAL AND DISPOSAL OF MAILBOXES
			EACH	LIN. FT.	EACH	EACH	EACH
SECTION 1 - LITTLE MAZARN CREEK							
105+73	105+73	STOP SIGN ON LT.				1	
105+88	105+88	SIDEDRAIN UNDER KATHRYN LN. ON LT.	1				
106+18	106+43	5' CHAIN LINK FENCE ON LT.		43			
106+43	106+59	GATE ON LT.			1		
106+59	110+12	5' CHAIN LINK FENCE ON LT.		392			
106+53	106+53	SIDEDRAIN UNDER DRIVEWAY LT.	1				
107+72	107+72	SIDEDRAIN UNDER DRIVEWAY RT.	1				
111+96	115+86	4 STRAND BARBED WIRE FENCE RT.		437			
117+63	117+63	ONE LANE BRIDGE SIGN ON LT.				1	
119+30	119+30	MAIL BOX ON RT.					2
119+42	119+42	SIDEDRAIN UNDER DRIVEWAY RT.	1				
SECTION 2 - LOST CREEK							
201+96	202+02	2 STRAND BARBED WIRE FENCE LT.		6			
202+11	202+11	SIDEDRAIN UNDER DRIVEWAY LT.	1				
202+02	202+20	18' GATE			1		
202+20	203+51	2 STRAND BARBED WIRE FENCE LT.		131			
203+77	203+77	15 MPH CURVE SIGN ON LT.				1	
207+97	207+97	WEIGHT LIMIT ON RT.				1	
208+36	208+36	BRIDGE ON RT. & LT.				2	
209+10	209+10	BRIDGE ON RT. & LT.				2	
209+54	209+54	WEIGHT LIMIT ON LT.				1	
211+33	211+33	SPEED LIMIT SIGN ON RT.				1	
212+01	214+49	6 STRAND BARBED WIRE FENCE ON RT.		280			
214+49	214+49	GATE AND WOOD RAILING FENCE		10	1		
215+57	215+57	SIDEDRAIN UNDER DRIVEWAY RT.	1				
217+35	217+35	SIDEDRAIN UNDER DRIVEWAY RT.	1				
217+55	217+55	MAIL BOX ON RT.					1
218+02	218+02	NARROW BRIDGE ON LT.				1	
219+43	219+43	SPEED LIMIT SIGN ON LT.				1	
TOTALS:			**7**	**1299**	**3**	**12**	**3**

CLEARING AND GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STATION	
SECTION 1 - LITTLE MAZARN CREEK			
105+00	109+75	5	5
111+50	120+00	9	9
SECTION 2 - LOST CREEK			
200+00	208+45	9	9
211+00	219+66	9	9
TOTALS:		**32**	**32**

MAILBOXES & MAILBOX SUPPORTS

STATION	MAILBOX	MAILBOX SUPPORTS (SINGLE)	MAILBOX SUPPORTS (DOUBLE)
	EACH	EACH	EACH
SECTION 1 - LITTLE MAZARN CREEK			
119+30 ON RT.	2		1
SECTION 2 - LOST CREEK			
217+55 ON RT.	1	1	
TOTALS:	**3**	**1**	**1**

FENCE AND GATE

STATION	STATION	SIDE	5' CHAIN LINK	WIRE FENCE (TYPE D) 4 STRAND BARBED WIRE	WIRE FENCE (TYPE D-2) 6 STRAND BARBED WIRE	ALTERNATES 16' - 0" STEEL GATE	ALTERNATES 16' - 0" ALUMINUM GATE	ALTERNATES 18' - 0" STEEL GATE	ALTERNATES 18' - 0" ALUMINUM GATE
			LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH
SECTION 1 - LITTLE MAZARN CREEK									
106+18	106+43	LT.	43						
106+43	106+59	LT.				1	1		
106+59	110+12	LT.	392						
111+96	115+79	RT.		445					
SECTION 2 - LOST CREEK									
201+96	202+02	LT.		6					
202+02	202+20	LT.						1	1
202+20	203+51	LT.		131					
212+01	214+49	RT.			280				
214+49	214+49	RT.				1	1		
214+49	214+49	RT.			10				
TOTALS:			**435**	**582**	**290**	**2**	**2**	**1**	**1**

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

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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
10-25-2021				6	ARK.			
				JOB NO.		BR2605	17	83
				4	QUANTITIES			

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
STEVEN MORGAN
11/2/2021

EROSION CONTROL

STATION	STATION	DESCRIPTION	LIME	SEEDING	MULCH COVER	WATER
			TONS	ACRE		M. GAL.
SECTION 1 - LITTLE MAZARN CREEK						
105+00.00	120+00.00	MAIN LANE	3.02	1.51	1.51	154.0
SECTION 1 - LOST CREEK						
200+00.00	219+65.65	MAIN LANE	3.64	1.82	1.82	185.6
TOTALS:			**6.66**	**3.33**	**3.33**	**339.6**
USE:			**7**	**3.33**	**3.33**	**339.6**

BASIS OF ESTIMATE:
LIME_____2 TONS PER ACRE SEEDING
WATER_____102.0 M. GALLON PER ACRE SEEDING

TEMPORARY EROSION CONTROL

LOCATION	TEMPORARY SEEDING	MULCH COVER	WATER	FILTER SOCK (E-3)	ROCK DITCH CHECKS (E-6)	SAND BAG DITCH CHECKS (E-5)	SILT FENCE (E-11)	SEDIMENT REMOVAL & DISPOSAL
	ACRE	ACRE	M. GAL.	LIN. FT.	CU. YD.	BAG	LIN. FT.	CU. YD.
SECTION 1 - LITTLE MAZARN CREEK								
ENTIRE SECTION AS SHOWN ON THE TEMPORARY EROSION CONTROL DETAILS				810	12	220	400	59
	1.51	1.51	30.8					
SECTION 2 - LOST CREEK								
ENTIRE SECTION AS SHOWN ON THE TEMPORARY EROSION CONTROL DETAILS					12	154	1300	59
	1.82	1.82	37.1					
TOTALS:	3.33	3.33	67.9	810	24	374	1700	118

BASIS OF ESTIMATE:
WATER FOR TEMPORARY SEEDING_____20.4 M. GALLON PER ACRE TEMPORARY SEEDING
NOTE: TEMPORARY EROSION CONTROL DEVICES SHOWN ABOVE AND ON THE PLANS SHALL BE INSTALLED IN SUCH A SEQUENCE AS TO DETER EROSION AND SEDIMENTATION OF U.S. WATERWAYS AS EXPLAINED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.

NOTE: QUANTITIES ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

EARTHWORK

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	CU. YD.
SECTION 1 - LITTLE MAZARN CREEK				
105+00.00	110+10.58	MAIN LANE	495.00	2771.00
105+88.00	105+88.00	COUNTY ROAD ON LT.	66.52	
106+53.00	106+53.00	DRIVEWAY ON LT.	20.64	
107+72.00	107+72.00	DRIVEWAY ON RT.		48.98
110+10.58	110+10.58	BRIDGE END WORK	1124.00	
111+83.00	111+83.00	BRIDGE END WORK		
113+45.00	113+45.00	DRIVEWAY ON LT.	77.00	
119+42.00	119+42.00	DRIVEWAY ON RT.	30.99	
111+82.18	120+00.00	MAIN LANE	12609.00	181.00
SECTION 2 - LOST CREEK				
200+00.00	208+11.50	MAIN LANE	4636.00	2149.00
200+31.00	200+31.00	DRIVEWAY ON RT.		14.73
202+11.00	202+11.00	DRIVEWAY ON LT.	95.98	
208+11.50	208+11.50	BRIDGE END WORK	410.00	
209+32.50	209+32.50	BRIDGE END WORK		
209+32.50	219+16.00	MAIN LANE	485.00	5438.00
215+57.00	215+57.00	DRIVEWAY ON RT.	18.02	4.12
217+35.00	217+35.00	DRIVEWAY ON RT.	33.19	
TOTALS:			**20101.34**	**10606.83**
USE:			**20101**	**10607**

NOTE: EARTHWORK TO BE PAID FOR AS PLAN QUANTITY.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	18	83
				4		QUANTITIES		

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING

Sep 1 2020 3:27 PM

DocuSign

TRAFFIC CONTROL DEVICES

LOCATION	W20-1 (1500 FT.)		W20-1 (1000 FT.)		W20-1 (500 FT.)		W20-3 (ROAD CLOSED AHEAD)		R11-2 (ROAD CLOSED)		G20-2 (END OF ROAD WORK)		BARRICADES (TYPE III)
	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	LIN. FT.
SECTION 1 - LITTLE MAZARN CREEK													
BEGINNING OF SECTION	1	16.00	1	16.00	1	16.00	1	16.00	1	10.00	1	8.00	20.00
END OF SECTION	1	16.00	1	16.00	1	16.00	1	16.00	1	10.00	1	8.00	20.00
SECTION 2 - LOST CREEK													
BEGINNING OF SECTION	1	16.00	1	16.00	1	16.00	1	16.00	1	10.00	1	8.00	20.00
END OF SECTION	1	16.00	1	16.00	1	16.00	1	16.00	1	10.00	1	8.00	20.00
TOTALS:	**4**	**64.00**	**4**	**64.00**	**4**	**64.00**	**4**	**64.00**	**4**	**40.00**	**4**	**32.00**	**80.00**

NOTE: REFER TO STANDARD DRAWINGS TC-1, TC-2, AND TC-3.

STANDARD HIGHWAY SIGNS AND SUPPORT ASSEMBLIES

STATION	SIDE	STANDARD SIGN NO.										SUPPORT ASSEMBLY		STANDARD DRAWING NUMBER
		OM-3L		OM-3R		W1-1aR (15 MPH CURVE)		R2-1 (SPEED LIMIT)		R1-1 (STOP SIGN)		TYPE A	TYPE C	
		NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	NO.	SQ. FT.	EACH	EACH	
SECTION 1 - LITTLE MAZARN CREEK														
105+73.00	LT.									1	6.25	1		SHS-1, SHS-2
109+84.00	LT.	1	3.00										1	SHS-1, SHS-2
109+84.00	RT.			1	3.00								1	SHS-1, SHS-2
112+09.00	LT.			1	3.00								1	SHS-1, SHS-2
112+09.00	RT.	1	3.00										1	SHS-1, SHS-2
SECTION 2 - LOST CREEK														
203+77.00	LT.					1	9.00					1		SHS-2, MUTCD
207+84.00	LT.	1	3.00										1	SHS-1, SHS-2
207+84.00	RT.			1	3.00								1	SHS-1, SHS-2
209+60.00	LT.			1	3.00								1	SHS-1, SHS-2
209+60.00	RT.	1	3.00										1	SHS-1, SHS-2
211+33.00	RT.							1	5.00			1		SHS-1, SHS-2
219+43.00	LT.							1	5.00			1		SHS-1, SHS-2
TOTALS:		**4**	**12.00**	**4**	**12.00**	**1**	**9.00**	**2**	**10.00**	**1**	**6.25**	**4**	**8**	

NOTES: ALL STANDARD SIGN BLANKS TO BE 0.080" THICK. REFER TO STANDARD DRAWING SHS-2 FOR CHANNEL POST SPLICING DETAILS.

REFLECTORIZED PAINT PAVEMENT MARKING

LOCATION	YELLOW 4" CONTINUOUS LIN. FT.	WHITE 4" CONTINUOUS LIN. FT.	STANDARD DRAWING NUMBER
SECTION 1 - LITTLE MAZARN CREEK			
105+00.00 - 120+00.00	3000	3000	PM-1
SECTION 2 - LOST CREEK			
200+00.00 - 219+65.65	3932	3932	PM-1
TOTALS:	**6932**	**6932**	

NOTE: THIS IS A LOW VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2014 EDITION.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-25-2021				6	ARK.			
				JOB NO.		BR2605	19	83

4 QUANTITIES

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
STEVEN MORGAN
11/2/2021

SIDE DRAINS

STATION	DESCRIPTION	SIDE DRAIN 18" LIN. FT.	SIDE DRAIN 22" X 14" LIN. FT.	SIDE DRAIN 24" LIN. FT.	STANDARD DRAWINGS
SECTION 1 - LITTLE MAZARN CREEK					
105+88.00	INSTALL PIPE SIDEDRAIN UNDER KATHRYN LN. ON LEFT			52	PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
106+53.00	INSTALL PIPE SIDEDRAIN ON LEFT			41	PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
107+72.00	INSTALL PIPE SIDEDRAIN ON RIGHT			41	PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
119+42.00	INSTALL PIPE SIDEDRAIN ON RIGHT	34			PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
SECTION 2 - LOST CREEK					
200+31.00	INSTALL PIPE SIDEDRAIN ON RT.		30		PCC-1, PCM-1, PCP-1, PCP-2, & PCP-2
202+11.00	INSTALL PIPE SIDEDRAIN ON LT.	30			PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
215+57.00	INSTALL PIPE SIDEDRAIN ON RT.	30			PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
217+35.00	INSTALL PIPE SIDEDRAIN ON RT.	30			PCC-1, PCM-1, PCP-1, PCP-2, & PCP-3
TOTALS:		**124**	**30**	**134**	

NOTE: FOR CLASS III R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE NOTED.
FOR C.M. OR PLASTIC PIPE CULVERT INSTALLATION USE TYPE 2 BEDDING UNLESS OTHERWISE NOTED.

GUARDRAIL

STATION	STATION	SIDE	THRIE BEAM GUARDRAIL TERMINAL EACH	GUARDRAIL (TYPE A) LIN. FT.	TERMINAL ANCHOR POST (TYPE 1) EACH
SECTION 1 - LITTLE MAZARN CREEK					
109+32.43	109+82.43	LT. & RT.	2	100	2
112+10.33	112+60.33	LT. & RT.	2	100	2
SECTION 2 - LOST CREEK					
107+33.35	207+83.35	LT. & RT.	2	100	2
209+60.65	210+10.65	LT. & RT.	2	100	2
TOTALS:			**8**	**400**	**8**

APPROACH SLABS

STATION	STATION	TYPE SPECIAL APPROACH SLAB CU. YD.	REINFORCING STEEL - RDWY. (GR. 60) LB.
SECTION 1 - LITTLE MAZARN CREEK			
109+80.58	110+10.58		
111+82.18	112+12.18		
W = 22'			
SECTION 2 - LOST CREEK			
207+81.50	208+11.50	27.30	1955
209+32.50	209+62.50	27.30	1955
TOTALS:		**54.60**	**3910**

W = 22'

APPROACH GUTTERS

STATION	STATION	SIDE	SPECIAL APPROACH GUTTERS (TYPE 1) CU. YD.	REINFORCING STEEL - ROADWAY (GR. 60) LB.	SPECIAL APPROACH GUTTERS (TYPE 2) CU. YD.	REINFORCING STEEL - ROADWAY (GR. 60) LB.
SECTION 1 - LITTLE MAZARN CREEK						
109+80.58	110+10.58	LT. & RT.	6.22	570		
111+82.18	112+12.18	LT. & RT.	6.22	570		
W = 3'						
SECTION 2 - LOST CREEK						
207+81.50	208+11.50	LT. & RT.			6.14	506
209+32.50	209+62.50	LT. & RT.			6.14	506
TOTALS:			**12.44**	**1140**	**12.28**	**1012**

W = 3'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-25-2021				6	ARK.			
				JOB NO.		BR2605	20	83
				4	QUANTITIES			

BASE AND SURFACING QUANTITIES

DESCRIPTION	STATIONS		LENGTH	AGGREGATE BASE COURSE (CLASS 7)			PRIME COAT			*ACHM SURFACE COURSE (1/2")		
	FROM	TO	LIN. FT.	WIDTH	TON/STAT.	TON	WIDTH	SQ. YD.	GAL.	WIDTH	SQ. YD.	TON
SECTION 1 - LITTLE MAZARN CREEK												
MAIN LANE	105+00.00	108+41.49	341.49	30.00	161.1	550.1	23.00	872.70	349.1	22.00	834.75	91.8
MAIN LANE FULL SUPER	108+41.49	108+89.58	48.09	30.00	164.9	79.3	23.00	122.90	49.2	22.00	117.55	12.9
TRANSITION - GUARDRAIL	108+89.58	109+22.58	33.00	35.25	188.7	62.3	23.00	84.30	33.7	22.00	80.67	8.9
GUARDRAIL FULLWIDTH	109+22.58	109+32.58	10.00	41.00	212.6	21.3	23.00	25.60	10.2	22.00	24.44	2.7
TRANSITION - GUARDRAIL	109+32.58	109+82.58	50.00	37.50	192.6	96.3	23.00	127.80	51.1	22.00	122.22	13.4
GUARDRAIL BRIDGE END CONNECTIONS	109+82.58	109+97.58	15.00	34.00	172.6	25.9						
BRIDGE	110+10.58	111+82.18	171.59	28.00								
GUARDRAIL BRIDGE END CONNECTIONS	111+95.18	112+10.18	15.00	34.00	172.6	25.9						
TRANSITION - GUARDRAIL	112+10.18	112+60.18	50.00	37.50	192.6	96.3	23.00	127.80	51.1	22.00	122.20	13.4
GUARDRAIL FULLWIDTH	112+60.18	112+70.18	10.00	41.00	212.6	21.3	23.00	25.60	10.2	22.00	24.40	2.7
TRANSITION - GUARDRAIL	112+70.18	113+03.18	33.00	35.25	188.7	62.3	23.00	84.30	33.7	22.00	80.70	8.9
MAIN LANE FULL SUPER	113+03.15	113+46.29	43.14	30.00	164.9	71.1	23.00	110.20	44.1	22.00	105.50	11.6
MAIN LANE	113+46.29	120+00.00	653.71	30.00	161.1	1053.1	23.00	1670.60	668.2	22.00	1598.00	175.8
1 COUNTY ROAD TURNOUT ON LEFT	105+88.00	105+88.00				51.7		126.50	50.6		126.50	13.9
DRIVEWAY ON LEFT	106+53.00	106+53.00				31.3		76.70	30.7		76.70	8.4
DRIVEWAY ON RIGHT	107+72.00	107+72.00				44.5		109.00	43.6		109.00	12.0
DRIVEWAY ON LEFT	113+45.00	113+45.00				83.7		205.08	82.0		205.08	22.6
DRIVEWAY ON RIGHT	119+42.00	119+42.00				34.3		84.10	33.6		84.10	9.3
MAINTENANCE OF TRAFFIC	105+00.00	120+00.00				200.0						
SECTION 2 - LOST CREEK												
MAIN LANE	200+00.00	206+90.50	690.50	20.00	161.1	1112.4	23.00	1764.60	705.8	22.00	1687.90	185.7
TRANSITION - GUARDRAIL	206+90.50	207+23.50	33.00	35.25	189.6	62.6	23.00	84.30	33.7	22.00	80.70	8.9
GUARDRAIL FULLWIDTH	207+23.50	207+33.50	10.00	41.00	212.6	21.3	23.00	25.60	10.2	22.00	24.40	2.7
TRANSITION - GUARDRAIL	207+33.50	207+83.50	50.00	37.50	192.6	96.3	23.00	127.80	51.1	22.00	122.20	13.4
GUARDRAIL BRIDGE END CONNECTIONS	207+83.50	207+98.50	15.00	34.00	172.6	25.9						
BRIDGE	208+11.50	209+32.50	121.00	28.00								
GUARDRAIL BRIDGE END CONNECTIONS	209+45.50	209+60.50	39.00	34.00	172.6	67.3						
TRANSITION - GUARDRAIL	209+60.50	210+10.50	50.00	37.50	192.6	96.3	23.00	127.80	51.1	22.00	122.20	13.4
GUARDRAIL FULLWIDTH	210+10.50	210+20.50	10.00	41.00	212.6	21.3	23.00	25.60	10.2	22.00	24.40	2.7
TRANSITION - GUARDRAIL	210+20.50	210+53.50	33.00	35.25	189.6	62.6	23.00	84.30	33.7	22.00	80.70	8.9
MAIN LANE	210+53.50	219+65.65	646.50	30.00	161.1	1041.5	23.00	1652.20	660.9	22.00	1580.30	173.8
DRIVEWAY ON RT.	200+31.00	200+31.00				31.2		76.51	30.6		72.08	7.9
DRIVEWAY ON LT.	202+11.00	202+11.00				50.5		123.66	49.5		123.66	13.6
DRIVEWAY ON RT.	215+59.00	215+59.00				25.9		63.50	25.4		63.50	7.0
DRIVEWAY ON RT.	217+35.00	217+35.00				41.5		101.52	40.6		101.52	11.2
MAINTENANCE OF TRAFFIC	200+00.00	219+65.65				100.0						
TOTALS:						**5467.3**			**3243.90**			**857.50**
USE:						**5468**			**3244**			**858**

BASIS OF ESTIMATE:

PRIME COAT 0.40 GAL. PER SQ. YD.

ACHM SURFACE COURSE (1/2") 220 POUND PER SQ. YD.

***Nmax = 115**

VOLUME CONTROL:

ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") 4.9%

MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2") 95.1%

NOTE: THESE ESTIMATED QUANTITIES MAY BE ADJUSTED BY THE ENGINEER TO MEET LOCAL ROADWAY CONDITIONS.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
STEVEN MORGAN
11/4/2021

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		BR2605	21	83

(1) 04946 & 04947 - QUANTITIES - 61780

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. BR2605

BRIDGE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	801	SS & 802	SP, SS, & 802	803	SS & 804	SS & 804	SS & 805	SS & 805	SP, SS & 807	SS & 807	SS & 808	SS & 809	812	816	816
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE - BRIDGE	CLASS S(AE) CONCRETE - BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	(2) STEEL PILING (HP 12X53)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (A709, GR. 50W)	(3) PAINTING STRUCTURAL STEEL	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE C)	FILTER BLANKET	DUMPED RIPRAP
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	TON	CU. IN.	LIN. FT.	EACH	SQ. YD.	CU. YD.
04946	SOUTH FORK LITTLE MAZARN CREEK	BENT 1 & 4			36	67.80		0.6	8,560		160		1,435		2,237.6	75		503	283
		BENT 2 & 3			241	131.50			20,100						2,809.4				
		169'-0" CONTINUOUS W-BEAM UNIT					161.90	13.2		38,050			112,165	3.1			1		
		SITE NO. 1 (EXISTING BR. NO. 13152)		1															
		TOTAL FOR BRIDGE NO. 04946			277	199.30	161.90	13.8	28,660	38,050	160		113,600	3.1	5,047.0	75	1	503	283
04947	LOST CREEK	BENT 1 & 4			20	23.40			2,103	683	136	80						472	268
		BENT 2 & 3			118	64.70			9,987						2,074.0				
		120'-0" CONT. INTEGRAL W-BEAM UNIT					141.00	8.9		30,357			53,510				1		
		SITE NO. 2 (EXISTING BR. NO. 13151)		1															
		TOTAL FOR BRIDGE NO. 04947			138	88.10	141.00	8.9	12,090	31,040	136	80	53,510		2,074.0		1	472	268
		TOTAL FOR JOB NO. BR2605			(1) 415	287.40	302.90	22.7	40,750	69,090	296	80	167,110	3.1	7,121.0	75	2	975	551

STEVEN PEYTON
DESIGN SECTION SUPERVISOR

(1) Includes approx. 158 cubic yards of rock elevation.

(2) All steel piling shall be Grade 50 and shall have approved driving points, which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 12x53)". All piles shall conform to Standard Drawing No. 55020.

(3) All Grade 50W structural steel, except galvanized members, surfaces in contact with concrete, and the expansion device, within five feet of bridge deck expansion joints shall be painted as specified in Subsection 807.75. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Ellis, Rick
Aug 6 2020 9:41 PM
DocuSigned
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES

LOST CR. & S. FORK LITTLE MAZARN CR.
STRS. & APPRS. (S)
GARLAND COUNTY

COUNTY ROAD 63

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 4/1/2020 FILENAME: bbr2605_q1.dgn
CHECKED BY: MCB DATE: 5/29/2020 SCALE: No Scale
DESIGNED BY: --- DATE: ---

BRIDGE NO. 04946 & 04947 DRAWING NO. 61780

PRINT DATE: 7/17/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
12-14-2021				6	ARK.			
				JOB NO.		BR2605	22	83

4 SUMMARY OF QUANTITIES AND REVISIONS

STATE OF ARKANSAS
Steven M Morgan
REGISTERED PROFESSIONAL ENGINEER
No. 9110
12/14/2021
STEVEN MORGAN

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		32	STATION
201	GRUBBING		32	STATION
202	REMOVAL AND DISPOSAL OF FENCE		1299	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		3	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		7	EACH
202	REMOVAL AND DISPOSAL OF SIGNS		12	EACH
202	REMOVAL AND DISPOSAL OF MAILBOXES		3	EACH
SS & 210	UNCLASSIFIED EXCAVATION		20109	CU. YD.
210	COMPACTED EMBANKMENT		10595	CU. YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		5466	TON
SS & 401	PRIME COAT		3242	GAL.
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		816	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")		42	TON
504	APPROACH SLABS		54.60	CU. YD.
504	APPROACH GUTTERS		24.72	CU. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS & 604	SIGNS		328	SQ. FT.
SS & 604	BARRICADES		80	LIN. FT.
SP, SS, & 606	18" SIDE DRAIN		124	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN		134	LIN. FT.
SS & 617	GUARDRAIL (TYPE A)		400	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)		8	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		8	EACH
619	WIRE FENCE (TYPE D)		582	LIN. FT.
619	WIRE FENCE (TYPE D-2)		290	LIN. FT.
619	5' STEEL CHAIN LINK FENCE		435	LIN. FT.
* 619	16' STEEL GATES	ALTERNATE NUMBER 1	2	EACH
* 619	16' ALUMINUM GATES	ALTERNATE NUMBER 2	2	EACH
* 619	18' STEEL GATES	ALTERNATE NUMBER 1	1	EACH
* 619	18' ALUMINUM GATES	ALTERNATE NUMBER 2	1	EACH
620	LIME		7	TON
620	SEEDING		3.33	ACRE
SS & 620	MULCH COVER		6.66	ACRE
620	WATER		407.5	M. GAL.
621	TEMPORARY SEEDING		3.33	ACRE
621	SILT FENCE		1700	LIN. FT.
621	SAND BAG DITCH CHECKS		374	BAG
621	SEDIMENT REMOVAL AND DISPOSAL		118	CU. YD.
621	ROCK DITCH CHECKS		24	CU. YD.
SS & 621	FILTER SOCK (12")		810	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		3	EACH
637	MAILBOX SUPPORTS (SINGLE)		1	EACH
637	MAILBOX SUPPORTS (DOUBLE)		1	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")		6932	LIN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")		6932	LIN. FT.
SS & 726	STANDARD SIGN		49.25	SQ. FT.
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE A)		4	EACH
SS & 729	CHANNEL POST SIGN SUPPORT (TYPE C)		8	EACH
SP & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		6062	POUND
	STRUCTURES OVER 20' - 0" SPAN			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)		1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)		1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE		415	CU. YD.
SS & 802	CLASS S CONCRETE-BRIDGE		287.40	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE		302.9	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT		22.7	GAL.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)		40750	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)		69090	POUND
SS & 805	STEEL PILING (HP 12X53)		296	LIN. FT.
SS & 805	PREBORING		80	LIN. FT.
SP, SS, & 807	STRUCTURAL STEEL IN BEAM SPANS (A709-GR50W)		167110	POUND
SS & 807	PAINTING STRUCTURAL STEEL		3.1	TON
SS & 808	ELASTOMERIC BEARINGS		7121.0	CU. IN.
SS & 809	SILICONE JOINT SEALANT		75	LIN. FT.
812	BRIDGE NAME PLATE (TYPE C)		2	EACH
816	FILTER BLANKET		975	SQ. YD.
816	DUMPED RIPRAP		551	CU. YD.

*DENOTES ALTERNATE BID ITEMS.

REVISIONS

DATE	REVISION	SHEET NUMBER
12/14/2021	REVISED STANDARD SPECIFICATIONS 400-7 , 621-1, 808-1, AND 808-2. ADDED SS TO ITEMS 210, 617, 726, AND 804.	3 & 22

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	23	83

SURVEY CONTROL DETAILS

SURVEY CONTROL COORDINATES

Project Name: sBR2605
Date: 9/18/2017
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE HORIZONTAL CTL BASED ON STATIC OBS ON PTS 2,6 & 7,11. VERTICAL CTL BASED ON STATIC OBS ON PTS:2 & 6 PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1951757.3811	936017.1115	568.391	CTL	STD.AHTD MON.STAMPED PN:1
2	1951576.3364	936519.2765	558.196	CTL	STD.AHTD MON.STAMPED PN:2
3	1950990.1855	936271.4809	522.566	CTL	STD.AHTD MON.STAMPED PN:3
4	1950439.7174	936040.3219	511.866	CTL	STD.AHTD MON.STAMPED PN:4
5	1950001.0680	935697.2808	522.033	CTL	STD.AHTD MON.STAMPED PN:5
6	1949512.0629	935417.1703	542.162	CTL	STD.AHTD MON.STAMPED PN:6
7	1957989.7245	940570.5251	543.591	CTL	STD.AHTD MON.STAMPED PN:7
8	1957361.1941	940556.5435	499.936	CTL	STD.AHTD MON.STAMPED PN:8
9	1956809.1421	940552.1821	485.613	CTL	STD.AHTD MON.STAMPED PN:9
10	1956250.7533	940502.8629	482.261	CTL	STD.AHTD MON.STAMPED PN:10
11	1955465.1255	940518.7817	512.766	CTL	STD.AHTD MON.STAMPED PN:11

*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).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999164155 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 sBR2605gi.CTL
HORIZONTAL DATUM: NAD 83 (2011)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

REFERENCE POINTS (1500 SERIES) ARE TO BE USED TO ESTABLISH CONTROL
IF THE PRIMARY CONTROL POINTS LISTED ABOVE HAVE BEEN DESTROYED.
REFERENCE POINTS ARE NOT TO BE USED FOR VERTICAL CONTROL

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: STATIC OBS ON PTS 2,6 & 7,11
CONVERGENCE ANGLE: 00 41 51 LEFT AT PN:2 LT:N 34-25-00 LG:W 093-14-47
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

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No. 11240
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CONSTRUCTION COORDINATES SECTION 1 LITTLE MAZARN CREEK

POINT NO.	TYPE	STATION	NORTHING	EASTING
8008	POB	100+00.00	1949789.1577	935581.1179
8009	PC	101+83.38	1949955.0458	935659.2872
8011	PT	104+12.70	1950149.5127	935779.8618
8012	PC	107+98.74	1950452.1814	936019.4912
8014	PT	113+90.04	1950966.8818	936305.2105
8015	PC	115+98.16	1951162.8140	936375.3700
8017	PT	119+09.71	1951454.0066	936486.0832
8018	POE	120+41.82	1951576.5542	936535.4284

CONSTRUCTION COORDINATE SECTION 2 LOST CREEK

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	200+00.00	1955423.2769	940498.8807
8001	PC	200+39.00	1955462.1962	940501.3112
8003	PT	206+00.79	1956023.5295	940522.5722
8004	PC	216+14.24	1957036.8961	940536.0964
8006	PT	218+53.57	1957276.1798	940540.7219
8007	POE	219+65.65	1957388.2215	940543.5585

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	24	83

4 SURVEY CONTROL - SECTION 1 - MAZARN CREEK

STATION 105+00.00 BEGIN JOB
SECTION 1 - LITTLE MAZARN CREEK

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POB100+00.00
PN# 8008
100
N 25°13'50.2" E
183.38'
PN# 8009
PC101+83.38
PI102+98.55
PT104+12.70
PN# 8011
PN:5
PD:STD.AHTD MON.STAMPED PN:5
SURVEY BASELINE N 38°01'37" E
556.86'
105
N 38°22'09.9" E
386.04'
PC107+98.74
PN# 8012
PN:4
PD:STD.AHTD MON.STAMPED PN:4
SURVEY BASELINE N 22°46'45" E
597.03'
PT113+90.04
PN:3
PD:STD.AHTD MON.STAMPED PN:3 JOB BR26
N 19°42'05.2" E
208.12'
115
PN# 8014
PI110+97.04

Lt. Loop P.I. = 102+98.55
" " " = 13°08'19.74" RT.
" " " = 5°43'46.48"
" " " = 100.00
" " " = 175.16'
" " " = 259.32'

Lt. Loop P.I. = 110+97.04
" " " = 18°40'04.72" LT.
" " " = 3°08'25.61"
" " " = 181.48'
" " " = 358.12'
" " " = 59.90'
" " " = 175'

PNW24 PD:SPIKE NAIL
PNW23 PD:SPIKE NAIL
PNW25 PD:SPIKE NAIL
PNW26 PD:SPIKE NAIL
PNW9 PD:SPIKE NAIL SPIKE NAIL
PNW2 PD:SPIKE NAIL
PNW7 PD:SPIKE NAIL
PNW8 PD:SPIKE NAIL
PNW22 PD:SPIKE NAIL
PNW20 PD:SPIKE NAIL
PNW21 PD:SPIKE NAIL

COORDINATE CONSTRUCTION CENTERLINE

0 100 200
SCALE IN FEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	25	83

4 SURVEY CONTROL - SECTION 1 - MAZARN CREEK

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N

STATION 120+00.00 END JOB
SECTION 1 - LITTLE MAZARN CREEK

SURVEY BASELINE N 70°10'28" W
533.80'

PC107+98.74

PI110+97.04

PT113+90.04

PI117+53.95

PC115+98.16

PT119+09.71

POE120+47.47

PN:4
PD:STD.AHTD MON.STAMPED PN:4 JOB BR2605

PN:3
PD:STD.AHTD MON.STAMPED PN:3 JOB BR2605

PN:2
PD:STD.AHTD MON.STAMPED PN:2 JOB BR2605

PN: 8012

PN: 8013

PN: 8014

PN: 8015

PN: 8016

PN: 8017

PN: 8018

SURVEY BASELINE N 22°46'45" E
597.03'

SURVEY BASELINE N 22°58'58" E
636.38'

N 19°42'05.2" E 115
208.12'

N 21°55'57.9" E
132.11'

P.I. = 110+97.04
Δ = 18°40'25.61" LT.
D = 3°08'28.30"
R = 1824.93'
T = 300.28'
L = 594.31'
LC = 591.75'

P.I. = 117+53.95
Δ = 2°13'52.70" RT.
D = 8°42'56.31"
R = 800.00'
T = 18.59'
L = 37.35'
LC = 37.11'
N.C.

PNW24 PD:SPIKE NAIL
PNW23 PD:SPIKE NAIL
PNW25 PD:SPIKE NAIL
PNW26 PD:SPIKE NAIL
PNW22 PD:SPIKE NAIL
PNW7 PD:SPIKE NAIL
PNW6 PD:SPIKE NAIL
PNW8 PD:SPIKE NAIL
PNW20 PD:SPIKE NAIL
PNW21 PD:SPIKE NAIL

COORDINATE CONSTRUCTION CENTERLINE

0 100 200
SCALE IN FEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	26	83

4 SURVEY CONTROL - SECTION 2 - LOST CREEK

STATION 200+00.00 BEGIN JOB
SECTION 2 - LOST CREEK

N

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N 3°34'24.9" E
39.00'

POB200+00.00
PC200+39.00
PT206+00.79
PI203+19.95

200
205
210
2

PN# 8000 PN# 8001
PN# 8003

SURVEY BASELINE N 01°09'39" W
1785.79'

SURVEY BASELINE N 05°02'51" E
560.56'

N 0°45'52.6" E 1013.46'

P.I. = 203+19.95
Δ = 2°48'32.26" LT.
D = 0°30'00.00"
R = 11459.16'
T = 280.95'
L = 561.79'
e = N.C.

PN#1 PD:STD.AHTD MON.STAMPED PN#1 JOB BR2605

PN#10 PD:STD.AHTD MON.STAMPED PN#10 JOB BR2605

PN#9 PD:STD.AHTD MON.STAMPED PN#9 JOB BR2605

PN#101 PD:20 D MAG NAIL 2" AHTD ALUM MO

PN#112 PD:SPIKE NAIL
PN#111 PD:SPIKE NAIL
PN#115 PD:SPIKE NAIL
PN#110 PD:SPIKE NAIL
PN#105 PD:SPIKE NAIL
PN#104 PD:SPIKE NAIL
PN#103 PD:SPIKE NAIL
PN#106 PD:SPIKE NAIL
PN#107 PD:SPIKE NAIL
PN#109 PD:SPIKE NAIL
PN#108 PD:SPIKE NAIL
PN#102 PD:SPIKE NAIL

COORDINATE CONSTRUCTION CENTERLINE

0 100 200
SCALE IN FEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	27	83

4 SURVEY CONTROL - SECTION 2 - LOST CREEK

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STATION 219+65.65 END JOB
SECTION 2 - LOST CREEK

PT206+00.79

PNail3 PD:SPIKE NAIL
PNail2 PD:SPIKE NAIL
PNail4 PD:SPIKE NAIL
PNail1 PD:SPIKE NAIL
PNail5 PD:SPIKE NAIL
PNail0 PD:SPIKE NAIL
PNail4 PD:SPIKE NAIL
PNail3 PD:SPIKE NAIL

205

PN# 8003

PNail0 PD:STD.AHTD MON.STAMPED PN#0 JOB BR2605

210

SURVEY BASELINE N 05°02'51" E
560.56'

PNail01 PD:20 D MAG NAIL 2" AHTD ALUM MO

PNail09 PD:SPIKE NAIL
PNail02 PD:SPIKE NAIL
PNail08 PD:SPIKE NAIL

N 0°45'52.6" E 1013.46'

PNail9 PD:STD.AHTD MON.STAMPED PN#9 JOB BR2605

215

PN# 8004

SURVEY BASELINE N 00°27'10" E
552.07'

P.I.= 217+33.91
Δ = 0°41'08.27" RT.
D = 0°17'11.32"
R = 20000.00
T = 119.67'
L = 239.33
e = N.C.

PC216+14.24

PNail00 PD:20 D MAG NAIL 2" AHTD ALUM MO

PI217+33.91

PT218+53.57

N 1°27'00.9" E
112.08'

219

PN# 8006

PN# 8007

PNail8 PD:STD.AHTD MON.STAMPED PN#8 JOB BR2605

POE219+65.65

COORDINATE CONSTRUCTION CENTERLINE

0 100 200
SCALE IN FEET

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	28	83

4 PLAN AND PROFILE LITTLE MAZARN CREEK

CLEARING AND GRUBBING
STATIONS 105+00 - 109+75 = 5 STATION
STATIONS 111+50 - 120+00 = 9 STATION

STATION 105+88.00 ON LEFT IN PLACE
A 18" CMP PIPE CULVERT
REMOVE AND CONSTRUCT A
24" X 52' SIDE DRAIN

POB100+00.00

PI102+98.55

BEGIN JOB BR2605 SECTION 1
STATION 105+00.00

100 N 25° 13'50.2" E 183.38'

STATION 107+72.00 ON RIGHT
IN PLACE 12" CMP SIDE DRAIN
REMOVE AND CONSTRUCT A
A 24" X 41' SIDE DRAIN

PC101+83.38

TEMPORARY CONTROL DEVICES
(W20 - 1) 1500 FT. - 2 SIGNS - 32.0 SQ. FT.
(W20-1) 1000 FT. - 2 SIGNS - 32.0 SQ. FT.
(W20-1) 500 FT. - 2 SIGNS - 32.0 SQ. FT.
(W20-3) ROAD CLOSED AHEAD - 2 SIGNS - 32.0 SQ. FT.
(R11-2) ROAD CLOSED - 2 SIGNS - 20.0 SQ. FT.
(G20-2) END OF ROAD WORK - 2 SIGNS - 16.0 SQ. FT.
BARRICADES (TYPE III) - 40.0 LIN. FT.

STATIONS 107+72.00
CONSTRUCT DRIVEWAY ON RIGHT
COMPACTED EMBANKMENT = 48.98 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 44.5 TON
SURFACE AREA = 63.5 SQ. YD.
PLUS AN ADDITIONAL 45.5 SQ. YD.

ROAD CLOSED DURING BRIDGE CONSTRUCTION

LOAD P.I. = 102+98.55 = 13.08 = 19.74" RT. = 5°43'46.48" = 100.00 = 1.15 = 229.32

PT104+12.70

STATION 105+88.00
CONSTRUCT COUNTY ROAD TURNOUT ON LEFT
UNCLASSIFIED EXCAVATION = 66.52 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 51.07 TON
SURFACE AREA = 109.6 SQ. YD.
PLUS ADDITIONAL 16.9 SQ. YD.

STATION 106+53 ON LEFT
IN PLACE A 18" SIDE DRAIN
REMOVE AND CONSTRUCT
24" X 41' SIDE DRAIN

STATION 105+73.00 ON LT. INSTALL
STANDARD HIGHWAY SIGN R1-1 (STOP SIGN)

105 N 38° 22'09.9" E 386.04'

5' STEEL CHAIN LINK FENCE
STATIONS 106+18.00 - 106+43.00 LT. = 43 LIN. FT.
STATIONS 106+59.00 - 110+12.00 LT. = 392 LIN. FT.
WIRE FENCE (TYPE D)
STATIONS 111+96.00 - 155+79.00 RT. = 435 LIN. FT.

CONSTRUCT A CURVED 169' - 0" CONTINUOUS
W-BEAM UNIT (52' - 65' - 52') BRIDGE - NUMEER 04946
TOTAL LENGTH 171' - 7 1/8"
FROM STA. 110+10.58 TO STA. 111+82.18
PC 107+98.74
PT 113+90.04
RADIUS = 1814.81 FT.
TANGENT = 298.29 FT.
LENGTH = 591.30 FT.
SUPERELEVATION = 4.3 %
TANGENT RUNOFF LENGTH = 131.25 FT.
SUPER ELEVATION RUNOFF LENGTH = 43.75 FT.

REMOVE EXISTING STRUCTURE
STA. 110+64 - STA. 111+55 IN PLACE
94' X 20' EXISTING 5 SPAN BRIDGE WITH
STEEL GIRDERS AND CORRUGATED STEEL
DECK WITH ASPHALT SURFACE BR. NO 13152

STATION 106+53.00
CONSTRUCT DRIVEWAY ON LEFT
UNCLASSIFIED EXCAVATION = 20.64 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 31.3 TON
SURFACE AREA = 63.5 SQ. YD.
PLUS AN ADDITIONAL 13.2 SQ. YD.

PC107+98.74

STATION 109+84.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

REMOVAL AND DISPOSAL OF FENCE
STATIONS 106+18.00 - 106+43.00 LT. = 43 LIN. FT.
STATIONS 106+59.00 - 110+12.00 LT. = 392 LIN. FT.
STATIONS 111+96.00 - 115+86.00 RT. = 437 LIN. FT.

STATIONS109+80.58 - 110+10.58 ON LT. & RT. CONSTRUCT
STATIONS 111+82.18 - 112+12.18 ON LT. & RT. CONSTRUCT
SPECIAL APPROACH GUTTERS (TYPE 1) = 12.3 CU. YD.
REINFORCING STEEL ROADWAY (GRADE 60) = 1140 LB.

LOAD P.I. = 110+97.04 = 18°40'04.72" LT. = 3°08'25.61" = 18.48 = 2°58'24.81" = 59.30 = 1.75

BEGIN SUPERELEVATION STA. 106+67.49
BEGIN FULL SUPERELEVATION STA. 108+41.49
END FULL SUPERELEVATION STA. 113+46.29
END SUPERELEVATION STA. 115+21.29

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N 19°42'05.2" E 208.12'

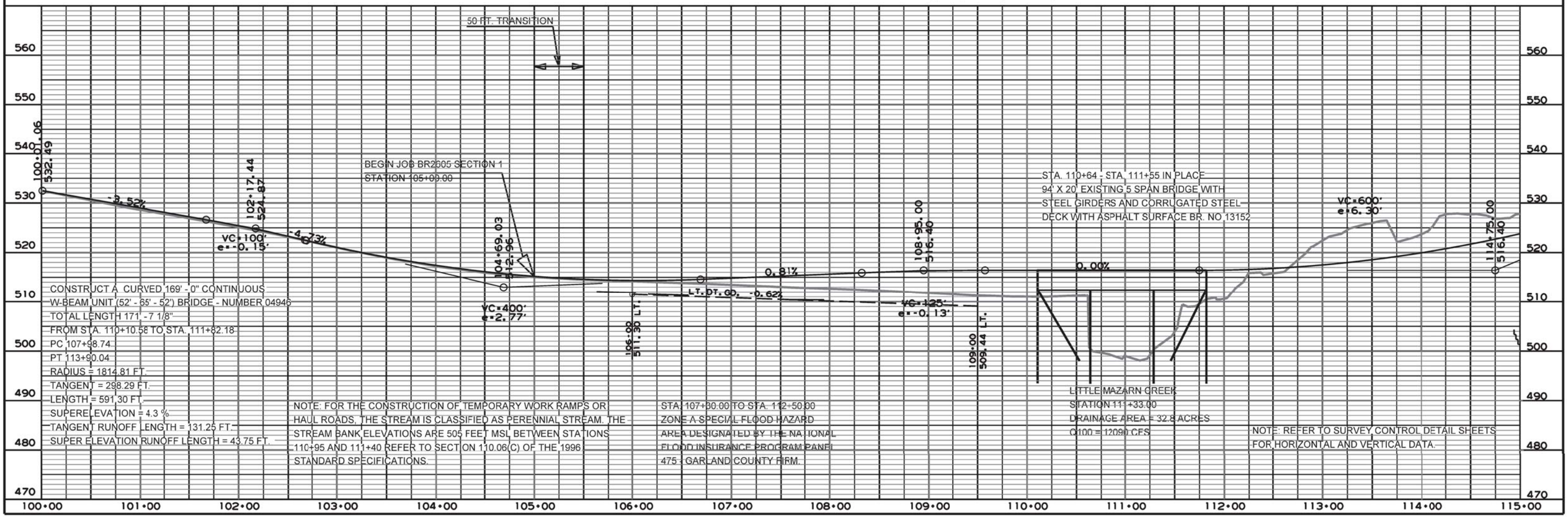
STATIONS109+32.43 - 109+82.43 ON LT. & RT. CONSTRUCT
STATIONS 112+10.33 - 112+60.33 ON LT. & RT. CONSTRUCT
THRIE BEAM GUARDRAIL = 4 EACH
GUARDRAIL (TYPE A) = 200 LIN. FT.
TERMINAL ANCHOR POST (TYPE 1) = 4 EACH

STATION 112+09.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3
STATIONS 111+66.00 - 111+81.00
OBLITERATION OF EXISTING ROAD
138.90 CU. YD.

REMOVAL AND DISPOSAL OF GATES
STATIONS 106+43 - 106+59 ON LT. = 1 EACH
16' STEEL GATE
STATIONS 106+43 - 106+59 ON LT. = 1 EACH

PI110+97.04

LITTLE MAZARN CREEK - SECTION 1- SHEET 1 0F 2



CONSTRUCT A CURVED 169' - 0" CONTINUOUS
W-BEAM UNIT (52' - 65' - 52') BRIDGE - NUMBER 04946
TOTAL LENGTH 171' - 7 1/8"
FROM STA. 110+10.58 TO STA. 111+82.18
PC 107+98.74
PT 113+90.04
RADIUS = 1814.81 FT.
TANGENT = 298.29 FT.
LENGTH = 591.30 FT.
SUPERELEVATION = 4.3 %
TANGENT RUNOFF LENGTH = 131.25 FT.
SUPER ELEVATION RUNOFF LENGTH = 43.75 FT.

NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 505 FEET MSL BETWEEN STATIONS 110+95 AND 111+40 REFER TO SECTION 110.06(C) OF THE 1996 STANDARD SPECIFICATIONS.

STA. 107+00.00 TO STA. 112+50.00
ZONE A SPECIAL FLOOD HAZARD
AREA DESIGNATED BY THE NATIONAL
FLOOD INSURANCE PROGRAM PANEL
475 - GARLAND COUNTY FIRM.

LITTLE MAZARN CREEK
STATION 111+33.00
DRAINAGE AREA = 32.8 ACRES
Q100 = 12090 CFS

NOTE: REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL DATA.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	29	83

4 PLAN AND PROFILE LITTLE MAZARN CREEK

STATION 109+84.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

STATIONS 113+45.00
CONSTRUCT DRIVEWAY ON LEFT
UNCLASSIFIED EXCAVATION = 77.00 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 83.7 TON
SURFACE AREA 205.08 SQ. YD.

END JOB BR2605 SECTION 1
STATION 120+00.00

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STATIONS109+80.58 - 110+10.58 ON LT. & RT. CONSTRUCT
STATIONS 111+82.18 - 112+12.18 ON LT. & RT. CONSTRUCT
SPECIAL APPROACH GUTTERS (TYPE 1) = 12.4 CU. YD.
REINFORCING STEEL ROADWAY (GRADE 60) = 1140 LB.

REMOVAL AND DISPOSAL OF MAIL BOXES
STATION 119+30.00 ON RT. = 2 EACH
MAIL BOX
STATION 119+30 ON RT. = 2 EACH
MAIL BOX SUPPORTS (DOUBLE)
STATION 119+30 ON RT. = 1 EACH

P.I. = 110+97.04
Δ = 19°38'04.72" LT.
D = 4°30'00"
T = 175.35
L = 350.61
R = 1273.24

PT113+90.04

N 19°42'05.2" E
208.12'

PC115+98.16

PT117+53.95

N 21°55'57.9" E
132.11'

PT119+09.71

POE120+41.82

STATION 112+09.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

PI110+97.04

STATION 119+42.00 ON RIGHT
IN PLACE 12" RCP SIDE DRAIN
REMOVE AND CONSTRUCT A
A 18" X 34' SIDE DRAIN

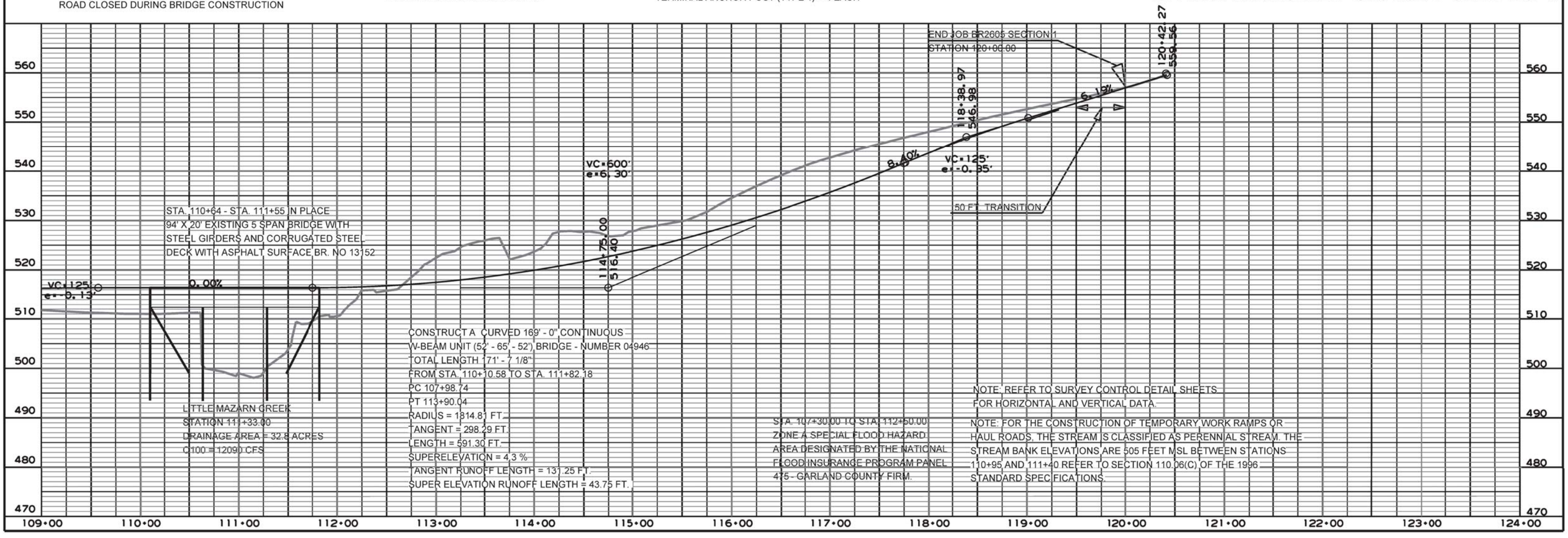
STATIONS 119+42.00
CONSTRUCT DRIVEWAY ON RIGHT
UNCLASSIFED EXCAVATION = 30.99 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 34.3 TON
SURFACE AREA = 63.5 SQ. YD.
PLUS AN ADDITIONAL 20.6 SQ. YD.

STATIONS109+32.43 - 109+82.43 ON LT. & RT. CONSTRUCT
STATIONS 112+10.33 - 112+60.33 ON LT. & RT. CONSTRUCT
THRIE BEAM GUARDRAIL = 4 EACH
GUARDRAIL (TYPE A) = 200 LIN. FT.
TERMINAL ANCHOR POST (TYPE 1) = 4 EACH

P.I. = 117+53.31
Δ = 86°50'70" RT.
D = 80°00'00"
T = 155.79
L = 158.58
N.C.

ROAD CLOSED DURING BRIDGE CONSTRUCTION

LITTLE MAZARN CREEK - SECTION 1- SHEET 2 0F 2



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-25-21				6	ARK.			
				JOB NO.		BR2605	30	83
				4	PLAN AND PROFILE LOST CREEK			

BEGIN JOB BR2605 SECTION 2
STATION 200+00.00

N 3°34'24.9" E
39.00'

POB200+00.00
PC200+39.00

STATION 202+11.00 ON LEFT IN PLACE
A 15" RCP SIDE DRAIN REMOVE
AND CONSTRUCT A 18" X 30' SIDE DRAIN
STATION 202+11.00
CONSTRUCT DRIVEWAY ON LEFT
UNCLASSIFIED EXCAVATION = 95.98 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 50.5 TON
TURNOUT 63.5 SQ. YD.
ADDITIONAL 60.16 SQ. YD.

STATION 203+77.00ON LT. INSTALL
STANDARD HIGHWAY SIGN W1-1aR (15 MPH CURVE)

WETLAND

REMOVE EXISTING STRUCTURE
STA. 208+38 - STA. 209+05 IN PLACE
68' X 20' EXISTING 2 SPAN BRIDGE WITH
STEEL GIRDERS AND CORRUGATED STEEL
DECK WITH ASPHALT SURFACE BR. NO. 13151

POND

STA. 208+11.50 - STA. 209+32.50 CONSTRUCT BRIDGE NUMBER 04947
120' - 0" INTEGRAL CONTINUOUS W-BEAM UNIT (37' - 46' - 37')
TOTAL LENGTH OF BRIDGE = 121' - 0"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9110
11/2/2021
STEVEN MORGAN

PT206+00.79

N 0°45'52.6" E 1013.46'

STATION 207+84.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

STATION 209+60.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

PI203+19.95

P. I. = 203+19.95
Δ = 2°48'32.26" LT.
D = 0°30'00.00"
R = 11459.16'
T = 280.95'
L = 561.79'
e = N.C.

STATION 200+31.00
CONSTRUCT DRIVEWAY ON RIGHT
22" X 14" X 30' PIPE CULVERT
COMPACTED EMBANKMENT = 14.73 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 31.2 TON
SURFACE AREA = 72.08 SQ. YD.

CLEARING AND GRUBBING
STATIONS 200+00.00 - 208+45.00 = 9 STATION
STATIONS 211+00.00 - 219+65.65 = 9 STATION

TEMPORARY CONTROL DEVICES
(W20 - 1) 1500 FT. - 2 SIGNS - 32.0 SQ. FT.
(W20-1) 1000 FT. - 2 SIGNS - 32.0 SQ. FT.
(W20-1) 500 FT. - 2 SIGNS - 32.0 SQ. FT.
(W20-3) ROAD CLOSED AHEAD - 2 SIGNS - 32.0 SQ. FT.
(R11-2) ROAD CLOSED - 2 SIGNS - 20.0 SQ. FT.
(G20-2) END OF ROAD WORK - 2 SIGNS - 16.0 SQ. FT.
BARRICADES (TYPE III) - 40.0 LIN. FT.

WIRE FENCE (TYPE D)
STATIONS 201+96.00 - 202+00.00 LT. = 6 LIN. FT.
STATIONS 202+20.00 - 203+51.00 LT. = 131 LIN. FT.

18' STEEL GATE
STATIONS 202+02 - 202+20 ON LT. = 1 EACH

REMOVAL AND DISPOSAL OF FENCE
STATIONS 201+96.00 - 203+51.00 LT. = 137 LIN. FT.
REMOVAL AND DISPOSAL OF GATES
STATIONS 202+02 - 202+20 ON LT. = 1 EACH

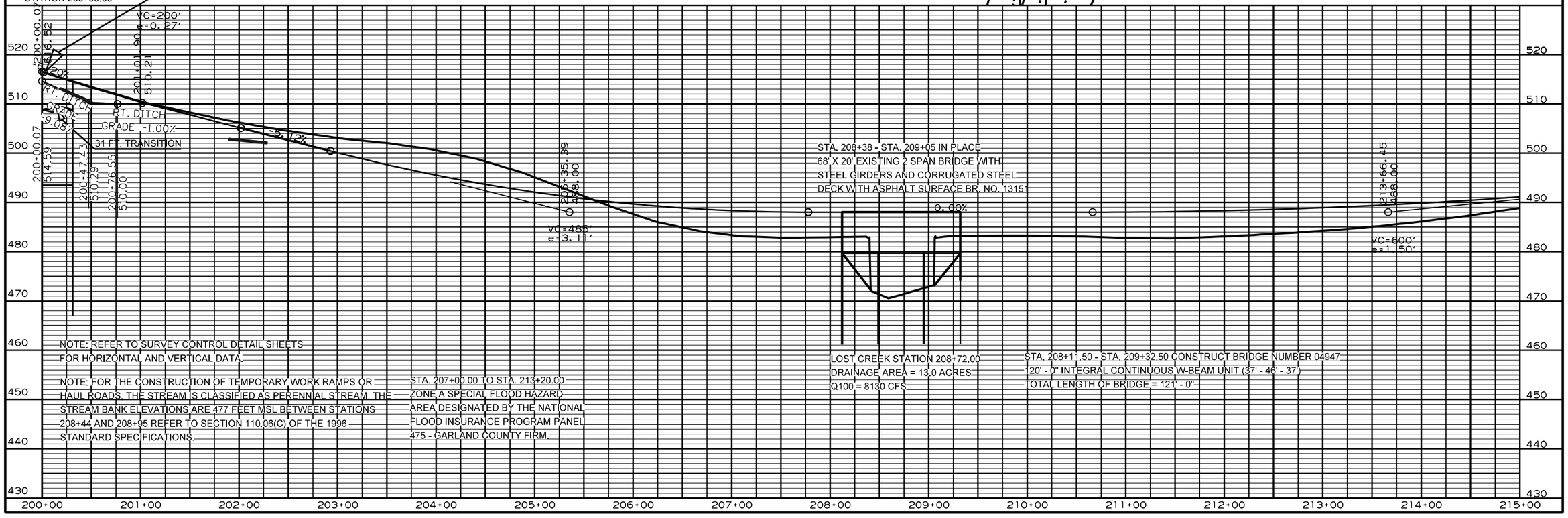
0 100 200
SCALE IN FEET

STATION 211+33.00 ON RT. INSTALL
STANDARD HIGHWAY SIGN R2-1 (SPEED LIMIT)

BEGIN JOB BR2605 SECTION 2
STATION 200+00.00

ROAD CLOSED DURING BRIDGE CONSTRUCTION

LOST CREEK - SECTION 2- SHEET 1 0F 2



NOTE: REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL DATA.

NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 477 FEET MSL BETWEEN STATIONS 208+44 AND 208+95 REFER TO SECTION 110.06(C) OF THE 1996 STANDARD SPECIFICATIONS.

STA. 207+00.00 TO STA. 213+20.00
ZONE A SPECIAL FLOOD HAZARD
AREA DESIGNATED BY THE NATIONAL
FLOOD INSURANCE PROGRAM PANEL
475 - GARLAND COUNTY FIRM.

LOST CREEK STATION 208+72.00
DRAINAGE AREA = 13.0 ACRES
Q100 = 8130 CFS

STA. 208+11.50 - STA. 209+32.50 CONSTRUCT BRIDGE NUMBER 04947
120' - 0" INTEGRAL CONTINUOUS W-BEAM UNIT (37' - 46' - 37')
TOTAL LENGTH OF BRIDGE = 121' - 0"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	31	83

4 PLAN AND PROFILE LOST CREEK

WETLAND

PT206+00.79

STATION 207+84.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

POND

REMOVAL AND DISPOSAL OF MAILBOXES
STATION 217+55.00 ON RT. = 2 EACH
MAILBOX
STATION 217+55.00 ON RT. = 2 EACH
MAILBOX SUPPORTS (SINGLE)
STATION 217+55.00 ON RT. = 1 EACH

STATIONS 207+33.35 - 207+83.35 ON LT. & RT. CONSTRUCT
STATIONS 209+60.62 - 210+10.65 ON LT. & RT. CONSTRUCT
THRIE BEAM GUARDRAIL = 4 EACH
GUARDRAIL (TYPE A) = 200 LIN. FT.
TERMINAL ANCHOR POST (TYPE 1) = 4 EACH

STATION 219+43.0 ON LT. INSTALL
STANDARD HIGHWAY SIGN R2-1 (SPEED LIMIT)

P.I. = 217+33.91
Δ = 0°41'08.27" RT.
D = 20000.00
T = 119.67
L = 239.33
N.C.

PI217+33.91

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11240
BRYAN FREELING
Sep 1 2020 3:29 PM
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205

210

N 0°45'52.6" E 1013.46'

215

N 1°27'00.9" E 112.08'

219

STATION 209+60.00 ON LT. & RT. INSTALL
STANDARD HIGHWAY SIGN OM-3

STATION 211+33.00 ON RT. INSTALL
STANDARD HIGHWAY SIGN R2-1 (SPEED LIMIT)

PC216+14.24

PT218+53.57

POE219+65.65

STATIONS 207+81.50 - 208+11.50 ON LT. & RT. CONSTRUCT
STATIONS 209+32.50 - 209+62.50 ON LT. & RT. CONSTRUCT
SPECIAL APPROACH GUTTERS (TYPE 2) = 12.3 CU. YD.
REINFORCING STEEL ROADWAY (GRADE 60) = 1012 LB.

STATIONS 207+81.50 - 208+11.50 CONSTRUCT
STATIONS 209+32.50 - 209+62.50 CONSTRUCT
APPROACH SLABS (TYPE A) = 55.0 CU. YD.
REINFORCING STEEL ROADWAY (GRADE 60) = 3910 LB.

STATION 215+59.00 ON RIGHT IN PLACE
A 16" RCP SIDE DRAIN REMOVE
AND CONSTRUCT A 18" X 30' SIDE DRAIN
STATION 215+59.00
CONSTRUCT DRIVEWAY ON RIGHT
COMPACTED EMBANKMENT = 4.12 CU. YD.
UNCLASSIFIED EXCAVATION = 18.02 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 25.9 TON
SURFACE AREA = 63.5 SQ. YD.

REMOVAL AND DISPOSAL OF GATES
STATIONS 214+49.00 ON LT. = 1 EACH

REMOVAL AND DISPOSAL OF FENCE
STATIONS 212+01.00 - 214+49.00 RT. = 280 LIN. FT.
STATION 214+49.00 RT. = 10.0 LIN. FT.

WIRE FENCE (TYPE D-2)
STATIONS 212+01.00 - 214+49.00 RT. = 280 LIN. FT.
STATION 214+49.00 RT. = 10.0 LIN. FT.

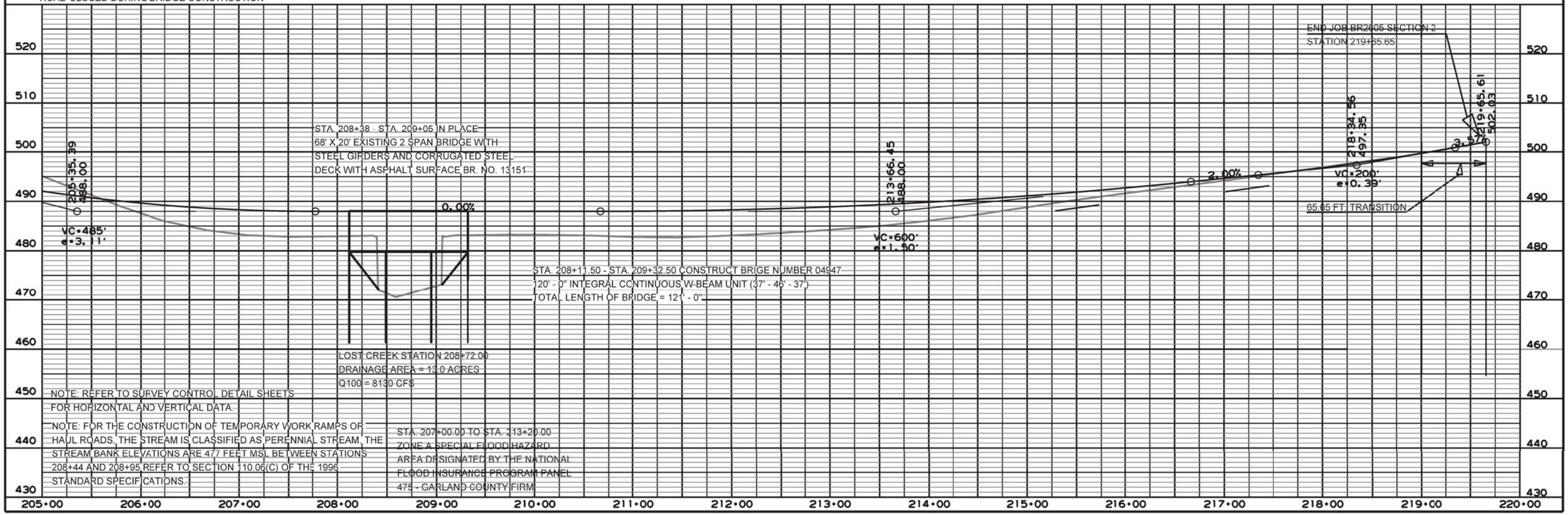
16' STEEL GATE
STATION 214+49.00 ON LT. = 1 EACH

STATION 217+35.00 ON RIGHT IN PLACE
A 16" RCP SIDE DRAIN REMOVE
AND CONSTRUCT A 18" X 30' SIDE DRAIN
STATION 217+35.00
CONSTRUCT DRIVEWAY ON RIGHT
UNCLASSIFIED EXCAVATION = 33.19 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 41.5 TON
SURFACE AREA = 63.5 SQ. YD.
ADDITIONAL SURFACE AREA = 38.02 SQ. YD.

END JOB BR2605 SECTION 2
STATION 219+65.65

ROAD CLOSED DURING BRIDGE CONSTRUCTION

LOST CREEK - SECTION 2- SHEET 2 0F 2



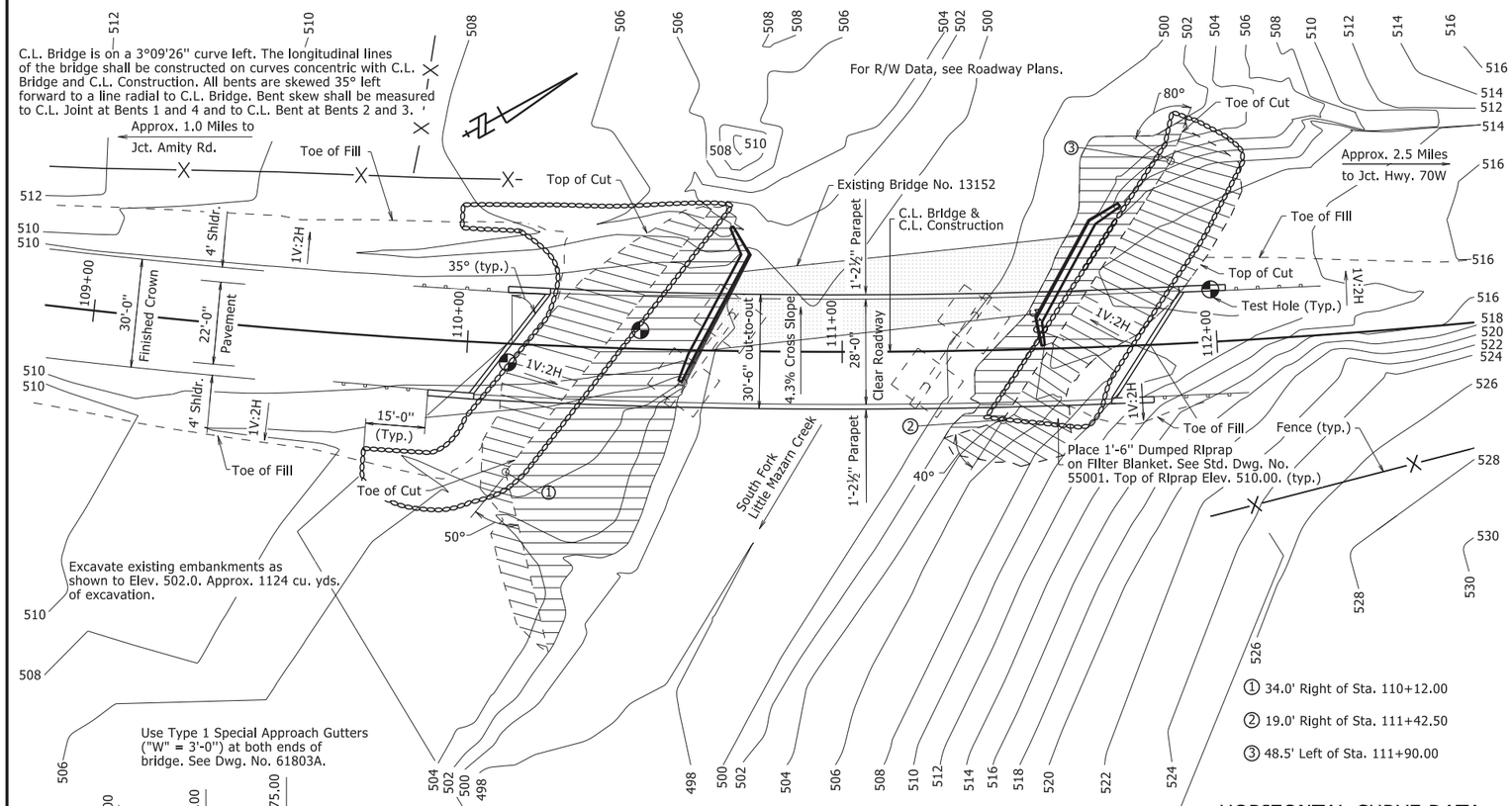
NOTE: REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL DATA.

NOTE: FOR THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THE STREAM IS CLASSIFIED AS PERENNIAL STREAM. THE STREAM BANK ELEVATIONS ARE 477 FEET MSL BETWEEN STATIONS 208+44 AND 208+95 REFER TO SECTION 110.06(C) OF THE 1996 STANDARD SPECIFICATIONS.

STA. 207+00.00 TO STA. 213+20.00
ZONE A SPECIAL FLOOD HAZARD
AREA DESIGNATED BY THE NATIONAL
FLOOD INSURANCE PROGRAM PANEL
475 - GARLAND COUNTY FIRM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	32	83
				①		04946 - LAYOUT - 61781		

C.L. Bridge is on a 3°09'26" curve left. The longitudinal lines of the bridge shall be constructed on curves concentric with C.L. Bridge and C.L. Construction. All bents are skewed 35° left forward to a line radial to C.L. Bridge. Bent skew shall be measured to C.L. Joint at Bents 1 and 4 and to C.L. Bent at Bents 2 and 3.

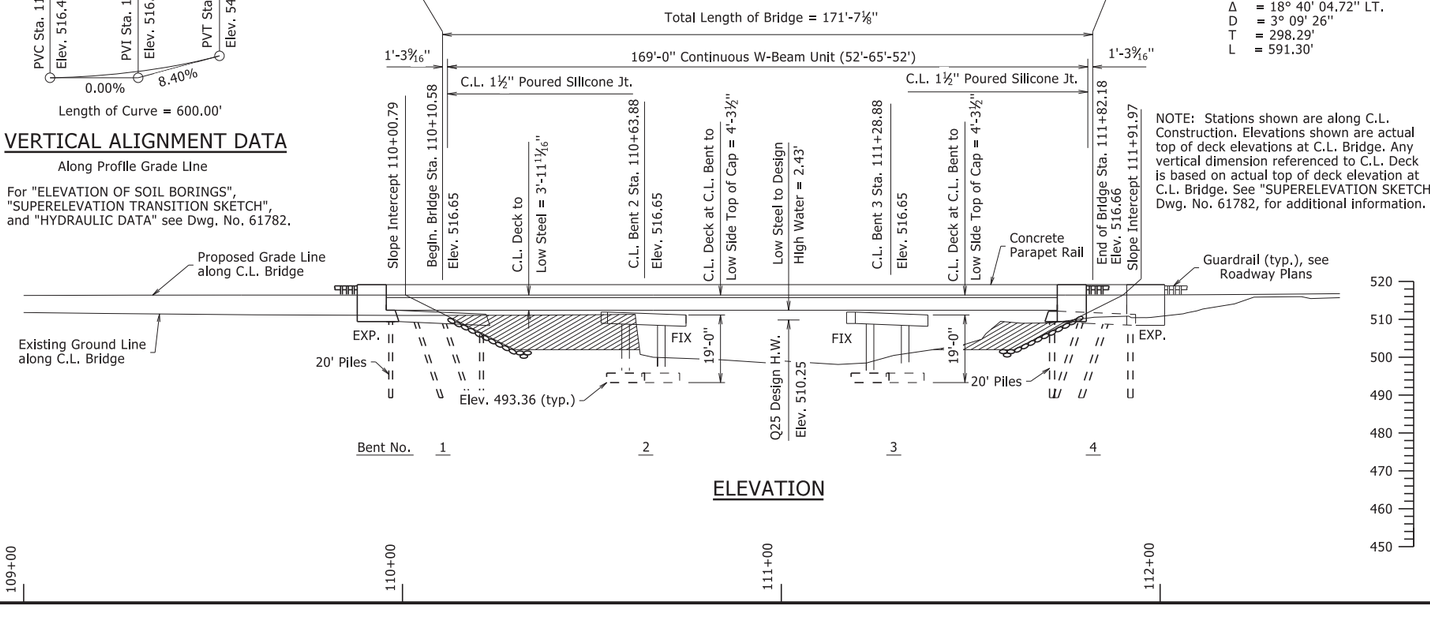


① 34.0' Right of Sta. 110+12.00

② 19.0' Right of Sta. 111+42.50

③ 48.5' Left of Sta. 111+90.00

PLAN



VERTICAL ALIGNMENT DATA

Along Profile Grade Line

For "ELEVATION OF SOIL BORINGS", "SUPERELEVATION TRANSITION SKETCH", and "HYDRAULIC DATA" see Dwg. No. 61782.

HORIZONTAL CURVE DATA

P.I. = 110+97.04
Δ = 18° 40' 04.72" LT.
D = 3° 09' 26"
T = 298.29'
L = 591.30'

NOTE: Stations shown are along C.L. Construction. Elevations shown are actual top of deck elevations at C.L. Bridge. Any vertical dimension referenced to C.L. Deck is based on actual top of deck elevation at C.L. Bridge. See "SUPERELEVATION SKETCH," Dwg. No. 61782, for additional information.

ELEVATION

GENERAL NOTES:

BENCH MARK: Vertical Control Data are 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 on the Plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 7th Edition (2014), with 2015 interim revisions.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 S_{D1}= 0.064 SITE CLASS: B

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Structural Steel (ASTM A709, Gr. 50 or Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: Piling at Bent Nos. 1 and 4 shall be HP 12x53 (Grade 50). All piling shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 96 tons per pile and into the material designated as Sandstone on the boring legend. Minimum penetration shall be 10' below bottom of cap. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

SPREAD FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as Sandstone on the boring legend. The top of the footings at Bents 2 and 3 shall be set a minimum of 2'-0" below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of the rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the surrounding ground in accordance with Subsection 801.08.

PAINTING: All Grade 50W structural steel, except galvanized members, surfaces in contact with concrete, and the expansion device, within five feet of bridge deck expansion joints shall be painted as specified in Subsection 807.75. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

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 1 Protective Surface Treatment shall be applied to the roadway surface and roadway face and top of the concrete parapet rails.

DETAIL DRAWINGS:	DRAWING NOS.
End Bents	61783-61785
Intermediate Bents	61786
Elastomeric Bearings	61787
169'-0" Continuous W-Beam Unit	61788-61792
Poured Silicone Joint	55008
Standard General Notes for Steel Bridge Structures	55006
Standard Details for Steel Bridge Structures	55007
Steel H-Piles	55020
Type 1 Special Approach Gutters	61803A

EXISTING BRIDGE: Existing Bridge No. 13152 (Log Mile 1.43) is 20.0' wide and 94.0' long and consist of five steel multi-beam spans with a corrugated steel deck with an asphalt surface, supported by reinforced concrete abutments and reinforced concrete multi-column bents with spread footings. The existing bridge occupies the same location as the proposed bridge.

REMOVAL AND SALVAGE: After the road has been closed, the Contractor shall remove existing Bridge No. 13152 in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor except the metal guardrail which shall remain the property of Garland County. The Contractor shall notify the Department and the Garland County Judge's office [phone (501) 622-3602] prior to removal to determine the specific pieces deemed salvageable. For property of the County, the Contractor shall store salvageable pieces onsite and load them onto Garland County equipment. Payment for this work shall be considered incidental to "Removal of Existing Bridge Structure (Site No. _)".

MAINTENANCE OF TRAFFIC: The road will be closed during the construction of the bridge.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:38 PM

BRIDGE ENGINEER

SHEET 1 OF 2
LAYOUT OF BRIDGE
COUNTY ROAD 63 OVER
SOUTH FORK LITTLE MAZARN CREEK

LOST CR. & S. FORK LITTLE MAZARN CR.
STRS. & APPRS. (S)
GARLAND COUNTY

COUNTY ROAD 63

ARKANSAS STATE HIGHWAY COMMISSION

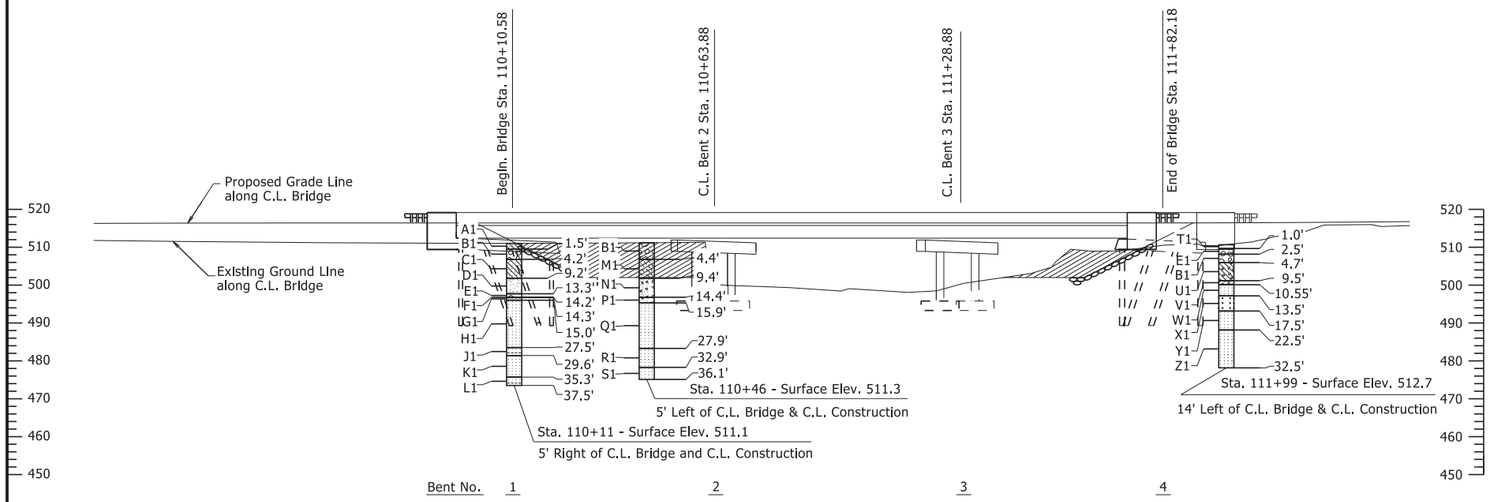
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 11/19/2018 FILENAME: bbr2605x1_J1.dgn
CHECKED BY: MCB DATE: 10/08/2019 SCALE: 1"=20'-0"
DESIGNED BY: JWP DATE: 09/2019

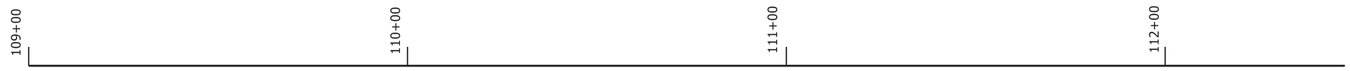
BRIDGE NO. 04946 DRAWING NO. 61781

PRINT DATE: dateprinted

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	33	83
				① 04946 - LAYOUT - 61782				



ELEVATION OF SOIL BORINGS

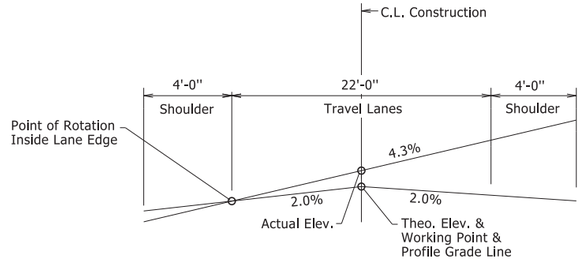


HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	① NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	8410	509.0	509.9
Base	100	12090	510.9	512.0
Extreme	500	16820	513.6	514.5
Overtopping	>500	———	———	———

① Unconstricted water surface without structure or roadway approaches.
Q100 backwater elevation for existing structure = 512.75 ft.

Proposed Low Bridge Chord elevation = 512.68 ft.
Drainage area = 32.8 square miles.
Historical H.W. Elev. = NA



Begin. Full Superelevation Sta. 108+42.49
End Full Superelevation Sta. 113+46.29

Stationing along C.L. Construction

SUPERELEVATION SKETCH

Looking Ahead
No Scale

BORING LEGEND

A1-Sandy Clay
B1-Cobbles
C1-Moist, Soft, Brown Sandy Clay with Trace Gravel
D1-Wet, Very Loose, Light Brown and Gray Sand with Some Clay
E1-Cobbles and Boulders
F1-No recovery
G1-SANDSTONE - Slightly Weathered, Well Cemented, Frequent Fractures, Gray
H1-SANDSTONE - Unweathered, Well Cemented, Occasional Quartz Veins, Gray
J1-SANDSTONE WITH OCCASIONAL INTERBEDDED SHALE - Slightly Weathered, Well Cemented, Gray
K1-SANDSTONE - Unweathered, Well Cemented, Occasional Shale Clasts and Quartz Veins, Gray
L1-SANDSTONE WITH OCCASIONAL INTERBEDDED SHALE - Unweathered, Well Cemented, Occasional Interbedded Shale, Gray
M1-Moist, Loose, Brown Clayey Sand
N1-Moist, Medium Dense, Brown Sand with Gravel
P1-Wet, Loose, Brown Sand with Gravel (Rock Fragments)
Q1-SANDSTONE WITH INTERBEDDED QUARTZITE - Unweathered, Well Cemented, Occasional Fractures, Light Gray
R1-SANDSTONE WITH INTERBEDDED QUARTZITE AND OCCASIONAL SHALE - Unweathered, Well Cemented, Occasional Fractures, Seams, Light Gray
S1-SANDSTONE WITH INTERBEDDED QUARTZITE - Unweathered, Well Cemented, Occasional Fractures and Quartz Veins, Occasional Shale Layers and Seams, Light Gray
T1-Asphalt
U1-Moist, Very Stiff, Light Brown Clay with Gravel (Rock Fragments)
V1-Moist, Very Dense, Light Brown Sand with Gravel (Sandstone Fragments)
W1-SANDSTONE - Weathered, Well Cemented, Frequent Fractures, Slickensided, Light Brown and Gray
X1-QUARTZITE - Unweathered, Well Cemented, Gray
Y1-SANDSTONE WITH INTERBEDDED QUARTZITE AND OCCASIONAL SHALE LAYERS - Unweathered, Well Cemented, Slickensided, Light Gray
Z1-SANDSTONE WITH INTERBEDDED QUARTZITE AND OCCASIONAL SHALE LAYERS - Unweathered, Well Cemented, Slickensided, Frequent Fractures, Steep Dip, Dark Gray

"N" VALUES

Sta. 110+11 - 5' Right of C.L. Bridge & C.L. Construction
4.7- 5.7, N=3
9.7- 10.7, N=4
14.2- 14.3, N=15(1")

Sta. 110+46 - 5' Left of C.L. Bridge & C.L. Construction
4.9- 5.9, N=8
9.9- 10.9, N=20
14.9- 15.9, N=8

Sta. 111+99 - 14' Left of C.L. Bridge & C.L. Construction
5.2- 6.2, N=28
10.0- 10.6, N=70(7")

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:38 PM
Charles R. Ellis
BRIDGE ENGINEER
DocuSign

SHEET 2 OF 2
LAYOUT OF BRIDGE
COUNTY ROAD 63 OVER
SOUTH FORK LITTLE MAZARN CREEK

LOST CR. & S. FORK LITTLE MAZARN CR.
STRS. & APPRS. (S)
GARLAND COUNTY

COUNTY ROAD 63

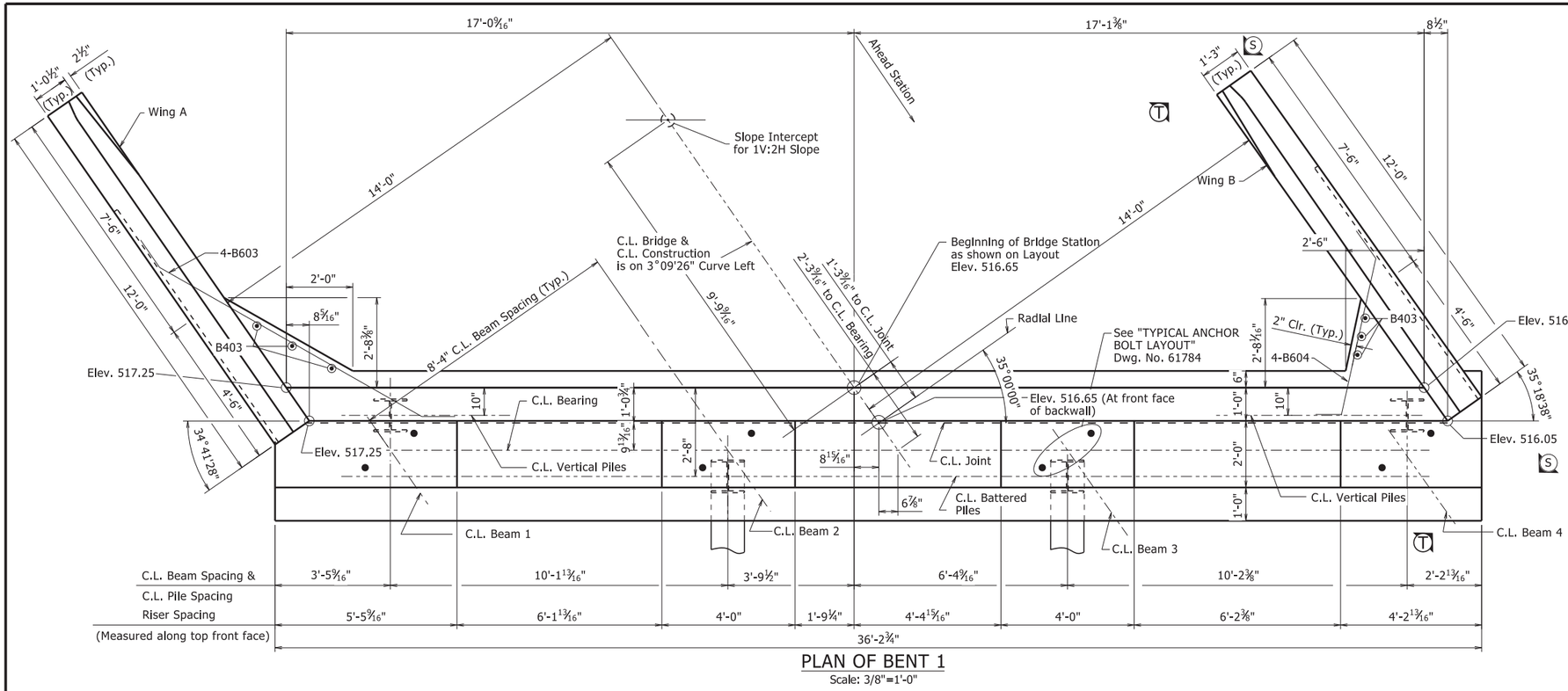
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 11/19/2018
CHECKED BY: MCB DATE: 10/8/2019
DESIGNED BY: JWP DATE: 09/2019
FILENAME: bbr2605x1_l1.dgn
SCALE: 1"=20'-0" or As Shown

BRIDGE NO. 04946 DRAWING NO. 61782

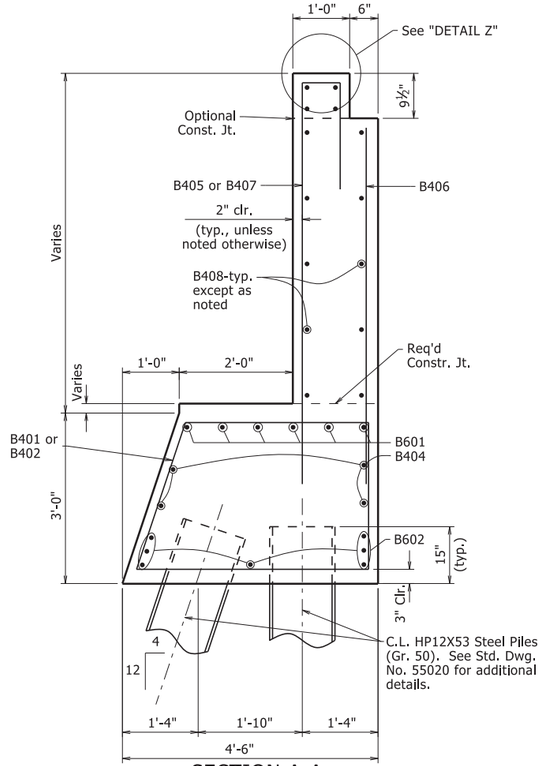
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				6	ARK.			
				JOB NO.		BR2605	34	83
				1	04946 - END BENTS - 61783			



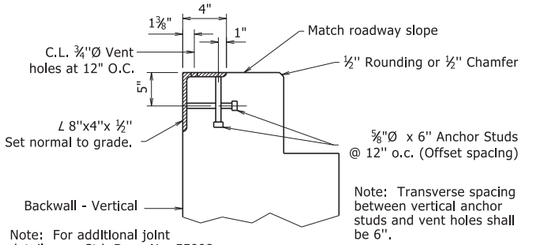
PLAN OF BENT 1

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



SECTION A-A

Scale: ½"=1'-0"



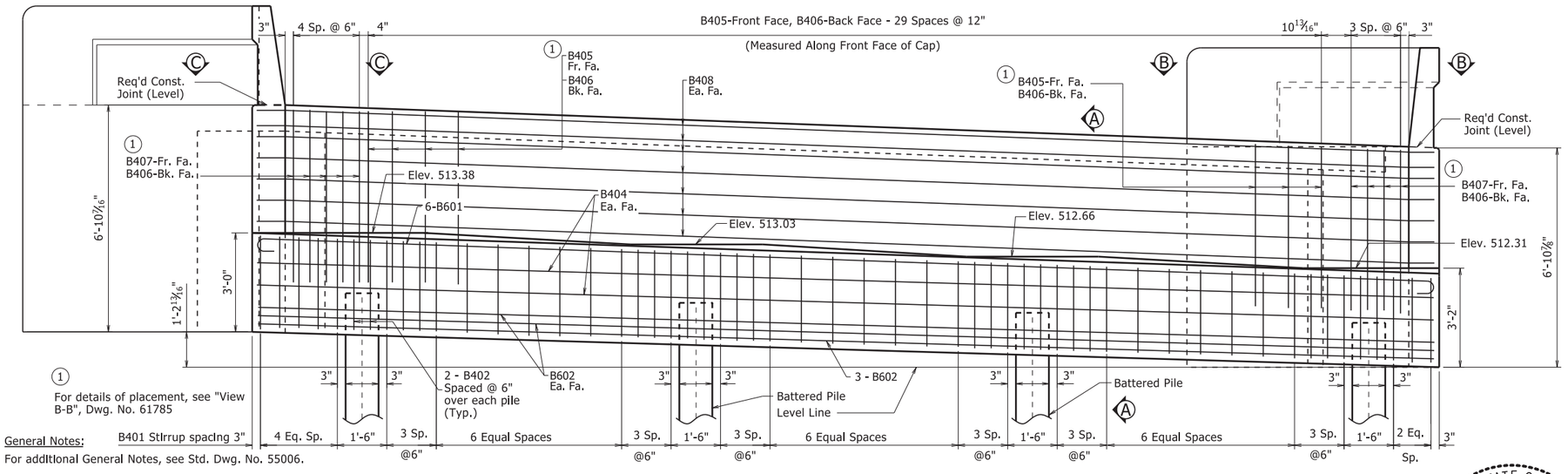
Note: For additional joint details, see Std. Dwg. No. 55008.

Note: Transverse spacing between vertical anchor studs and vent holes shall be 6".

Concrete shall be hand packed under the joint armor in the backwall.

DETAIL Z

No Scale



ELEVATION OF BENT 1

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

General Notes:

For additional General Notes, see Std. Dwg. No. 55006.

For "View B-B", "View C-C", "Section T-T", "View S-S", and details of wings, see Dwg. No. 61785.

Structural Steel in end bents shall be ASTM A709, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

Class 1 Protective Surface Treatment shall be applied to the top of the backwall, the roadway face and top of concrete parapet rails.

No portion of the backwall shall be poured before girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the adjacent deck pour has been made. Refer to the "EXPANSION DEVICE INSTALLATION AT THE END BENTS" note on Std. Dwg. No. 55008. No heavy construction equipment shall be allowed within 10' of the backwall until the deck concrete placement for the adjacent span has been completed.

For additional information, see Layout.

C.L. Bridge is on a 3°09'26" curve left. C.L. Beam and wings are to be constructed on curves concentric with C.L. Bridge. Bents shall be skewed 35° left forward to a line radial to C.L. Bridge. Bent skew shall be measured to C.L. Joint at Bents 1 and 4.

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SHEET 1 OF 3
DETAILS OF END BENTS
SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

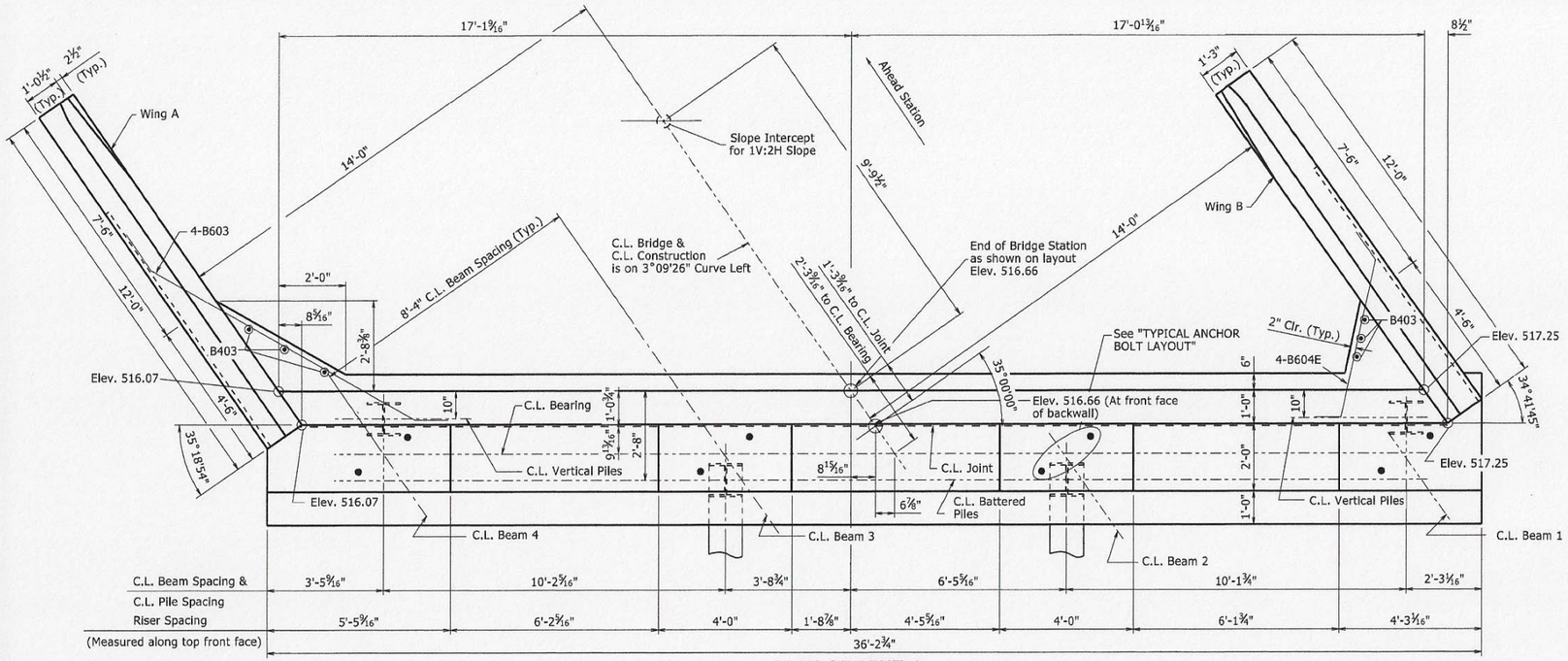
LITTLE ROCK, ARK.

DRAWN BY: EDO DATE: 03/2020 FILENAME: bbr2605x1_b1.dgn
CHECKED BY: MCB DATE: 05/21/2020 SCALE: AS NOTED
DESIGNED BY: JWP DATE: 12/2019

BRIDGE NO. 04946 DRAWING NO. 61783

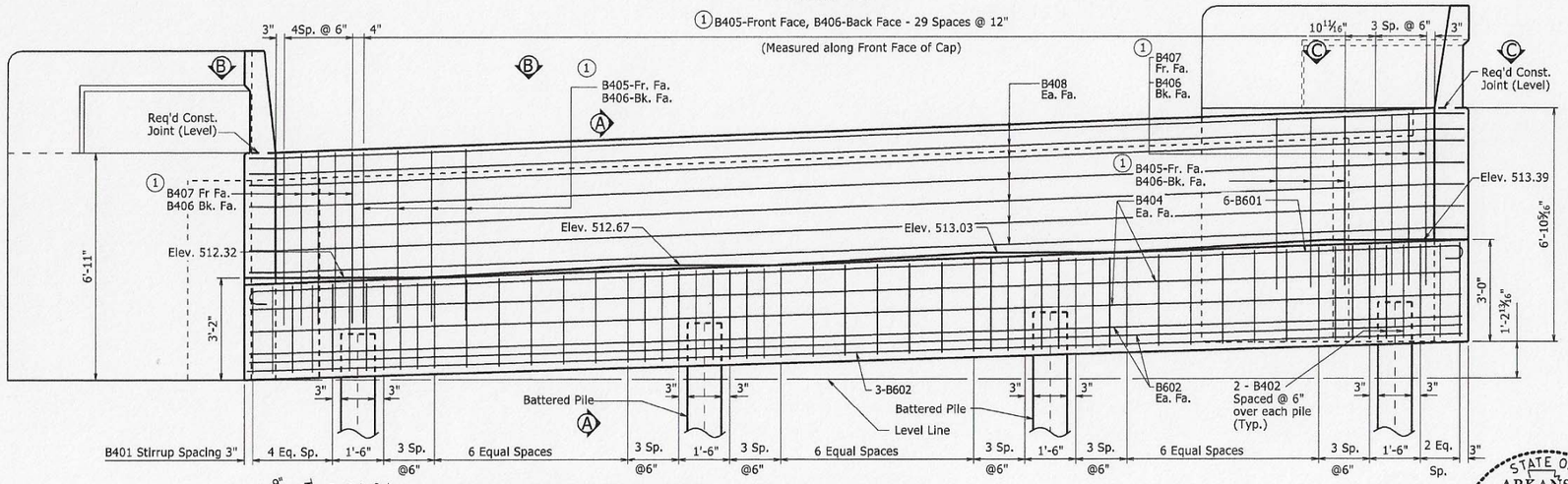
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				6	ARK.			
				JOB NO.		BR2605	35	83
				04946 - END BENTS - 61784				



PLAN OF BENT 4

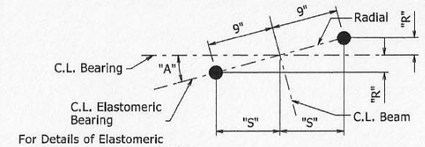
Scale: ⅜"=1'-0"



ELEVATION OF BENT 4

Scale: ⅜"=1'-0"
Looking Ahead

(1) For details of placement, see "View B-B" and "View C-C", Dwg. No. 61785.



For Details of Elastomeric Bearings, see Dwg. No. 61787.

TYPICAL ANCHOR BOLT LAYOUT

Not to Scale

		"A"	"S"	"R"
Bent 1	Beam 1	34°45'26"	7 3/8	5 1/8
	Beam 2	34°56'23"	7 3/8	5 1/8
	Beam 3	35°07'27"	7 3/8	5 3/16
	Beam 4	35°18'38"	7 3/8	5 3/16
Bent 4	Beam 1	34°41'42"	7 3/8	5 1/8
	Beam 2	34°52'36"	7 3/8	5 1/8
	Beam 3	35°03'39"	7 3/8	5 3/16
	Beam 4	35°14'49"	7 3/8	5 3/16

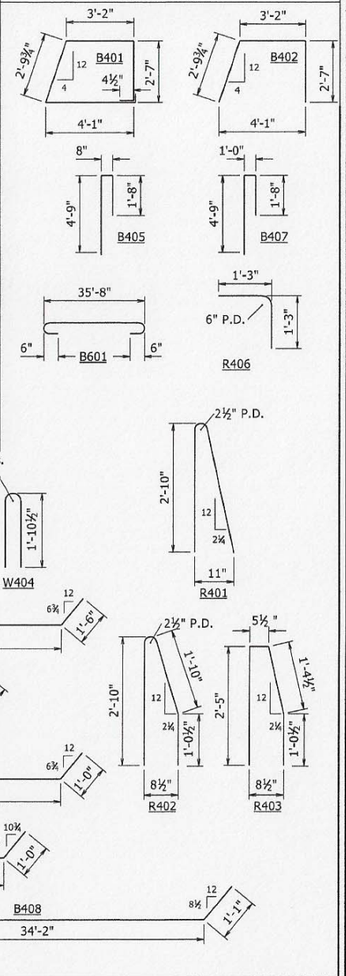
For "Section A-A", see Dwg. No. 61783. For "View B-B", "View C-C", "Section T-T", "View S-S", and details of wings, see Dwg. No. 61785.

BAR LIST-PER BENT

MARK	NO. REQ'D	LENGTH	P.D.
B401	47	13'-1	2"
B402	8	8'-6"	2"
B403	6	5'-8"	Str.
B404	4	35'-8"	Str.
B405	30	6'-11"	2"
B406	39	3'-11"	Str.
B407	9	7'-3"	2"
B408	14	36'-4"	3"
B601	6	37'-0"	4½"
B602	7	35'-8"	Str.
B603	4	11'-11"	4½"
B604	4	7'-10"	4½"
R401	38	5'-11"	3¾"
R402	8	5'-10"	3¾"
R403	2	5'-2"	2½"
R404	16	11'-8"	Str.
R405	8	4'-0"	Str.
R406	4	2'-6"	6"
W401	48	13'-8"	2"
W402	4	10'-11"	3"
W403	4	6'-10"	3"
W404	48	3'-9"	3¾"
W701	52	11'-8"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



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SHEET 2 OF 3
DETAILS OF END BENTS
SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

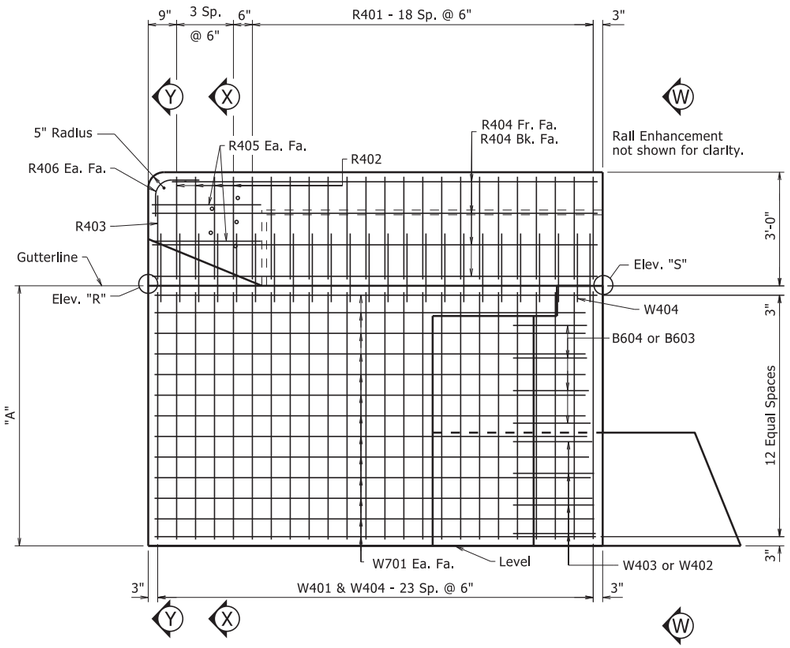
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DESIGNED BY: JWP DATE: 12/2019

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SCALE: AS NOTED

BRIDGE NO. 04946 DRAWING NO. 61784

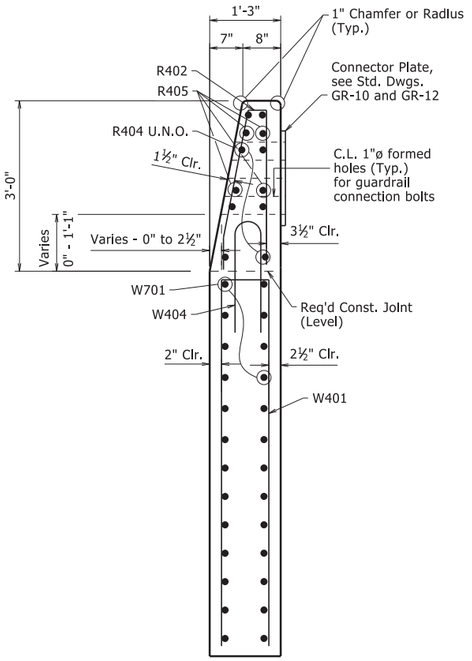
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				1		04946 - END BENTS - 61785		



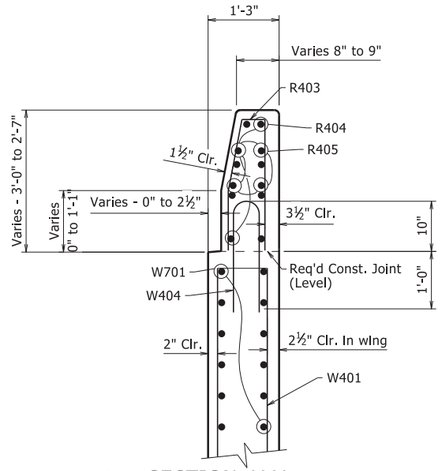
SECTION T-T

No Scale
Wing B, Shown
Wing A Similar



SECTION X-X

No Scale

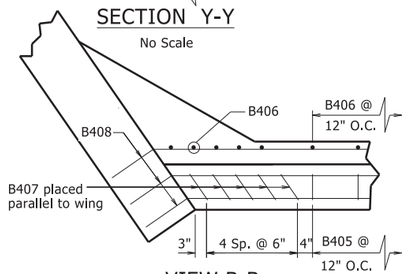


SECTION Y-Y

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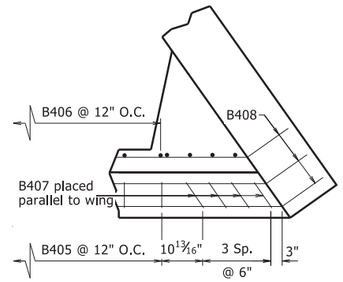
TABLE OF VARIABLES

		"A"	Elev "R"	Elev "S"
Bent 1	Wing A	6'-10 7/16"	517.25	517.25
	Wing B	6'-10 7/8"	516.05	516.05
Bent 4	Wing A	6'-11 1/2"	516.11	516.07
	Wing B	6'-10 7/16"	517.25	517.25



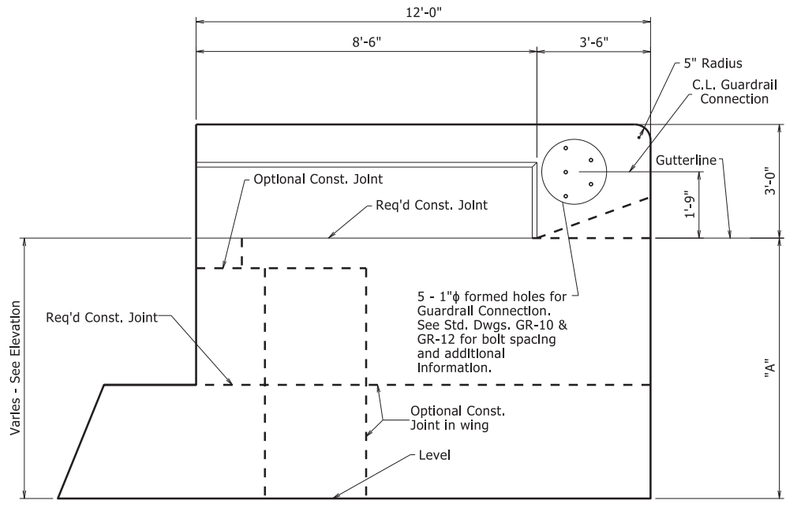
VIEW B-B

No Scale



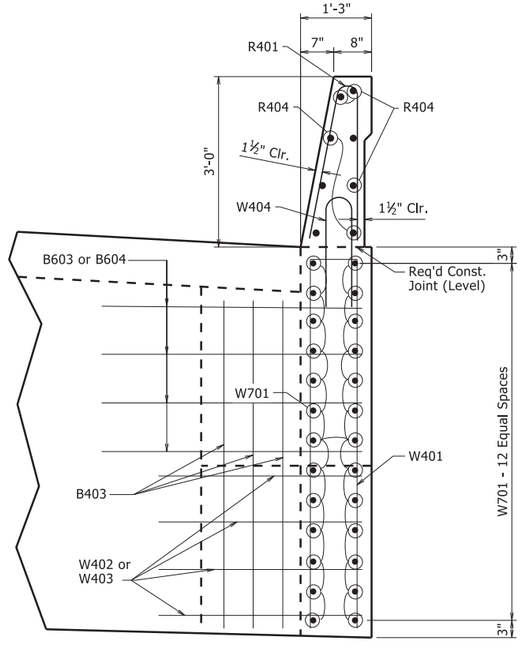
VIEW C-C

No Scale



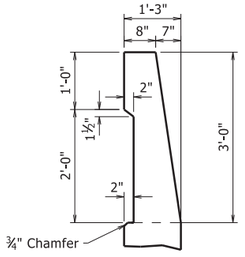
VIEW S-S

No Scale
Wing B, Shown
Wing A Similar



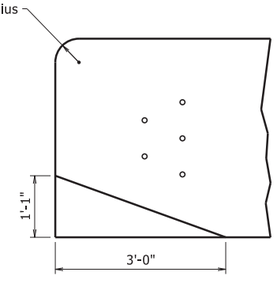
VIEW W-W

No Scale



BACK OF RAIL OFFSET

No Scale



VERTICAL TAPER

No Scale

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SHEET 3 OF 3
DETAILS OF END BENTS
SOUTH FORK LITTLE MAZARN CREEK

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LITTLE ROCK, ARK.

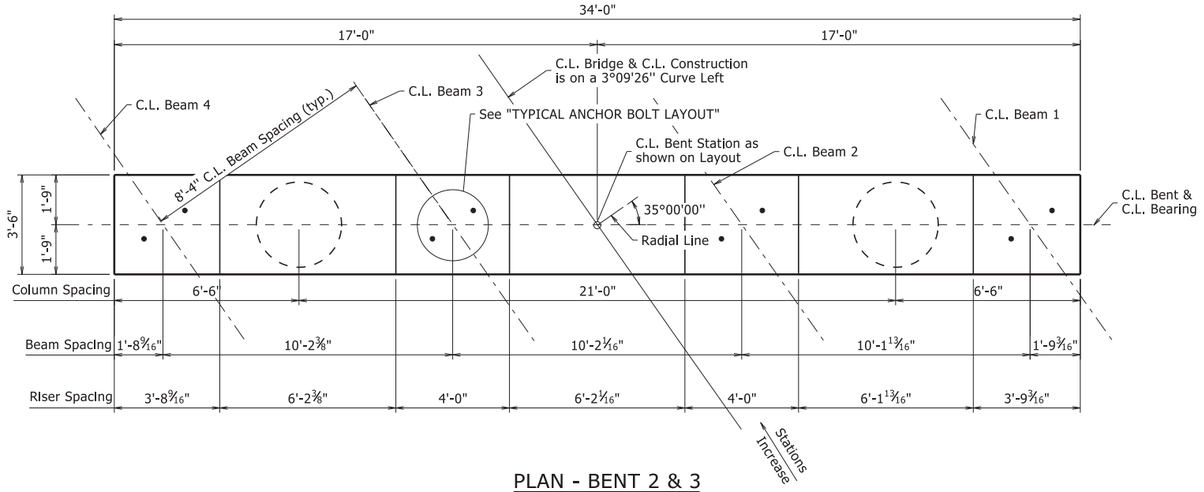
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BRIDGE NO. 04946 DRAWING NO. 61785

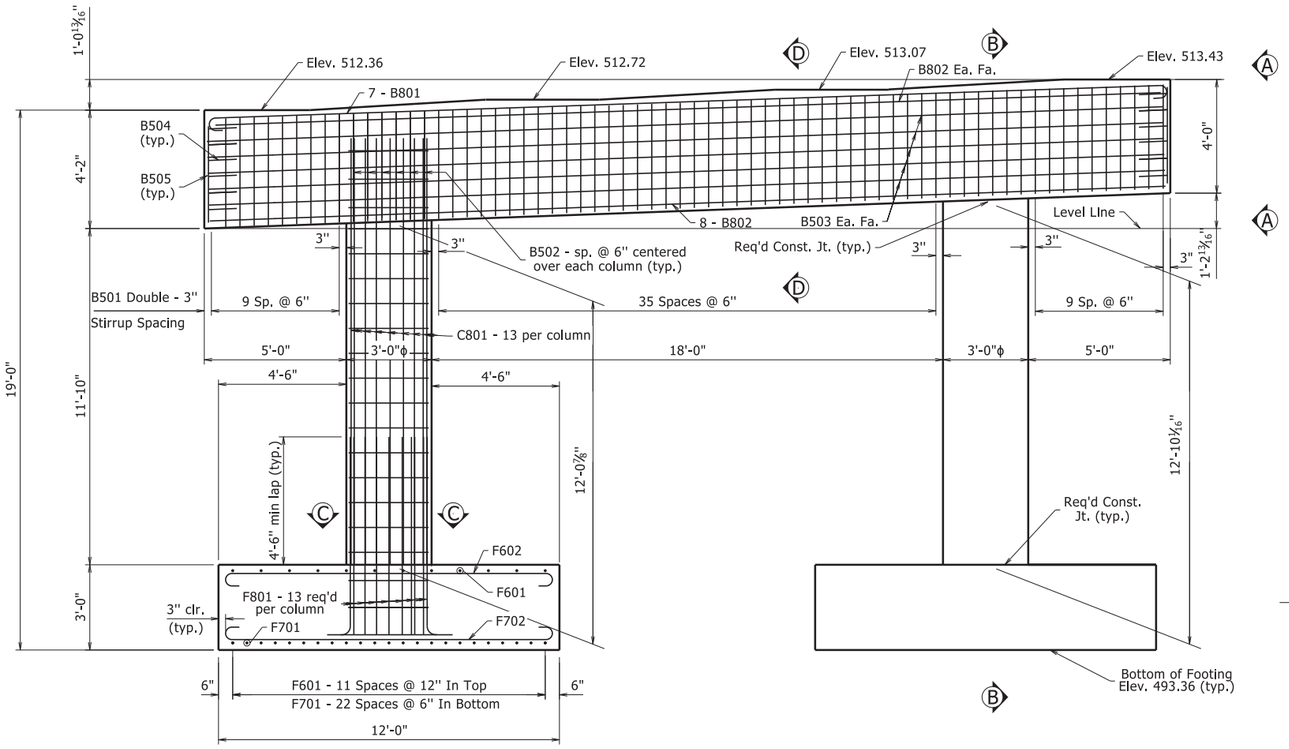
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				6	ARK.			
				JOB NO.		BR2605	37	83

1 04946 - INT. BENT DETAIL - 61786



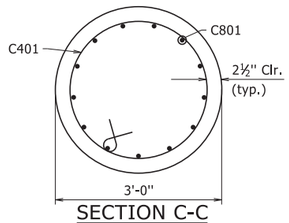
PLAN - BENT 2 & 3



F801 bars to be placed directly on bottom mat of reinforcing.

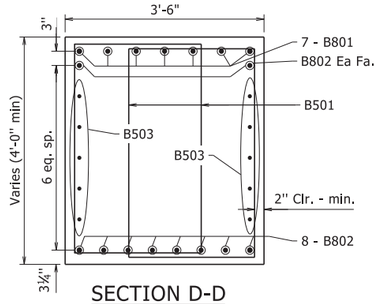
ELEVATION - BENT 2 & 3

(Looking Ahead)



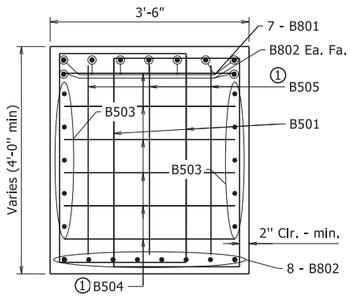
SECTION C-C

No Scale



SECTION D-D

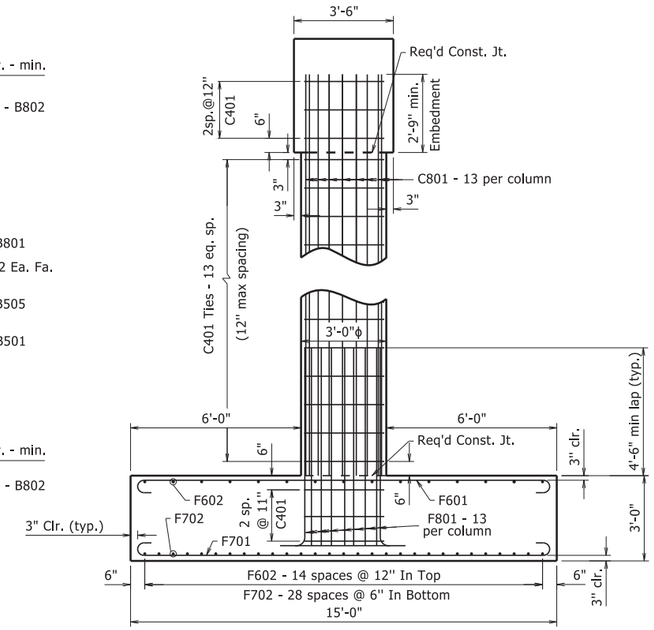
Scale: ¾" = 1'-0"



VIEW A-A

Scale: ¾" = 1'-0"

1 B504 and B505 "U-Bars" each end @ 12" max spacing. End of Cap - 2" clear

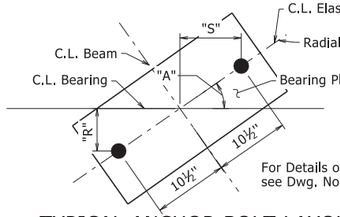


SECTION B-B

No Scale

F801 bars to be placed directly on bottom mat of reinforcing.

Bent 2 & 3	"A"	"S"	"R"
Beam 1	34°43'34"	8⅝"	6"
Beam 2	34°54'30"	8⅝"	6"
Beam 3	35°03'09"	8⅝"	6"
Beam 4	35°16'43"	8 9/16"	6 1/16"



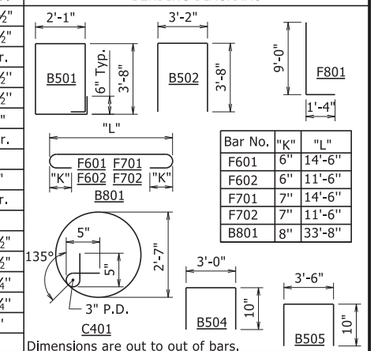
For Details of Elastomeric Bearings, see Dwg. No. 61787.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B501	112	12'-0"	2½"	
B502	12	10'-4"	2½"	
B503	10	33'-8"	Str.	
B504	12	4'-6"	2½"	
B505	6	5'-0"	2½"	
B801	7	35'-3"	6"	
B802	10	33'-8"	Str.	
C401	40	9'-4"	3"	
C801	26	16'-0"	Str.	
F601	24	15'-10"	4½"	
F602	30	12'-10"	4½"	
F701	46	16'-2"	5¼"	
F702	58	13'-2"	5¼"	
F801	26	12'-2"	6"	



Bar No.	"K"	"L"
F601	6"	14'-6"
F602	6"	11'-6"
F701	7"	14'-6"
F702	7"	11'-6"
B801	8"	33'-8"

Dimensions are out to out of bars.

GENERAL NOTES:

See Std. Dwg. No. 55006 for General Notes.

For additional information, see Layout.

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DETAILS OF INTERMEDIATE BENTS SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

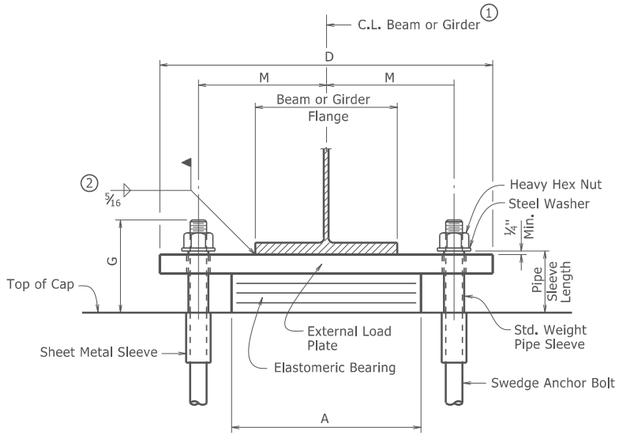
LITTLE ROCK, ARK.

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DESIGNED BY: JWP DATE: 12/2019 or as shown

BRIDGE NO. 04946 DRAWING NO. 61786

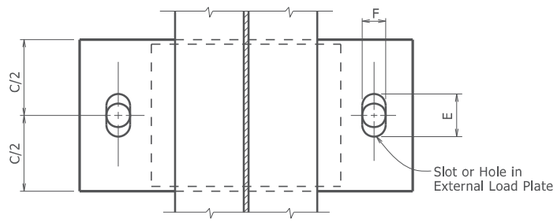
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				6	ARK.			
				JOB NO.		BR2605	38	83
				①	04946 - ELASTO. BRGS. - 61787			



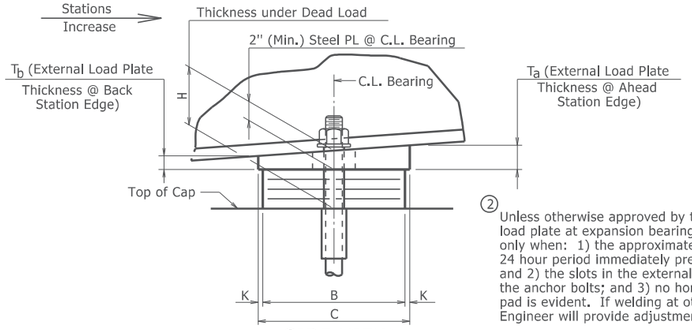
FRONT VIEW

① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.



PLAN VIEW

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

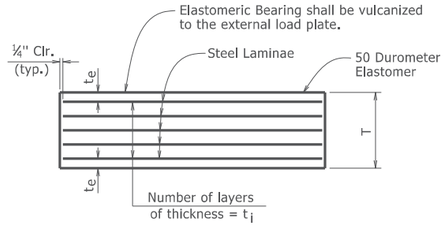


SIDE VIEW

Prior to erection of the beams or girders the Contractor shall verify the orientation of the bearing with respect to Ta and Tb.

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

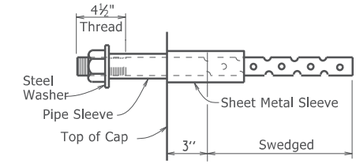


t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (A709, Gr. 50W)".

① Maximum Design Load = Service I Limit State

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION		BEARING TYPE	NO. OF BEARINGS EACH BENT	① MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD							EXTERNAL LOAD PLATE									ANCHOR BOLT				
	BENT NO (S).	BEAM OR GIRDER NO.						A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
04946	1	A1	Exp	4	109	7 1/4"	4 3/8"	13 1/2"	8 1/2"	3	1/2"	1/4"	4 @ 12 ga.	2 7/16"	9 1/2"	23 1/2"	3 5/8"	2 1/4"	N/A	1/2"	9"	2.00"	2.00"	1 1/2" x 24"	55	1 1/2" x 4 3/4"	3" x 5"	3"
	2	A1	Fix	4	201	7 1/8"	3 13/16"	15 1/2"	12 1/2"	2	1/2"	1/4"	3 @ 12 ga.	1 13/16"	13 1/2"	27 1/2"	3 1/8"	3 1/8"	N/A	1/2"	10 1/2"	2.00"	2.00"	2" x 29"	55	2 1/2" x 4 1/8"	4" x 5"	3 3/4"
	3	A1	Fix	4	201	7 1/8"	3 13/16"	15 1/2"	12 1/2"	2	1/2"	1/4"	3 @ 12 ga.	1 13/16"	13 1/2"	27 1/2"	3 1/8"	3 1/8"	N/A	1/2"	10 1/2"	2.00"	2.00"	2" x 29"	55	2 1/2" x 4 1/8"	4" x 5"	3 3/4"
	4	1 & 2	Exp	2	109	7 1/4"	4 3/8"	13 1/2"	8 1/2"	3	1/2"	1/4"	4 @ 12 ga.	2 7/16"	9 1/2"	23 1/2"	3 5/8"	2 1/4"	N/A	1/2"	9"	2.00"	2.00"	1 1/2" x 24"	55	1 1/2" x 4 3/4"	3" x 5"	3"
	4	3 & 4	Exp	2	109	7 1/4"	4 3/8"	13 1/2"	8 1/2"	3	1/2"	1/4"	4 @ 12 ga.	2 7/16"	9 1/2"	23 1/2"	3 5/8"	2 1/4"	N/A	1/2"	9"	2.01"	1.99"	1 1/2" x 24"	55	1 1/2" x 4 3/4"	3" x 5"	3"

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to ASTM A709, Gr. 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (A709, Gr. 50W)". External load plates will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS
BRIDGE ENGINEER

Aug 6 2020 9:38 PM
Charles R. Ellis
DocuSigned

DETAILS OF ELASTOMERIC BEARINGS SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 02/02/2020
CHECKED BY: JWP DATE: 02/02/2020
DESIGNED BY: JWP DATE: 12/2019
FILENAME: bbr2605x1_e1.dgn
SCALE: NONE

BRIDGE NO. 04946 DRAWING NO. 61787

PRINT DATE: 7/16/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	39	83
				①	04946 - SPAN DETAILS - 61788			

SLAB REINFORCING:

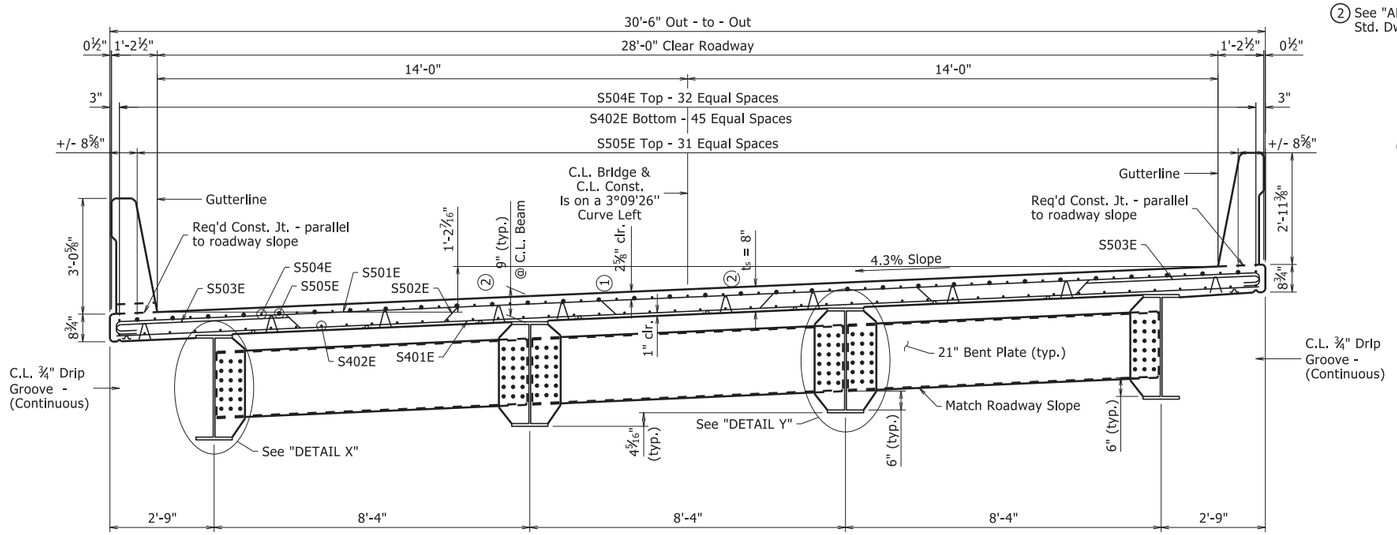
Longitudinal: S504E in Top and S402E in Bottom (placed as shown)
S505E over Intermediate Supports, see "HALF REINFORCING PLAN AND POURING SEQUENCE", Dwg. No. 61790.

Transverse: S501E @ 12" o.c. in Top, S401E @ 12" o.c. in bottom — Alternate
S502E @ 12" o.c. bent up over beams
S503E @ 6" in top of overhangs (bundled with No. 5 bars) both sides

At the Contractor's option, in lieu of providing bars S502E, one epoxy coated No. 5 bar, top and bottom, may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S502E. Bars in top and bottom shall be epoxy coated.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full-length lower runners directly on removable deck forms will not be allowed.

Class 1 Protective Surface Treatment shall be applied to the Roadway Surface and the Roadway Face and Top of Concrete Parapet Rail.

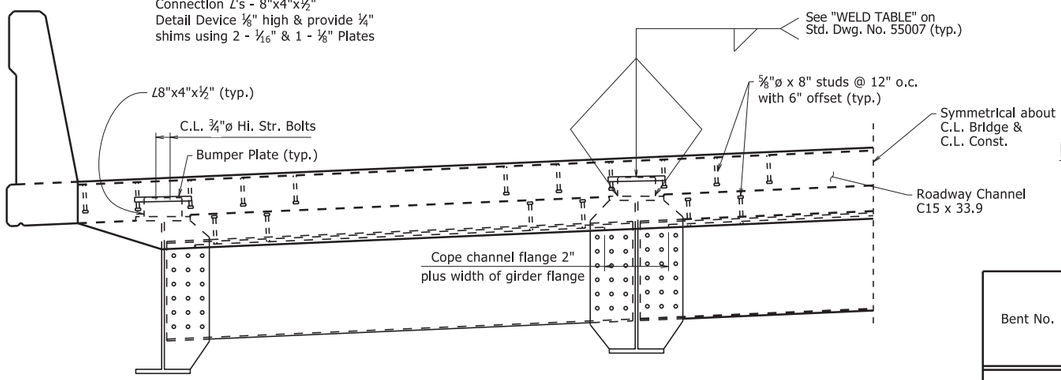


TYPICAL ROADWAY SECTION NEAR INT. BENT

Looking Ahead
Scale: ½" = 1'-0"

Expansion Device:

Roadway Channel - C15x33.9
Connection L's - 8"x4"x½"
Detail Device ⅛" high & provide ¼" shims using 2 - 1/16" & 1 - ⅛" Plates



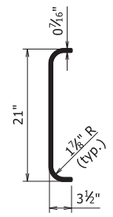
TYPICAL ROADWAY SECTION NEAR JOINT

Looking Ahead Bent 1
Scale: ¾" = 1'-0"

① Tolerance: Minus = ¼";
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

② See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

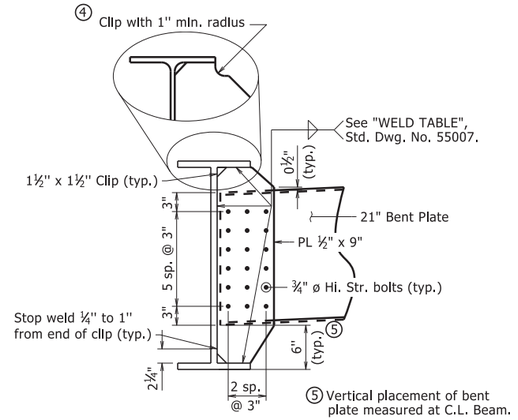
④ If permanent steel bridge deck forms are used, the Fabricator shall clip plates as necessary to accommodate the deck form supports.



Typical cross-section for all 21" bent plate diaphragms.

BENT PLATE DETAIL

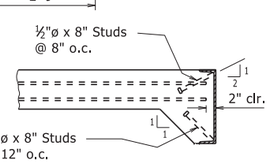
No Scale



⑤ Vertical placement of bent plate measured at C.L. Beam.

DETAIL X

No Scale



As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

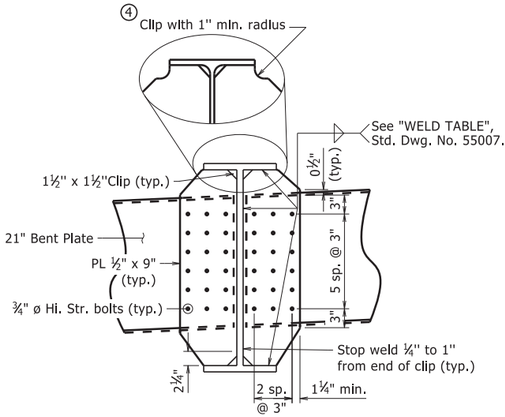
No Scale

SILICONE JOINT DATA

Bent No.	"A" - Width perpendicular to joint at 24 hour average temperature of: ③			"B" - Width Perpendicular to Joint at 60°F	Bumper Plate Size
	40°F	60°F	80°F		
1 & 4	1 9/16"	1½"	1⅜"	2" ±	1" x ¾"

For details of poured silicone joint, see Std. Dwg. No. 55008.

③ The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.



DETAIL Y

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:38 PM
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BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 169'-0" CONTINUOUS W-BEAM UNIT
SOUTH FORK LITTLE MAZARN CREEK

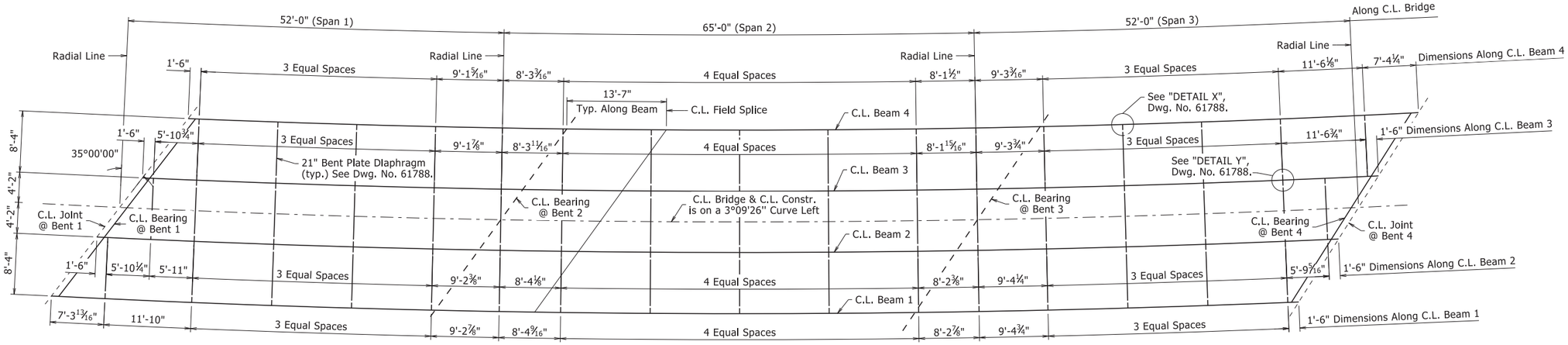
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 01/20/2020 FILENAME: bbr2605x1_s1.dgn
CHECKED BY: JWP DATE: 4/01/2020 SCALE: AS NOTED
DESIGNED BY: JWP DATE: 12/2019

BRIDGE NO. 04946 DRAWING NO. 61788

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	40	83
				04946 - SPAN DETAILS - 61789				

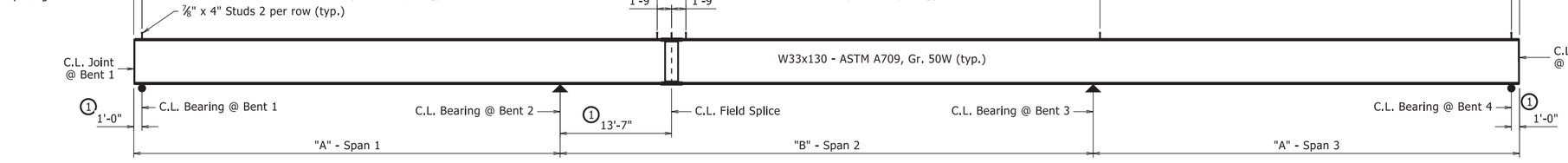


FRAMING PLAN

Scale: ⅛" = 1'-0"

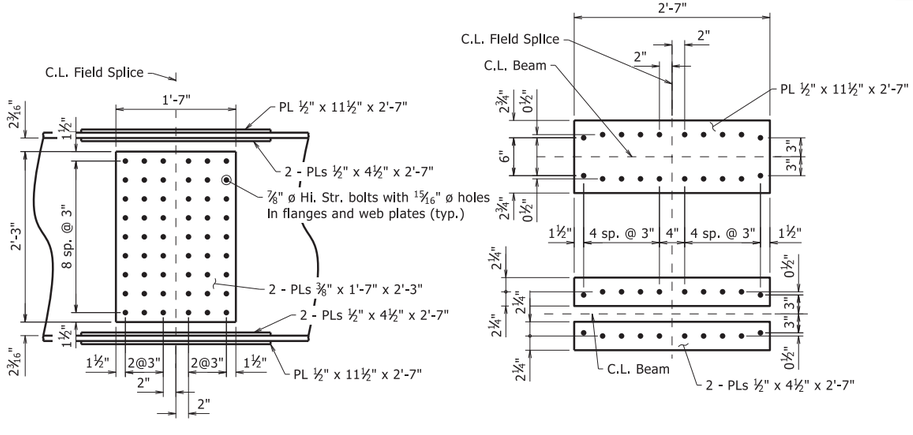
TABLE OF VARIABLES

Beam No.	"A"	"B"
1	52'-4⁵⁄₁₆"	65'-5⅜"
2	52'-1⁷⁄₁₆"	65'-1¹³⁄₁₆"
3	51'-10⁹⁄₁₆"	64'-10³⁄₁₆"
4	51'-7¹¹⁄₁₆"	64'-6⅞"



BEAM ELEVATION

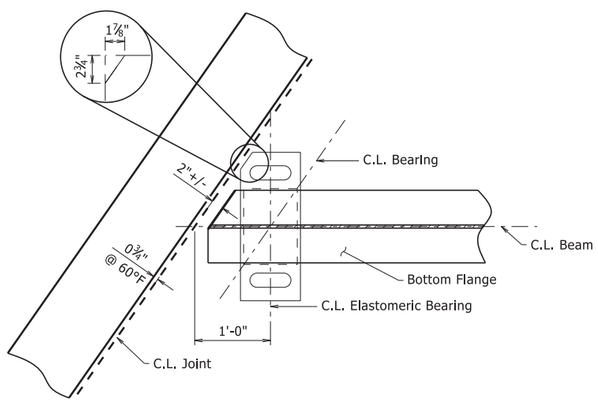
No Scale



FIELD SPLICE DETAIL

No Scale
Typical for All Field Splices

NOTE:
Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



PLAN OF BEARING AT END BENT

1" = 1'-0"

Notes:
All structural steel shall be ASTM A709, Gr. 50W unless otherwise noted and shall be paid for as "Structural Steel In Beam Spans (A709, Gr. 50W)".

All Grade 50W structural steel, except galvanized members, surfaces in contact with concrete, and the expansion device, within five feet of bridge deck expansion joints shall be painted as specified in Subsection 807.75. The color of paint shall be Brown equal or close to Federal Std. 595B, Color Chip No. 30070 and as approved by the Engineer. The finish system may be applied in the shop. Any damage to the paint system occurring during transport or installation shall be corrected according to the manufacturer's recommendations at no cost to the Department.

For additional information, see Layout.

For General Notes, see Std. Dwg. No. 55006.

For additional details, see Std. Dwg. No. 55007.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

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BRIDGE ENGINEER
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SHEET 2 OF 5
DETAILS OF 169'-0" CONTINUOUS W-BEAM UNIT
SOUTH FORK LITTLE MAZARN CREEK

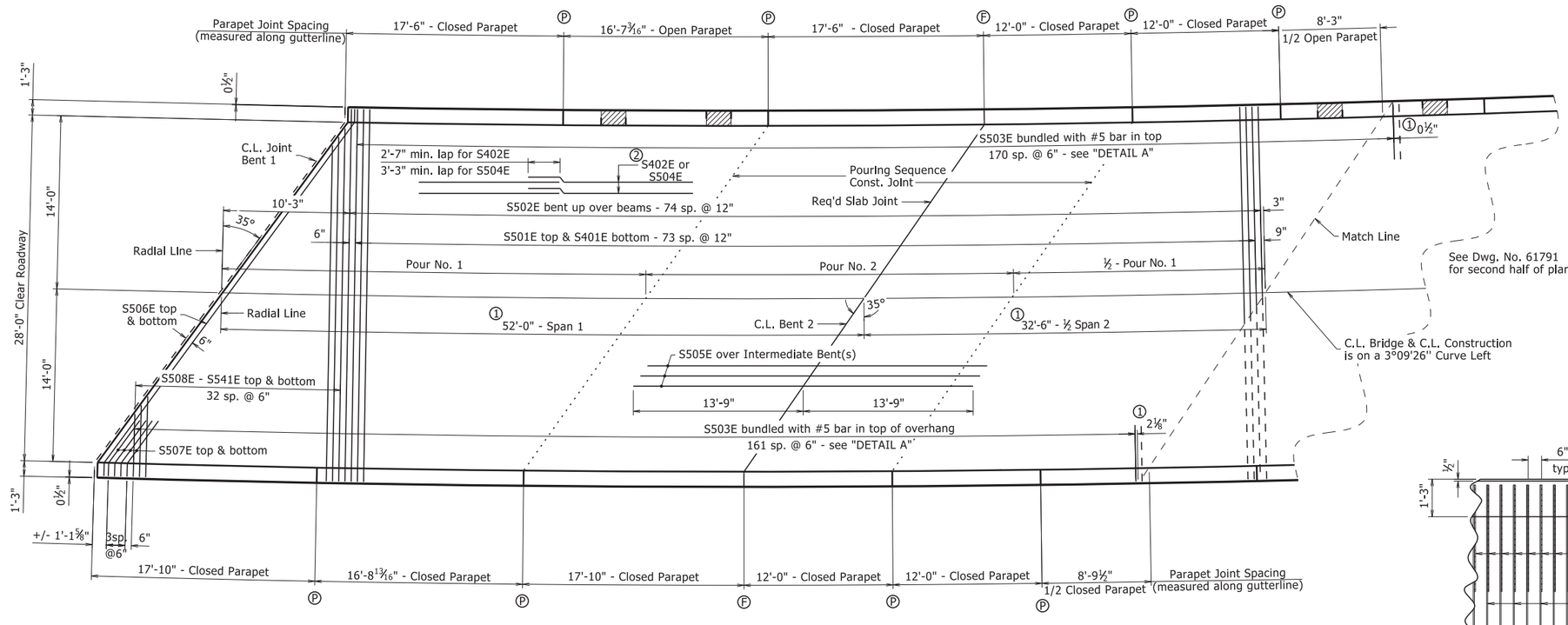
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

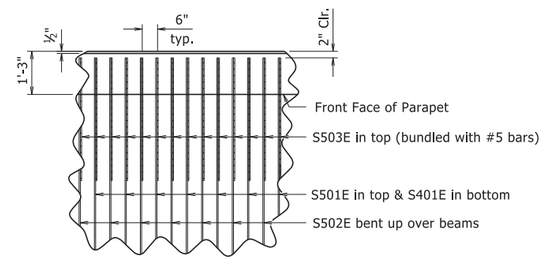
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CHECKED BY: JWP DATE: 4/01/2020 SCALE: AS NOTED
DESIGNED BY: JWP DATE: 12/2019

BRIDGE NO. 04946 DRAWING NO. 61789

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	41	83
				①		04946 - SPAN DETAILS - 61790		





DETAIL A

No Scale

HALF REINFORCING PLAN AND POURING SEQUENCE

Scale: ³⁄₁₆" = 1'-0"

NOTE:
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 adjacent pours.

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.

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.

NOTE:
C.L. Bridge is on a 3°09'26" horizontal curve to the left.

All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Bridge.

All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Bridge.

Required slab joints and pouring sequence construction joints shall align with open joints at the front face of the parapets.

Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" max.). Stop 6" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" max.). Stop 12" from top of slab.

① Measured along C.L. Bridge.

② Placed as shown in "TYPICAL ROADWAY SECTION NEAR INT. BENT", see Dwg. No. 61788.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:39 PM

Charles R. Ellis

BRIDGE ENGINEER

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SHEET 3 OF 5

DETAILS OF 169'-0" CONTINUOUS W-BEAM UNIT
SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

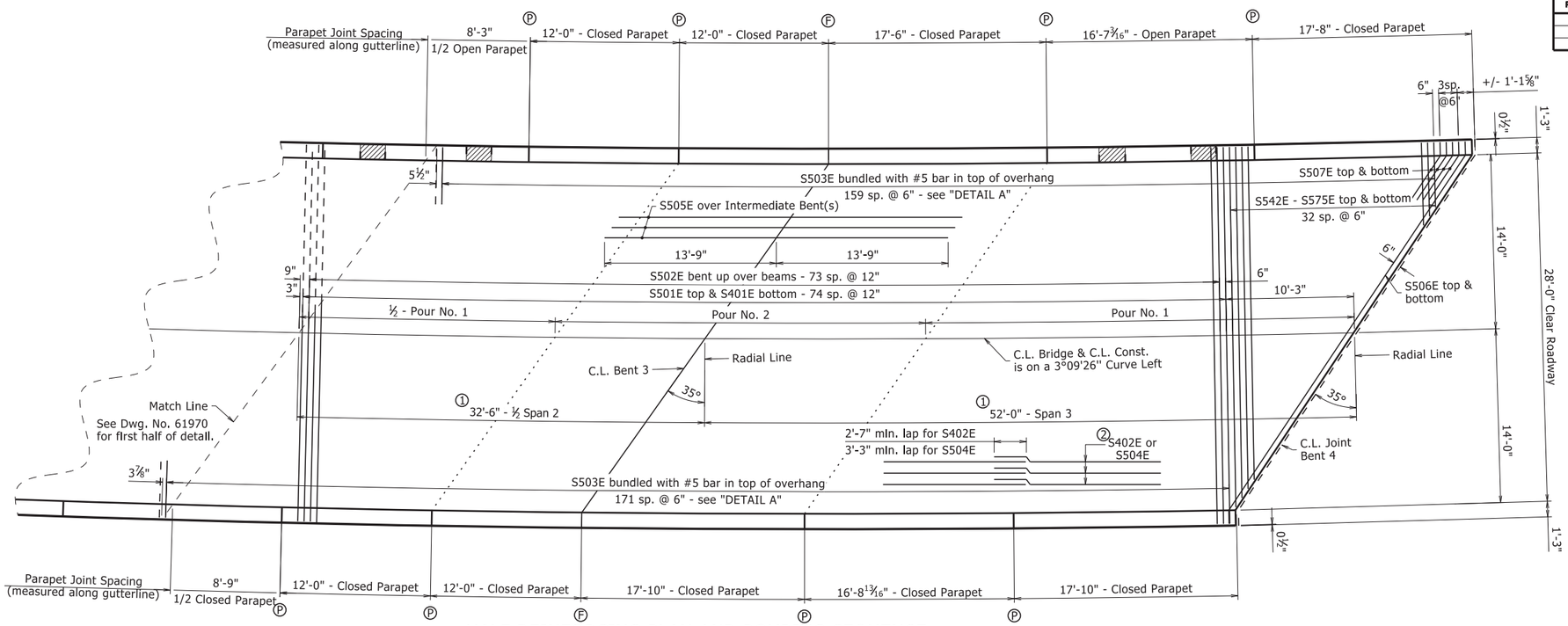
LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 01/20/2020 FILENAME: bbr2605x1_s1.dgn
CHECKED BY: JWP DATE: 4/01/2020 SCALE: AS NOTED
DESIGNED BY: JWP DATE: 12/2019

BRIDGE NO. 04946 DRAWING NO. 61790

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	42	83
				①	04946 - SPAN DETAILS - 61791			



HALF REINFORCING PLAN AND POURING SEQUENCE

Scale: ¼" = 1'-0"

Ⓕ C.L. Full-Depth Parapet Joint (¼" to 1" max.). Stop 6" from top of slab.

Ⓟ C.L. Partial-Depth Parapet Joint (¼" to 1" max.). Stop 12" from top of slab.

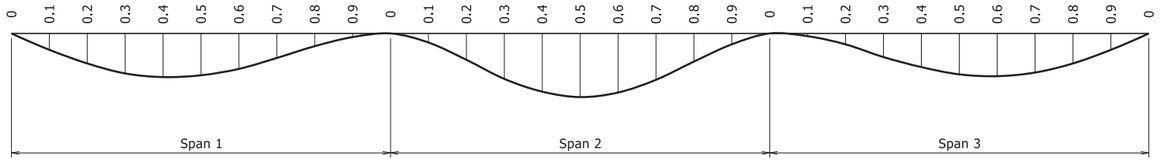
① Measured along C.L. Bridge.

② Placed as shown in "TYPICAL ROADWAY SECTION NEAR INT. BENT", see Dwg. No. 61788.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel				Structural Steel + Slab				Structural Seel + Slab + Parapet			
		Beam 1	Beam 2	Beam 3	Beam 4	Beam 1	Beam 2	Beam 3	Beam 4	Beam 1	Beam 2	Beam 3	Beam 4
Span 1	Support	0	0	0	0	0	0	0	0	0	0	0	0
	0.1	0.018	0.018	0.018	0.017	0.122	0.128	0.126	0.112	0.133	0.138	0.136	0.122
	0.2	0.034	0.034	0.034	0.031	0.225	0.236	0.234	0.204	0.246	0.255	0.252	0.223
	0.3	0.044	0.045	0.044	0.040	0.293	0.311	0.303	0.266	0.320	0.336	0.327	0.290
	0.4	0.048	0.049	0.048	0.044	0.321	0.341	0.330	0.290	0.351	0.368	0.356	0.316
	0.5	0.046	0.047	0.045	0.042	0.306	0.327	0.313	0.275	0.335	0.353	0.338	0.300
	0.6	0.038	0.039	0.037	0.035	0.255	0.273	0.257	0.229	0.279	0.294	0.277	0.250
	0.7	0.027	0.028	0.026	0.024	0.177	0.193	0.177	0.156	0.194	0.208	0.191	0.170
	0.8	0.014	0.014	0.014	0.013	0.092	0.100	0.093	0.081	0.101	0.108	0.100	0.088
	0.9	0.003	0.004	0.004	0.003	0.022	0.027	0.026	0.018	0.024	0.029	0.028	0.020
	Support	0	0	0	0	0	0	0	0	0	0	0	0
Span 2	0.1	0.010	0.010	0.010	0.010	0.066	0.073	0.076	0.069	0.072	0.079	0.082	0.075
	0.2	0.030	0.030	0.030	0.028	0.202	0.212	0.220	0.193	0.220	0.229	0.237	0.211
	0.3	0.050	0.050	0.050	0.047	0.337	0.359	0.361	0.322	0.368	0.388	0.389	0.352
	0.4	0.064	0.065	0.065	0.061	0.433	0.465	0.464	0.412	0.473	0.502	0.501	0.450
	0.5	0.070	0.071	0.070	0.065	0.477	0.505	0.499	0.442	0.521	0.545	0.539	0.483
	0.6	0.065	0.066	0.064	0.060	0.444	0.474	0.459	0.408	0.485	0.511	0.496	0.446
	0.7	0.051	0.052	0.050	0.047	0.346	0.374	0.354	0.318	0.378	0.403	0.383	0.347
	0.8	0.031	0.031	0.030	0.028	0.211	0.226	0.214	0.188	0.231	0.244	0.231	0.205
	0.9	0.011	0.012	0.010	0.010	0.074	0.085	0.072	0.069	0.081	0.091	0.078	0.075
	Support	0	0	0	0	0	0	0	0	0	0	0	0
Span 3	0.1	0.003	0.003	0.003	0.003	0.019	0.017	0.023	0.021	0.021	0.018	0.025	0.023
	0.2	0.013	0.013	0.014	0.013	0.083	0.086	0.098	0.085	0.090	0.093	0.105	0.093
	0.3	0.026	0.026	0.027	0.025	0.168	0.180	0.185	0.166	0.183	0.194	0.199	0.182
	0.4	0.037	0.038	0.038	0.036	0.242	0.262	0.267	0.237	0.264	0.283	0.288	0.259
	0.5	0.045	0.046	0.046	0.043	0.295	0.317	0.318	0.287	0.322	0.342	0.343	0.314
	0.6	0.047	0.048	0.048	0.045	0.310	0.334	0.333	0.299	0.338	0.360	0.359	0.327
	0.7	0.043	0.044	0.044	0.041	0.284	0.306	0.304	0.273	0.310	0.330	0.328	0.298
	0.8	0.033	0.034	0.033	0.031	0.218	0.235	0.232	0.208	0.238	0.253	0.250	0.227
	0.9	0.018	0.019	0.018	0.017	0.119	0.129	0.126	0.114	0.130	0.139	0.136	0.125
	Support	0	0	0	0	0	0	0	0	0	0	0	0

Note:
Camber for dead load deflection plus vertical curve +/- ¼" tolerance. Deflections shown are along C.L. Beam from the plane perpendicular to the web extending from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above plane. Vertical curve corrections not included.

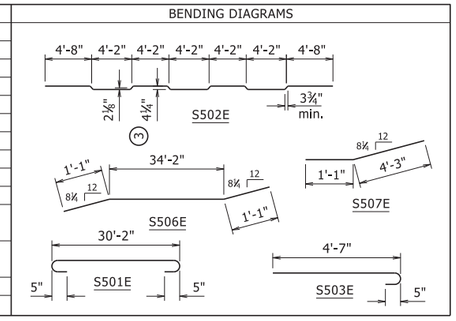


DEAD LOAD DEFLECTION DIAGRAM

NO SCALE

DECK SLAB BAR LIST

MARK	NO. REQ'D	LENGTH	P.D.	BENDING DIAGRAMS
S401E	148	30'-2"	Str.	
S402E	230	36'-1"	Str.	
S501E	148	31'-4"	3"	
S502E	148	30'-10"	3"	
S503E	662	5'-2"	3"	
S504E	165	36'-7"	Str.	
S505E	64	27'-6"	Str.	
S506E	4	36'-4"	3¾"	
S507E	16	5'-4"	3¾"	
S508E-S541E	2 ea.	5'-1" to 28'-7"	Str.	
S542E-S575E	2 ea.	5'-2" to 28'-11"	Str.	



Note: Dimensions are out to out of bars.
Bars designated with an "E" suffix to be Epoxy Coated.
For additional Parapet reinforcing bars, see Dwg. No. 61792.

③ ½" Overtolerance - No Undertolerance

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SHEET 4 OF 5
DETAILS OF 169'-0" CONTINUOUS W-BEAM UNIT
SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

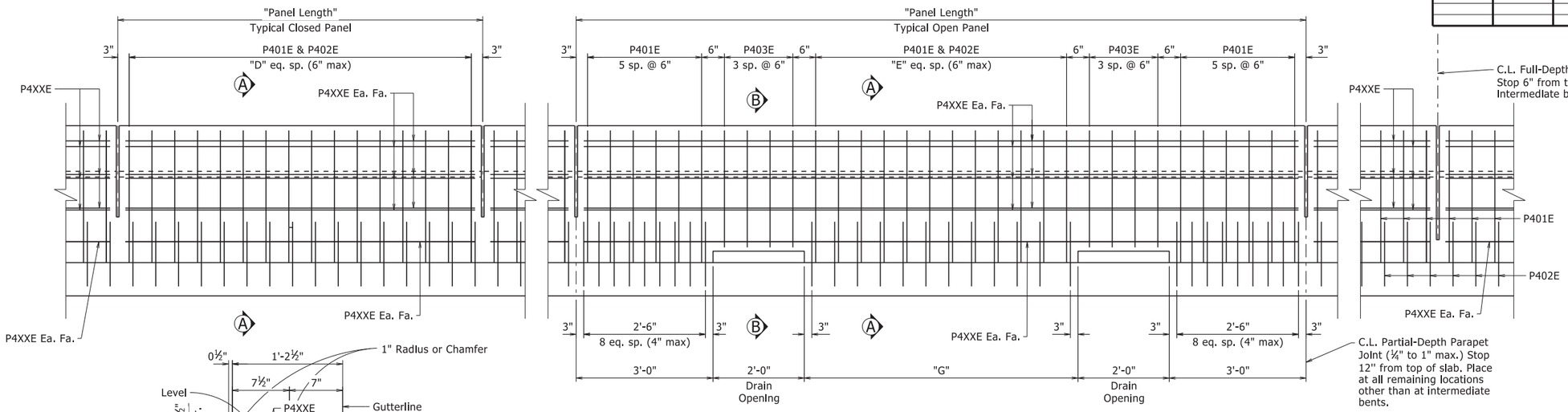
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 01/20/2020 FILENAME: bbr2605x1_s1.dgn
CHECKED BY: JWP DATE: 4/01/2020 SCALE: NO SCALE
DESIGNED BY: JWP DATE: 12/2019

BRIDGE NO. 04946 DRAWING NO. 61791

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	43	83
				①	04946 - SPAN DETAILS - 61792			



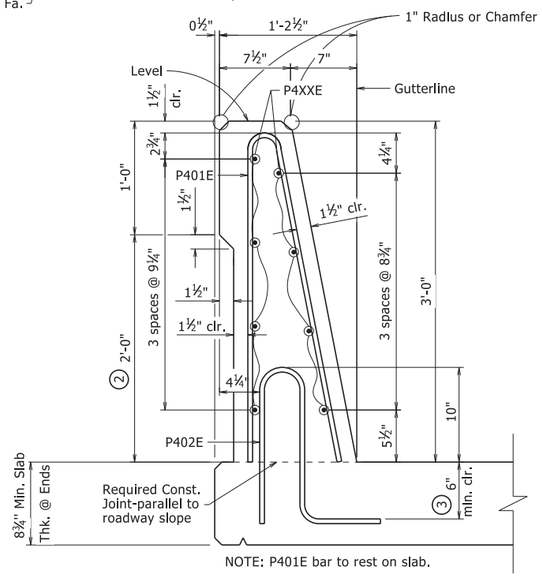
① All measurements shown are along gutterline.

② Varies with roadway slope. See Plans for additional information.

③ Minimum embedment into deck.

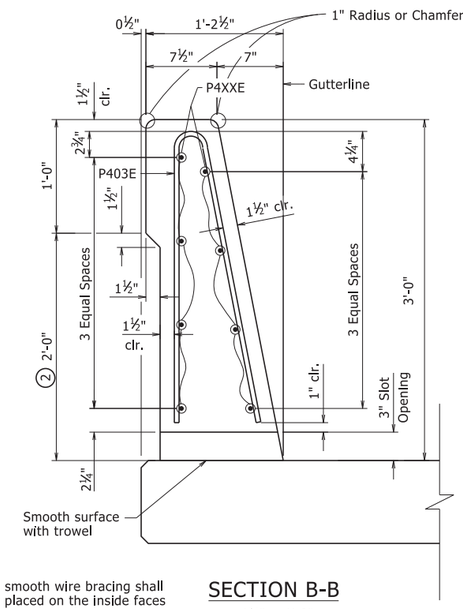
① ELEVATION - CONCRETE PARAPET RAIL

¾" = 1'-0"



SECTION A-A

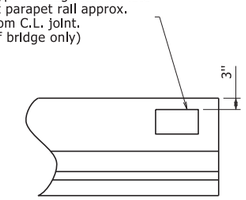
1½" = 1'-0"



SECTION B-B

1½" = 1'-0"

Place Type C Bridge Name Plate on right parapet rail approx. 1'-0" from C.L. joint. (Beg. of bridge only)



NAME PLATE DETAIL

No Scale

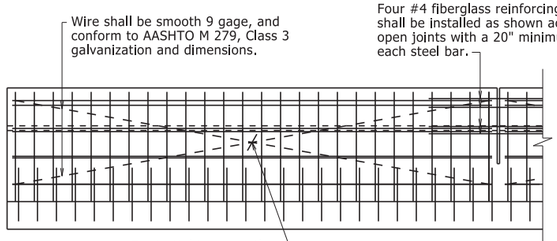
TABLE OF VARIABLES

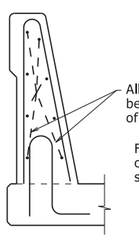
Closed Rail Panels			Open Rail Panels			
Panel Length	"D"	P4XXE Bar	Panel Length	"E"	"G"	P4XXE Bar
12'-0"	23	P404E	16'-6"	12	6'-6"	P408E
16'-8 13/16"	33	P405E	16'-7 3/16"	13	6'-7 3/16"	P409E
17'-6"	34	P406E				
17'-10"	35	P407E				

PARAPET BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAM
P401E	656	5'-10"	2½"	P401E: 2½" P.D., 2'-10½", 12, 2¼, 9¾"
P402E	674	3'-8"	3¾"	P402E: 3¾" P.D., 3" P.D., 1'-4½", 4¾", 8"
P403E	24	5'-3"	2½"	P403E: 2½" P.D., 2'-6½", 12, 2¼
P404E	64	11'-8"	Str.	
P405E	16	16'-4"	Str.	
P406E	40	17'-4"	Str.	
P407E	32	17'-6"	Str.	
P408E	8	16'-2"	Str.	
P409E	16	16'-3"	Str.	

Note: Dimensions are out to out of bars.
Bars designated with an "E" suffix to be Epoxy Coated.





All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish in place of Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIP FORMING OF CONCRETE PARAPET RAIL

No Scale

GENERAL NOTES:

This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria.

For location of Full and Partial Depth Parapet Joints, see "HALF REINFORCING PLAN AND POURING SEQUENCE" on Dwg. Nos. 61970 & 61971.

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SHEET 5 OF 5
DETAILS OF 169'-0" CONTINUOUS W-BEAM UNIT
SOUTH FORK LITTLE MAZARN CREEK

ROUTE SEC.

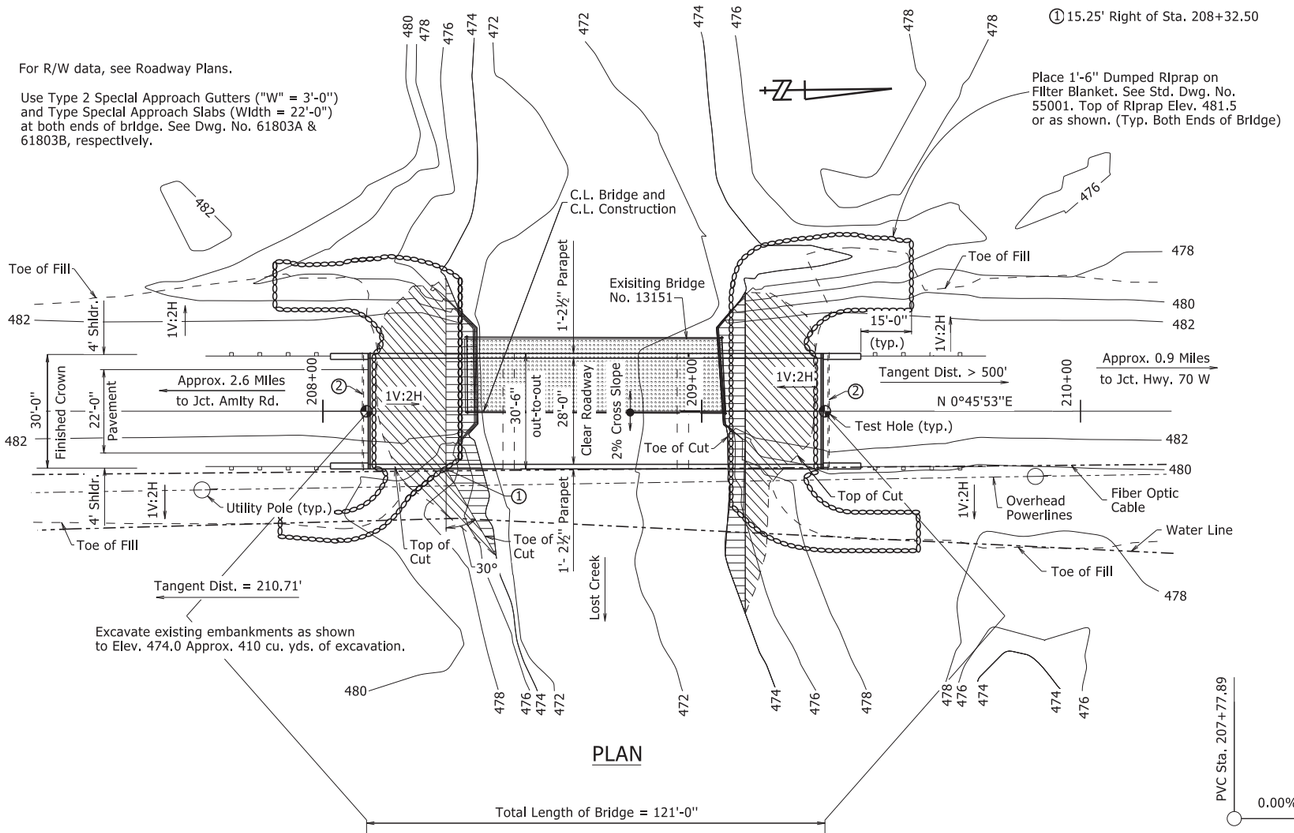
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 9/25/2019
CHECKED BY: JWP DATE: 4/01/2020
DESIGNED BY: JWP DATE: 12/2019
FILENAME: bbr2605x1_s1.dgn
SCALE: AS NOTED

BRIDGE NO. 04946 DRAWING NO. 61792

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	44	83
				①		04947 - LAYOUT - 61793		



GENERAL NOTES:

BENCH MARK: Vertical Control Data are 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 on the Plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 7th Edition (2014), with 2015 interim revisions.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 S_{D1} = 0.065 SITE CLASS: B

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (Superstructure)	f'c = 4,000 psi
Class S Concrete (Substructure)	f'c = 3,500 psi
Reinforcing Steel (Grade 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi
Structural Steel (ASTM A709, Gr. 36)	Fy = 36,000 psi
Structural Steel (ASTM A709, Gr. 50 or Gr. 50W)	Fy = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Construction Contract Procurement Section of the Program Management Division.

STEEL PILING: Piling at Bent Nos. 1 and 4 shall be HP 12x53 (Grade 50). All piling shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 96 tons per pile and into the material designated as Shale on the boring legend. Minimum penetration shall be 15' below the bottom of the cap. Piling in end bents shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual pile lengths are to be determined in the field. The Contractor shall use approved steel H-Pile driving points on all piles.

PREBORING: Preboring is required for all piling at Bents 1 and 4. Preboring shall be to a minimum depth of 5' into material designated as shale on the boring legend or to a depth of 15' below the bottom of the cap, whichever is lower. Prebored holes shall have a diameter 6" greater than the diagonal of the pile for a depth of 10' below the bottom of the cap. The size and depth of the remaining preboring shall be determined in the field by the Engineer, After driving is completed, the prebored holes shall be backfilled with Class S Concrete to within 10' of the bottom of the cap, and the remaining 10' shall be backfilled with sand or pea gravel. The Contractor shall be responsible for keeping prebored holes free of debris prior to driving piles and 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".

SPREAD FOOTINGS: Footings shall be set a minimum of 2'-0" into material designated as Shale on the boring legend. The top of the footings at Bents 2 and 3 shall be set a minimum 2'-0" below the channel bottom as determined by the lowest channel elevation within the footprint of the footing. Foundations for footings shall be prepared in accordance with Subsection 801.04. Excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of the rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the surrounding ground in accordance with Subsection 801.08.

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

② PIPE UNDERDRAIN: Install 4"ϕ Pipe Underdrain with Outlet Protectors at both bridge ends in accordance with Section 611 and Std. Dwg. PU-1. For additional details, see Dwg. No. 61803. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

PROTECTIVE SURFACE TREATMENT: Class 1 Protective Surface Treatment shall be applied to the roadway surface and roadway face and top of the concrete parapet rails in accordance with Section 803.

DETAIL DRAWINGS:	DRAWING NOS:
End Bents	61795
Intermediate Bents	61796
Elastomeric Bearings	61797
120'-0" Integral Continuous W-Beam Unit	61798-61803
Standard General Notes for Steel Bridge Structures	55006
Standard Details for Steel Bridge Structures	55007
Steel H-Piles	55020
Type 2 Special Approach Gutters	61803A
Type Special Approach Slab	61803B

EXISTING BRIDGE: Existing Bridge No. 13151 is 20.0' wide and 68.0' long and consist of three steel multi-beam spans with a reinforced concrete deck supported by reinforced concrete abutments and reinforced concrete wall piers with spread footings. The existing bridge occupies the same location as the proposed new bridge.

REMOVAL AND SALVAGE: After the road has been closed, the Contractor shall remove existing Bridge No. 13151 in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor except the metal guardrail which shall remain the property of Garland County. The Contractor shall notify the Department and the Garland County Judge's office [phone (501) 622-3602] prior to removal to determine the specific pieces deemed salvageable. For property of the County, the Contractor shall store salvageable pieces onsite and load them onto Garland County equipment. Payment for this work shall be considered incidental to "Removal of Existing Bridge Structure (Site No. _)".

MAINTENANCE OF TRAFFIC: The road will be closed during the construction of the bridge.

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SHEET 1 OF 2
LAYOUT OF BRIDGE
COUNTY ROAD 63 OVER
LOST CREEK

LOST CR. & S. FORK LITTLE MAZARN CR.
STRS. & APPRS. (S)
GARLAND COUNTY

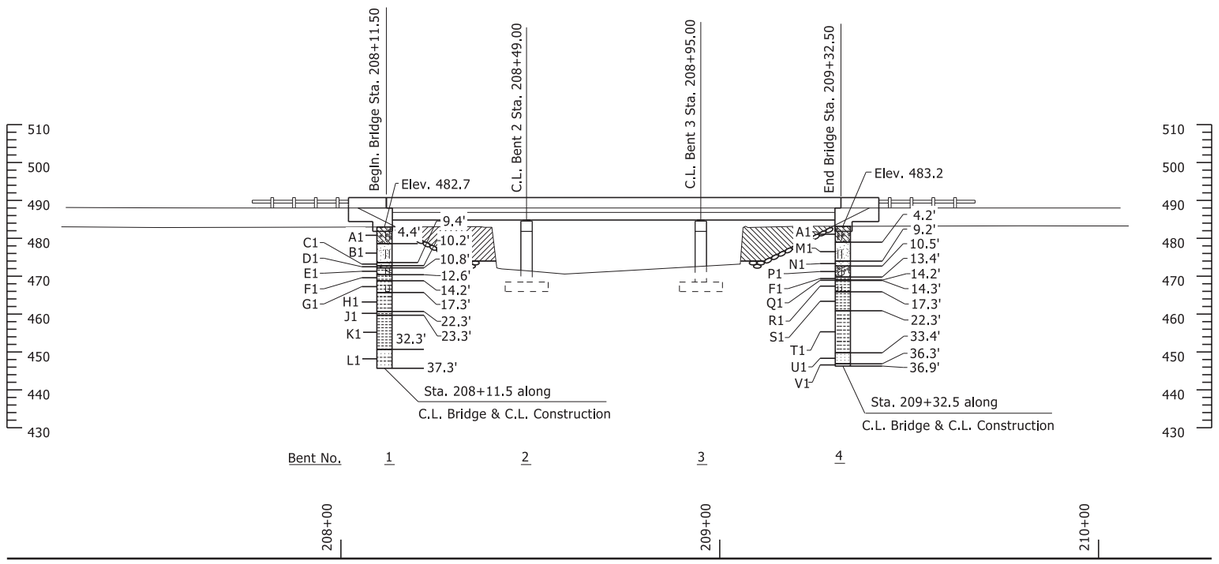
COUNTY ROAD 63
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: MCB DATE: 7/13/2020 SCALE: 1"=20'-0"
DESIGNED BY: JWP DATE: 9/2019

BRIDGE NO. 04947 DRAWING NO. 61793

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	45	83
				①		04947 - LAYOUT - 61794		



ELEVATION OF SOIL BORINGS

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	① NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	5630	481.3	481.9
Base	100	8130	483.0	484.0
Extreme	500	11550	485.0	487.4
Overtopping	>500	——	——	——

① Unconstricted water surface without structure or roadway approaches.
Q100 backwater elevation for existing structure = 484.5 ft.

Proposed Low Bridge Chord elevation = 484.80 ft.
Drainage area = 13 square miles.
Historical H.W. Elev. = NA

BORING LEGEND

A1-Sandy Clay with Gravel
B1-Wet, Loose, Light Brown Sand with Some Gravel
C1-Wet, Medium Dense, Light Brown Sand
D1-Wet, Medium Dense, Light Brown Sand with Gravel
E1-SHALE - Highly Weathered, Dark Gray
F1-SHALE
G1-SHALE WITH FREQUENT SANDSTONE PARTINGS AND SEAMS - Slightly Weathered, Medium Hard, Slickensided, Steep Dip, Dark Gray
H1-SHALE WITH FREQUENT SANDSTONE/METAQUARTZITE SEAMS - Slightly Weathered, Medium Hard, Slickensided, Steep Dip, Dark Gray
J1-SANDSTONE WITH INTERBEDDED SHALE - Unweathered, Well Cemented, Steep Dip, Gray
K1-SHALE - Unweathered, Medium Hard, Frequent Fractures, Slickensided, Steep Dip, Occasional Calcite Seams, Dark Gray
L1-SHALE WITH INTERBEDDED SANDSTONE - Unweathered, Medium Hard, Frequent Fractures, Slickensided, Steep Dip, Dark Gray
M1-Moist, Very Loose, Brown Sand
N1-Wet, Medium Dense, Brown Sand with Some Gravel
P1-Gravel and Cobbles
Q1-(No Recovery)
R1-SHALE - Slightly Weathered, Medium Hard, Frequent Fractures, Slickensided, Steep Dip, Dark Gray
S1-SHALE - Slightly Weathered, Medium Hard, Slickensided, Steep Dip, Occasional Calcite Partings, Dark Gray
T1-SHALE WITH FREQUENT SANDSTONE PARTINGS AND SEAMS - Unweathered, Medium Hard, Frequent Fractures, Slickensided, Steep Dip, Dark Gray
U1-SANDSTONE - Unweathered, Well Cemented, Steep Dip, Gray
V1-SHALE - Unweathered, Medium Hard, Steep Dip, Dark Gray

"N" VALUES

Sta. 208+11.5 - Construction Centerline
4.9- 5.9, N=7
9.9- 10.9, N=16

Sta. 209+32.5 - Construction Centerline
4.7- 5.7, N=3
9.7- 10.7, N=20
14.2- 14.3, N=25(1")

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SHEET 2 OF 2
LAYOUT OF BRIDGE
COUNTY ROAD 63 OVER
LOST CREEK

LOST CR. & S. FORK LITTLE MAZARN CR.
STRS. & APPRS. (S)
GARLAND COUNTY

COUNTY ROAD 63
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

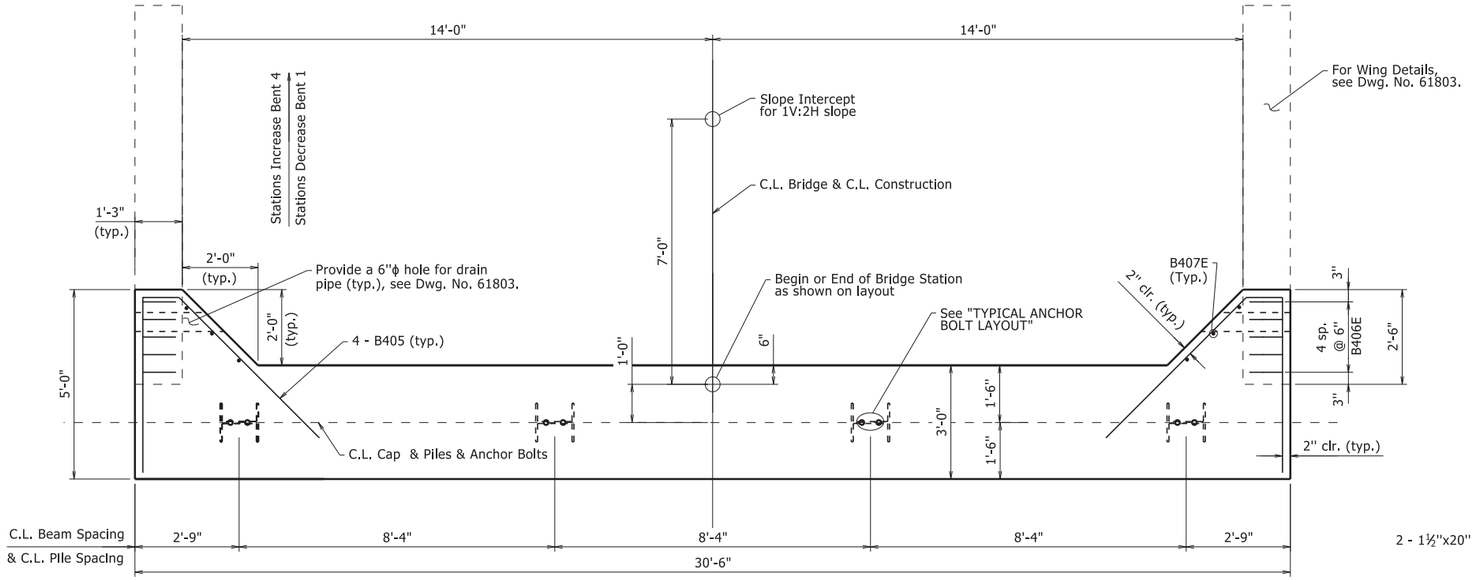
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CHECKED BY: MCB DATE: 7/13/2020 SCALE: 1"=20'-0"
DESIGNED BY: JWP DATE: 9/2019

BRIDGE NO. 04947 DRAWING NO. 61794

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	46	83

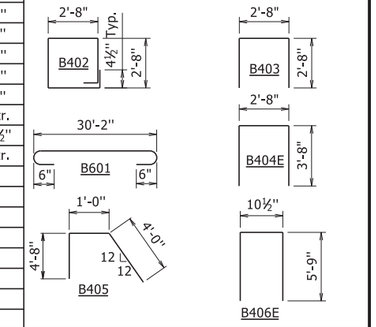
(1) 04947 - END BENT DETAIL - 61795



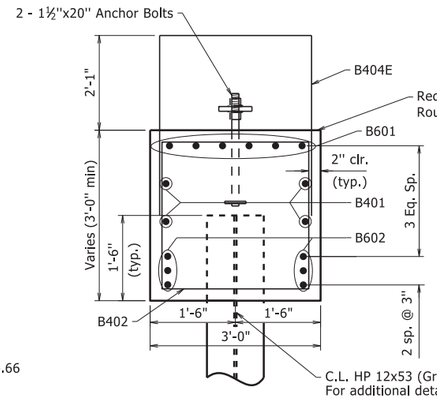
PLAN - BENT 1 & 4

BAR LIST - PER BENT

	MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
	B401	4	30'-2"	Str.	Dimensions are out to out of bars.
	B402	41	11'-0"	2"	
	B403	12	7'-10"	2"	
(1)	B404E	41	9'-10"	2"	
	B405	8	9'-6"	2"	
(1)	B406E	10	12'-3"	2"	
(1)	B407E	6	4'-11"	Str.	
	B601	6	31'-6"	4½"	
	B602	6	30'-2"	Str.	

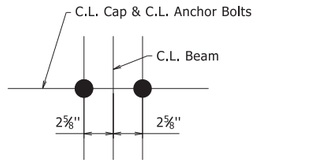


Bars designated with an "E" suffix are to be epoxy coated.



SECTION A-A

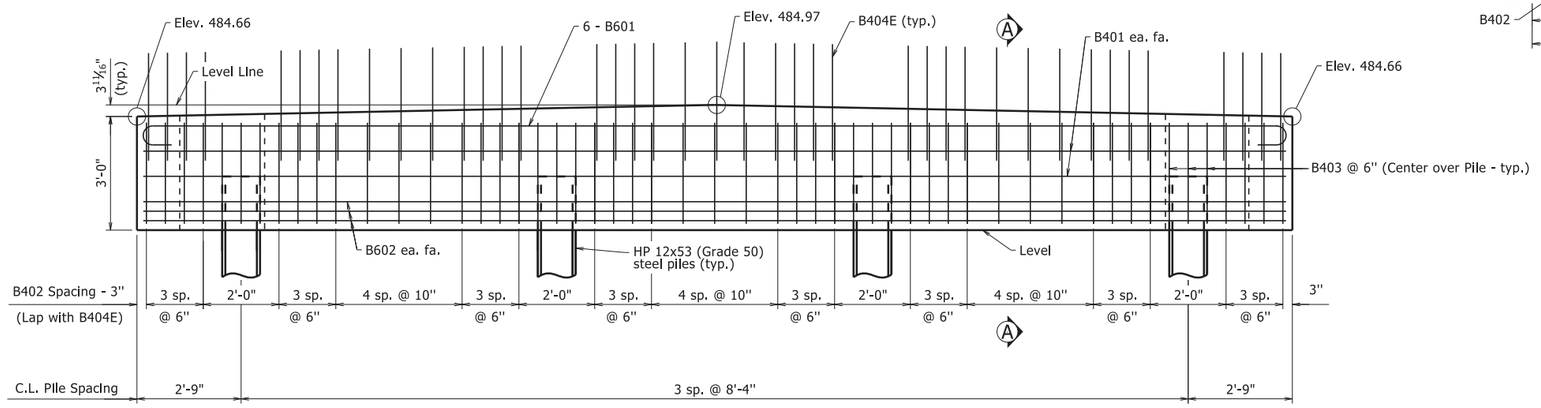
Scale: ¾" = 1'-0"



For details of anchor bolts, see Dwg. No. 61799.

TYPICAL ANCHOR BOLT LAYOUT

No Scale



ELEVATION - BENT 1 & 4

Bent 1 - Looking Back
Bent 4 - Looking Ahead

GENERAL NOTES

See Std. Dwg. No. 55006 for General Notes.

For additional information, see Layout.

(1) Bars B406E, & B407E, & B404E shall have a 1'-6" embedment into the end bent cap. See Dwg. No. 61803 for additional details.

Granular Backfill and Pipe Underdrain required behind Cap. See Dwg. No. 61799.

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DETAILS OF END BENTS LOST CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

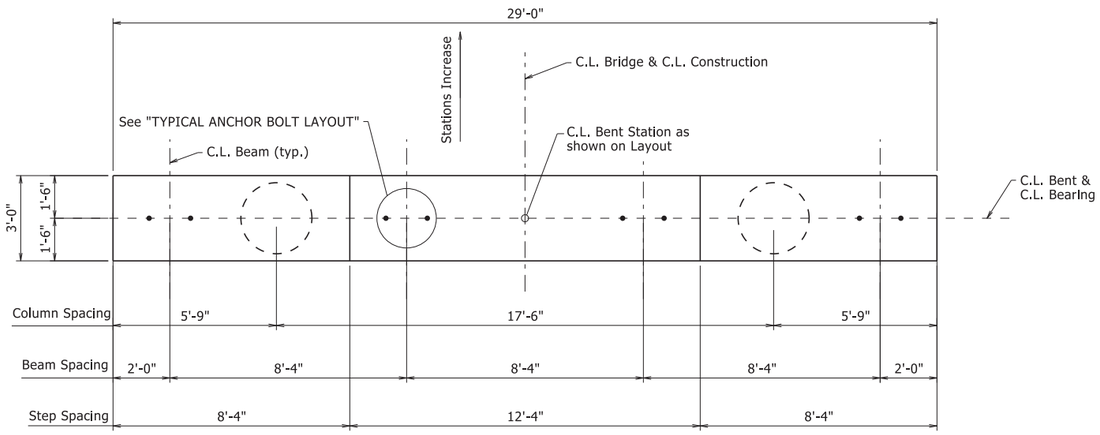
LITTLE ROCK, ARK.

DRAWN BY: JWP DATE: 02/11/2020 FILENAME: bbr2605x2_b1.dgn
CHECKED BY: CMW DATE: 7/13/2020 SCALE: ½"=1'-0" or as shown
DESIGNED BY: HY DATE: 01/2020

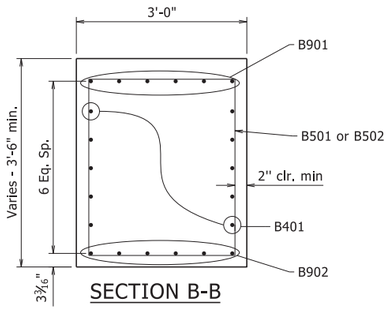
BRIDGE NO. 04947 DRAWING NO. 61795

PRINT DATE: 8/6/2020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		BR2605	47	83
				1	04947 - INT. BENT DETAIL - 61796			

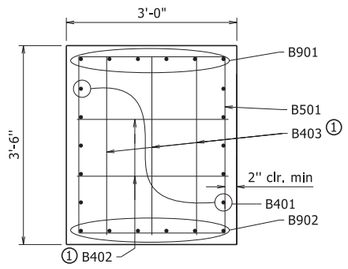


PLAN - BENT 2 & 3



SECTION B-B

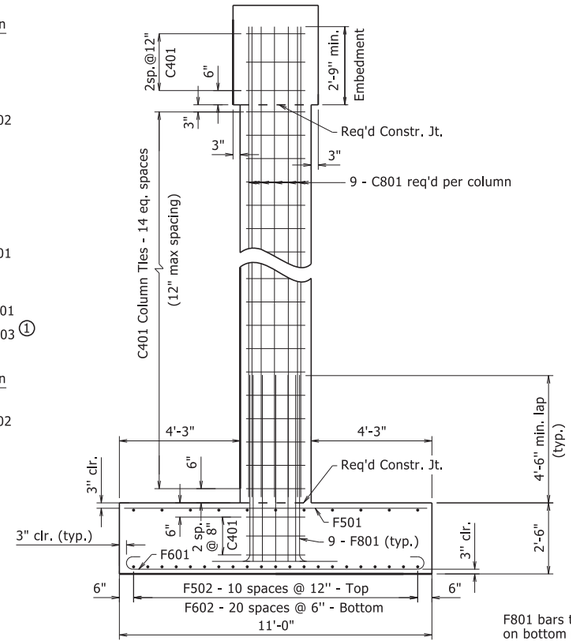
Scale: ¾" = 1'-0"



VIEW A-A

Scale: ¾" = 1'-0"

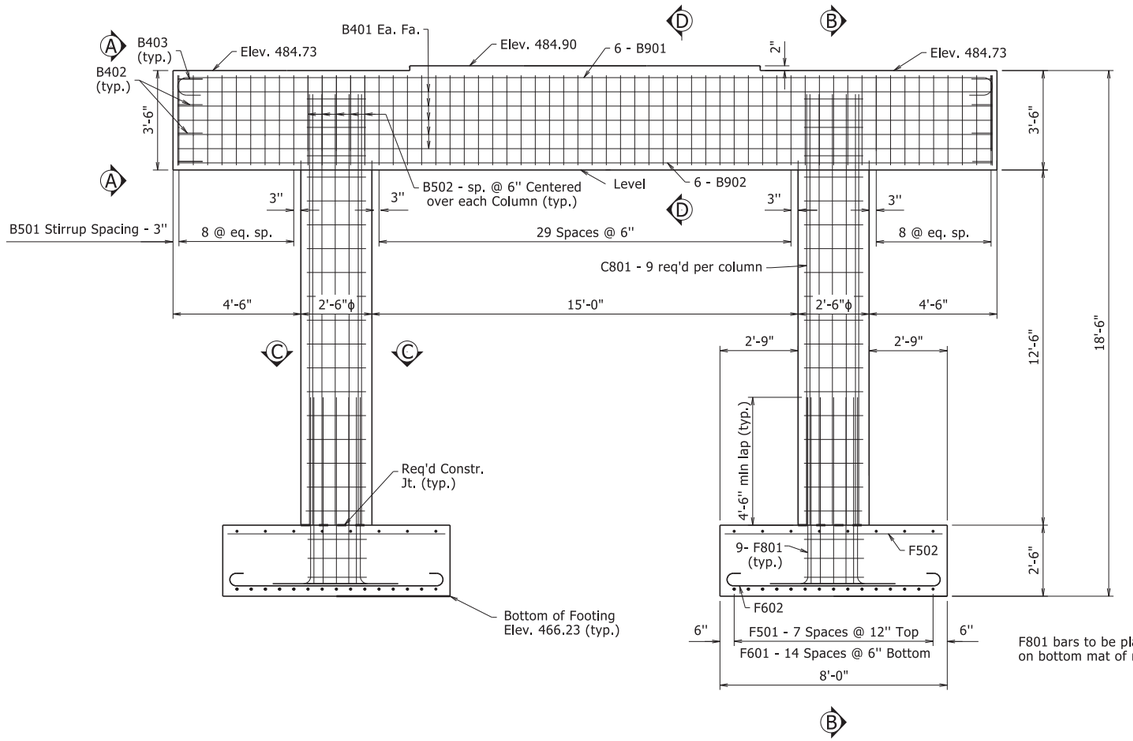
1 B402 & B403 "U-Bars" each end @ 12" max spacing, End of Cap - 2" clear



SECTION B-B

Scale: ⅜" = 1'-0"

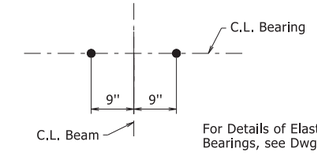
F801 bars to be placed directly on bottom mat of reinforcing.



F801 bars to be placed directly on bottom mat of reinforcing.

ELEVATION - BENT 2 & 3

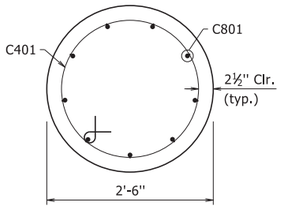
Looking Ahead



For Details of Elastomeric Bearings, see Dwg. No. 61797.

TYPICAL ANCHOR BOLT LAYOUT

No Scale

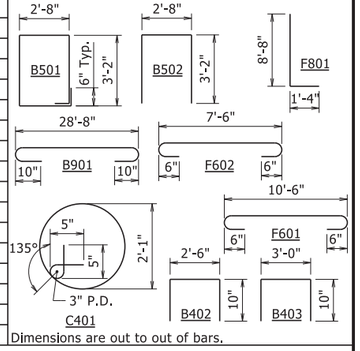


SECTION C-C

No Scale

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	10	28'-8"	Str.	
B402	4	4'-0"	2"	
B403	6	4'-6"	2"	
B501	48	12'-2"	2½"	
B502	10	8'-10"	2½"	
B901	6	31'-2"	9"	
B902	6	28'-8"	Str.	
C401	42	7'-8"	3"	
C801	18	15'-1"	Str.	
F501	16	10'-6"	Str.	
F502	22	7'-6"	Str.	
F601	30	11'-10"	4½"	
F602	42	8'-10"	4½"	
F801	18	9'-10"	6"	



Dimensions are out to out of bars.

GENERAL NOTES

See Std. Dwg. No. 55006 for General Notes.

For additional information, see Layout.

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DETAILS OF INTERMEDIATE BENTS LOST CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

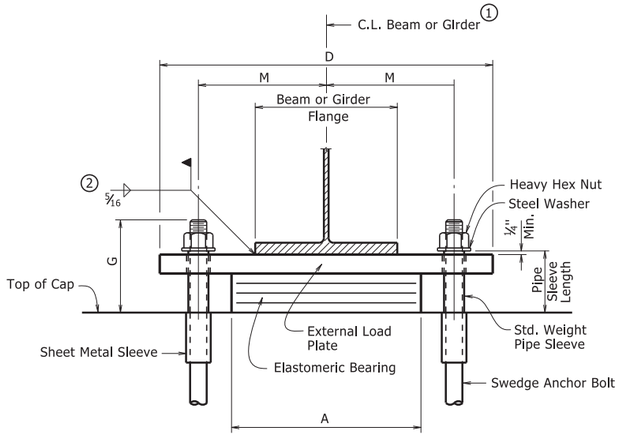
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BRIDGE NO. 04947

DRAWING NO. 61796

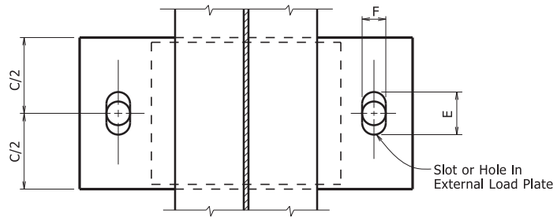
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				JOB NO.		BR2605	48	83
				①	04947 - ELASTO. BRGS. - 61797			



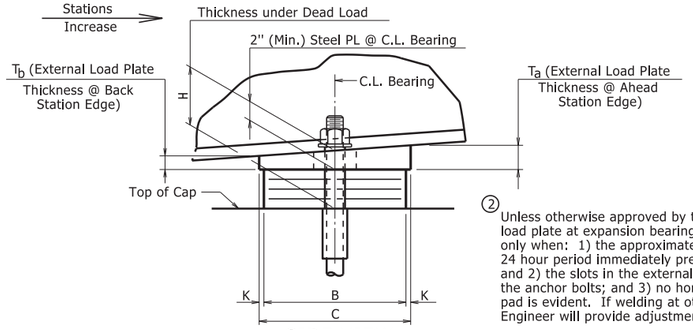
FRONT VIEW

① C.L Elastomeric Pad shall be aligned with C.L. Beam or Girder.



PLAN VIEW

The direction of bevel of the external load plate may not be accurately depicted with respect to Ta and Tb values shown in the "Table of Fabricator Variables".

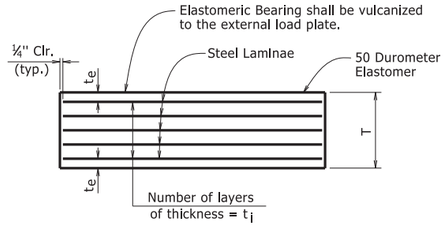


SIDE VIEW

Prior to erection of the beams or girders the Contractor shall verify the orientation of the bearing with respect to Ta and Tb.

② Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the beam or girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.

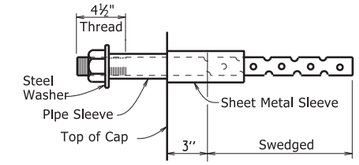


t_e = Thickness of elastomer cover on top and bottom of pad

t_i = Thickness of elastomer between steel laminae

N = Number of elastomer layers of thickness t_i

ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the concrete. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves shall meet the requirements of ASTM 653, CS Type B or approved equivalent, be of minimum 16 gage thickness, and be galvanized according to ASTM B695, Class 50. Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (A709, Gr. 50W)".

① Maximum Design Load = Service I Limit State

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION		BEARING TYPE	NO. OF BEARINGS EACH BENT	① MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD							EXTERNAL LOAD PLATE									ANCHOR BOLT				
	BENT NO (S).	BEAM OR GIRDER NO.				G	H	A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
04947	2 & 3	A1	Fix	4	147	6 7/8"	3 13/16"	13"	11"	2	1/2"	1/4"	3 @ 12 ga.	1 13/16"	12"	24"	2 5/8"	2 5/8"	N/A	1/2"	9"	2.00"	2.00"	1 3/4" x 27"	55	2" x 4 1/8"	4" x 5"	3 3/8"

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings".

External load plates shall conform to ASTM A709, Gr. 50W. Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor Bolts, Washers and Nuts shall conform to Subsection 807.07. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (A709, Gr. 50W)". External load plates will not be measured and paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

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DETAILS OF ELASTOMERIC BEARINGS LOST CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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SCALE: NONE

BRIDGE NO. 04947 DRAWING NO. 61797

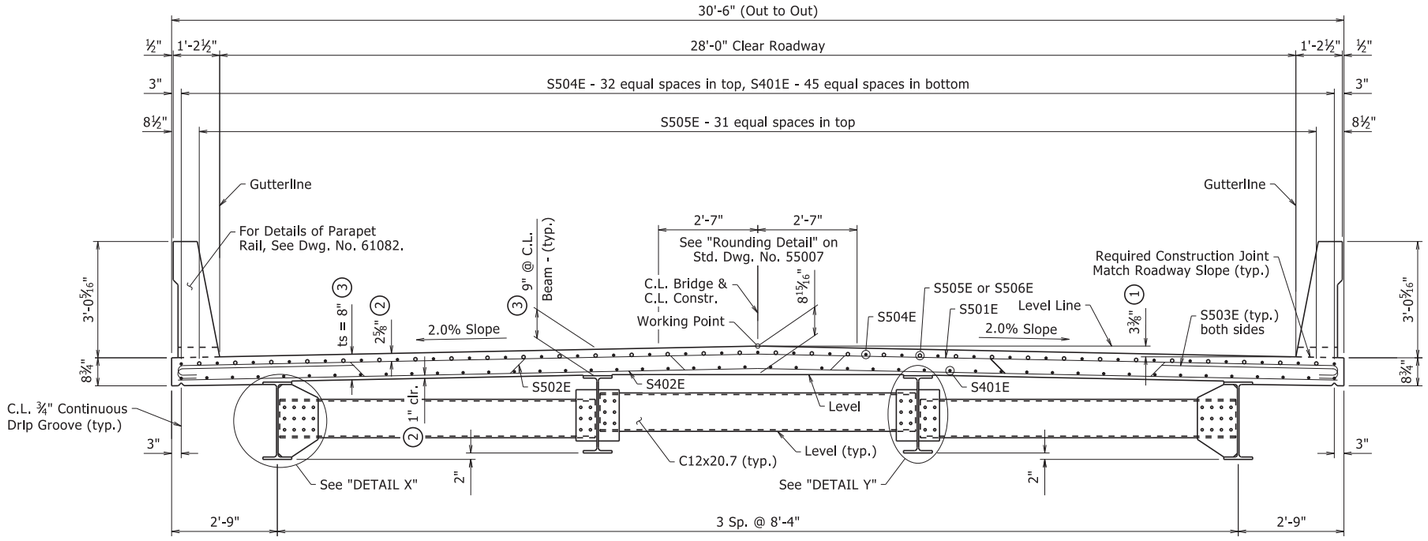
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				①	04947 - 120' UNIT - 61798			

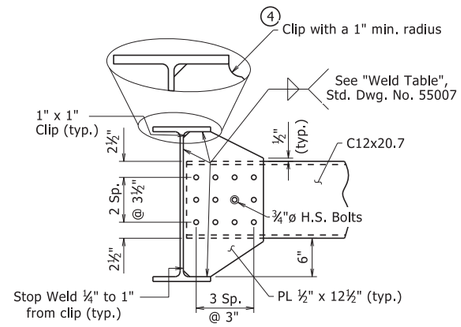
Slab Reinforcing:

Longitudinal: S504E in top and S401E in bottom (placed as shown)
S505E over intermediate supports and S506E placed at Beg. and End of bridge, See "REINFORCING PLAN & DECK POURING SEQUENCE", Dwg. No. 61801.

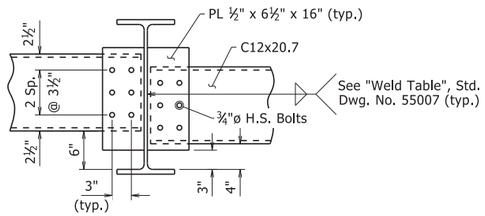
Transverse: S501E @ 12" o.c. in top, S402E @ 12" o.c. in bottom — Alternate
S502E @ 12" o.c. bent up over beams
S503E @ 6" in top of overhangs (bundled with No. 5 bars) both sides



TYPICAL ROADWAY SECTION
LOOKING AHEAD
½" = 1'-0"



DETAIL X
1" = 1'-0"

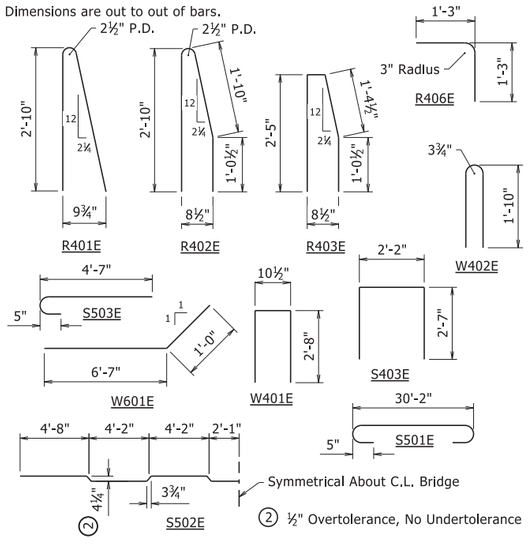


DETAIL Y
1" = 1'-0"

BAR LIST - DECK SLAB & END OF RAIL ⑤

Mark	No. Req'd	Length	Pin Dia.
S401E	184	32'-9"	Str.
S402E	132	30'-2"	Str.
S403E	82	7'-2"	2"
S501E	124	31'-4"	3"
S502E	115	30'-10"	3"
S503E	462	5'-2"	3"
S504E	99	42'-6"	Str.
S505E	64	20'-0"	Str.
S506E	64	7'-0"	Str.
S507E	56	4'-8"	Str.
R401E	60	5'-10"	2½"
R402E	16	5'-10"	2½"
R403E	4	5'-2"	2½"
R404E	32	9'-8"	Str.
R405E	48	4'-0"	Str.
R406E	8	2'-6"	6"
W401E	60	6'-1"	2½"
W402E	80	3'-9"	3¾"
W601E	16	7'-7"	4½"
W701E	40	12'-3"	Str.

BENDING DIAGRAMS



Bars with "E" designation shall be epoxy coated.

At the Contractor's option, in lieu of providing bars S502E, one epoxy coated No. 5 bar, top and bottom, may be substituted for each bar. Payment for reinforcing will be based on the weight for bars S502E. Bars in top and bottom shall be epoxy coated.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers or other approved devices per Subsection 804.06. Placement of slab bolsters or high-chairs with full-length lower runners on removable deck forms will not be allowed.

Class 1 Protective Surface Treatment shall be applied to the Roadway Surface and Roadway Face and Top of Concrete Parapet Rail.

① Working Point to gutterline

② Tolerance: Minus = ¼",
Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

③ See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE" on Std. Dwg. No. 55007.

④ If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

⑤ For additional Parapet reinforcing bars, see Dwg. No. 61802.

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SHEET 1 OF 6
DETAILS OF
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
LOST CREEK

ROUTE SEC.

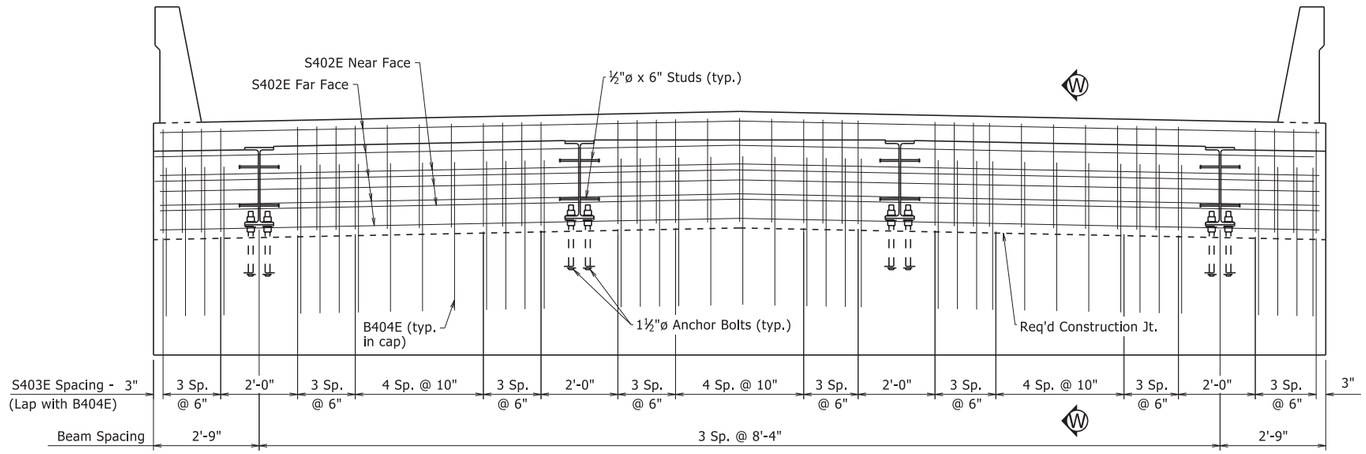
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LITTLE ROCK, ARK.

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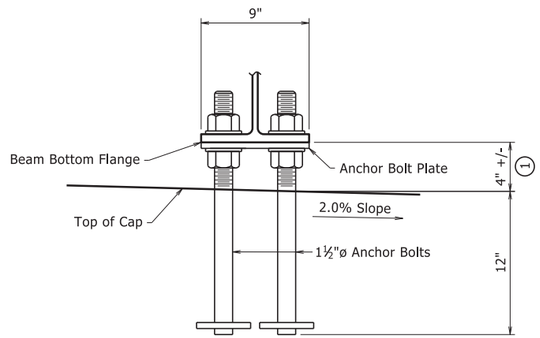
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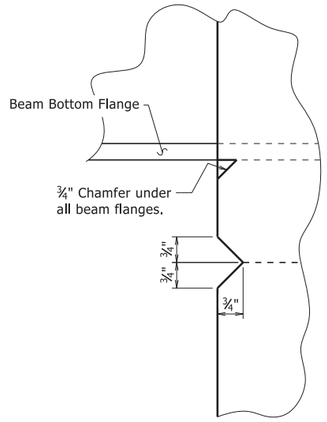
TYPICAL ROADWAY SECTION AT END BENTS

LOOKING AHEAD - Bent 4 (Bent 1 Similar)
½" = 1'-0"



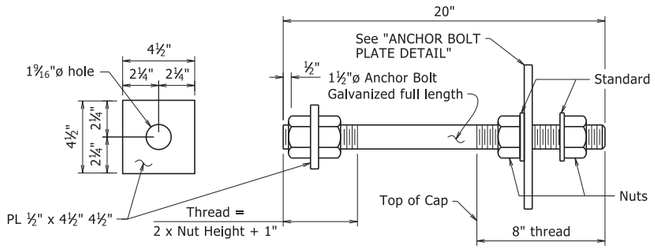
ANCHOR BOLT ELEVATION DETAIL

No Scale



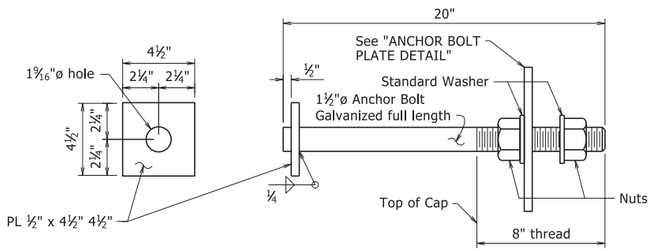
CHAMFER DETAIL

No Scale



ALTERNATE ANCHOR BOLT DETAIL

No Scale



ANCHOR BOLT DETAIL

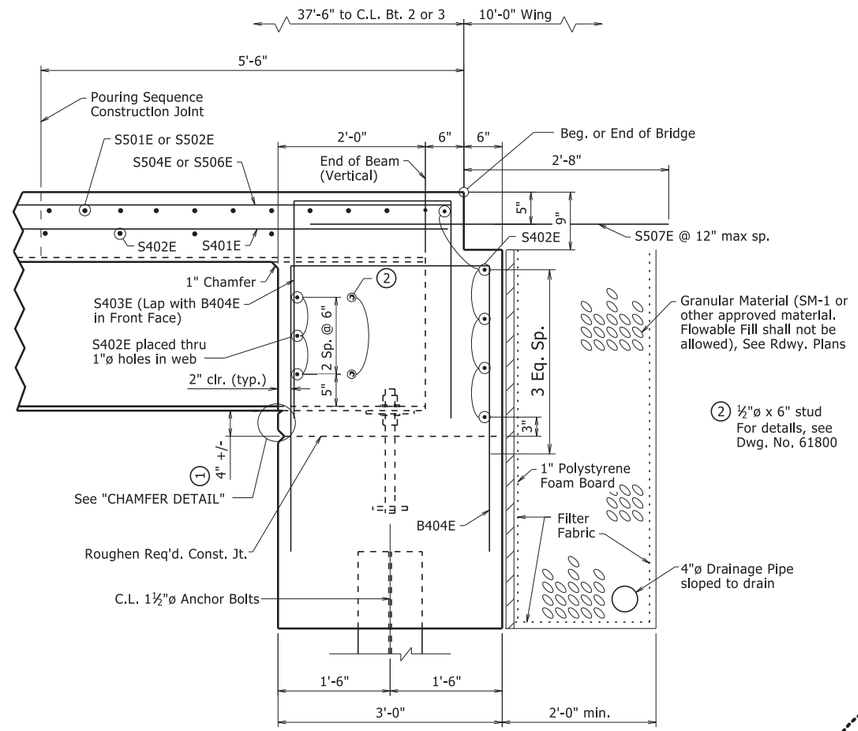
No Scale

Anchor bolts shall comply with AASHTO M 314, Grade 55, with Supplementary Requirement, and galvanized according to Subsection 807.07. Nuts and Washers for bolts shall be as specified in Subsection 807.07.

Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.

Bolts, nuts, and washers shall be paid for at the unit price bid for "Structural Steel In Beam Spans (A709, Gr. 50W)".

Plates shall be ASTM A709 Gr. 36, Gr. 50, or Gr. 50W and shall be galvanized in accordance with Subsection 807.07 and paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)".

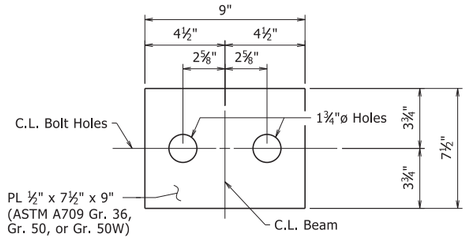


SECTION W-W

No Scale

② ½"ø x 6" stud
For details, see Dwg. No. 61800

See Dwg. No. 61795 for Details of End Bents.



ANCHOR BOLT PLATE DETAIL

No Scale

① Measured at C.L. Beam

Notes:
Limits for the concrete end diaphragm shall match plan dimension of End Bent Cap.

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 will 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.

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SHEET 2 OF 6
DETAILS OF
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
LOST CREEK

ROUTE SEC.

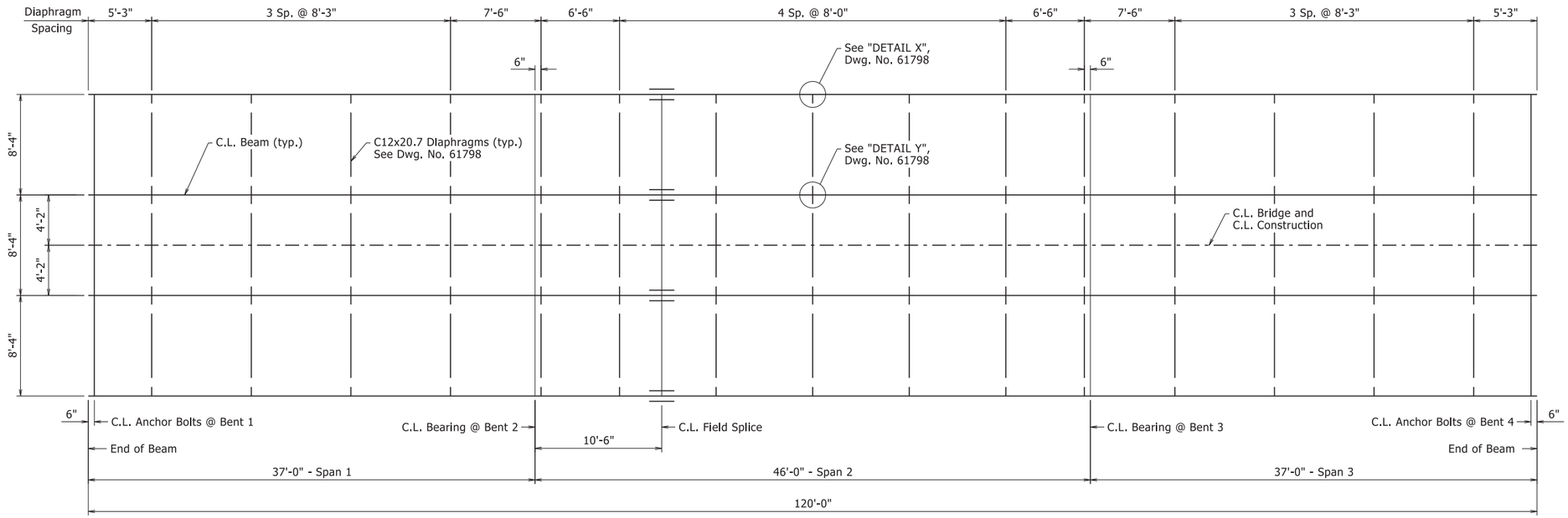
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LITTLE ROCK, ARK.

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BRIDGE NO. 04947 DRAWING NO. 61799

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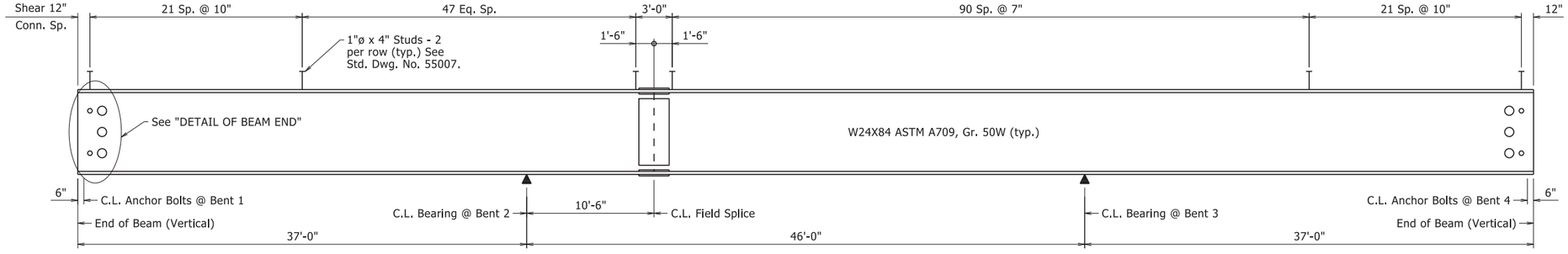
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				6	ARK.			
				JOB NO.		BR2605	51	83
				①		04947 - 120' UNIT - 61800		



Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.

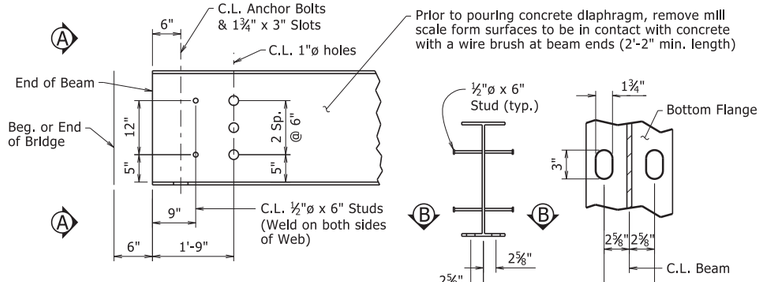
FRAMING PLAN

3/16" = 1'-0"



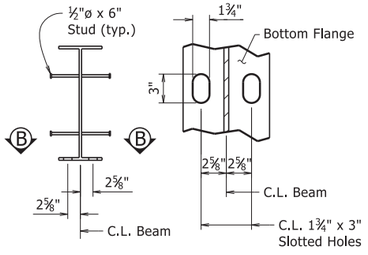
TYPICAL BEAM ELEVATION

No Scale



DETAIL OF BEAM END

No Scale



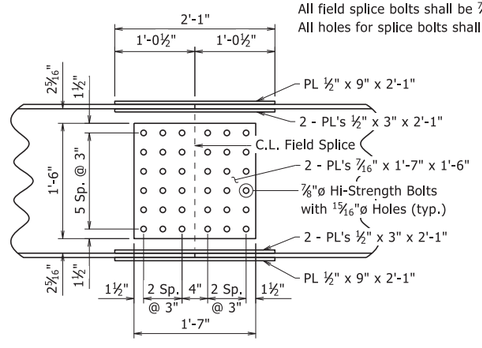
VIEW A-A

No Scale

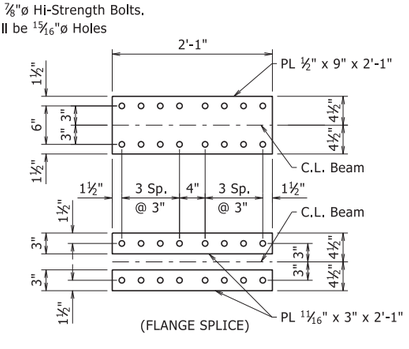
VIEW B-B

No Scale

All field splice bolts shall be ⅞"ø Hi-Strength Bolts.
All holes for splice bolts shall be 15/16"ø Holes



(WEB SPLICE)



(FLANGE SPLICE)

DETAILS OF FIELD SPLICE

No Scale

Notes:
All Structural Steel shall be ASTM A709, Gr. 50W unless otherwise noted, and shall be paid for as "Structural Steel in Beam Spans (A709, Gr. 50W)."

See Std. Dwg. Nos. 55006 & 55007 for additional notes and details.

For additional information, see Layout.

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SHEET 3 OF 6
DETAILS OF
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
LOST CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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CHECKED BY: HY DATE: 7/13/2020
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FILENAME: bbr2605x2_s1.dgn
SCALE: As Shown

BRIDGE NO. 04947 DRAWING NO. 61800

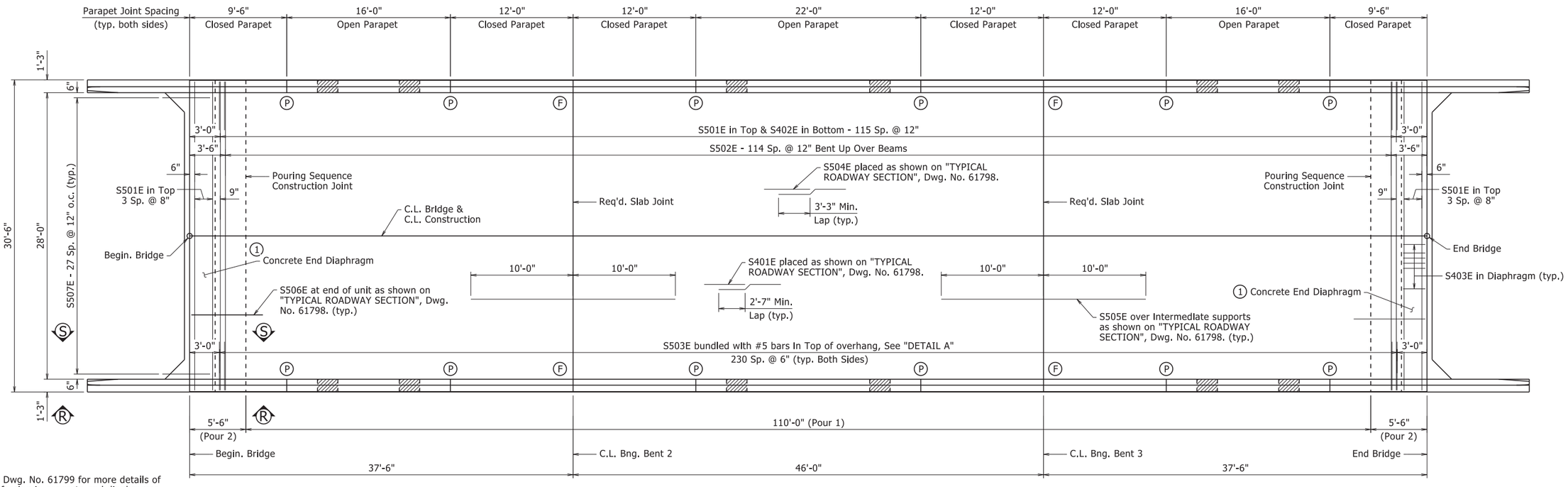
PRINT DATE: 8/6/2020

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6	ARK.			
JOB NO.		BR2605	52	83
①	04947 - 120' UNIT - 61801			

Ⓟ Partial depth parapet joint at this location.

Ⓕ Full depth parapet joint at this location.



① See Dwg. No. 61799 for more details of reinforcing in concrete end diaphragms.

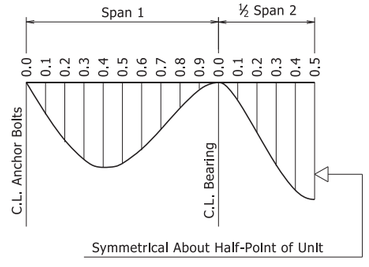
REINFORCING PLAN AND POURING SEQUENCE

No Scale

TABLE OF DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0.0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.010	0.009	0.093	0.076	0.099	0.083
	0.2	0.018	0.016	0.172	0.140	0.184	0.152
	0.3	0.023	0.021	0.224	0.183	0.239	0.199
	0.4	0.026	0.023	0.246	0.200	0.263	0.218
	0.5	0.024	0.022	0.235	0.192	0.251	0.209
	0.6	0.020	0.018	0.196	0.160	0.209	0.174
	0.7	0.014	0.013	0.137	0.112	0.146	0.122
	0.8	0.008	0.007	0.072	0.059	0.077	0.064
	0.9	0.002	0.002	0.019	0.015	0.020	0.016
2	0.0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.005	0.005	0.049	0.040	0.052	0.044
	0.2	0.015	0.013	0.144	0.117	0.154	0.127
	0.3	0.025	0.022	0.242	0.197	0.258	0.214
	0.4	0.032	0.029	0.313	0.254	0.334	0.276
	0.5	0.035	0.031	0.338	0.275	0.361	0.299

Symmetrical About Half-Point of Unit



DEAD LOAD DEFLECTION DIAGRAM

No Scale

Camber for Dead Load Deflection + / - ¼" tolerance. Deflections shown are along C.L. Beam from a chord from C.L. Anchor Bolt to C.L. Anchor Bolt.

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

For Bar List and Parapet Details, see Dwg. Nos. 61798 and 61802 respectively.

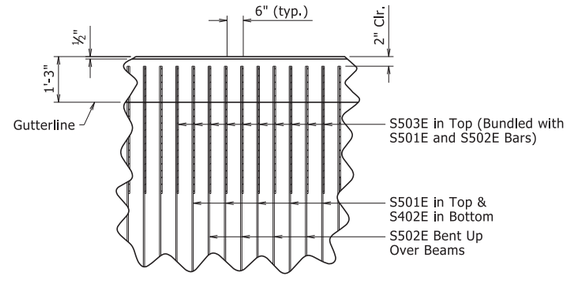
For "VIEW R-R" and "SECTION S-S", see Dwg. No. 61803.

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

Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

Concrete Diaphragms at end bents shall be poured monolithically with the deck.

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.



DETAIL A

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:40 PM

Charles R. Ellis

DocuSign

BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
LOST CREEK

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

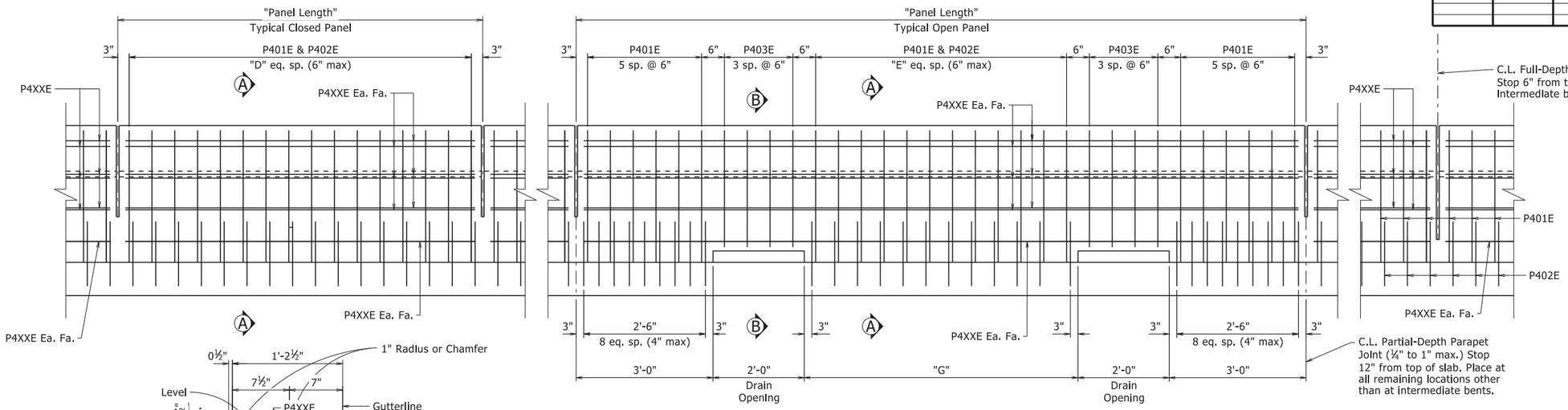
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CHECKED BY: HY DATE: 7/13/2020
DESIGNED BY: HY DATE: 12/2019

FILENAME: bbr2605x2_s1.dgn
SCALE: As Shown

BRIDGE NO. 04947 DRAWING NO. 61801

PRINT DATE: 8/6/2020

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				JOB NO.		BR2605	53	83
				①		04947 - 120' UNIT - 61802		



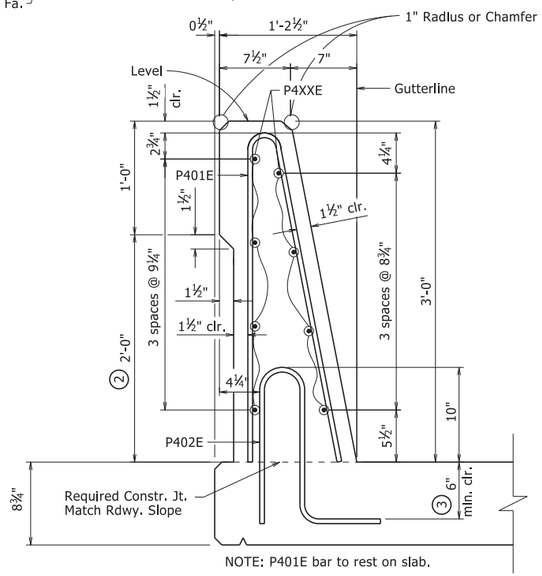
① All measurements shown are along gutterline.

② Varies with roadway slope. See Plans for additional information.

③ Minimum embedment into deck.

① ELEVATION - CONCRETE PARAPET RAIL

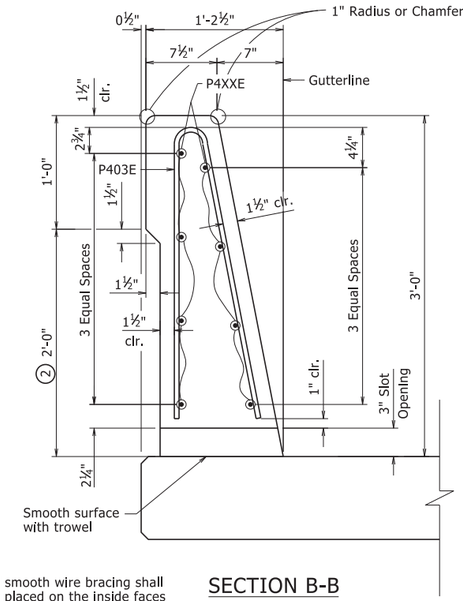
¾" = 1'-0"



NOTE: P401E bar to rest on slab.

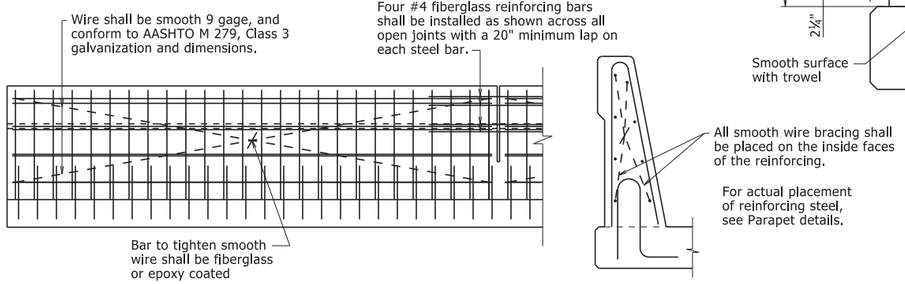
SECTION A-A

1½" = 1'-0"



SECTION B-B

1½" = 1'-0"



All panels shall be braced as required to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish in place of Class 2, Rubbed Finish.

DETAILS OF OPTIONAL SLIP FORMING OF CONCRETE PARAPET RAIL

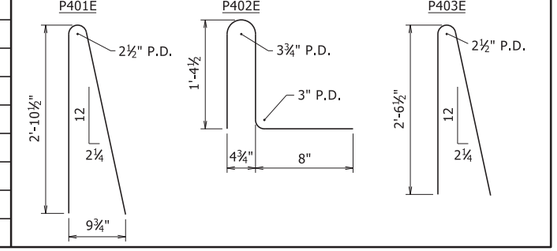
No Scale

TABLE OF VARIABLES

Closed Rail Panels			Open Rail Panels			
Panel Length	"D"	P4XXE Bar	Panel Length	"E"	"G"	P4XXE Bar
9'-6"	18	P404E	16'-0"	11	6'-0"	P406E
12'-0"	23	P405E	22'-0"	23	12'-0"	P407E

PARAPET BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAM
P401E	436	5'-10"	2½"	
P402E	472	3'-8"	3¾"	
P403E	48	5'-3"	2½"	
P404E	32	9'-2"	Str.	
P405E	64	11'-8"	Str.	
P406E	32	15'-8"	Str.	
P407E	16	21'-8"	Str.	



Note: Dimensions are out to out of bars. The first bar desingation number indicates the reinforcing bar size. Bars designated with an "E" suffix to be Epoxy Coated.

GENERAL NOTES

This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria.

For location of Full and Partial Depth Parapet Joints, see "REINFORCING PLAN AND POURING SEQUENCE" on Dwg. No. 61808.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:40 PM
BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
LOST CREEK

ROUTE SEC.

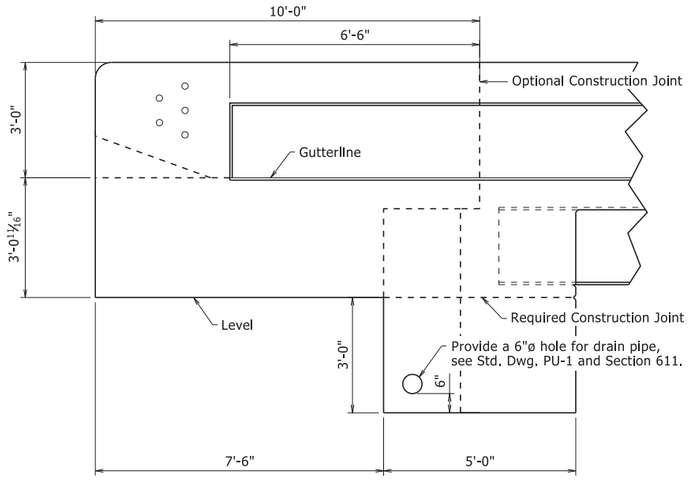
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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DESIGNED BY: JWP DATE: 12/2019

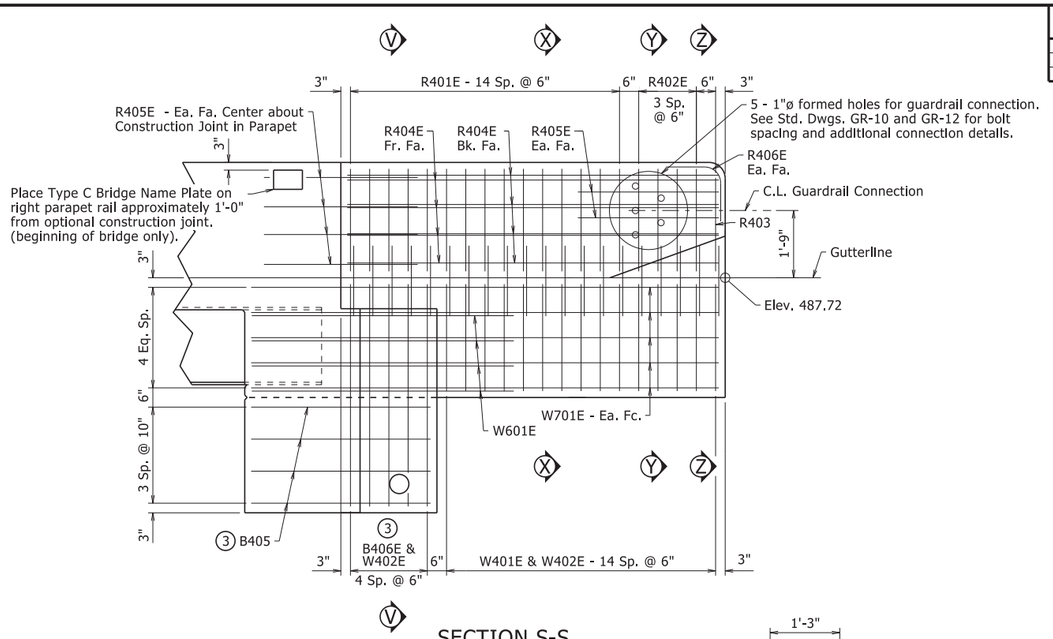
BRIDGE NO. 04947 DRAWING NO. 61802

PRINT DATE: 8/6/2020

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				JOB NO.		BR2605	54	83
				①		04947 - 120' UNIT - 61803		

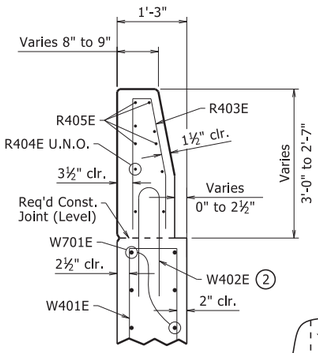


VIEW R-R
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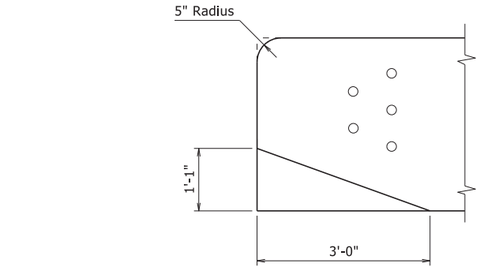


SECTION S-S
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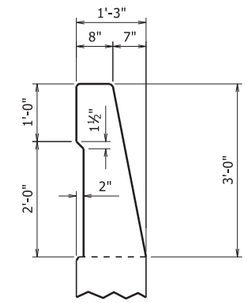
1. See Std. Dwgs. GR-10 & GR-12
2. See "DETAIL A" for placement of W402E bars.
3. See End Bent Details on Dwg. No. 61795 for reinforcing and additional details.



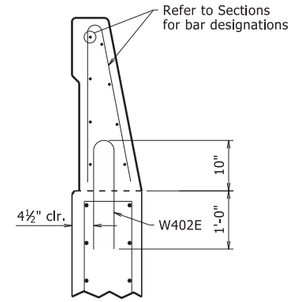
SECTION Z-Z
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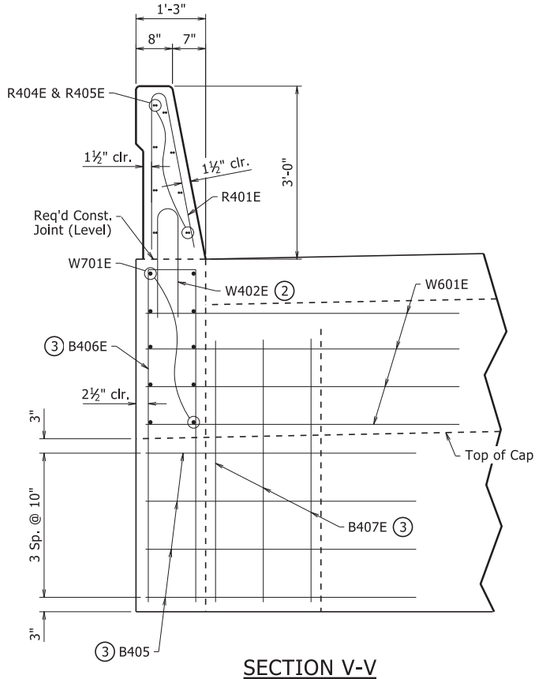
VERTICAL TAPER
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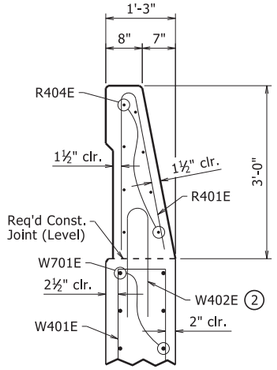
BACK OF RAIL OFFSET
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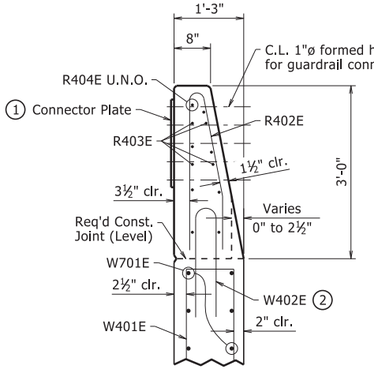
DETAIL A
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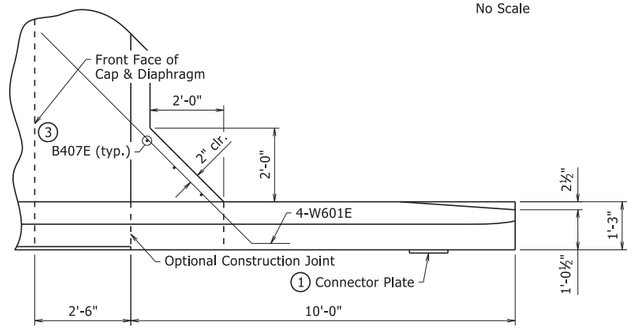
SECTION V-V
No Scale



SECTION X-X
No Scale



SECTION Y-Y
No Scale



PLAN OF RAIL
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:40 PM
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF
120'-0" INTEGRAL CONTINUOUS W-BEAM UNIT
LOST CREEK

ROUTE SEC.

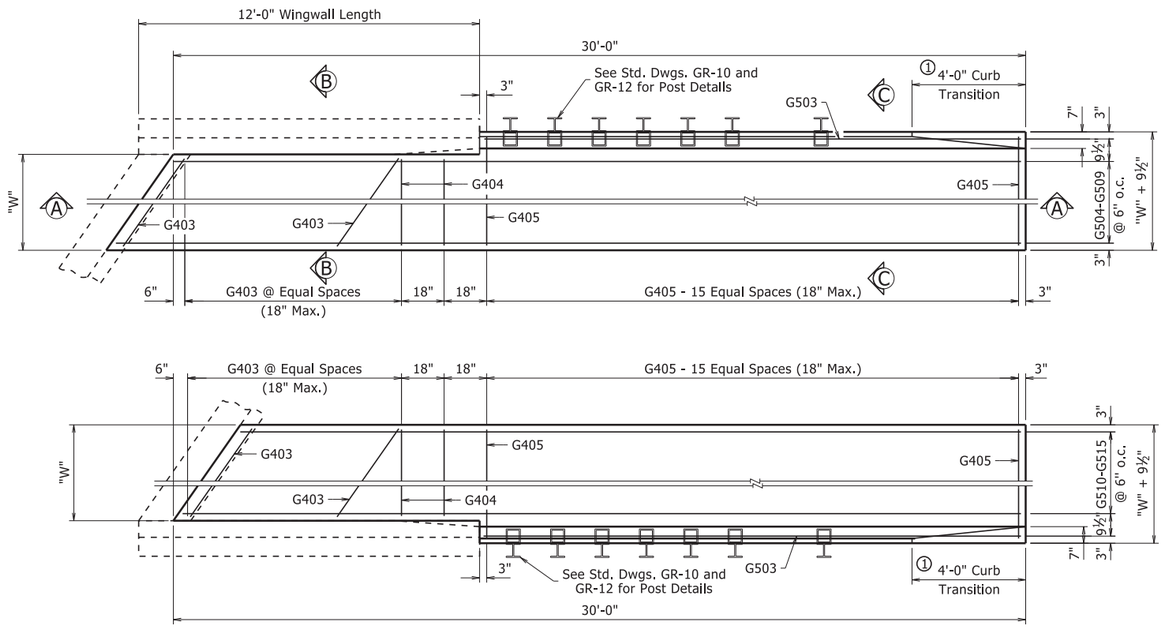
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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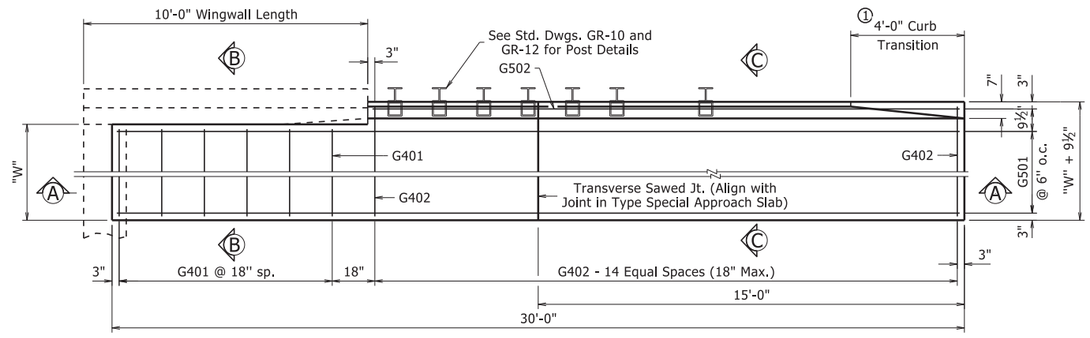
BRIDGE NO. 04947 DRAWING NO. 61803

PRINT DATE: 8/6/2020

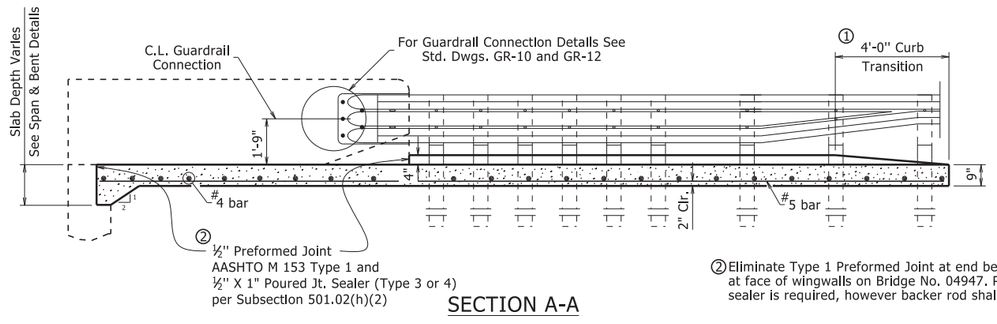
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				JOB NO.		BR2605	55	83
				① 04946 & 04947 - APPR. GUTTER - 61803A				



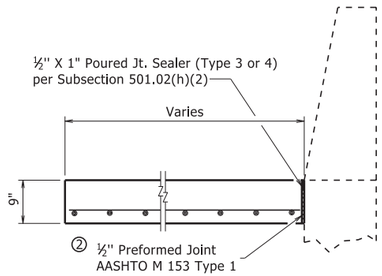
PLAN OF TYPE 1 SPECIAL APPROACH GUTTER



HALF PLAN OF TYPE 2 SPECIAL APPROACH GUTTER



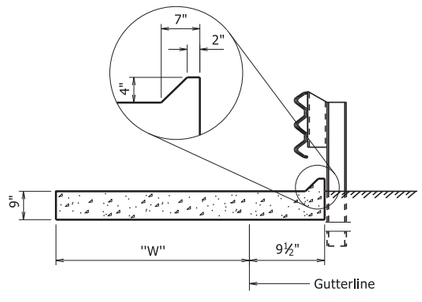
SECTION A-A



SECTION B-B
N.T.S.

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION C-C
N.T.S.

② Eliminate Type 1 Preformed Joint at end bent backwall and at face of wingwalls on Bridge No. 04947. Poured joint sealer is required, however backer rod shall be eliminated.

BAR LIST FOR ONE TYPE 1 SPECIAL APPROACH GUTTER

MARK	NO. REQ'D	LENGTH	P.D.
G403	6	3'-3"	Str.
G404	2	2'-8"	Str.
G405	16	3'-5"	Str.
G503	2	18'-10"	Str.
G504 - G509	1 EA	29'-10" - 31'-10"	Str.
G510 - G515	1 EA	27'-9" - 29'-4"	Str.

BAR LIST FOR ONE TYPE 2 SPECIAL APPROACH GUTTER

MARK	NO. REQ'D	LENGTH	P.D.
G401	6	2'-8"	Str.
G402	15	3'-5"	Str.
G501	6	29'-8"	Str.
G502	1	20'-8"	Str.

QUANTITIES FOR ONE TYPE 1 SPECIAL APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
3	285	3.11

QUANTITIES FOR ONE TYPE 2 SPECIAL APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
3	253	3.07

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.

All longitudinal lines within the limits of horizontal curves shall be on curves concentric to C.L. Bridge. Adjustment to longitudinal bar lengths may be required. Transverse reinforcing shall be placed on radial lines to C.L. Bridge.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:40 PM
BRIDGE ENGINEER

DETAILS OF TYPE 1 & 2 SPECIAL APPROACH GUTTERS

County Road 63

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MCB DATE: 05/15/2020 FILENAME: bbr2605_ag.dgn
CHECKED BY: CMW DATE: 06/05/2020 SCALE: No Scale
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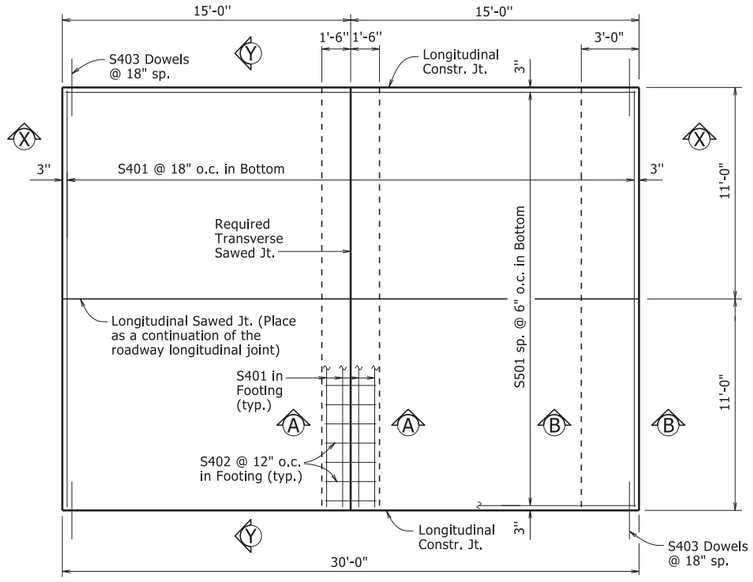
BRIDGE NO. 04946 & 04947 DRAWING NO. 61803A

PRINT DATE: 8/6/2020

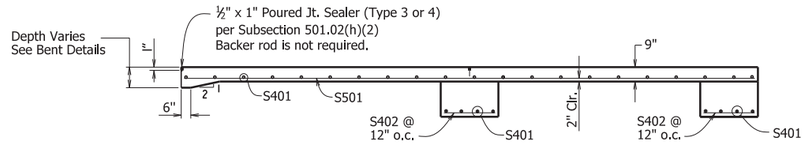
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				6	ARK.			
				JOB NO.		BR2605	56	83

(1) 04947 - TYPE SPECIAL APPROACH SLAB - 61803B

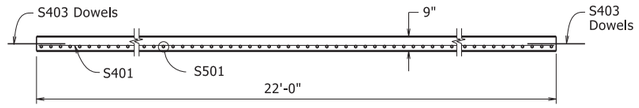
Notes:
The surface finish for Approach Slabs shall match that used on the bridge deck.



PLAN
No Scale



SECTION X-X
No Scale



SECTION Y-Y
No Scale

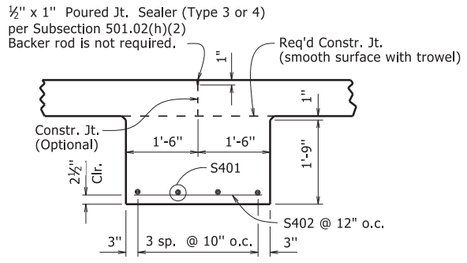
BAR LIST FOR ONE TYPE SPECIAL APPROACH SLAB

Mark	No. Req'd	Length
S401	30	21'-8"
S402	44	2'-8"
S403	40	3'-0"
S501	44	29'-8"

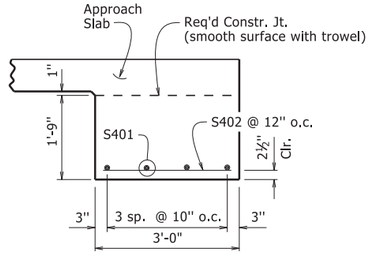
TABLE OF QUANTITIES FOR TYPE SPECIAL APPROACH SLAB

(FOR INFORMATION ONLY)

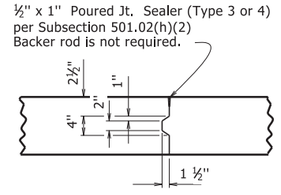
Slab Width	Reinforcing Steel	Concrete
	(Lbs.)	(Cu. Yds.)
22'-0"	1955	27.30



SECTION A-A
No Scale



SECTION B-B
No Scale



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
No Scale

GENERAL NOTES

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

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

Aug 6 2020 9:41 PM
Charles R. Ellis
BRIDGE ENGINEER
DocuSign

DETAILS OF TYPE SPECIAL APPROACH SLAB

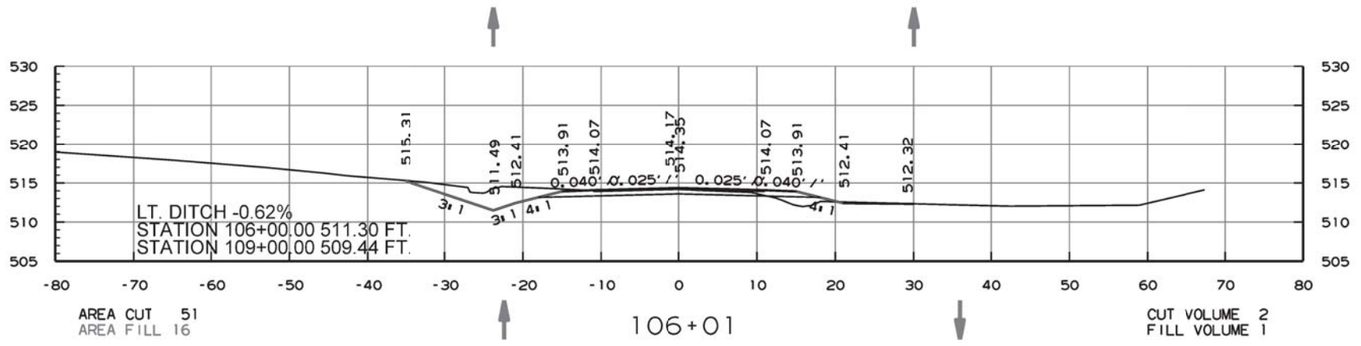
ROUTE SEC.

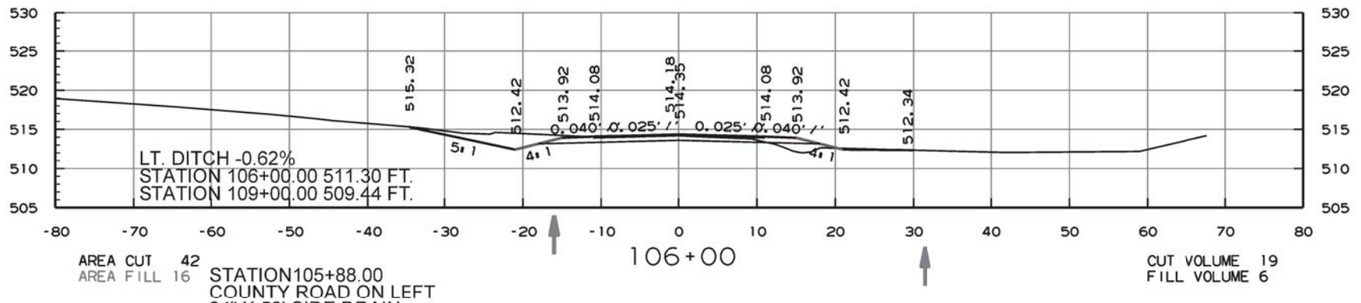
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: CMW DATE: 7/10/2020 FILENAME: bbr2605_as.dgn
CHECKED BY: SWP DATE: 7/15/2020 SCALE: As Shown
DESIGNED BY: STD DATE:

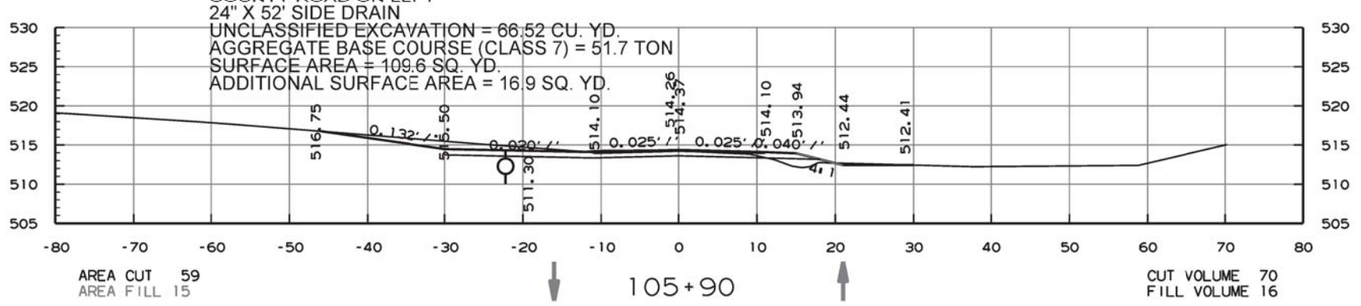
BRIDGE NO. 04947 DRAWING NO. 61803B

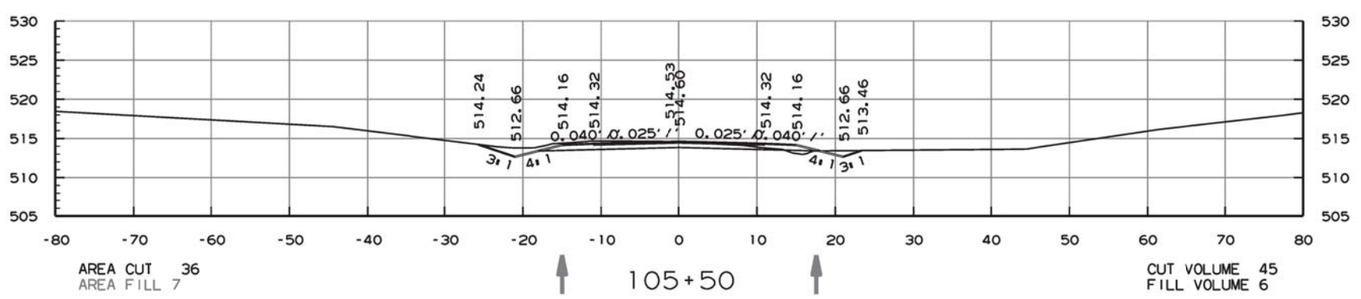
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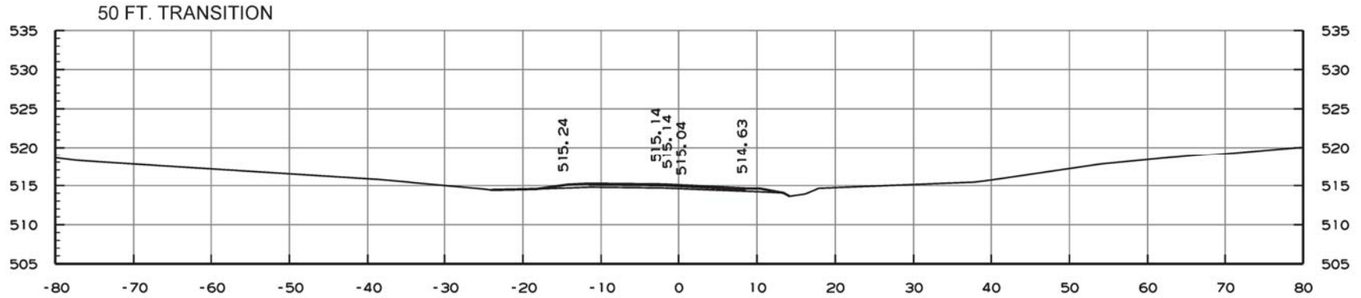


STATION105+88.00
COUNTY ROAD ON LEFT
24" X 52' SIDE DRAIN
UNCLASSIFIED EXCAVATION = 66.52 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 51.7 TON
SURFACE AREA = 109.6 SQ. YD.
ADDITIONAL SURFACE AREA = 16.9 SQ. YD.

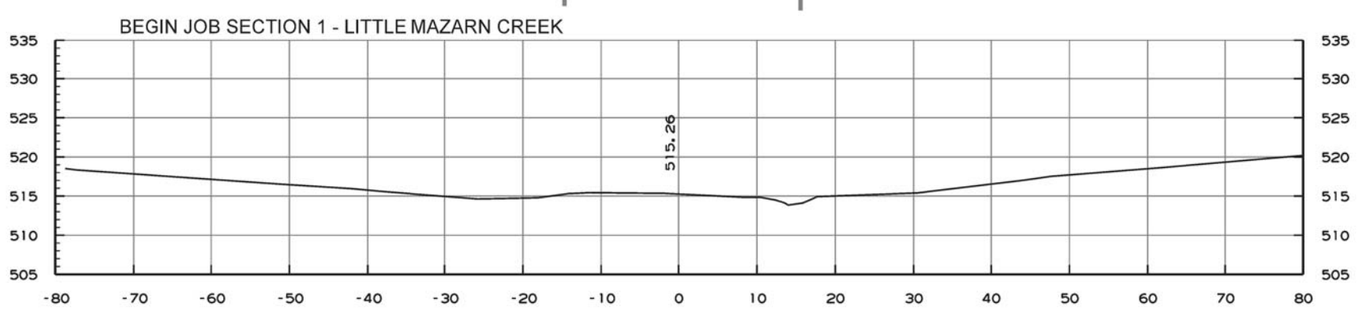




50 FT. TRANSITION



BEGIN JOB SECTION 1 - LITTLE MAZARN CREEK

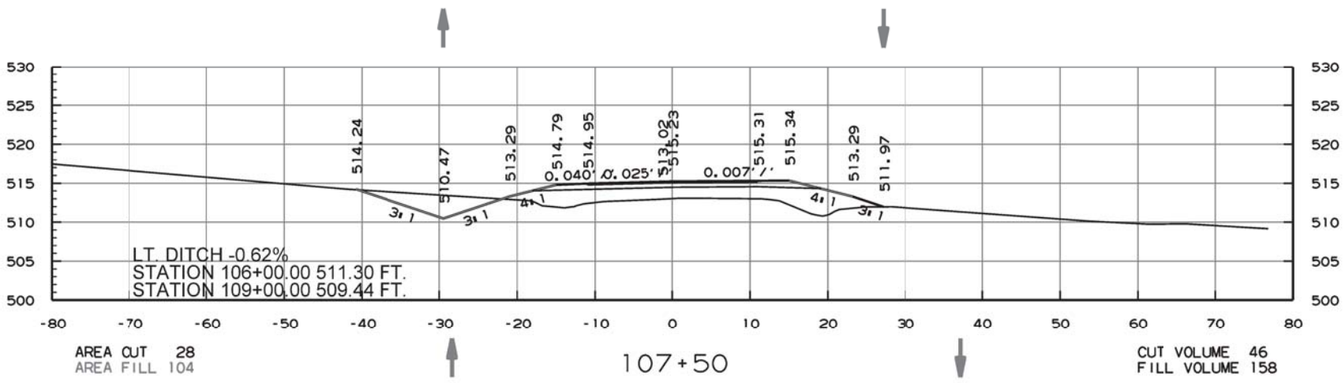


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		57	83

4 SECTION 1 - CROSS SECTIONS

JOB NO. BR2605

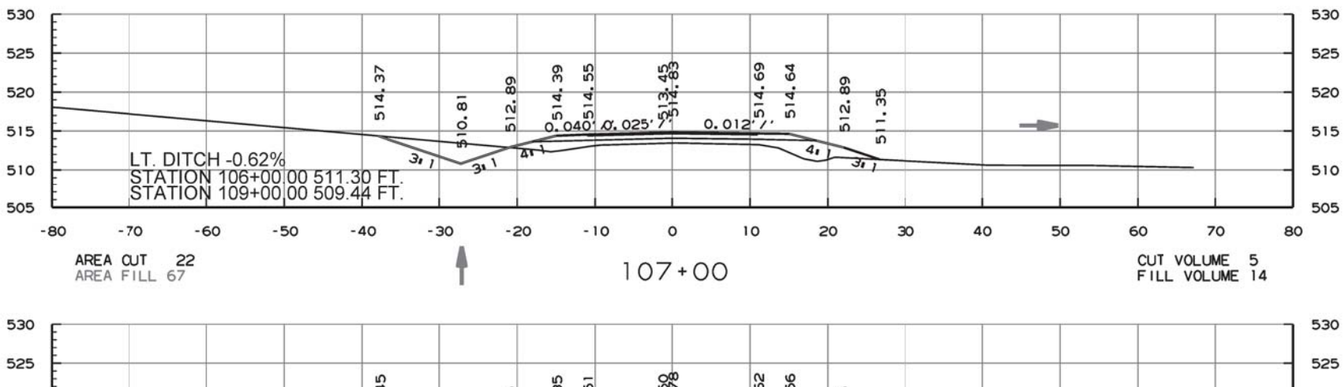
STA. 104+87 TO STA. 106+01



AREA CUT 28
AREA FILL 104

107+50

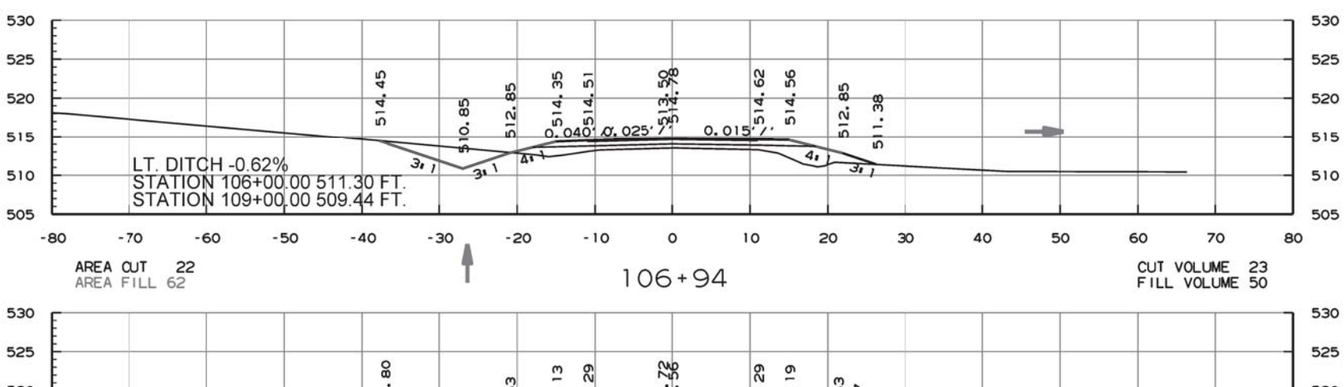
CUT VOLUME 46
FILL VOLUME 158



AREA CUT 22
AREA FILL 67

107+00

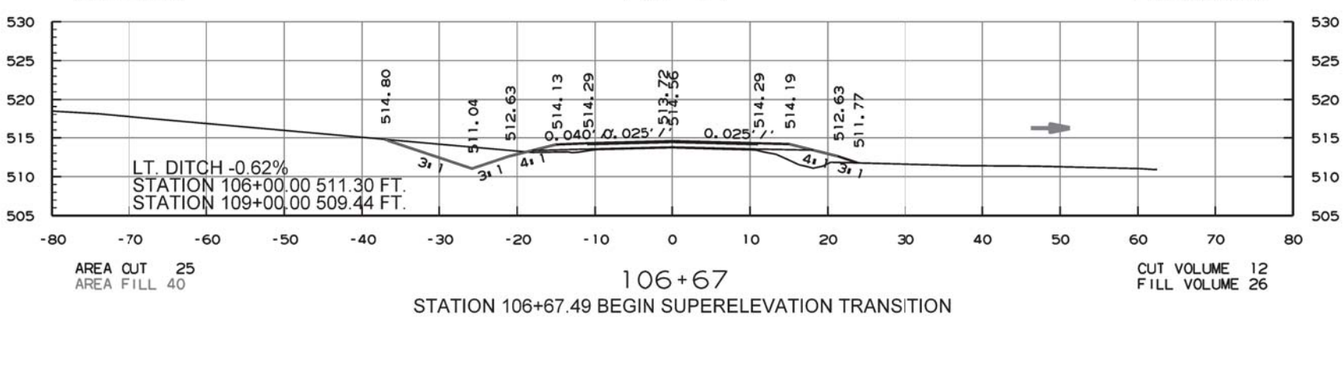
CUT VOLUME 5
FILL VOLUME 14



AREA CUT 22
AREA FILL 62

106+94

CUT VOLUME 23
FILL VOLUME 50



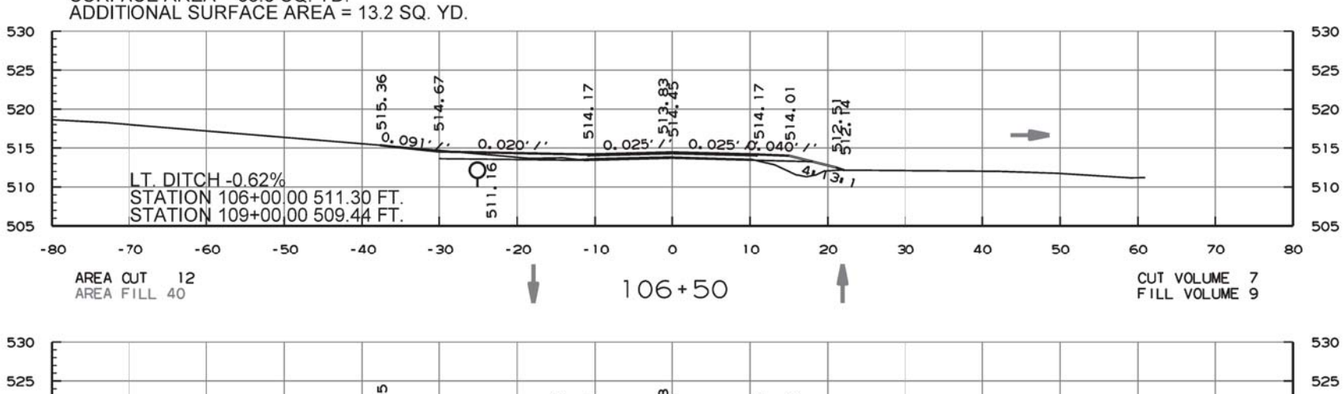
AREA CUT 25
AREA FILL 40

106+67

CUT VOLUME 12
FILL VOLUME 26

STATION 106+67.49 BEGIN SUPERELEVATION TRANSITION

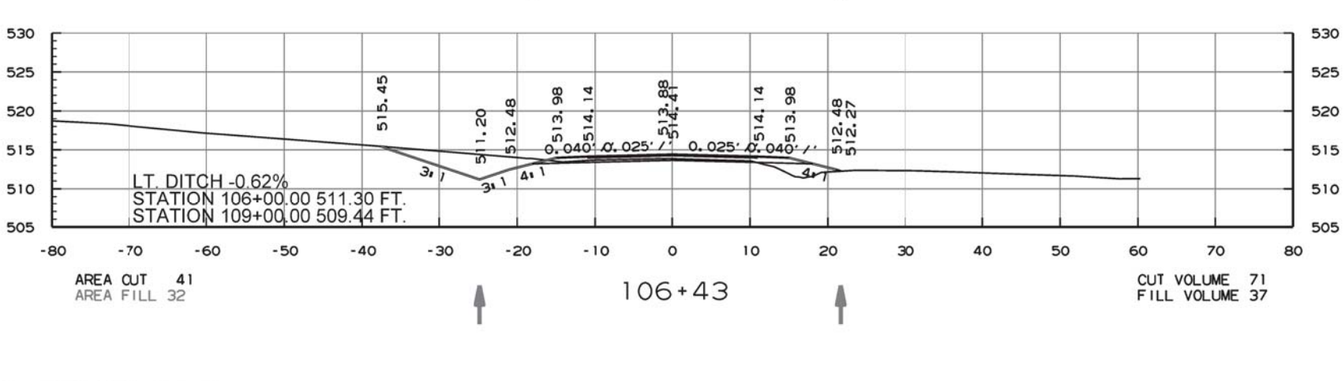
STATION 106+53.00
DRIVEWAY ON LEFT
24" X 41' SIDE DRAIN
UNCLASSIFIED EXCAVATION = 20.64 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 31.3 TON
SURFACE AREA = 63.5 SQ. YD.
ADDITIONAL SURFACE AREA = 13.2 SQ. YD.



AREA CUT 12
AREA FILL 40

106+50

CUT VOLUME 7
FILL VOLUME 9



AREA CUT 41
AREA FILL 32

106+43

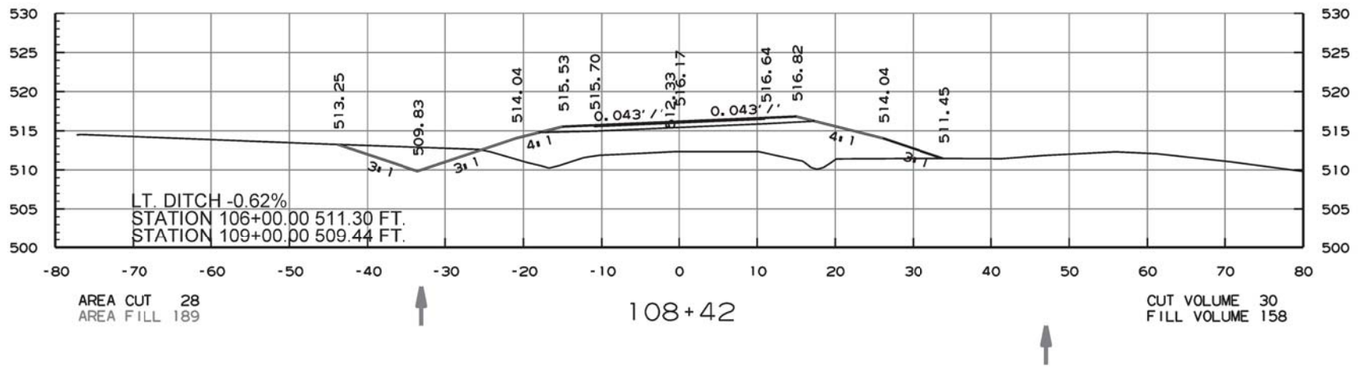
CUT VOLUME 71
FILL VOLUME 37

SECTION 1 - CROSS SECTIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		58	83

JOB NO. BR2605

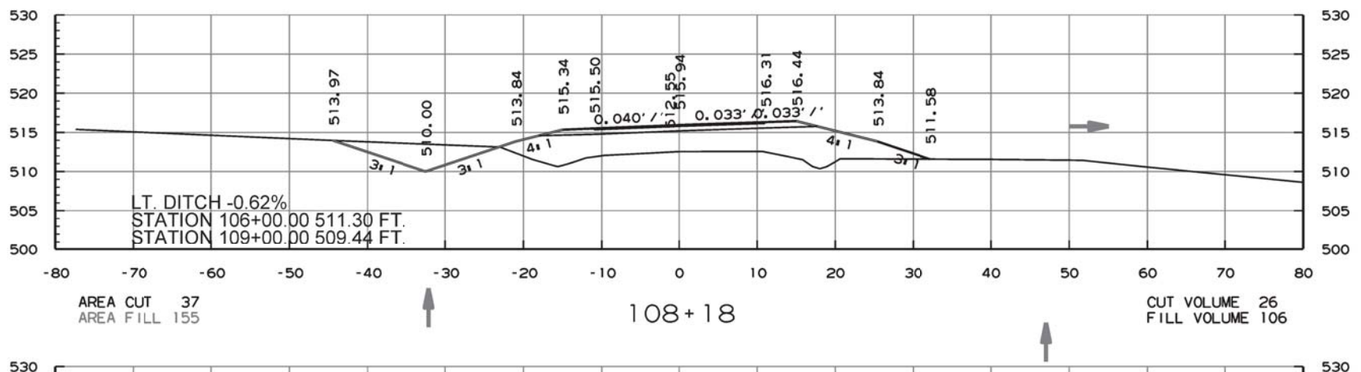
STA. 106+43 TO STA. 107+50



AREA CUT 28
AREA FILL 189

108+42

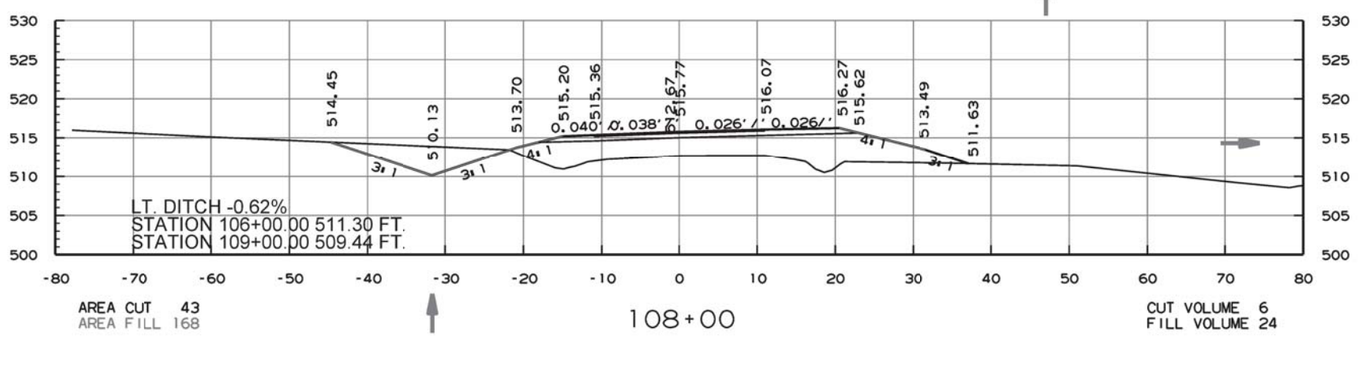
CUT VOLUME 30
FILL VOLUME 158



AREA CUT 37
AREA FILL 155

108+18

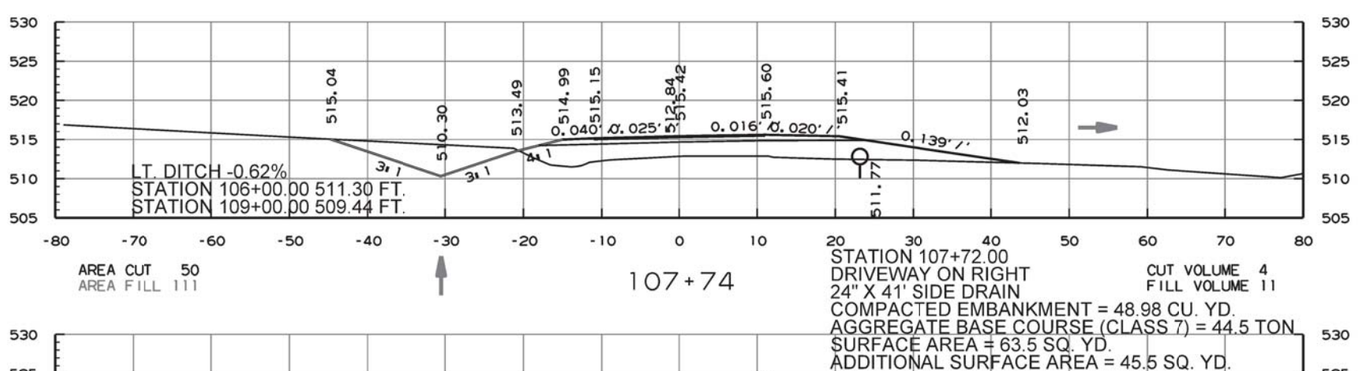
CUT VOLUME 26
FILL VOLUME 106



AREA CUT 43
AREA FILL 168

108+00

CUT VOLUME 6
FILL VOLUME 24

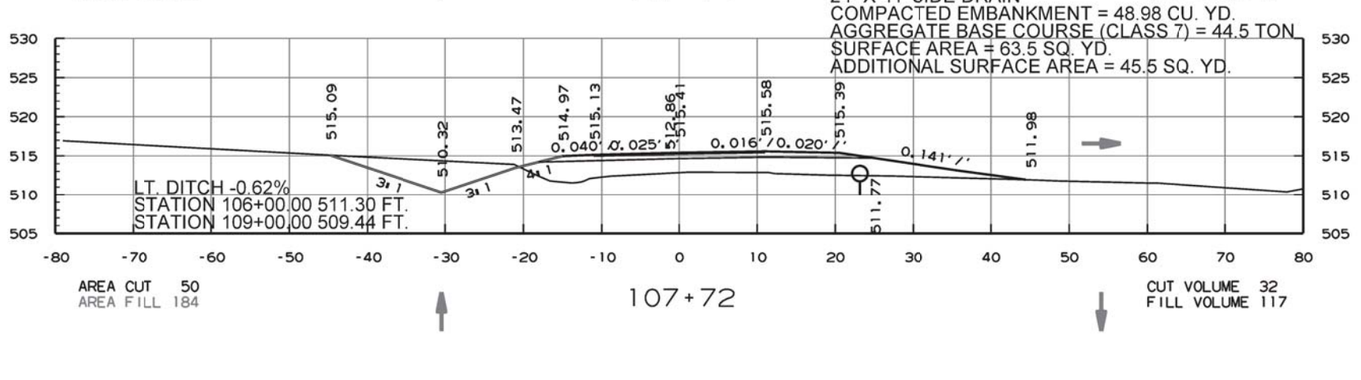


AREA CUT 50
AREA FILL 111

107+74

STATION 107+72.00
DRIVEWAY ON RIGHT
24" X 41' SIDE DRAIN
COMPACTED EMBANKMENT = 48.98 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 44.5 TON
SURFACE AREA = 63.5 SQ. YD.
ADDITIONAL SURFACE AREA = 45.5 SQ. YD.

CUT VOLUME 4
FILL VOLUME 11



AREA CUT 50
AREA FILL 184

107+72

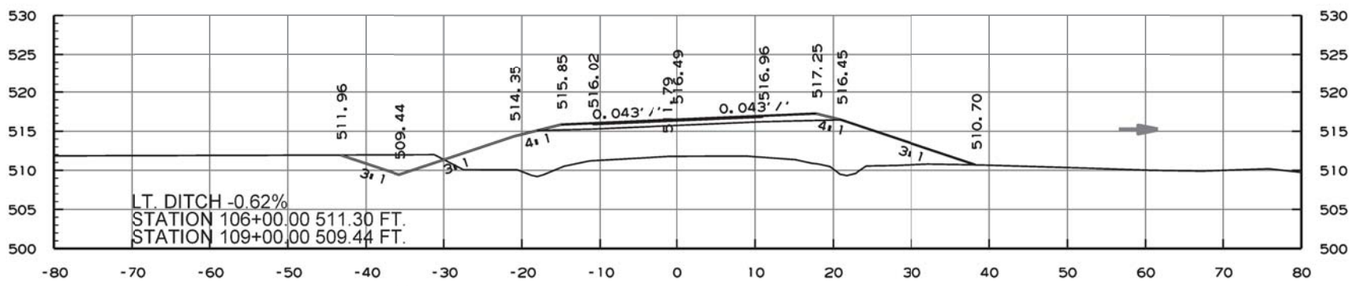
CUT VOLUME 32
FILL VOLUME 117

SECTION 1 - CROSS SECTIONS

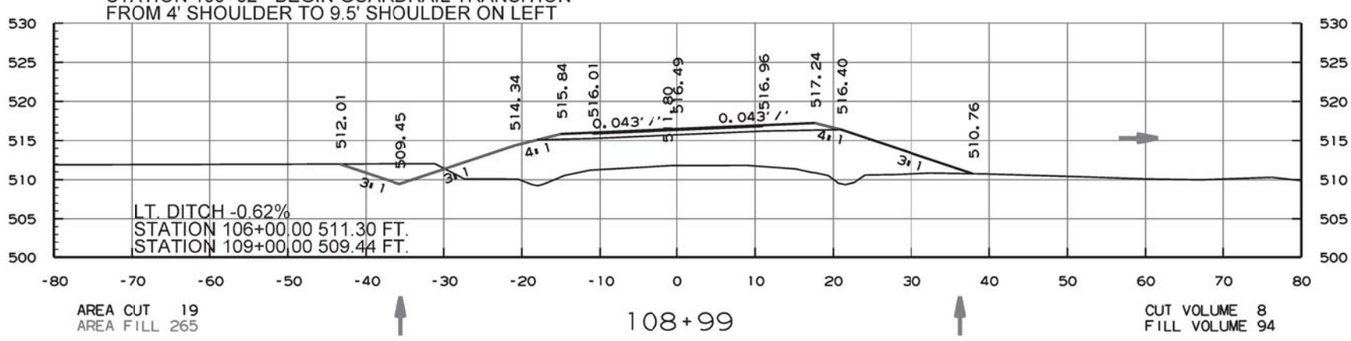
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				6	ARK.		59	83

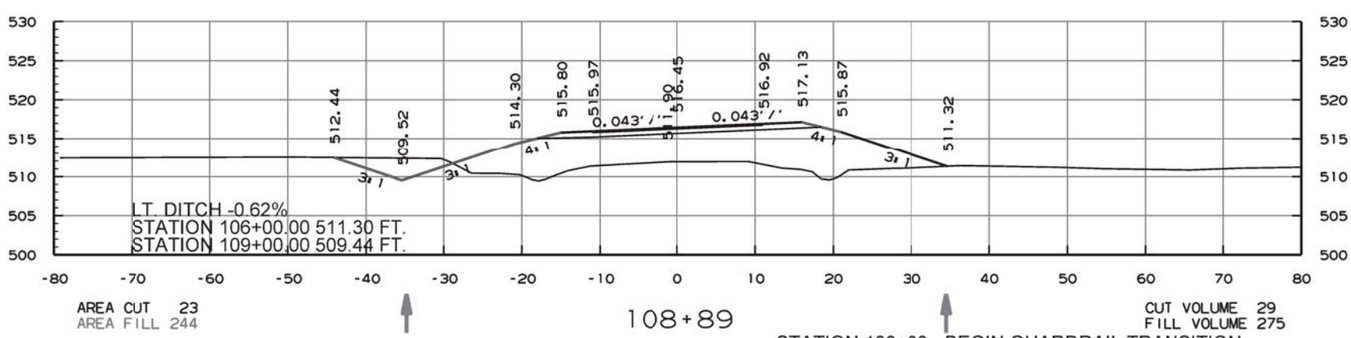
JOB NO. BR2605

STA. 107+72 TO STA. 108+42

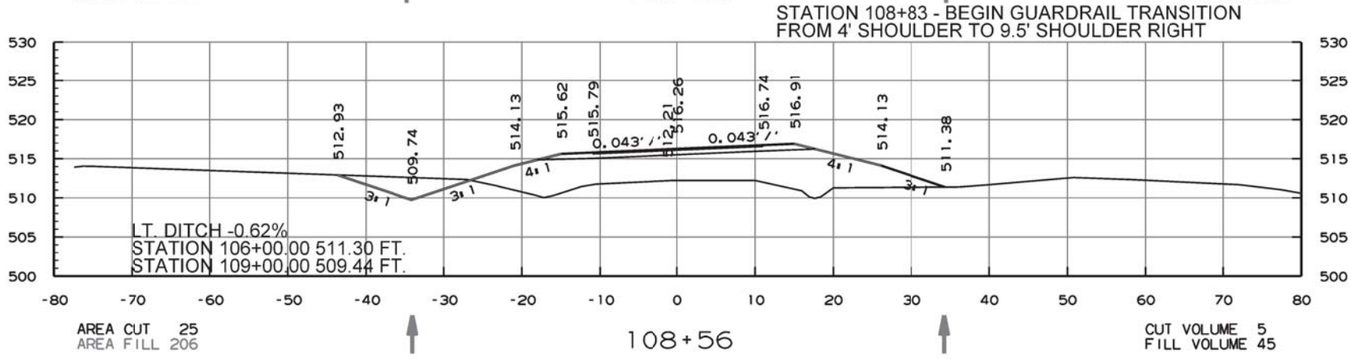


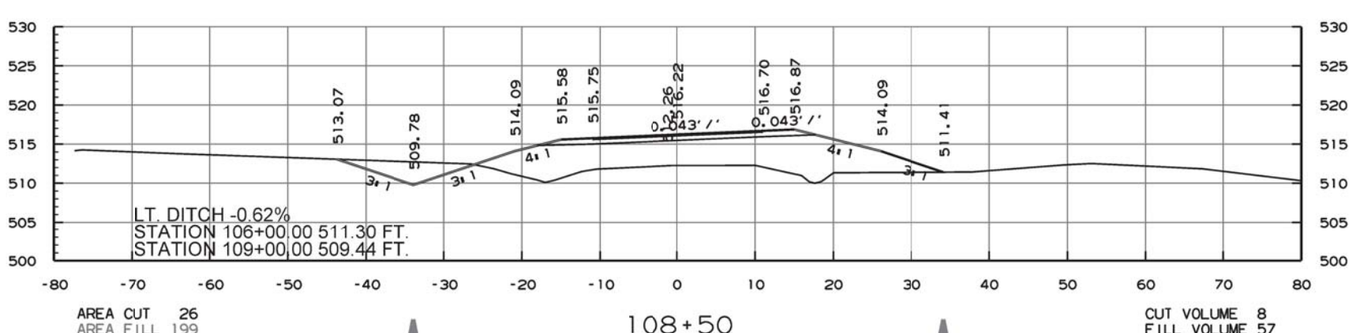
STATION 109+02 - BEGIN GUARDRAIL TRANSITION
FROM 4' SHOULDER TO 9.5' SHOULDER ON LEFT





STATION 108+83 - BEGIN GUARDRAIL TRANSITION
FROM 4' SHOULDER TO 9.5' SHOULDER RIGHT



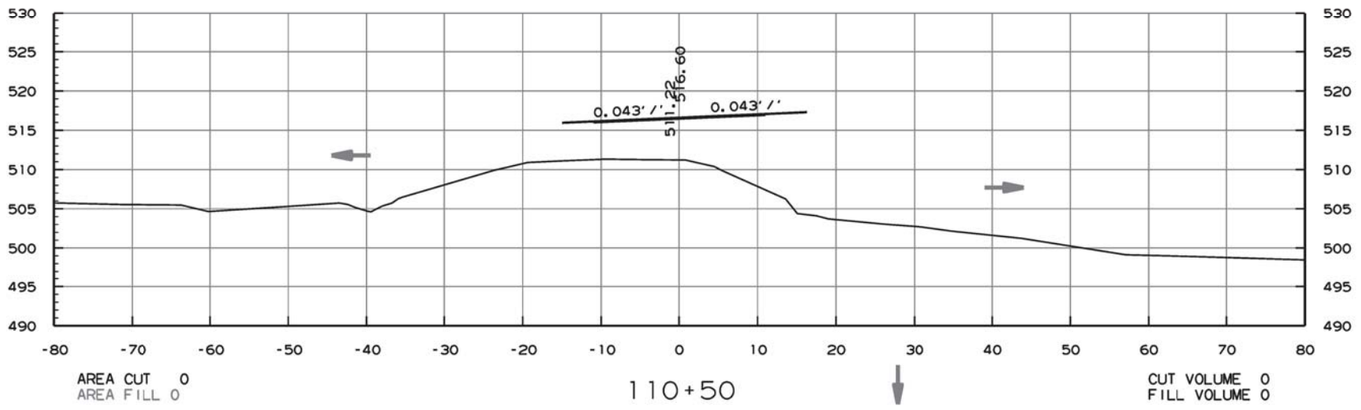


STA. 108+50 TO STA. 109+00

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				BR2605	60	83

DESIGN NO.	JOB NO.	STATE
6		ARK.

4 SECTION 1 - CROSS SECTIONS

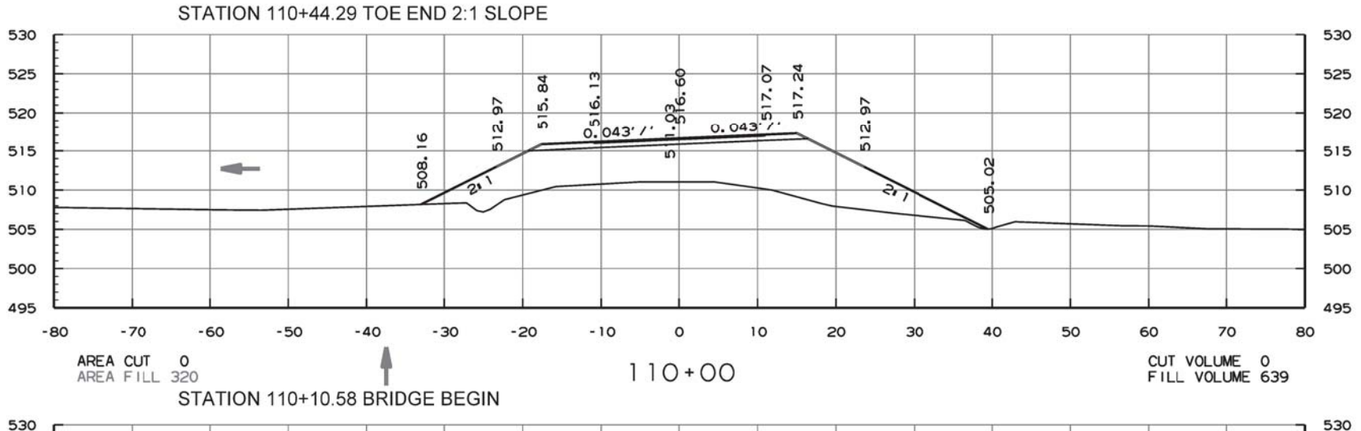


AREA CUT 0
AREA FILL 0

110+50

CUT VOLUME 0
FILL VOLUME 0

STATION 110+44.29 TOE END 2:1 SLOPE

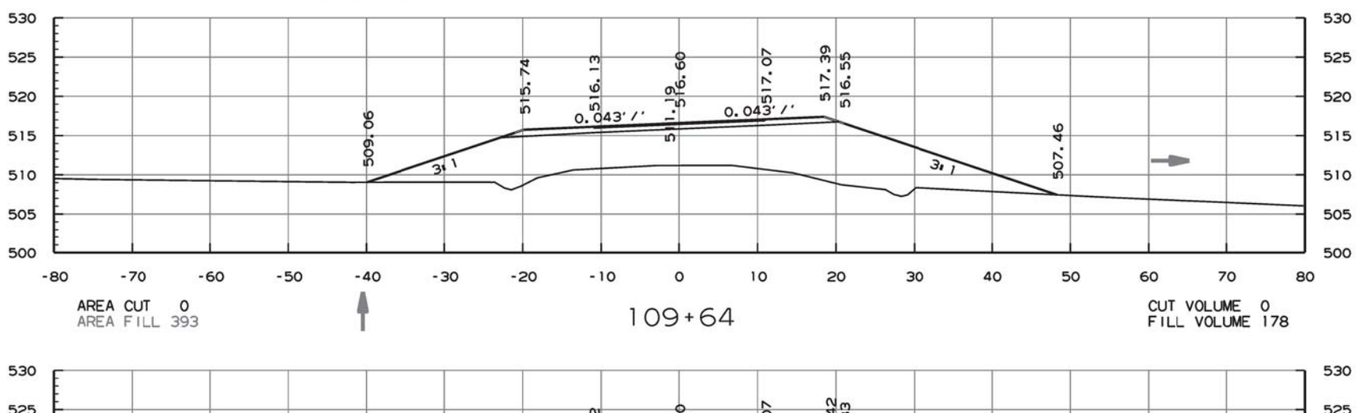


AREA CUT 0
AREA FILL 320

110+00

CUT VOLUME 0
FILL VOLUME 639

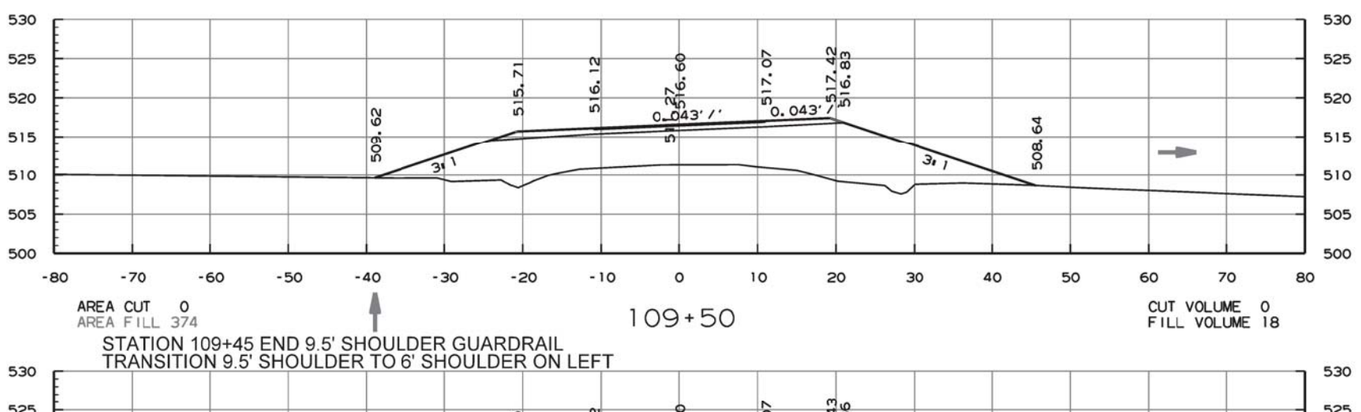
STATION 110+10.58 BRIDGE BEGIN



AREA CUT 0
AREA FILL 393

109+64

CUT VOLUME 0
FILL VOLUME 178

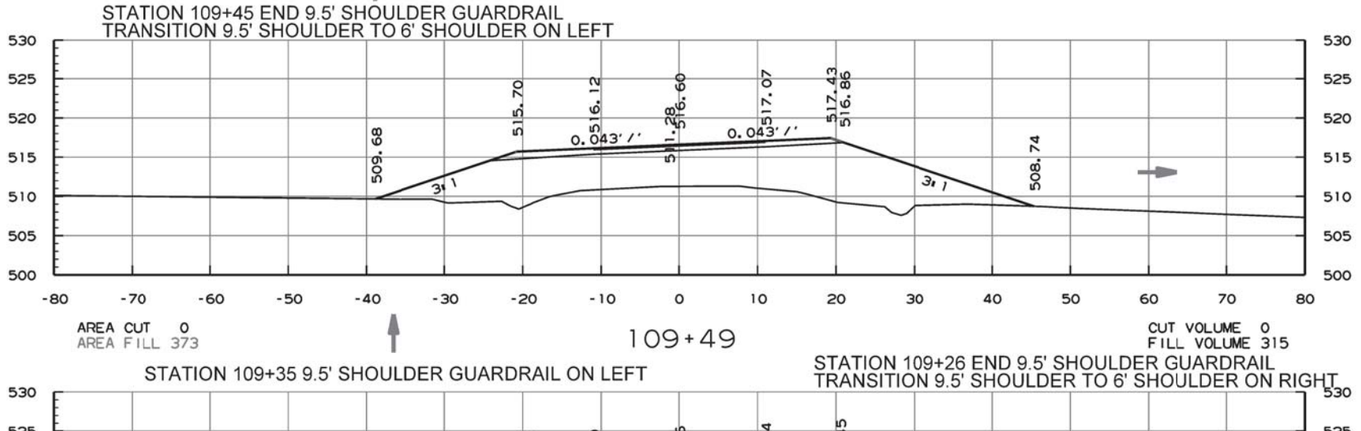


AREA CUT 0
AREA FILL 374

109+50

CUT VOLUME 0
FILL VOLUME 18

STATION 109+45 END 9.5' SHOULDER GUARDRAIL
TRANSITION 9.5' SHOULDER TO 6' SHOULDER ON LEFT



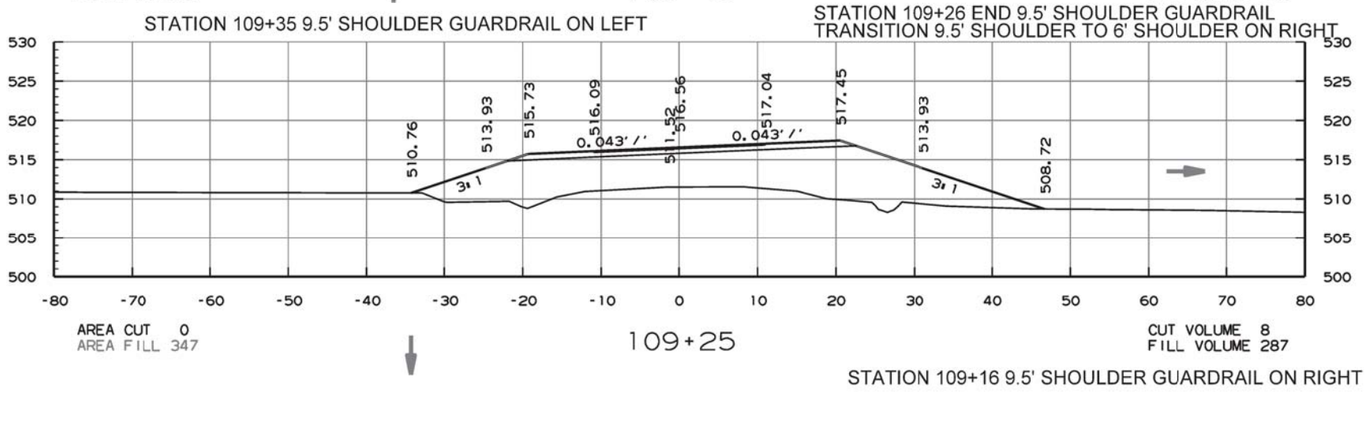
AREA CUT 0
AREA FILL 373

109+49

CUT VOLUME 0
FILL VOLUME 315

STATION 109+35 9.5' SHOULDER GUARDRAIL ON LEFT

STATION 109+26 END 9.5' SHOULDER GUARDRAIL
TRANSITION 9.5' SHOULDER TO 6' SHOULDER ON RIGHT



AREA CUT 0
AREA FILL 347

109+25

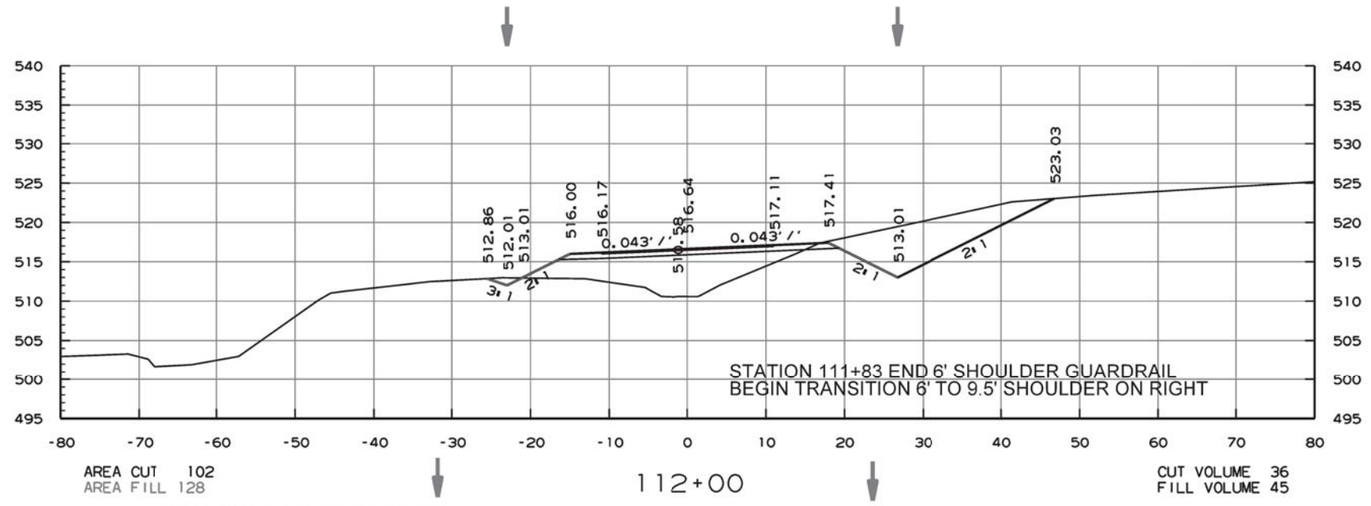
CUT VOLUME 8
FILL VOLUME 287

STATION 109+16 9.5' SHOULDER GUARDRAIL ON RIGHT

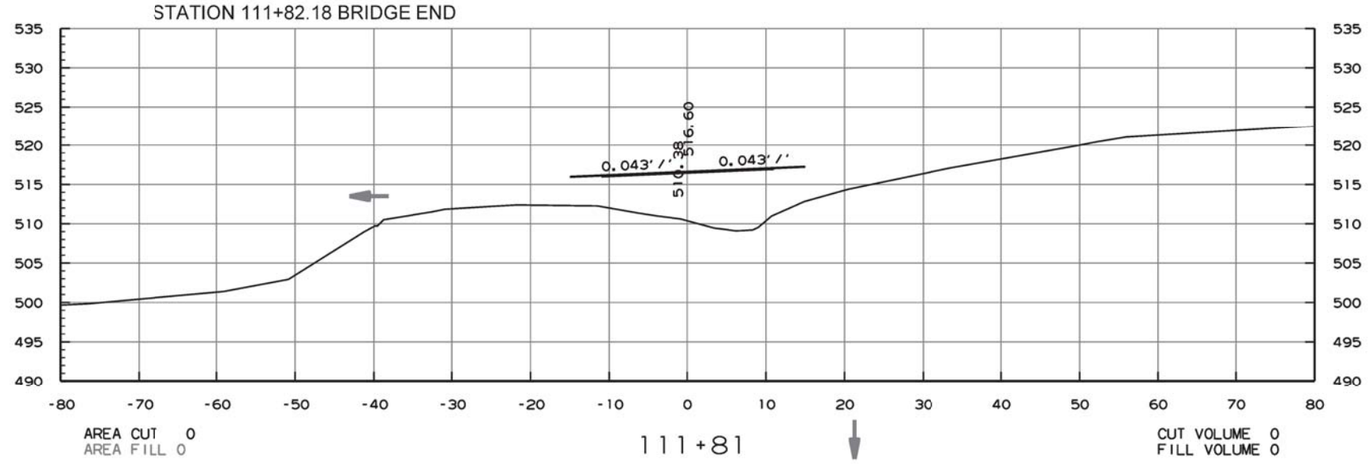
SECTION 1 - CROSS SECTIONS

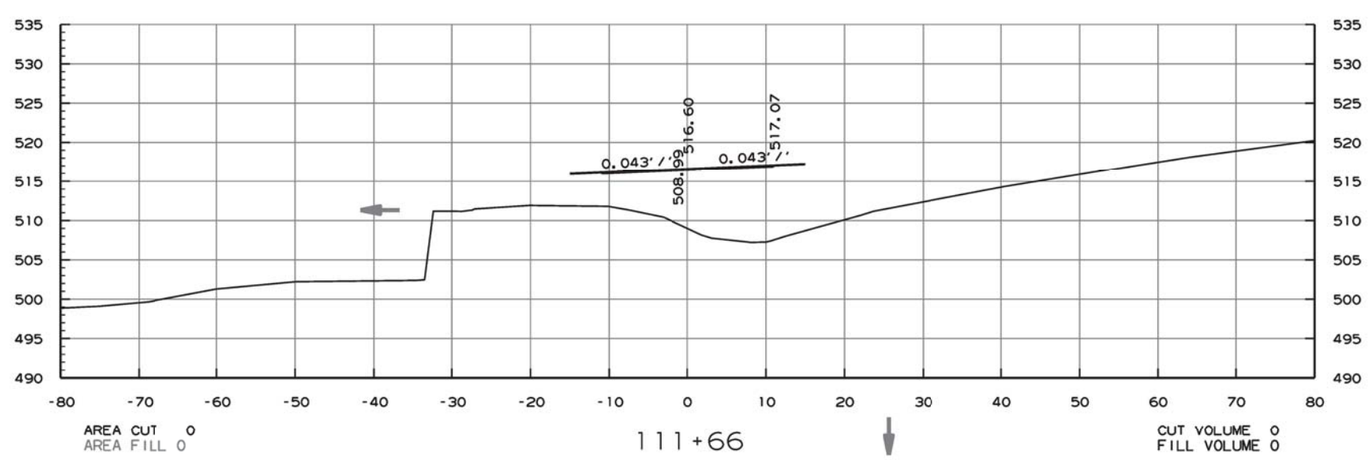
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				6	ARK.		61	83
				JOB NO.		BR2605		

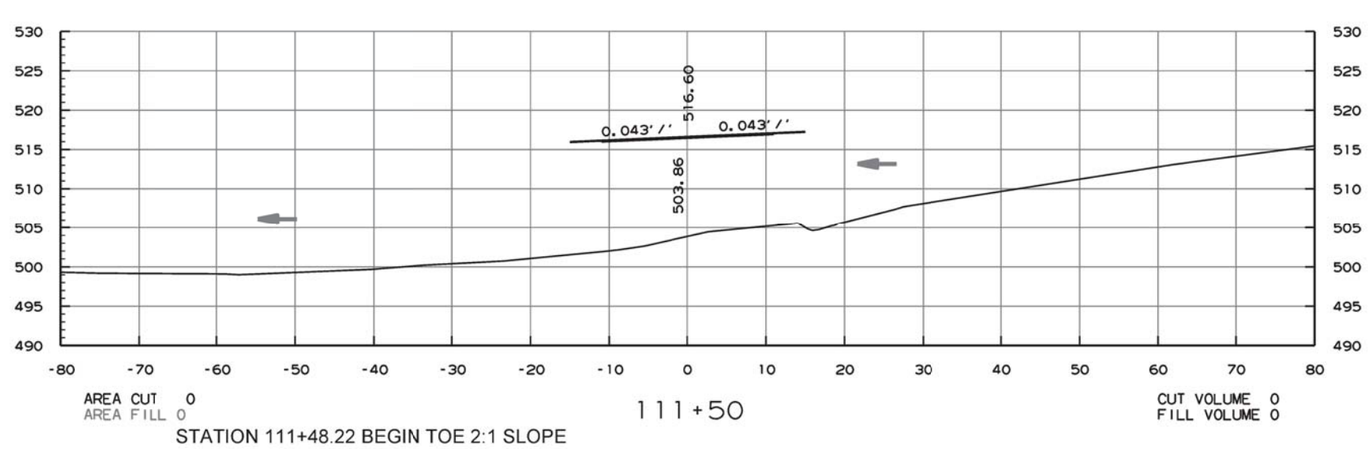
STA. 109+25 TO STA. 110+50



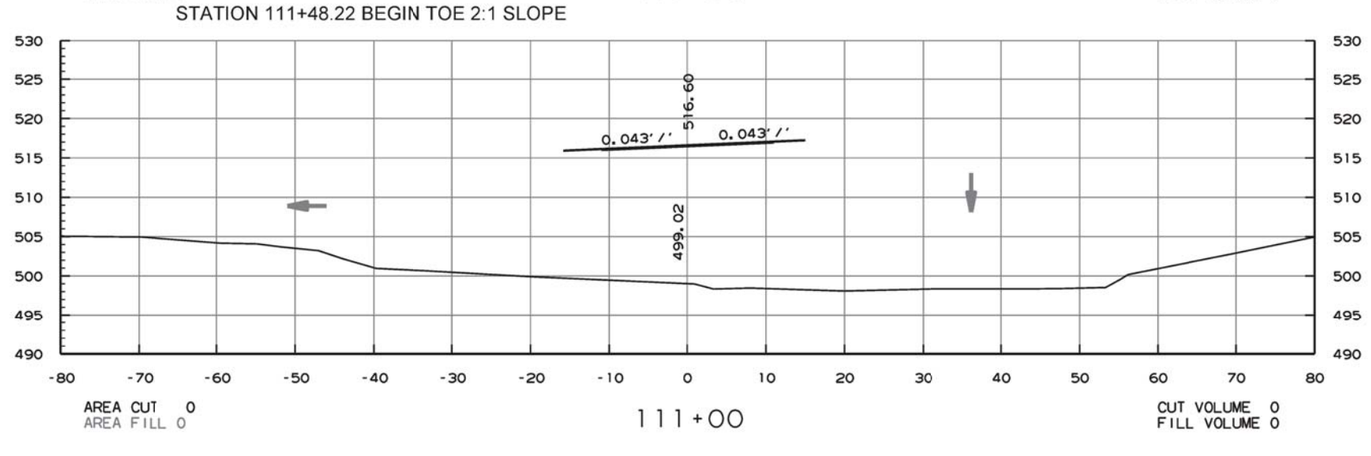
STATION 111+82.18 BRIDGE END







STATION 111+48.22 BEGIN TOE 2:1 SLOPE

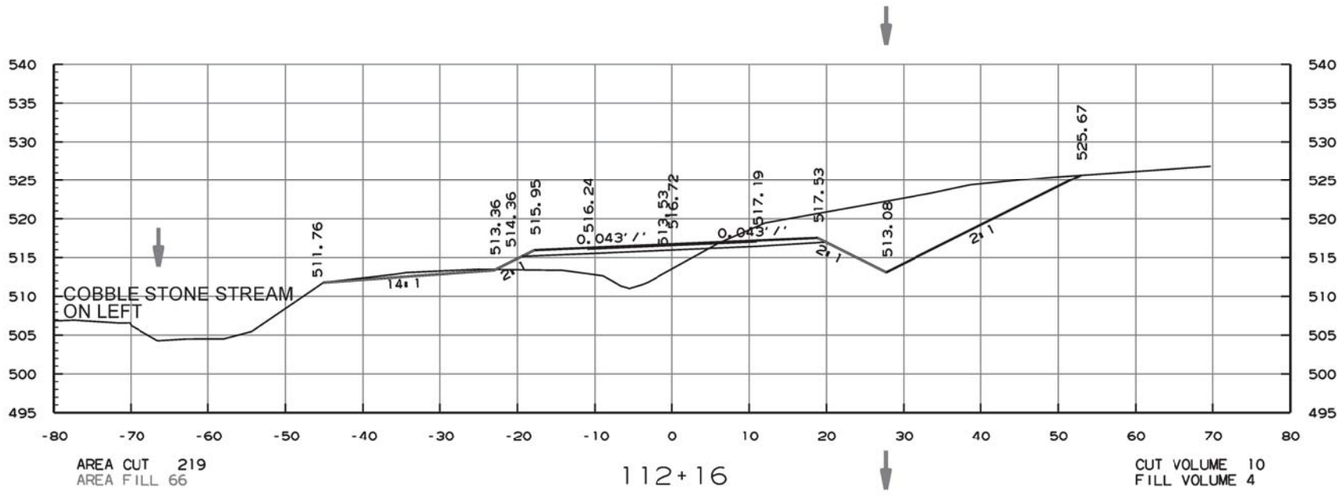


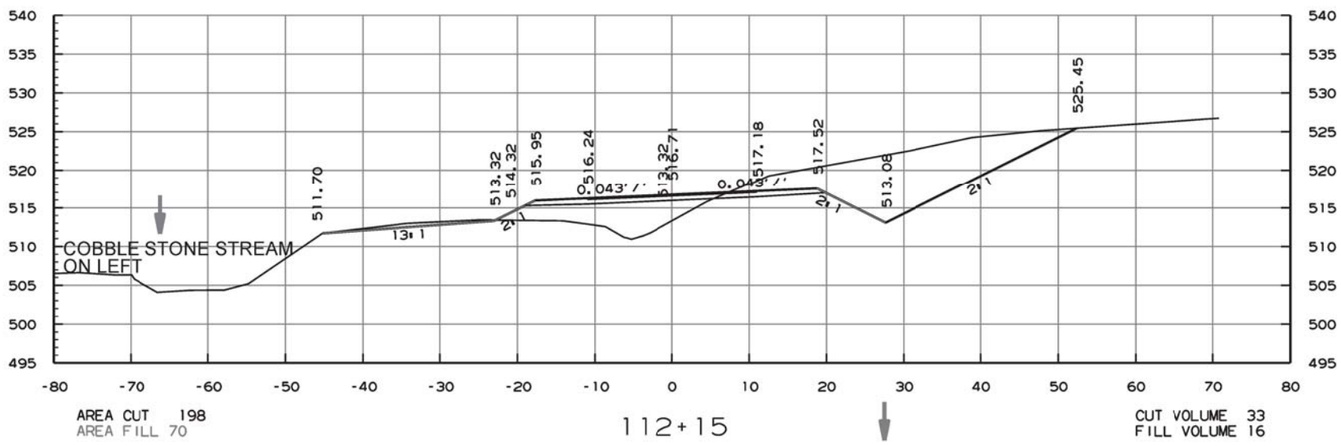
4 SECTION 1 - CROSS SECTIONS

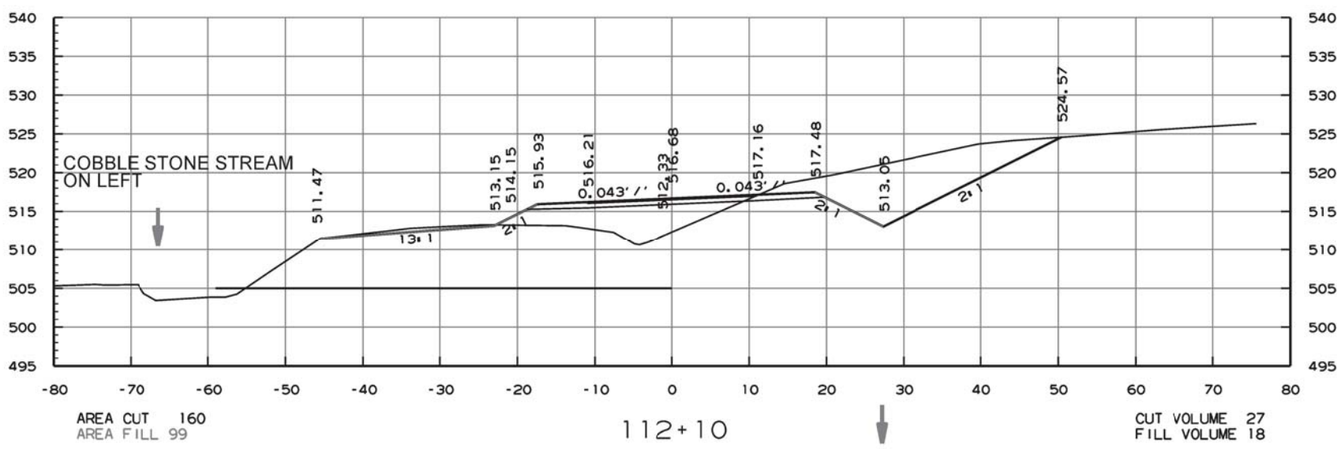
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	62	83

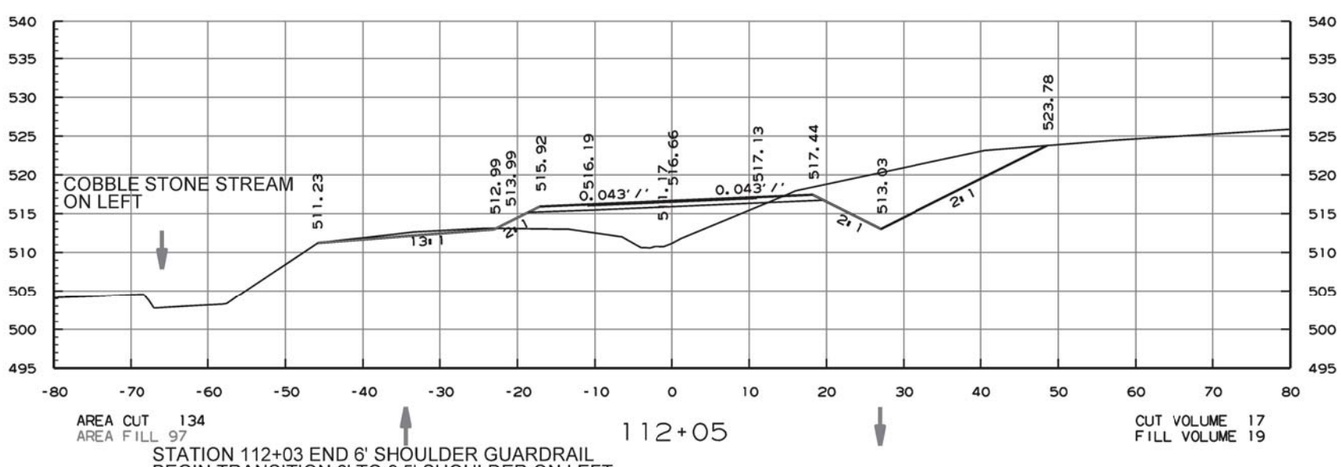
JOB NO.

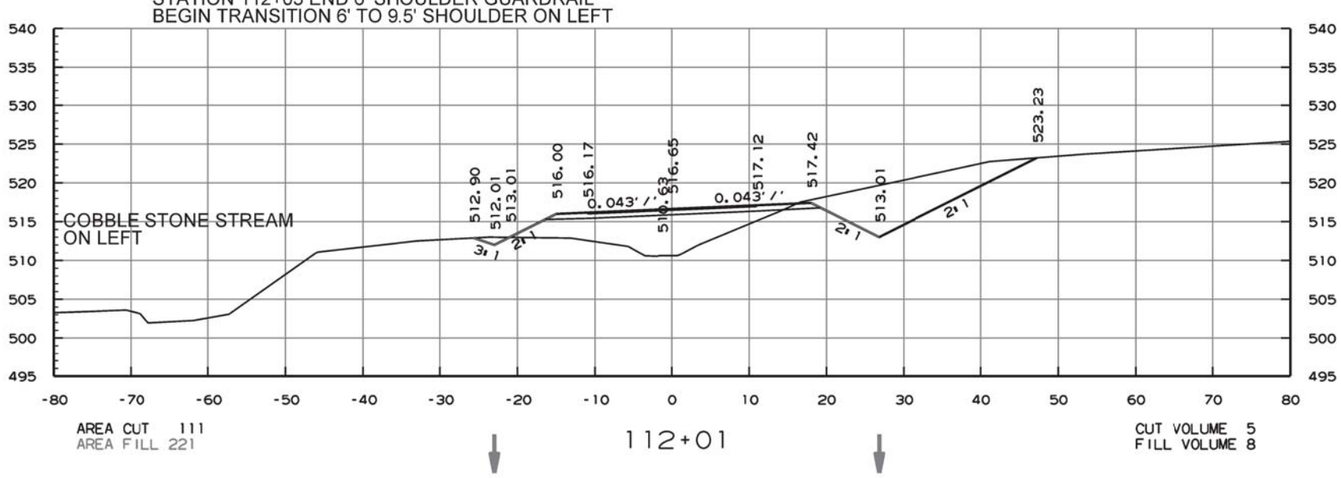
STA. 111+00 TO STA. 112+00







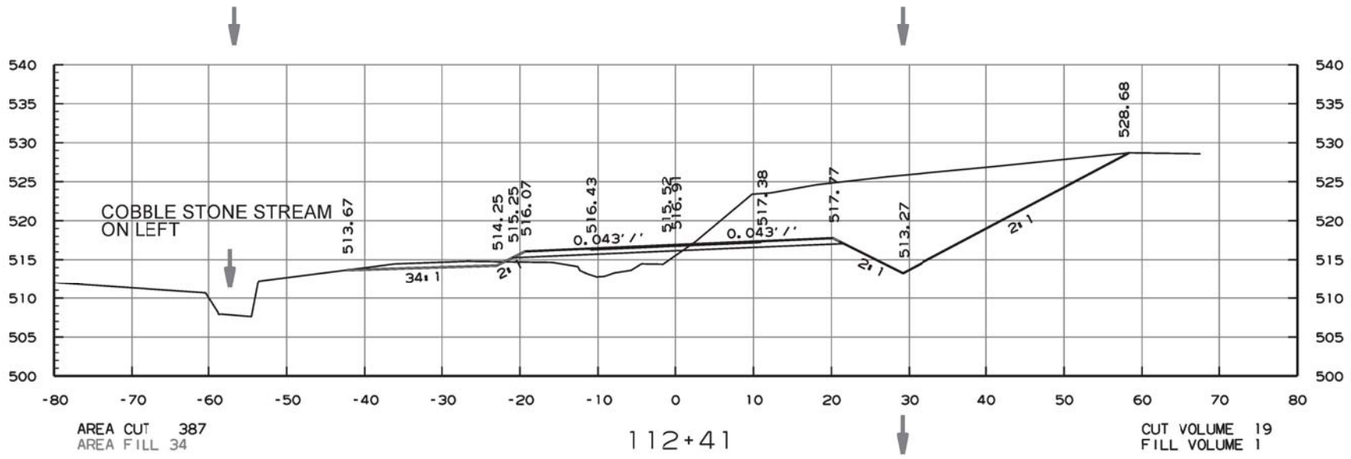


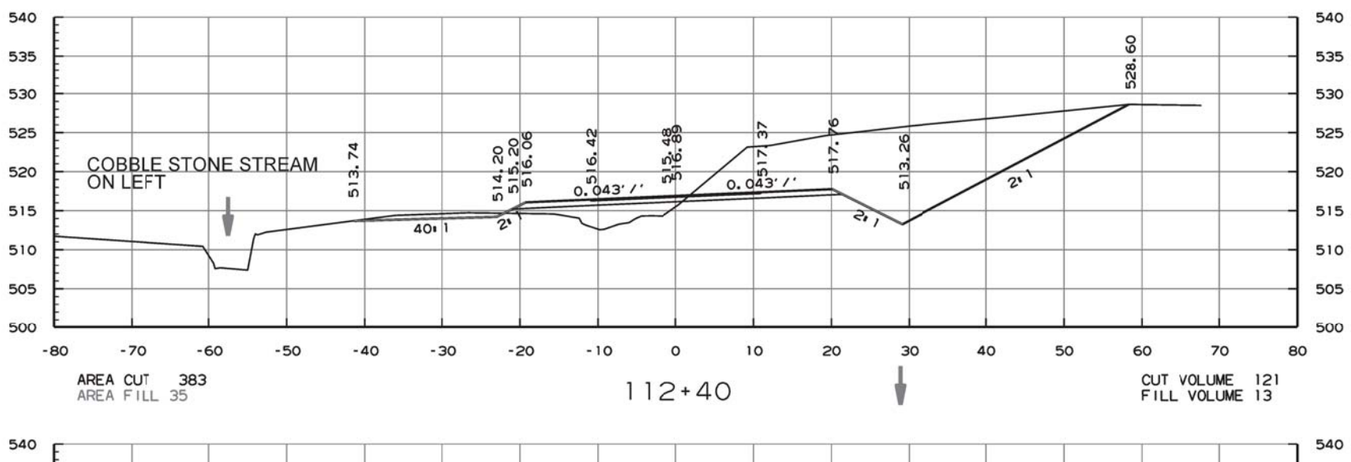


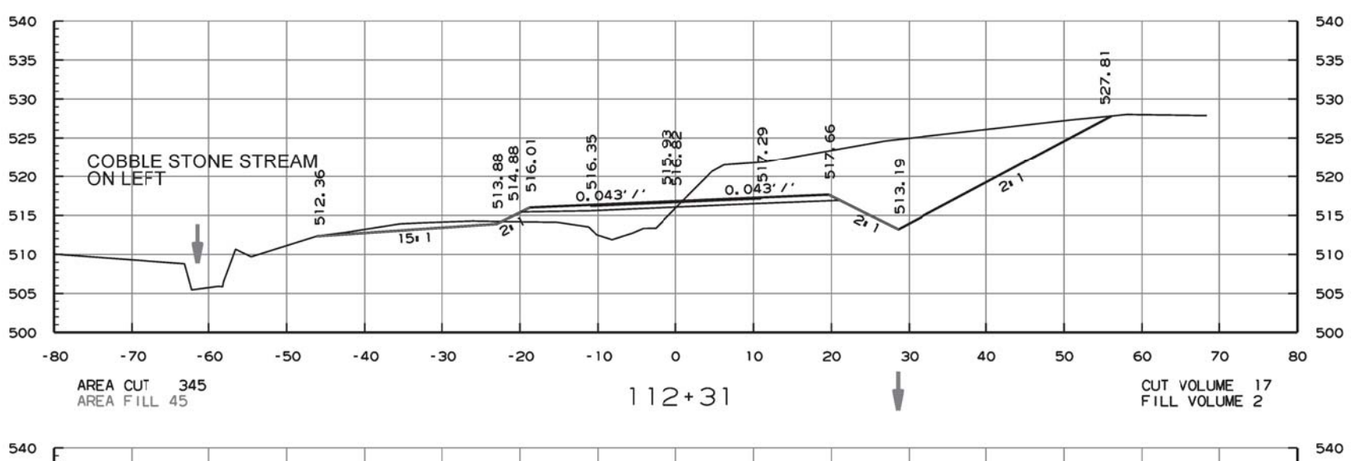
STA. 112+01 TO STA. 112+16

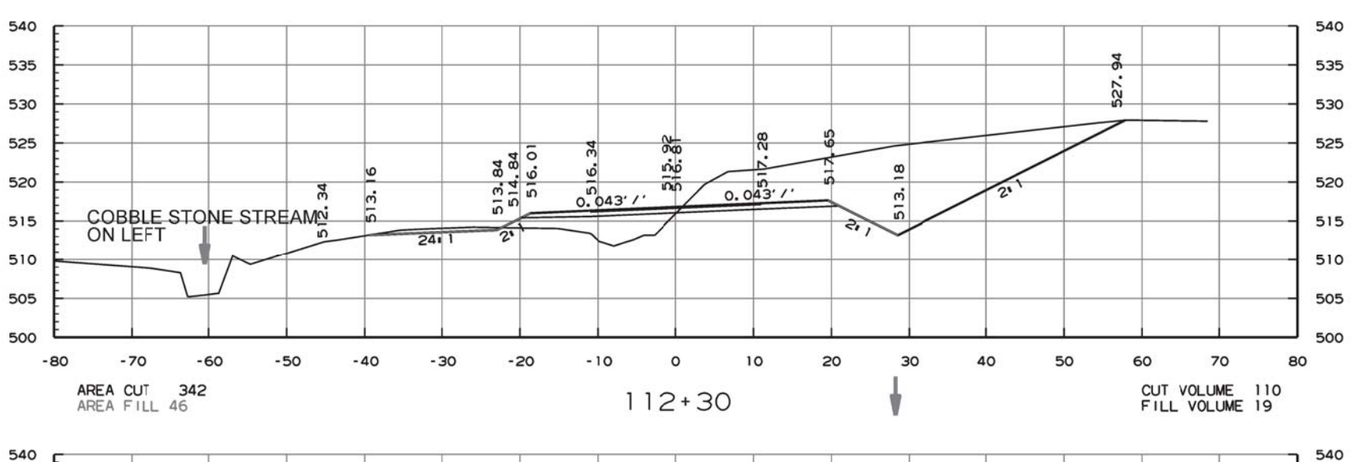
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	63	83

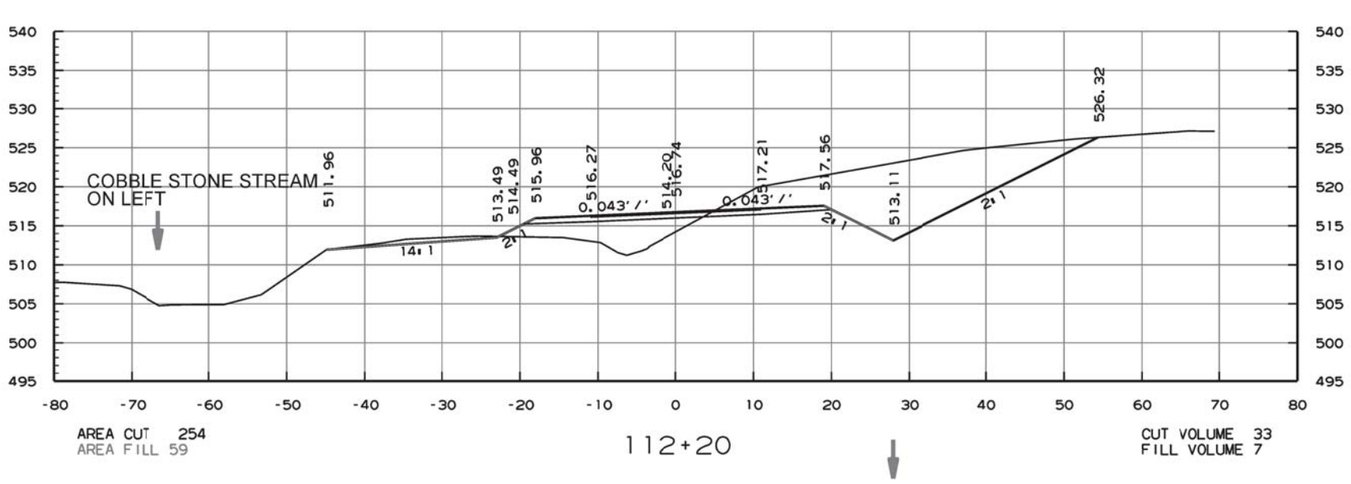
SECTION 1 - CROSS SECTIONS







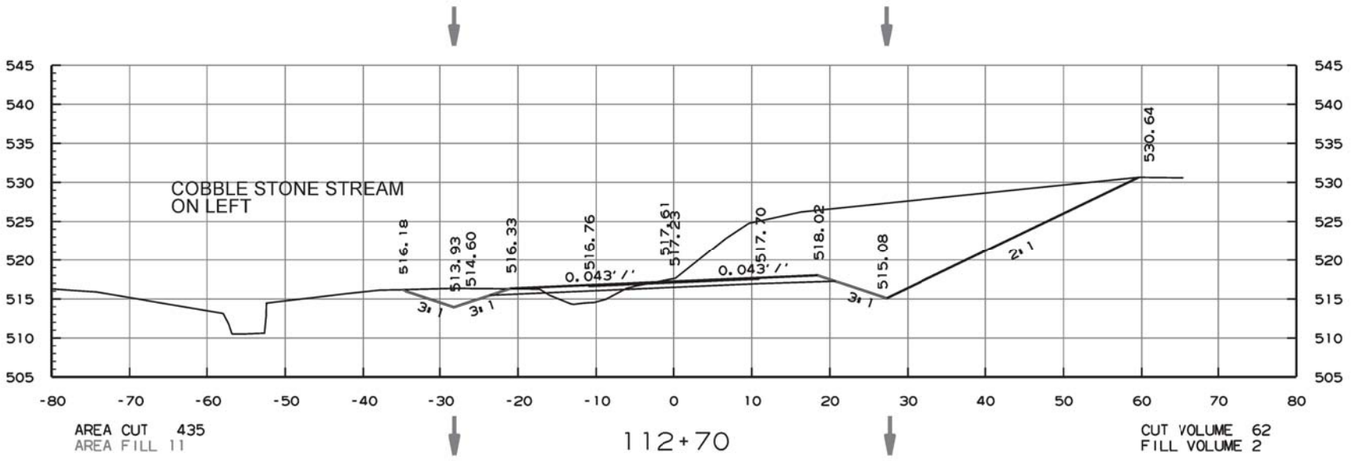




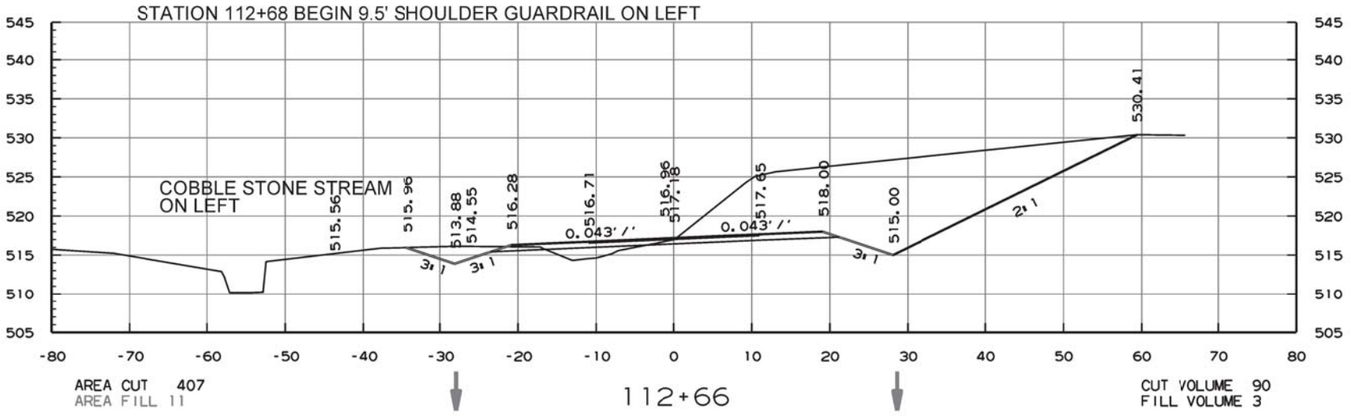
STA. 112+20 TO STA. 112+41

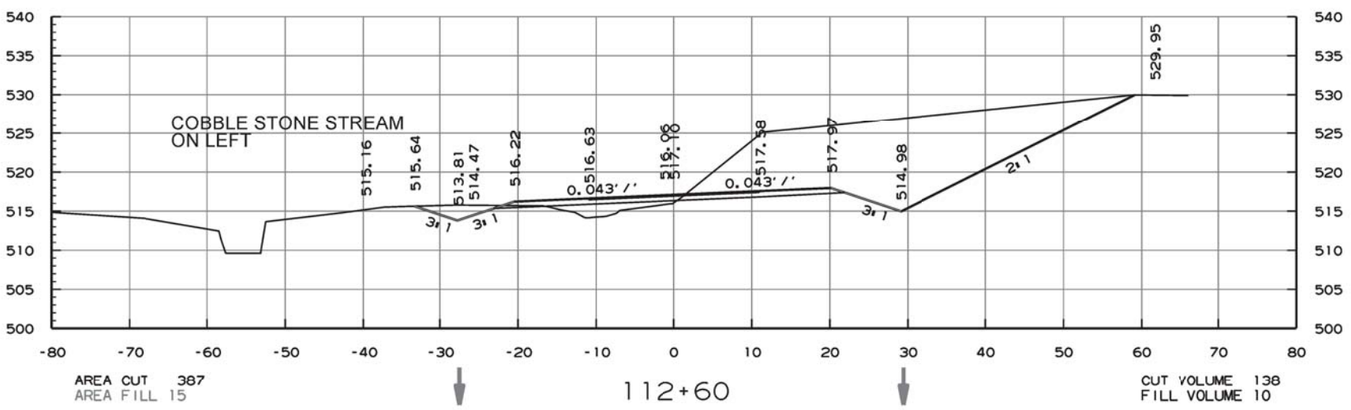
						DATE REVISED	
						DATE FILMED	
						DATE REVISED	
						DATE FILMED	
						FEDERAL DESIGNATION	6
						STATE	ARK.
						FED.AID PROJ.NO.	BR2605
						SHEET NO.	64
						TOTAL SHEETS	83

4 SECTION 1 - CROSS SECTIONS

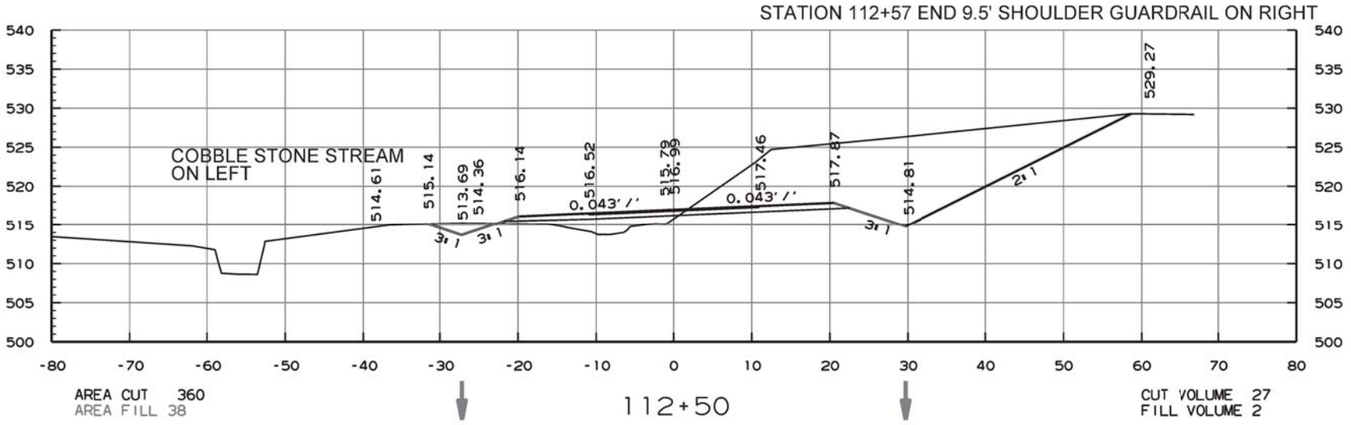


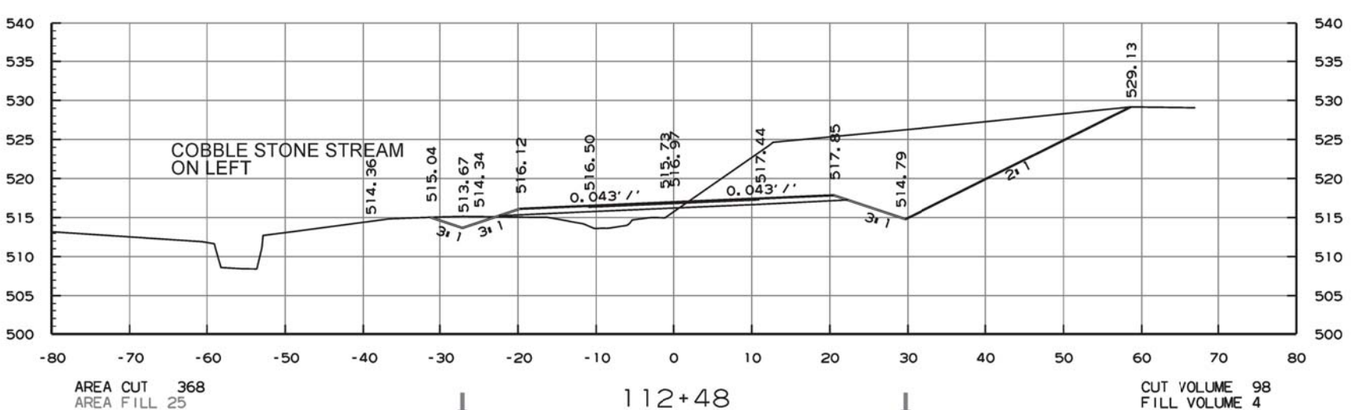
STATION 112+68 BEGIN 9.5' SHOULDER GUARDRAIL ON LEFT





STATION 112+57 END 9.5' SHOULDER GUARDRAIL ON RIGHT



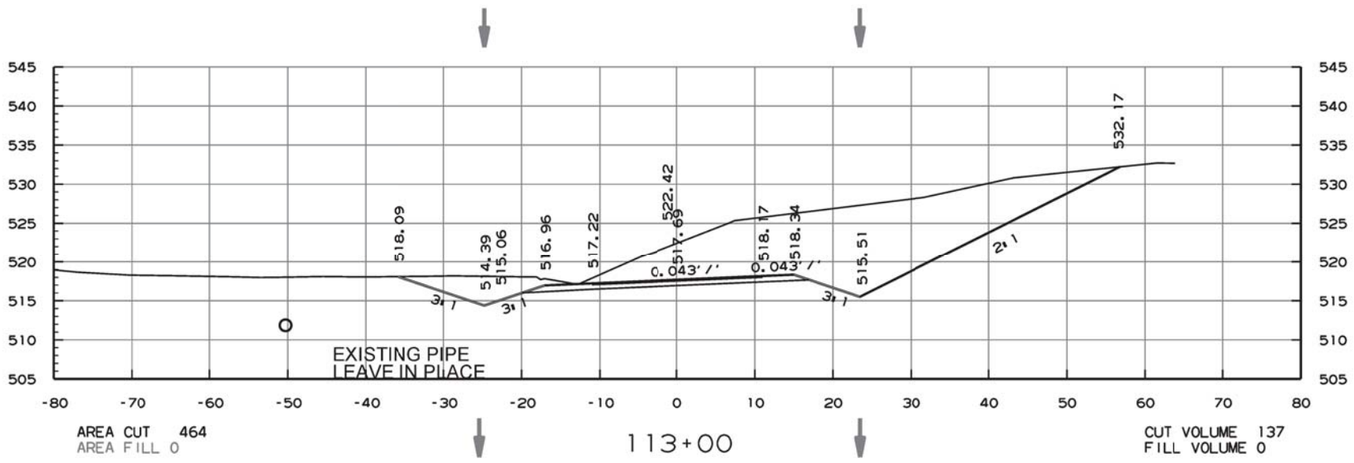


STATION 112+47 BEGIN 9.5' SHOULDER GUARDRAIL ON RIGHT

STA. 112+48 TO STA. 112+70

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	65	83

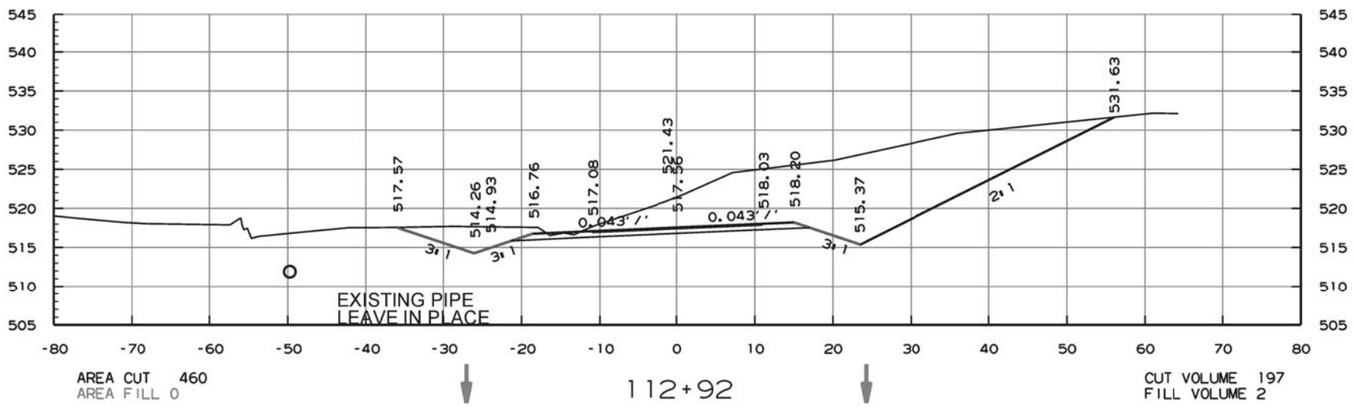
SECTION 1 - CROSS SECTIONS



AREA CUT 464
AREA FILL 0

113+00

CUT VOLUME 137
FILL VOLUME 0

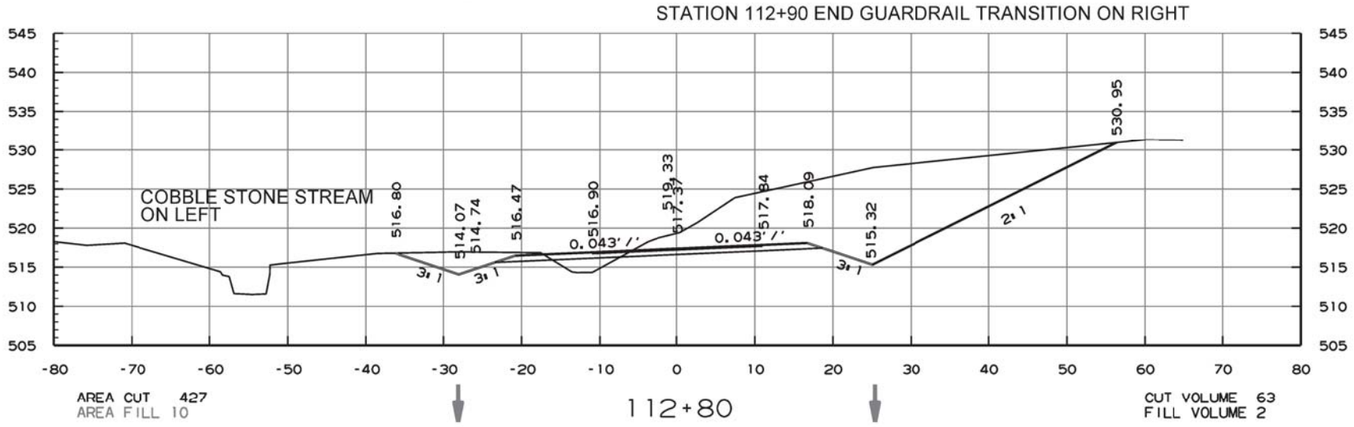


AREA CUT 460
AREA FILL 0

112+92

CUT VOLUME 197
FILL VOLUME 2

STATION 112+90 END GUARDRAIL TRANSITION ON RIGHT

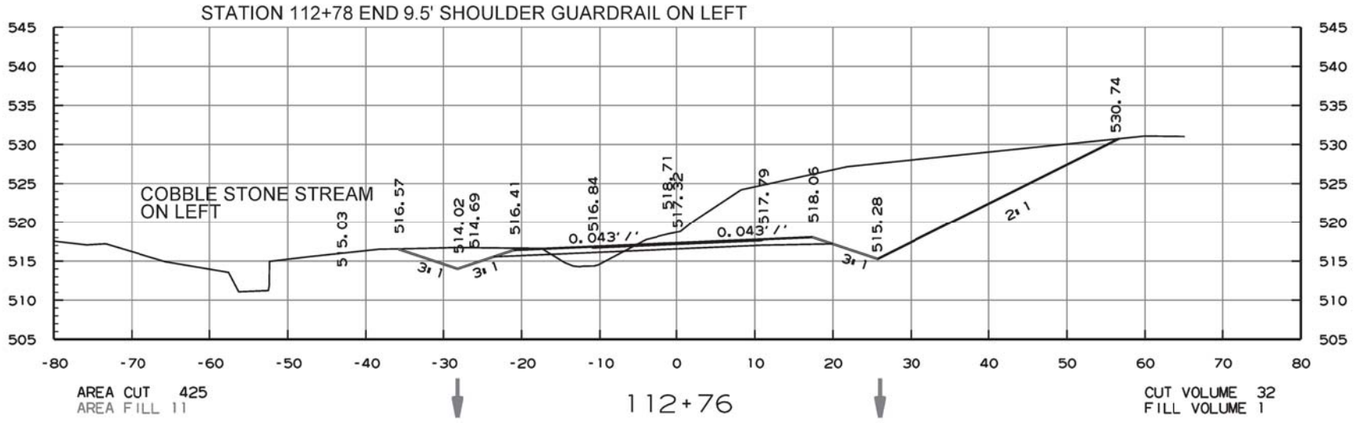


AREA CUT 427
AREA FILL 10

112+80

CUT VOLUME 63
FILL VOLUME 2

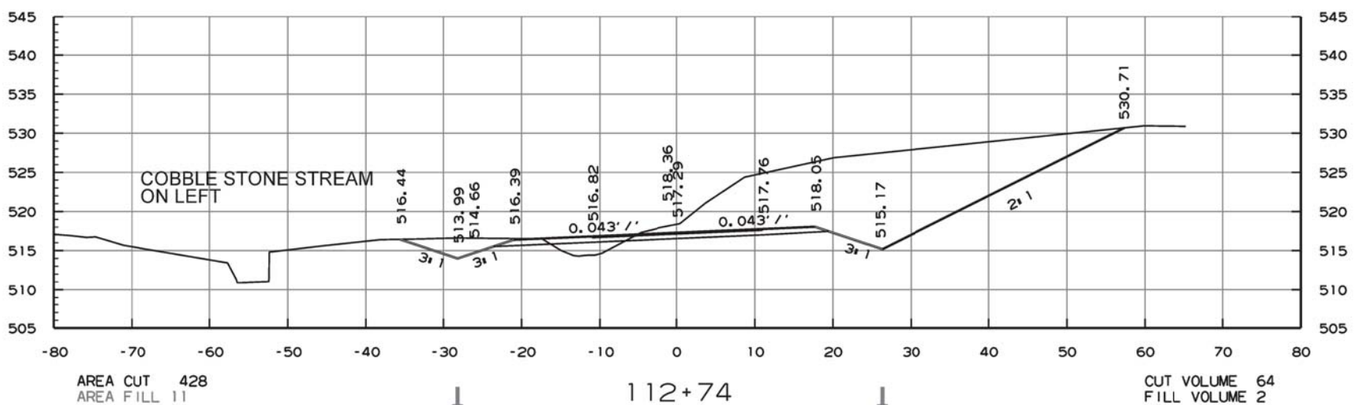
STATION 112+78 END 9.5' SHOULDER GUARDRAIL ON LEFT



AREA CUT 425
AREA FILL 11

112+76

CUT VOLUME 32
FILL VOLUME 1



AREA CUT 428
AREA FILL 11

112+74

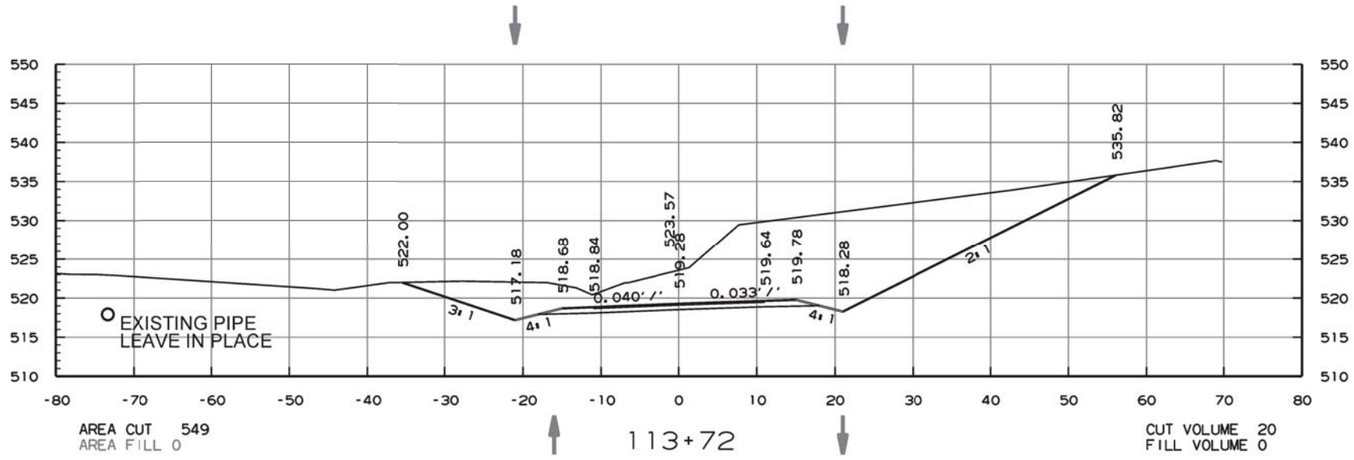
CUT VOLUME 64
FILL VOLUME 2

STA. 112+74 TO STA. 113+00

DATE REVISED	DATE PLOTED	DATE REVISED	DATE PLOTED	FEDERAL DIST. NO.	STATE
				6	ARK.

JOB NO.	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR2605	66	83	

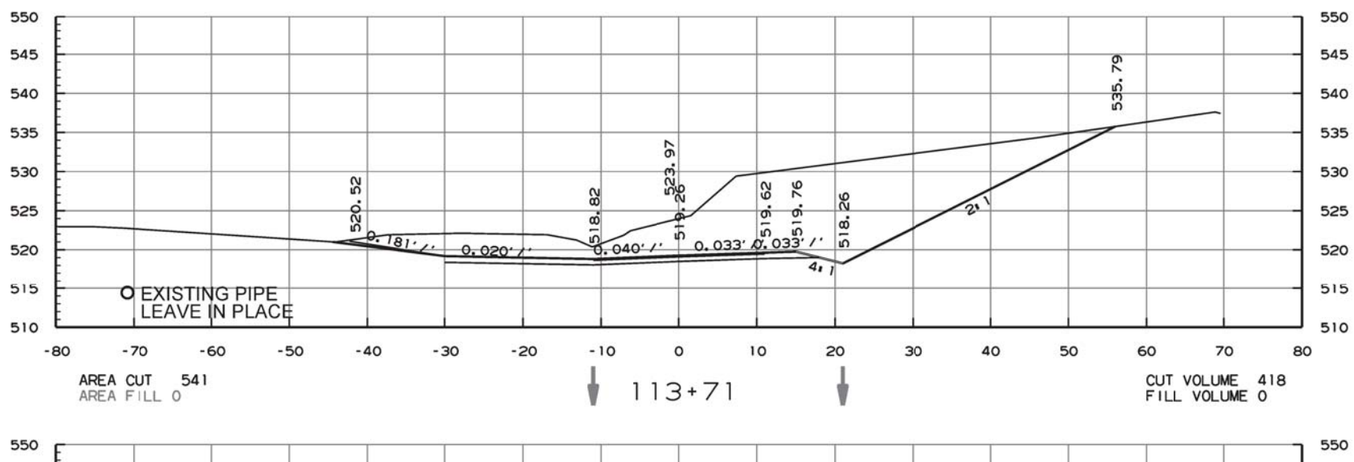
4 SECTION 1 - CROSS SECTIONS



AREA CUT 549
AREA FILL 0

113+72

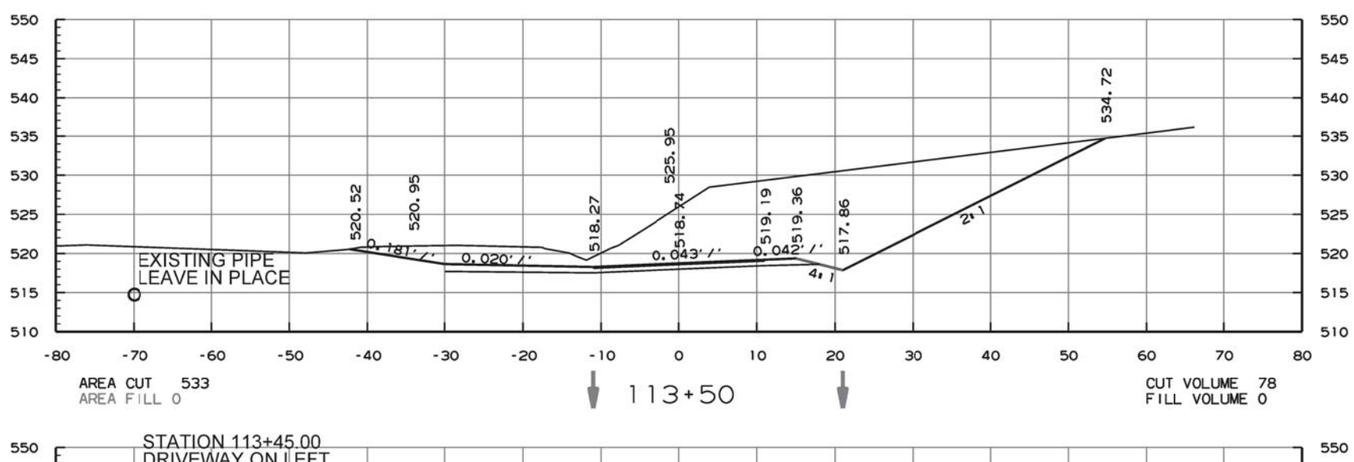
CUT VOLUME 20
FILL VOLUME 0



AREA CUT 541
AREA FILL 0

113+71

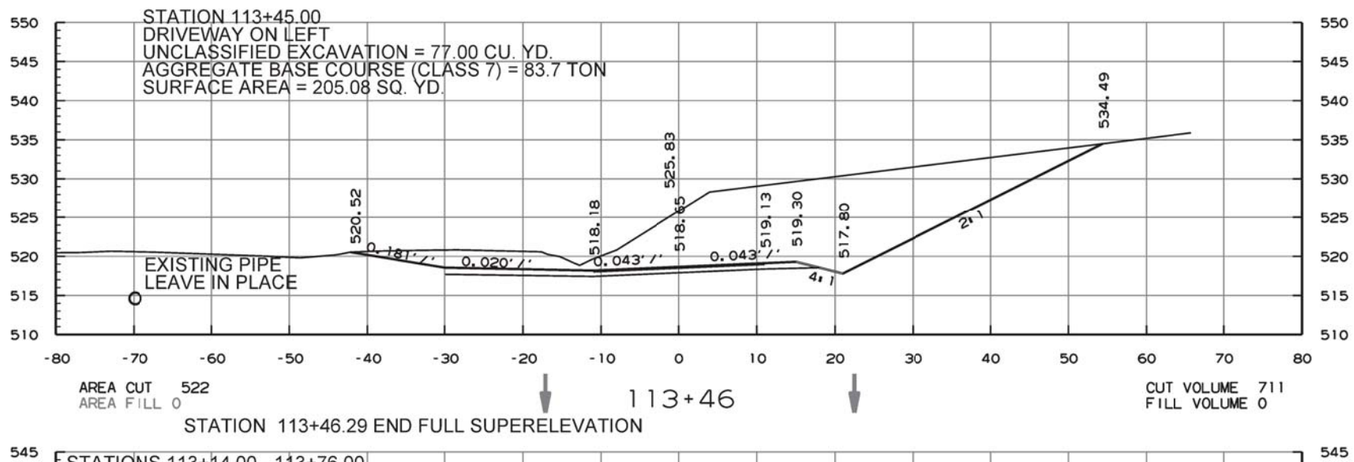
CUT VOLUME 418
FILL VOLUME 0



AREA CUT 533
AREA FILL 0

113+50

CUT VOLUME 78
FILL VOLUME 0

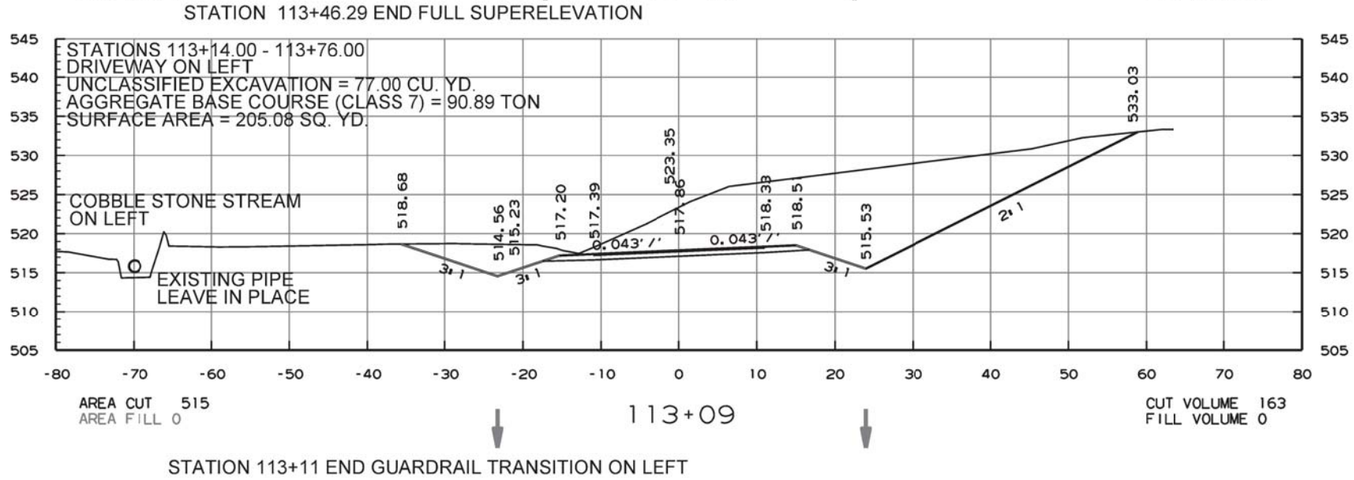


AREA CUT 522
AREA FILL 0

113+46

CUT VOLUME 711
FILL VOLUME 0

STATION 113+46.29 END FULL SUPERELEVATION



AREA CUT 515
AREA FILL 0

113+09

CUT VOLUME 163
FILL VOLUME 0

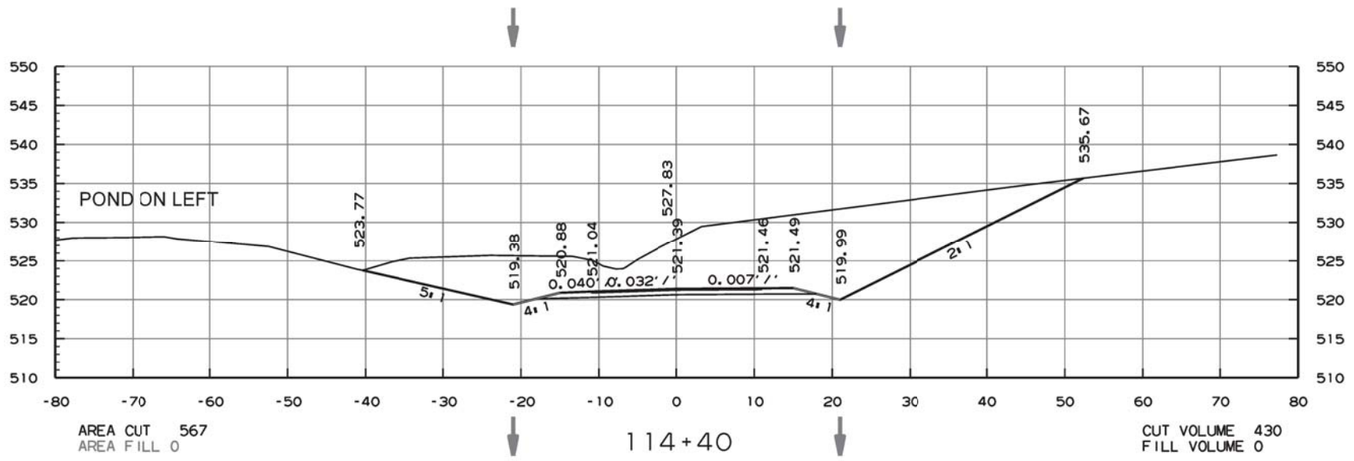
STATION 113+11 END GUARDRAIL TRANSITION ON LEFT

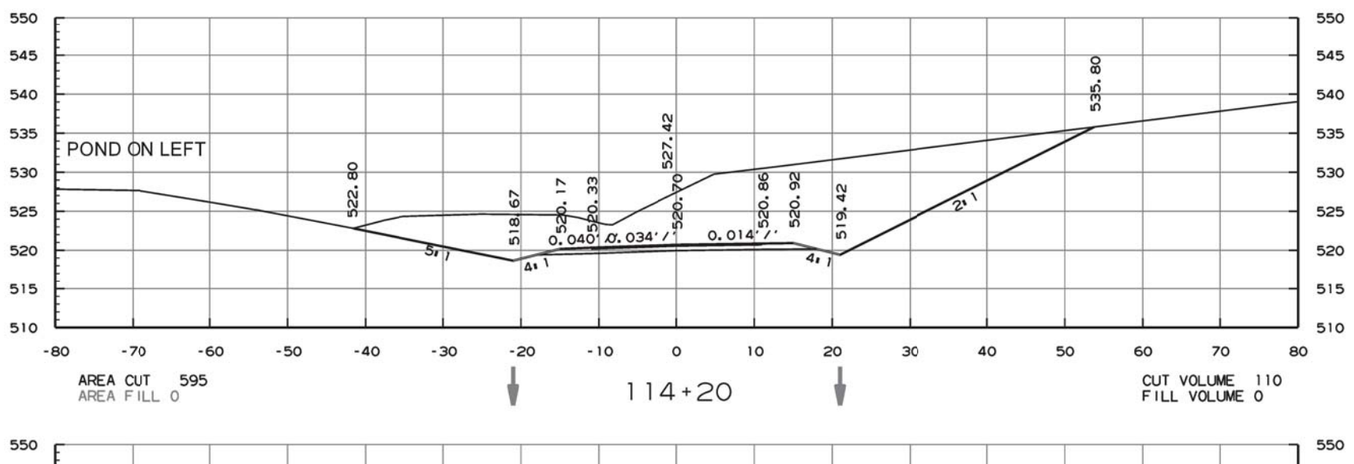
STA. 113+09 TO STA. 113+72

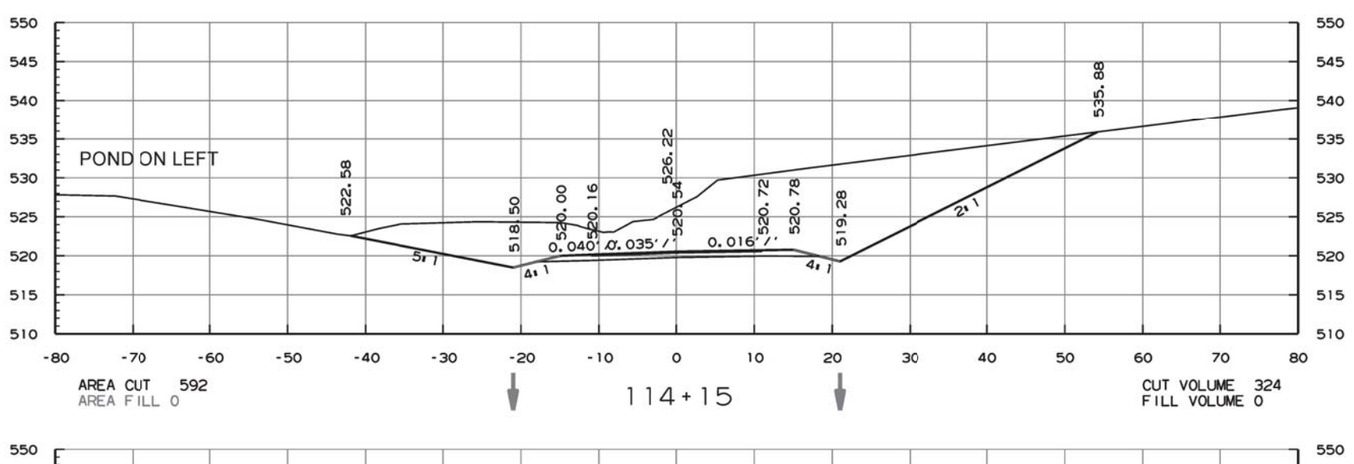
DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	67	83

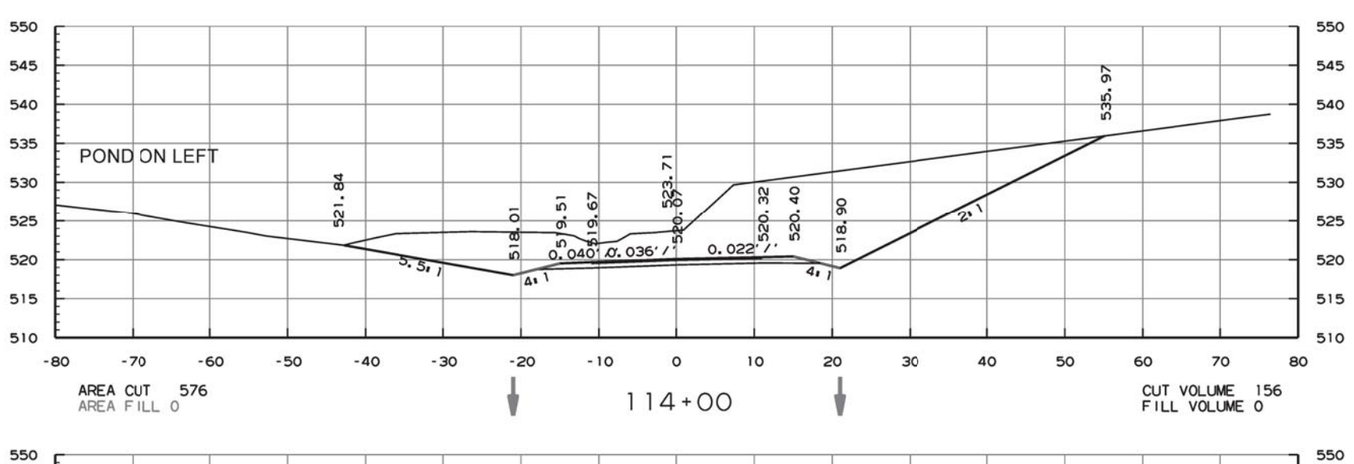
JOB NO.

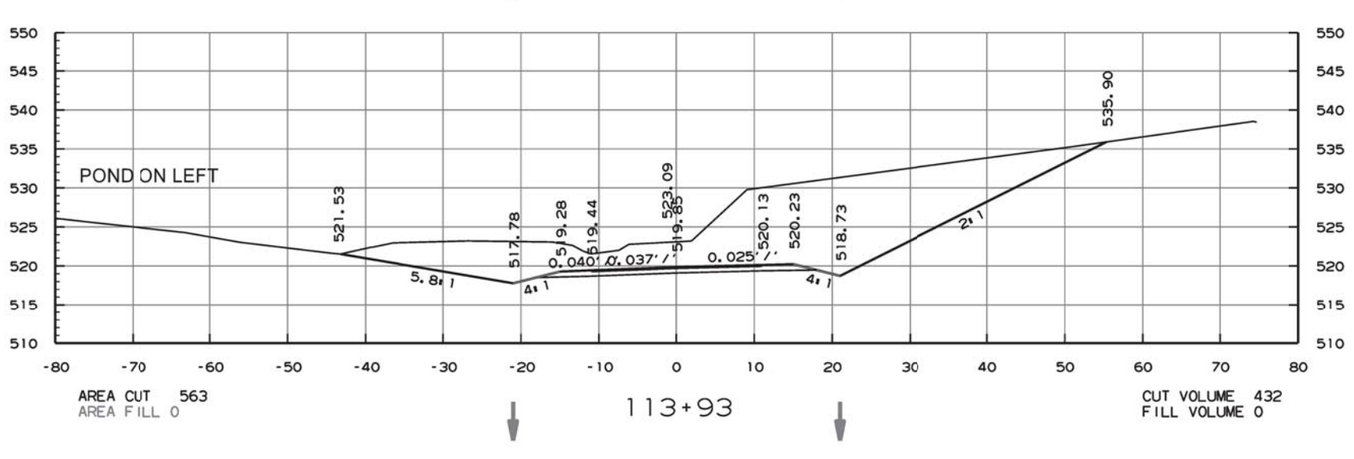
4 SECTION 1 - CROSS SECTIONS







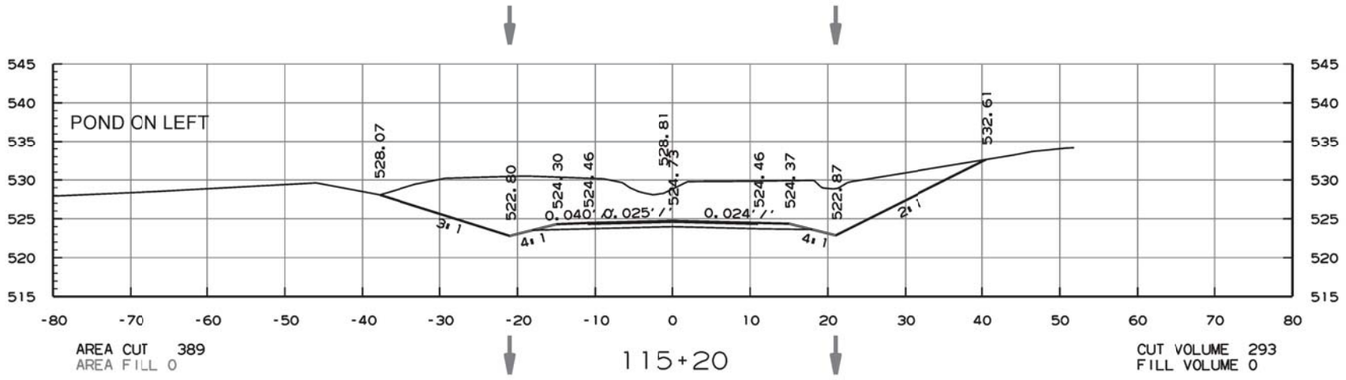


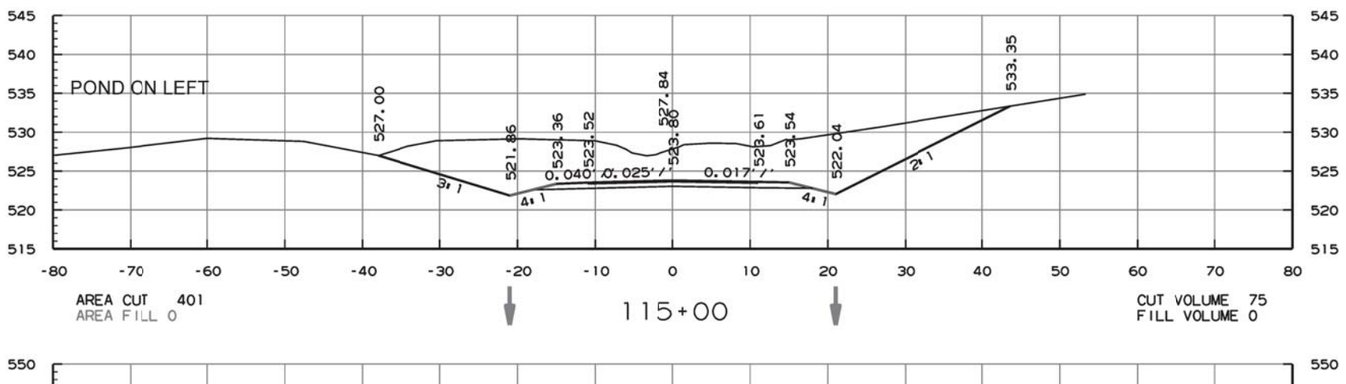


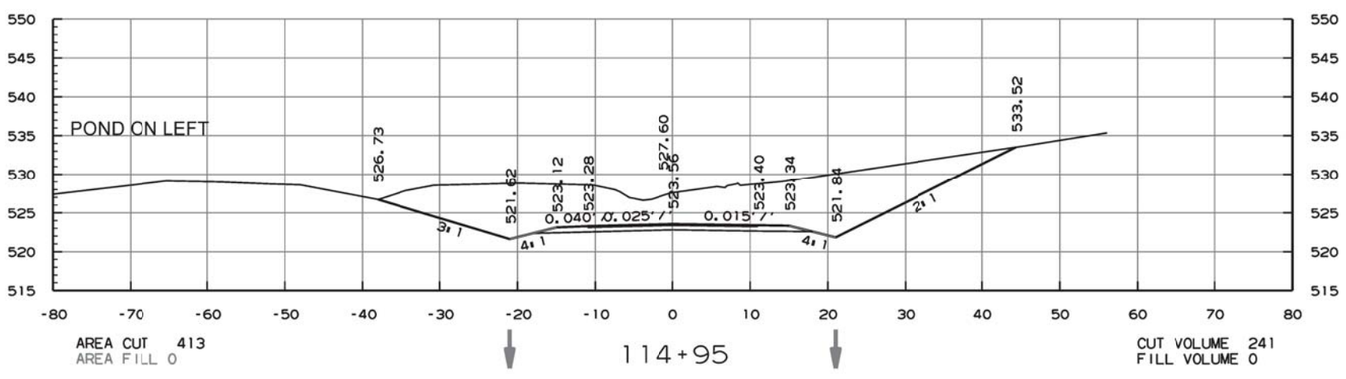
STA. 113+93 TO STA. 114+40

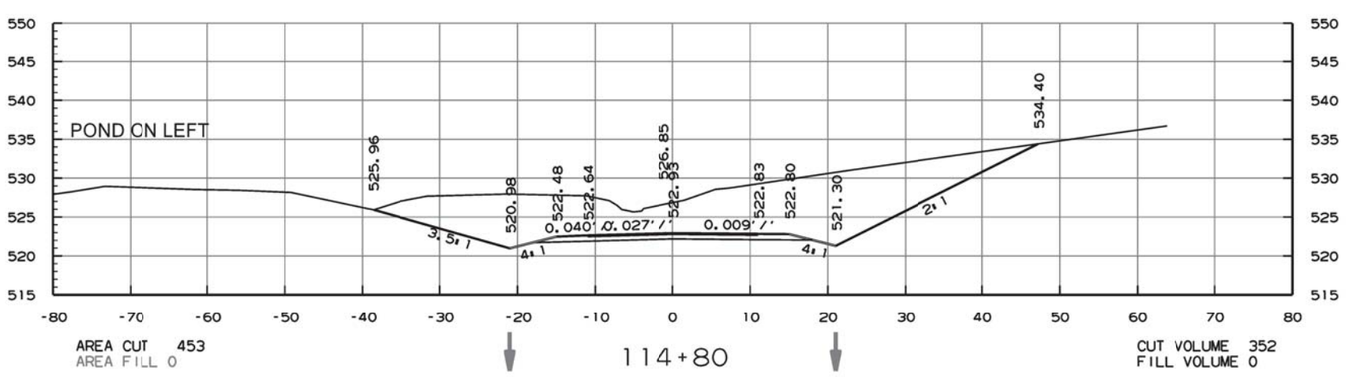
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		68	83
				JOB NO.		BR2605		

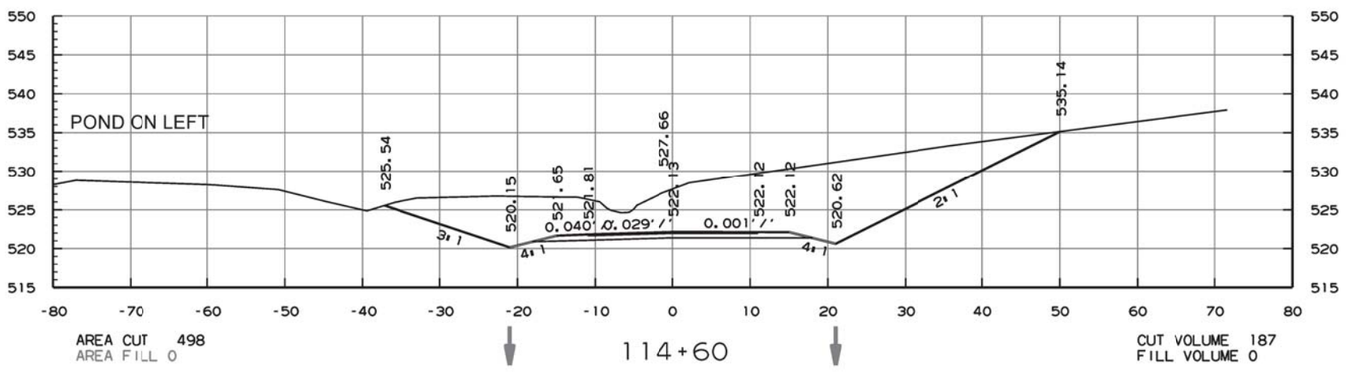
4 SECTION 1 - CROSS SECTIONS

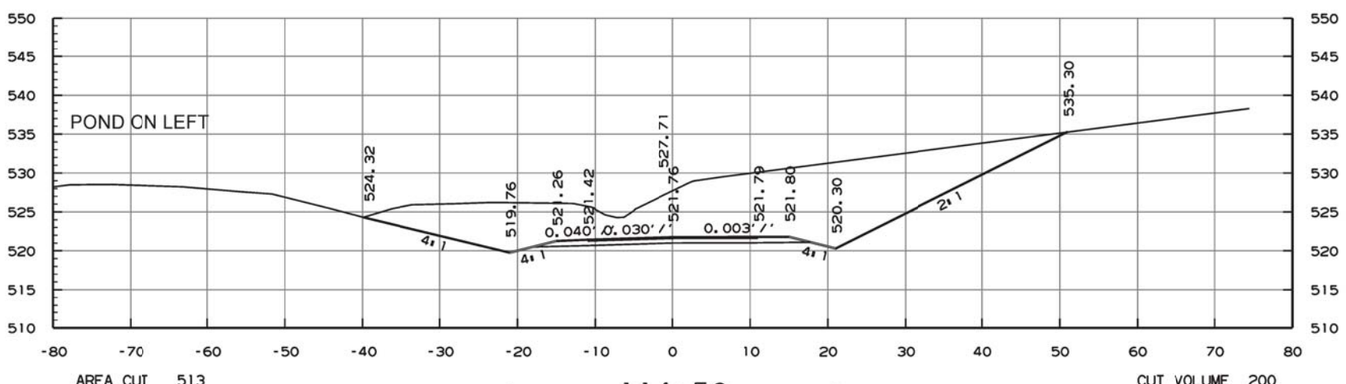










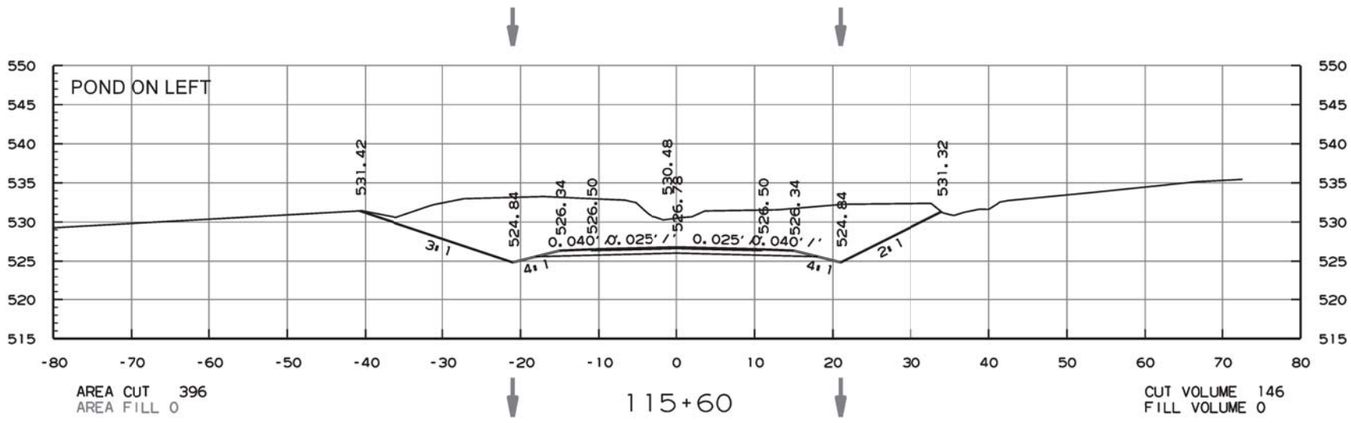


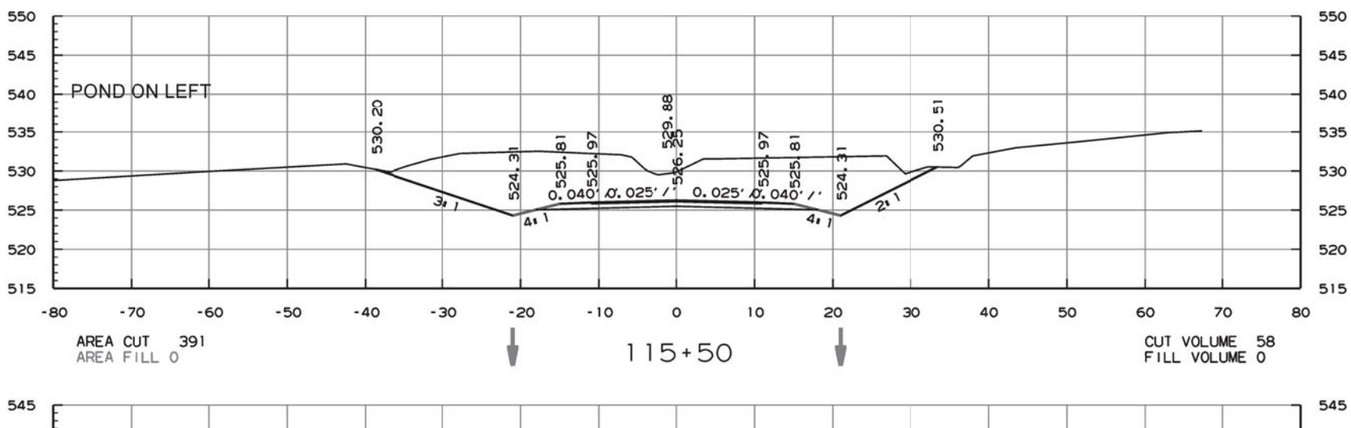
STA. 114+50 TO STA. 115+20

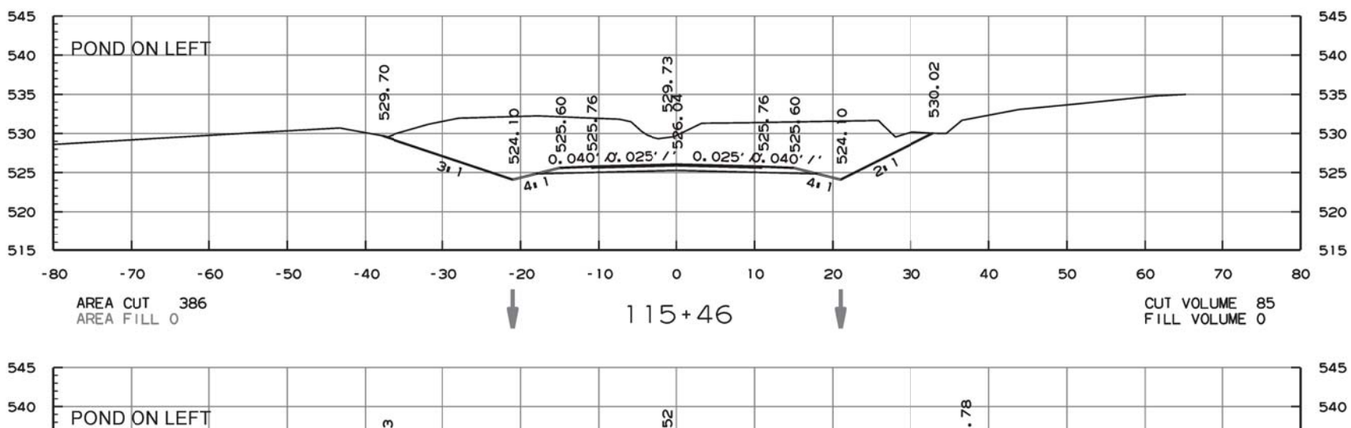
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		69	83

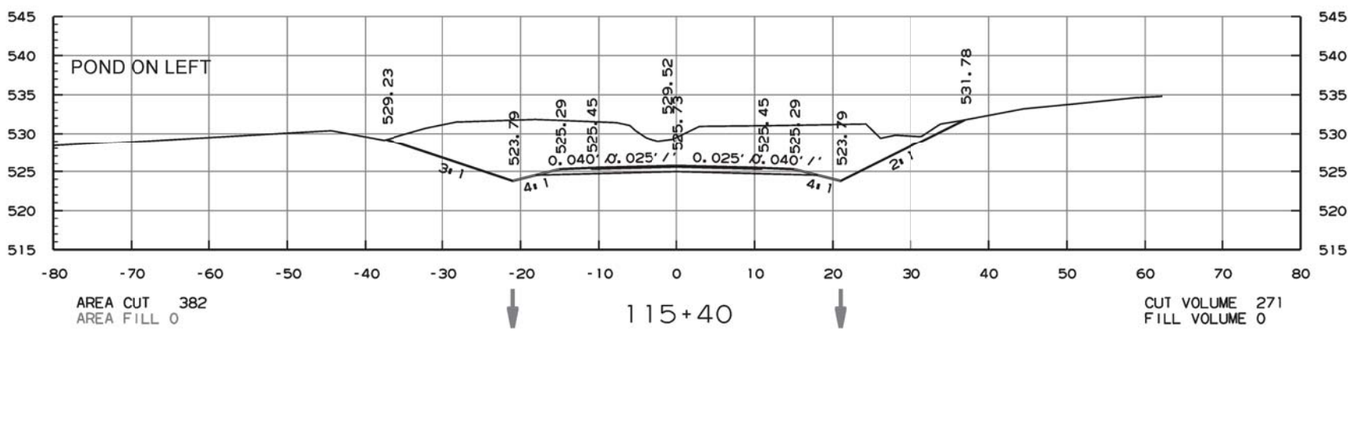
JOB NO. BR2605

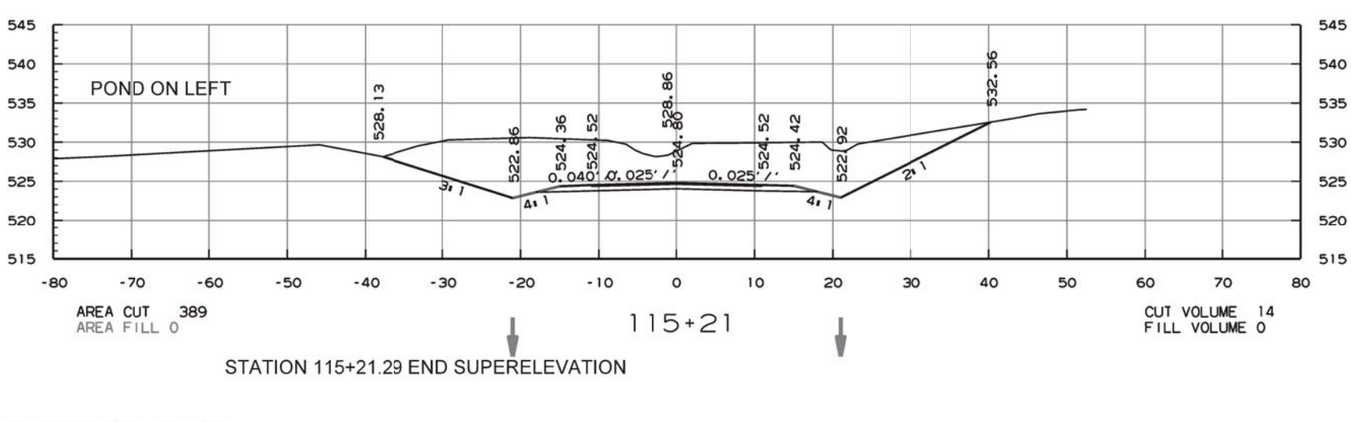
4 SECTION 1 - CROSS SECTIONS











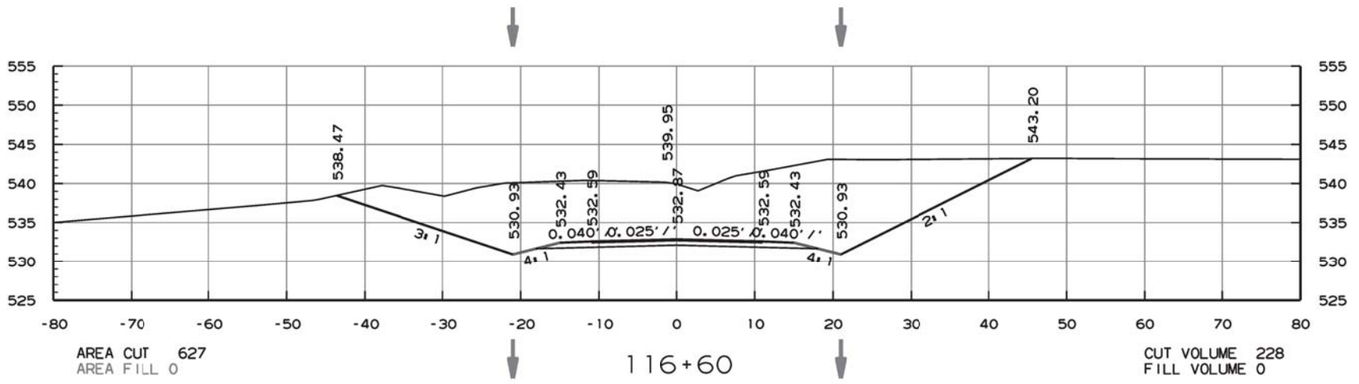
STATION 115+21.29 END SUPERELEVATION

STA. 115+21 TO STA. 115+60

4 SECTION 1- CROSS SECTIONS

DATE REVISED	DATE PLOTTED	DATE REVISED	DATE PLOTTED	FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	70	83

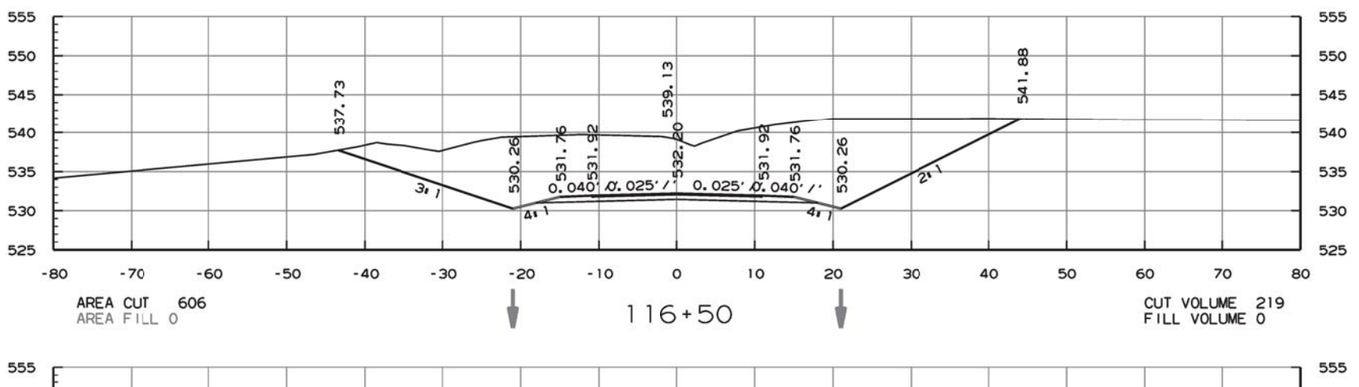
JOB NO.



AREA CUT 627
AREA FILL 0

116+60

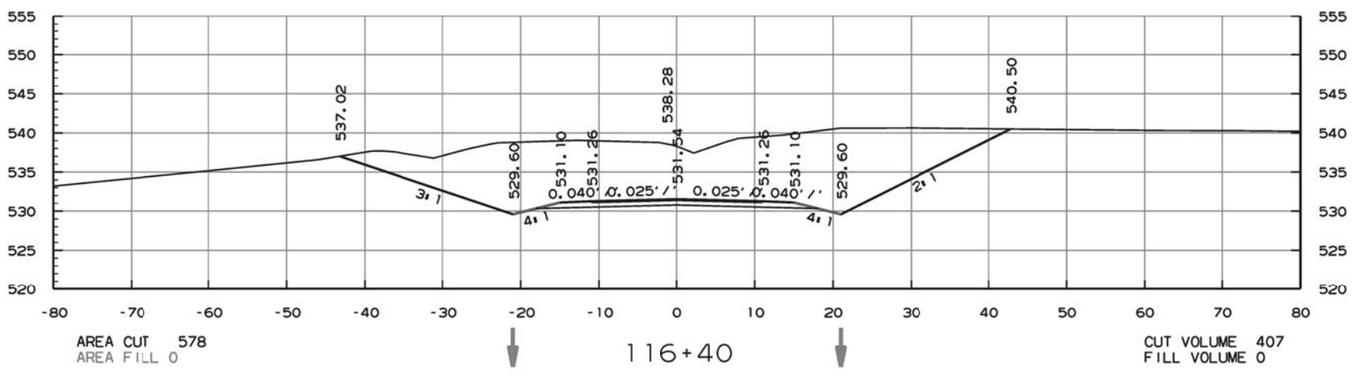
CUT VOLUME 228
FILL VOLUME 0



AREA CUT 606
AREA FILL 0

116+50

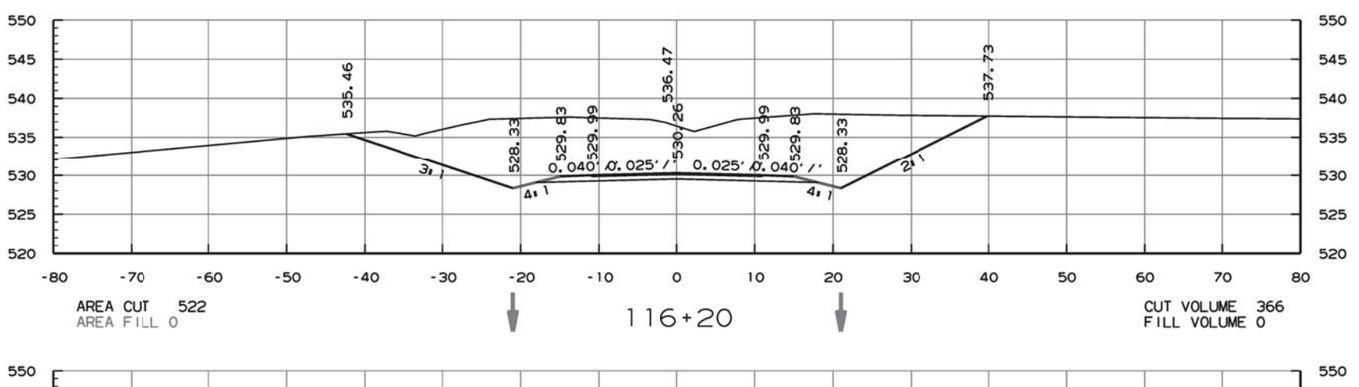
CUT VOLUME 219
FILL VOLUME 0



AREA CUT 578
AREA FILL 0

116+40

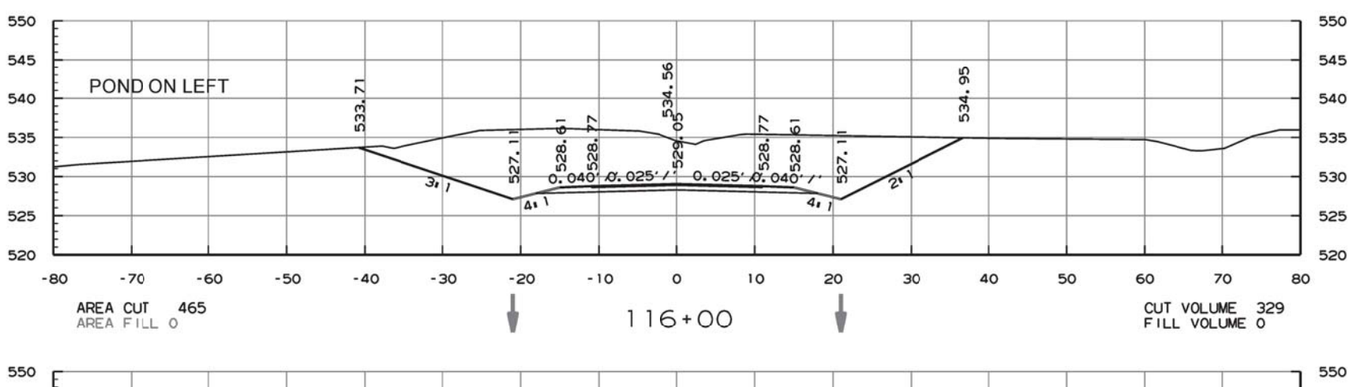
CUT VOLUME 407
FILL VOLUME 0



AREA CUT 522
AREA FILL 0

116+20

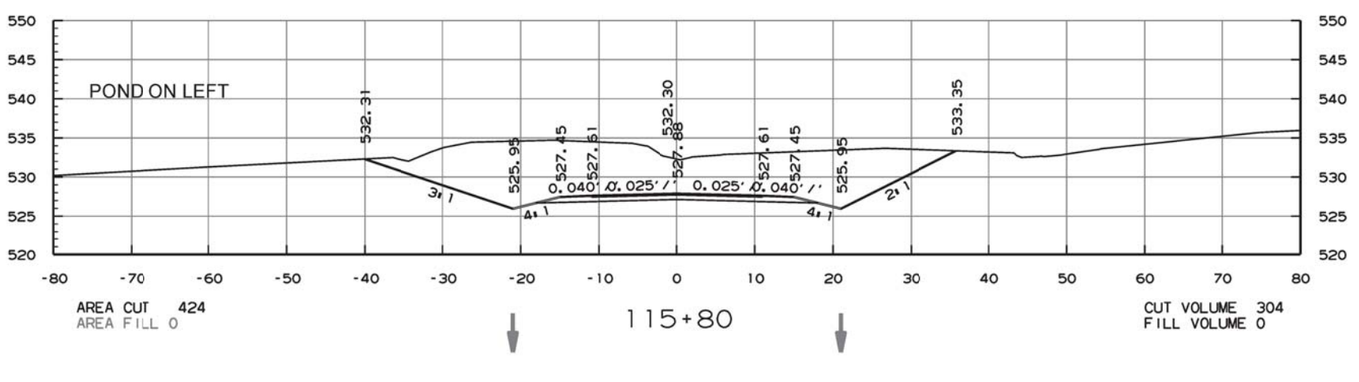
CUT VOLUME 366
FILL VOLUME 0



AREA CUT 465
AREA FILL 0

116+00

CUT VOLUME 329
FILL VOLUME 0



AREA CUT 424
AREA FILL 0

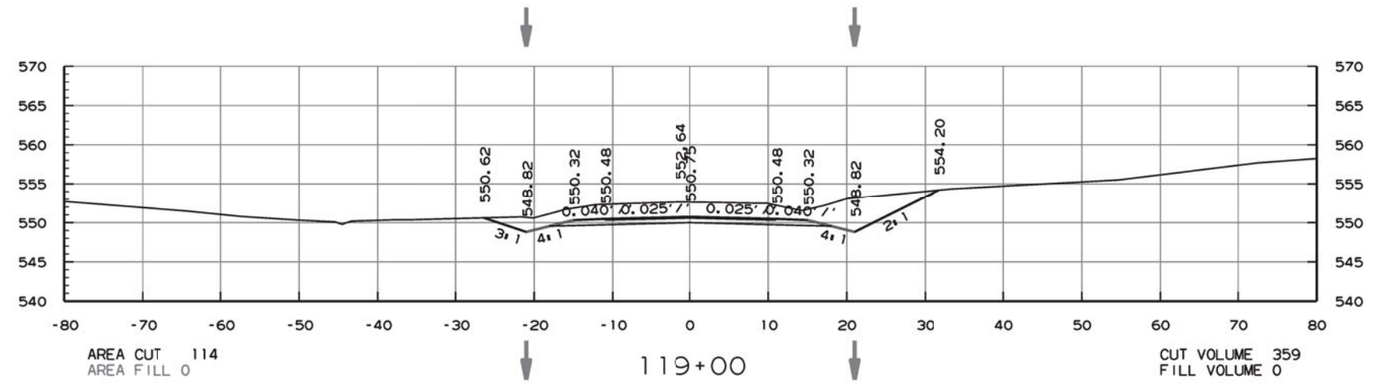
115+80

CUT VOLUME 304
FILL VOLUME 0

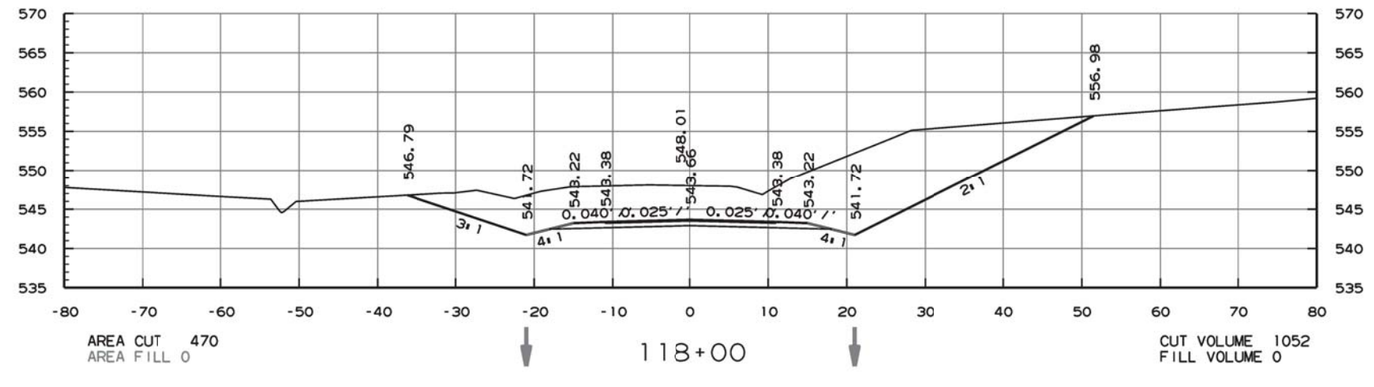
STA. 115+80 TO STA. 116+60

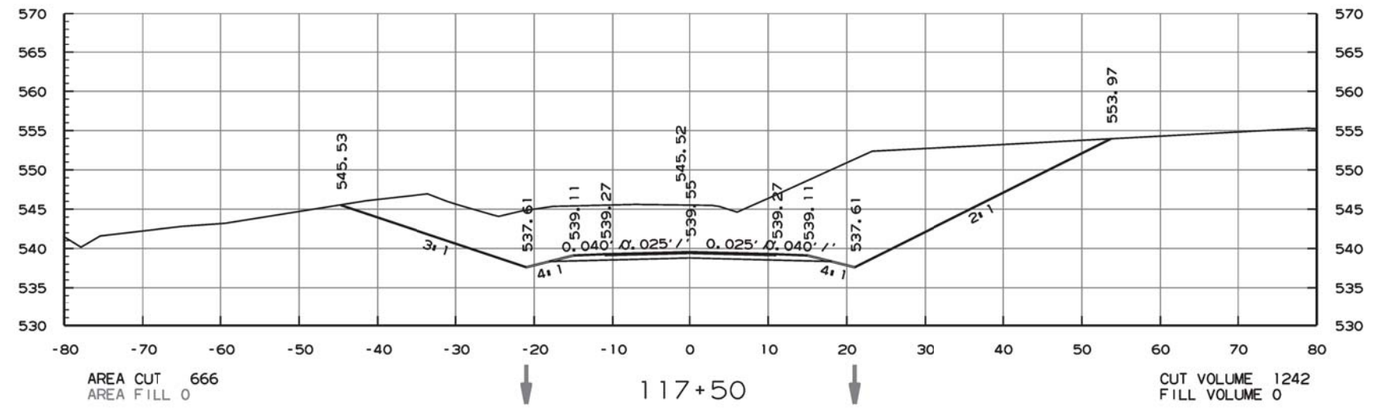
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		71	83
				JOB NO.		BR2605		

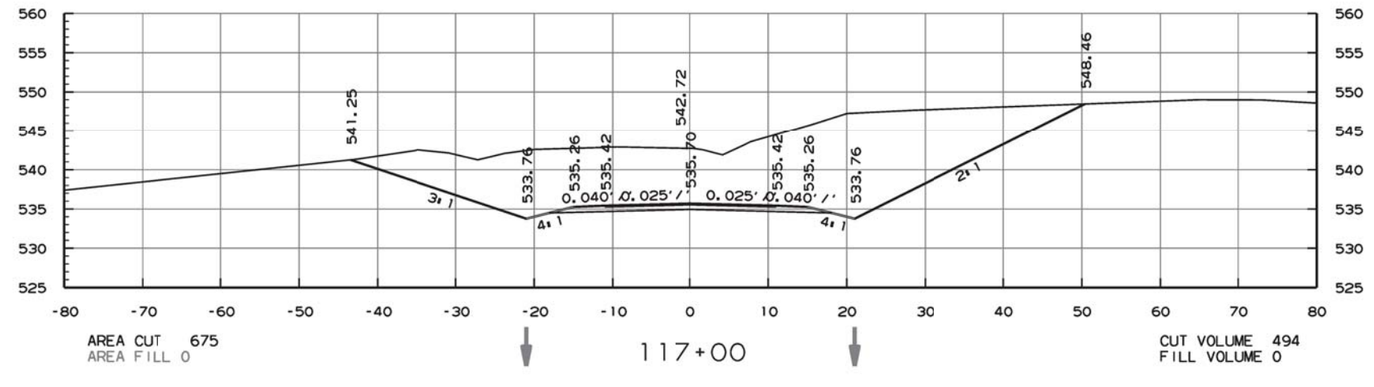
SECTION 1 - CROSS SECTIONS

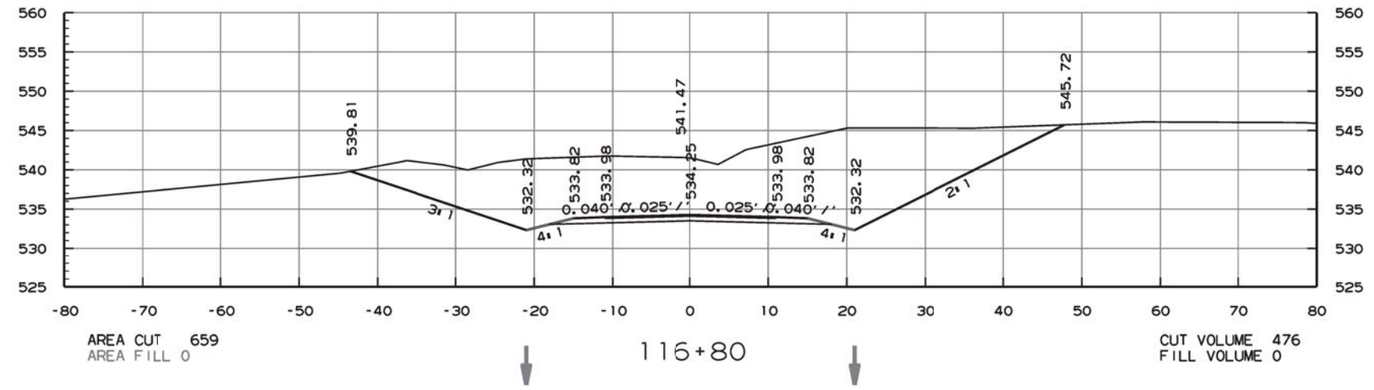










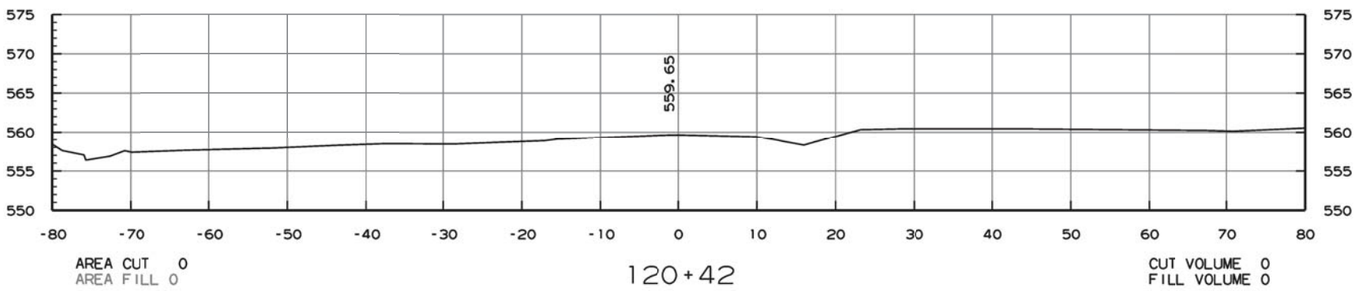


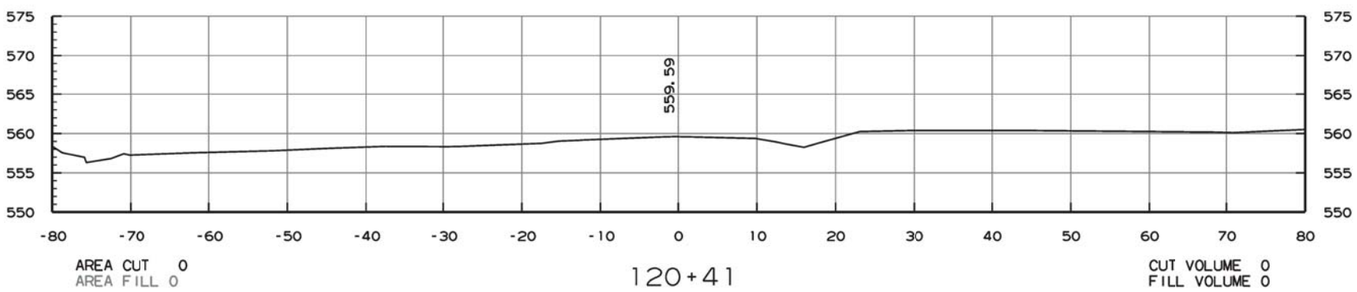
STA. 116+80 TO STA. 119+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS

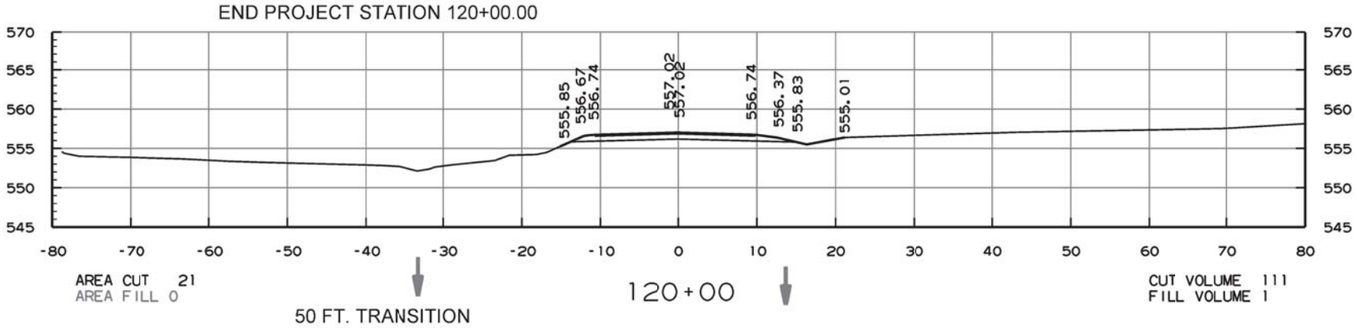
JOB NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
BR2605	ARK.		72	83

4 SECTION 1 - CROSS SECTIONS

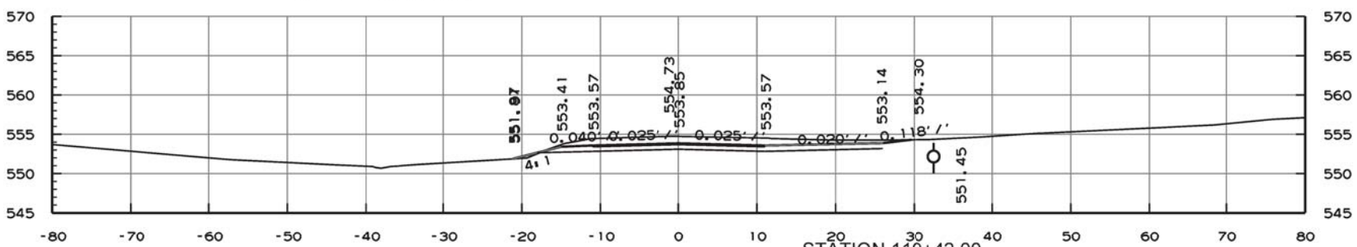




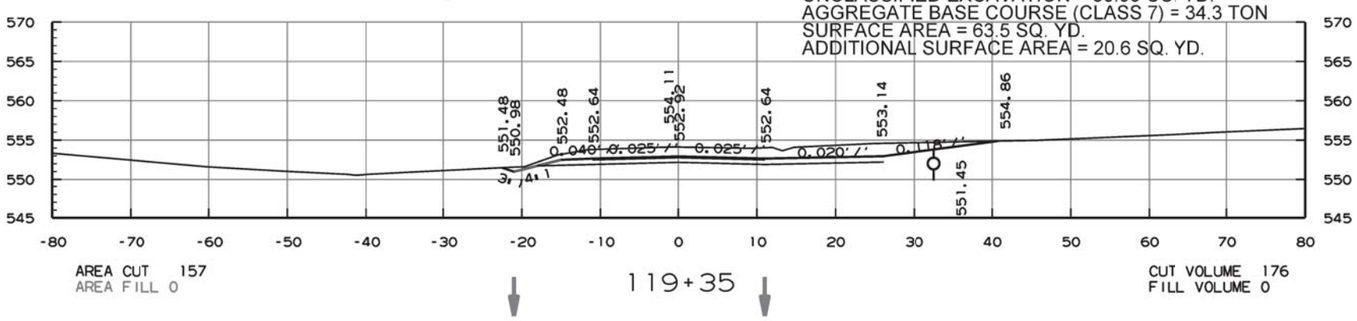
END PROJECT STATION 120+00.00



50 FT. TRANSITION



STATION 119+42.00
CONSTRUCT DRIVEWAY ON RIGHT
18" X 34' CMP SIDE DRAIN
UNCLASSIFIED EXCAVATION = 30.99 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 34.3 TON
SURFACE AREA = 63.5 SQ. YD.
ADDITIONAL SURFACE AREA = 20.6 SQ. YD.

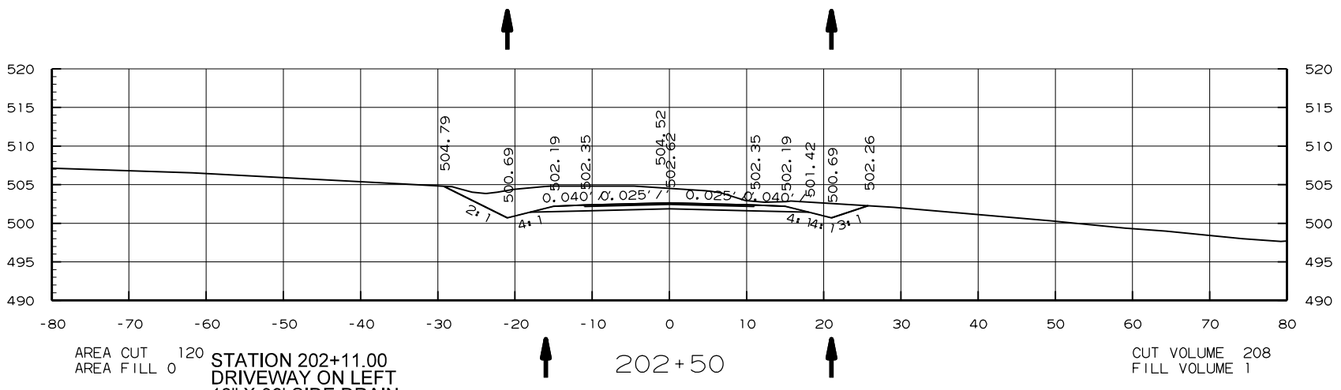


STA. 119+35 TO STA. 120+42

				DATE REVISED
				DATE PLANED
				DATE REVISED
				DATE PLANED
				FED.ROD. DIST.NO. 6
				STATE
				FED.AID PROJ.NO.
				SHEET NO.
				TOTAL SHEETS

4 SECTION 1 - CROSS SECTIONS

JOB NO. BR2605 73 83
ARK.

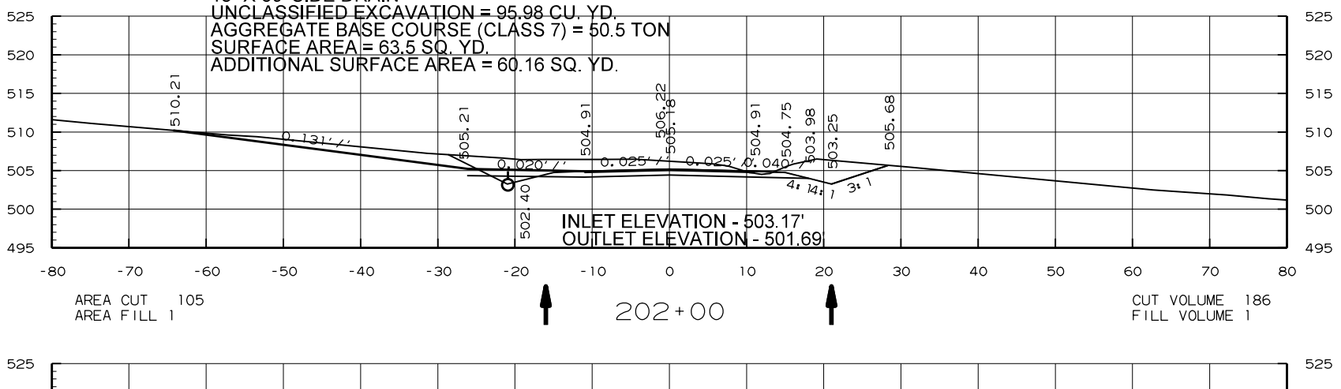


AREA CUT 120
AREA FILL 0

202+50

CUT VOLUME 208
FILL VOLUME 1

STATION 202+11.00
DRIVEWAY ON LEFT
18" X 30' SIDE DRAIN
UNCLASSIFIED EXCAVATION = 95.98 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 50.5 TON
SURFACE AREA = 63.5 SQ. YD.
ADDITIONAL SURFACE AREA = 60.16 SQ. YD.

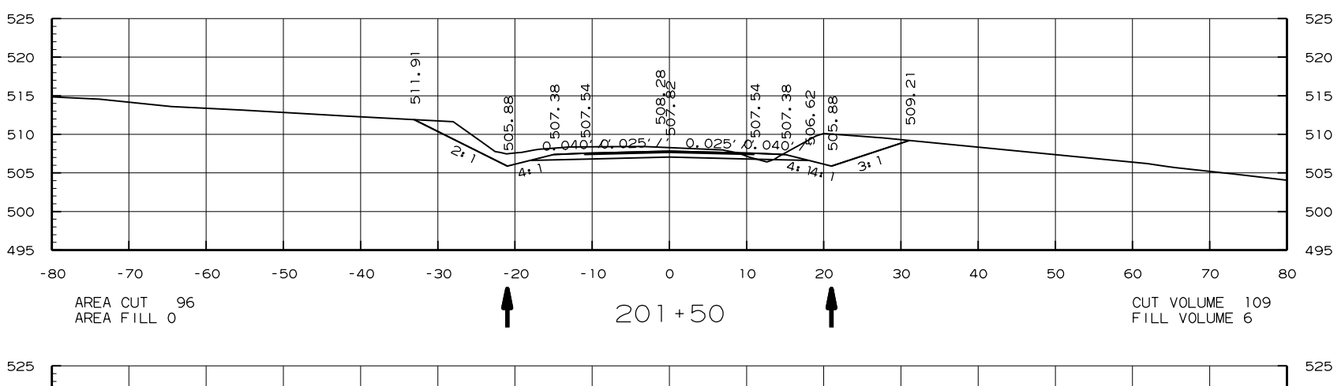


INLET ELEVATION - 503.17'
OUTLET ELEVATION - 501.69

AREA CUT 105
AREA FILL 1

202+00

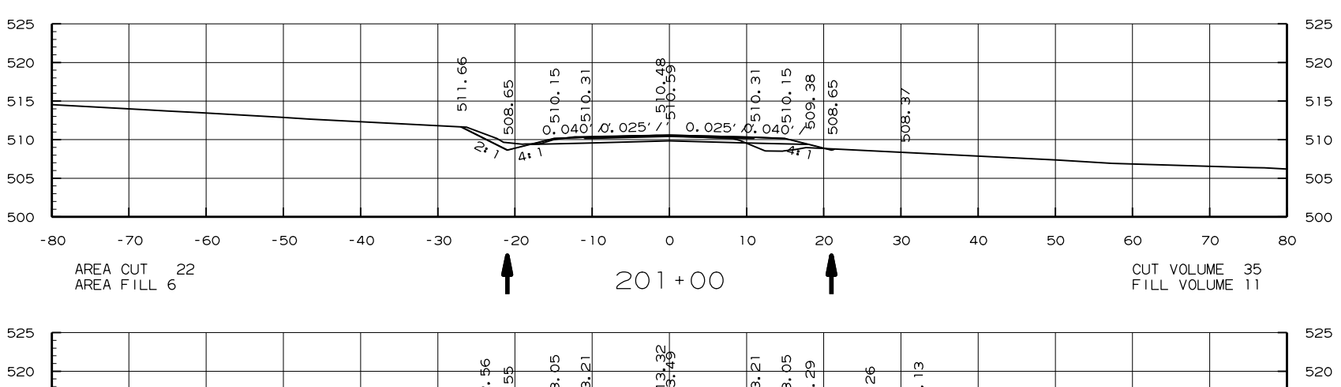
CUT VOLUME 186
FILL VOLUME 1



AREA CUT 96
AREA FILL 0

201+50

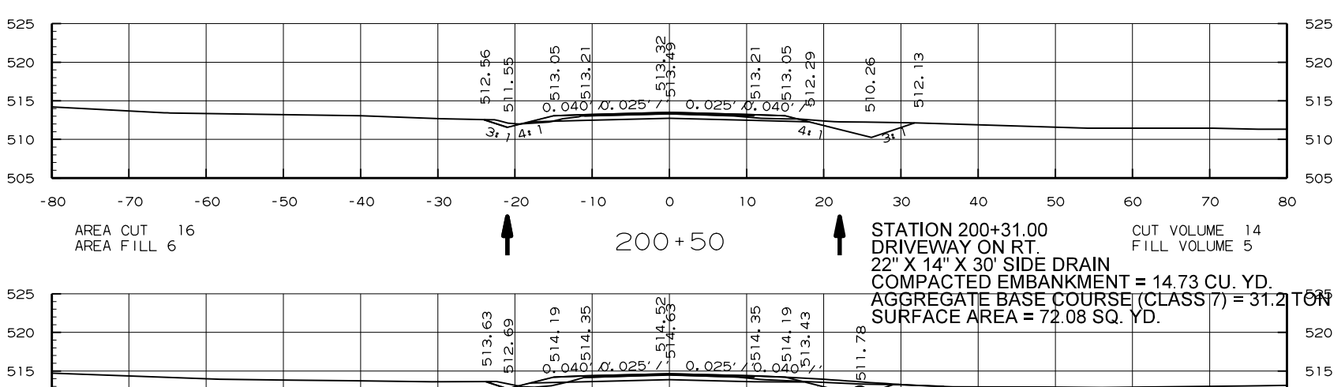
CUT VOLUME 109
FILL VOLUME 6



AREA CUT 22
AREA FILL 6

201+00

CUT VOLUME 35
FILL VOLUME 11

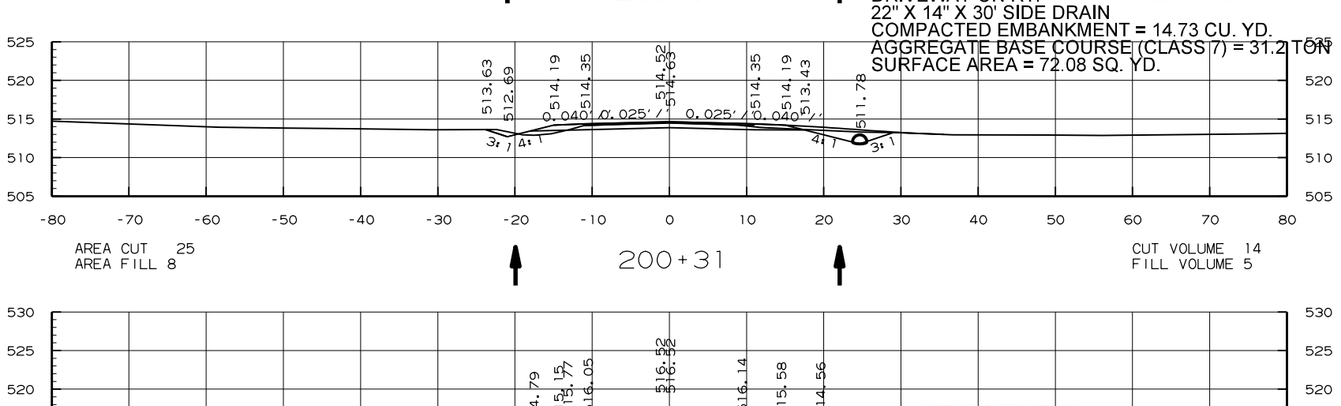


AREA CUT 16
AREA FILL 6

200+50

CUT VOLUME 14
FILL VOLUME 5

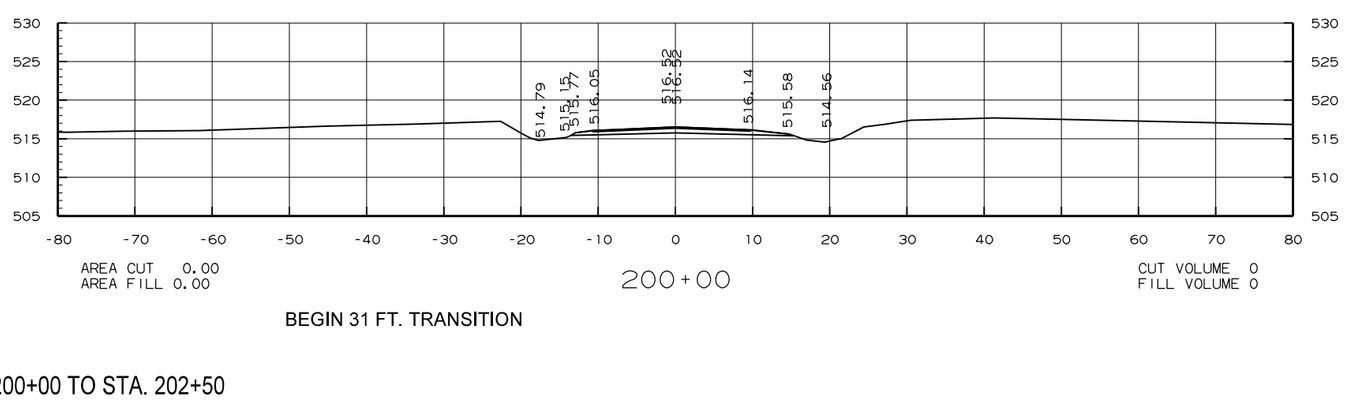
STATION 200+31.00
DRIVEWAY ON RT.
22" X 14" X 30' SIDE DRAIN
COMPACTED EMBANKMENT = 14.73 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 31.2 TON
SURFACE AREA = 72.08 SQ. YD.



AREA CUT 25
AREA FILL 8

200+31

CUT VOLUME 14
FILL VOLUME 5



AREA CUT 0.00
AREA FILL 0.00

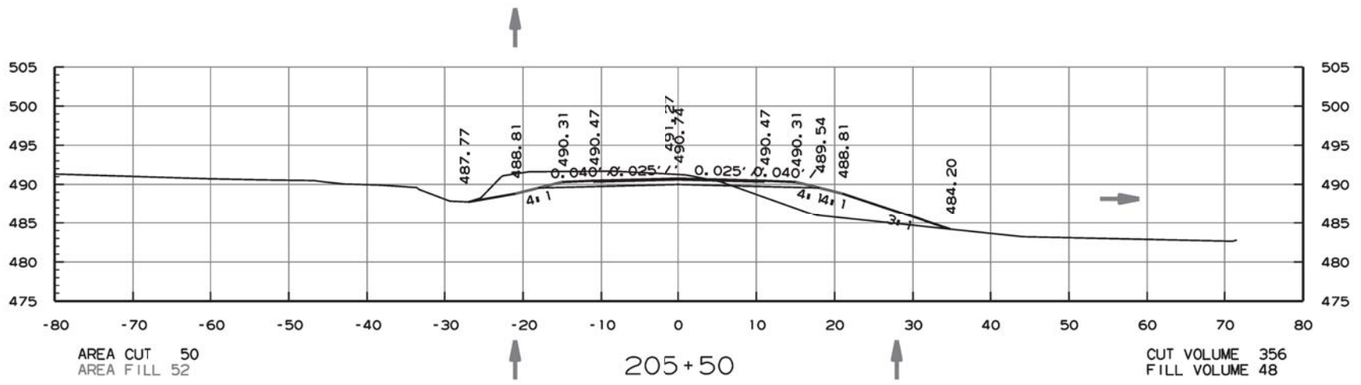
200+00

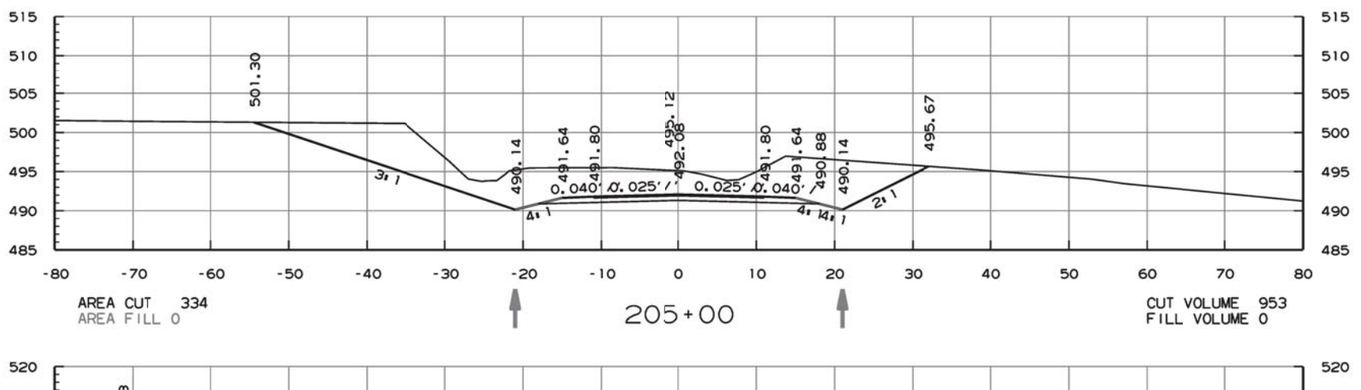
CUT VOLUME 0
FILL VOLUME 0

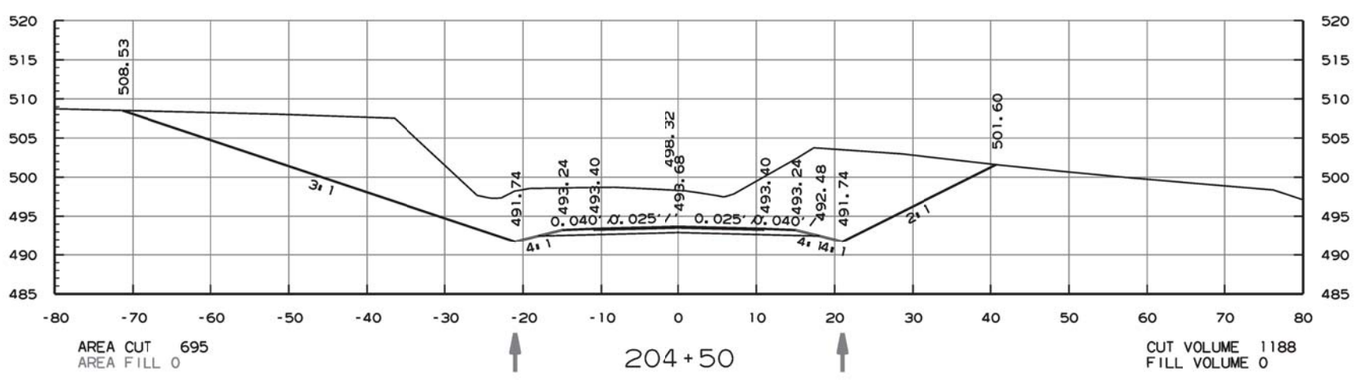
BEGIN 31 FT. TRANSITION

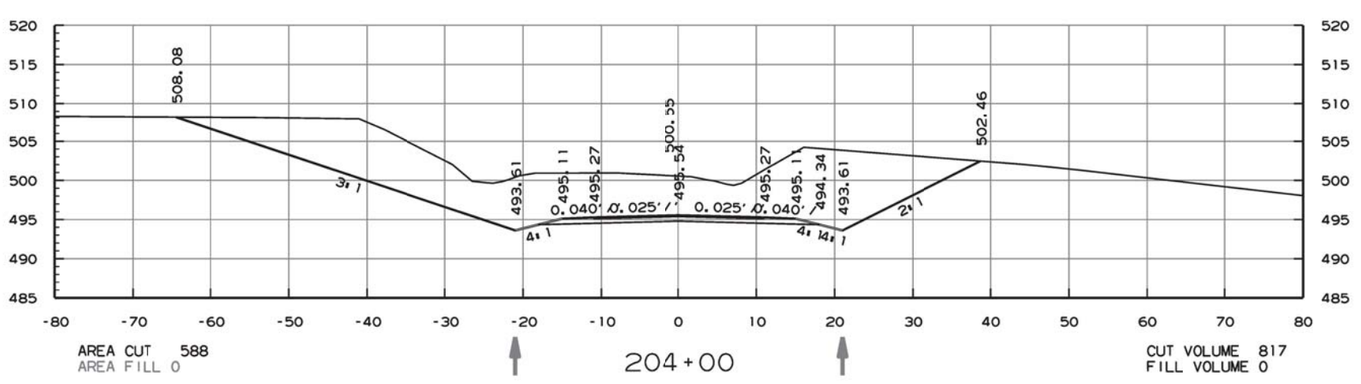
STA. 200+00 TO STA. 202+50

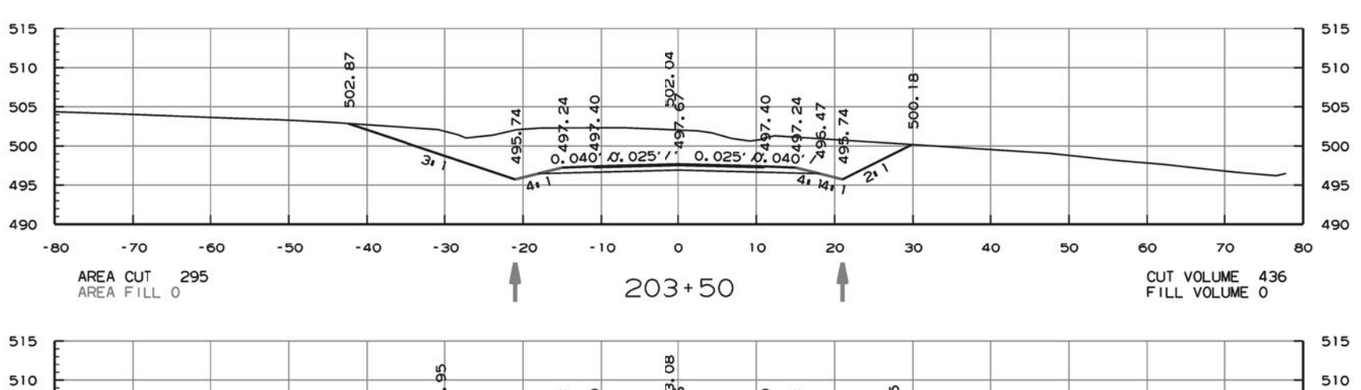
4 SECTION 2 - CROSS SECTIONS

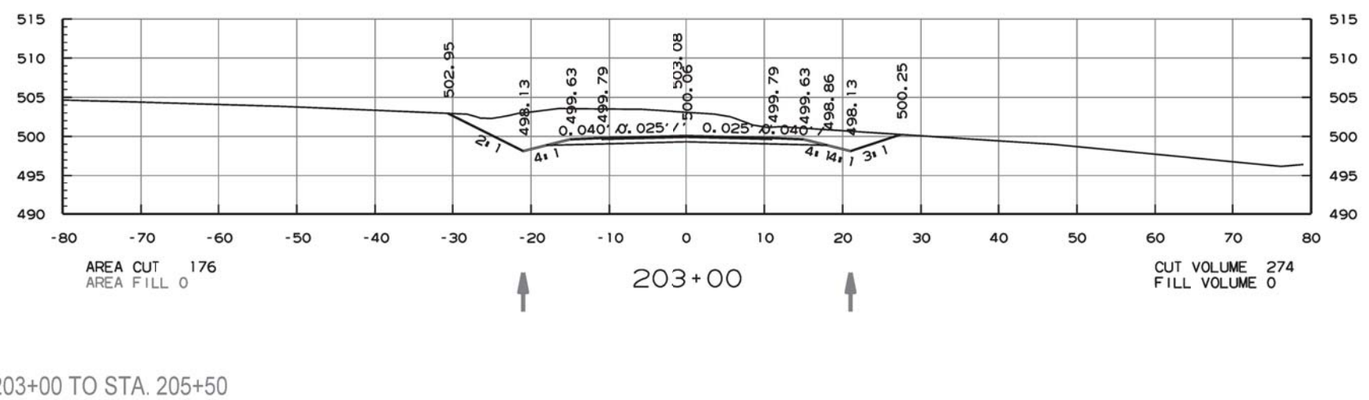












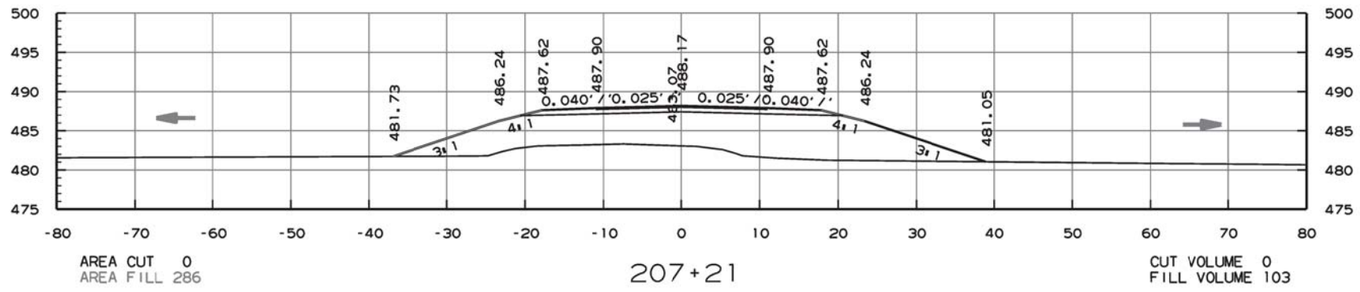
STA. 203+00 TO STA. 205+50

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.ROD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		75	83

JOB NO. BR2605

SECTION 2 - CROSS SECTIONS

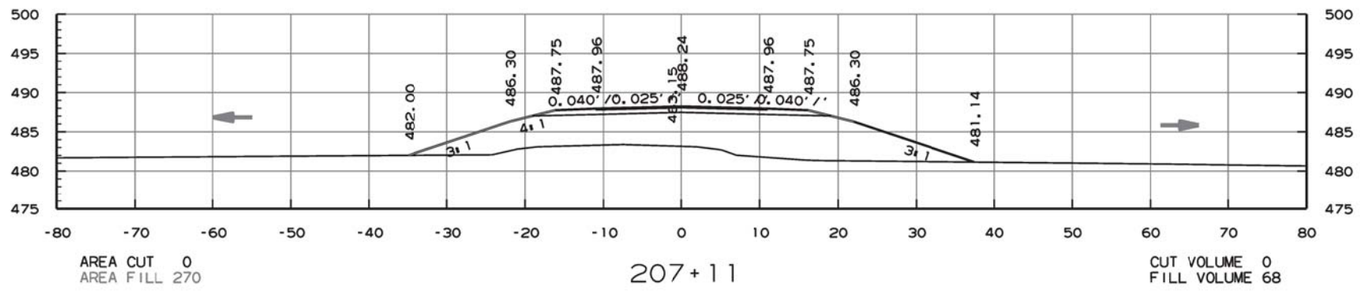
STATION 207+23.50 BEGIN 9.5' SHOULDER GUARDRAIL



AREA CUT 0
AREA FILL 286

207+21

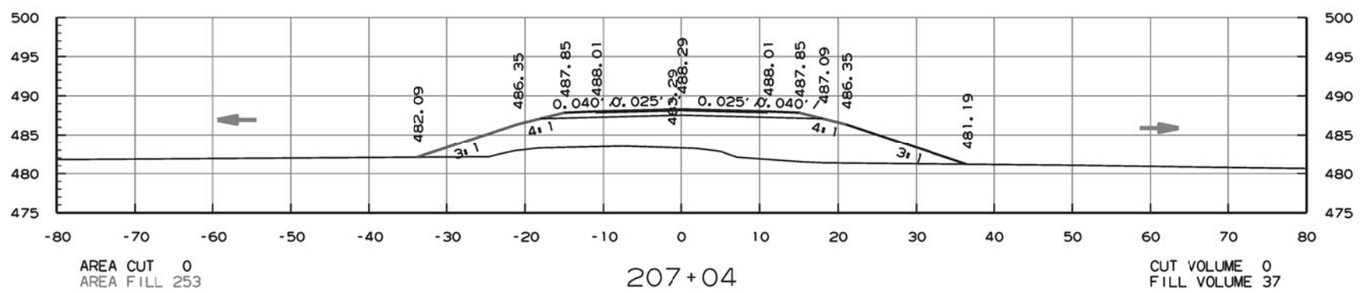
CUT VOLUME 0
FILL VOLUME 103



AREA CUT 0
AREA FILL 270

207+11

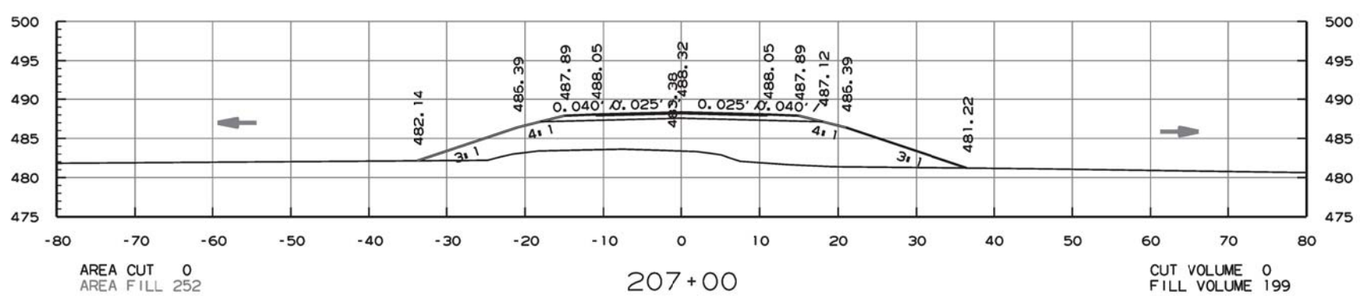
CUT VOLUME 0
FILL VOLUME 68



AREA CUT 0
AREA FILL 253

207+04

CUT VOLUME 0
FILL VOLUME 37



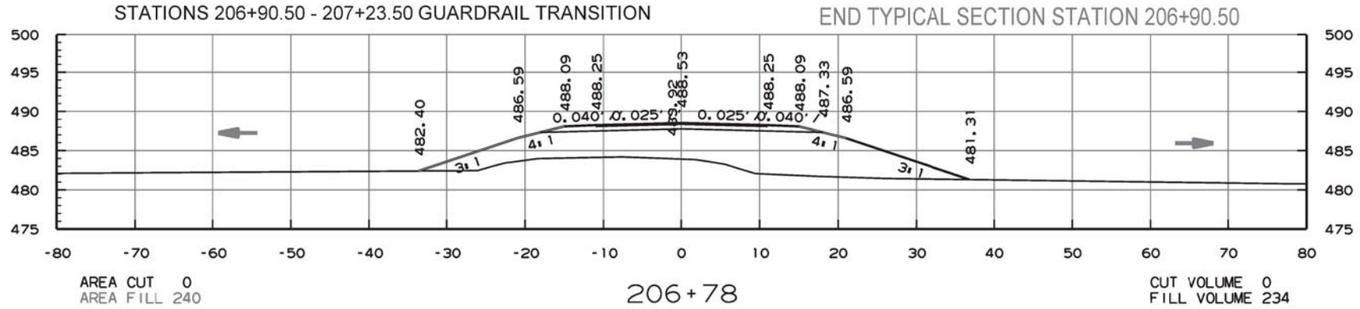
AREA CUT 0
AREA FILL 252

207+00

CUT VOLUME 0
FILL VOLUME 199

STATIONS 206+90.50 - 207+23.50 GUARDRAIL TRANSITION

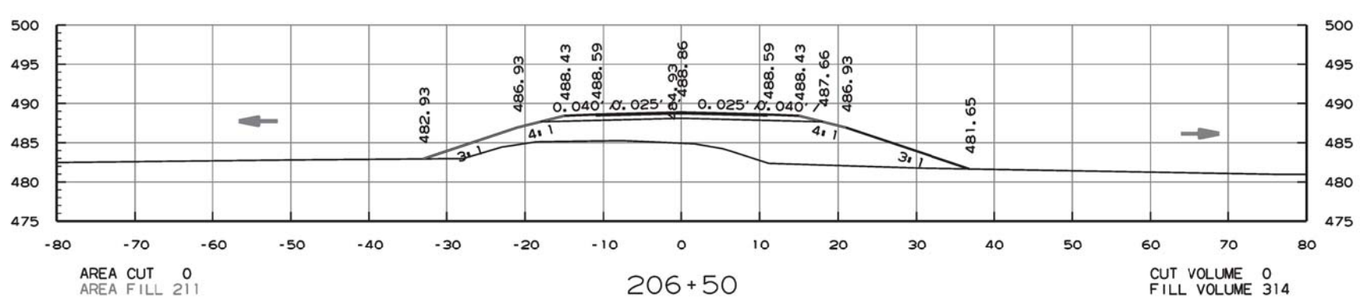
END TYPICAL SECTION STATION 206+90.50



AREA CUT 0
AREA FILL 240

206+78

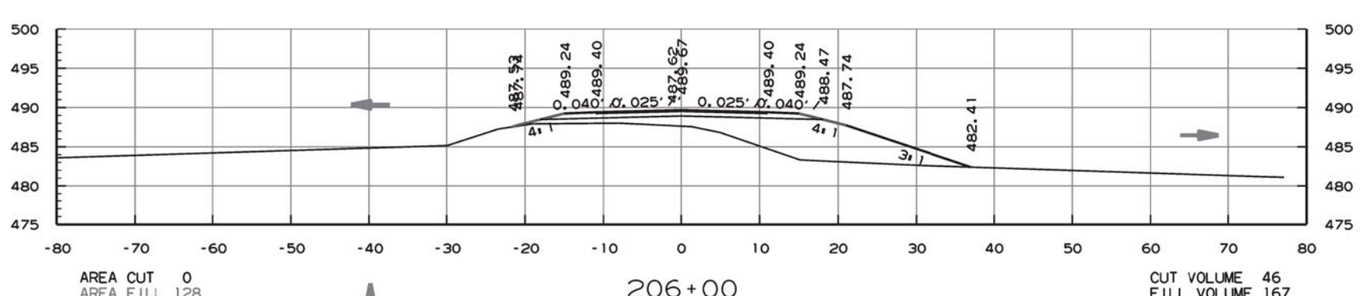
CUT VOLUME 0
FILL VOLUME 234



AREA CUT 0
AREA FILL 211

206+50

CUT VOLUME 0
FILL VOLUME 314



AREA CUT 0
AREA FILL 128

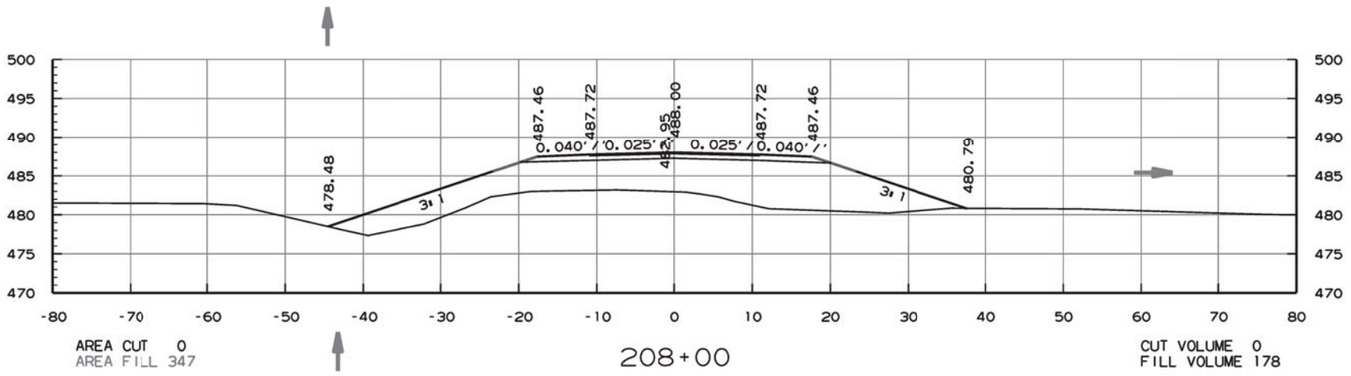
206+00

CUT VOLUME 46
FILL VOLUME 167

STA. 206+00 TO STA. 207+21

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	76	83

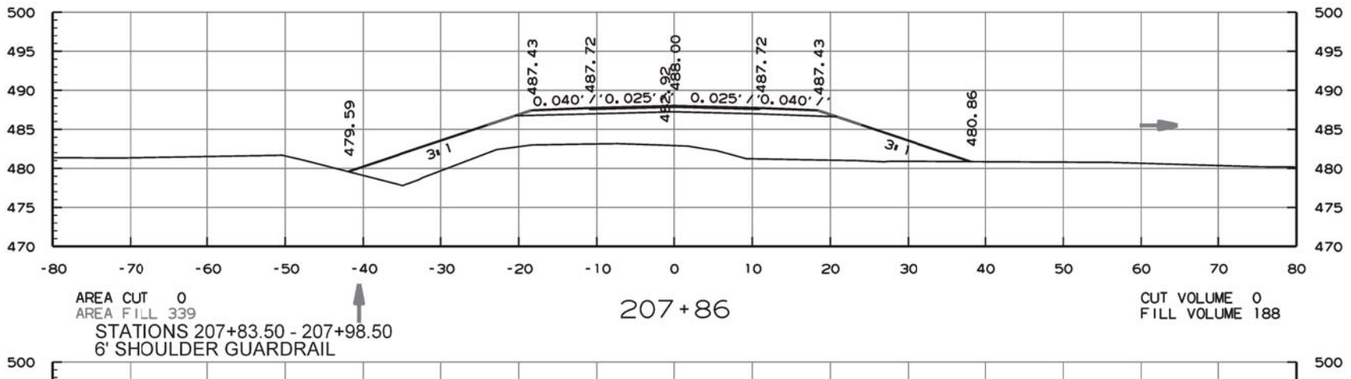
SECTION 2 - CROSS SECTIONS



AREA CUT 0
AREA FILL 347

208+00

CUT VOLUME 0
FILL VOLUME 178

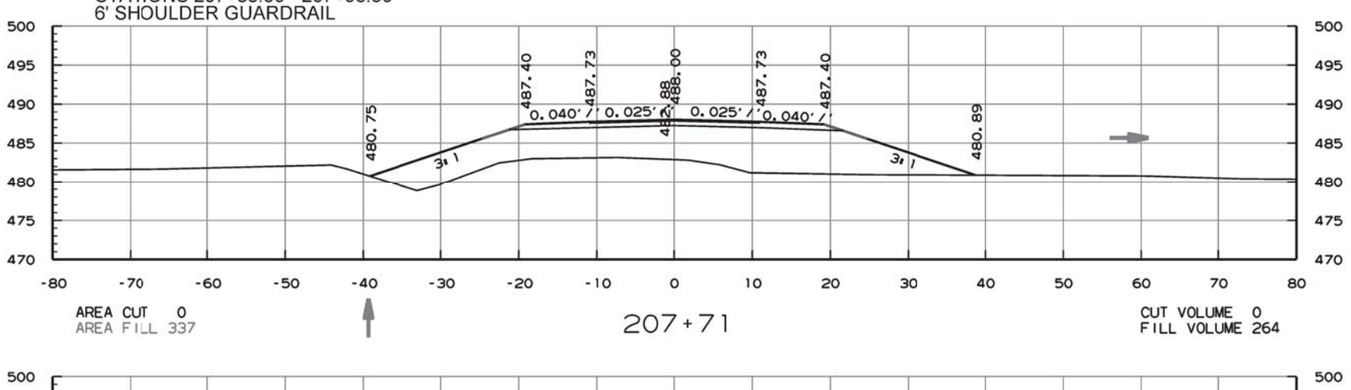


AREA CUT 0
AREA FILL 339

207+86

CUT VOLUME 0
FILL VOLUME 188

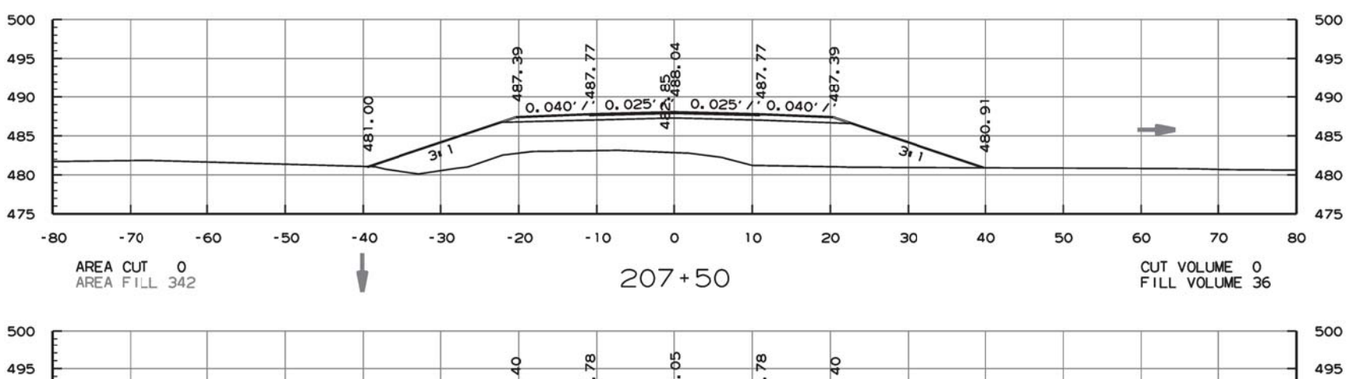
STATIONS 207+83.50 - 207+98.50
6' SHOULDER GUARDRAIL



AREA CUT 0
AREA FILL 337

207+71

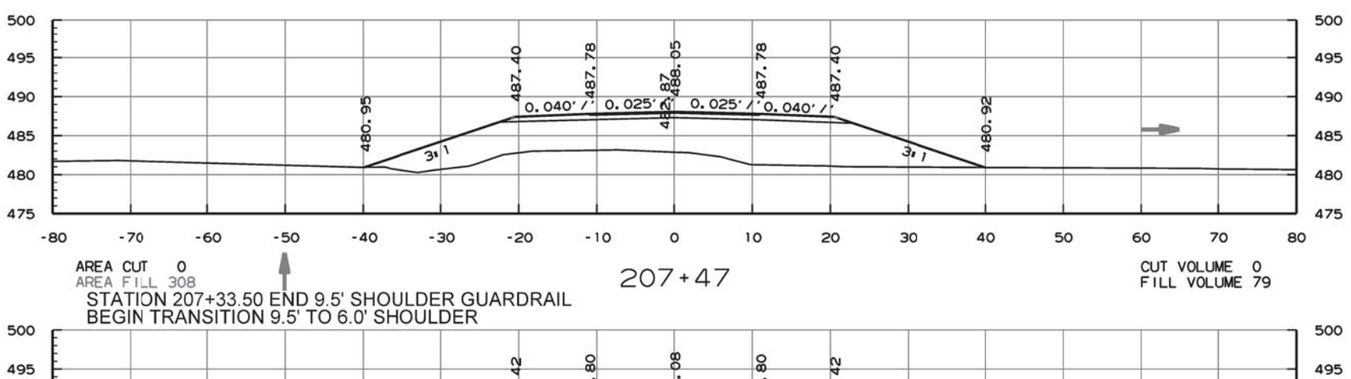
CUT VOLUME 0
FILL VOLUME 264



AREA CUT 0
AREA FILL 342

207+50

CUT VOLUME 0
FILL VOLUME 36

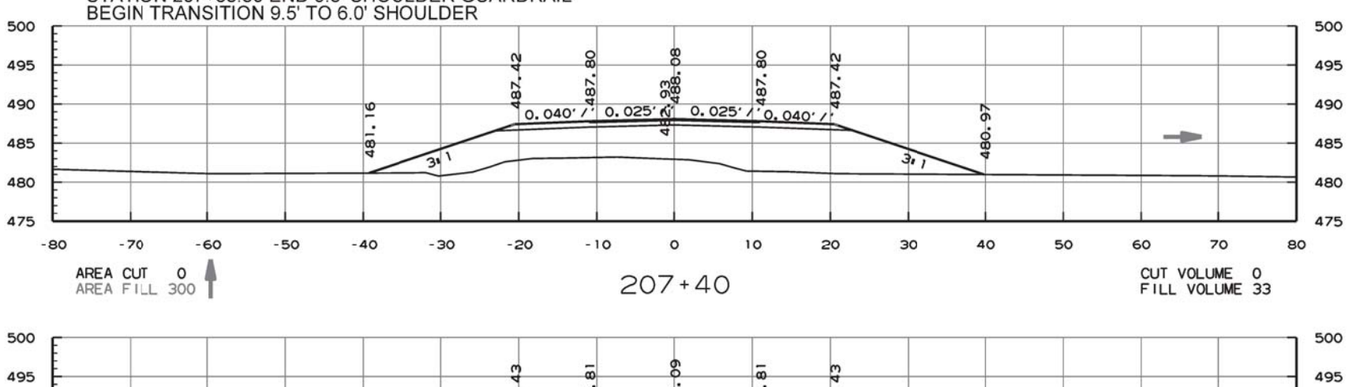


AREA CUT 0
AREA FILL 308

207+47

CUT VOLUME 0
FILL VOLUME 79

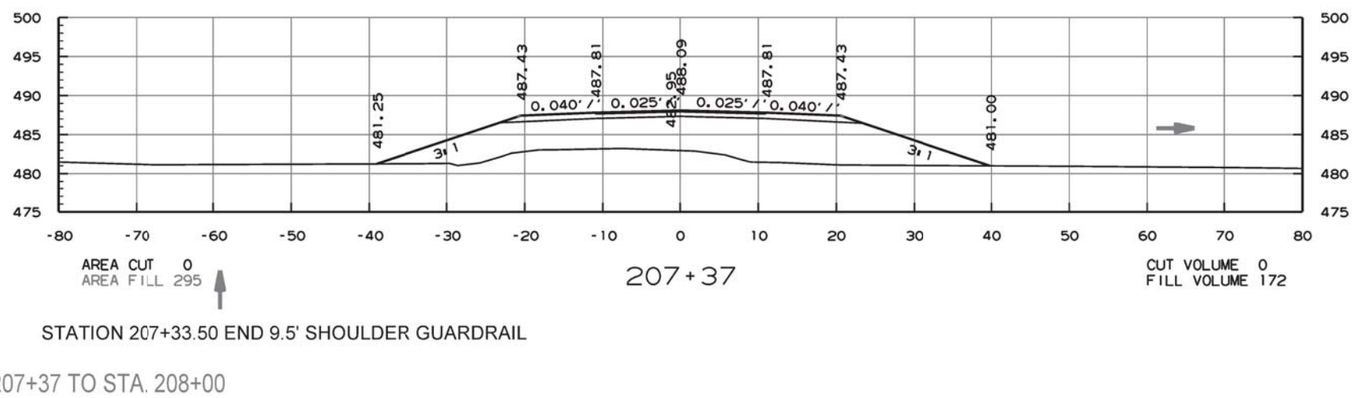
STATION 207+33.50 END 9.5' SHOULDER GUARDRAIL
BEGIN TRANSITION 9.5' TO 6.0' SHOULDER



AREA CUT 0
AREA FILL 300

207+40

CUT VOLUME 0
FILL VOLUME 33



AREA CUT 0
AREA FILL 295

207+37

CUT VOLUME 0
FILL VOLUME 172

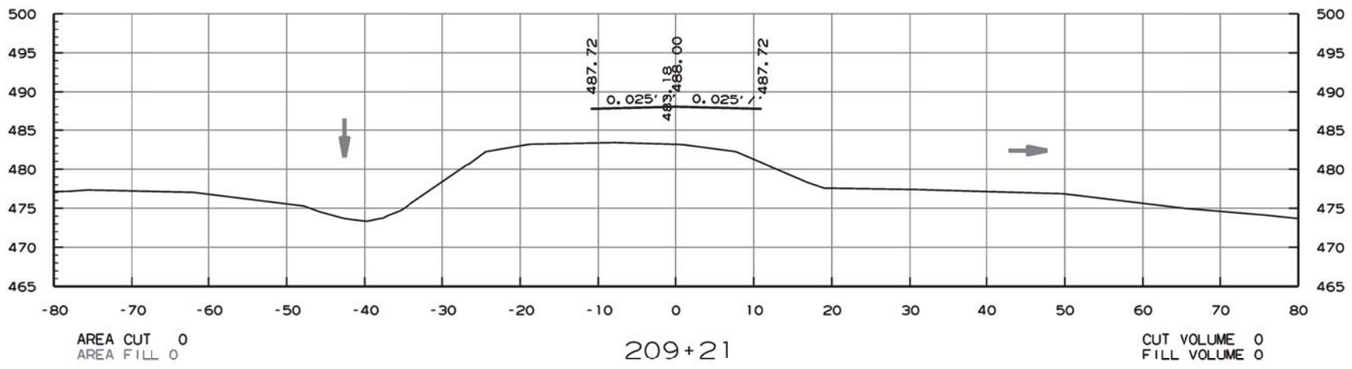
STATION 207+33.50 END 9.5' SHOULDER GUARDRAIL

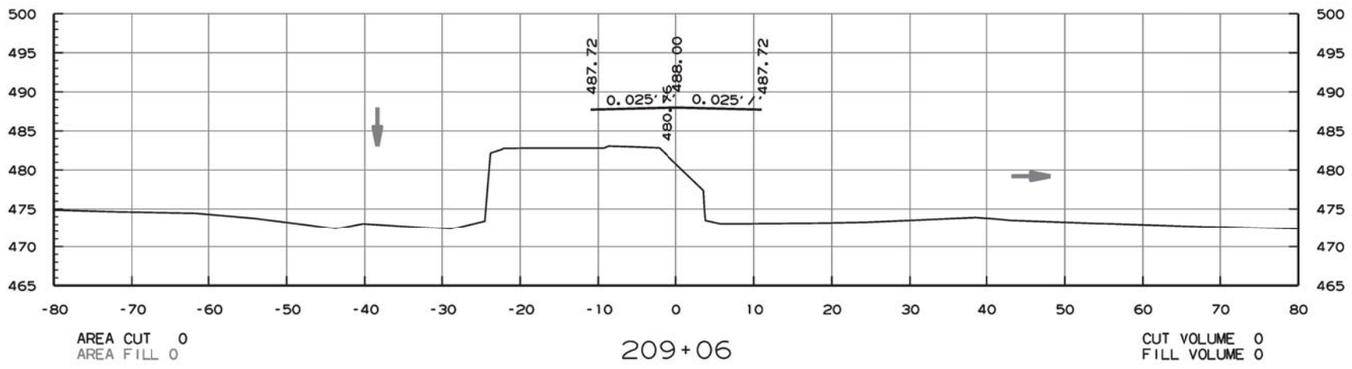
STA. 207+37 TO STA. 208+00

4 SECTION 2 - CROSS SECTIONS

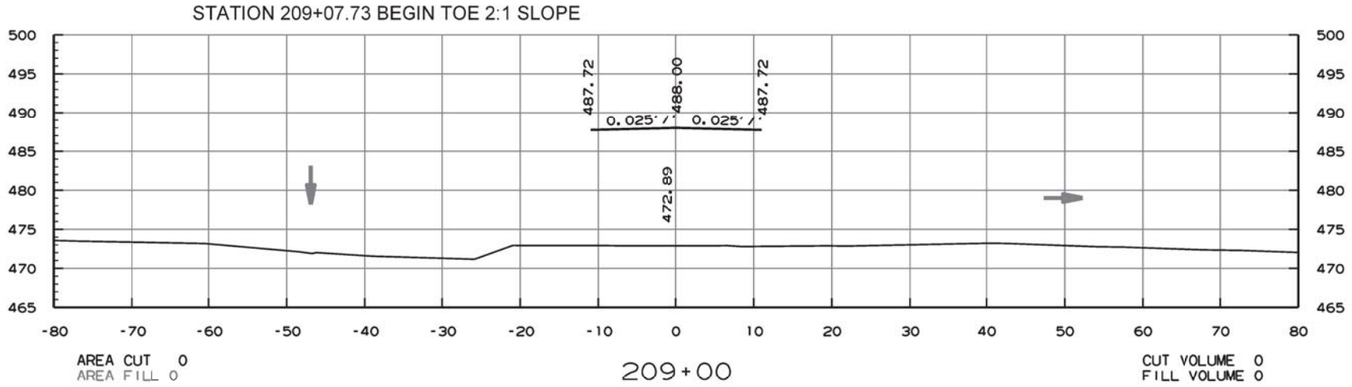
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID PROJ.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	77	83

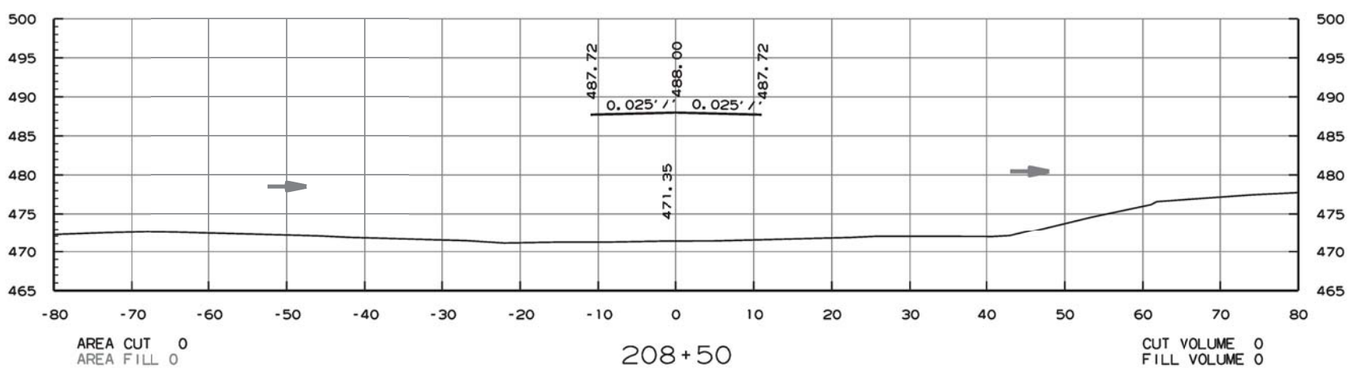
JOB NO.

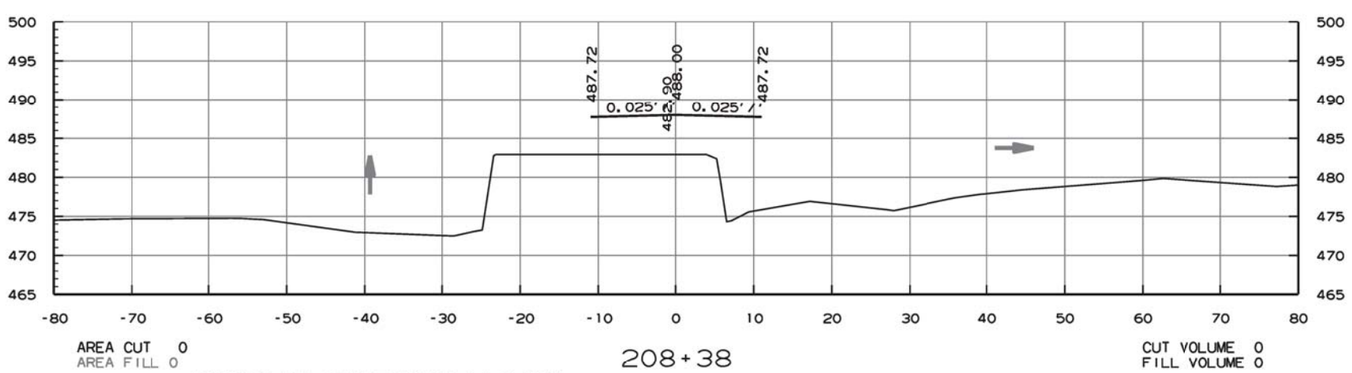




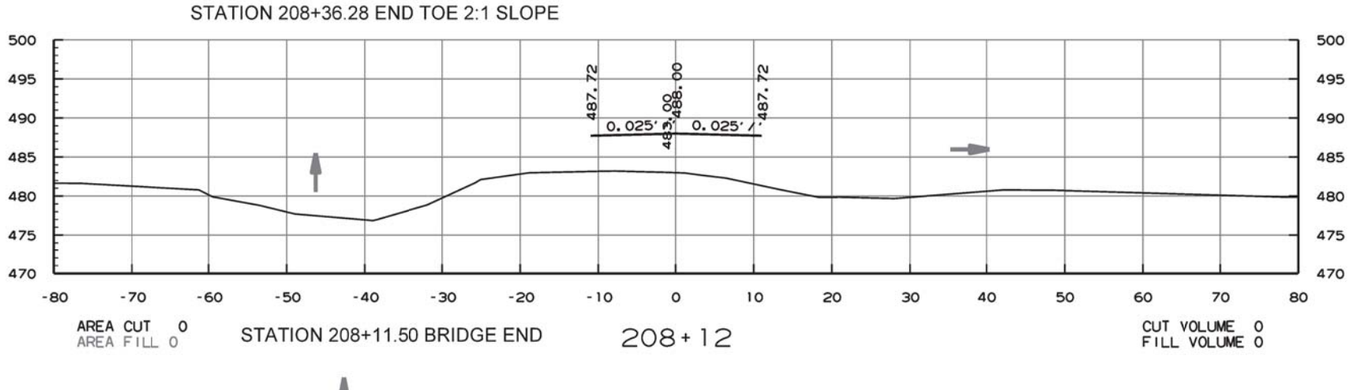
STATION 209+07.73 BEGIN TOE 2:1 SLOPE







STATION 208+36.28 END TOE 2:1 SLOPE



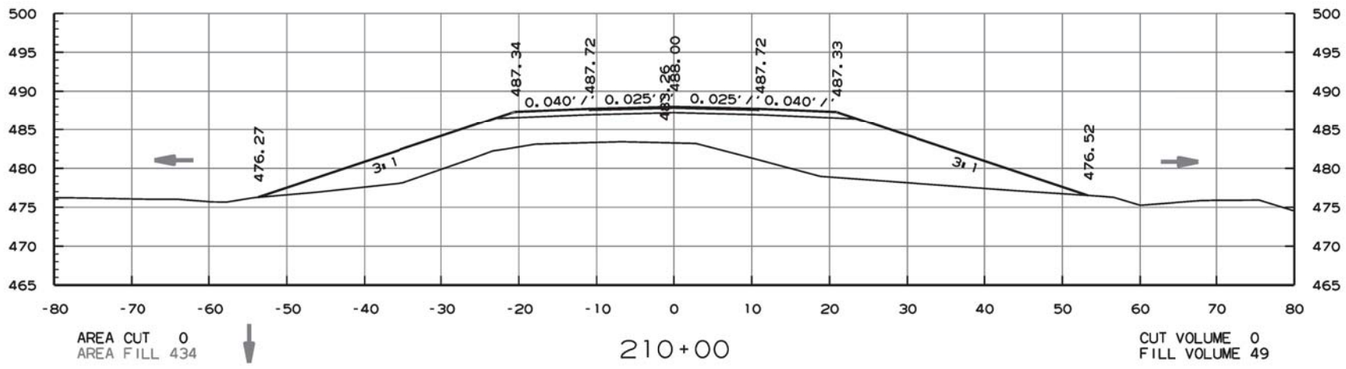
STATION 208+11.50 BRIDGE END

STA. 208+12 TO STA. 209+21

SECTION 2 - CROSS SECTIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		78	83

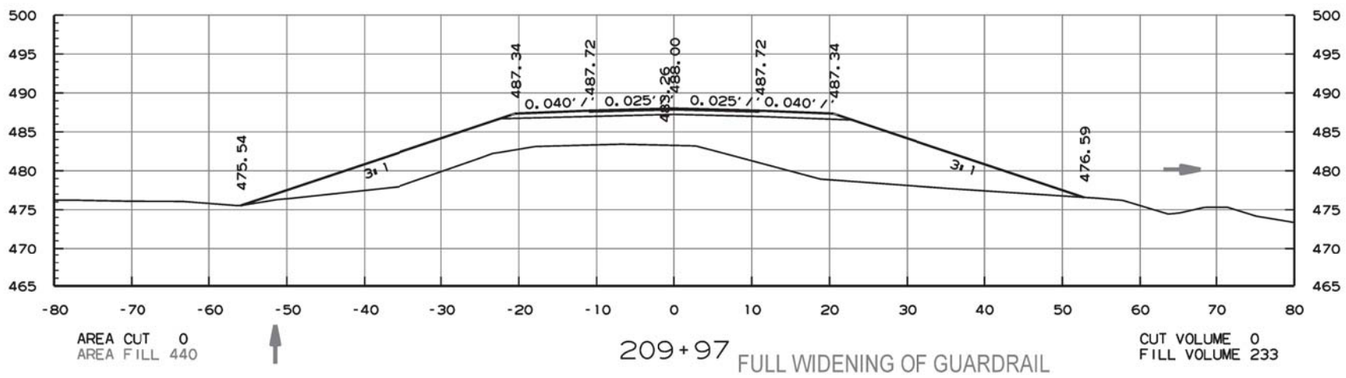
JOB NO. BR2605



AREA CUT 0
AREA FILL 434

210+00

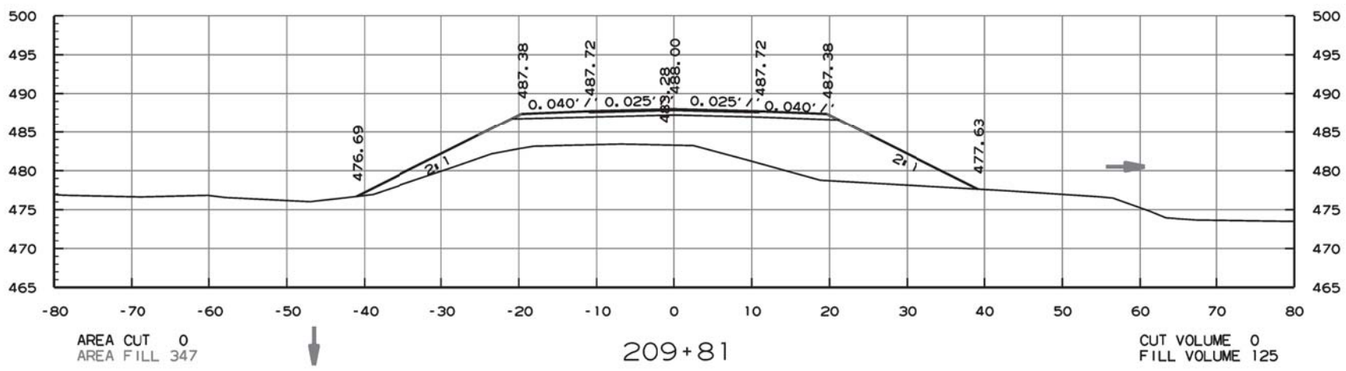
CUT VOLUME 0
FILL VOLUME 49



AREA CUT 0
AREA FILL 440

209+97 FULL WIDENING OF GUARDRAIL

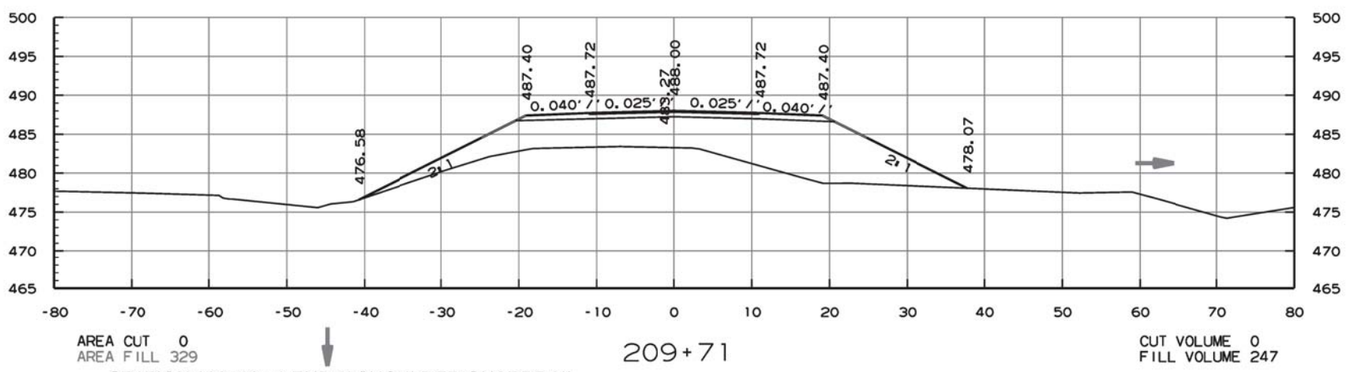
CUT VOLUME 0
FILL VOLUME 233



AREA CUT 0
AREA FILL 347

209+81

CUT VOLUME 0
FILL VOLUME 125

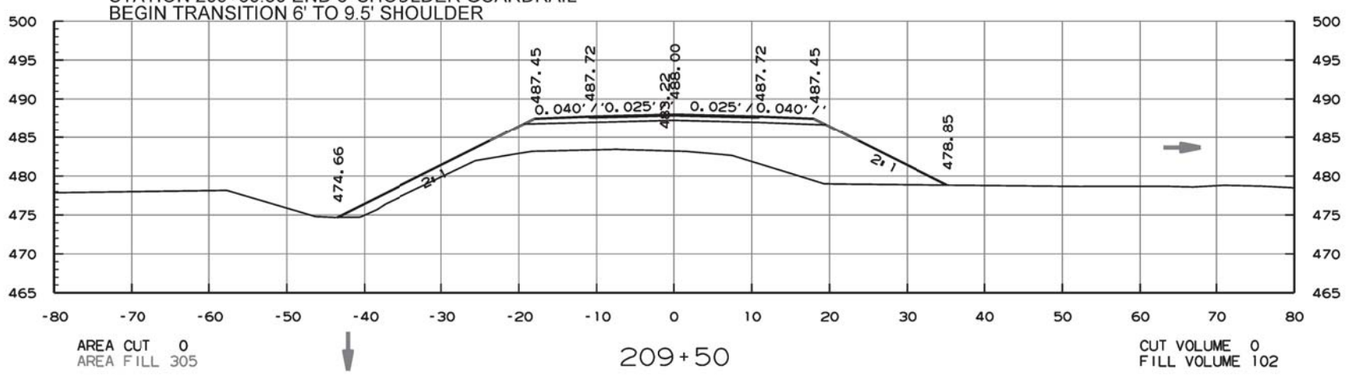


AREA CUT 0
AREA FILL 329

209+71

CUT VOLUME 0
FILL VOLUME 247

STATION 209+60.50 END 6' SHOULDER GUARDRAIL
BEGIN TRANSITION 6' TO 9.5' SHOULDER

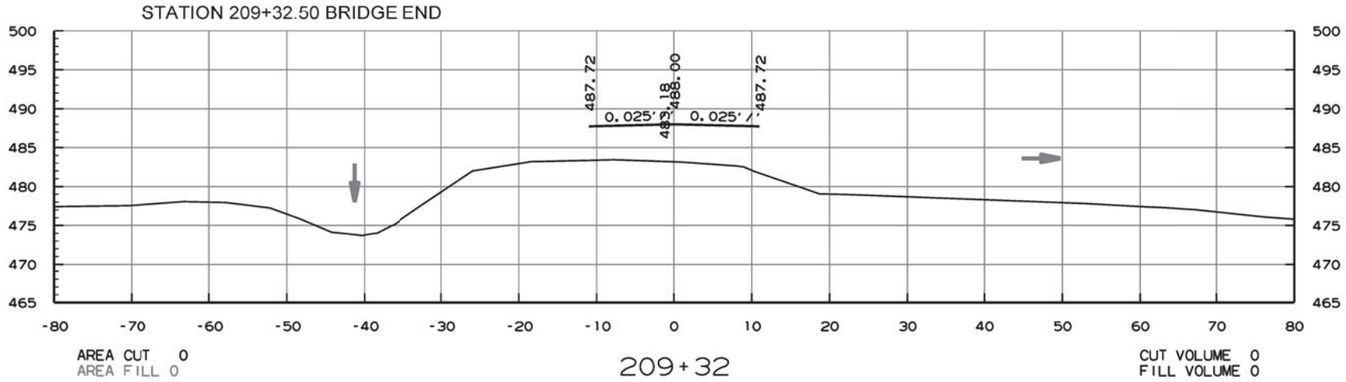


AREA CUT 0
AREA FILL 305

209+50

CUT VOLUME 0
FILL VOLUME 102

STATION 209+32.50 BRIDGE END



AREA CUT 0
AREA FILL 0

209+32

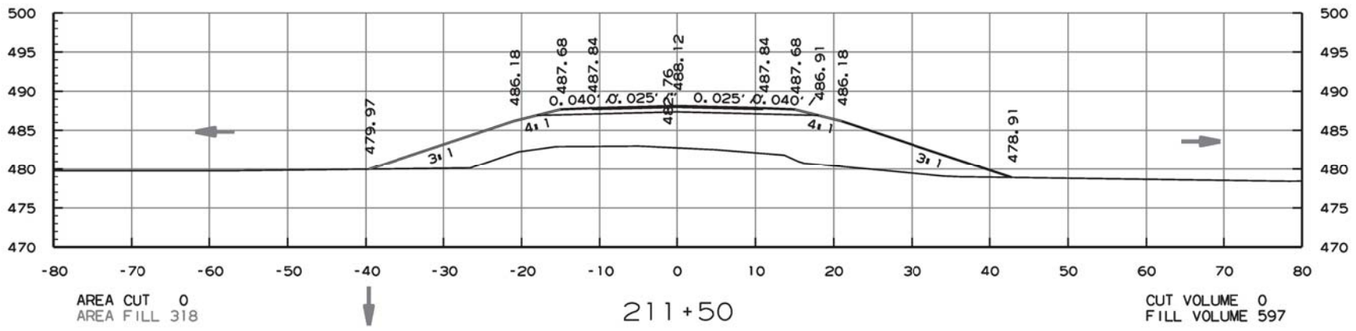
CUT VOLUME 0
FILL VOLUME 0

STA. 209+32 TO STA. 210+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		79	83

JOB NO. BR2605

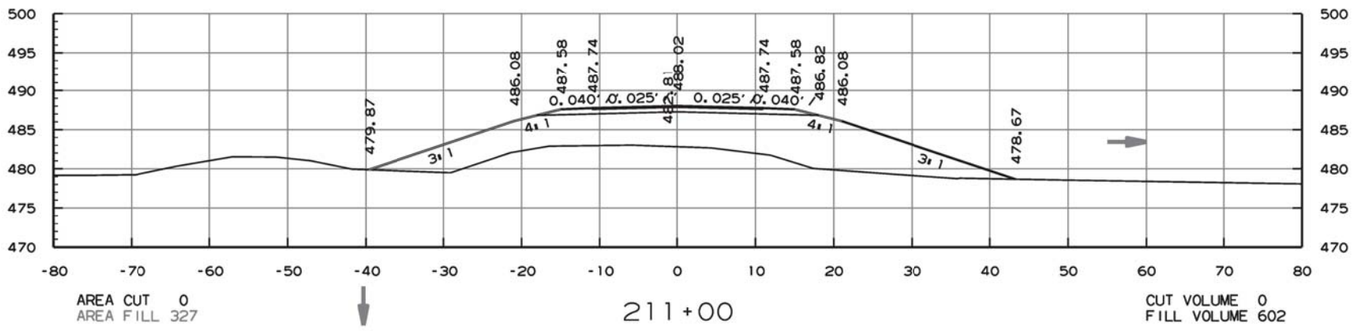
SECTION 2 - CROSS SECTIONS



AREA CUT 0
AREA FILL 318

211+50

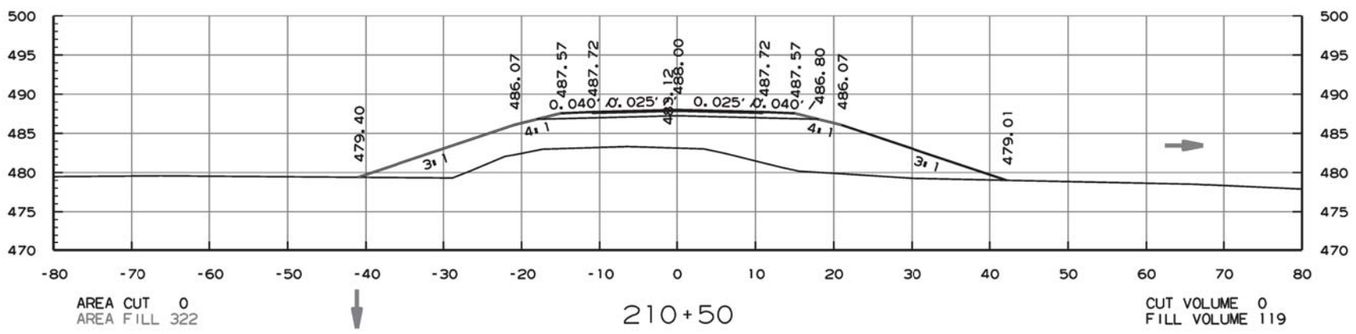
CUT VOLUME 0
FILL VOLUME 597



AREA CUT 0
AREA FILL 327

211+00

CUT VOLUME 0
FILL VOLUME 602

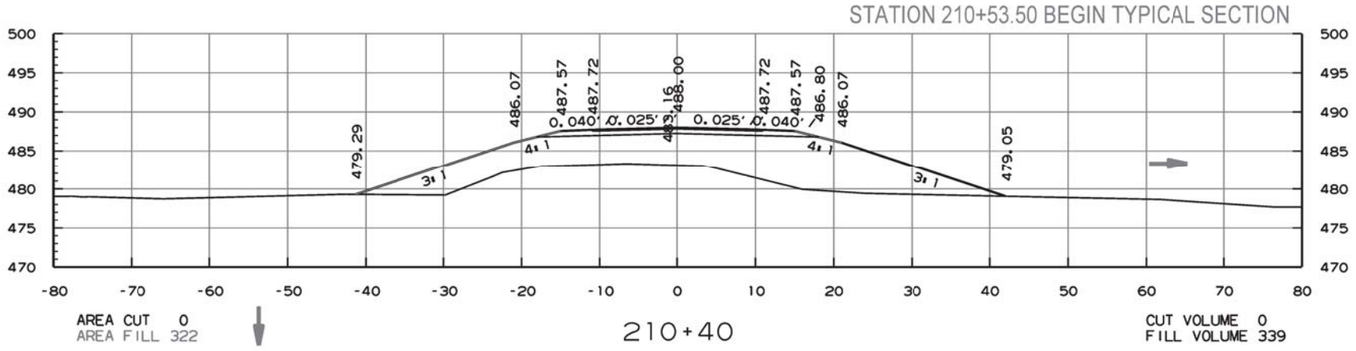


AREA CUT 0
AREA FILL 322

210+50

CUT VOLUME 0
FILL VOLUME 119

STATION 210+53.50 BEGIN TYPICAL SECTION

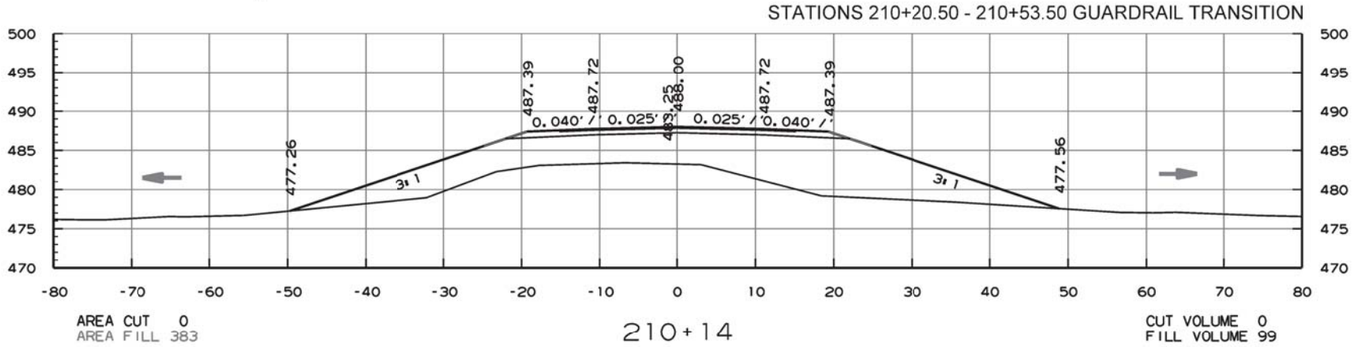


AREA CUT 0
AREA FILL 322

210+40

CUT VOLUME 0
FILL VOLUME 339

STATIONS 210+20.50 - 210+53.50 GUARDRAIL TRANSITION

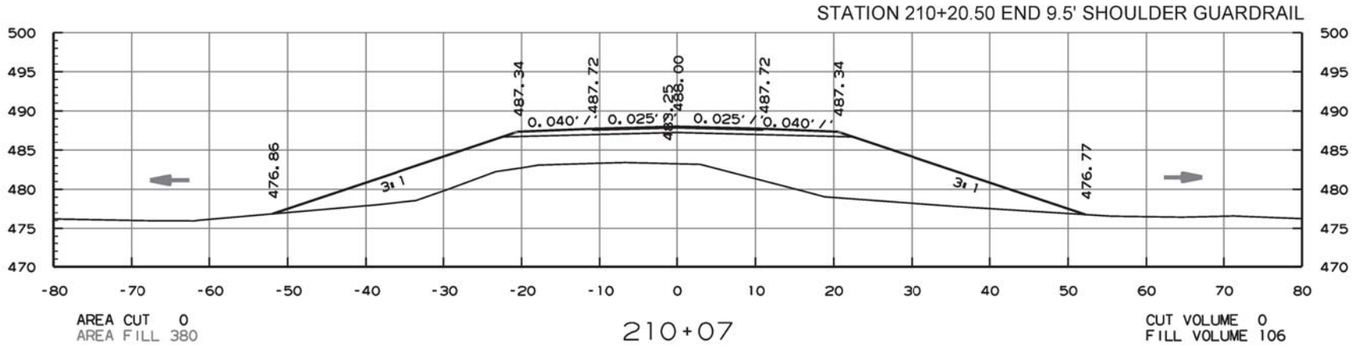


AREA CUT 0
AREA FILL 383

210+14

CUT VOLUME 0
FILL VOLUME 99

STATION 210+20.50 END 9.5' SHOULDER GUARDRAIL



AREA CUT 0
AREA FILL 380

210+07

CUT VOLUME 0
FILL VOLUME 106

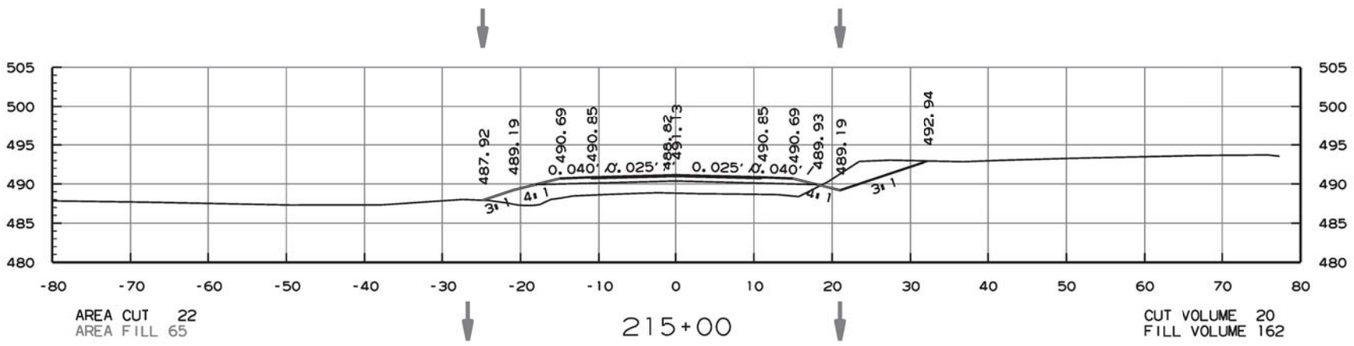
STATION 210+10.50 BEGIN 9.5' SHOULDER GUARDRAIL

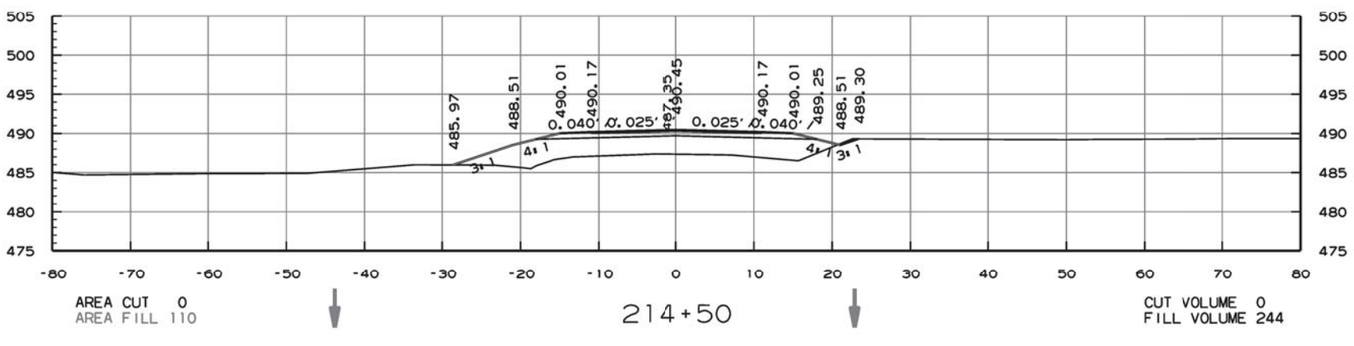
STA. 210+07 TO STA. 211+50

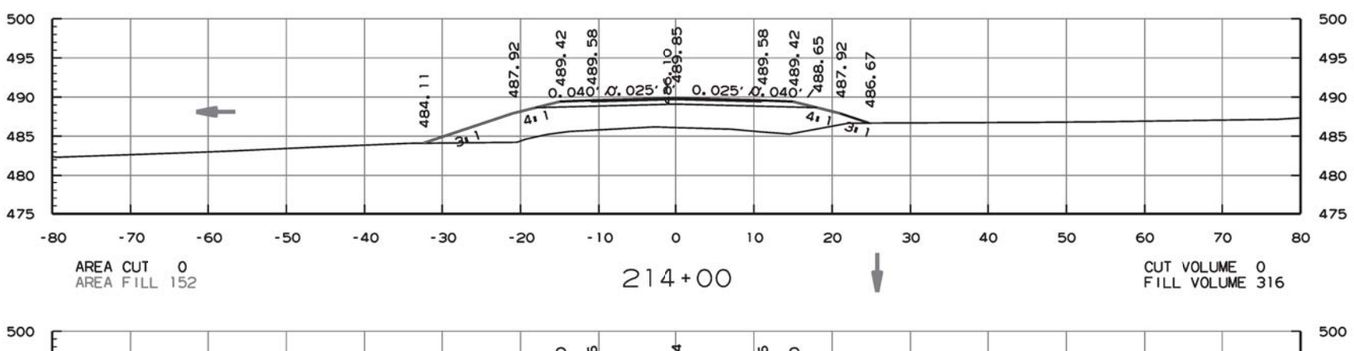
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				6	ARK.		80	83

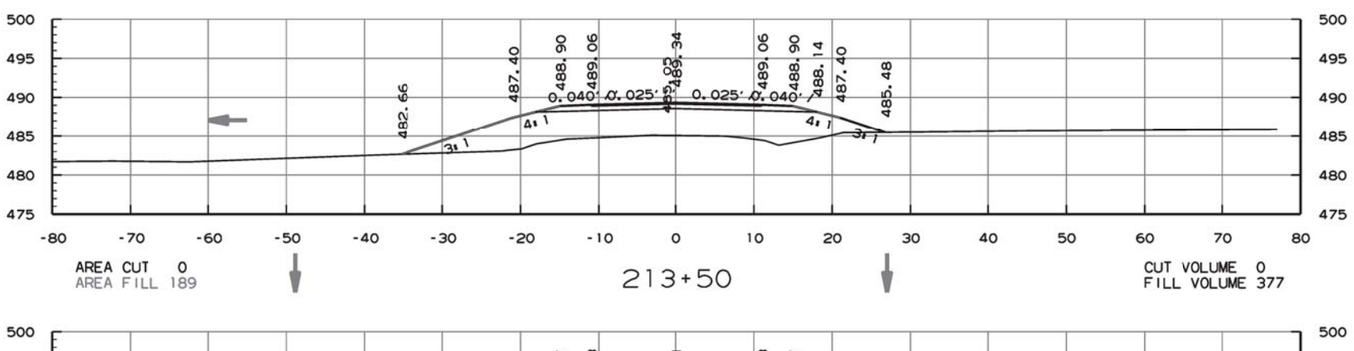
JOB NO. BR2605

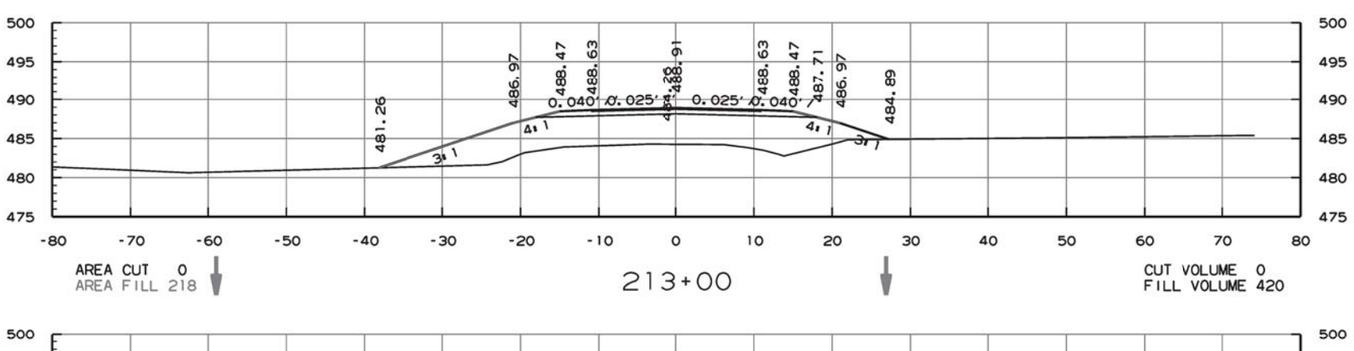
4 SECTION 2 - CROSS SECTIONS

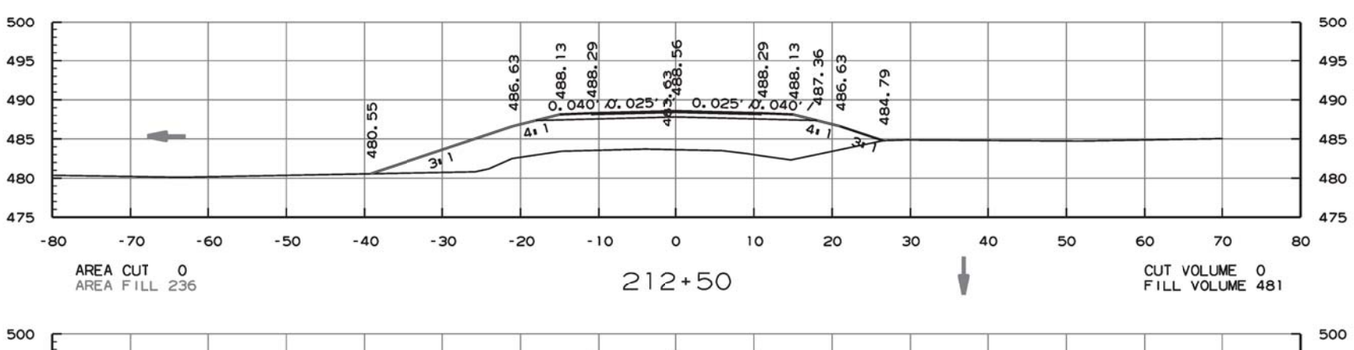


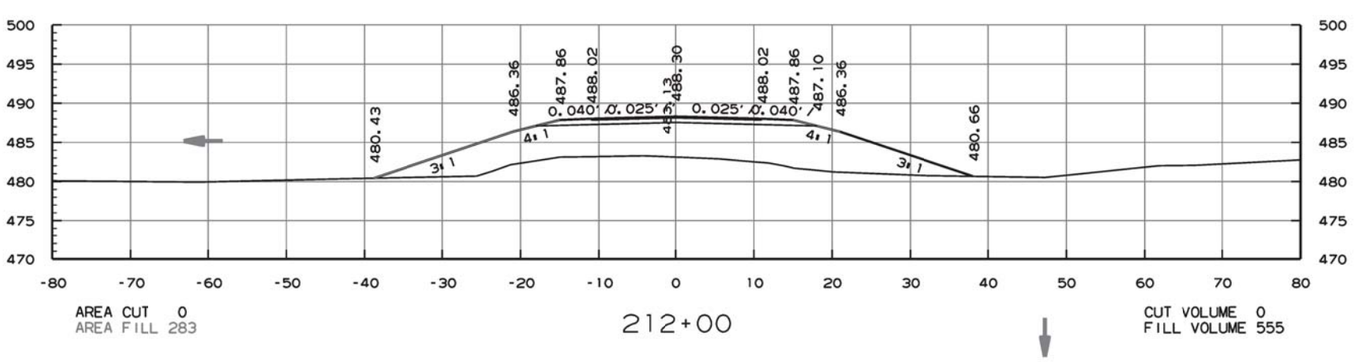










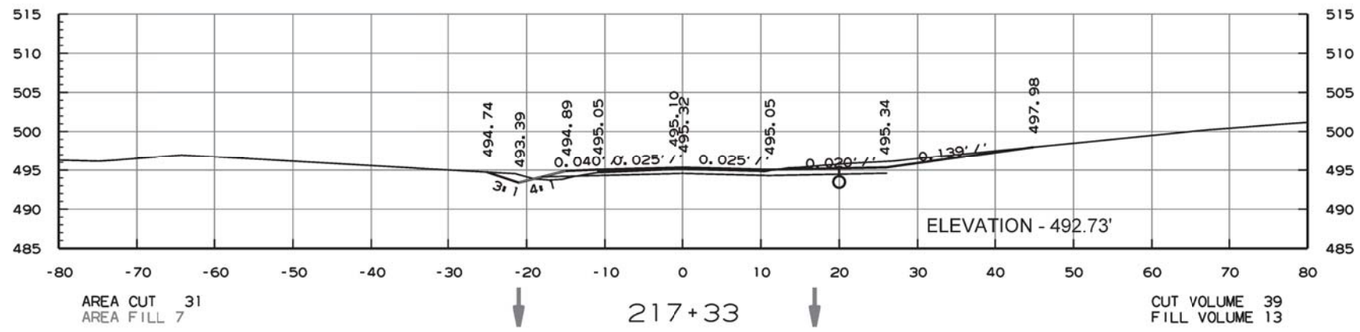


STA. 212+00 TO STA. 215+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	BR2605	81	83

SECTION 2 - CROSS SECTIONS

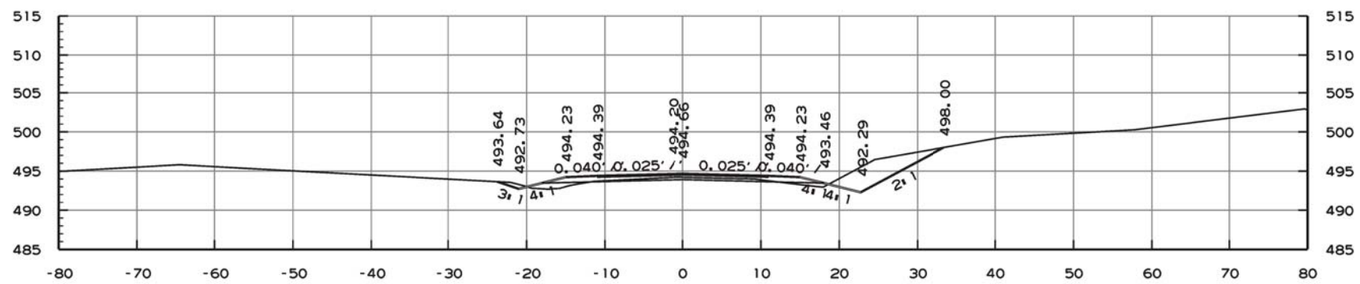
STATION 217+35.00
DRIVEWAY ON LEFT
18" X 30' SIDE DRAIN
UNCLASSIFIED EXCAVATION = 33.19 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 32.58 TON
SURFACE AREA = 63.5 SQ. YD.
ADDITIONAL SURFACE AREA = 38.02 SQ. YD.



AREA CUT 31
AREA FILL 7

217+33

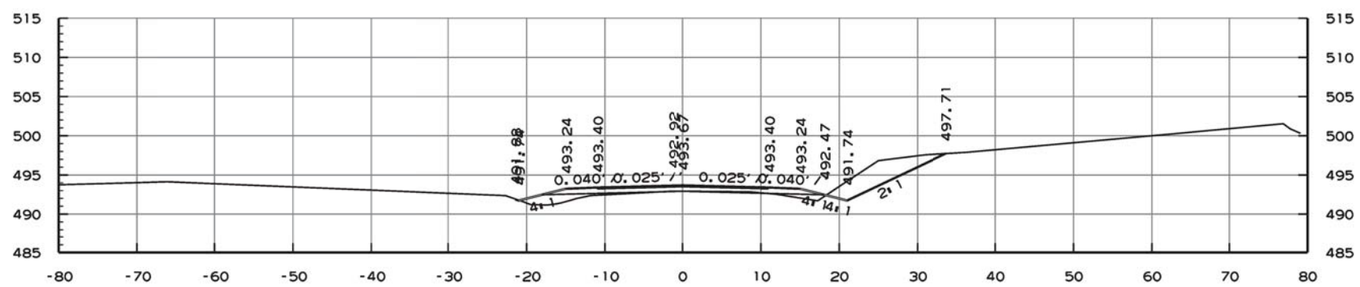
CUT VOLUME 39
FILL VOLUME 13



AREA CUT 33
AREA FILL 5

217+00

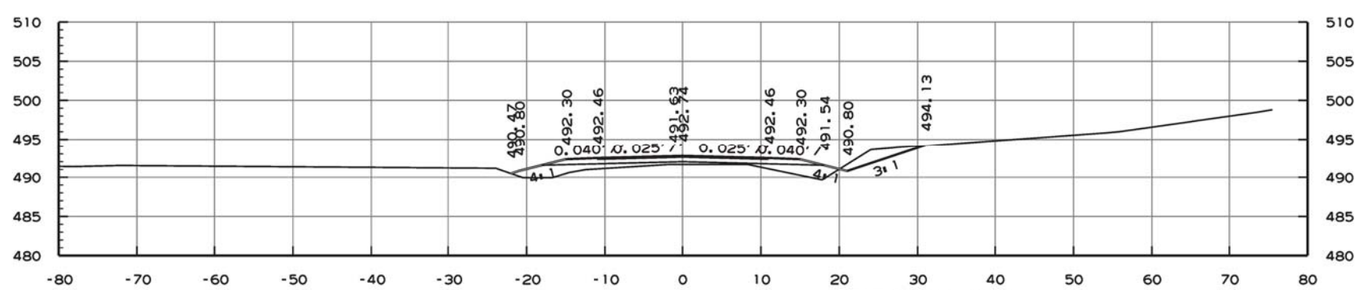
CUT VOLUME 58
FILL VOLUME 16



AREA CUT 30
AREA FILL 12

216+50

CUT VOLUME 37
FILL VOLUME 40

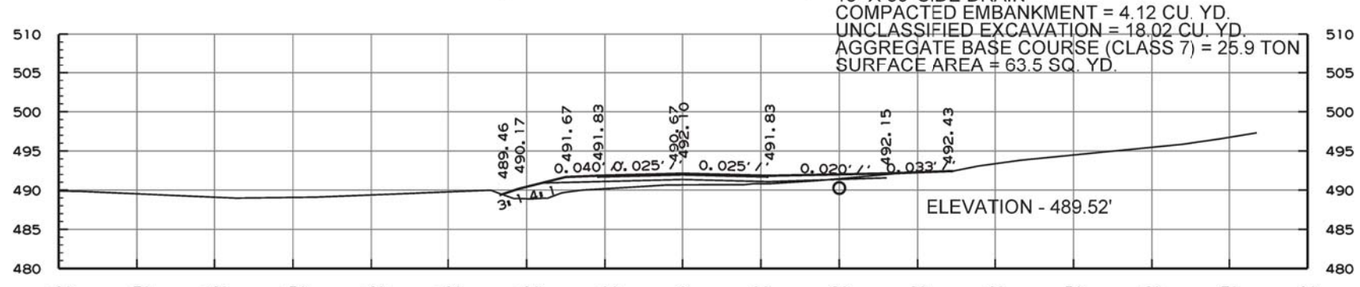


AREA CUT 10
AREA FILL 31

216+00

CUT VOLUME 7
FILL VOLUME 42

STATION 215+59.00
DRIVEWAY ON LEFT
18" X 30' SIDE DRAIN
COMPACTED EMBANKMENT = 4.12 CU. YD.
UNCLASSIFIED EXCAVATION = 18.02 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 25.9 TON
SURFACE AREA = 63.5 SQ. YD.

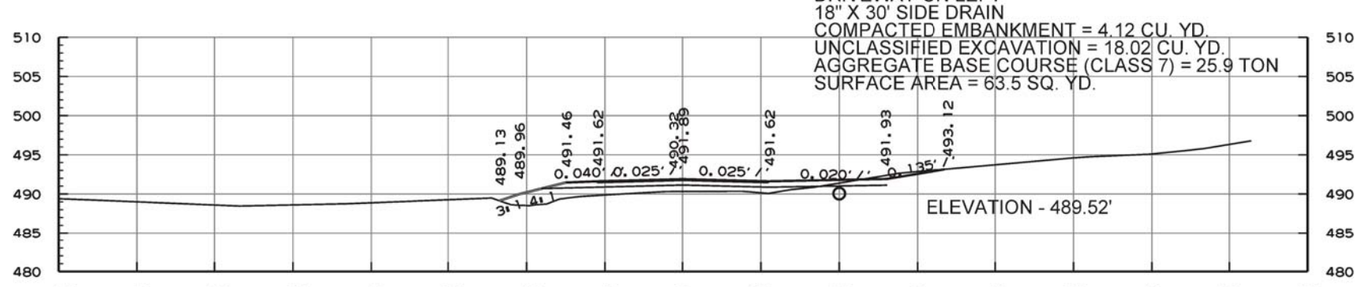


AREA CUT 0
AREA FILL 31

215+63

CUT VOLUME 3
FILL VOLUME 17

STATION 215+59.00
DRIVEWAY ON LEFT
18" X 30' SIDE DRAIN
COMPACTED EMBANKMENT = 4.12 CU. YD.
UNCLASSIFIED EXCAVATION = 18.02 CU. YD.
AGGREGATE BASE COURSE (CLASS 7) = 25.9 TON
SURFACE AREA = 63.5 SQ. YD.



AREA CUT 10
AREA FILL 38

215+50

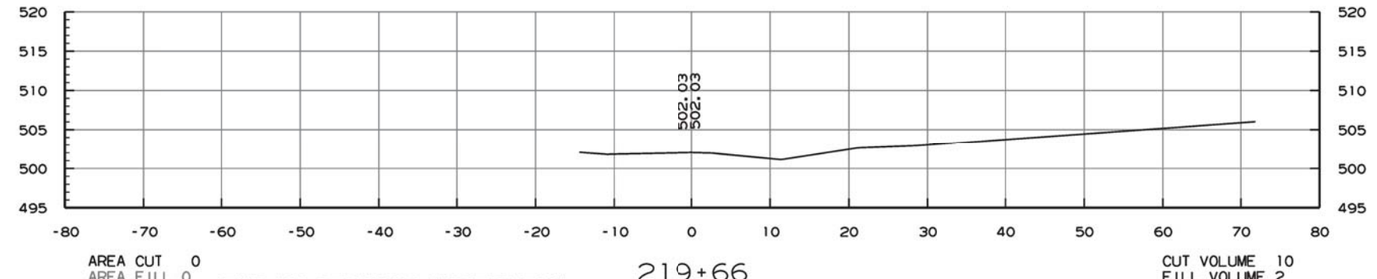
CUT VOLUME 30
FILL VOLUME 95

SECTION 2 - CROSS SECTIONS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.AID. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		82	83

JOB NO. BR2605

STA. 215+50 TO STA. 217+33

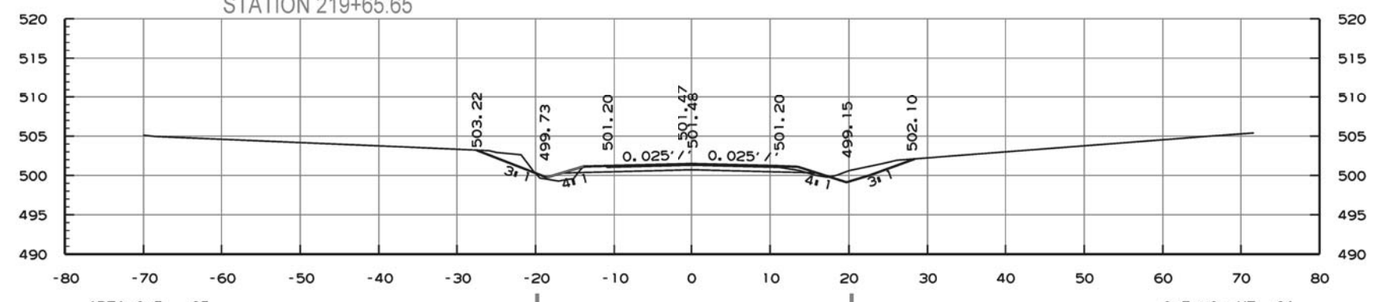


AREA CUT 0
AREA FILL 0

219+66

CUT VOLUME 10
FILL VOLUME 2

END JOB SECTION 2 (LOST CREEK)
STATION 219+65.65

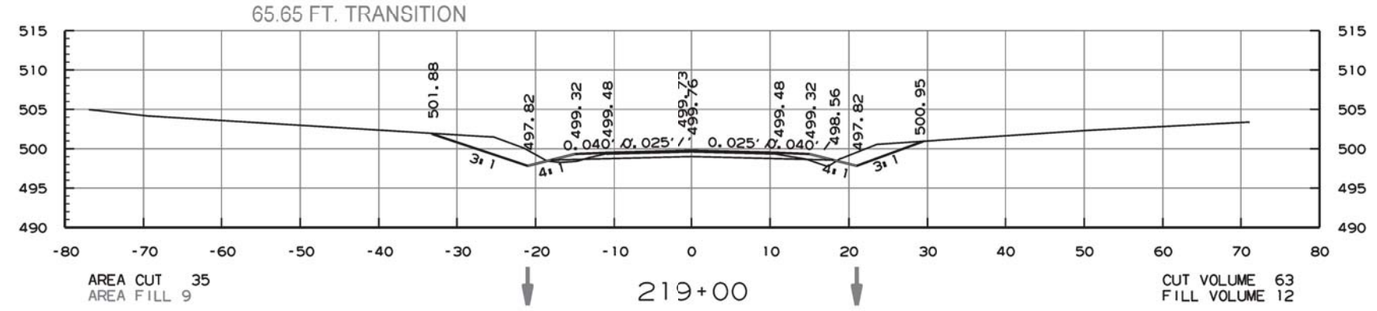


AREA CUT 35
AREA FILL 6

219+50

CUT VOLUME 64
FILL VOLUME 14

65.65 FT. TRANSITION

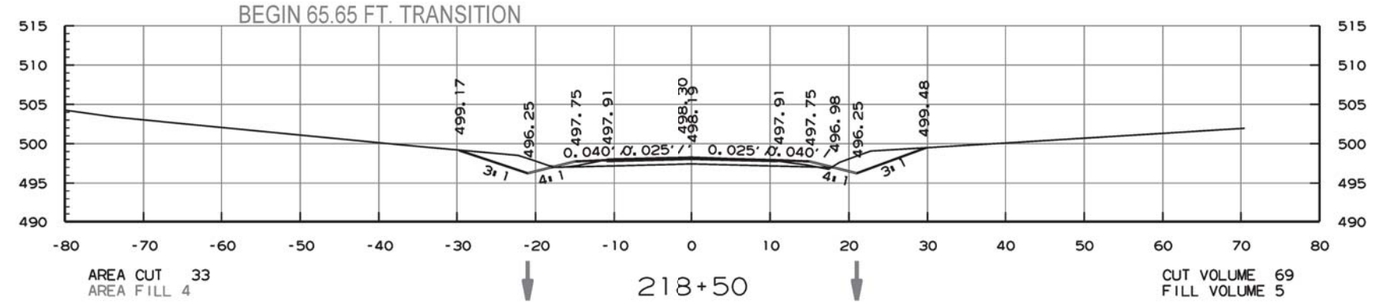


AREA CUT 35
AREA FILL 9

219+00

CUT VOLUME 63
FILL VOLUME 12

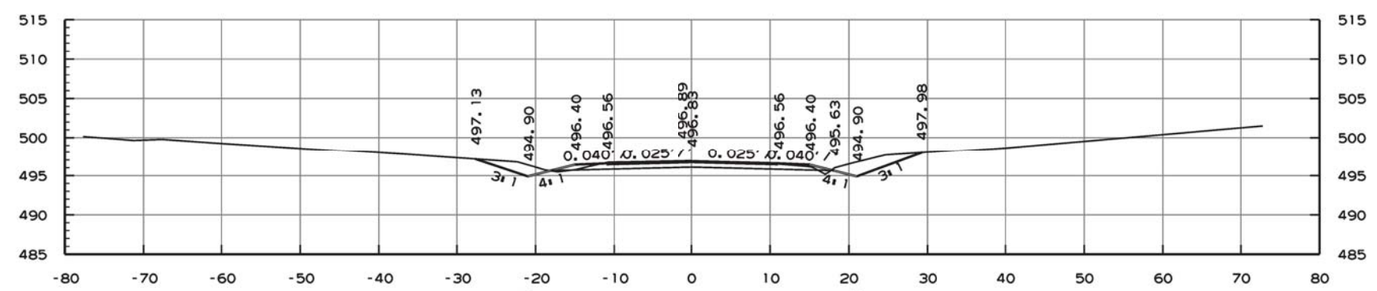
BEGIN 65.65 FT. TRANSITION



AREA CUT 33
AREA FILL 4

218+50

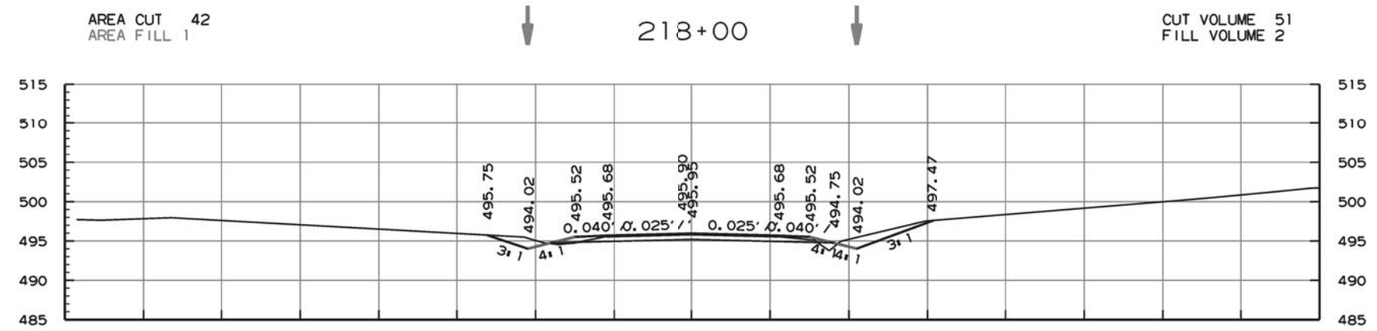
CUT VOLUME 69
FILL VOLUME 5



AREA CUT 42
AREA FILL 1

218+00

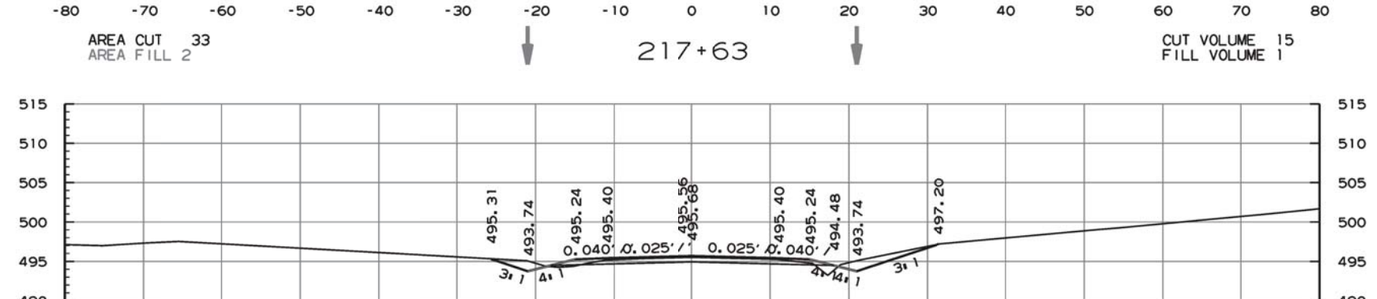
CUT VOLUME 51
FILL VOLUME 2



AREA CUT 33
AREA FILL 2

217+63

CUT VOLUME 15
FILL VOLUME 1



AREA CUT 29
AREA FILL 3

217+50

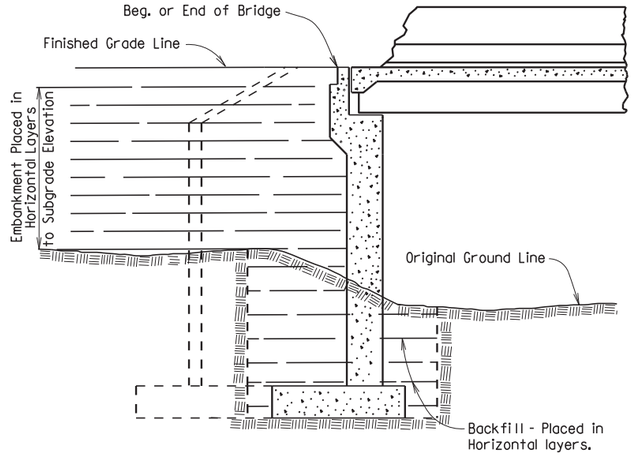
CUT VOLUME 19
FILL VOLUME 6

STA. 217+50 TO STA. 219+66

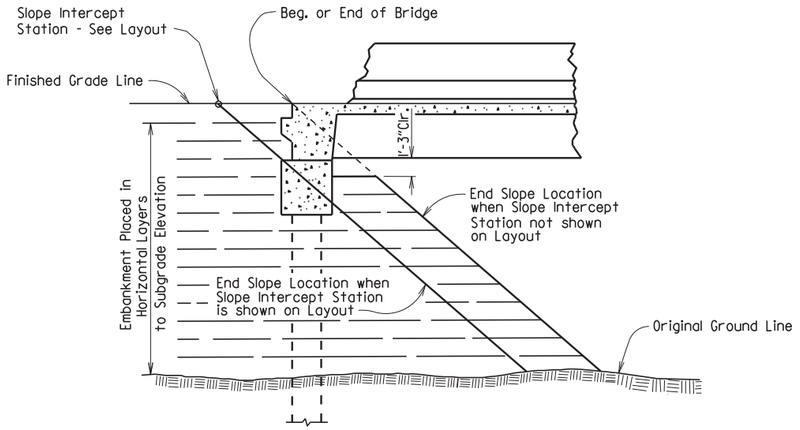
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FEDERAL DEPARTMENT	STATE	FEDERAL PROJ.NO.	SHEET NO.	TOTAL SHEETS
				G	ARK.			
				JOB NO.		BR2605	83	83

4 SECTION 2 - CROSS SECTIONS

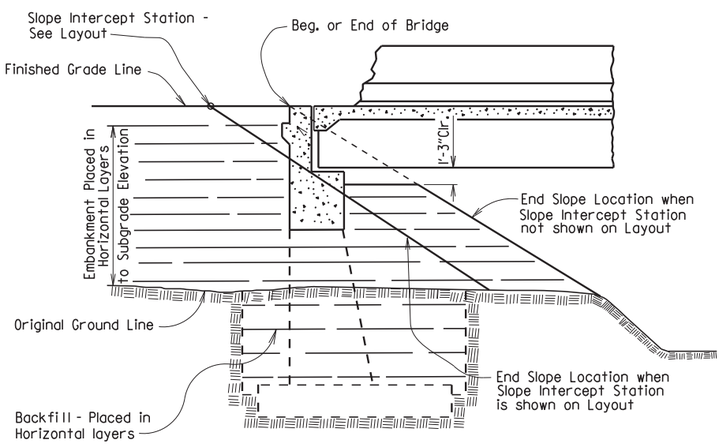
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				(1) EMBANKMENT & BACKFILL 55000				



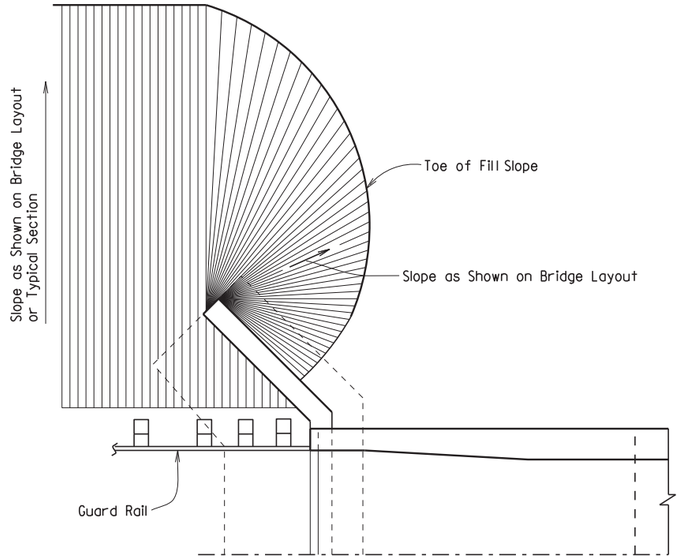
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



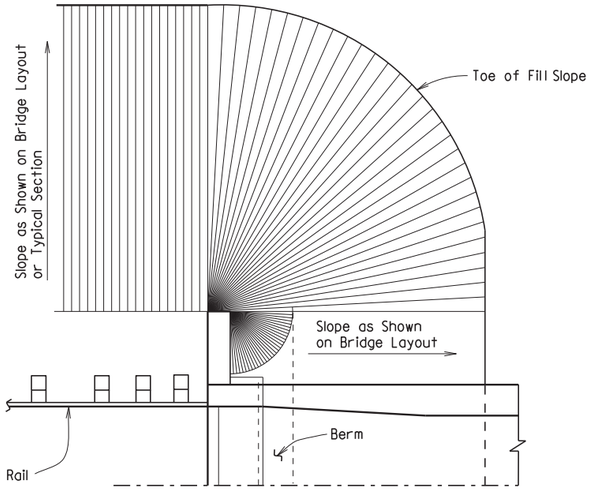
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



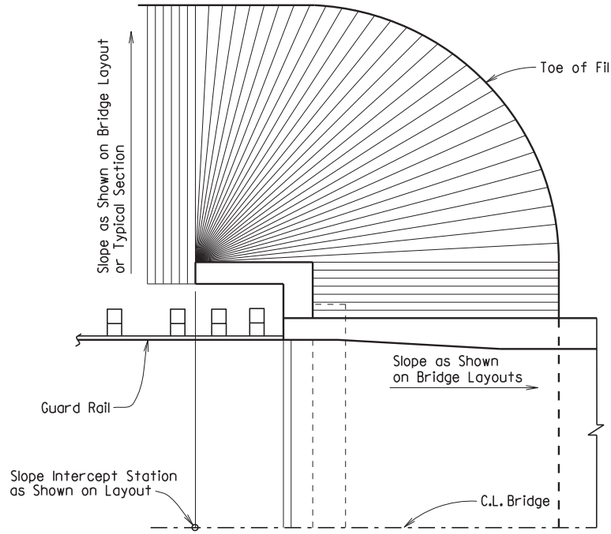
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



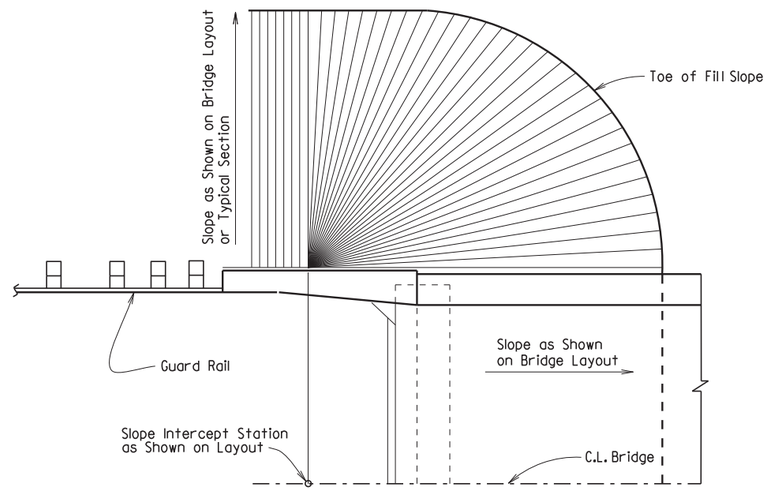
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn

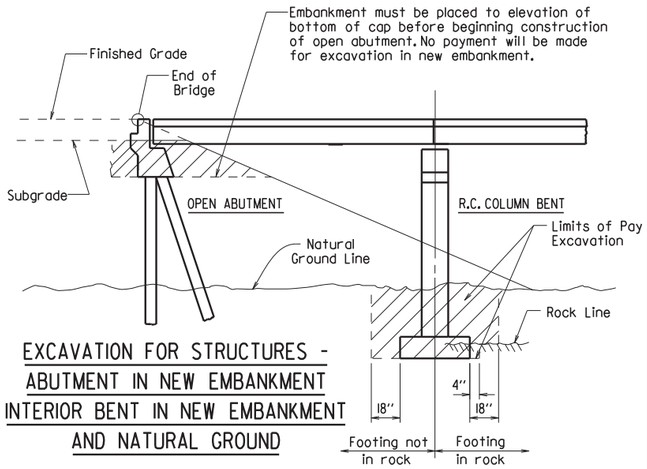
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DESIGNED BY: STD. DATE: -

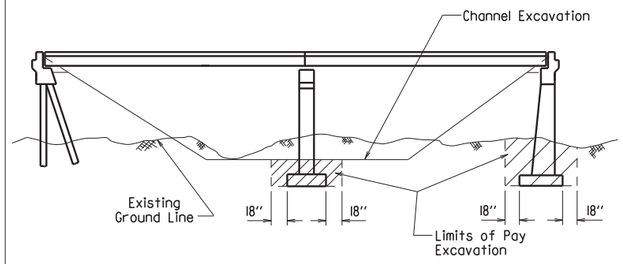
DRAWING NO. 55000

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

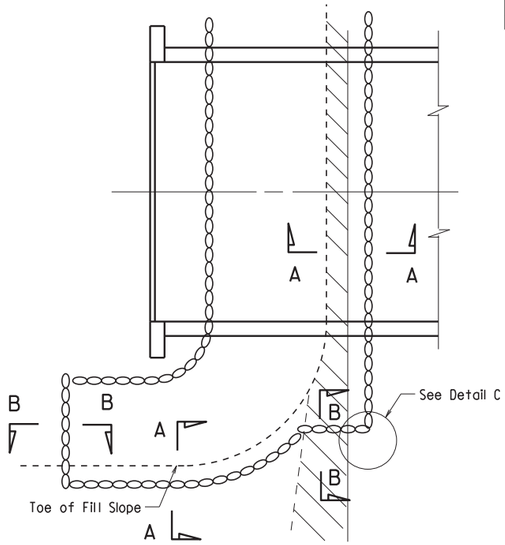
1 RIPRAP & EXCAV. 55001



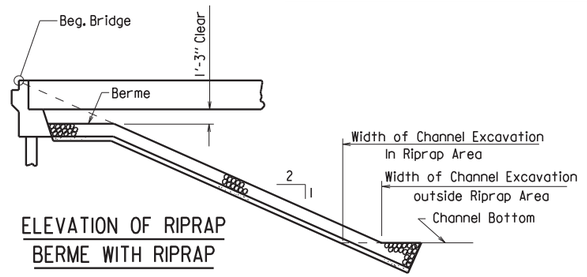
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



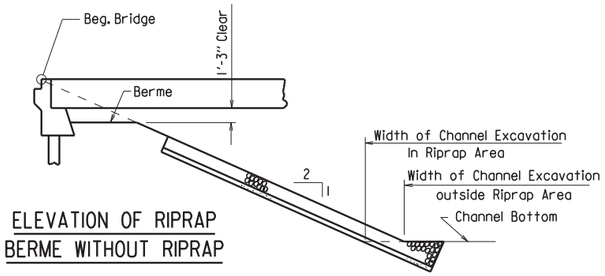
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



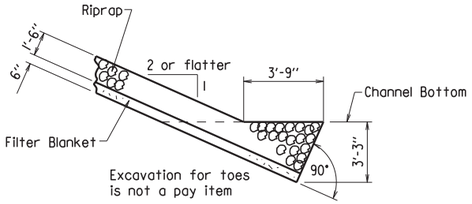
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP

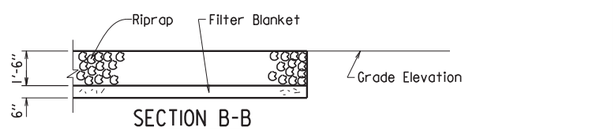


ELEVATION OF RIPRAP BERME WITHOUT RIPRAP

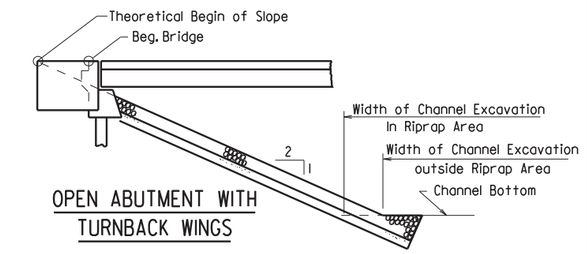


SECTION A-A

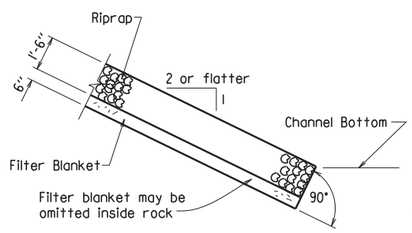
(Toe Excavation in Soil)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



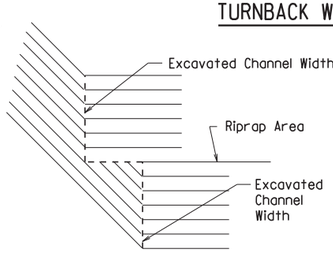
SECTION A-A

(Toe Excavation in Rock)

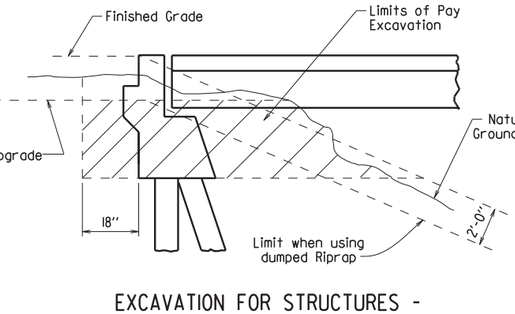
Note : Use this type of toe when rock is encountered which is in a stable condition.

Note : In lieu of an aggregate filter blanket, a synthetic fiber geotextile fabric complying with the requirements of Subsection 816.02(e) may be used.

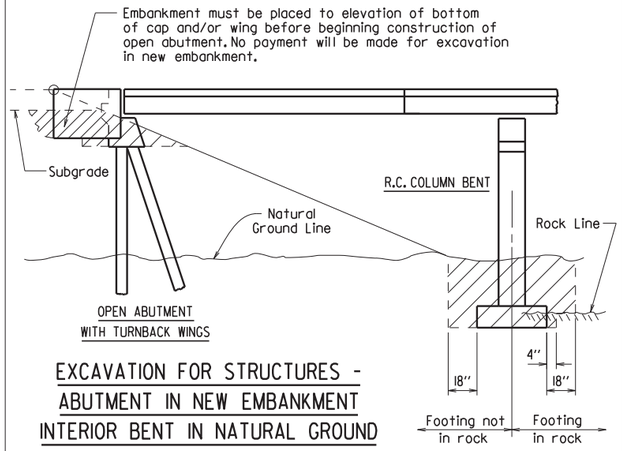
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



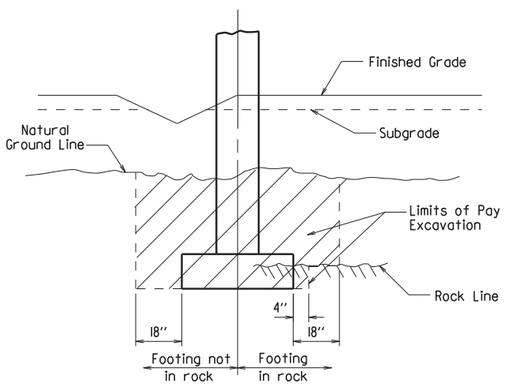
DETAIL C



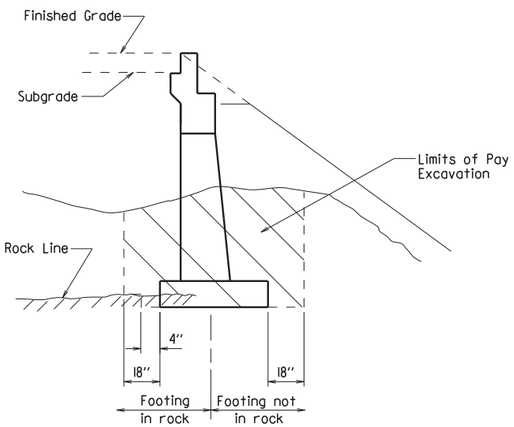
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

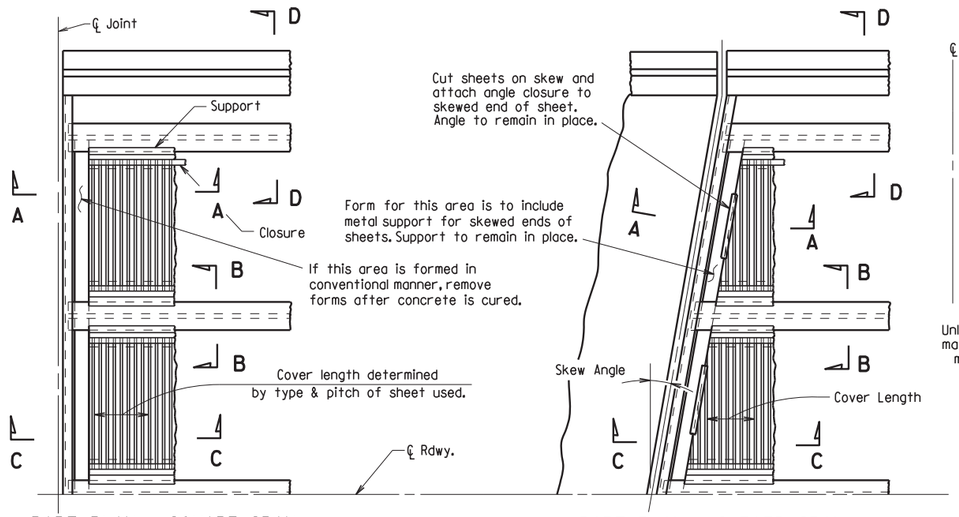
DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55001.dgn

CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE:

DRAWING NO. 55001

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				①	BRIDGE DECK FORMS		55005	

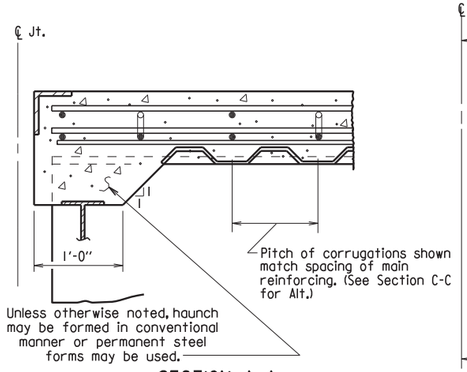


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

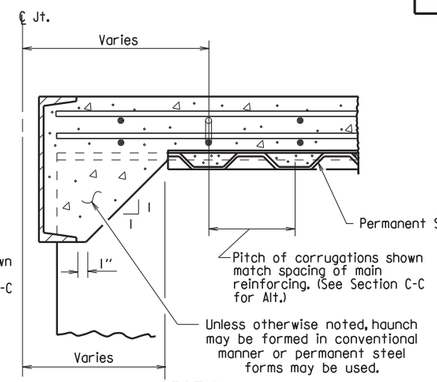
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



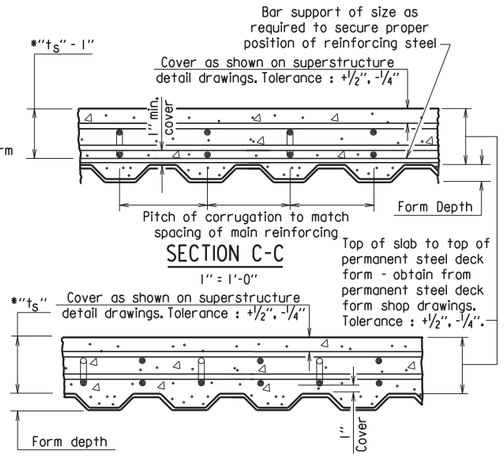
SECTION A-A

N.T.S.
(Angle at end of span)



SECTION A-A

N.T.S.
(Channel at end of span)

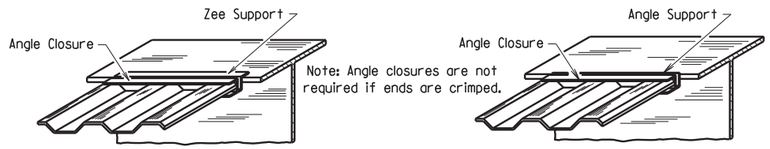


SECTION C-C

1" = 1'-0"

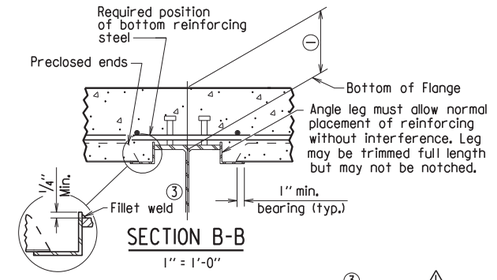
SECTION C-C - ALTERNATE

1" = 1'-0"
(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

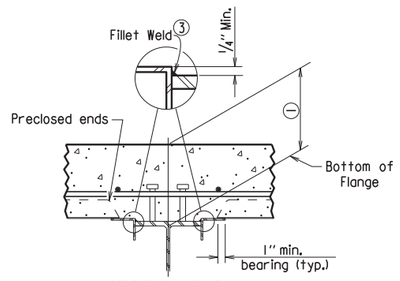
N.T.S.



SECTION B-B

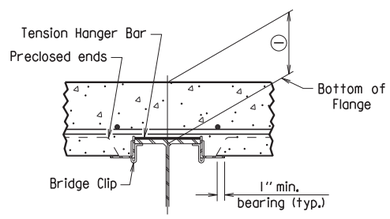
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



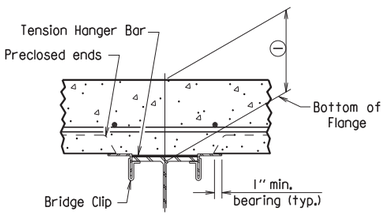
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



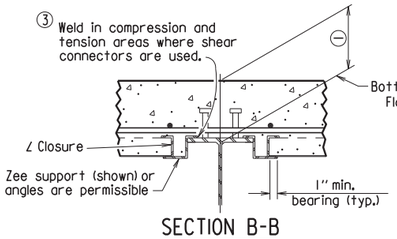
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



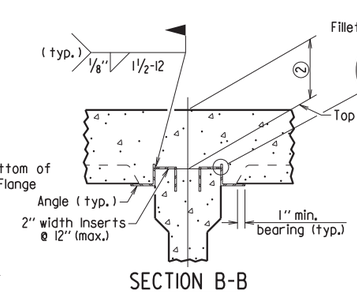
SECTION B-B

1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are not used)



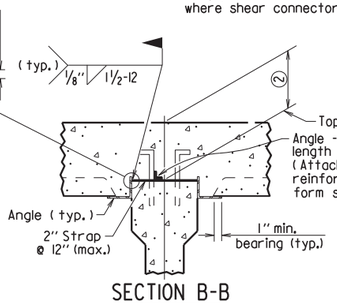
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



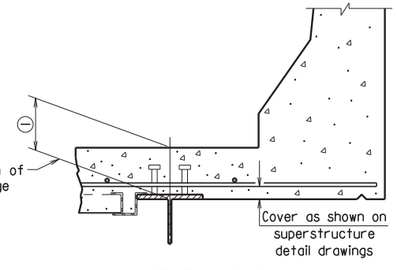
SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Insert cast in girder)



SECTION B-B (FOR CONCRETE GIRDERS)

1" = 1'-0"
(Showing support by Strap)



SECTION D-D

1" = 1'-0"
Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

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

*t_s = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in the dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

Permanent steel deck forms shall conform to Subsection 802.14(b). Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Engineer before work of forming the bridge deck is started.

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Engineer.

Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

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

STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55005.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NONE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55005

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
						GENERAL NOTES		55006

(1)

GENERAL NOTES

These GENERAL NOTES are applicable unless otherwise shown in the Plan Details, Special Provisions, or Supplemental Specifications.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Standard Specifications.

DESIGN SPECIFICATIONS: See Bridge Layout(s).

SUPERSTRUCTURE NOTES:

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c =	4,000 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy =	60,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy =	36,000 psi
Structural Steel (AASHTO M 270, Gr. 50)	Fy =	50,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy =	50,000 psi
Structural Steel (AASHTO M 270, Gr. HPS70W)	Fy =	70,000 psi

See Plan Details for Grade(s) of Structural Steel required.

CONCRETE:

All concrete 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.

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

Use of a longitudinal screed is not permitted on any span of a bridge deck with horizontal curvature.

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. Sidewalks shall receive a broomed finish as specified for final finishing in Subsection 802.19 for Class 6 Broomed 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 or girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings, median barrier, and sidewalks.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A, with mill test reports and shall be epoxy coated. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL (COMMON TO W-BEAMS AND PLATE GIRDERS):

Structural steel shall be AASHTO M 270 with grade and payment as specified in the plans. Grade 50W steel shall not be painted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Grade 36 and Grade 50 steel shall be painted unless otherwise noted and all exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Gr. 36, Gr. 50 or Gr. 50W unless otherwise noted.

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

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

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

Unless otherwise noted, field connections shall be bolted with ¾" ø high-strength bolts using 13/16 " ø open holes. Holes for ¾" ø high-strength bolts may be 15/16 " ø if a washer is supplied for use under both the nut and head of the bolt. The use of oversized holes will not be allowed on main members unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam or girder webs and on the bottom of the beam or girder flanges.

All stud shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

When painting is required, all structural steel except galvanized steel and steel completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall be as specified in the plans.

STRUCTURAL STEEL (W-BEAMS):

All beams and field splice plates, and all diaphragms and connection plates attached to horizontally curved beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. ___)".

All beams in continuous units and simple spans with field splices shall be blocked in their true position in the shop in groups as specified in Subsection 807.54(b)(2) with the webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All beams in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All beam dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Bent plate diaphragms for horizontally curved beams shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight beams may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved beams.

Unless otherwise noted, diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

STRUCTURAL STEEL (PLATE GIRDERS):

All references to cross-frames shall include "X" or "K" types.

All girder web and flange plates, all field splice plates, and all diaphragms, cross-frames and connection plates attached to horizontally curved girders are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

All girders in continuous units and simple spans with field splices shall be assembled in the shop as specified in Subsection 807.54(b)(2) and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram.

All girders in simple spans without field splices shall be blocked in their true position with webs horizontal. The camber, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records.

Web and flange plates for main members and flange splice plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

Girder webs may be made by shop splicing with minimum lengths of 25 feet for sections. Flange plates longer than 50 feet may be made by shop splicing with minimum lengths of 25 feet for sections. No additional payment will be made for shop welded splices.

All girder dimensions are based on a temperature of 60 degrees F. A tolerance of ¼" +/- is allowed for camber.

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required in Subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Q.C. testing shall be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. ___)".

Bent plate diaphragms for horizontally curved girders shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses. Bent plate diaphragms for straight girders may be cut and fabricated in accordance with Subsection 807.35 or as required for horizontally curved girders.

Unless otherwise noted, cross-frames and diaphragms shall be installed as girders are erected. All bolts in cross-frames, diaphragms, and field splices shall be installed and tightened in accordance with Subsection 807.71 prior to pouring the concrete deck.

SUBSTRUCTURE NOTES:

CONCRETE:

Unless otherwise noted, concrete in caps, columns and footings (except seal footings) shall be Class "S" with a minimum 28 day compressive strength f'c = 3,500 psi and shall be poured in the dry. Seal Concrete for footings shall have a minimum 28 day compressive strength f'c = 2,100 psi.

Concrete in drilled shafts shall be Class "S" as modified by Job SP "Drilled Shaft Foundations".

All exposed corners shall be chamfered ¾" unless otherwise noted.

REINFORCING STEEL:

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

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

STRUCTURAL STEEL:

Structural steel in end bents shall be AASHTO M 270 with grade and payment as specified in the plans.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT(S) AND PLAN DETAILS.

FOR ADDITIONAL INFORMATION AND NOTES, SEE LAYOUT(S) AND PLAN DETAILS.

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

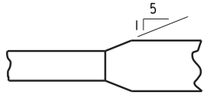
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 9-2-2015 FILENAME: b55006.dgn
CHECKED BY: B.E.F. DATE: 9-2-2015 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55006

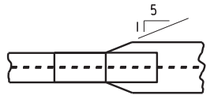
PRINT DATE: 11/7/2019

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	STEEL BRIDGE STRUCTURES 55007			

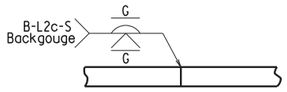


Plan-Unequal Width (Flg.)

FLANGE SPLICE

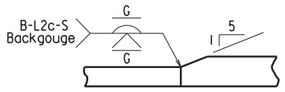


FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS



Equal Thickness

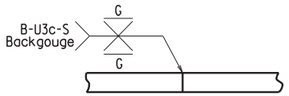
WEB & FLANGE SPLICE



Unequal Thickness

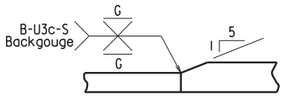
FLANGE SPLICE

(Use when Base Metal Thickness is Equal to or Less than 2")



Equal Thickness

WEB & FLANGE SPLICE

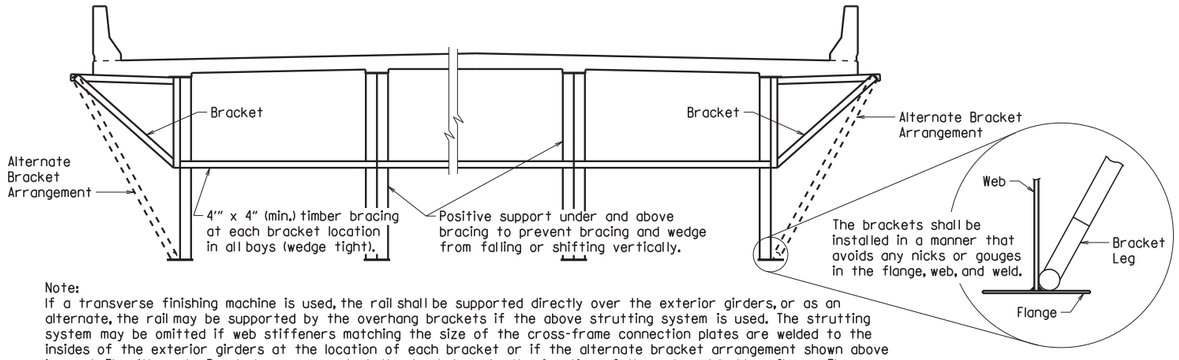


Unequal Thickness

FLANGE SPLICE

(Use when Base Metal Thickness is Greater than 2")

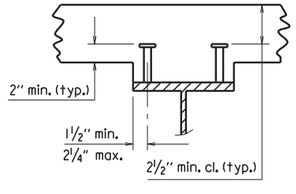
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



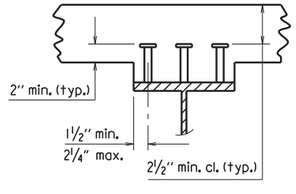
Note:
If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if web stiffeners matching the size of the cross-frame connection plates are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for cross frame connection plates shown on the plans. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (___)".

SCREED RAIL SUPPORT FOR PLATE GIRDERS

(USE WHEN WEB DEPTHS ARE 48" OR GREATER)



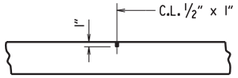
2 STUDS PER ROW



3 STUDS PER ROW

Stud Shear Connectors shall be automatically end welded to the beam or girder flange in accordance with the recommendations of the Manufacturer. See plan details for number and size.

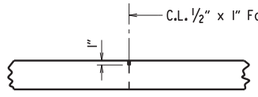
SHEAR CONNECTOR DETAIL



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. 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.

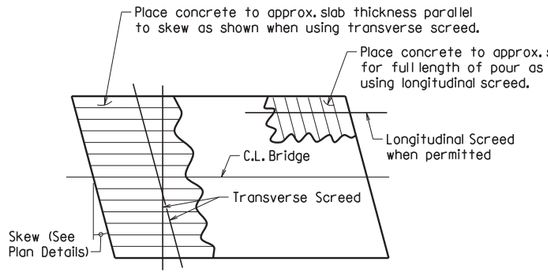
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and acrosss the top of the sidwalk or raised median to the edge of the slab. No joint sealer shall be placed on the deck slab under the sidewalk or raised median.

TRANSVERSE SLAB JOINT DETAIL



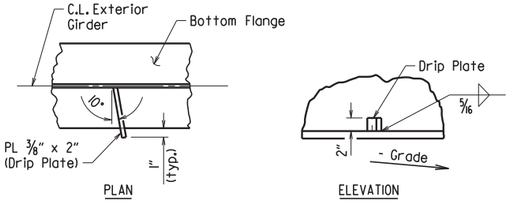
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT



Note: At the Contractor's option, the transverse screed may be placed parallel to the skew or perpendicular to C. L. Bridge.

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW



PLAN

ELEVATION

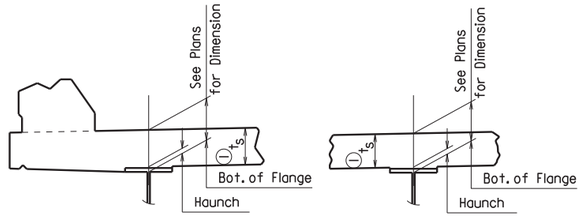
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent, unless otherwise noted in the plans.

BOTTOM FLANGE DRIP PLATE

(USE WHEN WEB DEPTHS ARE 54" OR GREATER AND UNIT OR SPAN IS NOT IN LEVEL GRADE)

t_s = slab thickness. See "Typical Roadway Section" in the plans.



EXTERIOR BEAM OR GIRDER

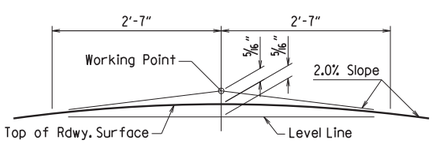
INTERIOR BEAM OR GIRDER

① Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾" unless otherwise noted in the plans. No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 55005 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

BRIDGES IN NORMAL CROWN

WELD TABLE

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To ¾" Inclusive	¼"	
Over ¾"	5/16"	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS.

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

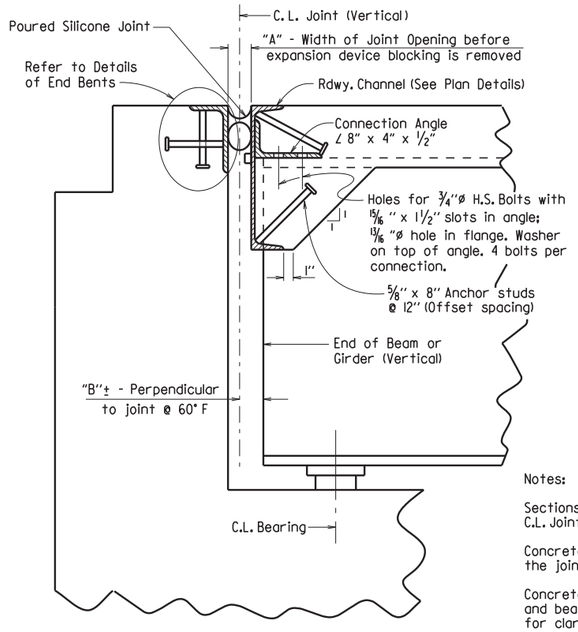
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CHECKED BY: AMS DATE: 2/11/2016 SCALE: No Scale

DESIGNED BY: STD. DATE: —

DRAWING NO. 55007

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	POURED SILICONE JOINT			55008



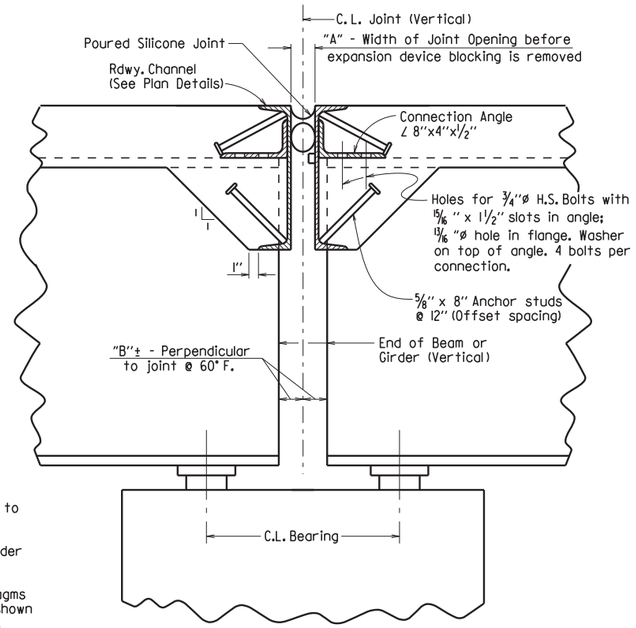
SECTION THRU JOINT AT END BENT

Notes:

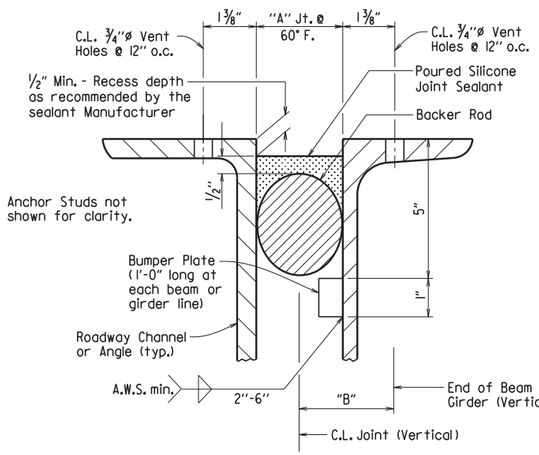
Sections are taken perpendicular to C.L. Joint.

Concrete shall be hand packed under the joint armor.

Concrete diaphragms, steel diaphragms and bearing stiffeners are not shown for clarity. See plans for details.



SECTION THRU JOINT AT INTERMEDIATE BENT



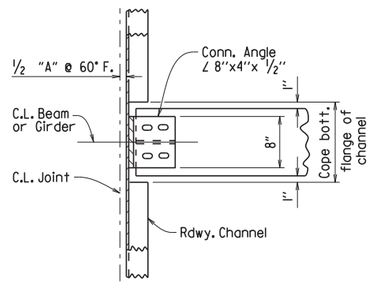
DETAIL OF POURED SILICONE JOINT

Silicone joint material and installation shall conform to Section 809. The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

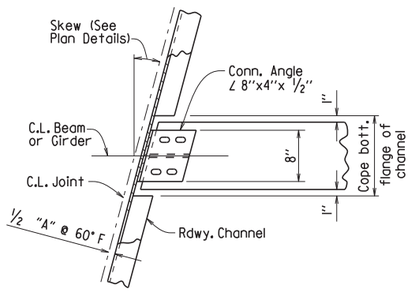
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.

When bridge deck is constructed in stages, backer rods shall be extended beyond length of poured joint in initial construction stage so that the two pieces can be properly spliced together prior to installing sealant in subsequent stages. Manufacturer's recommendations shall be followed to prevent sealant from "running out of joint" during stage construction.



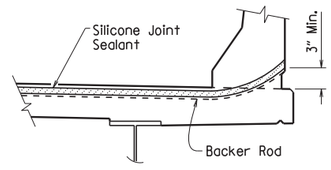
CHANNEL CONNECTION DETAIL

BENTS WITHOUT SKEW

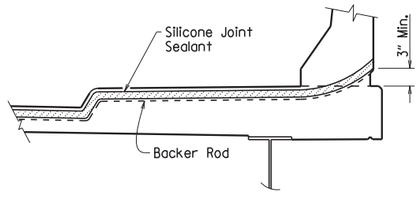


CHANNEL CONNECTION DETAIL

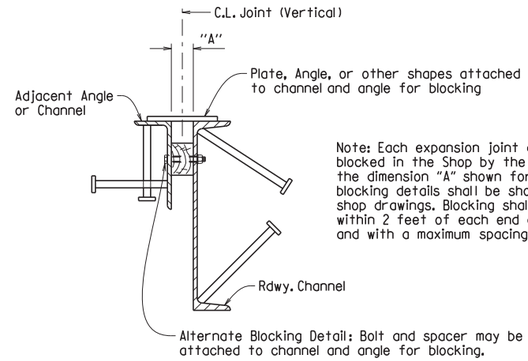
BENTS WITH SKEW



JOINT SEAL PLACEMENT AT RAIL



JOINT SEAL PLACEMENT AT SIDEWALK



Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A" shown for 60° F and the blocking details shall be shown on the shop drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams or girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, and the opening adjusted for temperature and grade.

2) The backwall shall be poured to the optional construction joint after beams or girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature and grade.

EXPANSION DEVICE INSTALLATION AT INTERMEDIATE BENTS:

After all beams or girders on each side of the joint are erected the blocked expansion device shall be installed and adjusted for grade. Deck concrete shall be placed for the entire unit or span on one side of the joint before deck concrete on the other side is placed. Connection bolts for the first side to have deck concrete placed shall be completely bolted. Bolts on the other side shall be loosely installed so that thermal and rotational movements will not be restricted during concrete placement on the first side.

Connection bolts on the second side shall remain loose until the concrete pour adjacent to the joint is to be placed. Immediately prior to pouring the span concrete on the second side, the blocking shall be removed, the joint adjusted for temperature and grade, and the connection bolts tightened.

SECTION AND SUBSECTION REFER TO THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2014 EDITION).

THESE DETAILS ARE APPLICABLE UNLESS OTHERWISE SHOWN IN THE PLAN DETAILS, SPECIAL PROVISIONS, OR SUPPLEMENTAL SPECIFICATIONS. SEE "TABLE OF SILICONE JOINT DATA" IN PLAN DETAILS FOR VARIABLES "A" AND "B", AND BUMPER PLATE SIZE.

STANDARD DETAILS FOR POURED SILICONE JOINTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

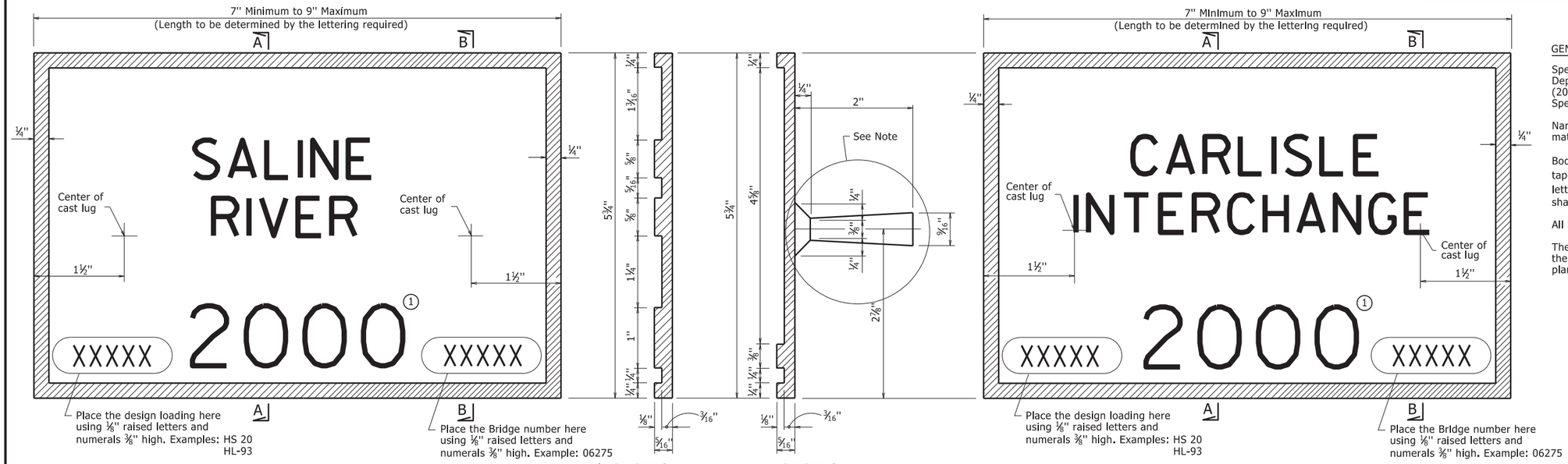
DRAWN BY: A.C.P. DATE: 2/11/2016 FILENAME: b55008.dgn

CHECKED BY: A.M.S. DATE: 2/11/2016 SCALE: No Scale

DESIGNED BY: STD. DATE: —

DRAWING NO. 55008

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
2/27/2020				6	ARK.			
				JOB NO.				
				①	TYPE C NAME PLATE	55011		



TYPICAL BRIDGE NAME PLATE-STYLE 1 - FULL SIZE
STREAM CROSSINGS

⚠1 SECTION A-A

SECTION B-B

Note: Alternate attachments may be used provided such attachments are submitted and approval secured before fabrication is begun.

TYPICAL BRIDGE NAME PLATE-STYLE 3 - FULL SIZE
GRADE SEPARATION STRUCTURES

GENERAL NOTES

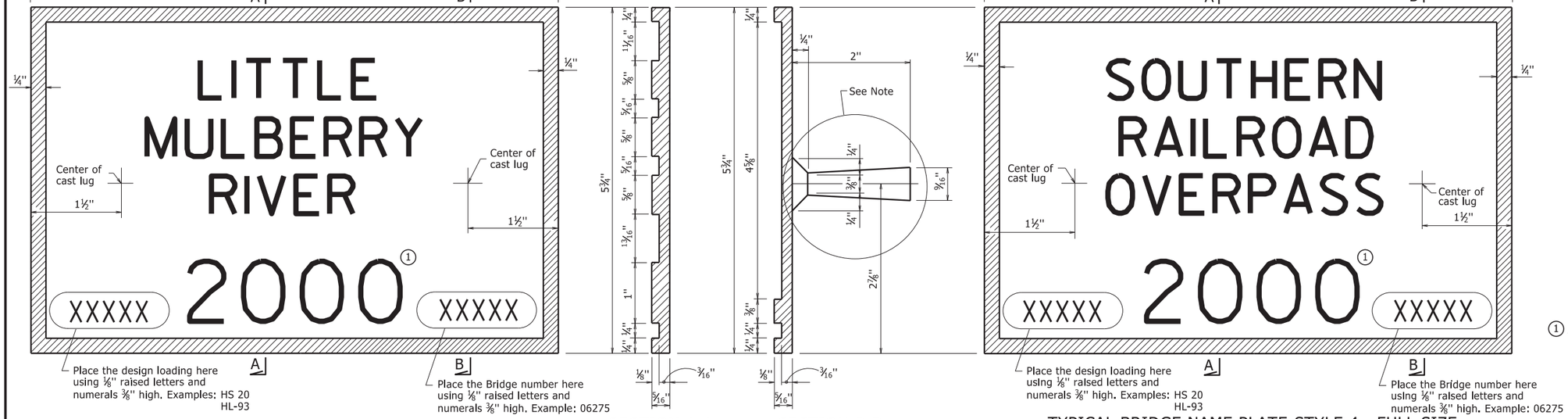
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

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

Body of plate shall be 3⁄16" thick and shall include two tapering cone lugs ⅜" to 9⁄16"x 2" long. The border and all lettering shall be raised ⅛" above the face of plate and shall be polished.

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

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



TYPICAL BRIDGE NAME PLATE-STYLE 2 - FULL SIZE
STREAM CROSSINGS

SECTION A-A

SECTION B-B

TYPICAL BRIDGE NAME PLATE-STYLE 4 - FULL SIZE
GRADE SEPARATION STRUCTURES

⚠1 Corrected error in detail showing three lines of text for feature intersected instead of two.
By: KWY, Checked by: WAC; 2/27/2020.

① Year in which contract is awarded.

STANDARD DETAILS FOR
TYPE C BRIDGE NAME PLATES

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55011.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	-------		

DRAWING NO. 55011

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				6	ARK.			
				JOB NO.				
				①		STEEL H-PILES		55020

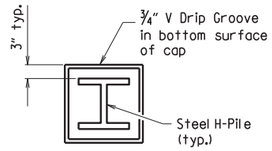
GENERAL NOTES FOR STEEL H-PILES:

Steel H-Piles shall conform to AASHTO M 270, Grade 36 or greater.

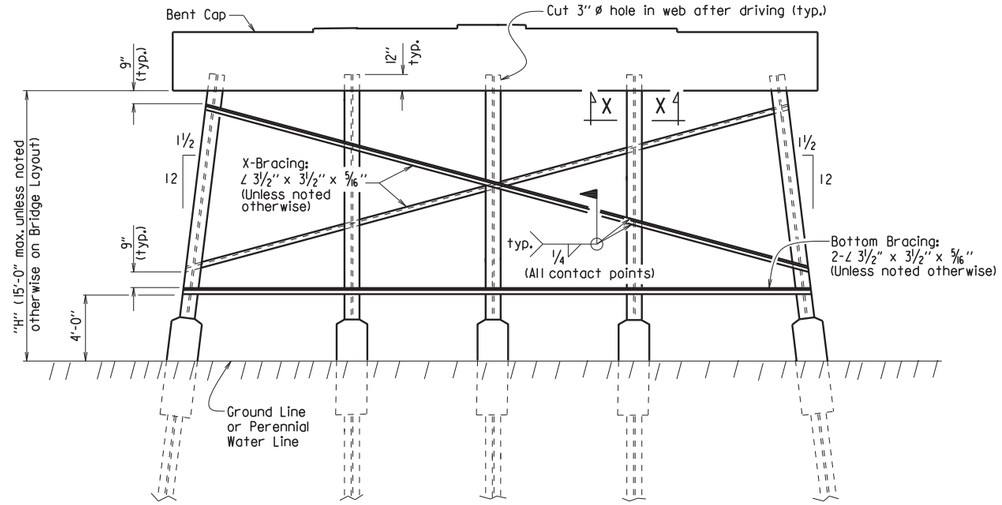
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

Steel H-Piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with Subsection 805.02.

Brackets, lugs, cap plates, pile tips, driving points, pile painting, splicing and welding shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



VIEW X-X



Notes:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under Item 807.

Unless noted otherwise, omit X-Bracing when "H" is less than 8 feet.

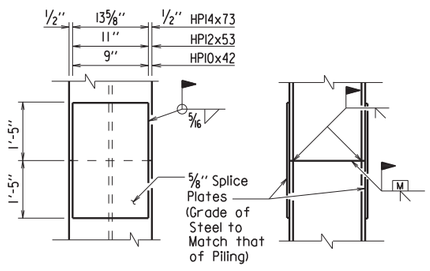
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

When required on the Bridge Layout sheet, pile encasements shall be constructed. See Notes and Details for H-Pile Encasements.

Omit all bracing (and V-groove in cap) when pile encasement is extended to bottom of bent cap.

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



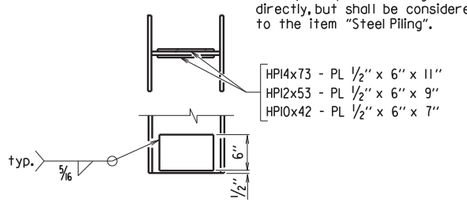
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

⚠ H-pile splicers manufactured by Associated Pile and Fitting Corporation, LB Foster Piling, Skyline Steel or equivalent may be used in lieu of the "Typical Splice Details" shown. H-pile splicers shall match the same grade of steel specified for the piling and shall be welded to the pile with a 5/16" fillet weld around the entire perimeter of the splice. Flanges shall be welded with a complete penetration groove weld complying with AASHTO/AWS Joint Designation B-U4a or B-U4b. All welding shall conform to Subsection 807.26 of the AHTD Standard Specifcations for Highway Construction (2014 Edition).

Notes:
Steel pile tip reinforcing not required when approved H-Pile driving points are used.

Steel pile tip reinforcing shall not be paid for directly, but shall be considered subsidiary to the item "Steel Piling".



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

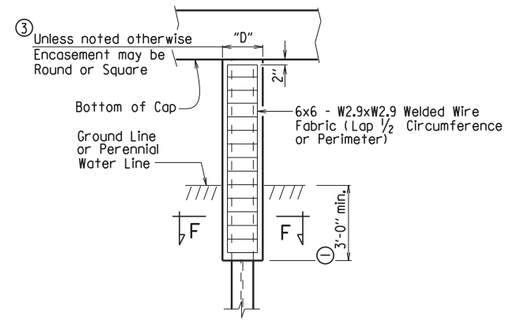
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

All concrete shall be Class S with a minimum 28-day compressive strength, f'c = 3,500 psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall be Grade 60 conforming to AASHTO M 31 or M 322, Type A.

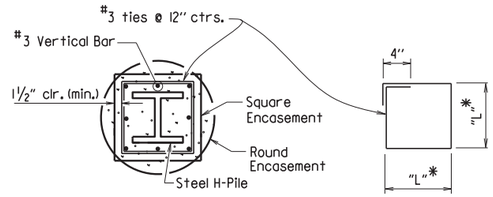
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, welded wire fabric or reinforcing steel and galvanized pipe shall not be paid for directly, but shall be considered subsidiary to the item "Pile Encasement".



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

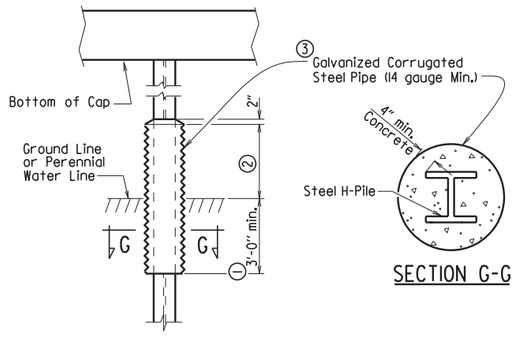


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HP10x42	1'-7"	2'-0"	1'-4"
HP12x53	1'-8"	2'-2"	1'-5"
HP14x73	1'-11"	2'-6"	1'-8"



SECTION G-G

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

① Unless otherwise noted on Bridge Layout.

② 3'-0" minimum or as shown on Bridge Layout.

③ Encasement dimensions shall be sized to maintain a minimum concrete cover of 4" from the H-Pile. Reinforcement shall be sized to provide a minimum concrete cover of 1½" and a minimum clearance of 1¼" from the pile.

④ Alternate pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the Partial Height Encasement detail.

⚠ Added alternate method of splicing H-piles and revised pile encasement note.
3/24/2016 AMS

This document was originally issued and sealed by Charles R. Ellis, PE No. 9235, on March 24, 2016. This copy is not a signed and sealed document.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9235
CHARLES R. ELLIS

BRIDGE ENGINEER

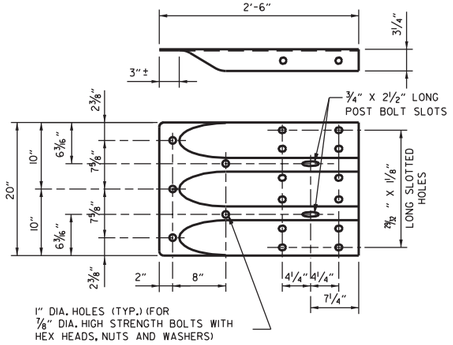
STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

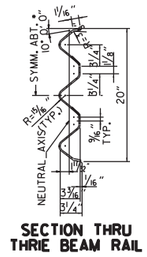
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

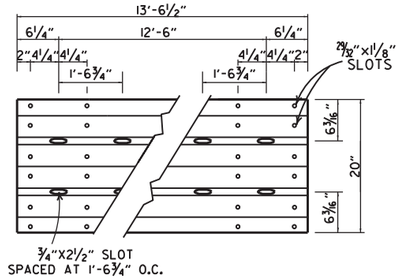
DRAWING NO. 55020



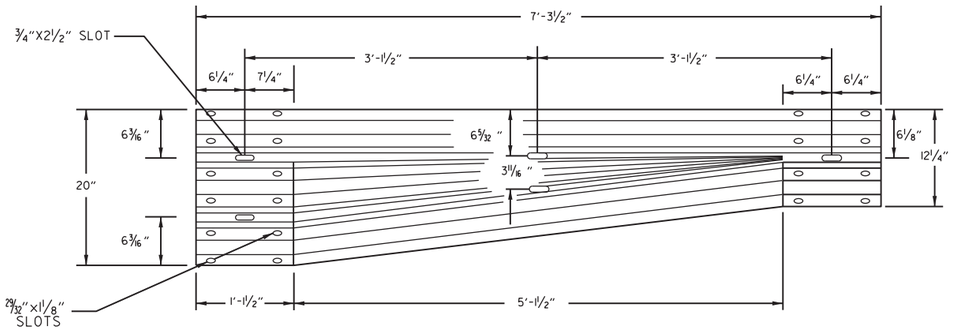
SPECIAL END SHOE



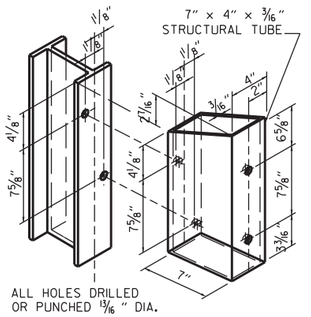
SECTION THRU THRIE BEAM RAIL



THRIE BEAM RAIL



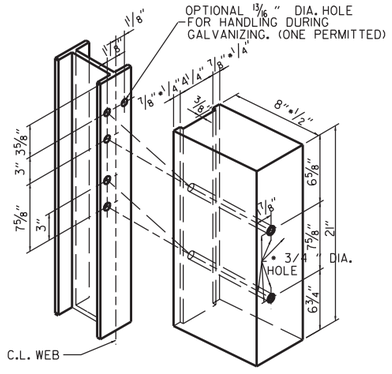
TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING 5/8" DIA. HEX HEAD BOLTS WITH 1 1/2" O.D. CUT STEEL WASHERS AND NUT.

ALL HOLES DRILLED OR PUNCHED 13/16" DIA.

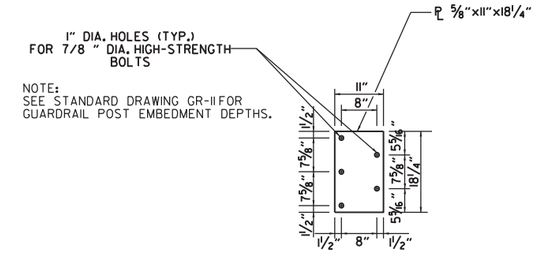
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

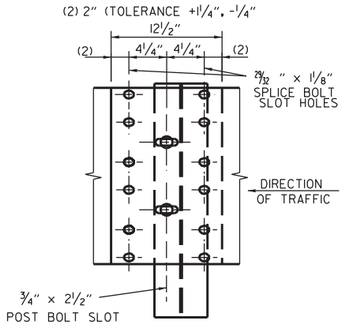
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING 7/8" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

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

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

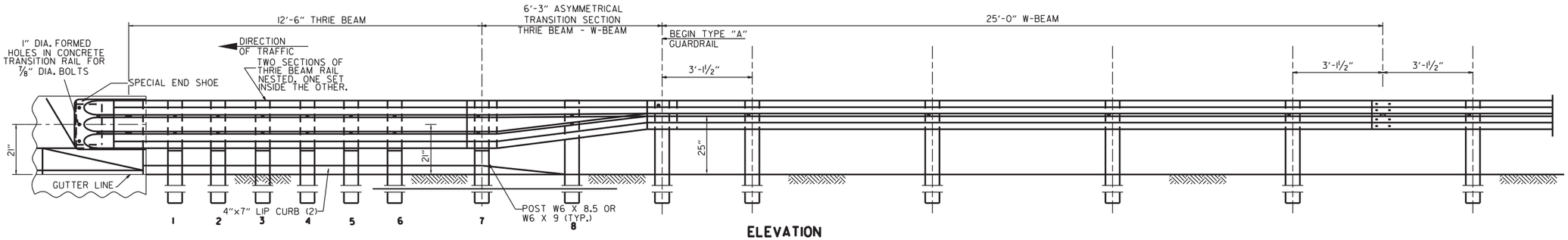
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-07-19	RENAMED AND REVISED REFERENCES	
11-16-17	REVISED TRANSITION SECTION, GUARD RAIL HEIGHT, AND GENERAL NOTES; MOVED THRIE BEAM GUARD RAIL CONNECTIONS AT BRIDGES ENDS TO STD. DRWG. GR-12	
07-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED NOTE (2)	
06-29-00	MOVED DIMENSION LINES	
05-18-00	ADDED NOTE	
03-30-00	DRAWN & ISSUED	

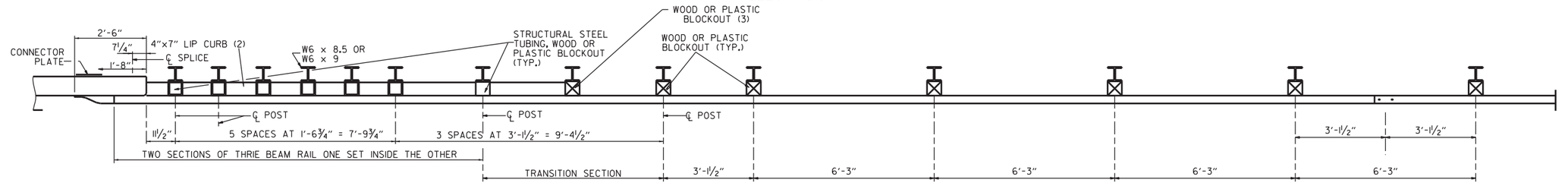
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

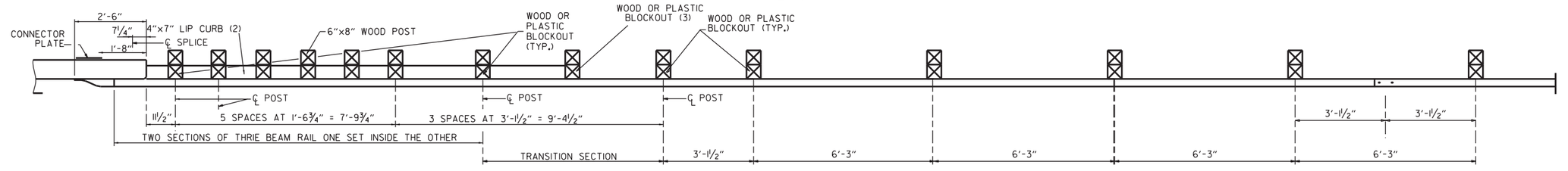
STANDARD DRAWING GR-10



ELEVATION



PLAN



PLAN

(1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
(2) REFER TO APPROACH GUTTER DETAILS.
(3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE I.

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-8 & GR-13.

REFER TO STD. DRWG. GR-11 FOR POST DETAILS.

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

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

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

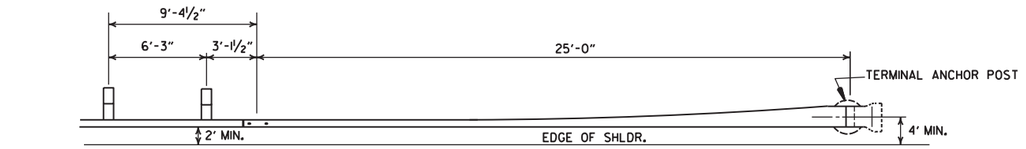
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
05-14-20	REVISED NOTES	
11-07-19	RENAMED & REVISED REFERENCES	
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

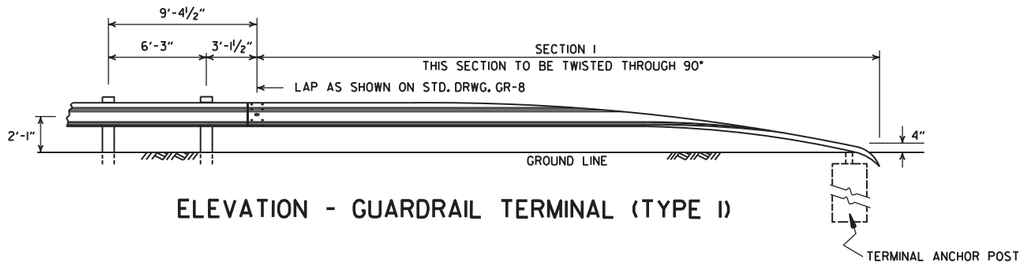
ARKANSAS STATE HIGHWAY COMMISSION

GUARDRAIL DETAILS

STANDARD DRAWING GR-12

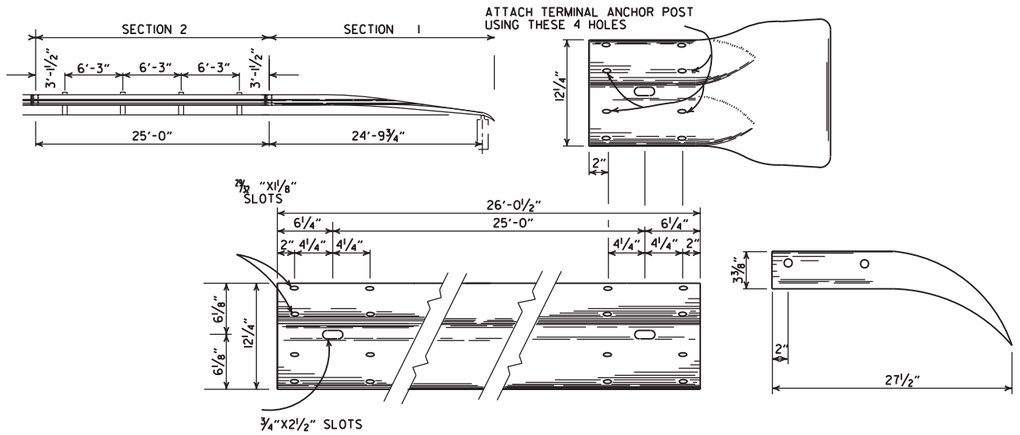


PLAN - GUARDRAIL TERMINAL (TYPE I)



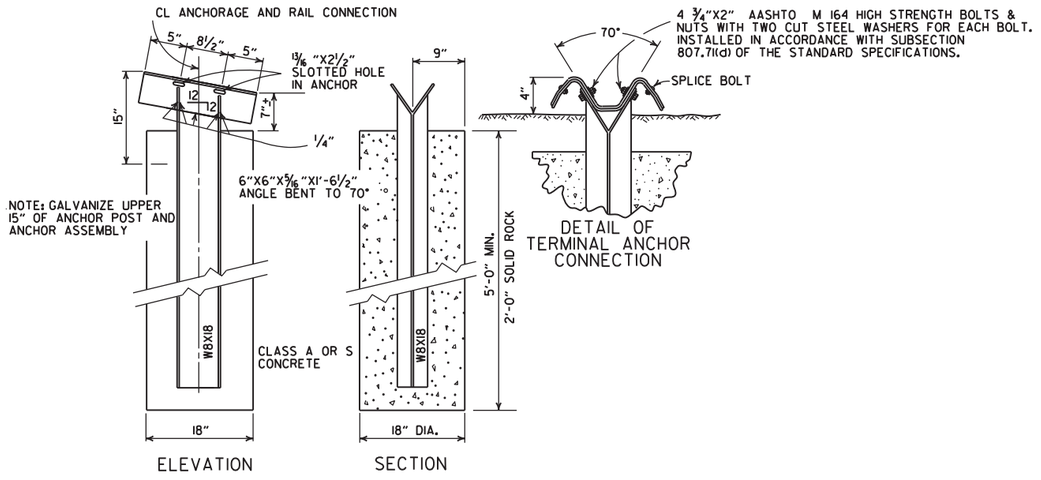
ELEVATION - GUARDRAIL TERMINAL (TYPE I)

NOTE:
SECTIONS I AND 2 OF GUARDRAIL TERMINAL SHALL BE PAID FOR AT THE PRICE BID PER LINEAR FOOT OF THE TYPE OF GUARDRAIL SPECIFIED.



SECTION I

TERMINAL SECTION



ELEVATION SECTION

NOTE: RAIL MEMBERS MAY BE BOLTED TO ANGLE AT TERMINAL ANCHOR AND THE TWO ASSEMBLIES POSITIONED TO PROPER ALIGNMENT PRIOR TO PLACING CONCRETE AROUND 8 WF 17 POST IF CONTRACTOR SO DESIRES.

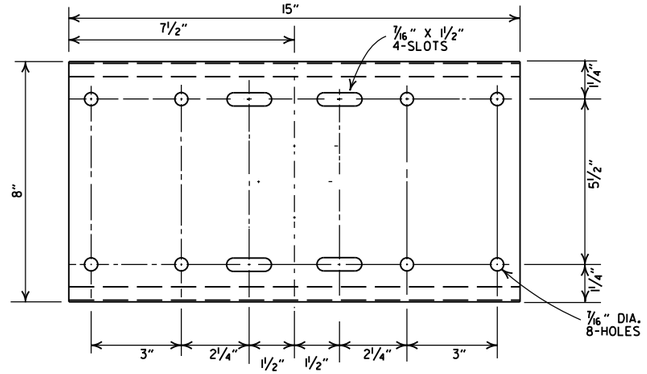
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	FILMED
11-07-19	RENAMED & REVISED REFERENCE.	
11-16-17	REVISED GUARDRAIL HEIGHT AND LOCATION OF POSTS	
07-14-10	RAISED HEIGHT OF GUARDRAIL 1"	
06-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-03-94	DIMENSION TERMINAL DETAIL	
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92
10-01-92	DRAWN & ISSUED	10-1-92

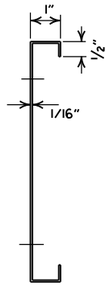
ARKANSAS STATE HIGHWAY COMMISSION

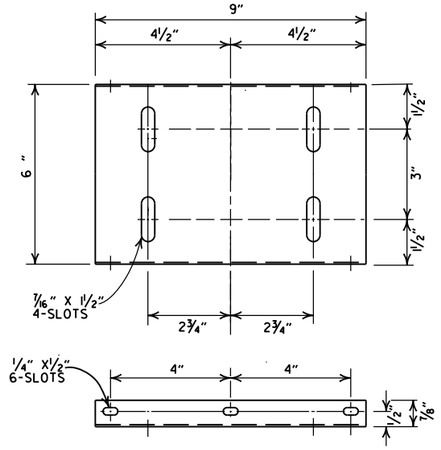
GUARDRAIL DETAILS

STANDARD DRAWING GRT-1

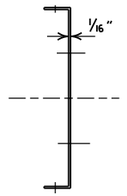


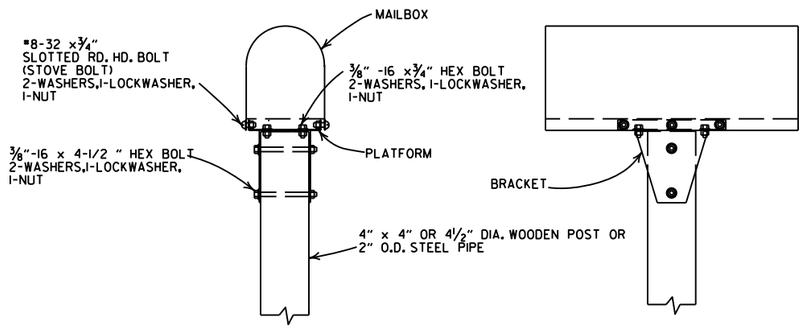
SHELF



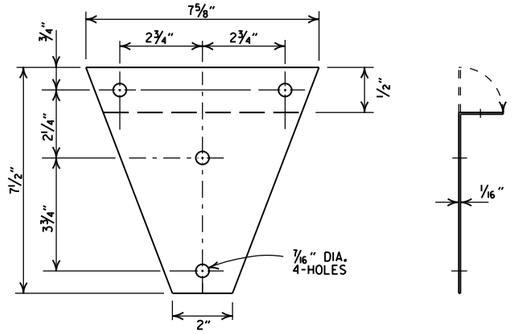


PLATFORM





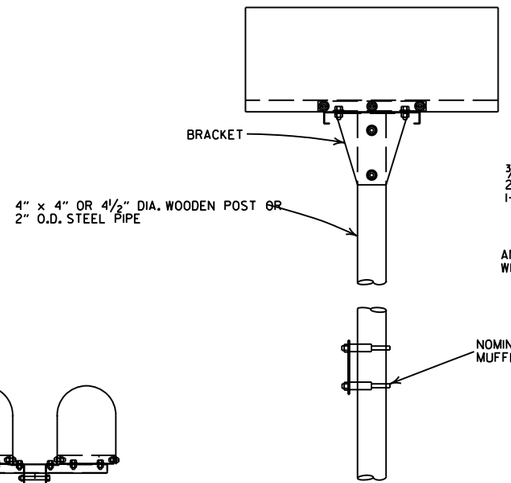
SINGLE INSTALLATION



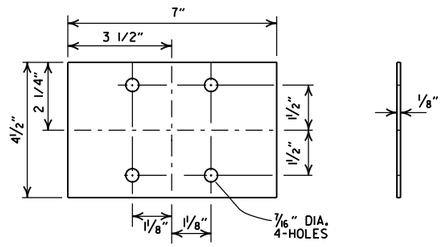
BRACKET

GENERAL NOTES

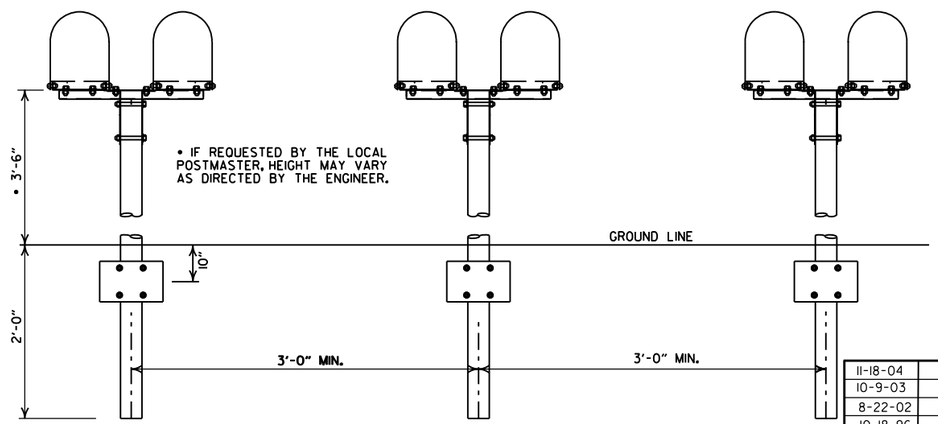
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED WOOD MAY BE USED WITH WOODEN POSTS. THE WOODEN SHELF, BRACKET & PLATFORM SHALL BE A MINIMUM OF ¾" THICK AND SHALL BE ASSEMBLED WITH BOLTS OF THE APPROPRIATE LENGTH WITH SIX 8 X¾" FLATHEAD WOOD SCREWS USED TO ATTACH THE MAILBOX TO THE PLATFORM.
4. THE MAILBOX SHELF AND PLATFORM THAT IS SHOWN IS FOR STANDARD SIZE MAILBOXES. THE SHELF AND PLATFORM SIZE SHALL BE MODIFIED TO FIT MAILBOXES OF A DIFFERENT SIZE.
5. METAL PIPE FOR MAILBOX SUPPORT SHALL BE 2" OUTSIDE DIAMETER STEEL WITH A WALL THICKNESS OF 0.145" AND A WEIGHT OF 2.72 LBS PER FT. OUTSIDE DIAMETER AND WEIGHT SHALL HAVE A TOLERANCE OF +/- 5% ACCORDING TO AASHTO M 181.
6. MAILBOX SUPPORT SYSTEM DIFFERING FROM THOSE SHOWN MAY BE USED, PROVIDED THEY ARE ON THE ARDOT QUALIFIED PRODUCTS LIST FOR MAILBOX SUPPORTS.



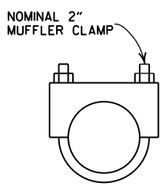
DOUBLE INSTALLATION



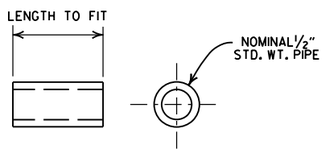
ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



CLAMP



SPACER

DATE	FILMED	REVISION
11-18-04		REVISED NOTES
10-9-03		REVISED NOTE 6
8-22-02		REVISED NOTE 6
10-18-96		CORRECTED AASHTO
10-1-92		CORRECTED SPELLING
9-26-91		NEW PHONE NUMBER
8-15-91		ADDED NOTE
11-30-89		ADJUSTED HEIGHT & ADDED NOTE
2-16-89		DELETED SLOTS FROM SHELF & PLTF
11-17-88	10-1-92	ADJUSTED DIMENSIONS OF STEEL POSTS
7-15-88	20-7-15-88	ISSUED

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	ARDOT NOMINAL	AASHTO M 206	ARDOT NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M206.

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA.	AASHTO M 207	
	SPAN	RISE
INCHES	INCHES	
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY AASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 606.03.(f)(1).

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

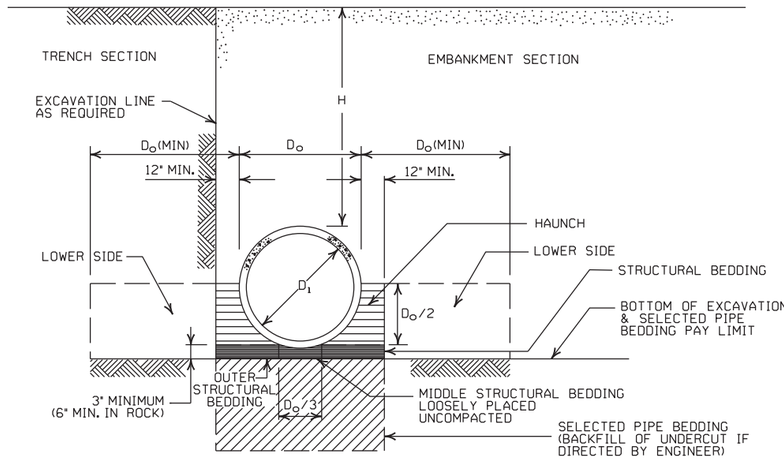
- LEGEND -

D_1 = NORMAL INSIDE DIAMETER OF PIPE
D_o = OUTSIDE DIAMETER OF PIPE
H = FILL COVER HEIGHT OVER PIPE (FEET)
MIN. = MINIMUM
= UNDISTURBED SOIL

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

MINIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

	CLASS OF PIPE			
	CLASS III		CLASS IV	CLASS V
INSTALLATION TYPE	TYPE 1 OR 2	TYPE 3	ALL	ALL
PIPE ID (IN.)	FEET			
12-15	2	2.5	2	1
18-24	2.5	3	2	1
27-33	3	4	2	1
36-42	3.5	5	2	1
48	4.5	5.5	2	1
54-60	5	7	2	1
66-78	6	8	2	1
84-108	7.5	8	2	1

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

MAXIMUM HEIGHT OF FILL "H" OVER CIRCULAR R.C. PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE		
	CLASS III	CLASS IV	CLASS V
	FEET		
TYPE 1	21	32	50
TYPE 2	16	25	39
TYPE 3	12	20	30

NOTE: IF FILL HEIGHT EXCEEDS 50 FEET, A SPECIAL DESIGN CONCRETE PIPE WILL BE REQUIRED USING TYPE 1 INSTALLATION.

MINIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2 OR TYPE 3	2.5	1.5

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

MAXIMUM HEIGHT OF FILL "H" OVER R.C. ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)	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 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			
			② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM					
				INSTALLATION	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.

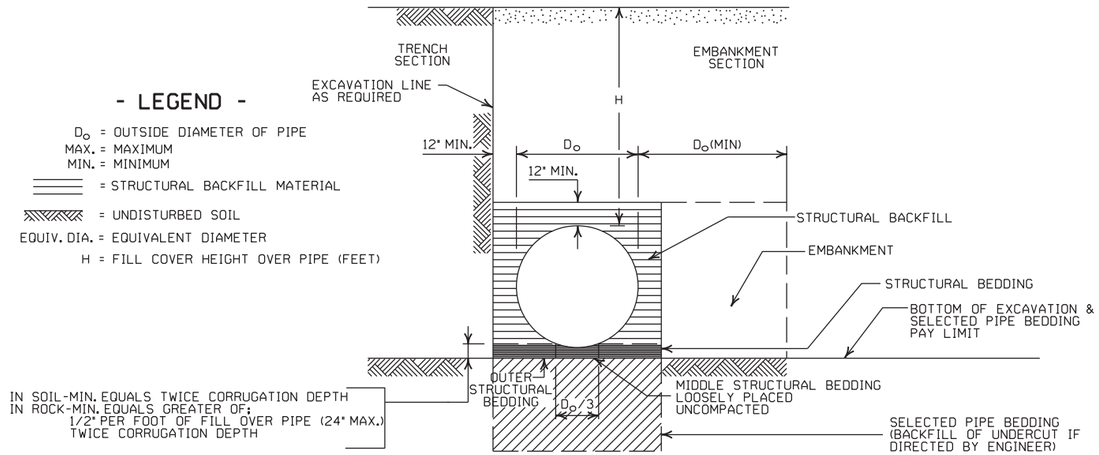
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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			
ZINC COATED	UNCOATED	ALUMINUM	
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.138	0.1345	0.135	10
0.168	0.1644	0.164	8



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS 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 ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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

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

SM3 WILL NOT BE ALLOWED.

•• STRUCTURAL BEDDING MATERIAL SHALL HAVE A MAXIMUM PARTICLE SIZE OF 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 HDPE PIPE.

MULTIPLE INSTALLATION OF HIGH DENSITY POLYETHYLENE PIPES

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

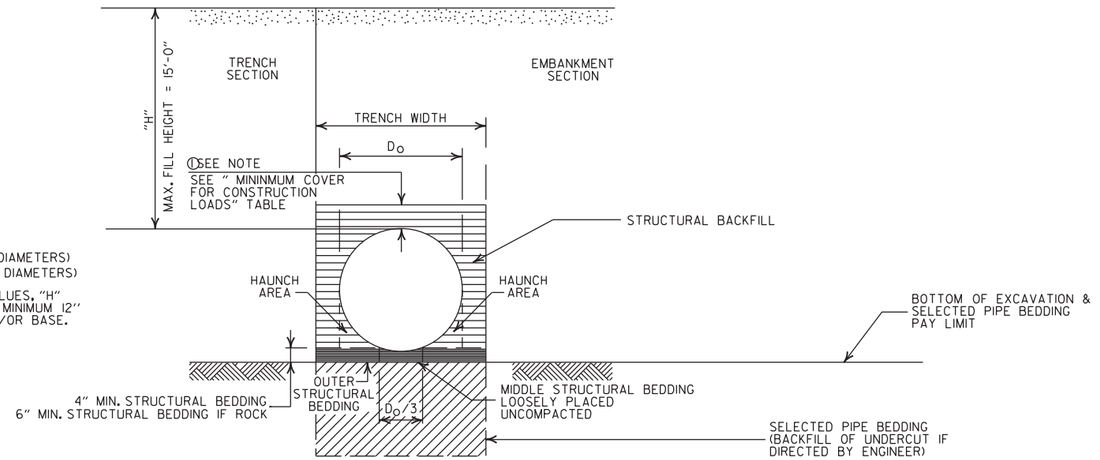
①NOTE:
18" MIN. (18" - 30" DIAMETERS)
24" MIN. (36" - 48" DIAMETERS)

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

MINIMUM COVER FOR CONSTRUCTION LOADS

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

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

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

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)

STANDARD DRAWING PCP-1

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

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

SM3 WILL NOT BE ALLOWED.

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

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

MINIMUM TRENCH WIDTH BASED ON FILL HEIGHT "H"

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

MULTIPLE INSTALLATION OF PVC PIPES

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

MAXIMUM FILL HEIGHT BASED ON STRUCTURAL BACKFILL

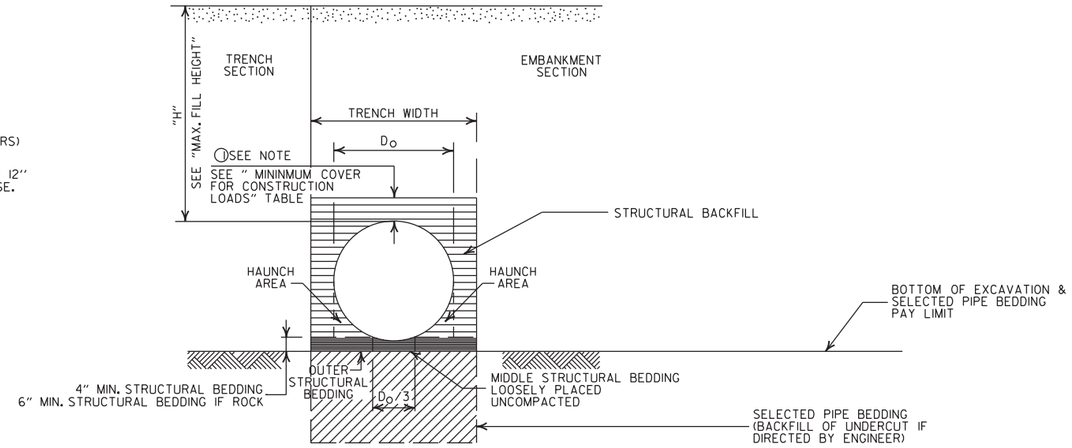
PIPE DIAMETER	"H"
18"	45'-0"
24"	45'-0"
30"	40'-0"
36"	40'-0"

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

MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIAMETER	② MIN. COVER (FEET) FOR INDICATED CONSTRUCTION LOADS			
	18.0-50.0 (KIPS)	50.0-75.0 (KIPS)	75.0-110.0 (KIPS)	110.0-175.0 (KIPS)
18" THRU 36"	2'-0"	2'-6"	3'-0"	3'-0"

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



TYPE 2 EMBANKMENT AND TRENCH INSTALLATIONS

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

CONSTRUCTION SEQUENCE

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

GENERAL NOTES

1. PIPE SHALL CONFORM TO ASTM F949, CELL CLASS 12454. INSTALLATION SHALL 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. PVC PIPES OF DIAMETERS OTHER THAN SHOWN WILL NOT BE ALLOWED.
9. JOINTS FOR PVC PIPE SHALL MEET THE REQUIREMENTS FOR SOIL TIGHTNESS AS SPECIFIED IN AASHTO SECTION 26.4.2.4 AND 30.4.2 "AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS." JOINTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

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

ARKANSAS STATE HIGHWAY COMMISSION

PLASTIC PIPE CULVERT (PVC F949)

STANDARD DRAWING PCP-2

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 1INCH. STRUCTURAL BACKFILL MATERIAL SHALL BE FREE OF ORGANIC MATERIAL, STONES LARGER THAN 1.50 INCH IN GREATEST DIMENSION, OR FROZEN LUMPS.

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

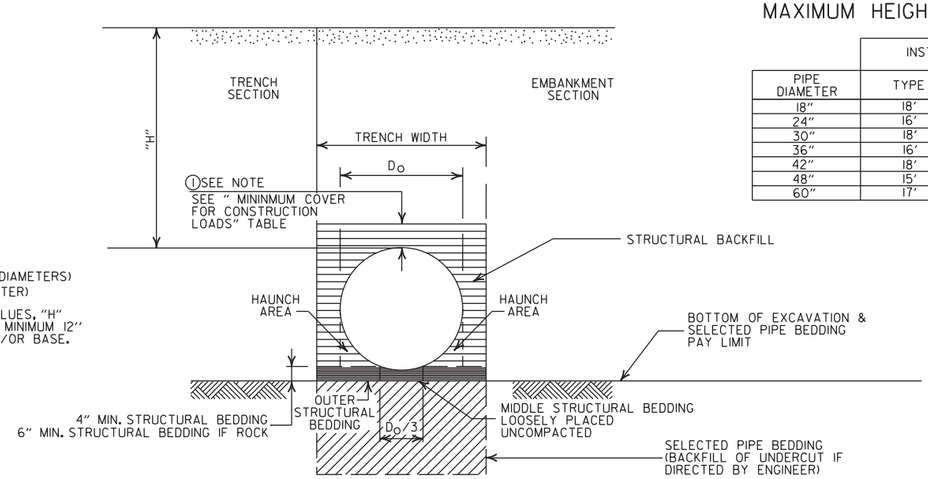
MINIMUM COVER FOR CONSTRUCTION LOADS

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"

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

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

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



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'

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 SPECIFICIATIONS 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.

- LEGEND -

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

= STRUCTURAL BACKFILL MATERIAL

= UNDISTURBED SOIL

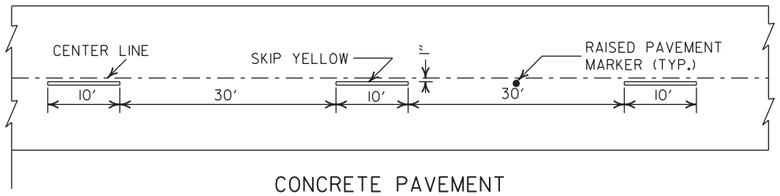
DATE	REVISION	DATE FILMED
02-27-20	REVISED	
11-07-19	ISSUED	

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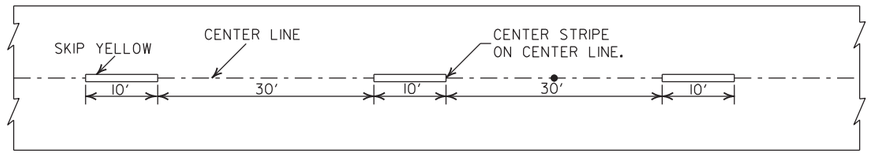
PLASTIC PIPE CULVERT (POLYPROPYLENE)

STANDARD DRAWING PCP-3

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

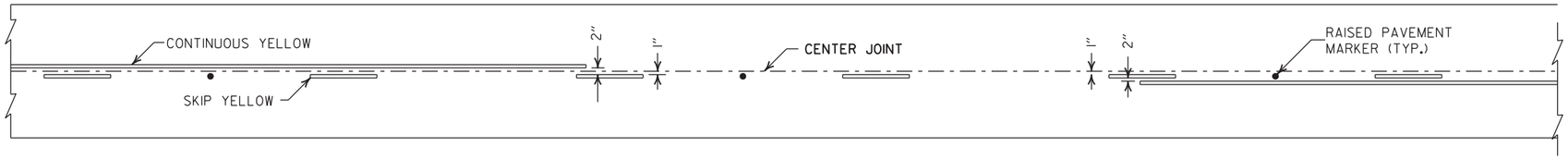


CONCRETE PAVEMENT

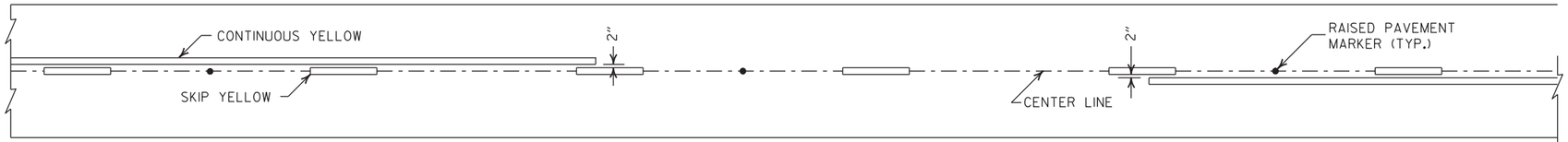


ASPHALT PAVEMENT

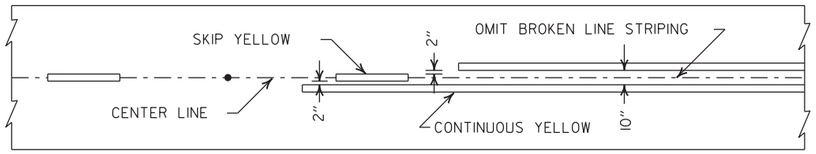
BROKEN LINE STRIPING



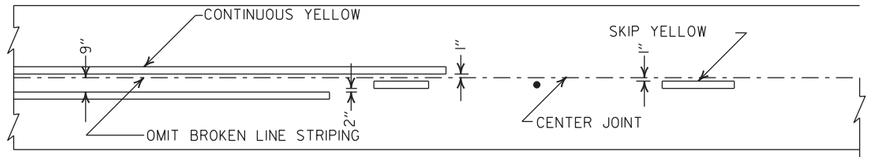
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

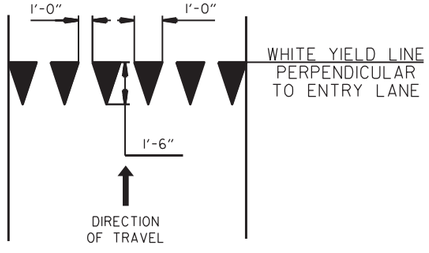


ASPHALT PAVEMENT

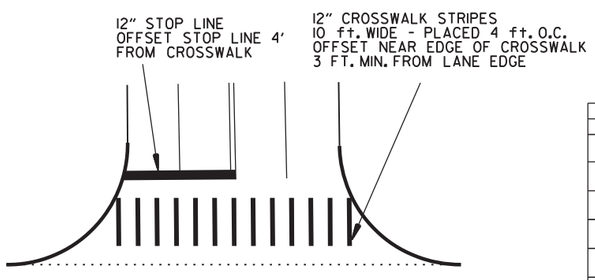


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

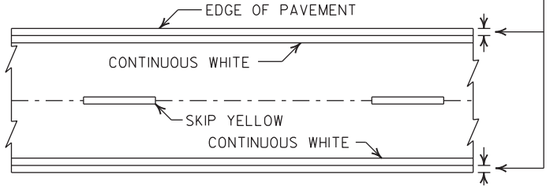


YIELD LINE DETAIL



CROSSWALK AND STOP LINE DETAILS

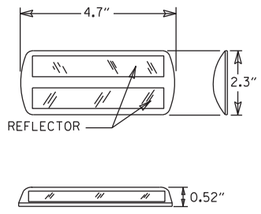
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

NOTE:
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	FILMED
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

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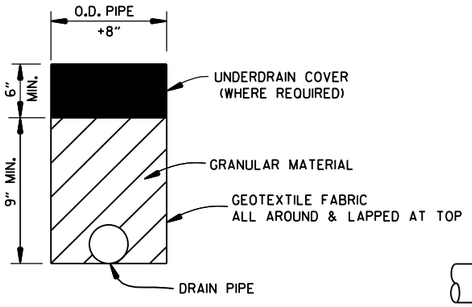
PAVEMENT MARKING DETAILS

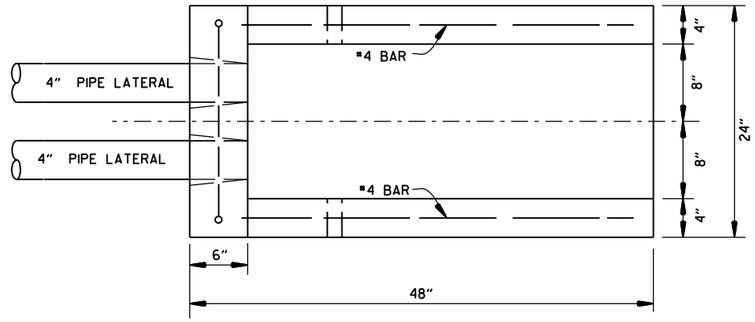
STANDARD DRAWING PM-1

NOTE:

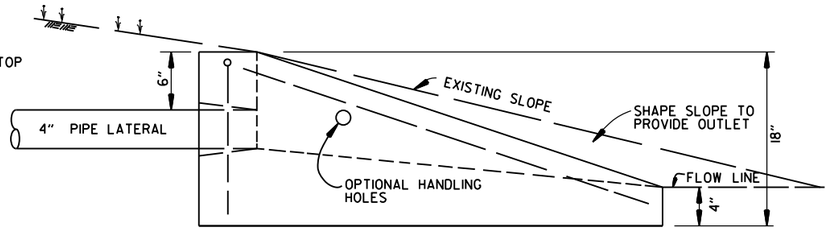
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

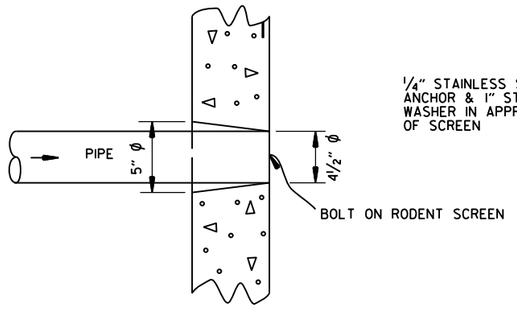




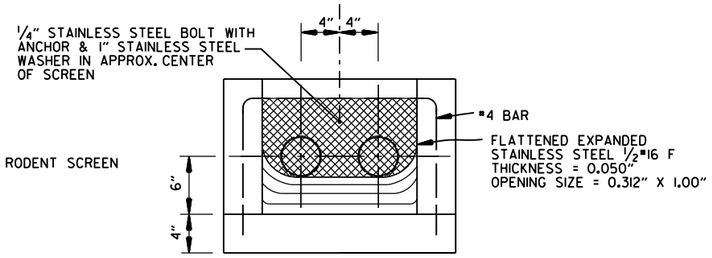
PLAN VIEW



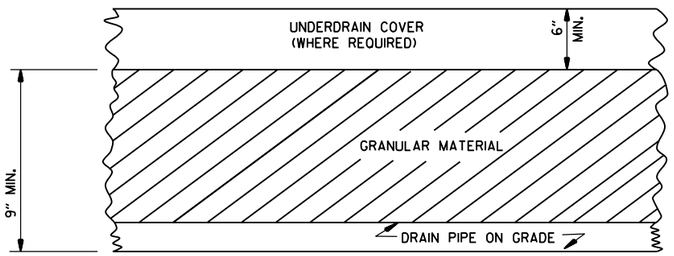
SIDE VIEW



DETAIL OF HOLE
FOR 4" PIPE

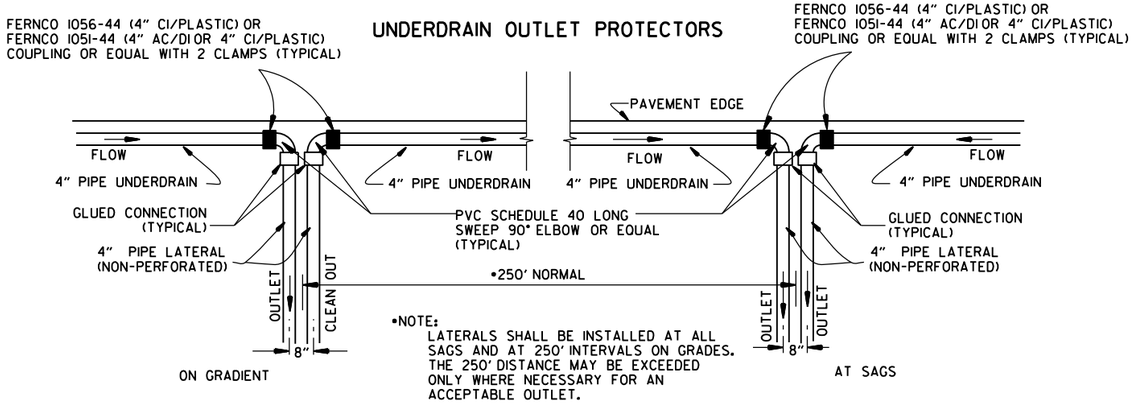


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS
WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			35 MPH			40 MPH			45 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH			75 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	NC			NC			NC			NC			NC			NC			NC			NC			NC			NC		
0° 30'	NC			NC			NC			NC			NC			NC			RC	96		RC	96		RC	96		0.022	101	
0° 45'	NC			NC			NC			NC			RC	96		RC	96		0.024	106		0.026	110		0.030	120		0.032	125	
1° 00'	NC			NC			NC			RC	90		0.022	101		0.026	110		0.030	120		0.034	130		0.038	139		0.042	149	300
1° 15'	NC			NC			RC	84		0.022	95		0.028	115		0.032	125		0.038	139		0.042	149		0.046	158	300	0.052	173	
1° 30'	NC			RC	78		0.022	88		0.028	108		0.032	125		0.038	139		0.044	154		0.050	168	300	0.056	182		0.062	197	
1° 45'	RC	72		RC	78		0.026	97		0.030	113		0.036	134		0.044	154		0.050	168		0.056	182		0.064	202		0.070	216	
2° 00'	RC	72		0.024	86		0.028	101		0.034	122		0.042	149		0.048	163		0.056	182		0.064	202		0.070	216		0.080	240	
2° 15'	RC	72		0.026	90		0.032	109		0.038	131		0.046	158		0.054	178		0.062	197		0.070	216		0.078	235		0.088	259	350
2° 30'	0.022	75		0.028	94		0.034	113		0.042	140		0.050	168		0.058	187	300	0.068	211		0.076	230		0.086	254	350	0.096	278	
2° 45'	0.024	79		0.030	98		0.038	122		0.046	149	200	0.054	178		0.064	202		0.072	221		0.082	245		0.092	269		0.100	288	400
3° 00'	0.026	83		0.034	105		0.040	126		0.050	158		0.058	187		0.068	211		0.078	235		0.088	259		0.098	283		D MAX = 2° 45'		
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		0.100	288				
3° 30'	0.030	90		0.038	113		0.046	139		0.056	171		0.066	206		0.076	230		0.086	254		0.096	278		D MAX = 3° 30'					
3° 45'	0.032	93		0.040	117		0.050	147		0.058	176		0.070	216		0.080	240		0.090	264		0.098	283							
4° 00'	0.034	97		0.042	121	200	0.052	151		0.062	185		0.072	221		0.084	250		0.094	274		0.100	288							
4° 15'	0.036	100		0.044	125		0.054	155		0.064	189		0.076	230		0.086	254		0.096	278		D MAX = 4° 15'								
4° 30'	0.036	100		0.046	129		0.056	160		0.068	198		0.078	235		0.090	264		0.098	283										
4° 45'	0.038	104	200	0.048	133		0.060	168		0.070	203		0.082	245		0.092	269		0.100	288										
5° 00'	0.040	108		0.050	137		0.062	172		0.072	207		0.084	250		0.094	274		D MAX = 5° 15'										
5° 30'	0.044	115		0.054	144		0.066	181		0.078	221	250	0.088	259		0.098	283												
6° 00'	0.046	119		0.058	152		0.070	189		0.082	230		0.092	269		0.100	288												
6° 30'	0.050	126		0.062	160		0.074	198		0.086	239		0.096	278	300	D MAX = 6° 30'													
7° 00'	0.052	130		0.064	164		0.078	206		0.090	248		0.098	283															
7° 30'	0.054	133		0.068	172		0.080	210		0.092	252		0.100	288															
8° 00'	0.058	140		0.070	176		0.084	219		0.094	257	300	D MAX = 8° 25'																
8° 30'	0.060	144		0.072	179		0.086	223	250	0.096	261																		
9° 00'	0.062	148		0.076	187		0.088	227		0.098	266																		
9° 30'	0.064	151		0.078	191		0.092	235		0.100	270																		
10° 00'	0.066	155		0.080	195		0.094	240		D MAX = 10° 30'																			
11° 00'	0.070	162		0.084	203		0.096	244																					
12° 00'	0.074	169		0.088	211	250	0.098	248																					
13° 00'	0.076	173		0.090	215		0.100	252	300																				
14° 00'	0.080	180		0.094	222		D MAX = 13° 45'																						
15° 00'	0.082	184		0.096	226																								
16° 00'	0.086	191		0.098	230																								
17° 00'	0.088	194		0.100	234																								
18° 00'	0.090	198	250	D MAX = 19° 30'																									
19° 00'	0.092	202																											
20° 00'	0.094	205																											
21° 00'	0.096	209																											
22° 00'	0.096	209																											
23° 00'	0.098	212																											
24° 00'	0.098	212																											
25° 00'	0.100	216																											
D MAX = 28° 30'																													

GENERAL NOTES

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

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

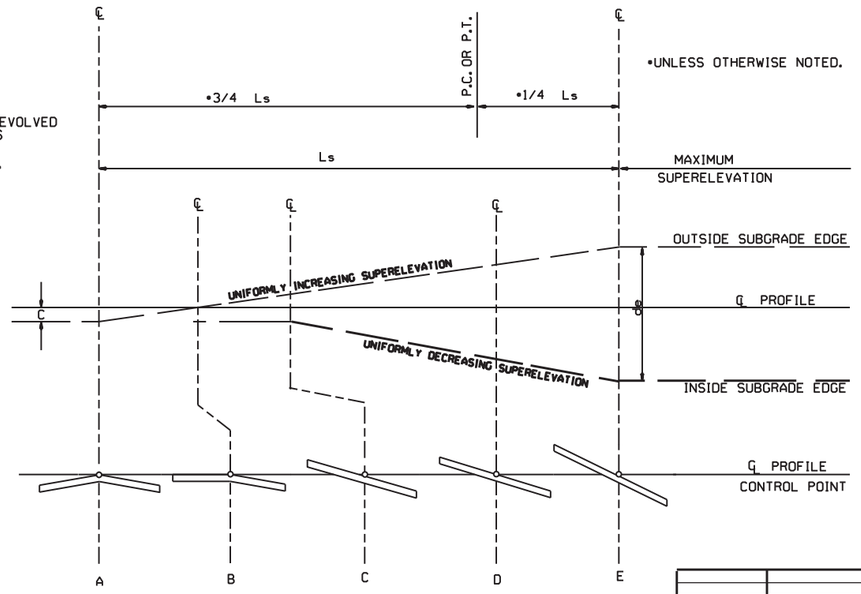
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.

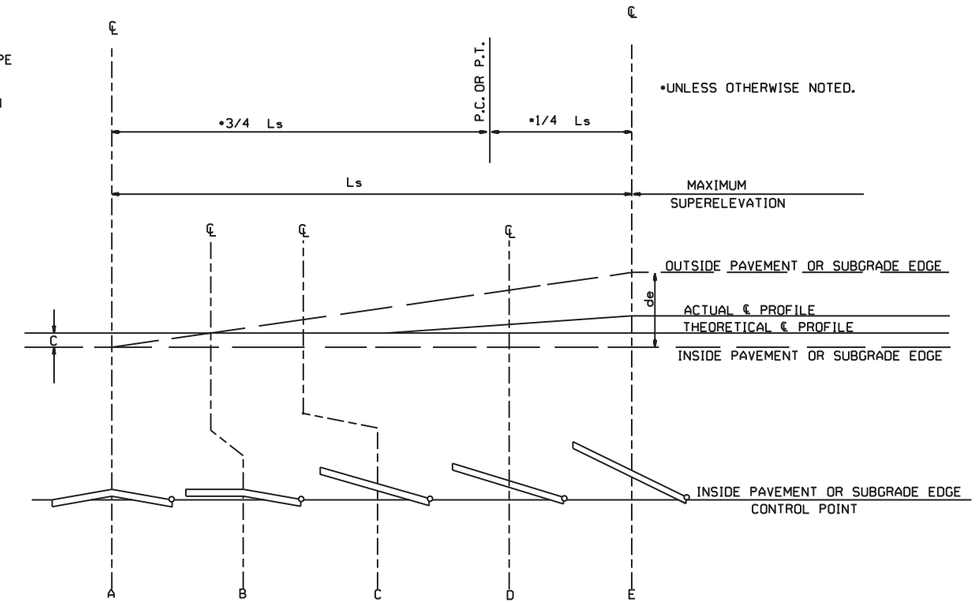
SUPERELEVATION FORMULA = $\frac{Lde}{Ls}$

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 EDGE

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

DATE	REVISION	DATE FILMED
11-07-19	REVISED SUPERELEVATION TABLE	
10-18-96	ADDED FORMULA	
01-09-87	ISSUED	534-1-9-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2



R1-1
30"X30"



W1-3
30"X30"
(LT. OR RT.)



W1-8
18"X24"



W2-5
30"X30"



W3-1
36"X36"



W5-1
36"X36"



M6-3
21"X15"



R1-2
36"X36"X36"



W1-4
30"X30"
(LT. or RT.)



W2-1
30"X30"



S1-1
36"X36"

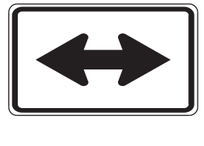


W3-2
36"X36"



County
Route Marker
M1-6
24"X24"

NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.



M6-4
21"X15"



R2-1
24"X30"



W1-5
30"X30"
(LT. or RT.)



W2-2
30"X30"



W5-2
36"X36"



W8-3
36"X36"



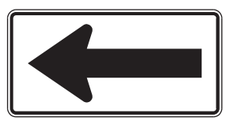
R1-3P
18"X6"



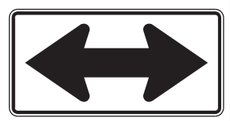
M6-5
21"X15"



W1-1
30"X30"
(LT. or RT.)



W1-6
48"X24"



W1-7
48"X24"



W2-3
30"X30"
(LT. or RT.)



W5-3
36"X36"



W13-1P
18"X18"



M6-1
21"X15"

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.



M6-6
21"X15"



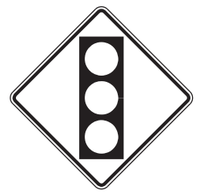
W1-2
30"X30"
(LT. or RT.)



W2-4
30"X30"



W10-1
36" DIAMETER



W3-3
36"X36"



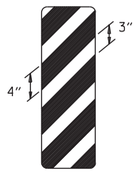
M6-2
21"X15"



S4-3P
24"X8"



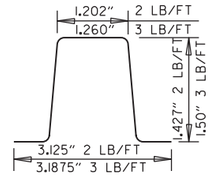
S4-2P
24"X10"



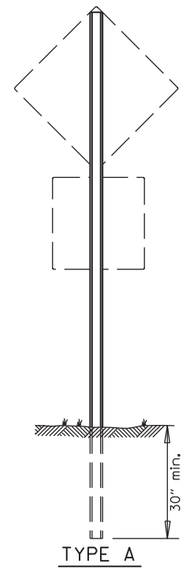
OM-3
12"X36"
(LT. or RT.)

MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

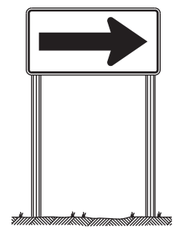


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

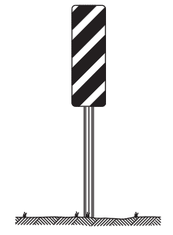


TYPE A

NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.



TYPE B



TYPE C

MINIMUM WEIGHT

TYPE A & B = 3 LBS./FT.
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

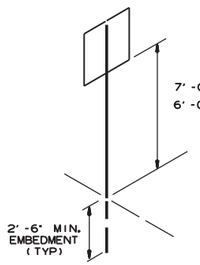
DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED RI-3 TO RI-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED WI4-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

SUPPORT ASSEMBLIES

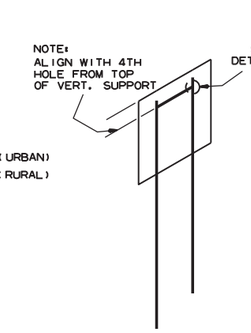
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

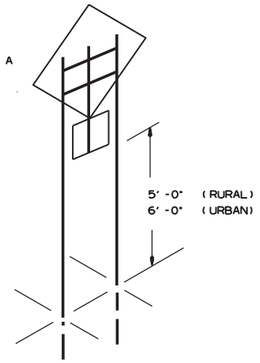
STANDARD DRAWING SHS-1



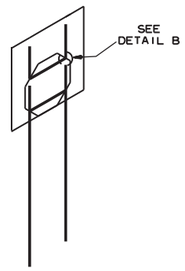
U-1



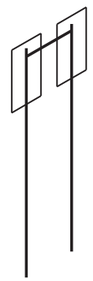
U-2



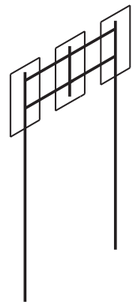
U-2 (A)



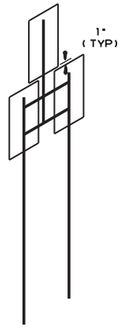
U-2 (B)



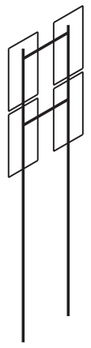
U-2 (1)



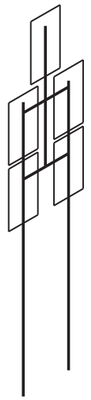
U-2 (2)



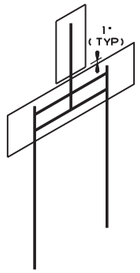
U-2 (3)



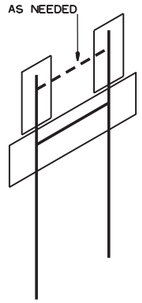
U-2 (4)



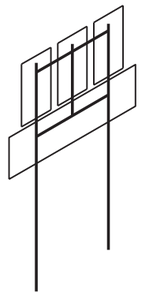
U-2 (5)



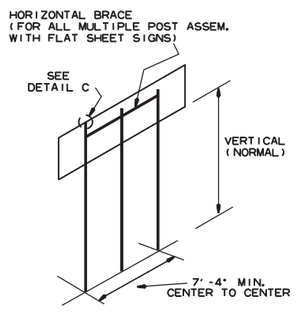
U-2 (6)



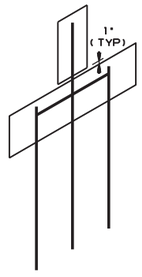
U-2 (7)



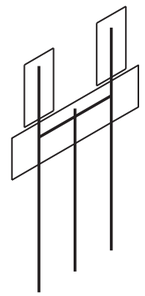
U-2 (8)



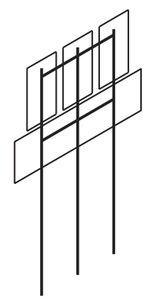
U-3



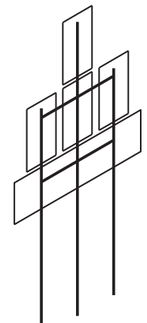
U-3 (1)



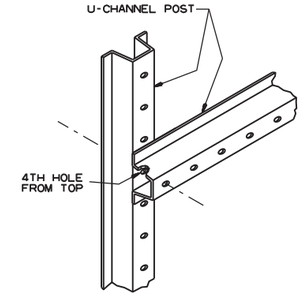
U-3 (2)



U-3 (3)

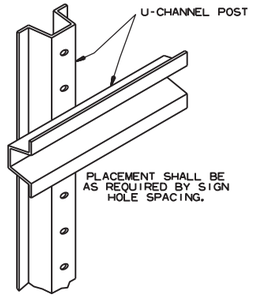


U-3 (4)



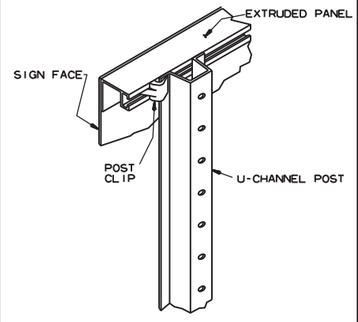
DETAIL A

SHOWING HORIZONTAL BRACE



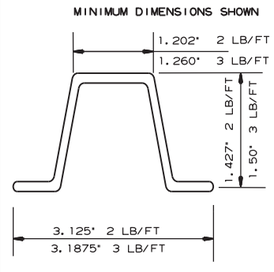
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



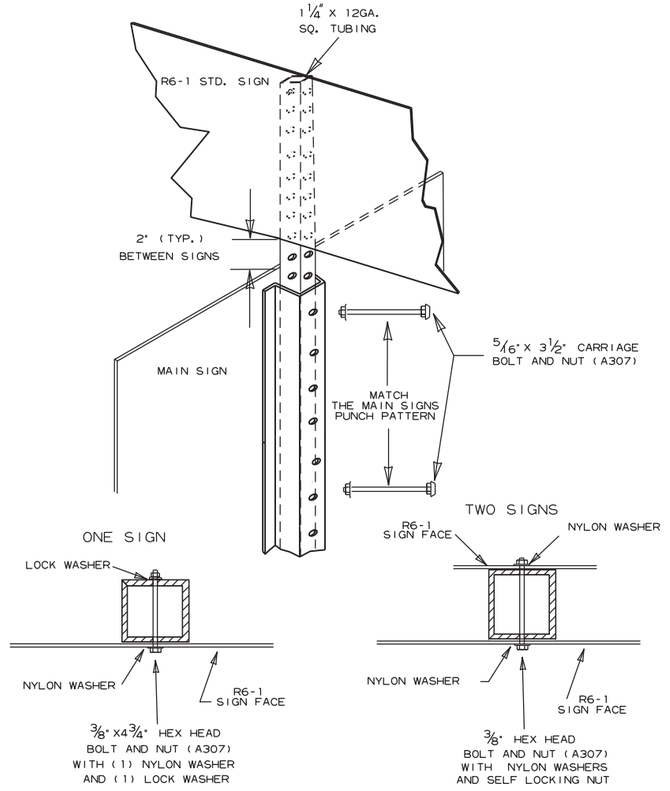
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



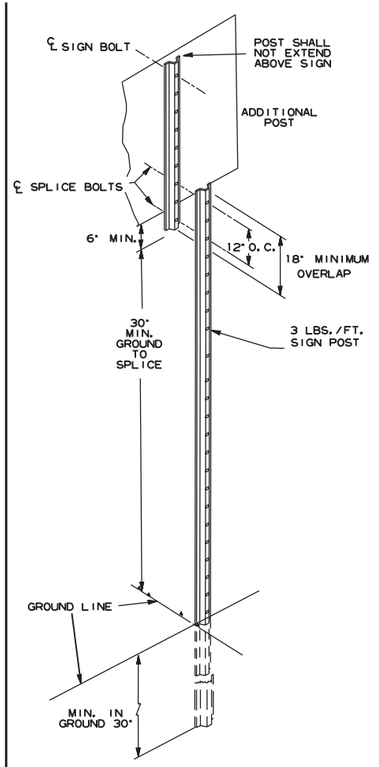
DETAIL C

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

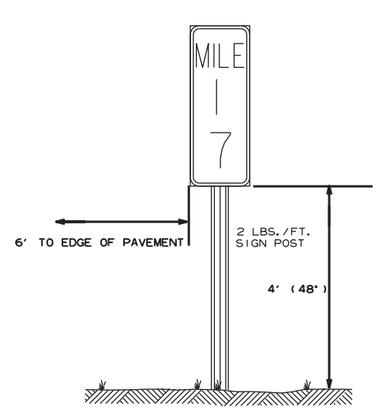
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

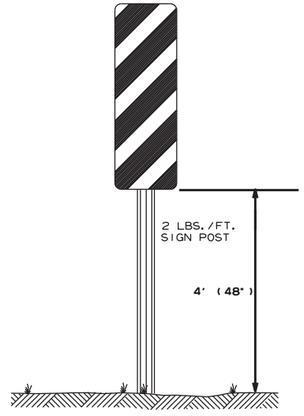
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

DATE	REVISION	FILMED
7-25-19	REVISED CARRIAGE BOLT WITH MATERIAL REQUIREMENT	
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

STANDARD DRAWING SHS-2

R1-1



STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a



STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1



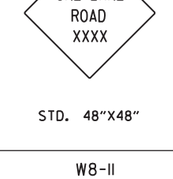
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2



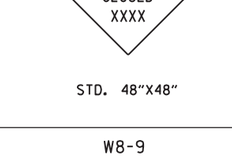
STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R5-1



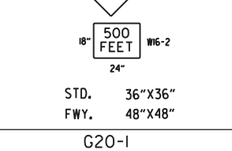
STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2



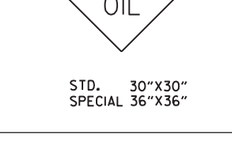
48"X30"

RII-3A



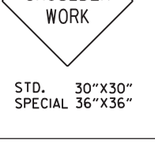
60"X30"

RII-4



60"X30"

W21-5a



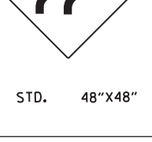
STD. 36"X36"
FWY. 48"X48"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2



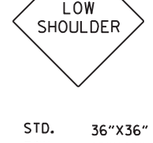
STD. 36"X36"
FWY. 48"X48"

WI-3



STD. 48"X48"

WI-4



STD. 48"X48"

WI-6



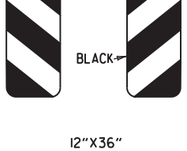
STD. 48"X24"
SPECIAL 60"X30"

WI-8



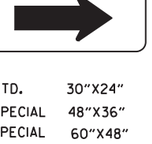
STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1



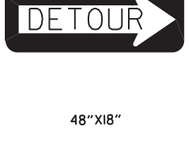
STD. 36"X36"
SPECIAL 48"X48"

W3-2



STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1



STD. 36"X36"
SPECIAL 48"X48"

W6-3



EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7



EXPWY. 36"X36"
FWY. 48"X48"

W9-2



STD. 36"X36"
FWY. 48"X48"

WI3-1



STD. 24"X24"

W20-1



STD. 48"X48"

W20-2



STD. 48"X48"

W20-3



STD. 48"X48"

W20-4



STD. 48"X48"

W20-5



STD. 48"X48"

W20-7a



STD. 36"X36"
FWY. 48"X48"

W21-2



STD. 30"X30"
SPECIAL 36"X36"

W21-5



STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b



STD. 48"X48"

R56-1



STD. 18"X18"

W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

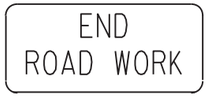
STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2



48"X24"

OM-3L OM-3R

12"X36"

M4-9



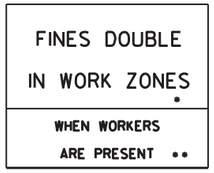
STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10



48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

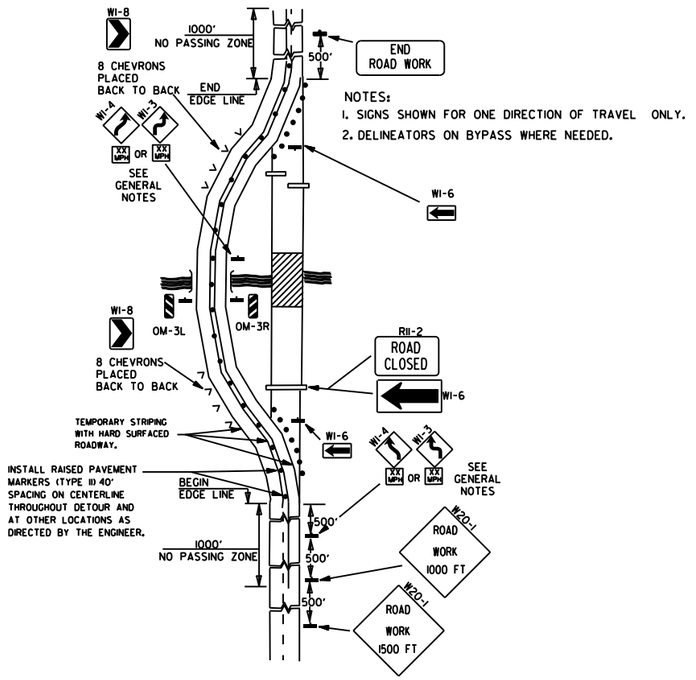
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-07-19	REVISED FOR MASH	
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

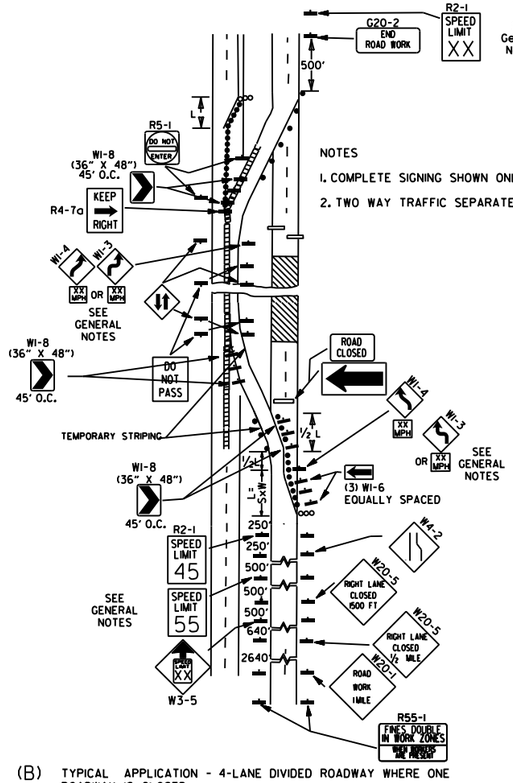
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



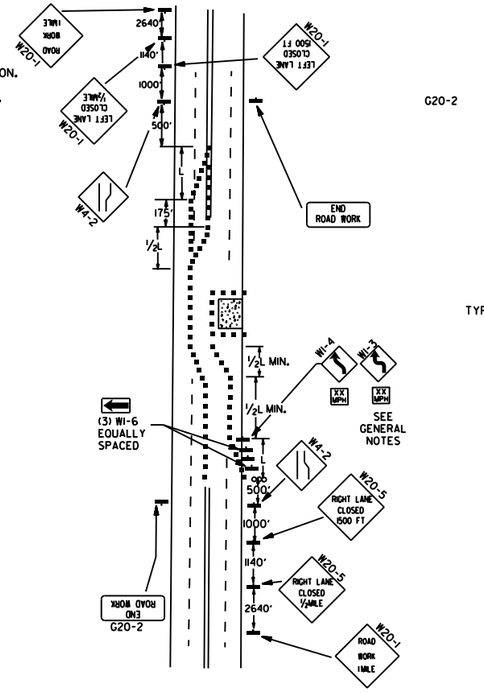
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

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

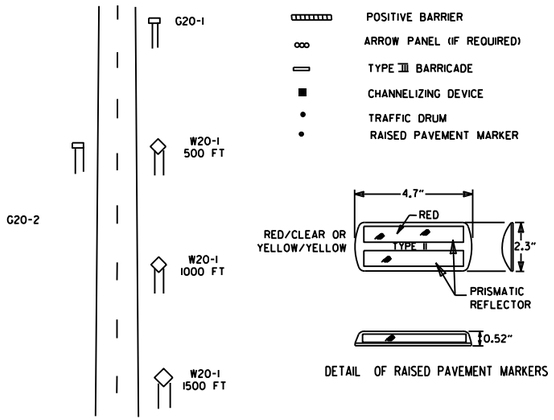


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

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



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



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:

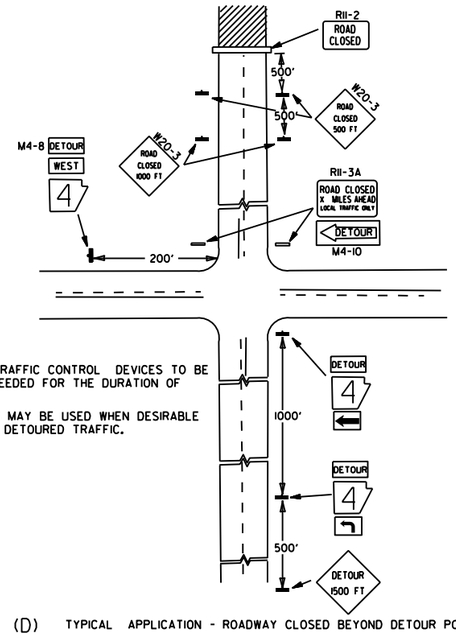
L= MINIMUM LENGTH OF TAPER.

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

W= WIDTH OF OFFSET.

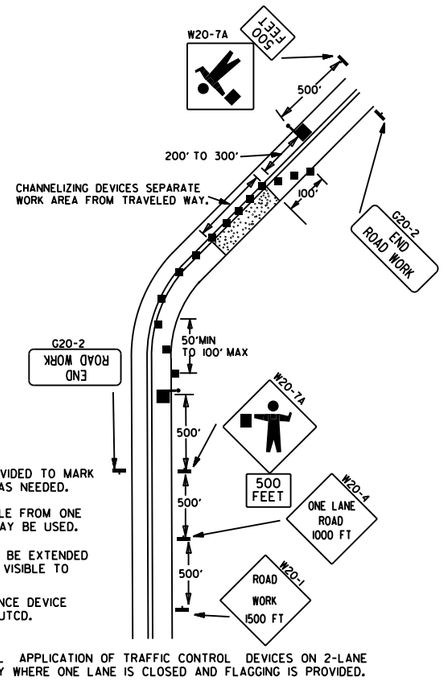
GENERAL NOTES:

1. THE MAINTENANCE DIVISION SHALL CONDUCT A BALL BANK STUDY TO DETERMINE THE ADVISORY SPEED LIMIT PRIOR TO OPENING TO TRAFFIC. THE ADVISORY SPEED WILL BE POSTED ON WI-3 OR WI-4 CURVE WARNING SIGNS. USE WI-4 WHEN SPEED IS GREATER THAN 30MPH AND WI-3 WHEN 30MPH OR LESS
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-1(55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER. WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE. PAYMENT FOR TRAFFIC DRUMS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR VARIOUS TRAILER MOUNTED DEVICES.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ARDOT QUALIFIED PRODUCTS LIST.
9. ALL TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).



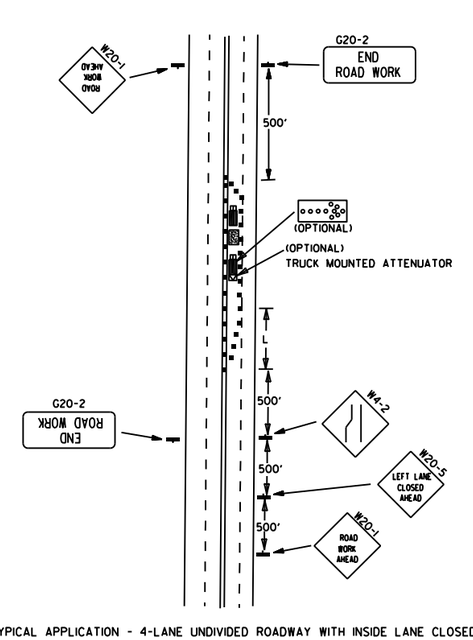
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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



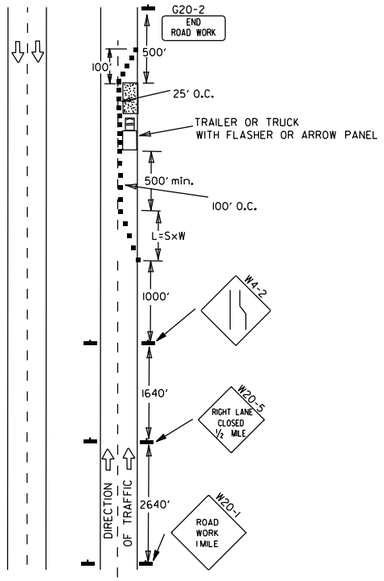
(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

DATE	REVISION	FILMED
05-20-21	REVISED NOTE 7	
11-07-19	REVISED NOTE 1, ADDED NOTE 9	
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

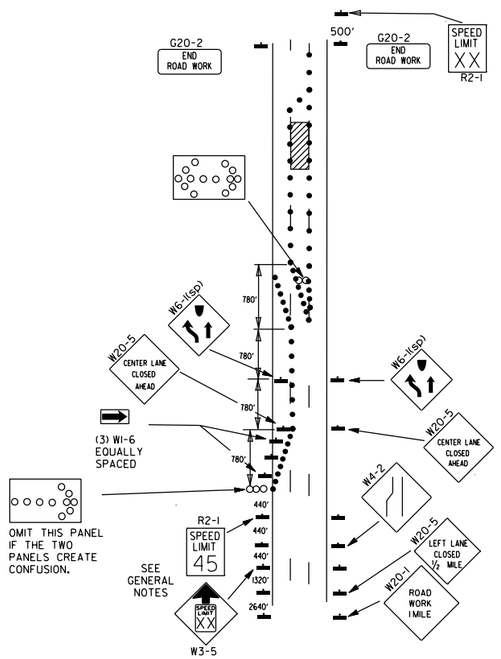
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



(A) TYPICAL APPLICATION - DAYTIME MAINTENANCE OPERATIONS OF SHORT DURATION ON A 4-LANE DIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



(B) TYPICAL APPLICATION - 3-LANE ONEWAY ROADWAY WHERE CENTER LANE IS CLOSED.

KEY:

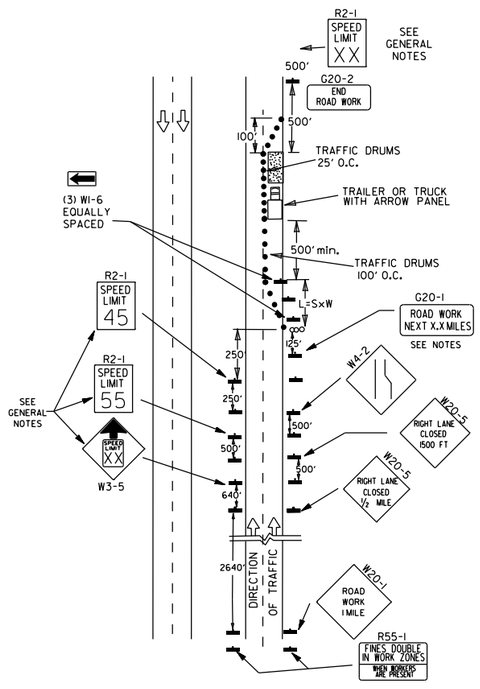
ARROW PANEL (IF REQUIRED)

■ CHANNELIZING DEVICE

● TRAFFIC DRUM

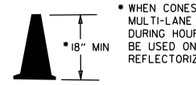
GENERAL NOTES:

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 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-1(45) SHALL BE OMITTED. ADDITIONAL R2-1 55MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS, AT THE END OF THE WORK AREA A R2-1(XX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. THE G20-1 SIGN WILL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH. WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT, THE G20-1 SIGN SHALL BE ERECTED 125' IN ADVANCE OF THE JOB LIMIT. ADDITIONAL W20-1 (1 MILE) SIGNS ARE NOT REQUIRED IN ADVANCE OF LANE CLOSURES THAT BEGIN INSIDE THE PROJECT LIMITS.
8. FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF 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.

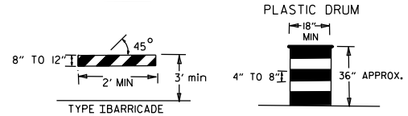
CHANNELIZING DEVICES



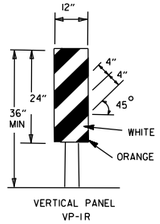
* WHEN CONES ARE USED ON FREEWAYS AND MULTI-LANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS, 28" CONES SHALL BE USED ON ALL ROADWAYS, AND SHALL BE REFLECTORIZED IN ACCORDANCE WITH THE M.U.T.C.D.

CONES

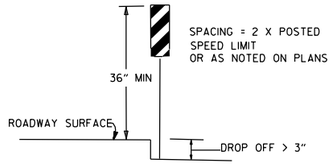
PLASTIC DRUM



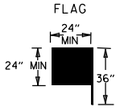
NOTE:
FOR ALL ROAD CLOSURES, THE TYPE III BARRICADES SHALL BE OF SUFFICIENT LENGTH TO EXTEND ACROSS ENTIRE ROADWAY.



VERTICAL PANEL PLACEMENT



FLAG



FLAG SHALL BE OF GOOD GRADE RED MATERIAL

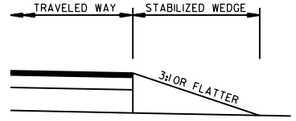
TRAFFIC CONTROL DEVICES			
NON-INTERSTATE			
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL	
		≤ 45 MPH	> 45 MPH
≤ 1"	CENTERLINE	W8-11	W8-11
> 1" ≤ 3"	CENTERLINE	W8-11 AND CENTERLINE LANE STRIPING	W8-11 AND CENTERLINE LANE STRIPING
> 3"	CENTERLINE	STANDARD LANE CLOSURE[6]	STANDARD LANE CLOSURE[6]
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9 AND TRAFFIC DRUMS[1]	W8-9 AND TRAFFIC DRUMS[1]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]
> 6" ≤ 18"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 18" ≤ 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[1]	A STABILIZED WEDGE, W8-17, EDGE LINE STRIPING AND TRAFFIC DRUMS[3]
> 24"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER[4] & EDGE LINES	PRECAST CONCRETE BARRIER[4] & EDGE LINES

INTERSTATE		
VERTICAL DIFFERENTIAL	LOCATION	TRAFFIC CONTROL
≤ 3"	CENTERLINE	W8-11 AND LANE STRIPING
≤ 3"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-9, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 3" ≤ 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	W8-17, EDGE LINE STRIPING, AND TRAFFIC DRUMS[2]
> 6"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	PRECAST CONCRETE BARRIER & EDGE LINES

INTERSTATE AND NON-INTERSTATE		
FORESLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	≤ 5 FT	TRAFFIC DRUMS
2:1	> 5 FT	PRECAST CONCRETE BARRIER
Flatter than 2:1	N/A	TRAFFIC DRUMS

GENERAL NOTES:

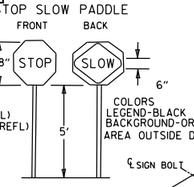
1. WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
2. WHEN THERE IS INSUFFICIENT WIDTH TO PLACE TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
3. PRECAST CONCRETE BARRIER WALL CAN BE USED IN LIEU OF A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS, IF AND WHERE DIRECTED BY THE ENGINEER.
4. A STABILIZED WEDGE, W8-17 SIGN, EDGE LINE STRIPING, AND TRAFFIC DRUMS CAN BE USED IN LIEU OF PRECAST CONCRETE BARRIER WALL, IF AND WHERE DIRECTED BY THE ENGINEER.
5. W21-5, W21-5a, AND/OR W21-5b SIGNS SHALL BE USED WHERE THE ROADWAY IS UNOBSTRUCTED IF AND WHERE DIRECTED BY THE ENGINEER.
6. TIME LIMITATIONS MUST CONFORM TO SECTION 603 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION).

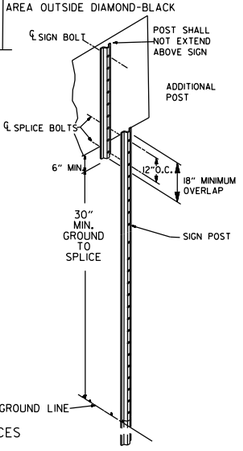


STABILIZED WEDGE

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

STOP SLOW PADDLE

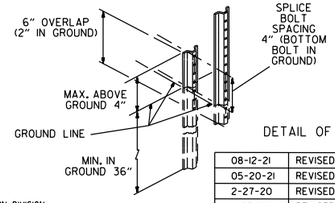




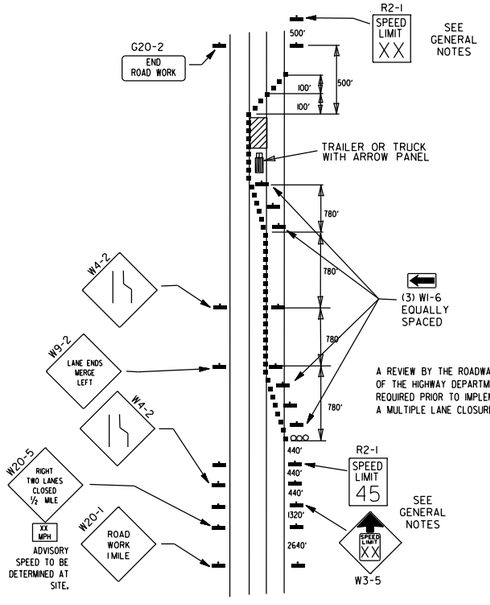
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-21)

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

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



DETAIL OF SPLICES



A REVIEW BY THE ROADWAY DESIGN DIVISION OF THE HIGHWAY DEPARTMENT WILL BE REQUIRED PRIOR TO IMPLEMENTING A MULTIPLE LANE CLOSURE.

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

DATE	REVISION	FILMED
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	

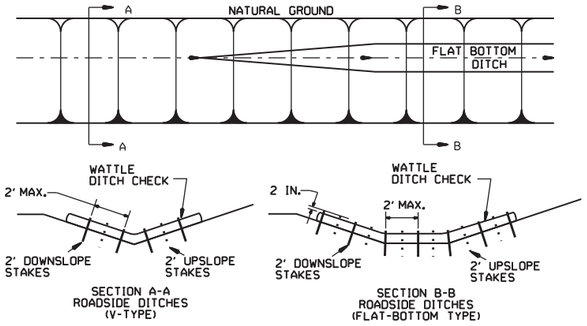
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

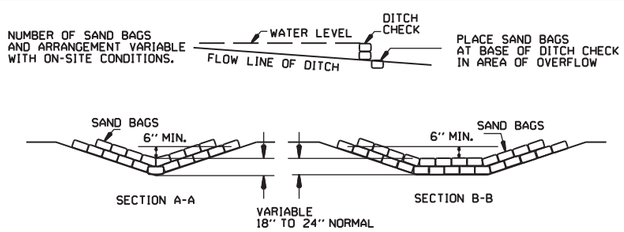
STANDARD DRAWING TC-3

GENERAL NOTES

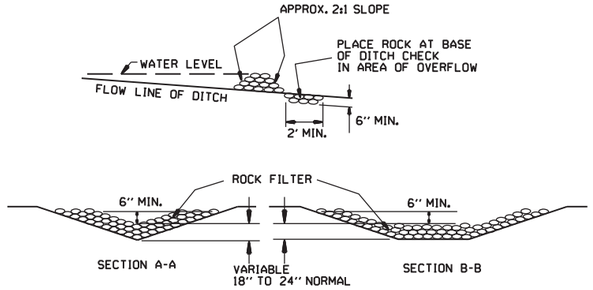
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

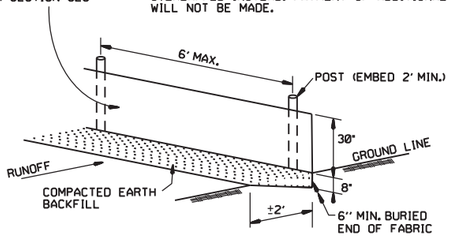


ROCK DITCH CHECK (E-6)

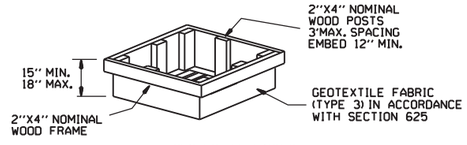
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

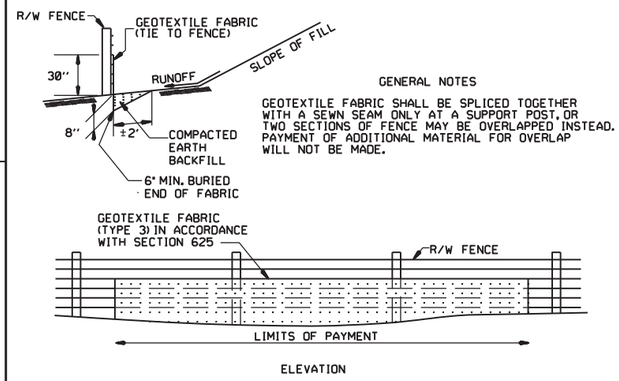
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)



DROP INLET SILT FENCE (E-7)



GENERAL NOTES

GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

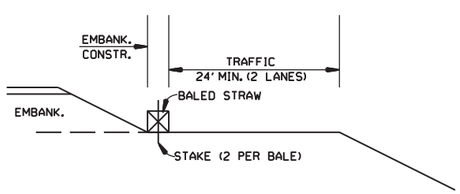
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

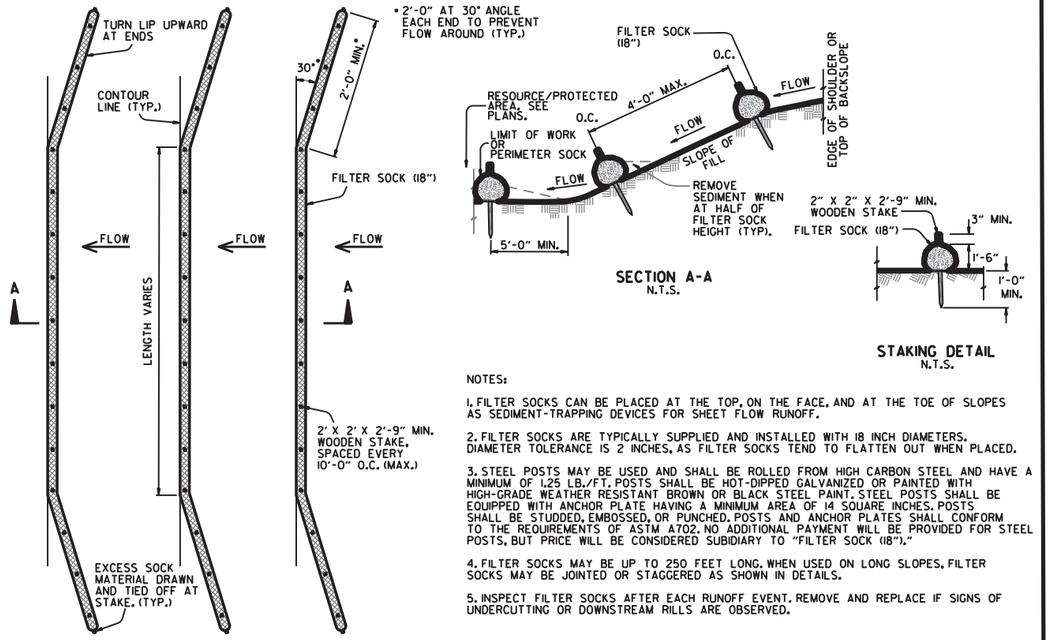
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

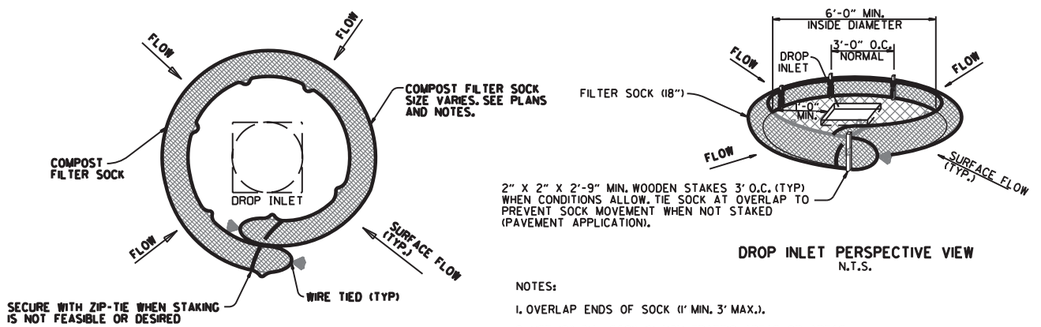
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

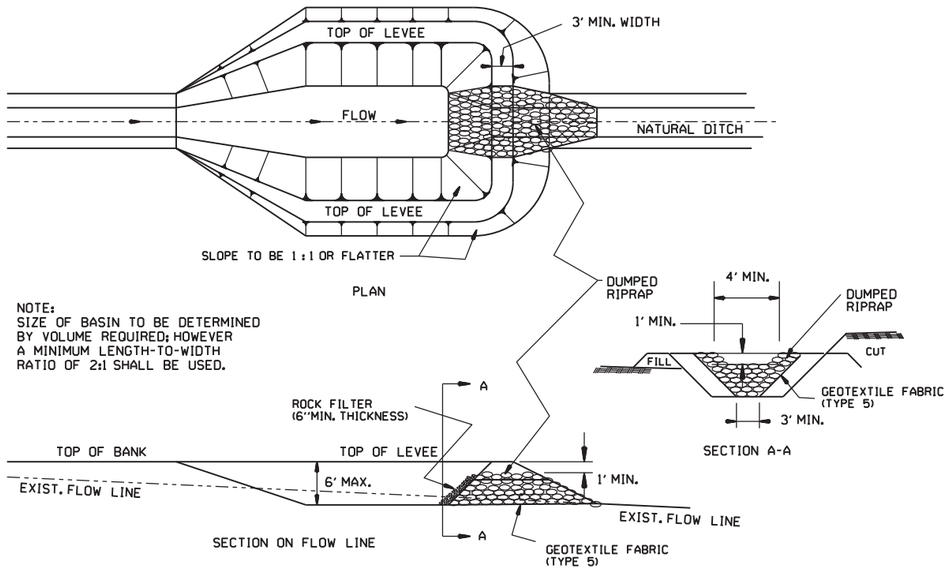
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

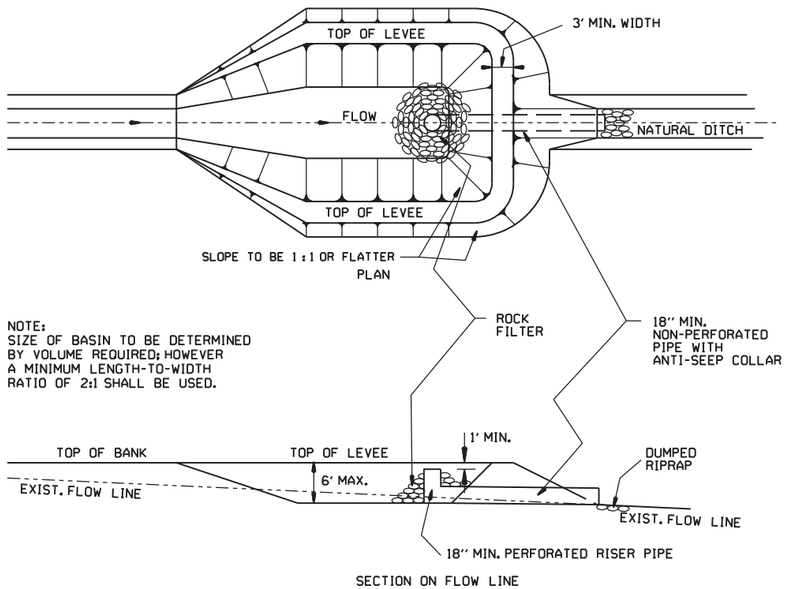
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

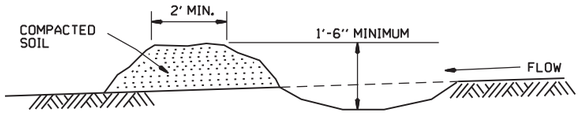
STANDARD DRAWING TEC-1



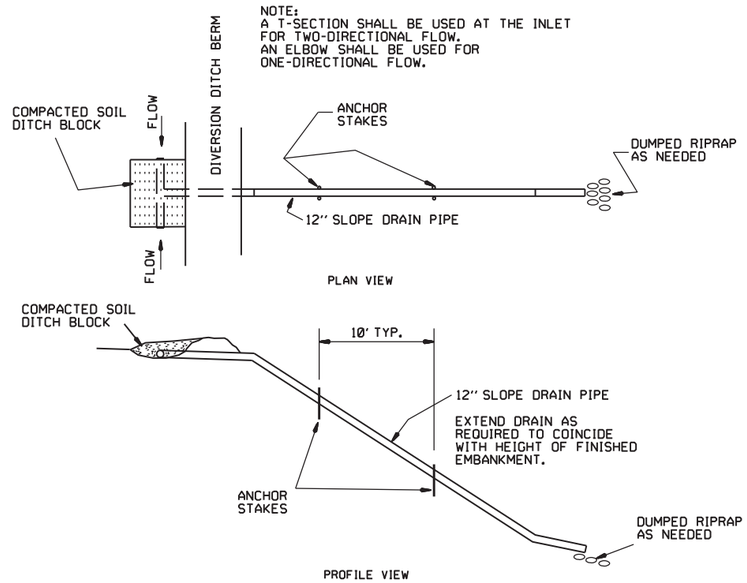
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



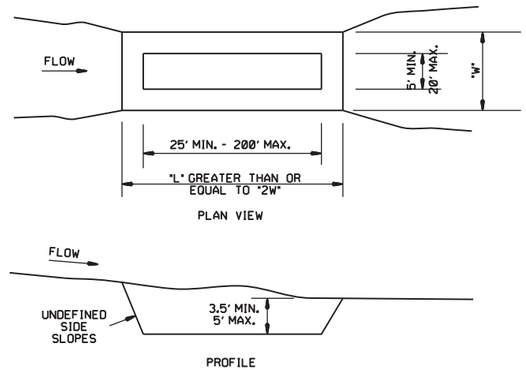
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

DATE	REVISION	FILMED
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13	
4-1-93	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-2

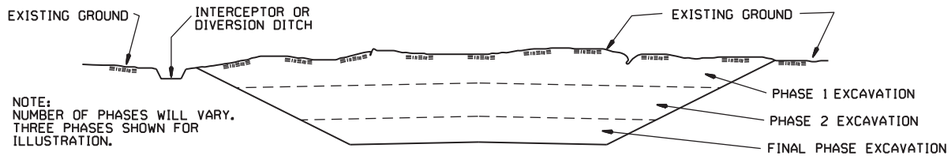
CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES , DIVERSION DITCHES, SEDIMENT BASINS, ETC.)

2. PERFORM CLEARING AND GRUBBING OPERATION.

EXCAVATION



GENERAL NOTE

ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

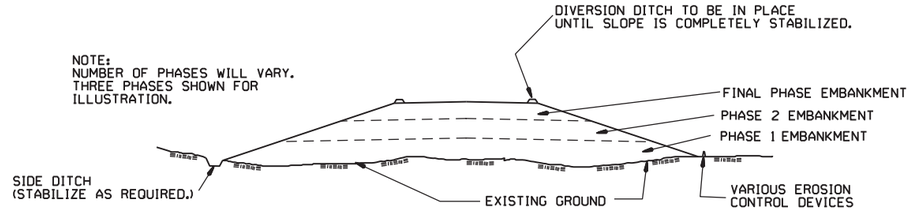
1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.

2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.

3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.

4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES. CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

EMBANKMENT



GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.

2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.

3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.

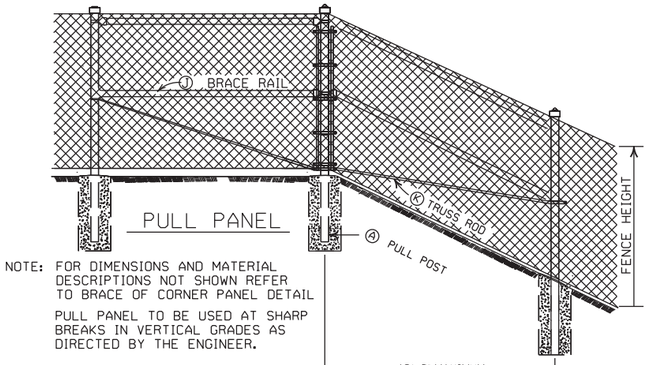
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

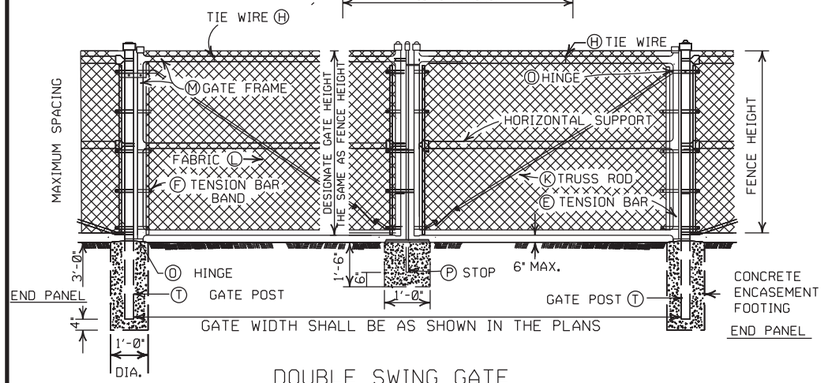
STANDARD DRAWING TEC-3



PULL PANEL

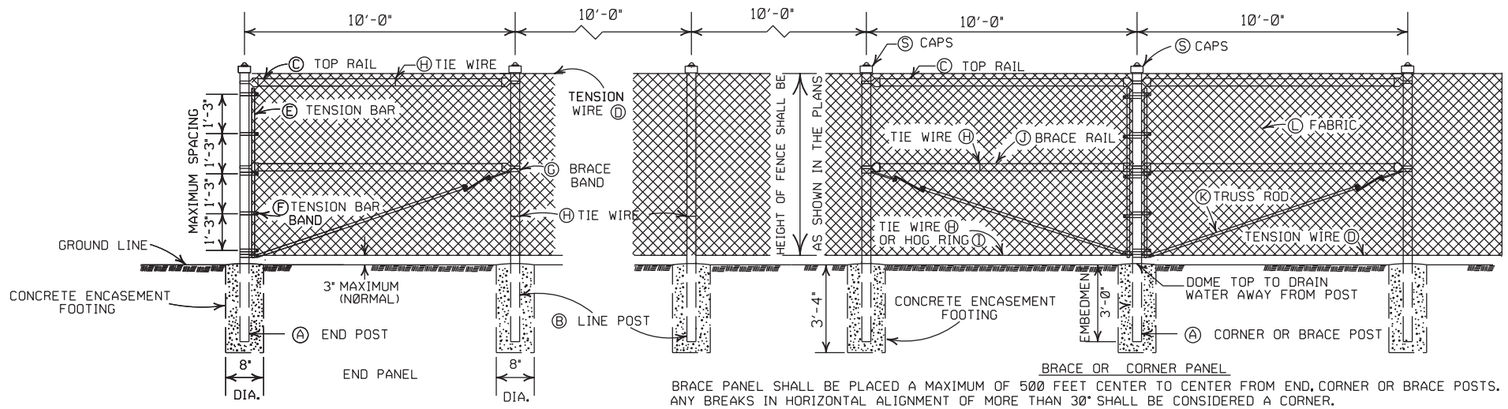
NOTE: FOR DIMENSIONS AND MATERIAL DESCRIPTIONS NOT SHOWN REFER TO BRACE OF CORNER PANEL DETAIL

PULL PANEL TO BE USED AT SHARP BREAKS IN VERTICAL GRADES AS DIRECTED BY THE ENGINEER.



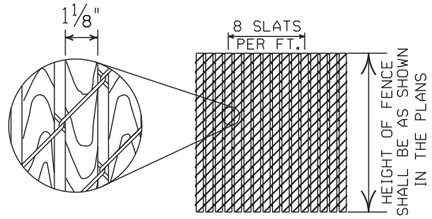
DOUBLE SWING GATE

POST SPACING DETAIL



BRACE OR CORNER PANEL

BRACE PANEL SHALL BE PLACED A MAXIMUM OF 500 FEET CENTER TO CENTER FROM END, CORNER OR BRACE POSTS. ANY BREAKS IN HORIZONTAL ALIGNMENT OF MORE THAN 30° SHALL BE CONSIDERED A CORNER.



1⅛" X ¼" REDWOOD SLATS(LENGTH TO MATCH HEIGHT OF FENCE)

DETAIL OF REDWOOD SLAT INSTALLATION

(WHERE APPLICABLE)

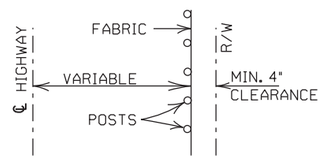
HEIGHT OF FENCE FABRIC	(A)	(B)		(C)			(D)		(E)		(F)			(G)	
	END, PULL, CORNER OR BRACE POST	LINE POSTS		TOP RAIL			TENSION WIRE		TENSION BAR		TENSION BAR BAND			BRACE BAND	
		SIZE	TIE SPACING	SIZE	TIE SPACING	MIN. LENGTH	SIZE	TIE SPACING	SIZE	LENGTH	SIZE	BOLT SIZE	SPACING	SIZE	BOLT SIZE
6' AND LESS	2½" O.D.	2" O.D.	1 TIE EVERY 1'-2" OF FABRIC HEIGHT	1⅝" O.D.	1 TIE EVERY 2'-0"	10'-0"	7 GAUGE COIL SPRING WIRE	1 TIE EVERY 1'-0"	MIN. OF ⅜" X ¾"	MIN. OF 2" LESS THAN FABRIC HEIGHT	MIN. OF ¾" X 0.074	⅝" X 1¼"	1 BAND AT TOP AND BOTTOM 15" MAX. INTERVAL BETWEEN BANDS	MIN. OF ¾" X 0.105	⅝" X 1¼"
OVER 6' TO 12' INCL.	3 " O.D.	2½" O.D.													

HEIGHT OF FENCE FABRIC	(H)	(I)	(J)		(K)	(L)			(M)		(N)		(O)	(T)	
	TIE WIRE	HOG RING	BRACE RAIL		TRUSS ROD	FABRIC			GATE FRAME		HORIZONTAL SUPPORT		HINGE TYPE	GATE POST	
			SIZE	TIE SPACING		SIZE	MESH	SELVAGE	SIZE	TIE SPACING	SIZE	TIE SPACING	180° SWING	GATE WIDTH 12' AND LESS	GATE WIDTH OVER 12' TO 24' INCL.
6' AND LESS	MIN. OF 12 GA. STEEL OR 9 GA. ALUM.	SAME GAUGE AS FABRIC	1⅝" O.D.	1 TIE EVERY 2'-0"	MIN. OF ⅝" ROUND WITH TIGHTNERS AND FITTINGS	9 GA.	2"	KNUCK -ING AND/OR TWIST -ING	2" O.D.	1 TIE EVERY 1'-0"	2" O.D.	1 TIE EVERY 1'-0"	OFFSET	3" O.D.	4" O.D.
OVER 6' TO 12' INCL.														4" O.D.	

NOTE: POST SIZES SHOWN ARE FOR STEEL. WHERE ALUMINUM IS PROVIDED, LINE POSTS SHALL HAVE AN OUT SIDE DIAMETER OF 2½" FOR FENCE HEIGHT OF 6' AND LESS, AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' TO 12'. END, PULL, CORNER OR BRACE POSTS SHALL HAVE AN OUTSIDE DIAMETER OF 3" FOR FENCE HEIGHT OF 6' AND LESS; AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHTS OF 6' TO 12'. GATE POSTS WHERE GATE WIDTH IS 12' AND LESS SHALL HAVE AN OUTSIDE DIAMETER OF 3½" FOR FENCE HEIGHT OF 6' AND LESS. ALUMINUM TENSION WIRE SHALL BE 0.192" IN DIAMETER. MINIMUM THICKNESS OF MATERIAL FROM WHICH EXPANSION SLEEVES SHALL BE MADE WILL BE 0.078". POSTS AND RAILS MAY HAVE ANY CROSS-SECTIONAL SHAPE THAT WILL MEET THE SPECIFICATIONS.

OTHER DETAILS APPLY TO BOTH STEEL AND ALUMINUM FENCE.

ALL MISCELLANEOUS FITTINGS AND HARDWARE SHALL MEET THE REQUIREMENTS AND PRODUCTION TOLERANCES AS SET FORTH IN THE SPECIFICATIONS. 9 GAUGE ALUMINUM WIRE SHALL BE ACCEPTABLE FOR TIEING FABRIC TO TUBULAR AND ROLL FORMED MEMBERS OF STEEL FENCE.



INSTALLATION MAY BE MODIFIED AS SHOWN IN THE PLANS

TYPICAL INSTALLATION DIAGRAM

POSTS AND RAILS

SIZE O.D.	GRADE 1 AND ALUMINUM ALLOY				GRADE 2		
	O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT. STEEL	LBS. PER LINEAR FT. ALUMINUM	O.D. INCHES	WALL THICKNESS	LBS. PER LINEAR FT.
1⅝	1.660	0.140	2.27	0.786	1.660	0.111	1.84
2	1.900	0.145	2.72	0.940	1.900	0.120	2.28
2½	2.375	0.154	3.65	1.264	2.375	0.130	3.11
3	2.875	0.203	5.79	2.004	2.875	0.160	4.64
3½	3.500	0.216	7.58	2.621	3.500	0.160	5.71
4	4.000	0.226	9.11	3.151	4.000	0.160	6.56

TOLERANCES ON DIMENSIONS AND WEIGHTS ACCORDING TO AASHTO M 181

GENERAL NOTES:

(C) CHAIN LINK FENCE BEING PLACED ON PRIVATE PROPERTY SHALL INCLUDE A TOP RAIL. ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LIN. FT. OF CHAIN LINK FENCE.

(D) TENSION WIRE: SHALL BE SECURED TO ALL TERMINAL, PULL, BRACE OR CORNER POSTS WITH TENSION BAR BANDS.

(J) BRACE RAIL: BRACE RAILS SHALL BE PROVIDED AT ALL TERMINAL, PULL, BRACE OR CORNER POSTS HALFWAY BETWEEN THE TOP RAIL AND GROUND LEVEL WHEN TOPRAIL IS SPECIFIED AND TWELVE INCHES (12") DOWN FROM TOP OF FABRIC WHEN TOP TENSION WIRE IS SPECIFIED. BRACE RAIL SHALL EXTEND FROM SUCH POST TO THE FIRST ADJACENT LINE POST.

(L) FABRIC: SHALL CONFORM TO THE SPECIFICATIONS.

(M) GATE FRAMES: SHALL BE CONSTRUCTED OF TUBULAR MEMBERS ASSEMBLED BY USE OF HEAVY PRESSED STEEL, MALLEABLE FITTINGS OR BY WELDING. ALL GATES SHALL HAVE ONE HORIZONTAL SUPPORT EXTENDING THE WIDTH OF THE GATE AT THE MIDPOINTS OF VERTICAL FRAME MEMBERS. THE COMPLETE FRAME SHALL BE RIGID AND HAVE AMPLE STRENGTH TO BE FREE FROM SAG AND TWIST.

(O) HINGES: SHALL BE OF HEAVY PATTERN, OF ADEQUATE STRENGTH FOR GATE, AND WITH LARGE BEARING SURFACES FOR CLAMPING IN POSITION. THE HINGE SHALL BE OF THE PROPER TYPE TO ALLOW FOR THE DESIGNATED DEGREE OF SWING. THE HINGE SHALL NOT TWIST OR TURN UNDER THE ACTION OF THE GATE. THE GATES SHALL BE CAPABLE OF BEING OPENED AND CLOSED EASILY BY ONE PERSON.

(P) LATCHES AND STOPS: SHALL BE PROVIDED FOR ALL GATES. GATES SHALL HAVE A DROP BAR LATCH. LATCHES SHALL BE ARRANGED FOR LOCKING. THE STOP FOR DROP BAR LATCHES SHALL BE SET IN CONCRETE AND ENGAGE THE PLUNGER OF THE BAR LATCH.

(S) CAPS: ALL POSTS, EXCEPT ROLL FORMED POSTS AND "T" POSTS SHALL BE CAPPED OVER THE EXTERIOR OF THE POST, AND SHALL CONFORM TO ASTM F626.

CONCRETE REQUIRED FOR THE EMBEDMENT OF ALL POSTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR CHAIN LINK FENCE.

POSTS SHALL BE SPACED EQUIDISTANT ON A MAXIMUM OF 10' CENTERS.

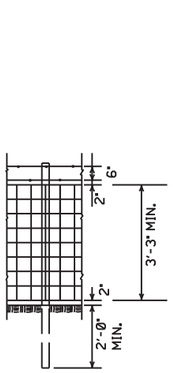
EXCAVATION FOR POSTS: IN OTHER THAN ROCK SHALL BE OF THE DIMENSIONS INDICATED. IF ROCK IS ENCOUNTERED BEFORE REACHING THE REQUIRED DEPTH, THE EXCAVATION SHALL BE CONTINUED TO THE DEPTH INDICATED OR 1'-6" INTO THE ROCK, WHICHEVER IS LESS, AND SHALL BE A MINIMUM OF 8 INCHES IN DIAMETER.

DATE	REVISION	FILMED
11-17-10	REVISED TRUSS ROD	
12-10-09	REVISED POSTS & RAILS TABLE	
5-21-09	ADDED TABLE & GEN. NOTE (C)	
8-22-02	REVISED NOTES, REMOVED TABLE, & REMOVED FENCE ALTERNATE	
4-3-97	REVISED BRACE RAIL NOTE	
10-18-96	REVISED AASHTO & ASTM REF.	
11-3-94	REVISED NOTE (L)	
10-1-92	DELETED ALTERNATE POST	10-1-92
8-15-91	DELETED ROLL FORMED POST DETAIL & ADDED NOTE	8-15-91 8-15-91
11-30-89	DELETED CLASS CONCRETE	11-30-89
11-17-88	REVISED O.D. SIZES	668-11-17-88
10-30-87	GENERAL REVISIONS	548-10-30-87
4-20-79	REVISED TOP RAIL & TENSION WIRE	695-4-20-79
10-2-72	REVISED AND REDRAWN	530-10-2-72

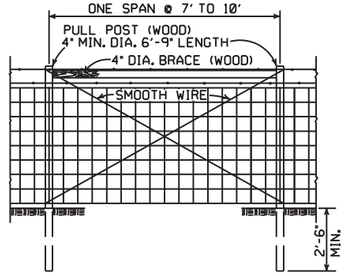
ARKANSAS STATE HIGHWAY COMMISSION

CHAIN LINK FENCE

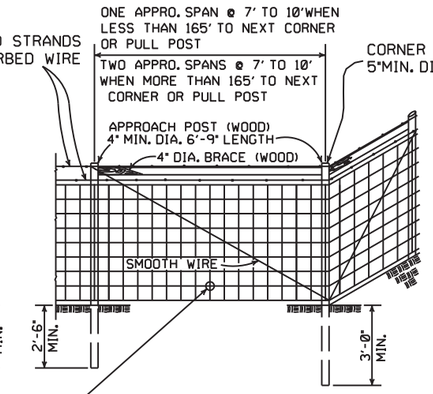
STANDARD DRAWING WF-3

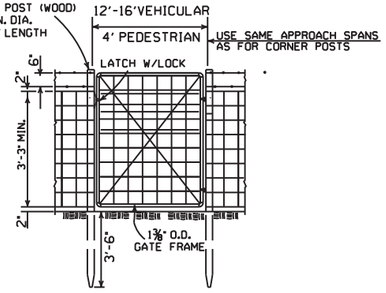


LINE POST
3" MIN. DIA. 6'-3" LENGTH
MAX. SPACING TO BE 10'-0"



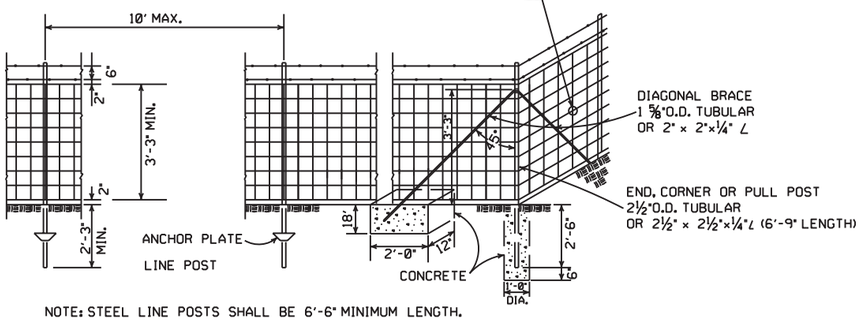
LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

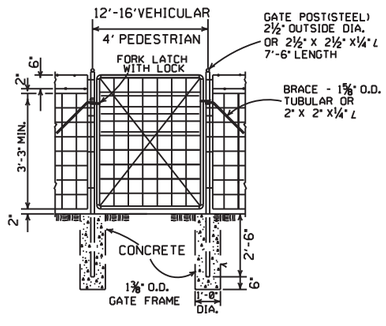


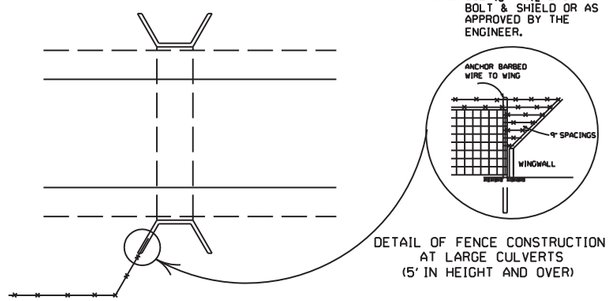


TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES
WILL BE PERMITTED





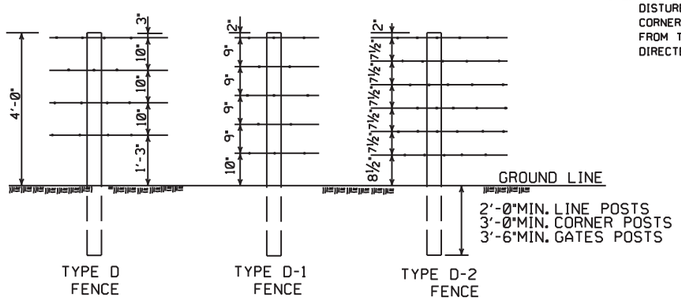


DETAIL OF FENCE CONSTRUCTION
AT LARGE CULVERTS
(5' IN HEIGHT AND OVER)

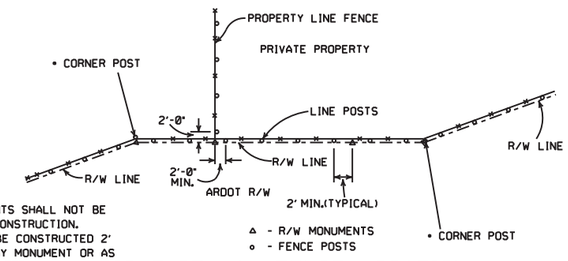
NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

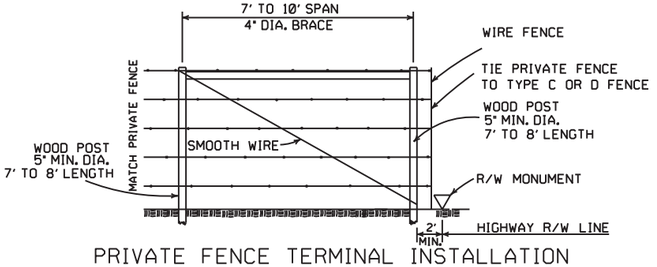


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

GENERAL NOTES:

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

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

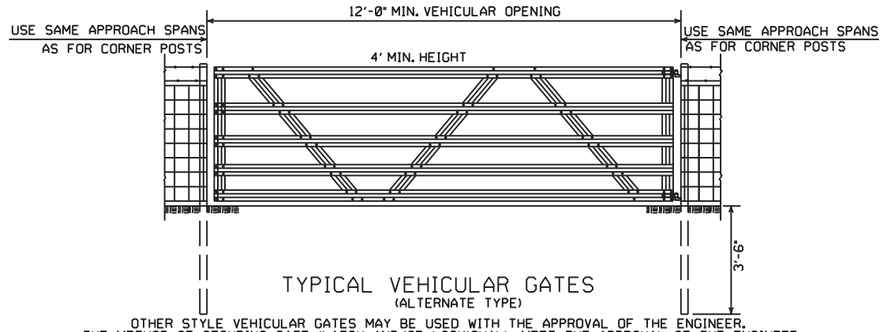
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED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

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

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

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

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



TYPICAL VEHICULAR GATES
(ALTERNATE TYPE)

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

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

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WIRE FENCE
TYPE C AND D

STANDARD DRAWING WF-4