

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

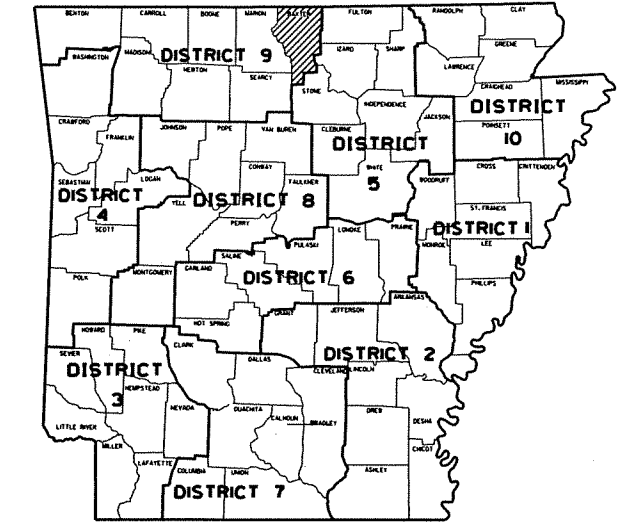
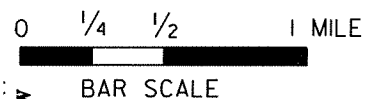
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		1	106
				2 NORTH FORK RIVER STR. & APPRS. (NORFORK) (S)				

NORTH FORK RIVER STR. & APPRS. (NORFORK) (S)

BAXTER COUNTY
ROUTE 5 SECTION 18

JOB 090281

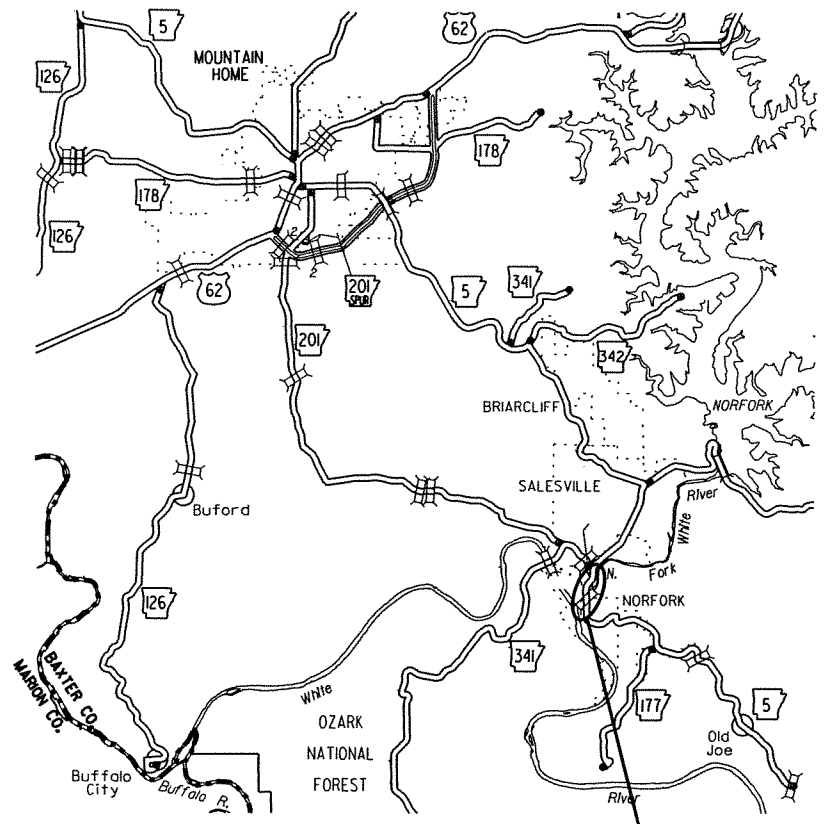
FED. AID PROJ. BRN-0003(47)



ARK. HWY. DIST. NO. 9

• DESIGN TRAFFIC DATA •

DESIGN YEAR	-----	2032
2012 ADT	-----	3,200
2032 ADT	-----	4,200
2032 DHV	-----	462
DIRECTIONAL DISTRIBUTION	-----	60%
TRUCKS	-----	6%
DESIGN SPEED	-----	50 MPH

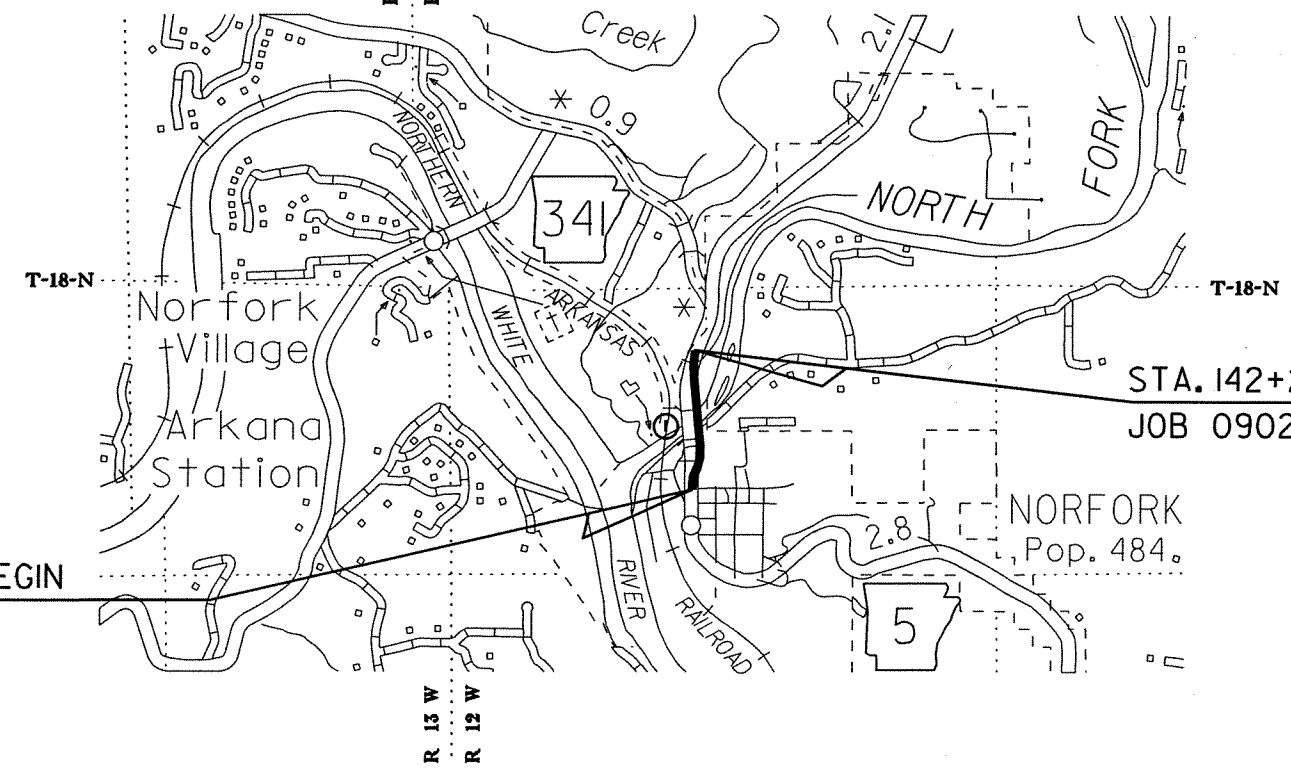


VICINITY MAP

PROJECT LOCATION

BRIDGE DATA

- ① STA. 126+48.75 BRIDGE END
BRIDGE NO. 07253
550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(125'-150'-150'-125')
40' CLEAR ROADWAY
552'-6" BRIDGE LENGTH
STA. 132+01.25 BRIDGE END



STA. 119+16.15 - BEGIN
JOB 090281
LOG MILE 6.63

STA. 142+23.35 END
JOB 090281

	BEGIN PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 36°12'60"	N 36°12'42"	N 36°12'37"
LONGITUDE	W 92°17'10"	W 92°17'12"	W 92°17'12"

GROSS LENGTH OF PROJECT	2307.20	FEET	OR	0.437	MILES
NET " " ROADWAY	1754.70	"	"	0.332	"
NET " " BRIDGES	552.50	"	"	0.105	"
NET " " PROJECT	2307.20	"	"	0.437	"

P.E. 090281
NON-PART.



APPROVED

8/1/12
DEPUTY DIRECTOR
AND CHIEF ENGINEER

INDEX OF SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	090281	2 106

② INDEX OF SHEETS



8/1/12

SHEET NO.	TITLE	BRIDGE NO.	DRWG. NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS			
3	GOVERNING SPECIFICATIONS AND GENERAL NOTES			
4 - 7	TYPICAL SECTIONS OF IMPROVEMENT			
8 - 10	SPECIAL DETAILS			
11 - 12	TEMPORARY EROSION CONTROL DETAILS			
13 - 15	MAINTENANCE OF TRAFFIC DETAILS			
16	PERMANENT PAVEMENT MARKING DETAILS			
17 - 21	QUANTITIES			
22	SCHEDULE OF BRIDGE QUANTITIES	07248	52625	
23 - 24	SUMMARY OF QUANTITIES AND REVISIONS			
25 - 26	SURVEY CONTROL DETAILS			
27	SOIL BORING LOG			
28 - 29	PLAN AND PROFILE SHEETS			
30	LAYOUT OF BRIDGE OVER NORTH FORK RIVER (SHEET 1 OF 2)	07248	52626	
31	LAYOUT OF BRIDGE OVER NORTH FORK RIVER (SHEET 2 OF 2)	07248	52627	
32	HYDROGRAPH	07248	52628	
33	DETAILS OF BENT 1 (SHEET 1 OF 3)	07248	52629	
34	DETAILS OF BENT 1 (SHEET 2 OF 3)	07248	52630	
35	DETAILS OF BENT 1 (SHEET 3 OF 3)	07248	52631	
36	DETAILS OF BENT 2 (SHEET 1 OF 2)	07248	52632	
37	DETAILS OF BENT 2 (SHEET 2 OF 2)	07248	52633	
38	DETAILS OF BENT 3 (SHEET 1 OF 2)	07248	52634	
39	DETAILS OF BENT 3 (SHEET 2 OF 2)	07248	52635	
40	DETAILS OF BENT 4 (SHEET 1 OF 2)	07248	52636	
41	DETAILS OF BENT 4 (SHEET 2 OF 2)	07248	52637	
42	DETAILS OF BENT 5 (SHEET 1 OF 3)	07248	52638	
43	DETAILS OF BENT 5 (SHEET 2 OF 3)	07248	52639	
44	DETAILS OF BENT 5 (SHEET 3 OF 3)	07248	52640	
45	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 1 OF 7)	07248	52641	
46	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 2 OF 7)	07248	52642	
47	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 3 OF 7)	07248	52643	
48	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 4 OF 7)	07248	52644	
49	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 5 OF 7)	07248	52645	
50	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 6 OF 7)	07248	52646	
51	DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT (SHEET 7 OF 7)	07248	52647	
52	DETAILS OF ELASTOMERIC BEARINGS	07248	52648	
53	EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	1888A		4-10-03
54	DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES	1891F		4-10-03
55	DETAILS OF STANDARD TYPE C APPROACH GUTTERS	2016C		7-14-10
56	DETAILS OF STANDARD TYPE D BRIDGE NAME PLATES	2387		9-08-11
57	DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	14991		4-10-03
58	DETAILS OF CONCRETE RIPRAP AND MISCELLANEOUS DETAILS OF STEEL PILING	14995A		4-10-03
59	CONCRETE DITCH PAVING	CDP-1		11-17-10
60	CURBING DETAILS	CG-1		11-29-07
61	DETAILS OF DRIVEWAYS & ISLANDS	DR-1		11-29-07
62	FLARED END SECTION	FES-1		10-18-96
63	FLARED END SECTION	FES-2		10-18-96
64	DETAILS OF DROP INLETS & JUNCTION BOXES	FPC-9		11-16-01
65	DETAILS OF DROP INLETS (TYPE C)	FPC-9E		8-22-02
66	DETAILS OF DROP INLET (TYPE MO)	FPC-9M		8-22-02
67	GUARD RAIL DETAILS	GR-8		7-14-10
68	GUARD RAIL DETAILS	GR-8A		7-14-10
69	GUARD RAIL DETAILS	GR-9		4-17-08
70	GUARD RAIL DETAILS	GR-9A		4-17-08
71	GUARD RAIL DETAILS	GR-10		7-14-10
72	GUARD RAIL DETAILS	GR-10A		7-14-10
73	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	PCC-1		12-15-11
74	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	PCM-1		12-15-11
75	PAVEMENT MARKING DETAILS	PM-1		11-17-10
76	DETAILS OF PIPE UNDERDRAIN	PU-1		4-10-03
77	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	SE-2		10-18-96
78	DETAILS OF SPECIAL ITEMS	SI-1		7-26-12
79	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1		12-15-11
80	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2		3-11-10
81	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-3		10-15-09
82	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-4		10-15-09
83	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	TC-5		10-15-09
84	TEMPORARY EROSION CONTROL DEVICES	TEC-1		12-15-11
85	TEMPORARY EROSION CONTROL DEVICES	TEC-2		6-02-94
86	TEMPORARY EROSION CONTROL DEVICES	TEC-3		11-03-94
87	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS	WR-1		11-10-05
88 - 106	CROSS SECTIONS			

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

INDEX OF SHEETS

7/31/2012

R090281.DGN

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				6	ARK.			
						JOB NO.	090281	3

② GOVERNING SPECS. AND GENERAL NOTES

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 090281	ARMORED JOINT WITH NEOPRENE STRIP SEAL
JOB 090281	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 090281	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 090281	COMPACTED EMBANKMENT
JOB 090281	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 090281	DETAILS FOR BOATER SAFETY ON NORTH FORK RIVER
JOB 090281	DRILLED SHAFT FOUNDATIONS (ROCK-SOCKETED)
JOB 090281	GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION
JOB 090281	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 090281	HIGH PERFORMANCE PAVEMENT MARKING
JOB 090281	INTERNET BIDDING
JOB 090281	NESTING SITES OF MIGRATORY BIRDS
JOB 090281	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 090281	PARTNERING REQUIREMENTS
JOB 090281	PLASTIC PIPE
JOB 090281	SECTION 404 NATIONWIDE 14 PERMIT REQUIREMENTS
JOB 090281	SHORING
JOB 090281	SITE USE (A + C METHOD)
JOB 090281	SOIL STABILIZATION
JOB 090281	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 090281	STORM WATER POLLUTION PREVENTION PLAN
JOB 090281	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 090281	UTILITY ADJUSTMENTS
JOB 090281	VALUE ENGINEERING
JOB 090281	WARM MIX ASPHALT
JOB 090281	WATER POLLUTION CONTROL & RESTRAINING CONDITION
JOB 090281	WELLHEAD PROTECTION

GENERAL NOTES

- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
- THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.



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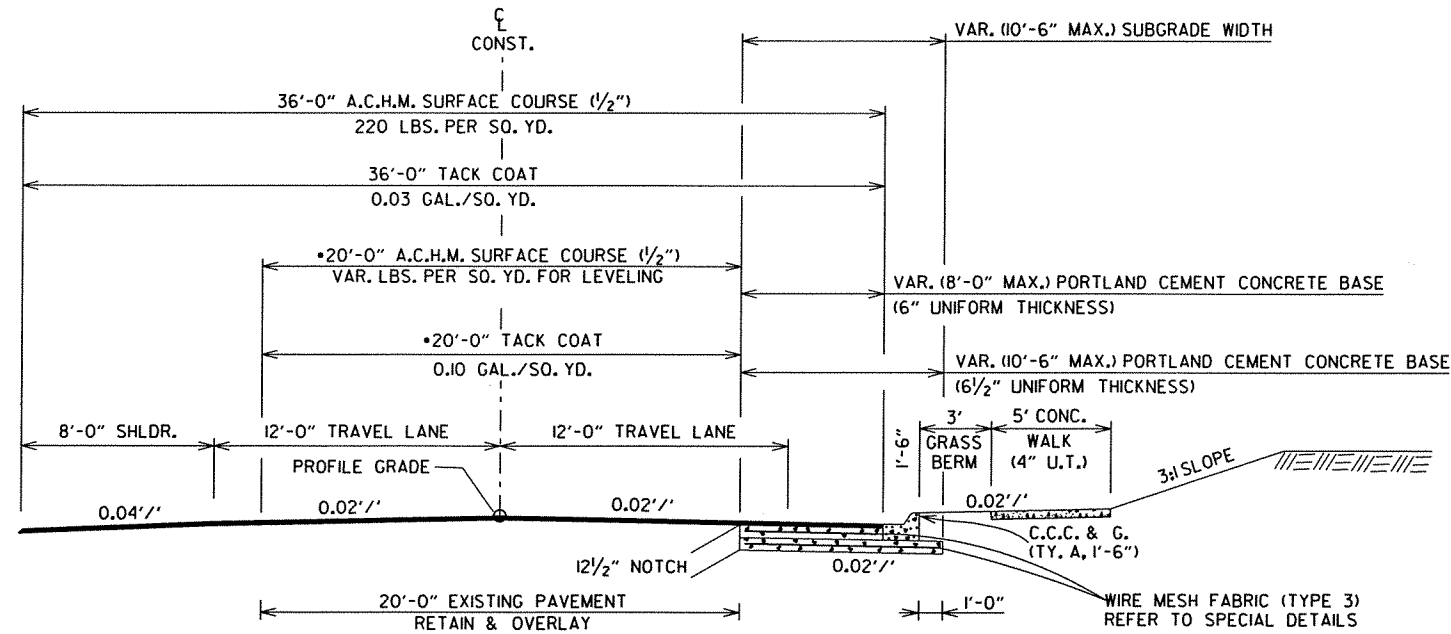
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JOB NO. 090281							4	106

② TYPICAL SECTIONS OF IMPROVEMENT



8/1/12



HWY. 5 - NOTCH AND WIDEN SECTION
WITH OVERLAY AND CURB AND GUTTER
STA. 119+16.15 TO 119+91.55

* TO BE USED IF AND WHERE
DIRECTED BY THE ENGINEER

NOTES:

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

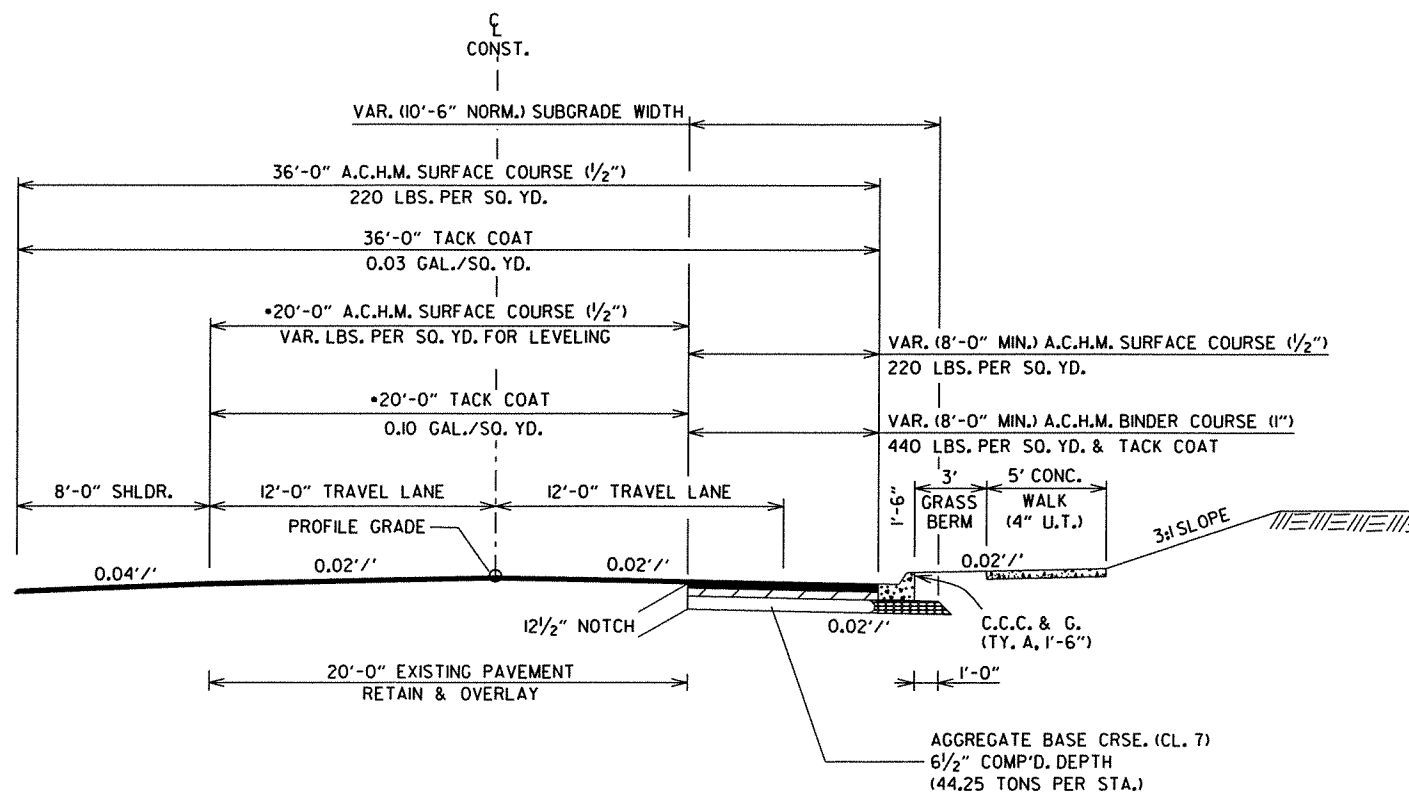
THE THICKNESS OF AGGREGATE BASE COURSE SHALL BE WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT THICKNESS THAT DOES NOT MEET TOLERANCE INDICATED. PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN EXCESS OF THE TOLERANCE INDICATED.

ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IF AND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING.

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

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

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.



HWY. 5 - NOTCH AND WIDEN SECTION
WITH OVERLAY AND CURB AND GUTTER
STA. 119+91.55 TO 120+30

TYPICAL SECTIONS OF IMPROVEMENT

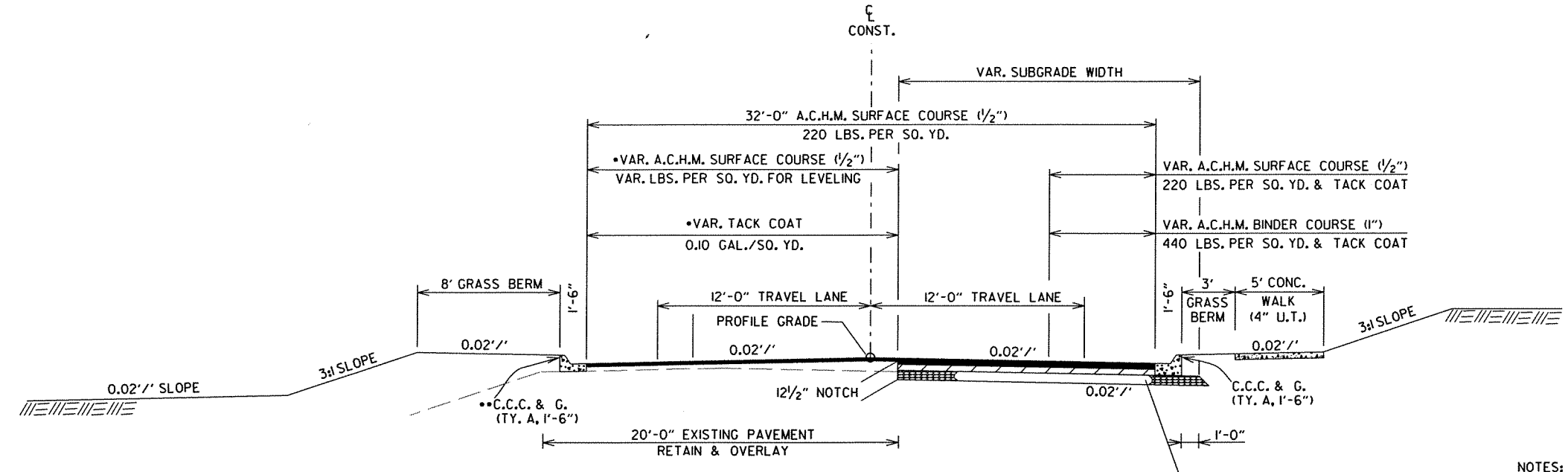
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2 TYPICAL SECTIONS OF IMPROVEMENT



••VAR. (6" MIN.) THICKNESS

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



HWY. 5 - NOTCH AND WIDEN SECTION WITH CURB AND GUTTER STA. 120+30 TO 121+66.98

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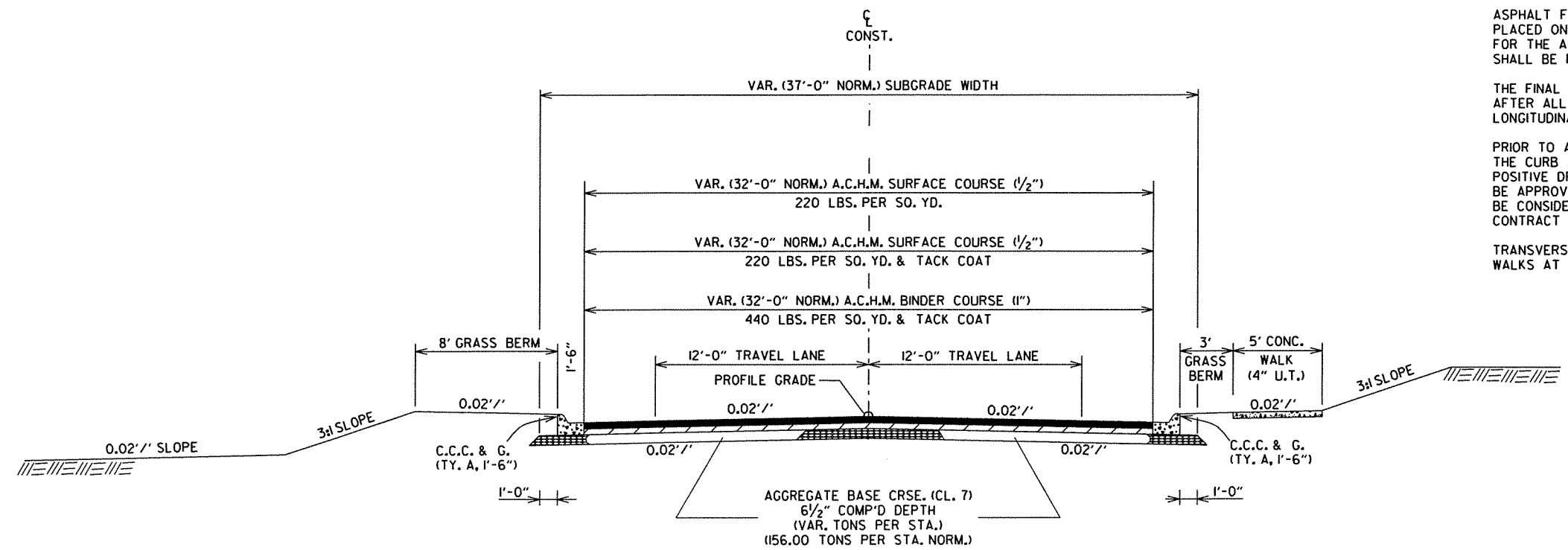
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TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE WALKS AT 45' INTERVALS.



HWY. 5 - FULL DEPTH SECTION WITH CURB AND GUTTER STA. 121+66.98 TO 122+50

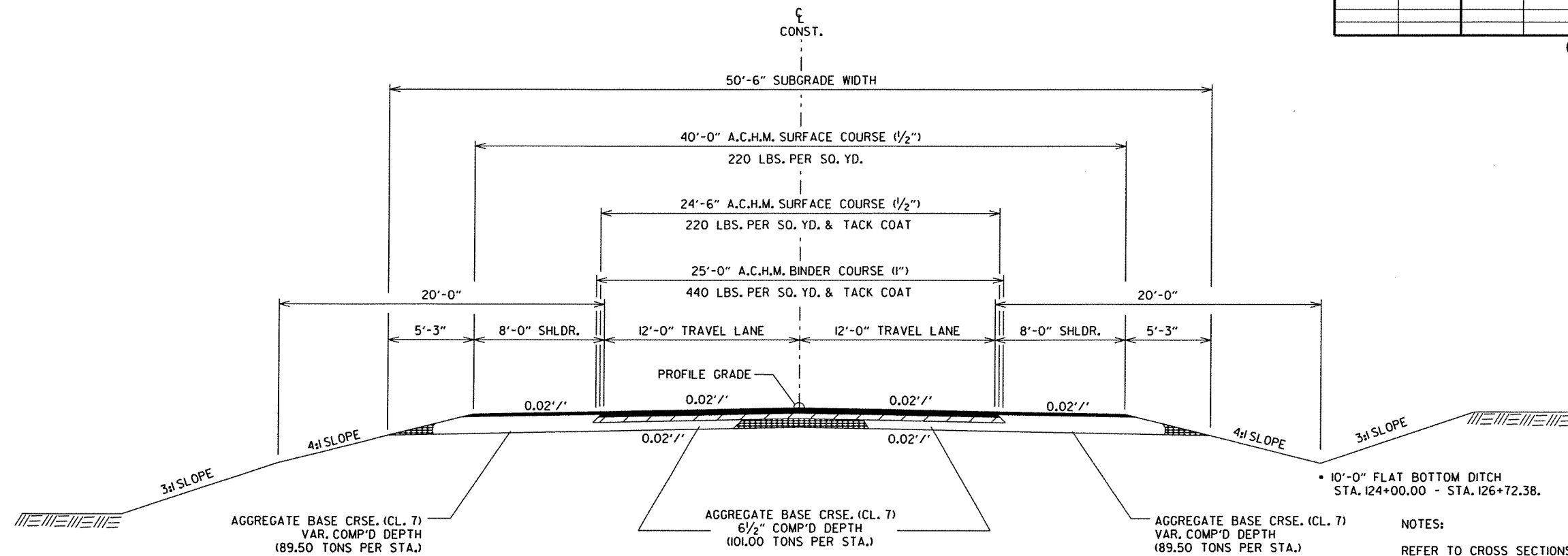
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2 TYPICAL SECTIONS OF IMPROVEMENT



8/1/12



HWY. 5 - FULL DEPTH SECTION WITH OPEN SHOULDERS
STA. 122+50 TO 126+48.75
STA. 132+01.25 TO 137+16.91

• 10'-0" FLAT BOTTOM DITCH
STA. 124+00.00 - STA. 126+72.38.

NOTES:

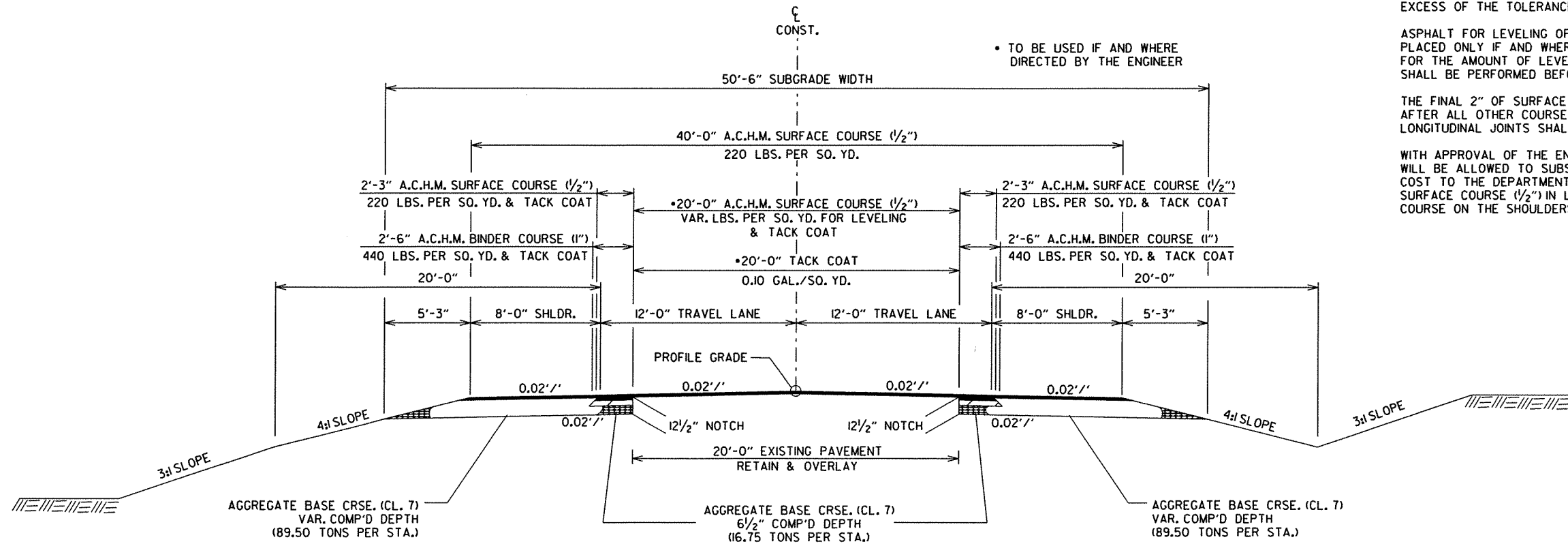
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THE FINAL 2" OF SURFACE COURSE IS TO BE PLACED AFTER ALL OTHER COURSES HAVE BEEN LAID. LONGITUDINAL JOINTS SHALL BE AT LANE LINES.

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



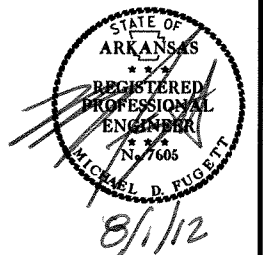
HWY. 5 - NOTCH AND WIDEN SECTION WITH OPEN SHOULDERS
STA. 137+16.91 TO 142+23.35

• TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

TYPICAL SECTIONS OF IMPROVEMENT

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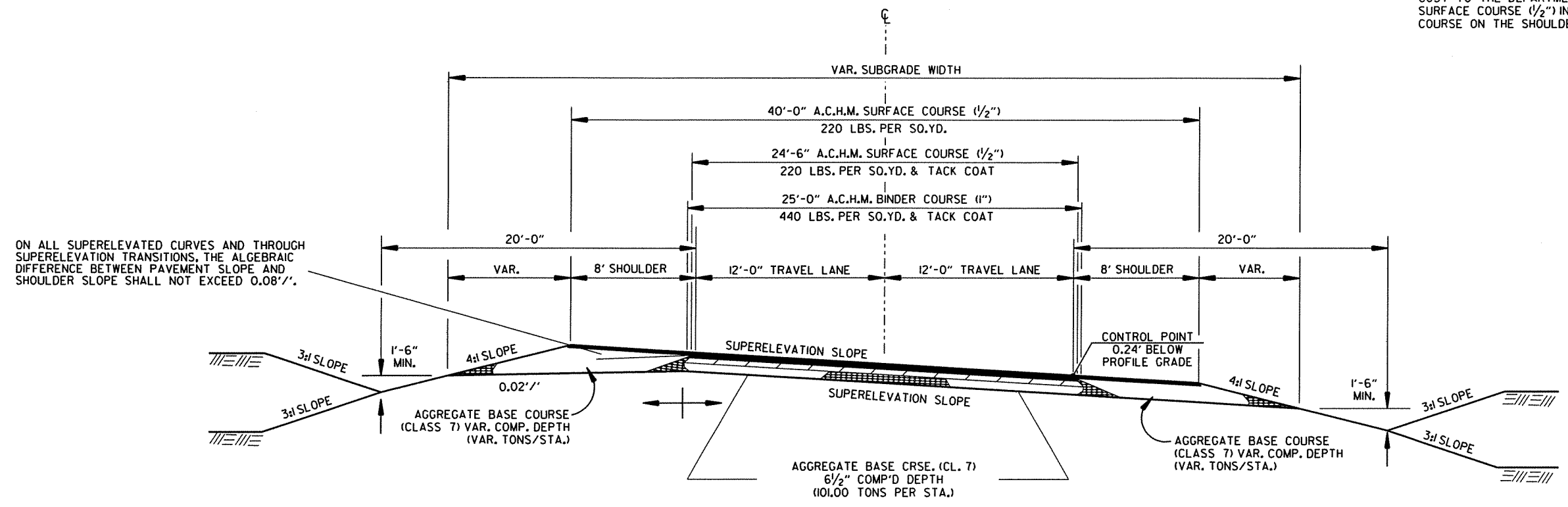
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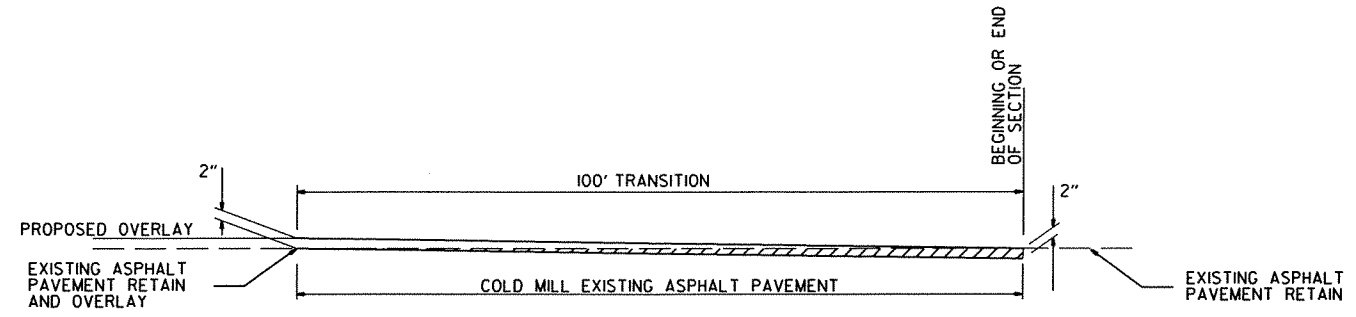
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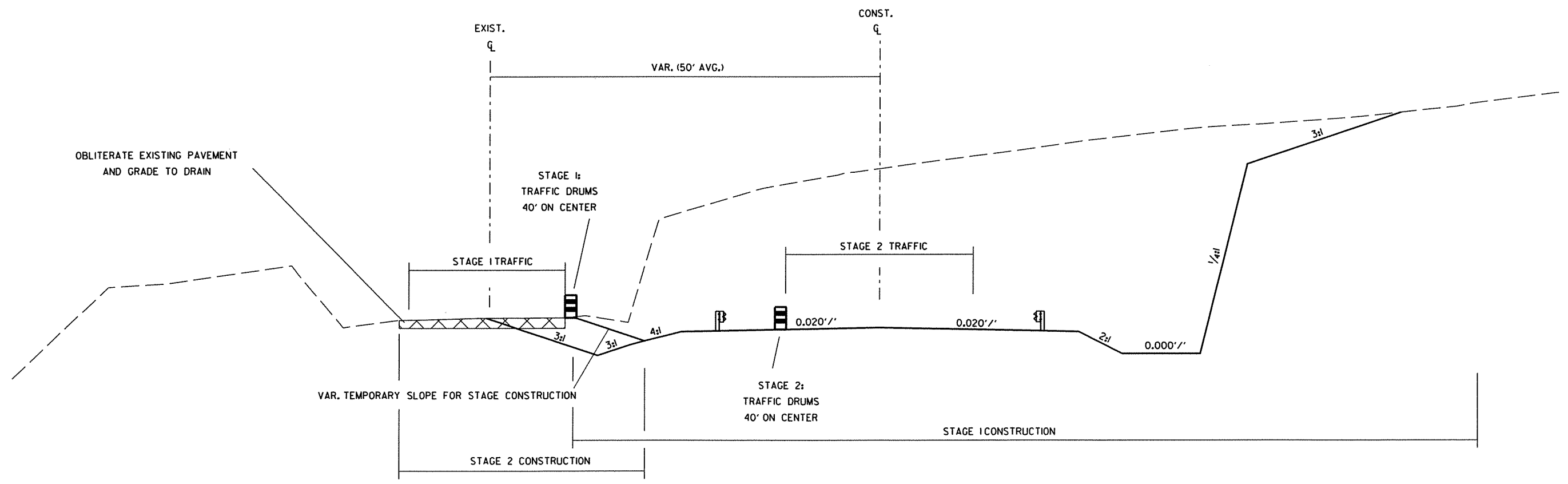
HWY. 5 - SUPER ELEVATION SECTION
WITH OPEN SHOULDERS
STA. 119+16.15 TO 120+29.65
STA. 122+51.44 TO 125+90.35
STA. 134+34.13 TO 142+23.35

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							8	106

② SPECIAL DETAILS



DETAIL FOR TRANSITIONS



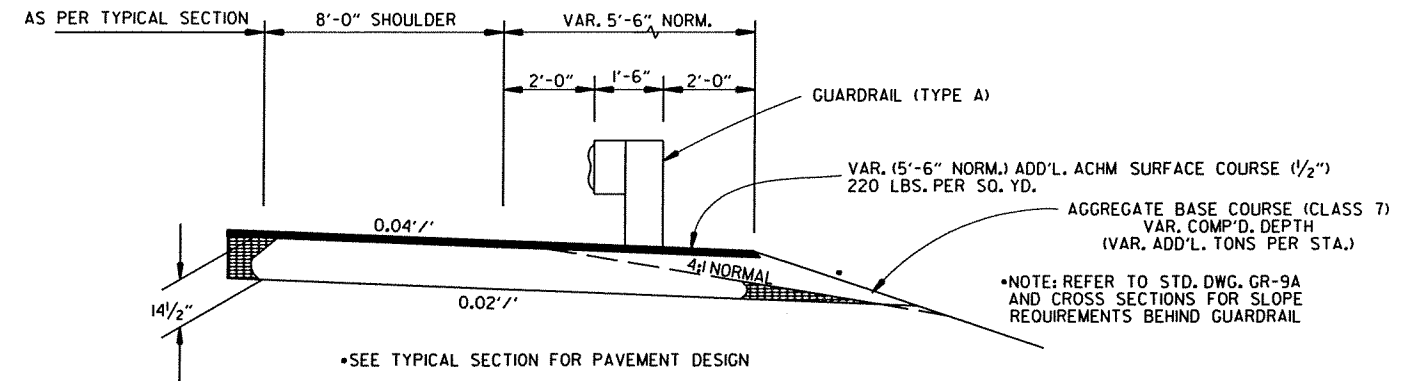
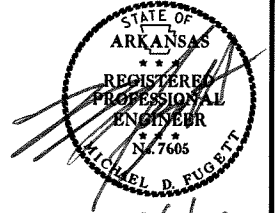
DETAIL FOR STAGE CONSTRUCTION

SPECIAL DETAILS

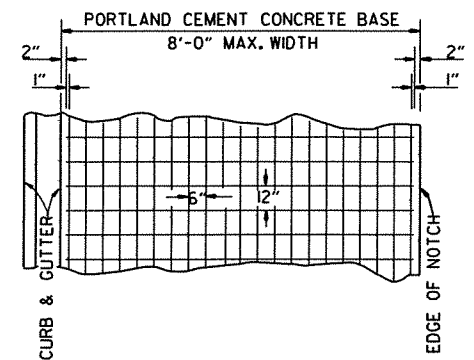
R090281.DGN 7/30/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		9	106

② SPECIAL DETAILS



WIDENING FOR GUARDRAIL

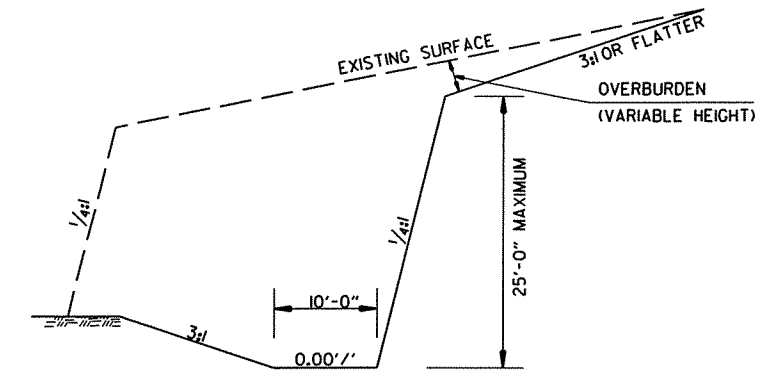


DETAIL OF REINFORCING
STEEL FOR PAVEMENT
(MESH FABRIC TYPE 3)

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

NOTES:

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

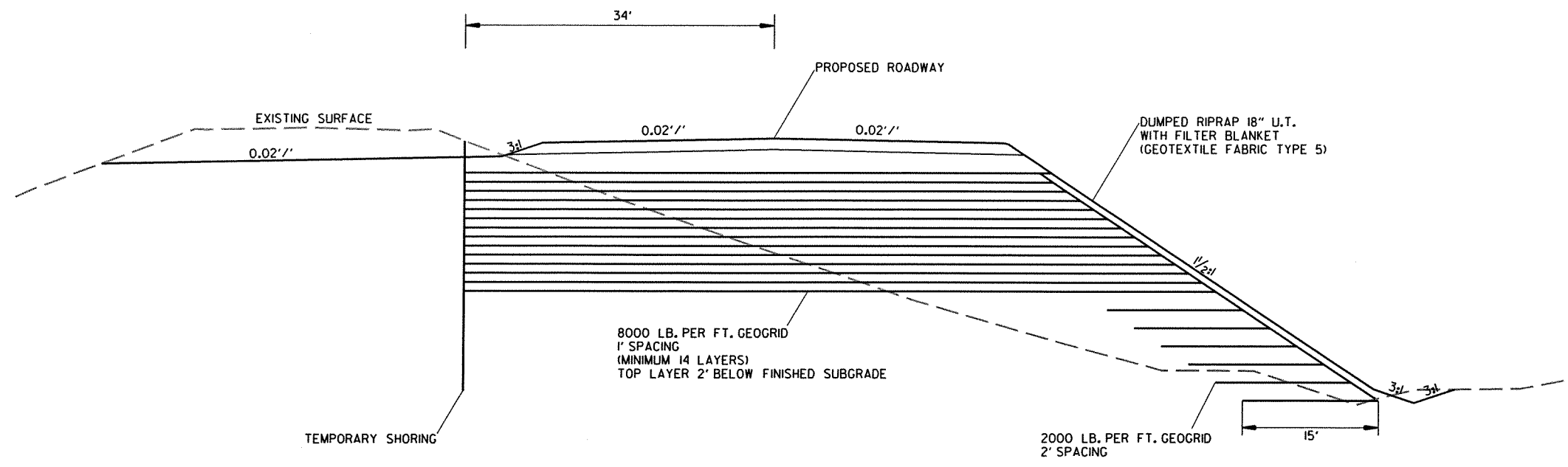
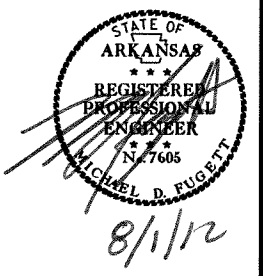


DETAIL FOR BENCHING IN SOLID ROCK

R090281.DGN 7/30/2012

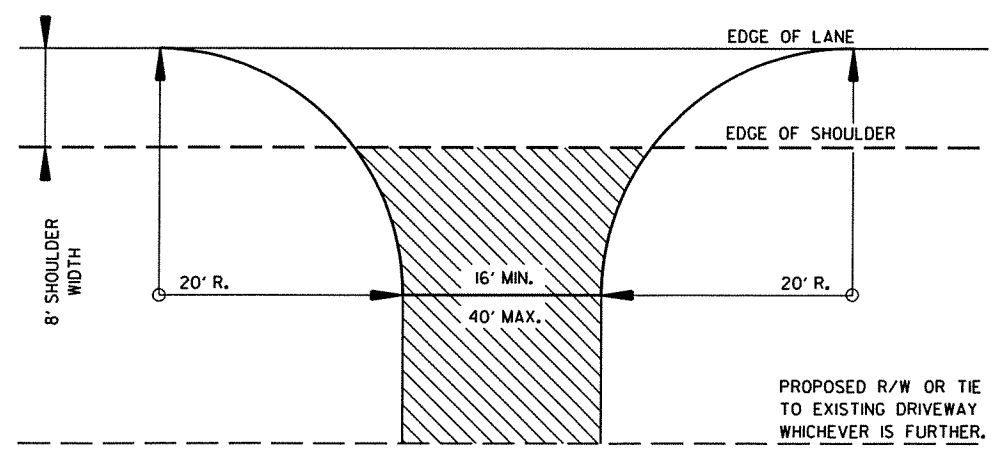
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							10	106

2 SPECIAL DETAILS



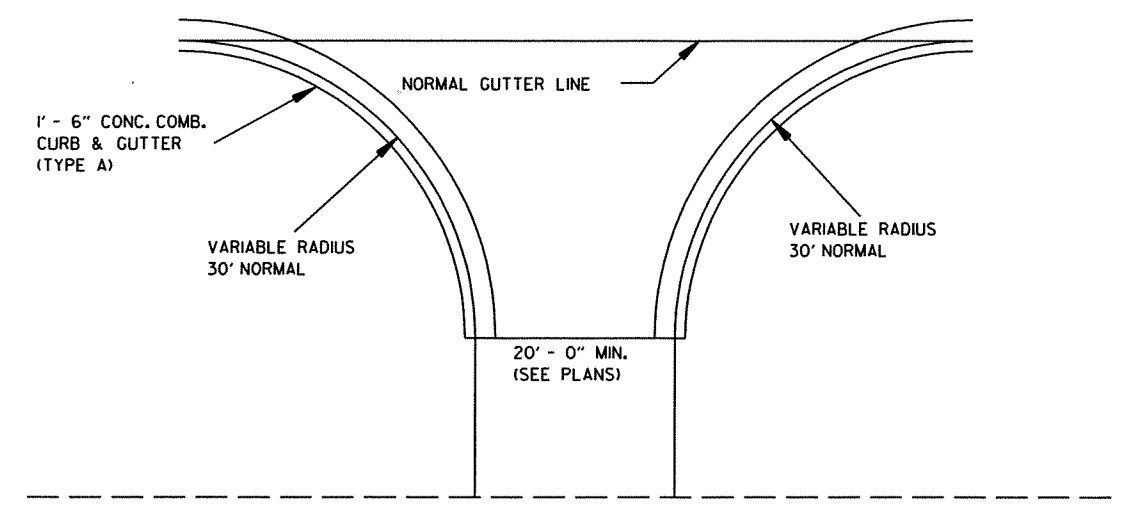
DETAIL FOR GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT

NOTE:
REFER TO "GEOSYNTHETIC INTERNAL REINFORCED EMBANKMENT CONSTRUCTION"
AND "SHORING" SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.



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

DETAIL FOR DRIVEWAY TURNOUTS



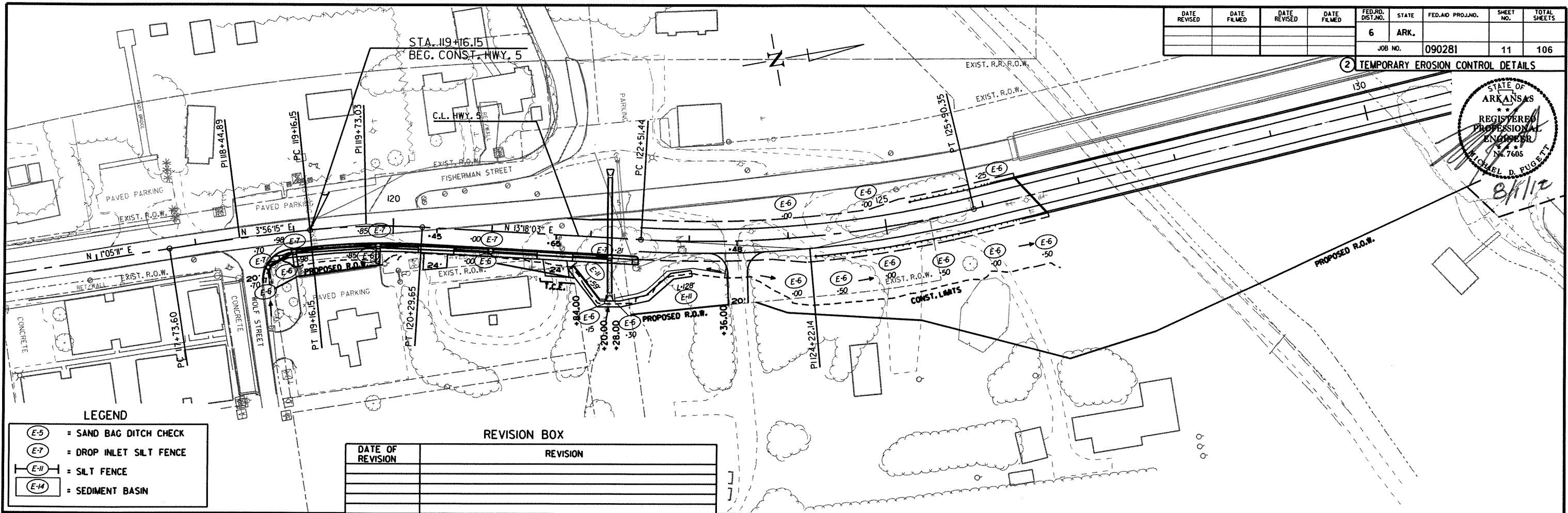
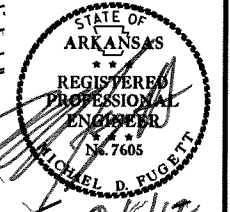
NOTE: TURNOUTS AND PRIVATE DRIVES SHALL BE MODIFIED WHERE NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.

DETAIL FOR STREET TURNOUTS ASPHALT

NOTE:
PAVEMENT STRUCTURE TO BE SAME AS MAIN LANES

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		11	106

2 TEMPORARY EROSION CONTROL DETAILS

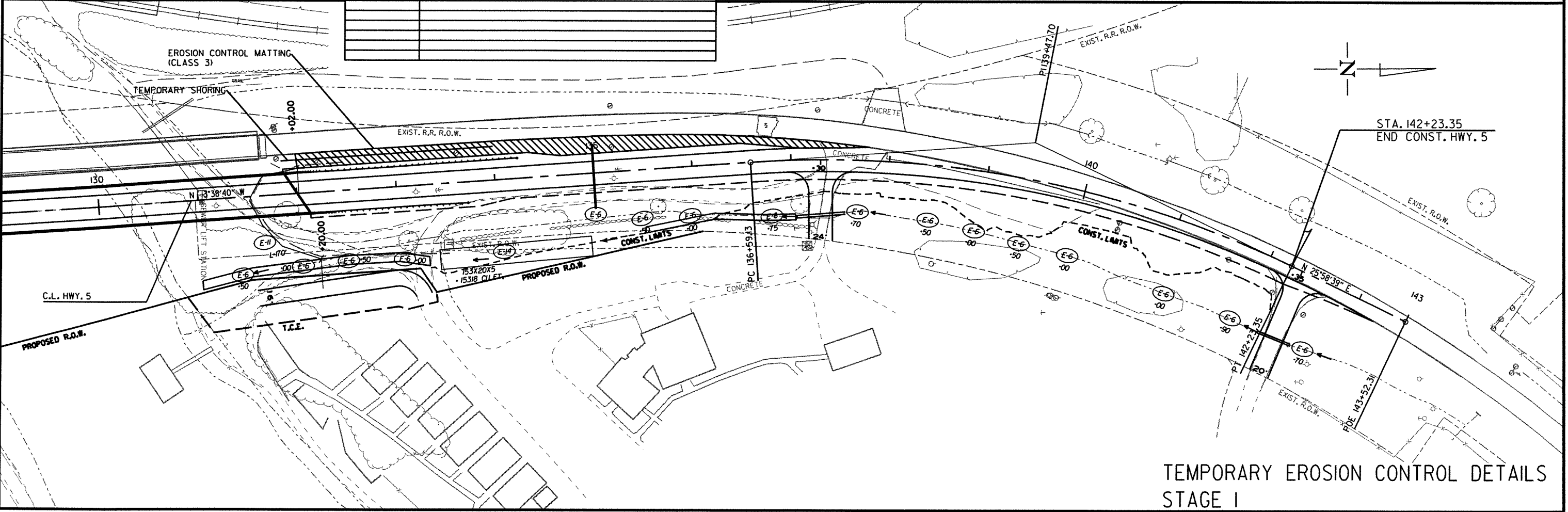


LEGEND

- (E-5) = SAND BAG DITCH CHECK
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- (E-14) = SEDIMENT BASIN

REVISION BOX

DATE OF REVISION	REVISION

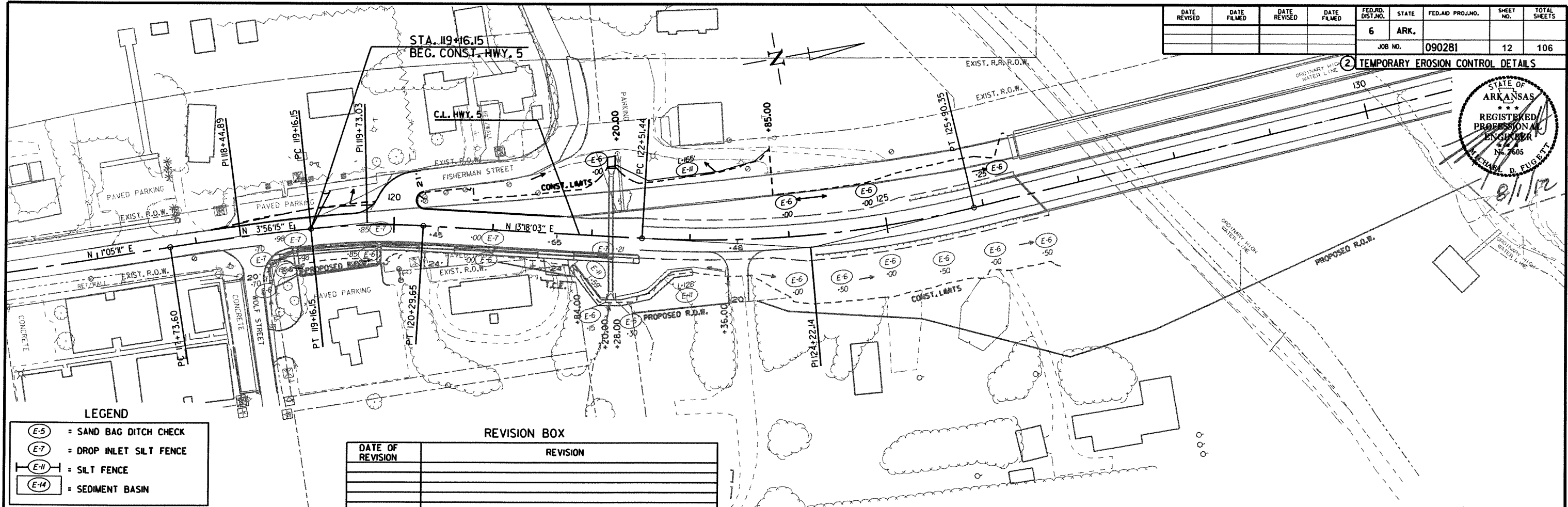
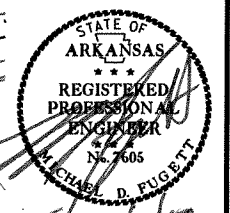


TEMPORARY EROSION CONTROL DETAILS
STAGE I

R090281.DGN 7/30/2012

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		12	106
						JOB NO.	090281	

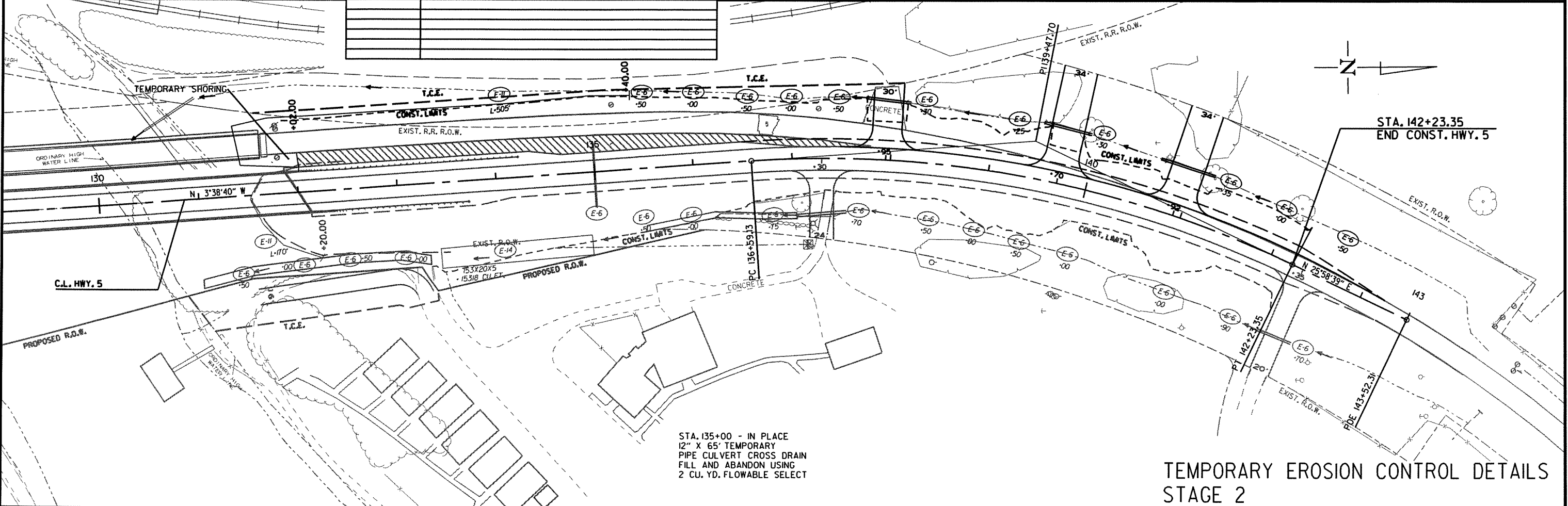
2 TEMPORARY EROSION CONTROL DETAILS



- LEGEND**
- (E-5) = SAND BAG DITCH CHECK
 - (E-7) = DROP INLET SILT FENCE
 - (E-11) = SILT FENCE
 - (E-14) = SEDIMENT BASIN

REVISION BOX

DATE OF REVISION	REVISION

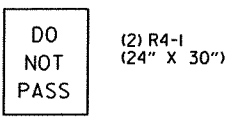


STA. 135+00 - IN PLACE
12" X 65' TEMPORARY
PIPE CULVERT CROSS DRAIN
FILL AND ABANDON USING
2 CU. YD. FLOWABLE SELECT

TEMPORARY EROSION CONTROL DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	090281	13
							106	

② MAINTENANCE OF TRAFFIC DETAILS



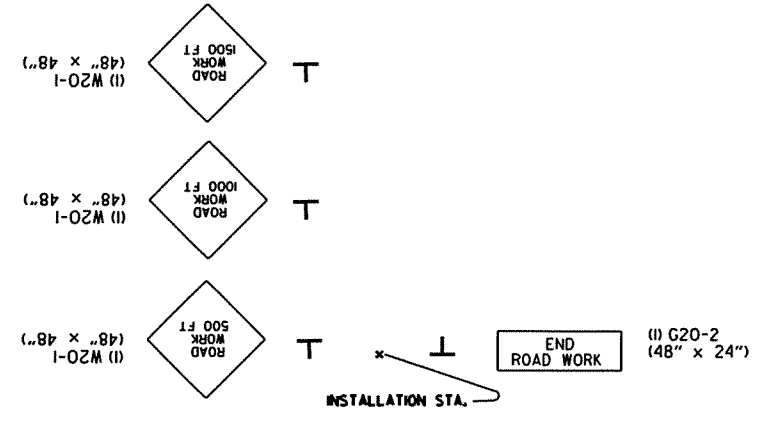
(2) R4-1
(24" X 30")

ALL STAGES TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



(2) W8-1
(30" X 30")

STAGE 2 TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



ADVANCE WARNING SIGNS
(ALL STAGES)
STA. 113+16.15
STA. 148+23.35

STAGE 1 CONSTRUCTION SEQUENCE

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS. INSTALL ROAD WORK AHEAD (W20-1) SIGN AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT PROPOSED BRIDGE OVER NORTH FORK OF THE WHITE RIVER.

APPLY LEVELING COURSE TO EXISTING LANES IF AND WHERE DIRECTED BY THE ENGINEER.

APPLY CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 40' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

NOTCH AND WIDEN HWY. 5 ON THE RIGHT FROM STATION 119+16.15 TO STATION 121+66.98 AND FROM STATION 137+16.91 TO STATION 143+23.35. CONSTRUCT FULL DEPTH SECTION OF HWY. 5 FROM STATION 121+66.98 TO STATION 126+48.75 AND FROM STATION 132+01.25 TO STATION 137+16.91.

INSTALL TYPE III BARRICADES WITH ROAD CLOSED (R11-2) SIGNS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC PLANS AS PROPOSED ROADWAY EMBANKMENT IS CONSTRUCTED.

STAGE 2 CONSTRUCTION SEQUENCE

APPLY CONSTRUCTION PAVEMENT MARKINGS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS AND SHIFT TRAFFIC ONTO THE PROPOSED ROADWAY CONSTRUCTED IN STAGE 1.

USE VERTICAL PANELS AND TRAFFIC DRUMS SPACED 40' ON CENTER TO DELINEATE THE WORK ZONE. USE TRAFFIC DRUMS TO DELINEATE DRIVEWAYS.

APPLY LEVELING COURSE FROM STATION 119+91.55 TO STATION 121+66.98 AND NOTCH AND WIDEN HWY. 5 ON THE LEFT FROM STATION 137+16.91 TO STATION 143+23.35.

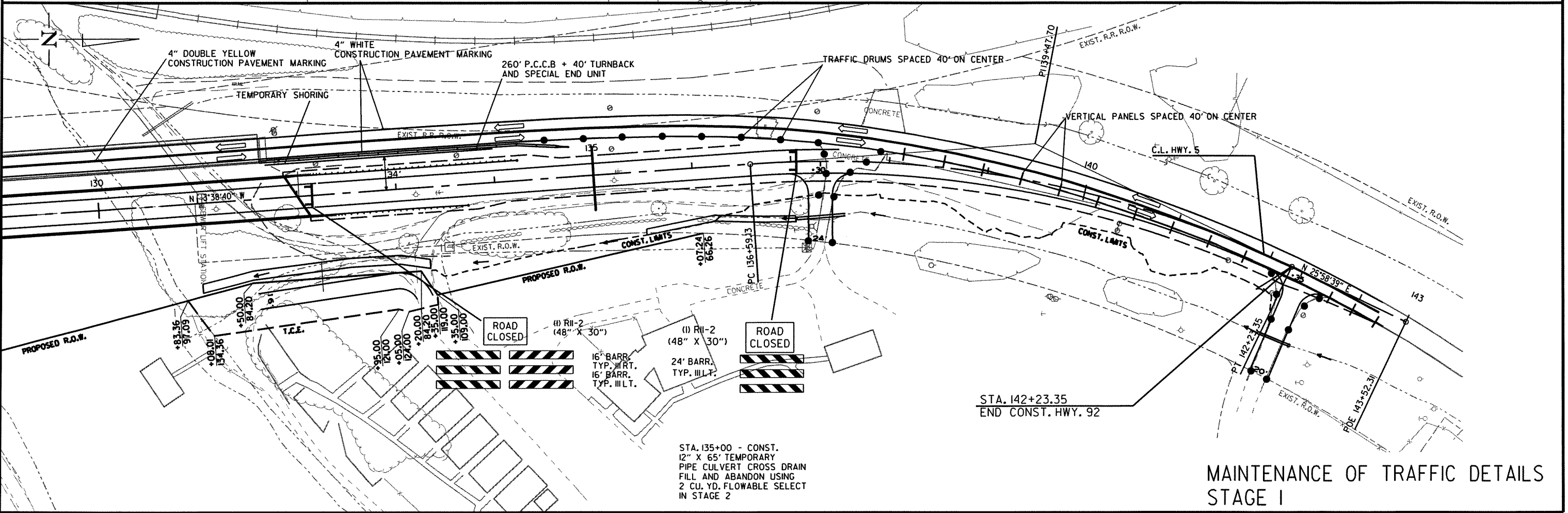
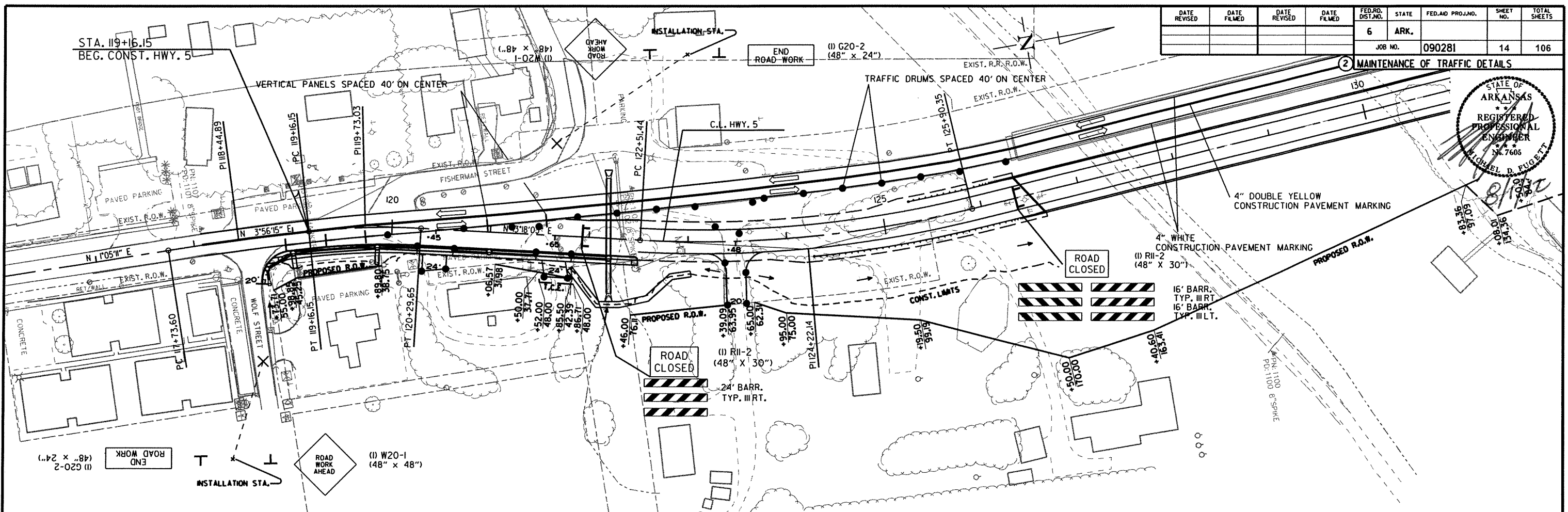
OBLITERATE THE PORTIONS OF EXISTING PAVEMENT ON HWY. 5 THAT ARE NOT NEEDED AND GRADE EMBANKMENT TO DRAIN AS SHOWN ON THE CROSS SECTIONS.

APPLY FINAL 2" LIFT OF A.C.H.M. SURFACE COURSE AND INSTALL PERMANENT PAVEMENT MARKINGS AS SHOWN IN THE PERMANENT PAVEMENT MARKINGS DETAILS.

REMOVE EXISTING BRIDGE LOCATED OVER NORTH FORK OF THE WHITE RIVER.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		14	106
				JOB NO. 090281				

2 MAINTENANCE OF TRAFFIC DETAILS

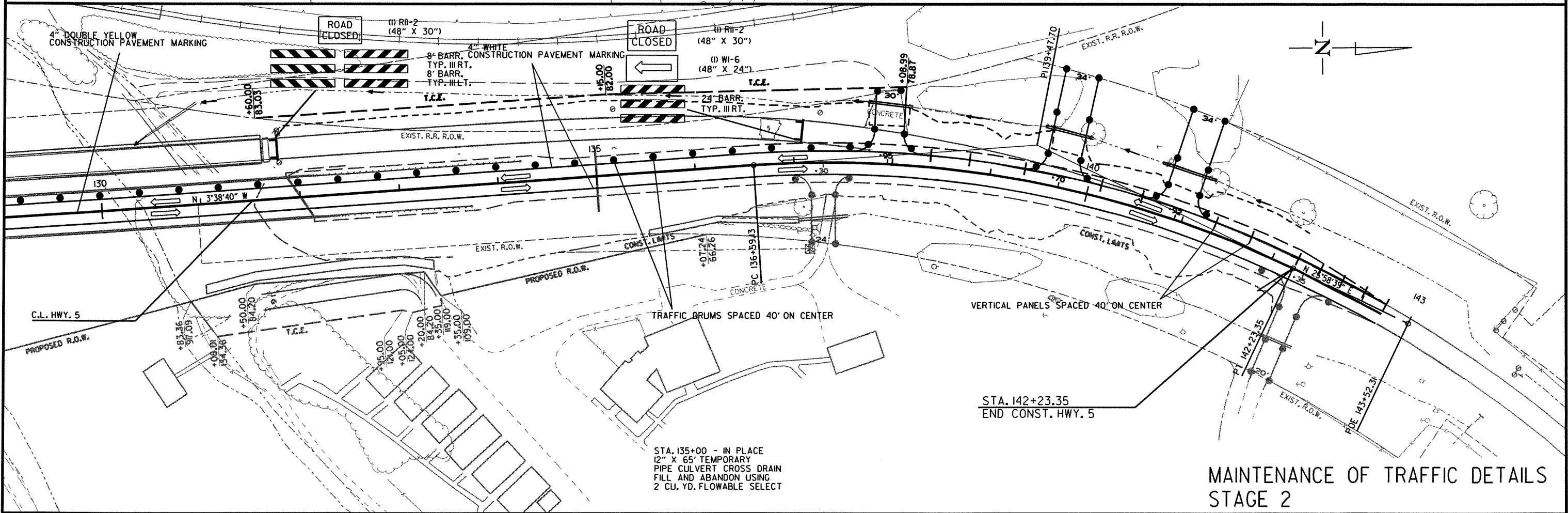
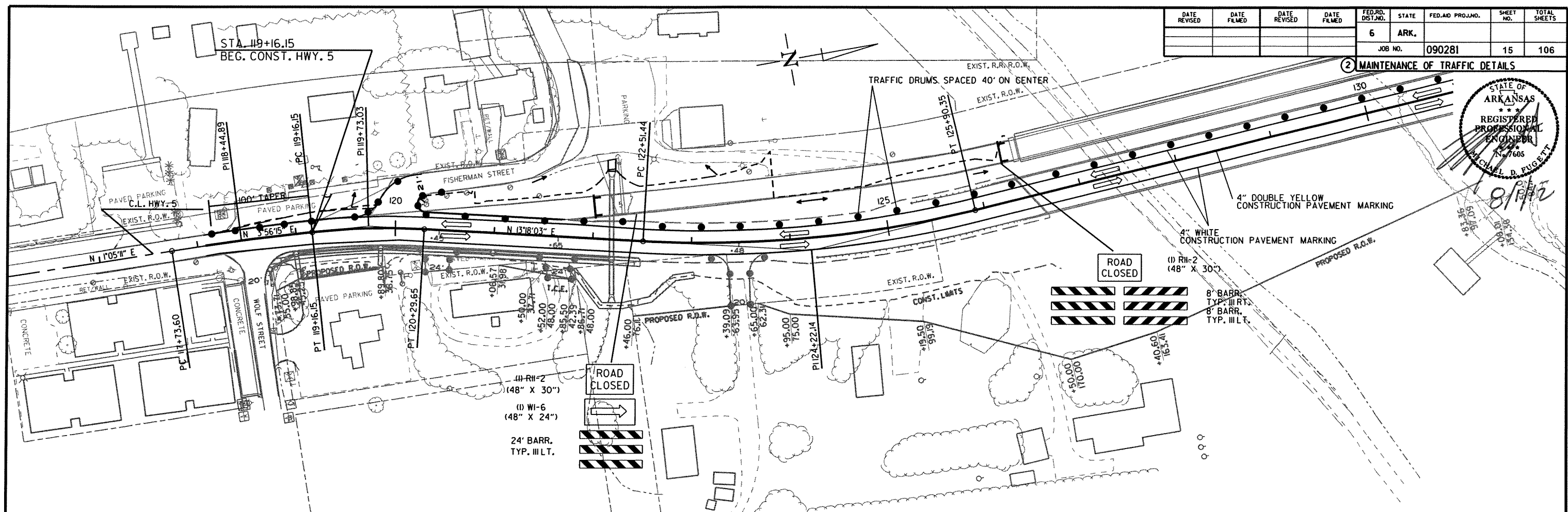
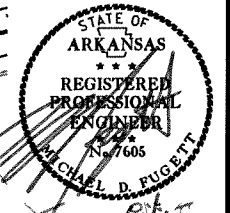


R090281.DGN 7/30/2012

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		15	106
				JOB NO. 090281				

② MAINTENANCE OF TRAFFIC DETAILS

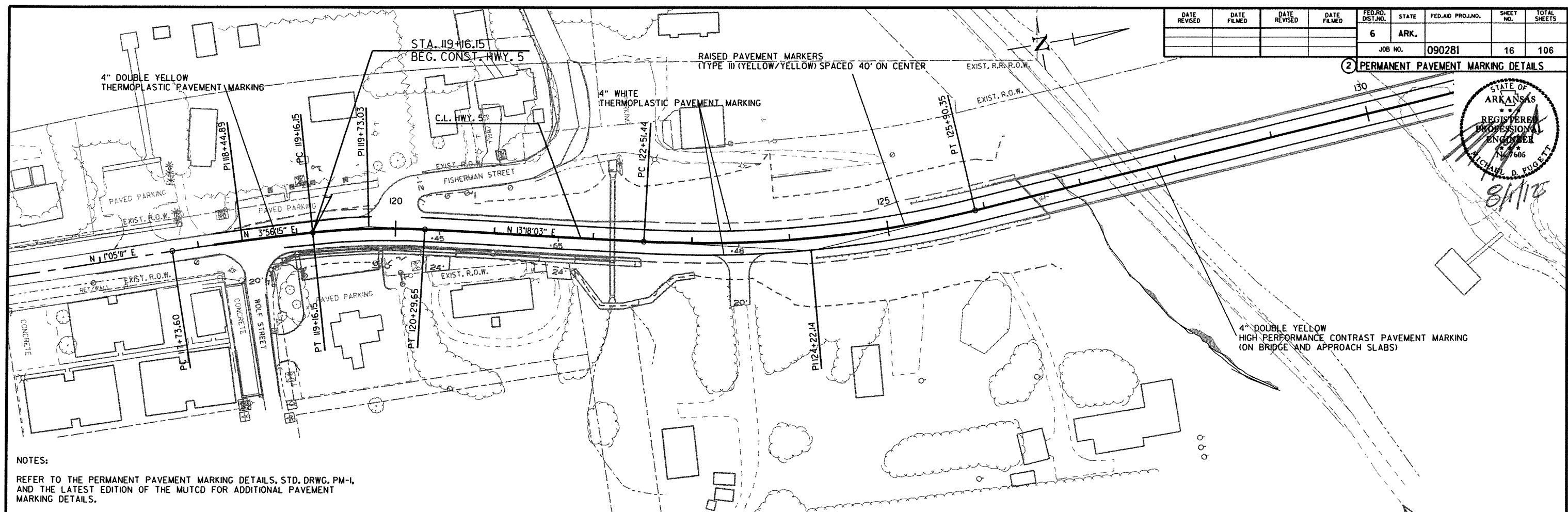
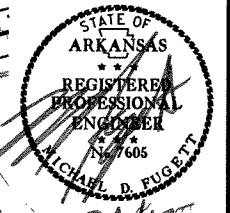


R090281.DGN 7/30/2012

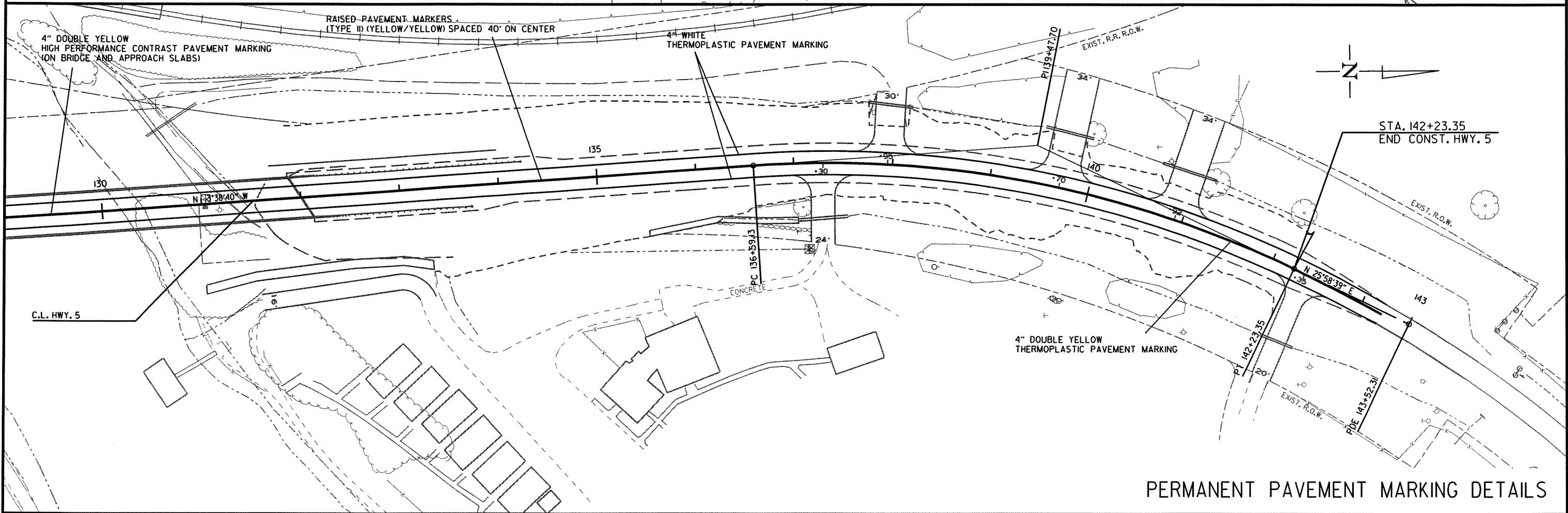
MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	16	106

2 PERMANENT PAVEMENT MARKING DETAILS



NOTES:
REFER TO THE PERMANENT PAVEMENT MARKING DETAILS, STD. DRWG. PM-1, AND THE LATEST EDITION OF THE MUTCD FOR ADDITIONAL PAVEMENT MARKING DETAILS.

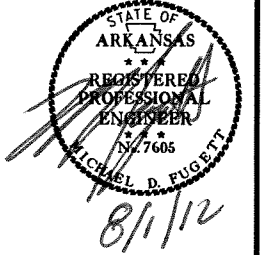


PERMANENT PAVEMENT MARKING DETAILS

R090281.DGN 7/30/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		17	106

② QUANTITIES



ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		VERTICAL PANELS	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	
						NO.	SQ. FT.			EACH	RIGHT		LEFT
											LIN. FT.		
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	32.0						
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	32.0						
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	32.0						
W20-1	ROAD WORK AHEAD	48"x48"	2	2	2	2	32.0						
G20-2	END ROAD WORK	48"x24"	4	4	4	4	32.0						
R11-2	ROAD CLOSED	48"x30"	4	4	4	4	40.0						
W1-6	LARGE ARROW	48"x24"		2	2	2	16.0						
R4-1	DO NOT PASS	24"x30"	2	2	2	2	10.0						
W8-1	BUMP	30"x30"		2	2	2	12.5						
	* DETAIL A	60"x36"	2	2	2	2	30.0						
	* DETAIL B	60"x42"	3	3	3	3	52.5						
	VERTICAL PANELS		19	12	19	19		19					
	TRAFFIC DRUMS		55	110	110	110			110				
	TYPE III BARRICADE-RT. (24')		1	1	1	1				24			
	TYPE III BARRICADE-LT. (24')		1	1	1	1					24		
	TYPE III BARRICADE-RT. (16')		2		2	2				32			
	TYPE III BARRICADE-LT. (16')		2		2	2					32		
	TYPE III BARRICADE-RT. (8')			2	2	2				16			
	TYPE III BARRICADE-LT. (8')			2	2	2					16		
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		313		313							313	
TOTALS:							321.0	19	110	72	72	313	

* REFER TO "DETAILS FOR BOATER SAFETY ON NORTH FORK RIVER" SPECIAL PROVISION.

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	END OF JOB	CONSTRUCTION PAVEMENT MARKINGS	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS	THERMOPLASTIC PAVEMENT MARKINGS		HIGH PERFORMANCE CONTRAST PAVEMENT MARKING
						TYPE II (YEL/YEL)	4"		YELLOW (4")
							WHITE	YELLOW	
LIN. FT. - EACH			LIN. FT.	LIN. FT.	EACH	LIN. FT.		LIN. FT.	
CONSTRUCTION PAVEMENT MARKINGS	10051	7853		17904					
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		2210			2210				
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)			63			63			
THERMOPLASTIC PAVEMENT MARKINGS WHITE (4")			4896				4896		
THERMOPLASTIC PAVEMENT MARKINGS YELLOW (4")			3910					3910	
HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")			1105						1105
TOTALS:				17904	2210	63	4896	3910	1105

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		18	106

② QUANTITIES



8/1/12

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	STATION
121+00.00	127+00.00	HWY. 5	6	6
130+00.00	138+00.00	HWY. 5	8	8
TOTALS:			14	14

REMOVAL AND DISPOSAL OF R.C. BOX CULVERT

STATION	LOCATION	DESCRIPTION	BOX CULVERTS
122+28.00	HWY. 5	3' X 2' R.C. BOX CULVERT - REMOVE 20' LT.	1
TOTAL:			1

REMOVAL AND DISPOSAL ITEMS

STATION	STATION	DESCRIPTION	FENCE	GATES	STEEL POSTS	RETAINING WALLS	CONCRETE DRIVEWAYS	CONCRETE SLABS	SIGN FOUNDATIONS	ROCK COLUMNS	SIGNS	WOODEN BRIDGES
			LIN. FT.	EACH	EACH	LIN. FT.	SQ. YD.	SQ. YD.	EACH	EACH	EACH	EACH
119+03.24		RT. OF HWY. 5, SIGN									1	
119+02.24		RT. OF HWY. 5, SIGN FOUNDATION							1			
119+77.59		RT. OF HWY. 5, SIGN									1	
120+06.00		RT. OF HWY. 5, SIGN FOUNDATION							1			
121+50.00		RT. OF HWY. 5, 2 RAIL WOOD FENCE	25									
121+67.91		RT. OF HWY. 5, SIGN									1	
123+42.00		LT. OF HWY. 5, STEEL POST			1							
123+72.00	123+80.00	LT. OF HWY. 5, ROCK RETAINING WALL				8						
123+35.00		RT. OF HWY. 5, CONCRETE PAD						4				
125+94.00		RT. OF HWY. 5, ROCK COLUMN								1		
126+09.00		RT. OF HWY. 5, ROCK COLUMN								1		
126+38.00	127+40.60	RT. OF HWY. 5, ROCK RETAINING WALL				130						
130+83.00		RT. OF HWY. 5, WOOD BRIDGE										1
132+09.00		RT. OF HWY. 5, GATE		1								
137+27.98	137+98.78	RT. OF HWY. 5, CONCRETE DRIVEWAY					2304					
137+70.50	138+13.74	LT. OF HWY. 5, CONCRETE DRIVEWAY					1388					
TOTALS:			25	1	1	138	3692	4	2	2	3	1

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	PRESPLITTING	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	COMPACTED EMBANKMENT (SPECIAL)	SHORING	* GEOGRID SOIL REINFORCEMENT	* GEOGRID SOIL REINFORCEMENT	*SOIL STABILIZATION
			SQ. YD.	CU. YD.	CU. YD.	CU. YD.	LUMP SUM	8000 LB PER FT. SQ. YD.	2000 LB PER FT. SQ. YD.	TON
118+16.00	126+53.15	STAGE 1 - HWY. 5	744	12502	2137					
131+55.35	134+00.00	STAGE 1 - HWY. 5		7854		15880	1.00	24968	2893	
134+00.00	143+23.00	STAGE 1 - HWY. 5		836	5528					
ENTIRE	PROJECT	STAGE 2 - HWY. 5		3602	319					
ENTIRE	PROJECT	APPROACHES		5	920					
ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER								50
TOTALS:			744	24799	8904	15880	1.00	24968	2893	50

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

NOTE: GEOGRID SOIL REINFORCEMENT QUANTITIES ARE SHOWN FOR INFORMATION ONLY.

BENCH MARK CAPS

STATION	LOCATION	EACH
123+48.75	BRIDGE END	1
TOTAL:		1

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

DUMPED RIPRAP AND FILTER BLANKET

STATION	STATION	LOCATION	DUMPED RIPRAP	* FILTER BLANKET
			CU. YD.	SQ. YD.
122+20.00		OUTLET OF PIPE CULVERT	5	10
132+01.25	134+00.00	RT. OF HWY. 5	506	1012
130+65.50	131+00.00	OUTLET OF CONCRETE DITCH PAVING	10	20
TOTALS:			521	1042

* USE GEOTEXTILE FABRIC (TYPE 5).

7/31/2012

R090281.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	19	106

② QUANTITIES



EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL						TEMPORARY EROSION CONTROL										
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	**SOLID SODDING	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS	ROCK DITCH CHECKS	DROP INLET SILT FENCE	SILT FENCE	SEDIMENT BASIN	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL	EROSION CONTROL MATTING (CLASS 3)
			ACRE	TON	ACRE	M.GAL.	ACRE	SQ.YD.	ACRE	ACRE	M.GAL.	(E-5) BAG	(E-6) CU.YD.	(E-7) LIN.FT.	(E-11) LIN.FT.	(E-14) CU.YD.	CU.YD.	CU.YD.	SQ. YD.
ENTIRE PROJECT	STAGE 1		1.26	2.52	1.26	130.1	1.26	125.0	5.00	5.00	102.0		93	125	357	567	567	616	810
ENTIRE PROJECT	STAGE 2		1.17	2.34	1.17	119.3	1.17		3.00	3.00	61.2		45		670			40	
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			0.61	1.22	0.61	62.2	0.61		2.00	2.00	40.8	242	33	31	260	133	133	166	68
TOTALS:			3.04	6.08	3.04	311.6	3.04	125.0	10.00	10.00	204.0	242	171	156	1287	700	700	822	878

BASIS OF ESTIMATE:
 LIME2 TONS / ACRE OF SEEDING
 WATER102.0 M.G. / ACRE OF SEEDING.
 WATER20.4 M.G. / ACRE OF TEMPORARY SEEDING.
 WATER12.6 GAL. / SQ. YD. OF SOLID SODDING.
 SAND BAG DITCH CHECKS22 BAGS / LOCATION
 ROCK DITCH CHECKS3 CU.YD./LOCATION

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

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

**SOLID SODDING TO BE PLACED BETWEEN THE CURB AND SIDEWALK FOR THE ENTIRE PROJECT.

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
118+98.00		RT. OF HWY. 5	14.00	4	6.22	6.2	0.1
119+85.00		RT. OF HWY. 5	16.00	4	7.11	7.1	0.1
121+82.00	123+03.00	RT. OF HWY. 5	155.00	6	103.33	68.9	0.9
131+00.00	133+30.00	RT. OF HWY. 5	230.00	9	230.00	102.2	1.3
135+50.00	137+04.00	RT. OF HWY. 5	154.00	6	102.67	68.4	0.9
TOTALS:					449.33	252.8	3.3

BASIS OF ESTIMATE:
 WATER12.6 GAL. / SQ. YD. OF SOLID SODDING.

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
			LIN.FT.	EACH		
124+26.15	126+44.90	HWY. 5 - RT. SIDE	150	1	1	
125+28.05	126+21.80	HWY. 5 - LT. SIDE	75	1		1
132+05.10	134+23.85	HWY. 5 - LT. SIDE	150	1	1	
132+28.20	133+71.95	HWY. 5 - RT. SIDE	125	1		1
TOTALS:			500	4	2	2

CONCRETE WALKS

STATION	STATION	LOCATION	LENGTH	CONCRETE WALKS	
			LIN.FT.	SQ.YD.	
118+75.00	122+50.00	RT. OF HWY. 5	375	208	
TOTAL:					208

WHEELCHAIR RAMPS

STATION	LOCATION	TYPE 3
		SQ.YD.
118+80.00	RT. OF HWY. 5	65.1
122+47.00	RT. OF HWY. 5	30.0
TOTAL:		95.1

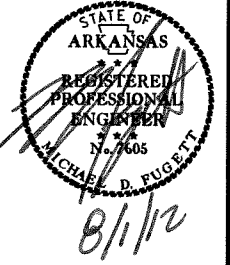
CONCRETE COMBINATION CURB AND GUTTER

STATION	STATION	LOCATION	TYPE A (1' 6")
			LIN. FT.
118+62.00	122+50.00	RT. OF HWY. 5	404
120+20.00	122+50.00	LT. OF HWY. 5	247
TOTAL:			651

7/31/2012 R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	20	106

② QUANTITIES



STRUCTURES

STATION	LOCATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III)		SIDE DRAIN	PIPE CULVERT STORM DRAIN ALTERNATES 1 & 2		FLARED END SECTIONS FOR R.C. PIPE CULVERTS		TEMPORARY PIPE CULVERTS	DROP INLETS		YARD DRAIN	SOLID SODDING	WATER	STD. DWG. NOS.		
			18"	48"		12"	18"	36"	18"		48"	12"					TYPE	EXT.
			LIN. FT.			EACH		EACH			EACH						MO	4'
118+70.00	HWY. 5	CONSTRUCT D.I. ON RT. W/EXT. & FES	10			26		1			1	1		5.0	0.1	FES-1, FES-2, PCC-1, FPC-9M		
118+98.00	HWY. 5	CONSTRUCT D.I. ON RT. W/EXT. & OPENING IN BACK					80				1	1				PCC-1, FPC-9M		
119+85.00	HWY. 5	CONSTRUCT D.I. ON RT. W/EXT. & OPENING IN BACK					110				1	1				PCC-1, FPC-9M		
121+00.00	HWY. 5	CONSTRUCT D.I. ON RT. W/EXT. & OPENING IN BACK					116				1	1				PCC-1, FPC-9M		
122+21.00	HWY. 5	CONSTRUCT D.I. ON RT. W/EXT. & FES LT. AND RT.		110					2		1	1		58.0	0.7	FES-1, FES-2, PCC-1, FPC-9M		
135+00.00	HWY. 5	TEMPORARY PIPE CROSS DRAIN								65								
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER					100								2			FPC-9, PCM-1		
TOTALS:			10	110	100	26	306	1	2	65	5	5	2	63.0	0.8			

BASIS OF ESTIMATE:
 WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.
 NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
TOTAL:	50

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

PAVEMENT REPAIR OVER CULVERTS (ASPHALT)

STATION	LOCATION	WIDTH	LENGTH	TON
		FEET		
122+28.00	HWY. 5	20.00	9.83	13
TOTAL:				13

FLOWABLE SELECT MATERIAL

STATION	LOCATION	CU. YD.
135+00.00	HWY. 5 - FILL TEMPORARY PIPE	2
122+28.00	HWY. 5 - FILL EXISTING R.C. BOX CULVERT	13
TOTAL:		15

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
118+16.15	119+16.15	HWY. 5	20	222.2
118+50.00		WOLF STEET	21	233.3
120+00.00		FISHERMAN STREET	20	222.2
142+23.35	143+23.35	HWY. 5	20	222.2
TOTAL:				899.9

NOTE: AVERAGE MILLING DEPTH 1".

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			1000	4
TOTALS:			1000	4

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

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	11	22
TOTALS:	11	22

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

APPROACH GUTTERS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE C)	REINFORCING STEEL RDWY. (GR 60)
			CU. YD.	POUND
126+29.20	126+37.20	HWY. 5 - LT. SIDE	14.79	807
126+52.30	126+60.30	HWY. 5 - RT. SIDE	14.79	807
131+89.70	131+97.70	HWY. 5 - LT. SIDE	14.79	807
132+12.80	132+20.80	HWY. 5 - RT. SIDE	14.79	807
TOTALS:			59.16	3228

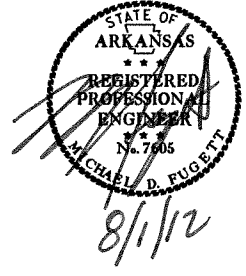
NOTE: USE T = 14.5" FOR 8' SHOULDER.

7/30/2012 R090281.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		21	106

2 QUANTITIES



DRIVEWAYS & TURNOUTS

STATION	SIDE	LOCATION	WIDTH FEET	**MODIFIED CURB		PORTLAND CEMENT CONCRETE DRIVEWAY SQ. YD.	ACHM SURFACE COURSE (1/2") 220 LBS. PER SQ. YD. (PG 64-22)		AGGREGATE BASE COURSE (CLASS 7) TON	SIDE DRAINS	
				STATION	STATION		SQ. YD.	TON		24" LIN. FT.	30"
120+45.00	RT.	HWY. 5	24	120+19	120+71	32.00	41.7	4.6	17.0		
121+65.00	RT.	HWY. 5	24	121+39	121+91	32.00	45.1	5.0	18.4		
123+48.00	RT.	HWY. 5	20				100.7	11.1	41.1		
133+00.00	RT.	HWY. 5	16				310.6	34.2	163.1		
137+30.00	RT.	HWY. 5	24			129.70	35.4	3.9	14.5		50
137+95.00	LT.	HWY. 5	30			144.50	43.4	4.8	17.7	46	
139+70.00	LT.	HWY. 5	34				375.4	41.3	153.3	50	
140+92.00	LT.	HWY. 5	34				350.8	38.6	143.2	58	
142+35.00	RT.	HWY. 5	20				252.3	27.8	103.0	36	
* ENTIRE PROJECT TEMPORARY DRIVES									90.0		
TOTALS:						338.20	1555.4	171.3	761.3	190	50

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, WILL BE ALLOWED TO SUBSTITUTE A HIGHER PERFORMANCE GRADE ASPHALT SURFACE COURSE FOR DRIVEWAYS AND MINOR SIDE STREET CONSTRUCTION AT NO ADDITIONAL COST TO THE DEPARTMENT.

* QUANTITY ESTIMATED
** FOR INFORMATION ONLY

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

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH FEET	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				PORTLAND CEMENT CONCRETE BASE				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")											
				TON / STATION	TON	(0.10 GAL. PER SQ. YD.)		(0.03 GAL. PER SQ. YD.)		6" UNIFORM THICKNESS		6 1/2" UNIFORM THICKNESS		ACHM BINDER COURSE (1")		ACHM SURFACE COURSE (1/2")													
						TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL WID. FEET	SQ.YD.	GALLON	TOTAL GALLONS	AVG. WID. FEET	SQ.YD.	AVG. WID. FEET	SQ.YD.	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	AVG. WID. FEET	SQ.YD.	POUND / SQ.YD.	PG 64-22 TON	TONS
MAIN LANES - HWY. 5																													
118+16.15	119+16.15	TRANSITION	100.0																										
119+16.15	119+91.55	NOTCH W/ CURB AND GUTTER & PCC BASE	75.4																										
119+91.55	120+30.00	NOTCH W/ CURB AND GUTTER & CL. 7 BASE	38.5	VAR.	20.74																								
120+30.00	121+66.98	NOTCH W/ CURB AND GUTTER	137.0	VAR.	143.83																								
121+66.98	122+50.00	FULL DEPTH W/ CURB AND GUTTER	83.0	156.00	129.48																								
122+50.00	126+48.75	FULL DEPTH W/ OPEN SHOULDERS	398.8	257.50	1026.91																								
132+01.25	137+16.91	FULL DEPTH W/ OPEN SHOULDERS	515.7	257.50	1327.93																								
137+16.91	142+23.35	NOTCH AND WIDEN SECTION	506.4	VAR.	1062.99																								
142+23.35	143+23.35	TRANSITION	100.0																										
ADDITIONAL FOR LEVELING																													
119+16.15	121+66.98	LEVELING	250.8			VAR.	525.5	52.6	VAR.	525.5	15.8	68.4																	89.3
137+16.91	143+23.35	LEVELING	606.4			VAR.	968.8	96.9	VAR.	968.8	29.1	126.0																	340.8
ADDITIONAL FOR SUPERELEVATION																													
122+51.44	124+20.89	SUPERELEVATION TRANSITION	169.4	26.38	44.69																								
124+20.89	124+20.89	MAXIMUM SUPERELEVATION		52.75																									
124+20.89	125+90.35	SUPERELEVATION TRANSITION	169.5	26.38	44.71																								
134+34.13	137+34.13	SUPERELEVATION TRANSITION	300.0	30.75	92.25																								
137+34.13	141+48.35	MAXIMUM SUPERELEVATION		414.2	61.50	254.73																							
141+48.35	142+23.35	SUPERELEVATION TRANSITION	75.0	30.75	23.06																								
ADDITIONAL FOR GUARDRAIL WIDENING																													
123+82.97	126+62.46	GUARDRAIL WIDENING ON RT.	279.5	31.75	83.49																								18.8
124+84.10	126+37.54	GUARDRAIL WIDENING ON LT.	153.4	31.75	43.49																								10.3
131+87.54	134+67.11	GUARDRAIL WIDENING ON LT.	279.6	31.75	83.52																								18.8
132+12.46	133+65.21	GUARDRAIL WIDENING ON RT.	152.8	31.75	43.23																								10.3
WOLF ST.																													
118+50.00		WOLF STREET	37.0							VAR.	123.3	12.3	12.3																13.6
118+50.00		WOLF STREET - TRANSITION	100.0																										24.4
FISHERMAN ST.																													
120+00.00		FISHERMAN STREET	54.6							VAR.	338.1	10.1	10.1																9.7
120+00.00		FISHERMAN STREET - TRANSITION	100.0																										25.7
TOTALS:				4425.05	1494.3	149.5	10371.7	319.8	469.3	72.5	111.4	2741.2	611.6	5322.5	851.2	9092.4	1006.1	1857.3											

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.5% MIN. AGGR.....5.5% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

7/31/2012 R090281.DGN

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	090281	22	106
				JOB NO. 07248		QUANTITIES		52625

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 090281

BRIDGE NO. CODE NO. NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP & 205	801	802	802	803	SS & 804	SS & 804	805	807	808	812	816	816	SP JOB 090281	SP JOB 090281	SP JOB 090281	SP JOB 090281	SP JOB 090281
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO.)	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 2 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP 12X53)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	ARMORED JOINT WITH NEOPRENE STRIP SEAL	DRILLED SHAFT (84" DIA.)	PERMANENT STEEL CASING (84" DIA.)	CROSSHOLE SONIC LOGGING (84" DIA.)	CORING DRILLED SHAFT
		UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	LB.	LB.	LIN. FT.	LB.	CU. IN.	EACH	SQ. YD.	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.
07248 X471 NORTH FORK RIVER	BENT NO. 1			97	96.02		20	8964			1004									
	BENT NO. 2				173.47			27412								59	27	2	59	
	BENT NO. 3				160.91			25662								57	25	2	57	
	BENT NO. 4				112.74			16862								86	58	2	86	
	BENT NO. 5				59.36		20	6840		490	1004			745	385					
	550' -0' CONT. COMP. PLATE GIRDER UNIT EXIST. BR. NO. 00587 (SITE NO. 1)		1				721.40	2890	176640		820602	22230.0	1			84				
TOTALS FOR JOB NO. 090281				① 97	602.50	721.40	2930	85740	176640	②③ 490	822610	22230.0	1	745	385	84	202	110	6	202

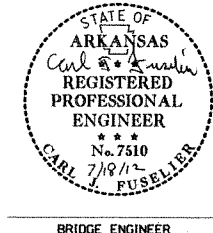
① Rock Excavation.

② These steel piles are required to have driving points which will not be paid for directly, but will be considered subsidiary to the item "Steel Piling (HP 12x53)".

③ All Piling to be AASHTO M270, Gr. 50.

PRINT DATE: 18-JUL-2012

JIM TRIBO
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES
NORTH FORK RIVER
STR. & APPRS. (NORFORK) (S)
BAXTER COUNTY
ROUTE 5 SEC. 18
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: SWP DATE: 3/22/12 FILENAME: b090281-ql.dgn
CHECKED BY: LJB DATE: 7/18/12 SCALE: NONE
DESIGNED BY: - DATE: -
BRIDGE NO. 07248 DRAWING NO. 52625

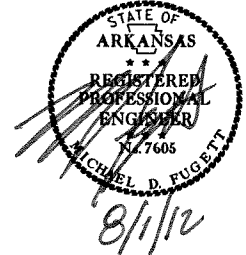
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		23	106

2 SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	14	STATION
201	GRUBBING	14	STATION
202	REMOVAL AND DISPOSAL OF FENCE	25	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	1	EACH
202	REMOVAL AND DISPOSAL OF STEEL POSTS	1	EACH
202	REMOVAL AND DISPOSAL OF RETAINING WALLS	138	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	3692	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE SLABS	4	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	2	EACH
202	REMOVAL AND DISPOSAL OF ROCK COLUMNS	2	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	3	EACH
202	REMOVAL AND DISPOSAL OF WOODEN BRIDGES	1	EACH
202	REMOVAL AND DISPOSAL OF BOX CULVERTS	1	EACH
206	FLOWABLE SELECT MATERIAL	15	CU. YD.
210	UNCLASSIFIED EXCAVATION	24799	CU. YD.
210	PRESPLITTING	744	SQ. YD.
SP & 210	COMPACTED EMBANKMENT	8904	CU. YD.
SP & 210	COMPACTED EMBANKMENT (SPECIAL)	15880	CU. YD.
SP & 210	SOIL STABILIZATION	50	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	5186	TON
309	PORTLAND CEMENT CONCRETE BASE (6" UNIFORM THICKNESS)	73	SQ. YD.
309	PORTLAND CEMENT CONCRETE BASE (6 1/2" UNIFORM THICKNESS)	111	SQ. YD.
401	TACK COAT	491	GAL.
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	585	TON
SP, SS, & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	27	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	1917	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	112	TON
412	COLD MILLING ASPHALT PAVEMENT	900	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	11	TON
504	APPROACH GUTTERS (TYPE C)	59.16	CU. YD.
505	PORTLAND CEMENT CONCRETE DRIVEWAY	338.20	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
603	12" TEMPORARY CULVERT	65	LIN. FT.
SP, SS, & 604	SIGNS	321	SQ. FT.
SS & 604	BARRICADES	144	LIN. FT.
SS & 604	TRAFFIC DRUMS	110	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	313	LIN. FT.
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	17904	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	2210	LIN. FT.
SS & 604	VERTICAL PANELS	19	EACH
605	CONCRETE DITCH PAVING (TYPE B)	449	SQ. YD.
SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	10	LIN. FT.
* SS & 606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	26	LIN. FT.
* 606	18" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	26	LIN. FT.
* SS & 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III) (ALTERNATE NO. 1)	306	LIN. FT.
* 606	36" SMOOTH LINED POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE (ALTERNATE NO. 2)	306	LIN. FT.
SS & 606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	110	LIN. FT.
SS & 606	12" SIDE DRAIN	100	LIN. FT.
SP, SS, & 606	24" SIDE DRAIN	190	LIN. FT.
SP, SS, & 606	30" SIDE DRAIN	50	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	1	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	SELECTED PIPE BEDDING	50	CU. YD.
609	DROP INLETS (TYPE MO)	5	EACH
609	DROP INLET EXTENSIONS (4')	5	EACH
609	YARD DRAINS	2	EACH
611	UNDERDRAIN OUTLET PROTECTORS	4	EACH
611	4" PIPE UNDERDRAINS	1000	LIN. FT.
615	PAVEMENT REPAIR OVER CULVERTS (ASPHALT)	13	TON
SS & 617	GUARDRAIL (TYPE A)	500	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	2	EACH
SS & 617	THREE BEAM GUARDRAIL TERMINAL	4	EACH
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)	2	EACH
620	LIME	6	TON
620	SEEDING	3.04	ACRE
620	MULCH COVER	13.04	ACRE
SS & 620	WATER	519.7	M.GAL.

*ALTERNATE BID ITEMS



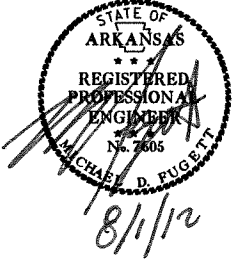
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO. 090281		24		106

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
621	TEMPORARY SEEDING	10.00	ACRE
621	SILT FENCE	1287	LIN. FT.
621	SAND BAG DITCH CHECKS	242	BAG
621	DROP INLET SILT FENCE	156	LIN. FT.
621	SEDIMENT BASIN	700	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	700	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL	822	CU. YD.
621	ROCK DITCH CHECKS	171	CU. YD.
623	SECOND SEEDING APPLICATION	3.04	ACRE
624	SOLID SODDING	441	SQ. YD.
626	EROSION CONTROL MATTING (CLASS 3)	878	SQ. YD.
633	CONCRETE WALKS	208	SQ. YD.
634	CONCRETE COMBINATION CURB AND GUTTER (TYPE A) (1' 6")	651	LIN. FT.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
641	WHEELCHAIR RAMPS (TYPE 3)	95	SQ. YD.
SS & 719	THERMOPLASTIC PAVEMENT MARKING WHITE (4")	4896	LIN. FT.
SS & 719	THERMOPLASTIC PAVEMENT MARKING YELLOW (4")	3910	LIN. FT.
* SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4")	1105	LIN. FT.
	(ALTERNATE NO. 1)		
* SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4")	1105	LIN. FT.
	(ALTERNATE NO. 2)		
721	RAISED PAVEMENT MARKERS (TYPE II)	63	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)	3228	POUND
816	FILTER BLANKET	1042	SQ. YD.
816	DUMPED RIPRAP	521	CU. YD.
SP	SHORING	1.00	LUMP SUM
STRUCTURES OVER 20' SPAN			
SP & 205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	97	CU. YD.
802	CLASS S CONCRETE-BRIDGE	602.50	CU. YD.
802	CLASS S(AE) CONCRETE-BRIDGE	721.40	CU. YD.
803	CLASS 2 PROTECTIVE SURFACE TREATMENT	2930	SQ. YD.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	85740	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	176640	POUND
805	STEEL PILING (HP 12X53)	490	LIN. FT.
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)	822610	POUND
808	ELASTOMERIC BEARINGS	22230.0	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)	1	EACH
816	FILTER BLANKET	745	SQ. YD.
816	DUMPED RIPRAP	385	CU. YD.
SP	ARMORED JOINT WITH NEOPRENE STRIP SEAL	84	LIN. FT.
SP	DRILLED SHAFT (84" DIAMETER)	202	LIN. FT.
SP	PERMANENT STEEL CASING (84" DIAMETER)	110	LIN. FT.
SP	CROSSHOLE SONIC LOGGING (84" DIAMETER)	6	EACH
SP	CORING DRILLED SHAFT	202	LIN. FT.

*ALTERNATE BID ITEMS

2 SUMMARY OF QUANTITIES AND REVISIONS



REVISIONS

DATE	REVISION	SHEET NUMBER

7/30/2012

R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		25	106

2 SURVEY CONTROL DETAILS



Coordinate System: ARKANSAS STATE PLANE - NORTH/SOUTH ZONE BASED ON GPS CONTROL,
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	682983.6808	1227824.7134	434.412	CTL	5/8" REBAR W/2" CAP INTERSECTION OF HWY. 5 AND BLEVINS ST
2	683477.9333	1227812.1841	440.487	CTL	5/8" REBAR W/2" CAP 15.5' W OF C/L HWY. 5
3	684037.5043	1227826.0974	446.723	CTL	5/8" REBAR W/2" CAP 36.7' W OF C/L HWY. 5
4	684470.1374	1227759.3418	381.552	CTL	5/8" REBAR W/2" CAP 11' N C/L GRAVEL RD
5	685816.0258	1228078.0813	428.710	CTL	5/8" REBAR W/2" CAP 15.5' E C/L HWY. 5
6	686301.4231	1228494.9820	470.118	CTL	5/8" REBAR W/2" CAP 16' E OF C/L HWY. 5
7	684768.9606	1227970.7381	391.718	CTL	5/8" REBAR W/2" CAP
8	685190.2488	1227800.4229	409.523	CTL	5/8" REBAR W/2" CAP
9	684684.9775	1227834.1970	414.995	CTL	5/8" REBAR W/2" CAP
100	686483.9763	1228502.4672	471.898	GPS	AHTD GPS 030009
101	688569.7329	1227736.1083	424.584	GPS	AHTD GPS 030009A
900	683130.1682	1227706.1436	441.681	TBM	X CUT IN BOLT ON FH
901	684039.8314	1227872.6965	440.237	TBM	SQ CUT SW CNR BR, 32' W OF C/L HWY. 5
902	684646.8305	1227792.5126	420.342	TBM	SQ CUT NE COR BR, 12.4' W OF C/L HWY. 5
903	685151.9883	1227957.8795	405.872	TBM	X CUT IN BOLT OF FH 11.8' S OF C/L CONCRETE DRIVE
908	-99999.0000	-99999.0000	403.998	TBM	CHSLD CIRCLE ON ROCK 8.8' SOUTH OF SOUTH RR
909	-99999.0000	-99999.0000	400.530	TBM	CONC POST, 9' EAST OF EAST RAIL
910	690932.7060	1222485.2459	402.863	TBM	SQ CUT, ROCK OUTCROP 11' NORTH OF NORTH RAIL
911	688398.2570	1224525.8765	435.524	TBM	SQ CUT, SE COR BR, HY 341 & RR TRACKS
912	689910.0132	1226251.0777	475.552	TBM	SQ CUT IN HDWL, 23' SOUTH OF C/L
913	687780.5776	1228211.3394	411.727	TBM	AHTD CAP IN SW COR OF BR
990	684009.6887	1206237.4163	411.420	BM	NGS MARK C 39
991	686113.2407	1211899.3553	402.845	BM	NGS MARK D 39

HWY. 5

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	100+00.00	681775.9139	1228434.5217
8001	P. C. STA.	103+15.00	681899.3492	1228144.7090
8002	P. I. STA.	103+15.00	682440.0027	1228374.9810
8003	P. T. STA.	110+25.93	682464.4582	1227787.8410
8004	P. C. STA.	112+73.18	682711.4938	1227798.1306
8005	P. I. STA.	115+32.93	683188.3774	1216348.9019
8006	P. T. STA.	115+32.93	682971.1144	1227805.9980
8007	P. C. STA.	117+73.60	683211.7496	1227810.5612
8008	P. I. STA.	122+89.22	683157.4338	1230674.8353
8009	P. T. STA.	119+16.15	683354.1469	1227816.8080
8010	P. C. STA.	119+16.15	683354.1470	1227816.8080
8011	P. I. STA.	119+16.15	683306.4590	1228509.6631
8012	P. T. STA.	120+29.65	683466.2373	1227833.7983
8013	P. C. STA.	122+51.44	683682.0790	1227884.8245
8014	P. I. STA.	122+51.44	683945.7132	1226769.6476
8015	P. T. STA.	125+90.35	684018.5520	1227913.2459
8016	P. C. STA.	136+59.13	685085.1716	1227845.3101
8017	P. I. STA.	142+23.35	685154.5419	1228934.4513
8018	P. T. STA.	142+23.35	685632.5716	1227953.3660
8019	POE	142+23.35	685632.5732	1227953.3668

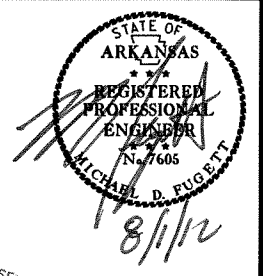
*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
 *(standard markings common to all caps), or as indicated
 (other markings indicated in the point description of the individual point).
 ALL DISTANCES ARE GROUND.
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
 A PROJECT CAF OF 0.9999766967 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, S090281G1.CTL
 HORIZONTAL DATUM: NAD 83 (1997)
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
 AT A SPECIFIC POINT.

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

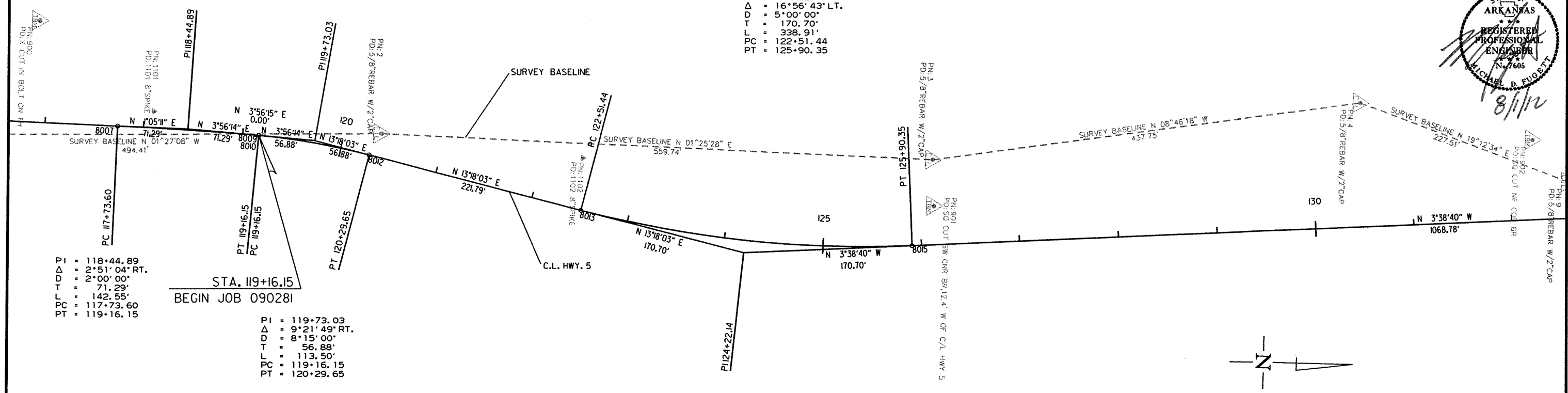
BASIS OF BEARING:
 ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE
 DETERMINED FROM GPS CONTROL POINTS: 030009-03009A
 CONVERGENCE ANGLE: 00 10 00.8 LEFT AT LT: 36-12-48 LG: 92-17-12
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							26	106

2 SURVEY CONTROL DETAILS



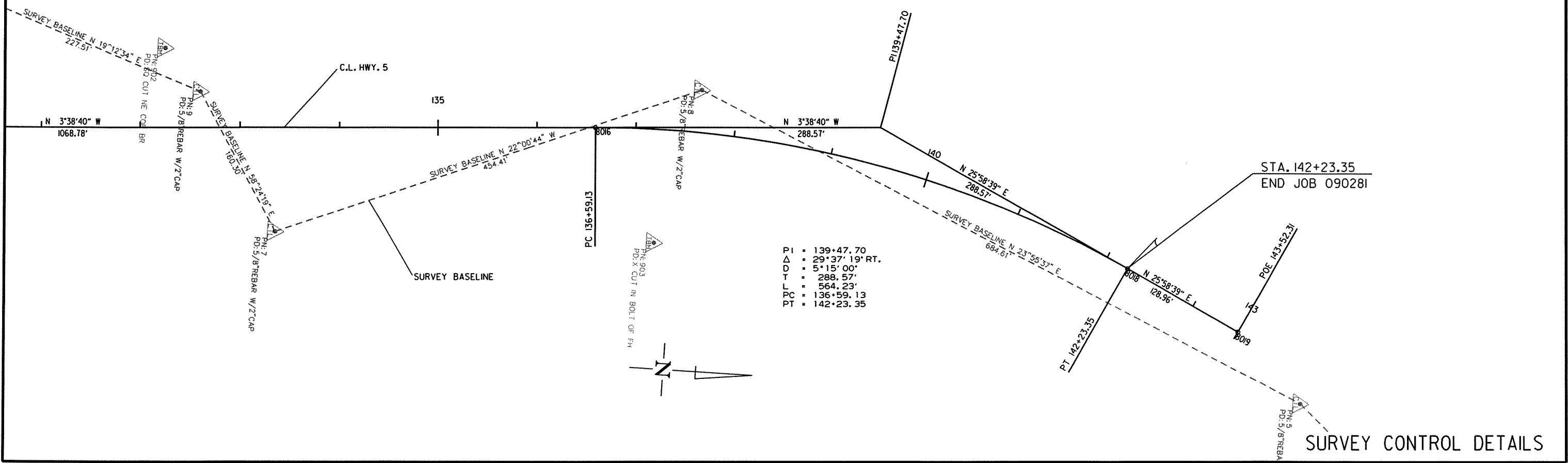
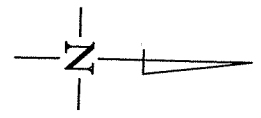
PI = 124+22.14
 Δ = 16°56'43" LT.
 D = 5°00'00"
 T = 170.70'
 L = 338.91'
 PC = 122+51.44
 PT = 125+90.35



PI = 118+44.89
 Δ = 2°51'04" RT.
 D = 2°00'00"
 T = 71.29'
 L = 142.55'
 PC = 117+73.60
 PT = 119+16.15

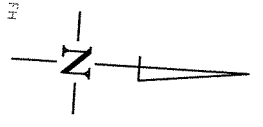
STA. 119+16.15
 BEGIN JOB 090281

PI = 119+73.03
 Δ = 9°21'49" RT.
 D = 8°15'00"
 T = 56.88'
 L = 113.50'
 PC = 119+16.15
 PT = 120+29.65



STA. 142+23.35
 END JOB 090281

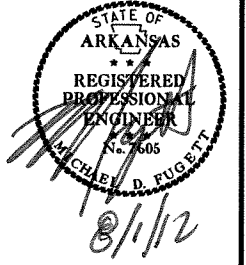
PI = 139+47.70
 Δ = 29°37'19" RT.
 D = 5°15'00"
 T = 288.57'
 L = 564.23'
 PC = 136+59.13
 PT = 142+23.35



SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	27	106

2 SOIL BORING LOG



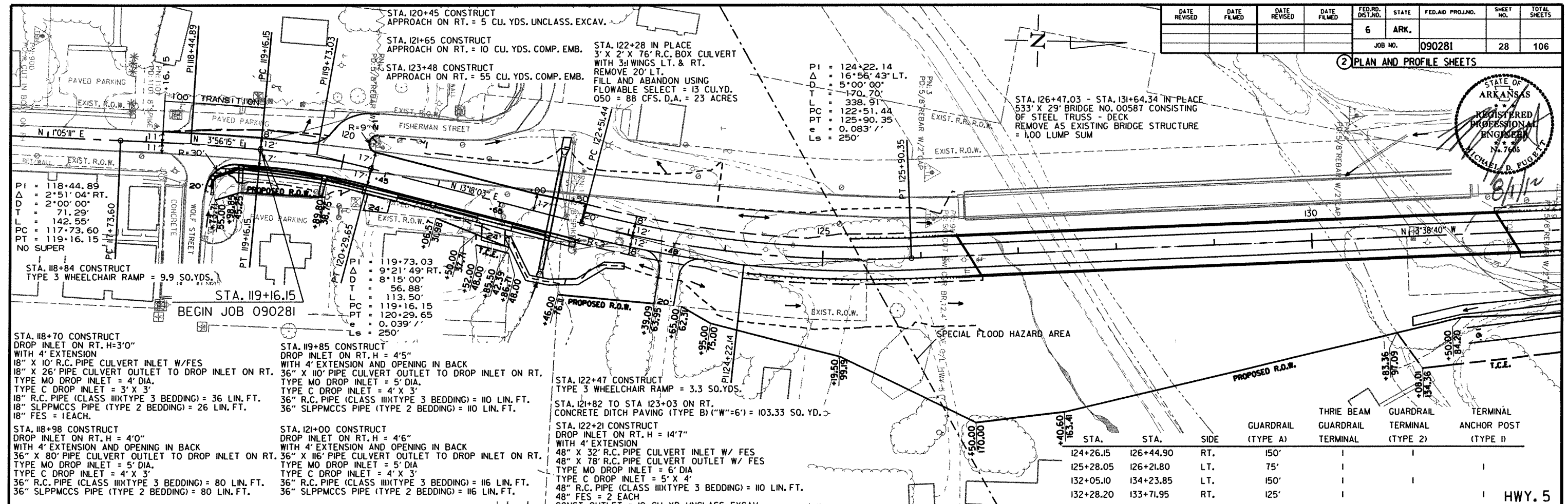
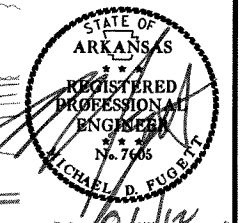
SOIL LOG

STATION	LATITUDE			LONGITUDE			LOCATION	DEPTH FEET	LIQUID LIMIT	PLASTICITY INDEX	AASHTO CLASSIFICATION	COLOR
	DEG	MIN	SEC	DEG	MIN	SEC						
122+65.00	36	12	40.80	92	17	11.10	3'LT.	0-3.0Z	47	31	A-7-6(14)	BROWN
122+65.00	36	12	41.20	92	17	11.20	30'LT.	0-5	52	33	A-7-6(18)	RED
135+90.00	36	12	53.70	92	17	12.30	35'LT.	0-5	29	19	A-6(6)	RED
135+90.00	36	12	53.70	92	17	12.10	66'LT.	0-5	17	3	A-4(0)	RD/BR
135+90.00	36	12	53.70	92	17	12.10	66'LT.	0-5	25	15	A-6(3)	RD/BR

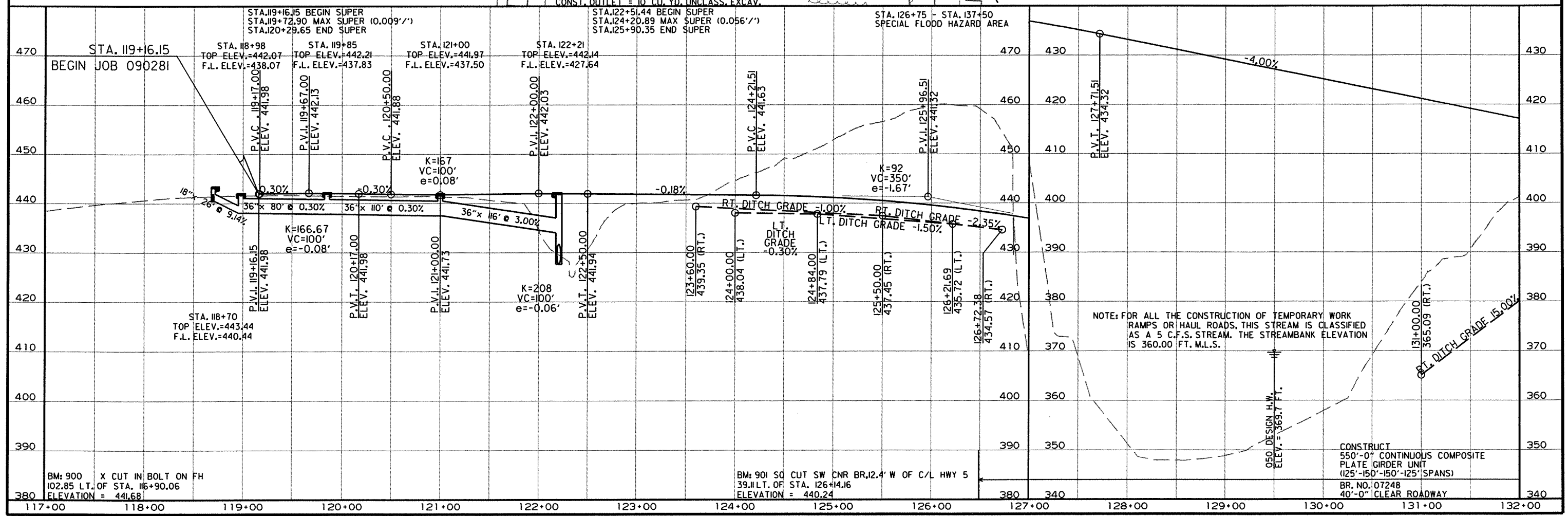
SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATION ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN THE SOIL CHARACTERISTICS AND/OR EXTENT OF SAME DIFFERING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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							28	106

2 PLAN AND PROFILE SHEETS



STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THREE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE D)
124+26.15	126+44.90	RT.	150'			
125+28.05	126+21.80	LT.	75'			
132+05.10	134+23.85	LT.	150'			
132+28.20	133+71.95	RT.	125'			

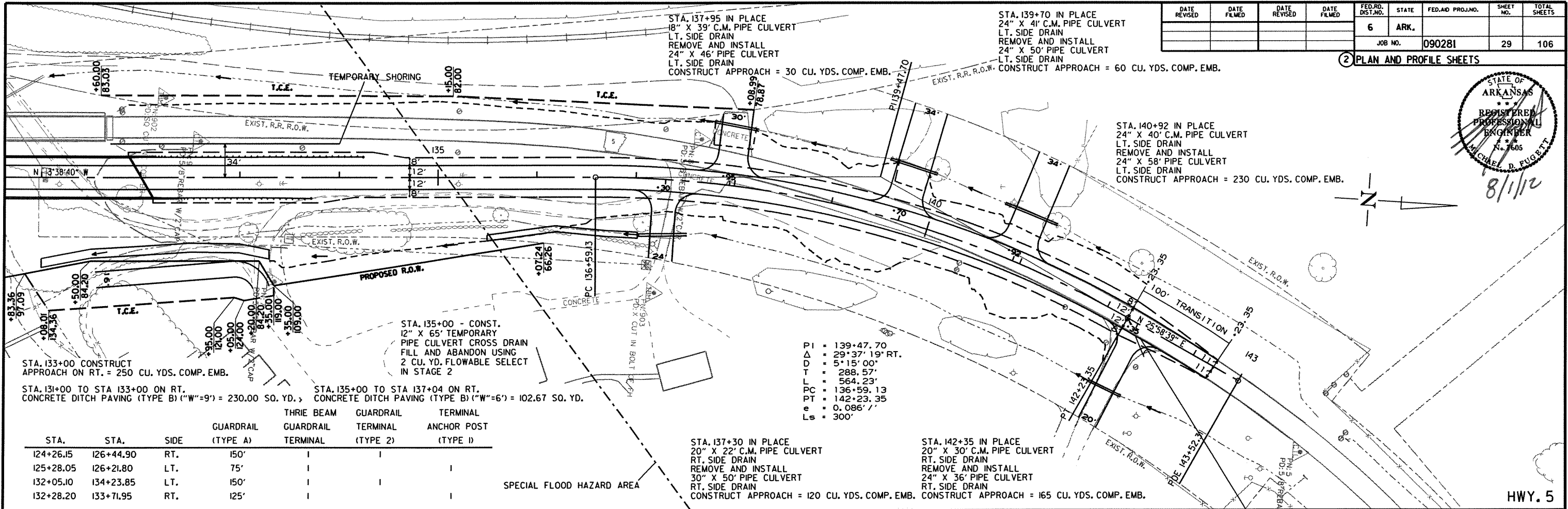


NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMP OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS A 5 C.F.S. STREAM. THE STREAMBANK ELEVATION IS 360.00 FT. M.L.S.

R090281.DGN 7/30/2012

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		29	106

2 PLAN AND PROFILE SHEETS



PI = 139+47.70
 Δ = 29°37'19" RT.
D = 5'15'00"
T = 288.57'
L = 564.23'
PC = 136+59.13
PT = 142+23.35
e = 0.086' /'
Ls = 300'

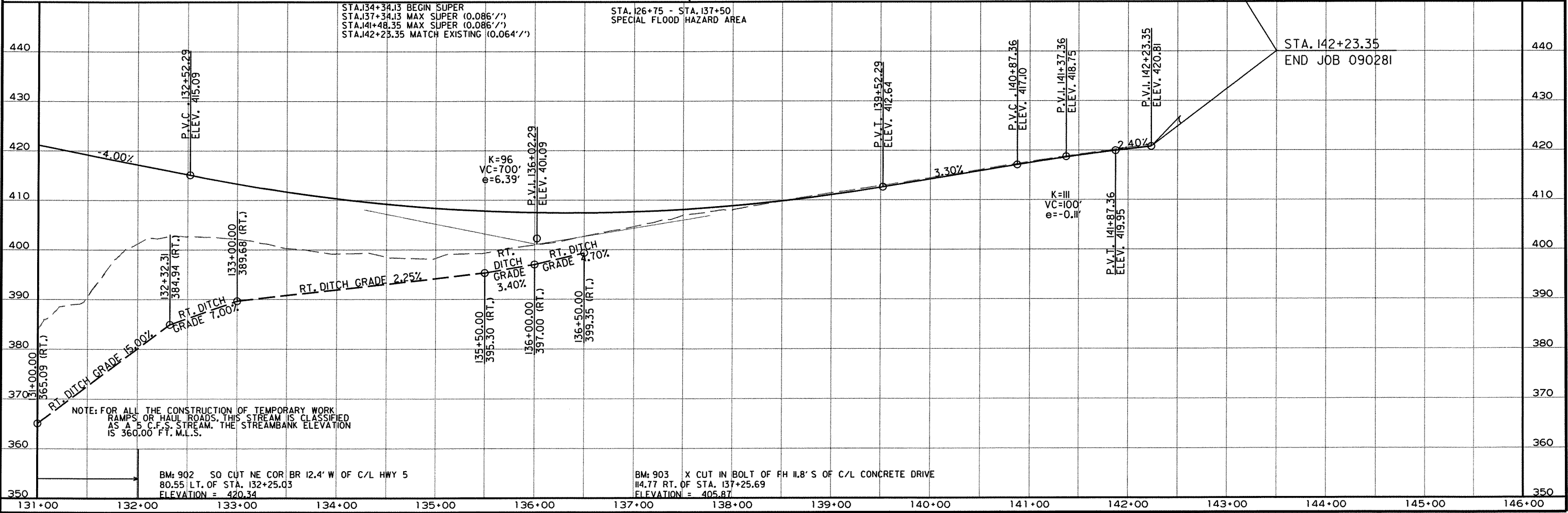
STA. 133+00 CONSTRUCT APPROACH ON RT. = 250 CU. YDS. COMP. EMB.
 STA. 131+00 TO STA 133+00 ON RT. CONCRETE DITCH PAVING (TYPE B) ("W"=9') = 230.00 SO. YD.

STA. 135+00 - CONST. 12" X 65' TEMPORARY PIPE CULVERT CROSS DRAIN FILL AND ABANDON USING 2 CU. YD. FLOWABLE SELECT IN STAGE 2
 STA. 135+00 TO STA 137+04 ON RT. CONCRETE DITCH PAVING (TYPE B) ("W"=6') = 102.67 SO. YD.

STA.	STA.	SIDE	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
124+26.15	126+44.90	RT.	150'			
125+28.05	126+21.80	LT.	75'			
132+05.10	134+23.85	LT.	150'			
132+28.20	133+71.95	RT.	125'			

STA. 137+30 IN PLACE 20" X 22' C.M. PIPE CULVERT RT. SIDE DRAIN REMOVE AND INSTALL 30" X 50' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH = 120 CU. YDS. COMP. EMB.
 STA. 142+35 IN PLACE 20" X 30' C.M. PIPE CULVERT RT. SIDE DRAIN REMOVE AND INSTALL 24" X 36' PIPE CULVERT RT. SIDE DRAIN CONSTRUCT APPROACH = 165 CU. YDS. COMP. EMB.

SPECIAL FLOOD HAZARD AREA



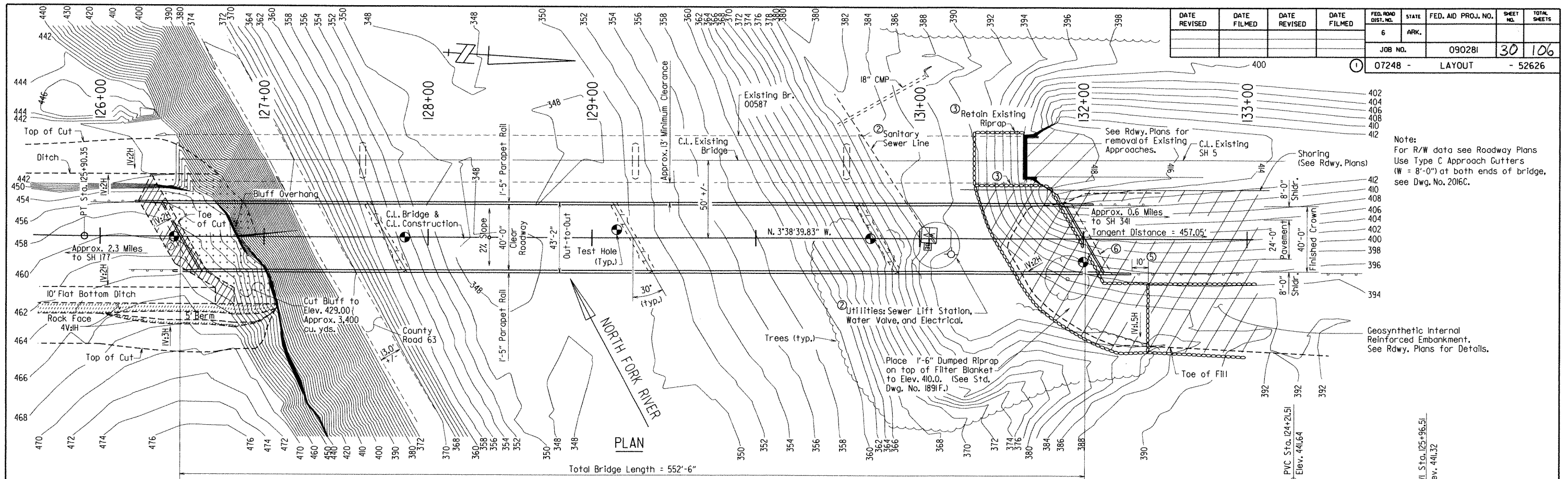
NOTE: FOR ALL THE CONSTRUCTION OF TEMPORARY WORK RAMPS OR HAUL ROADS, THIS STREAM IS CLASSIFIED AS A 5 C.F.S. STREAM. THE STREAMBANK ELEVATION IS 360.00 FT. M.L.S.

BM: 902 SO CUT NE COR BR 12.4' W OF C/L HWY 5 80.55 LT. OF STA. 132+25.03 ELEVATION = 420.34

BM: 903 X CUT IN BOLT OF FH 11.8' S OF C/L CONCRETE DRIVE 114.77 RT. OF STA. 137+25.69 ELEVATION = 405.87

R090281.DGN 7/30/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		30	106
				07248 -	LAYOUT		- 52626	



Note:
For R/W data see Roadway Plans
Use Type C Approach Gutters
(W = 8'-0") at both ends of bridge,
see Dwg. No. 2016C.

Geosynthetic Internal Reinforced Embankment.
See Rdwy. Plans for Details.

Total Bridge Length = 552'-6"

550'-0" Continuous Composite Plate Girder Unit
(125'-150'-150'-125')

VERTICAL CURVE DATA
Along C.L. Bridge

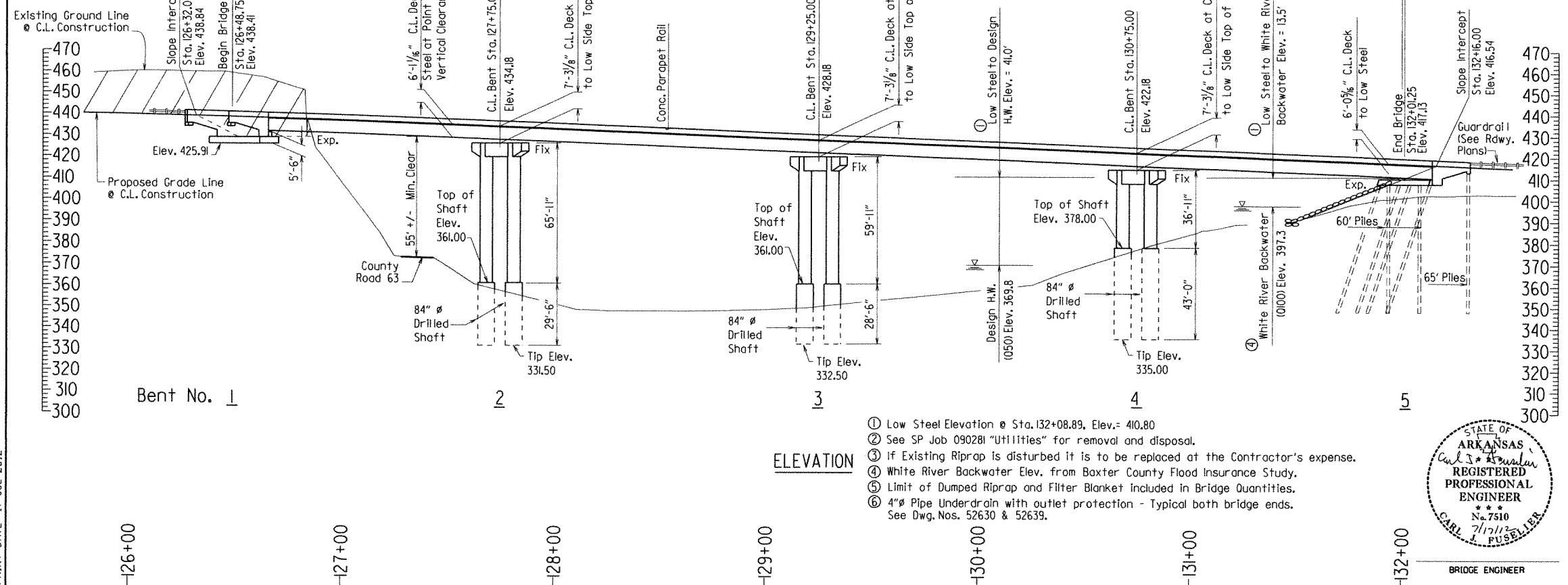
HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY YEARS	DISCHARGE CFS	*NATURAL WATER SURFACE ELEVATION FEET	WATER SURFACE ELEV. WITH BACKWATER FEET
			Design 050	45,400
Base 0100	69,500	374.8	375.1	
Extreme 0500	162,000	389.1	389.8	
Overtopping >0500	-	-	-	-

*Unconstricted water surface without structure or roadway approaches.
0100 Backwater Elevation for Existing Structure = 375.1 feet.
Proposed Low Bridge Chord Elevation = 410.80 feet
Drainage area = 183 square miles.
Historical H.W. Elev. = 390.30 ft.

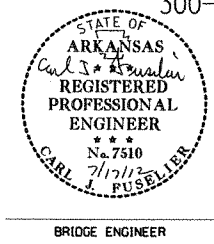
Note:
See Rdwy. Plans for Additional Excavation Details

Note: Stations and Elevations are Along C.L. Bridge. Elevations are at Working Point.



ELEVATION

- ① Low Steel Elevation @ Sta. 132+08.89, Elev. = 410.80
- ② See SP Job 090281 "Utilities" for removal and disposal.
- ③ If Existing Riprap is disturbed it is to be replaced at the Contractor's expense.
- ④ White River Backwater Elev. from Baxter County Flood Insurance Study.
- ⑤ Limit of Dumped Riprap and Filter Blanket included in Bridge Quantities.
- ⑥ 4" Pipe Underdrain with outlet protection - Typical both bridge ends. See Dwg. Nos. 52630 & 52639.



SHEET 1 OF 2
LAYOUT OF BRIDGE OVER
NORTH FORK RIVER
NORTH FORK RIVER STR. & APPRS.
(NORFORK) (S)
BAXTER COUNTY
ROUTE 5 SEC. 18
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: LJB DATE: 8/8/11 FILENAME: b090281x1.dgn
CHECKED BY: JCT DATE: 7/16/11 SCALE: 1"=30'-0"
DESIGNED BY: DBS DATE: 07/11
BRIDGE NO. 07248 DRAWING NO. 52626

PRINT DATE: 17-JUL-2012

GENERAL NOTES

BENCH MARK: BM 901, Corner of existing Bridge 39.11' lt. of Sta. 126+14.16, Elev. 440.24.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2003 edition, with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans Section and Subsection refer to the Standard Construction Specifications.

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

LIVE LOADING: HL-93

SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 53, Gr. 60)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50W)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

PILING: Piling in bent 5 shall be HP12 X 53 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 90 tons per pile. Piling in bent 5 shall be driven after embankment to bottom of cap is in place. All Piling shall be driven into the material designated as Hard Dolostone on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the specifications. On all piles the Contractor shall use approved steel H-pile driving points.

FOOTINGS: Footings at bent 1 shall be set at or below the elevation shown on the Plans and as directed by the Engineer. Bent 1 footings shall be set a minimum of 2 feet into material designated as Hard Dolostone on the boring legend. Foundations for footings at bent 1 shall be prepared in accordance with subsection 801.04. Rock excavations shall be made to neat lines of the concrete footing. Care shall be exercised to avoid shattering of the rock faces by excessive blasting. Concrete in footing shall be poured directly against excavated surfaces of rock.

DRILLED SHAFTS: Foundations for intermediate bents shall consist of Drilled Shafts. All drilled shafts shall be founded to the minimum rock penetrations and tip elevations shown on the plans. No adjustments in the Plan Tip Elevation shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP Job 090281 "Drilled Shaft Foundations". Permanent Casings shall not be extended below the top of rock. The Contractor must obtain approval from the Engineer for any deviation from this requirement.

CROSSHOLE SONIC LOGGING: Nondestructive testing shall be performed on each drilled shaft in accordance with SP Job 090281 "Nondestructive Testing of Drilled Shafts".

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

DETAIL DRAWINGS: DRAWING NO.

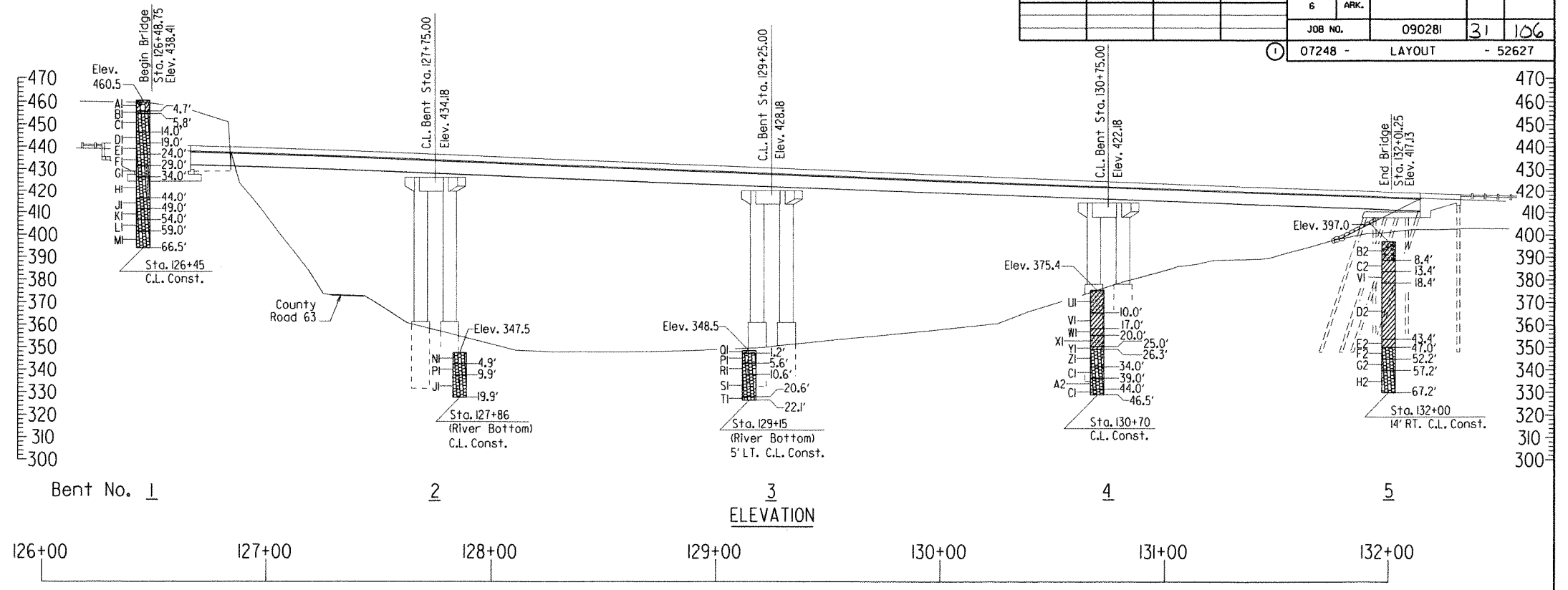
End Bents	52629-5631 & 52638-52640
Intermediate Bents	52632-52637
550'-0" Cont. Comp. Plate Girder Unit	52641-52647
Elastomeric Bearings	52648
Steel Piling	14995A
Type C Approach Gutters	2016C

EXISTING BRIDGE: Bridge No. 00587 (Log Mile 6.77) is 28.5' wide and 533' long and consists of a 4 span, 518' long deck truss with a concrete deck supported on a concrete abutment, a pile abutment, and concrete piers with spread footings.

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. 00587 (Site. No. 1) shall be removed in accordance with Section 205 of the Standard Specifications. All material from the existing bridge shall become the property of the Contractor except the bridge name plate which will remain the property of AHTD.

MAINTENANCE OF TRAFFIC: For details of maintenance of traffic, see Roadway Plans.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090281	31	106
				07248 -	LAYOUT			52627



"N" VALUES

Sta. 126+45 - C.L. Const.	4. 7- 4. 8, N=0
Sta. 127+86 - (River Bottom) C.L. Const.	13. 9- 14. 9, N=6
Sta. 129+15 - (River Bottom) 5' LT. C.L. Const.	0. 5- 1. 3, N=23 (10")
Sta. 130+70 - C.L. Const.	5. 5- 6. 5, N=8
	10. 5- 11. 5, N=6
	15. 5- 16. 5, N=7
	20. 5- 21. 5, N=4
	25. 0- 25. 5, N=36 (5. 5")

Sta. 132+00 - 14' RT. C.L. Const.	3. 9- 4. 9, N=14
	8. 9- 9. 9, N=11
	18. 9- 19. 9, N=4
	23. 9- 24. 9, N=4
	28. 9- 29. 9, N=4
	33. 9- 34. 9, N=3
	38. 9- 39. 9, N=4
	43. 9- 44. 9, N=7

BORING LEGEND

AI-Dry, Very Stiff, Light Brown Clay with Gravel (Dolostone Fragments), cobbles and Boulders

BI-DOLOSTONE WITH SHALE LAYERS - Light Gray, Laminated, Slightly Weathered, Moderately Hard, with Slight Dip

CI-DOLOSTONE - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

DI-DOLOSTONE WITH CHERT LAYERS AND CALCITE PARTINGS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Seams

EI-DOLOSTONE WITH CHERT LAYERS AND SEAMS - Light Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Seams

FI-DOLOSTONE WITH CHERT SEAMS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

GI-DOLOSTONE WITH SHALE AND CHERT LAYERS AND SEAMS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Seams

HI-DOLOSTONE WITH SHALE AND CHERT LAYERS AND SEAMS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

JI-DOLOSTONE WITH CHERT LAYERS AND CALCITE PARTINGS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

KI-DOLOSTONE WITH CHERT LAYERS AND SEAMS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

LI-DOLOSTONE WITH CALCITE PARTINGS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

MI-DOLOSTONE - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

NI-DOLOSTONE WITH CHERT SEAMS AND CALCITE PARTINGS - Light Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip

PI-DOLOSTONE WITH CHERT LAYERS AND CALCITE PARTINGS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Seams

QI-Wet, Medium Dense, Brown Sand with Gravel

RI-DOLOSTONE WITH CHERT LAYERS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

SI-DOLOSTONE WITH CHERT LAYERS - Light Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip and Vertically Fractured Seams

TI-DOLOSTONE WITH CHERT SEAMS - Light Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip

UI-Moist, Medium Stiff, Brown Clay with Sand

VI-Moist, Medium Stiff, Brown Clay

WI-Wet, Medium Stiff, Brown Clay

XI-Wet, Soft, Brown Sandy Clay

YI-Wet, Hard, Brown Clay with Gravel (Dolostone Fragments) and some Sand

ZI-DOLOSTONE - Light Gray, Medium Bedded, Slightly Weathered, Hard, with Slight Dip

A2-DOLOSTONE WITH CHERT LAYERS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

B2-Moist, Stiff, Reddish Brown Clay with Sand and Gravel (Sandstone Fragments)

C2-Moist, Stiff, Brown Clay

D2-Moist, Soft, Brown Clay

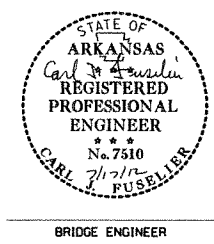
E2-Moist, Medium Stiff, Light Gray and Brown Clay with some Sand

F2-DOLOSTONE - Light Gray, Very Thick Bedded, Slightly Weathered, Hard, with Slight Dip and Fractured Layer

G2-DOLOSTONE WITH CALCITE PARTINGS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip

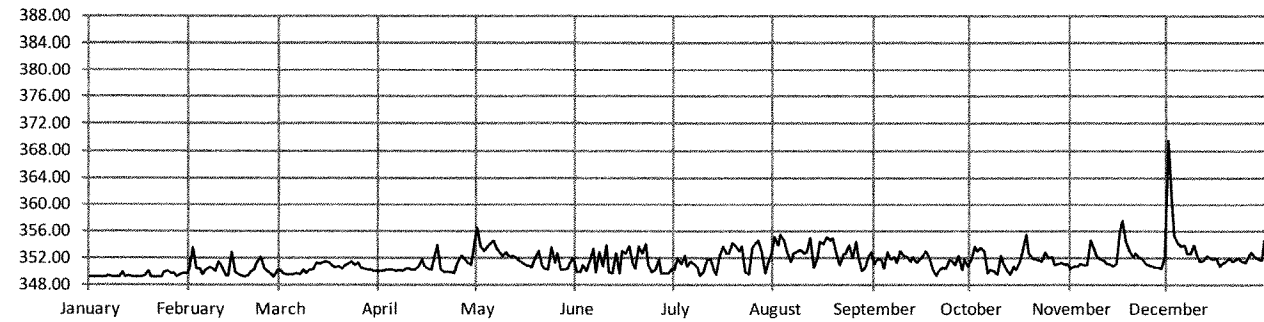
H2-DOLOSTONE WITH CALCITE PARTINGS - Light Gray, Thick Bedded, Slightly Weathered, Hard, with Slight Dip and Fractured Layers

SHEET 2 OF 2
 LAYOUT OF BRIDGE OVER
 NORTH FORK RIVER
 NORTH FORK RIVER STR. & APPRS.
 (NORFORK) (S)
 BAXTER COUNTY
 ROUTE 5 SEC. 18
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

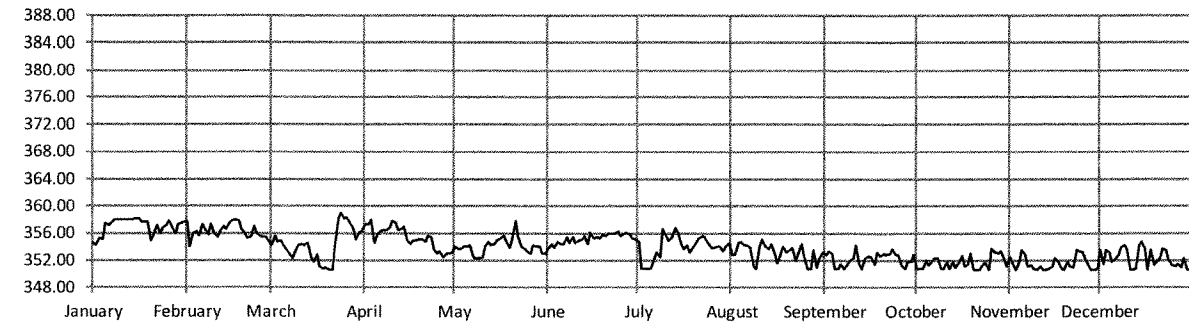


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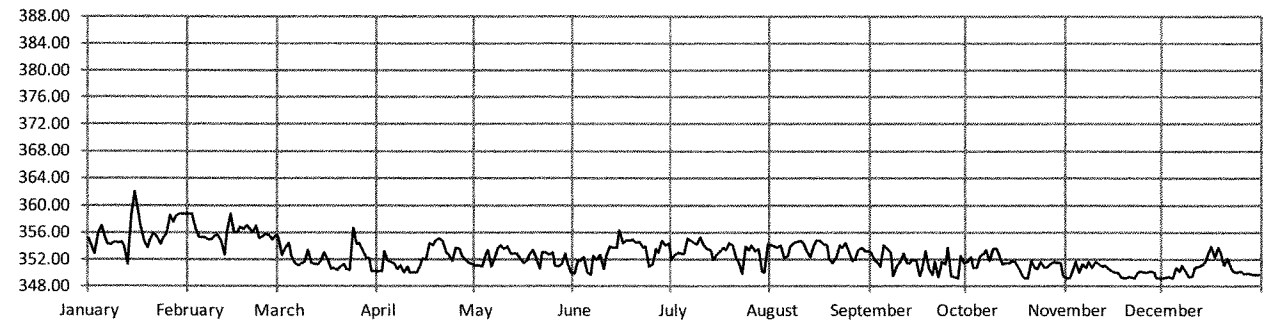
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				6	ARK.			
JOB NO. 090281							32	106
① 07248 - HYDROGRAPH							- 52628	



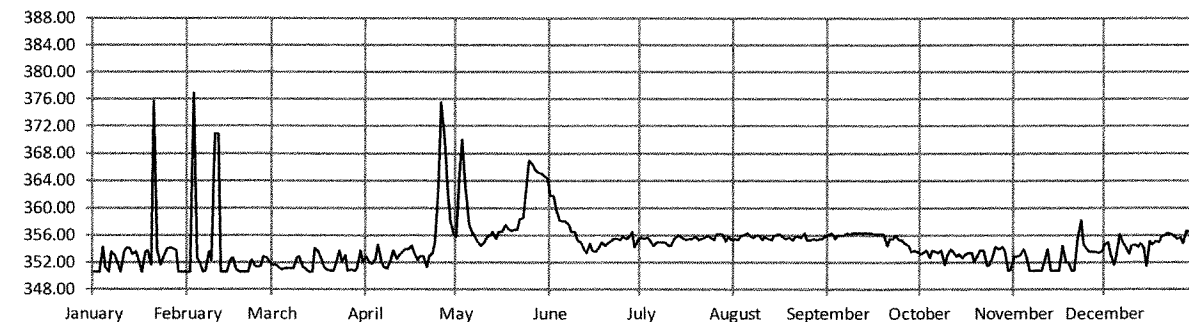
DAILY STAGES FOR JANUARY THRU DECEMBER 2006



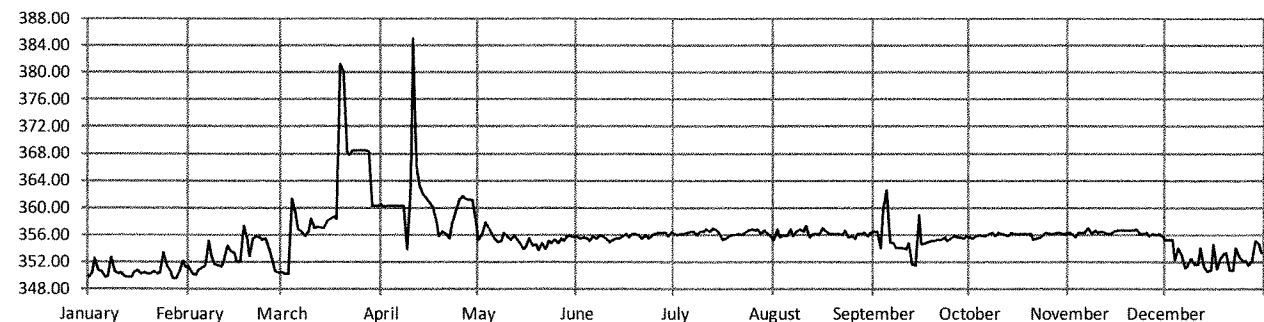
DAILY STAGES FOR JANUARY THRU DECEMBER 2010



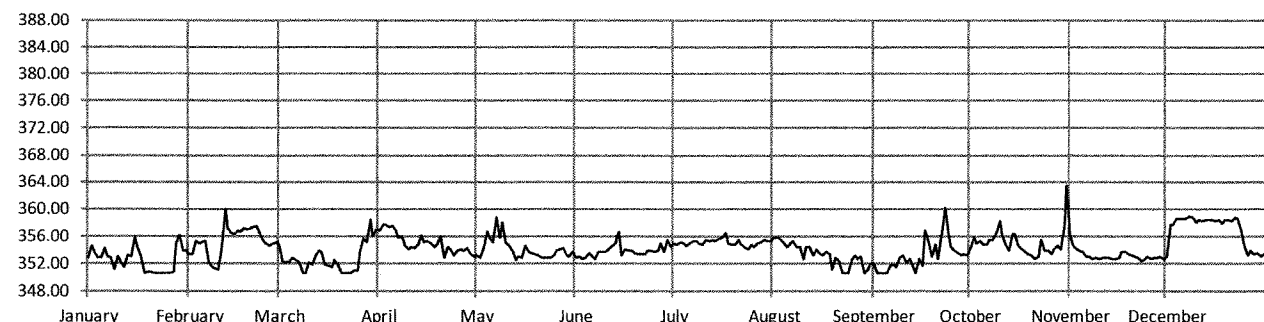
DAILY STAGES FOR JANUARY THRU DECEMBER 2007



DAILY STAGES FOR JANUARY THRU DECEMBER 2011



DAILY STAGES FOR JANUARY THRU DECEMBER 2008



DAILY STAGES FOR JANUARY THRU DECEMBER 2009

This Stage Hydrograph was obtained from the United States Army Corps of Engineers and was plotted by the Arkansas State Highway and Transportation Department.

Gage No. USGS 07057370
Location: Latitude 36°13'25", Longitude 92°18'00", White River at Highway 341 bridge.

NOTE: Elevations have been adjusted to represent those at the mouth of the North Fork of the White River.

This hydrograph is provided for information only.



BRIDGE ENGINEER

HYDROGRAPH - NORTH FORK RIVER
STR. & APPRS. (NORFORK) (S)
BAXTER COUNTY

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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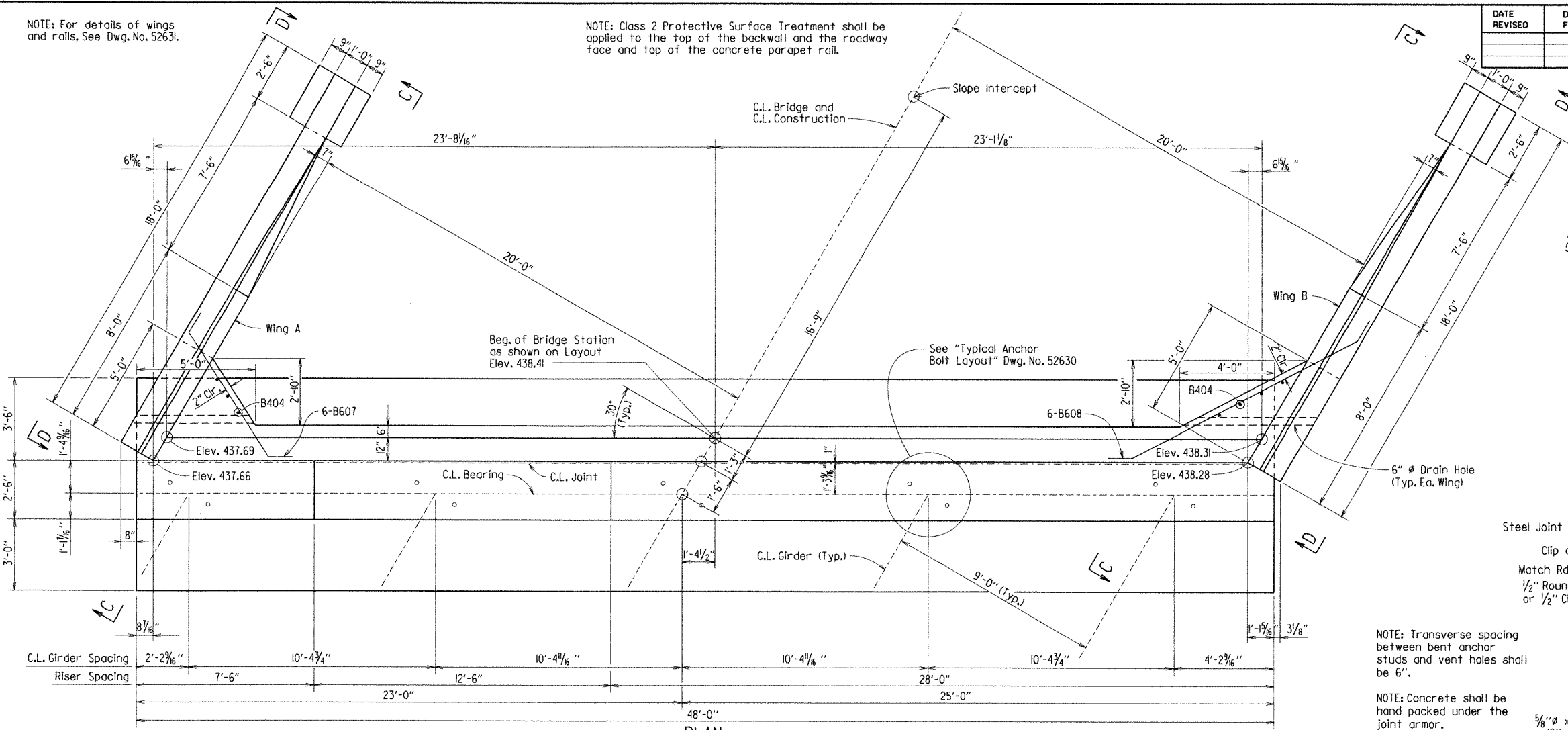
CHECKED BY: JGT DATE: 7/6/12 SCALE: NONE

DESIGNED BY: DATE: BRIDGE NO. 07248 DRAWING NO. 52628

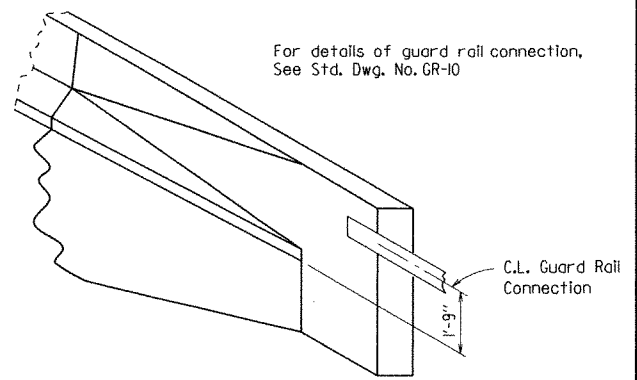
NOTE: For details of wings and rails, See Dwg. No. 52631.

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

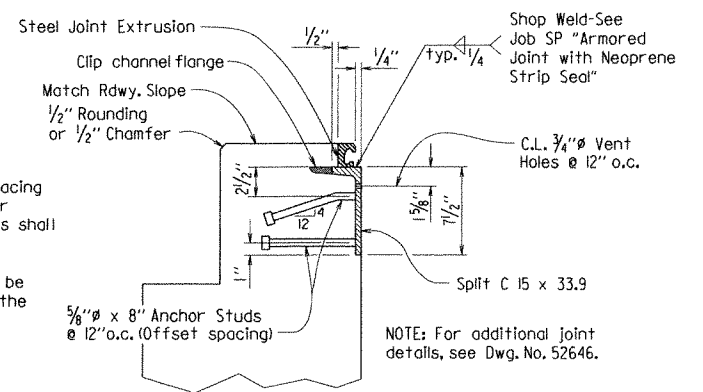
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				6	ARK.		33	106
				JOB NO.	090281		33	106
				07248 - BENT I DETAILS -		52629		



PLAN
3/8" = 1'-0"



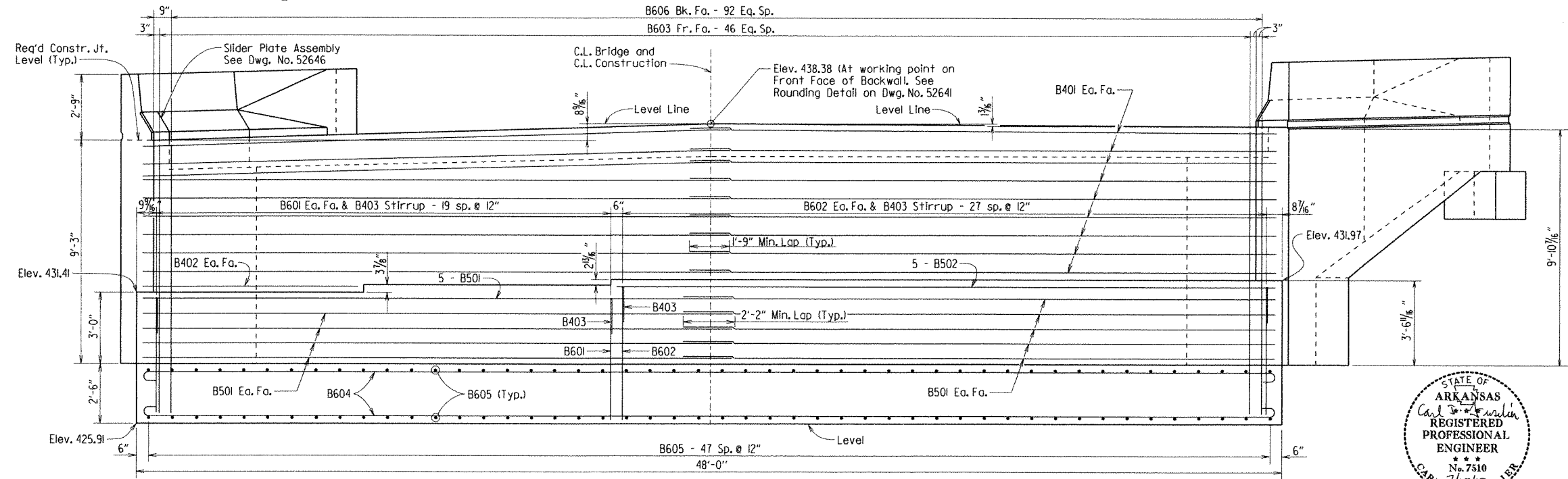
THREE DIMENSIONAL VIEW OF RAIL
No Scale



DETAIL Z
No Scale

NOTE: Transverse spacing between bent anchor studs and vent holes shall be 6".
NOTE: Concrete shall be hand packed under the joint armor.

NOTE: The profile of the split channel in the backwall shall be established based on the vertical curve in conjunction with the skew.



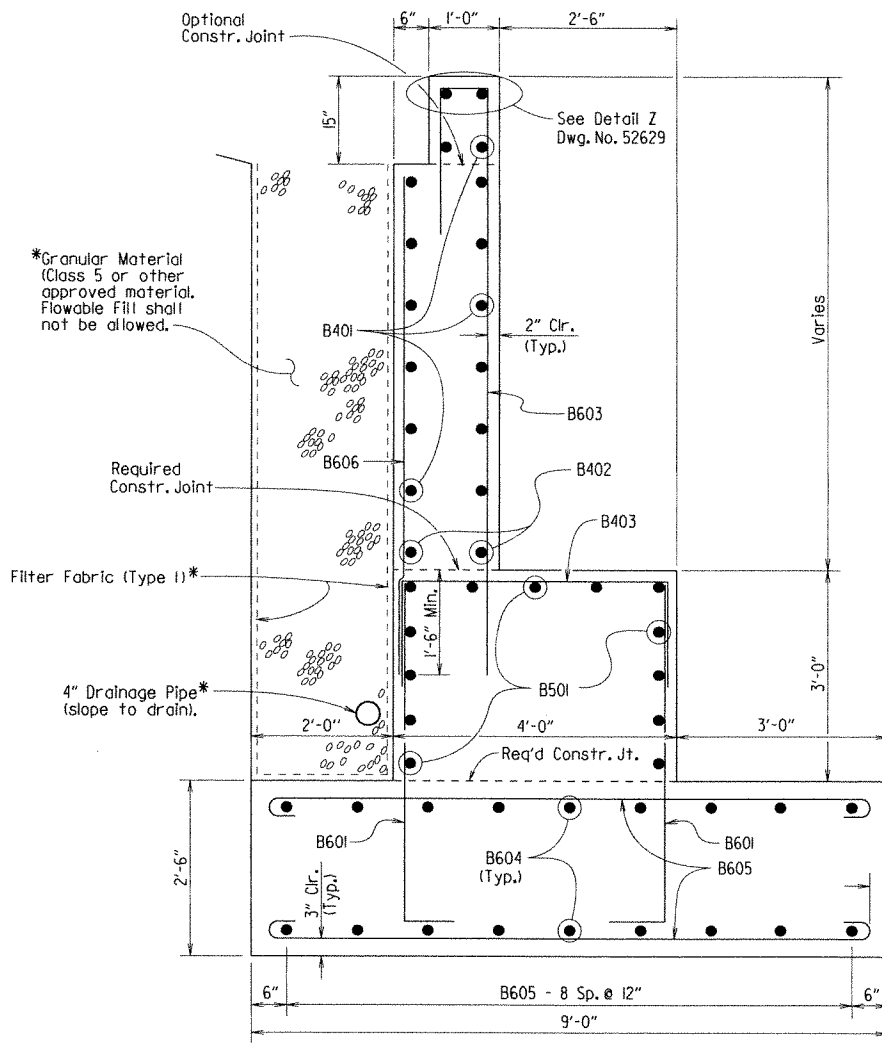
ELEVATION
Looking Back
3/8" = 1'-0"



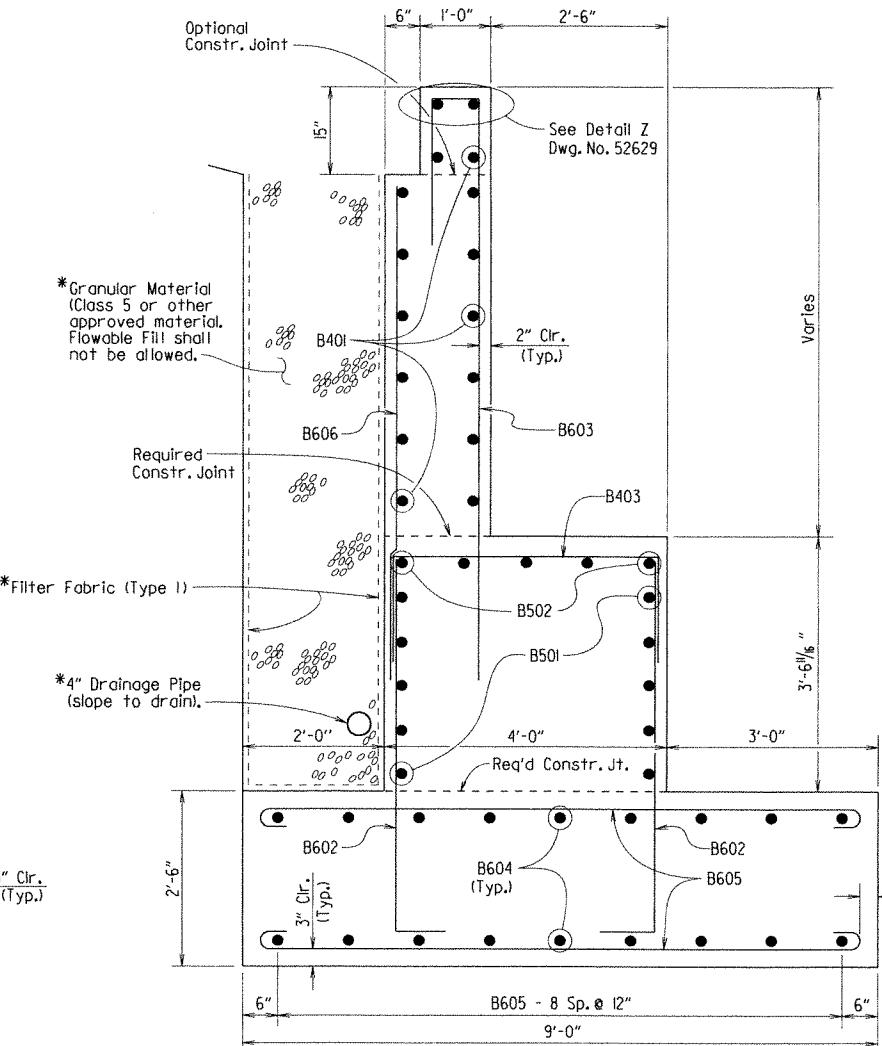
SHEET 1 OF 3
DETAILS OF BENT I
NORTH FORK RIVER
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
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DESIGNED BY: DBS DATE: 02/12
BRIDGE NO. 07248 DRAWING NO. 52629

PRINT DATE: 17-JUL-2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281	34	106	
				① 07248 - BENT I DETAILS - 52630				

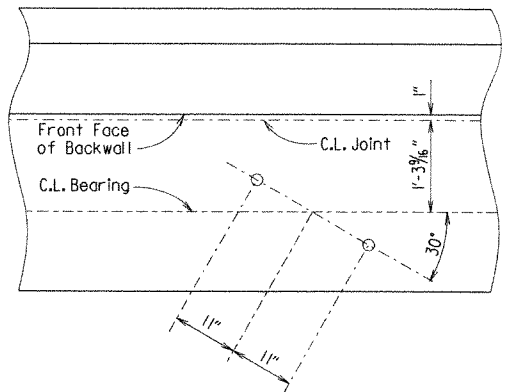


SECTION B-B
3/4"=1'-0"



SECTION A-A
3/4"=1'-0"

* NOTE: For additional details of pipe underdrain see Std. Dwg. PU-1 and Section 611 of the Standard Specifications. Pipe underdrains, outlet protectors, granular materials, drain pipe, and filter fabric will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Unclassified Excavation". Locate holes in wings to miss reinforcing steel.



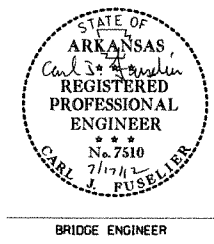
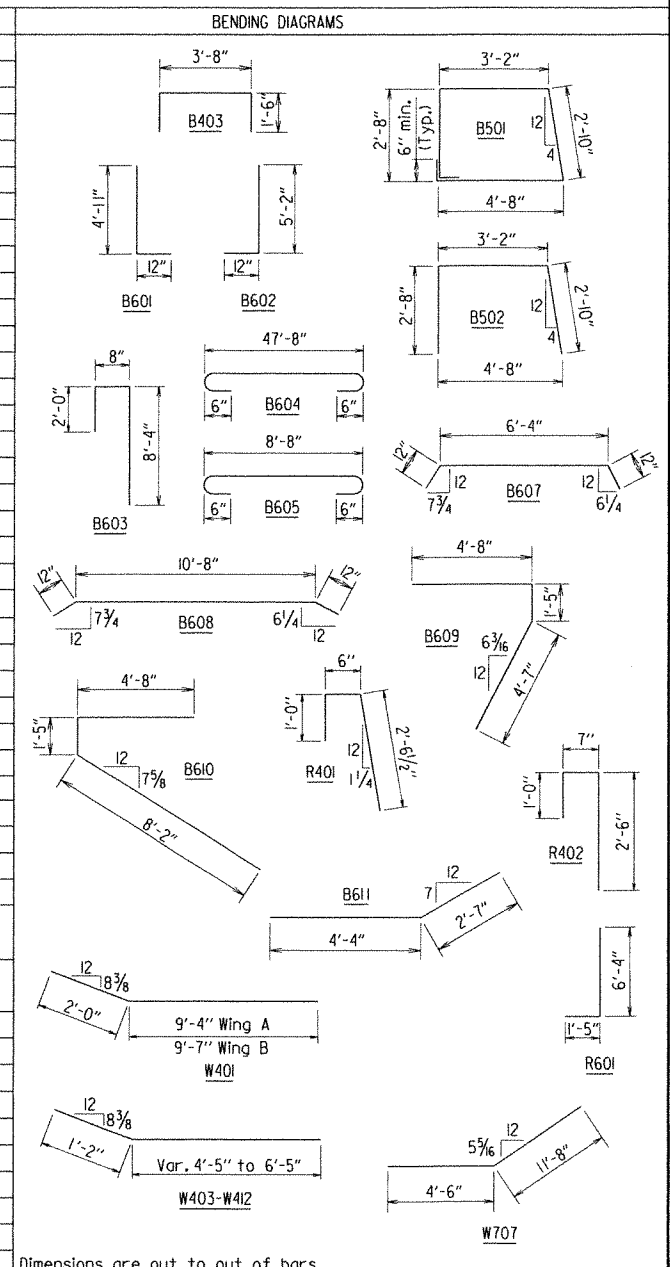
TYPICAL ANCHOR BOLT LAYOUT
NO SCALE

GENERAL NOTES

- All concrete shall be Class "S" with a minimum 28 day compressive strength $f'c = 3,500$ psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.
- All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (Yield Strength = 60,000 psi.).
- All structural steel shall be AASHTO M270, Gr. 50W. Structural steel in backwall shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".
- Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.
- 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 deck pour has been made. Refer to the "Expansion Device Installation" note, see Dwg. 52646.
- Concrete shall be hand packed under the joint armor.
- For additional information see Layout.

BAR LIST

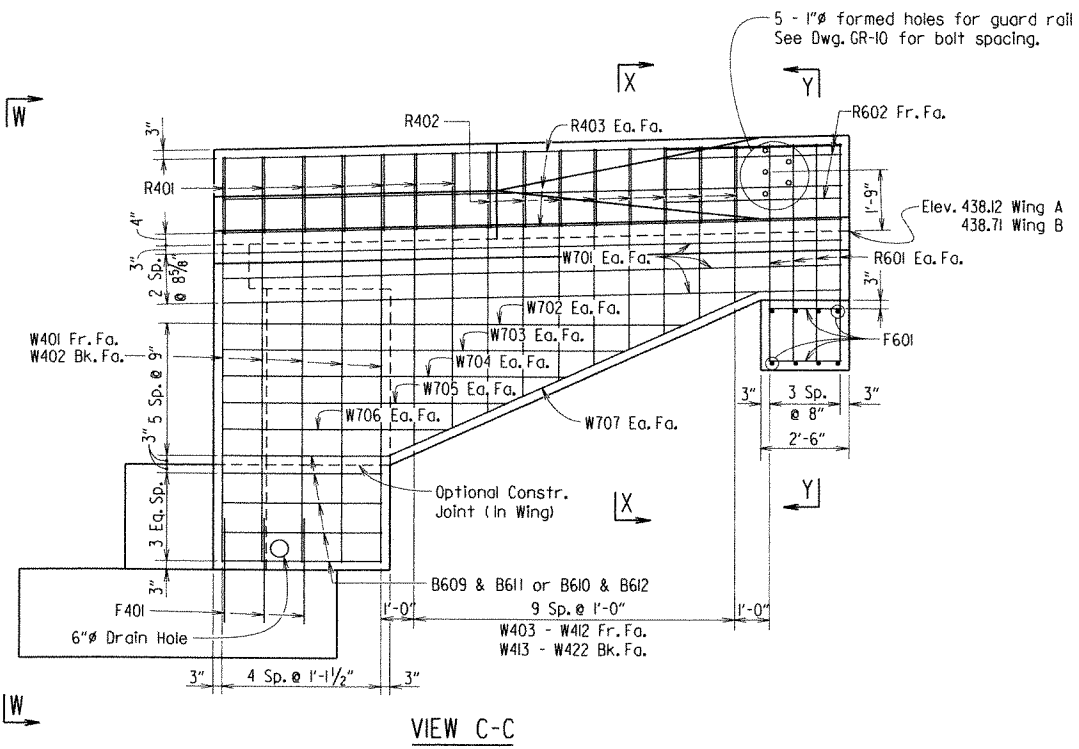
MARK	NO. REQ'D.	LENGTH	P.D.	
B401	36	24'-8"	Str.	
B402	2	9'-0"	Str.	
B403	48	6'-6"	2"	
B404	7	9'-6"	Str.	
B501	23	25'-0"	Str.	
B502	5	27'-8"	Str.	
B601	40	5'-10"	4 1/2"	
B602	56	6'-1"	4 1/2"	
B603	47	10'-9"	4 1/2"	
B604	18	49'-0"	4 1/2"	
B605	96	10'-0"	4 1/2"	
B606	93	7'-1"	Str.	
B607	6	8'-2"	4 1/2"	
B608	6	12'-6"	4 1/2"	
B609	5	10'-5"	4 1/2"	
B610	5	14'-0"	4 1/2"	
B611	4	7'-1"	4 1/2"	
B612	4	6'-10"	Str.	
R401	14	3'-11"	2"	
R402	16	4'-0"	2"	
R403	12	17'-6"	Str.	
R601	16	6'-3"	4 1/2"	
R602	6	5'-0"	Str.	
F401	8	3'-0"	Str.	
F601	28	2'-0"	Str.	
W401	10	11'-4"	11'-7"	2"
W402	10	11'-8"	11'-11"	Str.
W403 - W412	2 Each	Var. 4'-11" to 8'-9"	2"	
W413 - W422	2 Each	Var. 4'-7" to 8'-5"	Str.	
W701	12	17'-8"	Str.	
W702	4	13'-1"	Str.	
W703	4	11'-5"	Str.	
W704	4	9'-9"	Str.	
W705	4	8'-1"	Str.	
W706	4	6'-5"	Str.	
W707	4	16'-4"	5 1/4"	



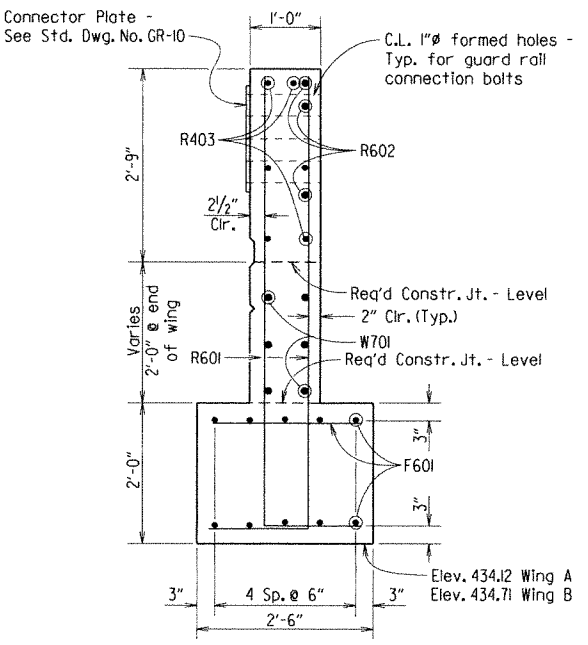
SHEET 2 OF 3
 DETAILS OF BENT I
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
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 CHECKED BY: JGT DATE: 7/12/12 SCALE: 3/4" = 1'-0" or as shown
 DESIGNED BY: DBJ DATE: 02/12
 BRIDGE NO. 07248 DRAWING NO. 52630

PRINT DATE: 17-JUL-2012

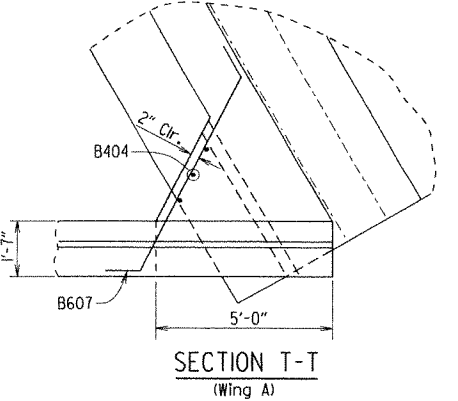
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				6	ARK.			
				JOB NO.	090281		35	106
				07248 - BENT I DETAILS -		52631		



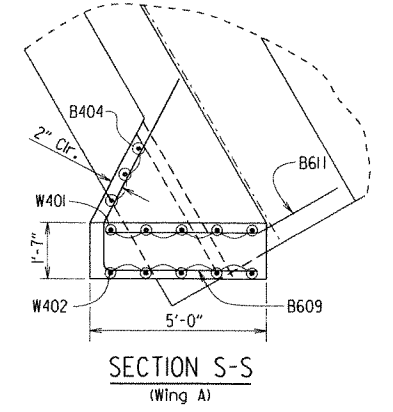
VIEW C-C



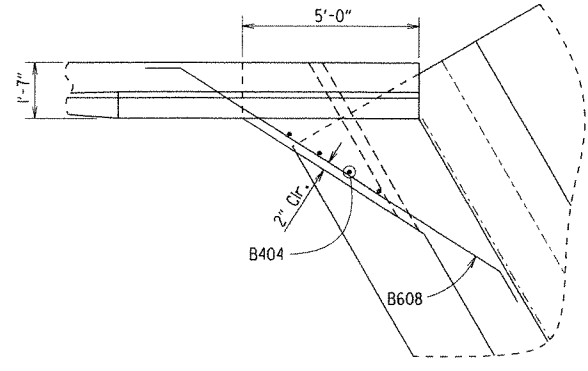
SECTION Y-Y
Scale: 3/4" = 1'-0"



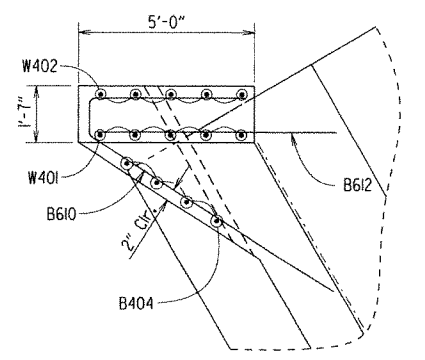
SECTION T-T
(Wing A)



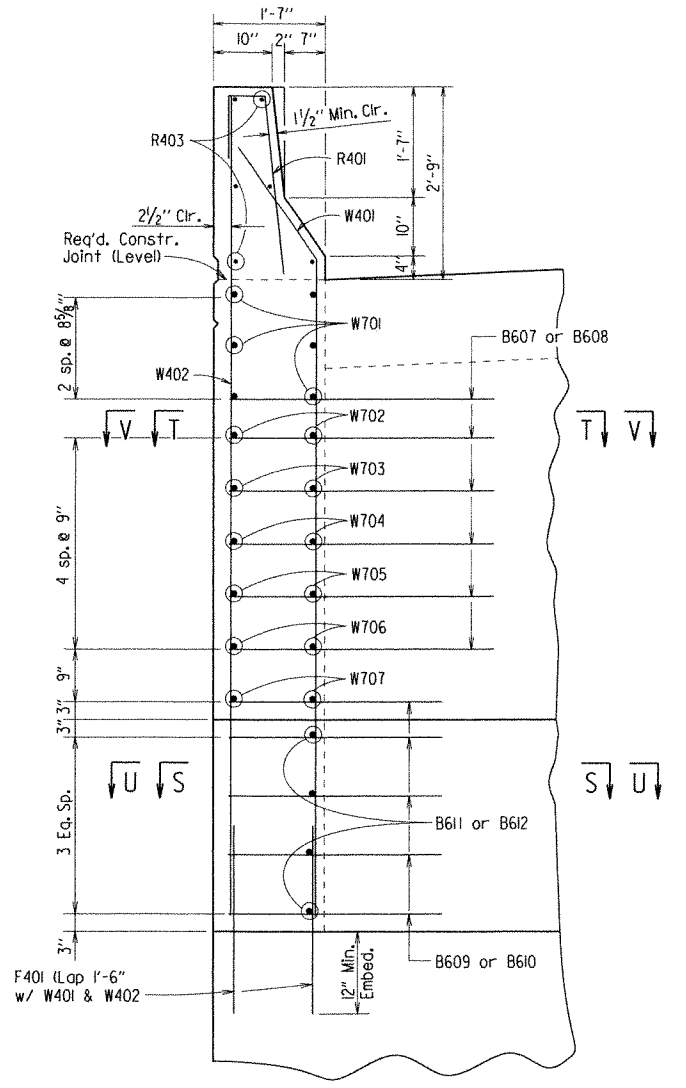
SECTION S-S
(Wing A)



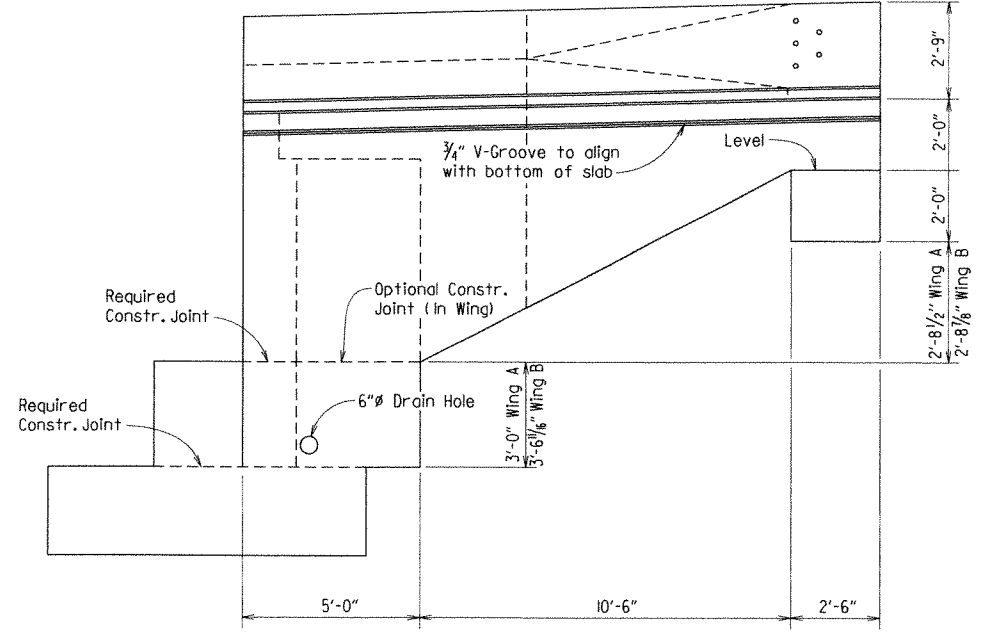
SECTION V-V
(Wing B)



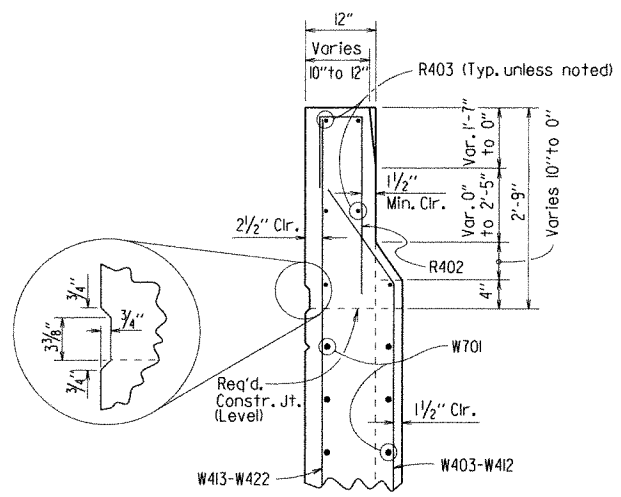
SECTION U-U
(Wing B)



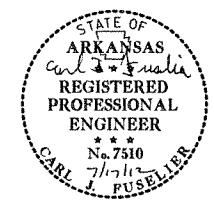
VIEW W-W
Scale: 3/4" = 1'-0"



VIEW D-D



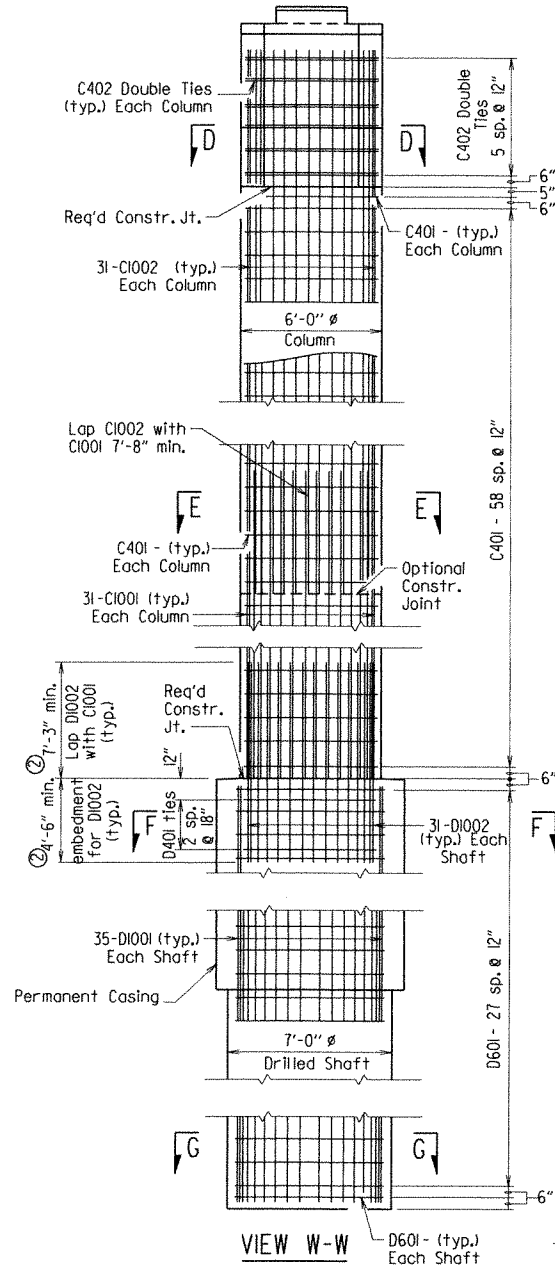
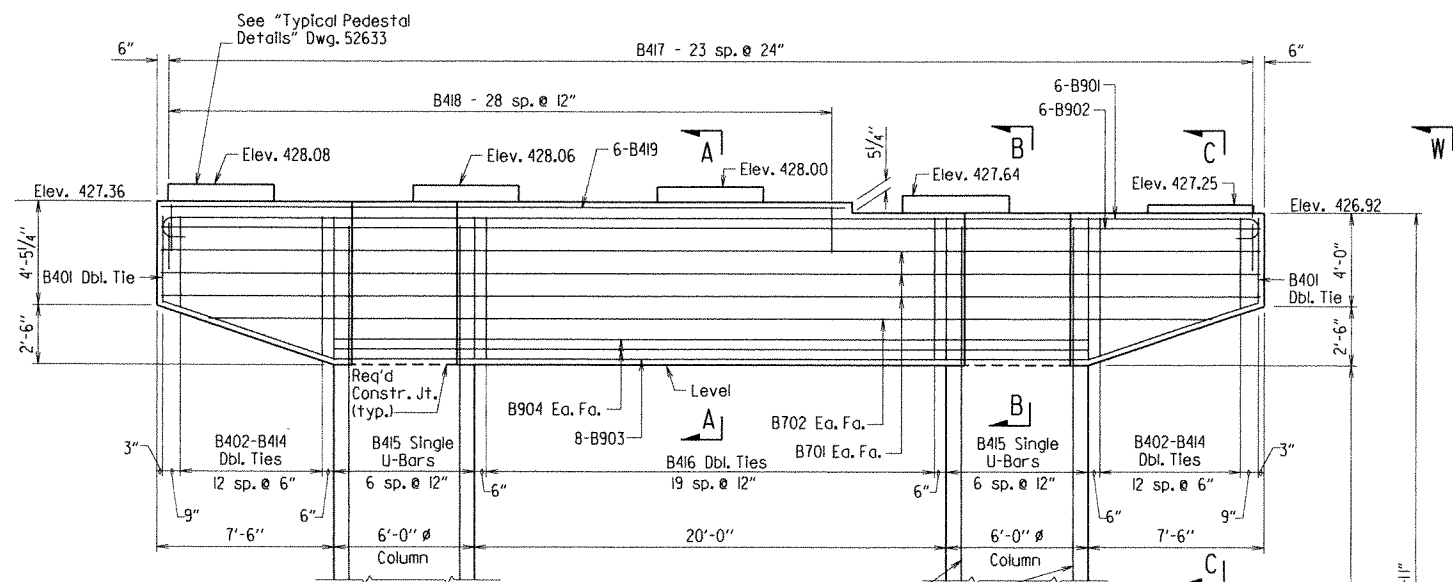
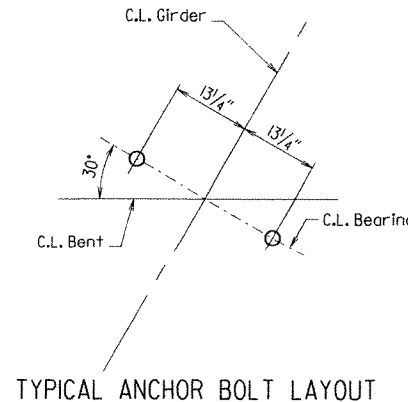
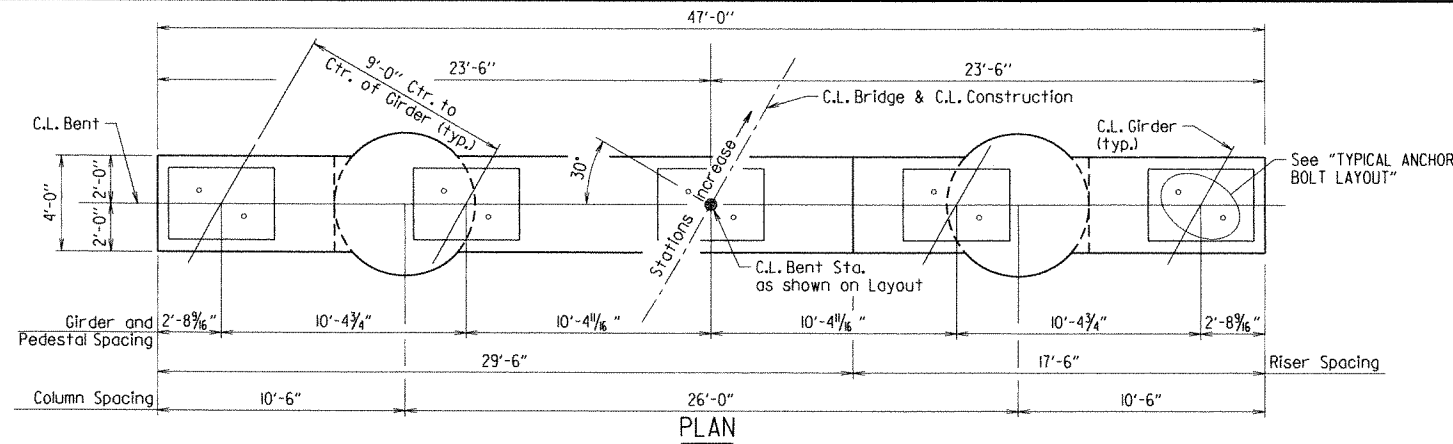
SECTION X-X
Scale: 3/4" = 1'-0"



SHEET 3 OF 3
 DETAILS OF BENT I
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
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 DESIGNED BY: DB DATE: 02/12
 BRIDGE NO. 07248 DRAWING NO. 52631

PRINT DATE: 17-JUL-2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		36	106
							JOB NO. 090281	
							07248 - INT. BENTS - 52632	



GENERAL NOTES

Concrete in the cap and column shall be Class S with a minimum 28 day compressive strength, $f'_c = 3500$ psi., and shall be poured in the dry. Concrete in the drilled shaft shall be Class S as modified by SP Job 090281 "Drilled Shaft Foundations". All exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

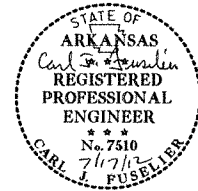
Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

Drilled shafts shall conform to SP Job 090281 "Drilled Shaft Foundations".

For all "Sections", see Dwg. No. 52633.

- Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. The upper 10 feet of casing shall be painted. See Special Provision Job 090281 "Drilled Shaft Foundations". Permanent casings shall not extend below top of competent rock.
- The column reinforcing cage, consisting of bars D401 and D1002, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.
- Minimum penetration into competent rock below permanent casing.

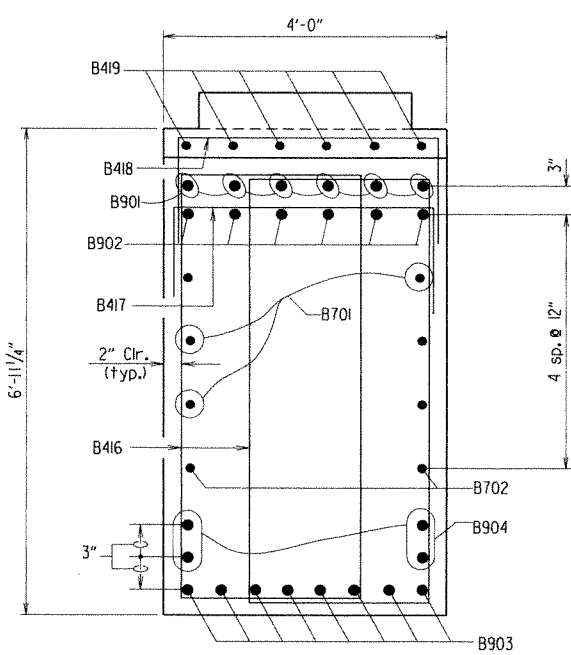


SHEET 1 OF 2
DETAILS OF BENT 2
NORTH FORK RIVER
 ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

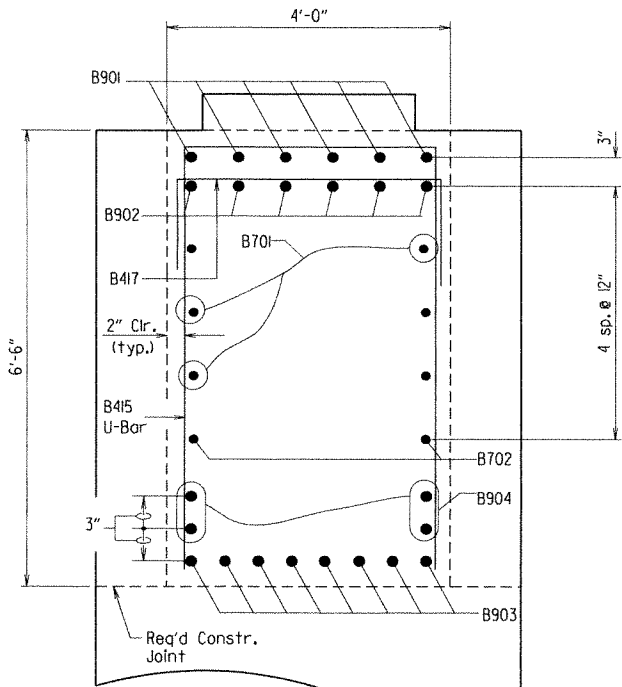
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 BRIDGE NO. 07248 DRAWING NO. 52632

PRINT DATE: 17-JUL-2012

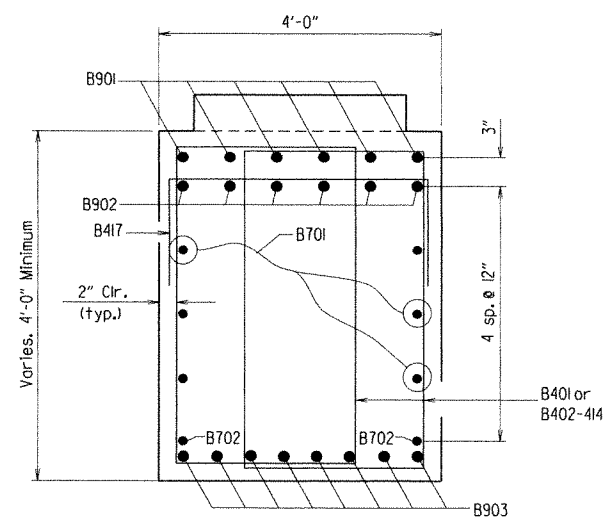
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				6	ARK.			
				JOB NO.	090281	37	106	
				07248 - INT. BENTS - 52633				



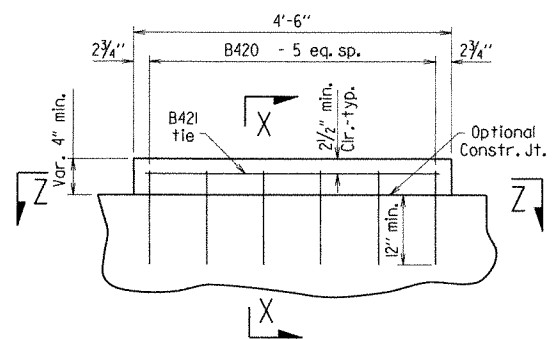
SECTION A-A
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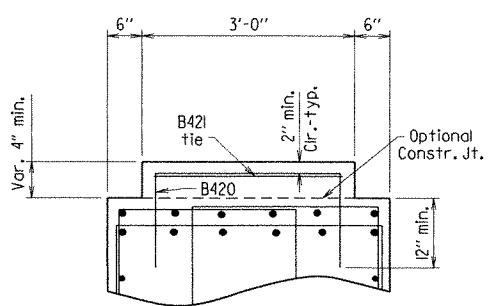
SECTION B-B
Scale: 3/4" = 1'-0"



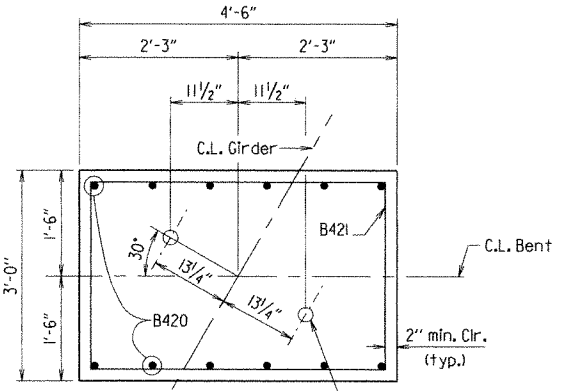
SECTION C-C
Scale: 3/4" = 1'-0"



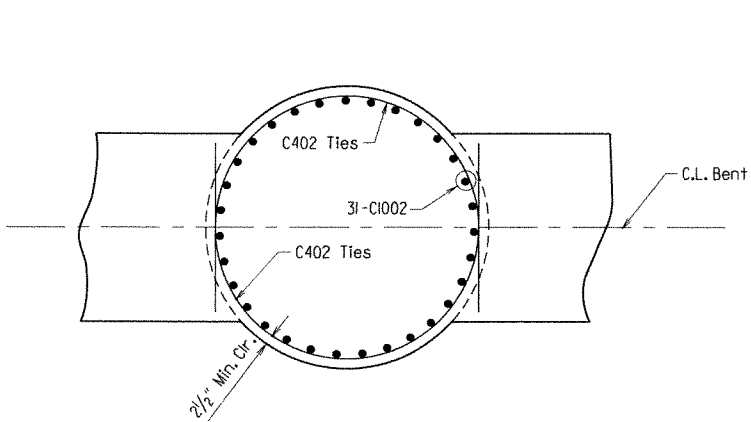
TYPICAL PEDESTAL DETAILS



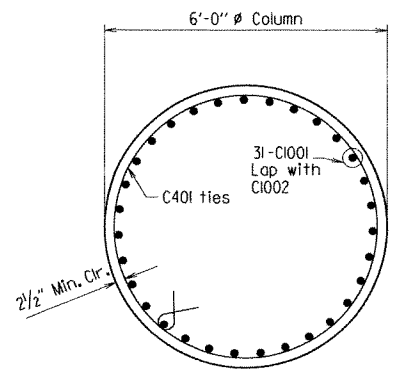
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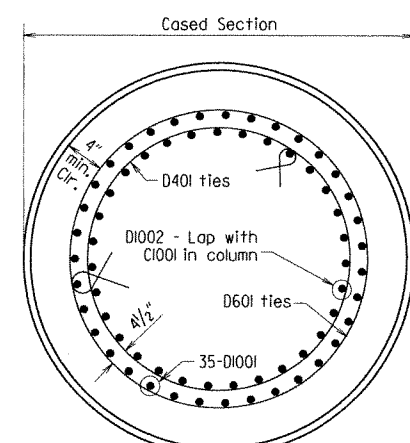
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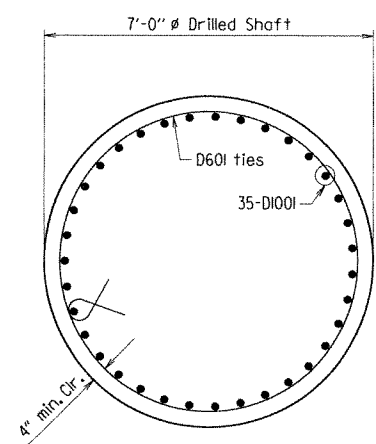
SECTION D-D
Scale: 1/2" = 1'-0"



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



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

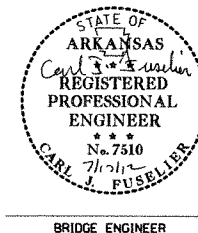


SECTION G-G
Scale: 1/2" = 1'-0"

BAR LIST				BENDING DIAGRAMS	
MARK	NO. REQ'D.	LENGTH	P.D.	Dimensions are out to out of bars.	
B401	4	13'-2"	2"		
B402-B414	4 each	Var. 13'-8" to 17'-8"	2"		
B415	14	15'-10"	2"		
B416	40	18'-0"	2"		
B417	24	6'-6"	2"		
B418	29	6'-6"	2"		
B419	6	29'-0"	Str.		
B420	30	6'-5"	2"		
B421	5	14'-0"	2"		
B701	6	46'-8"	Str.		
B702	2	42'-7"	Str.		
B901	6	49'-2"	9"		
B902	6	46'-8"	Str.		
B903	8	47'-4"	9"		
B904	4	32'-0"	Str.		
C401	120	18'-8"	3"		
C402	24	12'-4"	3"		
C1001	62	37'-10"	Str.		
C1002	62	35'-6"	Str.		
D401	6	18'-8"	3"		
D601	58	21'-6"	4 1/2"		
D1001	70	29'-0"	Str.		
D1002	62	13'-0"	Str.		

④ D401, D601, D1001, and D1002 Bars are non-pay items and are subsidiary to SP Job 090281 "Drilled Shaft Foundations"

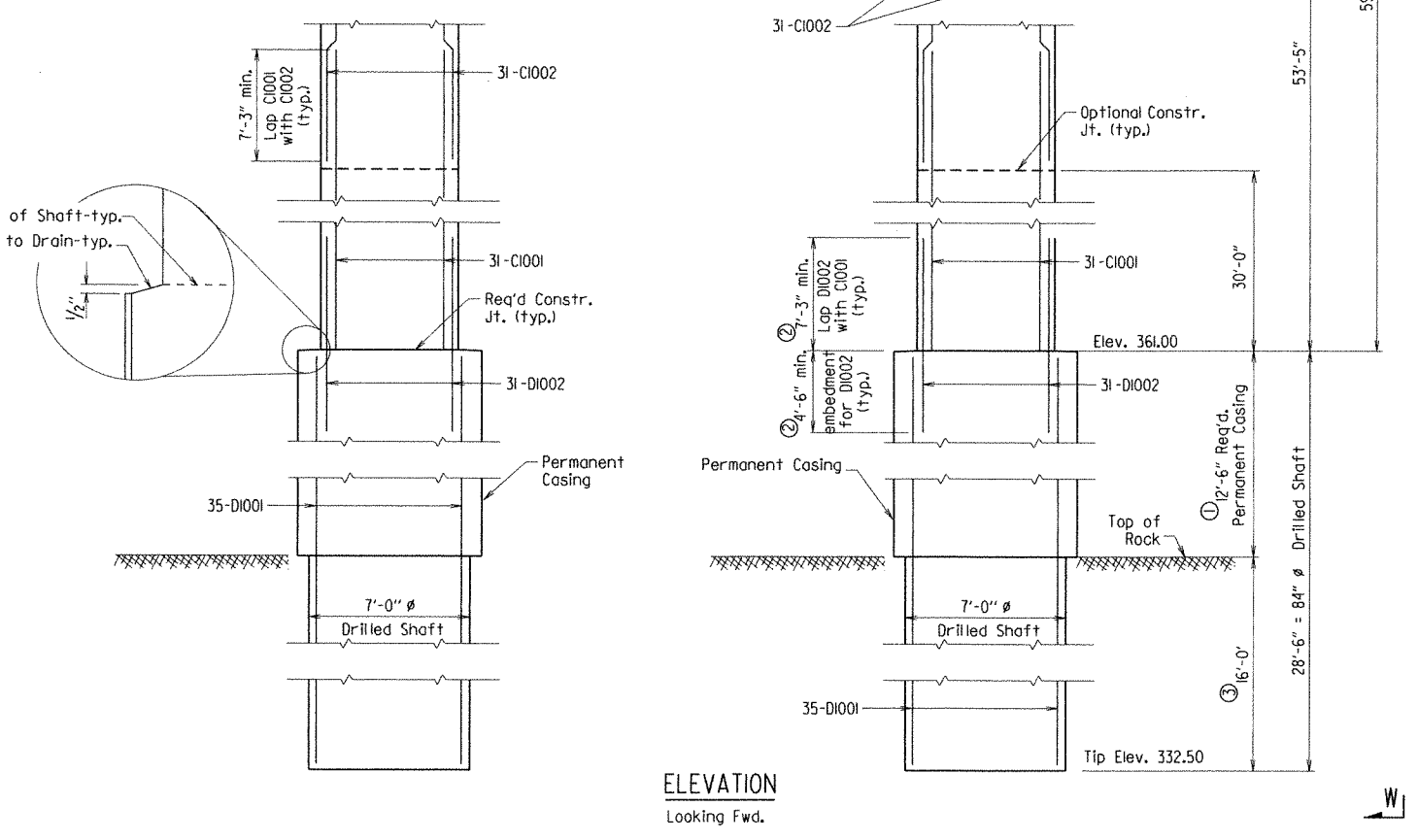
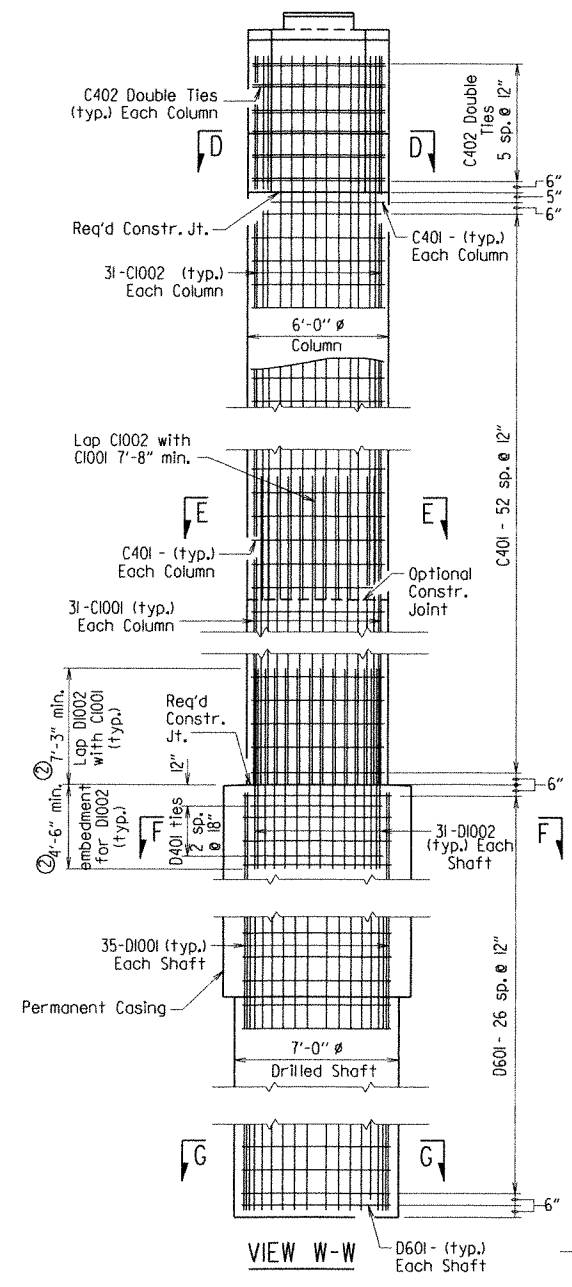
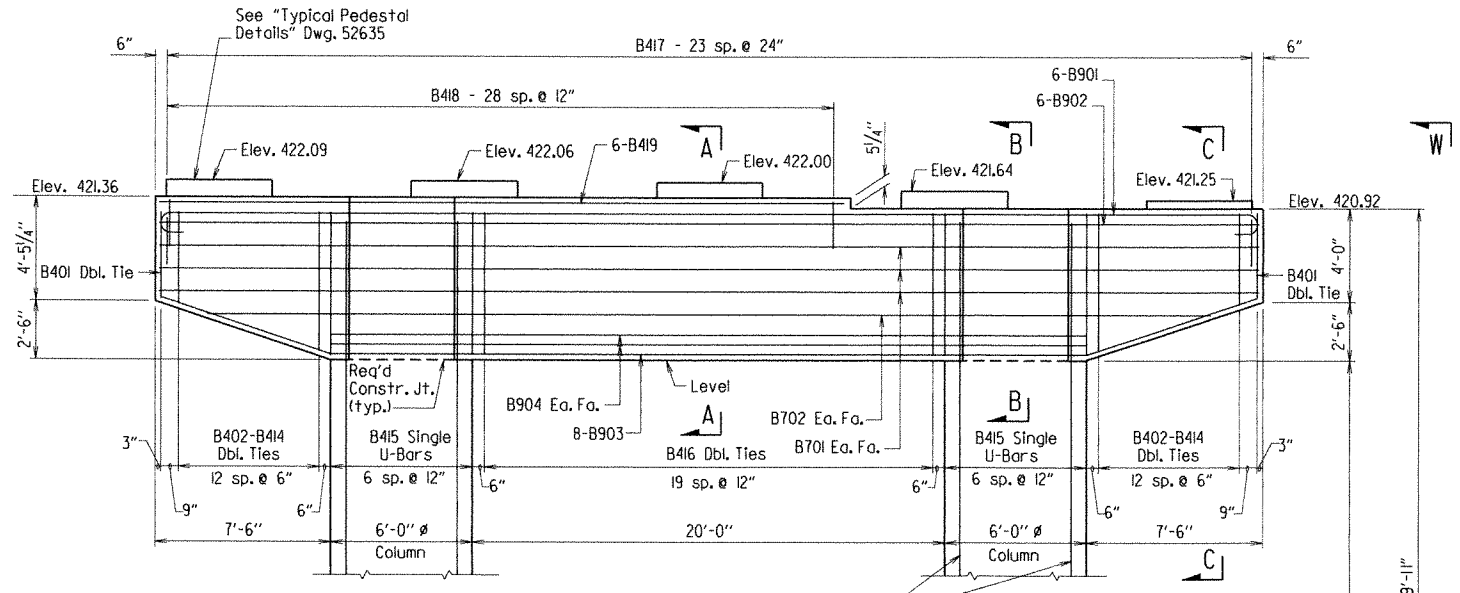
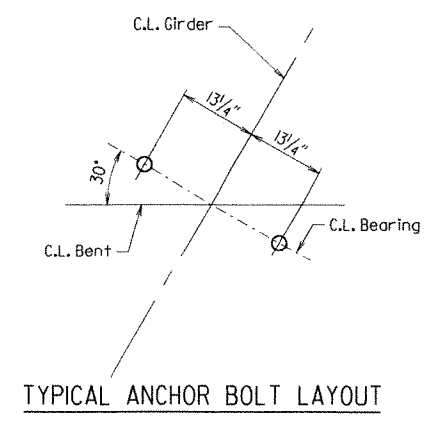
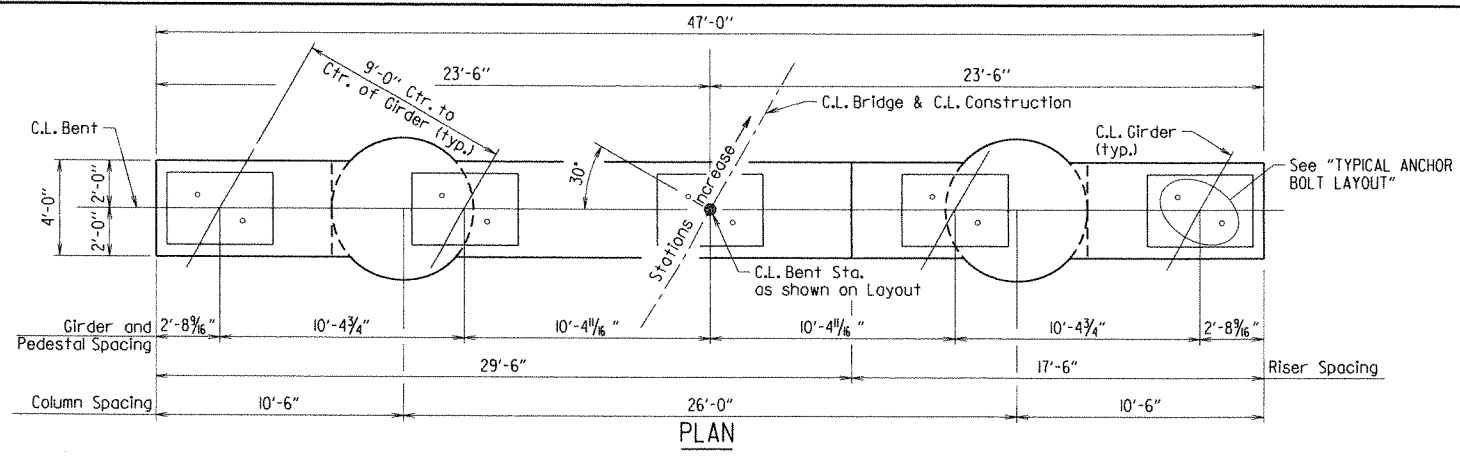
⑤ The Contractor may substitute an approved mechanical rebar splice in lieu of 135° hooks for D601 Bars. Mechanical Couplers shall be from the Qualified Products List, and shall maintain minimum clearances shown. Their payment is subsidiary to the item "Drilled Shaft (84" Dia.)". The couplers shall develop at least 125% of the specified yield strength of the bar.



SHEET 2 OF 2
 DETAILS OF BENT 2
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: LJB DATE: 2/10/11 FILENAME: b090281x1.b2.dgn
 CHECKED BY: PBJ DATE: 07/2/12 SCALE: AS NOTED
 DESIGNED BY: DBS DATE: 01/12
 BRIDGE NO. 07248 DRAWING NO. 52633

PRINT DATE: 17-JUL-2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO. 090281	38 106
① 07248 - INT. BENTS - 52634								



GENERAL NOTES

Concrete in the cap and column shall be Class S with a minimum 28 day compressive strength, $f'_c = 3500$ psi., and shall be poured in the dry. Concrete in the drilled shaft shall be Class S as modified by SP Job 090281 "Drilled Shaft Foundations". All exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

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

For additional information see layout.

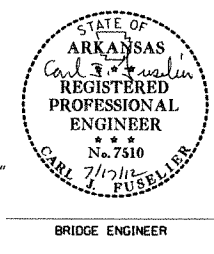
Drilled shafts shall conform to SP Job 090281 "Drilled Shaft Foundations".

For all "Sections", see Dwg. No. 52635.

- ① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. The upper 10 feet of casing shall be painted. See Special Provision Job 090281 "Drilled Shaft Foundations." Permanent casings shall not extend below top of competent rock.
- ② The column reinforcing cage, consisting of bars D401 and D1002, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.
- ③ Minimum penetration into competent rock below permanent casing.

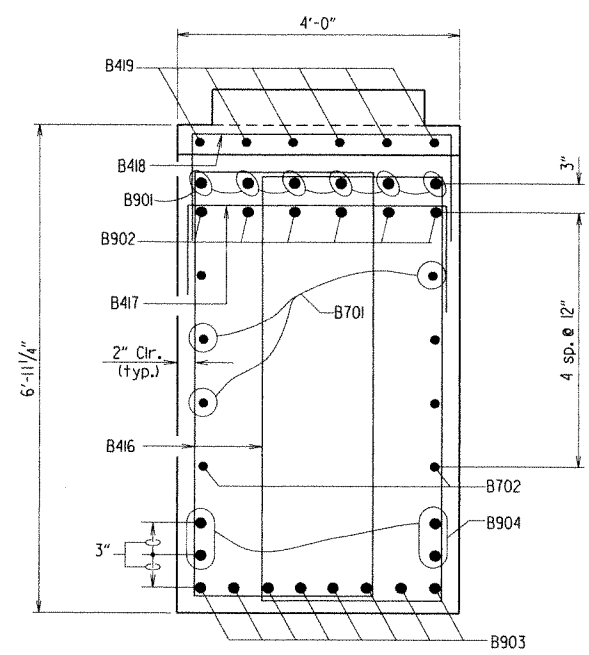
SHEET 1 OF 2
 DETAILS OF BENT 3
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 2/10/11 FILENAME: b090281x1.b3.dgn
 CHECKED BY: DBS DATE: 4/19/12 SCALE: 1/4" = 1'-0"
 DESIGNED BY: DBS DATE: 01/12
 BRIDGE NO. 07248 DRAWING NO. 52634

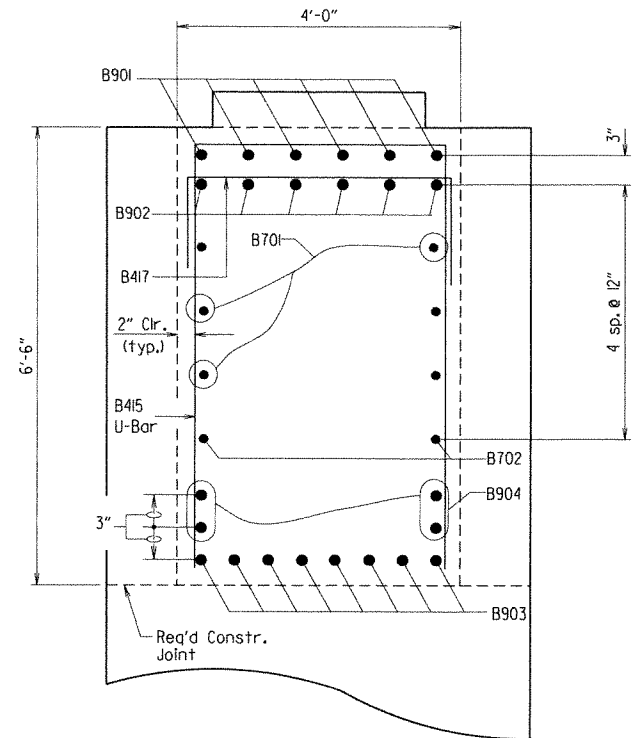


PRINT DATE: 17-JUL-2012

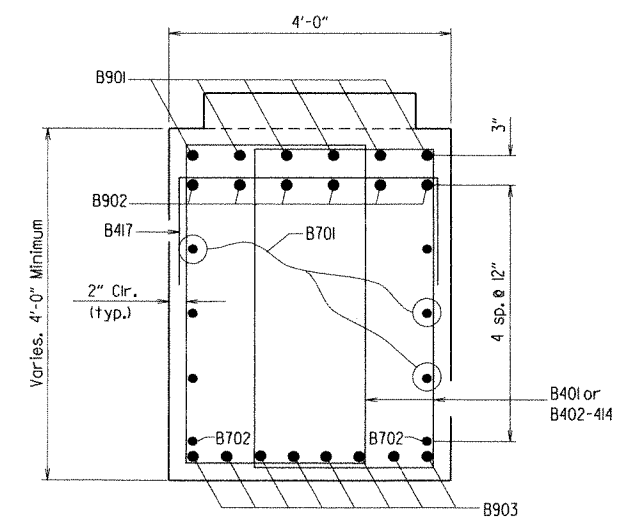
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		39	106
				07248 - INT. BENTS - 52635				



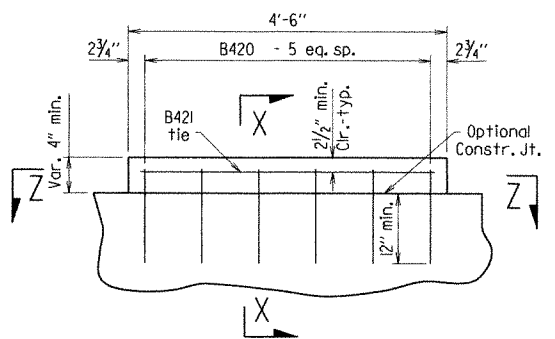
SECTION A-A
Scale: 3/4" = 1'-0"



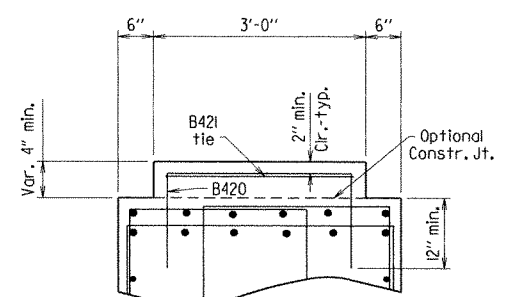
SECTION B-B
Scale: 3/4" = 1'-0"



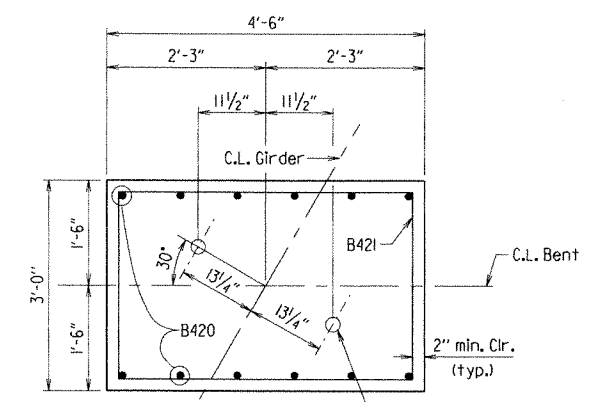
SECTION C-C
Scale: 3/4" = 1'-0"



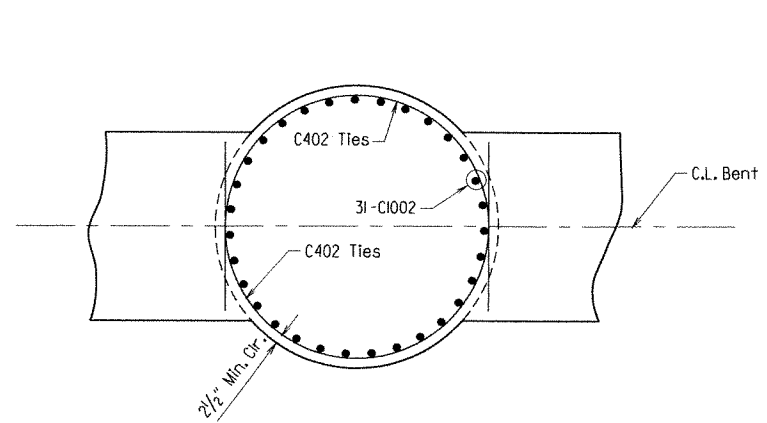
TYPICAL PEDESTAL DETAILS



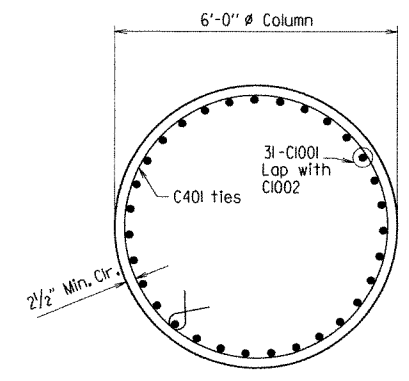
SECTION X-X
Scale: 3/4" = 1'-0"



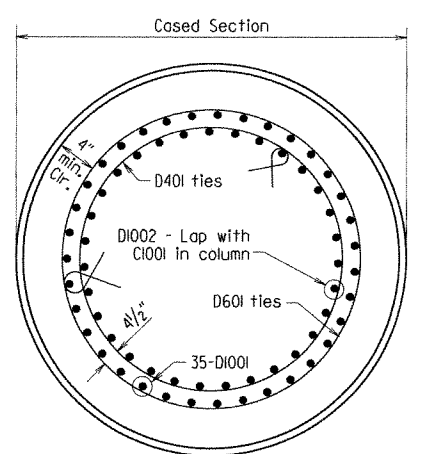
SECTION Z-Z
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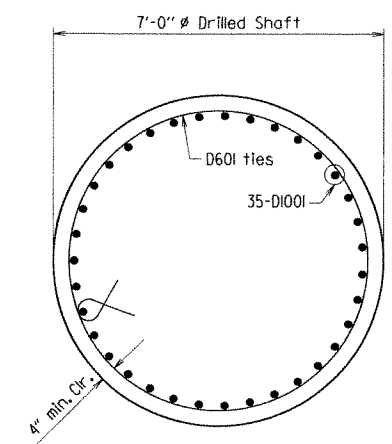
SECTION D-D
Scale: 1/2" = 1'-0"



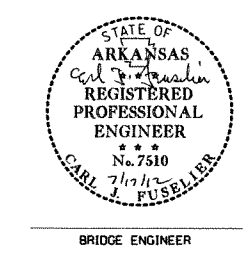
SECTION E-E
Scale: 1/2" = 1'-0"



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

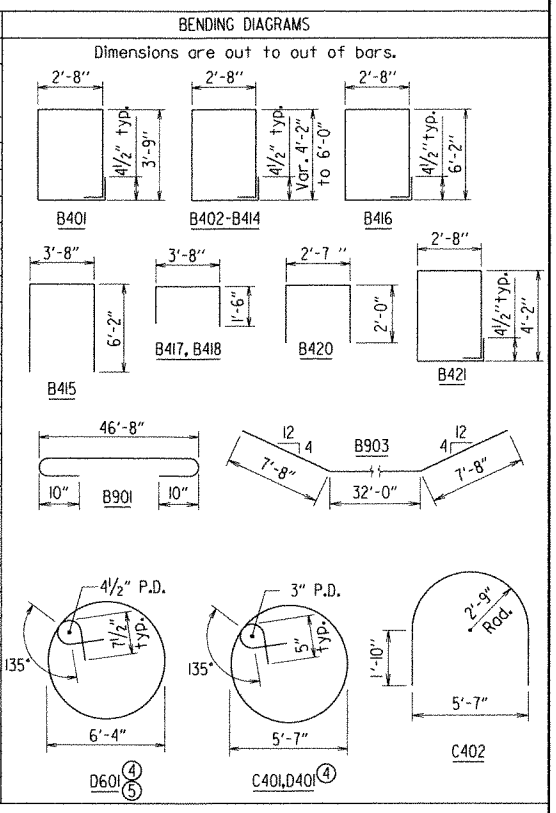


SECTION G-G
Scale: 1/2" = 1'-0"



BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	13'-2"	2"
B402-B414	4 each	Var. 13'-8" to 17'-8"	2"
B415	14	15'-10"	2"
B416	40	18'-0"	2"
B417	24	6'-6"	2"
B418	29	6'-6"	2"
B419	6	29'-0"	Str.
B420	30	6'-5"	2"
B421	5	14'-0"	2"
B701	6	46'-8"	Str.
B702	2	42'-7"	Str.
B901	6	49'-2"	9"
B902	6	46'-8"	Str.
B903	8	47'-4"	9"
B904	4	32'-0"	Str.
C401	108	18'-8"	3"
C402	24	12'-4"	3"
C1001	62	37'-10"	Str.
C1002	62	29'-6"	Str.
D401	6	18'-8"	3"
D601	56	2'-6"	4 1/2"
D1001	70	28'-0"	Str.
D1002	62	13'-0"	Str.

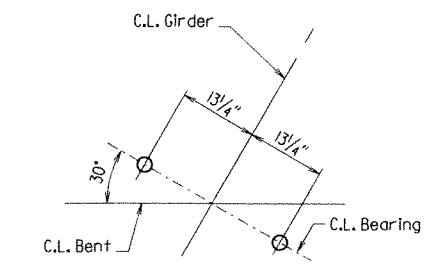
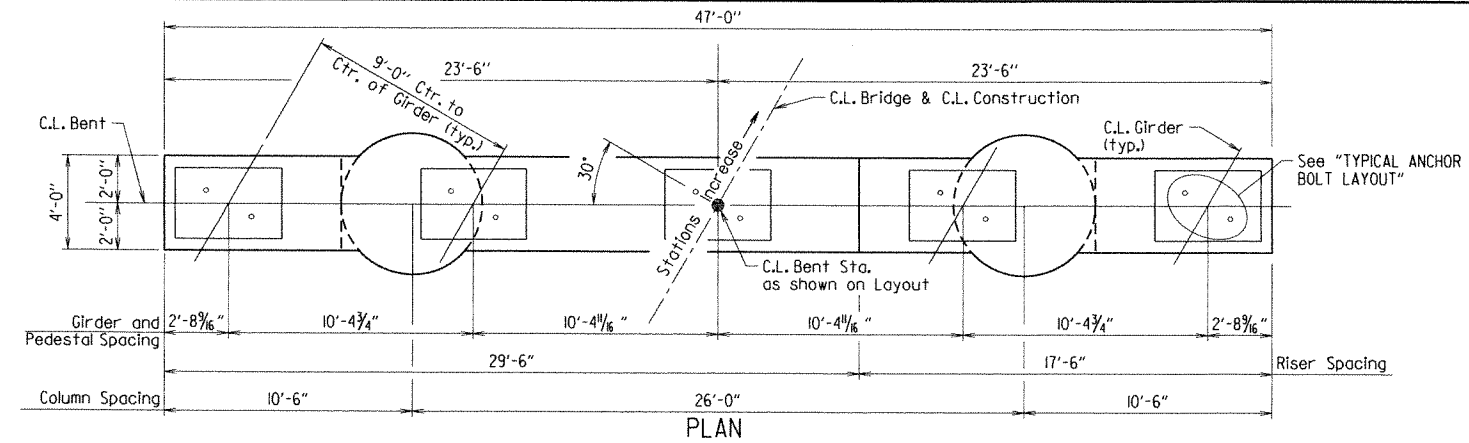


- ④ D401, D601, D1001, and D1002 Bars are non-pay items and are subsidiary to SP Job 090281 "Drilled Shaft Foundations"
- ⑤ The Contractor may substitute an approved mechanical rebar splice in lieu of 135° hooks for D601 Bars. Mechanical Couplers shall be from the Qualified Products List, and shall maintain minimum clearances shown. Their payment is subsidiary to the item "Drilled Shaft (84" Dia.)". The couplers shall develop at least 125% of the specified yield strength of the bar.

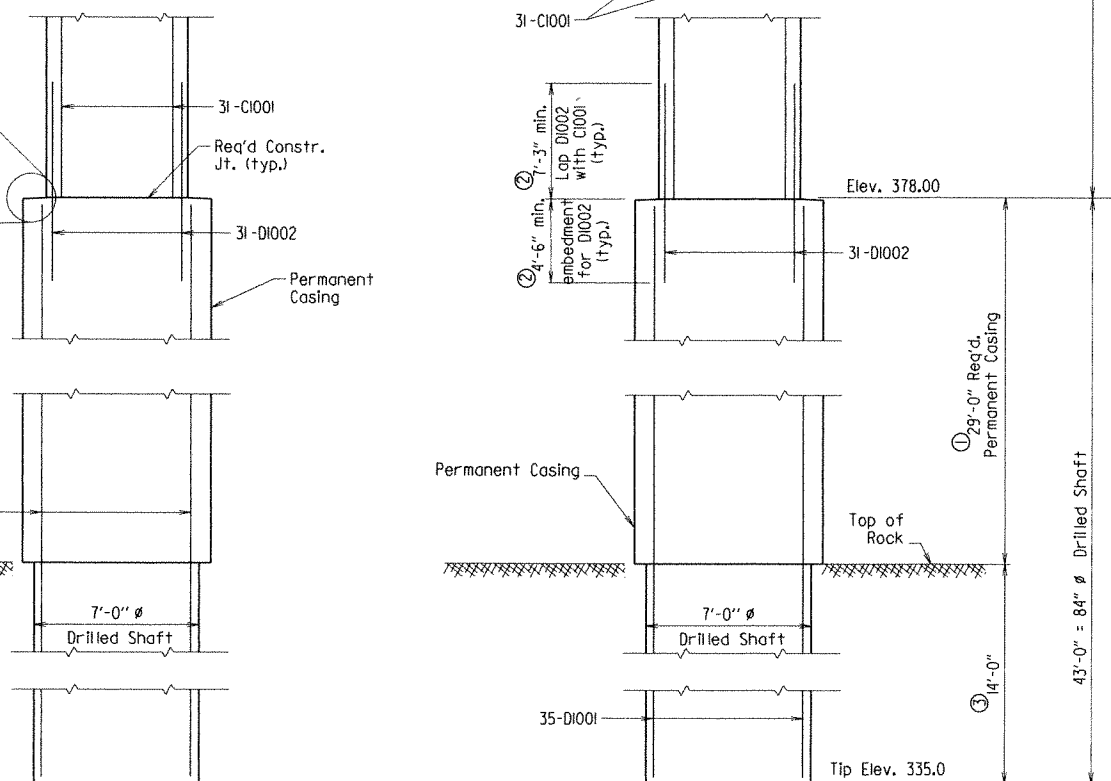
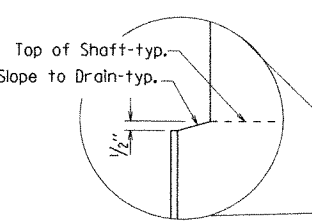
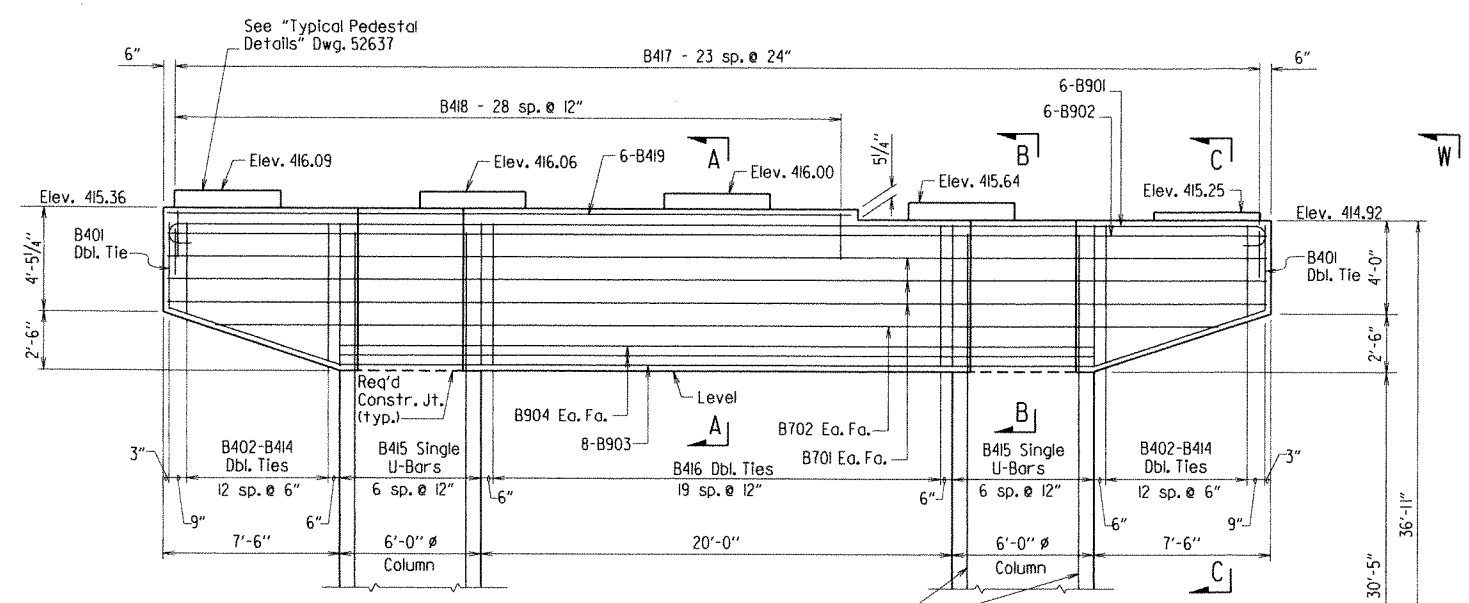
SHEET 2 OF 2
 DETAILS OF BENT 3
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: LJB DATE: 2/10/11 FILENAME: b090281x1.b3.dgn
 CHECKED BY: DBJ DATE: 7/12/12 SCALE: AS NOTED
 DESIGNED BY: DBJ DATE: 7/12/12
 BRIDGE NO. 07248 DRAWING NO. 52635

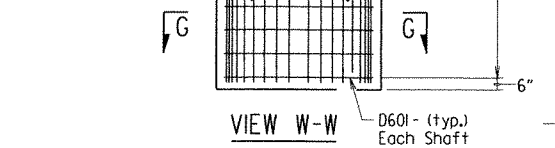
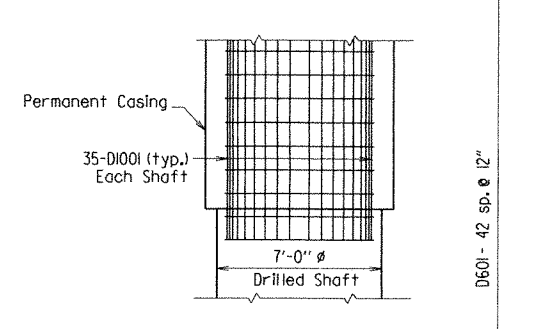
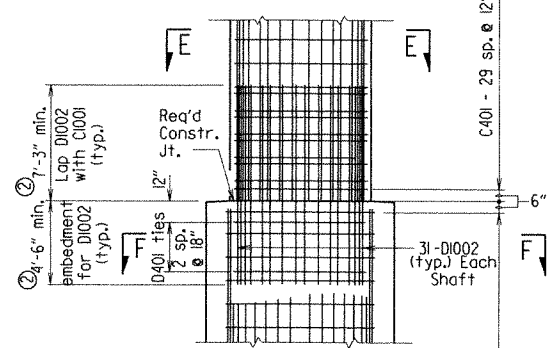
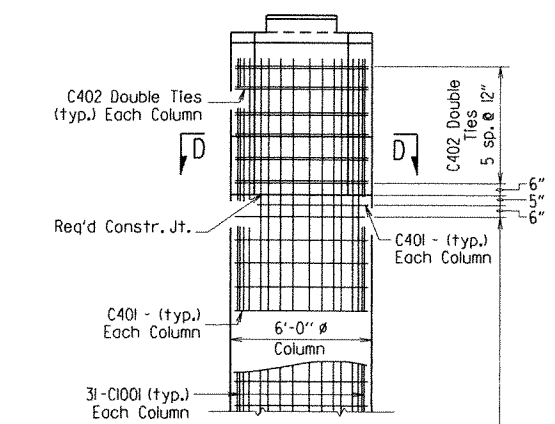
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090281	40	106
				07248 - INT. BENTS - 52636				



TYPICAL ANCHOR BOLT LAYOUT
No Scale



ELEVATION
Looking Fwd.



VIEW W-W
D601 - (typ.) Each Shaft

GENERAL NOTES

Concrete in the cap and column shall be Class S with a minimum 28 day compressive strength, $f'_c = 3500$ psi., and shall be poured in the dry. Concrete in the drilled shaft shall be Class S as modified by SP Job 090281 "Drilled Shaft Foundations". All exposed corners to be chamfered $3/4$ " unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60.

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

For additional information see layout.

Drilled shafts shall conform to SP Job 090281 "Drilled Shaft Foundations".

For all "Sections", see Dwg. No. 52637.

- Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job 090281 "Drilled Shaft Foundations". Permanent casings shall not extend below top of competent rock.
- The column reinforcing cage, consisting of bars D401 and D1002, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.
- Minimum penetration into competent rock below permanent casing.

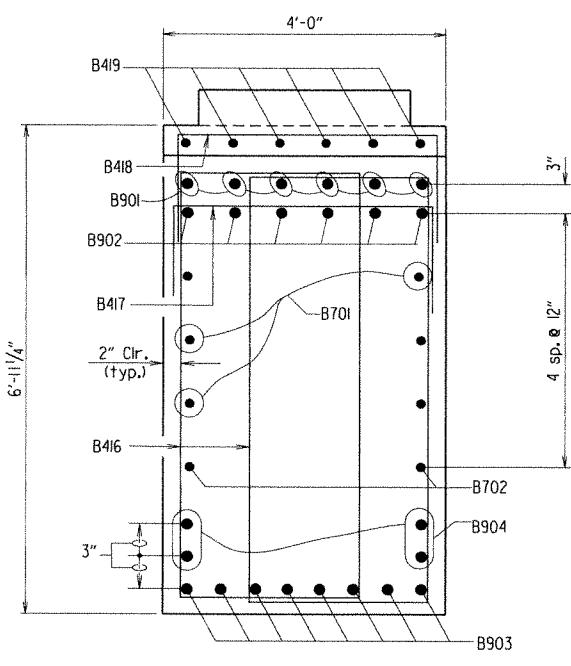


SHEET 1 OF 2
 DETAILS OF BENT 4
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

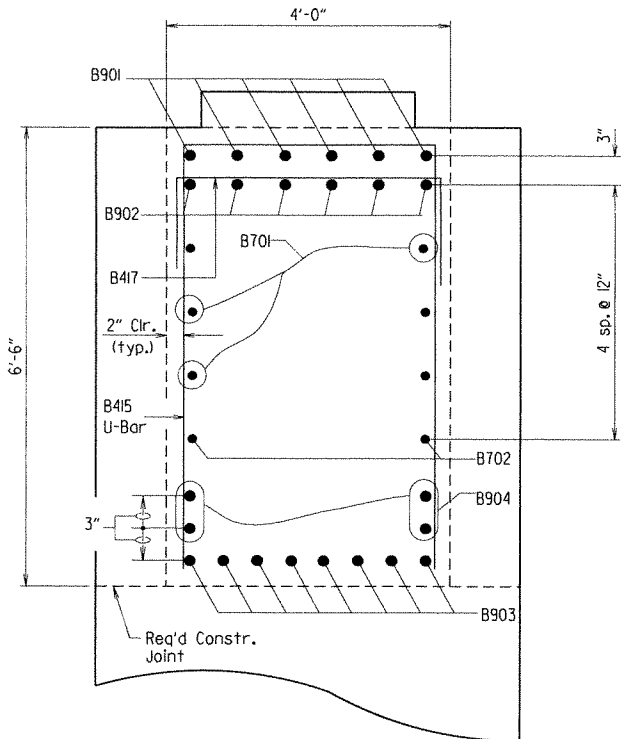
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 CHECKED BY: DBS DATE: 4/17/12 SCALE: 1/4" = 1'-0"
 DESIGNED BY: DBS DATE: 01/12
 BRIDGE NO. 07248 DRAWING NO. 52636

PRINT DATE: 17-JUL-2012

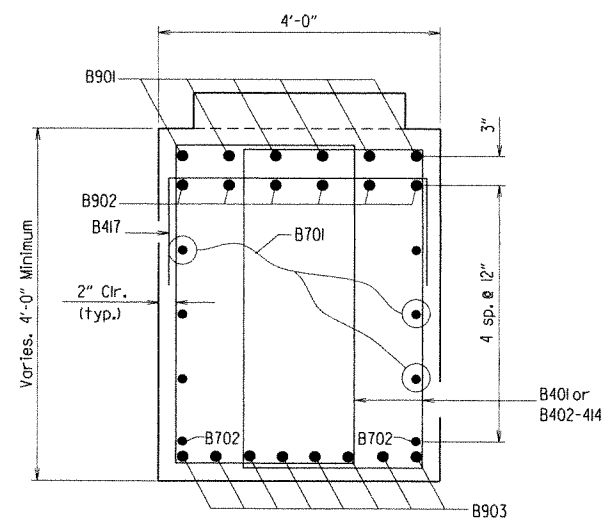
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				6	ARK.			
				JOB NO.	090281	41	106	
				07248 - INT. BENTS - 52637				



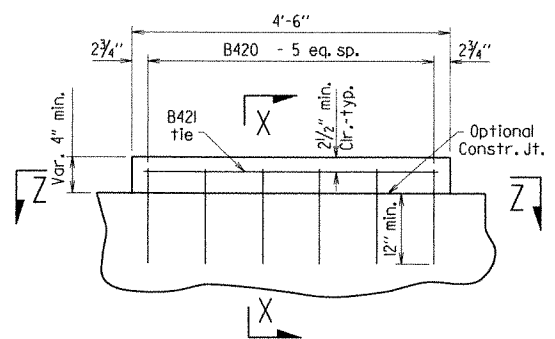
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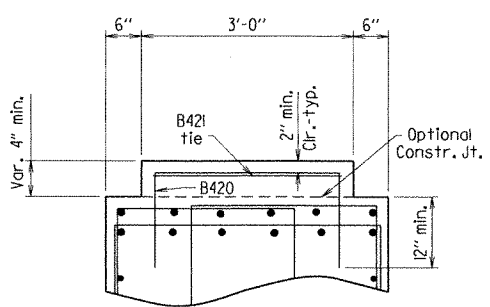
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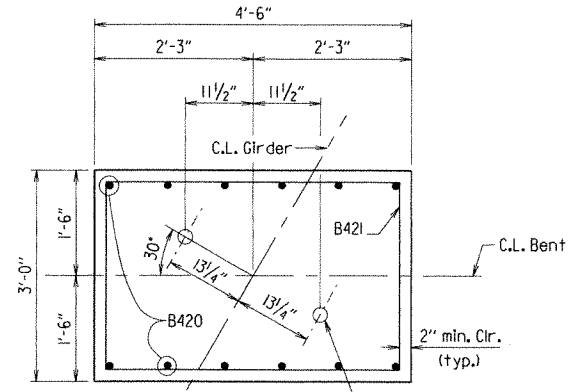
SECTION C-C
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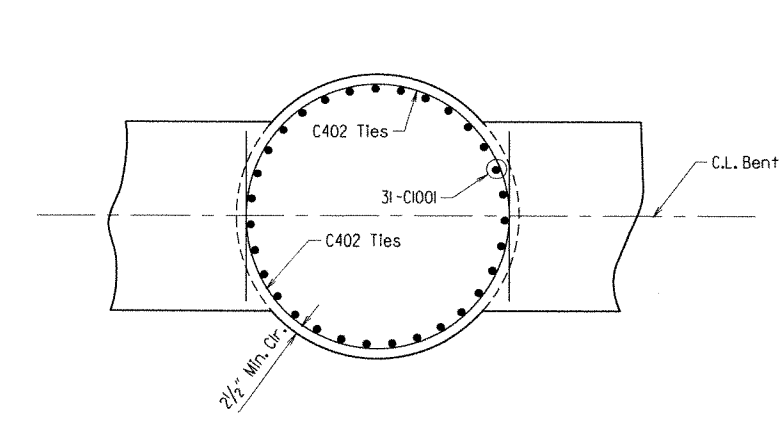
TYPICAL PEDESTAL DETAILS



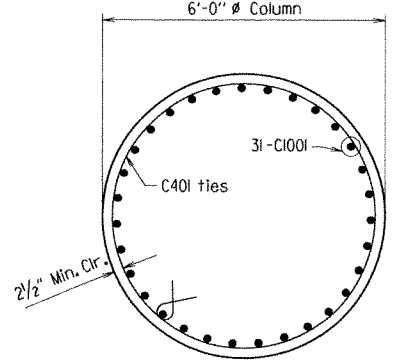
SECTION X-X
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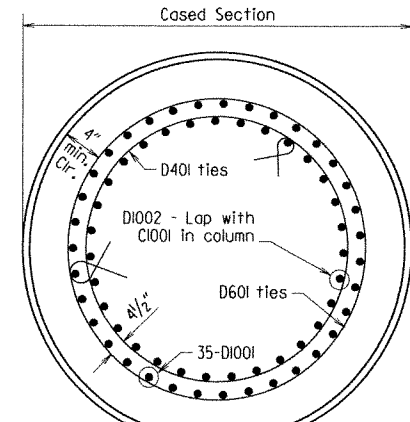
SECTION Z-Z
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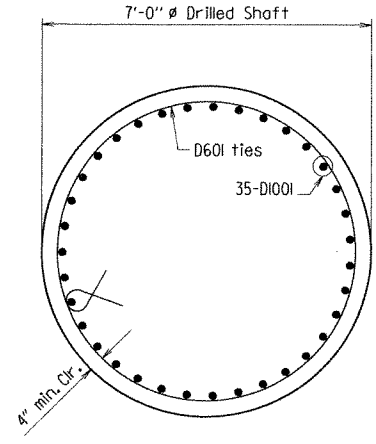
SECTION D-D
Scale: 1/2" = 1'-0"



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



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

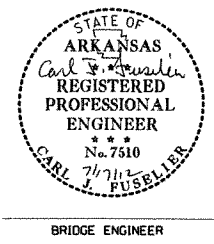


SECTION G-G
Scale: 1/2" = 1'-0"

BAR LIST				BENDING DIAGRAMS	
MARK	NO. REQ'D.	LENGTH	P.D.	Dimensions are out to out of bars.	
B401	4	13'-2"	2"		
B402-B414	4 each	Var. 13'-8" to 17'-8"	2"		
B415	14	15'-10"	2"		
B416	40	18'-0"	2"		
B417	24	6'-6"	2"		
B418	29	6'-6"	2"		
B419	6	29'-0"	Str.		
B420	30	6'-5"	2"		
B421	5	14'-0"	2"		
B701	6	46'-8"	Str.		
B702	2	42'-7"	Str.		
B901	6	49'-2"	9"		
B902	6	46'-8"	Str.		
B903	8	47'-4"	9"		
B904	4	32'-0"	Str.		
C401	62	18'-8"	3"		
C402	24	12'-4"	3"		
C1001	62	36'-6"	Str.		
D401	6	18'-8"	3"		
D601	86	21'-6"	4 1/2"		
D1001	70	42'-6"	Str.		
D1002	62	13'-0"	Str.		

④ D401, D601, D1001, and D1002 Bars are non-pay items and are subsidiary to SP Job 090281 "Drilled Shaft Foundations"

⑤ The Contractor may substitute an approved mechanical rebar splice in lieu of 135° hooks for D601 Bars. Mechanical Couplers shall be from the Qualified Products List, and shall maintain minimum clearances shown. Their payment is subsidiary to the item "Drilled Shaft (84" Dia.)". The couplers shall develop at least 125% of the specified yield strength of the bar.



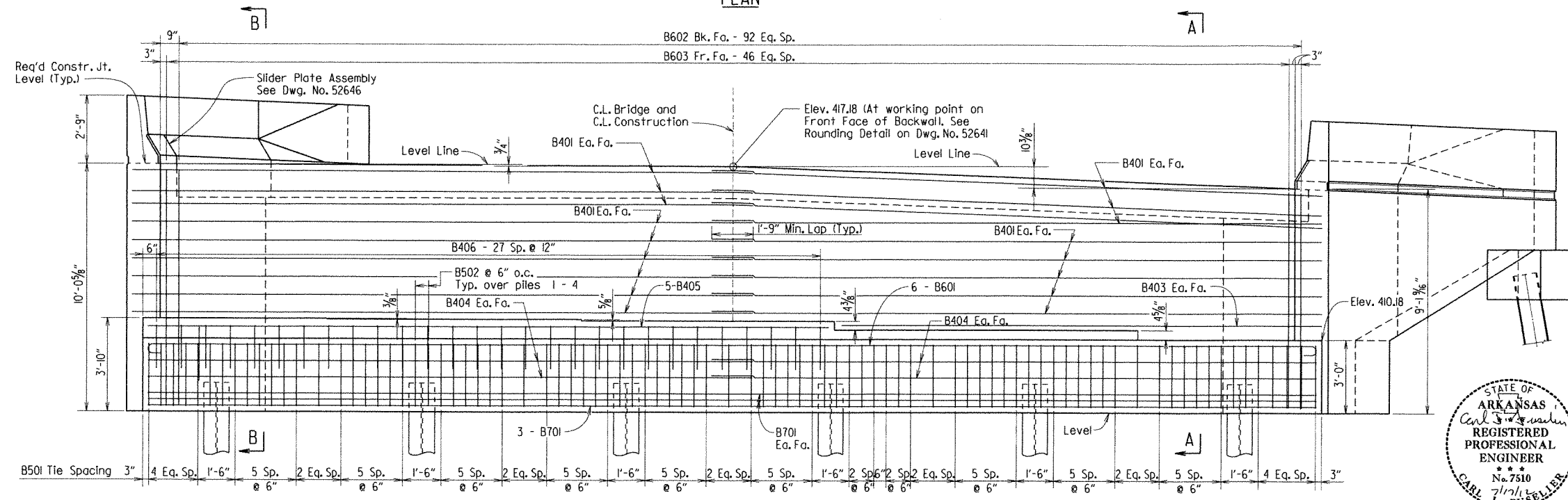
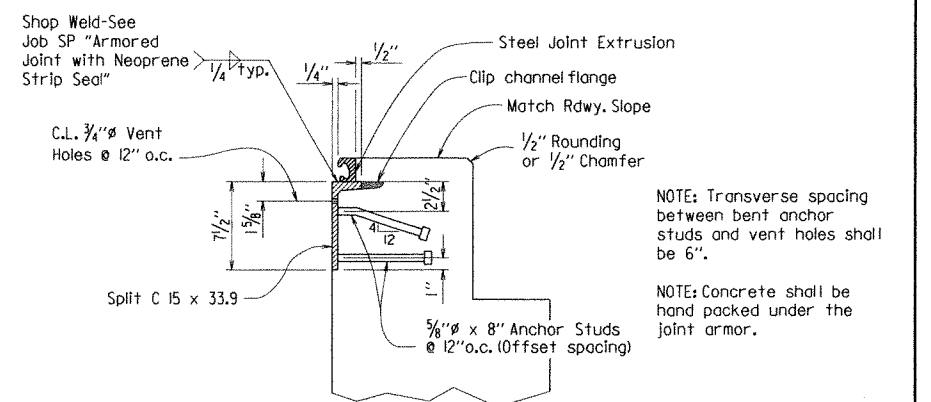
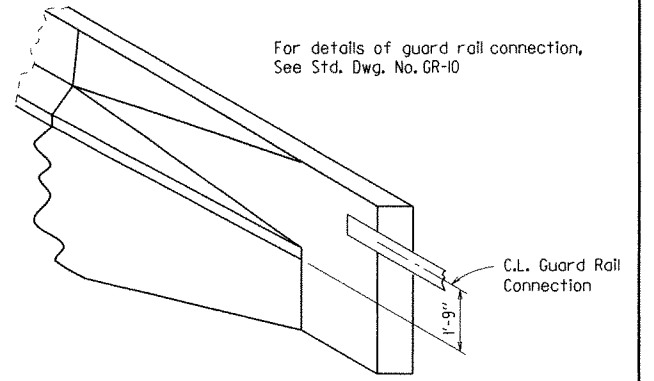
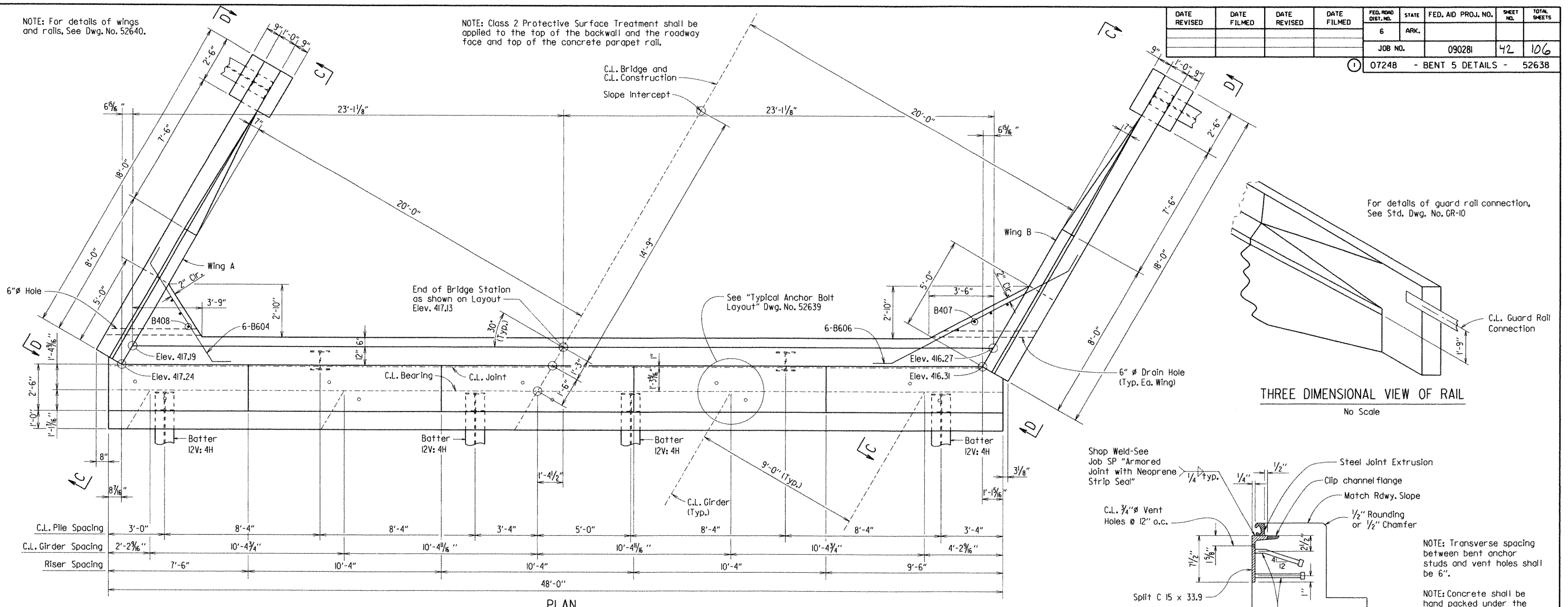
SHEET 2 OF 2
 DETAILS OF BENT 4
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: LJB DATE: 2/10/11 FILENAME: b090281x1.b4.dgn
 CHECKED BY: DBS DATE: 7/2/12 SCALE: AS NOTED
 DESIGNED BY: DBS DATE: 0/1/12
 BRIDGE NO. 07248 DRAWING NO. 52637

PRINT DATE: 17-JUL-2012

NOTE: For details of wings and rails, See Dwg. No. 52640.

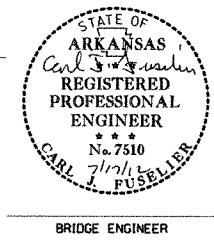
NOTE: Class 2 Protective Surface Treatment shall be applied to the top of the backwall and the roadway face and top of the concrete parapet rail.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281	42	106	
				① 07248 - BENT 5 DETAILS - 52638				



NOTE: For additional joint details, see Dwg. No. 52646.

NOTE: The profile of the split channel in the backwall shall be established based on the vertical curve in conjunction with the skew.

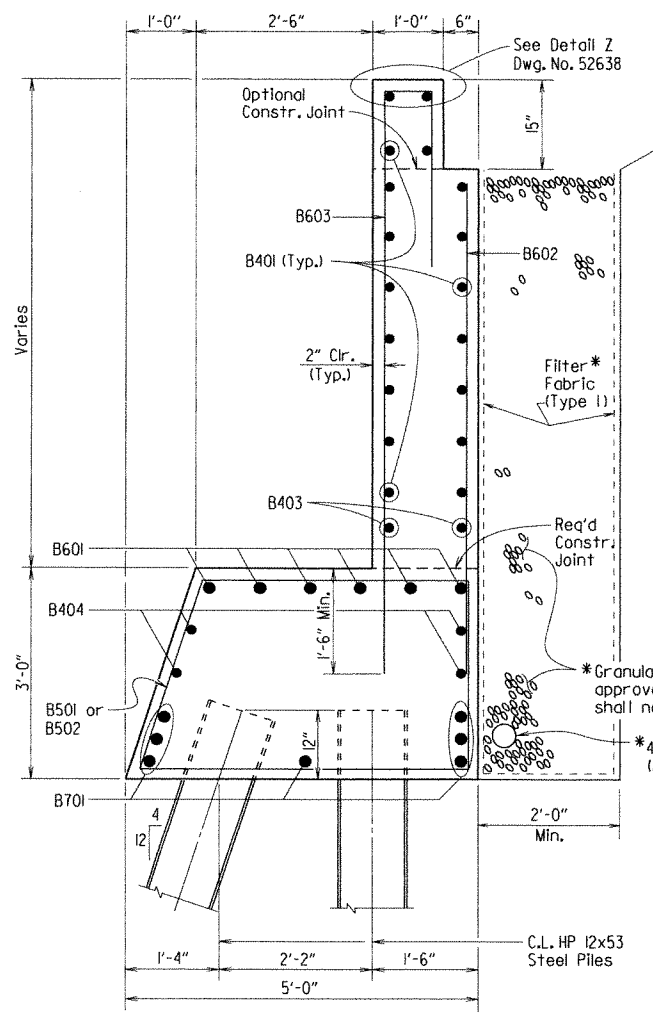


SHEET 1 OF 3
DETAILS OF BENT 5
NORTH FORK RIVER
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

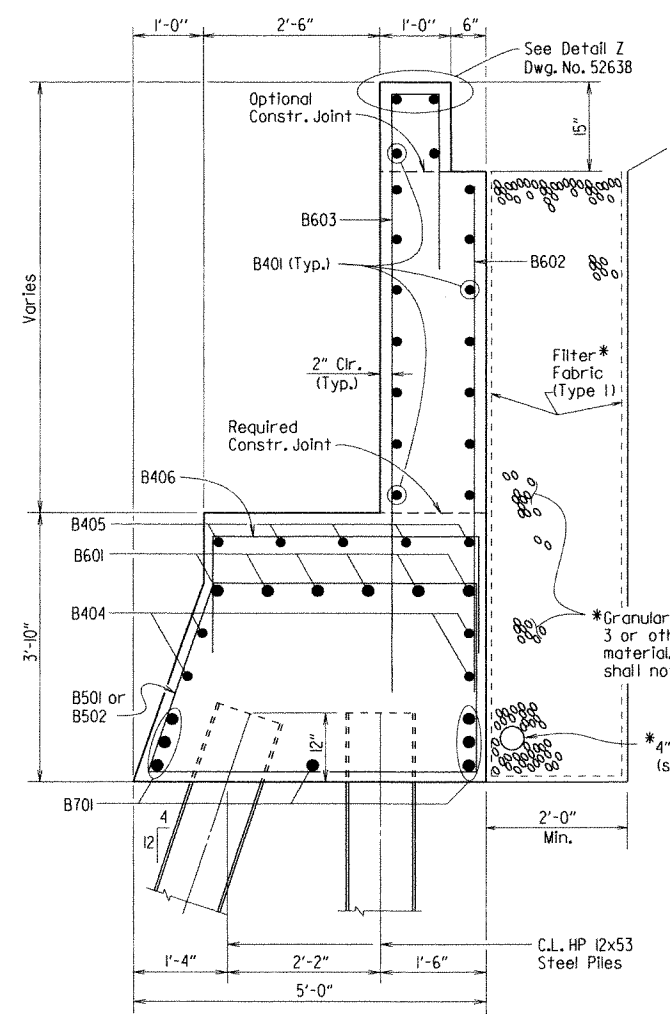
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CHECKED BY: JGT DATE: 7/10/12 SCALE: 3/8" = 1'-0" or as shown
DESIGNED BY: DBS DATE: 02/12
BRIDGE NO. 07248 DRAWING NO. 52638

PRINT DATE: 17-JUL-2012

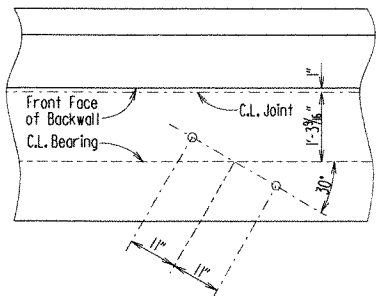
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090281	43	106
				07248 - BENT 5 DETAILS -				52639



SECTION A-A
Scale: 3/4" = 1'-0"



SECTION B-B
Scale: 3/4" = 1'-0"



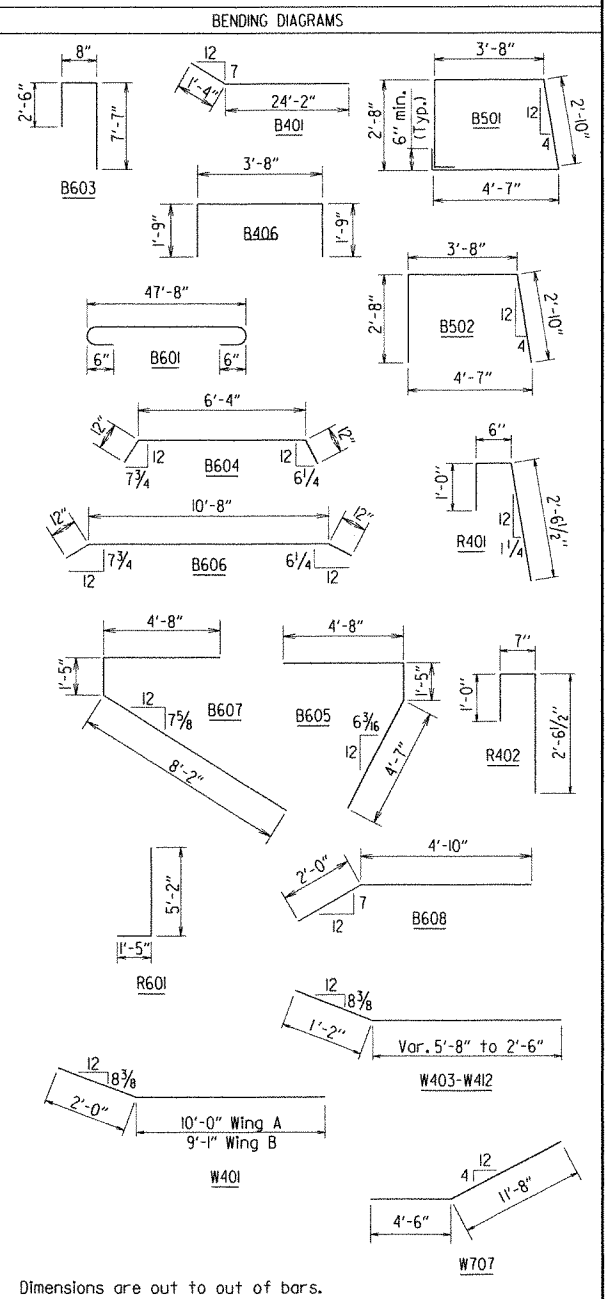
TYPICAL ANCHOR BOLT LAYOUT
NO SCALE

*NOTE: For additional details of pipe underdrain see Std. Dwg. PU-1 and Section 611 of the Standard Specifications. Pipe underdrains, outlet protectors, granular materials, drain pipe, and filter fabric will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Unclassified Excavation". Locate holes in wings to miss reinforcing steel.

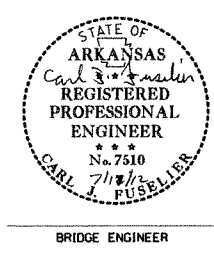
GENERAL NOTES
 All concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 3,500$ psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.
 All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (Yield Strength = 60,000 psi).
 All structural steel shall be AASHTO M270, Gr. 50W. Structural steel in backwall shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".
 Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.
 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 deck pour has been made. Refer to the "Expansion Device Installation" note, see Dwg. 52646.
 Concrete shall be hand packed under the joint armor.
 For additional information see Layout.

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
B401	36	25'-6"	3"
B403	2	19'-6"	Str.
B404	8	24'-9"	Str.
B405	5	27'-9"	Str.
B406	28	7'-0"	2"
B407	4	7'-6"	Str.
B408	3	8'-6"	Str.
B501	75	14'-3"	2 1/2"
B502	12	9'-0"	2 1/2"
B601	6	49'-0"	4 1/2"
B602	93	7'-7"	Str.
B603	47	10'-5"	4 1/2"
B604	6	8'-2"	4 1/2"
B605	5	10'-5"	4 1/2"
B606	6	12'-6"	4 1/2"
B607	5	14'-0"	4 1/2"
B608	4	6'-10"	4 1/2"
B609	4	6'-11"	Str.
B701	7	47'-8"	Str.
R401	14	3'-11"	2"
R402	16	4'-0"	2"
R403	12	17'-8"	Str.
R601	16	6'-5"	4 1/2"
R602	6	5'-0"	Str.
F601	10	2'-2"	Str.
W401	10	12'-0" 11'-1"	2"
W402	10	12'-5" 11'-6"	Str.
W403 - W412	2 Each	Var. 6'-10" to 3'-8"	2"
W413 - W422	2 Each	Var. 8'-3" to 4'-10"	Str.
W701	12	17'-8"	Str.
W702	4	15'-5"	Str.
W703	4	13'-5"	Str.
W704	4	11'-5"	Str.
W705	4	9'-5"	Str.
W706	4	7'-5"	Str.
W707	4	16'-2"	5 1/4"



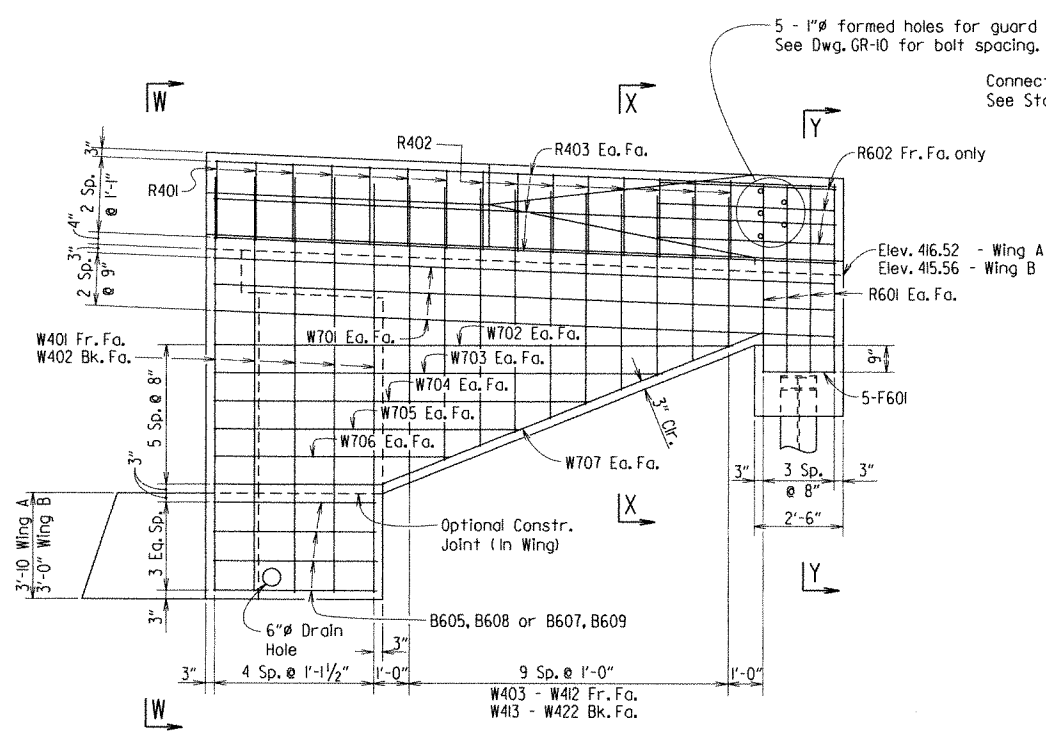
Dimensions are out to out of bars.



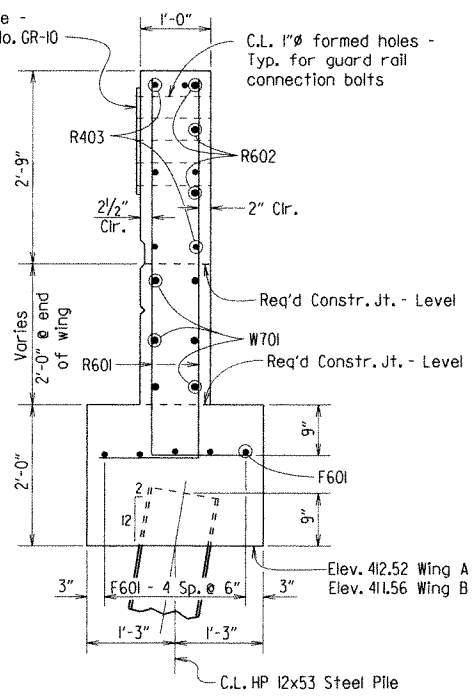
SHEET 2 OF 3
 DETAILS OF BENT 5
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: MRE DATE: 02/15/12 FILENAME: b090281x1_b5.dgn
 CHECKED BY: JGT DATE: 7/10/12 SCALE: As Shown
 DESIGNED BY: DBS DATE: 02/12
 BRIDGE NO. 07248 DRAWING NO. 52639

PRINT DATE: 17-JUL-2012

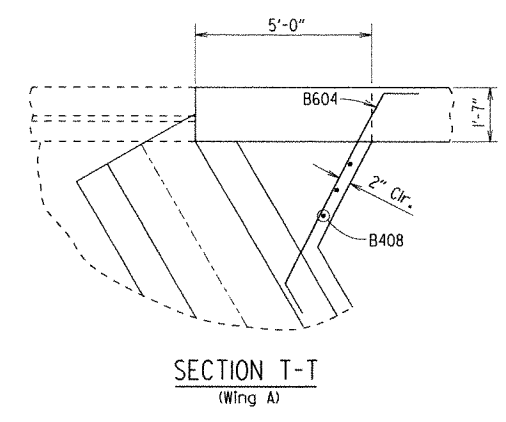
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				6	ARK.			
				JOB NO.		090281	44	106
				07248	- BENT 5 DETAILS -		52640	



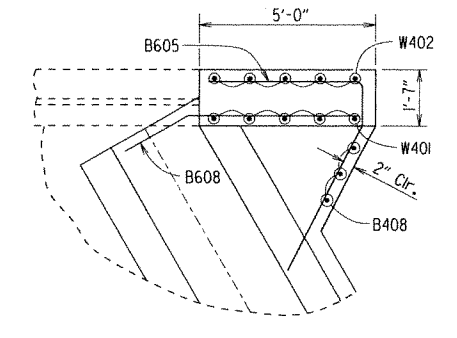
VIEW C-C



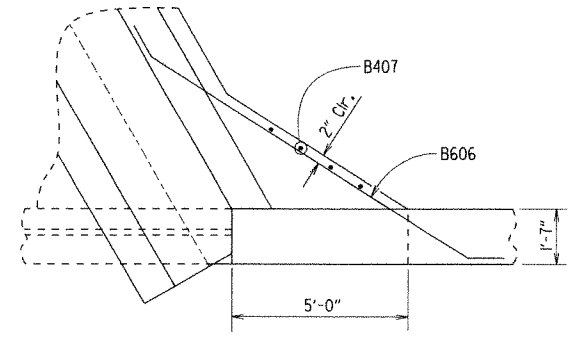
SECTION Y-Y
Scale: 3/4" = 1'-0"



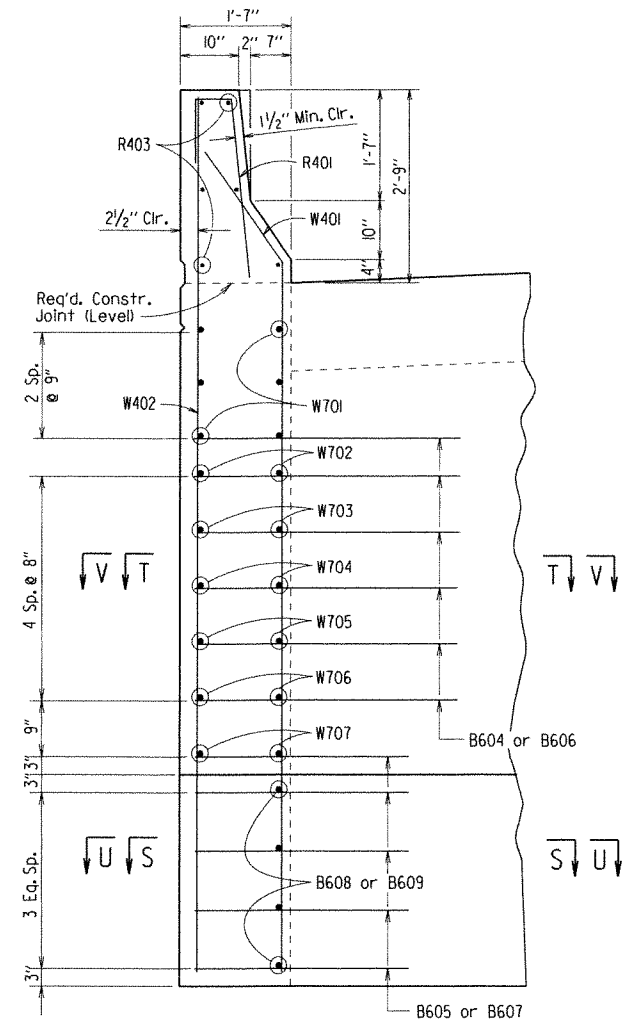
SECTION T-T
(Wing A)



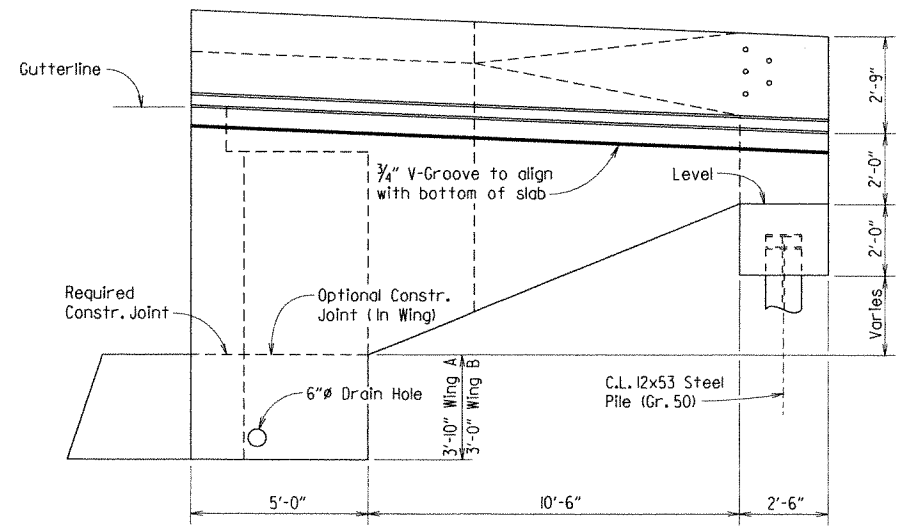
SECTION S-S
(Wing A)



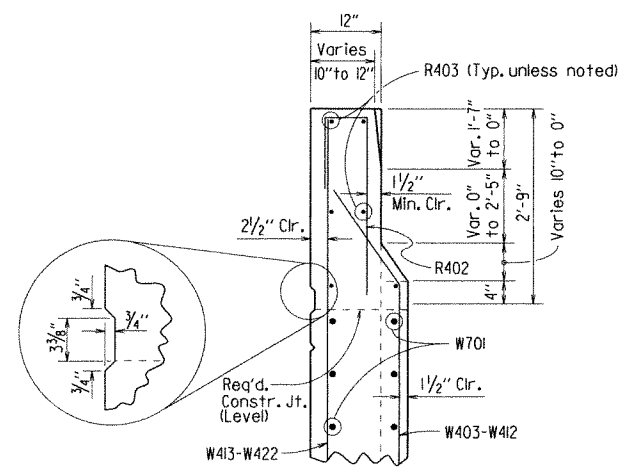
SECTION V-V
(Wing B)



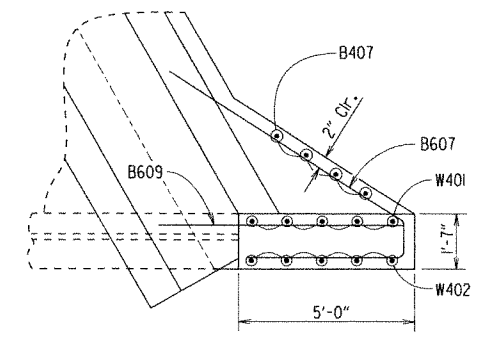
VIEW W-W
Scale: 3/4" = 1'-0"



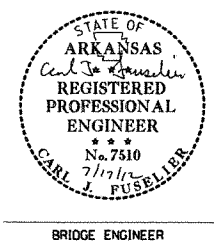
VIEW D-D



SECTION X-X
Scale: 3/4" = 1'-0"



SECTION U-U
(Wing B)



SHEET 3 OF 3
 DETAILS OF BENT 5
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

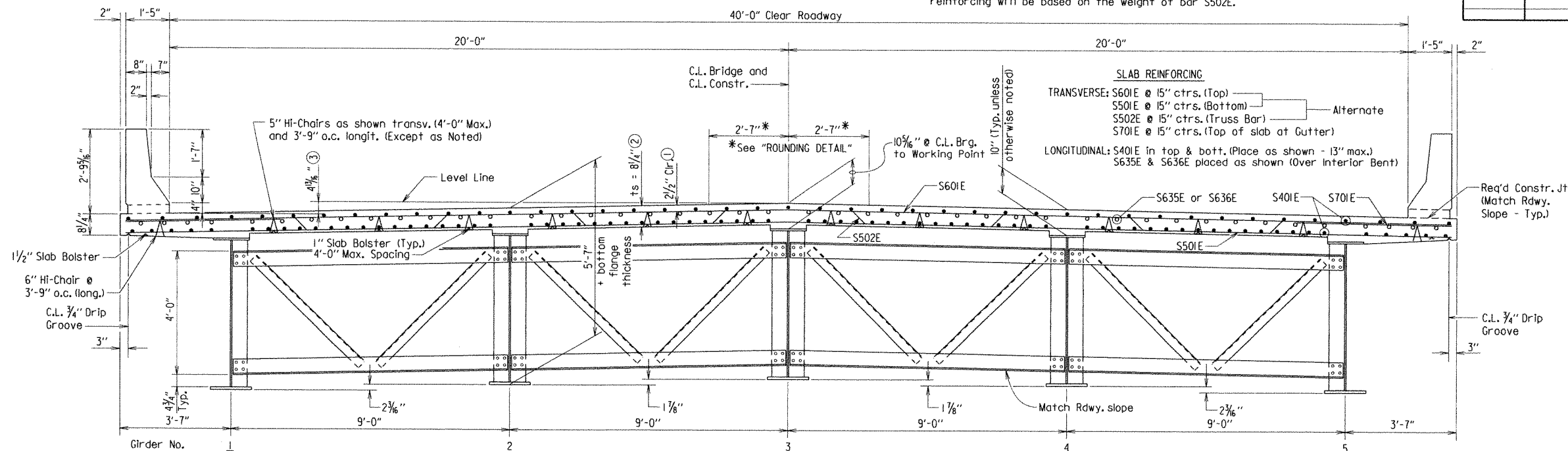
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 CHECKED BY: JG DATE: 7/2/12 SCALE: 3/8" = 1'-0" or as shown
 DESIGNED BY: DBS DATE: 02/12
 BRIDGE NO. 07248 DRAWING NO. 52640

PRINT DATE: 17-JUL-2012

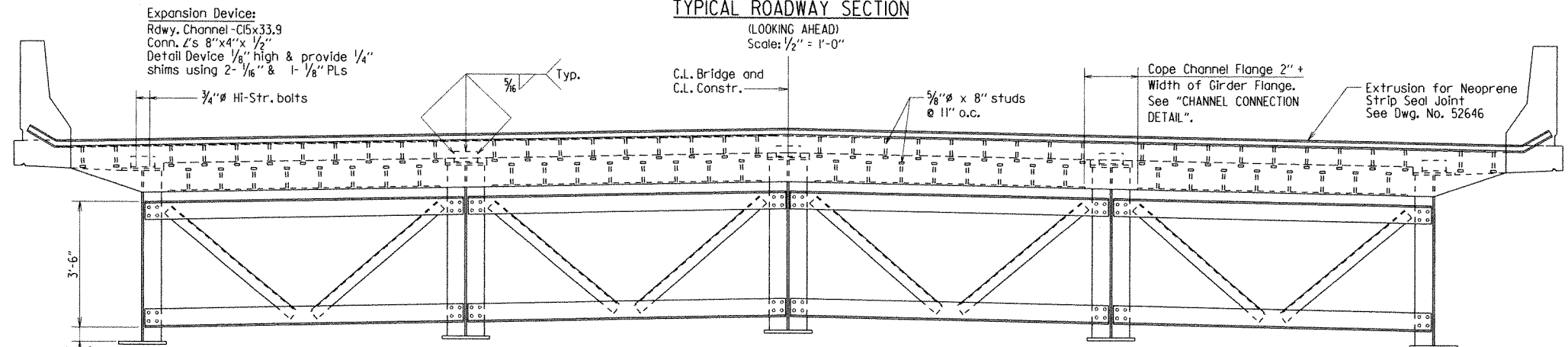
NOTE: Class 2 Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

NOTE: At the Contractor's option, one epoxy coated No.5 straight bar top and bottom may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

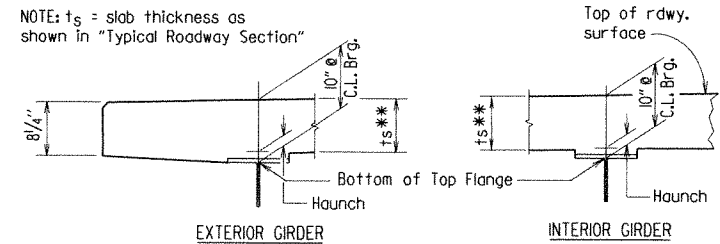
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		45	106
				JOB NO.	090281		45	106
① 07248 - SPAN DETAILS - 52641								



TYPICAL ROADWAY SECTION
(LOOKING AHEAD)
Scale: 1/2" = 1'-0"



TYPICAL SECTION THRU JOINT
Scale: 1/2" = 1'-0"



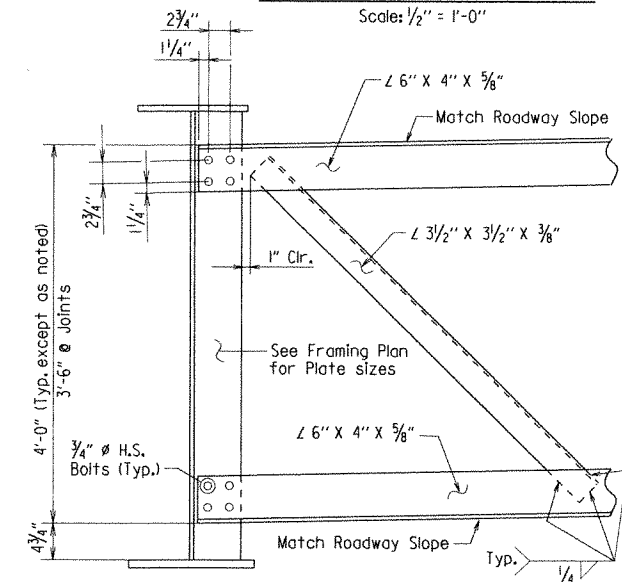
NOTE: t_s = slab thickness as shown in "Typical Roadway Section"

**Tolerance when removable deck forming is used is + 1/2", - 1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

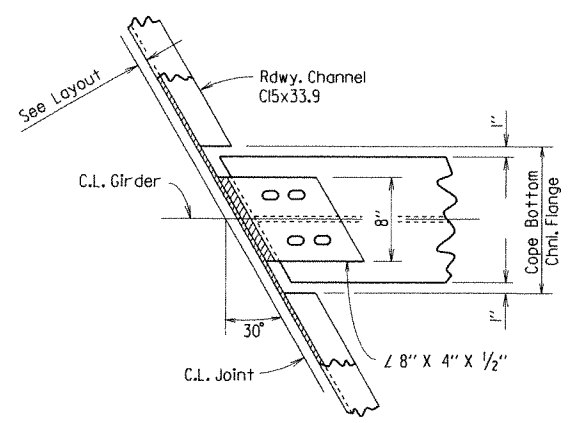
NOTES:
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel. Maximum - top flange thickness plus 1 3/4". No increase in concrete and structural steel quantities will be made to maintain tolerances.

Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

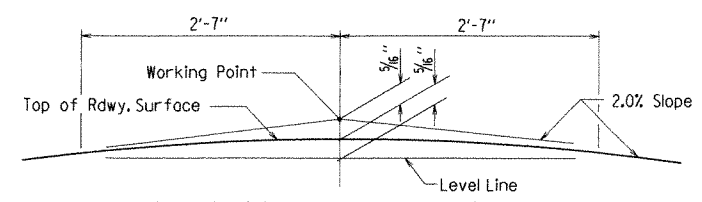
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE
WHEN REMOVABLE DECK FORMING IS USED
No Scale



TYPICAL CROSS-FRAME CONNECTION DETAIL
Scale: 1" = 1'-0"



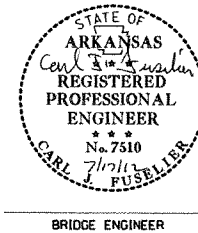
CHANNEL CONNECTION DETAIL
No Scale



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL
No Scale

- ① Tolerance: Minus = 1/4"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance - See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED."
- ② See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED."
- ③ Working Point to Gutterline



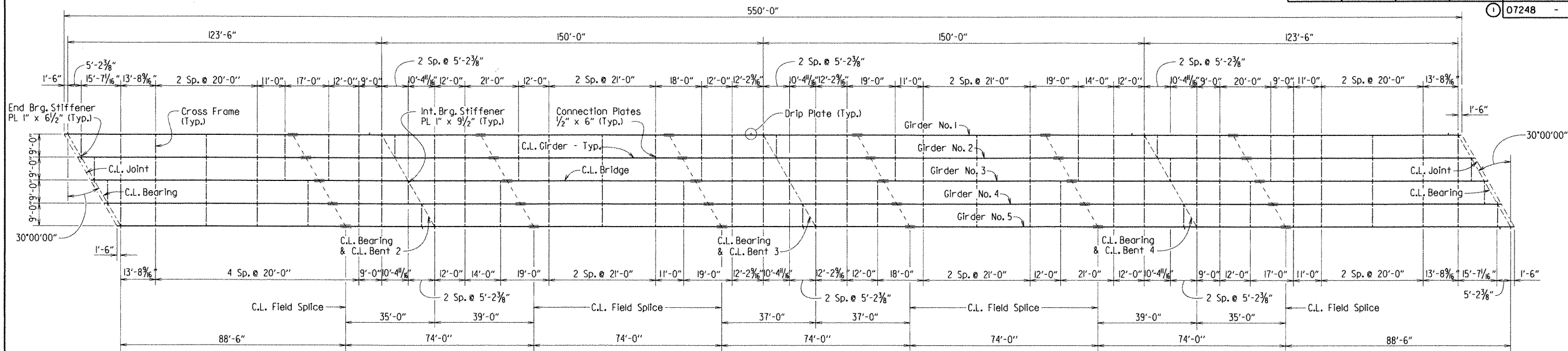
SHEET 1 OF 7
DETAILS OF 550'-0" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
NORTH FORK RIVER
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 11/30/11 FILENAME: b090281.sldgn
CHECKED BY: DBS DATE: 7/12/12 SCALE: 1/2" = 1'-0" or as shown
DESIGNED BY: DBS DATE: 11/11
BRIDGE NO. 07248 DRAWING NO. 52641

PRINT DATE: 17-JUL-2012

NOTE: All Structural Steel shall be AASHTO M270, Grade 50W unless otherwise noted.

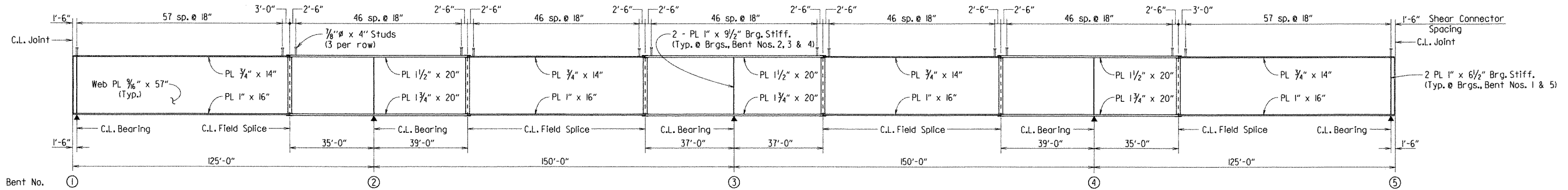
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		46	106
				07248	SPAN DETAILS		52642	



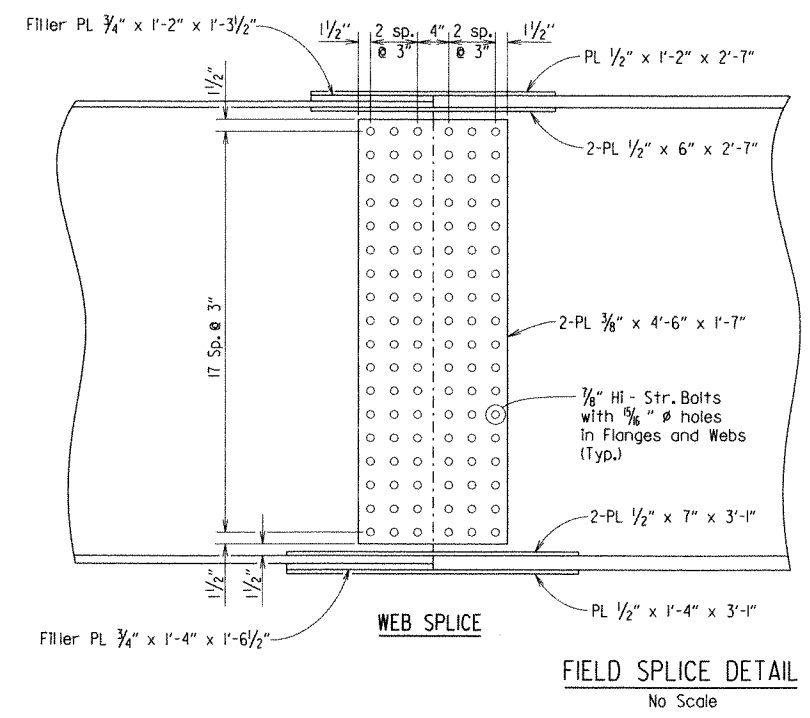
NOTE: For details of Bearing Stiffeners and Connection Plates, see Dwg. No. 52647.

FRAMING PLAN
No Scale

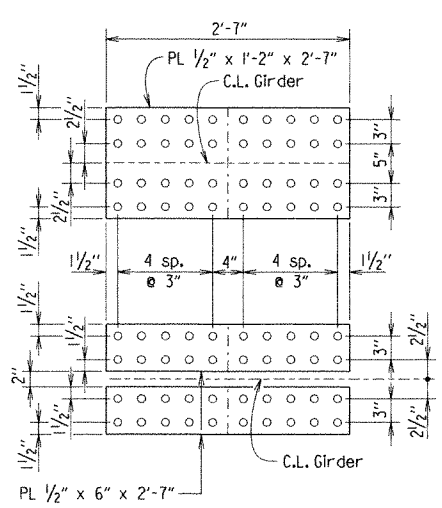
NOTE: Bolted field splices may be eliminated or shop welded splices may be substituted with the approval of the Engineer. Payment will be made on the basis of plan quantities.



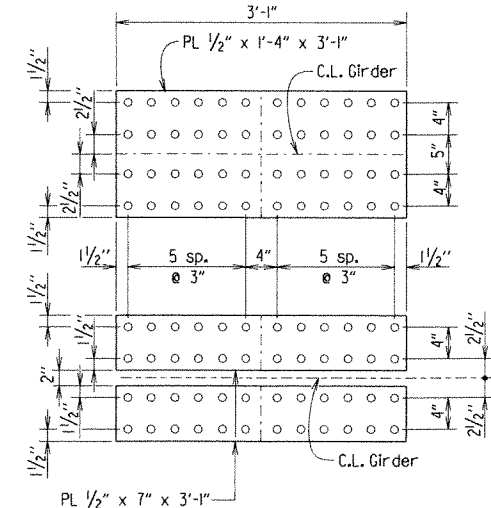
BEAM ELEVATION
No Scale



FIELD SPICE DETAIL
No Scale

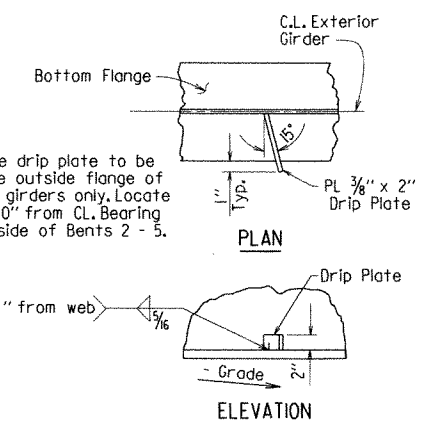


FLANGE SPICE - TOP



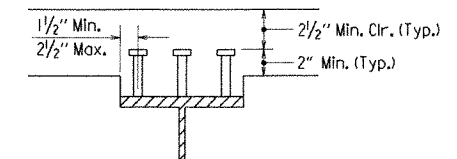
FLANGE SPICE - BOTTOM

NOTE: All splice plates shall be AASHTO M270, Gr. 50W



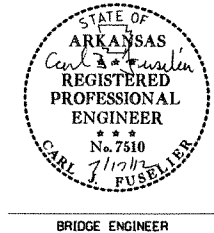
BOTTOM FLANGE DRIP PLATE
No Scale

NOTE: Bottom flange drip plate to be welded to the outside flange of the exterior girders only. Locate drip plate 5'-0" from C.L. Bearing on the high side of Bents 2 - 5.



Stud Shear Connectors shown shall be 1/8" diameter x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 3/4" diameter studs may be used in place of the 1/8" diameter studs shown, at the ratio of 1.361 - 3/4" diameter studs in place of one 1/8" diameter stud. 1/8" diameter studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL
No Scale

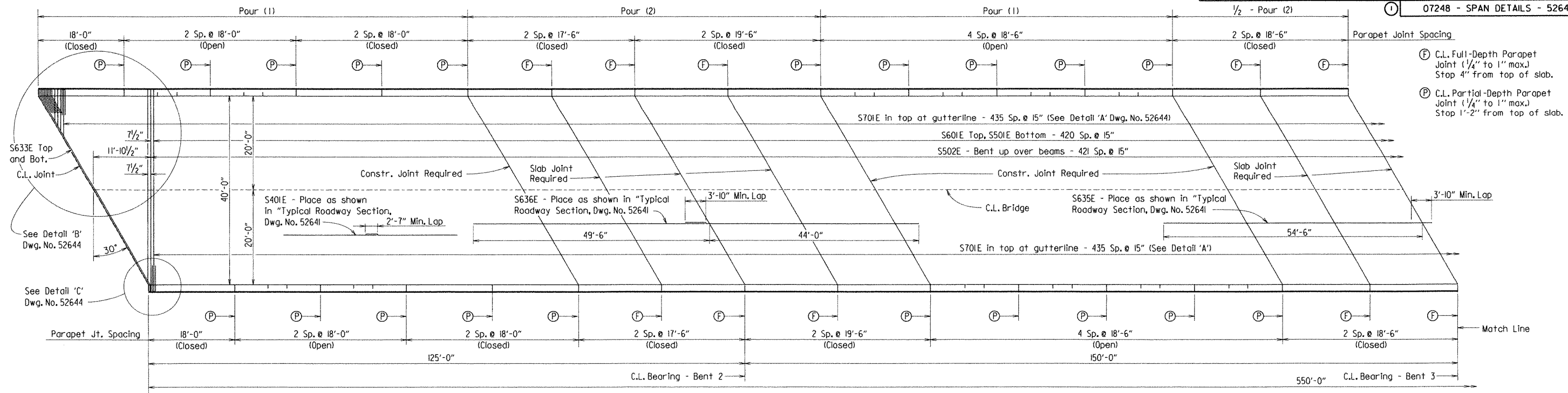


SHEET 2 OF 7
DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT NORTH FORK RIVER
 ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: MRE DATE: 12/07/11 FILENAME: b090281.sldgn
 CHECKED BY: DBS DATE: 7/13/12 SCALE: As Shown
 DESIGNED BY: DBS DATE: 11/11
 BRIDGE NO. 07248 DRAWING NO. 52642

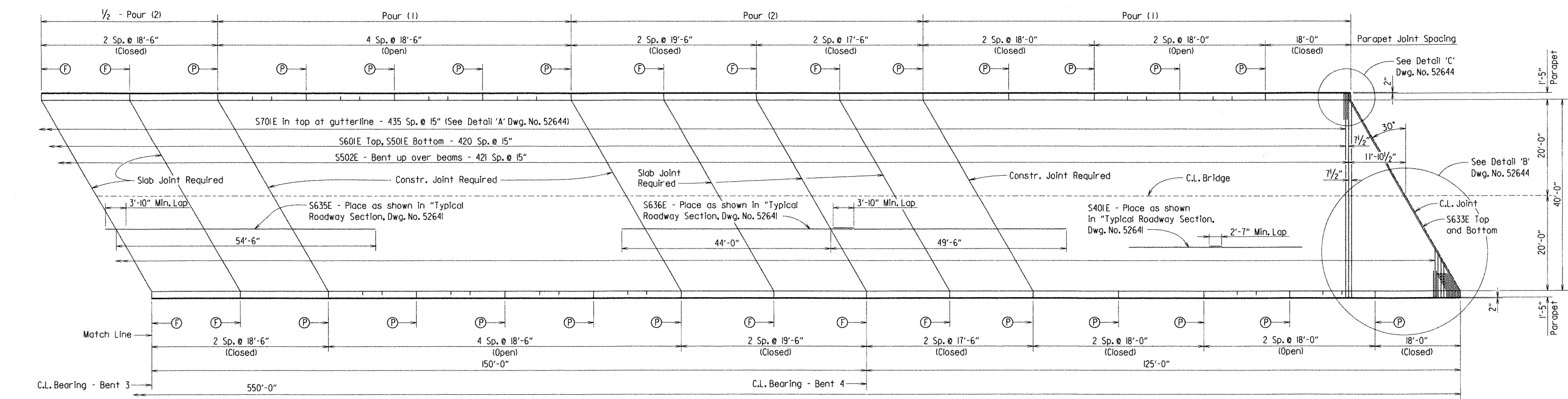
PRINT DATE: 17-JUL-2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281	47	106	

07248 - SPAN DETAILS - 52643

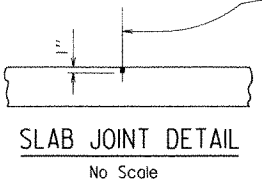


- (F) C.L. Full-Depth Parapet Joint (1/4" to 1" max.) Stop 4" from top of slab.
- (P) C.L. Partial-Depth Parapet Joint (1/4" to 1" max.) Stop 1'-2" from top of slab.



NOTE: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

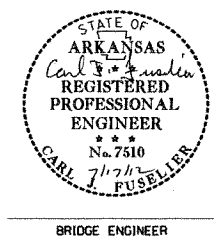
Concrete in bridge superstructure shall be placed and consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.



Use Type 3, 4, or 6 Joint Sealer. See subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class (S/AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. 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 slab (gutterline to gutterline). Slab joints shall align with parapet open joints.

REINFORCING PLAN & DECK POURING SEQUENCE

Scale: 3/32" = 1'-0"



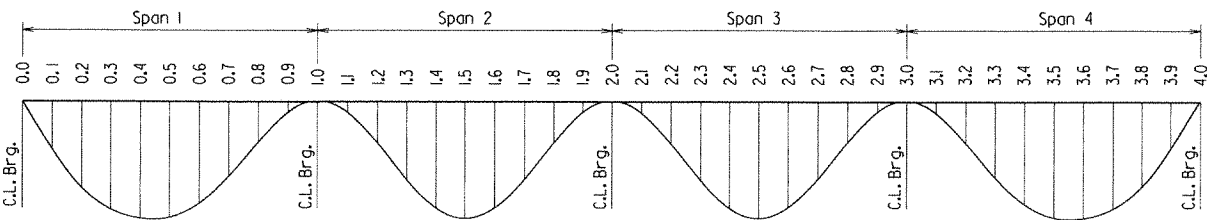
SHEET 3 OF 7
 DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
 NORTH FORK RIVER ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: MRE DATE: 12/09/11 FILENAME: b090281.sl.dgn
 CHECKED BY: DBS DATE: 5/21/12 SCALE: As Noted
 DESIGNED BY: DBS DATE: 11/11
 BRIDGE NO. 07248 DRAWING NO. 52643

PRINT DATE: 17-JUL-2012

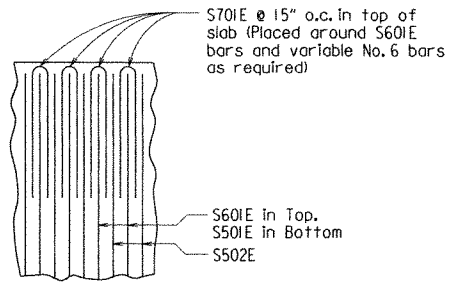
TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

SPAN	BEAM NO.	GIRDER 1			GIRDERS 2-4			GIRDER 5		
		Point of Deflection	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab	Structural Steel + Slab + Parapet	Structural Steel	Structural Steel + Slab
SPAN 1	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.190	0.986	1.042	0.185	0.978	1.028	0.186	0.973	1.030
	0.2	0.351	1.821	1.928	0.338	1.792	1.885	0.334	1.747	1.852
	0.3	0.458	2.375	2.517	0.439	2.327	2.449	0.438	2.291	2.431
	0.4	0.497	2.579	2.734	0.479	2.537	2.671	0.474	2.478	2.630
	0.5	0.474	2.456	2.605	0.454	2.405	2.532	0.447	2.337	2.480
	0.6	0.390	2.016	2.137	0.374	1.981	2.084	0.365	1.908	2.024
	0.7	0.272	1.406	1.489	0.261	1.383	1.453	0.253	1.323	1.402
	0.8	0.151	0.782	0.825	0.144	0.768	0.803	0.137	0.723	0.762
	0.9	0.052	0.276	0.288	0.048	0.263	0.271	0.043	0.240	0.250
SPAN 2	1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.033	0.127	0.149	0.038	0.152	0.172	0.041	0.156	0.180
	1.2	0.130	0.578	0.645	0.140	0.635	0.695	0.149	0.643	0.713
	1.3	0.250	1.160	1.277	0.262	1.236	1.341	0.275	1.241	1.361
	1.4	0.351	1.665	1.820	0.360	1.730	1.868	0.371	1.712	1.868
	1.5	0.393	1.885	2.054	0.402	1.947	2.096	0.414	1.931	2.100
	1.6	0.366	1.763	1.918	0.373	1.811	1.947	0.382	1.784	1.937
	1.7	0.276	1.324	1.440	0.280	1.353	1.453	0.284	1.317	1.430
	1.8	0.153	0.731	0.796	0.159	0.757	0.813	0.160	0.729	0.792
	1.9	0.048	0.230	0.251	0.050	0.237	0.255	0.049	0.220	0.239
SPAN 3	2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	2.1	0.049	0.218	0.237	0.048	0.228	0.245	0.047	0.221	0.241
	2.2	0.157	0.718	0.780	0.157	0.747	0.802	0.156	0.730	0.795
	2.3	0.284	1.314	1.427	0.279	1.343	1.442	0.279	1.307	1.421
	2.4	0.380	1.776	1.929	0.373	1.794	1.928	0.374	1.748	1.901
	2.5	0.414	1.932	2.101	0.408	1.953	2.102	0.408	1.893	2.062
	2.6	0.379	1.748	1.907	0.371	1.753	1.891	0.371	1.687	1.843
	2.7	0.276	1.242	1.363	0.273	1.255	1.359	0.270	1.183	1.301
	2.8	0.151	0.647	0.718	0.150	0.655	0.716	0.146	0.597	0.665
	2.9	0.045	0.169	0.194	0.043	0.166	0.187	0.041	0.134	0.157
SPAN 4	3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	3.1	0.042	0.239	0.248	0.043	0.253	0.262	0.044	0.262	0.273
	3.2	0.133	0.718	0.756	0.137	0.753	0.787	0.138	0.771	0.813
	3.3	0.248	1.312	1.389	0.251	1.366	1.435	0.256	1.394	1.476
	3.4	0.363	1.912	2.027	0.363	1.959	2.062	0.372	2.002	2.122
	3.5	0.446	2.340	2.482	0.443	2.379	2.505	0.451	2.410	2.555
	3.6	0.475	2.488	2.639	0.469	2.519	2.653	0.482	2.564	2.719
	3.7	0.439	2.299	2.438	0.434	2.328	2.451	0.445	2.362	2.503
	3.8	0.342	1.790	1.897	0.336	1.799	1.893	0.344	1.824	1.931
	3.9	0.186	0.975	1.032	0.184	0.986	1.036	0.188	0.993	1.050
4.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

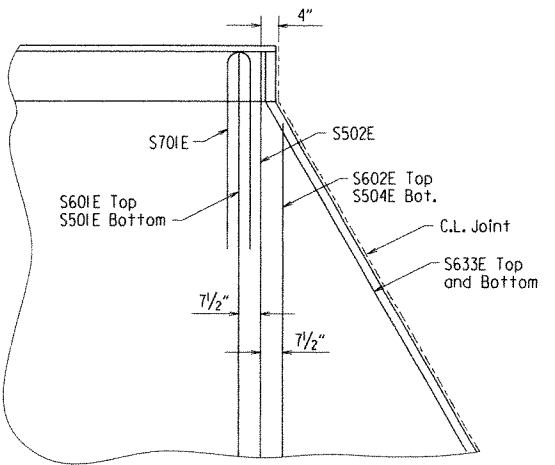
NOTE: Camber for Dead Load Deflection plus Vertical curve +/- 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included.
 NOTE: This deflection table applies only to the Pouring Sequence shown on Dwg. No. 52643.



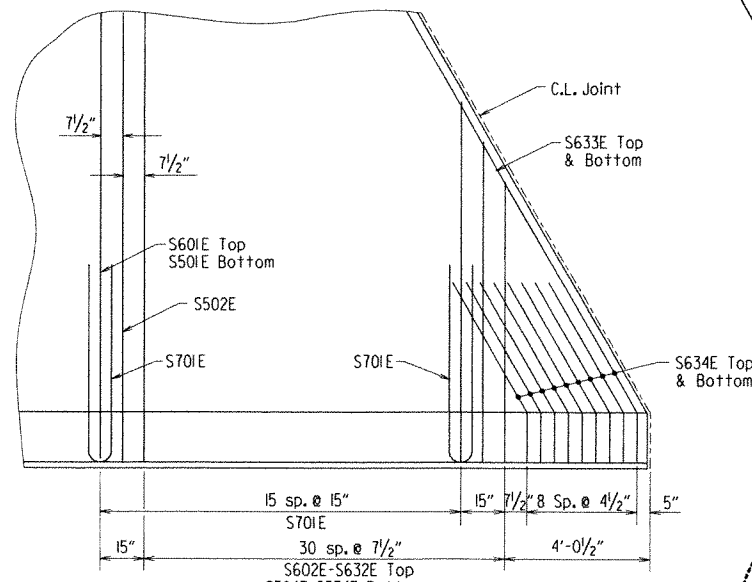
DEAD LOAD DEFLECTION DIAGRAM
No Scale



DETAIL A
No Scale



DETAIL C
No Scale



DETAIL B
No Scale

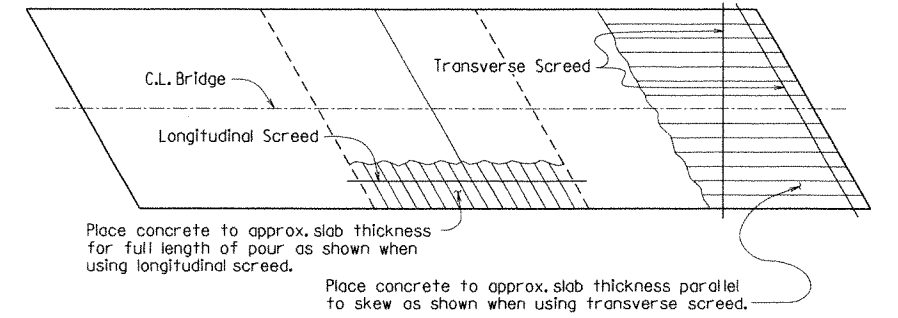
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		48	106
				JOB NO.		090281	48 106	
				07248 - SPAN DETAILS - 52644				

BAR LIST

MARK	NO.	REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
P401E	1992	5'-6"	2"		Dimensions are out to out of bars.
P402E	208	4'-10"	2"		
P403E	48	37'-5"	Str.		
P404E	40	17'-2"	Str.		
P405E	40	19'-2"	Str.		
P406E	48	38'-11"	Str.		
P407E	72	18'-2"	Str.		
P408E	60	17'-8"	Str.		
P501E	1992	4'-9"	3 3/4"		
S401E	1755	39'-1"	Str.		
S501E	421	42'-10"	Str.		
S502E	422	43'-10"	3"		
S504E - S534E	2 ea.	7'-8" - 40'-2"	Str.		
S601E	421	42'-8"	Str.		
S602E - S632E	2 ea.	7'-8" - 40'-2"	Str.		
S633E	4	49'-0"	4 1/2"		
S634E	18	5'-8"	4 1/2"		
S635E	176	48'-8"	Str.		
S636E	88	56'-5"	Str.		
S701E	872	11'-11"	6"		

NOTE: Bars marked with an "E" suffix shall be epoxy coated.

NOTE: At the Contractor's Option, the Transverse Screenshot may be placed parallel to the skew or perpendicular to C.L. Bridge.



CONCRETE PLACEMENT PROCEDURE
No Scale

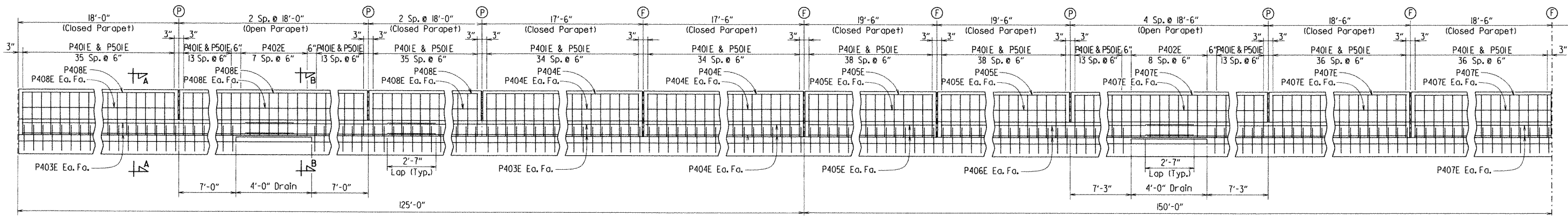


SHEET 4 OF 7
 DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: MRE DATE: 12/15/11 FILENAME: b090281.sl.dgn
 CHECKED BY: DBS DATE: 7/12/12 SCALE: AS SHOWN
 DESIGNED BY: DBS DATE: 11/11
 BRIDGE NO. 07248 DRAWING NO. 52644

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						090281	49	106
①								07248 - SPAN DETAILS - 52645

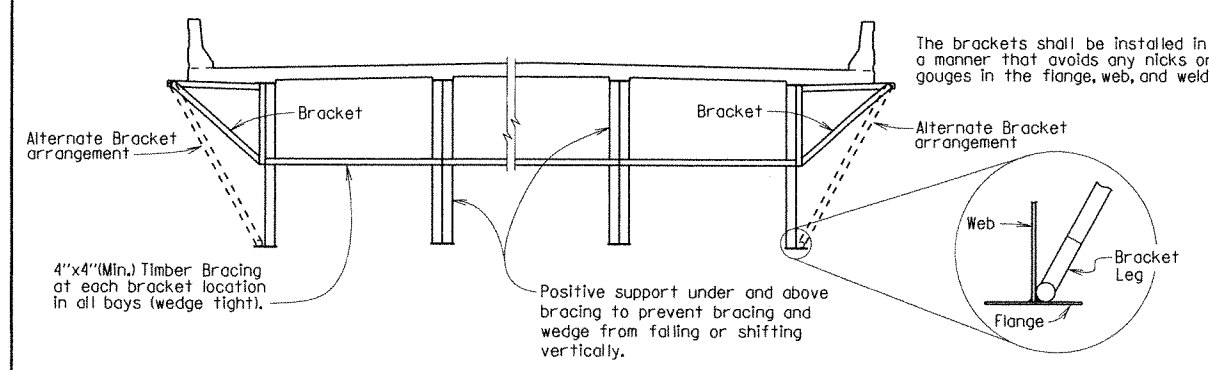
ⓕ C.L. Full-Depth Parapet Joint (1/4" to 1" max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 52643. Stop 4" from top of slab.

ⓐ C.L. Partial-Depth Parapet Joint (1/4" to 1" max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 52643. Stop 1'-2" from top of slab.



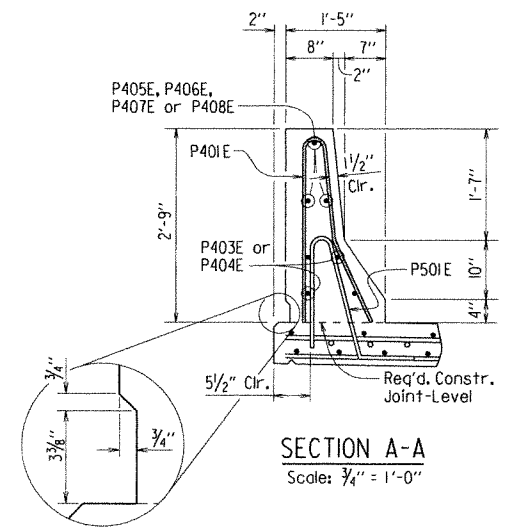
PARAPET RAIL REINFORCING PLAN
Scale: 3/8" = 1'-0"

Symm. about C.L. Unit

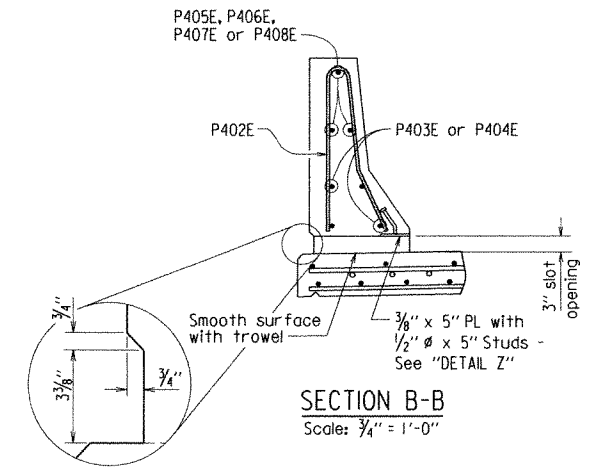


SCREED RAIL SUPPORT
No Scale

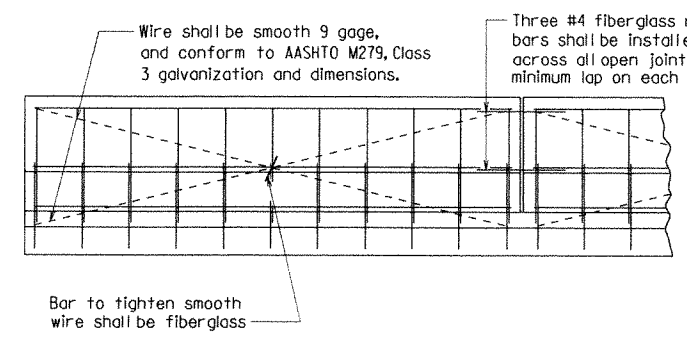
NOTE: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 1/2"x6" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for intermediate connection plates shown on drawing No. 52641. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (M270, Gr. 50W)."



SECTION A-A
Scale: 3/4" = 1'-0"



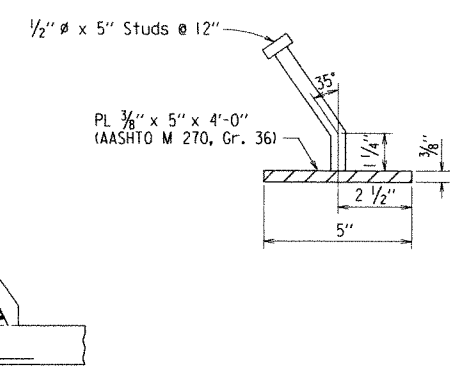
SECTION B-B
Scale: 3/4" = 1'-0"



DETAILS OF OPTIONAL SLIP FORMING OF CONCRETE PARAPET RAIL
No Scale

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

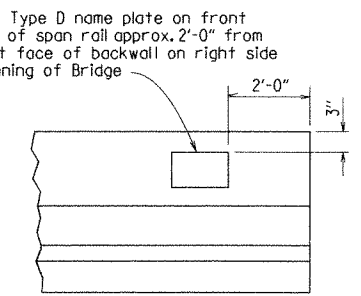
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3, Textured Coating Finish, in place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



DETAIL Z
No Scale

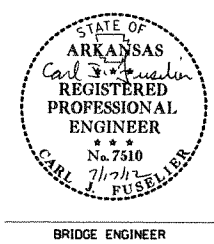
NOTE: The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Plate Girder Spans (M270, Gr. 50W)."

Parapet studs shall be 5" long, granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807 and shall be measured and paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)."



NAME PLATE DETAIL
No Scale

Place Type D name plate on front face of span rail approx. 2'-0" from front face of backwall on right side Beginning of Bridge

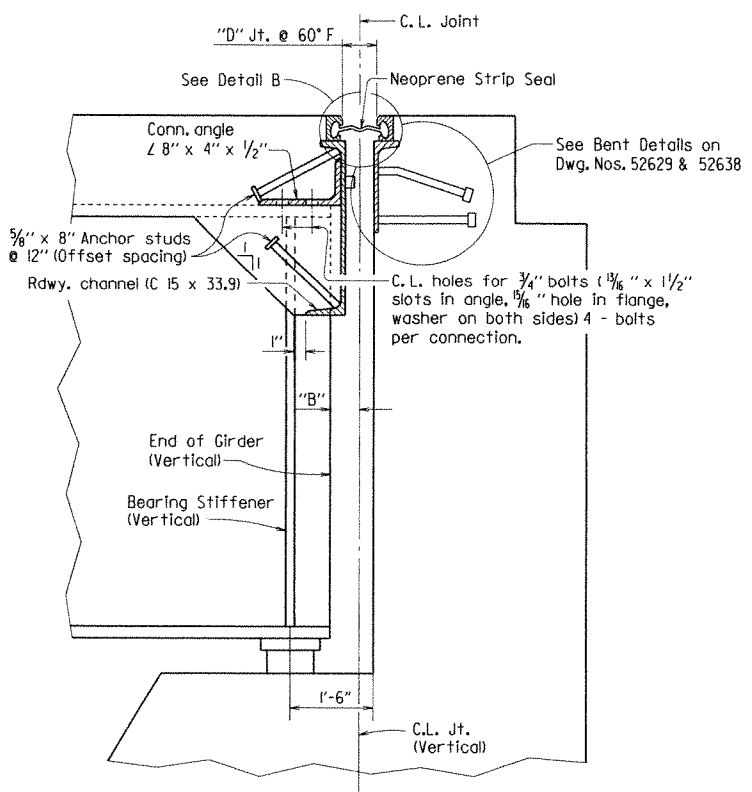


SHEET 5 OF 7
DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
NORTH FORK RIVER ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

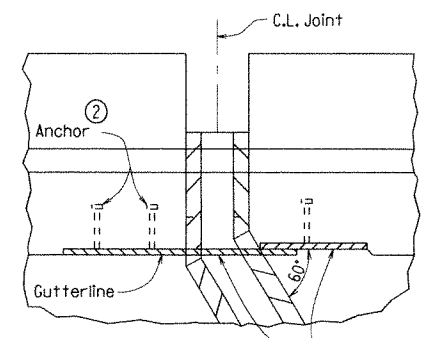
DRAWN BY: MRE DATE: 12/15/11 FILENAME: b090281.sl.dgn
CHECKED BY: DBS DATE: 5/2/12 SCALE: 3/8" = 1'-0" or as shown
DESIGNED BY: DBS DATE: 11/11
BRIDGE NO. 07248 DRAWING NO. 52645

PRINT DATE: 17-JUL-2012

DATE REVISION	DATE FILMED	DATE REVISION	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		50	106
				JOB NO.	090281		50	106
				07248 - SPAN DETAILS - 52646				



DETAILS OF JOINT AT BENTS 1 & 5
No Scale

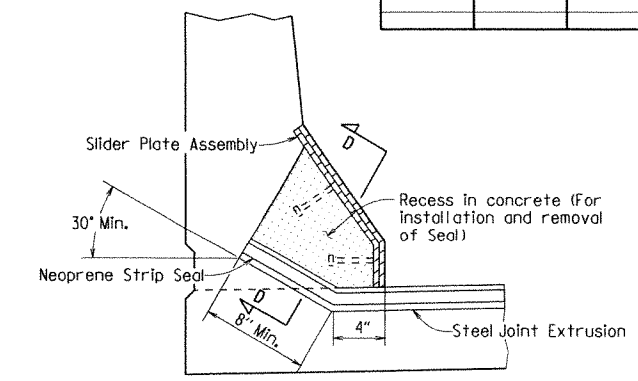


SECTION C-C
No Scale

NOTE: Details of Joint turn-up in curb and parapet are general and show basic design controls only. See Special Provision Job 090281, "Armored Joint with Neoprene Strip Seal." Method of installation and fabrication shall be determined by the manufacturer.

② The method of attachment of the slider plate assembly must be such that it may be removed in order to provide for future replacement of the neoprene seal.

Slider plates shall be AASHTO M270 - Gr. 36 or Gr. 50 and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)". The surfaces of the plates which will not be in contact with the concrete shall be cleaned and painted in accordance with Section 638, or as directed by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting shall not be paid for directly, but will be considered subsidiary to "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

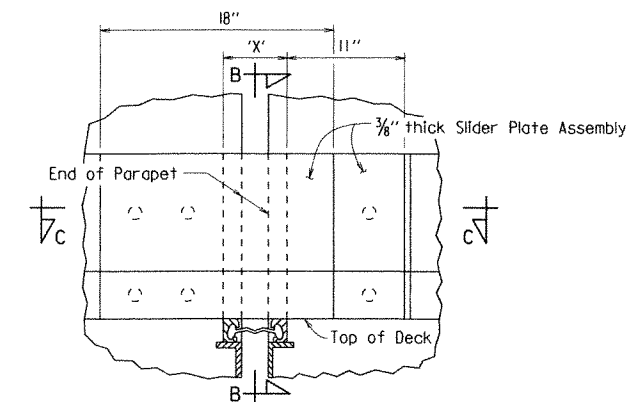


SECTION B-B
Scale: 1 1/2" = 1'-0"

EXPANSION DEVICE INSTALLATION

Bent 1 or 5

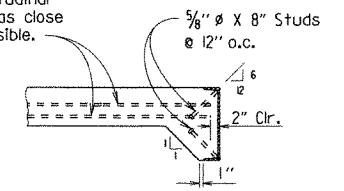
- The Contractor may elect to install the expansion device using one of the following two alternatives.
- 1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.
 - 2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.



NOTE: Dimension 'X' equals the width of opening in parapet at curb to allow for removal or repair of joint.

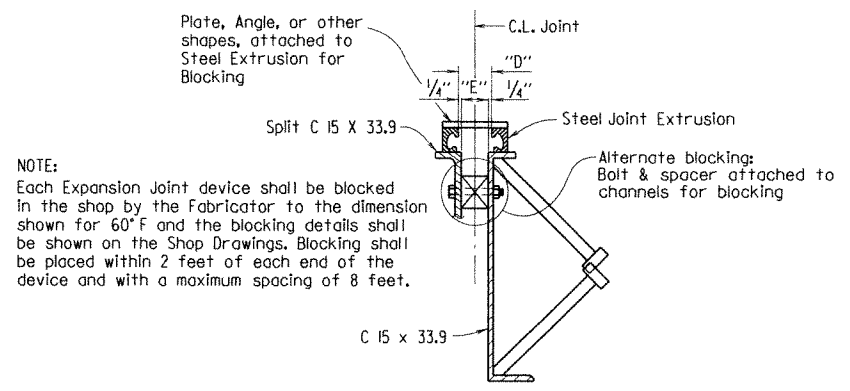
DETAIL OF NEOPRENE STRIP SEAL AT CURB
No Scale

Hold ends of longitudinal reinforcing steel as close to channel as possible.



NOTE: As an alternate to 5/8" studs, 1/2" x 8" studs spaced as shown may be used. Use weight of 5/8" stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT
No Scale



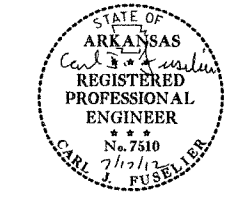
NOTE: Each Expansion Joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

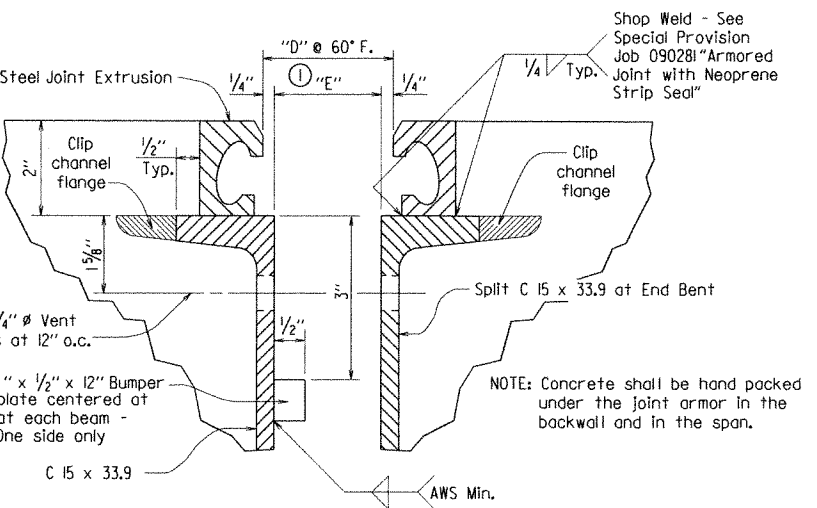
STRIP SEAL DATA

Bent Number	① "E" width perpendicular to joint at 24 hour average temperature of:			"D" joint width perpendicular to joint at 60°F	Movement Rating	"B" perpendicular to joint
	40°	60°	80°			
1 & 5	2 1/2"	2"	1 1/2"	2 1/2"	4"	2 1/2"

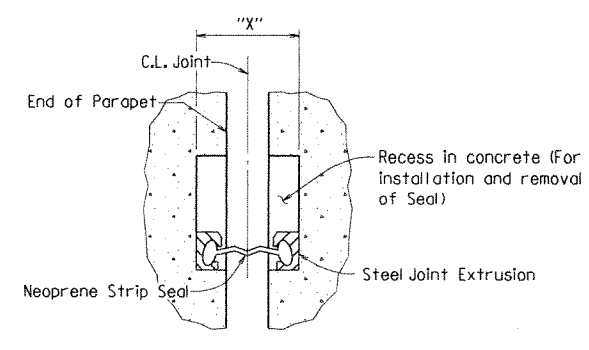
① The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.



BRIDGE ENGINEER



DETAIL B
No Scale



SECTION D-D
No Scale

SHEET 6 OF 7
DETAILS OF 550'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT NORTH FORK RIVER ROUTE SEC. ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.
DRAWN BY: MRE DATE: 12/15/11 FILENAME: b090281_sl.dgn
CHECKED BY: JCT DATE: 7/11/12 SCALE: AS SHOWN
DESIGNED BY: DBS DATE: 11/11
BRIDGE NO. 07248 DRAWING NO. 52646

PRINT DATE: 17-JUL-2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		51	106
① 07248 - SPAN DETAILS - 52647								

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010) with 2010 Interims.

LIVE LOADING: HL-93

MATERIALS AND STRENGTHS:

Class (SIAE) Concrete $f'_c = 4,000$ psi
 Reinforcing Steel (AASHTO M31 or M53, Gr. 60) $f_y = 60,000$ psi
 Structural Steel (AASHTO M 270, Gr. 50W) $f_y = 50,000$ psi
 Structural Steel (AASHTO M 270, Gr. 36) $f_y = 36,000$ psi

CONCRETE:

All concrete shall be Class (SIAE) with a minimum 28 day compressive strength $f'_c = 4000$ psi. Concrete shall be poured in the dry and all exposed corners to be chamfered $\frac{3}{4}$ " unless otherwise noted.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class (SIAE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

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

The concrete deck shall be given a Fine Finish in accordance with subsection 802.19 for Class 5, Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the parapet railing.

A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60. The reinforcing steel shall 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 of "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M270, Gr. 50W, unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)". Structural Steel completely embedded in concrete may be AASHTO M270, Gr. 36 or M270, Gr. 50. All exposed surfaces shall be cleaned in accordance with subsection 807.84 unless otherwise noted.

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.

Longitudinal girders and all field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test Specified in subsection 807.05. This work and material will not be paid for directly but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50W)". Webs, flange plates, 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.

Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted and approved before fabrication is begun. Girder webs may be made by shop splicing with minimum lengths of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with minimum lengths of 25'-0" for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for welds for these splices will be made.

All girders shall be blocked in their true position in the shop as specified in subsection 807.54 (b)(2). The camber, length of sections, distance between bearings and openings of joints shall be measured with the girder in their true position. This information shall become part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of $\frac{1}{4}$ " +/- is allowed for camber.

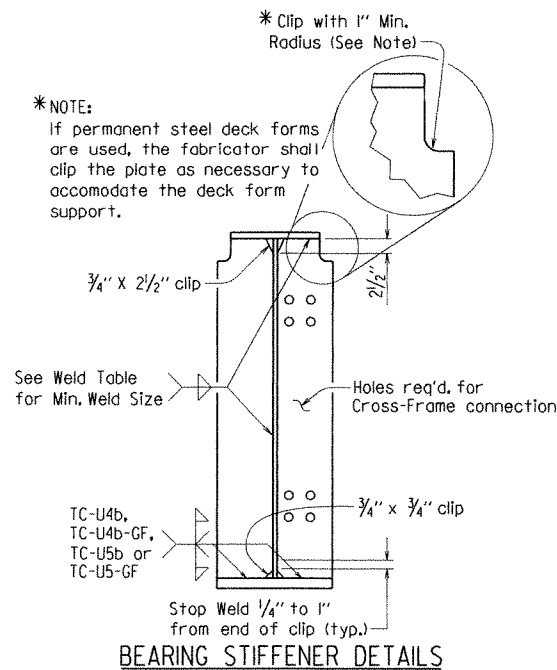
Field connections shall be bolted with high-strength bolts. Bolts shall be $\frac{3}{4}$ " diameter, unless noted otherwise, and open holes shall be $\frac{1}{8}$ ", unless noted otherwise. Holes for $\frac{3}{4}$ " diameter bolts may be $\frac{5}{8}$ " diameter if a washer is supplied for use under both the nut and head of the bolt. Bolt spacing shall be $2\frac{1}{2}$ " for $\frac{3}{4}$ " diameter bolts unless noted otherwise. For Field Splice bolts shall be $\frac{1}{8}$ " diameter bolts unless noted otherwise. Open holes shall be $\frac{1}{8}$ " unless noted otherwise. Bolt spacing shall be 3" for $\frac{1}{8}$ " diameter bolts unless noted otherwise. Bolts shall be placed with heads on the outside face of the exterior girder web and on the bottom of the girder flanges.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screeled 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.

Groove welds in main plate girder members shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the contractor's expense.

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

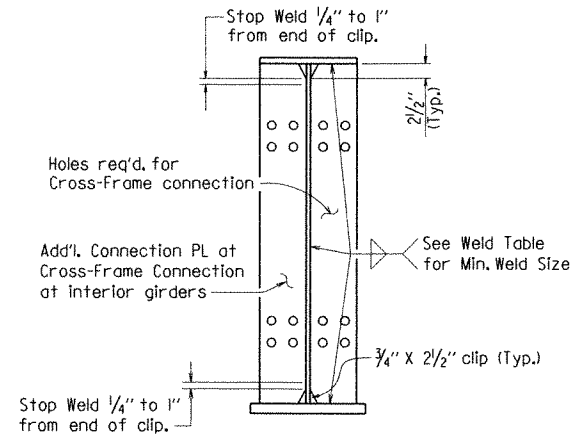
Bearings shall be seated in accordance with subsection 808.08. This work and material will not be paid for directly but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50W)". Cross-Frames shall be installed as girders are erected. All bolts in Cross-Frames and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring of the concrete deck.



BEARING STIFFENER DETAILS

No Scale

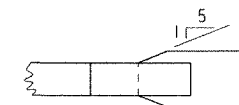
NOTE: Bearing stiffeners shall be vertical in their final position.



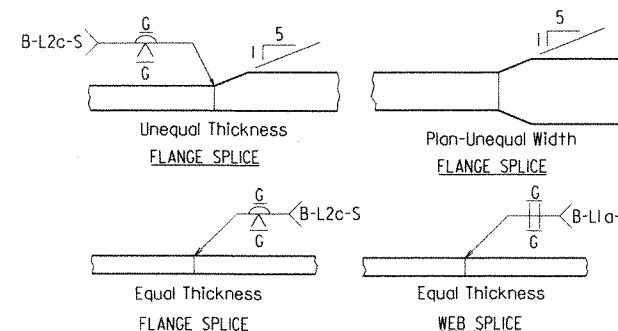
CONNECTION PLATE DETAILS

No Scale

NOTE: Bolts in Cross-frame connections shall be properly installed and tightened in accordance with subsection 807.71.



FIELD SPLICE AT UNEQUAL FLANGE WIDTHS



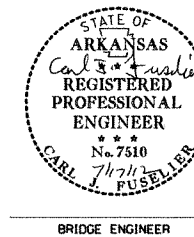
DETAILS OF WELDED SPLICES

No Scale

TABLE FOR WELD

Material Thickness Of Thicker Part Joined (Inches)	Minimum Size Of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To $\frac{3}{4}$ " Inclusive	$\frac{1}{4}$ "	Used
Over $\frac{3}{4}$ "	$\frac{5}{16}$ "	

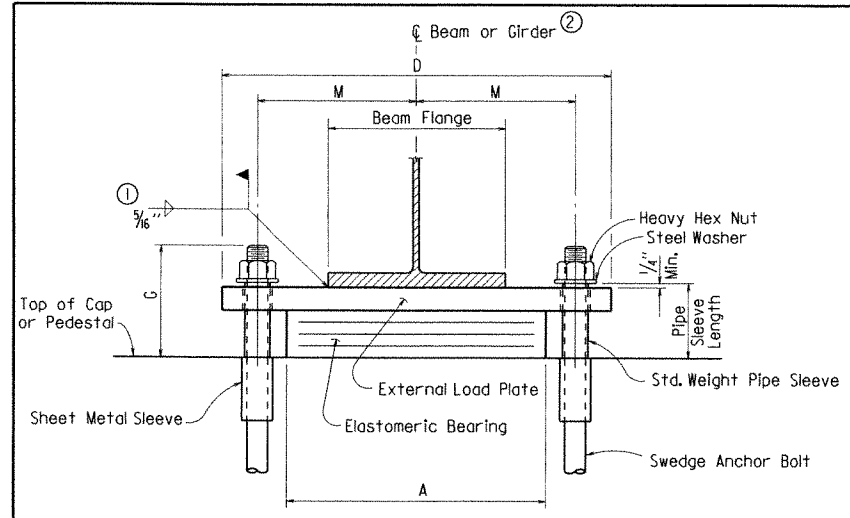
NOTE: When a fillet weld size, as shown on the Plans, is larger than the minimum, the First Pass shall be that specified for minimum size of fillet weld.



SHEET 7 OF 7
 DETAILS OF 550'-0" CONTINUOUS
 COMPOSITE PLATE GIRDER UNIT
 NORTH FORK RIVER
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION

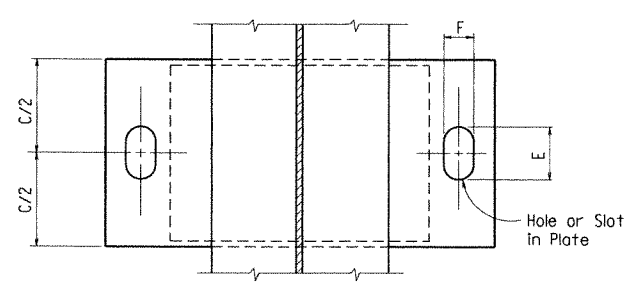
LITTLE ROCK, ARK.
 DRAWN BY: MRE DATE: 12/15/11 FILENAME: b090281.sldgn
 CHECKED BY: DBJ DATE: 7/12/12 SCALE: AS SHOWN
 DESIGNED BY: DBJ DATE: 11/11
 BRIDGE NO. 07248 DRAWING NO. 52647

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090281	52	106
				07248 - ELASTO. BRGS. - 52648				

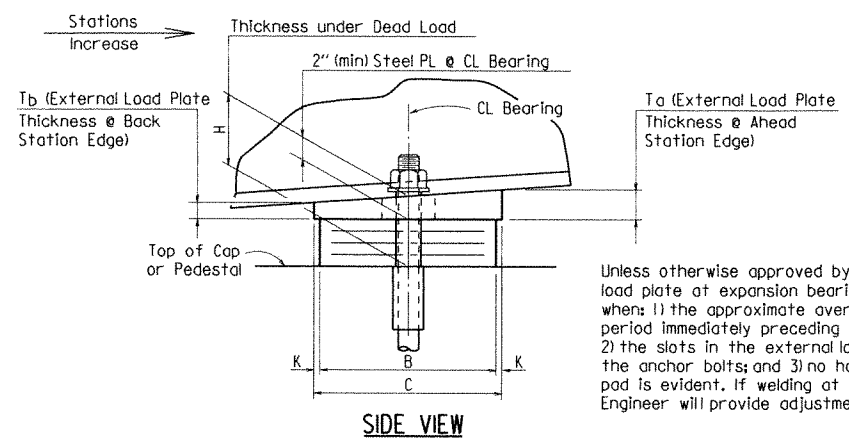


FRONT VIEW

- ① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.
- ② C.L. Elastomeric pad shall be aligned with C.L. Girder.



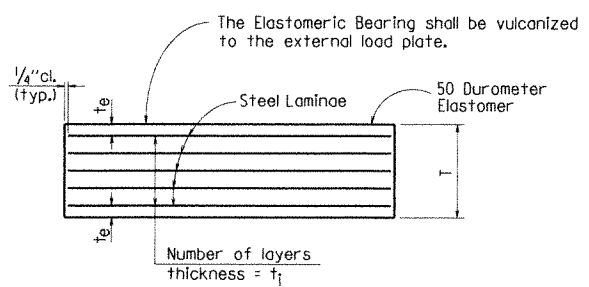
PLAN VIEW



SIDE VIEW

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

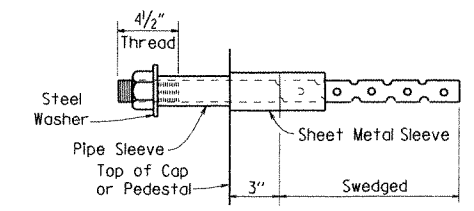
NOTE: The direction of bevel of the external load plate may not be accurately depicted with respect to T_a and T_b values shown in the "Table of Fabricator Variables".



ELASTOMERIC BEARING

t_e = thickness of elastomer cover on top and bottom of pad
t₁ = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness t₁

- ③ Dimension shown for Intermediate Bents is measured from top of Pedestal. Contractor shall consider height of Pedestal if Optional Construction Joint is used.



ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a DPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)".

GENERAL NOTES

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

External load plates shall conform to AASHTO M 270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

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

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

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

Tabular Data by: DBS Date: 03-05-12
Checked by: JCT Date: 7/11/12
Designed by: DBS Date: 12/21/12

TABLE OF FABRICATOR VARIABLES

* Maximum Design Load = Service I Limit State

BRIDGE NO.	LOCATION		BEARING TYPE	NO. of BEARINGS EACH BENT	* MAXIMUM DESIGN LOAD (KIPS)	③		ELASTOMERIC PAD						EXTERNAL LOAD PLATE						ANCHOR BOLT							
	BENT NO(S).	BEAM OR GIRDER NO.				G	H	A	B	N	t ₁	t _e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T _a	T _b	ANCHOR BOLT		PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)
																							(Ø x L)	GRADE			
07248	1	1	EXP.	1	158	11 1/2"	7 7/8"	16"	9"	8	1/2"	1/4"	9 @ 12 Gauge	5 1/8"	11 1/2"	28 1/2"	7 1/2"	3 3/8"	1 1/4"	11"	1.85"	2.15"	2"Øx32"	55	2 1/2"Øx8 1/2"	4"Ø x 6"	3 3/4"
	1	2	EXP.	1	158	11 1/2"	7 7/8"	16"	9"	8	1/2"	1/4"	9 @ 12 Gauge	5 1/8"	11 1/2"	28 1/2"	7 1/2"	3 3/8"	1 1/4"	11"	2.41"	2.71"	2"Øx32"	55	2 1/2"Øx8 1/2"	4"Ø x 6"	3 3/4"
	1	3	EXP.	1	158	11 1/2"	8 1/8"	16"	9"	8	1/2"	1/4"	9 @ 12 Gauge	5 1/8"	11 1/2"	28 1/2"	7 1/2"	3 3/8"	1 1/4"	11"	2.60"	2.90"	2"Øx32"	55	2 1/2"Øx8 1/2"	4"Ø x 6"	3 3/4"
	1	4	EXP.	1	158	11 1/2"	7 7/8"	16"	9"	8	1/2"	1/4"	9 @ 12 Gauge	5 1/8"	11 1/2"	28 1/2"	7 1/2"	3 3/8"	1 1/4"	11"	1.84"	2.16"	2"Øx32"	55	2 1/2"Øx8 1/2"	4"Ø x 6"	3 3/4"
	1	5	EXP.	1	158	11 1/2"	7 7/8"	16"	9"	8	1/2"	1/4"	9 @ 12 Gauge	5 1/8"	11 1/2"	28 1/2"	7 1/2"	3 3/8"	1 1/4"	11"	1.84"	2.16"	2"Øx32"	55	2 1/2"Øx8 1/2"	4"Ø x 6"	3 3/4"
	2	ALL	FIX	5	439	9"	5"	20"	16"	4	1/2"	1/4"	5 @ 12 Gauge	3"	17"	33 1/2"	3 3/4"	3 3/4"	1/2"	13 1/4"	1.66"	2.34"	2 1/2"Øx35"	55	3"Øx5 1/2"	4"Ø x 10"	4 1/2"
	3	ALL	FIX	5	439	9"	5"	20"	16"	4	1/2"	1/4"	5 @ 12 Gauge	3"	17"	33 1/2"	3 3/4"	3 3/4"	1/2"	13 1/4"	1.66"	2.34"	2 1/2"Øx35"	55	3"Øx5 1/2"	4"Ø x 10"	4 1/2"
	4	ALL	FIX	5	439	9"	5"	20"	16"	4	1/2"	1/4"	5 @ 12 Gauge	3"	17"	33 1/2"	3 3/4"	3 3/4"	1/2"	13 1/4"	1.66"	2.34"	2 1/2"Øx35"	55	3"Øx5 1/2"	4"Ø x 10"	4 1/2"
	5	ALL	EXP.	5	158	10 3/4"	7 7/8"	16"	9"	8	1/2"	1/4"	9 @ 12 Gauge	5 1/8"	11 1/2"	28 1/2"	7 1/2"	3 3/8"	1 1/4"	11"	1.77"	2.23"	2"Øx31"	55	2 1/2"Øx7 3/4"	4"Ø x 6"	3 3/4"



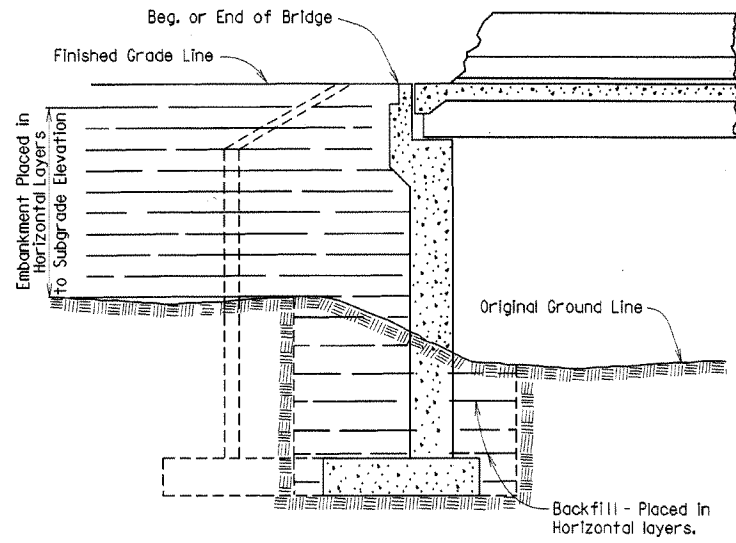
**DETAILS OF ELASTOMERIC BEARINGS
NORTH FORK RIVER**

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

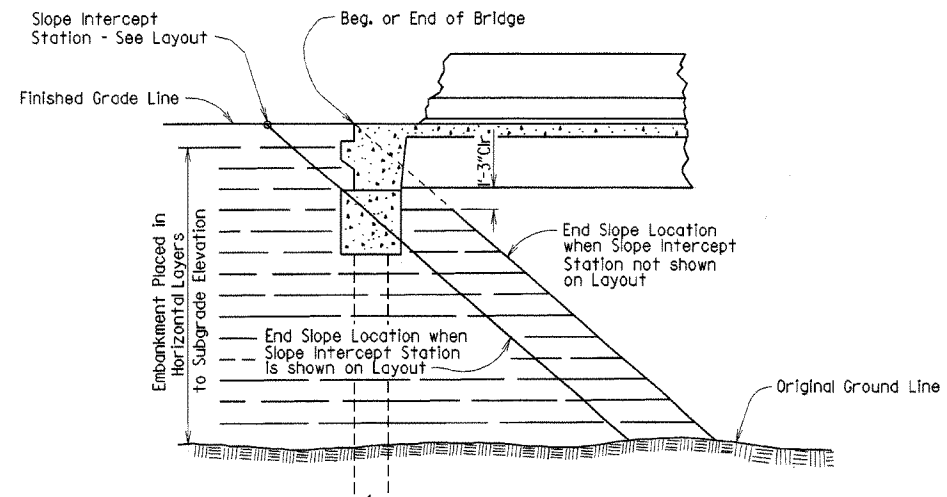
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BRIDGE NO. 07248 DRAWING NO. 52648

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		53	
							JOB NO.	

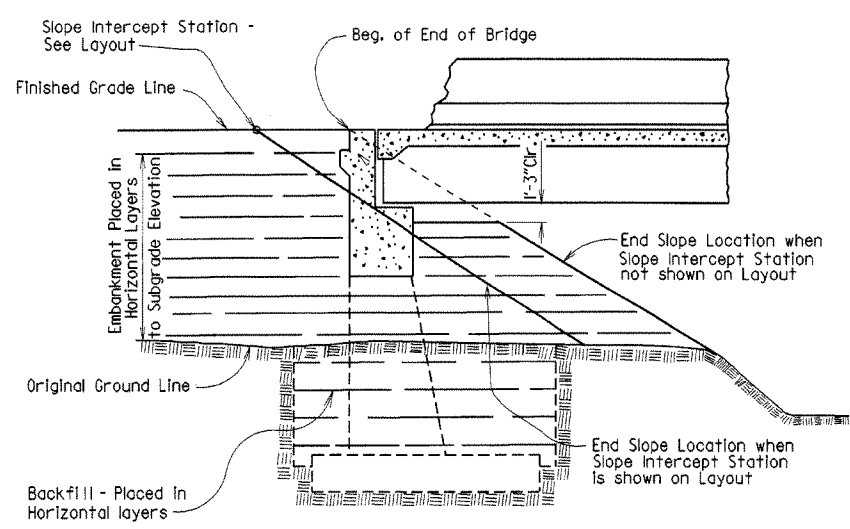
EMBANKMENT & BACKFILL 1888A



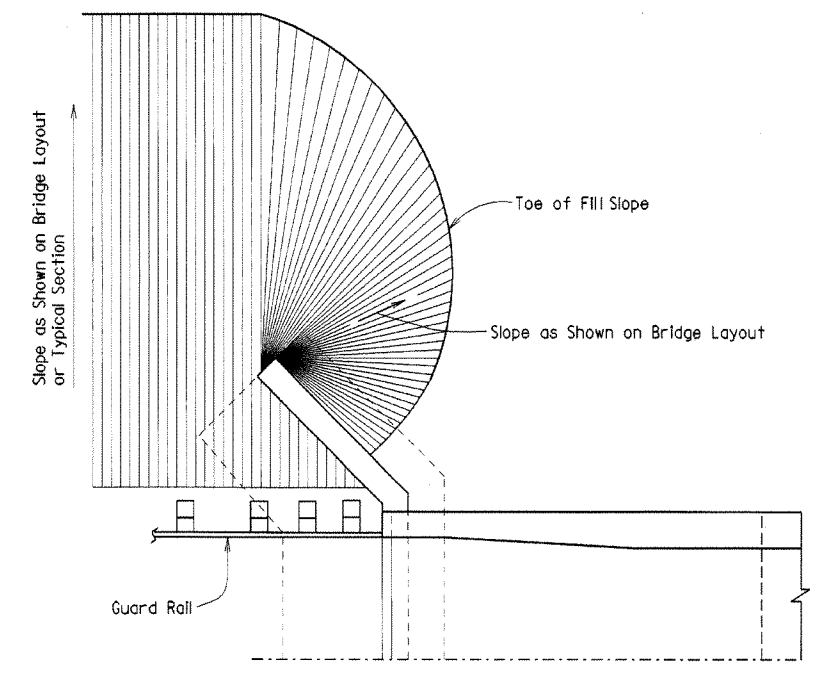
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



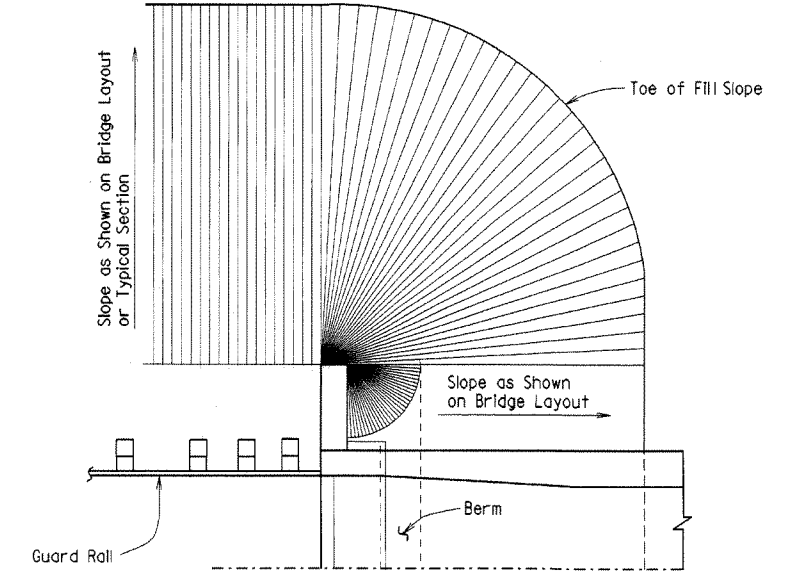
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



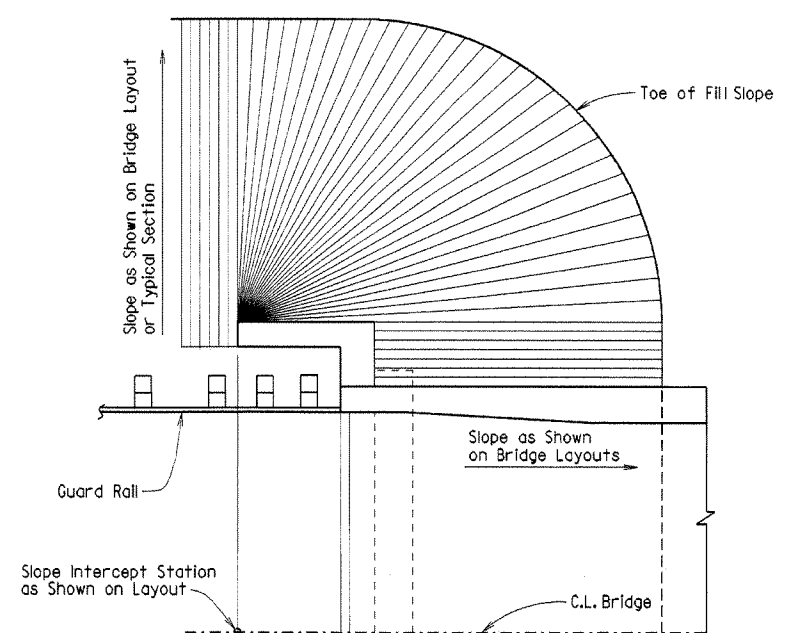
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



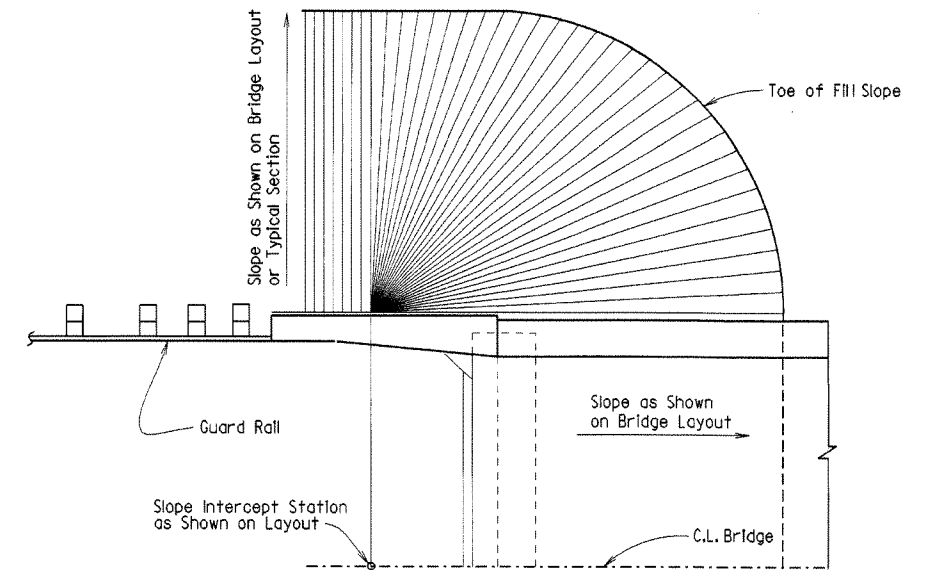
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 4 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to subsections 210.09, 210.10 and 801.08 of the Specifications for construction requirements.

Revised and redrawn MJT 04-10-2003
Chk'd. By: cJF 04-10-2003

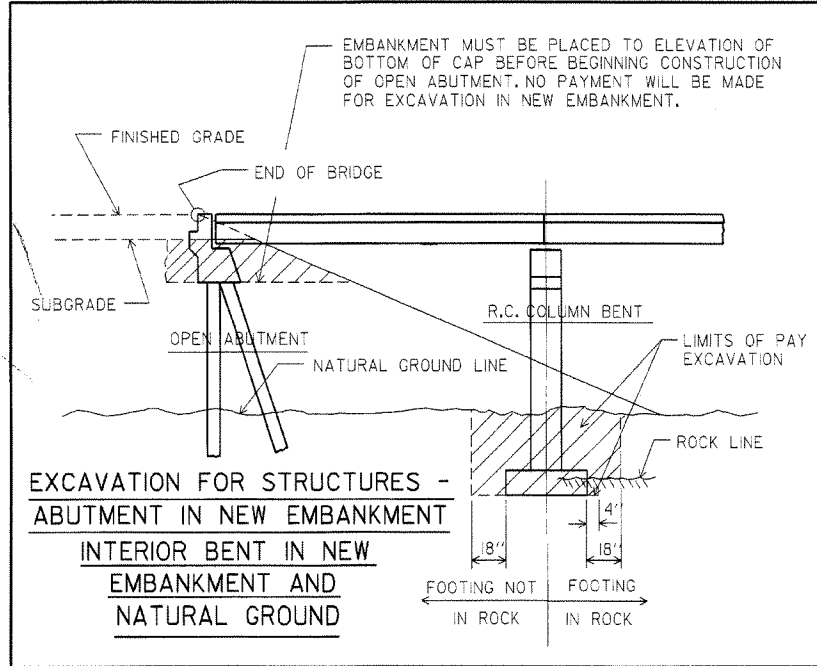


BRIDGE ENGINEER

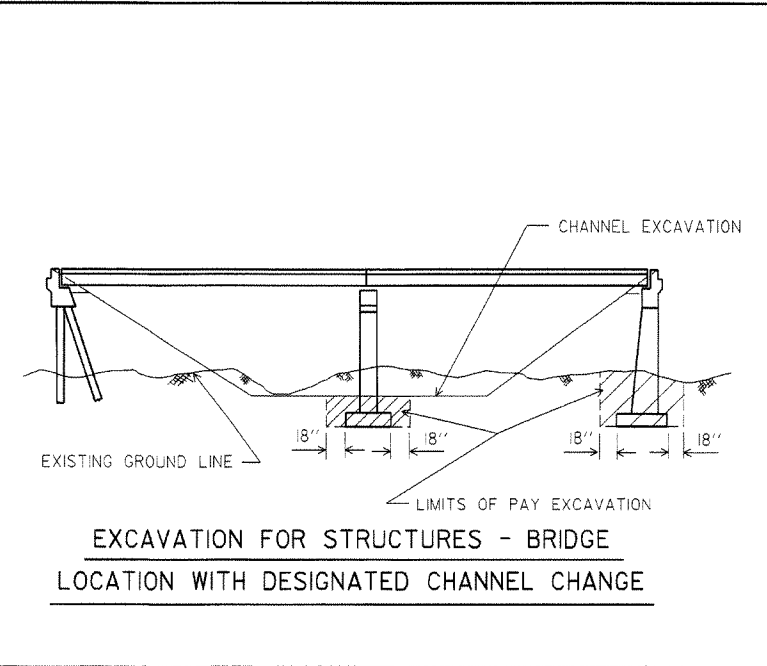
EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1888A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD DATE: _____
BRIDGE NO. _____ DRAWING NO. 1888A

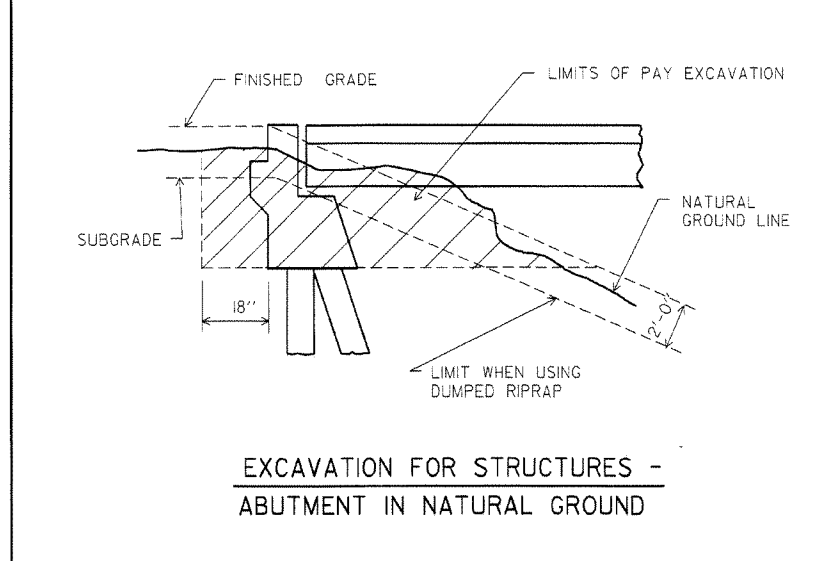
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04-10-2003				6	ARK.		54	
							JOB NO.	
							①	RIP. & EXCAV. 1891F



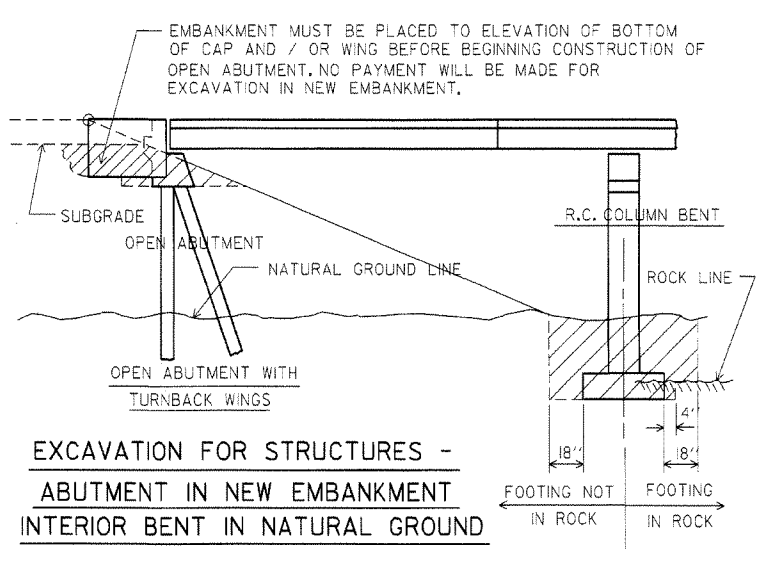
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



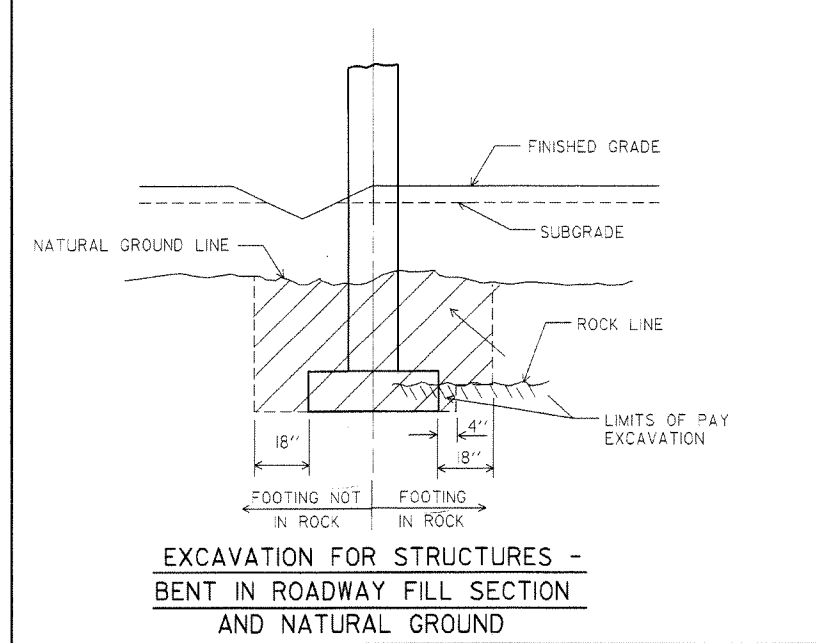
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



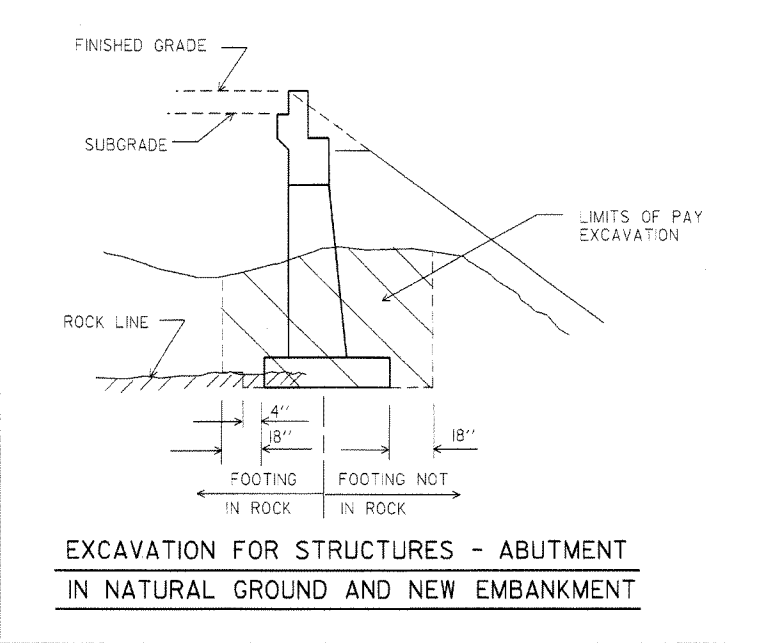
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



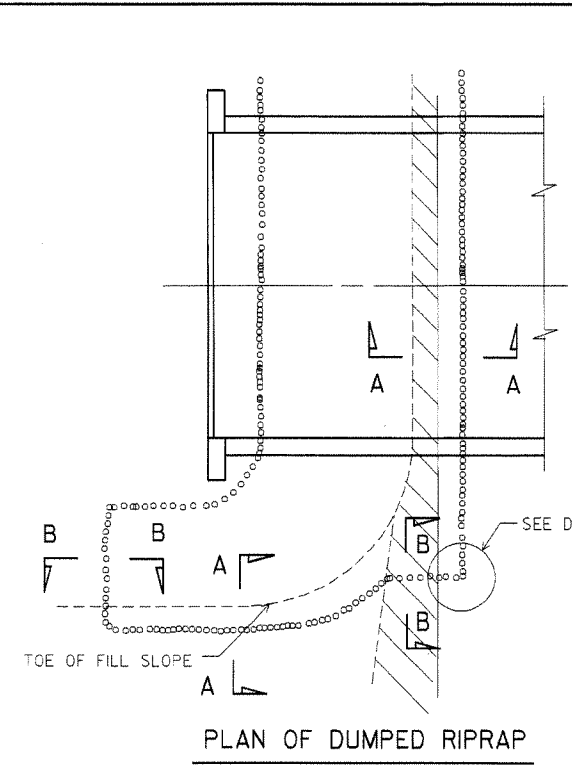
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



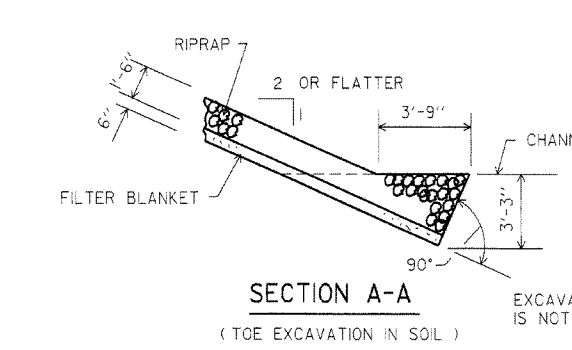
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



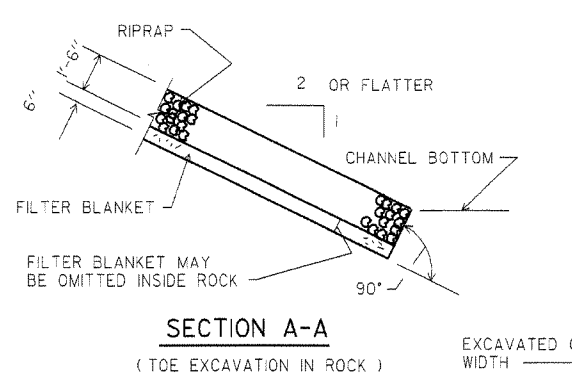
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



PLAN OF DUMPED RIPRAP



SECTION A-A (TOE EXCAVATION IN SOIL)

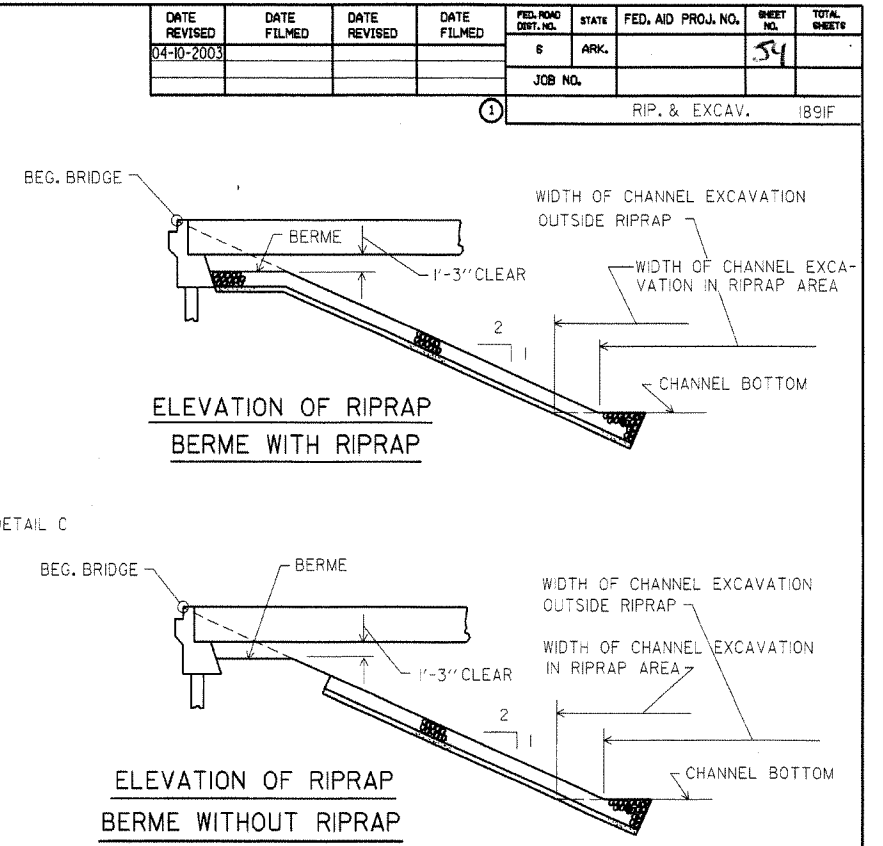


SECTION A-A (TOE EXCAVATION IN ROCK)

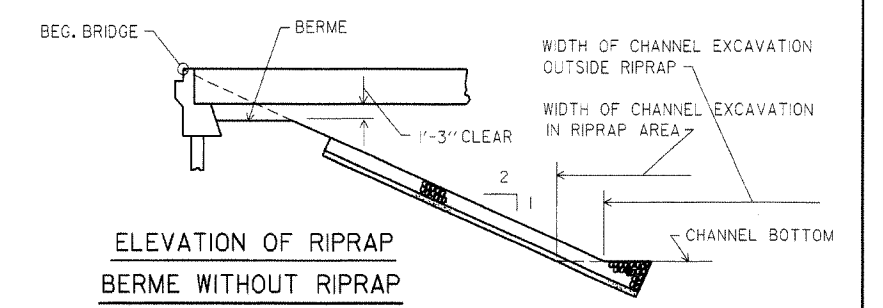
NOTE: USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

NOTE: IN LIEU OF AN AGGREGATE FILTER BLANKET, A SYNTHETIC FIBER GEOTEXTILE FABRIC COMPLYING WITH THE REQUIREMENTS OF SUBSECTION 816.02(6) MAY BE USED.

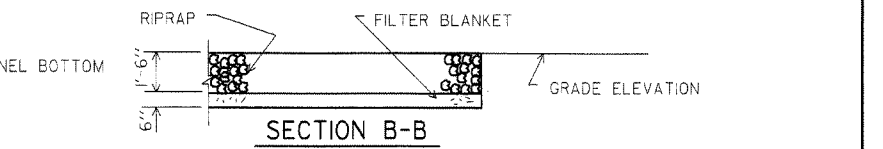
NOTE: DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



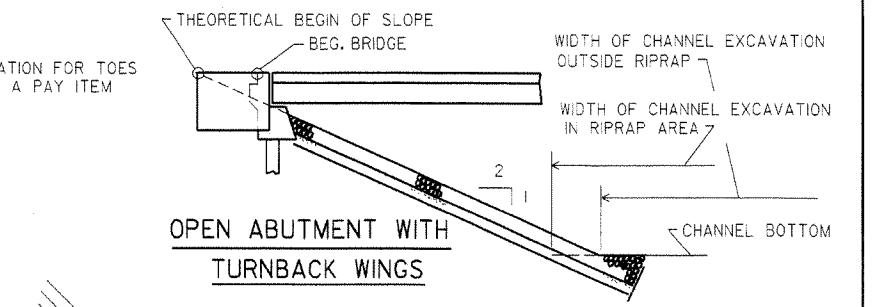
ELEVATION OF RIPRAP BERME WITH RIPRAP



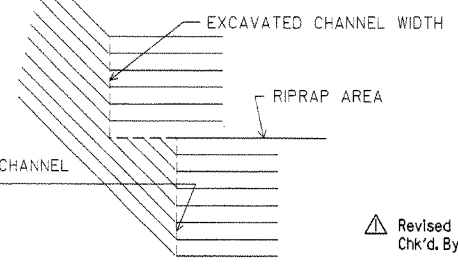
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B

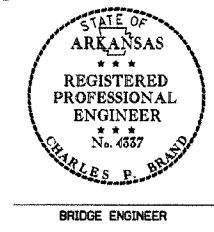


OPEN ABUTMENT WITH TURNBACK WINGS



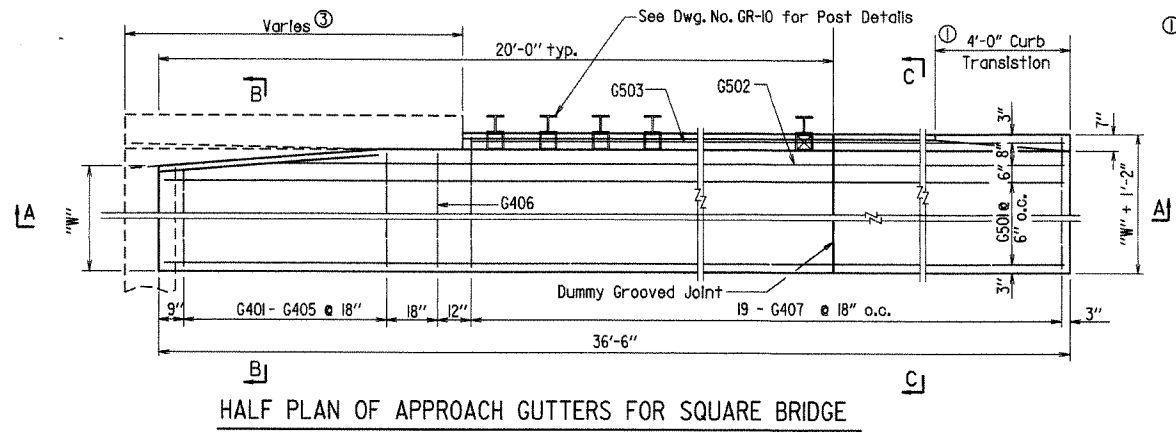
DETAIL C

Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003



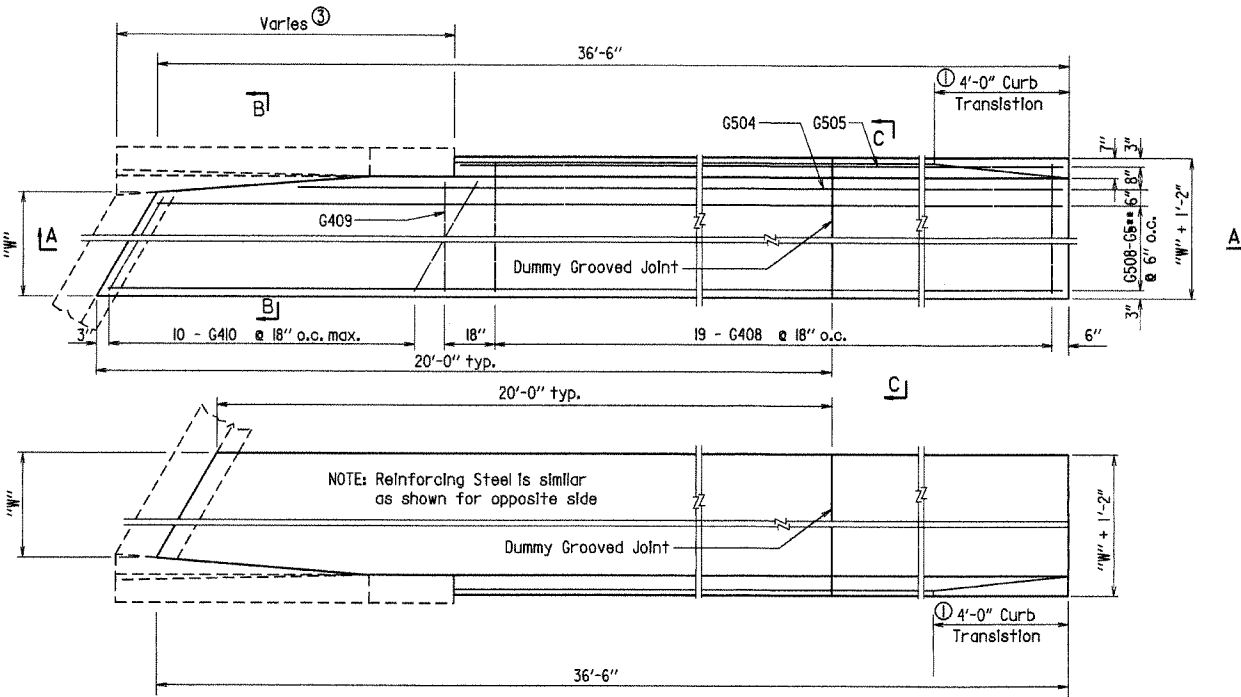
DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B1891F.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD DATE: _____
BRIDGE NO. DRAWING NO. 1891F

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				6	ARK.		53	
07-14-2010								
JOB NO.							TYPE C GUTTERS - 2016C	



HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

③ Length Varies See End Bt. Details for Actual Length. Quantities Shown are for 10'-0" Transition Rail.

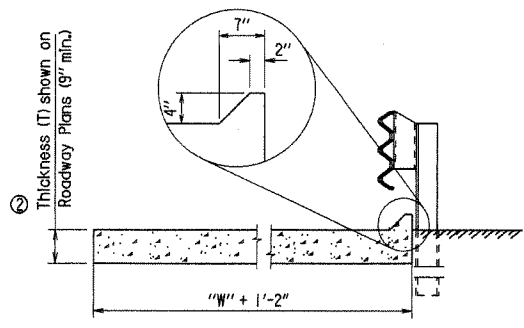


PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

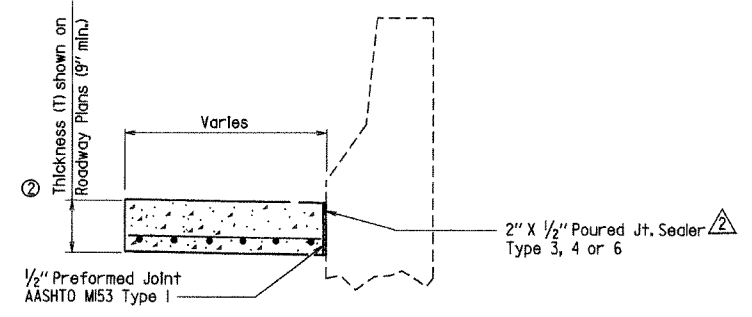
NOTE: Reinforcing Steel is similar as shown for opposite side

② Thickness shall match Approach Slab Thickness. Thickness shall be 9" if Approach Slab is not used.

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION C - C
N.T.S.



SECTION B - B
N.T.S.

*** BAR LIST FOR ONE TYPE C GUTTER

Mark	No. Req'd. for Width "W"				Length	Square or Skewed
	4'-0"	6'-0"	8'-0"	10'-0"		
G401 - G405	1 each	1 each	1 each	1 each	"W"-3" to "W"+3"	Square
G406	1	1	1	1	"W"+3"	Square
G407	19	19	19	19	"W"+10"	Square
G408	19	19	19	19	"W"+10"	Skewed
G409	1	1	1	1	"W"+3"	Skewed
G410	10	10	10	10	*	Skewed
G501	8	12	16	20	36'-2"	Square
G502	1	1	1	1	3'-8"	Square
G503	1	1	1	1	27'-2"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G508 - G5... **	1 each	1 each	1 each	1 each	*	Skewed

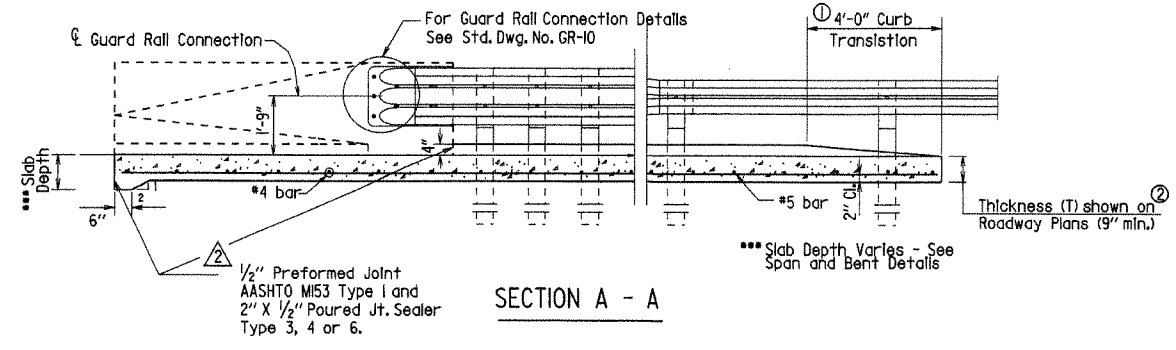
*** Special bar list required when skew angle exceeds 35° for W = 10'; 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

* Bar Lengths vary with Skew.

** G515 for W = 4'
G519 for W = 6'
G523 for W = 8'
G527 for W = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)				
		T=9"	T=10"	T=11"	T=12"	T=14 1/2"
4	439	5.19	5.75	6.31	6.88	8.25
6	623	7.24	8.02	8.80	9.59	11.52
8	807	9.28	10.29	11.30	12.32	14.79
10	991	11.33	12.56	13.79	15.03	18.06



SECTION A - A

1/2" Preformed Joint AASHTO M153 Type I and 2" X 1/2" Poured Jt. Sealer Type 3, 4 or 6.

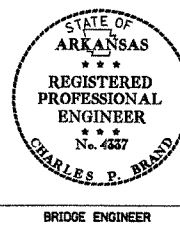
*** Slab Depth Varies - See Span and Bent Details

GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.
Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).
Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

△ Revised and redrawn 4-10-2003. By KDH Ck. By: CJF 4-10-2003

△ Added joint sealer type 07-14-2010 by MJT Checked by: CJF 7-14-2010



DETAILS OF STANDARD TYPE C APPROACH GUTTERS
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016C.STD
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"
DESIGNED BY: STD. DATE: _____
BRIDGE NO. DRAWING NO. 2016C

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11				6	ARK.		56	
JOB NO.							NAME PLATE 2387	

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

Line	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	Highway 5
Line 2	Relief	Railroad	River	
Line 3		Overpass	Relief	

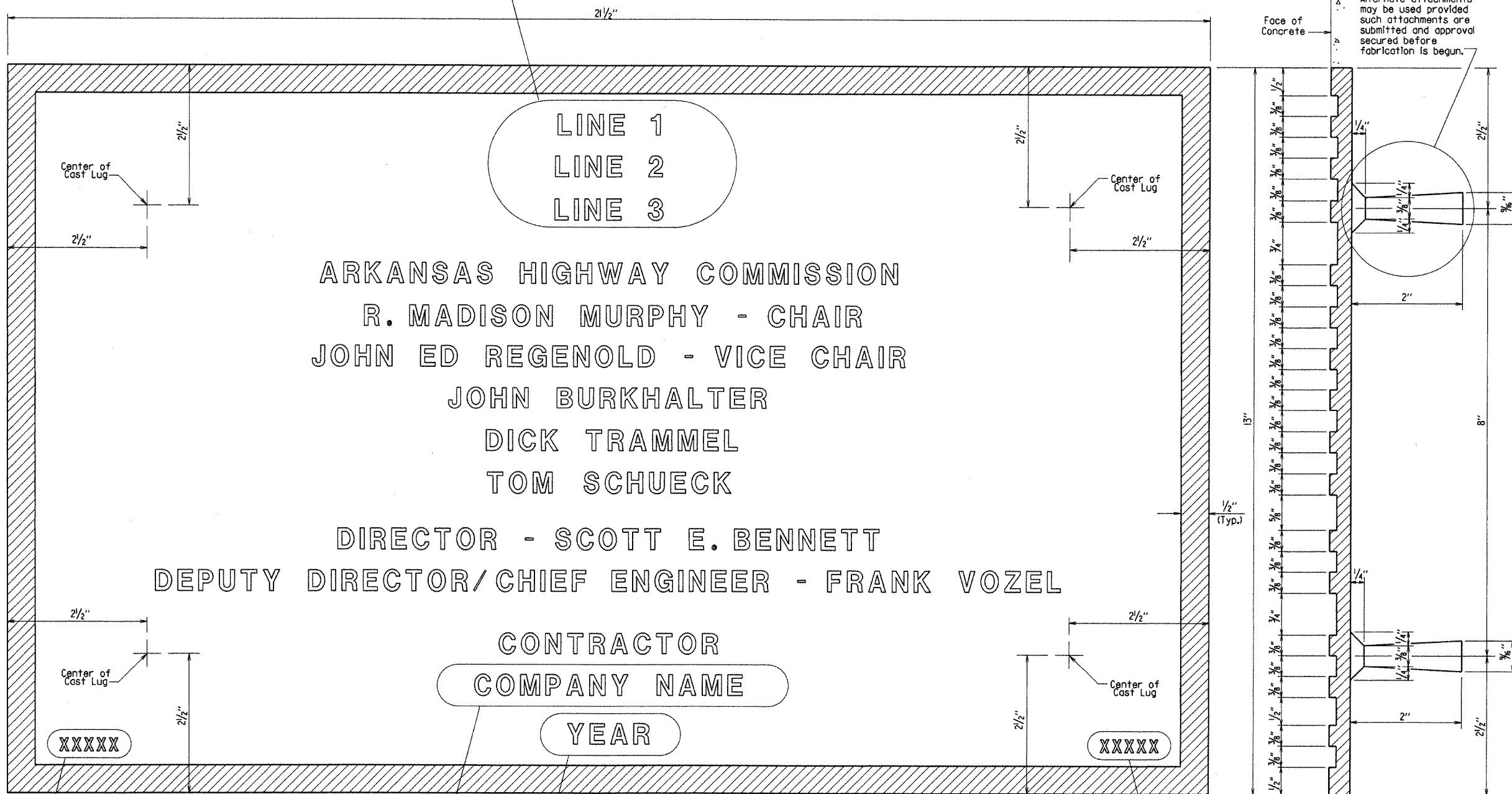
GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 Edition) with applicable Supplemental Specifications and Special Provisions.

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

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 5/8" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered. The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.



Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples: HS 20 HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example: 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example: ABCD CONSTRUCTION, INC.

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

TYPICAL BRIDGE NAME PLATE



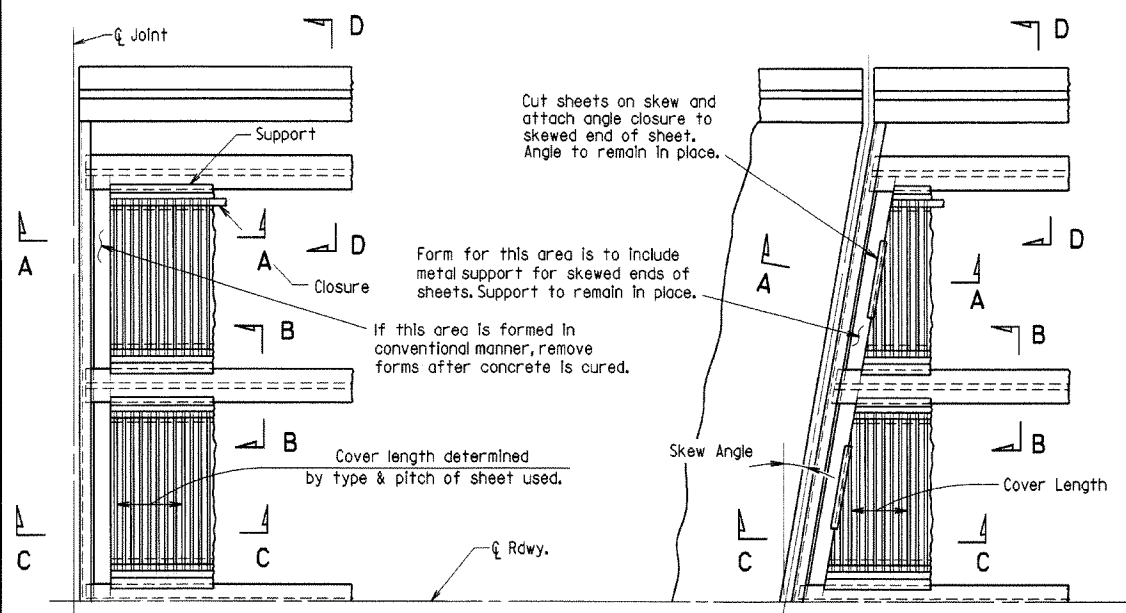
DETAILS OF STANDARD TYPE D BRIDGE NAME PLATE
 ROUTE SEC.
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-8-11 FILENAME: B2387.STD
 CHECKED BY: CRE DATE: 9-8-11 SCALE: 1'-0" = 1'-0"
 DESIGNED BY: STD. DATE: OR AS NOTED
 BRIDGE NO. DRAWING NO. 2387

Revised and Redrawn 9-8-11 KDH Checked By: CRE

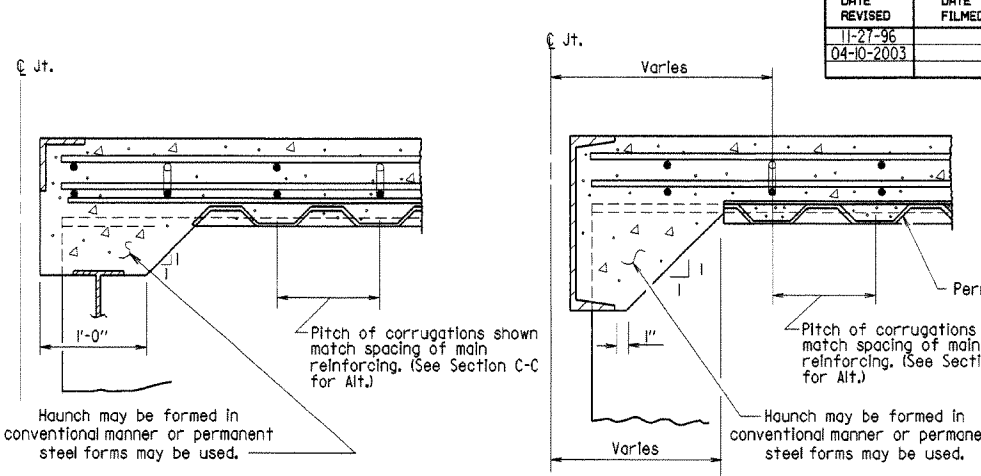
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		57	
04-10-2003										

BR. DECK FORMS 14991



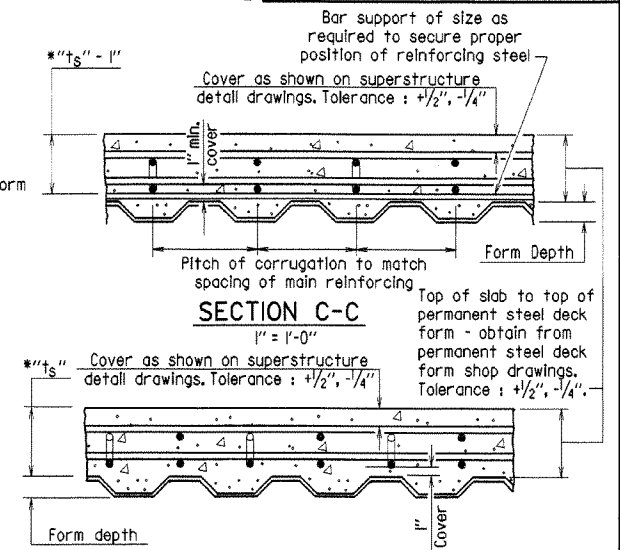
PART PLAN - SQUARE SPAN
3/8" = 1'-0"

PART PLAN - SKEWED SPAN
3/8" = 1'-0"



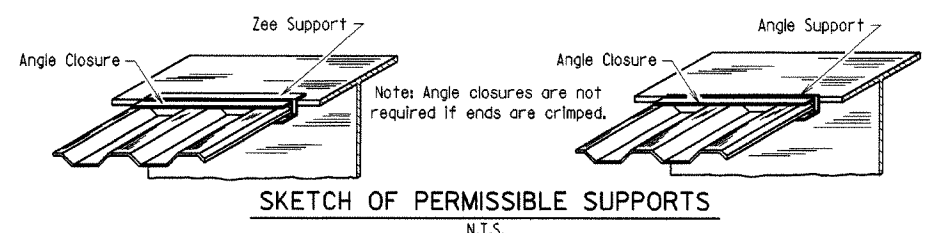
SECTION A-A
N.T.S.
(Angle at end of span)

SECTION A-A
N.T.S.
(Channel at end of span)

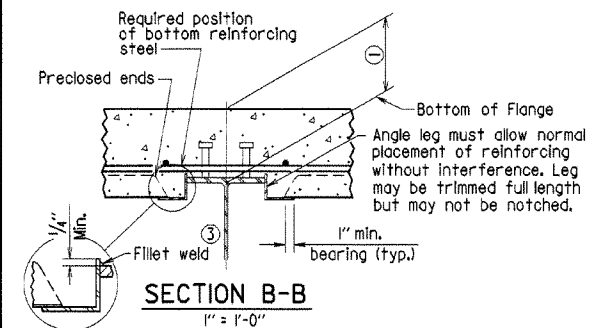


SECTION C-C
1" = 1'-0"

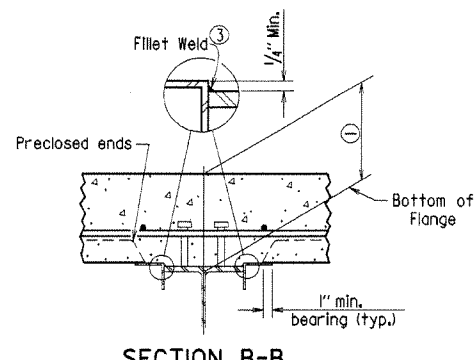
SECTION C-C - ALTERNATE
1" = 1'-0"



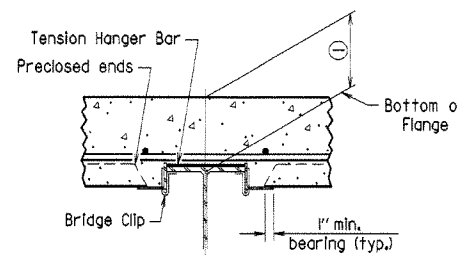
SKETCH OF PERMISSIBLE SUPPORTS
N.T.S.



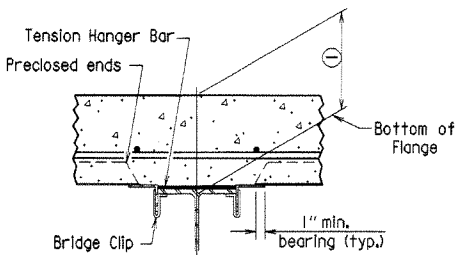
SECTION B-B
1" = 1'-0"



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



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



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

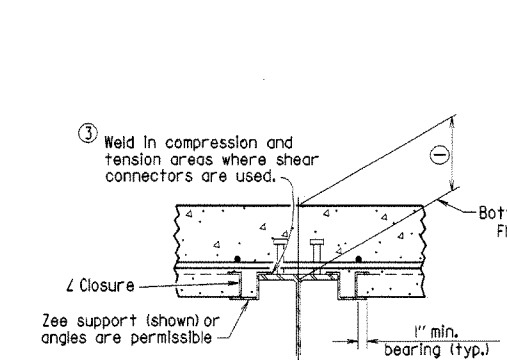
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

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

(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)

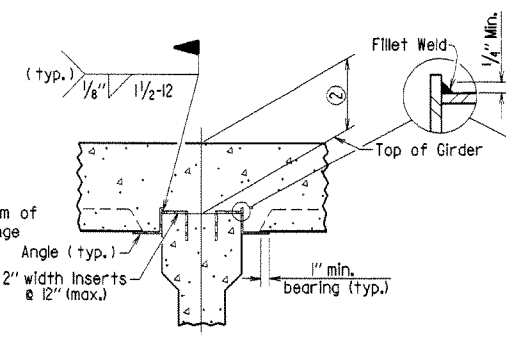
(Showing permissible support for tension flange where shear connectors are not used)

(Showing permissible support for tension flange where shear connectors are not used)



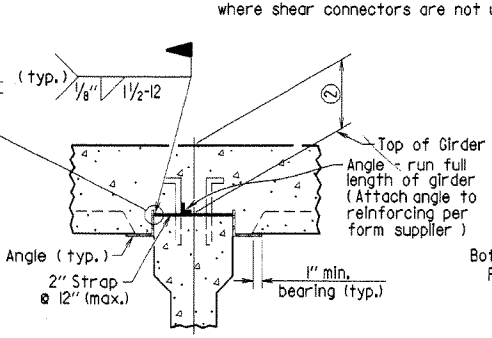
SECTION B-B
1" = 1'-0"

(Showing Z Closure)



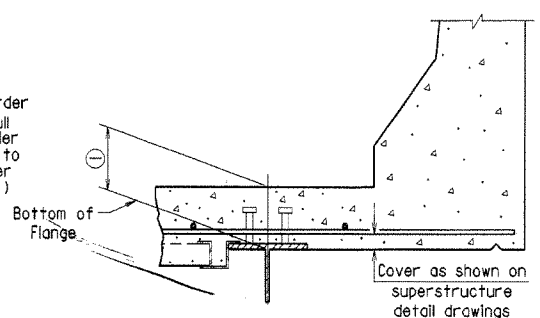
SECTION B-B
(FOR CONCRETE GIRDERS)

(Showing support by insert cast in girder)



SECTION B-B
(FOR CONCRETE GIRDERS)

(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 = $t_s + 1/4"$ + 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.

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

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

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

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

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

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

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

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

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.

**DETAILS OF PERMISSIBLE TYPE
PERMANENT STEEL BRIDGE DECK FORMS
FOR STEEL & CONCRETE GIRDER SPANS**
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

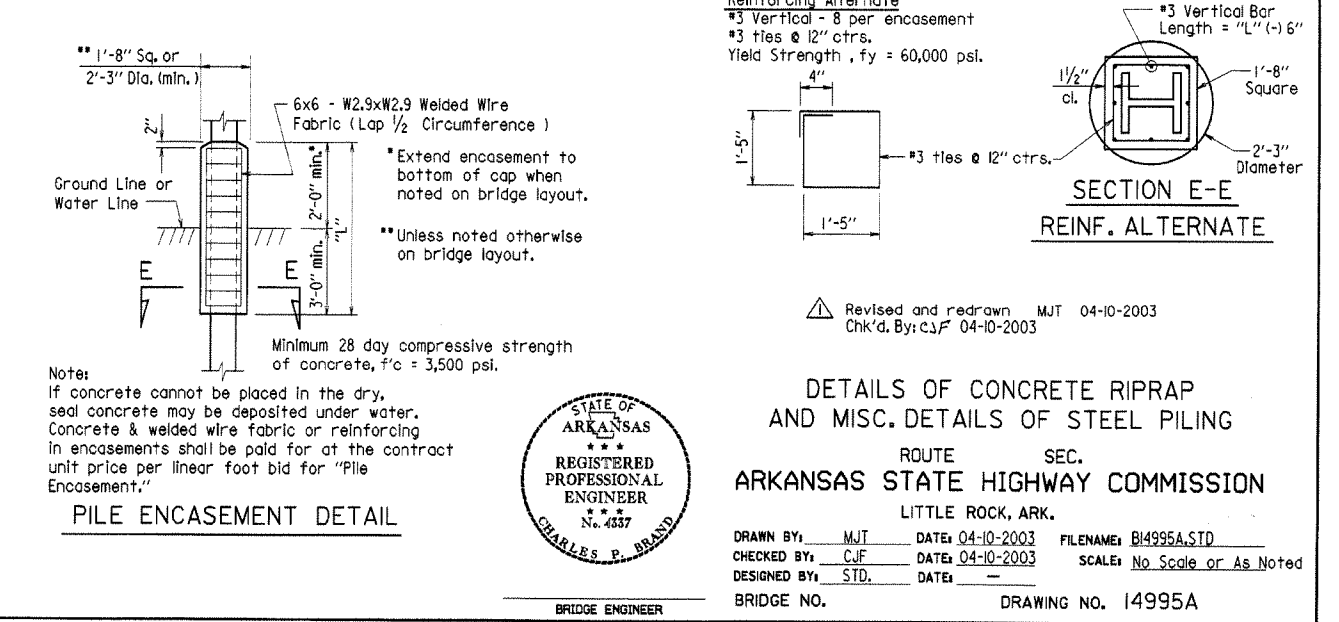
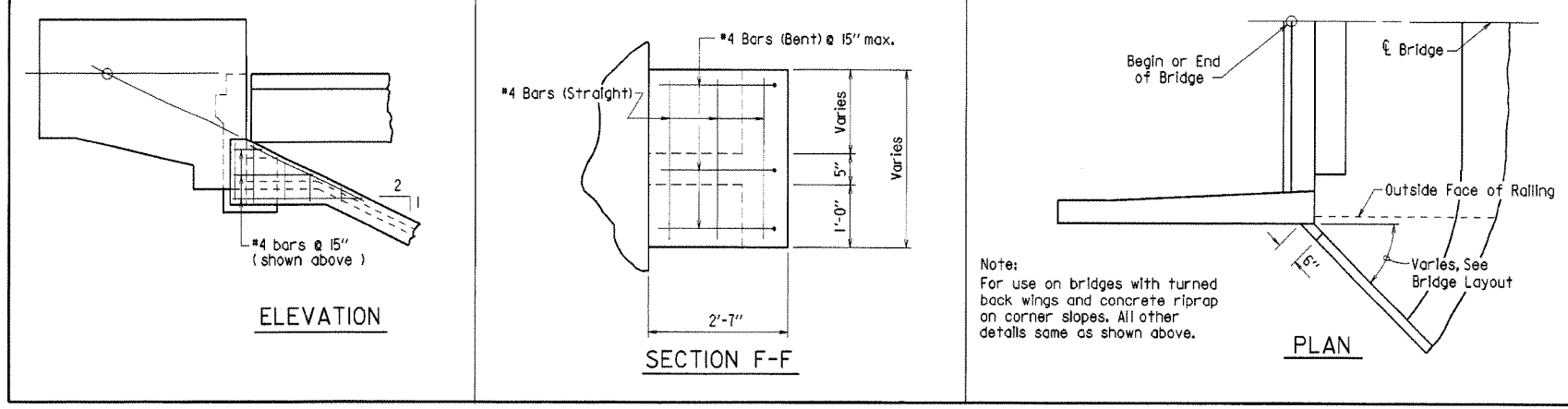
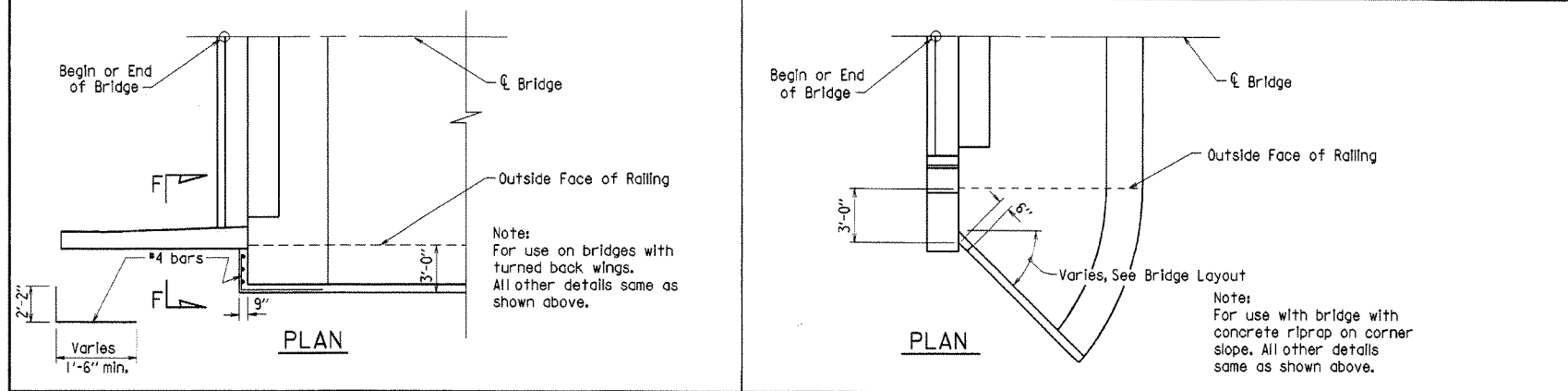
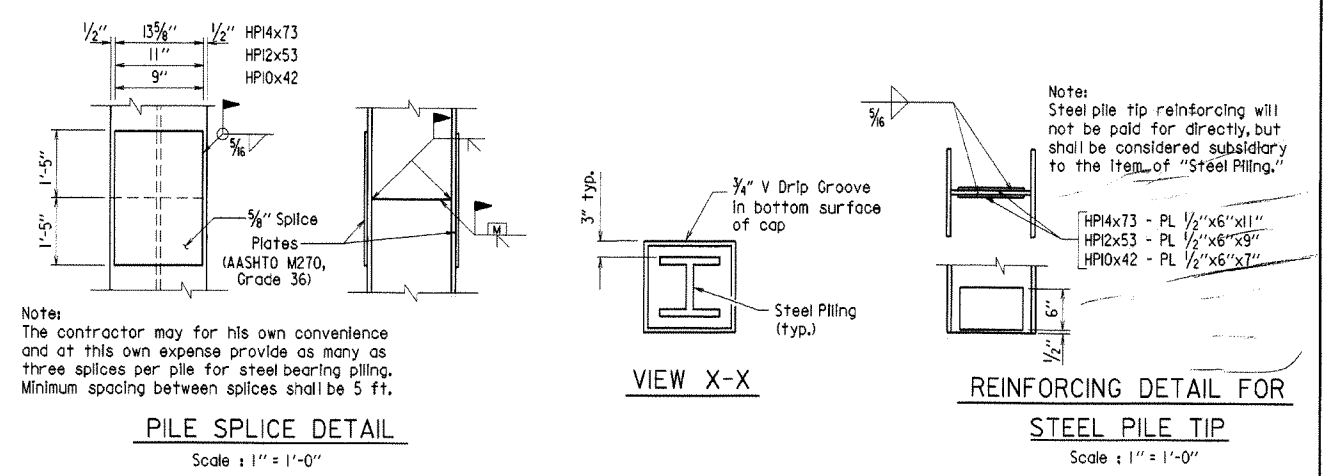
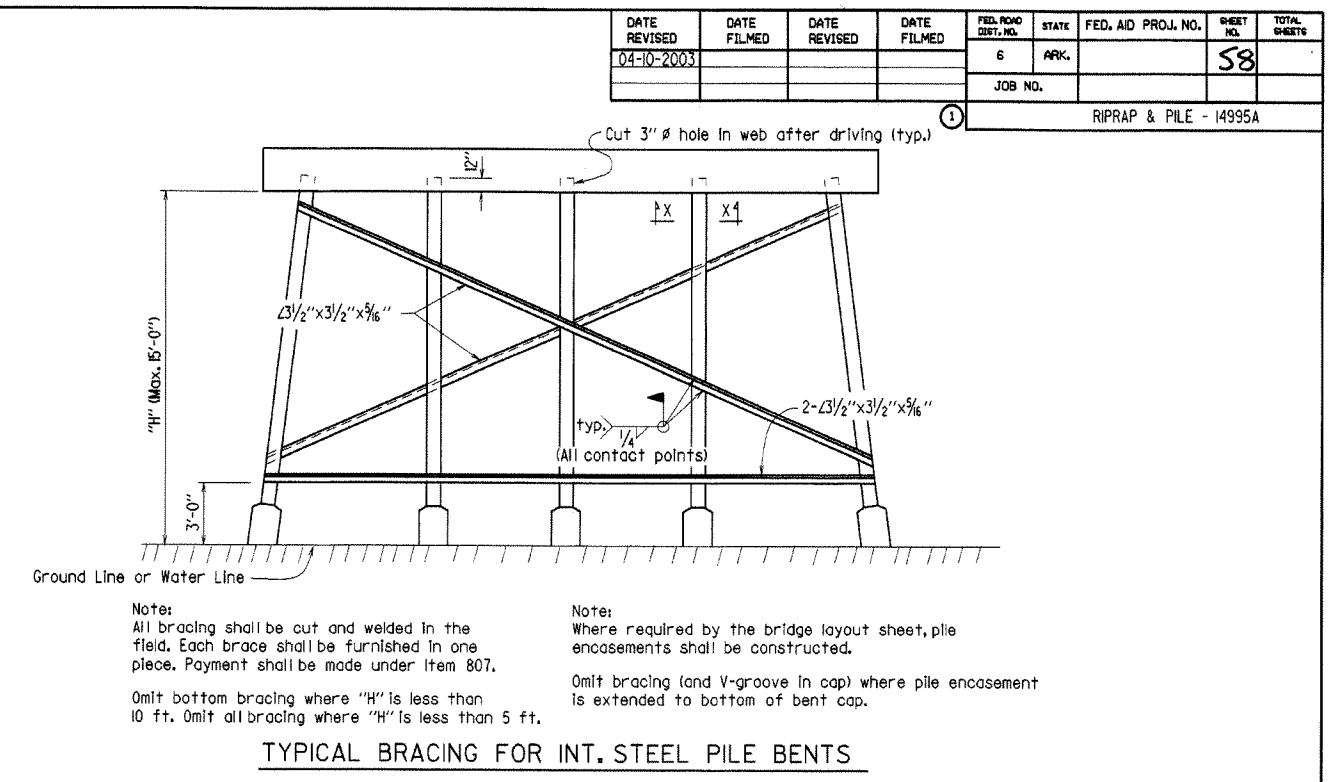
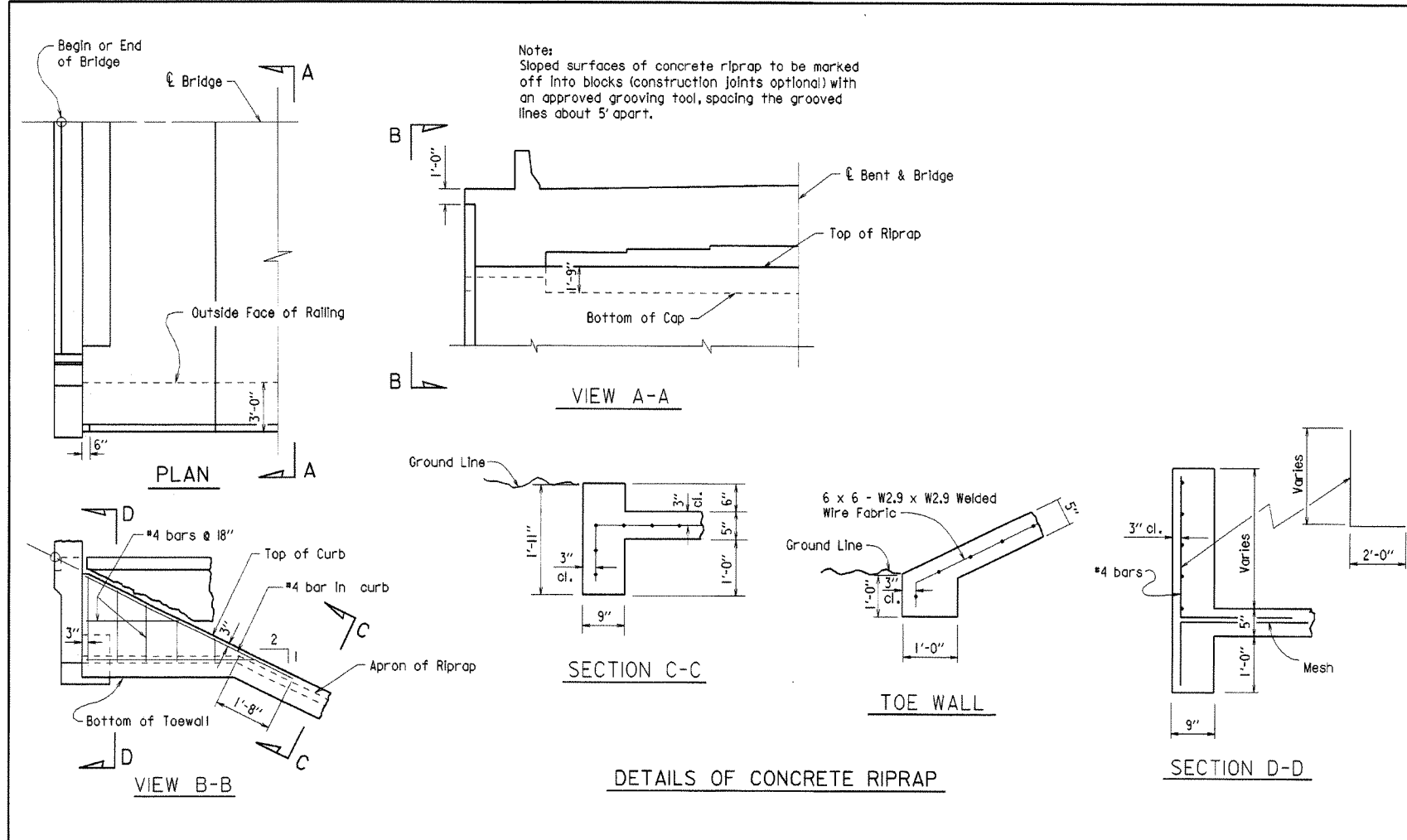
DRAWN BY: MJT DATE: 10-17-96
CHECKED BY: CPB DATE: 10-17-96 SCALE: as noted
DESIGNED BY: STD. DATE: _____
BRIDGE NO. _____ DRAWING NO. 14991

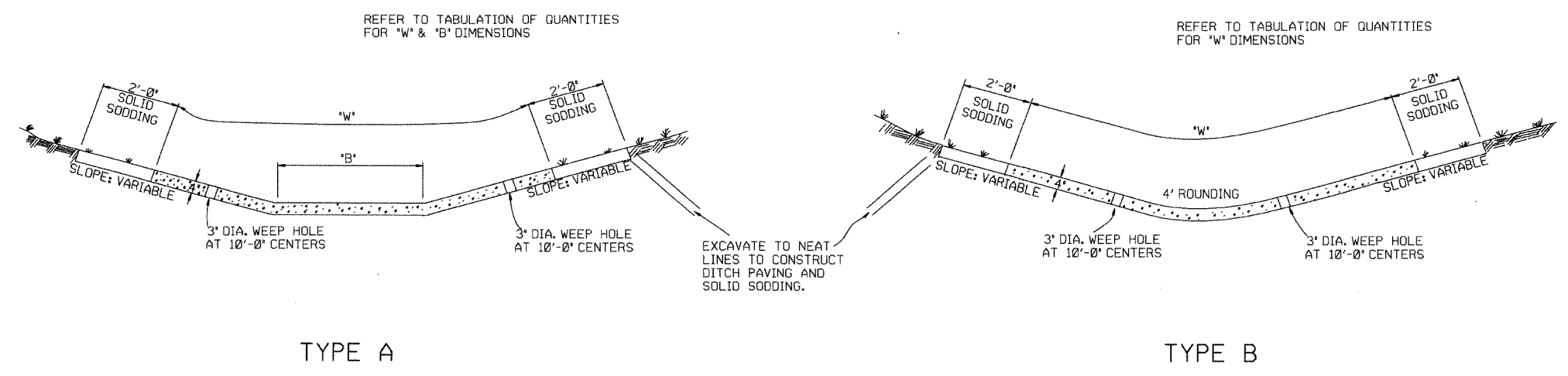


Revised for 2003 AHTD Construction Specifications and CPB Seal. MJT 04-10-2003
Chk'd. By: csp 04-10-2003

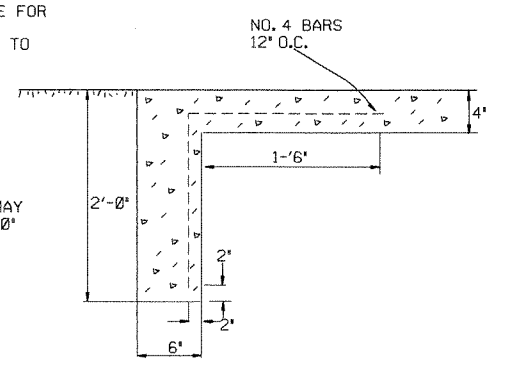
Redrawn and revised 11/27/96; MJT

DATE REVISION	DATE FILMED	DATE REVISION	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		58	
				JOB NO.		RIPRAP & PILE - 14995A		



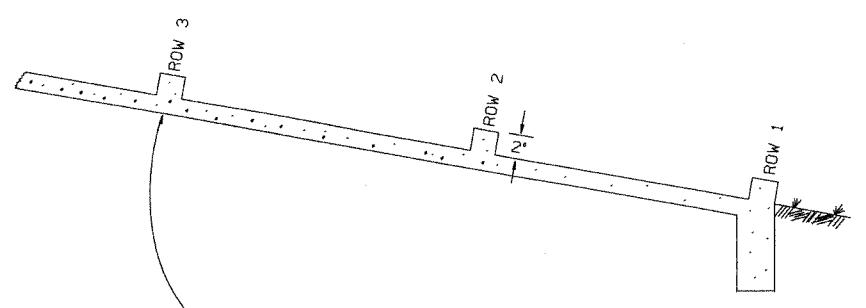


THE STEEL AND ADDITIONAL CONCRETE FOR THE WALLS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR 'CONCRETE DITCH PAVING.'



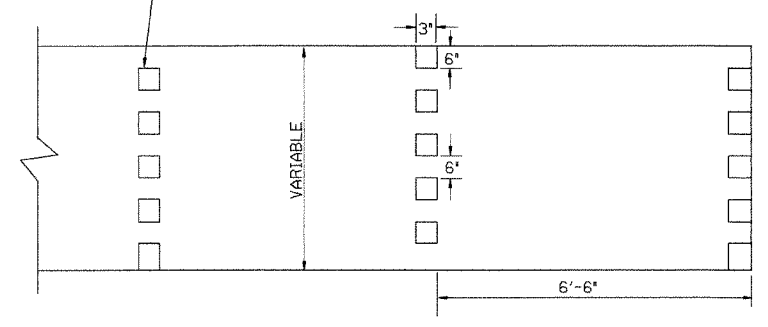
TOE WALL DEPTH MAY BE ALTERED TO 1'-0" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION

TOE WALL DETAIL FOR CONCRETE DITCH PAVING



NUMBER OF ELEMENTS PER ROW VARIES WITH WIDTH OF PAVING SPECIFIED

ENERGY DISSIPATORS TO BE USED FOR THE ENTIRE LENGTH OF DITCH WHEN SLOPE OF DITCH PAVING EXCEEDS 7%. THE DISSIPATORS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



ENERGY DISSIPATORS
(NO SCALE)

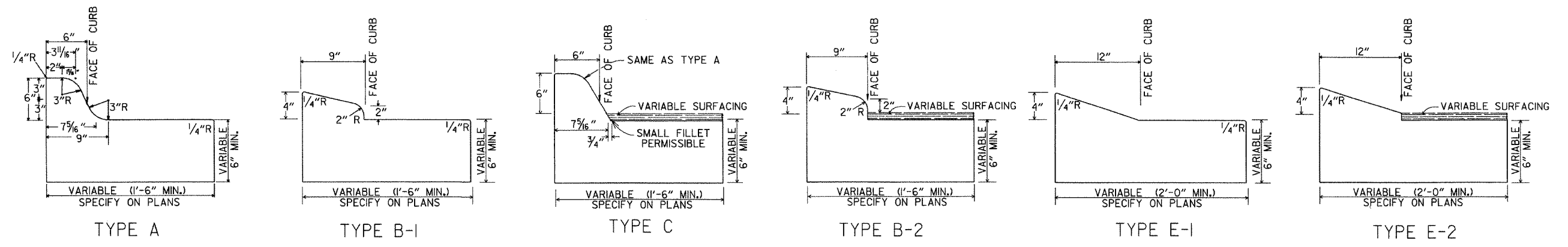
- GENERAL NOTES:
- THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY.
 - TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.
 - SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.
 - 1' WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	549-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS	508-11-1-84
	ADDED	
11-1-84	EXCAVATION DETAILS ADDED	
	TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72
DATE	REVISION	DATE FILM'D

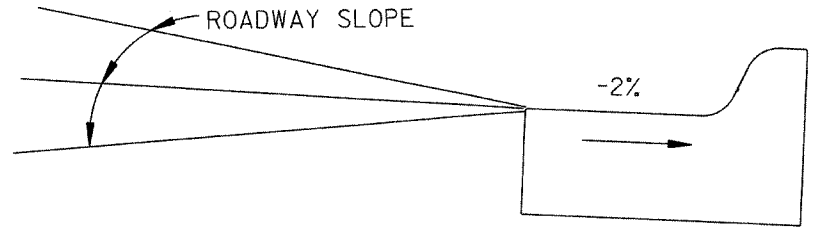
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

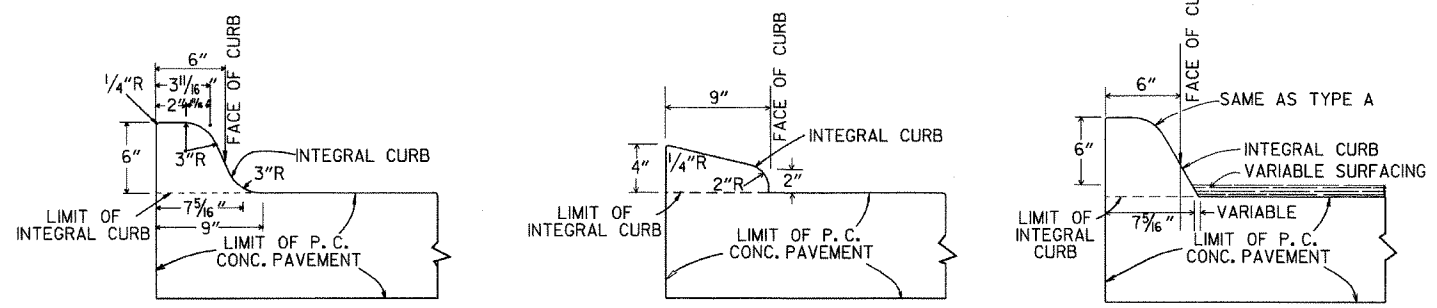
STANDARD DRAWING CDP-1



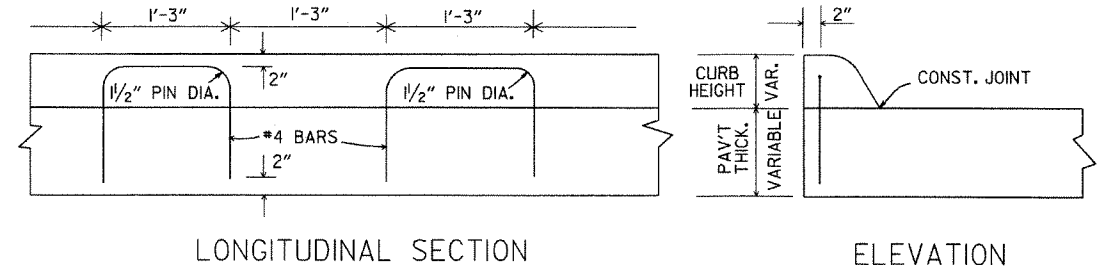
CONCRETE COMBINATION CURB AND GUTTER



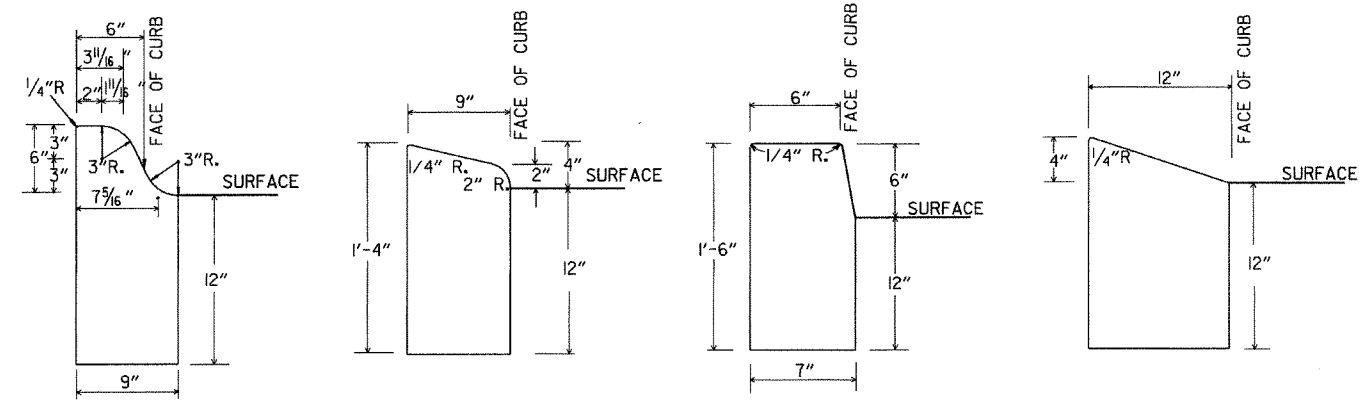
DETAIL OF GUTTER SLOPE
GUTTER SHALL BE CONSTRUCTED ON 2% SLOPE AWAY FROM ROADWAY, REGARDLESS OF ROADWAY SLOPE.



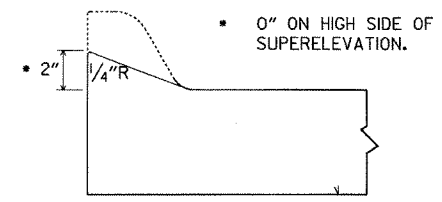
INTEGRAL CURB



ALTERNATE CONSTRUCTION METHOD FOR INTEGRAL CURB



CONCRETE CURB



NOTE: USE MODIFIED CURB AS SPECIFIED ON STD. DR-1. COMPENSATION FOR MODIFIED CURB WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE TYPE OF CURB OR CURB AND GUTTER SPECIFIED.

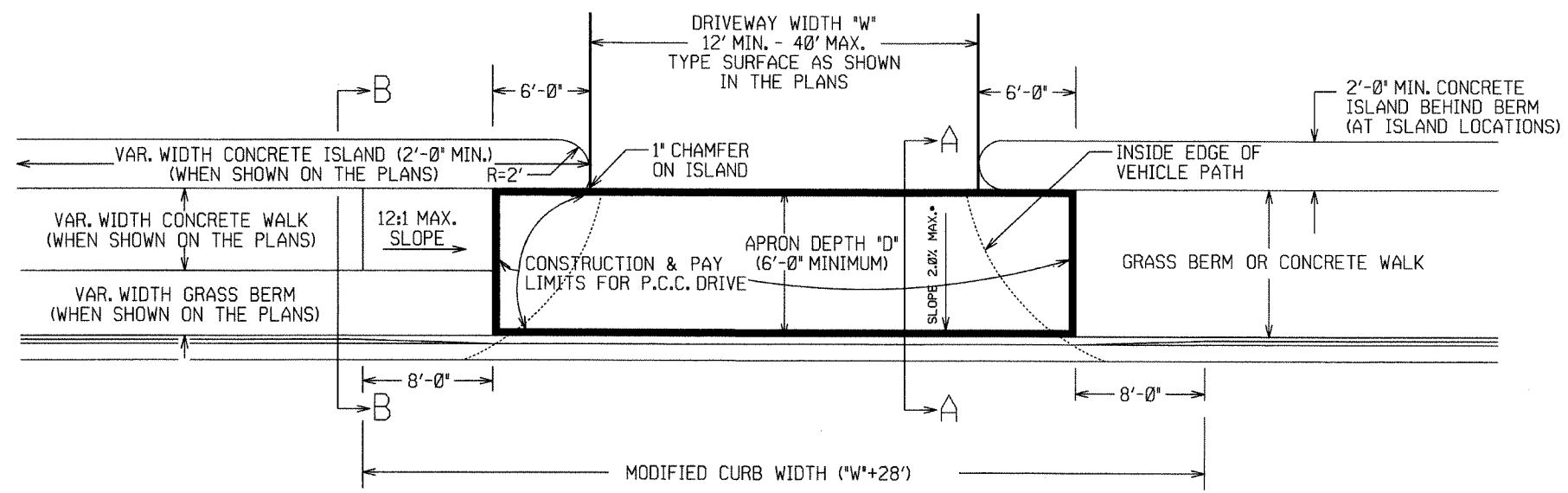
DETAILS OF MODIFIED CURB

DATE	REVISION	DATE FILMED
11-29-07	REVISED GUTTER SLOPE & MODIFIED CURB DETAILS	
11-10-05	ADDED DETAILS OF TYPE E CURBS	
11-16-01	REVISED CONCRETE CURB TYPE B	
11-18-98	REVISED MODIFIED CURB	
6-2-94	ADDED NOTE TO SPECIAL MODIFIED CURB	
8-5-93	CORRECTED GUTTER SLOPE	8-5-93
10-1-92	ADDED DETAILS OF GUTTER SLOPE	10-1-92
5-24-90	ADDED DETAILS OF MODIFIED CURB	5-24-90
11-30-89	VARIABLE DEPTH TYPE A & B 1	11-30-89
7-15-88	REVISED MODIFIED CURB	630-7-15-88
11-1-73	REVISED MODIFIED CURB	500-11-1-73
10-2-72	REVISED AND REDRAWN	512-10-2-72

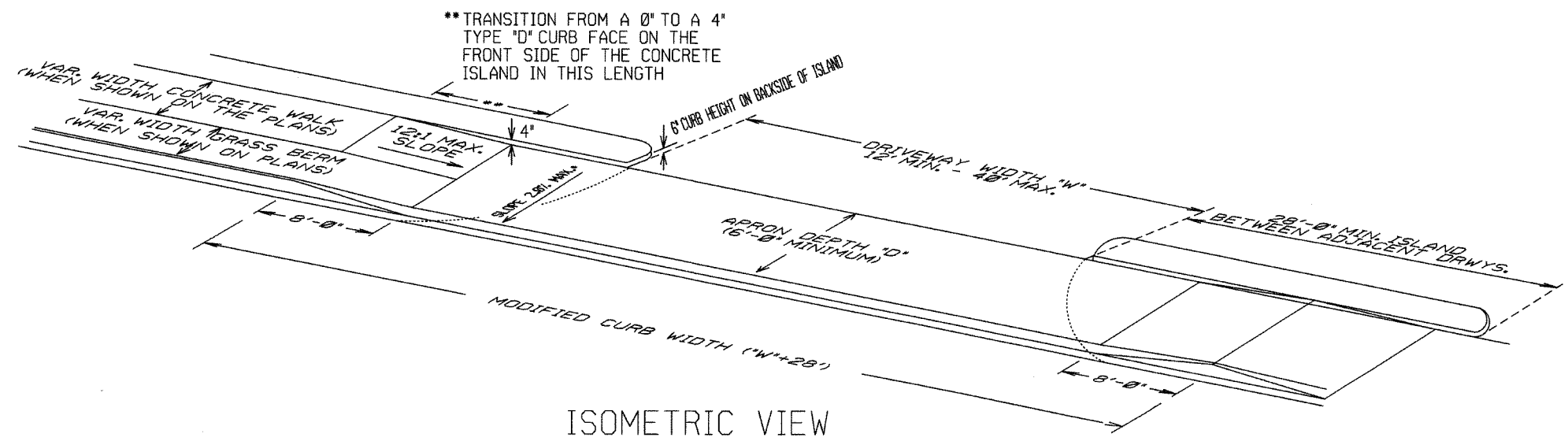
ARKANSAS STATE HIGHWAY COMMISSION

CURBING DETAILS

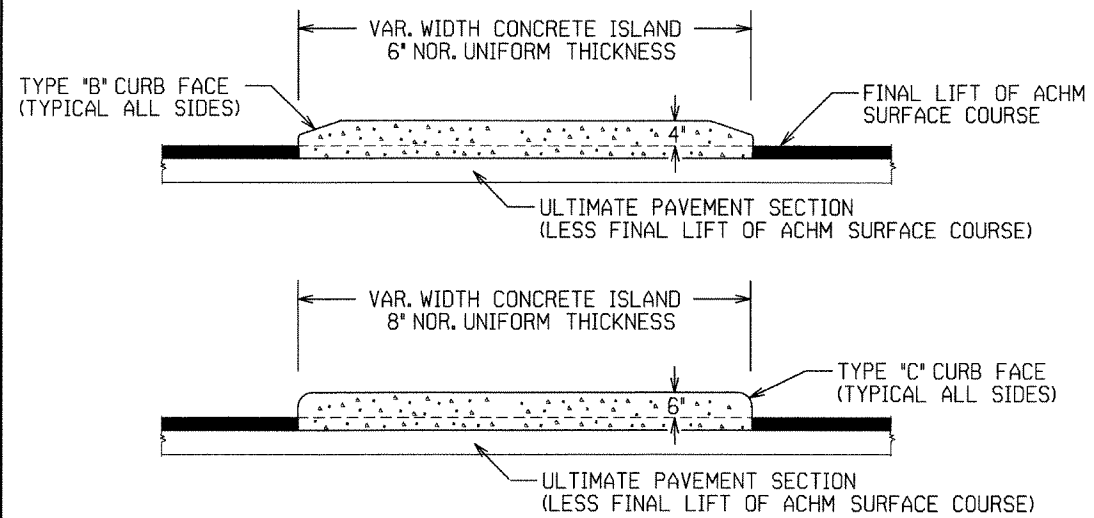
STANDARD DRAWING CG-1



PLAN VIEW

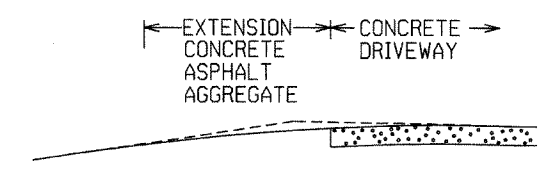


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

REFER TO PLANS FOR TYPE OF CURB FACE TO BE USED.
NO DIRECT PAYMENT WILL BE MADE FOR THE CURB FACES
SHOWN ON THE ISLAND DETAILS. PAYMENT FOR THE CURB
FACE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE
ITEM "CONCRETE ISLAND".

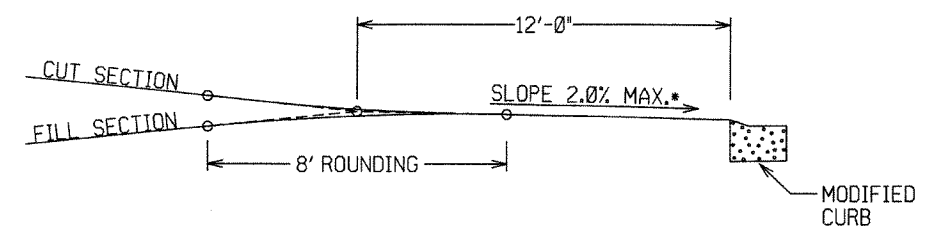


EXTENSION TYPICAL SECTIONS

- 1: CONCRETE - 6" P.C. CONCRETE DRIVEWAY
- 2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE (1") OR
4" ACHM BASE COURSE (1-1/2")
- 3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE
- 4: AGGREGATE - 6" AGGREGATE BASE COURSE

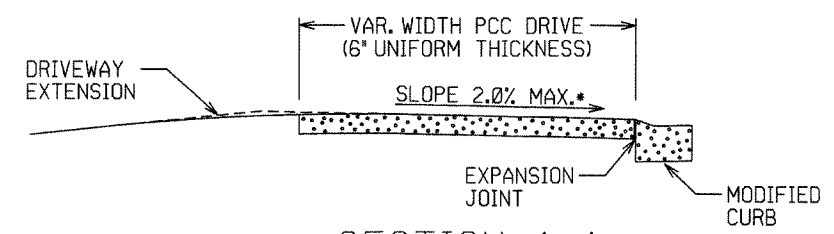
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS.
THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER,
SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU
OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL
COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

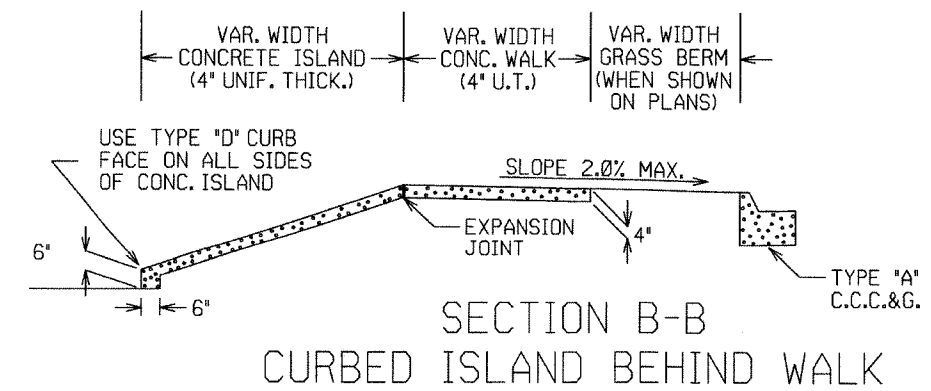


DRIVEWAY VERTICAL ALIGNMENT DETAILS

* NOTE: DRIVEWAYS MAY NOT BE SLOPED AWAY
FROM THE ROADWAY UNLESS APPROVED
BY THE ENGINEER.



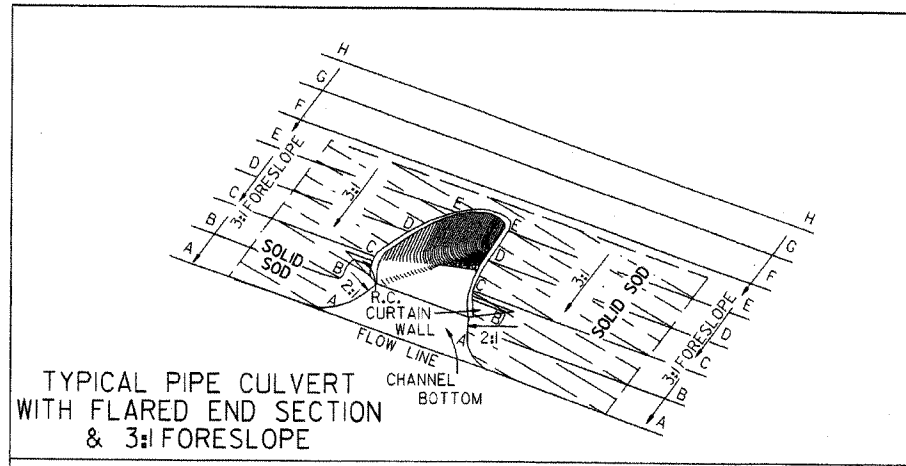
SECTION A-A



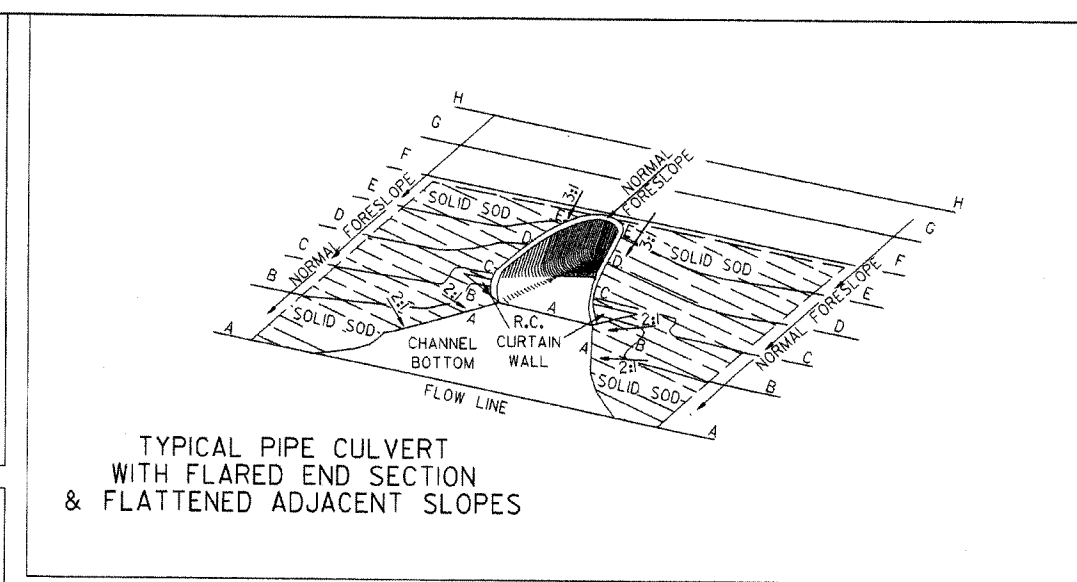
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE	REV	DATE FILMED	DESCRIPTION
11-29-07			ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05			REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02			ADDED ISLAND DETAILS & NOTES
3-30-00			REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98			REVISED NOTES
11-18-98			REDRAWN AND REISSUED

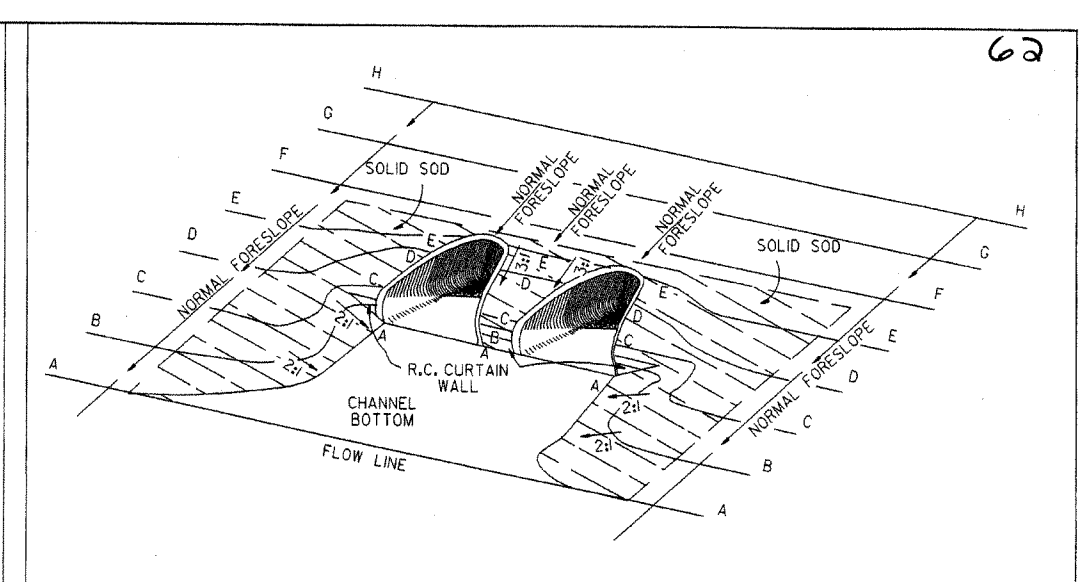
ARKANSAS STATE HIGHWAY COMMISSION
DETAILS OF DRIVEWAYS & ISLANDS
STANDARD DRAWING DR-1



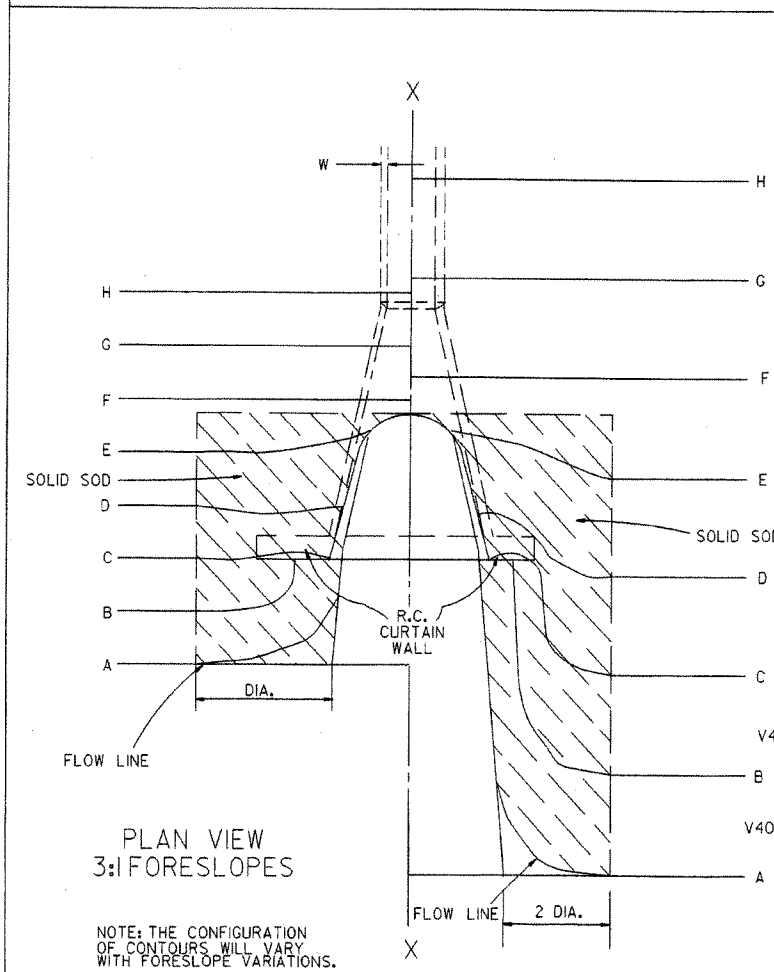
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES



TYPICAL MULTIPLE PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES



PLAN VIEW 3:1 FORESLOPES

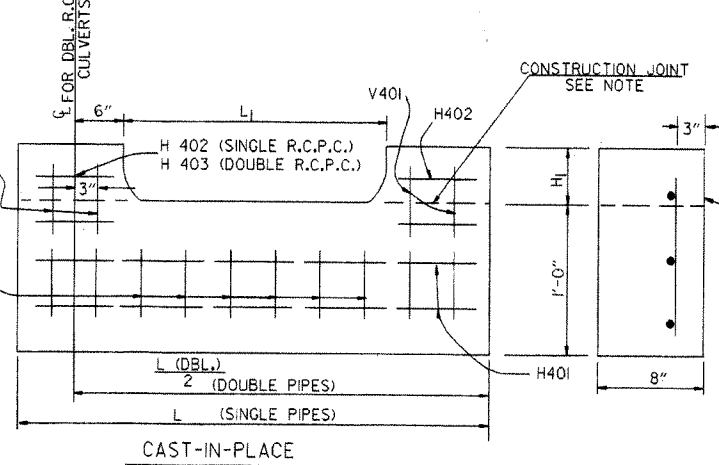
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

PIPE DIA.	H ₁	L ₁	L	L (DBL.) / 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11'-0 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1 1/2"	7'-3"	15'-6"	12'-0"	0.82	77.1	1.10	100.7
48"	2'-5"	7'-10"	17'-0"	13'-0"	0.98	94.9	1.27	120.4
54"	2'-9 1/2"	8'-5"	18'-6"	14'-0"	1.16	115.8	1.47	143.7
60"	3'-4"	9'-0"	20'-6"	15'-6"	1.47	149.7	1.84	180.3
72"	4'-5"	10'-2"	25'-6"	18'-6"	2.31	232.6	2.73	271.0

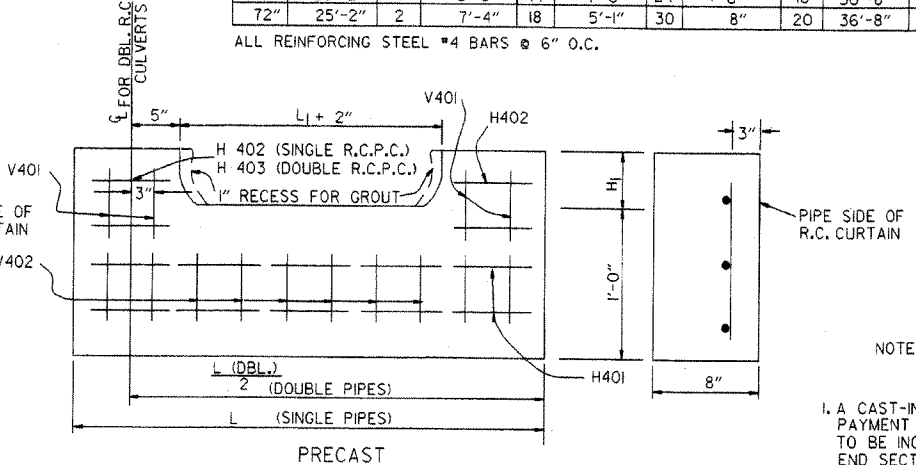
NOTE: QUANTITIES SHOWN ARE FOR ONE (1) CURTAIN WALL.



CAST-IN-PLACE

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION (LOWER 1'-0") SHALL BE PLACED MONOLITHICALLY. THE FLARED END SECTION SHALL THEN BE SET IN PLACE & THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.

R.C. CURTAIN WALL DETAILS



PRECAST

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL THEN BE SET IN PLACE AND THE 1" RECESS FILLED WITH GROUT. WHERE "L" EXCEEDS 11' THE CURTAIN WALL MAY BE CAST IN TWO (2) OR MORE SECTIONS. THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT								DOUBLE R.C. PIPE CULVERT									
	H401		H402		V401		V402		H401		H402		H403		V401		V402	
	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.	L	NO.
18"	7'-8"	2	1'-11 1/2"	4	1'-7 1/2"	8	8"	8	12'-2"	2	1'-11 1/2"	4	8"	2	1'-7 1/2"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8 1/2"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8 1/2"	12	8"	18
30"	10'-8"	2	2'-4 1/2"	4	1'-11 1/2"	10	8"	12	17'-8"	2	2'-4 1/2"	4	8"	2	1'-11 1/2"	14	8"	22
36"	12'-8"	2	2'-10"	6	2'-3"	12	8"	14	20'-8"	2	2'-10"	6	8"	3	2'-3"	14	8"	28
42"	15'-2"	2	3'-9 1/2"	8	2'-9 1/2"	16	8"	15	23'-8"	2	3'-9 1/2"	8	8"	4	2'-9 1/2"	18	8"	30
48"	16'-8"	2	4'-3"	10	3'-1"	18	8"	16	25'-8"	2	4'-3"	10	8"	5	3'-1"	20	8"	32
54"	18'-2"	2	4'-8 1/2"	12	3'-5 1/2"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5 1/2"	22	8"	34
60"	20'-2"	2	5'-5"	14	4'-0"	24	8"	18	30'-8"	2	5'-5"	14	8"	7	4'-0"	26	8"	36
72"	25'-2"	2	7'-4"	18	5'-1"	30	8"	20	36'-8"	2	7'-4"	18	8"	9	5'-1"	33	8"	40

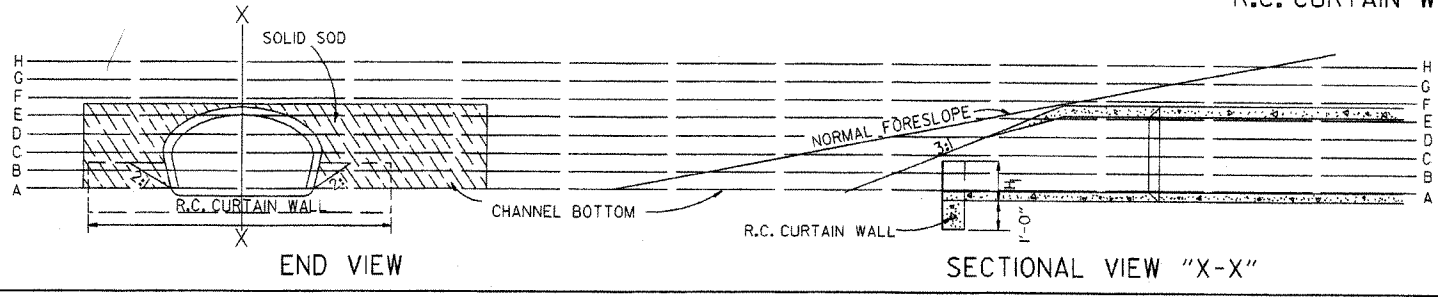
ALL REINFORCING STEEL #4 BARS @ 6" O.C.

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
	SQ. YDS.					
18"	5	7	12	6	8	13
24"	8	12	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

NOTE: QUANTITIES SHOWN ABOVE ARE FOR ONE (1) END OF F.E.S.

- GENERAL NOTES
- A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL AND CONCRETES FOR FORMS, MIXING AND PLACING; FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
 - ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
 - CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS A OR S CONCRETE AS PROVIDED IN SECTION 802 OF THE STANDARD SPECIFICATIONS OR FOR PAVING CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
 - WELDED WIRE MESH 3 x 3 W/10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

10-18-98	ADDED NOTE TO SOLID SODDING		
10-12-95	CORRECTED SPELLING	10-18-98	
11-3-94	ADDED GENERAL NOTE NO. 4		
8-15-91	REV. CURTAIN WALL QUANT. STEEL SCH. & SOLID SOD QUANT.		
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES		
5-15-80	ADDED PRECAST WALL & GENERAL NOTES		
10-2-72	REVISED AND REDRAWN		
DATE	REVISION	FILMED	ARKANSAS STATE HIGHWAY COMMISSION
			FLARED END SECTION
			STANDARD DRAWING FES-1

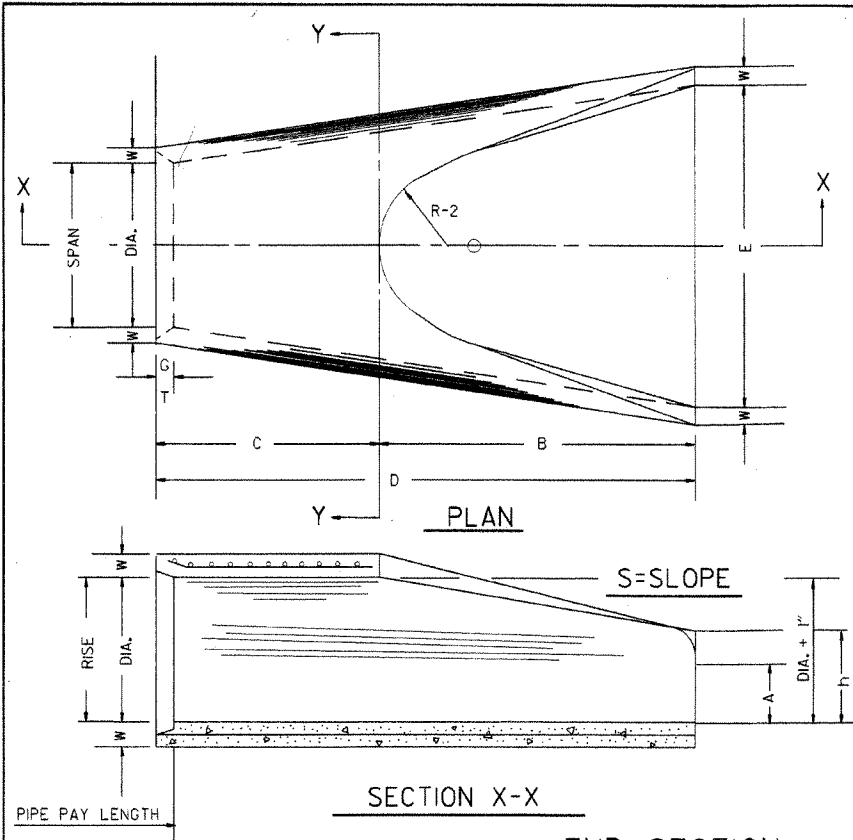
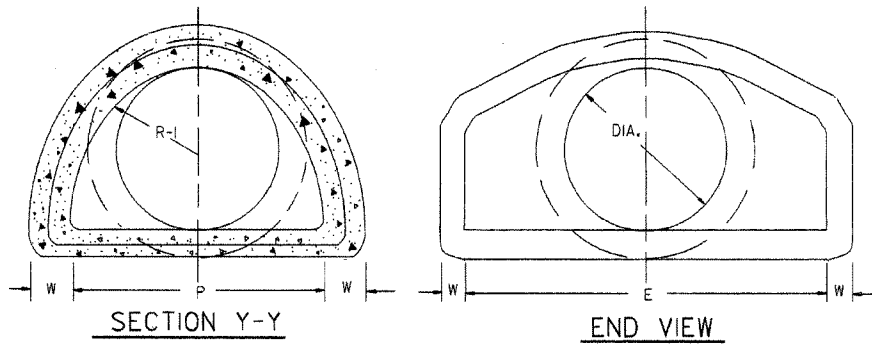


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	19"	29"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3:1	25"	33 3/8"	16 3/8"	14"	2 1/2"	600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	3:1	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 5/8"
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	3:1	37"	47 1/8"	24 3/8"	20"	3 1/2"	4100	1'-8"
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3:1	43"	53 1/8"	27 1/2"	22"	3 1/2"	5380	2'-2 1/2"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3:1	49"	56 1/2"	28 3/8"	22"	3 1/2"	6550	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3:1	55"	63 1/2"	33 3/8"	24"	4"	8750	2'-10 1/2"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3:1	61"	72 1/2"	36 1/8"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3:1	73"	77 1/8"	38 3/8"	24"	5"	13250	4'-6"

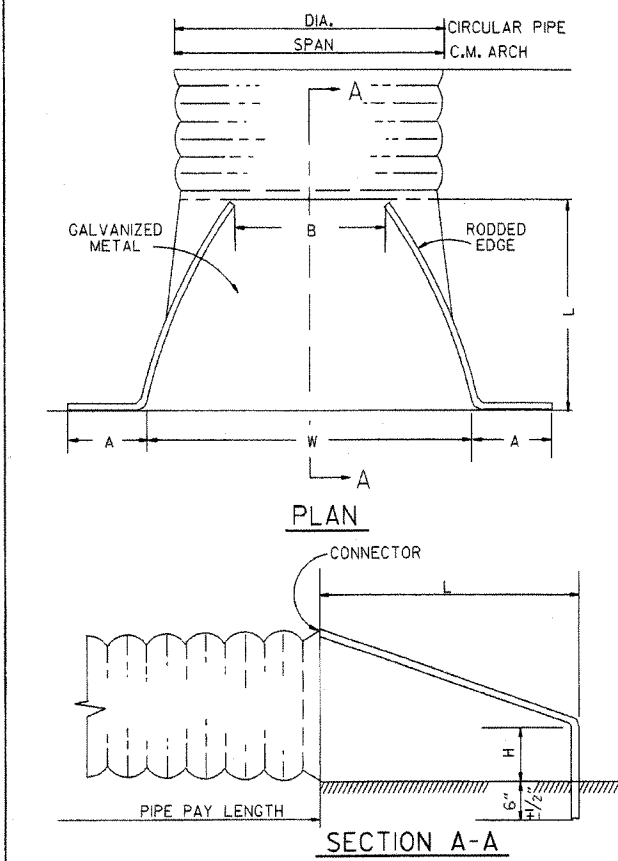
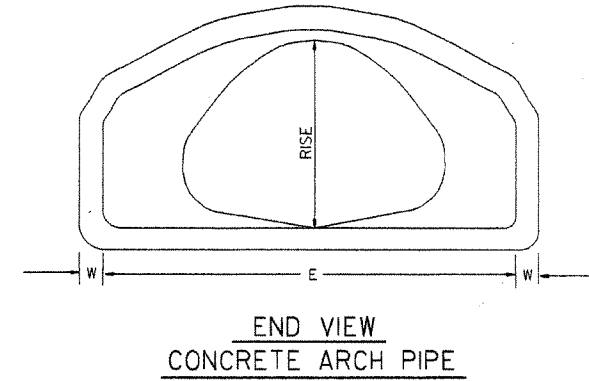


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

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

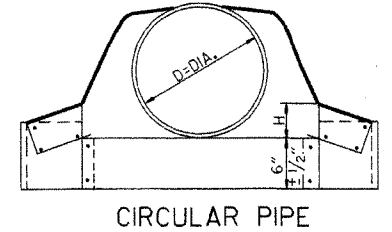
* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



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

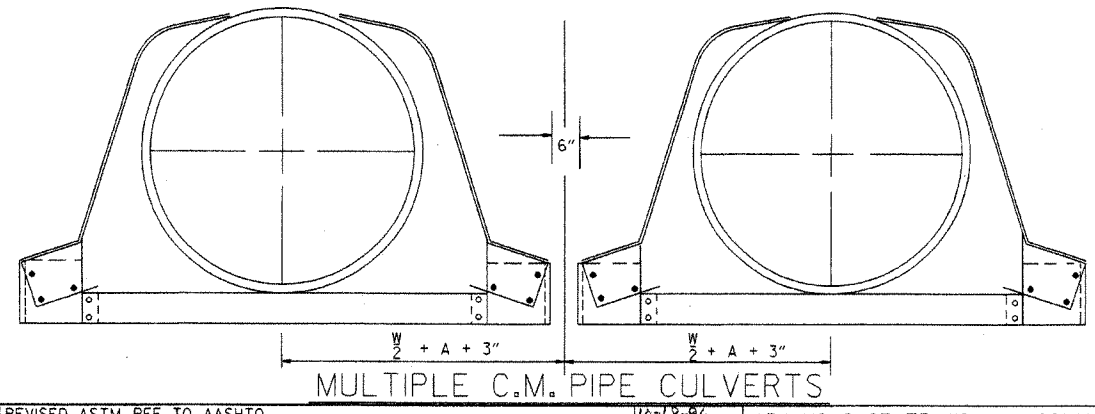
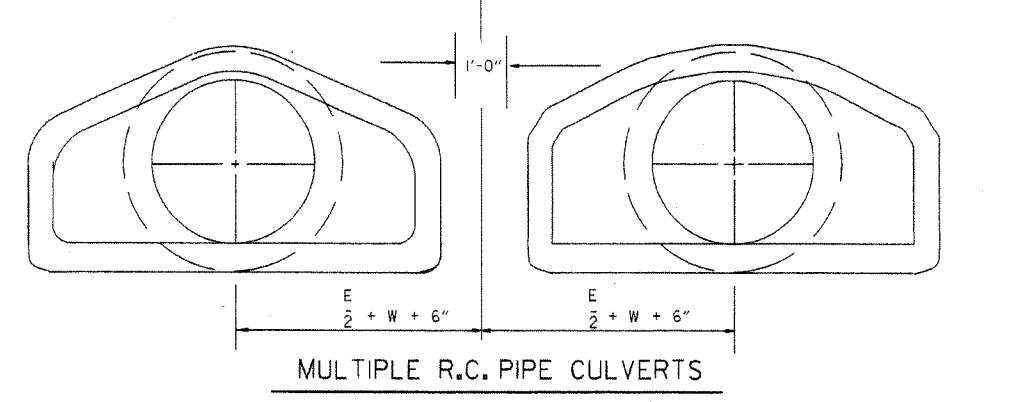
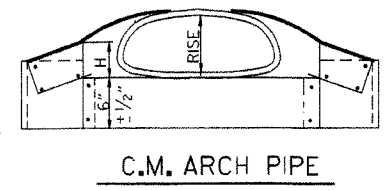
CIRCULAR PIPE

D. DIA.	GAUGE	A	B. MAX.	H	L	W	S
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	78	90	2 1/2:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1 3/4:1
66	12	18	36	12	87	120	1 1/2:1
72	12	18	39	12	87	126	1 1/3:1



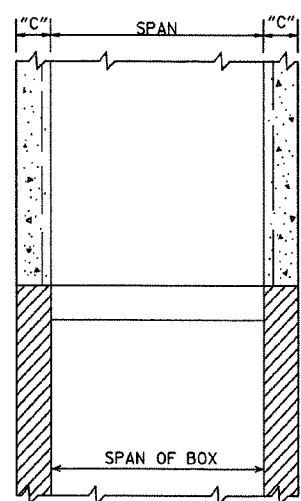
C.M. ARCH PIPE

EQUIV. DIA.	SPAN	RISE	A	B. MAX.	H	L	W	S	GAUGE
15"	17	13	7	9	6	19	30	2 1/2:1	16
18"	21	15	7	10	6	23	36	2 1/2:1	16
21"	24	18	8	12	6	28	42	2 1/2:1	16
24"	28	20	9	14	6	32	48	2 1/2:1	16
30"	35	24	10	16	6	39	60	2 1/2:1	14
36"	42	29	12	18	8	46	75	2 1/2:1	14
42"	49	33	13	21	9	53	85	2 1/2:1	12
48"	57	38	18	26	12	63	90	2 1/2:1	12
54"	64	43	18	30	12	70	102	2 1/4:1	12
60"	71	47	18	33	12	77	114	2 1/4:1	12

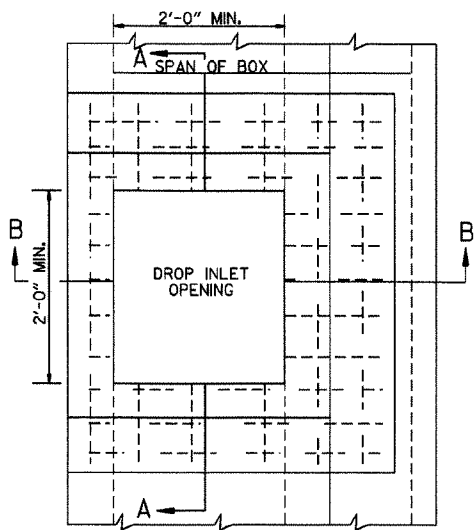


DATE	REVISION	REVISION
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73
10-2-72	REVISED AND REDRAWN	760-10-2-72

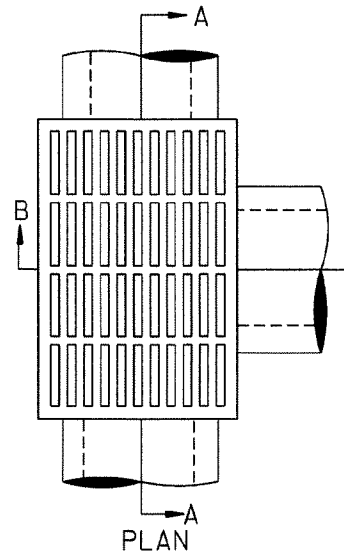
ARKANSAS STATE HIGHWAY COMMISSION
FLARED END SECTION
STANDARD DRAWING FES-2



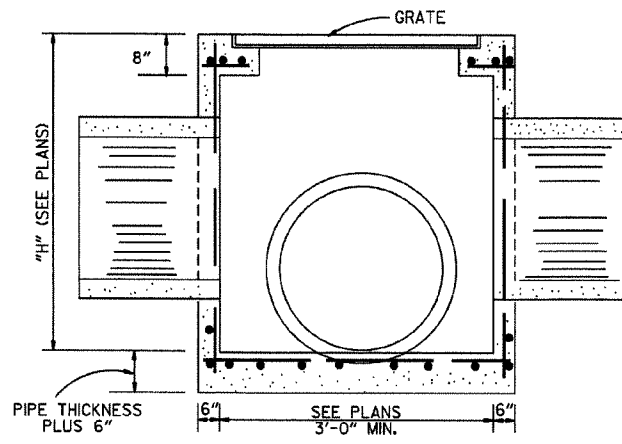
SECTION B-B



PLAN



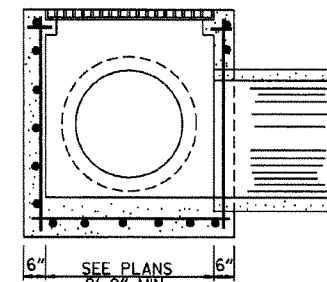
PLAN



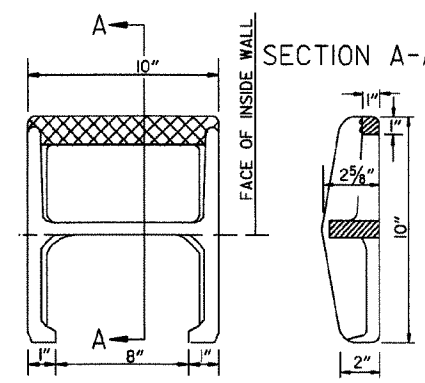
SECTION A-A

DROP INLET (TYPE E)

NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE DROP INLET TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.

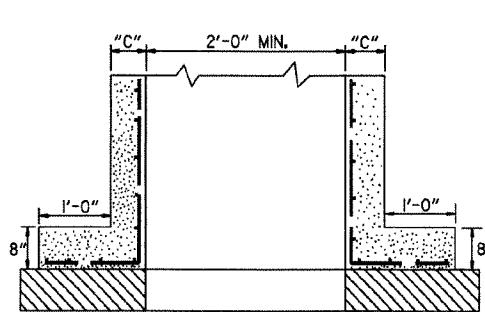


SECTION B-B

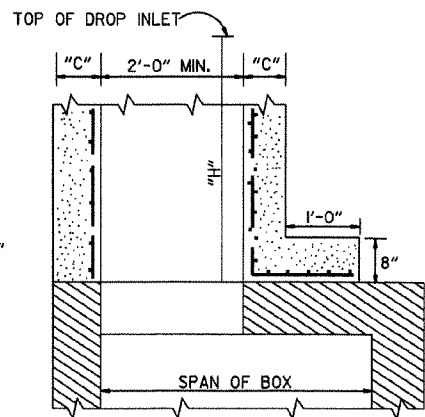


APPROX. WEIGHT = 11 LBS. (CAST IRON)
PLAN
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

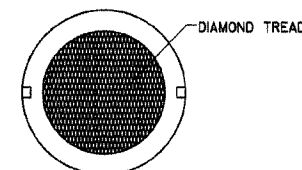


SECTION A-A

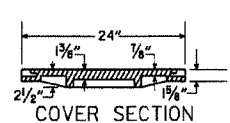


SECTION B-B

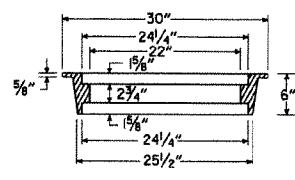
METHOD OF CONSTRUCTING DROP INLET ON EXISTING R.C. BOX CULVERT



COVER FACE



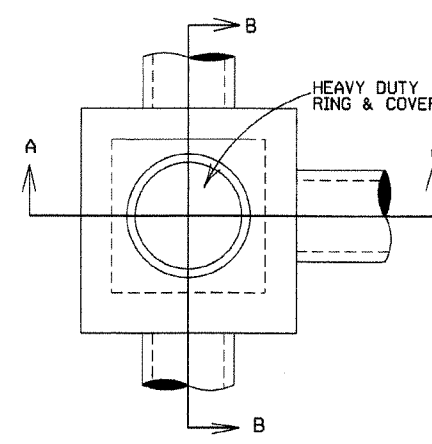
COVER SECTION



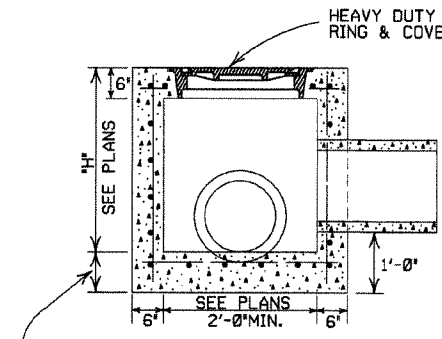
RING SECTION

APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



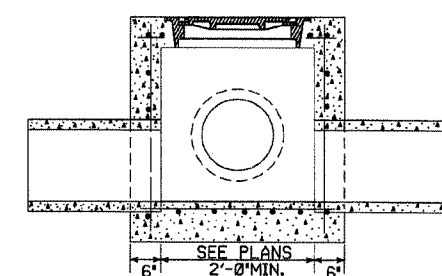
PLAN



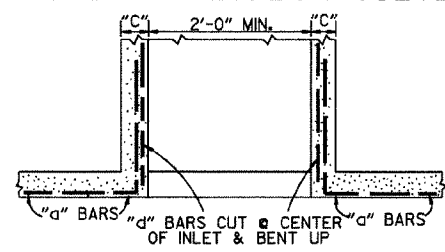
SECTION A-A

JUNCTION BOX (TYPE E)

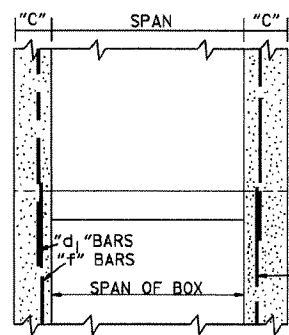
NOTE: REINF. BARS TO BE #4 BARS ON 6" CTRS. WITH 1/2" MIN. COVER. THIS TYPE JUNCTION BOX TO BE USED WHERE NOT SUBJECTED TO TRAFFIC.



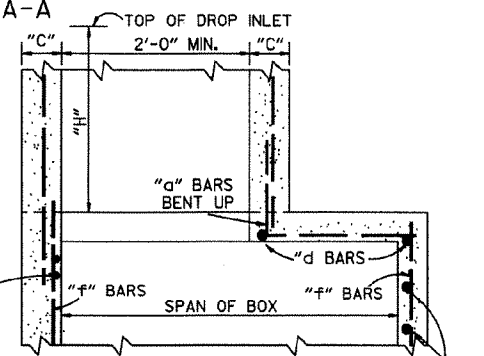
SECTION B-B



SECTION A-A



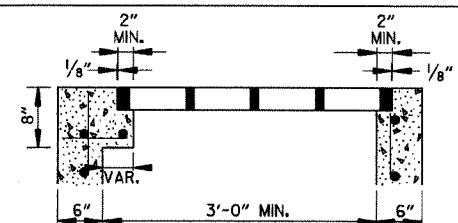
SECTION B-B



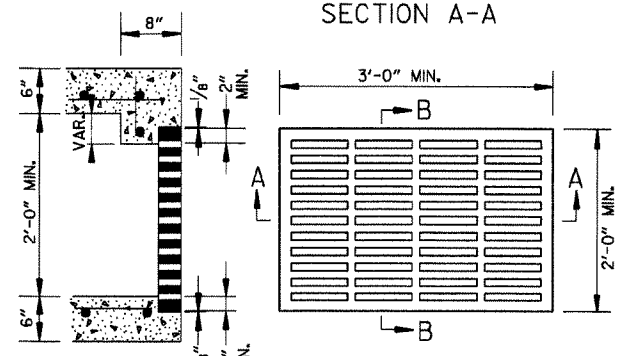
SECTION B-B

METHOD OF CONSTRUCTING DROP INLET ON NEW R.C. BOX CULVERT

NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



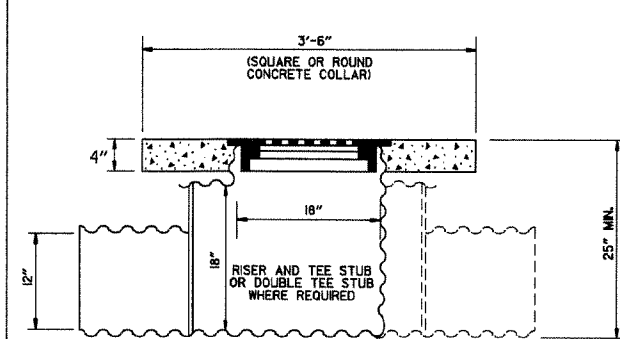
SECTION A-A



SECTION B-B

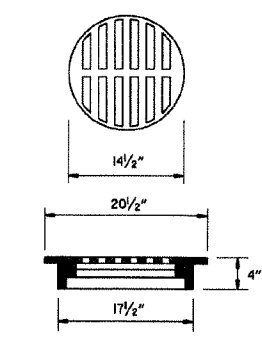
APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

GRATE FOR TYPE E DROP INLET



NOTE: CONCRETE COLLAR TO BE CAST IN PLACE. 12" PIPE CULVERTS TO BE MEASURED AND PAID FOR AS "12" SIDE DRAIN".

DETAIL OF YARD DRAIN



USE NEENAH R-590I-C OR EQUIVALENT BICYCLE SAFE FRAME AND GRATE

- GENERAL NOTES:
1. ALL EXPOSED CORNERS SHALL BE 3/4" CHAMFERED.
 2. STEPS SHALL BE INSTALLED ON 6" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
 3. EXPANSION JOINT MATERIAL SHALL BE 3/4" PREFORMED FIBER.
 4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
 5. GRATE AND FRAME SHALL NOT BE PAINTED.
 6. GRATE SHALL BE BICYCLE SAFE.
 7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
 8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B & AASHTO M 306.
 9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
 10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

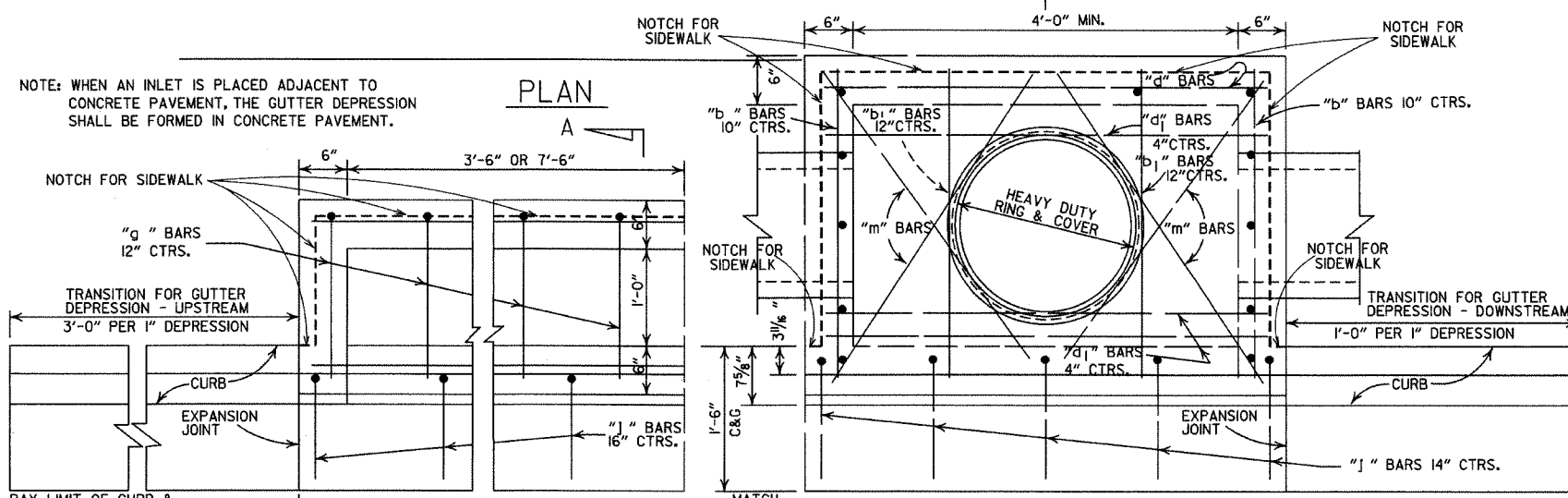
DATE	REV.	REVISION	DATE FILMED
11-16-01		ADDED NOTE 10	
1-12-00		REVISED HEAVY DUTY RING & COVER	
7-02-98		CHANGED GRATE DETAIL, DELETED D (TYPE D), REPLACED RING & COVER W/HEAVY DUTY RING & COVER, ADDED JUNCTION BOX (TYPE E)	
6-26-97		ADDED DIMENSION TO TYPE IV-A	
10-18-96		ADDED DETAIL OF YARD DRAIN	
8-15-91		DELETE TYPE IV GRATE	
7-15-88		REVISED STEP DETAIL	
5-20-83		REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83		ADDED GENERAL NOTE NO. 4	
3-2-81		ADDED TYPE IV-A GRATE	
5-22-74		DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72		REVISED AND REDRAWN	

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

STANDARD DRAWING FPC-9

NOTE: WHEN AN INLET IS PLACED ADJACENT TO CONCRETE PAVEMENT, THE GUTTER DEPRESSION SHALL BE FORMED IN CONCRETE PAVEMENT.

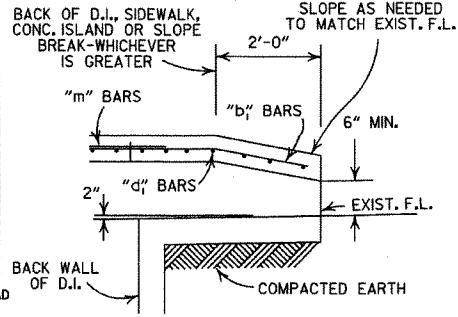
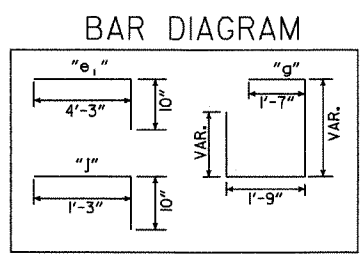


PIPE SIZE	MIN. WIDTH	HEIGHT 5'-0"		PLUS OR MINUS PER LIN. FT. OF HEIGHT		4'-0"		8'-0"	
		CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS
18"	2'-6"	1.77	156	0.28	22	0.58	38	0.87	72
24"	2'-6"	1.79	156	0.28	22				
30"	3'-2"	2.39	205	0.30	26				
36"	3'-8"	2.63	236	0.32	28				
42"	4'-4"	2.95	250	0.34	30				
48"	4'-10"	3.21	265	0.36	32				
						DEDUCT FROM QUANTITY COMPUTED FOR EACH EXTENSION ADDED.			
						0.04	3		

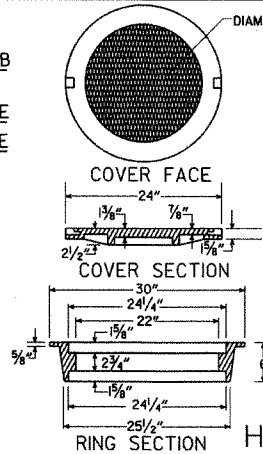
NOTE: QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR BIDDER INFORMATION ONLY.

DEDUCT FROM QUANTITY COMPUTED FOR EACH PIPE ENTERING INLET

INSIDE DIA. PIPE INCHES	CLASS A CONC. CU. YDS.	REINF. STEEL POUNDS
18	0.05	2
24	0.09	3
30	0.13	4
42	0.24	8

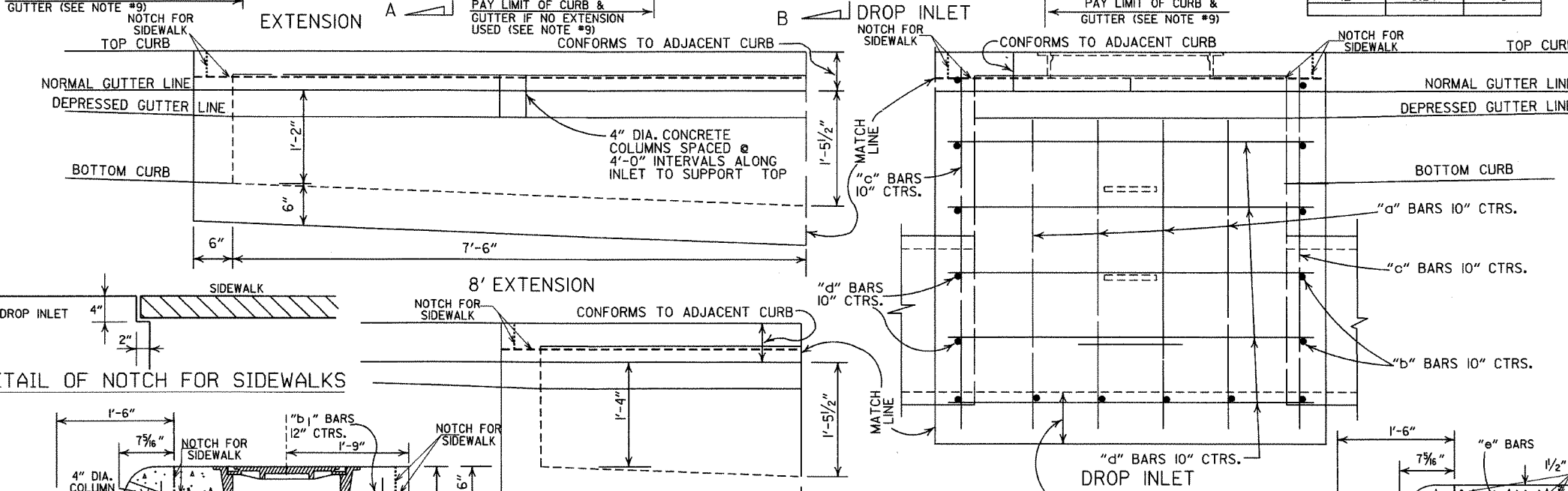


WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE C).

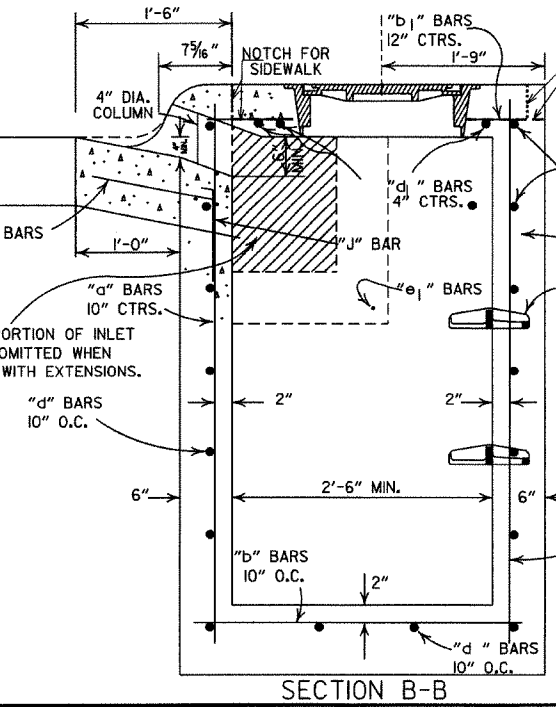


APPROXIMATE TOTAL WEIGHT = 333 LBS.

- GENERAL NOTES:
- ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
 - STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OF AS APPROVED BY THE ENGINEER.
 - ALL REINF. BARS SHALL BE #4 AND HAVE 1/2" COVER.
 - DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
 - THIS DROP INLET MAY BE CONSTRUCTED ON NEW OR EXISTING R.C. BOX CULVERT AS SHOWN ON F.P.C.-9.
 - WHEN PLANS CALL FOR DROP INLET OVER 10'-0" HIGH, FLOOR AND WALLS SHALL BE CONSTRUCTED AS SHOWN FOR TYPE "RM" DROP INLET (F.P.C.-9D).
 - HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
 - DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
 - PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
 - HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
 - HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
 - 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
 - DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

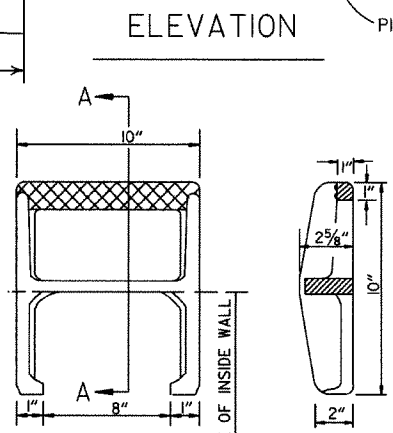


DETAIL OF NOTCH FOR SIDEWALKS



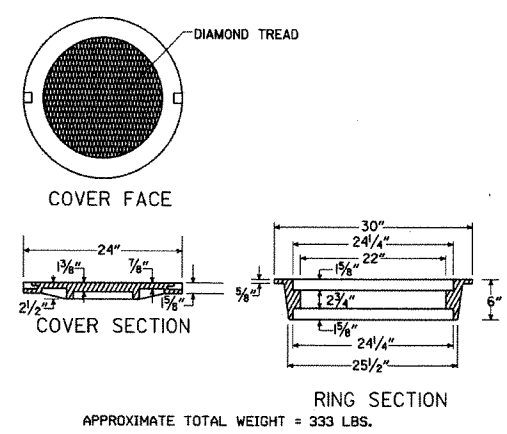
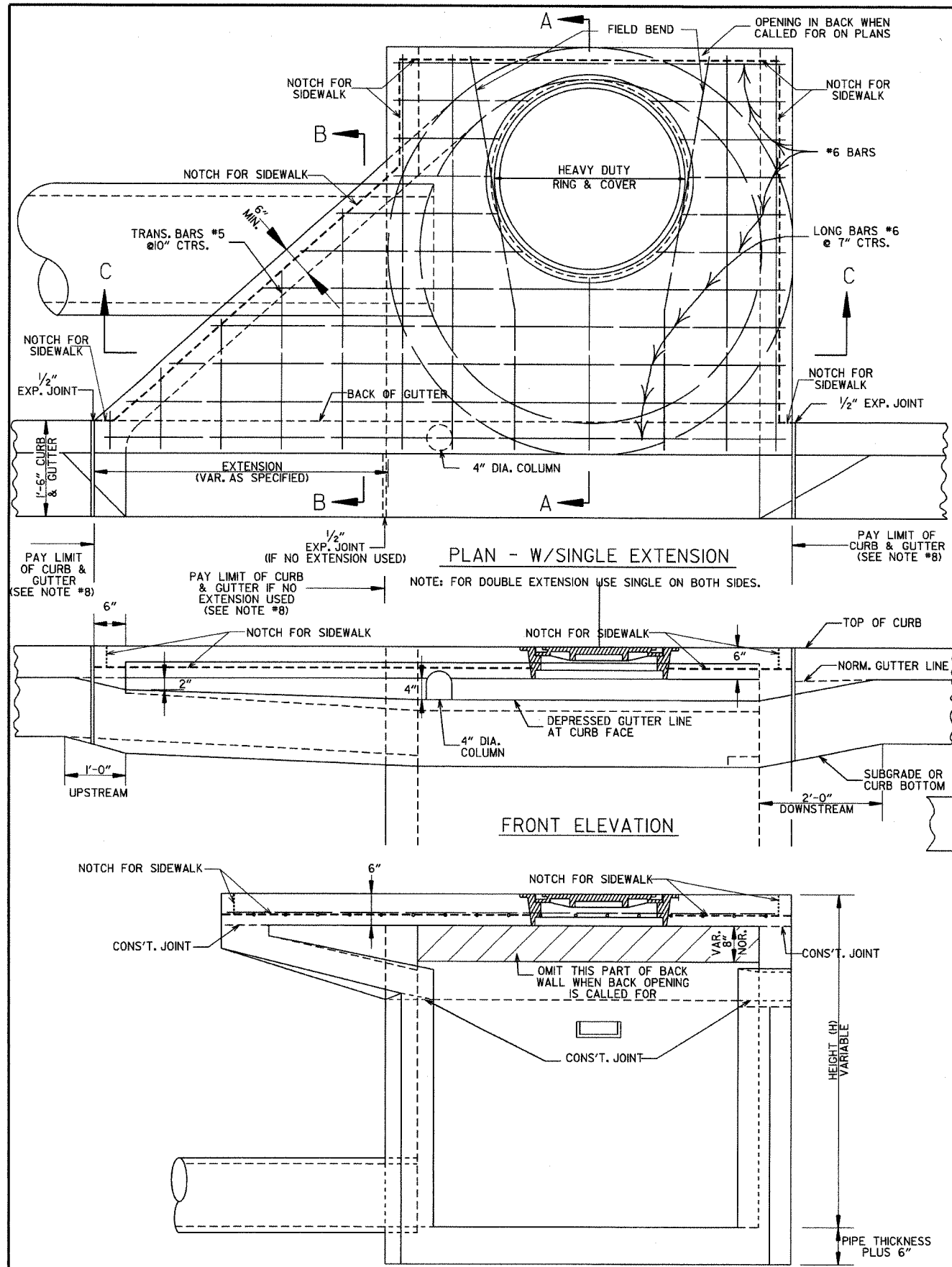
NOTE: LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

NOTE: PIPES MAY ENTER BOX FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER. REINFORCING BARS SHALL BE CUT TO CLEAR PIPE BY 1/2".

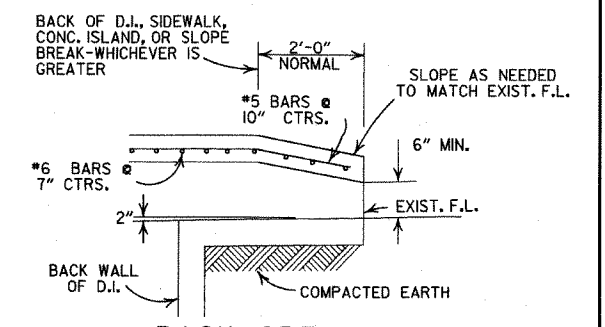
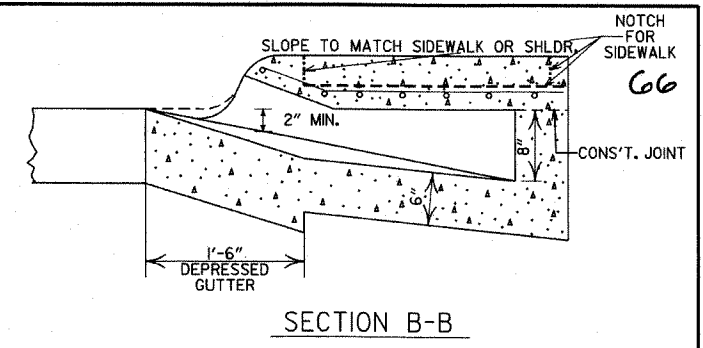
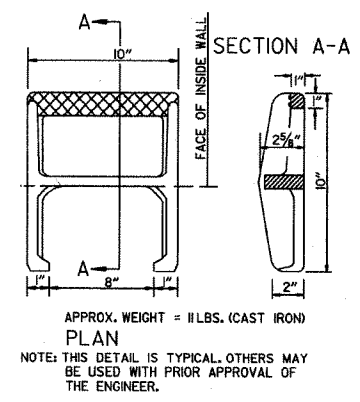
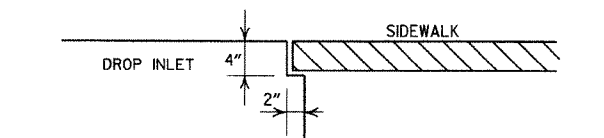


PLAN SECTION A-A
DETAIL OF STEP FOR DROP INLET
APPROX. WEIGHT = 11 LBS. (CAST IRON)
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DATE	REV.	DESCRIPTION	DATE FILMED
8-22-02		ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B	
11-16-01		ADDED NOTE 13; REVISED SECTION B-B	
1-12-00		CORRECTED DIMENSION ON SECTION B-B & REVISED RING & COVER	
5-13-99		ADDED DETAIL OF NOTCH FOR SIDEWALKS	
7-02-98		REPLACED RING & COVER W/HEAVY DUTY RING & COVER ADDED NOTES 9, 10, & 11	
10-18-96		CORRECTED SPELLING	
4-26-96		ADDED NOTE 8 & REVISED (4') (8') EXTENSION TITLES	10-18-96
4-1-93		REVISED BACK OPENING & NOTE	
8-15-91		DELETE TYPE IV GRATE	
7-15-88		REVISED STEP DETAIL	
5-20-83		REVISED DETAILS OF GRATES (TYPE IV & IV-A)	
2-4-83		ADDED GENERAL NOTE NO. 4	
3-2-81		ADDED TYPE IV-A GRATE	
5-22-74		DELETED INLET (TYPE F) & GRATE (TYPE III)	
10-2-72		REVISED AND REDRAWN	



1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.

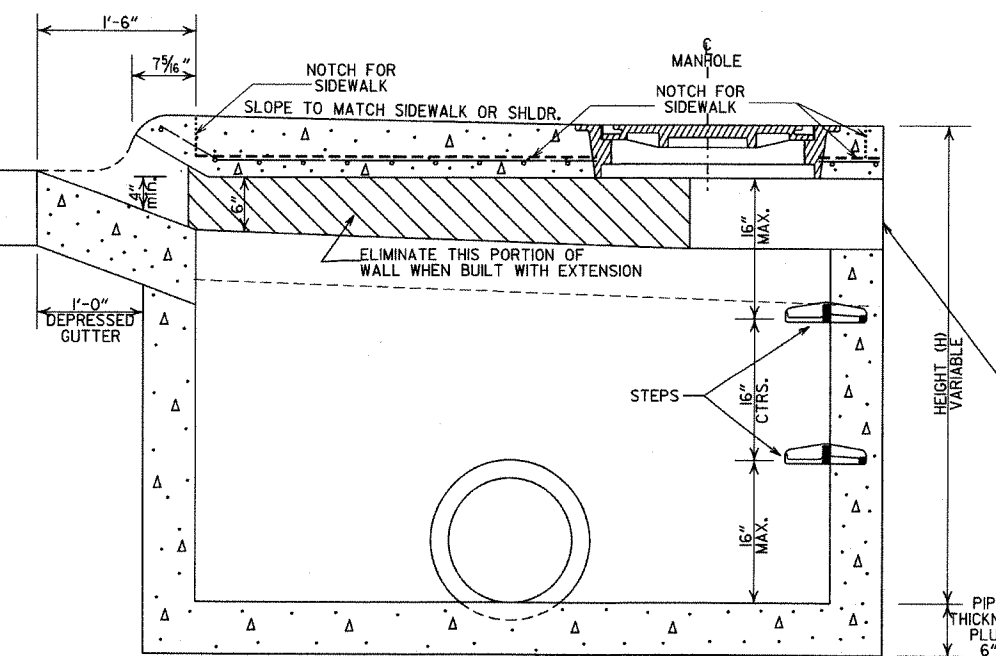


WHEN OPENING IN BACK IS CALLED FOR ON PLANS EXTEND OPENING AS SHOWN IN DETAIL. PAYMENT TO BE INCLUDED IN PRICE BID FOR DROP INLET (TYPE MO).

- GENERAL NOTES:**
1. ALL EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
 2. STEPS SHALL BE INSTALLED IN ALL INLETS 4'-0" HIGH AND OVER OR AS DIRECTED BY THE ENGINEER.
 3. ALL REINFORCING BARS SHALL BE GRADE 60 AND HAVE MIN. 1/2" COVER.
 4. DROP INLETS AND EXTENSION ON CURVED SECTIONS SHALL CONFORM TO THE CURVATURE OF THE CURB.
 5. 4" DIA. COLUMNS SPACED AT MAX. 4'-0" INTERVALS SHALL BE INSTALLED ALONG INLET AND EXTENSION TO SUPPORT TOP.
 6. BASE AND INLET WALLS SHALL BE CAST MONOLITHICALLY.
 7. THE THROAT SHALL BE CAST INTEGRALLY WITH THE GUTTER.
 8. PAYMENT FOR CURB AND/OR CURB AND GUTTER WITHIN THE LIMITS OF DROP INLETS AND DROP INLET EXTENSIONS SHALL BE CONSIDERED INCLUDED IN PAYMENT MADE FOR DROP INLETS AND/OR DROP INLET EXTENSIONS.
 9. PIPES MAY ENTER DROP INLET FROM ANY ANGLE OR ELEVATION AS MAY BE APPROVED BY THE ENGINEER.
 10. APPROPRIATE SIZE TYPE C DROP INLETS MAY BE SUBSTITUTED FOR TYPE MO DROP INLETS AS APPROVED BY THE ENGINEER. PAYMENT TO BE AS DROP INLET (TYPE MO).
 11. DURING CONSTRUCTION OF THE ROADWAY THE CONTRACTOR SHALL MAINTAIN DRAINAGE INTO OR AROUND THE DROP INLET AS APPROVED BY THE ENGINEER.
 12. 4"x2" NOTCH SHALL BE FORMED IN ALL DROP INLETS TO SUPPORT SIDEWALK CONSTRUCTION. REFER TO DETAIL OF NOTCH FOR SIDEWALKS.
 13. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

LEAVE OPENING IN BACK WHEN CALLED FOR ON PLANS REFER TO BACK OPENING DETAIL

MINIMUM WALL THICKNESS			
DIA. OF D.I.	DIA. OF OUTLET PIPE	CAST IN PLACE	PRECAST
4" I.D.	12" THRU 27"	6"	5"
5" I.D.	30" THRU 42"	8"	6"
6" I.D.	48" THRU 54"	8"	7"

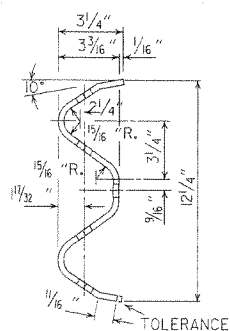
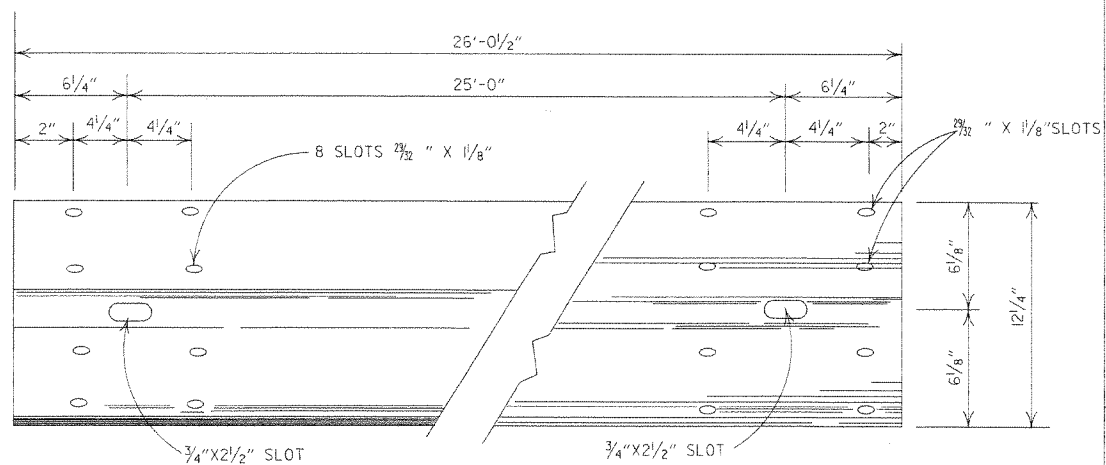


DATE	ISSUED	REVISIONS	DATE FILED
8-22-02	ADDED PAY LIMIT CURB NOTES TO SECTIONS A-A & B-B		
8-16-01	ADDED NOTE 13		
1-12-00	REVISED HEAVY DUTY RING & COVER		
5-13-99	ADDED NOTCH DETAIL FOR SIDEWALKS		
7-02-98	REP. NOTE 8, REV. PLAN DET., REV. PICTURE FOR NEW RING & COVER, ADDED HEAVY DUTY RING & COVER AND DETAIL OF STEP FOR DROP INLET		
4-26-96	ADDED NOTE 11 AND OPENING DIMENSION		
10-12-95	CORRECTED #6 BAR SPACING		
7-20-95	CORRECTED DIAMETER OF D.I. IN BOX		
7-2-95	TYPE C TO MO (OPEN BACK DETAIL)		
11-2-95	REVISED GENERAL NOTES		
4-1-95	REV. BACK OPEN DETAIL & NOTE		
8-16-91	REVISED NOTES 11, 2 & ADDED BK OPEN DETAIL		
10-10-89	ADDED NOTE NO. 12		
6-23-88	ADDED NOTE & MINIMUM WALL THICKNESS		
7-16-88	ADDED EXTEND NOTE TO SECTION A-A		
11-16-87	MODIFIED WALL THICKNESS		
6-17-87	ISSUED		

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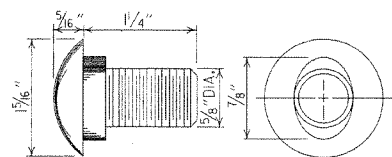
DETAILS OF DROP INLET (TYPE MO)

STANDARD DRAWING FPC-9M

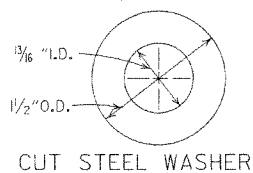


DETAILS OF W-BEAM GUARD RAIL

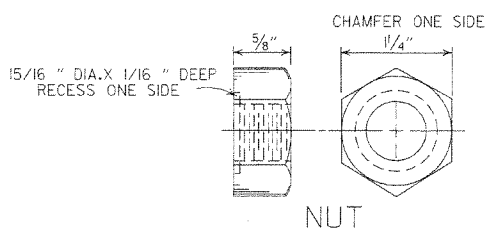
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



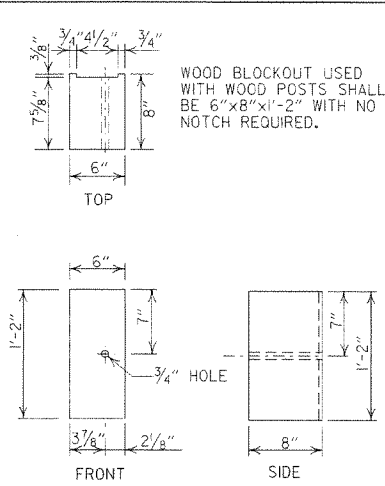
SPLICE BOLT POST BOLT - SAME EXCEPT LENGTH



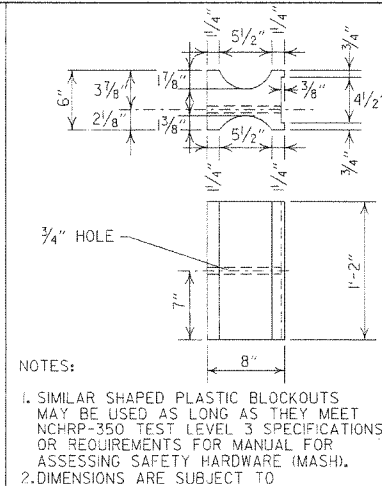
CUT STEEL WASHER



NUT

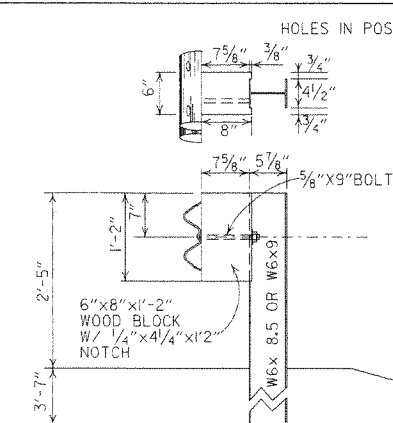


WOOD BLOCKOUT (W-BEAM)

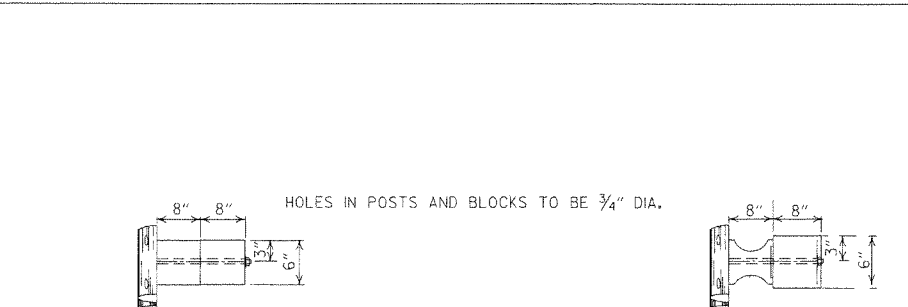
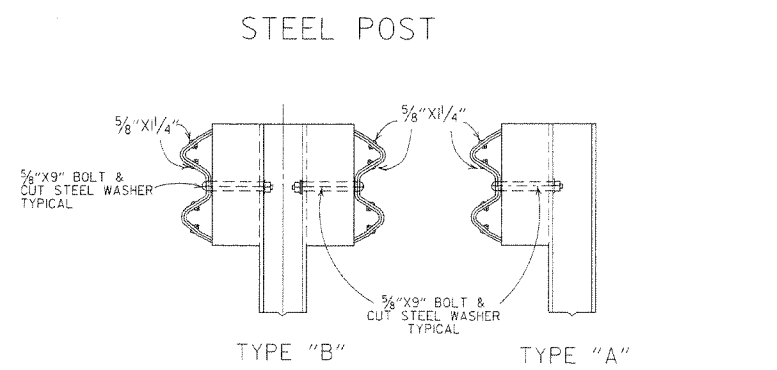
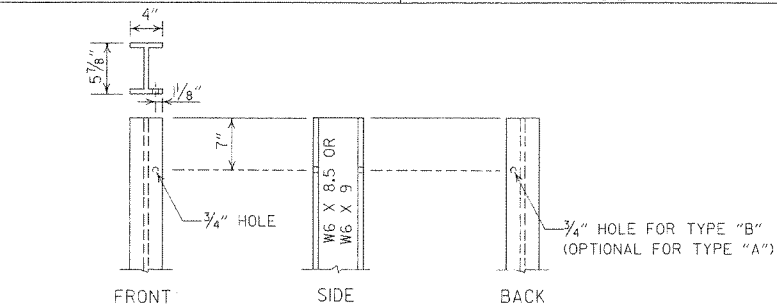


NOTES:
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

PLASTIC BLOCKOUT (W-BEAM)



WOOD BLOCKOUT CONNECTIONS
PLASTIC BLOCKOUT CONNECTIONS
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



WOOD BLOCKOUT CONNECTIONS
PLASTIC BLOCKOUT CONNECTIONS
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

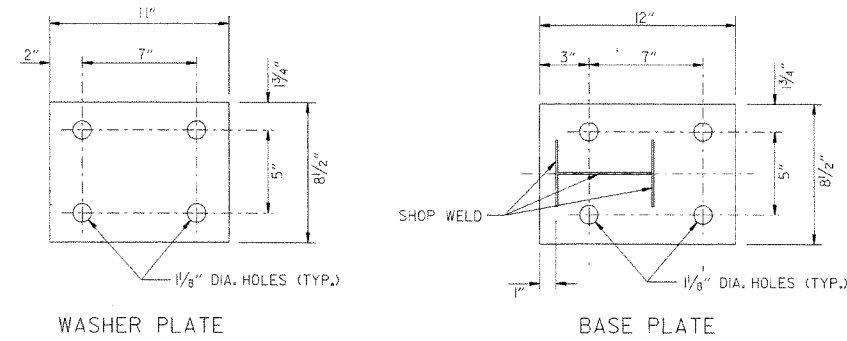
ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
WHERE W-BEAM GUARD RAIL CONTIGUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.
USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.
ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7F (1400 F) OR NO. 1 1350 F SOUTHERN PINE.
CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.

7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
0-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
11-2-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
7-15-88	REVISED SECTION 3 & GENERAL NOTES	
3-4-88	REV. ANCHOR POST, ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-9-87	REDRAWN & REVISED	802-10-9-87
DATE	REVISION	DATE FILM

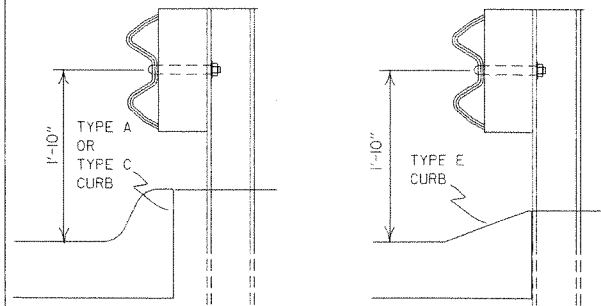
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-8



Note: Bolts, nuts, washers and plates shall be galvanized in accordance with Section 807 of the Standard Specifications.

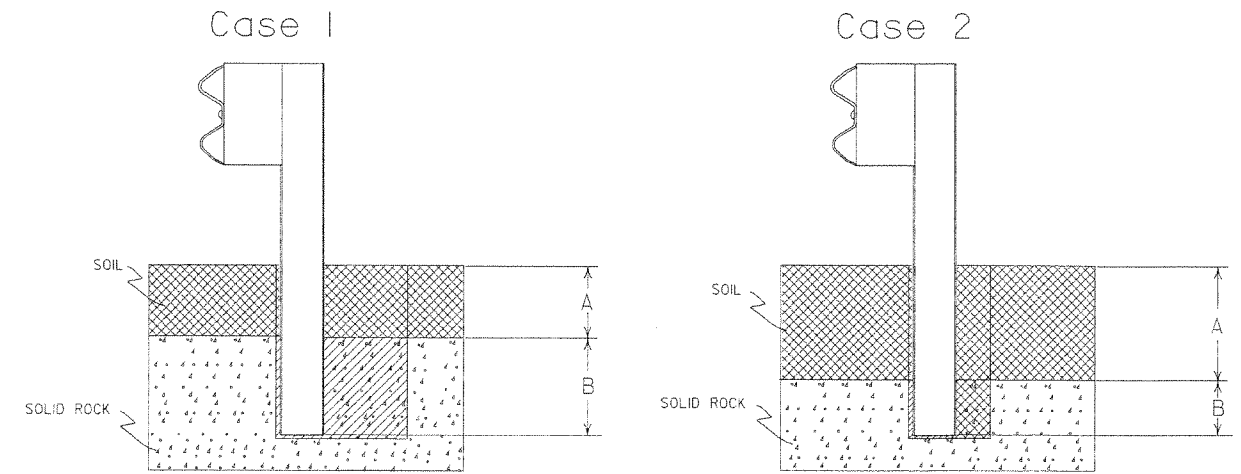


FOR DESIGN SPEEDS OF 50 MPH OR LESS
ALIGN FACE OF GUARD RAIL WITH FACE OF CURB.

FOR DESIGN SPEEDS OF 55 MPH OR MORE
PLACE GUARD RAIL POSTS AGAINST BACK OF CURB.

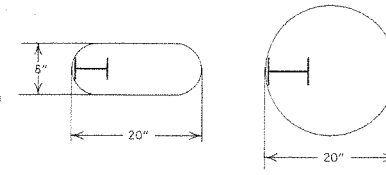
DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



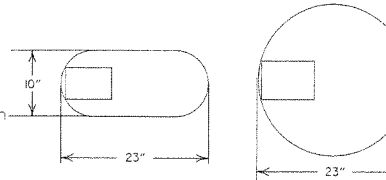
Plan View Steel Posts

Either hole configuration acceptable



Plan View Wood Posts

Either hole configuration acceptable



Notes: For overlying soil depths (A) ranging from 0 to 18", the depth of required drilling (B) is equal to 24".

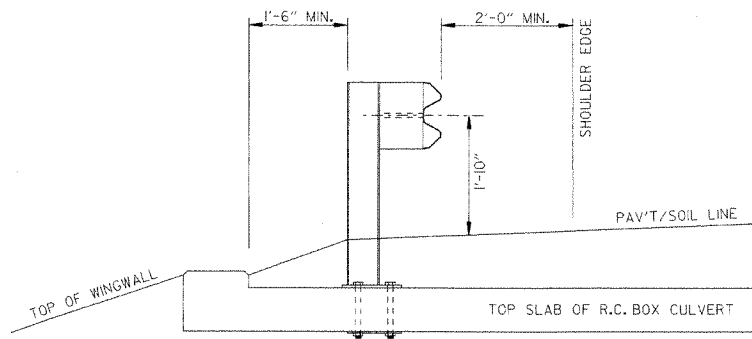
Zone A: Backfill according to Section 617.03(a).

Zone B: Backfill hole in 6" lifts with material meeting the requirements of Section 802.02(c) - Alternate gradation. Compact to 95% maximum dry density per ASTM D-698.

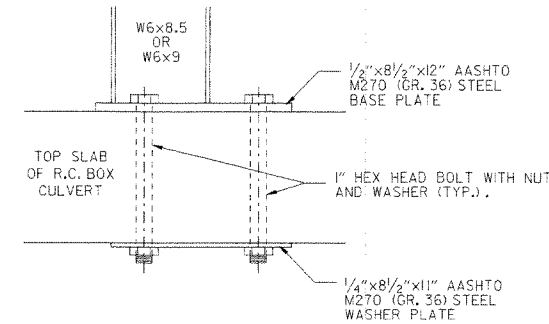
Notes: For overlying soil depths (A) ranging from 18" to 44", the depth of required drilling (B) is equal to either 12" or 44" minus the depth of soil whichever is less.

Zone A & B: Backfill according to Section 617.03(a).

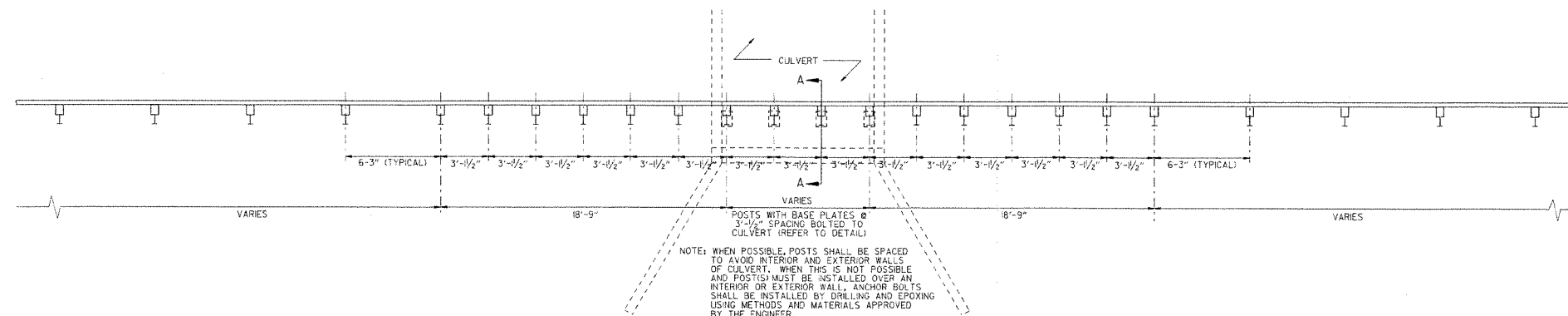
DETAIL OF POST PLACEMENT IN SOLID ROCK (W-BEAM)



SECTION A-A



DETAIL OF CONNECTION



PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

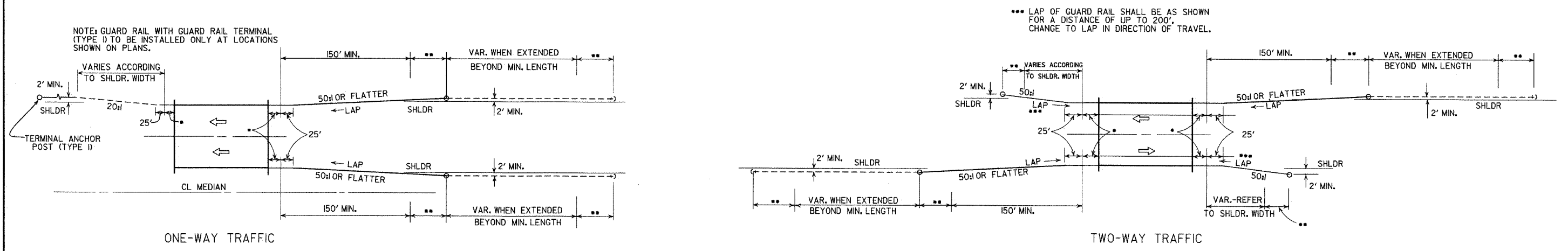
NOTE: THIS DETAIL IS TO BE USED ONLY WHEN THE COVER OVER THE CULVERT DOES NOT PERMIT FULL EMBEDMENT OF GUARD RAIL POSTS AS SHOWN ON STD. DRWG. GR-8.

7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
4-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
3-30-00	REMOVED CONCRETE INSERT ANCHOR	
8-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT, ADD. DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULVERT. DELETED DET. OF STEEL LINE POST CONN. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. IN SOLID ROCK	
4-3-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
6-2-94	REVISED ALTERNATE POST SIZE	
8-5-93	REVISED STEEL POST SIZE	
10-1-92	REDRAWN & REVISED	10-1-92
8-2-90	DEL. WASHER ON ANCHOR ASSEMBLY CONFORMED TO 1988 SPECS	8-2-90
7-15-88	REVISED ANCHOR NOTE	
3-4-88	REVISED ANCHOR ASSEMBLY	7-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-30-87	REDRAWN & REVISED	803-10-9-87
10-9-87	DATE	REVISION
		DATE FILM

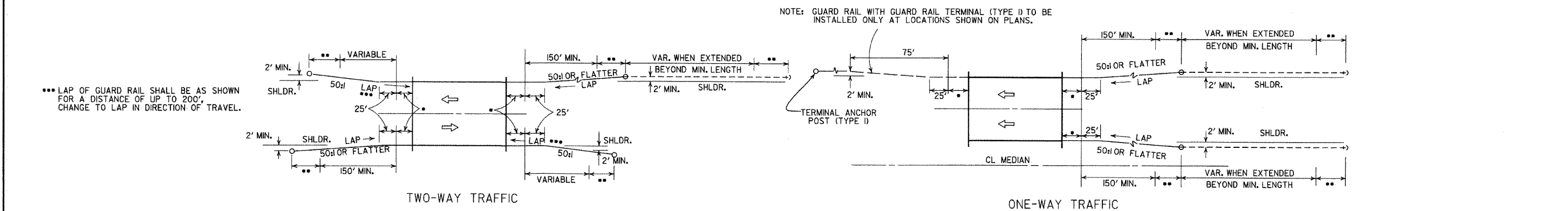
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

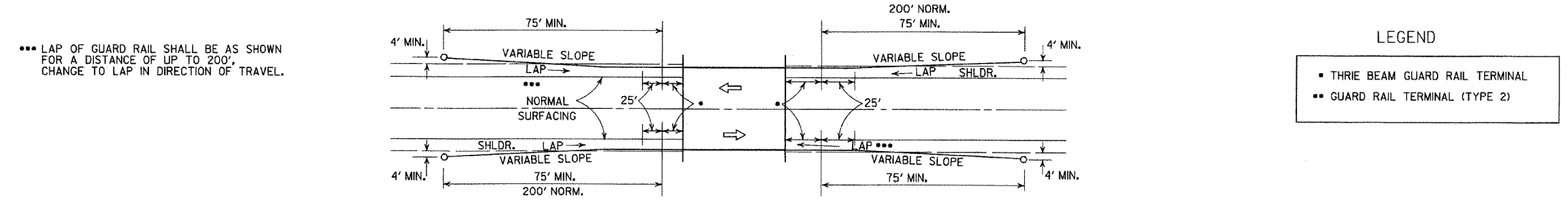
STANDARD DRAWING GR-8A



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

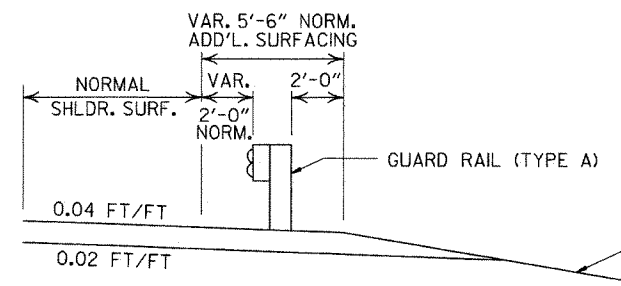
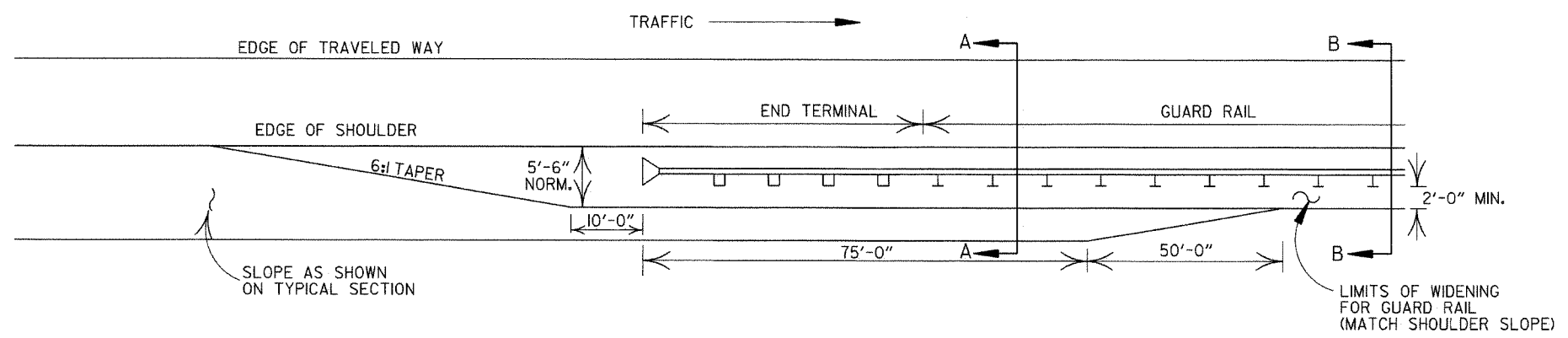


METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

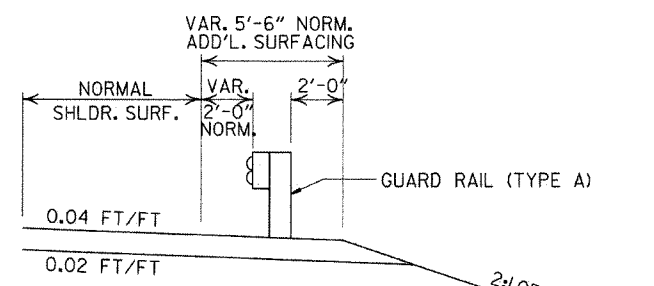


METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERMINAL (TYPE 1) (FULL SHOULDER WIDTH OR LESS BRIDGES)

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

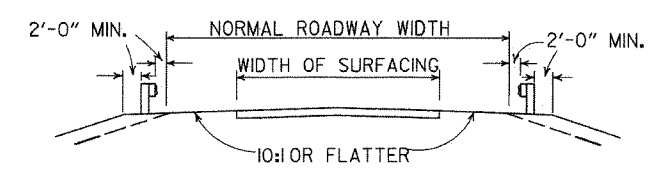


SECTION A-A

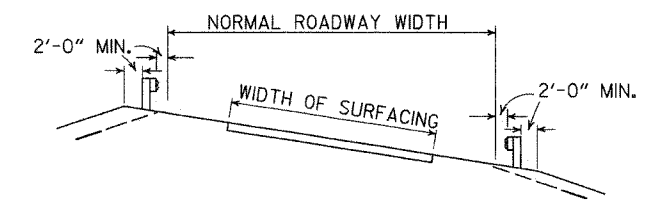


SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

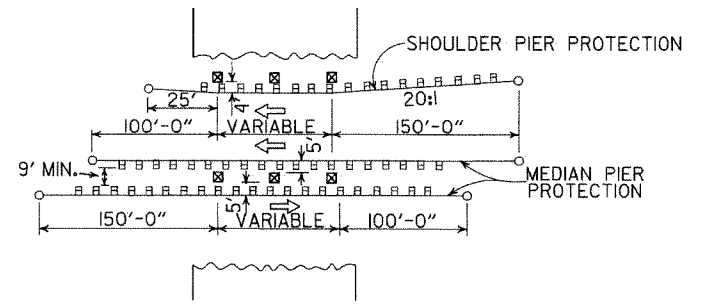


SECTION ON TANGENT



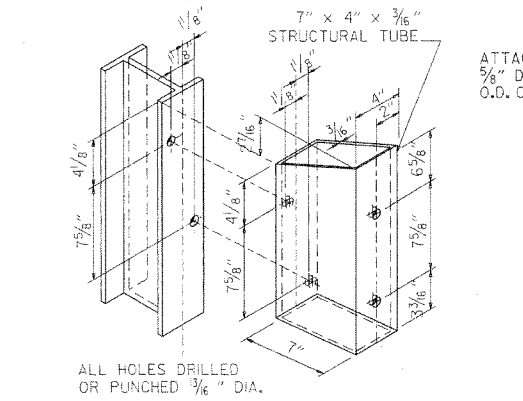
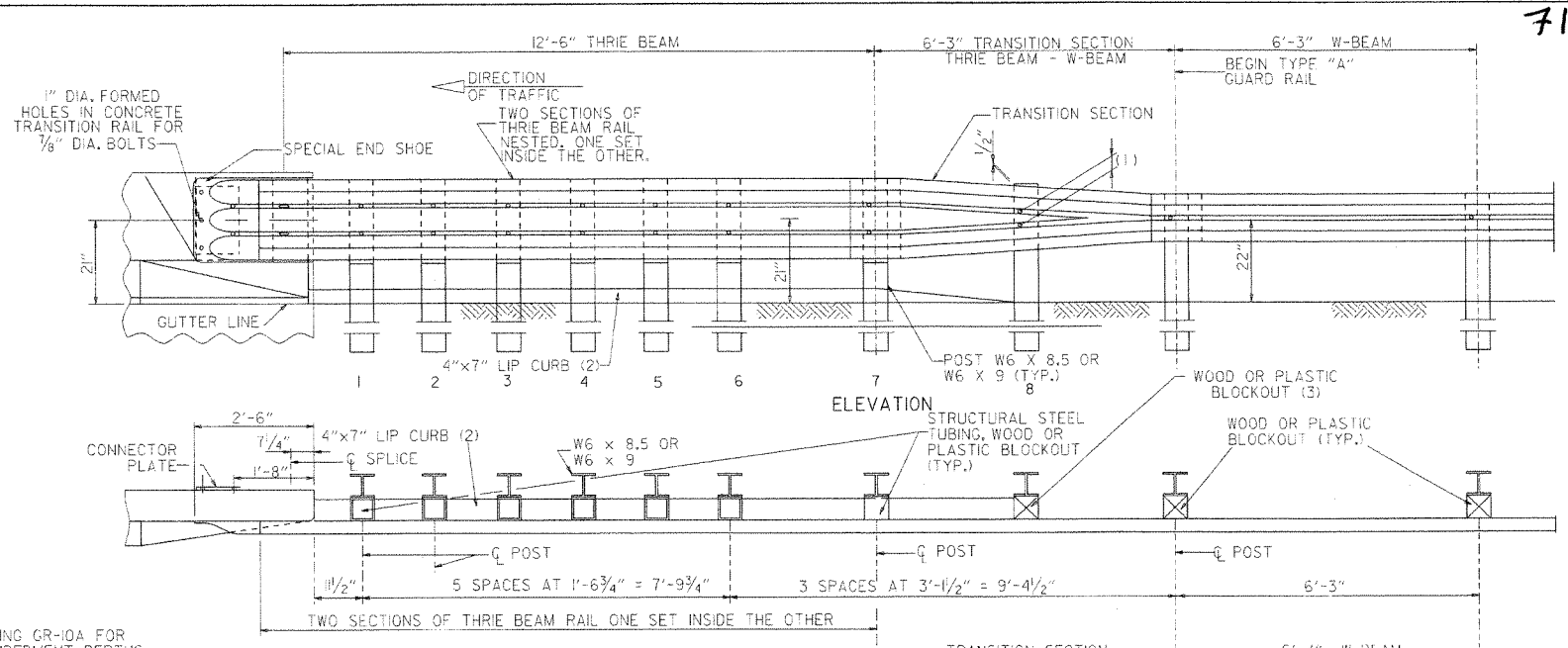
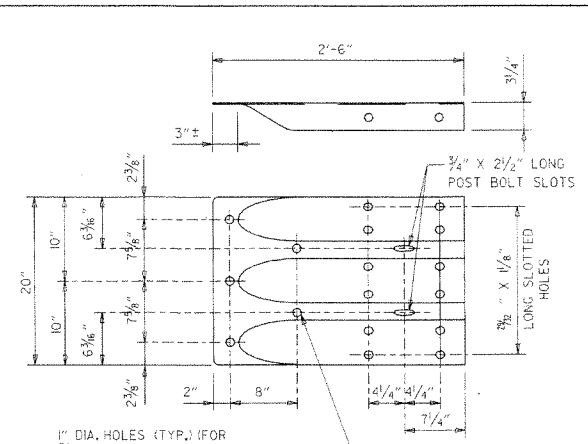
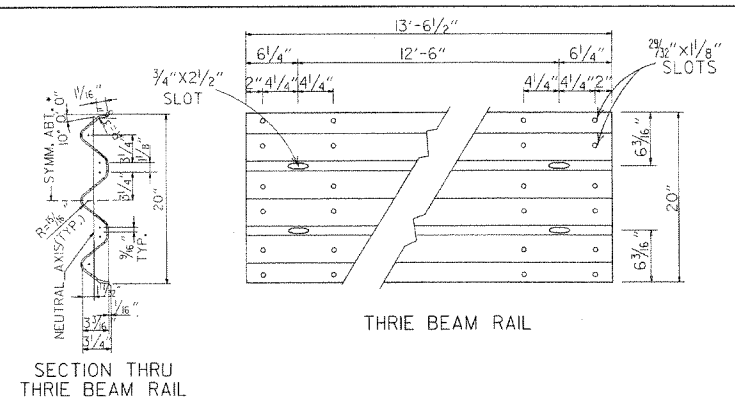
SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY

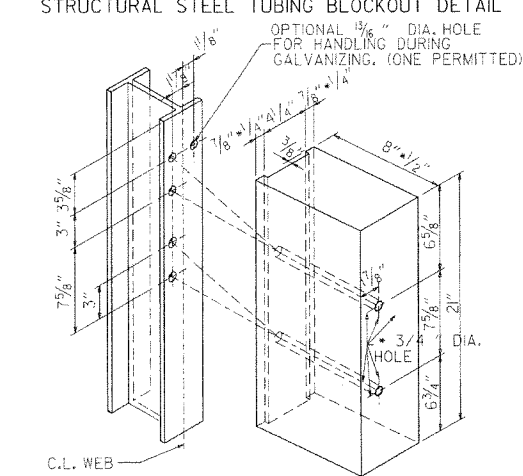


METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

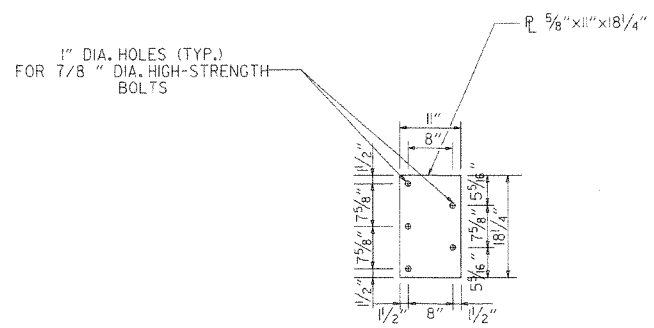
ARKANSAS STATE HIGHWAY COMMISSION			
GUARD RAIL DETAILS			
STANDARD DRAWING GR-9A			
4-17-08	MINOR REVISION		
11-10-05	DRAWN		
DATE	REVISION	DATE	FILM



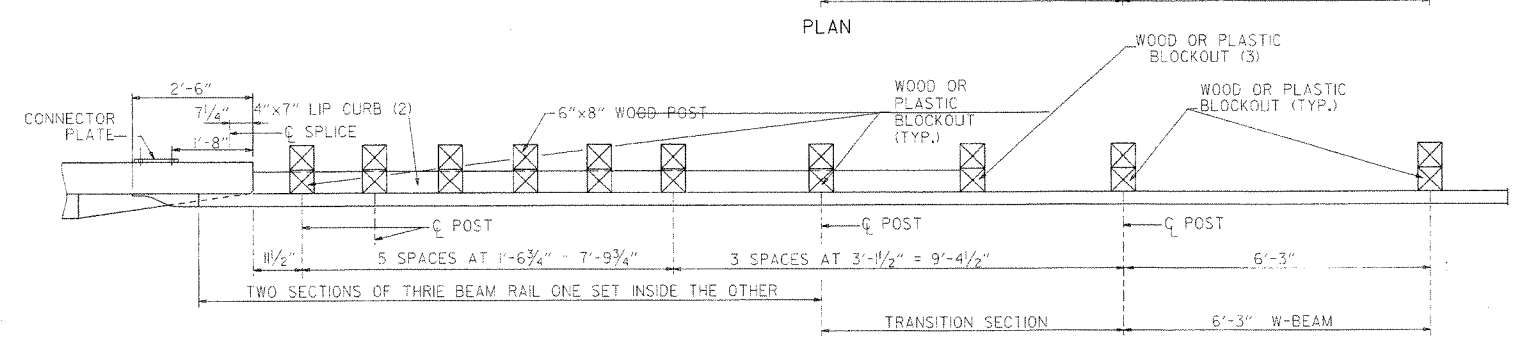
ATTACH BLOCKOUT TO POST USING 5/8" DIA. HEX HEAD BOLTS WITH 1/2" O.D. CUT STEEL WASHERS AND NUT.



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

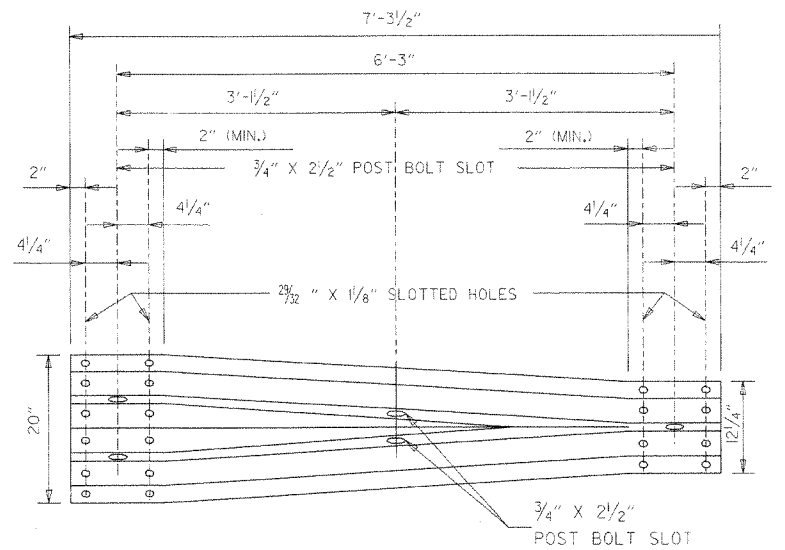
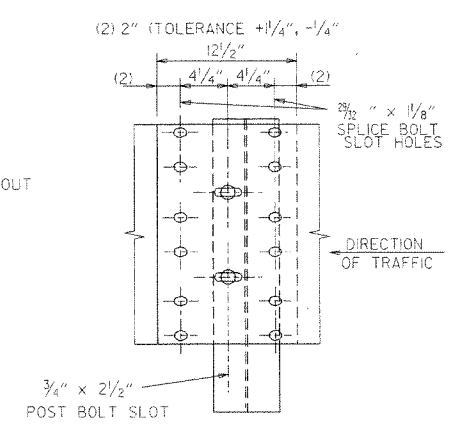


NOTE: SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



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

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

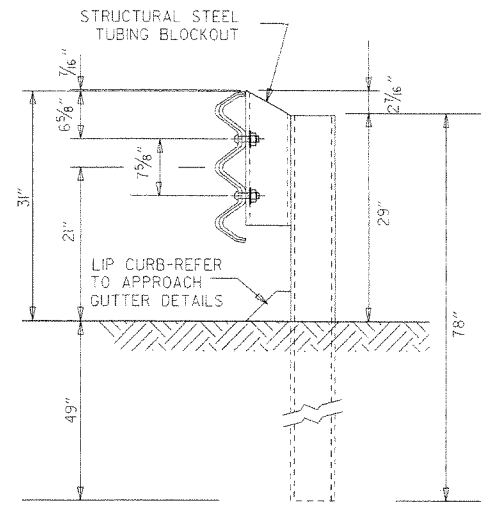


GENERAL NOTES:

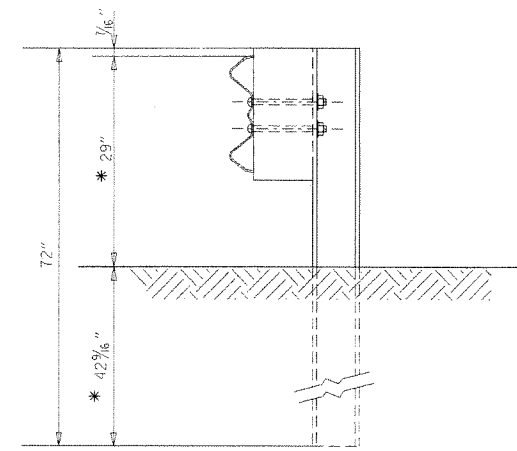
THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1. RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION. ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL 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-9 & GR-11. WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7F (1400 F) OR NO. 1 1350 F SOUTHERN PINE. REFER TO STD. DRWG. GR-10A FOR POST DETAILS. USE THRIE BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. THRIE BEAM POSTS SHALL BE SAME MATERIAL AS W-BEAM POSTS FOR ENTIRE JOB.

DATE	REVISION	DATE FILM
7-14-10	RAISED HEIGHT OF W-BEAM 1"	
11-29-07	ADDED PLASTIC BLOCKOUTS	
11-10-05	ADDED NOTE FOR ATTACHING STEEL BLOCKOUT	
11-18-04	REVISED GENERAL NOTES	
10-9-03	REVISED GENERAL NOTES	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED NOTE (2)	
6-29-00	MOVED DIMENSION LINES	
5-18-00	ADDED NOTE	
3-30-00	DRAWN & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS
STANDARD DRAWING GR-10

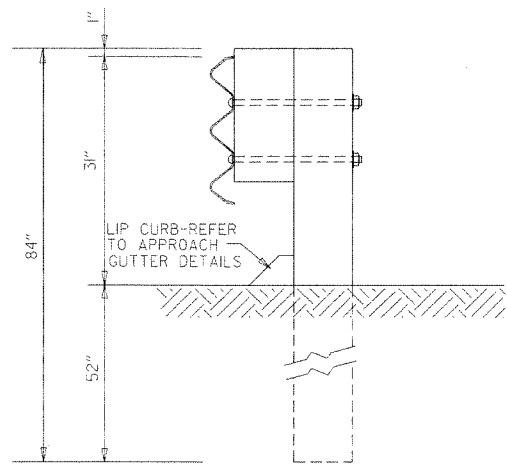


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST
POSTS 1-7

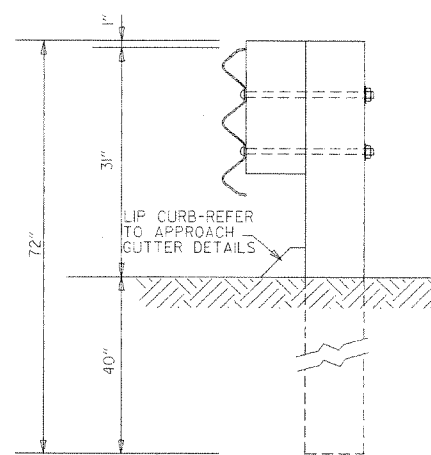


W-BEAM TO THRIE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8

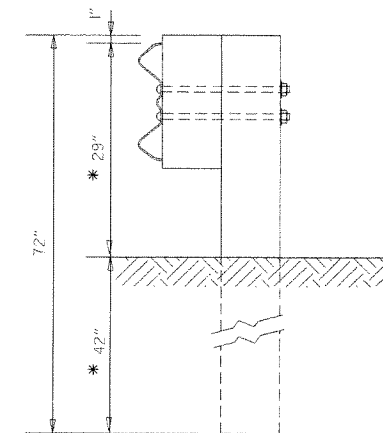
* NOTE:
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



THRIE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUTS & WOOD POSTS
POSTS 1-6



THRIE BEAM RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST
POST 7



W-BEAM TO THRIE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT & WOOD POST
POST 8

GENERAL NOTES:
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7F (1400 F) OR NO. 1 1350 F SOUTHERN PINE.

DATE	REVISION	DATE FILM
7-14-10	REVISED POST 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
8-22-02	REVISED LIP CURB NOTE	
3-30-00	DRAWN & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION
GUARD RAIL DETAILS
STANDARD DRAWING GR-10A

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA. INCHES	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
15	18	18	11	11
18	22	22	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/8	44	26 5/8	27
42	51 1/8	51	31 5/16	31
48	58 1/2	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	77 1/2	77
108	138	138	87 7/8	87
120	154	154	96 7/8	97
132	168 3/4	169	106 1/2	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. INCHES	AASHTO M 207	
	SPAN INCHES	RISE INCHES
18	23	14
24	30	19
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
48	60	38
54	68	43
60	76	48
66	83	53
72	91	58
78	98	63
84	106	68

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

CONSTRUCTION SEQUENCE

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

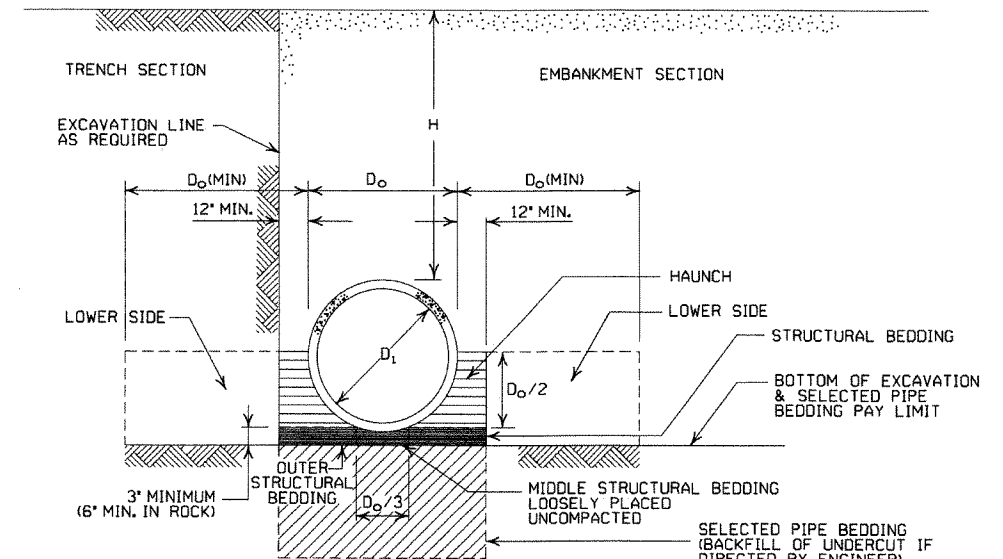
NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

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

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

- * SM-3 WILL NOT BE ALLOWED.
- ** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

1. CONCRETE PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS, UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONCRETE PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. ALL PIPE SHALL CONFORM TO SECTION 606. CIRCULAR R.C. PIPE CULVERTS SHALL CONFORM TO AASHTO M170, R.C. ARCH PIPE CULVERTS SHALL CONFORM TO AASHTO M206 AND HORIZONTAL ELLIPTICAL PIPE CULVERTS SHALL CONFORM TO AASHTO M207.
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. NOT MORE THAN ONE LIFTING HOLE MAY BE PROVIDED IN CONCRETE PIPE TO FACILITATE HANDLING. HOLE MAY BE CAST IN PLACE, CUT INTO THE FRESH CONCRETE AFTER FORMS ARE REMOVED, OR DRILLED. THE HOLE SHALL NOT BE MORE THAN TWO INCHES IN DIAMETER OR TWO INCHES SQUARE. CUTTING OR DISPLACEMENT OF REINFORCEMENT WILL NOT BE PERMITTED. SPALLED AREAS AROUND THE HOLE SHALL BE REPAIRED IN A WORKMANLIKE MANNER. LIFTING HOLE SHALL BE FILLED WITH MORTAR, CONCRETE, OR OTHER METHOD AS APPROVED BY THE ENGINEER.
9. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
10. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED ABOVE AS THE HAUNCH), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

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

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

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

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

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

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

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

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

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

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

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

INSTALLATION TYPE	CLASS OF PIPE	
	CLASS III	CLASS IV
	FEET	
TYPE 2	13	21
TYPE 3	10	16

NOTE: TYPE 1 INSTALLATION WILL NOT BE ALLOWED FOR ARCH & HORIZONTAL ELLIPTICAL PIPE CULVERTS.

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

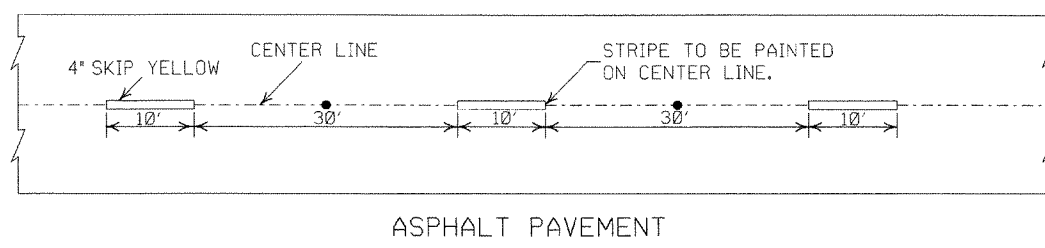
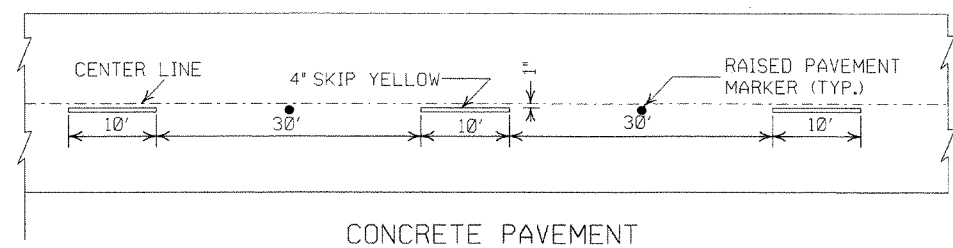
CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1



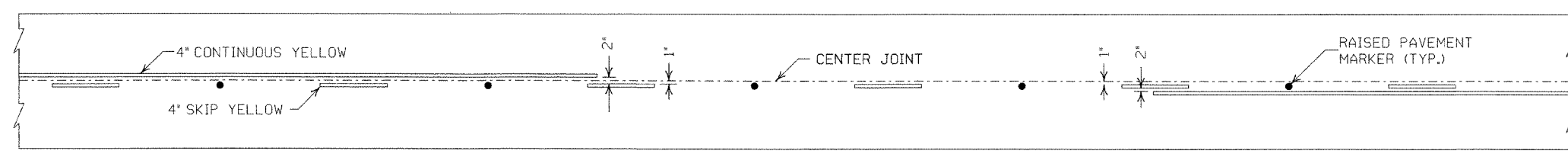
NOTES:

1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.'
4. RAISED PAVEMENT MARKERS SHALL BE CENTERED BETWEEN SKIP LINES ON 40 FEET SPACING UNLESS OTHERWISE SHOWN ON THE PLANS.

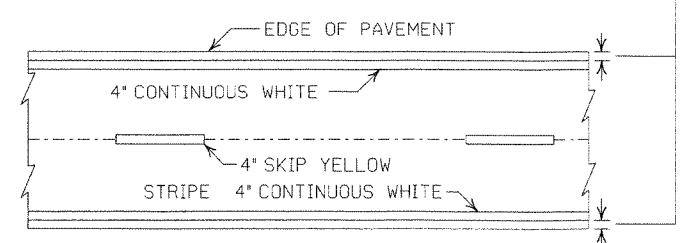


BROKEN LINE STRIPING

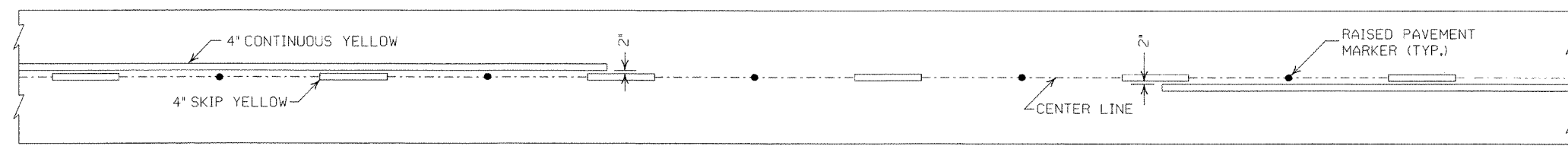
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



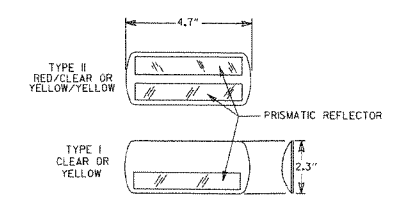
SOLID LINE STRIPING ON CONCRETE PAVEMENT



PAVEMENT EDGE LINE MARKING

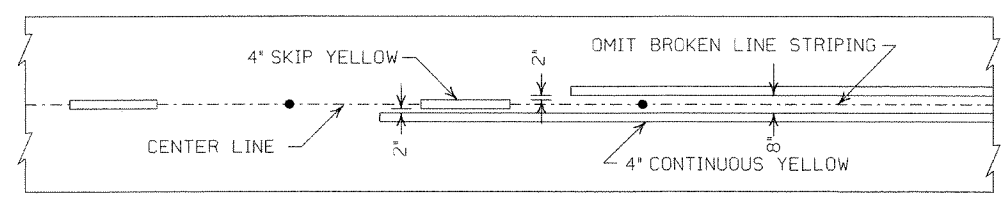


SOLID LINE STRIPING ON ASPHALT PAVEMENT

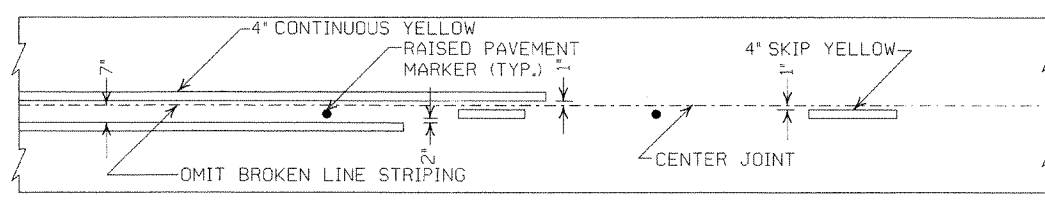


NOTE: THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS



ASPHALT PAVEMENT



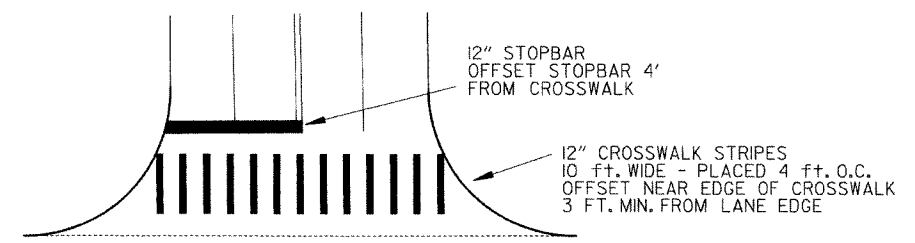
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

GENERAL NOTES:
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.

THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

NOTE:
DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.



CROSSWALK AND STOPBAR DETAILS

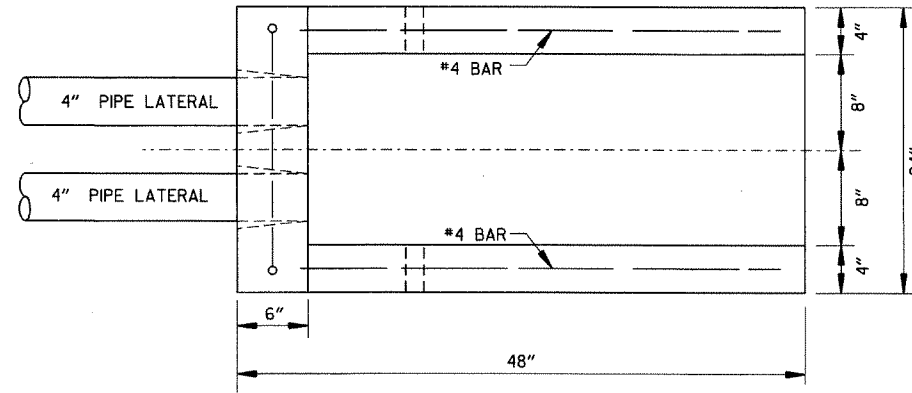
DATE	REVISION	FILMED
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

ARKANSAS STATE HIGHWAY COMMISSION

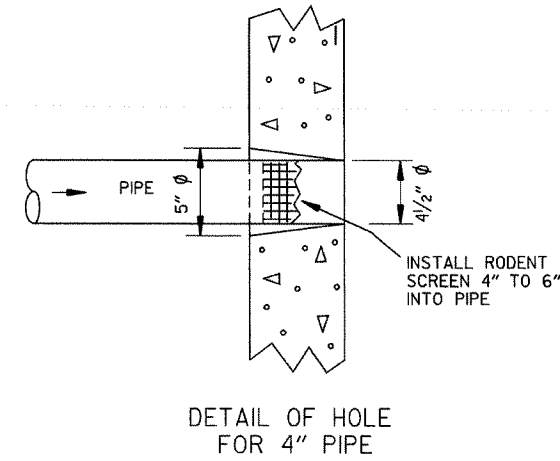
PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

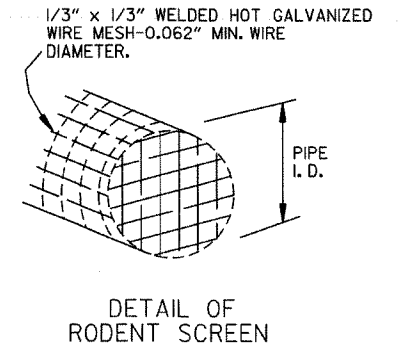
NOTE:
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.



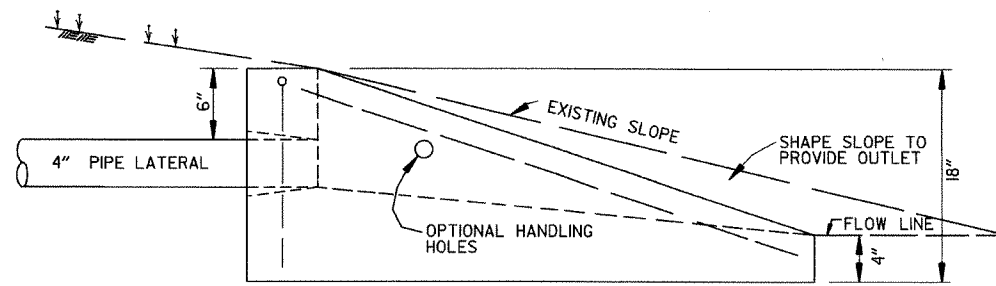
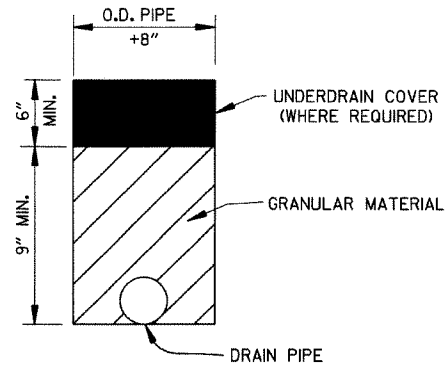
PLAN VIEW



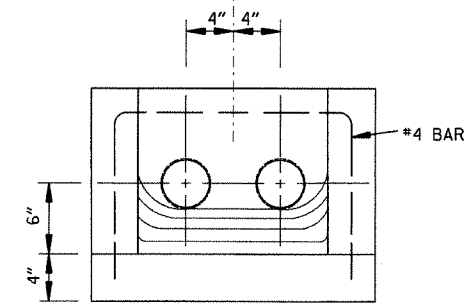
DETAIL OF HOLE FOR 4" PIPE



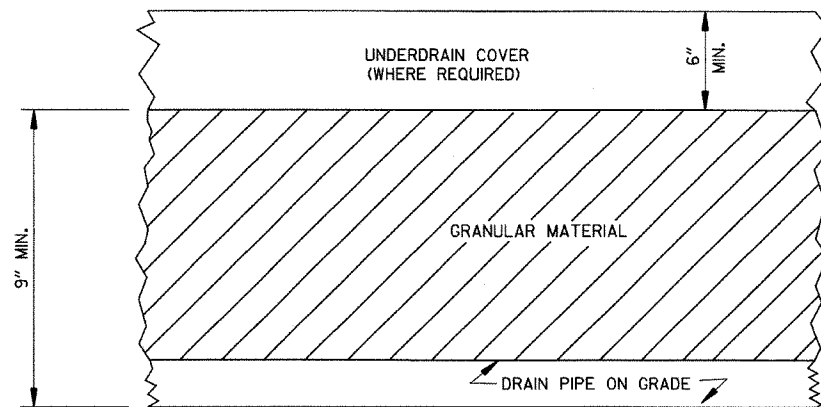
DETAIL OF RODENT SCREEN



SIDE VIEW



FRONT VIEW

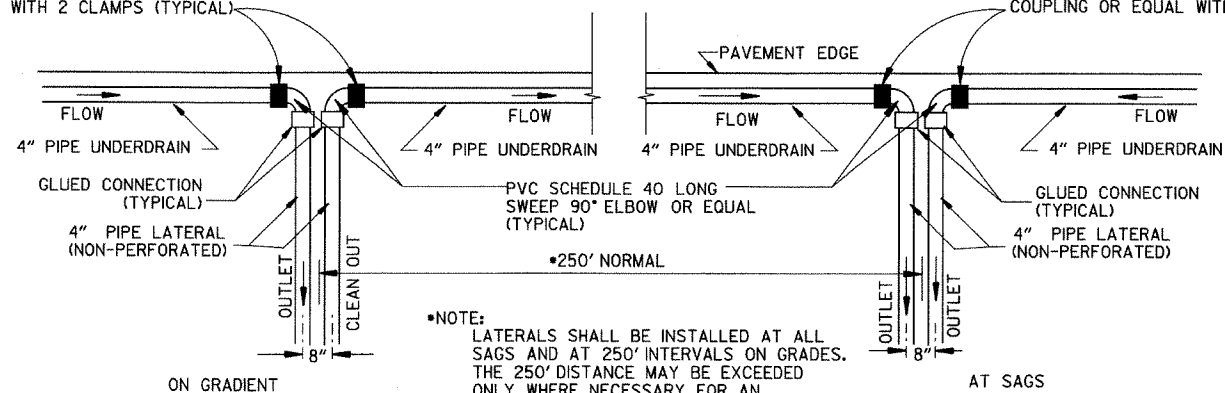


DETAILS OF PIPE UNDERDRAIN

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

UNDERDRAIN OUTLET PROTECTORS

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



NOTE:
 LATERALS SHALL BE INSTALLED AT ALL SAGS AND AT 250' INTERVALS ON GRADES. THE 250' DISTANCE MAY BE EXCEEDED ONLY WHERE NECESSARY FOR AN ACCEPTABLE OUTLET.

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.

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; 5 1/2" 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 POLYETHYLENE 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
DATE	REVISION	DATE FILMED

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH		40 MPH		50 MPH		55 MPH		60 MPH		70 MPH	
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			N.C.		
1° 00'	N.C.			N.C.			0.021			0.028		
1° 15'	N.C.			R.C.			0.026			0.030		
1° 30'	N.C.			0.021			0.032			0.037		
1° 45'	N.C.			0.025			0.043			0.049		
2° 00'	R.C.			0.028	175		0.048	225	300	0.055	250	300
2° 15'	R.C.			0.031			0.053			0.061		
2° 30'	0.021			0.034			0.058			0.067		
2° 45'	0.023			0.037			0.063			0.072		
3° 00'	0.025			0.040			0.067	230		0.077	260	
3° 15'	0.027			0.043			0.072	245		0.082	275	
3° 30'	0.029			0.046			0.076	255		0.086	285	
3° 45'	0.031			0.049			0.080	265		0.090	295	
4° 00'	0.033			0.051			0.083	270		0.093	305	
4° 30'	0.037	150	200	0.056			0.087	280		0.096	315	
5° 00'	0.040			0.061			0.091	295		0.098	320	
5° 30'	0.043			0.066	185		0.094	300	350			
6° 00'	0.046			0.070	190		0.092	270		0.096	305	
6° 30'	0.050			0.074	200		0.095	280		0.100	315	
7° 00'	0.053			0.078	210		0.098	285				
7° 30'	0.056			0.081	215		0.099	290				
8° 00'	0.058			0.084	220		0.100	290				
8° 30'	0.061			0.087	225							
9° 00'	0.063			0.089	230							
10° 00'	0.068	160		0.094	235							
11° 00'	0.072	170		0.097	250							
12° 00'	0.075	175		0.099	250							
13° 00'	0.080	180		0.100	250							
14° 00'	0.083	190										
15° 00'	0.086	195										
16° 00'	0.089	200										
17° 00'	0.091	200										
18° 00'	0.093	205										
19° 00'	0.095	210										
20° 00'	0.097	215										
21° 00'	0.098	215										
22° 00'	0.099	215										
23° 00'	0.099	215										
24° 00'	0.100	220										

D MAX = 24° 45'

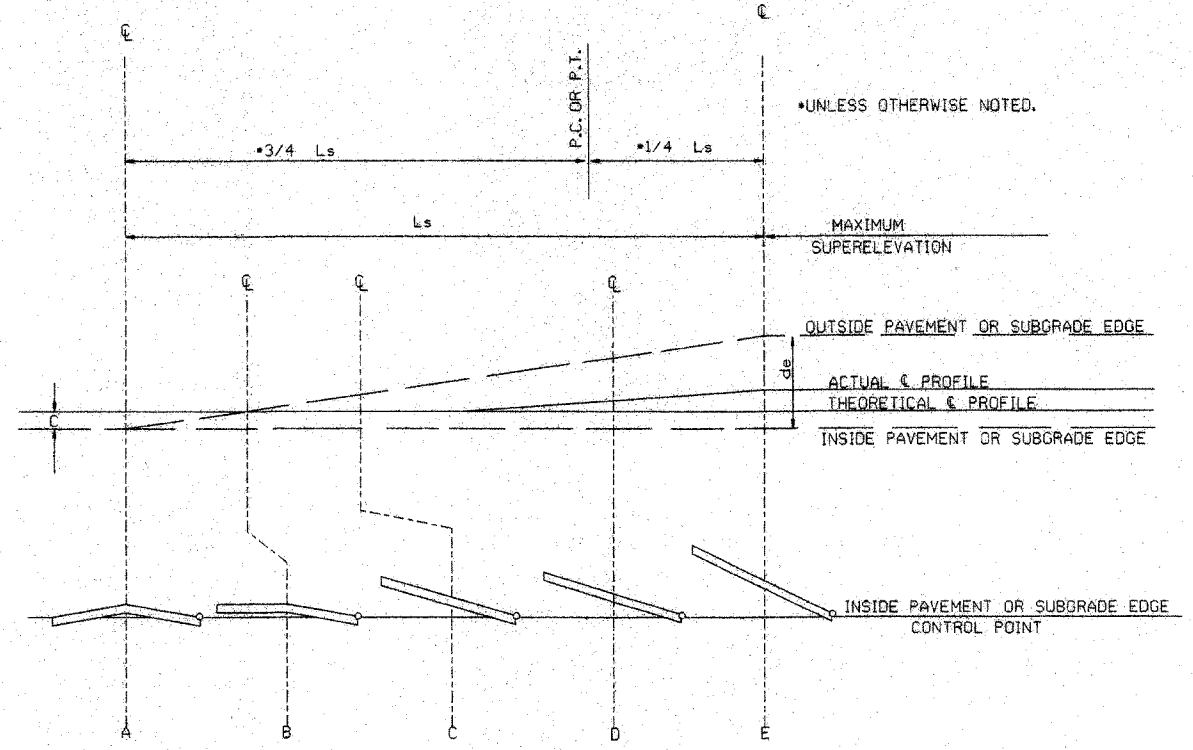
ABBREVIATIONS

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

GENERAL NOTES

1. ON PAVEMENT WITH TWO-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE PAVEMENT EDGE UNLESS OTHERWISE NOTED ON THE PLANS
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED TO OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR L MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. PAVEMENTS WIDER THAN 2 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLLOWS:
 - 3 LANE UNDIVIDED ----- +20%
 - 4 LANE UNDIVIDED ----- +50%
 - 5 LANE UNDIVIDED ----- +80%
 - 6 LANE UNDIVIDED ----- +100%

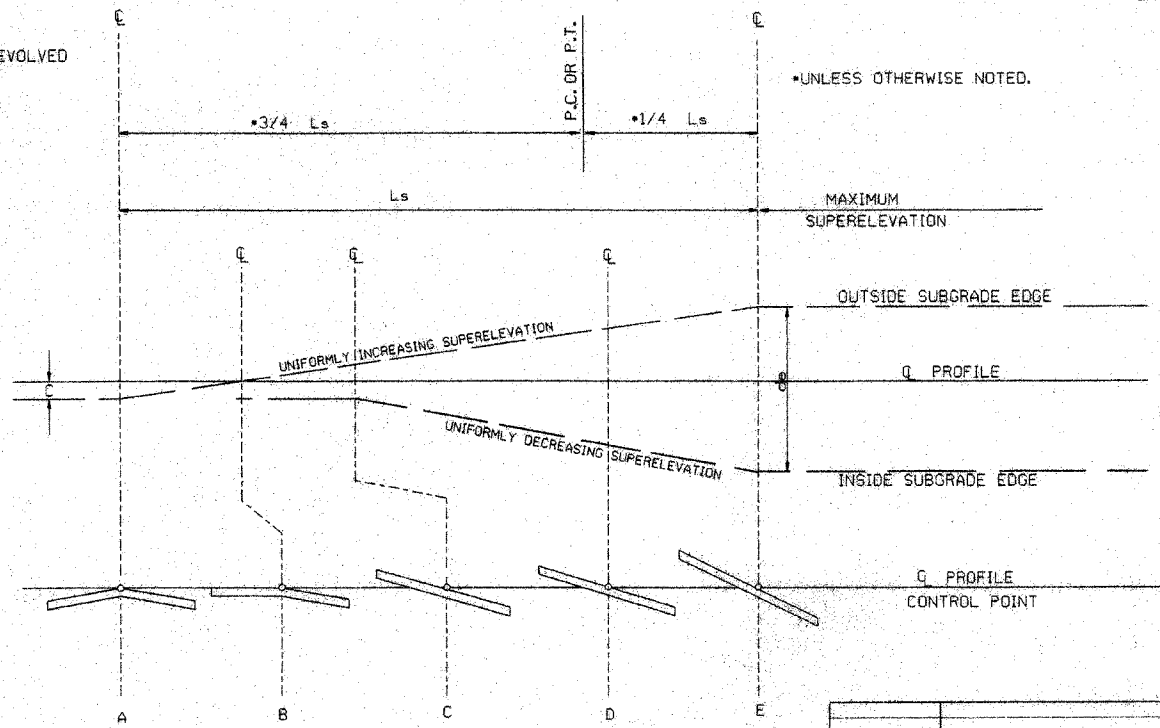
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C. RATE OF SUPERELEVATION SHALL BE COMPUTED ON STRAIGHT LINE METHOD USING APPLICABLE Ls.



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

NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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



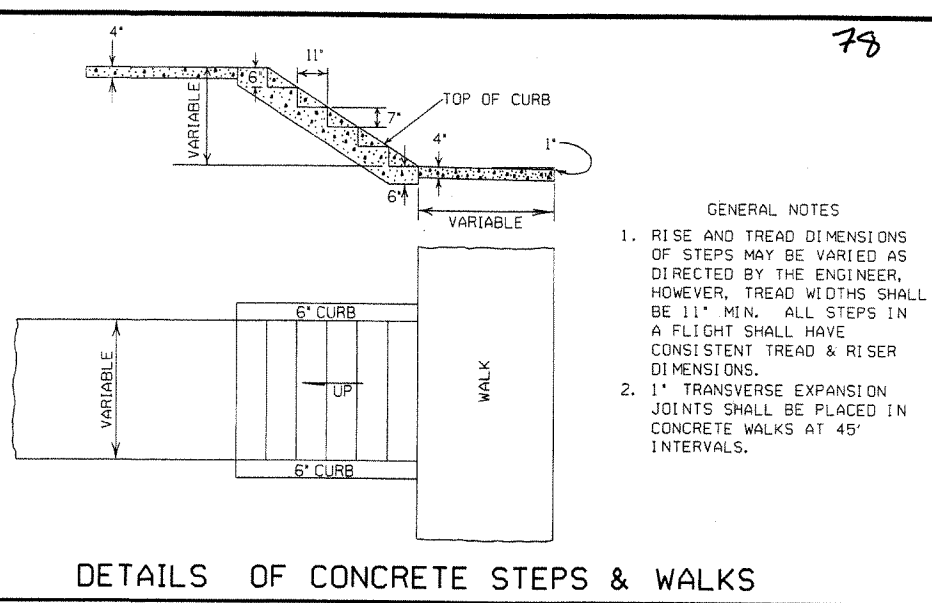
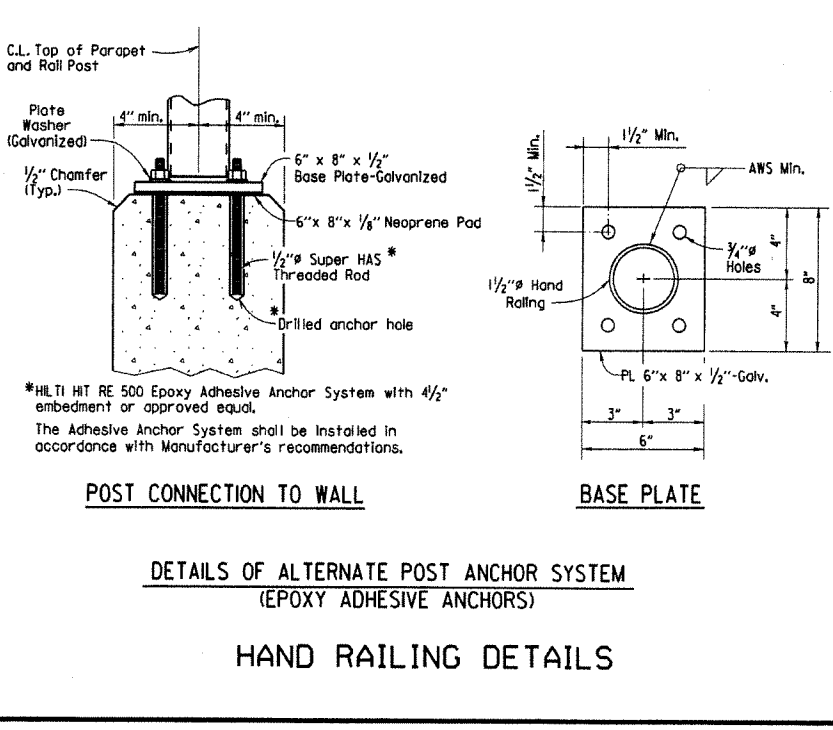
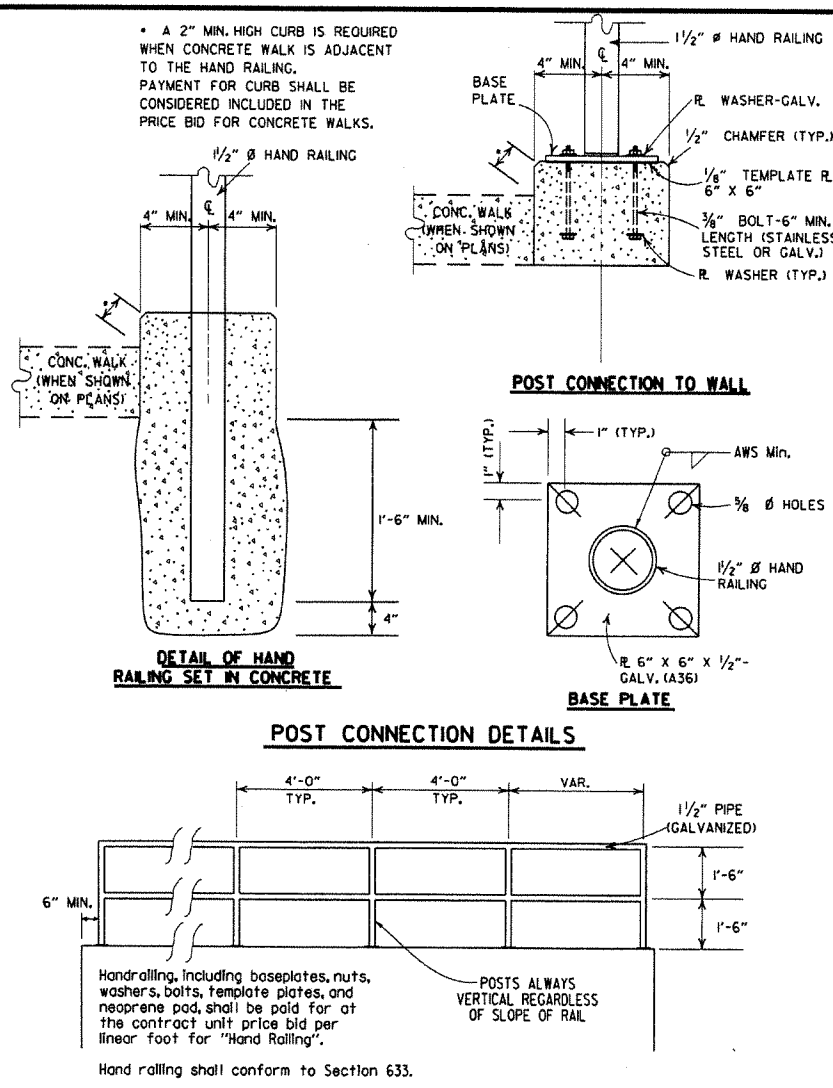
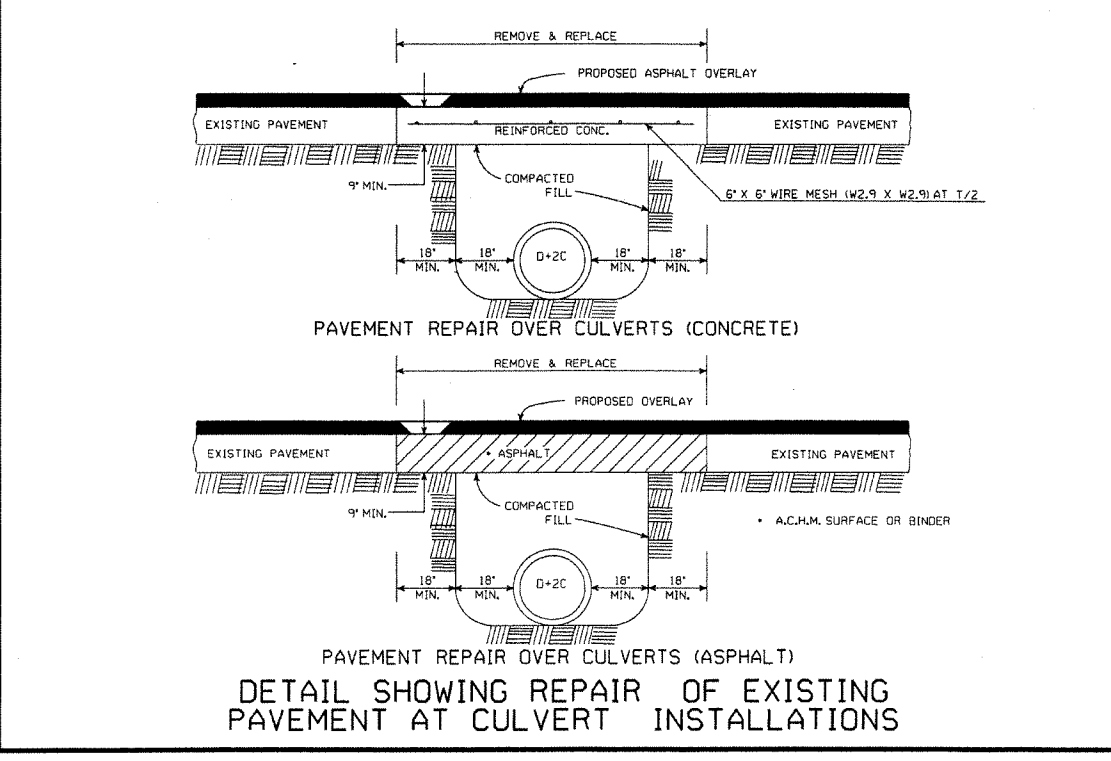
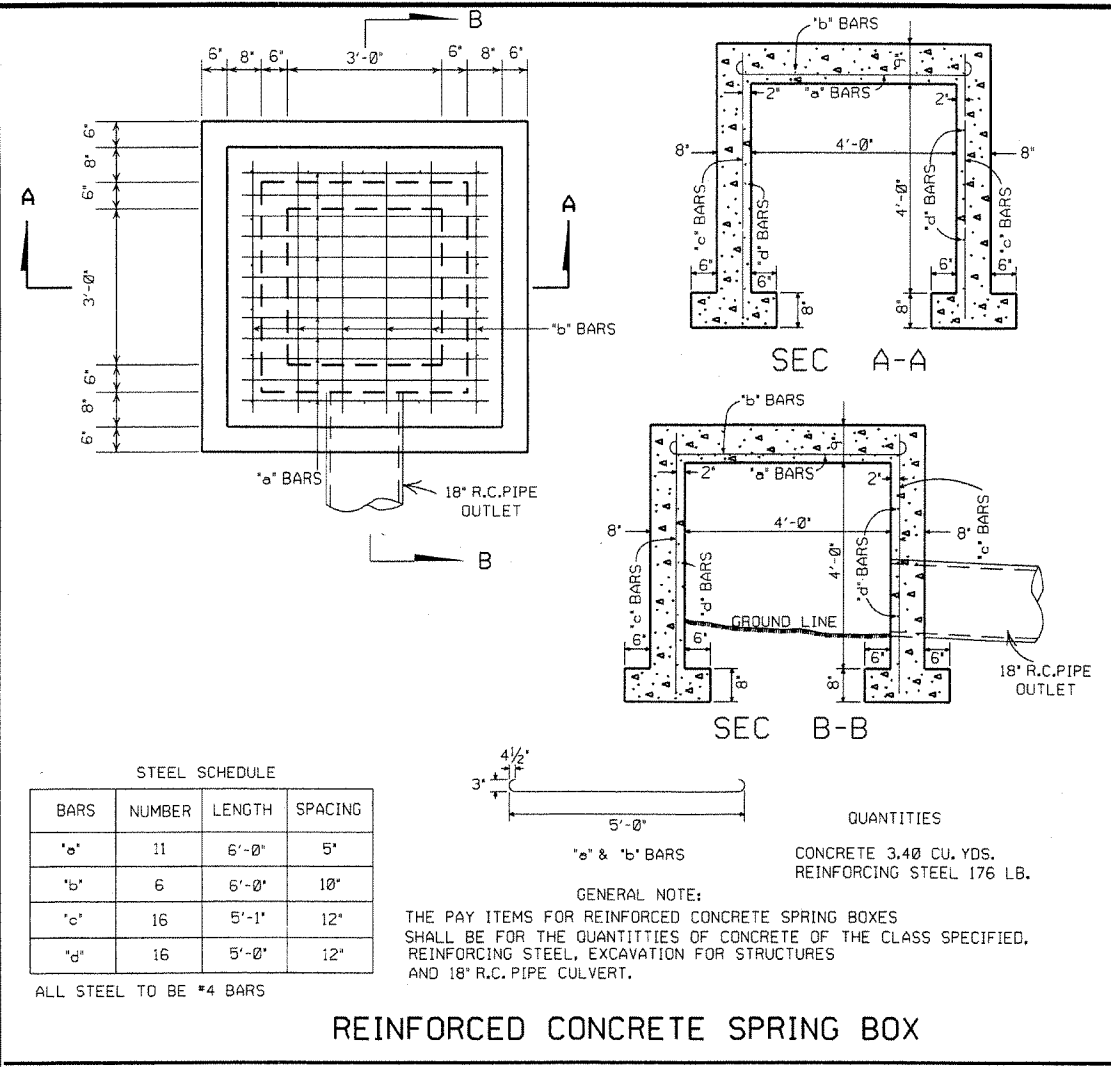
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

10-18-96	ADDED FORMULA	10-18-96
01-09-87	ISSUED	534-1-9-87
DATE	REVISION	DATE FILMED



DATE	REVISION	DATE FILMED
7-26-12	REMOVED RETAINING WALL DETAILS & REVISED HAND RAILING DETAILS	
4-17-08	REV. JOINT & FOOTING STEP DETAILS	
11-29-07	REVISED RETAINING WALL DRAINAGE	
5-25-06	REVISED PVMT REPAIR OVER CULVERTS (CONC.); REVISED REINFORCED CONC SPRING BOX	
10-9-03	REVISED PIPE RAILING DETAILS TO HAND RAILING DETAILS	
4-10-03	REVISED RETAINING WALL DRAWING	
8-22-02	ADDED HAND RAILING DETAIL	
11-16-01	REVISED PVMT REPAIR OVER CULVERTS (CONC.); CORRECTED SPELLING IN GENERAL NOTES	
11-18-98	ADDED GENERAL NOTES TO CONCRETE STEPS & WALKS	
7-02-98	ENLARGED PIPE	
4-03-97	ADDED NOTE TO STEEL BAR SCHED.	
10-18-96	CORRECTED SPELLING	
4-26-96	ADD WEEP HOLE; REV. JOINT SPACING IN RET. WALL	
6-2-94	CHANGED CONST. TO CONTRACTION JOINT	
10-1-92	CHANGED MESH FABRIC TO WIRE MESH	10-1-92
8-15-91	DELETED HDWL MODIFICATION DETAIL	8-15-91
11-8-90	DELETED COLD MIX FROM CULV'T. REPAIR	11-8-90
11-30-89	REV. RETAINING WALL STEEL SCHEDULE	11-30-89
11-17-88	V. BARS BEHIND ARROW	665-11-17-88
7-15-88	REV. PAVEMENT REPAIR	649-7-15-88
	ADDED HDWL. MODS. DEL. PIPE UNDERDRAINS	
11-1-84	REV. TRENCH FOR PIPE UNDERDRAIN	510-11-1-84
1-4-83	ELIMINATED CONC. CLASS & ADDED CHAMFER NOTE	682-1-4-83
3-2-81	SPELLING OF "UNDERDRAIN"	721-3-2-81
4-20-79	REV. UNDERDRAIN DET. & PAVEMENT REPAIR	674-4-20-79
2-2-76	12" MIN. GRAN. MAT'L. OVER PIPE	919-2-2-76
4-10-75	REM. SPECS. FOR GRAN. MAT'L.	568-4-10-75-853
5-22-74	GRANULAR MAT'L. TO BE SB-3	567-5-22-74-740
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

ADVANCE DISTANCES (XXXX)

500 FT 1/2 MILE
1000 FT 3/4 MILE
1500 FT 1 MILE AHEAD


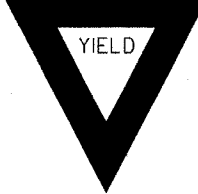
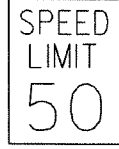
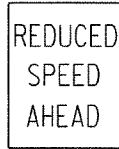

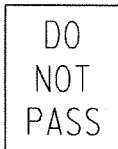



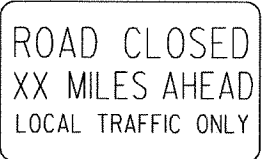
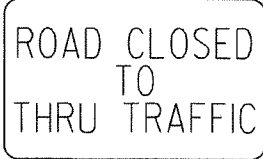

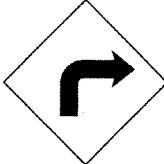






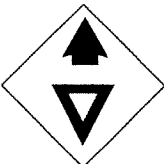
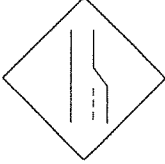



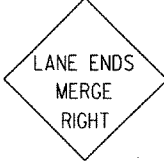








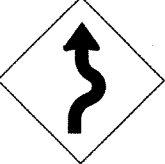
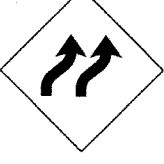

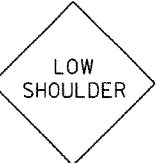
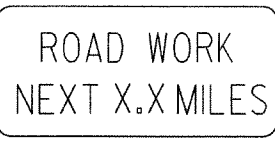
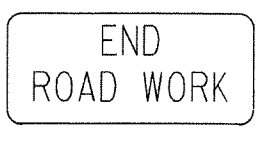
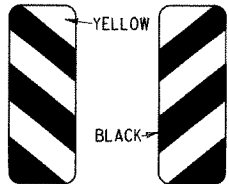
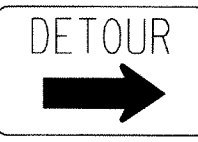


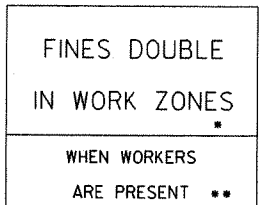
GENERAL NOTES:

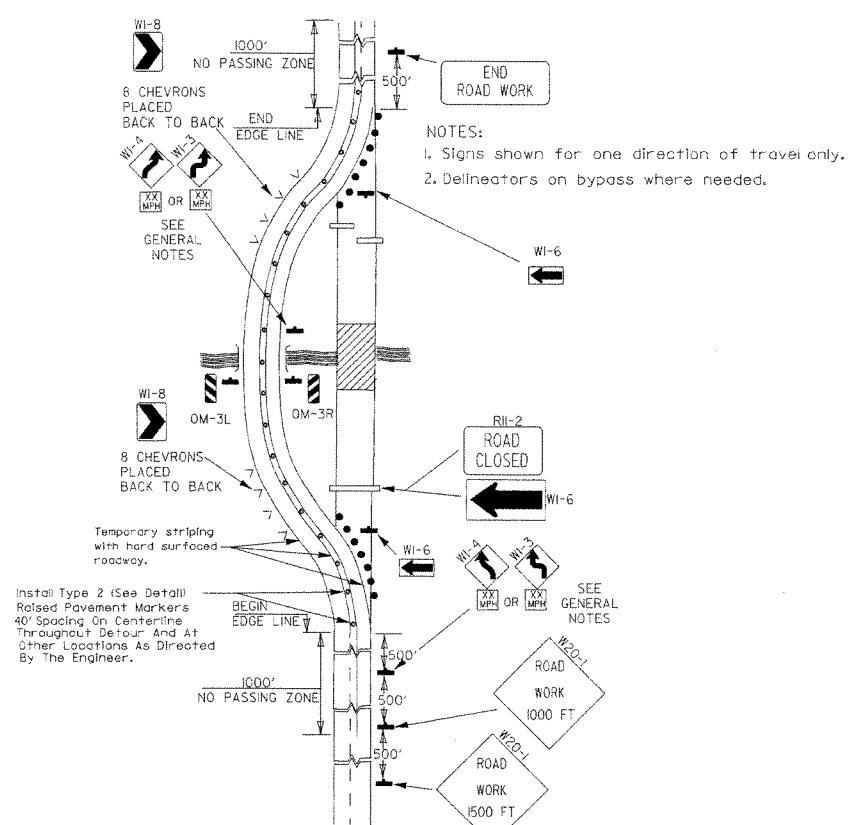
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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.
- 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, DEFACTED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 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.
- 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.
- 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.
- 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.

- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- 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.
- R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

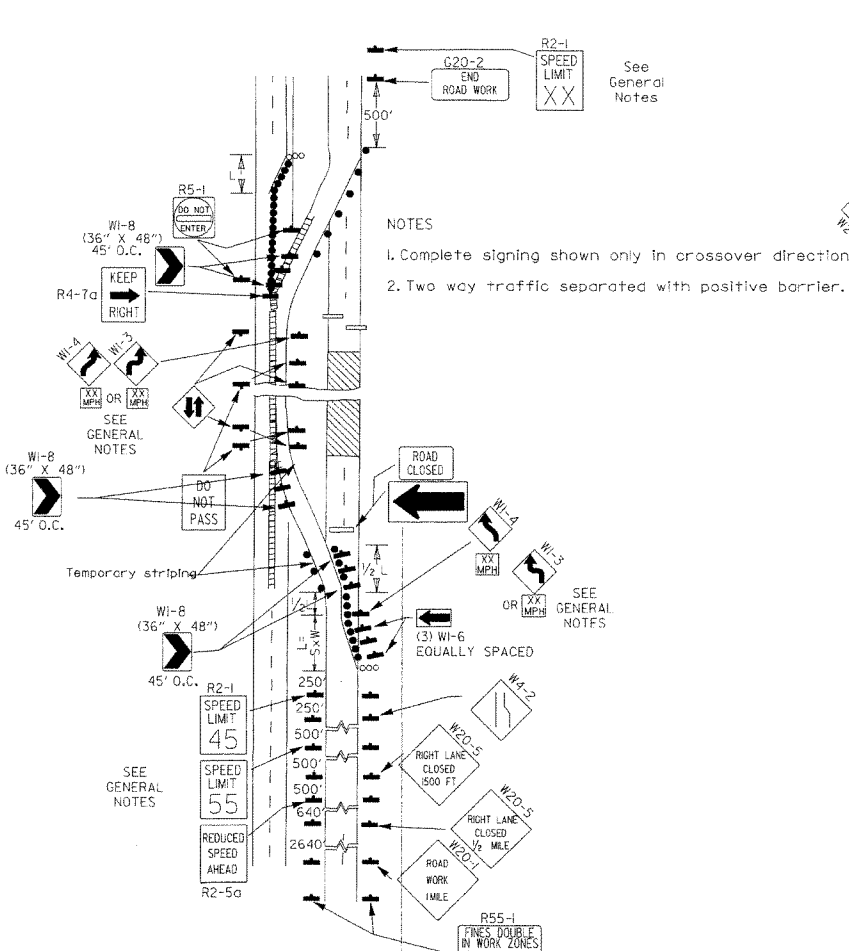
* NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

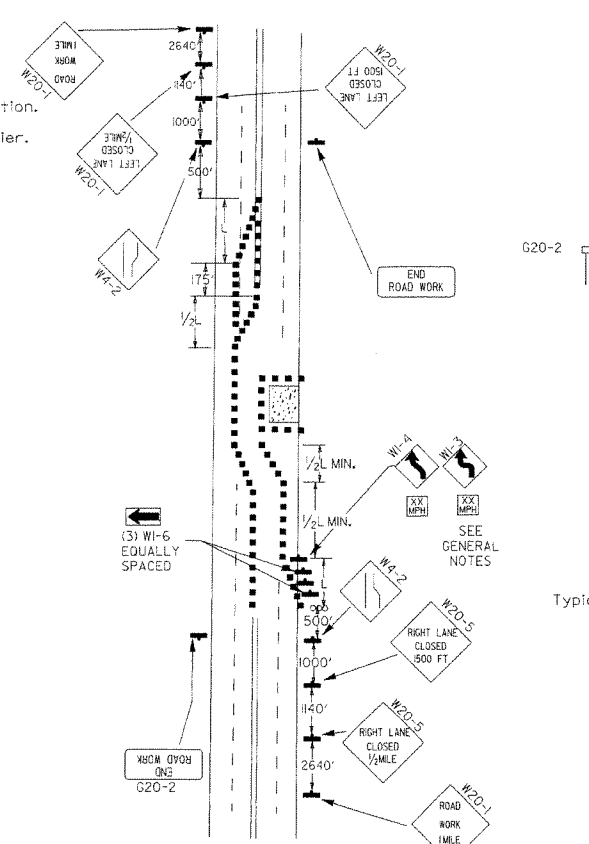
<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>
<p>W20-4</p>  <p>STD. 48"x48"</p>	<p>W20-5</p>  <p>STD. 48"x48"</p>	<p>W20-7a</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W21-2</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W21-5</p>  <p>STD. 30"x30" SPECIAL 36"x36"</p>	<p>W24-1</p>  <p>STD. 36"x36"</p>	<p>WI-4b</p>  <p>STD. 48"x48"</p>
<p>W8-11</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W8-9</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>G20-1</p>  <p>60"x24"</p>	<p>G20-2</p>  <p>48"x24"</p>	<p>OM-3L OM-3R</p>  <p>12"x36"</p>	<p>M4-9</p>  <p>STD. 30"x24" SPECIAL 48"x36" SPECIAL 60"x48"</p>	<p>M4-10</p>  <p>48"x18"</p>
						<p>R56-1</p>  <p>STD. 18"x18"</p>
						<p>R55-1</p>  <p>36"x60"</p> <p>• USE 6" C LETTERS •• USE 4" D LETTERS</p>



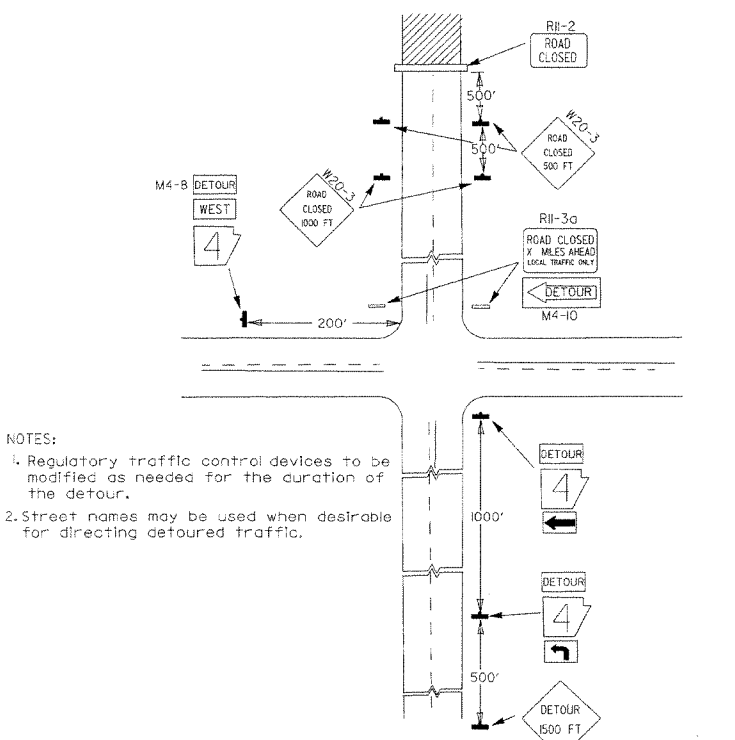
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



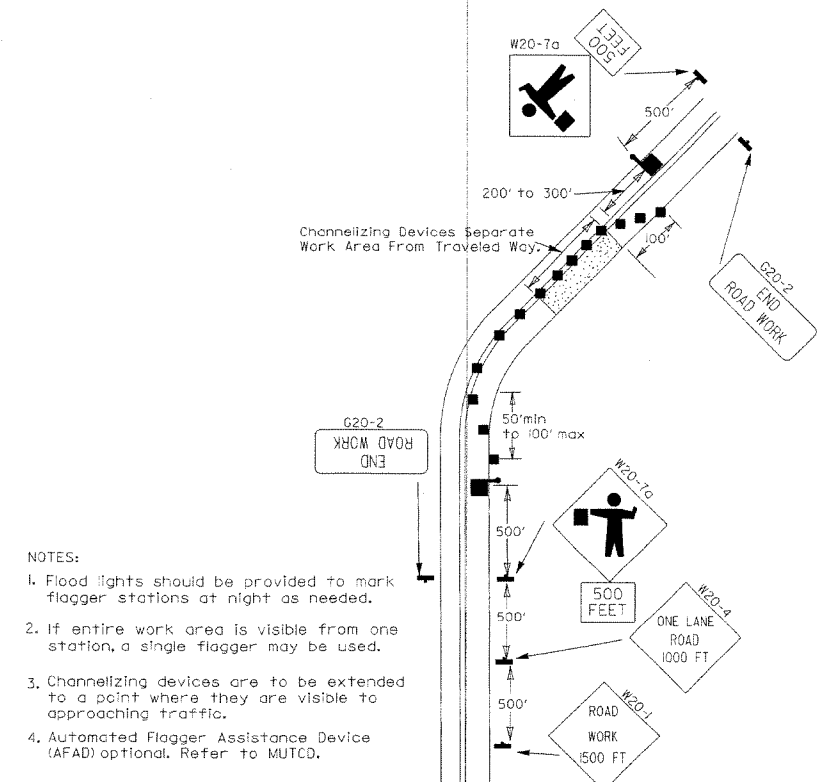
(B) Typical application - 4-lane divided roadway where one roadway is closed.



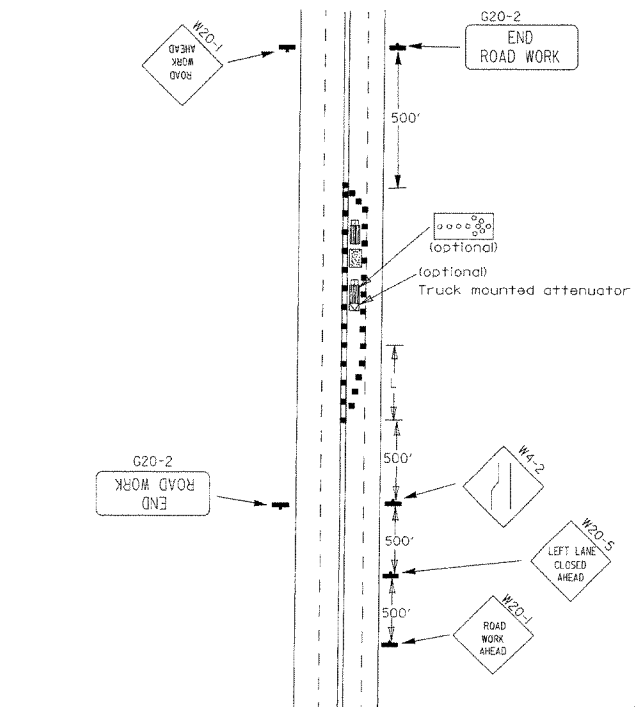
(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.



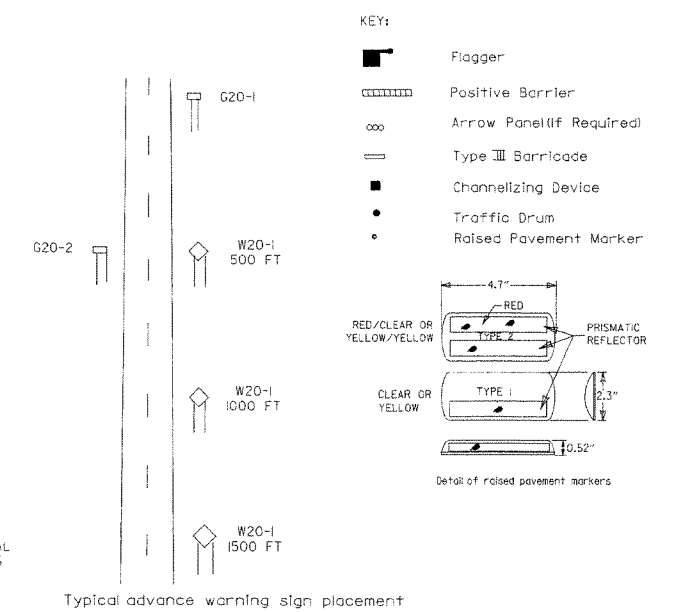
(D) Typical application - roadway closed beyond detour point.



(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.



(F) Typical application - 4-lane undivided roadway with inside lane closed.

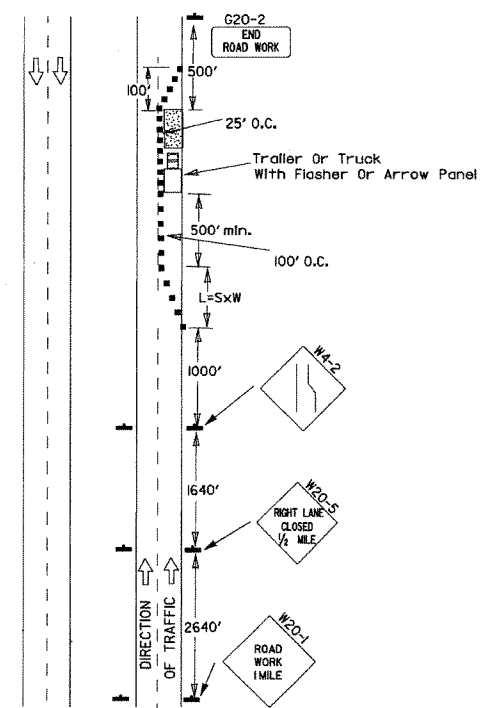


Taper formulae:
 $L = 5 \times W$ for speeds of 45mph or more.
 $L = \frac{WS^2}{60}$ for speeds of 40mph or less.
 Where:
 L = Minimum length of taper.
 S = Numerical value of posted speed limit prior to work or 85th percentile speed.
 W = Width of offset.

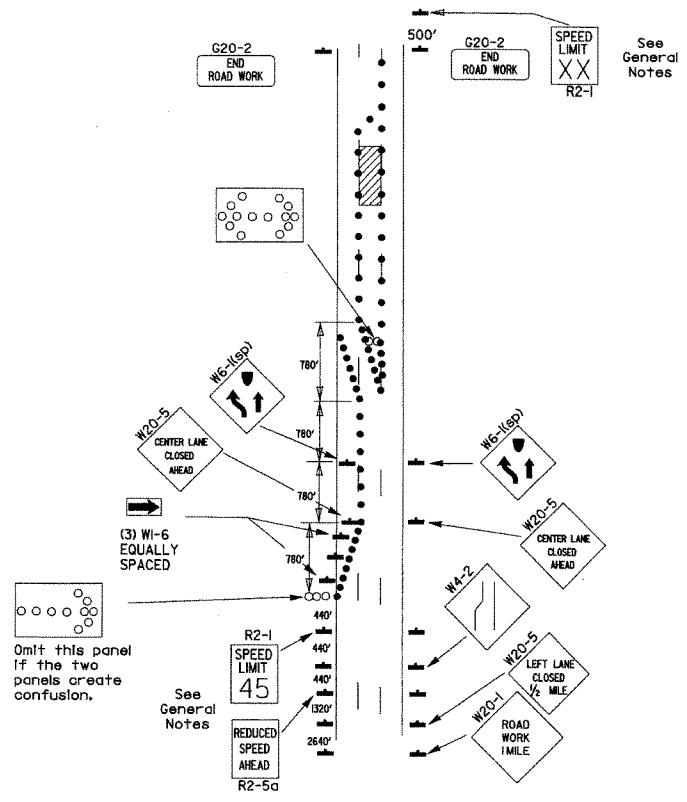
- GENERAL NOTES:
- Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
 - When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(45) shall be omitted and the R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
 - When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1/2 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
 - The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit, or as directed by the Engineer.
 - Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
 - Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
 - Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

DATE	REVISION	FILMED
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	
8-5-91	DRAWN AND PLACED IN USE	

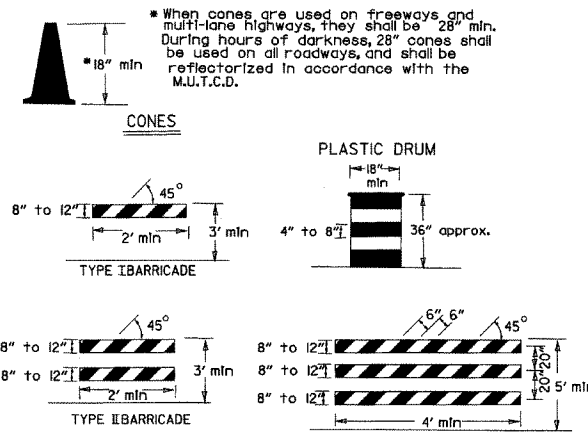
Channelizing devices



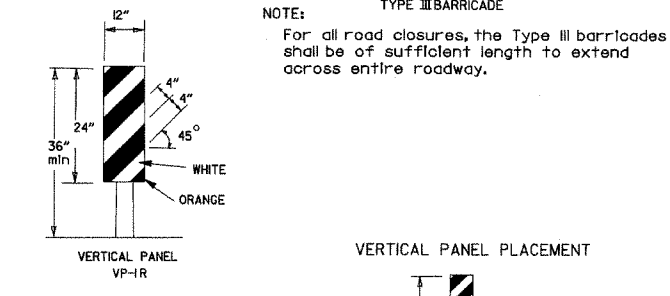
(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



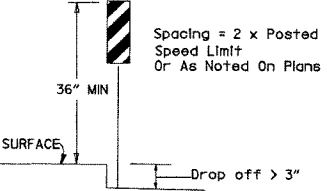
(B) Typical application - 3-lane oneway roadway where center lane is closed.



NOTE: For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.



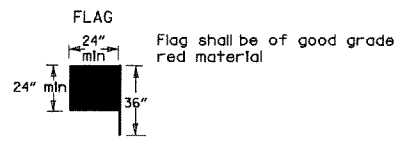
VERTICAL PANEL PLACEMENT



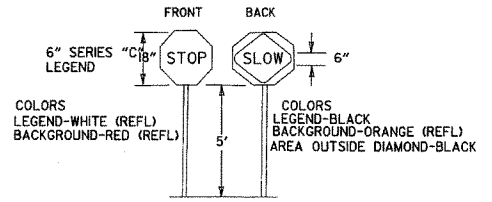
TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-land vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

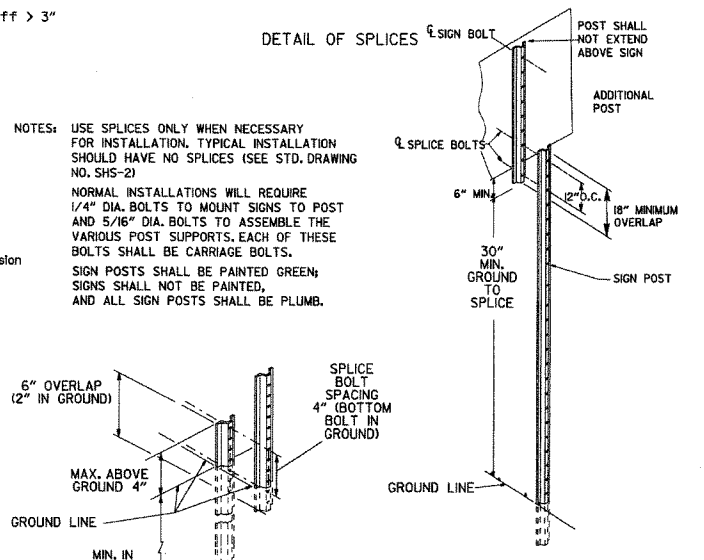
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



STOP SLOW PADDLE



DETAIL OF SPLICES

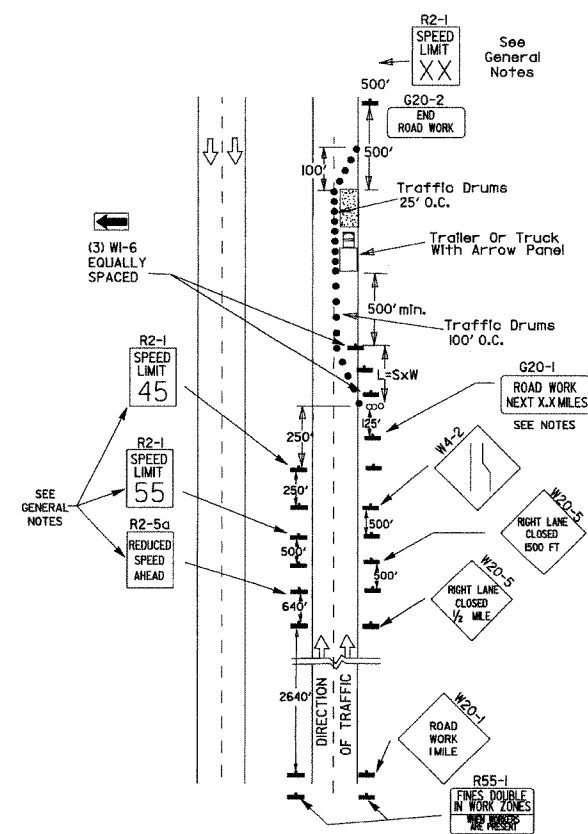


NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2). NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS. SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

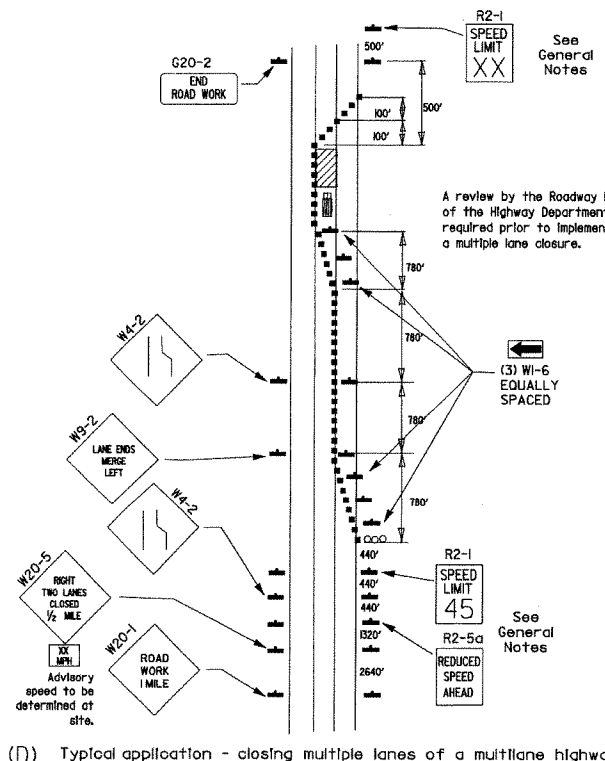
- KEY:
- Arrow Panel (if Required)
 - Channelizing Device
 - Traffic drum

GENERAL NOTES:

- A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
- When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1(45) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
- 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(55) speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
- The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
- Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
- Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
- 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.
- Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
- All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
- 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.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

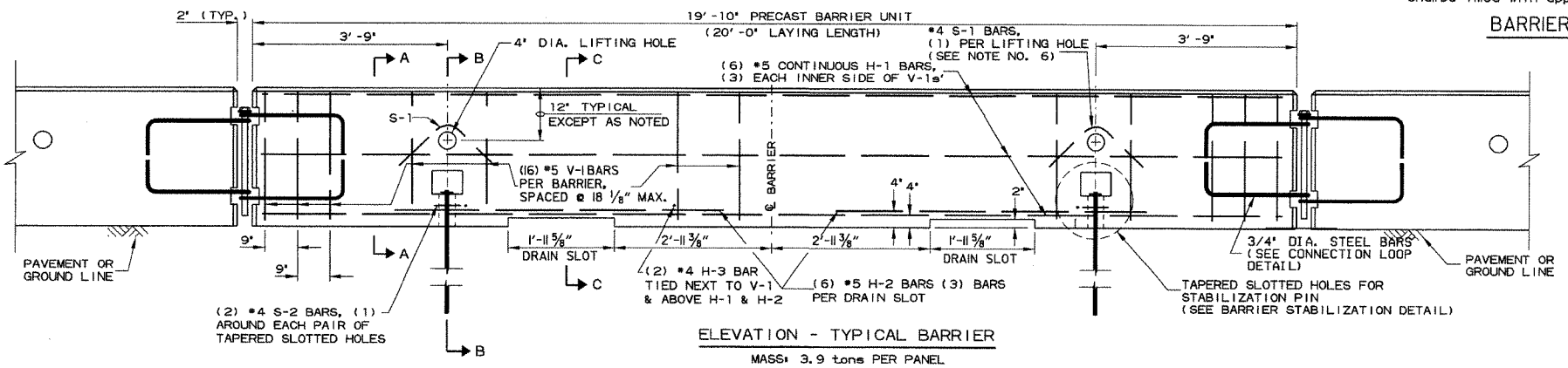
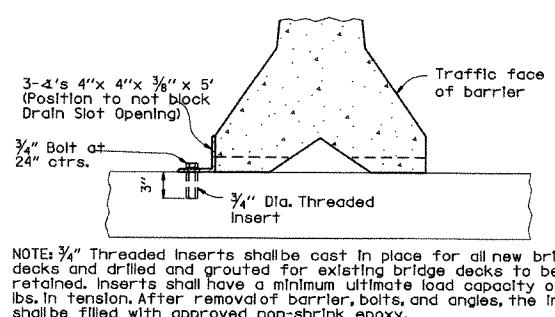
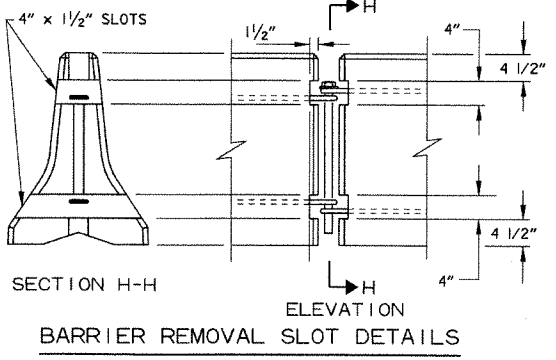
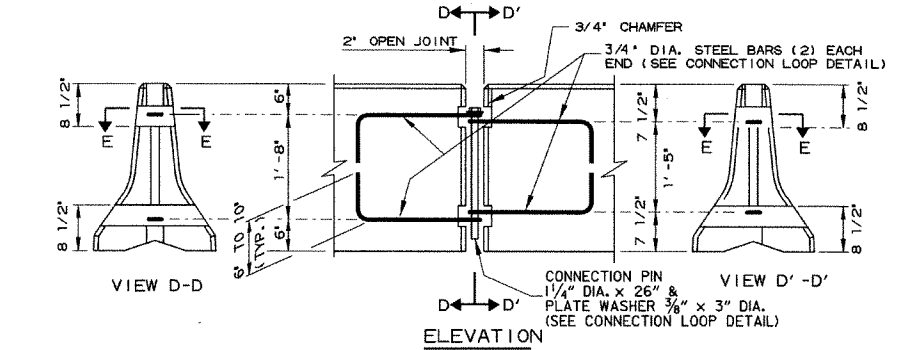
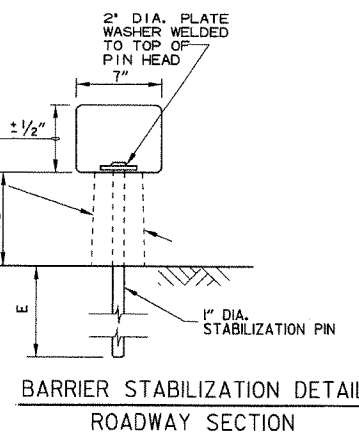
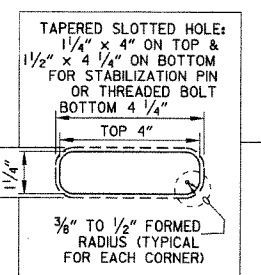
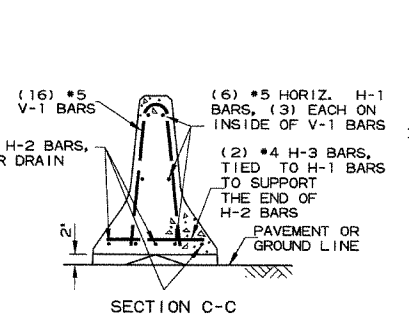
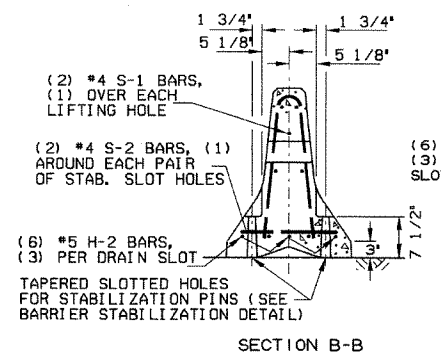
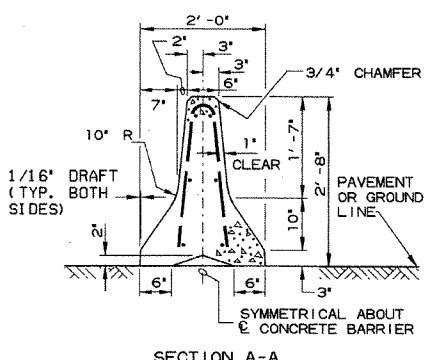
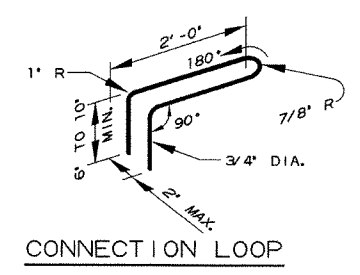
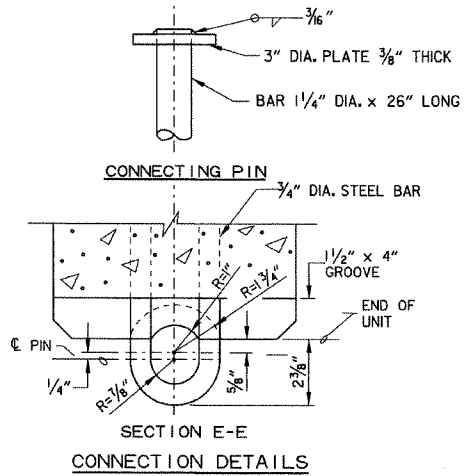


(D) Typical application - closing multiple lanes of a multilane highway.

DATE	REVISION	FILED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
8-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-95	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

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

REINFORCING BAR TABLE PER BARRIER UNIT			
MARK	LOCATION	BAR SIZE	(NO. BARS)
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)
S-1	OVER LIFT HOLES	#4	(2)
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S & DRAIN SLOTS	#4	(2)
V-1	VERTICAL IN BARRIER (3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)



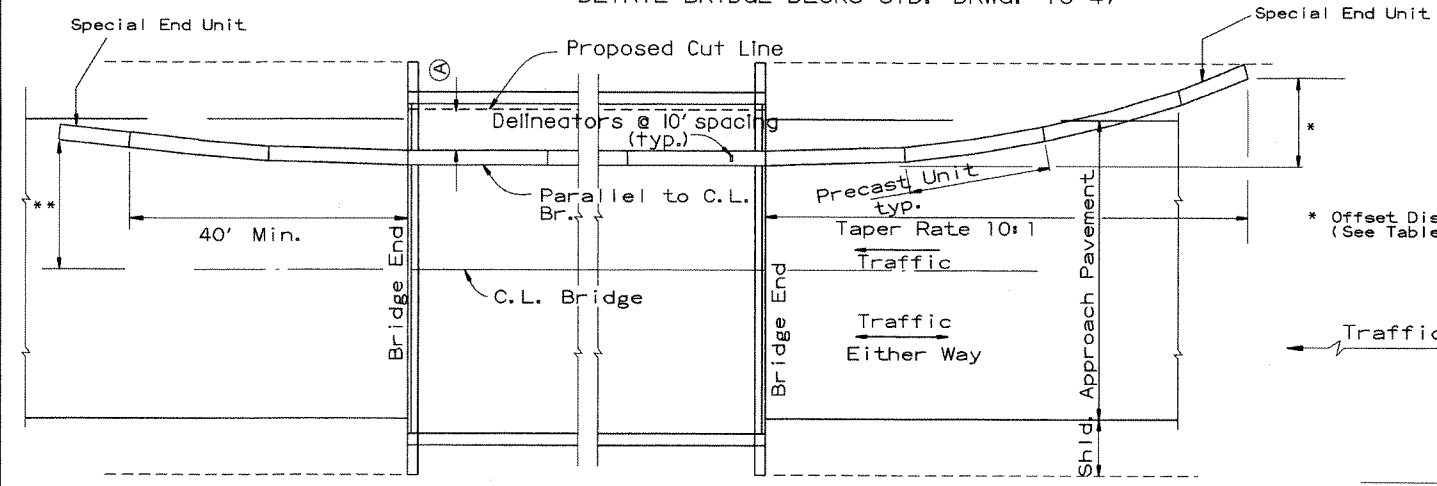
- General Notes**
- The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.
 - Materials shall meet the following minimum requirements: Concrete: 2500 psi compressive strength at 28 days. Reinforcing Steel: AASHTO M 31 or M 53, Grade 60 Structural Steels AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin. Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers. Delineator color shall be in accordance with the Manual Uniform Traffic Control Devices. Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.
 - Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.
 - Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.
 - Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.
 - A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

DATE	REVISION	FILED
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
8-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER
STANDARD DRAWING TC-4

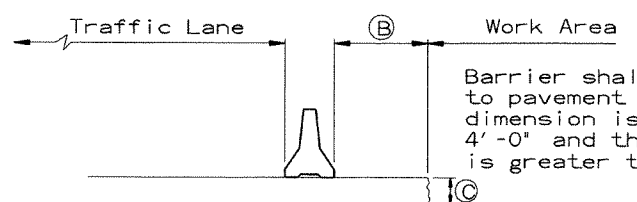
(A) 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



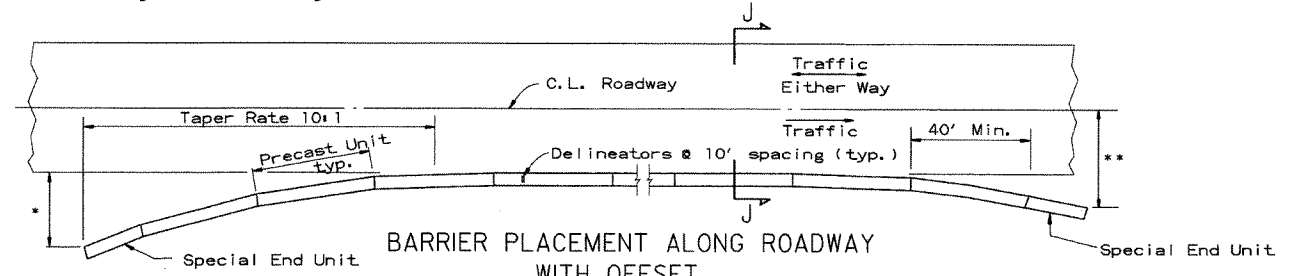
BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only



SECTION J-J
No Scale



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

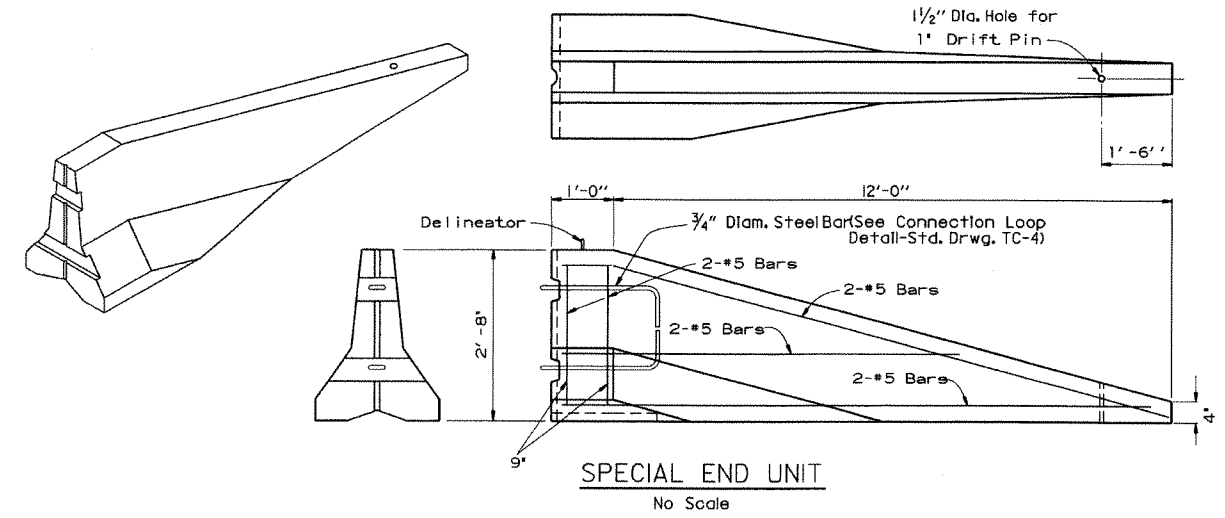
No Scale

** Offset Distance for Two Way Traffic Only

* Offset Distance (See Table)

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

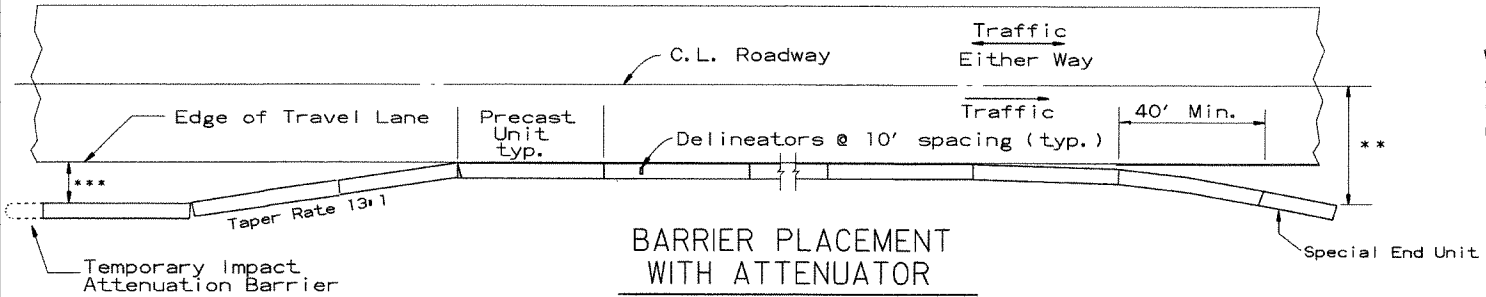
If offset distance is not attainable, then see 'Barrier Placement With Attenuator' Detail shown below.



SPECIAL END UNIT
No Scale

General Notes

When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with an NCHRP-350 or Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of 'Temporary Impact Attenuation Barrier.'



BARRIER PLACEMENT WITH ATTENUATOR

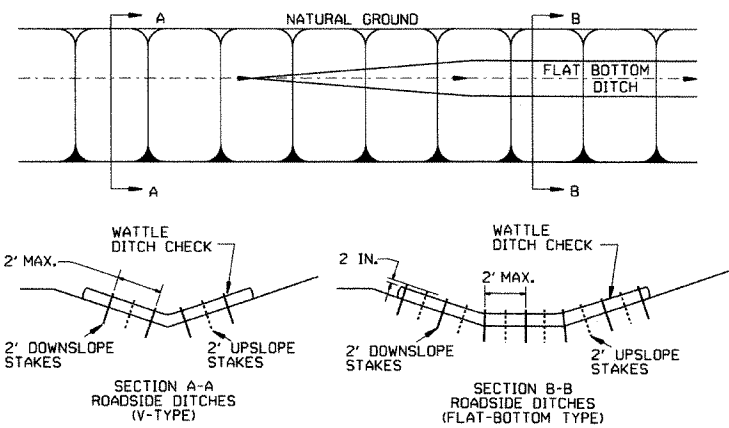
No Scale

** Offset Distance for Two Way Traffic Only

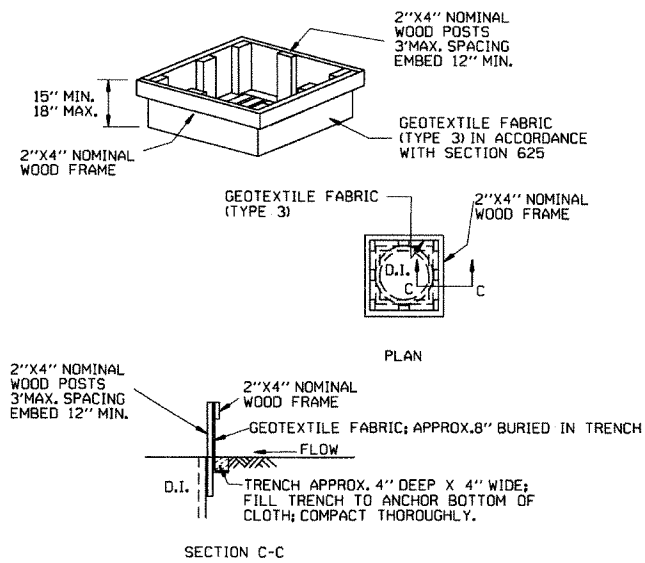
*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

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

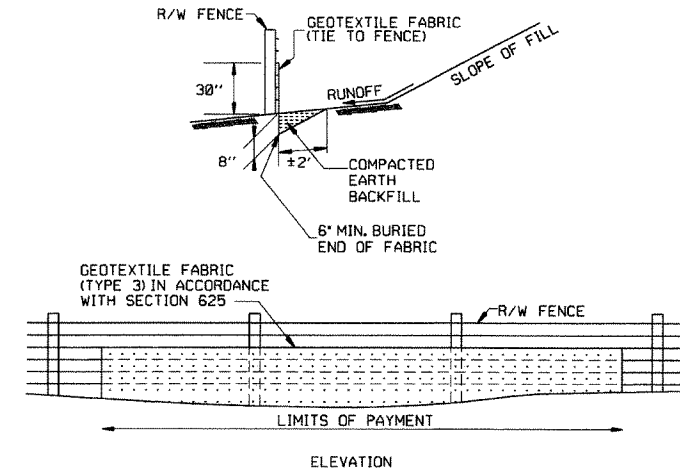
GENERAL NOTES
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)

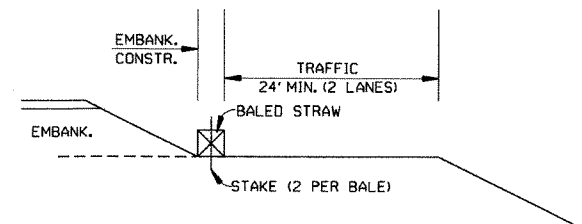


DROP INLET SILT FENCE (E-7)

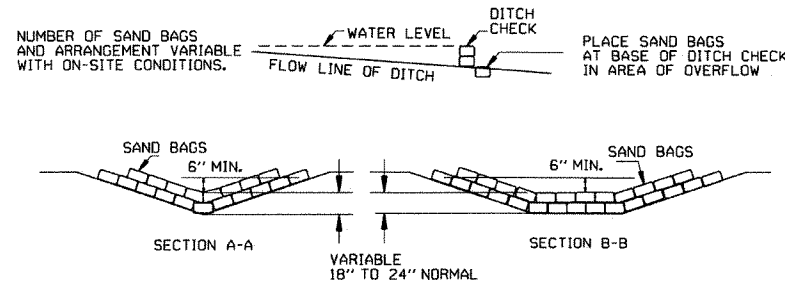


SILT FENCE ON R/W FENCE (E-4)

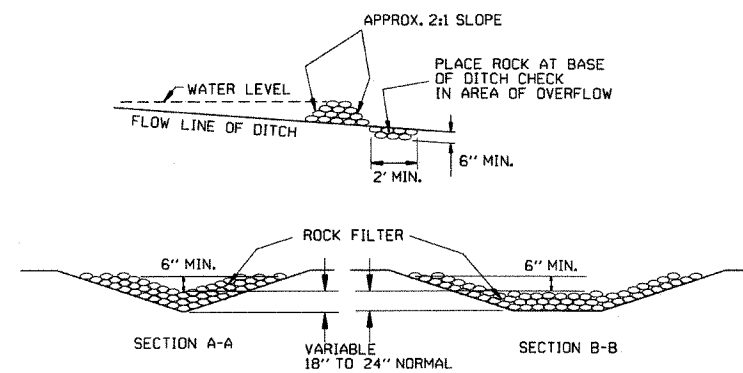
GENERAL NOTES
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



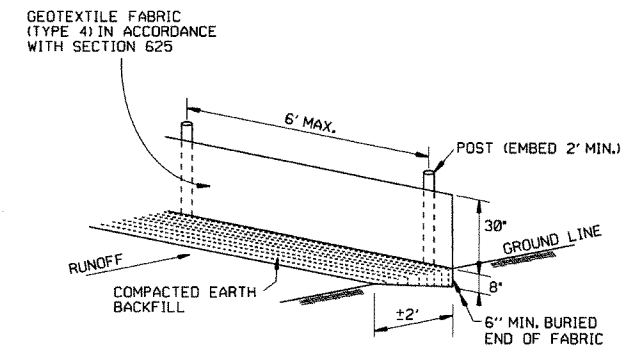
BALED STRAW FILTER BARRIER (E-2)



SAND BAG DITCH CHECK (E-5)



ROCK DITCH CHECK (E-6)

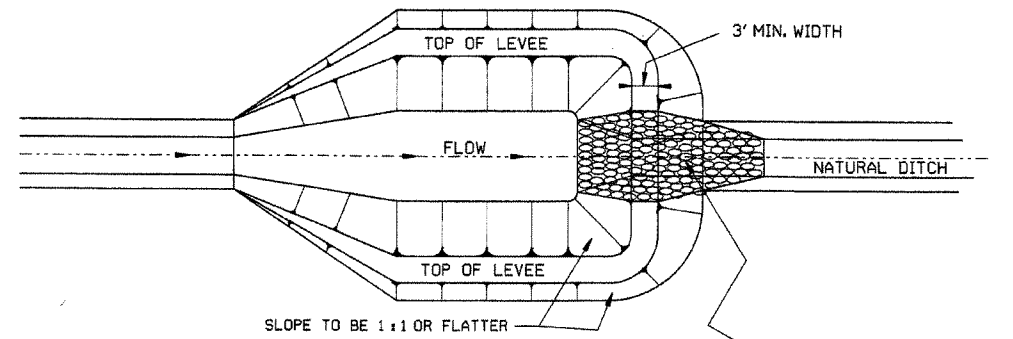


SILT FENCE (E-11)

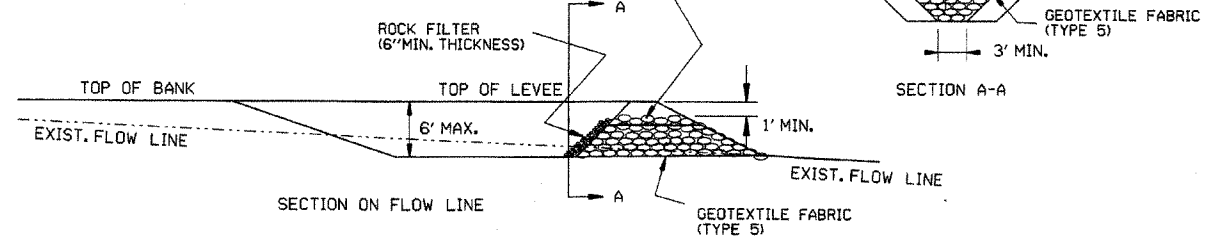
GENERAL NOTES
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	
7-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC		
6-2-94	REVISED E-1, 4, 7 & 11; DELETED E-2 & 3	6-2-94	
4-1-93	REDRAWN		
10-1-92	REDRAWN		
8-2-76	ISSUED R.D.M.	298-7-28-76	
DATE	REVISION	FILMED	

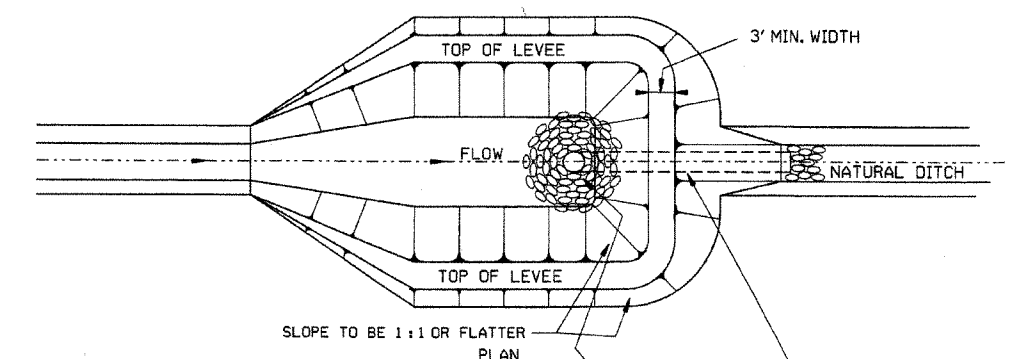
TEMPORARY EROSION CONTROL DEVICES
STANDARD DRAWING TEC-1



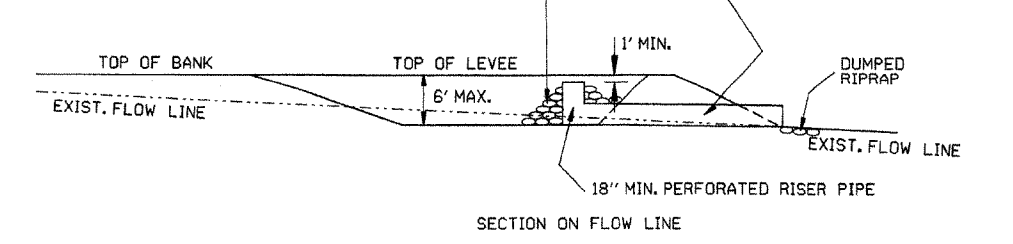
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



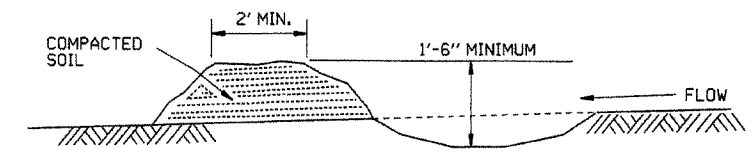
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



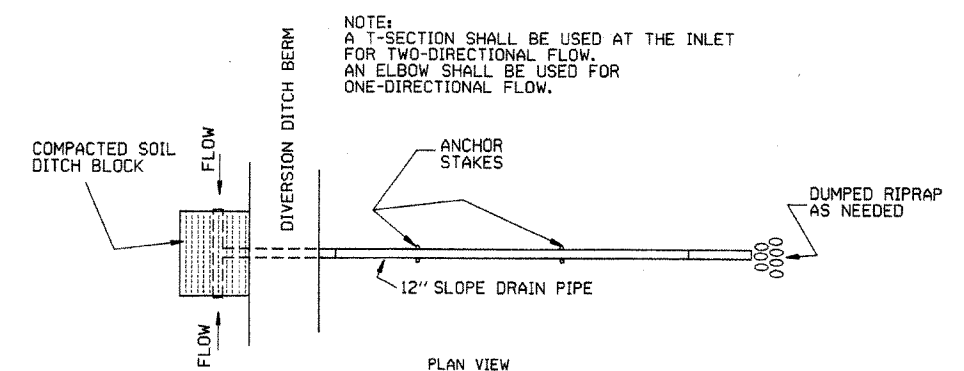
NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED; HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



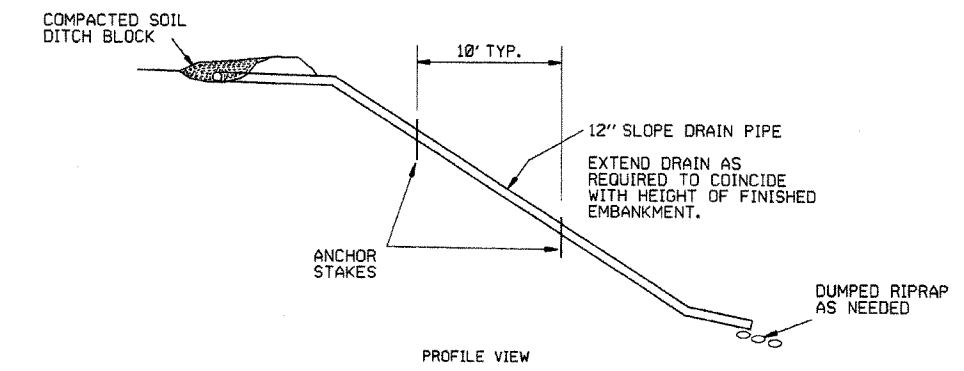
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



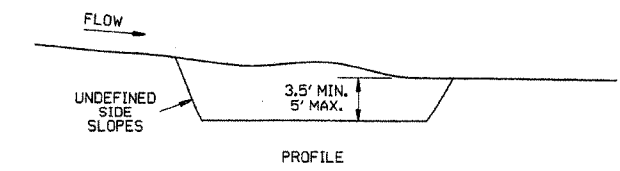
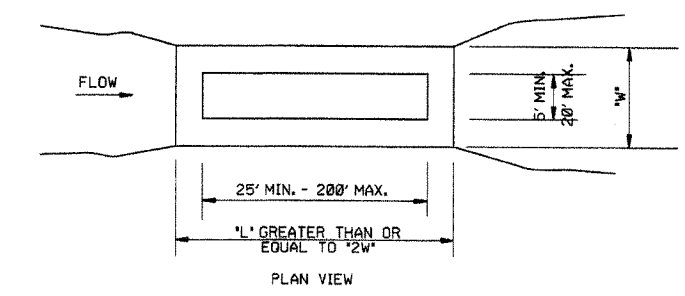
DIVERSION DITCH (E-8)



NOTE:
A T-SECTION SHALL BE USED AT THE INLET
FOR TWO-DIRECTIONAL FLOW.
AN ELBOW SHALL BE USED FOR
ONE-DIRECTIONAL FLOW.



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

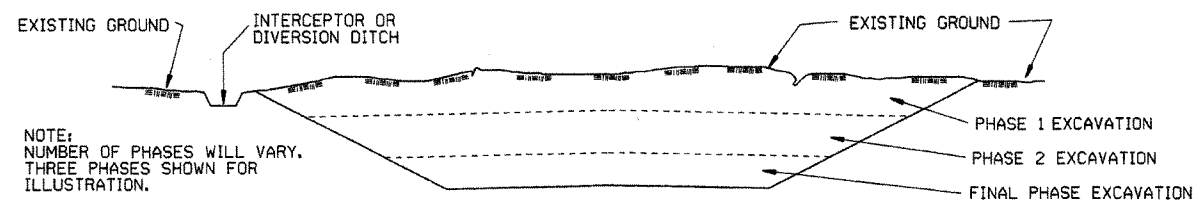
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED
		STANDARD DRAWING TEC-2	

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

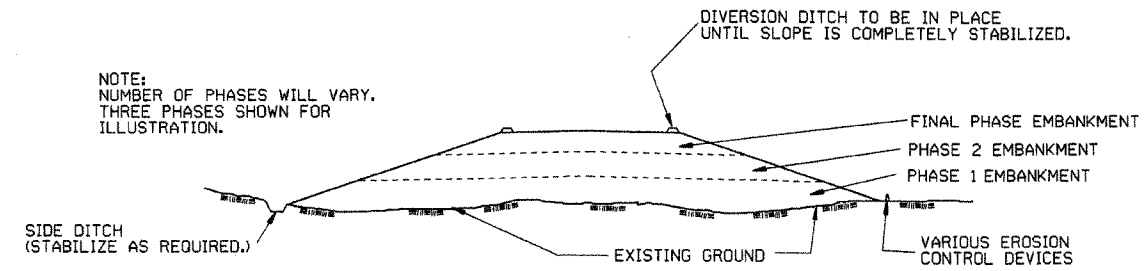
GENERAL NOTE

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



NOTE:
NUMBER OF PHASES WILL VARY.
THREE PHASES SHOWN FOR
ILLUSTRATION.

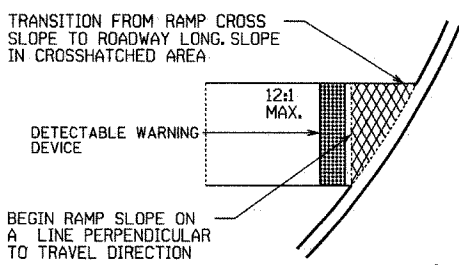
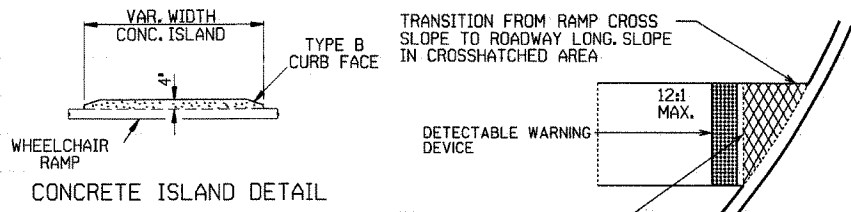
GENERAL NOTE

ALL EMBANKMENT SLOPES SHALL BE DRESSED, PREPARED, SEEDED, AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE CONSTRUCTED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 25 FEET, MEASURED VERTICALLY.

CONSTRUCTION SEQUENCE

1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
3. PLACE PHASE 2 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD OF GREATER THAN 21 DAYS.
4. PLACE FINAL PHASE OF EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PLACE DIVERSION DITCHES AND SLOPE DRAINS AND MAINTAIN UNTIL ENTIRE SLOPE IS STABILIZED.

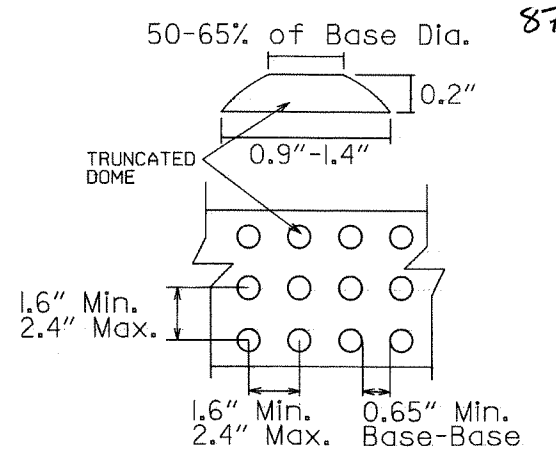
			ARKANSAS STATE HIGHWAY COMMISSION
			TEMPORARY EROSION CONTROL DEVICES
11-03-94	CORRECTED SPELLING		
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILMED	STANDARD DRAWING TEC-3



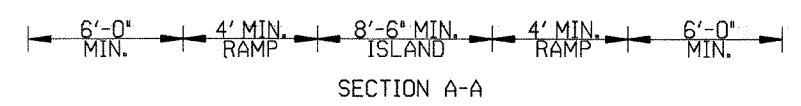
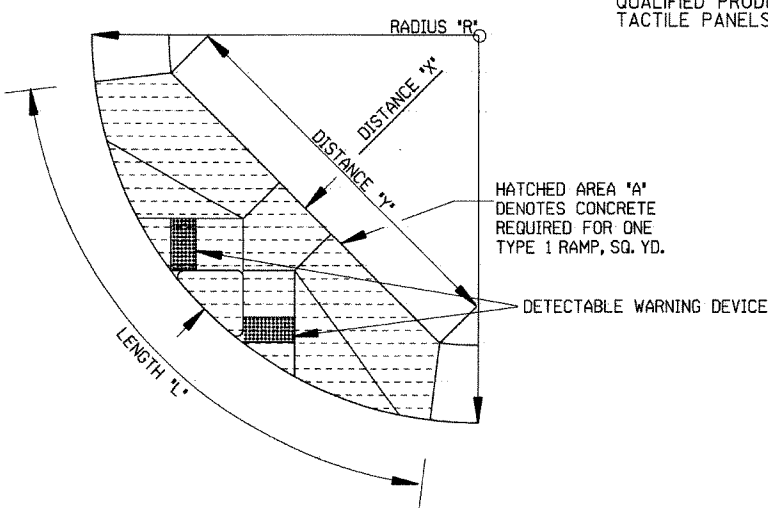
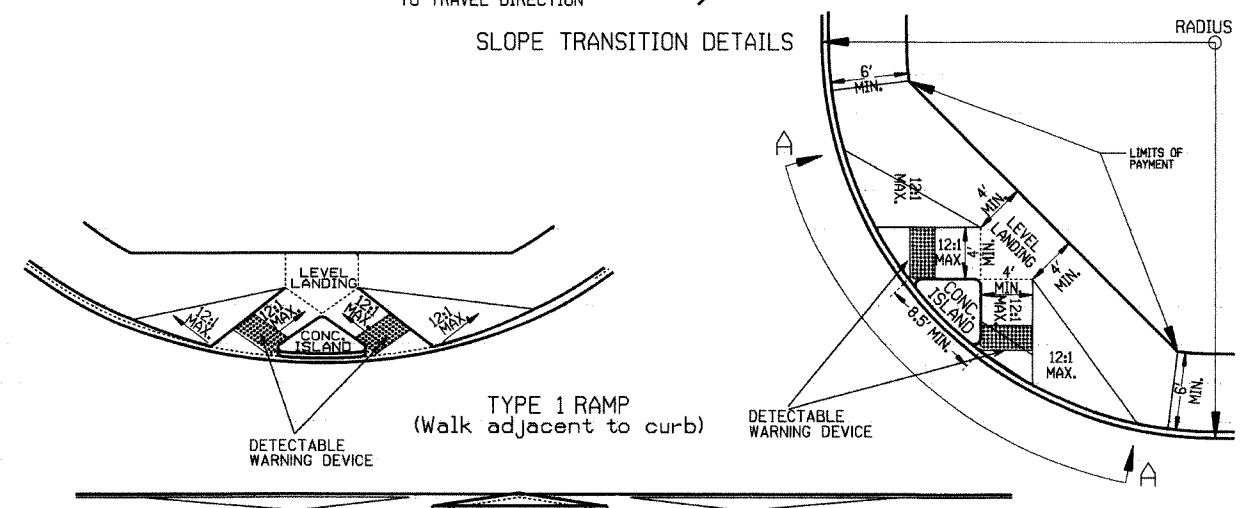
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

RADIUS "R"	DISTANCE "X"	DISTANCE "Y"	LENGTH	RAMP AREA "A"
FEET	FEET	FEET	FEET	SQ. YD.
15	11.67	18.82	32.18	26.21
20	11.52	22.28	35.46	30.07
25	11.43	26.60	38.77	33.80
30	11.37	30.26	40.93	36.90
35	11.33	33.51	43.11	39.77
40	11.30	36.45	45.26	42.45
45	11.27	39.16	47.34	44.97
50	11.25	41.69	49.36	47.35
55	11.24	44.07	51.31	49.63
60	11.22	46.33	53.21	51.80

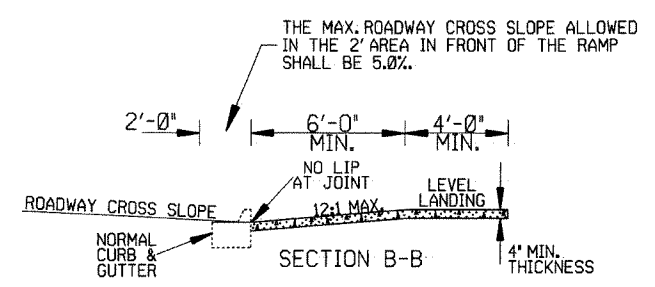
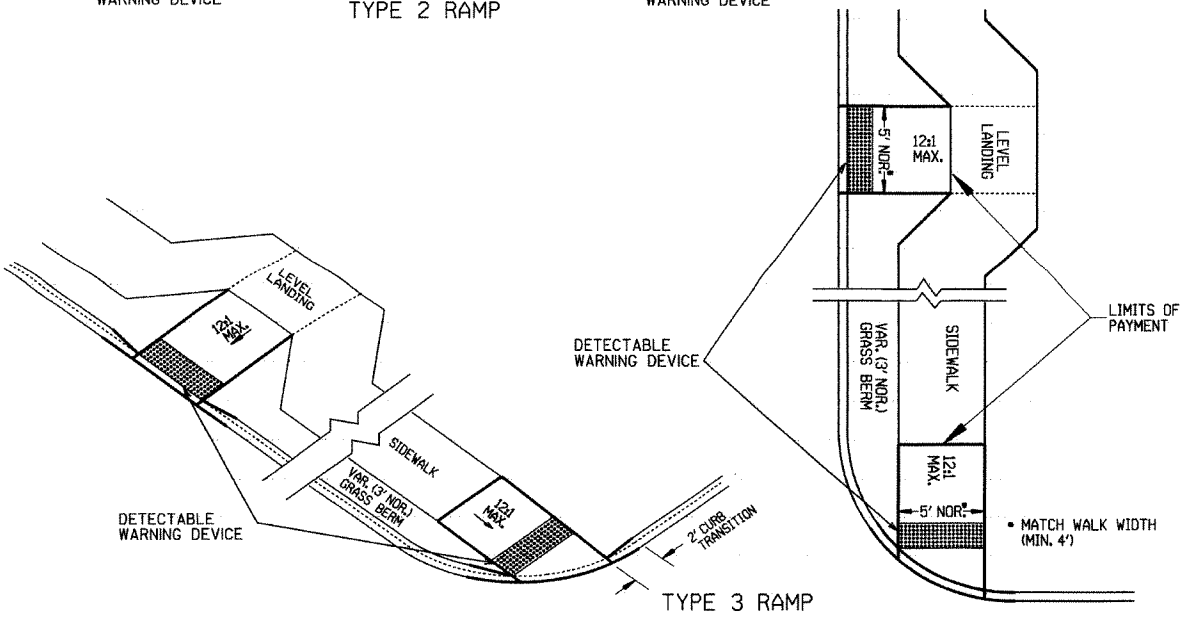
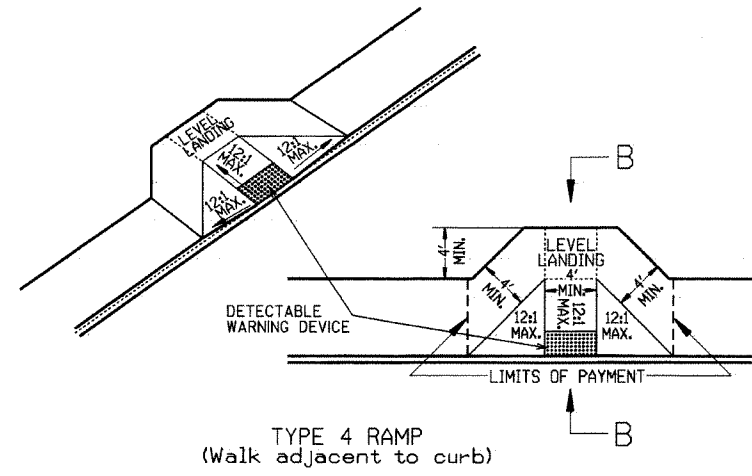
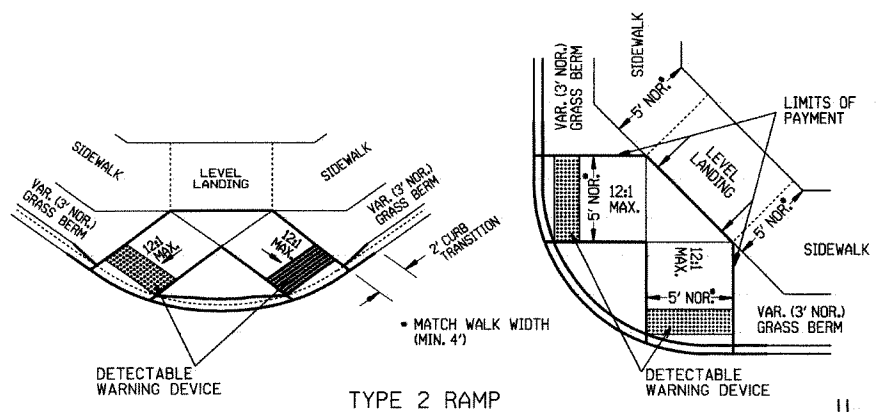
GENERAL NOTES FOR DETECTABLE WARNING DEVICES
 THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
 TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.
 DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
 DETECTABLE WARNING DEVICE SHALL BE 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
 DETECTABLE WARNING DEVICE SHALL BE ON THE AHTD QUALIFIED PRODUCTS LIST FOR CAST-IN-PLACE TACTILE PANELS (ADA DETECTABLE WARNING).



DETECTABLE WARNING DEVICE DETAIL



NOTE:
 THE CROSS SLOPE OF THE RAMPS, LEVEL LANDINGS, AND SIDEWALKS SHALL NOT EXCEED 2.0% UNLESS REQUIRED TO MATCH STREET LONGITUDINAL GRADE.



GENERAL NOTES:

IN NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED ON THE PLANS, WHEELCHAIR RAMPS ARE TO BE PROVIDED AT ALL CORNERS OF CURBED STREET INTERSECTIONS AND MID-BLOCK CROSSWALK LOCATIONS.
 IN ALTERATIONS WHEELCHAIR RAMPS ARE TO BE PROVIDED AT CURBED STREET INTERSECTIONS WITH PEDESTRIAN TRAFFIC AND MID-BLOCK CROSSWALK LOCATIONS.
 THE LENGTH OF THE RAMP SHALL BE SUCH THAT THE SLOPE DOES NOT EXCEED 12:1. THE SURFACE TEXTURE OF THE RAMP SHALL CONFORM TO A CLASS 6 FINISH ACCORDING TO SECTION 802.19.
 THE NORMAL GUTTER GRADE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
 ALL PAYEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
 THE MINIMUM THICKNESS OF THE RAMP, WALK, & LANDING SHALL BE 4". THE MINIMUM WIDTH OF THE RAMPS SHALL BE THE WALK WIDTH OR 36", WHICHEVER IS GREATER.
 RAMPS SHALL BE MODIFIED AS NECESSARY TO INSURE THAT THEY ARE PARALLEL TO A LINE DRAWN FROM THE CENTER OF ONE RAMP TO THE CENTER OF THE RAMP ON THE OPPOSITE SIDE OF THE INTERSECTION.
 THE DIMENSIONS AND QUANTITIES SHOWN ON THIS DRAWING ARE FOR A 90° INTERSECTION ONLY. DIMENSIONS AND QUANTITIES FOR SKEWED INTERSECTIONS WILL VARY, AND ARE TO BE DETERMINED BY THE ENGINEER.

RAMP SELECTION CRITERIA

CHOICE	TYPE	DESCRIPTION
FIRST CHOICE	TYPE 1	CORNER LOCATIONS WITH THE WALK ADJACENT TO THE CURB (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 2	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE INSUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 3	CORNER LOCATIONS WITH THE WALK OFFSET FROM THE CURB A DISTANCE SUFFICIENT TO ALLOW THE REQUIRED RAMP SLOPE (BOTH NEW CONSTRUCTION AND ALTERATIONS).
	TYPE 4	TANGENT LOCATIONS (BOTH NEW CONSTRUCTION AND ALTERATIONS).
SECOND CHOICE	TYPE 5	TANGENT LOCATIONS (ALTERATIONS ONLY).
THIRD CHOICE	TYPE 6	CORNER LOCATIONS (ALTERATIONS ONLY). THIS RAMP MAY BE USED ONLY IF THE TYPE 5 RAMPS CANNOT BE PLACED AT THE ENDS OF THE RADIUS.
FOURTH CHOICE		IF SITE CONSTRAINTS PREVENT THE CONSTRUCTION OF ANY OF THE TYPES LISTED, THEN AND ONLY THEN CAN THE 12:1 MAX. SLOPE ON THE RAMP BE EXCEEDED TO PROVIDE ACCESS TO THE STREET LEVEL (ALTERATIONS ONLY). THE SLOPE CAN BE STEEPENED TO A 10:1 MAX. FOR A MAX. LENGTH OF 5' OR A 8:1 MAX. FOR A MAX. LENGTH OF 2'. SLOPES STEEPER THAN 8:1 ARE NOT ALLOWED UNDER ANY CIRCUMSTANCES.

NOTE: IN ALTERATIONS, THE SELECTION OF THE TYPE OF WHEELCHAIR RAMP TO BE CONSTRUCTED SHALL BE BASED ON THE AMOUNT OF RIGHT-OF-WAY AVAILABLE, AND ON THE PRESENCE OF OTHER SITE CONSTRAINTS (UTILITIES, BUILDINGS, ETC.). THE TABLE ABOVE LISTS THE ORDER IN WHICH THE RAMPS ARE TO BE CONSIDERED. AN ALTERATION IS DEFINED AS A PROJECT THAT CHANGES OR AFFECTS THE USE OF A PEDESTRIAN PATHWAY (OVERLAYS, SIGNALIZATION PROJECTS, ETC.) BUT DOES NOT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY. ALL PROJECTS THAT REQUIRE THE PURCHASE OF ADDITIONAL RIGHT-OF-WAY WILL USUALLY BE CONSIDERED NEW CONSTRUCTION FOR THE PURPOSES OF THE CHART ABOVE.

DATE	REVISION	DATE FILM
11-10-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD SLOPE TRANS. & REV. ISL. DIMS.	
11-8-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	
10-18-96	CORRECTED DIMENSIONS	10-18-96
5-24-90	FROM 8:1 TO 12:1 MAX. SLOPES	5-24-90
7-15-88	ADJUSTED MAX. SLOPE	652-7-15-88
7-14-88	INCLUD. "CONC. ISL." IN PAY ITEM	
6-02-76	ISSUED P.H.D.	299-7-28-76

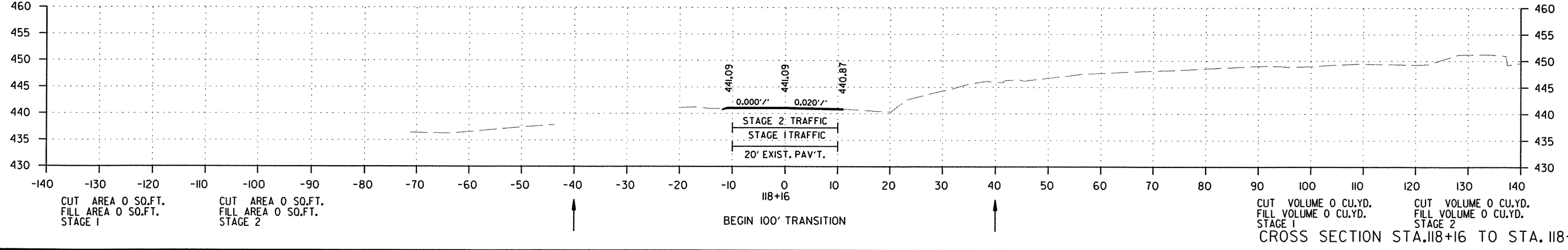
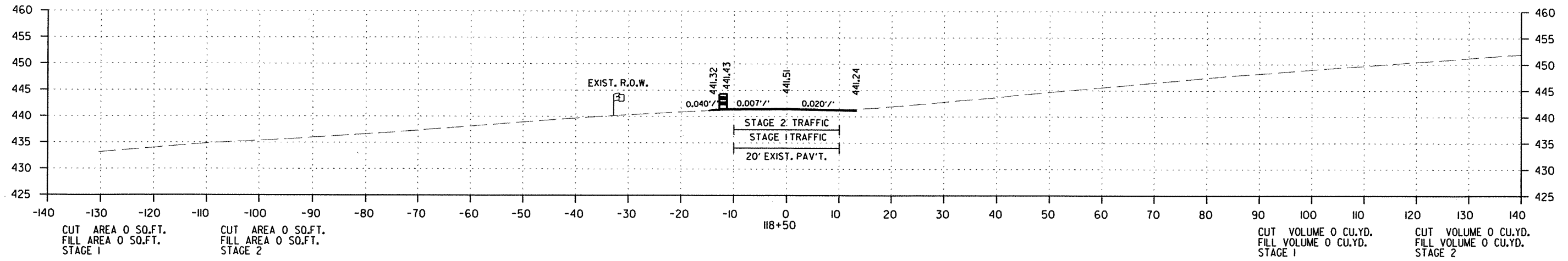
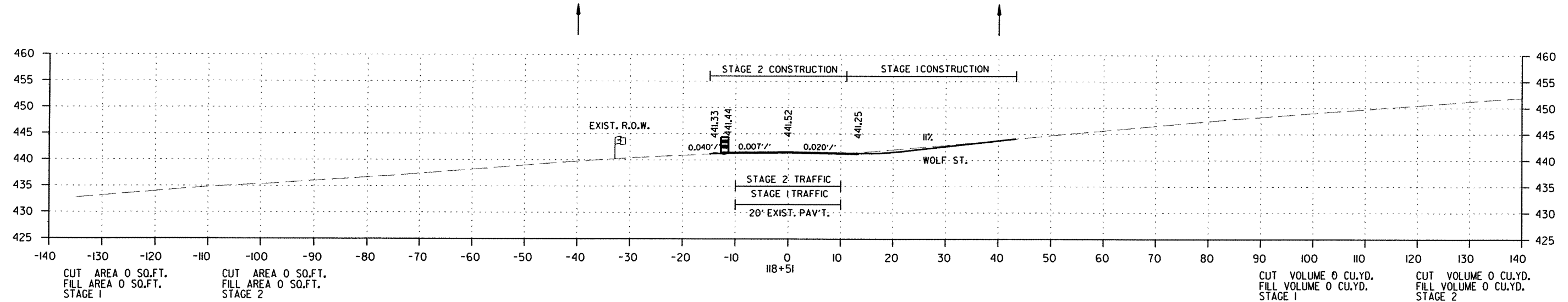
ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS
 NEW CONSTRUCTION
 AND ALTERATIONS

STANDARD DRAWING WR-1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							88	106

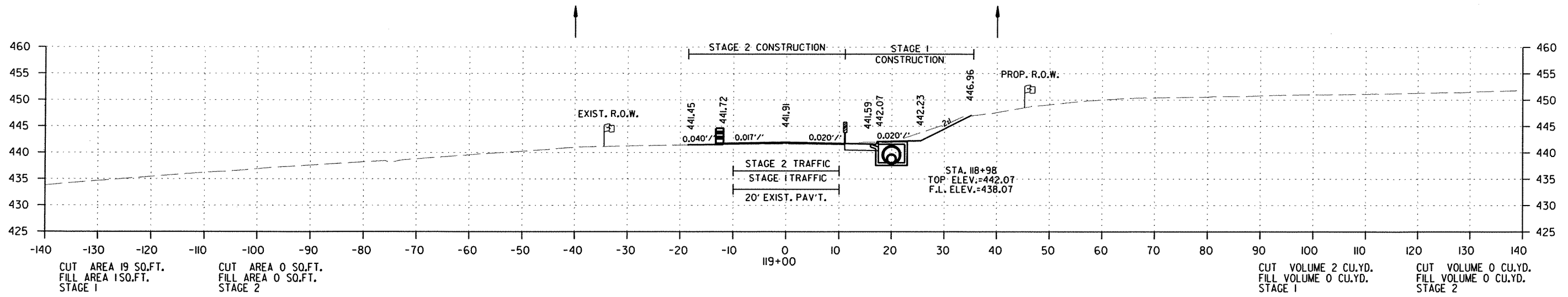
2 CROSS SECTIONS



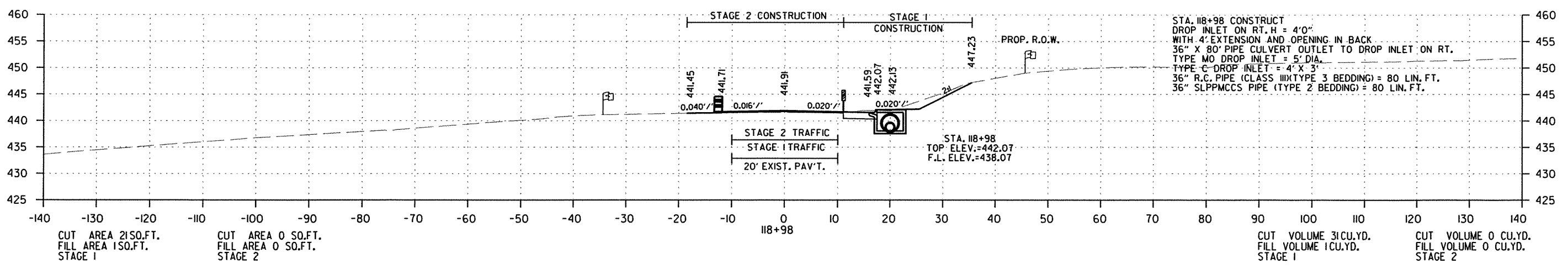
7/30/2012 R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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JOB NO. 090281							89	106

2 CROSS SECTIONS

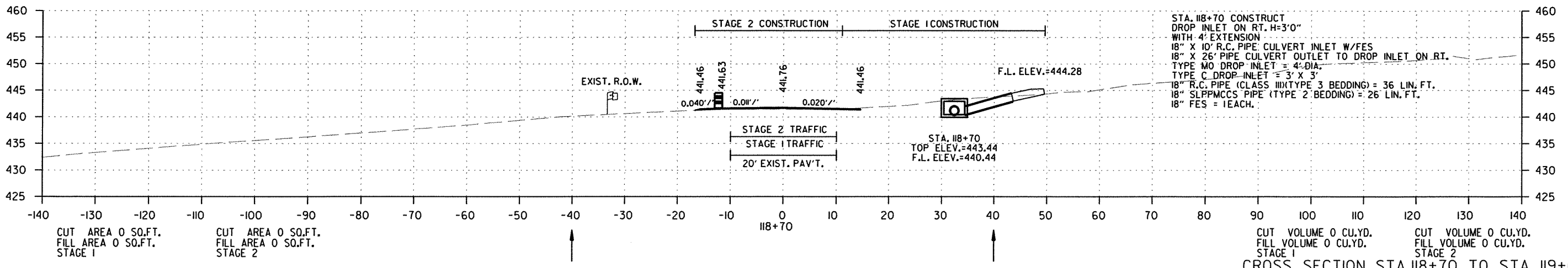


CUT AREA 19 SQ.FT. FILL AREA 150.FT. STAGE 1 CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2 CUT VOLUME 2 CU.YD. FILL VOLUME 0 CU.YD. STAGE 1 CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2



STA. 118+98 CONSTRUCT DROP INLET ON RT. H = 4'0" WITH 4' EXTENSION AND OPENING IN BACK. 36" X 80' PIPE CULVERT OUTLET TO DROP INLET ON RT. TYPE MO DROP INLET = 5' DIA. TYPE C DROP INLET = 4' X 3' 36" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 80 LIN. FT. 36" SLPPMCCS PIPE (TYPE 2 BEDDING) = 80 LIN. FT.

CUT AREA 21 SQ.FT. FILL AREA 150.FT. STAGE 1 CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2 CUT VOLUME 31 CU.YD. FILL VOLUME 1 CU.YD. STAGE 1 CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2



STA. 118+70 CONSTRUCT DROP INLET ON RT. H=3'0" WITH 4' EXTENSION. 18" X 10' R.C. PIPE CULVERT INLET W/FES. 18" X 26' PIPE CULVERT OUTLET TO DROP INLET ON RT. TYPE MO DROP INLET = 4' DIA. TYPE C DROP INLET = 3' X 3' 18" R.C. PIPE (CLASS III)(TYPE 3 BEDDING) = 36 LIN. FT. 18" SLPPMCCS PIPE (TYPE 2 BEDDING) = 26 LIN. FT. 18" FES = 1 EACH.

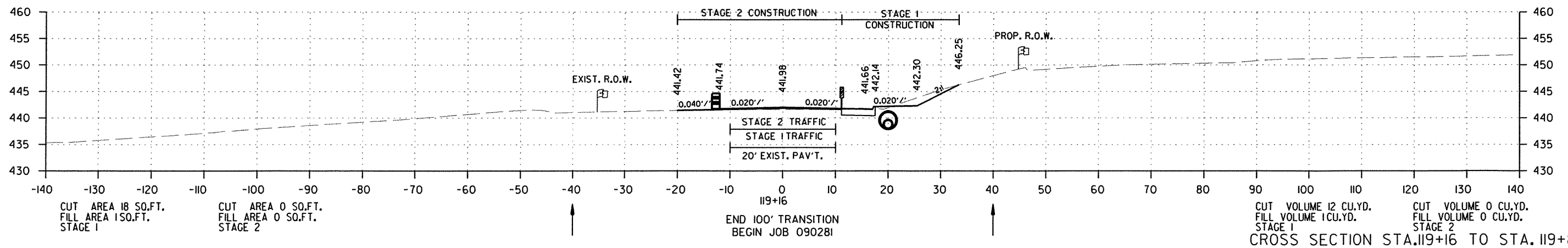
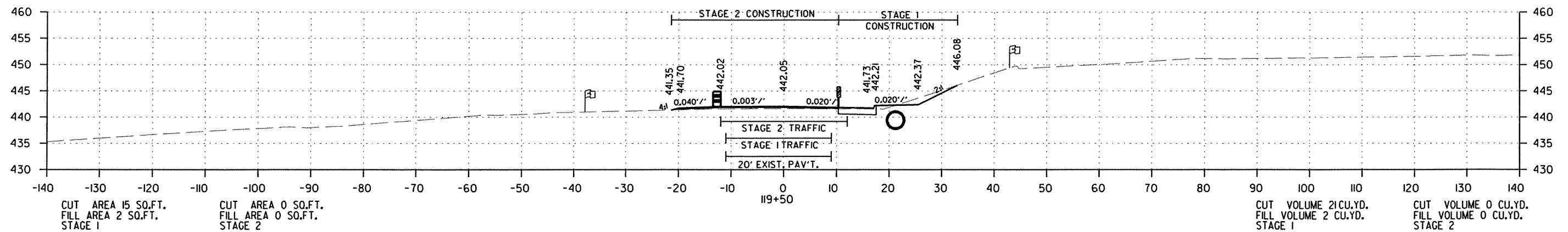
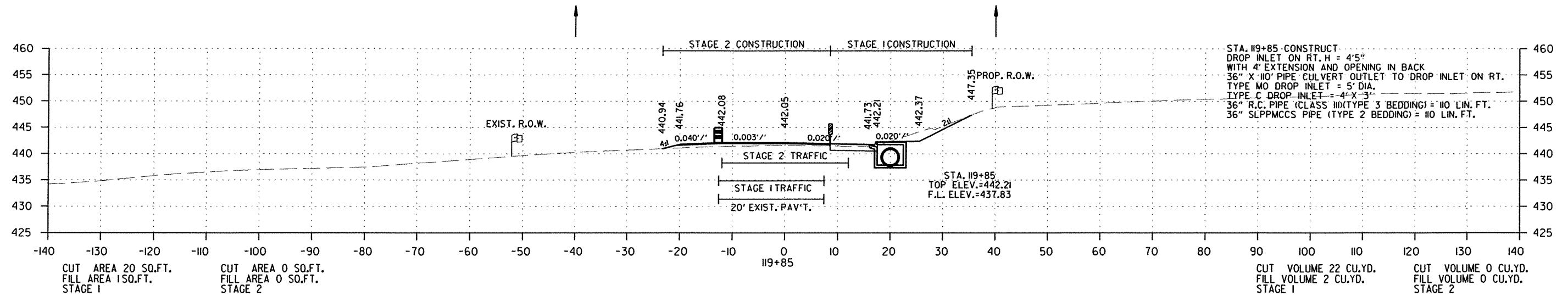
CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. STAGE 1 CUT AREA 0 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2 CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. STAGE 1 CUT VOLUME 0 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2

CROSS SECTION STA. 118+70 TO STA. 119+00

7/30/2012 R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	90	106

2 CROSS SECTIONS

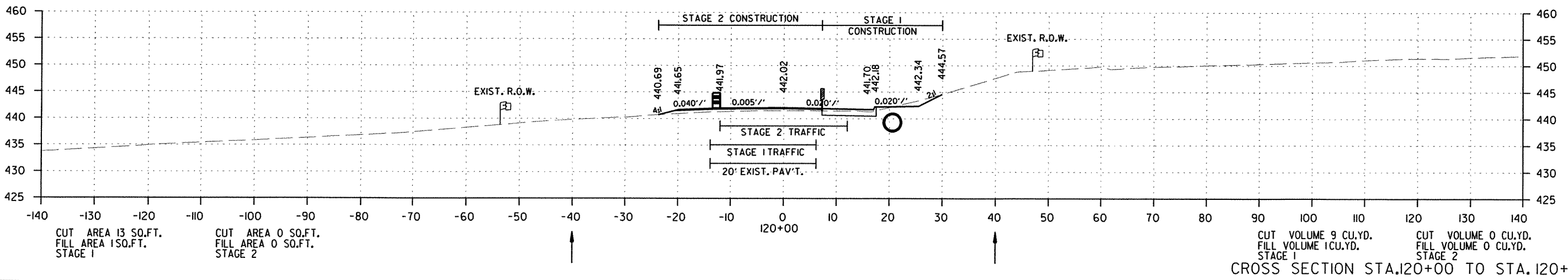
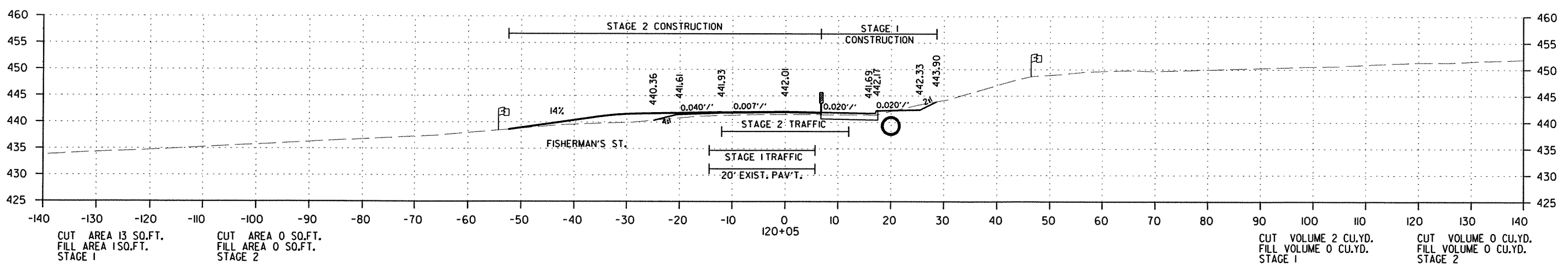
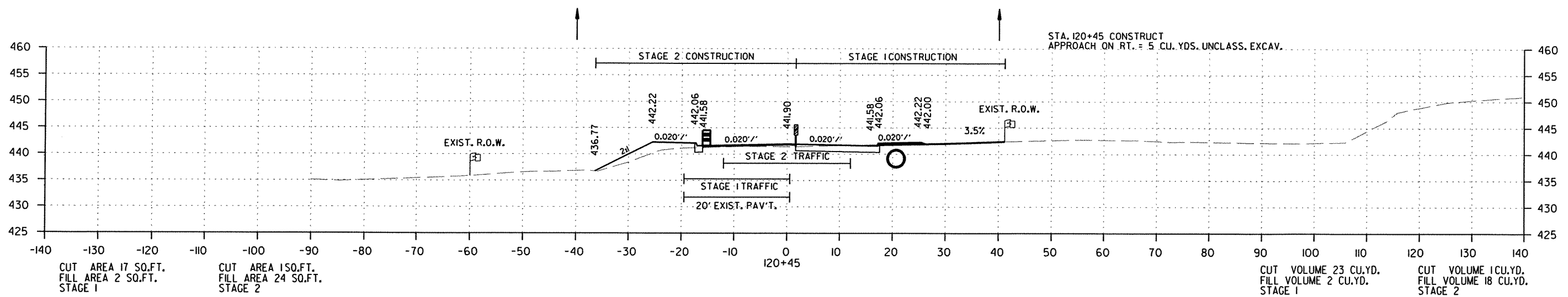


7/30/2012

R090281.DGN

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

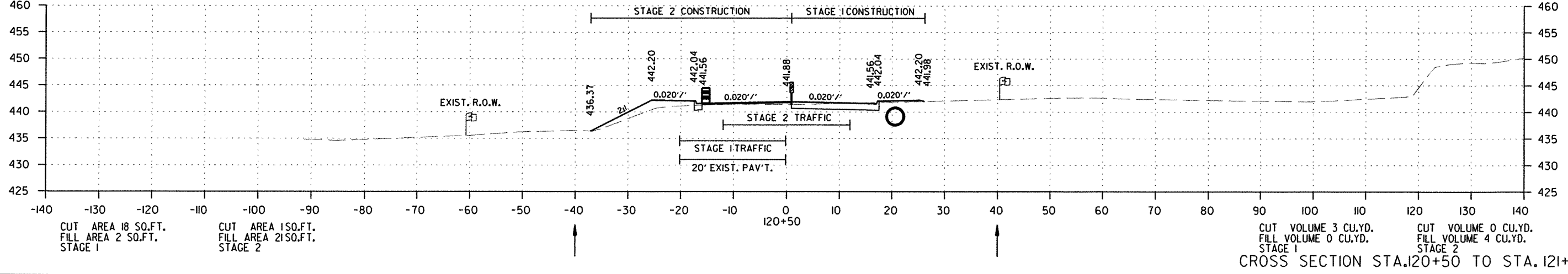
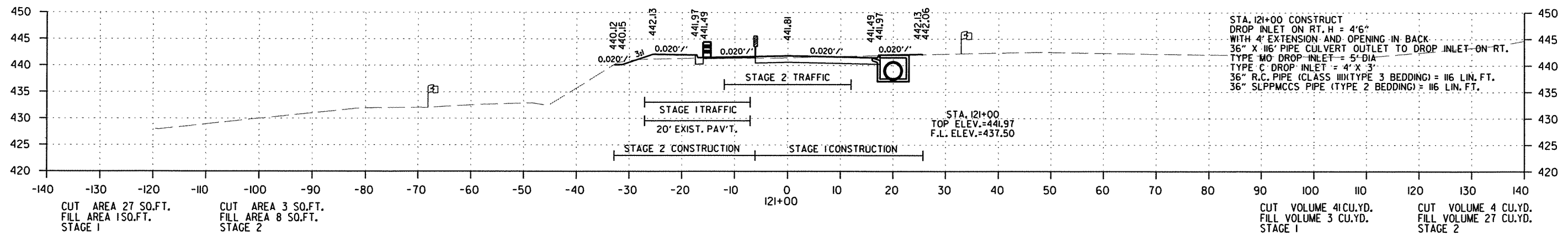
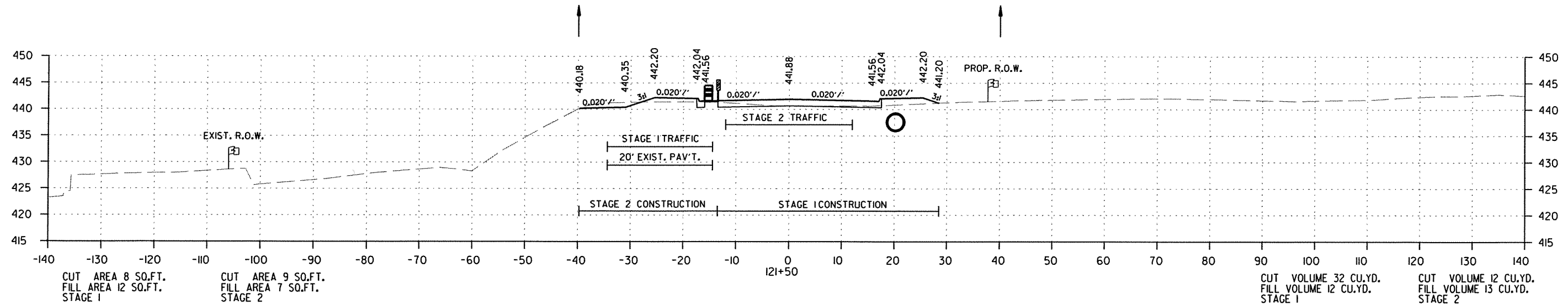


CROSS SECTION STA. 120+00 TO STA. 120+45

7/30/2012 R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	92	106

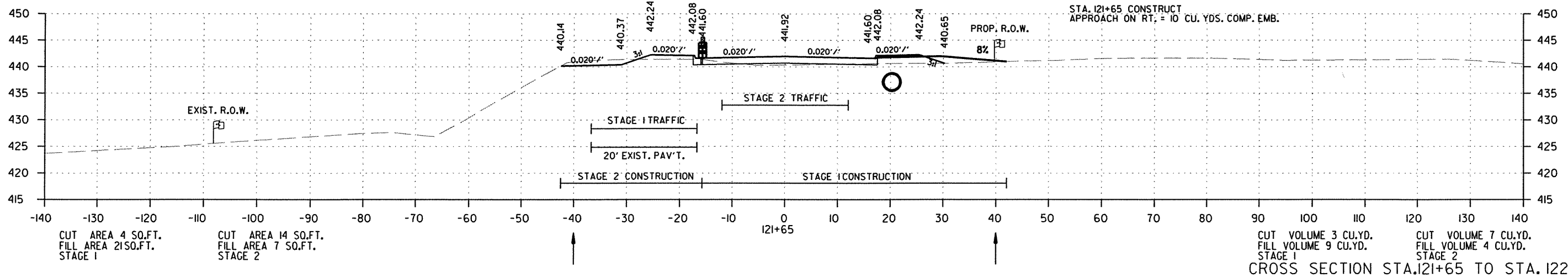
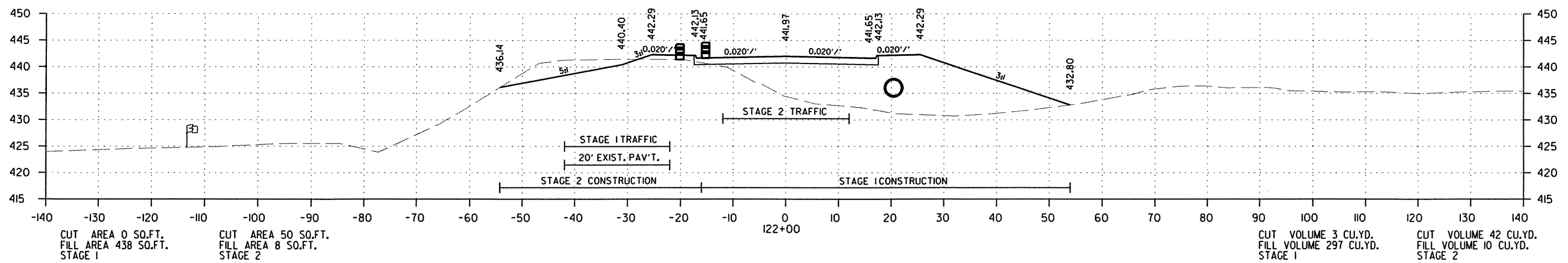
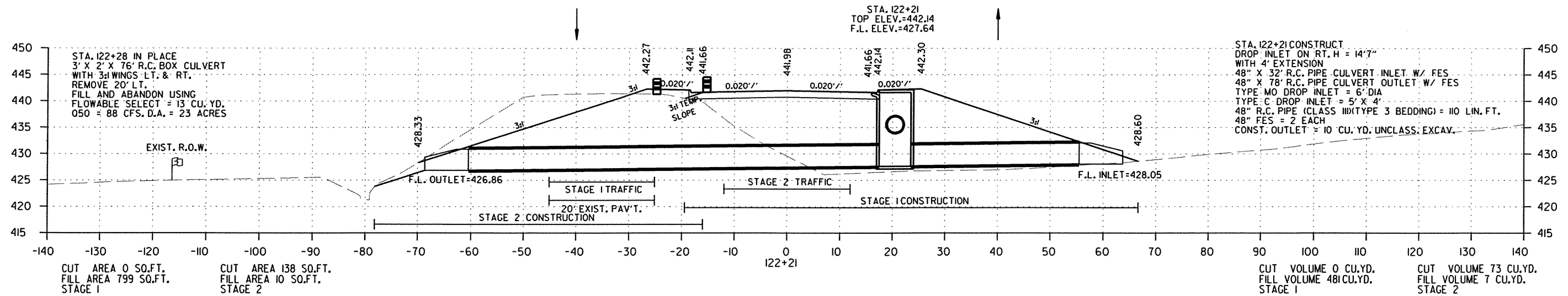
2 CROSS SECTIONS



7/30/2012
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							93	106

2 CROSS SECTIONS

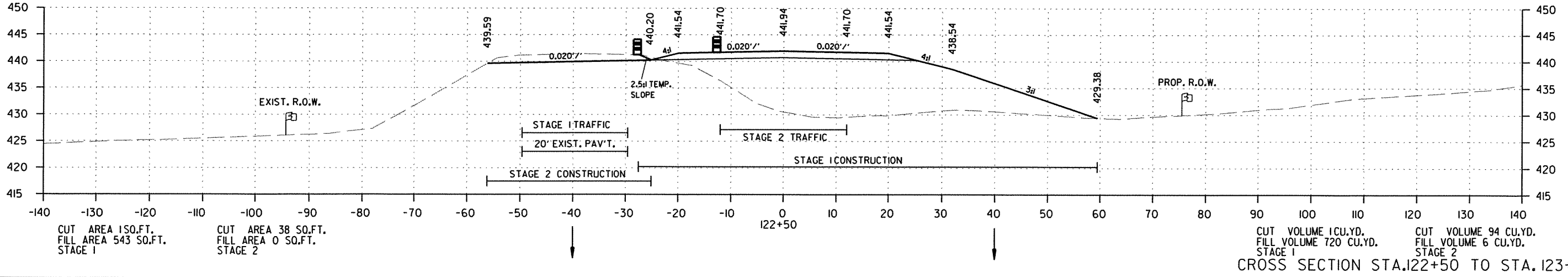
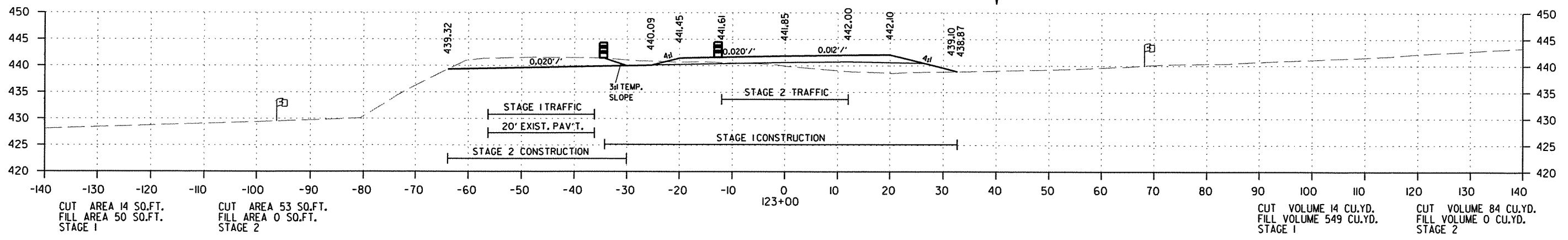
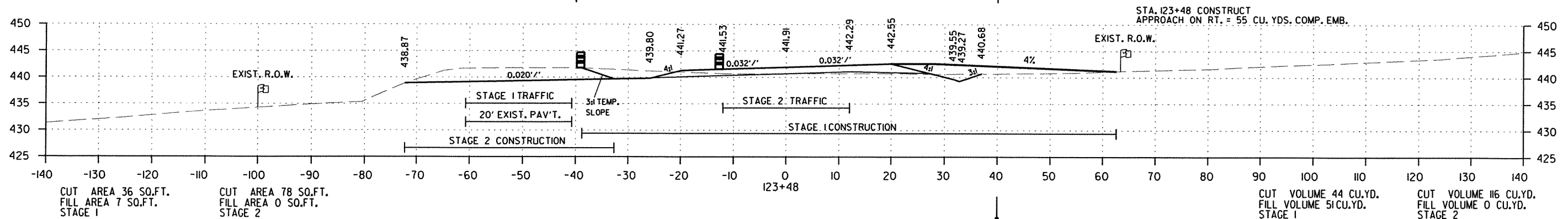


7/30/2012

RO90281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	94	106

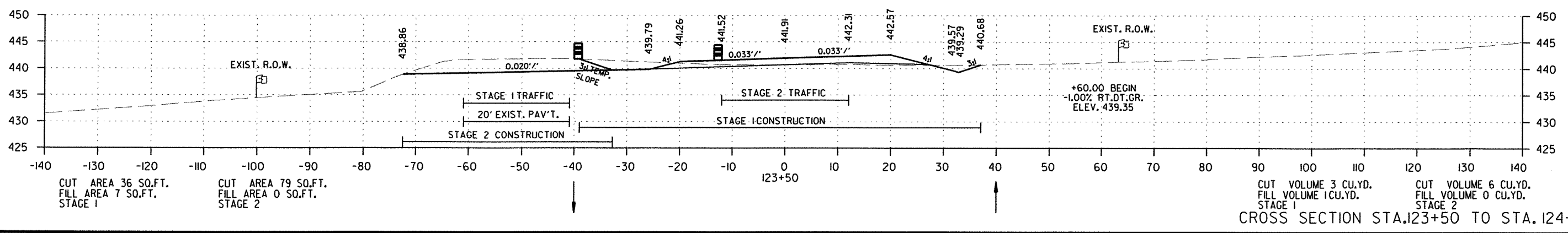
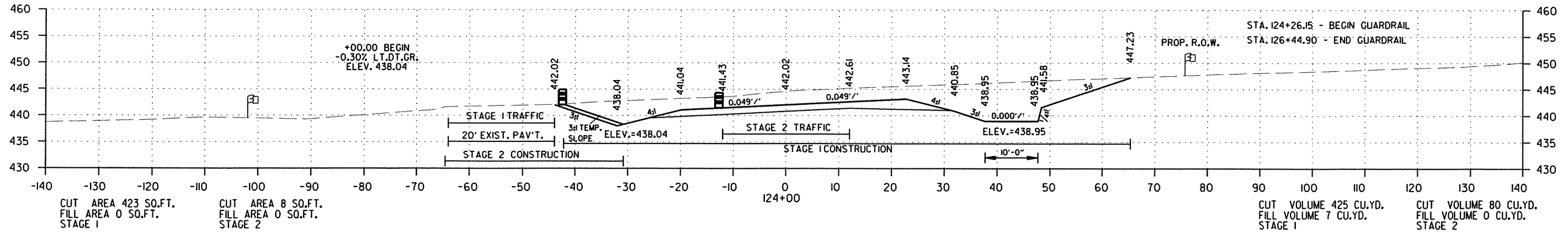
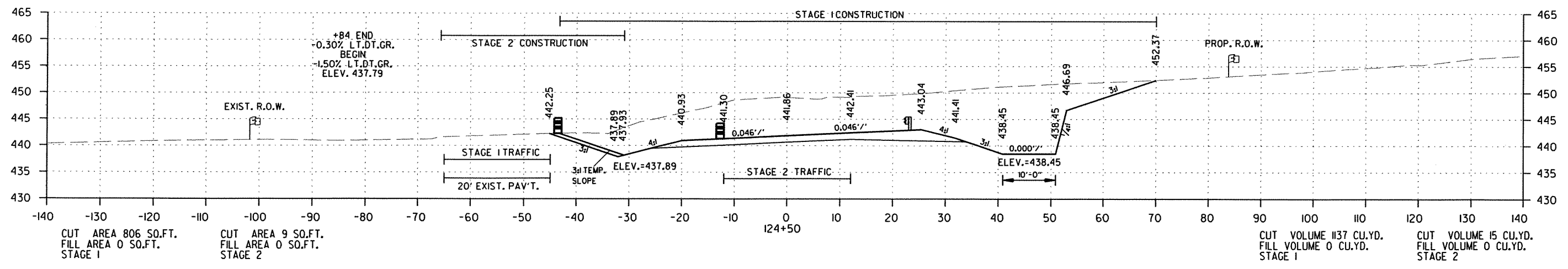
2 CROSS SECTIONS



7/30/2012
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							95	106

2 CROSS SECTIONS

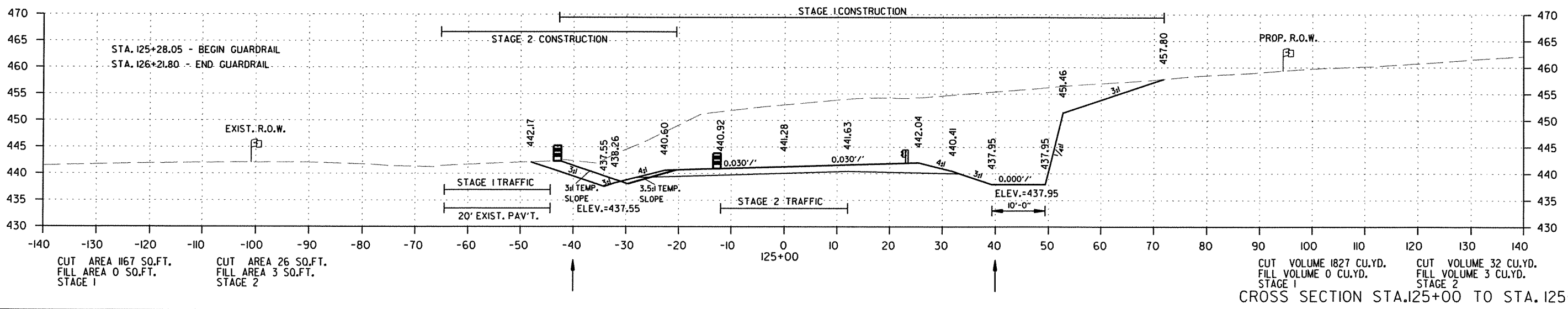
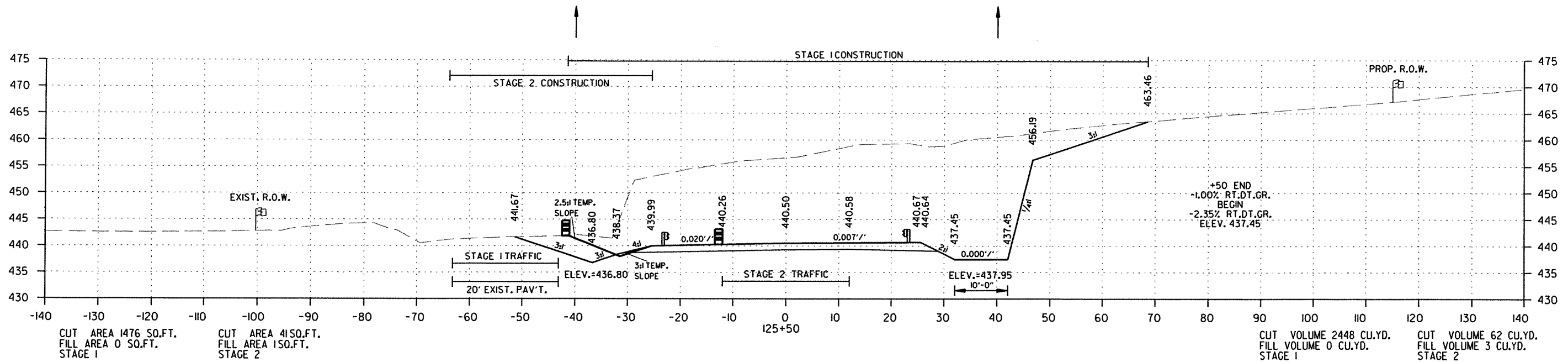


CROSS SECTION STA. 123+50 TO STA. 124+50

7/30/2012 R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	96	106

2 CROSS SECTIONS

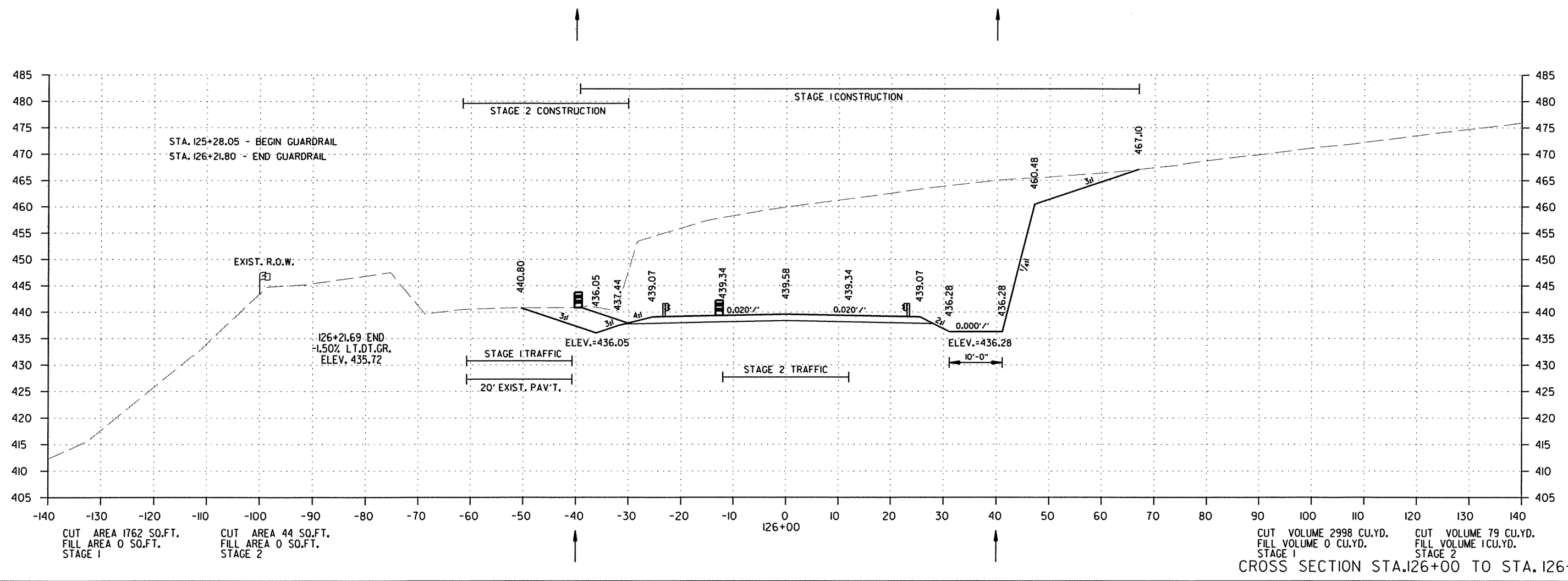


CROSS SECTION STA. 125+00 TO STA. 125+50

7/30/2012
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		97	106

② CROSS SECTIONS



7/30/2012
R090281.DGN

CROSS SECTION STA. 126+00 TO STA. 126+00

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							98	106

2 CROSS SECTIONS

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 1

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

131+55.35
TOE OF SLOPE

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 1

CUT VOLUME 0 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 2

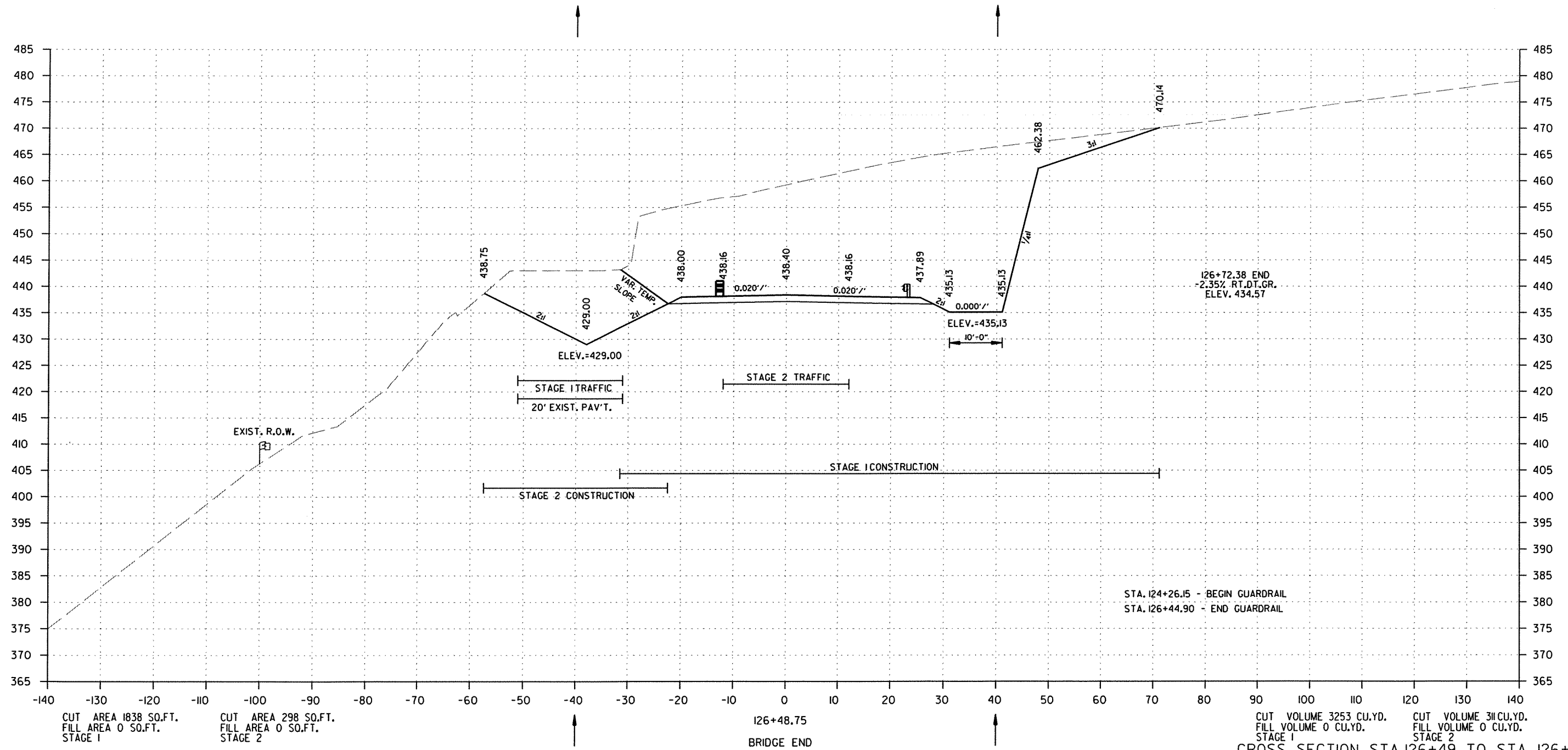
CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 1

CUT AREA 0 SQ.FT.
FILL AREA 0 SQ.FT.

126+53.15
TOE OF SLOPE

CUT VOLUME 150 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 1

CUT VOLUME 23 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 2



CUT AREA 1838 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 1

CUT AREA 298 SQ.FT.
FILL AREA 0 SQ.FT.
STAGE 2

126+48.75
BRIDGE END

CUT VOLUME 3253 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 1

CUT VOLUME 311 CU.YD.
FILL VOLUME 0 CU.YD.
STAGE 2

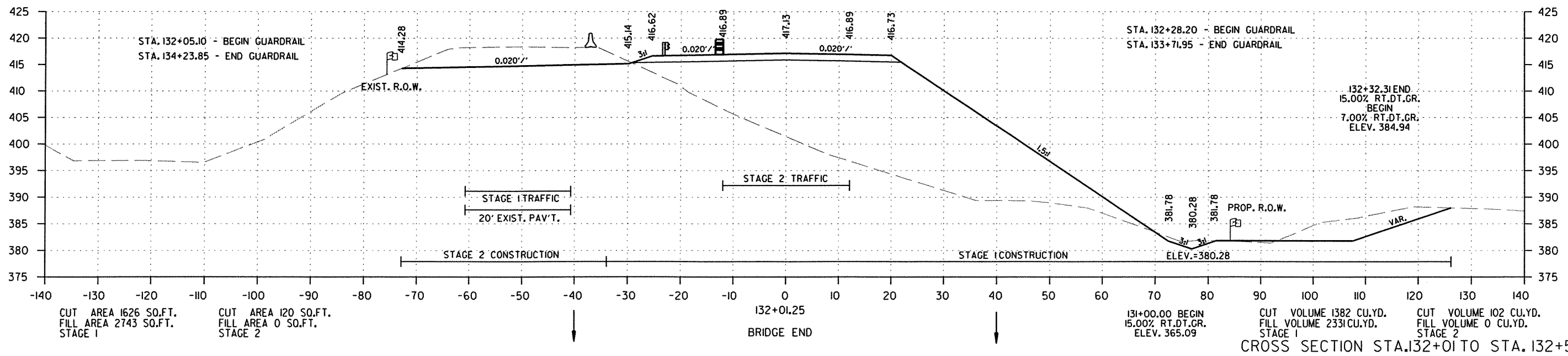
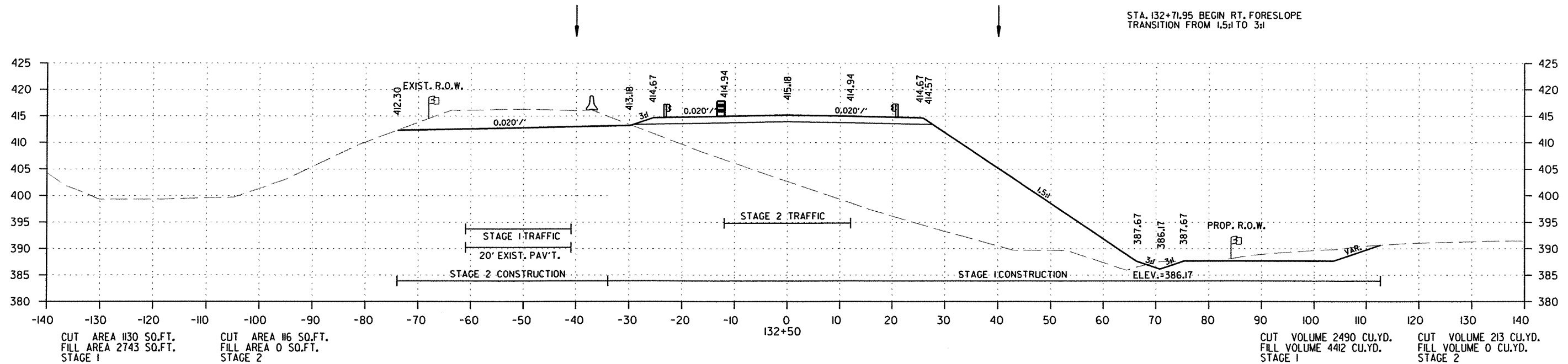
CROSS SECTION STA. 126+49 TO STA. 126+49

7/30/2012

R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							99	106

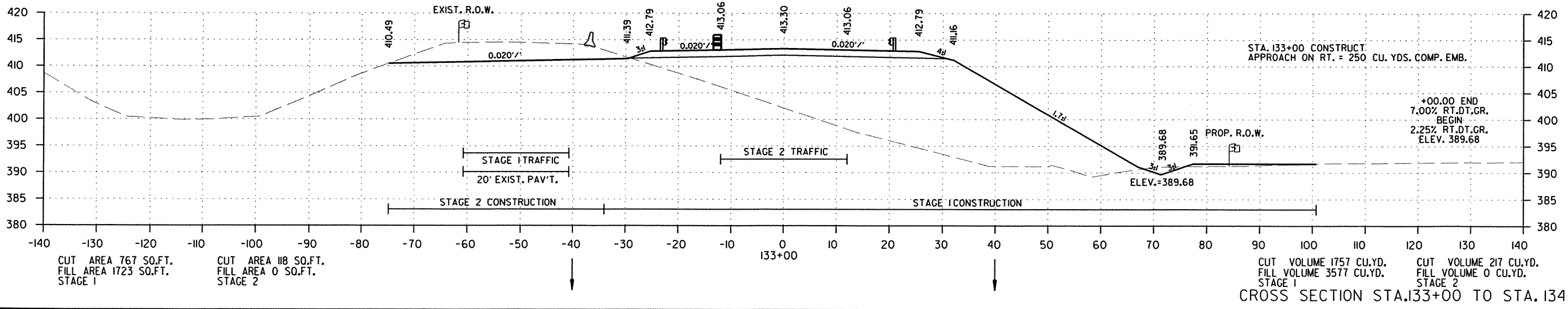
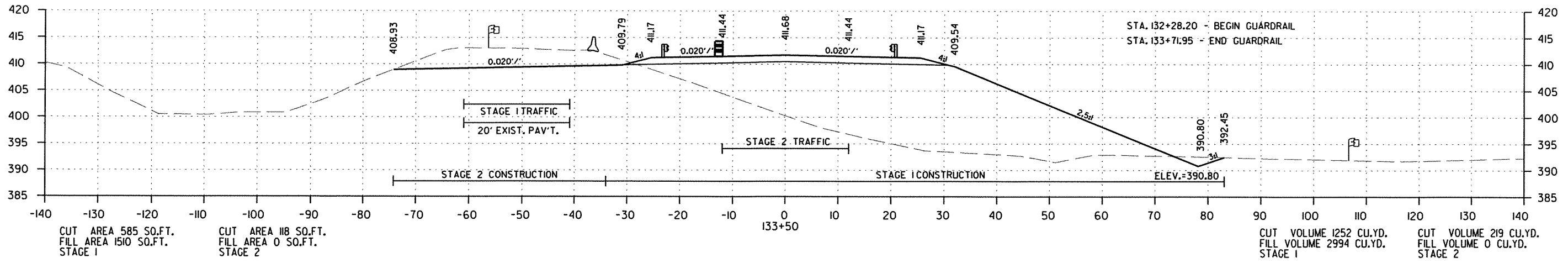
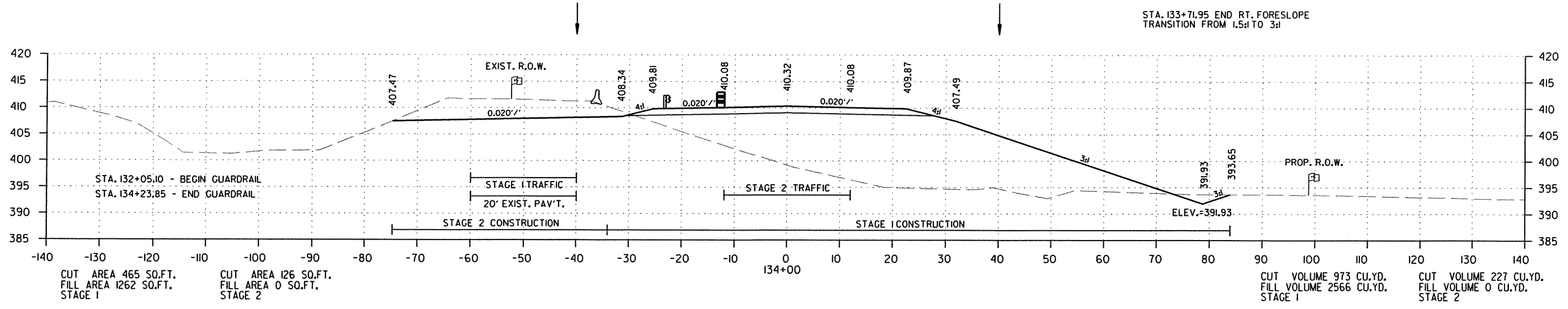
2 CROSS SECTIONS



7/30/2012
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	100	106

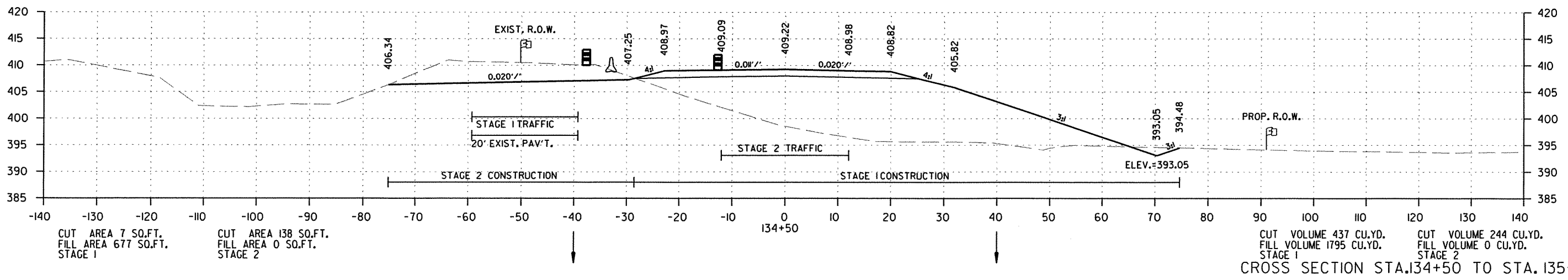
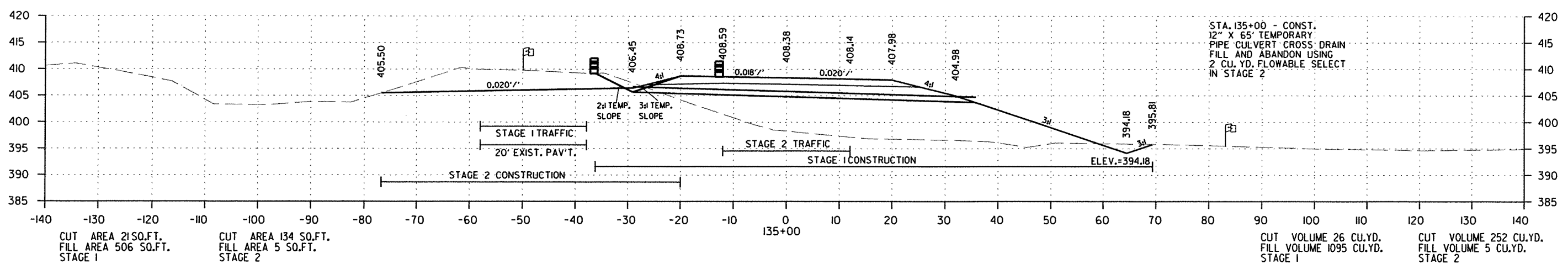
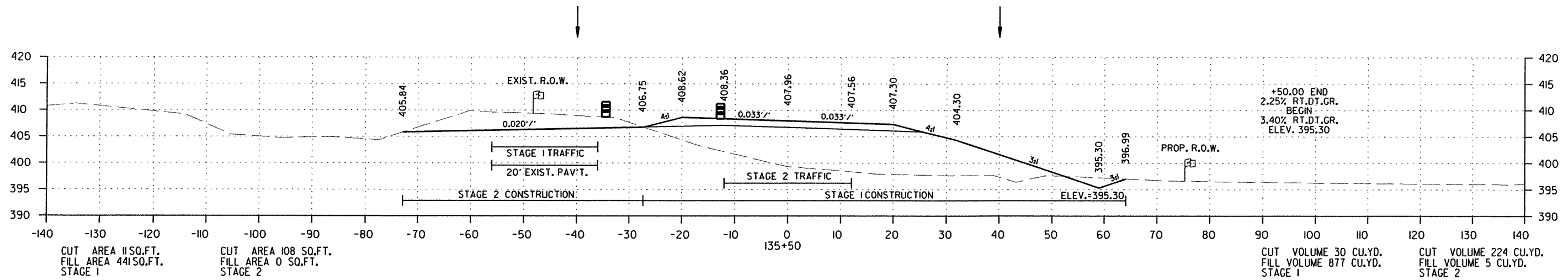
② CROSS SECTIONS



7/30/2012
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	101	106

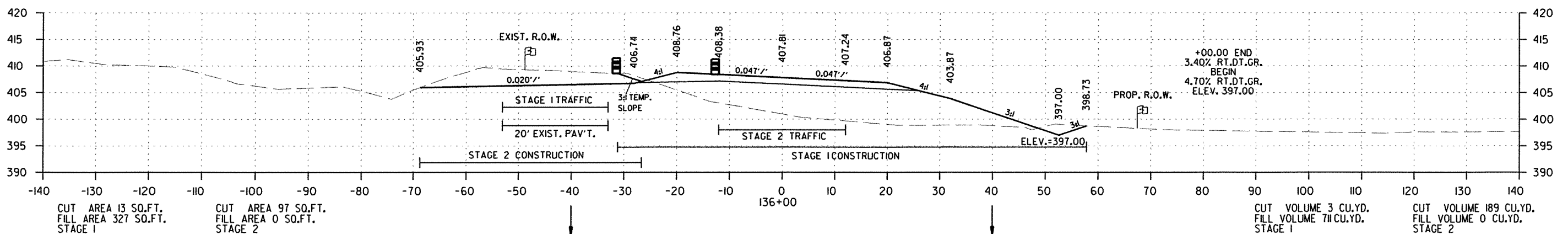
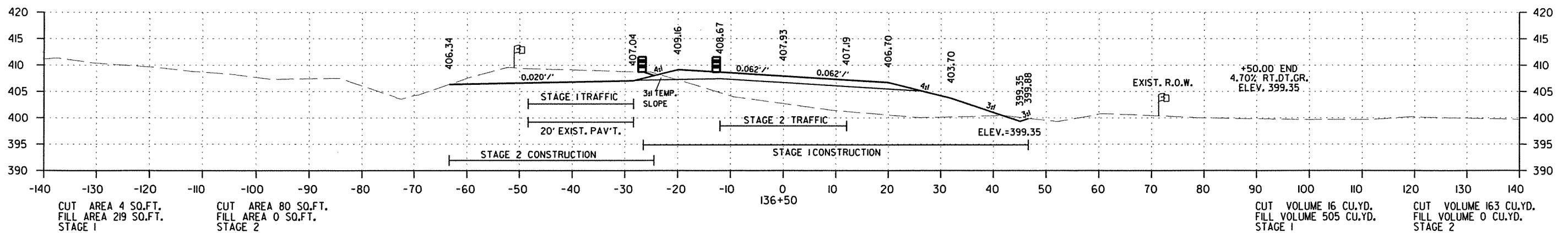
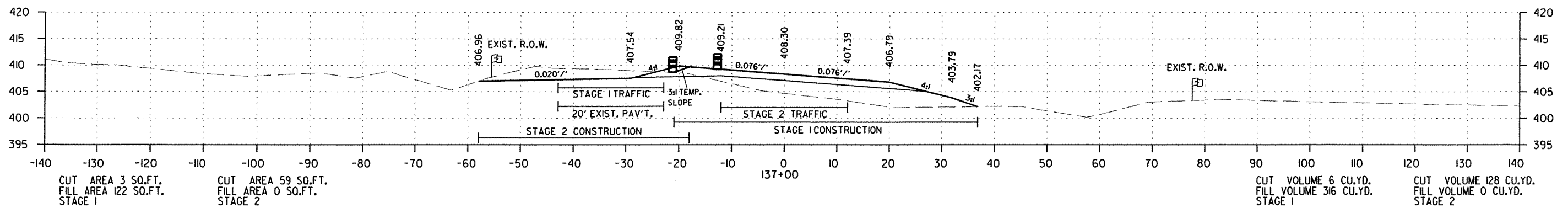
2 CROSS SECTIONS



7/30/2012
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	090281		102	106

② CROSS SECTIONS



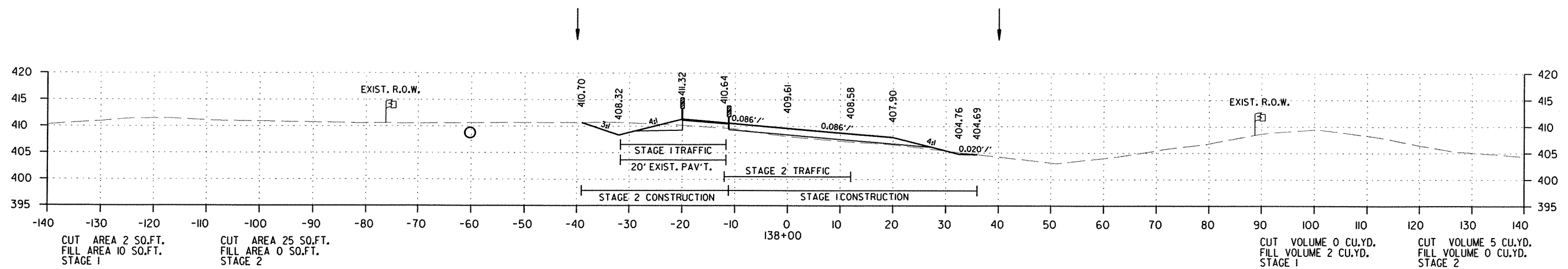
CROSS SECTION STA. 136+00 TO STA. 137+00

7/30/2012

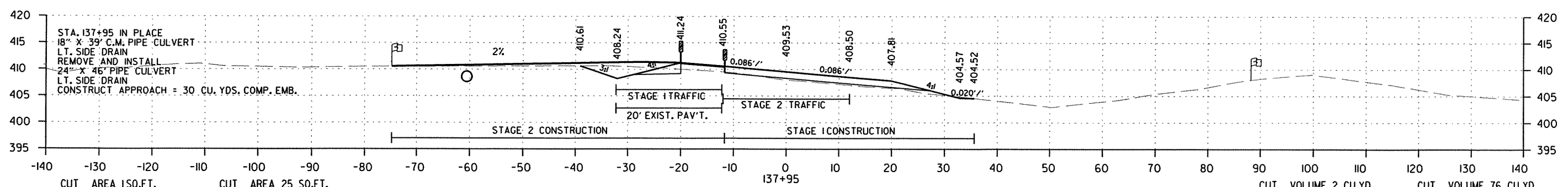
R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	103	106

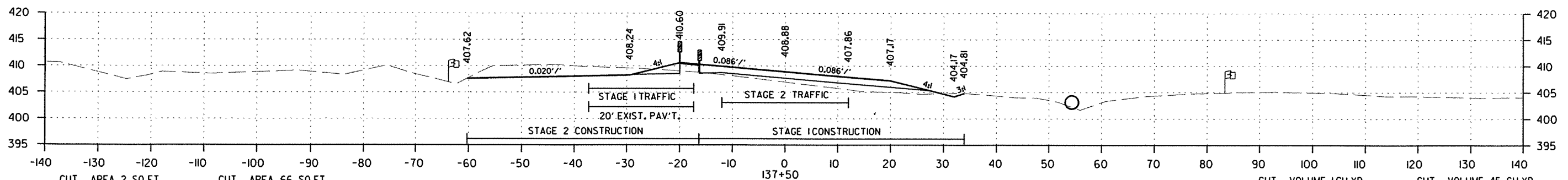
2 CROSS SECTIONS



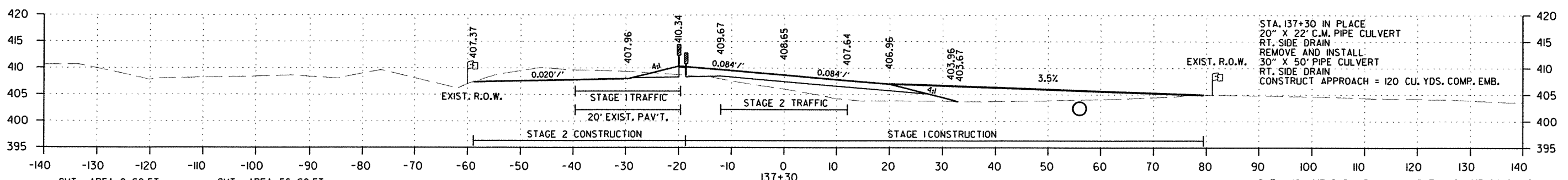
CUT AREA 2 SQ.FT. FILL AREA 10 SQ.FT. STAGE 1
 CUT AREA 25 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2
 CUT VOLUME 0 CU.YD. FILL VOLUME 2 CU.YD. STAGE 1
 CUT VOLUME 5 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2



CUT AREA 150 SQ.FT. FILL AREA 115 SQ.FT. STAGE 1
 CUT AREA 25 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2
 CUT VOLUME 2 CU.YD. FILL VOLUME 38 CU.YD. STAGE 1
 CUT VOLUME 76 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2



CUT AREA 2 SQ.FT. FILL AREA 35 SQ.FT. STAGE 1
 CUT AREA 66 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2
 CUT VOLUME 1 CU.YD. FILL VOLUME 39 CU.YD. STAGE 1
 CUT VOLUME 45 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2



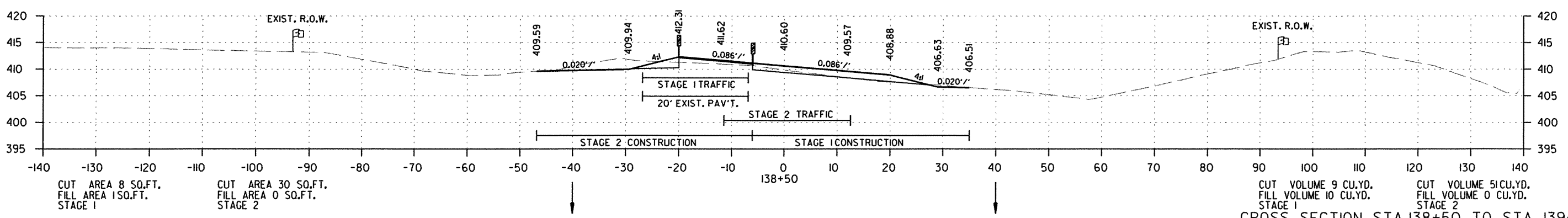
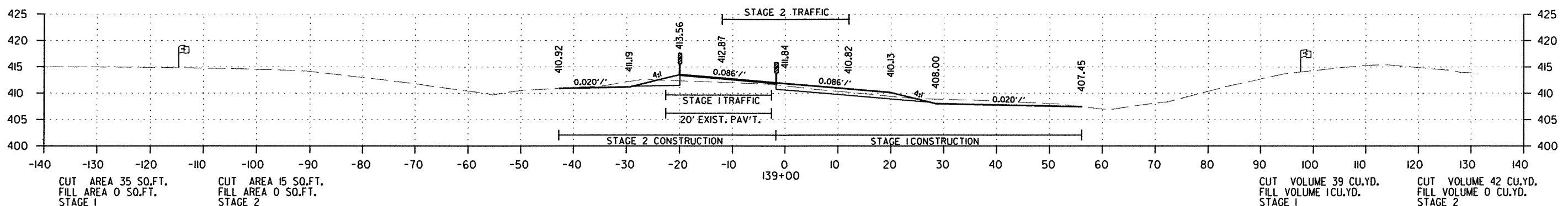
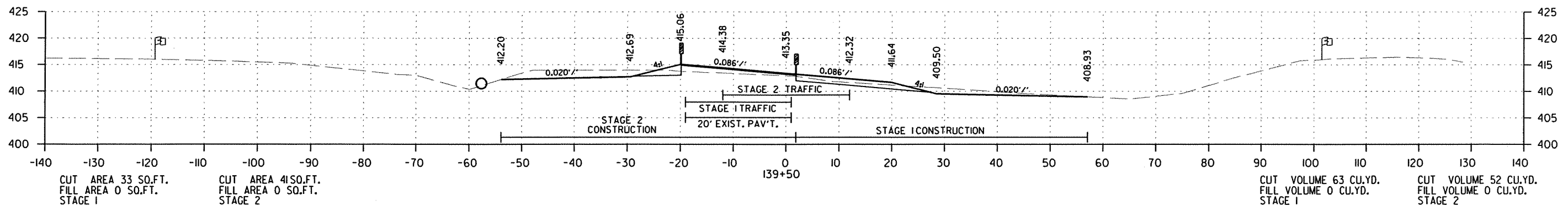
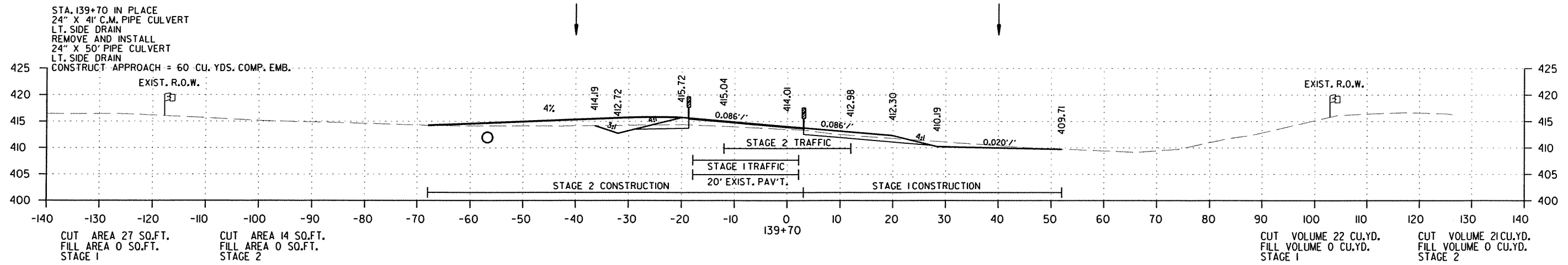
CUT AREA 0 SQ.FT. FILL AREA 70 SQ.FT. STAGE 1
 CUT AREA 56 SQ.FT. FILL AREA 0 SQ.FT. STAGE 2
 CUT VOLUME 2 CU.YD. FILL VOLUME 107 CU.YD. STAGE 1
 CUT VOLUME 64 CU.YD. FILL VOLUME 0 CU.YD. STAGE 2

CROSS SECTION STA. 137+30 TO STA. 138+00

7/30/2012
 R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 090281	104	106

2 CROSS SECTIONS



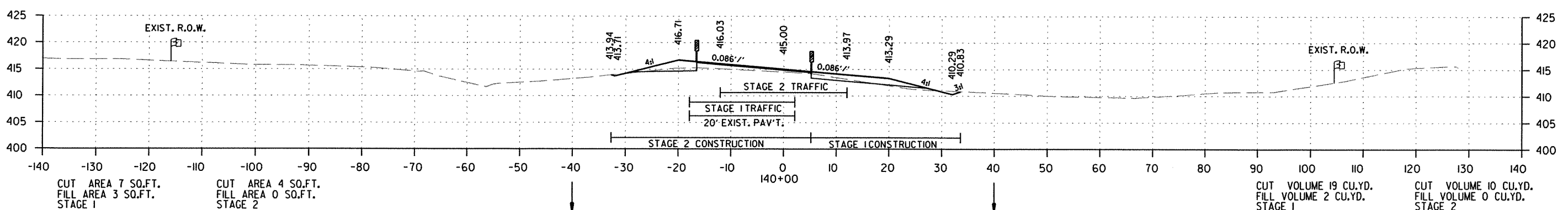
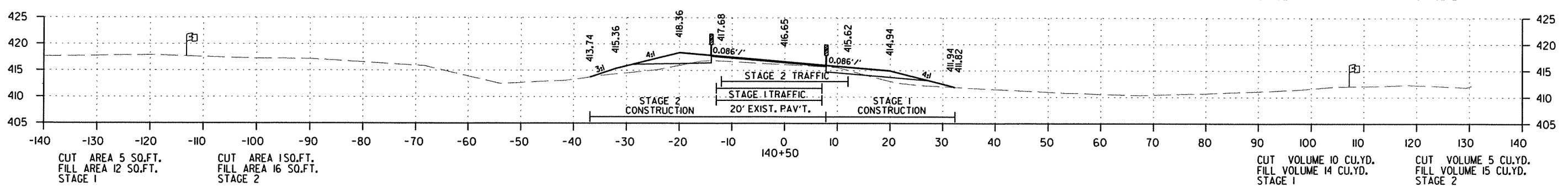
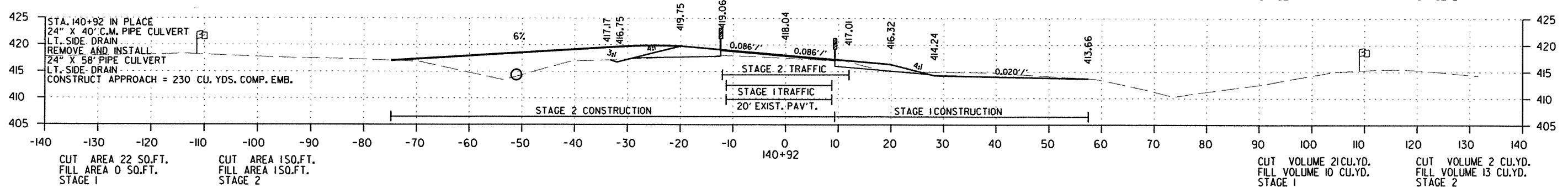
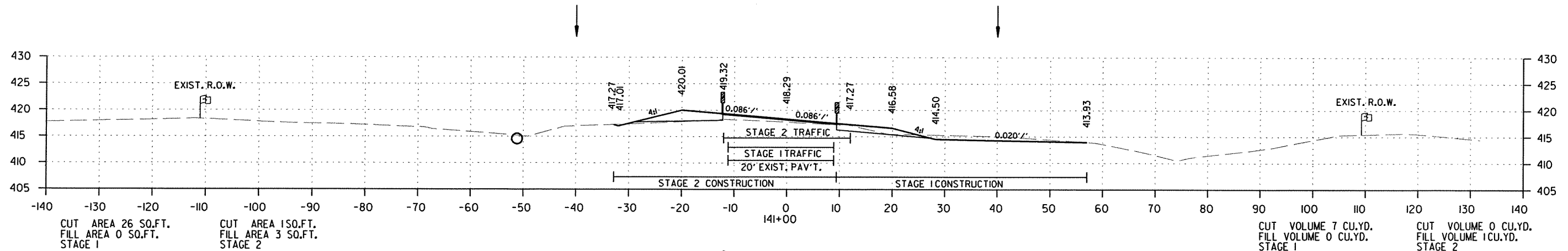
CROSS SECTION STA. 138+50 TO STA. 139+70

7/30/2012

R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281						105	106	

2 CROSS SECTIONS



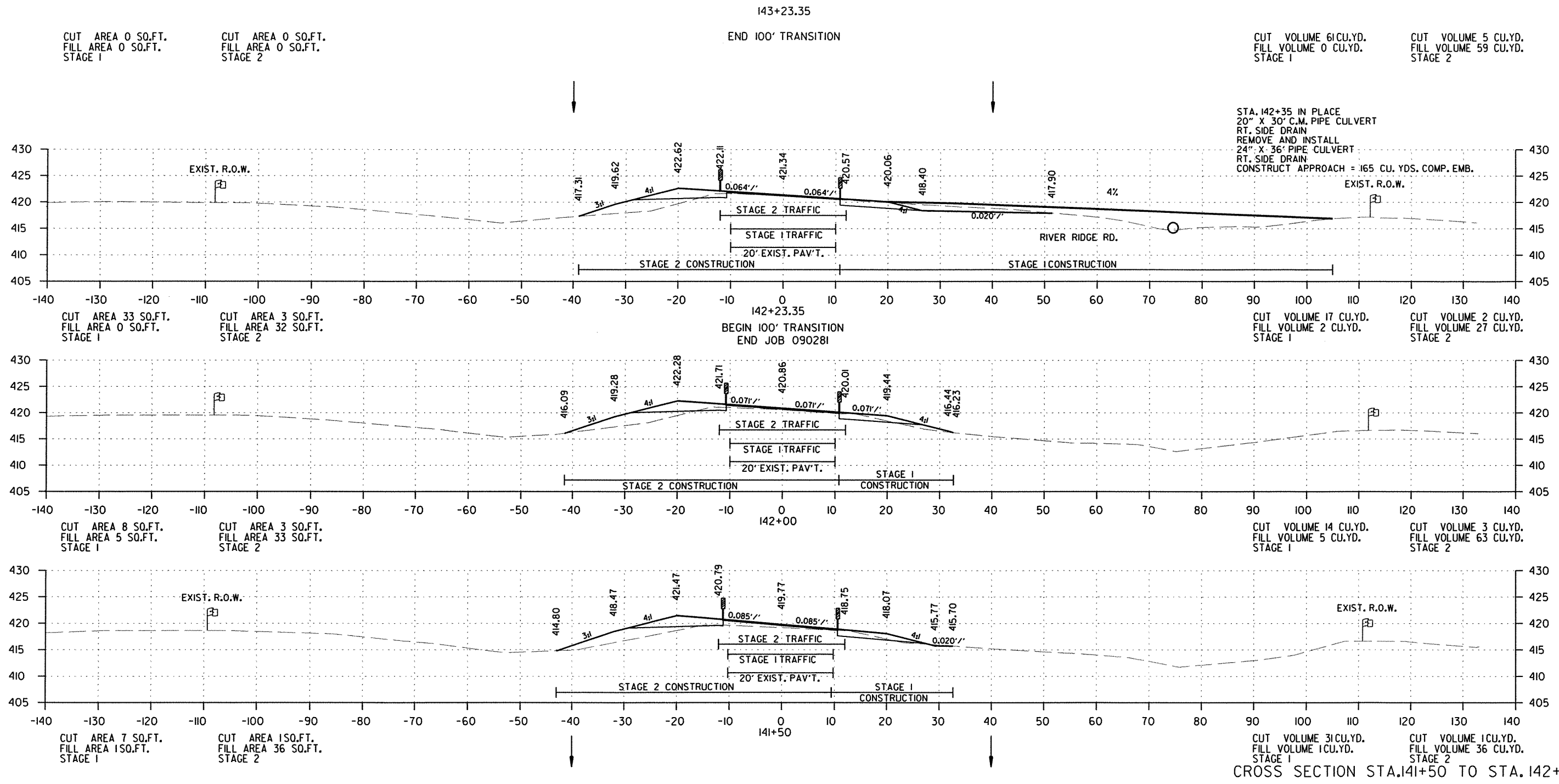
CROSS SECTION STA. 140+00 TO STA. 141+00

7/30/2012

R090281.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 090281							106	106

2 CROSS SECTIONS



CROSS SECTION STA. 141+50 TO STA. 142+23

7/30/2012
R090281.DGN