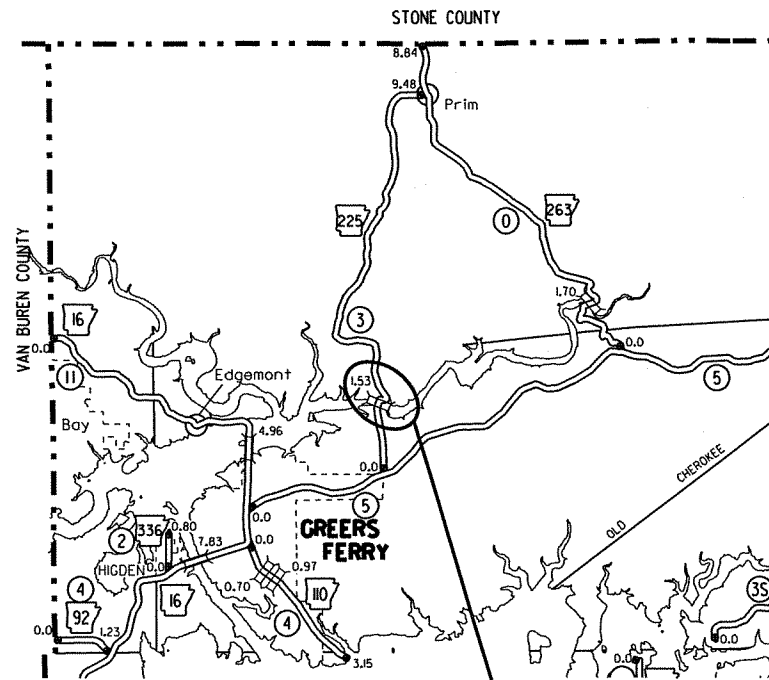


ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

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.	050228		1	96

② MIDWAY BRANCH STR. & APPRS. (S)



VICINITY MAP

PROJECT LOCATION

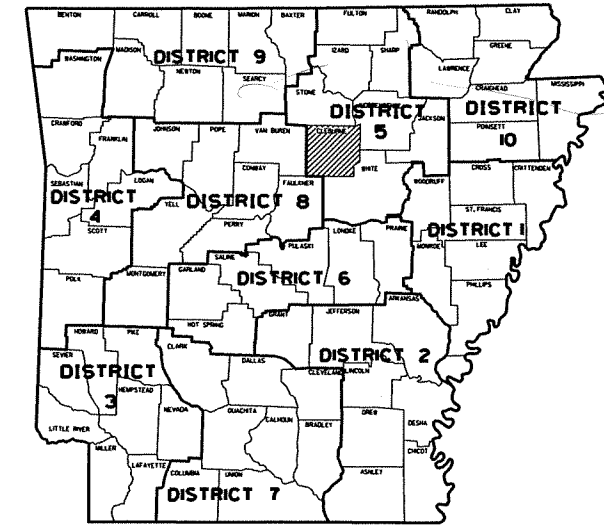
# MIDWAY BRANCH STR. & APPRS. (S)

CLEBURNE COUNTY

ROUTE 225 SECTION 3

## JOB 050228

F. A. P. NO. BRN-0012(30)



ARK. HWY. DIST. NO. 5

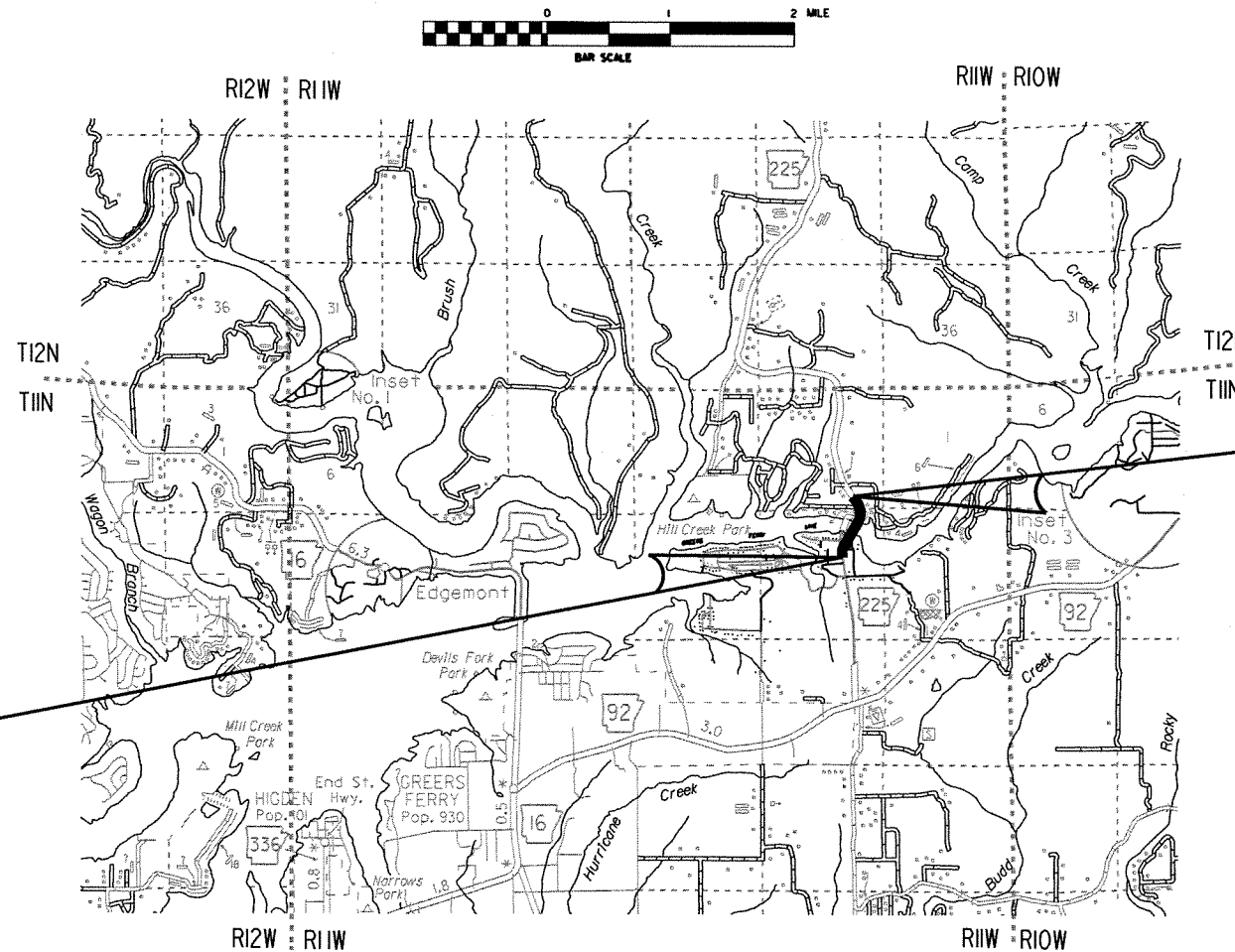
• DESIGN TRAFFIC DATA •

DESIGN YEAR	-----	2012
2012 ADT	-----	1000
2032 ADT	-----	1300
2032 DHV	-----	143
DIRECTIONAL DISTRIBUTION	-----	60 %
TRUCKS	-----	10%
DESIGN SPEED	-----	50 M. P. H.

BRIDGE CONSTRUCTION DATA

STA. 113+23.27 BRIDGE END  
BRIDGE NO. 07235  
900' CONTINUOUS COMPOSITE  
PLATE GIRDER UNIT  
(150', 185', 230', 185', 150')  
30' CLEAR ROADWAY  
903'-5 1/2" BRIDGE LENGTH  
STA. 122+26.73 BRIDGE END

STA. 102+16.64  
BEGINNING JOB 050228  
LOG MILE 1.42



STA. 131+04.57  
END JOB 050228  
LOG MILE 1.97

BEGINNING:	LAT: N35° 36' 09"	LONG: W92° 07' 46"
MID POINT:	LAT: N35° 36' 23"	LONG: W92° 07' 41"
ENDING:	LAT: N35° 36' 35"	LONG: W92° 07' 39"

GROSS LENGTH OF PROJECT	2887.93 FEET	OR	0.547 MILES
NET ROADWAY	1984.37		0.376
NET BRIDGES	903.56		0.171
NET PROJECT	2887.93		0.547

P.E. 050228  
NON-PART.



APPROVED



DEPUTY DIRECTOR  
AND CHIEF ENGINEER

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
01/09/12				6	ARK.			
						050228	2	96

2 INDEX, GOV. SPECS. AND GEN. NOTES

INDEX OF SHEETS

GOVERNING SPECIFICATIONS

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



1-9-12

SHEET NO.		BRIDGE NO.	DRWG. NO.	DATE
1	TITLE SHEET			
2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES			
3-5	TYPICAL SECTIONS OF IMPROVEMENT			
6-7	SPECIAL DETAILS			
8-11	TEMPORARY EROSION CONTROL DETAILS			
12-17	MAINTENANCE OF TRAFFIC DETAILS			
18	PERMANENT PAVEMENT MARKING DETAILS			
19-22	QUANTITY SHEETS			
23	SCHEDULE OF BRIDGE QUANTITIES	07235	52531	
24	SUMMARY OF QUANTITIES AND REVISIONS			
25-28	SURVEY CONTROL DETAILS			
29-33	PLAN AND PROFILE SHEETS			
34	LAYOUT OF BRIDGE OVER MIDWAY BRANCH - SHEET 1 OF 3	07235	52532	
35	LAYOUT OF BRIDGE OVER MIDWAY BRANCH - SHEET 2 OF 3	07235	52533	
36	LAYOUT OF BRIDGE OVER MIDWAY BRANCH - SHEET 3 OF 3	07235	52534	
37	HYDROGRAPH - GREERS FERRY LAKE	07235	52535	
38	DETAILS OF END BENTS - SHEET 1 OF 2	07235	52536	
39	DETAILS OF END BENTS - SHEET 2 OF 2	07235	52537	
40	DETAILS OF BENT 2 - SHEET 1 OF 2	07235	52538	
41	DETAILS OF BENT 2 - SHEET 2 OF 2	07235	52539	
42	DETAILS OF BENTS 3 & 4 - SHEET 1 OF 2	07235	52540	
43	DETAILS OF BENTS 3 & 4 - SHEET 2 OF 2	07235	52541	
44	DETAILS OF BENT 5 - SHEET 1 OF 2	07235	52542	
45	DETAILS OF BENT 5 - SHEET 2 OF 2	07235	52543	
46	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 1 OF 9	07235	52544	
47	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 2 OF 9	07235	52545	
48	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 3 OF 9	07235	52546	
49	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 4 OF 9	07235	52547	
50	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 5 OF 9	07235	52548	
51	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 6 OF 9	07235	52549	
52	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 7 OF 9	07235	52550	
53	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 8 OF 9	07235	52551	
54	DETAILS OF 900' CONTINUOUS COMPOSITE PLATE GIRDER UNIT - SHEET 9 OF 9	07235	52552	
55	DETAILS OF JOINTS	07235	52553	
56	DETAILS OF ELASTOMERIC BEARINGS WITH SHEAR BLOCKS	07235	52554	
57	EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS		1888A	4-10-03
58	DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES		1891F	4-10-03
59	DETAILS OF STANDARD TYPE C APPROACH GUTTERS		2016C	7-14-10
60	DETAILS OF STANDARD TYPE D BRIDGE NAME PLATES		2387	9-08-11
61	DETAILS OF PERMISSABLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL AND CONCRETE GIRDER SPANS		14991	4-10-03
62	DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING		14995A	4-10-03
63	CONCRETE DITCH PAVING		CDP-1	11-17-10
64	GUARD RAIL DETAILS (TYPE C) STREET/ROAD BARRICADE OR TEMPORARY INSTALLATION		GR-7	7-14-10
65	GUARD RAIL DETAILS		GR-8	7-14-10
66	GUARD RAIL DETAILS		GR-9	4-17-08
67	GUARD RAIL DETAILS		GR-9A	4-17-08
68	GUARD RAIL DETAILS		GR-10	7-14-10
69	GUARD RAIL DETAILS		GR-10A	7-14-10
70	GUARD RAIL DETAILS		GRT-1	7-14-10
71	MAILBOX DETAILS		MB-1	11-18-04
72	METAL PIPE CULVERT FILL HEIGHTS & BEDDING		PCM-1	12-15-11
73	PAVEMENT MARKING DETAILS		PM-1	11-17-10
74	DETAILS OF PIPE UNDERDRAINS		PU-1	4-10-03
75	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC		SE-2	10-18-96
76	STANDARD HIGHWAY SIGN AND SUPPORT ASSEMBLIES		SHS-1	4-17-08
77	U-CHANNEL POST ASSEMBLIES		SHS-2	10-9-03
78	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-1	12-15-11
79	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-2	3-11-10
80	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10-15-09
81	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
82	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-02-94
83	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-03-94
84-96	CROSS SECTIONS			

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	FHWA-1273 REVISIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 050228
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)
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
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
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
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
723-1	GENERAL REQUIREMENTS FOR SIGNS
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 050228	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 050228	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 050228	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 050228	DELAY IN RIGHT-OF-WAY OCCUPANCY
JOB 050228	DETAILS FOR BOATER SAFETY ON GREERS FERRY LAKE
JOB 050228	DRILLED SHAFT FOUNDATIONS
JOB 050228	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 050228	GRADE HPS70W STRUCTURAL STEEL
JOB 050228	HIGH PERFORMANCE PAVEMENT MARKING
JOB 050228	INTERNET BIDDING
JOB 050228	NESTING SITES OF MIGRATORY BIRDS
JOB 050228	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 050228	PARTNERING REQUIREMENTS
JOB 050228	ROCK FILL
JOB 050228	SECTION 404 NATIONWIDE PERMIT 14 REQUIREMENTS
JOB 050228	SPECIAL FACILITIES AT SITE
JOB 050228	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 050228	SPlicing REINFORCING STEEL
JOB 050228	STORM WATER POLLUTION PREVENTION PLAN
JOB 050228	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 050228	UTILITY ADJUSTMENTS
JOB 050228	VALUE ENGINEERING
JOB 050228	WARM MIX ASPHALT
JOB 050228	ZEBRA MUSSEL CONTAINMENT

GENERAL NOTES

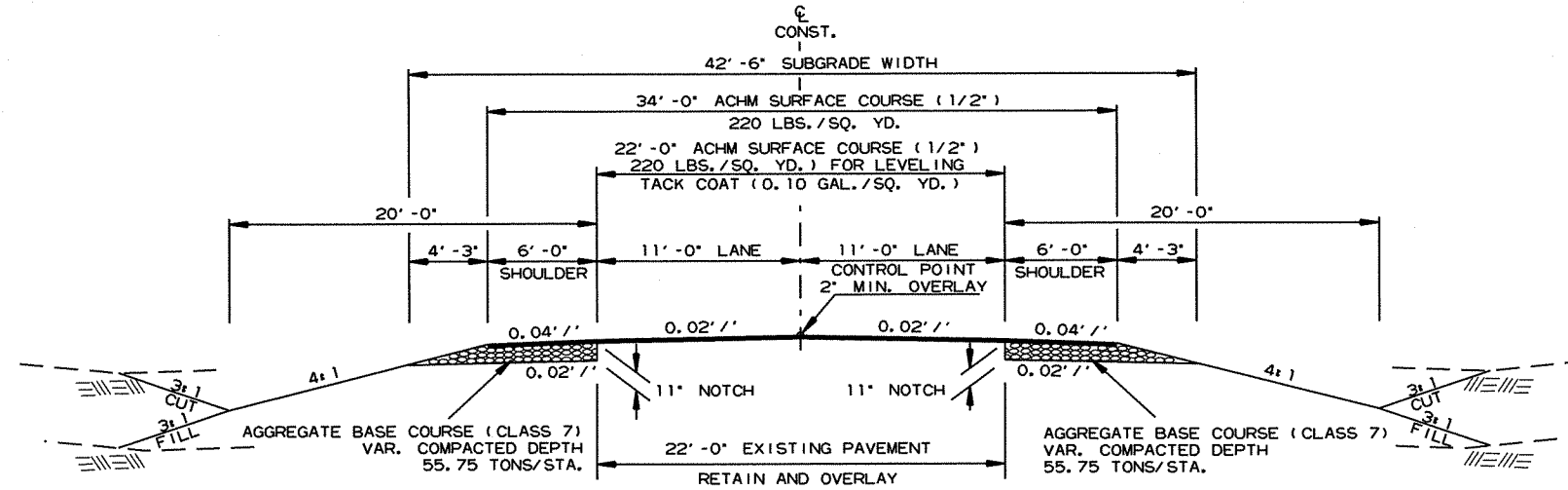
- GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
- ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U. S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- 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.
- ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 UNCLASSIFIED EXCAVATION.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 050228	3	96

② TYPICAL SECTIONS OF IMPROVEMENT



12-20-11



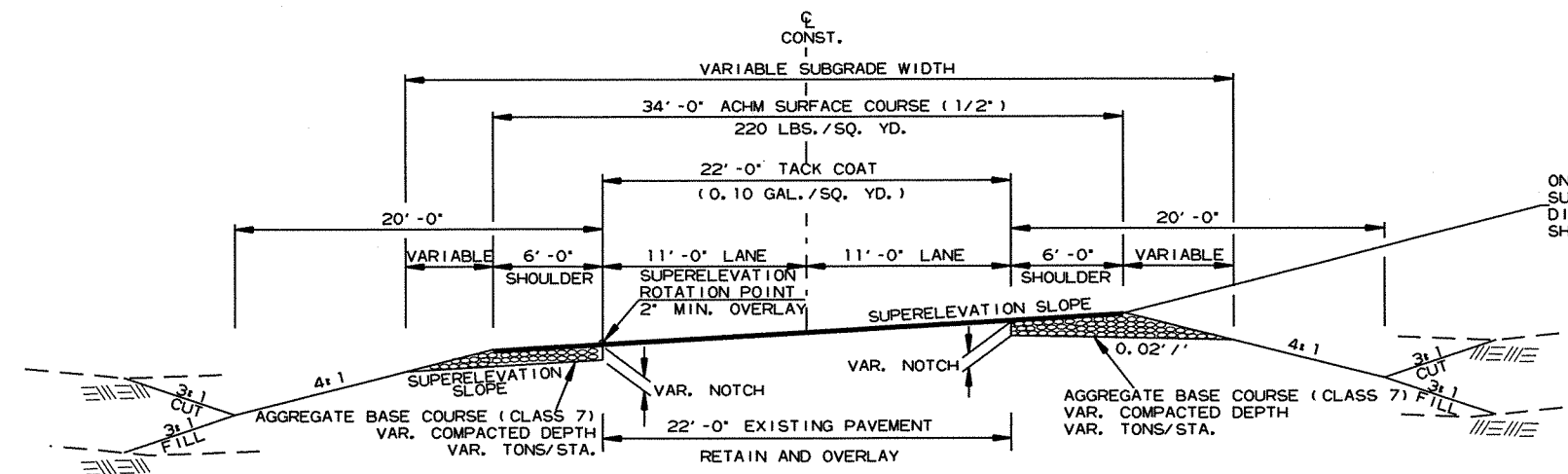
TYPICAL SECTION OF IMPROVEMENT  
NOTCH & WIDENING  
STA. 102+16.64 TO STA. 104+12.35  
STA. 129+81.00 TO STA. 131+04.57

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

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

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

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



TYPICAL SECTION OF IMPROVEMENT  
FULL DEPTH  
SUPERELEVATION

ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATED TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

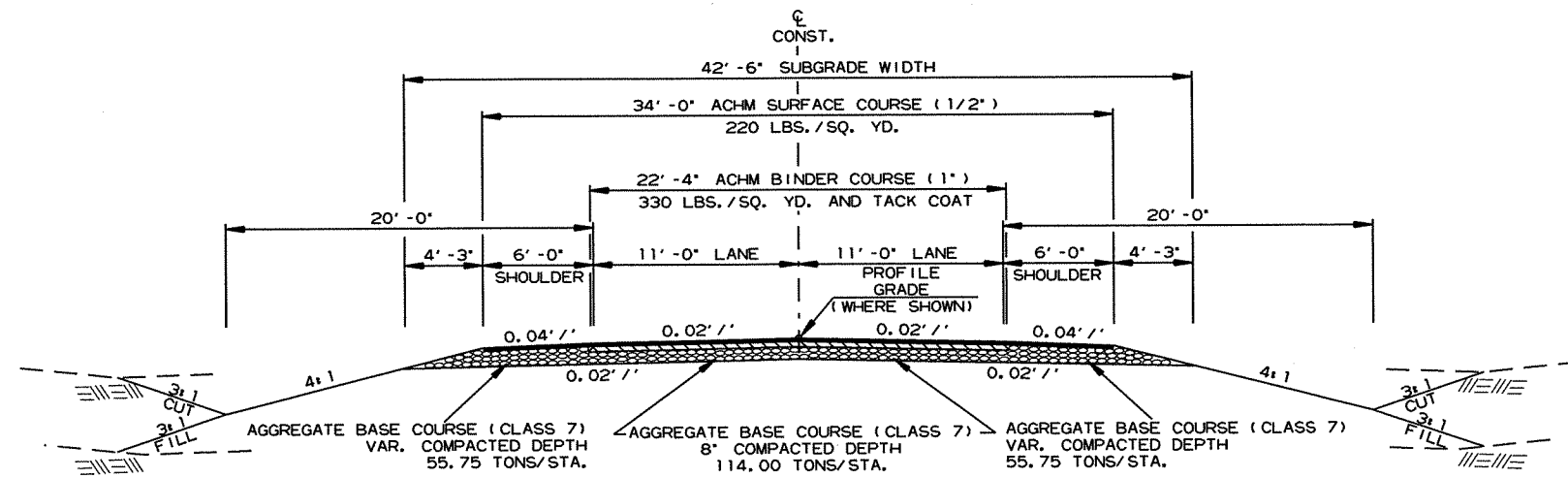
TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 050228	4	96

2 TYPICAL SECTIONS OF IMPROVEMENT



12-20-11



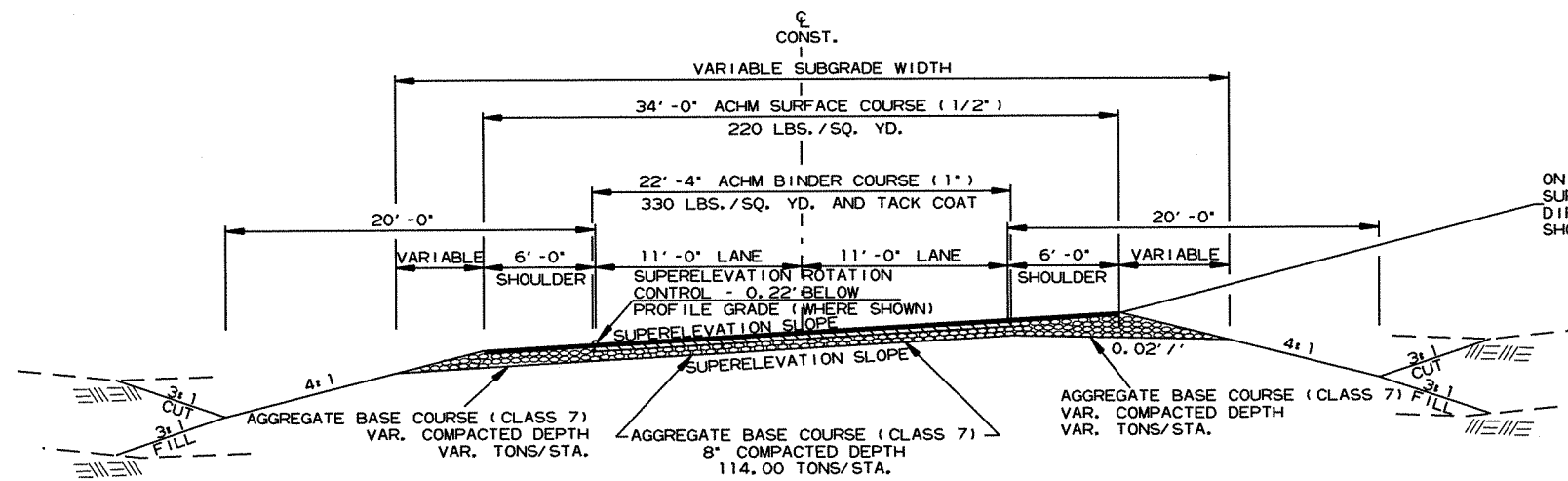
TYPICAL SECTION OF IMPROVEMENT  
FULL DEPTH

STA. 104+12.35 TO STA. 113+23.17  
STA. 122+26.73 TO STA. 129+81.00

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

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

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



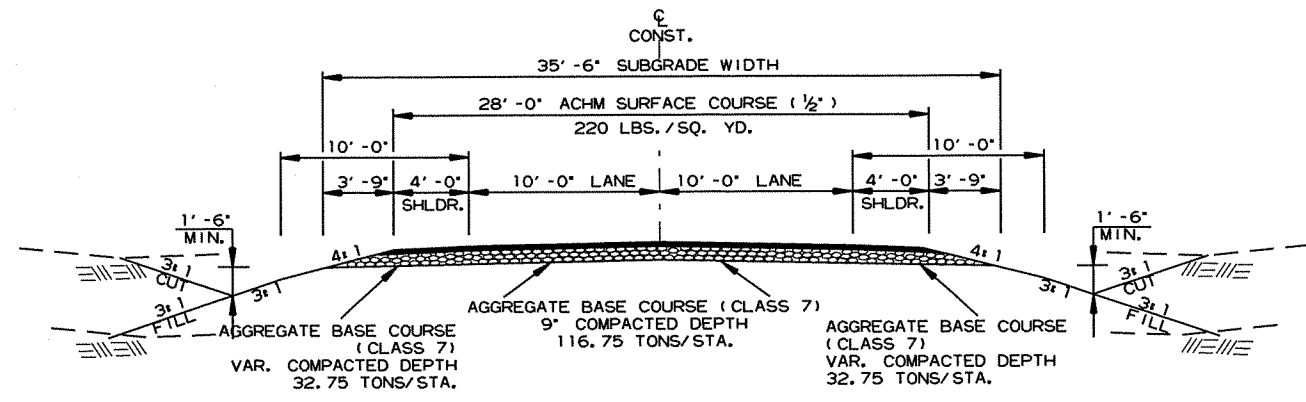
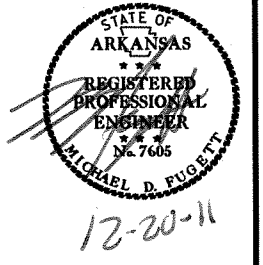
TYPICAL SECTION OF IMPROVEMENT  
FULL DEPTH  
SUPERELEVATION

ON ALL SUPERELEVATED CURVES AND THROUGH SUPERELEVATED TRANSITIONS, THE ALGEBRAIC DIFFERENCE BETWEEN PAVEMENT SLOPE AND SHOULDER SLOPE SHALL NOT EXCEED 0.08'/'.

TYPICAL SECTIONS OF IMPROVEMENT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 050228	5	96

2 TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT

STA. 100+00.00 TO STA. 104+72.00 (SYLVAN SHORE DRIVE) CONNECTOR AT BEGINNING OF JOB 050228  
 STA. 100+11.00 TO STA. 103+30.00 CONNECTOR AT END OF JOB 050228

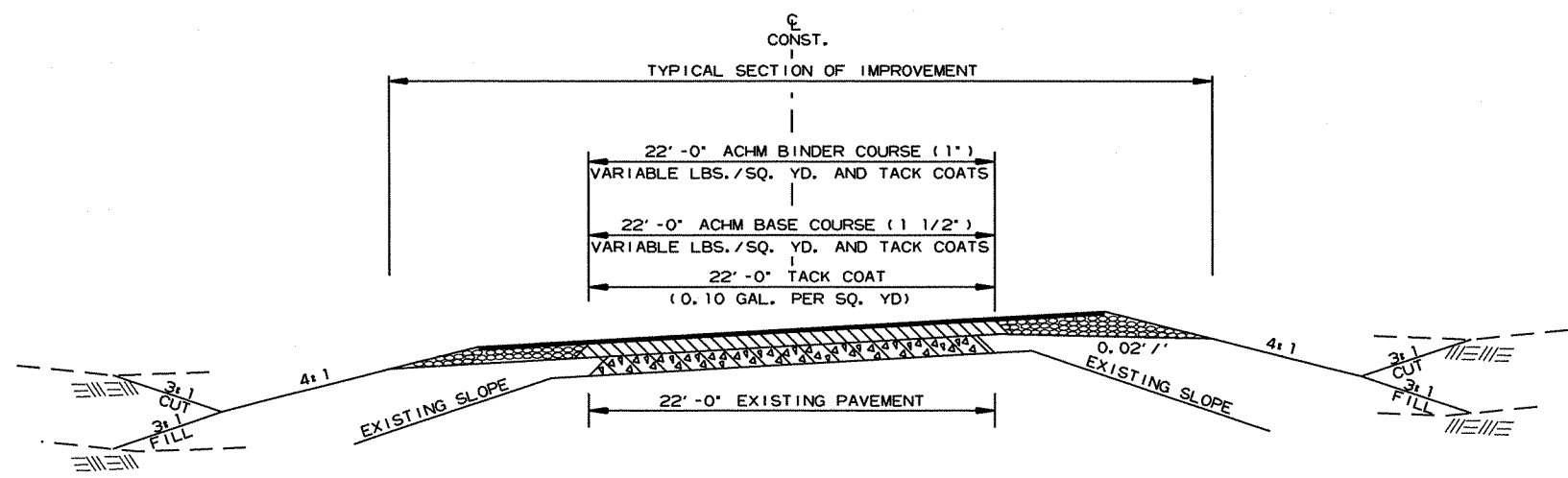
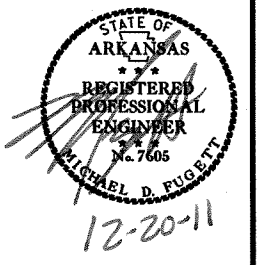
NOTES:  
 REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		6	96
				JOB NO.	050228			

2 SPECIAL DETAILS



METHOD OF RAISING GRADE  
 STA. 102+16.64 TO STA. 104+12.35  
 STA. 129+81.00 TO STA. 131+04.57

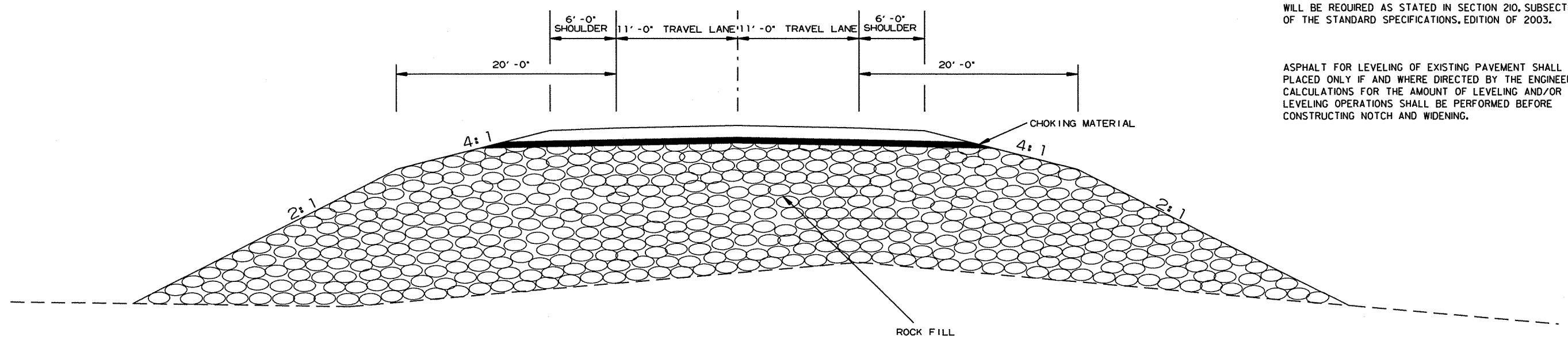
NOTES:

THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.

QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.

IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.

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.



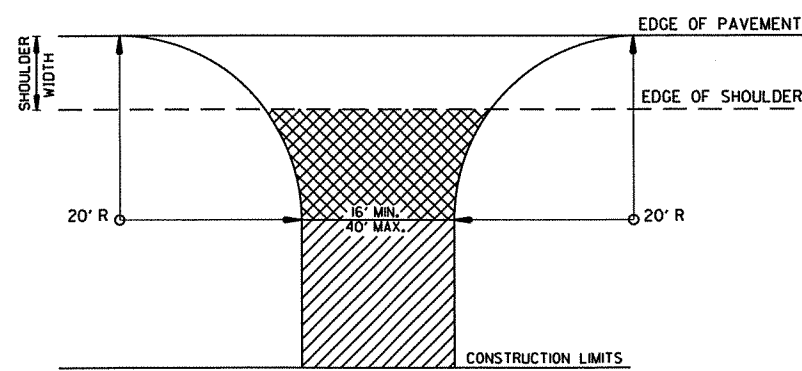
ROCK FILL DETAIL  
 STA. 106+80.00 - STA. 113+23.27

SPECIAL DETAILS

R050228.DGN 12/20/2011

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							7	96

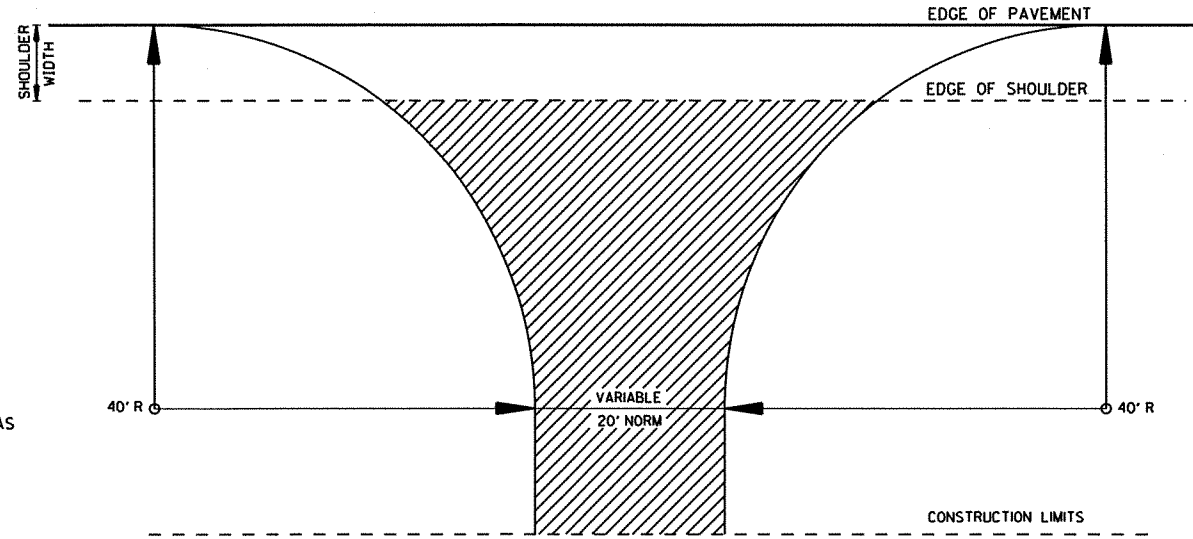
2 SPECIAL DETAILS



**DETAIL FOR DRIVEWAY TURNOUTS**

A.C.H.M. SURFACE COURSE (1/2") (220 LBS./SQ. YD.) & AGGREGATE BASE COURSE (CLASS 7) (7" COMPACTED DEPTH)  
 AGGREGATE BASE COURSE (CLASS 7) (9" COMPACTED DEPTH)

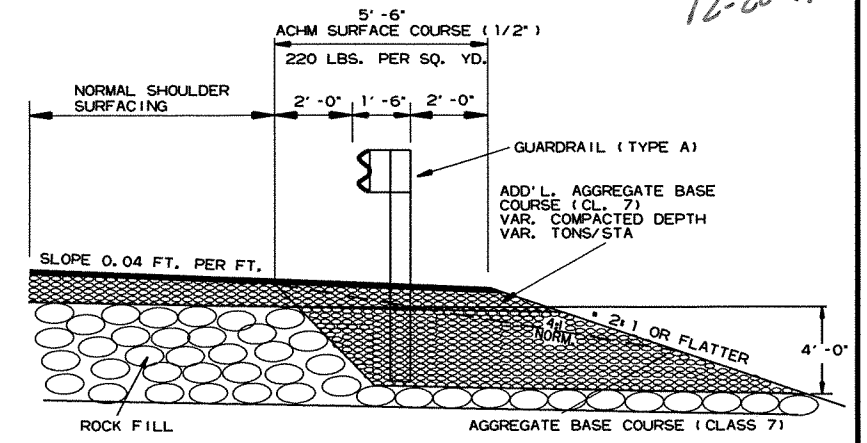
TURNOUTS SHALL BE MODIFIED AS NECESSARY TO MEET LOCAL CONDITIONS AS DIRECTED BY THE ENGINEER.



**DETAIL FOR COUNTY ROAD TURNOUT**

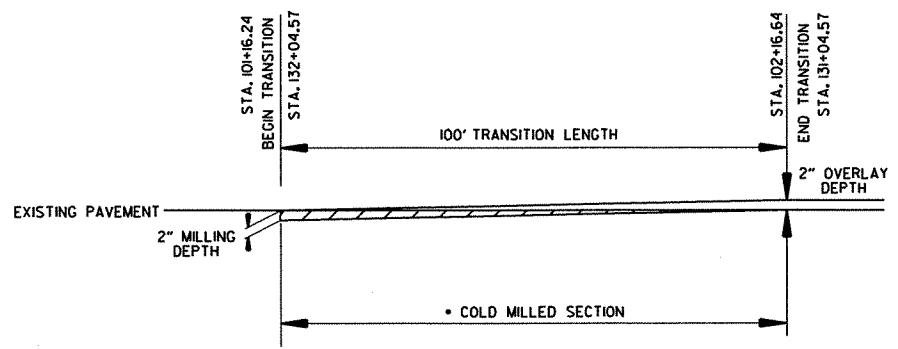
ASPHALT CONCRETE HOT MIX SURFACE COURSE (1/2") (220 LBS. PER SQ. YD.) AND AGGREGATE BASE COURSE (CLASS 7) (9" COMPACTED DEPTH)

TURNOUTS SHALL BE MODIFIED AS NECESSARY TO MEET LOCAL CONDITIONS, AS SHOWN IN PLANS AND IF AND WHERE DIRECTED BY THE ENGINEER.



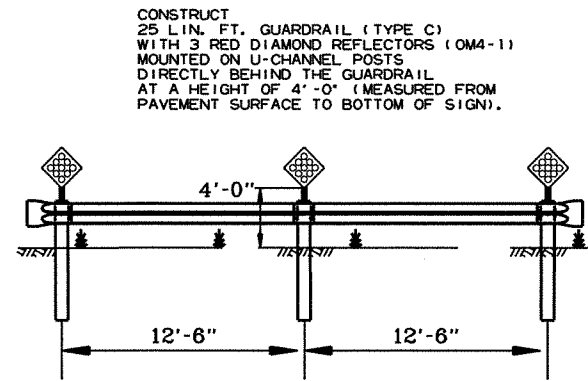
**DETAIL OF WIDENING FOR GUARDRAIL**

REFER TO STD. DWG. GR-9A FOR SLOPE REQUIREMENTS BEHIND GUARDRAIL.



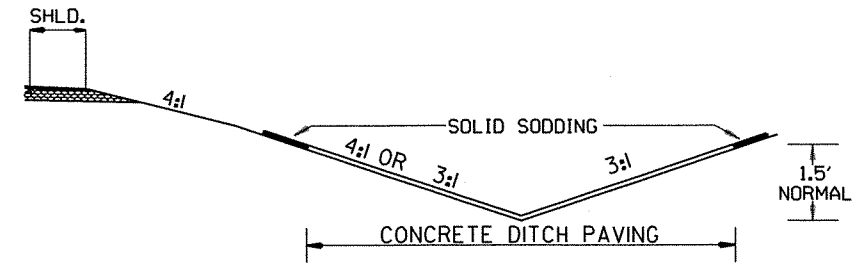
**DETAIL SHOWING TAPER TO EXISTING PAVEMENT**

TO BE USED AS DIRECTED BY THE ENGINEER

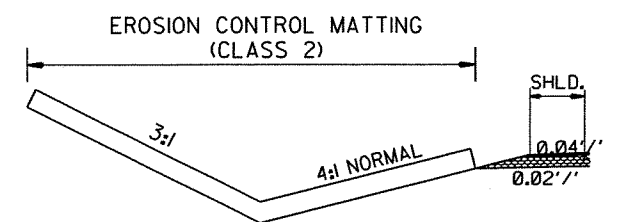


**DETAIL FOR PERMANENT ROAD CLOSURE**

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



**DITCH LINING DETAILS**



**EROSION CONTROL MATTING DETAILS**

SPECIAL DETAILS

CLEARING AND GRUBBING

MAIN LANES

STA. 105+00.00 - STA. 114+00.00 LT. & RT. 9 STA.  
 STA. 120+00.00 - STA. 131+04.57 LT. & RT. 11 STA.

SYLVAN SHORES DRIVE

STA. 100+00.00 - STA. 104+72.00 LT. & RT. 5 STA.

END CONNECTOR

STA. 100+11.00 - STA. 103+30.00 LT. & RT. 4 STA.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		8	96
							JOB NO. 050228	

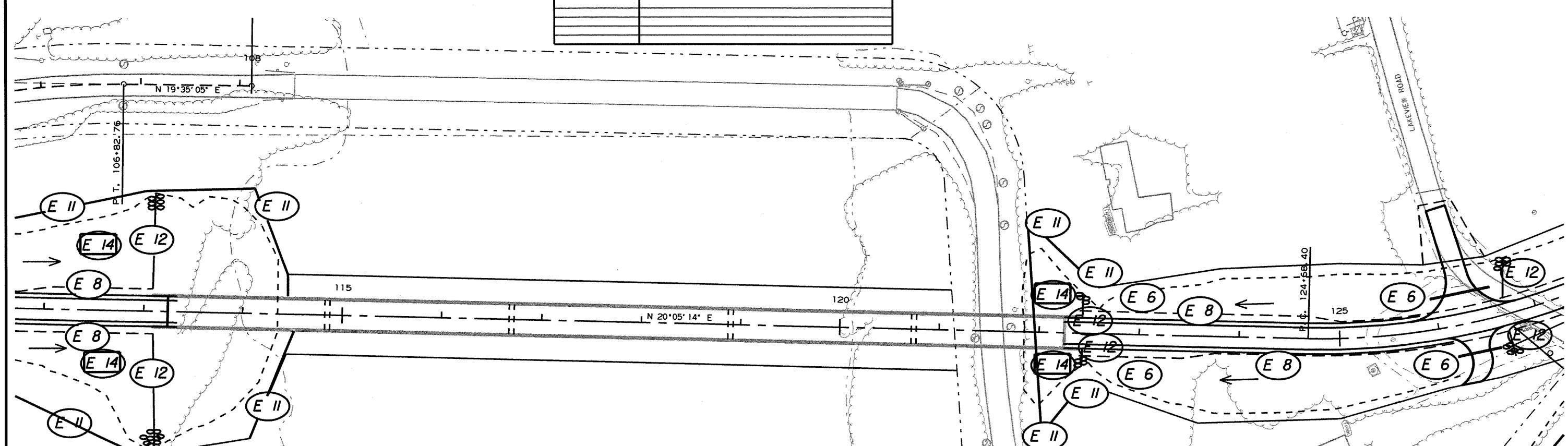
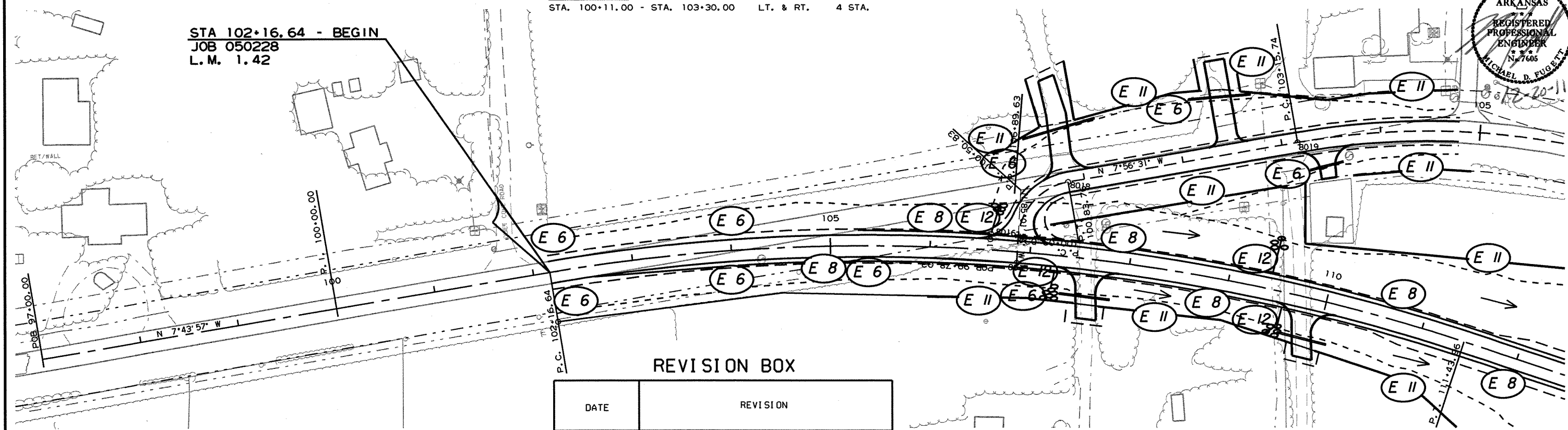
② TEMPORARY EROSION CONTROL DETAILS



STA 102+16.64 - BEGIN  
 JOB 050228  
 L.M. 1.42

REVISION BOX

DATE	REVISION

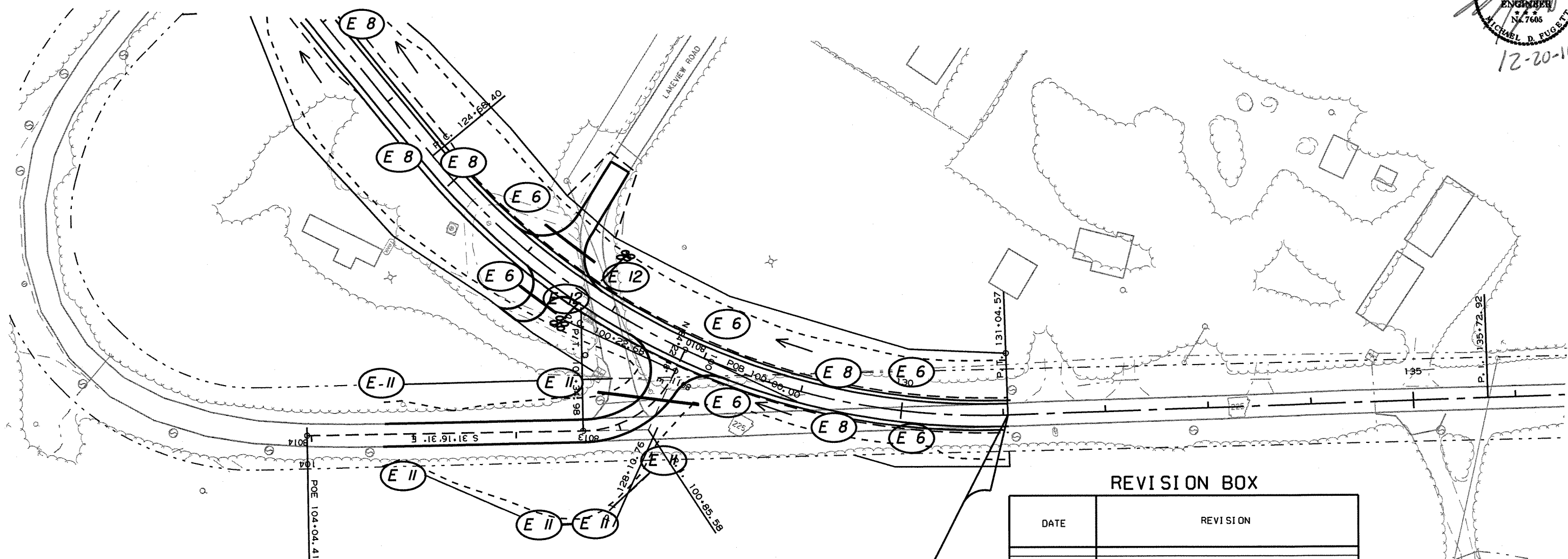


TEMPORARY EROSION CONTROL DETAILS  
 STAGE I



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							9	96

2 TEMPORARY EROSION CONTROL DETAILS



REVISION BOX	
DATE	REVISION

STA 131+04.57 - END  
 JOB 050228  
 L.M. 1.97

SILT FENCE (E-11)

STA. 106+00 - STA. 114+50	RT. OF C.L. CONST.	886 LIN. FT.
STA. 109+50 - STA. 114+50	LT. OF C.L. CONST.	652 LIN. FT.
STA. 121+97 - STA. 122+60	LT. & RT. OF C.L. CONST.	413 LIN. FT.
STA. 100+50 - STA. 105+00	LT. OF C.L. BEGIN CONNECTOR	566 LIN. FT.
STA. 100+50 - STA. 105+50	RT. OF C.L. BEGIN CONNECTOR	358 LIN. FT.
STA. 100+85 - STA. 103+25	RT. OF C.L. BEGIN CONNECTOR	300 LIN. FT.
STA. 101+25 - STA. 103+25	LT. OF C.L. BEGIN CONNECTOR	200 LIN. FT.
		3375 LIN. FT.

DIVERSION DITCH (E-8)

STA. 105+00 - STA. 113+25	LT. OF C.L. CONST.	825 LIN. FT.
STA. 103+00 - STA. 113+25	RT. OF C.L. CONST.	1025 LIN. FT.
STA. 122+25 - STA. 131+05	LT. OF C.L. CONST.	880 LIN. FT.
STA. 122+25 - STA. 131+05	RT. OF C.L. CONST.	880 LIN. FT.
		3610 LIN. FT.

SEDIMENT BASIN (E-14)

STA.	RT.	LT.	SIZE	CU. YD.	OBLITERATION OF SEDIMENT BASIN	SEDIMENT REMOVAL & DISPOSAL
STA. 112+50	RT.		20' x 36' x 5'	133.3	133.3	266.6
STA. 112+50	LT.		20' x 36' x 5'	133.3	133.3	266.6
STA. 122+00	RT.		20' x 36' x 5'	133.3	133.3	266.6
STA. 122+00	LT.		20' x 36' x 5'	133.3	133.3	266.6
				533.2	533.2	1066.4

ROCK DITCH CHECKS (E-6)

STA. 102+20	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	4.22 CU. YD.
STA. 104+00	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	4.22 CU. YD.
STA. 105+50	RT. OF C.L. CONST.	1 INSTALLATION	2.11 CU. YD.
STA. 106+50	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	4.22 CU. YD.
STA. 125+50	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	4.22 CU. YD.
STA. 128+00	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	4.22 CU. YD.
STA. 130+00	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	4.22 CU. YD.
STA. 102+00	LT. SYLVAN SHORES DRIVE	1 INSTALLATION	2.11 CU. YD.
STA. 103+00	RT. SYLVAN SHORES DRIVE	1 INSTALLATION	2.11 CU. YD.
			31.65 CU. YD.

PIPE SIPHONS (E-12)

STA. 106+60	LT. OF C.L. CONST.	27 LIN. FT.	5 CU. YD.
STA. 107+25	RT. OF C.L. CONST.	14 LIN. FT.	5 CU. YD.
STA. 109+47	LT. OF C.L. CONST.	36 LIN. FT.	5 CU. YD.
STA. 109+58	RT. OF C.L. CONST.	18 LIN. FT.	5 CU. YD.
STA. 113+10	LT. OF C.L. CONST.	90 LIN. FT.	5 CU. YD.
STA. 113+10	RT. OF C.L. CONST.	90 LIN. FT.	5 CU. YD.
STA. 122+45	LT. OF C.L. CONST.	36 LIN. FT.	5 CU. YD.
STA. 122+45	RT. OF C.L. CONST.	25 LIN. FT.	5 CU. YD.
STA. 126+72	LT. OF C.L. CONST.	11 LIN. FT.	5 CU. YD.
STA. 126+72	RT. OF C.L. CONST.	8 LIN. FT.	5 CU. YD.
			355 LIN. FT.
			50 CU. YD.

TEMPORARY EROSION CONTROL DETAILS  
 STAGE I

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. 050228							10	96

**CLEARING AND GRUBBING**

**MAIN LANES**  
 STA. 105+00.00 - STA. 114+00.00 LT. & RT. 9 STA.  
 STA. 120+00.00 - STA. 131+04.57 LT. & RT. 11 STA.

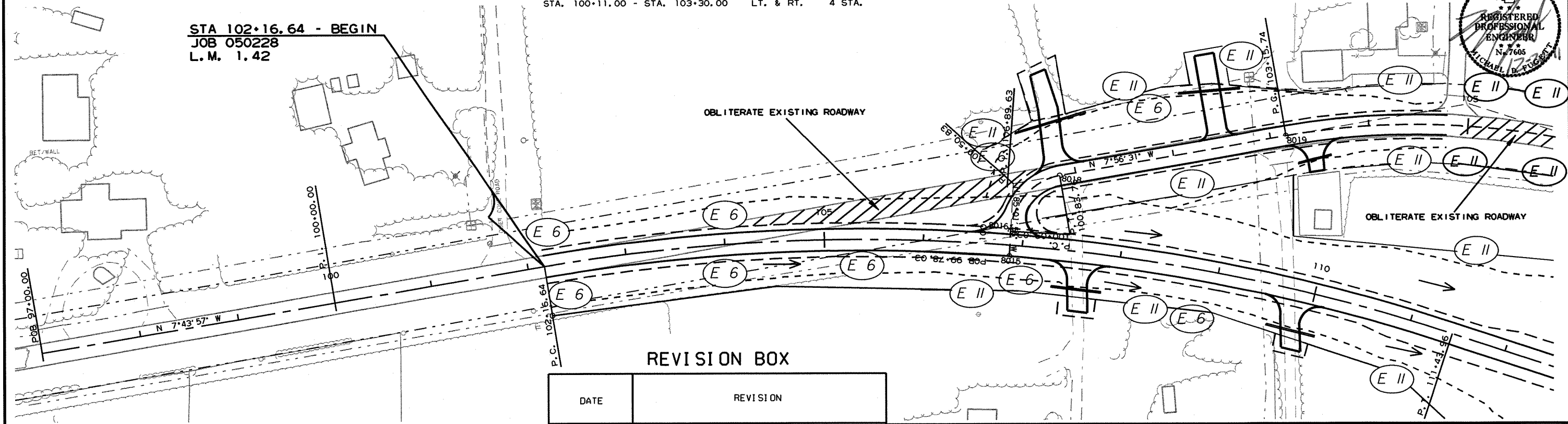
**SYLVAN SHORES DRIVE**  
 STA. 100+00.00 - STA. 104+72.00 LT. & RT. 5 STA.

**END CONNECTOR**  
 STA. 100+11.00 - STA. 103+30.00 LT. & RT. 4 STA.

2 TEMPORARY EROSION CONTROL DETAILS

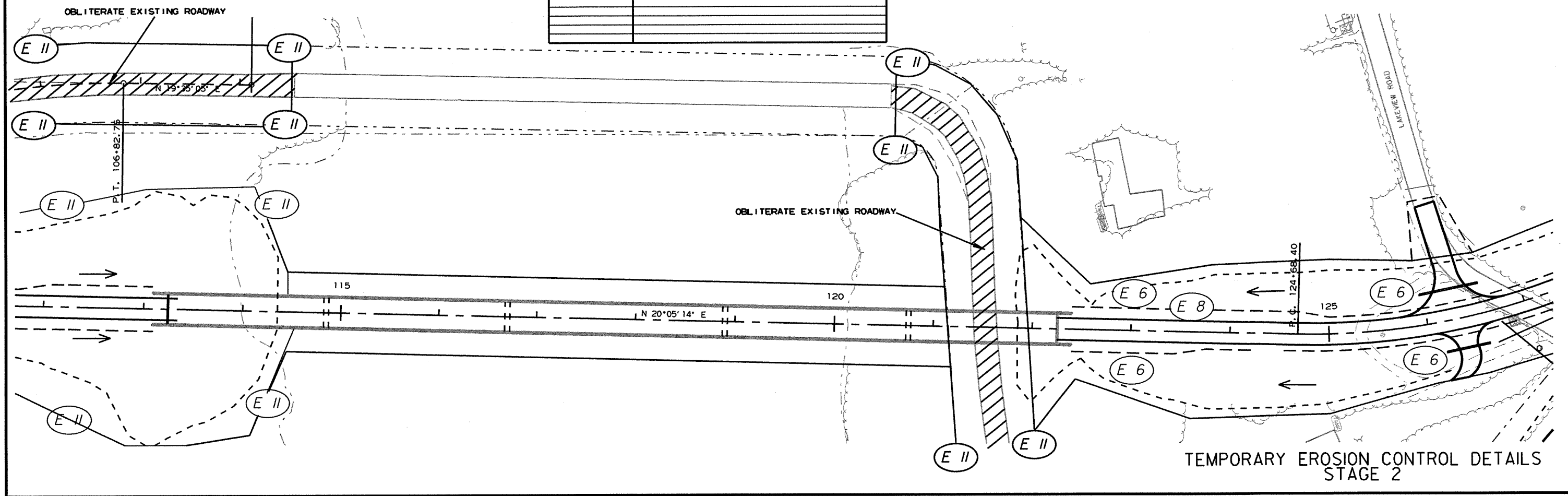


STA 102+16.64 - BEGIN  
 JOB 050228  
 L.M. 1.42



REVISION BOX

DATE	REVISION



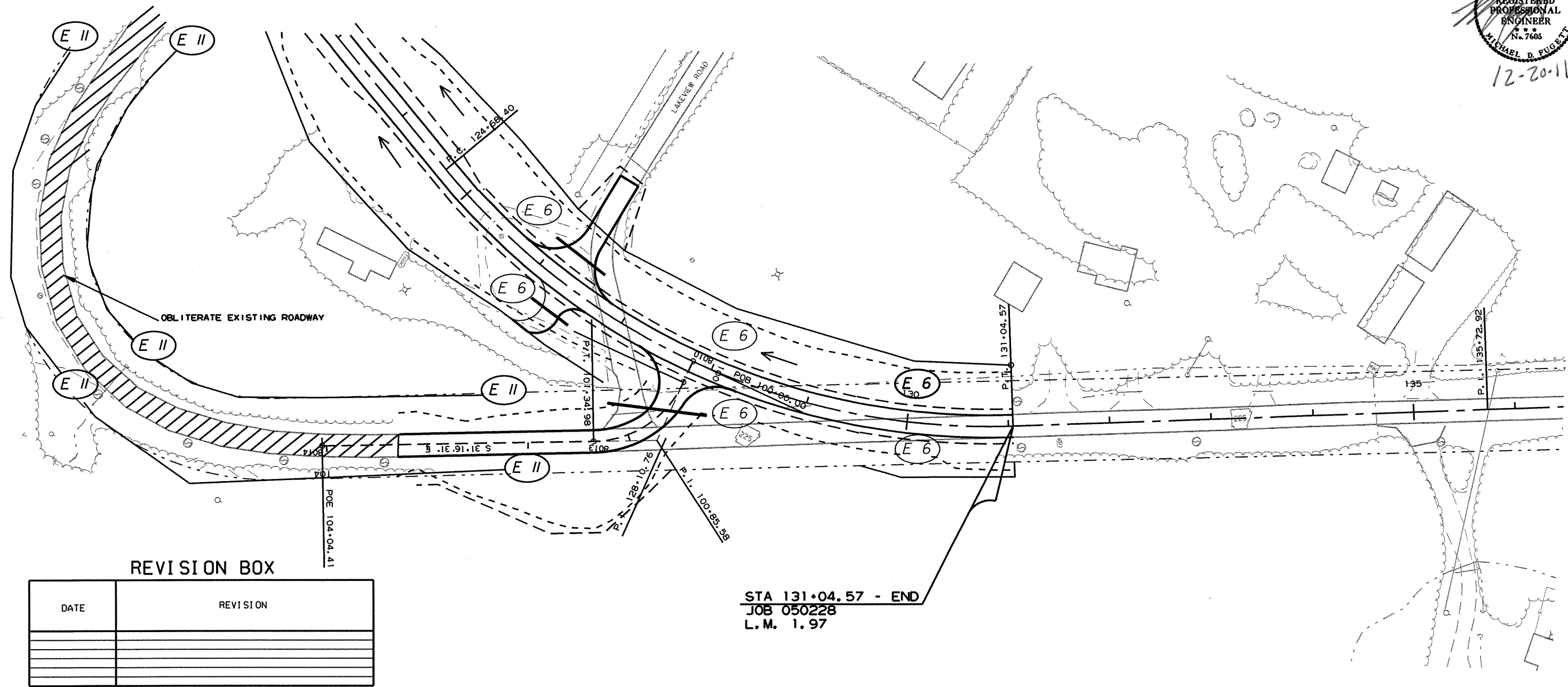
TEMPORARY EROSION CONTROL DETAILS  
 STAGE 2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 050228	II	96

2 TEMPORARY EROSION CONTROL DETAILS



12-20-11



REVISION BOX

DATE	REVISION

STA 131+04.57 - END  
JOB 050228  
L.M. 1.97

SILT FENCE (E-11)

STA. 106+00 - STA. 114+50	RT. OF C.L. CONST.	RETAIN
STA. 109+50 - STA. 114+50	LT. OF C.L. CONST.	RETAIN
STA. 100+50 - STA. 105+00	LT. OF C.L. BEGIN CONNECTOR	RETAIN
STA. 100+50 - STA. 105+50	RT. OF C.L. BEGIN CONNECTOR	RETAIN
STA. 111+50 - STA. 114+50	LT. OF C.L. CONST. ALONG EXISTING ROADWAY	760 CU. YD.
STA. 120+50 - STA. 122+10	LT. OF C.L. CONST. ALONG EXISTING ROADWAY	2572 CU. YD.

ROCK DITCH CHECKS (E-6)

STA. 102+20	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	RETAIN
STA. 104+00	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	RETAIN
STA. 105+50	RT. OF C.L. CONST.	1 INSTALLATION	RETAIN
STA. 125+50	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	RETAIN
STA. 128+00	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	RETAIN
STA. 130+00	LT. & RT. OF C.L. CONST.	2 INSTALLATIONS	RETAIN

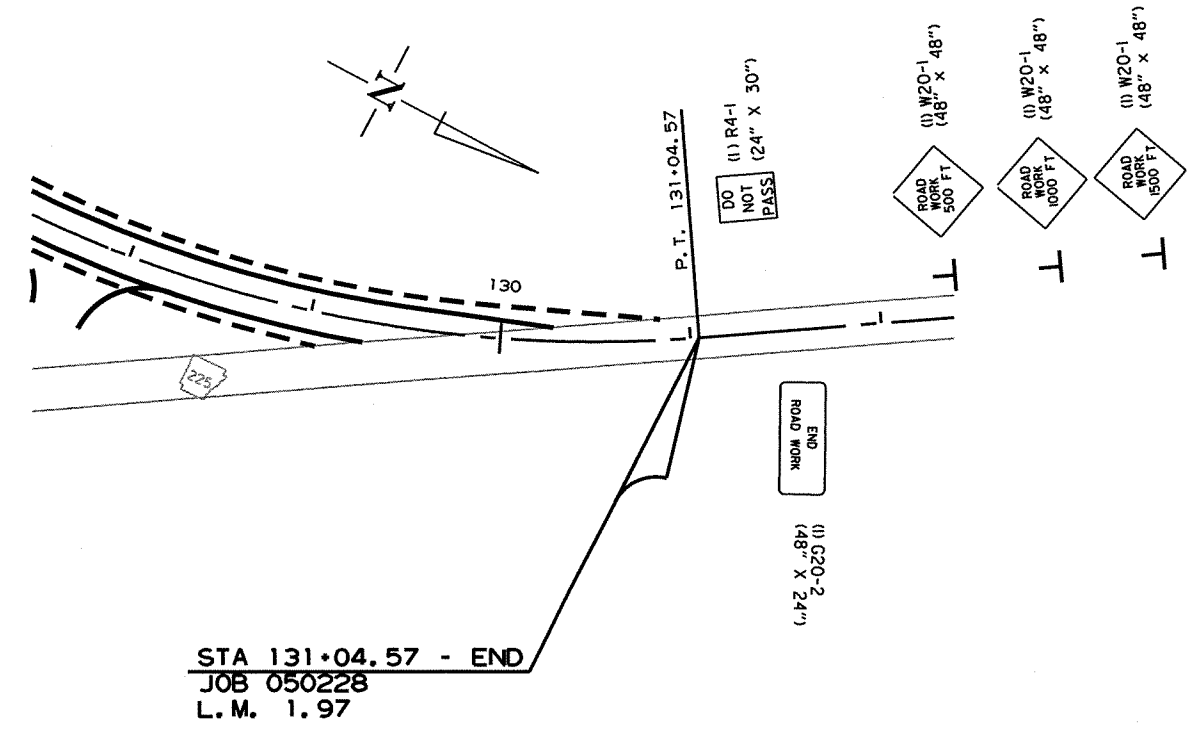
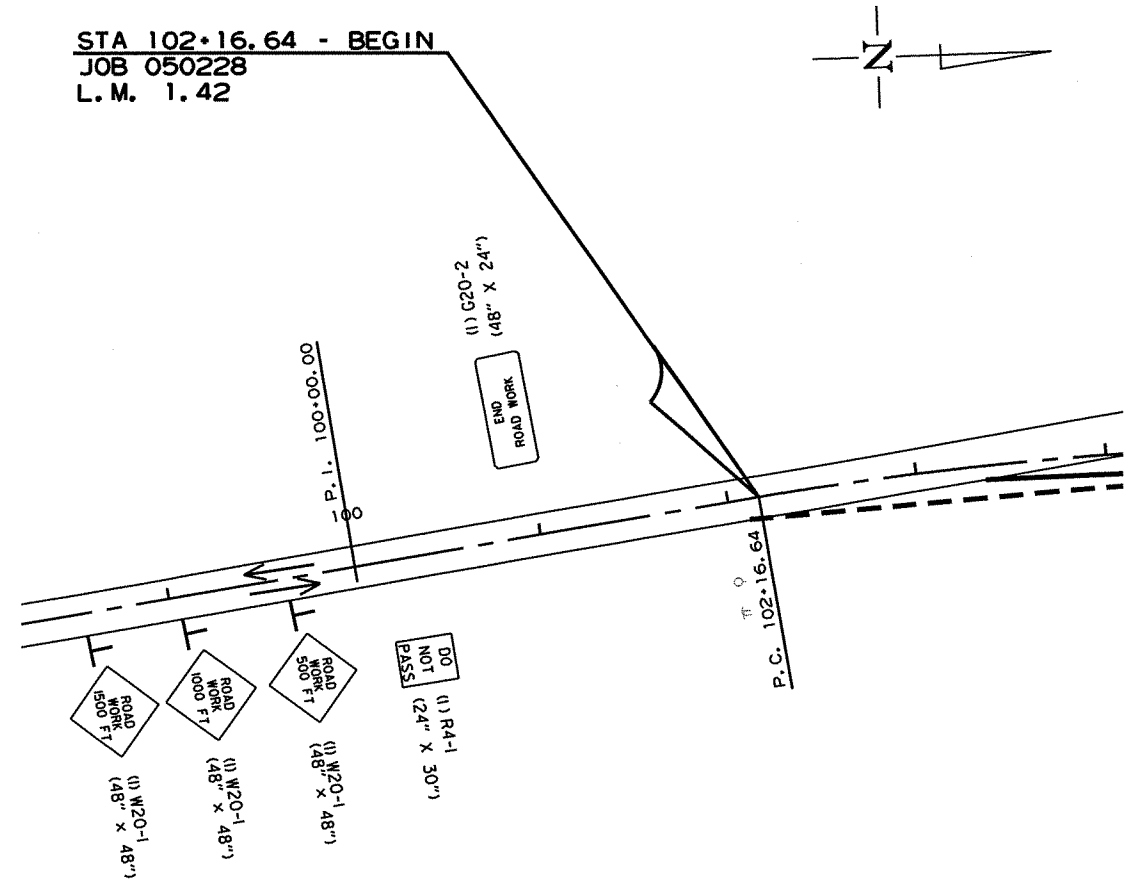
TEMPORARY EROSION CONTROL DETAILS  
STAGE 2

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.						050288	12	96

② MAINTENANCE OF TRAFFIC DETAILS



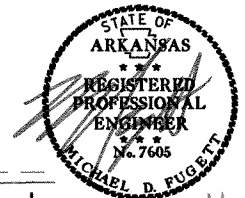
12-20-11



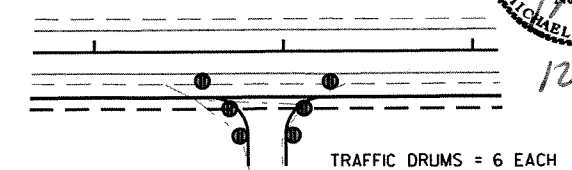
ADVANCE WARNING SIGNS  
MAINTENANCE OF TRAFFIC DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	050228	13
							96	

② MAINTENANCE OF TRAFFIC DETAILS

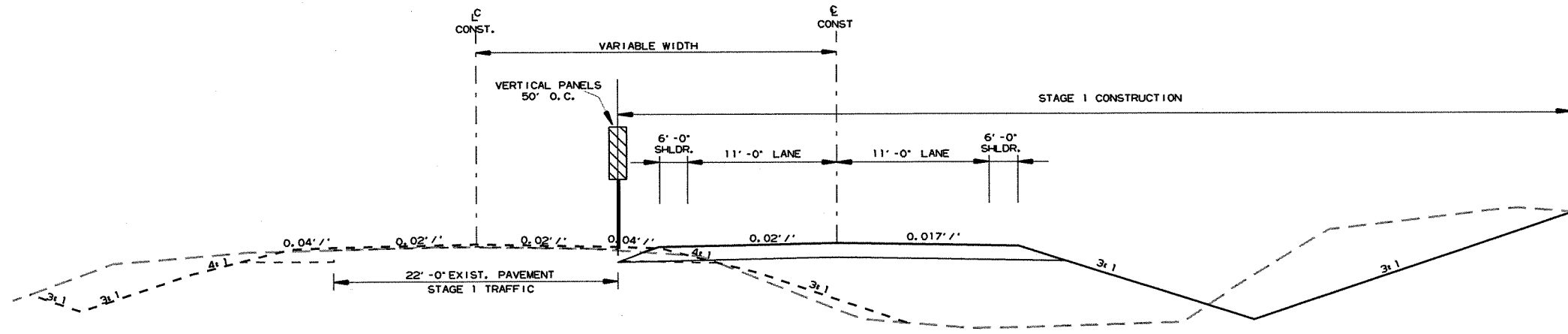


12-20-11

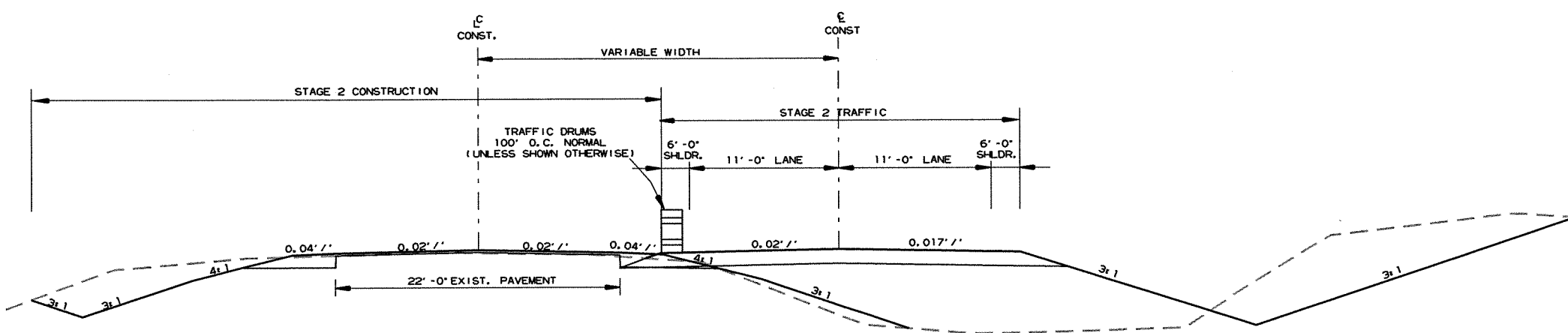


TRAFFIC DRUMS = 6 EACH

TYPICAL PLACEMENT OF TRAFFIC DRUMS AT DRIVEWAY DETAIL



TYPICAL PLACEMENT OF VERTICAL PANELS



TYPICAL PLACEMENT OF TRAFFIC DRUMS

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT CONNECTORS, PROPOSED ROADWAY, BRIDGE, DRIVES, AND INSTALL PIPE CULVERTS. UTILIZE VERTICAL PANELS AT 50' O.C. ALONG BEGIN AND END OF NEW CONSTRUCTION. PLACE CONSTRUCTION MARKINGS AND RAISED PAVEMENT MARKERS (TYPE II).

STAGE 2: SHIFT TRAFFIC ONTO TO NEW CONSTRUCTION. REMOVE EXISTING BRIDGE STRUCTURE, NOTCH AND WIDEN AT BEGIN AND END OF PROJECT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C. SPACING ON LT. AND TRAFFIC DRUMS AT 100' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING. OBLITERATE OLD ROADWAY.

CONSTRUCTION PAVEMENT MARKINGS:

EXISTING ROADWAY:  
AS DIRECTED BY THE ENGINEER:  
RT. AND LT. EDGE LINES = 1610 LIN. FT.  
DBL. CENTERLINE = 1610 LIN. FT.

MAIN LANES:  
RT. AND LT. EDGE LINES = 3969 LIN. FT.  
DBL. CENTERLINE = 3969 LIN. FT.  
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 1000 LIN. FT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							14	96

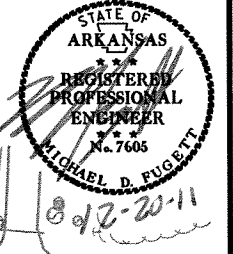
**SEQUENCING:**

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT CONNECTORS, PROPOSED ROADWAY, BRIDGE, DRIVES, AND INSTALL PIPE CULVERTS. UTILIZE VERTICAL PANELS AT 50' O.C. ALONG BEGIN AND END OF NEW CONSTRUCTION. PLACE CONSTRUCTION MARKINGS AND RAISED PAVEMENT MARKERS (TYPE II).

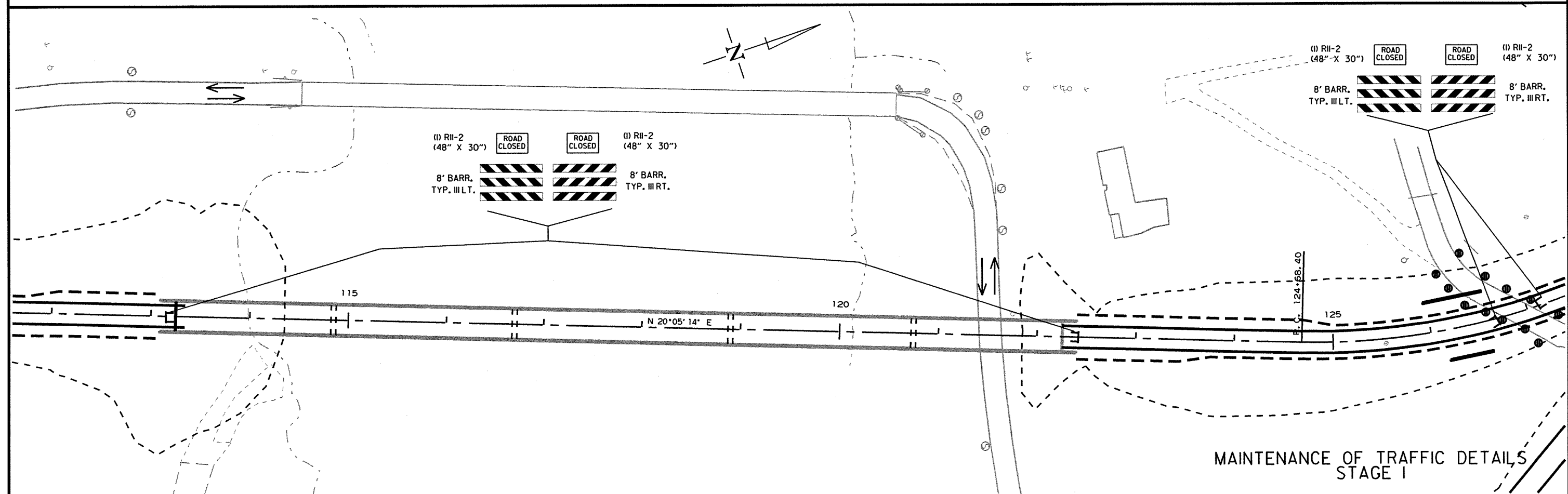
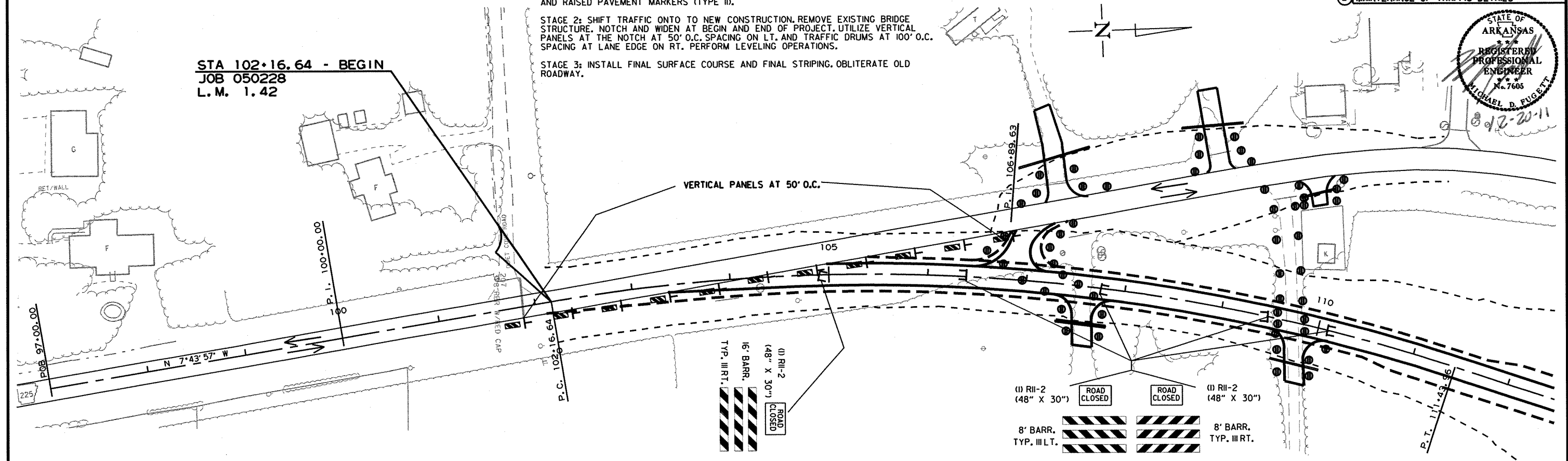
STAGE 2: SHIFT TRAFFIC ONTO TO NEW CONSTRUCTION. REMOVE EXISTING BRIDGE STRUCTURE. NOTCH AND WIDEN AT BEGIN AND END OF PROJECT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C. SPACING ON LT. AND TRAFFIC DRUMS AT 100' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING. OBLITERATE OLD ROADWAY.

**2 MAINTENANCE OF TRAFFIC DETAILS**



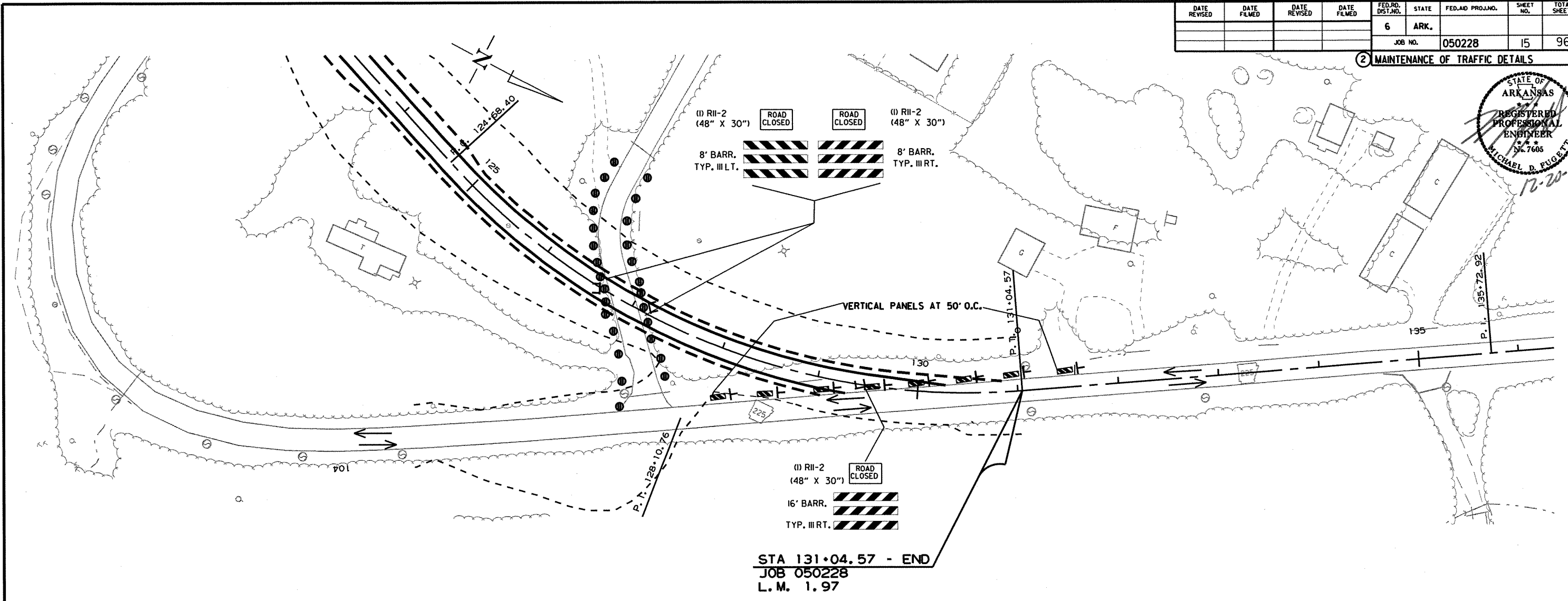
STA 102+16.64 - BEGIN  
JOB 050228  
L.M. 1.42



MAINTENANCE OF TRAFFIC DETAILS  
STAGE 1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		15	96
JOB NO. 050228								

2 MAINTENANCE OF TRAFFIC DETAILS



SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT CONNECTORS, PROPOSED ROADWAY, BRIDGE, DRIVES, AND INSTALL PIPE CULVERTS. UTILIZE VERTICAL PANELS AT 50' O.C. ALONG BEGIN AND END OF NEW CONSTRUCTION. PLACE CONSTRUCTION MARKINGS AND RAISED PAVEMENT MARKERS (TYPE II).

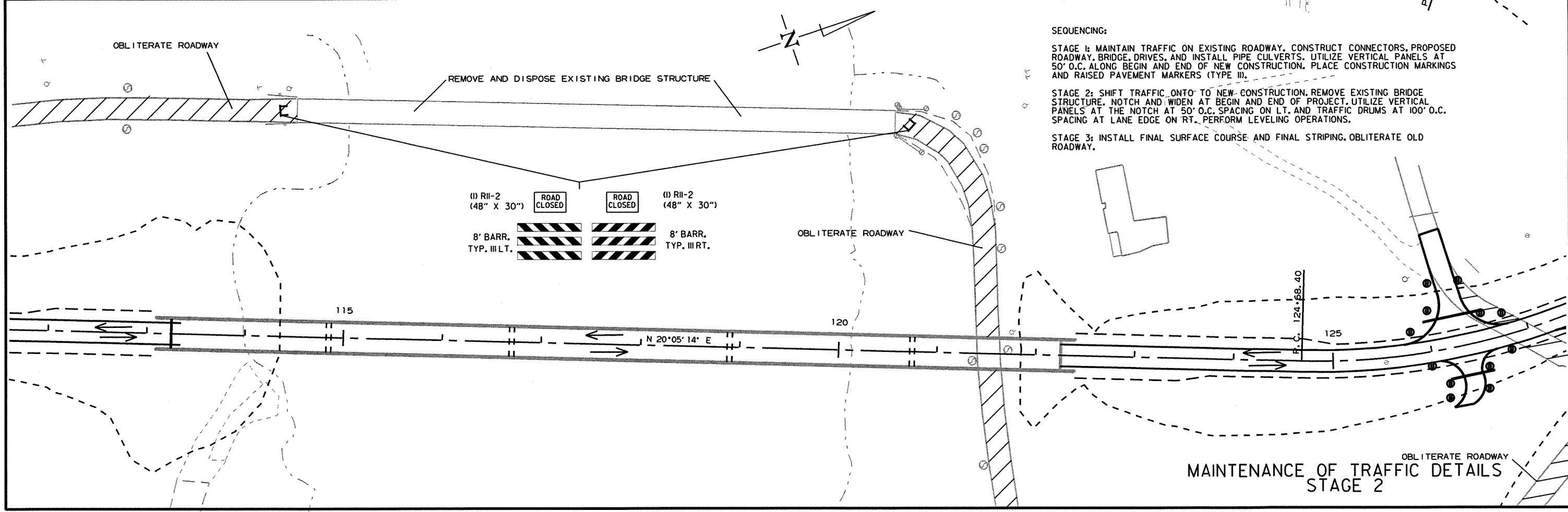
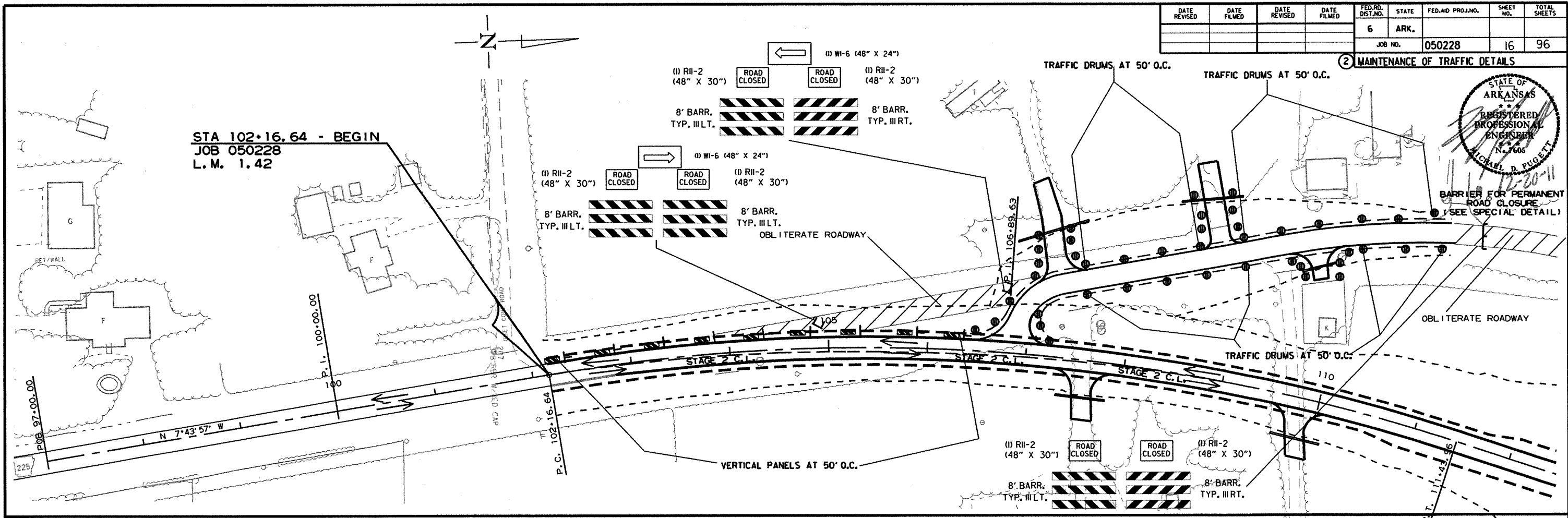
STAGE 2: SHIFT TRAFFIC ONTO TO NEW CONSTRUCTION. REMOVE EXISTING BRIDGE STRUCTURE. NOTCH AND WIDEN AT BEGIN AND END OF PROJECT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C. SPACING ON LT. AND TRAFFIC DRUMS AT 100' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING. OBLITERATE OLD ROADWAY.

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.			
				JOB NO.	050228		16	96

② MAINTENANCE OF TRAFFIC DETAILS



**SEQUENCING:**

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT CONNECTORS, PROPOSED ROADWAY, BRIDGE, DRIVES, AND INSTALL PIPE CULVERTS. UTILIZE VERTICAL PANELS AT 50' O.C. ALONG BEGIN AND END OF NEW CONSTRUCTION. PLACE CONSTRUCTION MARKINGS AND RAISED PAVEMENT MARKERS (TYPE III).

STAGE 2: SHIFT TRAFFIC ONTO TO NEW CONSTRUCTION. REMOVE EXISTING BRIDGE STRUCTURE, NOTCH AND WIDEN AT BEGIN AND END OF PROJECT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C. SPACING ON LT. AND TRAFFIC DRUMS AT 100' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS.

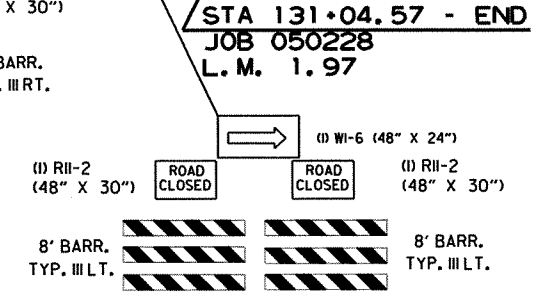
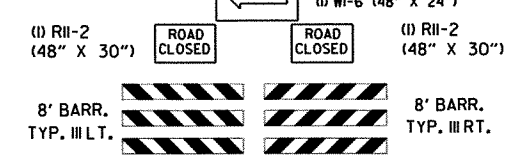
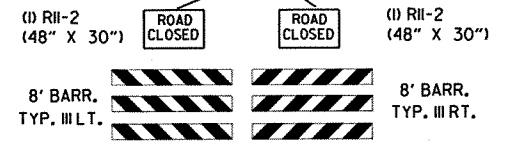
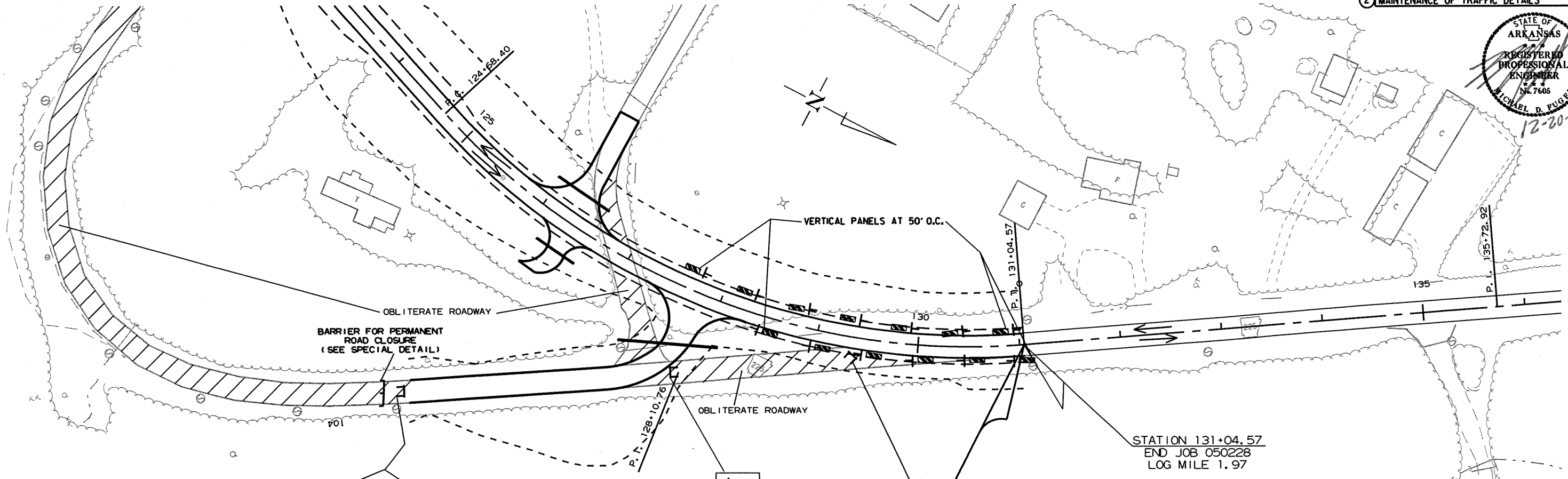
STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING. OBLITERATE OLD ROADWAY.

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. 050228							17	96

② MAINTENANCE OF TRAFFIC DETAILS



STA 131+04.57 - END  
JOB 050228  
L. M. 1.97

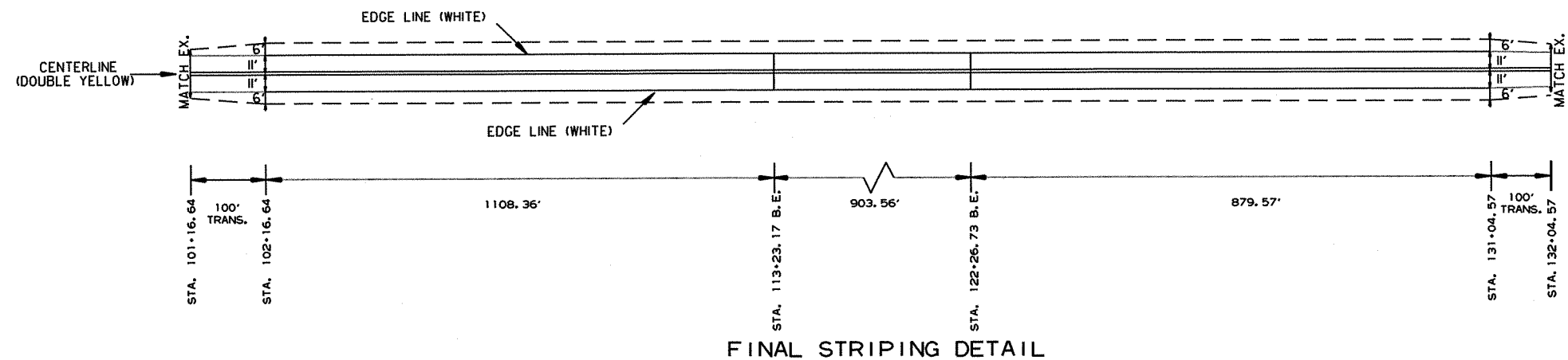
SEQUENCING:

- STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT CONNECTORS, PROPOSED ROADWAY, BRIDGE, DRIVES, AND INSTALL PIPE CULVERTS. UTILIZE VERTICAL PANELS AT 50' O.C. ALONG BEGIN AND END OF NEW CONSTRUCTION. PLACE CONSTRUCTION MARKINGS AND RAISED PAVEMENT MARKERS (TYPE III).
- STAGE 2: SHIFT TRAFFIC ONTO TO NEW CONSTRUCTION. REMOVE EXISTING BRIDGE STRUCTURE, NOTCH AND WIDEN AT BEGIN AND END OF PROJECT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C. SPACING ON LT. AND TRAFFIC DRUMS AT 100' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS.
- STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING. OBLITERATE OLD ROADWAY.

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.	050228	18
							96	

② PERMANENT PAVEMENT MARKING DETAILS



FINAL STRIPING DETAIL

SEQUENCING:

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY. CONSTRUCT CONNECTORS, PROPOSED ROADWAY, BRIDGE, DRIVES, AND INSTALL PIPE CULVERTS. UTILIZE VERTICAL PANELS AT 50' O.C. ALONG BEGIN AND END OF NEW CONSTRUCTION. PLACE CONSTRUCTION MARKINGS AND RAISED PAVEMENT MARKERS (TYPE III).

STAGE 2: SHIFT TRAFFIC ONTO TO NEW CONSTRUCTION, REMOVE EXISTING BRIDGE STRUCTURE. NOTCH AND WIDEN AT BEGIN AND END OF PROJECT. UTILIZE VERTICAL PANELS AT THE NOTCH AT 50' O.C. SPACING ON LT. AND TRAFFIC DRUMS AT 100' O.C. SPACING AT LANE EDGE ON RT. PERFORM LEVELING OPERATIONS.

STAGE 3: INSTALL FINAL SURFACE COURSE AND FINAL STRIPING. OBLITERATE OLD ROADWAY.

CONSTRUCTION PAVEMENT MARKINGS:

EXISTING ROADWAY:  
AS DIRECTED BY THE ENGINEER:  
RT. AND LT. EDGE LINES = 1610 LIN. FT.  
DBL. CENTERLINE = 1610 LIN. FT.

MAIN LANES:  
RT. AND LT. EDGE LINES = 3969 LIN. FT.  
DBL. CENTERLINE = 3969 LIN. FT.  
REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS = 1000 LIN. FT.

FINAL STRIPING:

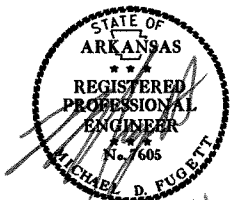
REFLECTORIZED PAINT PAVEMENT MARKINGS:  
RT. AND LT. EDGE LINES = 6176 LIN. FT. WHITE  
DBL. CENTERLINE = 4376 LIN. FT. YELLOW

HIGH PERFORMANCE PAVEMENT MARKINGS:  
DBL. CENTERLINE = 1804 LIN. FT. YELLOW

PERMANENT PAVEMENT MARKING DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	050228	19	96	

② QUANTITIES



12-21-11

**ADVANCE WARNING SIGNS AND DEVICES, CONSTRUCTION PAVEMENT MARKINGS, AND PERMANENT PAVEMENT MARKINGS**

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	END OF JOB	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	VERTICAL PANELS	BARRICADES (TYPE III)		CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	REFLECTORIZED PAINT PAVEMENT MARKINGS		HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	
							NO.	SQ. FT.			EACH	LT.			RT.	4"		
																WHITE		YELLOW
			SQ. FT. - LIN. FT. - EACH															
W20-1	ROAD WORK 1500 FT.	48"x48"	2	2	2	2	2	32.0										
W20-1	ROAD WORK 1000 FT.	48"x48"	2	2	2	2	2	32.0										
W20-1	ROAD WORK 500 FT.	48"x48"	2	2	2	2	2	32.0										
G20-2	END ROAD WORK	48"x24"	2	2	2	2	2	10.0										
R4-1	DO NOT PASS	24"x30"	2	2	2	2	2	10.0										
R11-2	ROAD CLOSED	48"x30"	27	16	16	27	27	270.0										
W1-6	ARROW	48"x24"		4	4	4	4	32.0										
	DETAIL A	60"x36"	2	2	2	2	2	30.0										
	DETAIL B	60"x36"	2	2	2	2	2	30.0										
	TRAFFIC DRUMS		92	55		92			92									
	VERTICAL PANELS		19	22		22				22								
	TYPE III BARRICADE - LT. (8')		80	80		80				80								
	TYPE III BARRICADE - RT. (8')		80	48		80					80							
	TYPE III BARRICADE - RT. (16')			32		32					32							
	CONSTRUCTION PAVEMENT MARKINGS		3220	7938		11158						11158						
	REFLECTORIZED PAINT PAVEMENT MARKINGS-WHITE (4")				6176	6176								6176				
	REFLECTORIZED PAINT PAVEMENT MARKINGS-YELLOW (4")				4376	4376									4376			
	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS					1000							1000					
	HIGH PERFORMANCE CONTRAST PAVEMENT MARKING YELLOW (4")				1804	1804											1804	
<b>TOTALS:</b>								<b>478.0</b>	<b>92</b>	<b>22</b>	<b>80</b>	<b>112</b>	<b>11158</b>	<b>1000</b>	<b>6176</b>	<b>4376</b>	<b>1804</b>	

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

**STANDARD SIGN & SUPPORT**

STATION	SIGN NUMBER	DESCRIPTION	SIZE	STANDARD SIGN	CHANNEL POST SIGN SUPPORT (TYPE C)
				SQ. FT.	EACH
111+00	OM4-1	LT. OF C.L. CONST. ACROSS OLD ROADWAY - ROAD CLOSURE	24"x24"	12	3
126+00	OM4-1	RT. OF C.L. CONST. ACROSS OLD ROADWAY - ROAD CLOSURE	24"x24"	12	3
<b>TOTALS:</b>				<b>24</b>	<b>6</b>

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.	050228	20

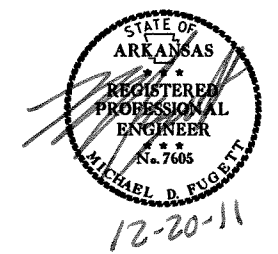
② QUANTITIES

**CLEARING AND GRUBBING**

STATION	STATION	CLEARING	GRUBBING
102+16.64	114+00.00	12	12
120+00.00	131+04.57	12	12
100+00.00	104+72.00	5	5
100+11.00	103+30.00	4	4
<b>TOTALS:</b>		<b>33</b>	<b>33</b>

**REMOVAL AND DISPOSAL OF PIPE CULVERTS**

STATION	STATION	DESCRIPTION	REMOVAL AND DISPOSAL OF PIPE CULVERT	REMOVAL AND DISPOSAL OF GUARDRAIL
			EACH	LIN. FT.
107+50		18"x24' C.M. PIPE CULVERT LT. SIDE DRAIN	1	
109+40		18"x30' C.M. PIPE CULVERT LT. SIDE DRAIN	1	
100+83		18"x30' C.M. PIPE CULVERT LT. SIDE DRAIN - SYLVAN SHORE DRIVE	1	
100+49		18"x24' C.M. PIPE CULVERT LT. SIDE DRAIN - SYLVAN SHORE DRIVE	1	
103+42		18"x30' C.M. PIPE CULVERT LT. SIDE DRAIN - SYLVAN SHORE DRIVE	1	
114+15	114+45	LT. CL. CONST. - LT. & RT. OF EXISTING ROADWAY		60
120+50	120+86	LT. CL. CONST. - LT. & RT. OF EXISTING ROADWAY		60
124+18		RT. C.L. CONST. - 24"x50' R.C. PIPE CULVERT UNDER EXIST. ROADWAY	1	
<b>TOTALS:</b>			<b>6</b>	<b>120</b>



**DRIVEWAYS & TURNOUTS - BASE & SURFACING**

STATION	SIDE	DESCRIPTION	WIDTH	ADD'L. LENGTH	ACHM		AGGREGATE BASE COURSE (CLASS 7)	SIDE DRAINS
					SQ. YD.	ACHM SURFACE COURSE (1/2") (PG 64-22)		
107+60	RT	INSTALL 18" X 42' SIDE DRAIN	20	32	38	4	39	42
109+82	RT	INSTALL 18" X 44' SIDE DRAIN	20	32	37	4	39	44
126+28	LT	INSTALL 18" X 74' SIDE DRAIN	20	61	139	15	77	74
126+36	RT	INSTALL 18" X 50' SIDE DRAIN	20	34	51	6	42	50
100+83	LT	INSTALL 18" X 76' SIDE DRAIN	20	82	35	4	97	76
102+49	LT	INSTALL 18" X 58' SIDE DRAIN	20	75	42	5	89	58
103+42	RT	INSTALL 18" X 30' SIDE DRAIN	16	14	40	4	15	30
ENTIRE	PROJECT	TEMPORARY DRIVES					500	
<b>TOTALS:</b>					<b>42</b>	<b>898</b>	<b>374</b>	

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....94.3% MIN. AGGR.....5.7% ASPHALT BINDER (PG 64-22)  
 MAXIMUM NUMBER OF GYRATIONS = 115  
 FOR C.M. PIPE CULVERT INSTALLATIONS, USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

**SOIL LOG**

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO SOIL CLASS	COLOR
103+00	5' RT	0-2.8	ND	NP	A-4(0)	RED
103+00	33' RT	0-3.0	ND	NP	A-4(0)	RED
110+00	120' LT	0-1.5	ND	NP	A-4(0)	RED
124+00	CL	0-3.5	ND	NP	A-4(0)	RED
131+00	5' LT	0-5	28	10	A-4(3)	RD/GR
131+00	27' LT	0-5	27	5	A-4(0)	RD/GR
131+00	27' LT	0-5	ND	NP	A-4(0)	RD/GR

NOTE: SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE, AND FROM SURFACE INDICATIONS ARE TYPICAL OF 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 ABOVE TABULATIONS.

**MAIN LANE BASE AND SURFACING**

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT						ACHM BASE COURSE (1 1/2") (PG 64-22)				ACHM BINDER COURSE (1") (PG 64-22)				ACHM SURFACE COURSE (1/2") (PG 64-22)				
				TON/STATION	TON	LEVELING			TOTAL WIDTH	SQ. YD.	GALLON/SQ. YD.	GALLON	AVG. WIDTH	SQ. YD.	POUND/SQ. YD.	TON	AVG. WIDTH	SQ. YD.	POUND/SQ. YD.	TON	AVG. WIDTH	SQ. YD.	POUND/SQ. YD.	TON
						TOTAL WIDTH	SQ. YD.	GALLON/SQ. YD.																
102+16.64	104+12.35	MAIN LANE TRANSITION - METHOD OF RAISING GRADE	195.71	111.50	218	22.00	478	0.10	44.00	957	0.03	77	22	478	660	158	22.75	495	605	150	34.00	739	220	81
104+12.35	113+23.27	MAIN LANE FULL DEPTH	910.92	225.50	2054				22.00	2227	0.03	67					22.33	2260	330	373	34.00	3441	220	379
122+26.73	129+81.00	MAIN LANE FULL DEPTH	754.27	225.50	1701				22.00	1844	0.03	55					22.33	1871	330	309	34.00	2849	220	313
129+81.00	131+04.57	MAIN LANE TRANSITION - METHOD OF RAISING GRADE	123.57	111.50	138	22.00	302	0.10	44.00	604	0.03	48	22	302	660	100	22.75	312	605	94	34.00	467	220	51
105+40.00	106+60.00	EXISTING ROADWAY - ADDITIONAL FOR METHOD OF RAISING GRADE	120.00										22	293	3960	580	22.00	293	880	129				
102+17.00	109+00.00	ADDITIONAL FOR SHOULDER - STAGE 2	683.00														6.00	455	330	75				
102+16.64	113+00.00	ADDITIONAL FOR SUPERELEVATION	1083.36		402																22.00	2648	220	291
122+43.40	130+86.50	ADDITIONAL FOR SUPERELEVATION	843.10		409																			
110+47.12	113+23.27	GUARDRAIL WIDENING - RT.	276.15		550																			17
111+72.12	113+23.27	GUARDRAIL WIDENING - LT.	151.15		287																			9
122+26.73	125+02.88	GUARDRAIL WIDENING - LT.	276.15		550																			17
122+26.73	123+77.88	GUARDRAIL WIDENING - RT.	151.15		287																			9
100+00.00	104+72.00	FULL DEPTH - SYLVAN SHORE DRIVE	472.00	182.25	860																28.00	1468	220	161
100+11.00	103+30.00	FULL DEPTH - CONNECTOR AT END OF JOB 050228	319.00	182.25	581																28.00	992	220	109
<b>TOTALS:</b>				<b>8037</b>								<b>247</b>				<b>838</b>				<b>1130</b>				<b>1437</b>

BASIS OF ESTIMATE:  
 ACHM SURFACE COURSE (1/2").....94.3% MIN. AGGR.....5.7% ASPHALT BINDER (PG 64-22)  
 ACHM BINDER COURSE (1").....95.3% MIN. AGGR.....4.7% ASPHALT BINDER (PG 64-22)  
 ACHM BASE COURSE (1 1/2").....95.9% MIN. AGGR.....4.1% ASPHALT BINDER (PG 64-22)  
 MAXIMUM NUMBER OF GYRATIONS = 115

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
JOB NO.							050228	21	96

② QUANTITIES

### EARTHWORK

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	ROCK FILL
			CU. YD.		
101+16.64	106+80.00	MAIN LANES		3340	
106+80.00	113+25.00	MAIN LANES - ROCK FILL			29846
101+16.64	114+15.00	MAIN LANES	626		
122+00.00	132+04.57	MAIN LANES	15193	1588	
100+00.00	104+72.00	SYLVAN SHORE DRIVE	76		8369
100+11.00	103+29.00	NORTH CONNECTOR	5	2009	
107+60.00		CONSTRUCT APPROACH ON RT.		109	
109+82.00		CONSTRUCT APPROACH ON RT.		121	
126+28.00		CONSTRUCT TURNOUT ON LT.	385		
126+36.00		CONSTRUCT APPROACH ON RT.		80	
100+83.00		CONSTRUCT APPROACH ON LT. - SYLVAN SHORE DRIVE		754	
102+49.00		CONSTRUCT APPROACH ON LT. - SYLVAN SHORE DRIVE		423	
103+42.00		CONSTRUCT APPROACH ON RT. - SYLVAN SHORE DRIVE		37	
113+50.00	115+00.00	OBLITERATE BRIDGE APPROACH	8600		
		ENTIRE PROJECT OBLITERATE ROADWAY	2500		
<b>TOTALS:</b>			<b>27385</b>	<b>8461</b>	<b>38215</b>

NOTE: EARTHWORK QUANTITIES SHOWN ABOVE TO BE PAID AS PLAN QUANTITY.

### APPROACH GUTTERS

STATION	LOCATION	APPROACH GUTTER (TYPE C)	REINFORCING STEEL-ROADWAY (GRADE 60)
		CU. YD. POUND	
113+23.27	LT. & RT.	10.38	878
122+26.73	LT. & RT.	10.38	878
<b>TOTALS:</b>		<b>20.76</b>	<b>1756</b>

### SELECTED PIPE BEDDING & BACKFILL

LOCATION	SELECTED PIPE BEDDING	SELECTED PIPE BACKFILL
	CU. YD.	
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.	25	50
<b>TOTALS:</b>	<b>25</b>	<b>50</b>

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

### COLD MILLING

STATION	STATION	LOCATION	COLD MILLING ASPHALT PAVEMENT
			SQ. YD.
101+16.64	102+16.64	BEGIN TRANSITION	222
131+04.57	132+04.57	END TRANSITION	222
<b>TOTAL:</b>			<b>444</b>

AVG. 1" DEPTH



12-20-11

### CONCRETE DITCH PAVING

STATION	STATION	LOCATION	CONCRETE DITCH PAVING (TYPE B) (W=4'-0")	SOLID SODDING	WATER
			SQ. YD.		M. GAL.
102+17	106+87	LT. MAIN LANES	209	209	2.6
102+17	107+34	RT. MAIN LANES	230	230	2.9
107+52	108+32	LT. MAIN LANES	41	41	0.5
107+84	109+56	RT. MAIN LANES	76	76	1.0
110+00	113+00	RT. MAIN LANES	133	133	1.7
110+50	113+00	LT. MAIN LANES	111	111	1.4
122+28	126+00	LT. MAIN LANES	165	165	2.1
122+28	126+00	RT. MAIN LANES	165	165	2.1
126+60	131+00	LT. MAIN LANES	196	196	2.5
126+60	127+00	RT. MAIN LANES	18	18	0.2
128+00	131+00	RT. MAIN LANES	133	133	1.7
101+50	103+20	RT. SYLVAN SHORE DRIVE	111	111	1.4
<b>TOTALS:</b>			<b>1588</b>	<b>1588</b>	<b>20.1</b>

BASIS OF ESTIMATE:

WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING.

NOTE: EXPANSION JOINTS TO BE PLACED 45' ON CENTERS.

### 4" PIPE UNDERDRAIN

LOCATIONS	4" PIPE UNDERDRAIN	UNDERDRAIN OUTLET PROTECTORS
	LIN. FT.	EACH
ENTIRE PROJECT AS DIRECTED BY THE ENGINEER	1000	8
<b>TOTALS:</b>	<b>1000</b>	<b>8</b>

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

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO.	050228
								22
								96

② QUANTITIES

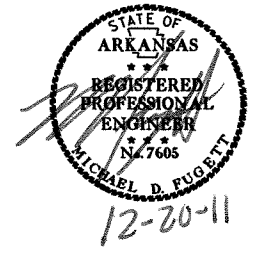
### GUARDRAIL

STATION	STATION	SIDE	GUARDRAIL		THREE BEAM GUARDRAIL TERMINAL	TERMINAL ANCHOR POST (TYPE 1)
			(TYPE C)	(TYPE A)		
			LIN.FT.		EACH	
110+90.12	113+08.87	RT		200	1	1
112+15.12	113+08.87	LT		75	1	1
122+41.13	123+34.88	RT		75	1	1
122+41.13	124+59.88	LT		200	1	1
111+00.00		LT	25			
126+00.00		RT	25			
<b>TOTALS:</b>			50	550	4	4

### ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	ASPH. CONC. PATCHING FOR M.O.T.	TACK COAT
	TON	GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50	100
<b>TOTALS:</b>	50	100

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



### EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL												EROSION CONTROL MATTING (CLASS 2)
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	DIVERSION DITCH (E-8)	PIPE FOR SLOPE DRAINS (E-12)	DUMPED RIPRAP	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL		
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	CU. YD.	(E-11)	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	CU. YD.	SQ. YD.	
102+16.64	131+04.57	STAGE 1	7.99	16	7.99	815.0	7.99	4.11	4.11	83.8	32	3375	3610	355	50	533	533	1066		
102+16.64	131+04.57	STAGE 2										3332								
122+00.00	131+05.00																		6100	
<b>TOTALS:</b>			7.99	16	7.99	815.0	7.99	4.11	4.11	83.8	32	6707	3610	355	50	533	533	1066	6100	

BASIS OF ESTIMATE:

LIME ..... 2 TONS / ACRE OF SEEDING  
 WATER ..... 102.0 M.G. / ACRE OF SEEDING.  
 WATER ..... 20.4 M.G. / ACRE OF TEMPORARY SEEDING.  
 ROCK DITCH CHECKS ..... 2.11 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.

\* QUANTITY ESTIMATED. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

### MAILBOXES

LOCATION	MAILBOXES	MAILBOX SUPPORTS (SINGLE)
		EACH
ENTIRE PROJECT	5	5
<b>TOTALS:</b>	5	5

### A.C.H.M. PATCHING OF EXISTING ROADWAY

DESCRIPTION	TON
ENTIRE PROJECT - TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	50
<b>TOTAL:</b>	50

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

### BENCH MARKS

STATION	DESCRIPTION	BENCH MARK
		EACH
113+23.27	BRIDGE END	1
<b>TOTAL:</b>		1

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

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. 050228							23	96
07235 - QUANTITIES							- 5253I	

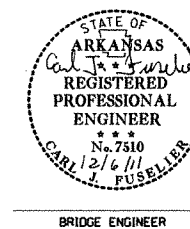
SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 050228

BRIDGE NO. CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	SP & 205	801	802	802	803	SS, SP & 804	SS & 804	805	805	807	SP & 807	
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. )	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL PILING (HP 14X73)	PREBORING	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE 50W)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270, GRADE HPS 70W)	
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	LB.	
07235 X071	MIDWAY BRANCH	BENT NO. 1				49.81		0.4	6718		496		3,300		
		BENT NO. 2				122.79			20,082						
		BENT NO. 3					125.96			28,283					
		BENT NO. 4					139.13			31,030					
		BENT NO. 5					100.70			17,399					
		BENT NO. 6			36		49.91		0.4	6718		196	120	3,300	
		900' -0' CONT. COMP. PLATE GIRDER UNIT							934.00	74.2		235,110		1,063,430	394,230
		EXIST. BR. NO. M3642 (SITE NO. 1)		1											
TOTALS FOR JOB NO. 050228				1	36	588.30	934.00	75.0	110,230	235,110	② 692	120	1,070,030	394,230	

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 14x73)".

BRIDGE NO. CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	808	812	816	816	SP JOB 050228	SP JOB 050228	SP JOB 050228	SP JOB 050228	SP JOB 050228	SP JOB 050228	SP JOB 050228
			ITEM	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	FILTER BLANKET	DUMPED RIPRAP	DRILLED SHAFT (108" DIA.)	DRILLED SHAFT (132" DIA.)	PERMANENT STEEL CASING (120" DIA.)	PERMANENT STEEL CASING (144" DIA.)	CROSSHOLE SONIC LOGGING (108" DIA.)	CROSSHOLE SONIC LOGGING (132" DIA.)	CORING DRILLED SHAFT
			UNIT	CU. IN.	EACH	SQ. YD.	CU. YD.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.
07235 X071	MIDWAY BRANCH	BENT NO. 1				306	153							
		BENT NO. 2						46.0		13.0		1		46.0
		BENT NO. 3								132.5			1	132.5
		BENT NO. 4								128.5			1	128.5
		BENT NO. 5							41.0		10.0		1	41.0
		BENT NO. 6			266		148							
		900' -0' CONT. COMP. PLATE GIRDER UNIT		27,179.0		1								
		EXIST. BR. NO. M3642 (SITE NO. 1)												
TOTALS FOR JOB NO. 050228				27,179.0	1	572	301	87.0	261.0	23.0	163.0	2	2	348.0

BRYAN FREELING  
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES  
MIDWAY BRANCH STR. & APPRS. (S)  
CLEBURNE COUNTY

ROUTE 225 SEC. 3  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-6-11 FILENAME: b050228-ql.dgn  
CHECKED BY: SWP DATE: 12-5-11 SCALE: NONE  
DESIGNED BY: DATE: BRIDGE NO. 07235 DRAWING NO. 5253I

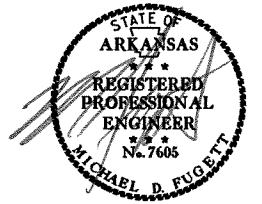
SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	33	STATION
201	GRUBBING	33	STATION
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	6	EACH
202	REMOVAL AND DISPOSAL OF GUARDRAIL	120	LIN. FT.
210	UNCLASSIFIED EXCAVATION	27385	CU.YD.
210	COMPACTED EMBANKMENT	8461	CU.YD.
SP & 210	ROCK FILL	38215	CU.YD.
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	8935	TON
401	TACK COAT	347	GALLON
SP,SS & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	804	TON
SP,SS & 405	ASPHALT BINDER (PG 64-22) IN ACHM BASE COURSE (1 1/2")	34	TON
SP,SS & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	1077	TON
SP,SS & 406	ASPHALT BINDER (PG 64-22) IN ACHM BINDER COURSE (1")	53	TON
SP,SS & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	1395	TON
SP,SS & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	84	TON
412	COLD MILLING ASPHALT PAVEMENT	444	SQ.YD.
SP,SS & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	50	TON
SP,SS & 415	ACHM PATCHING FOR EXISTING ROADWAY	50	TON
504	APPROACH GUTTERS (TYPE C)	20.76	CU.YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SP,SS & 604	SIGNS	478	SQ. FT.
SS & 604	BARRICADES	192	LIN. FT.
SS & 604	TRAFFIC DRUMS	92	EACH
SS & 604	VERTICAL PANELS	22	EACH
SS & 604	CONSTRUCTION PAVEMENT MARKINGS	11158	LIN. FT.
604	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	1000	LIN. FT.
605	CONCRETE DITCH PAVING (TYPE B)	1588	SQ.YD.
606	SELECTED PIPE BEDDING	25	CU.YD.
606	SELECTED PIPE BACKFILL	50	CU.YD.
SS & 606	18" SIDE DRAIN	374	LIN. FT.
611	4" PIPE UNDERDRAIN	1000	LIN. FT.
611	UNDERDRAIN OUTLET PROTECTORS	8	EACH
SS & 617	GUARDRAIL (TYPE A)	550	LIN. FT.
SS & 617	GUARDRAIL (TYPE C)	50	LIN. FT.
SS & 617	TERMINAL ANCHOR POSTS (TYPE 1)	4	EACH
SS & 617	THREE BEAM GUARDRAIL TERMINAL	4	EACH
620	LIME	16	TON
620	SEEDING	7.99	ACRE
620	MULCH COVER	12.10	ACRE
SS & 620	WATER	918.9	M.GAL.
621	TEMPORARY SEEDING	4.11	ACRE
621	SILT FENCE	6707	LIN.FT.
621	ROCK DITCH CHECKS	32	CU.YD.
621	SEDIMENT BASIN	533	CU.YD.
621	OBLITERATION OF SEDIMENT BASIN	533	CU.YD.
621	SEDIMENT REMOVAL AND DISPOSAL	1066	CU.YD.
621	DIVERSION DITCH	3610	LIN.FT.
621	PIPE FOR SLOPE DRAINS	355	LIN.FT.
623	SECOND SEEDING APPLICATION	7.99	ACRE
624	SOLID SODDING	1588	SQ.YD.
626	EROSION CONTROL MATTING (CLASS 2)	6100	SQ.YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
637	MAILBOX SUPPORTS (SINGLE)	5	EACH
637	MAILBOXES	5	EACH
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (4")	6176	LIN.FT.
SS & 718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (4")	4376	LIN.FT.
SP & 719	INVERTED PROFILE THERMOPLASTIC CONTRAST PAVEMENT MARKING YELLOW (4") (ALTERNATE NO. 1)	1804	LIN.FT.
SP	HIGH PERFORMANCE CONTRAST MARKING TAPE YELLOW (4") (ALTERNATE NO. 2)	1804	LIN.FT.
SS & 726	STANDARD SIGN	24	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE C)	6	EACH
SS & 804	REINFORCING STEEL - ROADWAY (GRADE 60)	1756	POUND
816	DUMPED RIPRAP	50	CU. YD.
<b>STRUCTURES OVER 20'-0" SPAN</b>			
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	36	CU.YD.
802	CLASS S CONCRETE-BRIDGE	588.30	CU.YD.
802	CLASS S(AE) CONCRETE-BRIDGE	934.00	CU.YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	75	GALLON
SP,SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	110230	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	235110	POUND
805	STEEL PILING (HP14x73)	692	LIN. FT.
805	PREBORING	120	LIN. FT.
807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270-GR50W)	1070030	POUND
SP & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270-GRHPS 70W)	394230	POUND
808	ELASTOMERIC BEARINGS	27179.0	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)	1	EACH
816	FILTER BLANKET	572	SQ. YD.
816	DUMPED RIPRAP	301	CU. YD.
SP	DRILLED SHAFT (108" DIAMETER)	87.0	LIN. FT.
SP	DRILLED SHAFT (132" DIAMETER)	261.0	LIN. FT.
SP	PERMANENT STEEL CASING (120" DIAMETER)	23.0	LIN. FT.
SP	PERMANENT STEEL CASING (144" DIAMETER)	163.0	LIN. FT.
SP	CROSSHOLE SONIC LOGGING (108" DIAMETER)	2	EACH
SP	CROSSHOLE SONIC LOGGING (132" DIAMETER)	2	EACH
SP	CORING DRILLED SHAFT	348.0	LIN. FT.

\* DENOTES ALTERNATE BID ITEM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
01/09/12				6	ARK.			
						JOB NO. 050228	24	96

2 SUMMARY OF QUANTITIES AND REVISIONS



1-9-12

REVISIONS

DATE	REVISION	SHEET NUMBER(S)
1/9/2012	ADDED DELAY IN RIGHT-OF-WAY OCCUPANCY SP	2, 24



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 050228	25	96

2 SURVEY CONTROL DETAILS



SURVEY CONTROL COORDINATES

Project Name: s050288  
 Date: 10/21/2010  
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.  
 Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	461774.8768	1274026.5722	603.588	CTL	5/8" Rebar with 2" Aluminum Cap, 18.0 E CNT HWY 225
2	462212.1314	1273964.6084	573.481	CTL	5/8" Rebar with 2" Aluminum Cap
3	462892.7931	1273848.8969	508.774	CTL	
4	463187.3282	1273929.8337	496.852	CTL	5/8" Rebar with 2" Aluminum Cap
5	463858.0536	1274234.9199	498.632	CTL	5/8" Rebar with 2" Aluminum Cap
6	463789.7798	1274702.3855	527.366	CTL	5/8" Rebar with 2" Aluminum Cap
7	463974.7758	1274914.6318	529.907	CTL	5/8" Rebar with 2" Aluminum Cap
8	464450.3505	1274642.0381	564.885	CTL	5/8" Rebar with 2" Aluminum Cap
9	464803.3386	1274419.0101	586.235	CTL	5/8" Rebar with 2" Aluminum Cap
10	465095.7644	1274230.1469	581.981	CTL	5/8" Rebar with 2" Aluminum Cap
100	461325.0653	1274091.2383	615.591	GPS	AHTD GPS 120012
101	459421.6319	1274362.0898	634.562	GPS	AHTD GPS 120012A
102	468422.3049	1274023.9949	811.467	GPS	AHTD GPS 120013
103	466989.2855	1273696.4090	688.830	GPS	AHTD GPS 120013A
900	463264.6678	1273958.5618	496.940	BM	BRASS CAP COR ENG ET DF-1 PD+LI
901	463840.7701	1274165.7643	498.076	TBM	SQ. CUT NW COR BRIDGE
902	463981.3623	1274917.4031	528.895	TBM	SQ. CUT E END RCP

\*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped  
 \*(standard markings common to all caps), or as indicated  
 (other markings indicated in the point description of the individual point).  
 USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT  
 A PROJECT CAF OF 0.9999057326 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 s050228gi.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: 120012 - 120012A and 120013 - 120013A  
 CONVERGENCE ANGLE: 0-04-26 RIGHT AT LT: 35-36-26.5 LG: 092-07-37.2  
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

HWY. 225 CONST

POINT NO.	TYPE	STATION	NORTHING	EASTING
8000	POB	97+00.00	461473.45	1274050.39
8001	PI	100+00.00	461770.72	1274010.03
8002	PC	102+16.64	461985.39	1273980.88
8004	PT	111+43.96	462898.29	1274079.69
8005	PC	124+68.40	464142.17	1274534.57
8007	PT	131+04.57	464752.79	1274468.72
8008	PI	135+72.92	465148.25	1274217.79

NORTH CONNECTOR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8010	POB	100+00.00	464448.71	1274573.48
8011	PC	100+22.68	464450.93	1274596.04
8013	PT	101+34.98	464403.32	1274691.30
8014	POE	104+04.41	464173.04	1274831.18

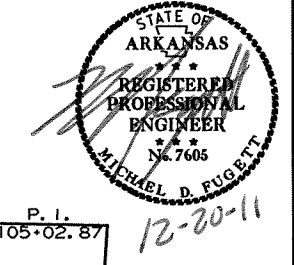
SOUTH CONNECTOR

POINT NO.	TYPE	STATION	NORTHING	EASTING
8015	POB	99+78.03	462454.10	1273986.42
8016	PC	100+03.03	462456.27	1273961.51
8018	PT	100+83.76	462507.75	1273907.28
8019	PC	103+15.74	462737.52	1273875.23
8021	PT	106+82.76	463099.14	1273912.10
8022	POE	108+11.91	463220.82	1273955.39

STA 99+78.03 - BEGIN  
SYLVAN SHORES DRIVE

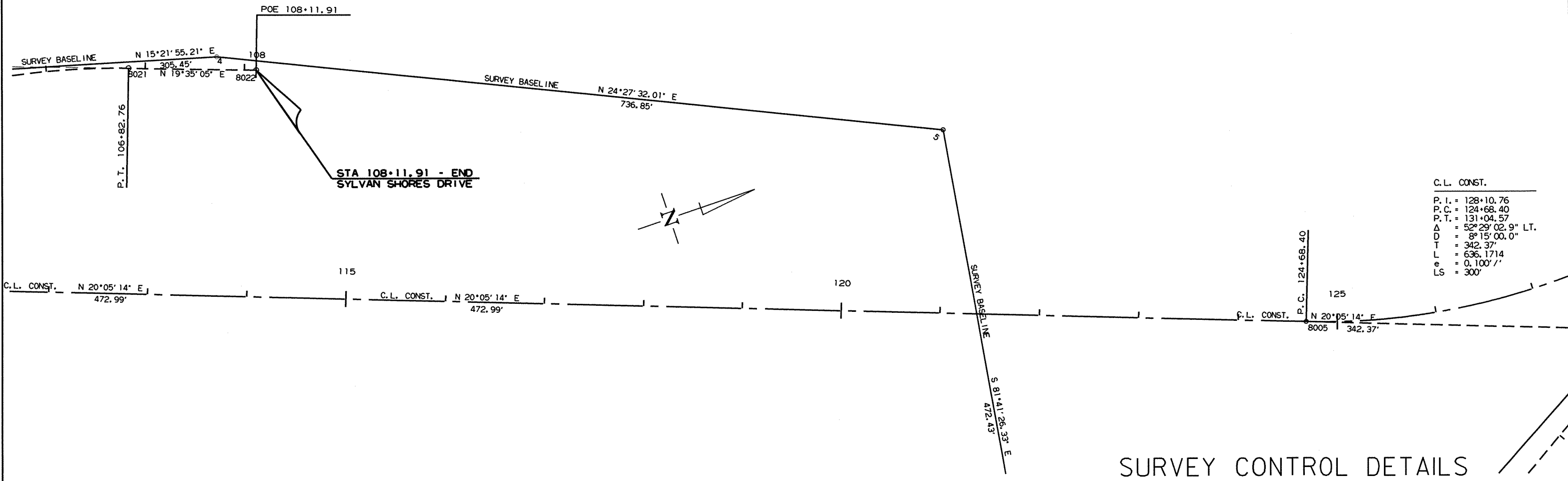
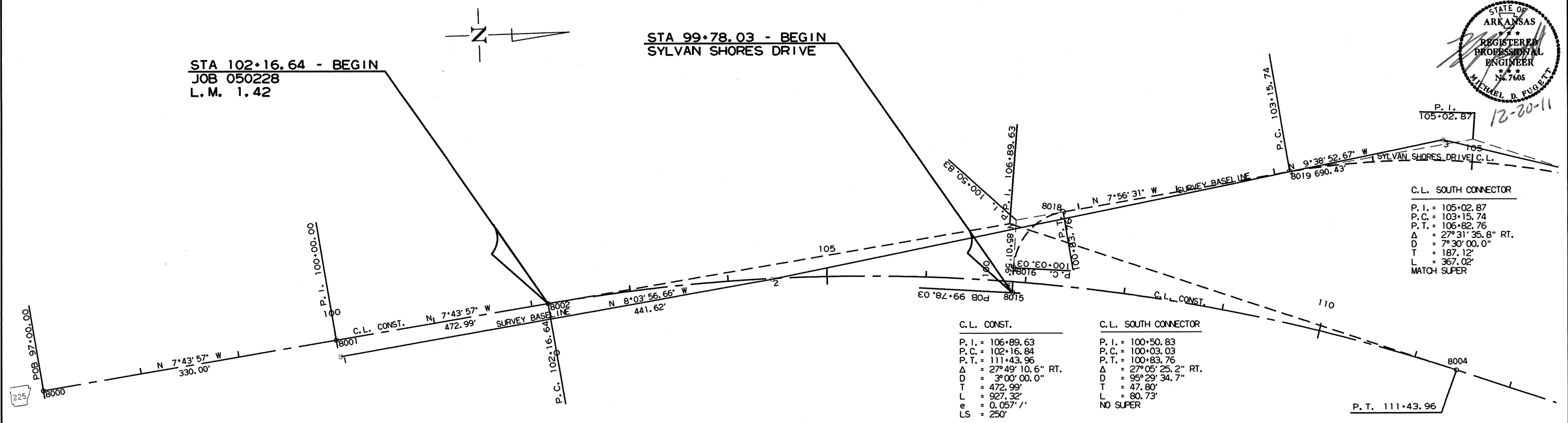
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				6	ARK.			
JOB NO. 050228							26	96

2 SURVEY CONTROL DETAILS



STA 102+16.64 - BEGIN  
JOB 050228  
L.M. 1.42

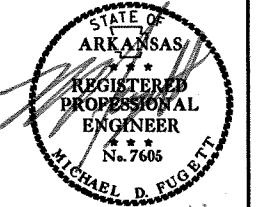
STA 99+78.03 - BEGIN  
SYLVAN SHORES DRIVE



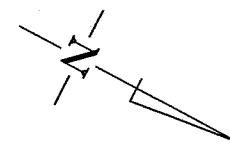
SURVEY CONTROL DETAILS

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. 050228	27	96

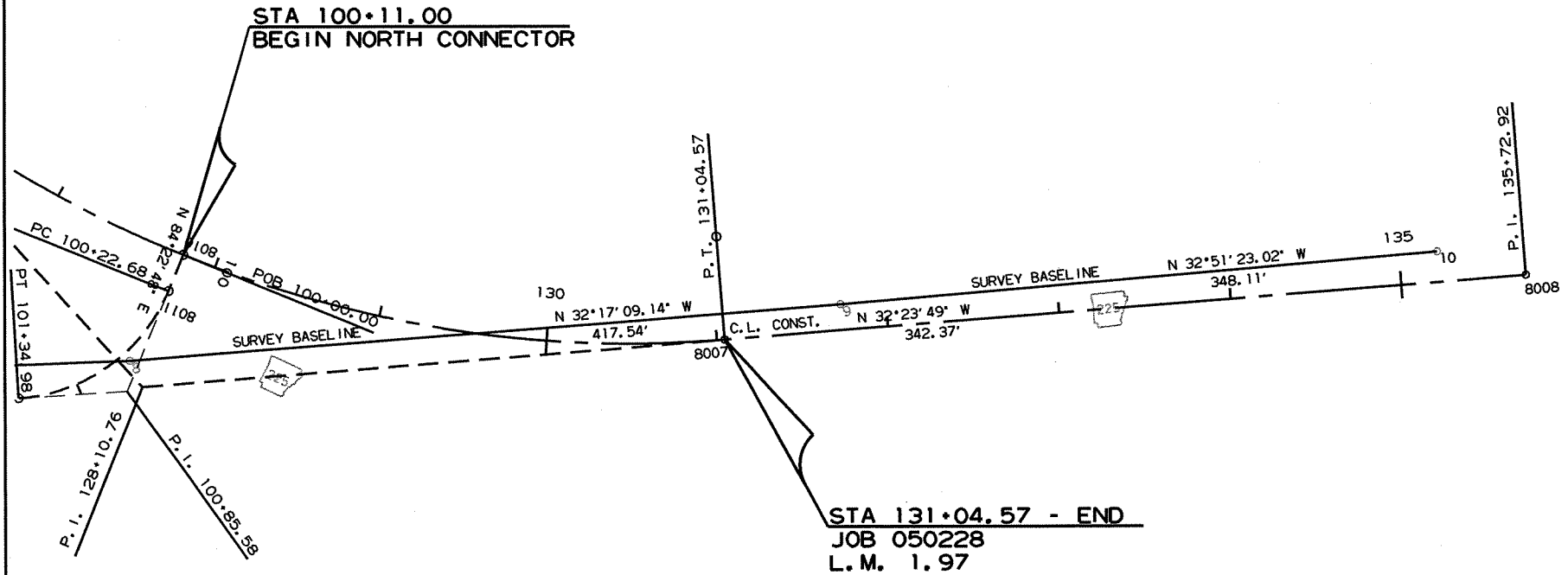
2 SURVEY CONTROL DETAILS



12-20-11



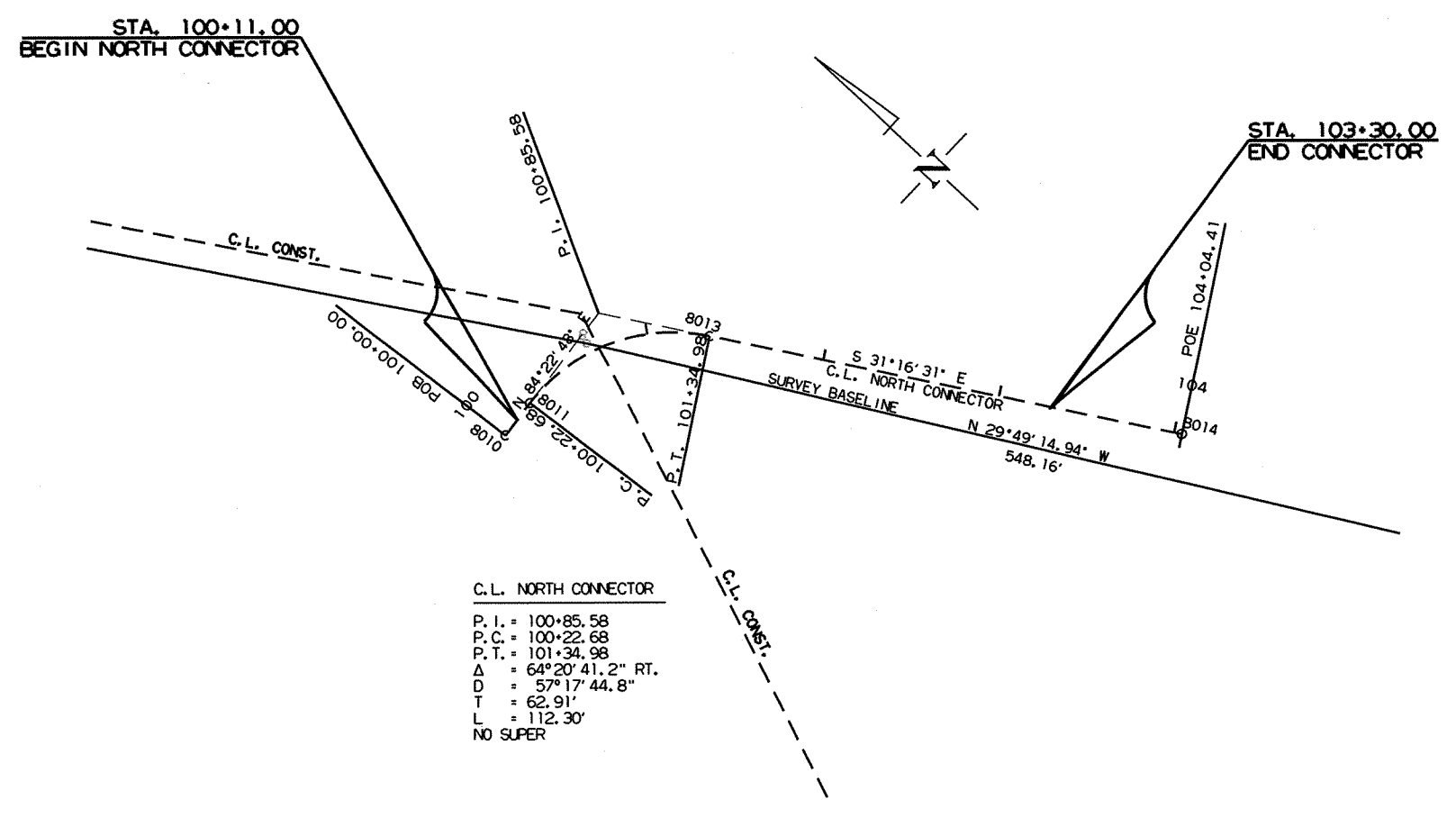
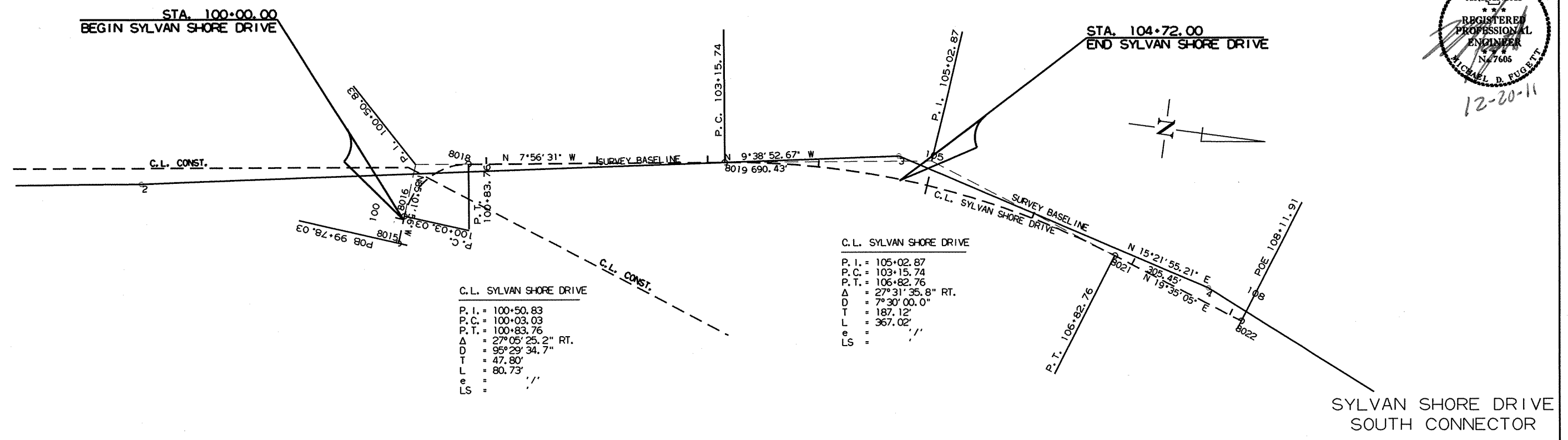
C.L. NORTH CONNECTOR	C.L. CONST.
P. I. = 100+85.58	P. I. = 128+10.76
P. C. = 100+22.68	P. C. = 124+68.40
P. T. = 101+34.98	P. T. = 131+04.57
Δ = 64°20'41.2" RT.	Δ = 52°29'02.9" LT.
D = 57°17'44.8"	D = 8°15'00.0"
T = 62.91'	T = 342.37'
L = 112.30'	L = 636.1714'
NO SUPER	e = 0.100'/'
	LS = 300'



STA 131+04.57 - END  
 JOB 050228  
 L.M. 1.97

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		28	96
				JOB NO.		050228		

2 SURVEY CONTROL DETAILS

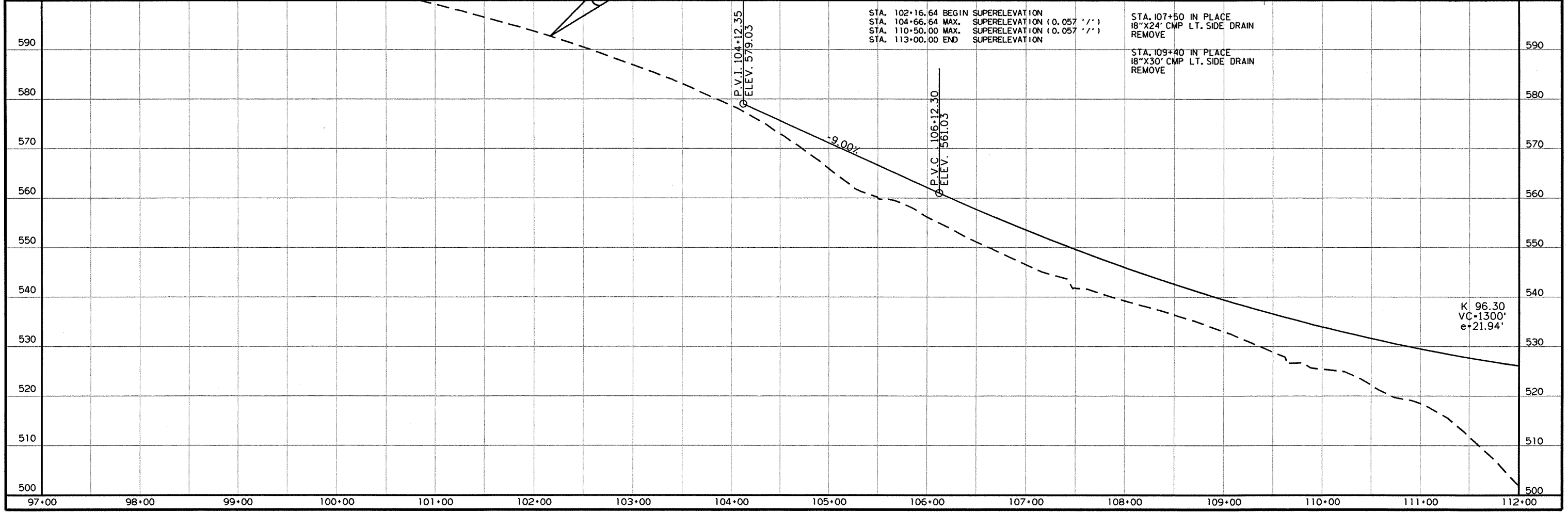
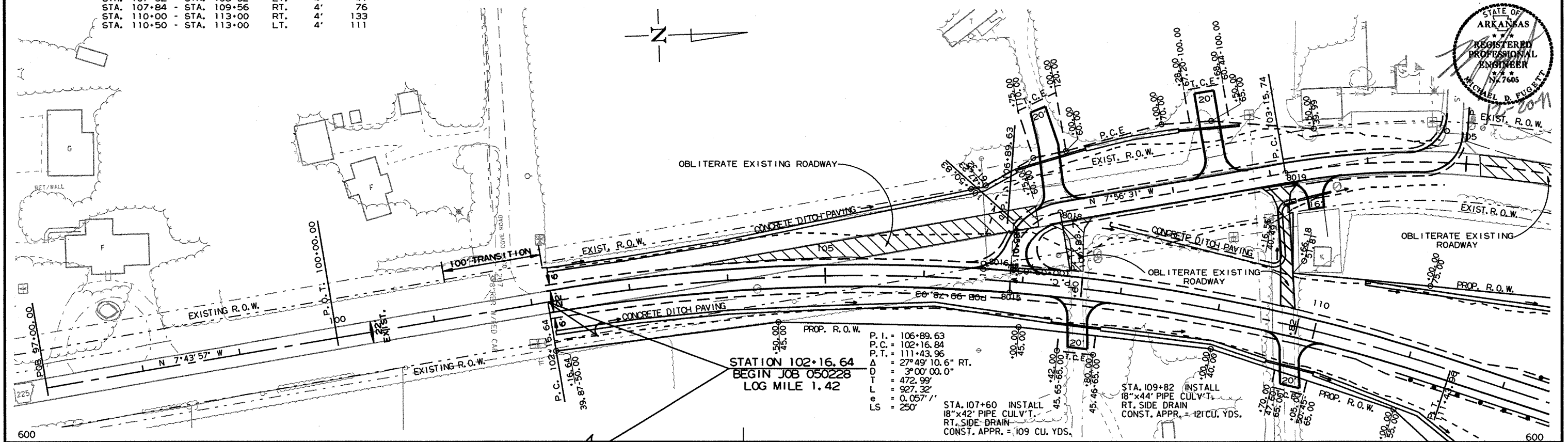
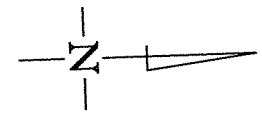
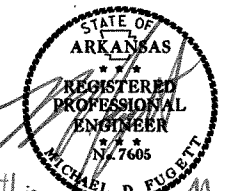


NORTH CONNECTOR  
SURVEY CONTROL DETAILS

CONCRETE DITCH PAVING		* W'	SQ. YD.
STA. 102+17 - STA. 106+87	LT.	4'	209
STA. 102+17 - STA. 107+34	RT.	4'	230
STA. 107+52 - STA. 108+32	LT.	4'	41
STA. 107+84 - STA. 109+56	RT.	4'	76
STA. 110+00 - STA. 113+00	RT.	4'	133
STA. 110+50 - STA. 113+00	LT.	4'	111

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		29	96

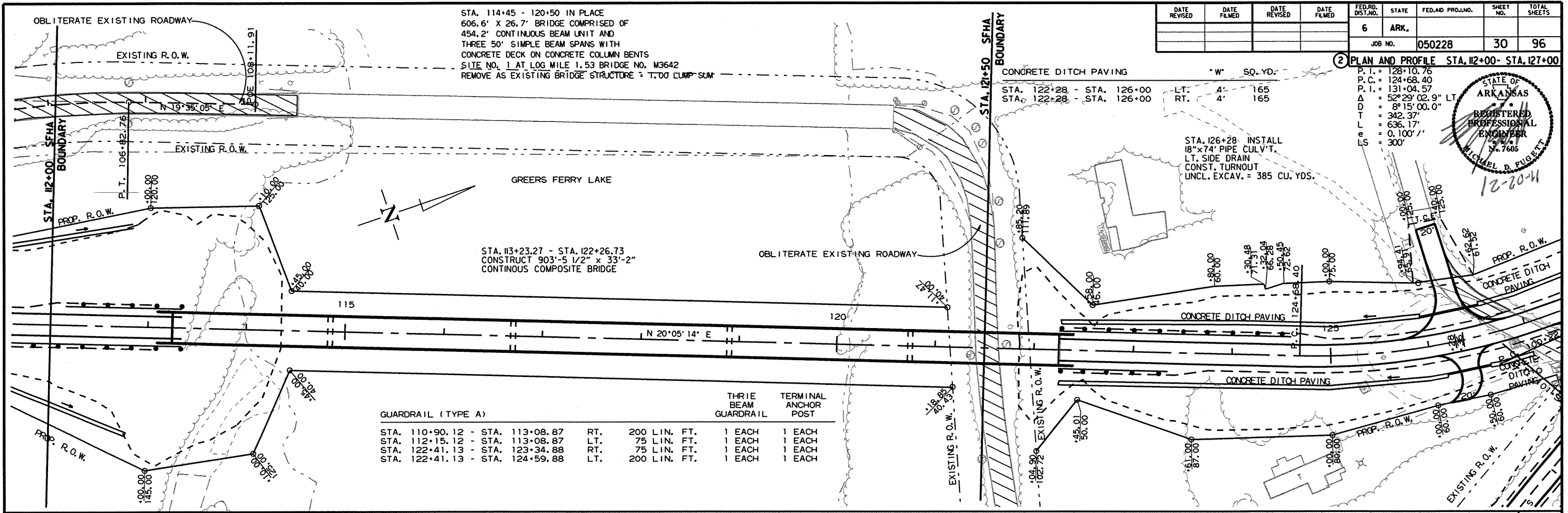
2 PLAN AND PROFILE STA. 97+00-STA. 112+00



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							30	96

PLAN AND PROFILE STA. 112+00 - STA. 127+00

P.I. = 128+10.76  
 P.C. = 124+68.40  
 P.T. = 131+04.57  
 $\Delta$  = 52°29'02.9" LT  
 D = 8°15'00.0"  
 T = 342.37'  
 L = 636.17'  
 e = 0.100'/'  
 LS = 300'



GUARDRAIL (TYPE A)		THREE BEAM GUARDRAIL	TERMINAL ANCHOR POST
STA. 110+90.12 - STA. 113+08.87	RT.	200 LIN. FT.	1 EACH
STA. 112+15.12 - STA. 113+08.87	LT.	75 LIN. FT.	1 EACH
STA. 122+41.13 - STA. 123+34.88	RT.	75 LIN. FT.	1 EACH
STA. 122+41.13 - STA. 124+59.88	LT.	200 LIN. FT.	1 EACH



STA. 102+16.64 BEGIN SUPERELEVATION  
 STA. 104+66.64 MAX. SUPERELEVATION (0.057'/'')  
 STA. 110+50.00 MAX. SUPERELEVATION (0.057'/'')  
 STA. 113+00.00 END SUPERELEVATION

STA. 122+43.40 BEGIN SUPERELEVATION  
 STA. 125+43.40 MAX. SUPERELEVATION (0.100'/'')  
 STA. 127+86.50 MAX. SUPERELEVATION (0.100'/'')  
 STA. 130+86.50 END SUPERELEVATION

STA. 126+36 INSTALL  
 18"x50' PIPE CULV'T.  
 RT. SIDE DRAIN  
 CONST. APPR. = 80 CU. YDS.

K 96.30  
VC=1300'  
e=21.94'

P.V.I. 112+62.30  
 ELEV. 502.54

BM: 900 BRASS CAP COR ENG ET OF-IPD<sub>L</sub>I  
 239.59 LT. OF STA. 114+46.44  
 ELEVATION = 496.94

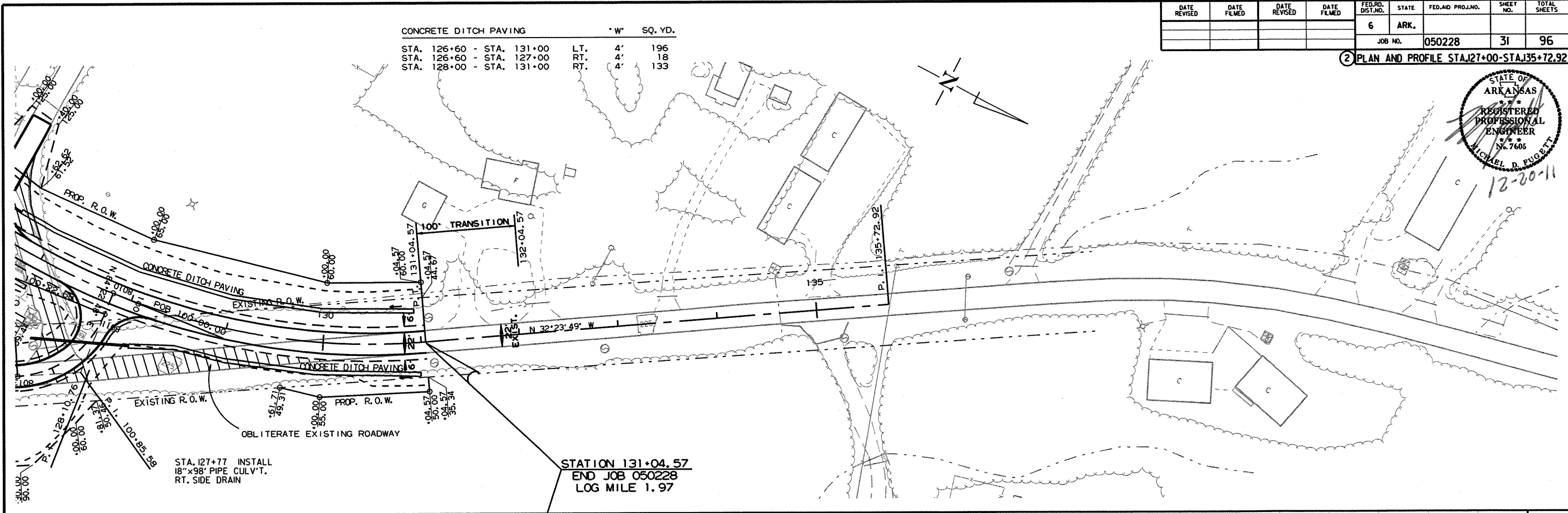
BM: 901 SO. CUT NW COR BRIDGE  
 242.86 LT. OF STA. 120+58.66  
 ELEVATION = 498.08

BM: 902 SO. CUT E END RCP  
 414.78 RT. OF STA. 124+48.86  
 ELEVATION = 528.89

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		31	96

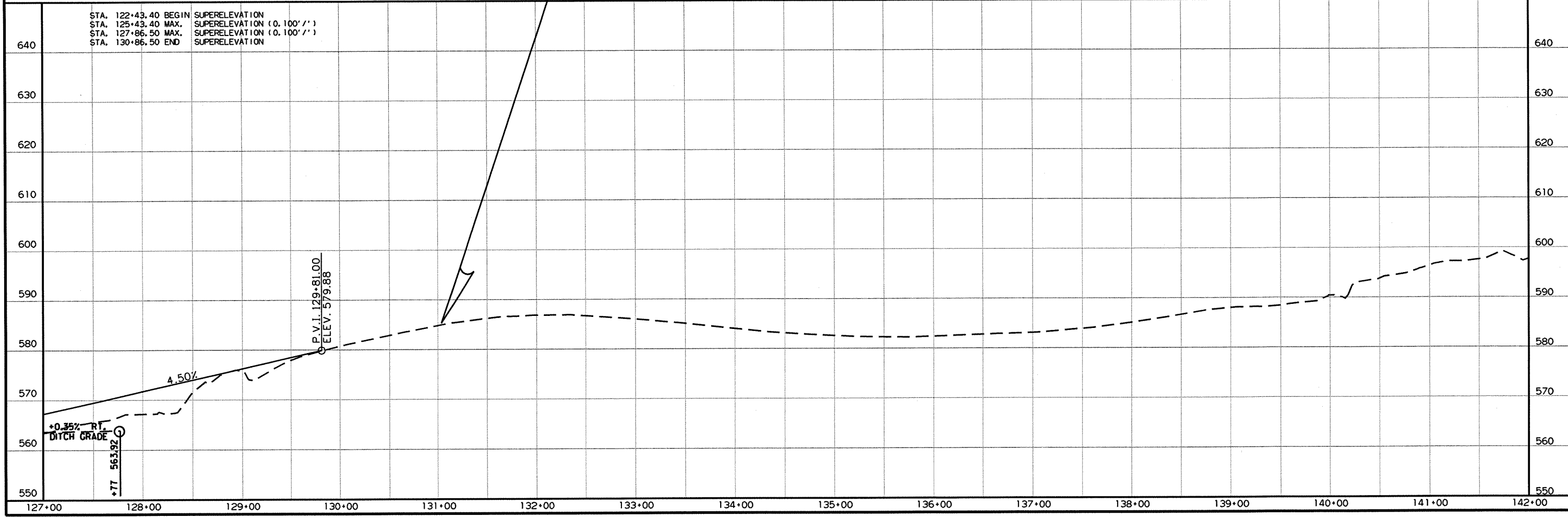
2 PLAN AND PROFILE STA. 127+00 - STA. 135+72.92

CONCRETE DITCH PAVING		* W'	SQ. YD.
STA. 126+60 - STA. 131+00	LT.	4'	196
STA. 126+60 - STA. 127+00	RT.	4'	18
STA. 128+00 - STA. 131+00	RT.	4'	133



STA. 127+77 INSTALL 18" x 98" PIPE CULV'T. RT. SIDE DRAIN

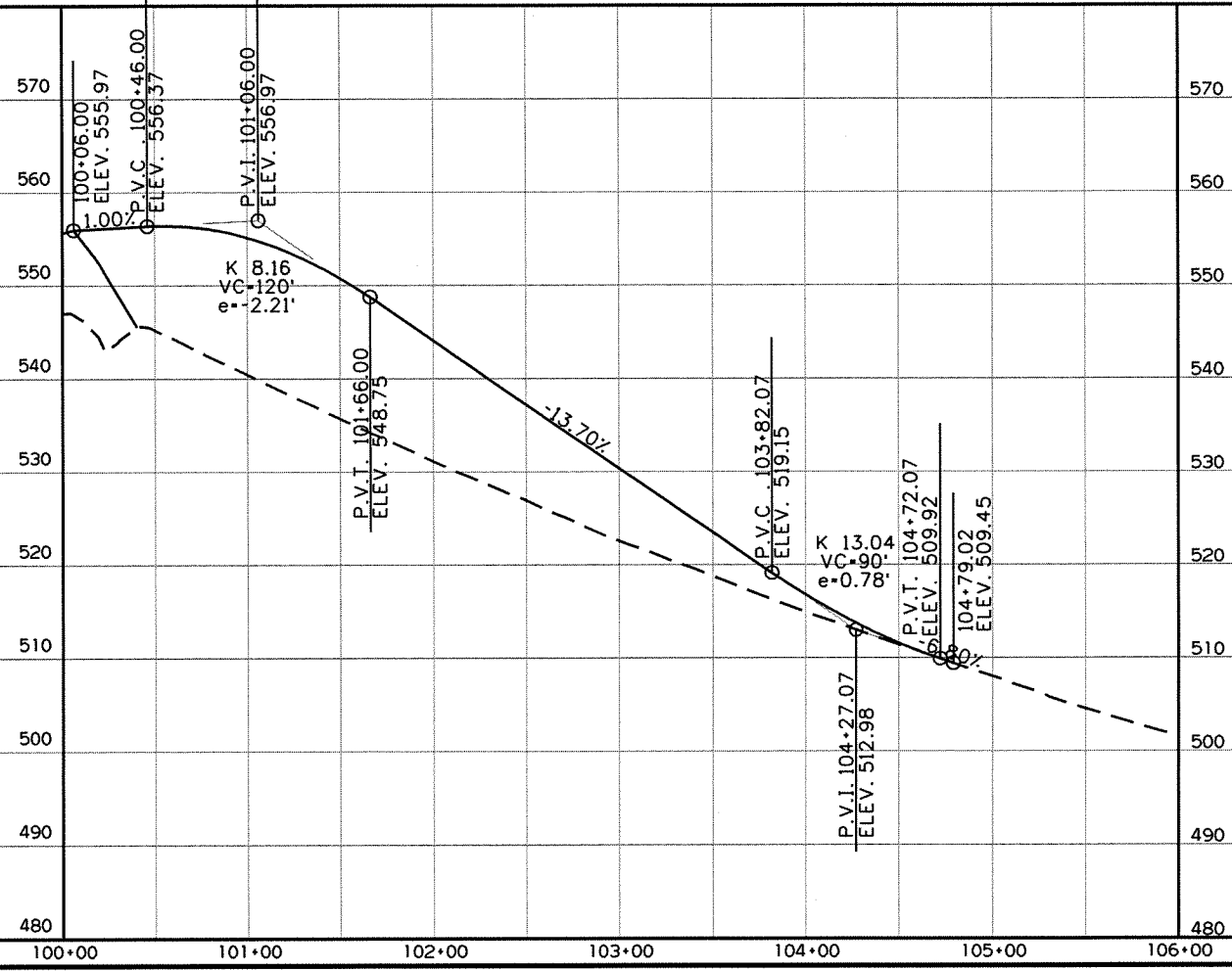
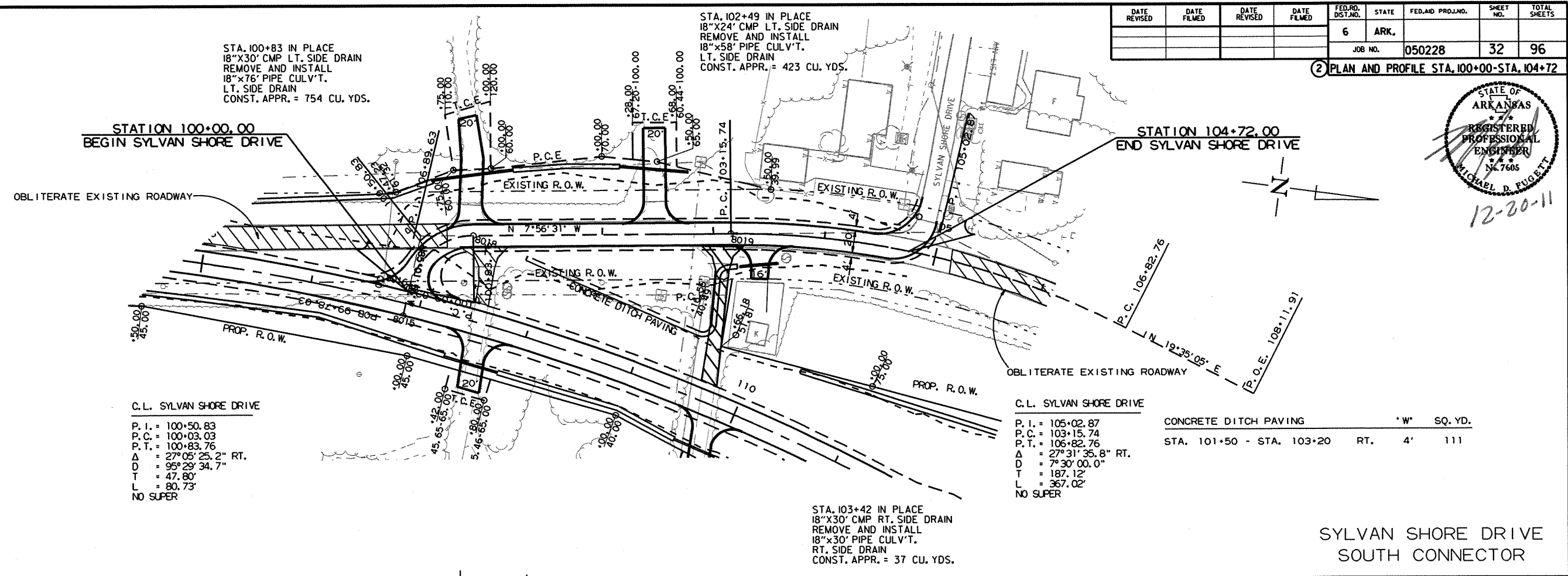
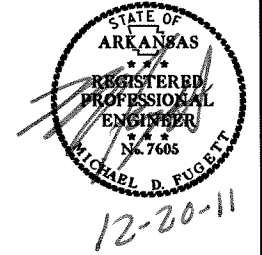
STATION 131+04.57  
END JOB 050228  
LOG MILE 1.97



STA. 122+43.40 BEGIN SUPERELEVATION  
STA. 125+43.40 MAX. SUPERELEVATION (0.100' /')

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.	050228		32	96

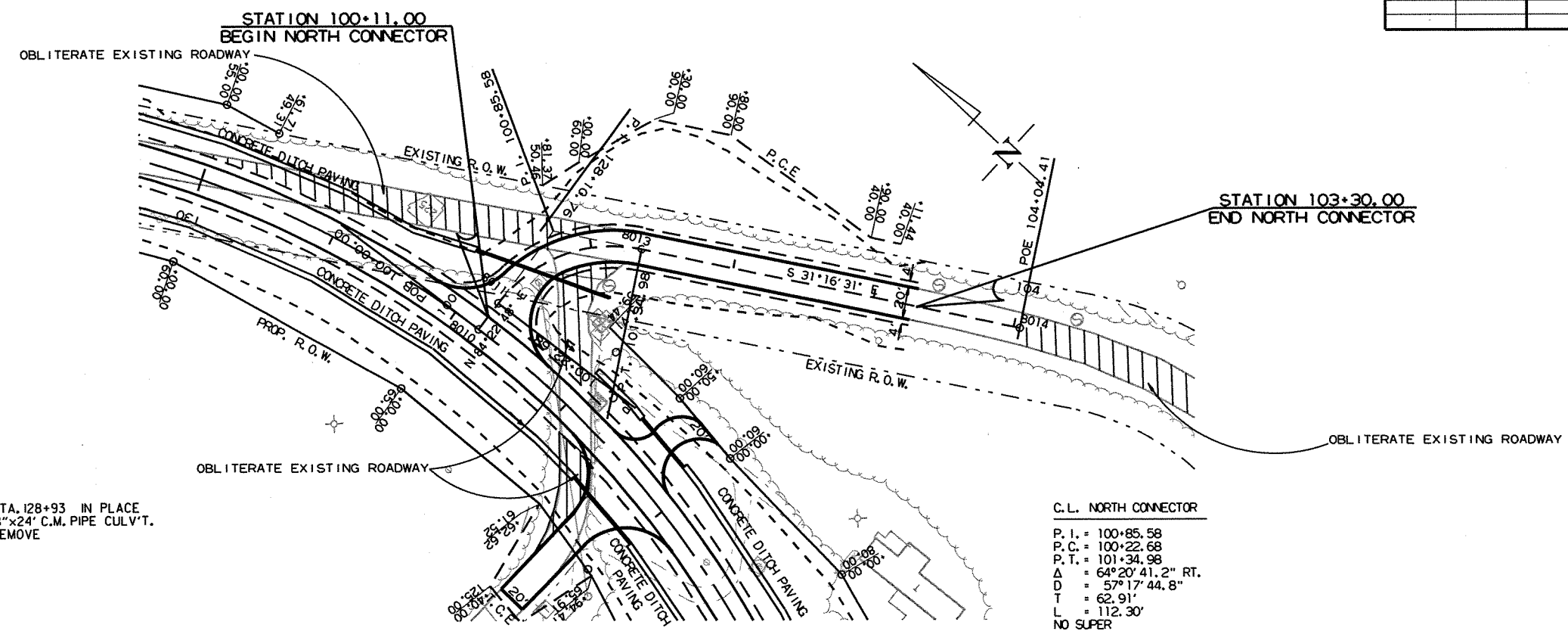
2 PLAN AND PROFILE STA. 100+00-STA. 104+72





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 050228	33	96

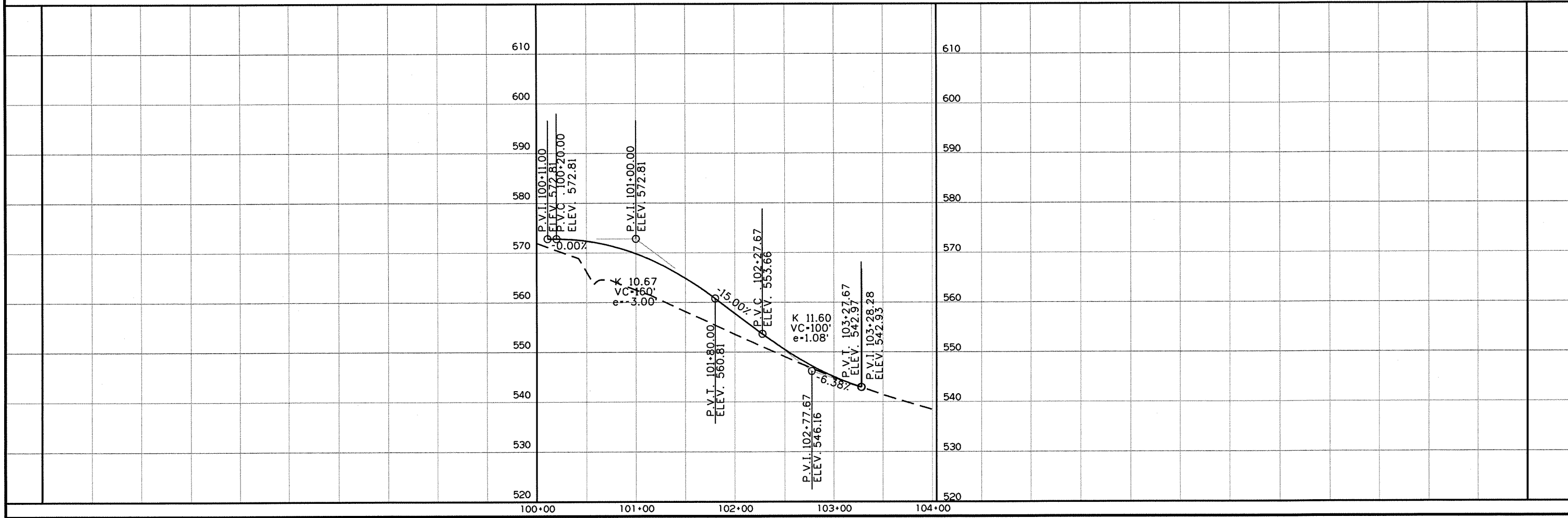
2 PLAN AND PROFILE STA. 100+11-STA. 103+30



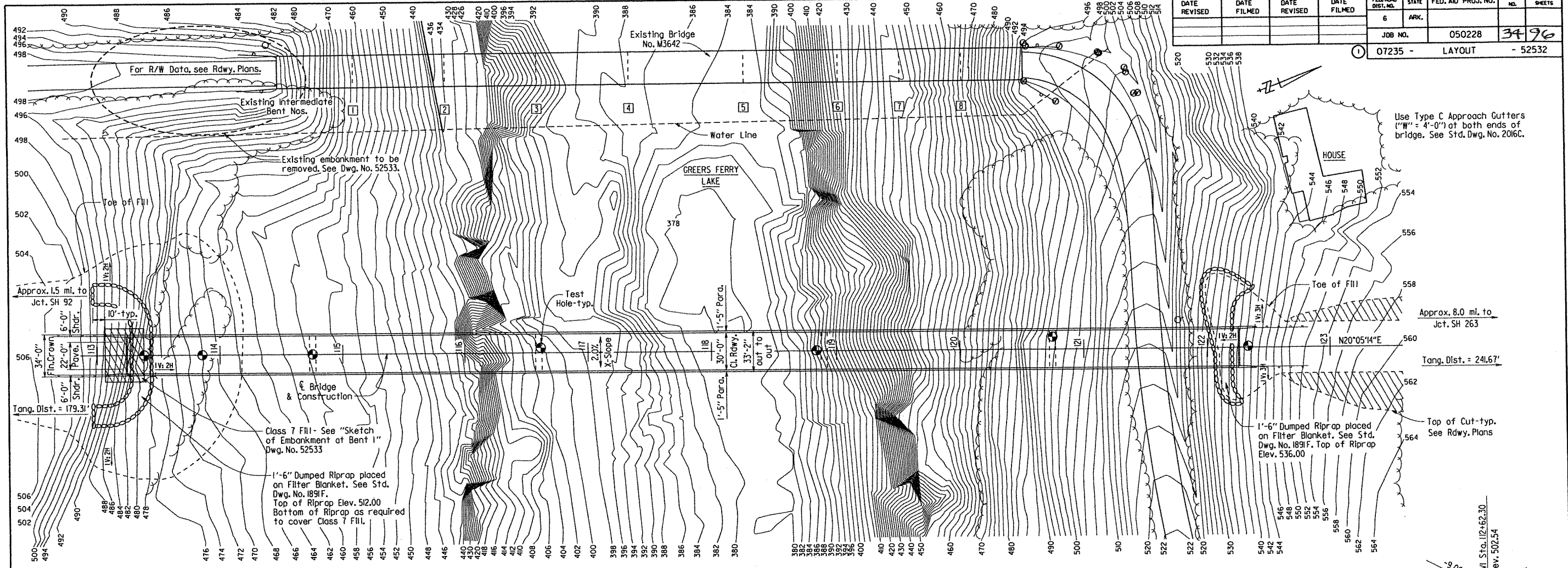
C. L. NORTH CONNECTOR  
P. I. = 100+85.58  
P. C. = 100+22.68  
P. T. = 101+34.98  
Δ = 64° 20' 41.2" RT.  
D = 57° 17' 44.8"  
L = 62.91'  
L = 112.30'  
NO SUPER

STA. 128+93 IN PLACE  
18" x 24" C.M. PIPE CULV'T.  
REMOVE

NORTH CONNECTOR

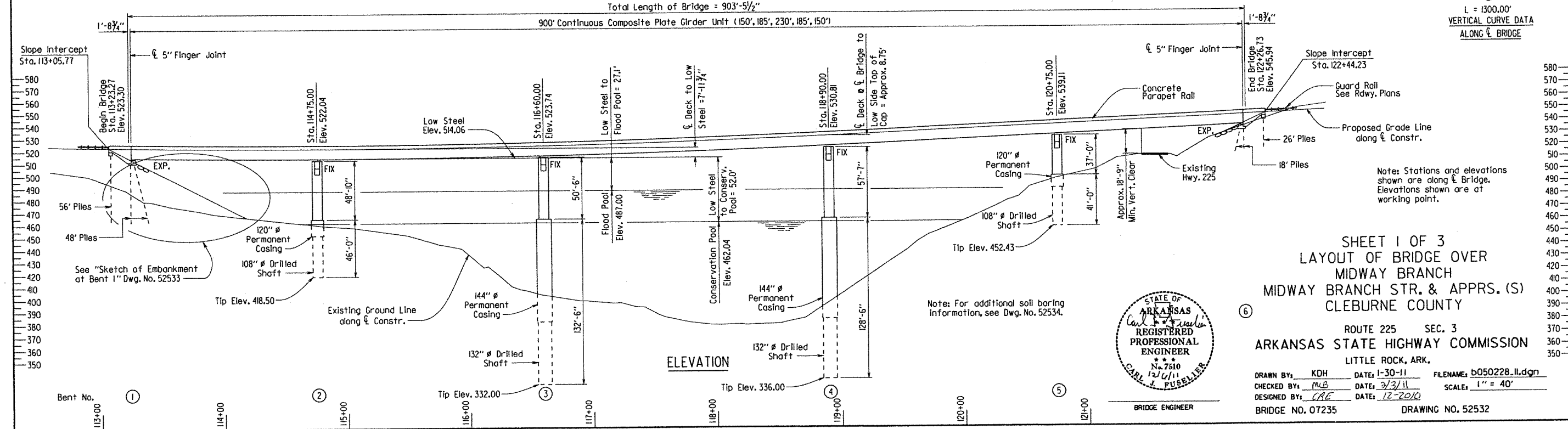


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	050228		34	96
				07235 - LAYOUT				52532

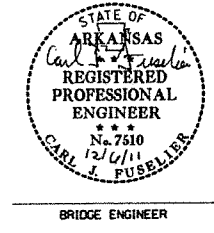


PLAN

Total Length of Bridge = 903'-5 1/2"



ELEVATION



SHEET 1 OF 3  
 LAYOUT OF BRIDGE OVER  
 MIDWAY BRANCH  
 MIDWAY BRANCH STR. & APPRS. (S)  
 CLEBURNE COUNTY  
 ROUTE 225 SEC. 3  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

BRIDGE ENGINEER

DRAWN BY: KDH DATE: 1-30-11 FILENAME: b050228.il.dgn  
 CHECKED BY: MCB DATE: 2/3/11 SCALE: 1" = 40'  
 DESIGNED BY: CAE DATE: 12-20-10  
 BRIDGE NO. 07235 DRAWING NO. 52532

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	050228	35	96
				① 07235 - LAYOUT		- 52533		

**GENERAL NOTES**

BENCH MARK: Square cut in NW corner of bridge, 242.86 ft. left of C Constr. Sta. 120+58.66, Elev. 498.08

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications or 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)  $f_y = 60,000$  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  
 Structural Steel (AASHTO M 270, Gr. HPS 70W)  $F_y = 70,000$  psi

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

STEEL PILING: Piling in Bents 1 & 6 shall be HP14x73 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 70 tons per pile and into the material designated as sandstone on the boring legend. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. On all piles the Contractor shall use approved steel H-Pile driving points.

PREBORING: Preboring is required for Bent 6 piling (including wing piles) to a depth of 15' below the bottom of the cap. Prebored holes shall be 6" greater than the diameter of the pile cross-section and shall be backfilled with Class S Concrete after piles are in place. The contractor shall be responsible for keeping holes free of debris prior to backfilling, which may require the use of temporary casings or other methods. Any related cost for backfilling and temporary casing will be considered subsidiary to "Preboring".

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 as shown on the plans. No adjustments in 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 050228 "Drilled Shaft Foundations". Any casing used as a means for construction of the drilled shafts, such as to prevent caving, to exclude groundwater, or to provide shoring shall not extend below 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 050228 "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.

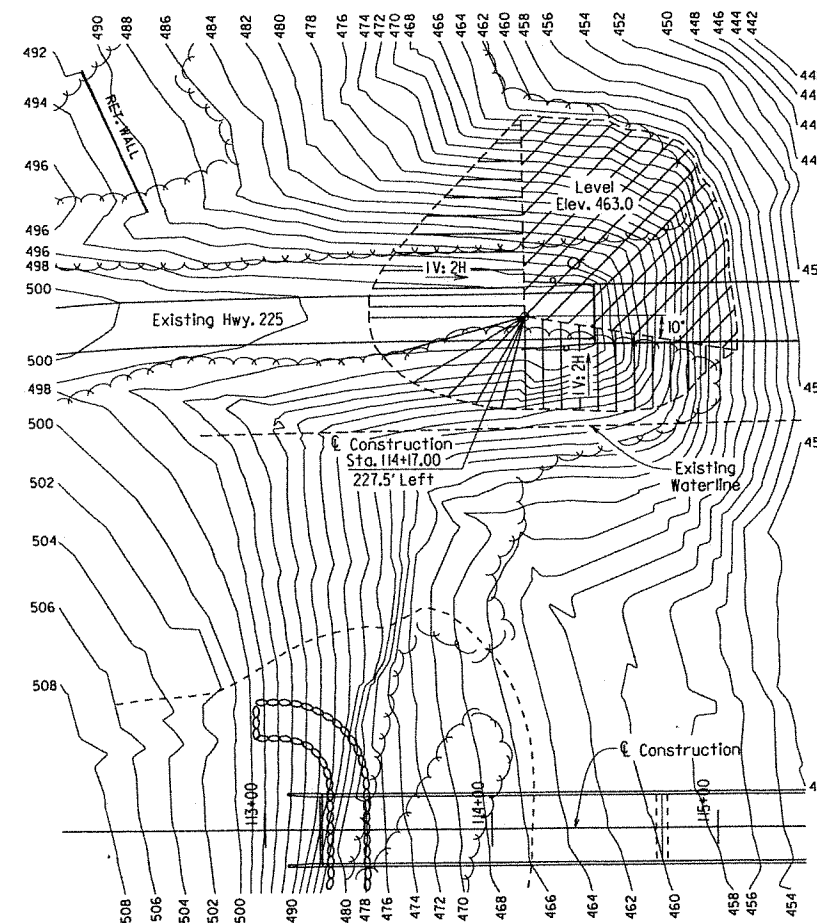
DETAIL DRAWINGS:	DRAWING NOS.
End Bents	52536 - 52537
Intermediate Bents	52538 - 52543
90' Continuous Composite Plate Girder Unit	52544 - 52552
Finger Joint	52553
Elastomeric Bearings	52554
Steel Piling	14995A
Type C Approach Cutters	206C

EXISTING BRIDGE: Existing Bridge No. M3642 (Log M. 1.53) is 606.6' long and 26.7' wide and is comprised of a 454.2' continuous beam unit and three 50' simple beam spans with a concrete deck on concrete column bents. Centerline of existing bridge is located approximately 230' west of the proposed roadway centerline.

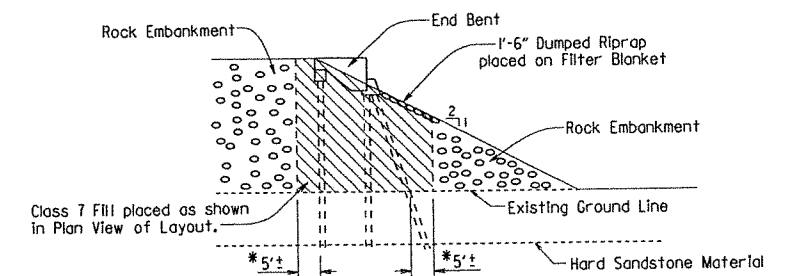
REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing Bridge No. M3642 shall be removed in accordance with Section 205 except as noted. All material from the existing bridge shall become the property of the Contractor. Existing intermediate bent Nos. 3 - 5 shall be removed to Elev. 420.00 or lower. Existing intermediate bent Nos. 1, 2 & 6 - 8 shall be removed to 2' below natural ground or as directed by the Engineer. Debris from bridge removal shall not enter the waterway. For additional information see SP Job 050228 "Details for Boater Safety on Greers Ferry Lake".

MAINTENANCE OF TRAFFIC: See Roadway Plans.

The Contractor shall remove the existing bridge embankment as shown, using 1V:2H side slopes, to Elev. 463.00. Approx. 8600 cu. yds. of excavation.



LOCATION SKETCH OF EXISTING EMBANKMENT REMOVAL



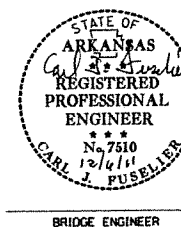
\* 5'-0" clear from rock embankment to pile for both longitudinal and transverse direction.

Where rock fill is used for embankment construction, aggregate base course (Class 7), in accordance with section 303.02, shall be placed as shown in areas where piling will be located. Aggregate base course (Class 7) shall be paid for as "Rock Fill". See Roadway Plans.

At the contractor's option, preboring or other methods as approved by the Engineer may be used to facilitate pile installation thru the aggregate base course (Class 7) material at these locations. Preboring or other methods used for installation of piles, where rock fill is used for embankment construction, will not be paid for separately but shall be included in the item "Steel Piling (HP 14x73)".

SKETCH OF EMBANKMENT AT BENT 1

No Scale

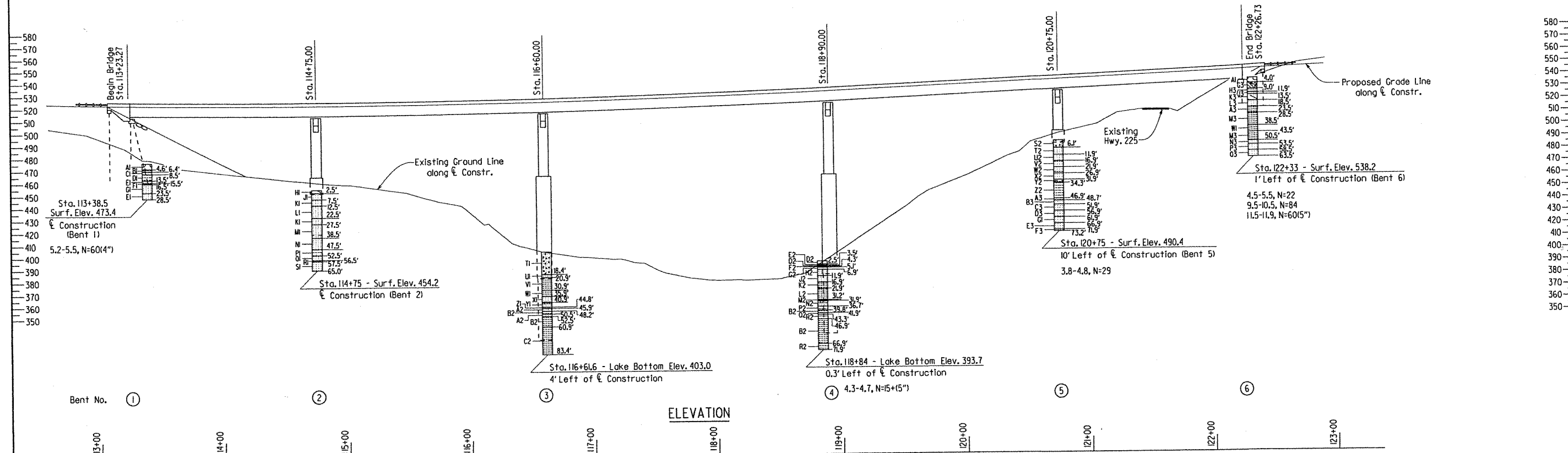


SHEET 2 OF 3  
 LAYOUT OF BRIDGE OVER  
 MIDWAY BRANCH  
 MIDWAY BRANCH STR. & APPRS. (S)  
 CLEBURNE COUNTY

ROUTE 225 SEC. 3  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

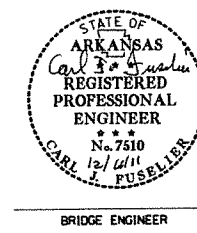
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 BRIDGE NO. 07235 DRAWING NO. 52533

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.		050228	36	96
				07235 - LAYOUT				52534



**BORING LEGEND**

- AI-Sandstone Cobbles and Boulders
- BI-SHALE - Dark Gray, Weathered, Medium Hard
- CI-WEATHERED SHALE WITH SANDSTONE PARTINGS - Dark Gray, Laminated, Medium Hard, with Slight Dip
- DI-WEATHERED SHALE WITH SANDSTONE LAYERS AND SEAMS - Dark Gray, Laminated, Medium Hard, with Slight Dip
- EI-SANDSTONE - Brown and Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- FI-SANDSTONE - Brown and Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and Vertically Fractured Layers
- GI-SANDSTONE - Brown, Very Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- HI-SANDSTONE WITH CLAY SEAMS - Brown and Gray, Medium Bedded, Weathered, Poorly-Cemented, with Moderate Dip
- JI-SANDSTONE WITH WEATHERED SHALE LAYERS - Brown and Gray, Medium Bedded, Weathered, Poorly-Cemented, with Moderate Dip and Fractured Layers
- KI-SANDSTONE - Brown and Gray, Very Thick Bedded, Cemented, with Slight Dip
- LI-SANDSTONE - Brown and Gray, Thick Bedded, Cemented, with Slight Dip
- MI-SANDSTONE - Reddish Brown, Very Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- NI-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- PI-SANDSTONE WITH SHALE SEAMS AND PARTINGS - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- QI-SANDSTONE - Gray and Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- RI-SANDSTONE - Gray and Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and Vertically Fractured Layers
- SI-SANDSTONE WITH SHALE PARTINGS - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- TI-Sand with Gravel(Sandstone Fragments)
- UI-SANDSTONE - Brown, Medium Bedded, Slightly Weathered, Well-Cemented, with Slight Dip
- VI-SHALE - Dark Gray, Laminated, Weathered, Medium Hard, with Slight Dip and Fractured Layers
- WI-SHALE WITH WEATHERED SHALE LAYERS - Dark Gray, Laminated, Medium Hard, with Slight Dip and Fractured Layers
- XI-SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip
- YI-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip
- ZI-SHALE WITH GRAY CALCAREOUS SANDSTONE LAYERS - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip
- A2-SANDSTONE - Gray, Medium Bedded, Slightly Weathered, Well-Cemented, with Slight Dip
- B2-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip
- C2-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip and Fractured Layers
- D2-Wet, Medium Dense, Brown Silty Sand
- E2-Sandstone Boulder
- F2-Wet, Medium Dense, Brown Sand with Clay and Gravel(Sandstone Fragments)
- G2-SANDSTONE WITH CLAY SEAMS - Brown, Medium Bedded, Slightly Weathered, Well-Cemented, with Slight Dip
- H2-SANDSTONE - Reddish Brown to Gray, Thick Bedded, Slightly Weathered, Well-Cemented, with Moderate Dip and some Vertically Fractured Layers
- J2-SANDSTONE - Reddish Brown to Gray, Medium Bedded, Vuggy, Slightly Weathered, Well-Cemented, with Slight Dip
- K2-SHALE WITH WEATHERED SHALE SEAMS - Dark Gray, Laminated, Medium Hard, with Slight Dip
- L2-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip
- M2-SANDSTONE WITH SHALE PARTINGS - Gray, Medium Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip
- N2-SANDSTONE WITH SHALE PARTINGS - Gray, Thick Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip
- P2-ALTERNATING LAYERS OF SHALE AND SANDSTONE - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip (Shale); Gray, Medium Bed
- Q2-SANDSTONE WITH SHALE PARTINGS - Gray, Medium Bedded, Slightly Weathered, Calcareous, Well-Cemented, with Slight Dip
- R2-SHALE WITH SANDSTONE SEAMS - Dark Gray, Laminated, Slightly Weathered, Hard, with Slight Dip
- S2-Dry, Medium Dense, Brown Sand with Gravel(Sandstone Fragments)
- T2-SANDSTONE - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and Fractured Layers
- U2-SANDSTONE WITH SHALE PARTINGS - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- V2-SANDSTONE WITH SHALE SEAMS - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip
- W2-SANDSTONE WITH WEATHERED SHALE LAYERS AND SEAMS - Gray, Very Thick Bedded, Slightly Weathered, Poorly-Cemented, with Slight Dip
- X2-SANDSTONE WITH SHALE LAYERS AND SEAMS - Gray, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- Y2-SANDSTONE WITH SHALE LAYERS AND SEAMS - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip
- Z2-SHALE WITH SANDSTONE LAYERS AND WEATHERED SHALE SEAMS - Dark Gray, Laminated, Medium Hard, with Slight Dip and Fractured Layers
- A3-SHALE - Dark Gray, Laminated, Highly Weathered, Medium Hard, with Slight Dip
- B3-SANDSTONE WITH SHALE PARTINGS - Gray and Brown, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip
- C3-SANDSTONE WITH SHALE PARTINGS - Gray and Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- D3-SANDSTONE - Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- E3-SANDSTONE - Brown, Very Thick Bedded, Slightly Weathered, Cemented, with Slight Dip and Vertically Fractured Layers
- F3-SANDSTONE - Brown, Thick Bedded, Slightly Weathered, Cemented, with Slight Dip
- G3-Dry, Very Stiff, Brown Sandy Clay with Gravel(Sandstone Fragments)
- H3-SHALE - Brown, Highly Weathered, Medium Hard
- J3-SANDSTONE - Brown and Gray, Thin Bedded, Weathered, Cemented, with Slight Dip and Fractured Layers
- K3-SANDSTONE WITH CLAY SEAMS - Gray and Brown, Thin Bedded, Weathered, Cemented, with Slight Dip and Fractured Layers
- L3-SANDSTONE - Brown, Thin Bedded, Weathered, Vuggy, Cemented, with Slight Dip and Fractured Layers
- M3-SHALE WITH WEATHERED SHALE LAYERS - Dark Gray, Laminated, Medium Hard, with Slight Dip
- N3-SANDSTONE WITH SHALE PARTINGS - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip
- P3-SANDSTONE WITH SHALE PARTINGS - Gray, Thick Bedded, Slightly Weathered, Well-Cemented, with Slight Dip
- Q3-SANDSTONE WITH SHALE SEAMS, LAYERS AND PARTINGS - Gray, Medium Bedded, Slightly Weathered, Cemented, with Slight Dip

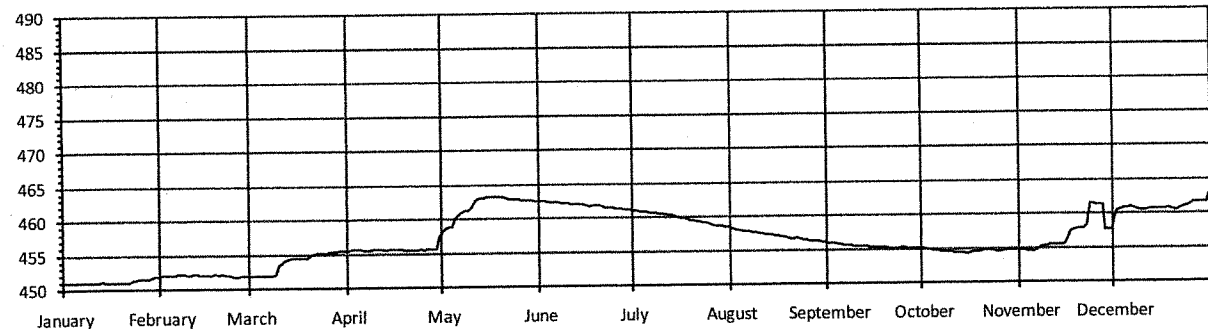


SHEET 3 OF 3  
LAYOUT OF BRIDGE OVER  
MIDWAY BRANCH  
MIDWAY BRANCH STR. & APPRS. (S)  
CLEBURNE COUNTY

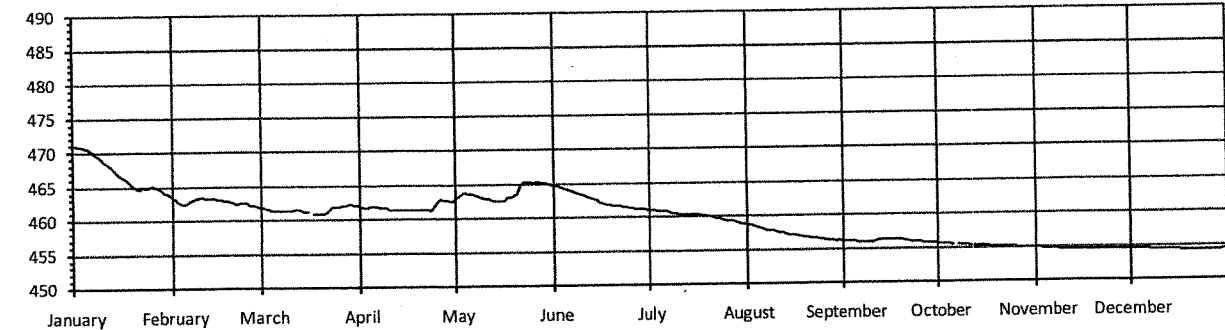
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LITTLE ROCK, ARK.

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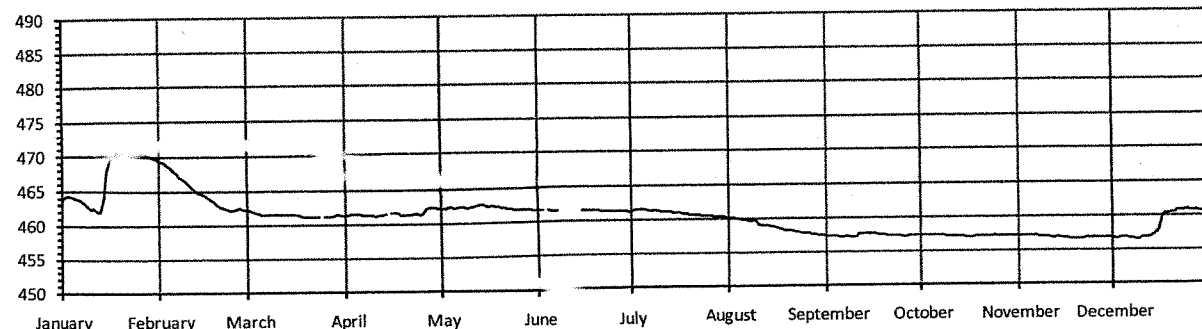
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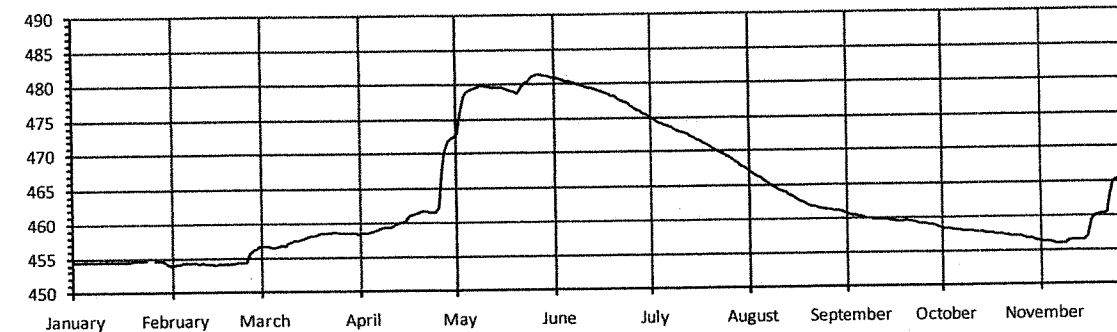
DAILY STAGES FOR JANUARY THRU DECEMBER 2006



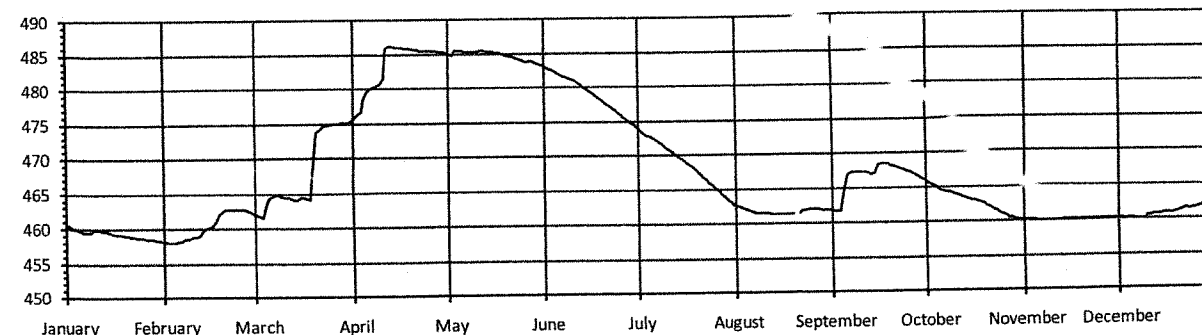
DAILY STAGES FOR JANUARY THRU DECEMBER 2010



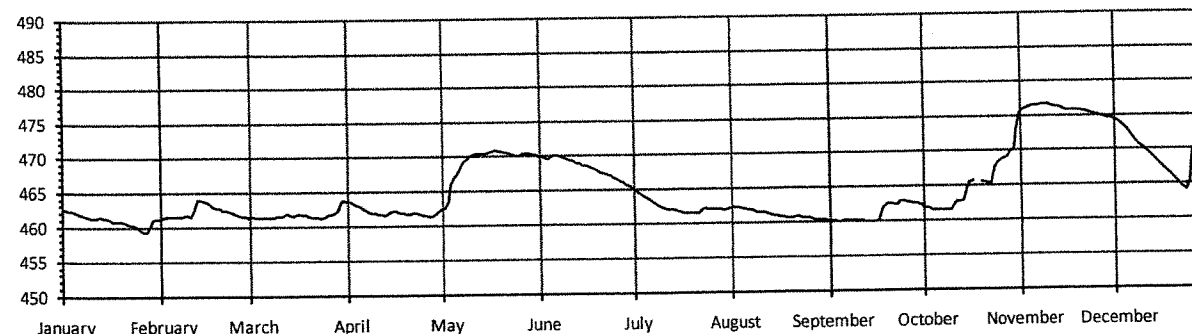
DAILY STAGES FOR JANUARY THRU DECEMBER 2007



DAILY STAGES FOR JANUARY THRU NOVEMBER 2011



DAILY STAGES FOR JANUARY THRU DECEMBER 2008



DAILY STAGES FOR JANUARY THRU DECEMBER 2009

This Stage Hydrograph was obtained from the United States Geological Survey Division and was plotted by the Arkansas State Highway and Transportation Department.

This hydrograph is provided for information only.

Gage No. GRR44  
 Location: Latitude 35°31'15", Longitude 91°59'42", Greers Ferry Dam located at River Mile 79.0 of Little Red River. Broken lines in hydrograph signify missing data.



BRIDGE ENGINEER

HYDROGRAPH - GREERS FERRY LAKE  
 MIDWAY BRANCH STR. & APPRS. (S)  
 CLEBURNE COUNTY

ROUTE 225 SEC. 3  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

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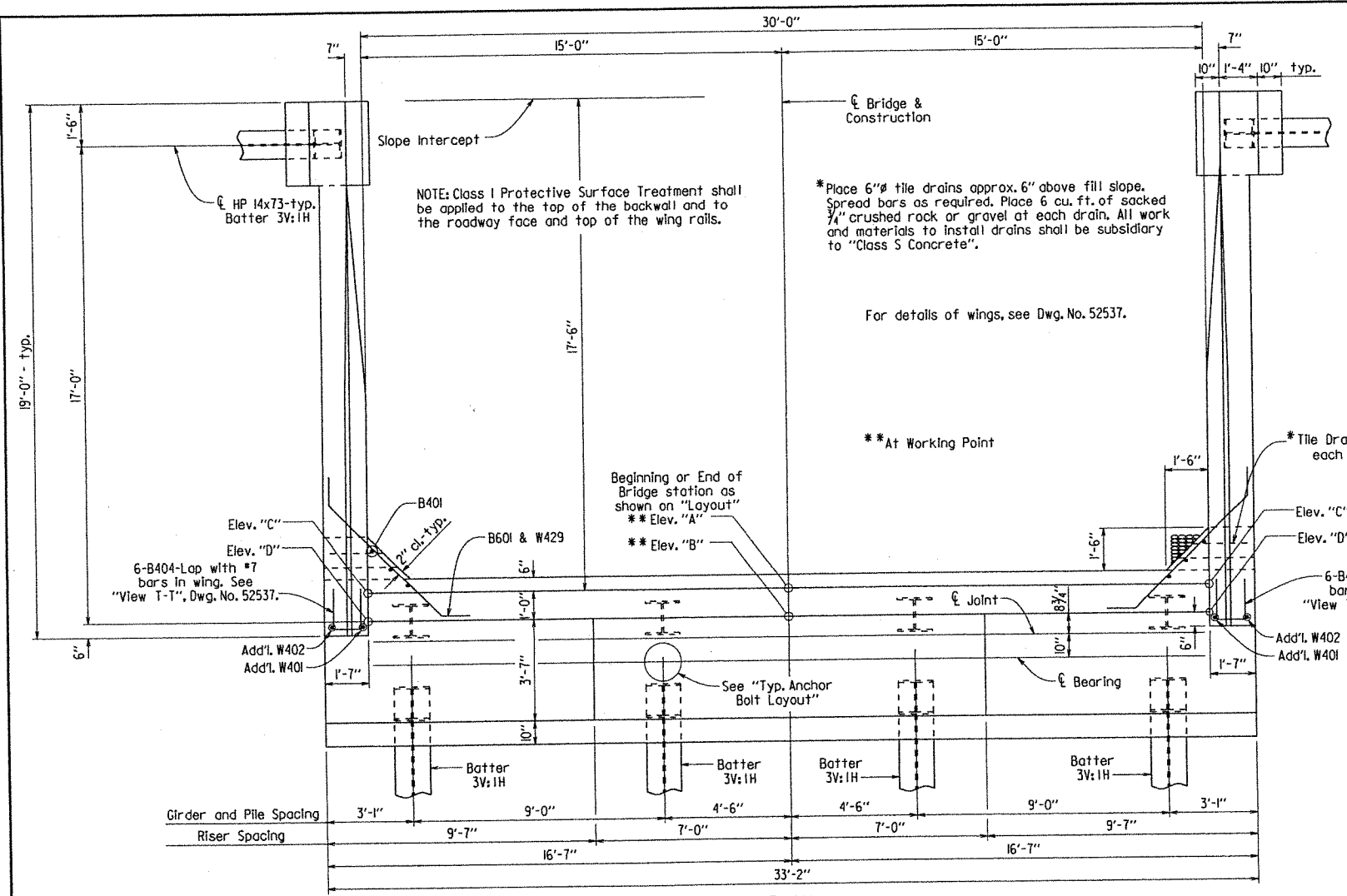
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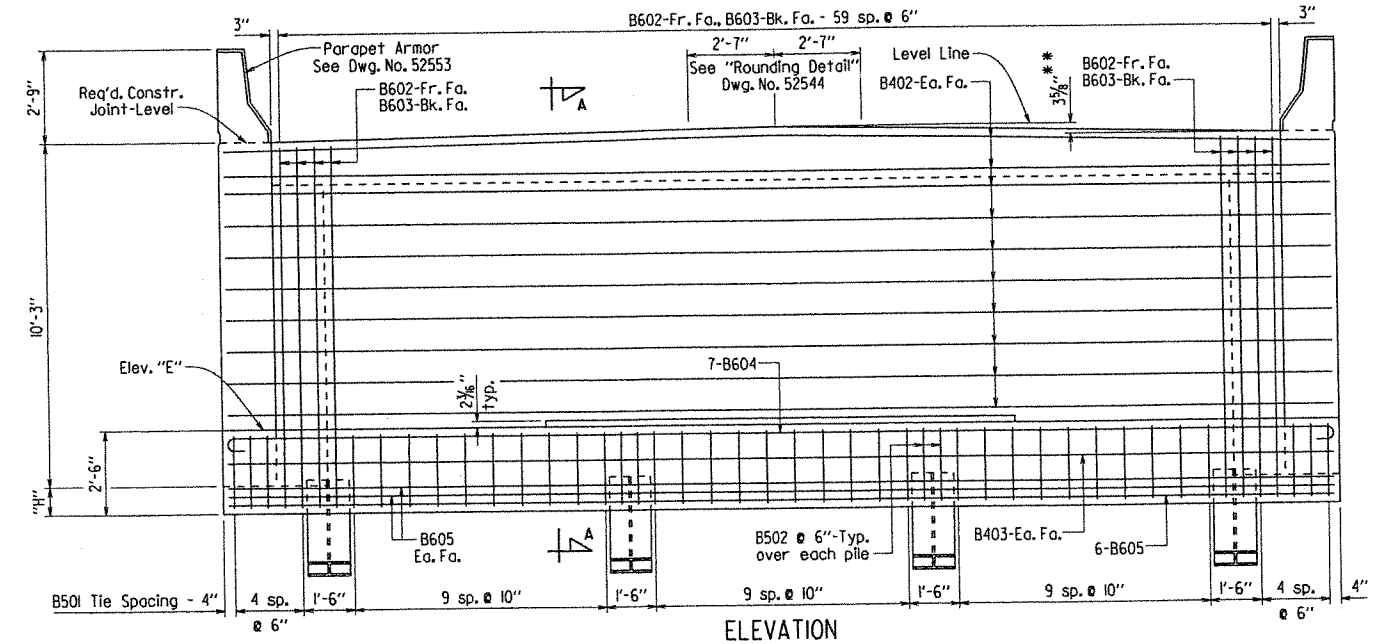
BRIDGE NO. 07235

DRAWING NO. 52535

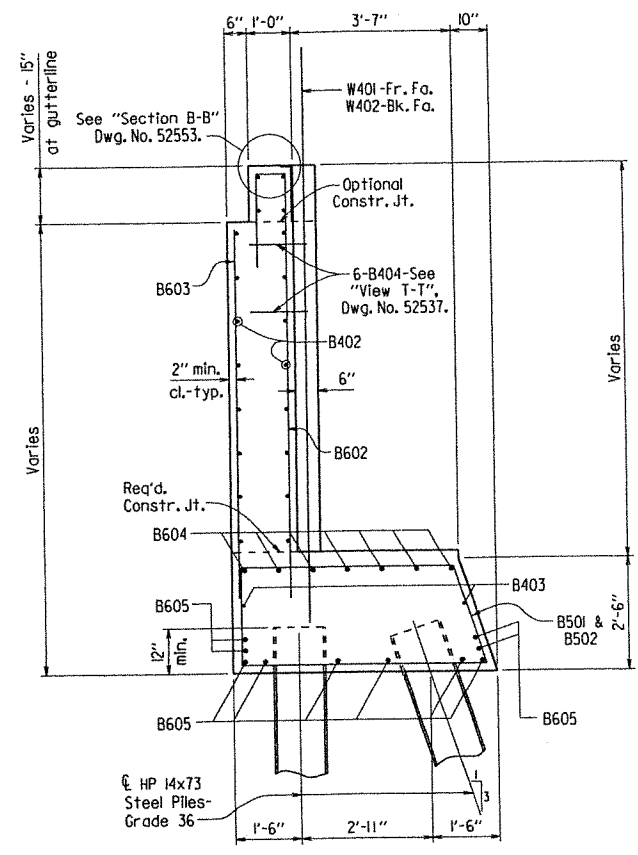
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				JOB NO.	050228		07235 - END BENTS - 52536	



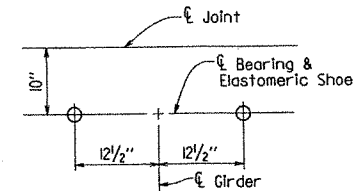
**PLAN**  
Scale: 3/8" = 1'-0"



**ELEVATION**  
Looking Back - Bent 1  
Looking Ahead - Bent 6  
Scale: 3/8" = 1'-0"



**SECTION A-A**  
Scale: 1/2" = 1'-0"



**TYP. ANCHOR BOLT LAYOUT**  
No Scale

**TABLE OF VARIABLES**

Elevation	Bent 1	Bent 6
"A"	523.30	545.94
"B"	523.28	545.89
"C"	523.00	545.64
"D"	522.98	545.59
"E"	514.48	537.04
"H"	9"	9 9/16"

**GENERAL NOTES**

All concrete shall be Class S and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.

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

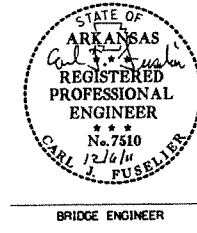
The backwall shown above the required construction joint shall not be poured until the deck concrete for Pour (1) on the adjacent span has been poured.

Structural steel in end bents shall be AASHTO M270, Gr. 50W and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be placed to avoid damage.

Concrete under the joint armor shall be hand packed.

For additional information, see layout.

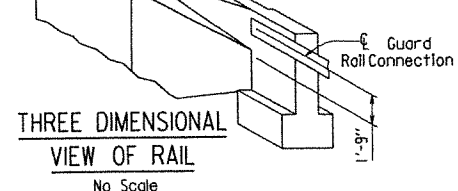
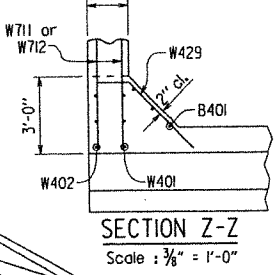
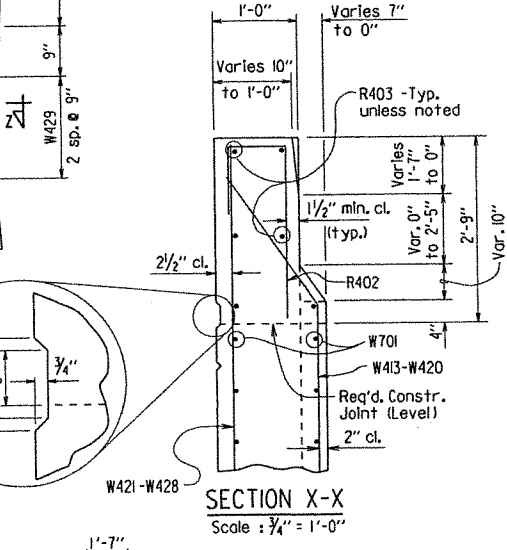
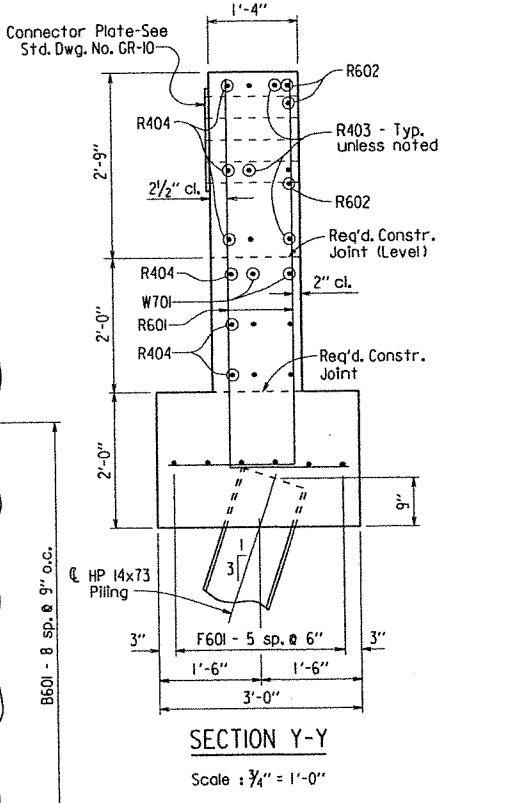
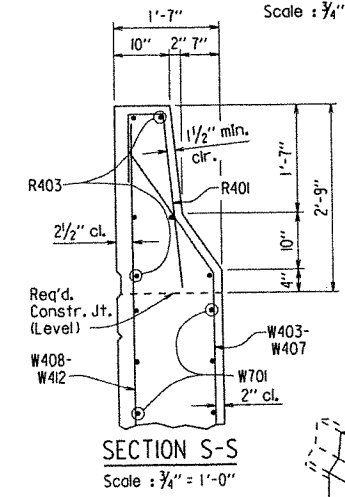
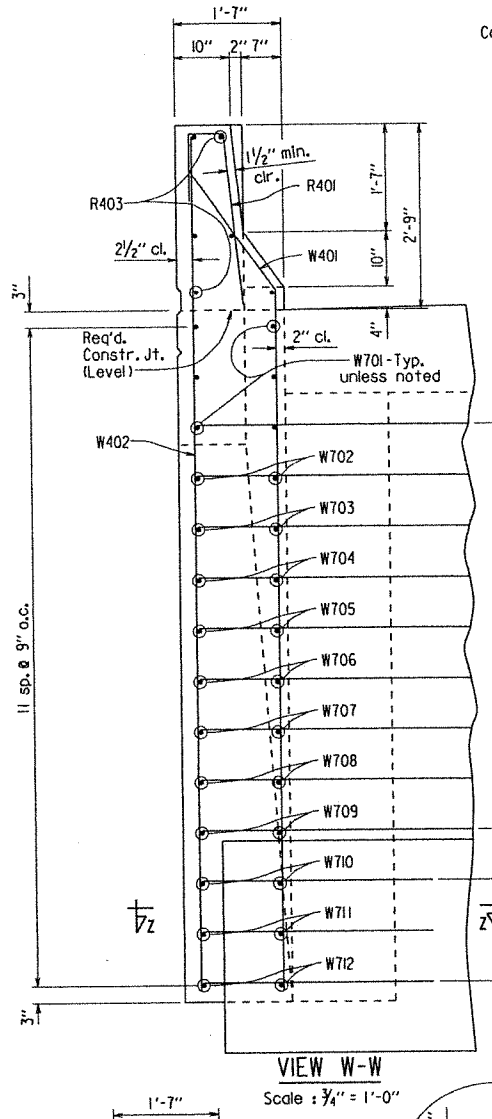
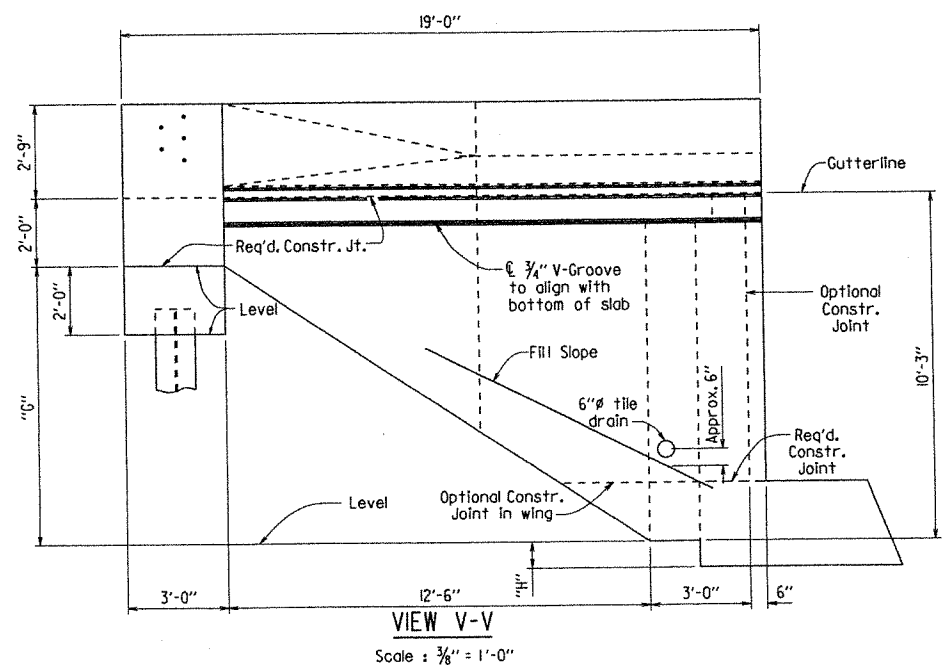
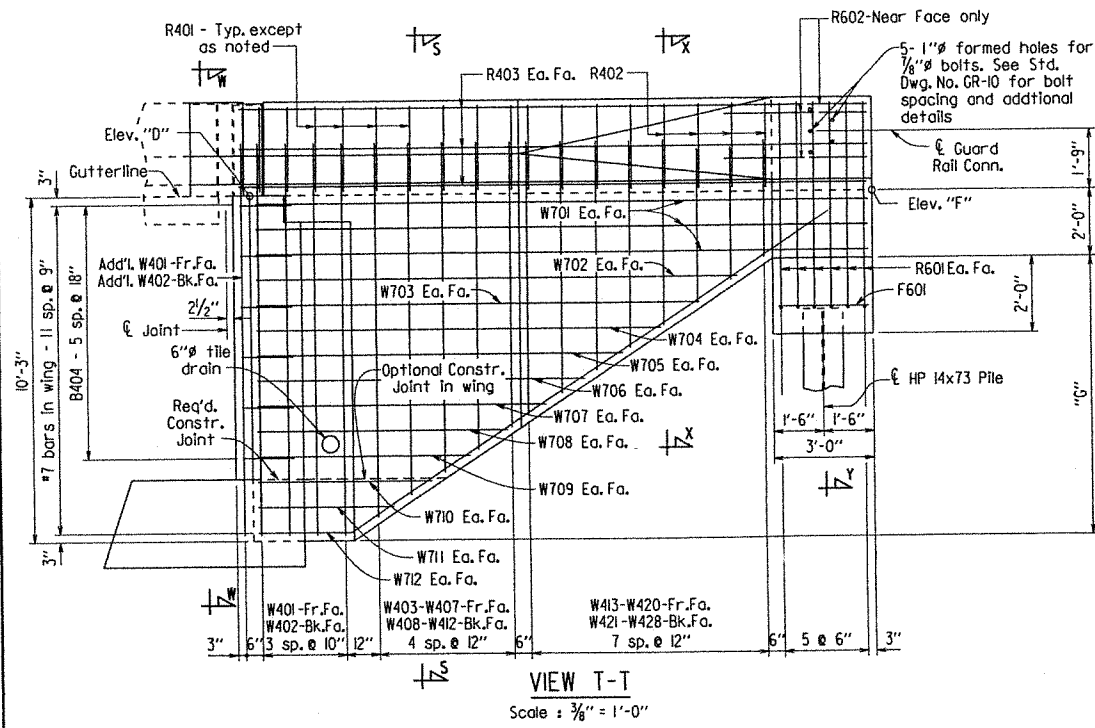
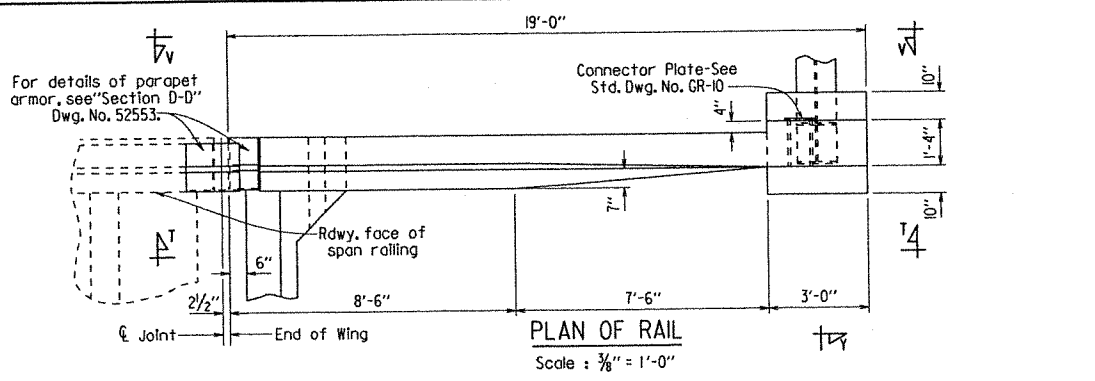


**SHEET 1 OF 2**  
**DETAILS OF END BENTS**  
**MIDWAY BRANCH**

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

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DESIGNED BY: [Signature] DATE: 05-11  
BRIDGE NO. 07235 DRAWING NO. 52536

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				6	ARK.	050228	39	96
				JOB NO.		07235 - END BENTS	52537	



BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.
B401	6	8'-8"	Str.
B402	20	32'-10"	Str.
B403	2	32'-10"	Str.
B404	12	4'-4"	2"
R401	28	3'-11"	2"
R402	8	4'-0"	2"
R403	12	18'-8"	Str.
R404	12	2'-8"	Str.
W401	10	12'-4"	2"
W402	10	12'-8"	Str.
W403-W407	2 each	Var. 9'-2" to 11'-10"	2"
W408-W412	2 each	Var. 9'-6" to 12'-2"	Str.
W413-W420	2 each	Var. 3'-5" to 8'-0"	2"
W421-W428	2 each	Var. 4'-7" to 9'-2"	Str.
W429	6	7'-8"	2"
B501	40	15'-3"	2 1/2"
B502	8	9'-2"	2 1/2"
B601	18	7'-8"	4 1/2"
B602	60	12'-11"	4 1/2"
B603	60	8'-7"	Str.
B604	7	34'-2"	4 1/2"
B605	10	32'-10"	Str.
F601	12	2'-8"	Str.
R601	24	7'-4"	4 1/2"
R602	6	5'-6"	Str.
W701	12	18'-2"	Str.
W702	4	14'-3"	Str.
W703	4	13'-1"	Str.
W704	4	12'-0"	Str.
W705	4	10'-10"	Str.
W706	4	9'-8"	Str.
W707	4	8'-7"	Str.
W708	4	7'-5"	Str.
W709	4	6'-3"	Str.
W710	4	5'-2"	Str.
W711	4	4'-0"	Str.
W712	4	19'-10"	5 1/4"

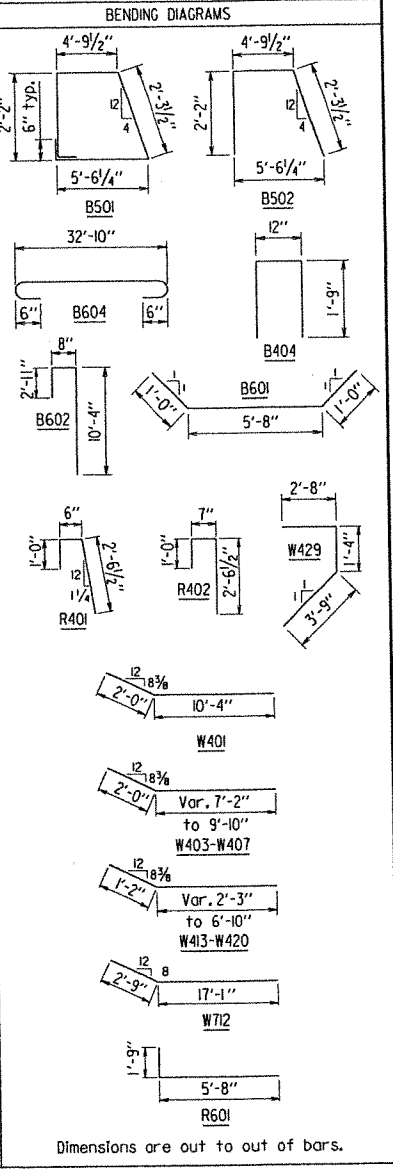
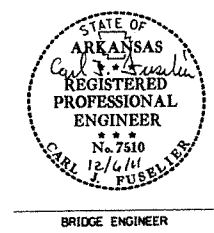


TABLE OF VARIABLES

	Bent 1	Bent 6
Elev. "D"	522.98	545.59
Elev. "F"	523.30	546.43
"G"	8'-6 1/8"	9'-1 1/8"
"H"	9"	9 3/8"



SHEET 2 OF 2  
DETAILS OF END BENTS  
MIDWAY BRANCH

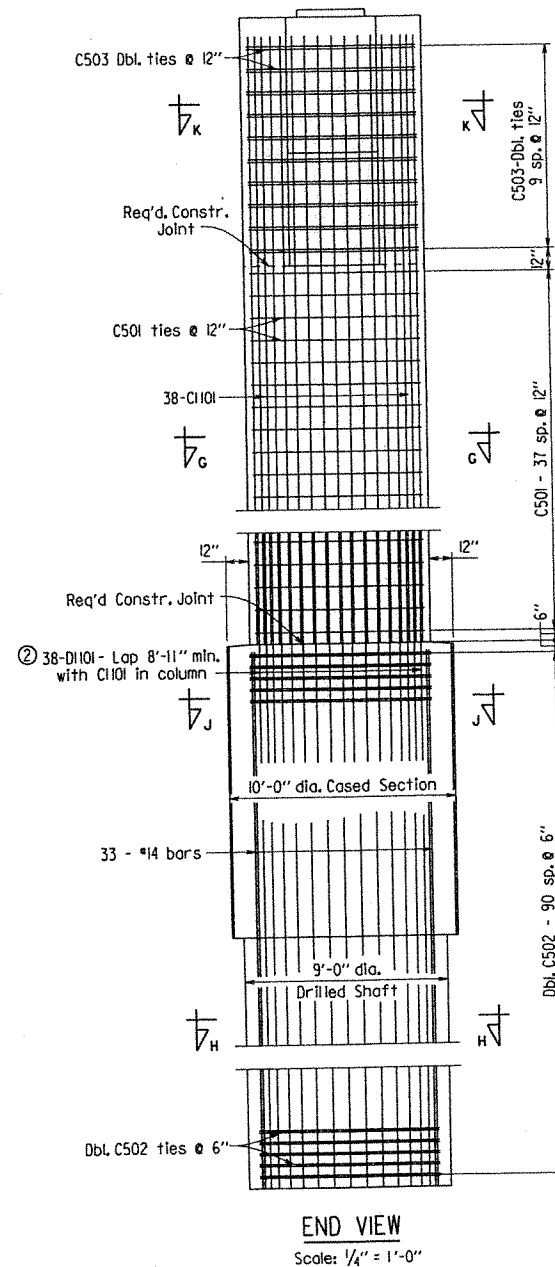
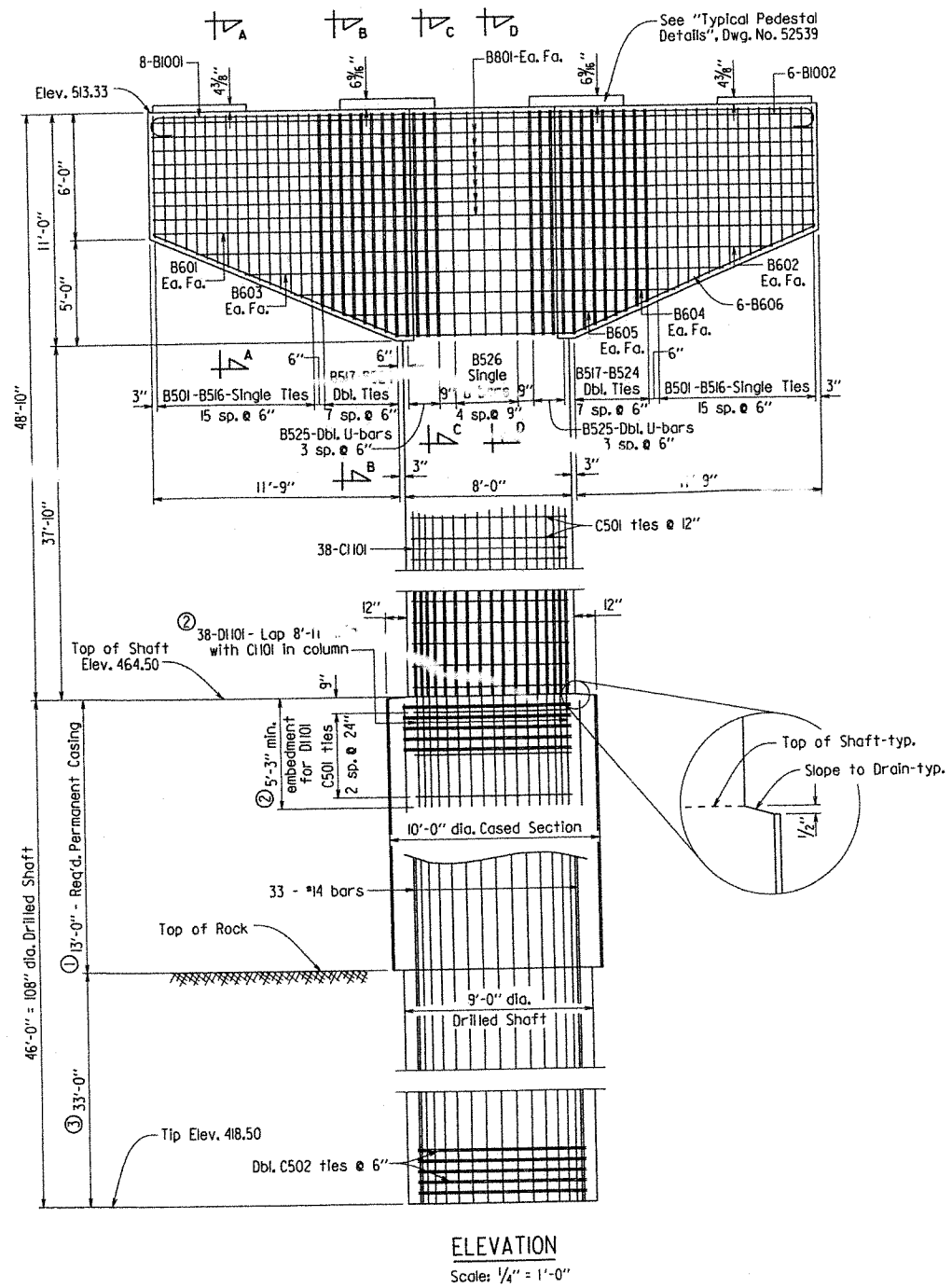
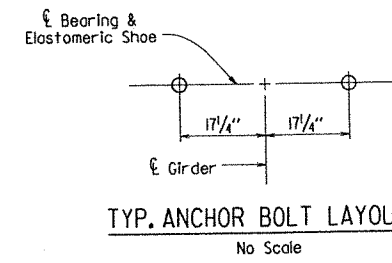
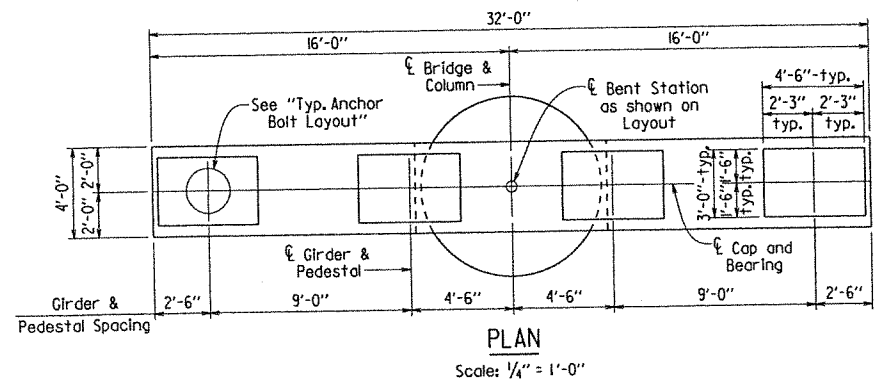
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

BRIDGE NO. 07235 DRAWING NO. 52537

DATE: 4-22-11  
DESIGNED BY: MCB  
CHECKED BY: MCB  
DRAWN BY: KDH

FILENAME: b050228.bl.dgn  
SCALE: AS NOTED  
DATE: 6/6/11  
DATE: 2/5-11

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.		050228	4096	
				①	07235 -	INT. BENTS	-	52538



**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 050228 "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.

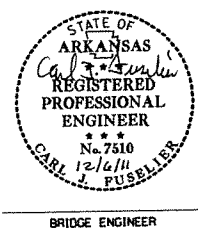
Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

Drilled shafts shall conform to SP Job 050228 "Drilled Shaft Foundations".

For all "Sections", see Dwg. No. 52539.

- Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job 050228 "Drilled Shaft Foundations." Permanent casings shall not extend below top of competent rock.
- The column reinforcing cage, consisting of bars C501 and D1101, 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.



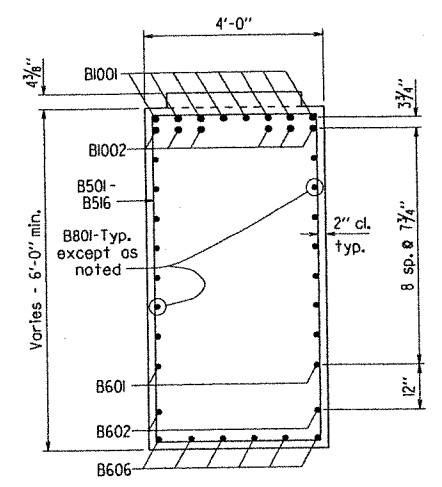
SHEET 1 OF 2  
DETAILS OF BENT 2  
MIDWAY BRANCH

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

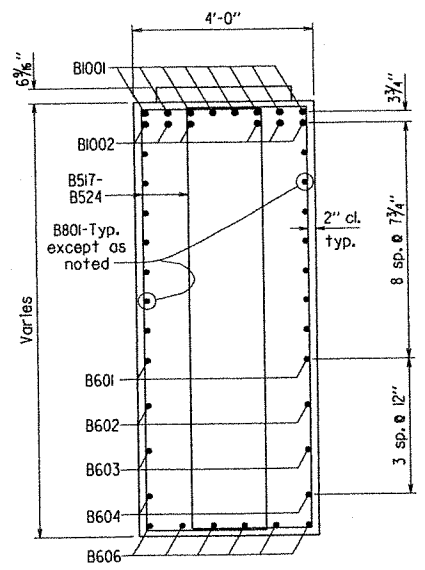
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BRIDGE NO. 07235 DRAWING NO. 52538



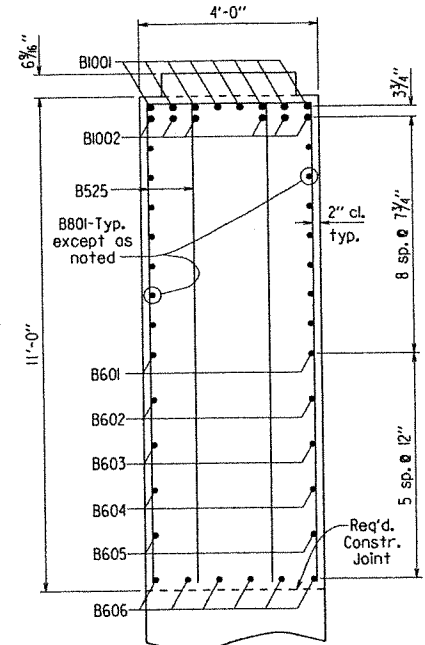
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				07235 - INT. BENTS	- 52539			



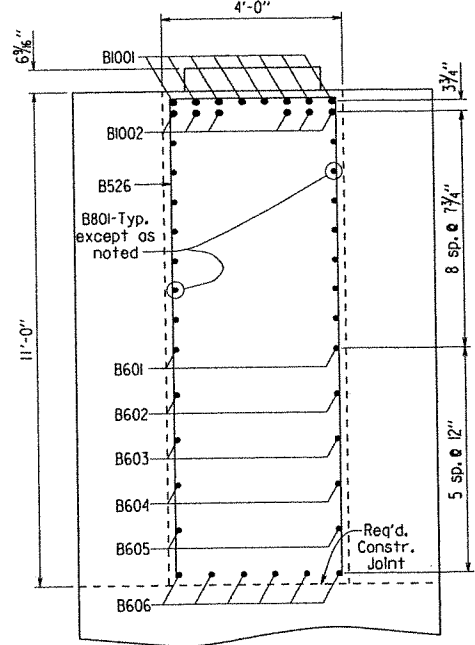
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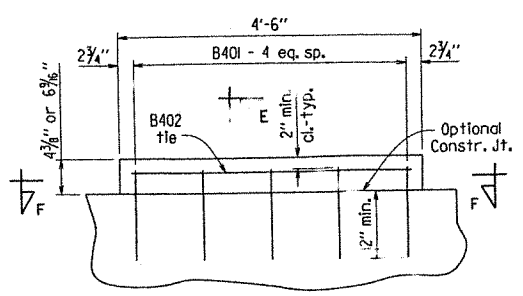
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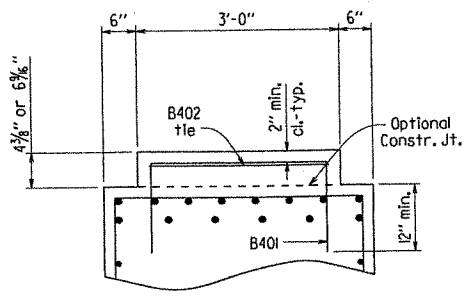
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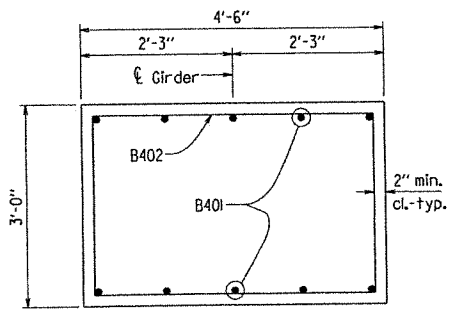
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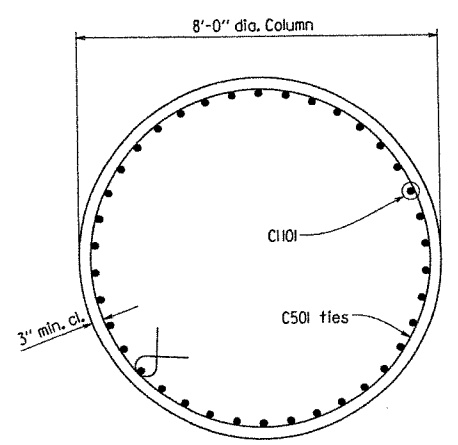
TYPICAL PEDESTAL DETAILS  
Scale: 3/4" = 1'-0"



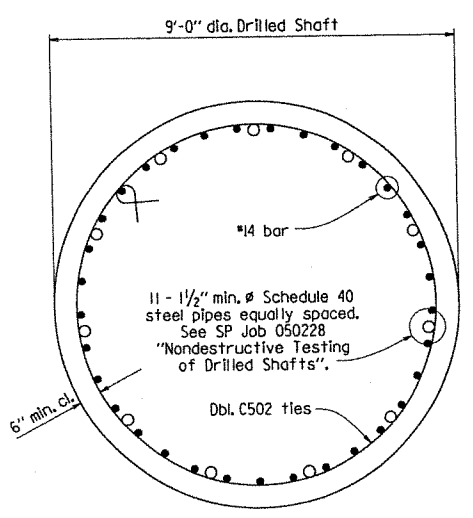
SECTION E-E  
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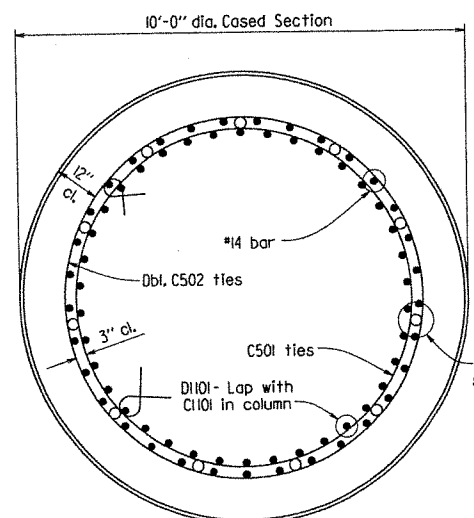
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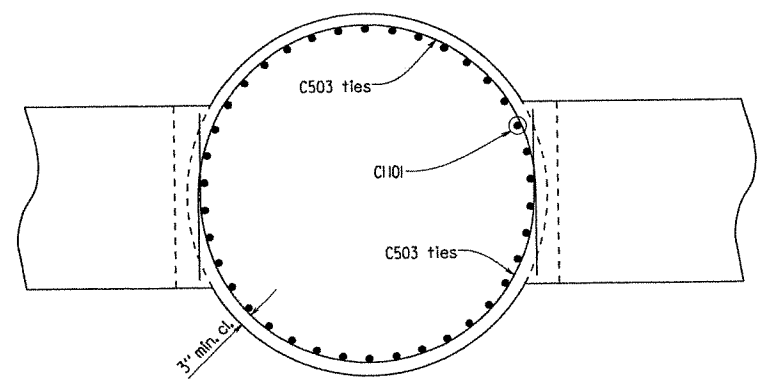
SECTION G-G  
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SECTION H-H  
Scale: 1/2" = 1'-0"



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

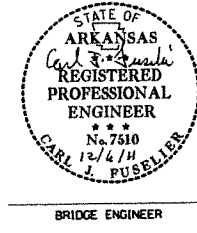


SECTION K-K  
Scale: 1/2" = 1'-0"

BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	20	5'-3"	2"	<p>Dimensions are out to out of bars.</p>
B402	4	14'-0"	2"	
B501-B516	2 each	Var. 19'-4" to 25'-9"	2 1/2"	
B517-B524	4 each	Var. 24'-2" to 27'-2"	2 1/2"	
B525	16	23'-10"	2 1/2"	
B526	5	24'-10"	2 1/2"	
C501	41	24'-11"	3 3/4"	
C502	182	26'-6"	3 3/4"	
C503	20	15'-5"	4 1/2"	
B601	2	31'-8"	Str.	
B602	2	27'-7"	Str.	
B603	2	22'-11"	Str.	
B604	2	18'-2"	Str.	
B605	2	13'-6"	Str.	
B606	6	33'-7"	4 1/2"	
B801	14	31'-8"	Str.	
B1001	8	34'-6"	10"	
B1002	6	31'-8"	Str.	
C101	38	48'-0"	Str.	
D101	38	14'-6"	Str.	
④ #14 bars	33	45'-9"	Str.	

④ Non-pay item - Subsidiary to SP Job 050228 "Drilled Shaft Foundations"



SHEET 2 OF 2  
DETAILS OF BENT 2  
MIDWAY BRANCH

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

DRAWN BY: KDH DATE: 5-26-11 FILENAME: b050228\_b2.dgn  
CHECKED BY: SWP DATE: 12-5-11 SCALE: AS NOTED  
DESIGNED BY: SWP DATE: 11/11  
BRIDGE NO. 07235 DRAWING NO. 52539

DATE REVISION	DATE FILMED	DATE REVISION	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.	050228		42	96
				①	07235 - INT. BENTS		- 52540	

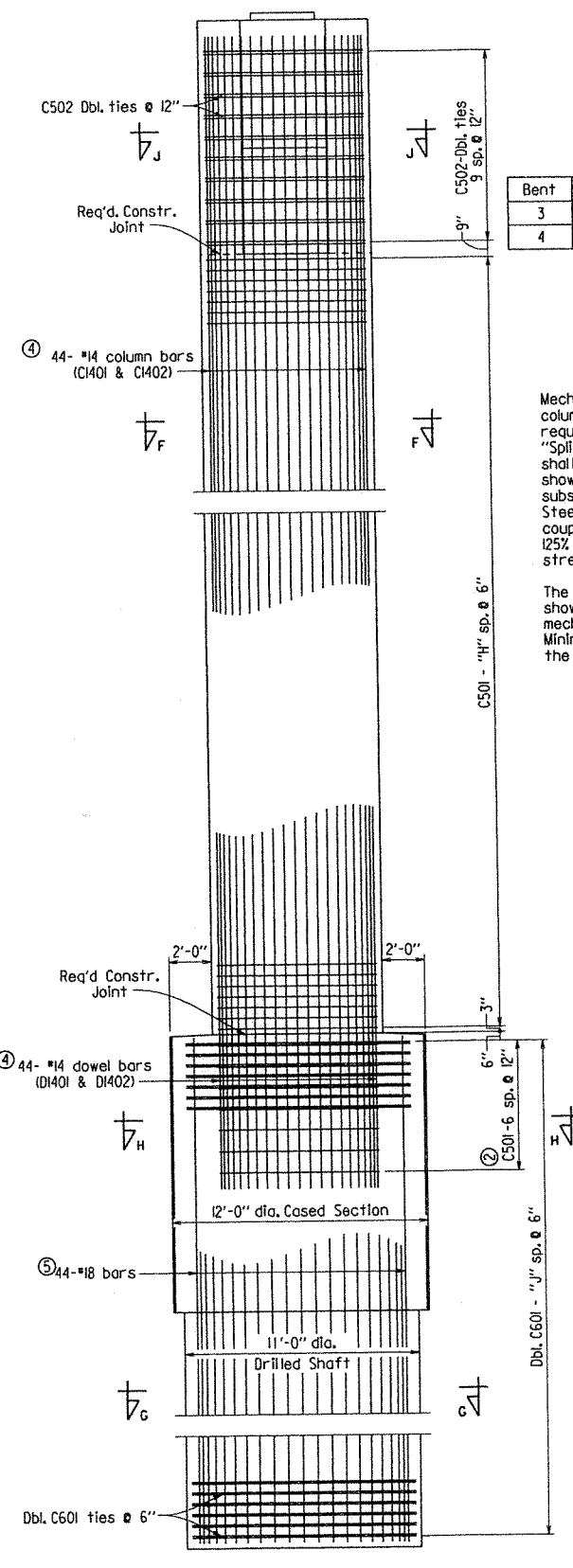
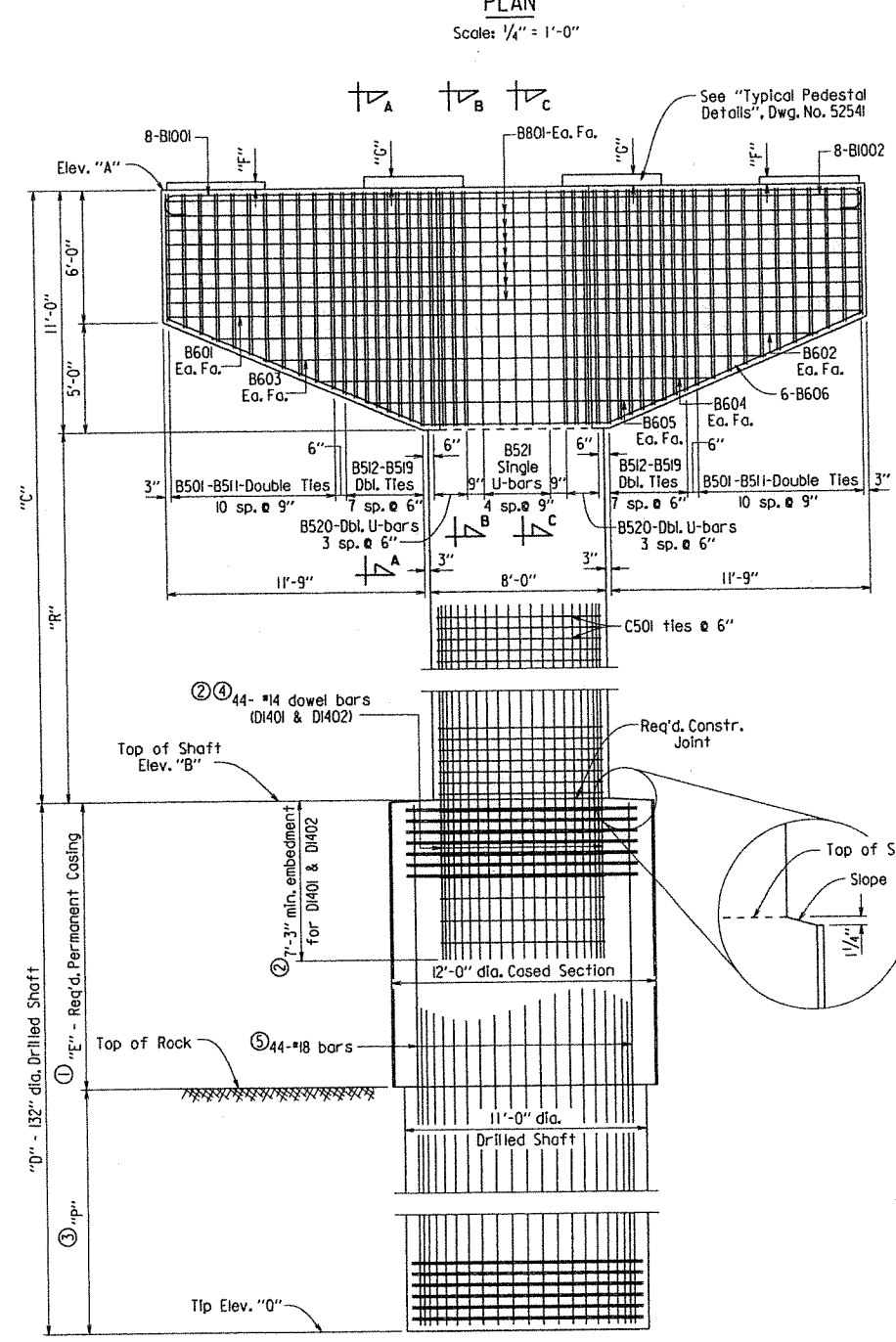
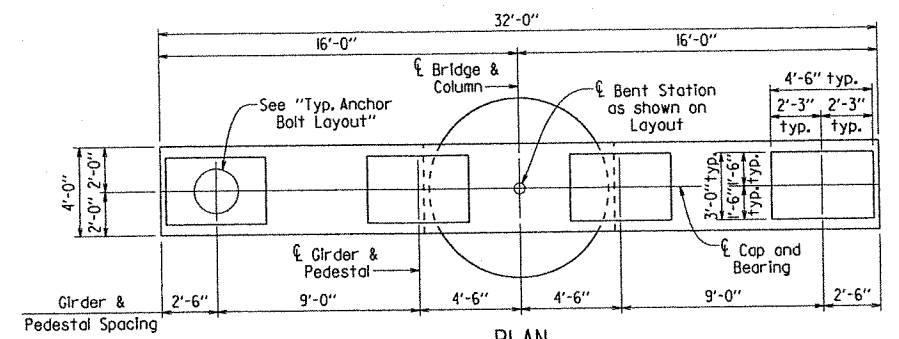
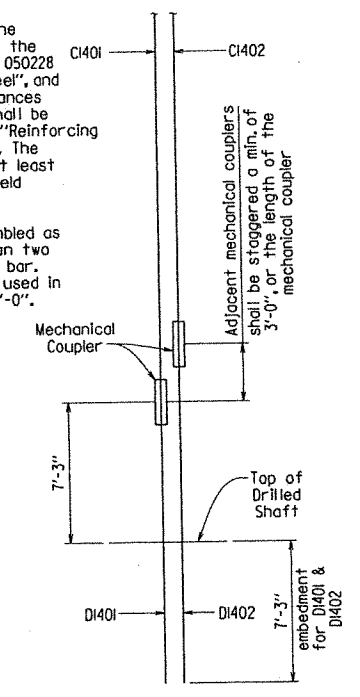


TABLE OF VARIABLES

Bent	Elev. "A"	Elev. "B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"N"	"P"	Elev. "O"	"R"
3	515.00	464.50	50'-6"	132'-6"	82'-6"	4 1/2"	6 3/4"	78	263	86	528	42'-6"	39'-6"	50'-0"	332.00	39'-6"
4	522.08	464.50	57'-7"	128'-6"	80'-6"	4 1/2"	6 3/4"	92	255	100	512	49'-7"	46'-7"	48'-0"	336.00	46'-7"

Mechanical couplers in the column shall conform to the requirements of SP Job 050228 "Splicing Reinforcing Steel", and shall maintain the clearances shown. Their payment shall be subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)". The couplers shall develop at least 125% of the specified yield strength of the bar.

The bars shall be assembled as shown, with no more than two mechanical couplers per bar. Minimum length of bars used in the assembly shall be 5'-0".



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 050228 "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.

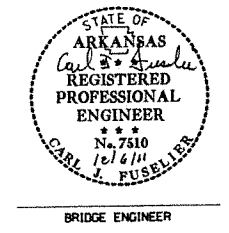
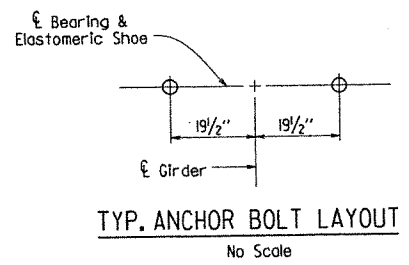
Top reinforcing bars shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information see layout.

Drilled shafts shall conform to SP Job 050228 "Drilled Shaft Foundations".

For all "Sections", see Dwg. No. 52541.

- Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. The upper 15'-0" of the permanent casing shall be painted. See SP Job 050228 "Drilled Shaft Foundations". Permanent casing shall not extend below top of competent rock.
- The column reinforcing cage, consisting of bars C501, D1401 & D1402, 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.
- See "Dowel and Column Bar Detail"
- See "Section G-G" and "Drilled Shaft Bar Detail", Dwg. No. 52541.

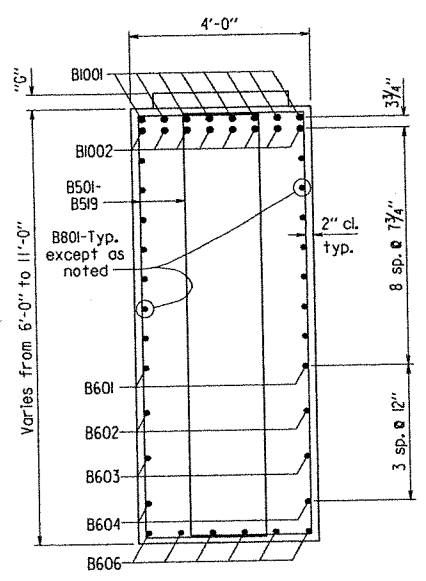


SHEET 1 OF 2  
DETAILS OF BENTS 3 & 4  
MIDWAY BRANCH

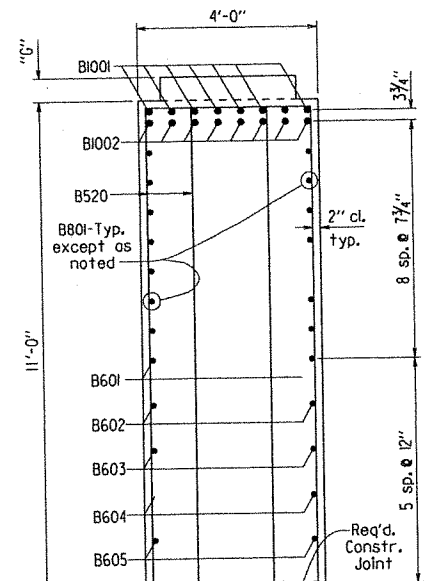
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

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CHECKED BY: BM DATE: 12-01-11 SCALE: AS NOTED  
DESIGNED BY: GWP DATE: 11/20/11  
BRIDGE NO. 07235 DRAWING NO. 52540

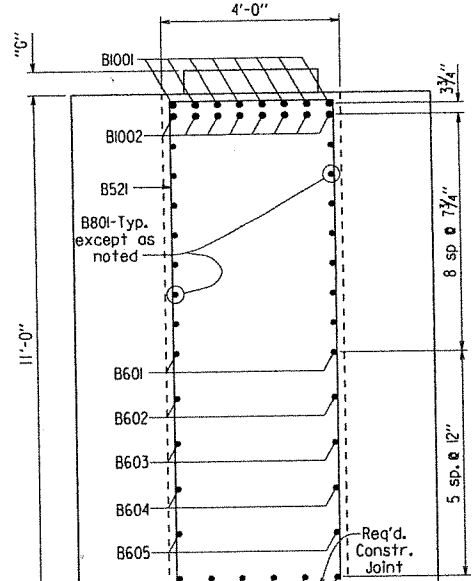
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				6	ARK.			
				JOB NO.	050228	43	96	
				①	07235 - INT. BENTS	-	52541	



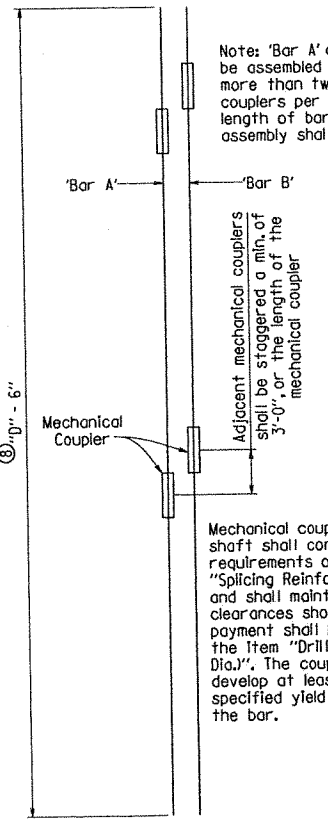
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SECTION B-B  
Scale: 1/2" = 1'-0"

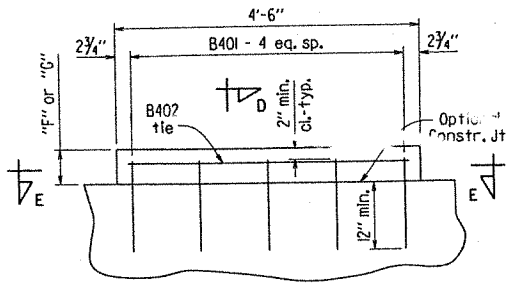


SECTION C-C  
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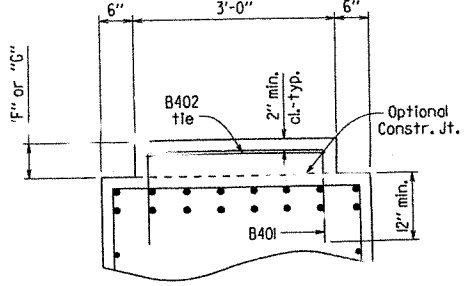


DRILLED SHAFT BAR DETAIL  
No Scale

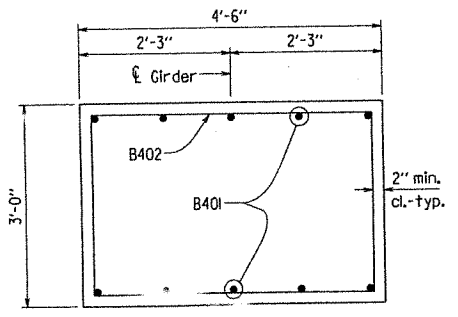
BAR LIST - PER BENT				BENDING DIAGRAMS	
MARK	NO. REQ'D.	LENGTH	P.D.	Dimensions are out to out of bars.	
B401	20	5'-3"	2"	2'-8"	
B402	4	14'-0"	2"	2'-8"	
B501-B511	4 each	Var. 17'-4" to 23'-9"	2 1/2"	2'-8"	
B512-B519	4 each	Var. 24'-2" to 27'-2"	2 1/2"	2'-8"	
B520	16	23'-10"	2 1/2"	2'-8"	
B521	5	24'-10"	2 1/2"	2'-8"	
C501	⑧ "K"	24'-11"	3 3/4"	2'-8"	
C502	20	15'-5"		2'-8"	
B601	2	31'-8"	Str.	3'-8"	
B602	2	27'-7"	Str.	3'-8"	
B603	2	22'-11"	Str.	3'-8"	
B604	2	18'-2"	Str.	3'-8"	
B605	2	13'-6"	Str.	3'-8"	
B606	6	33'-7"	4 1/2"	3'-8"	
C601	⑧ "L"	33'-3"	4 1/2"	3'-8"	
B801	14	31'-8"	Str.	3'-8"	
B1001	8	34'-6"	10"	3'-8"	
B1002	8	31'-8"	Str.	3'-8"	
C1401	22	⑧ "M"	Str.	3'-8"	
C1402	22	⑧ "N"	Str.	3'-8"	
D1401	22	14'-6"	Str.	3'-8"	
D1402	22	17'-6"	Str.	3'-8"	
⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳	18 bars	44	⑧ "D" - 6"	3'-8"	



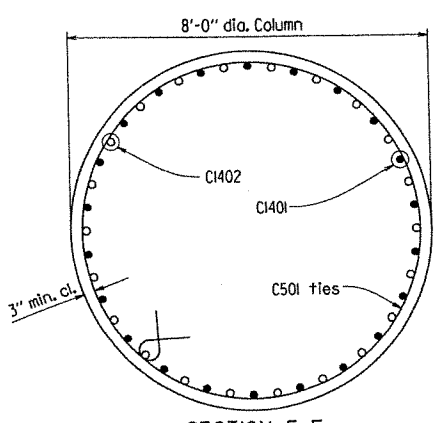
TYPICAL PEDESTAL DETAILS  
Scale: 3/4" = 1'-0"



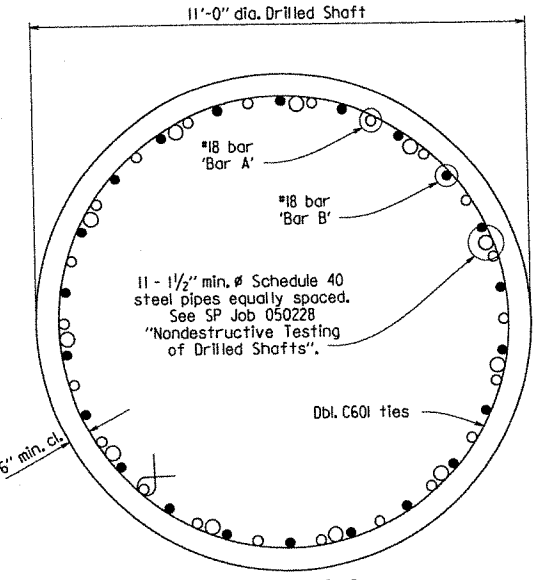
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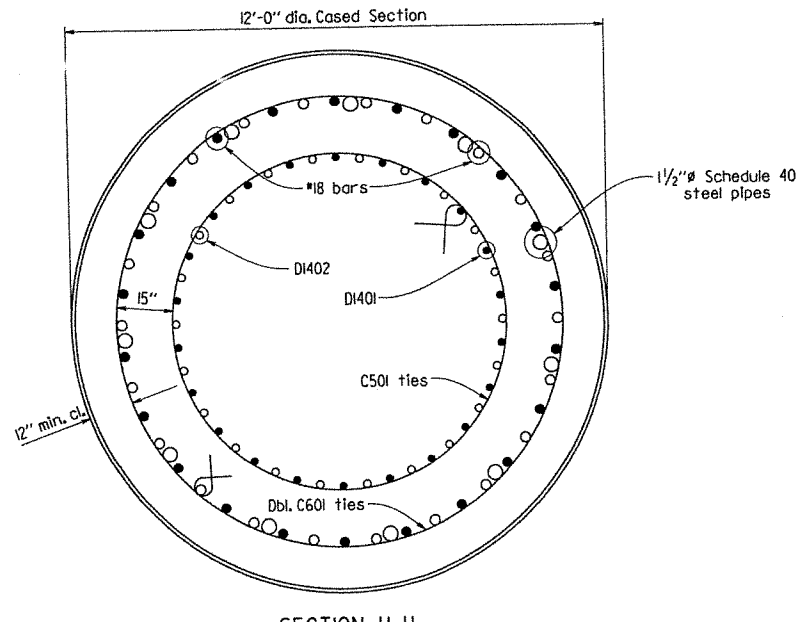
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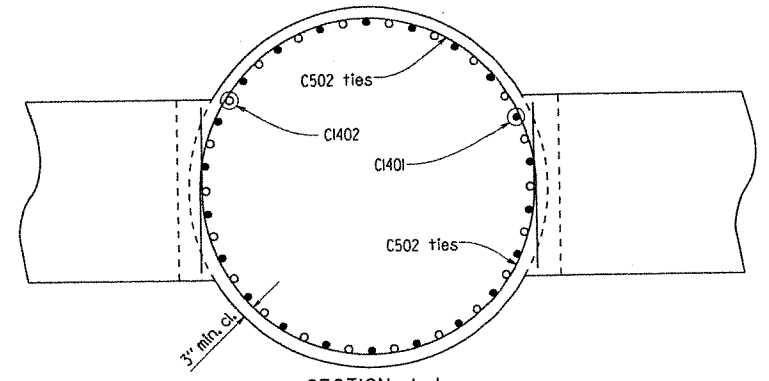
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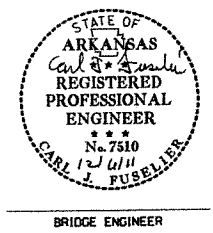
SECTION G-G  
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SECTION H-H  
Scale: 1/2" = 1'-0"



SECTION J-J  
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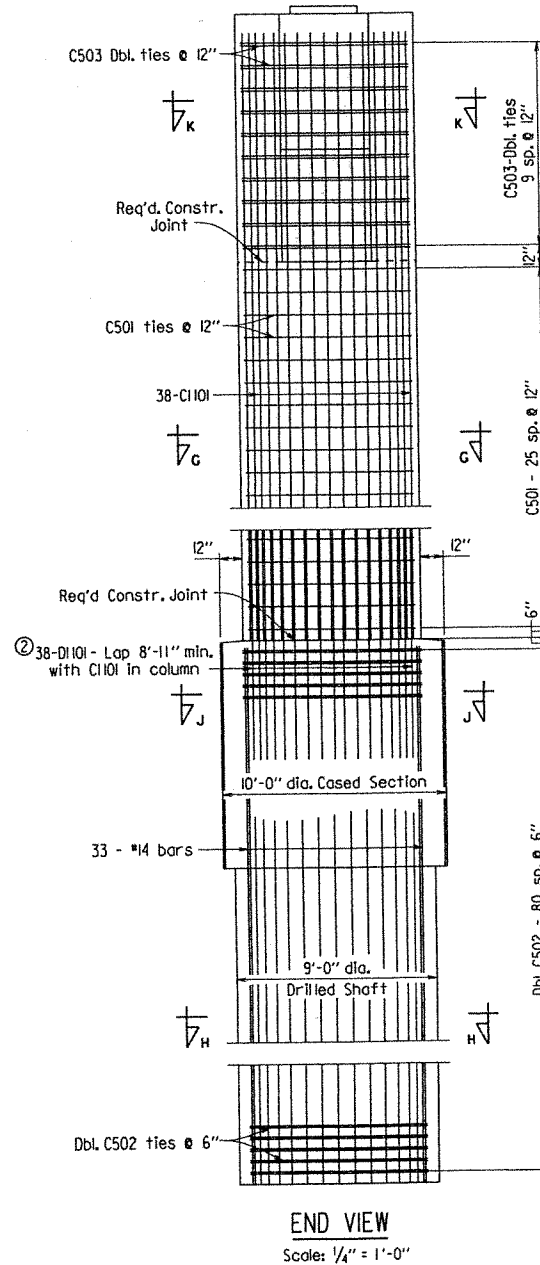
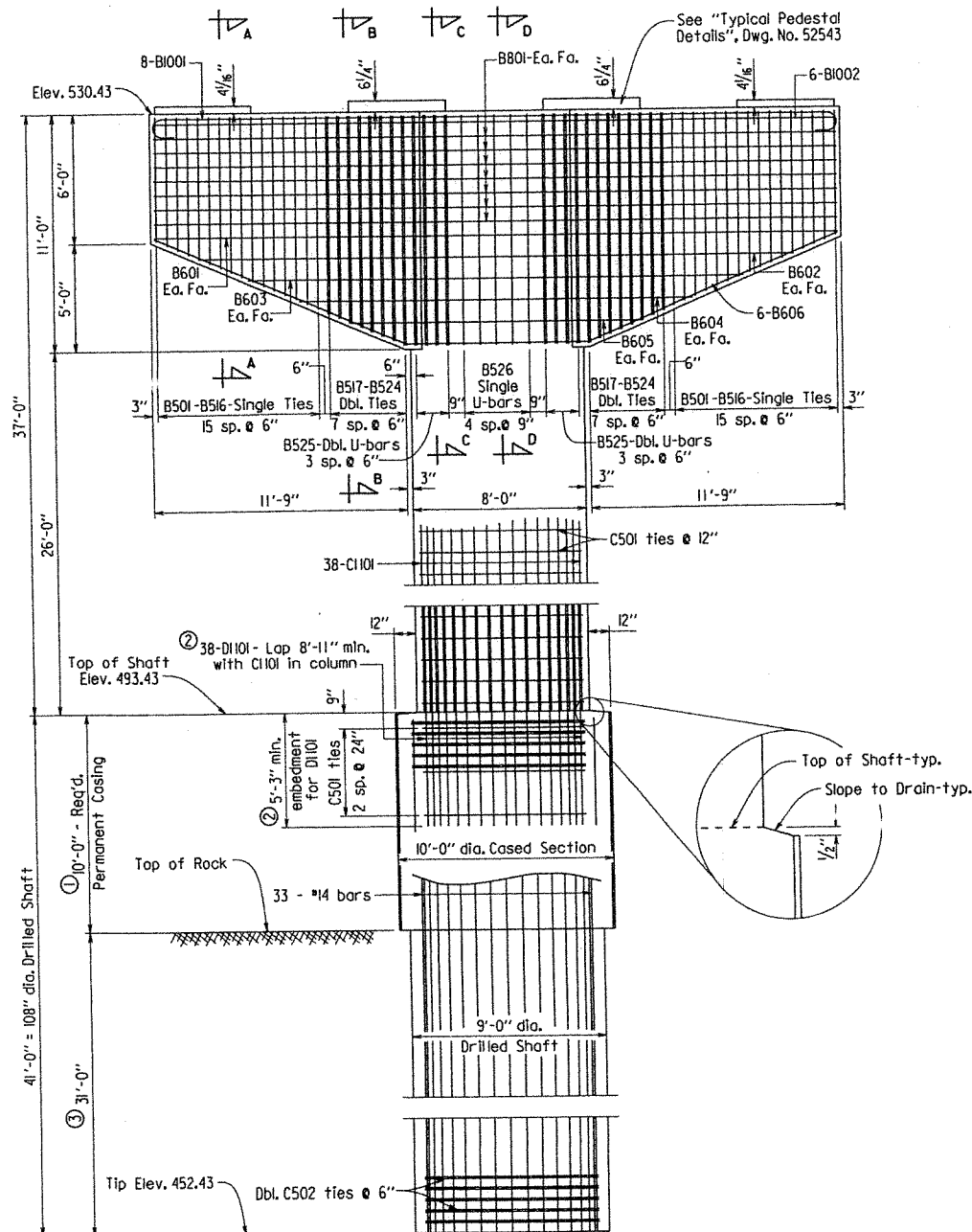
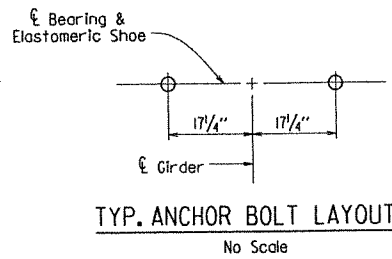
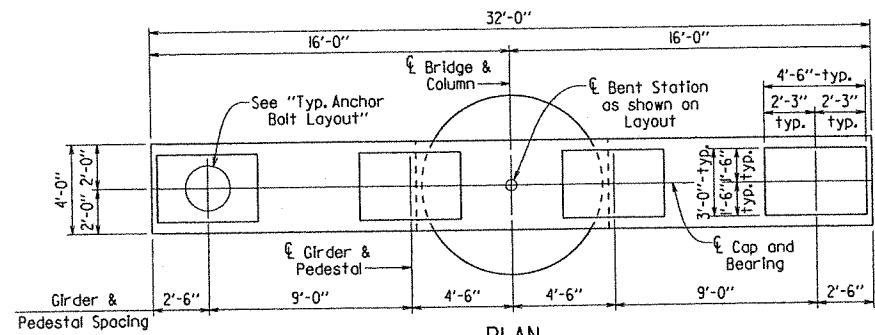


SHEET 2 OF 2  
DETAILS OF BENTS 3 & 4  
MIDWAY BRANCH

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

DRAWN BY: KDH DATE: 6-24-11 FILENAME: b050228\_b3.dgn  
CHECKED BY: [Signature] DATE: 12-01-11 SCALE: AS NOTED  
DESIGNED BY: SWP DATE: 11/2011  
BRIDGE NO. 07235 DRAWING NO. 52541

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	050228	44	96
				07235	-	INT. BENTS	-	52542



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 050228 "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 050228 "Drilled Shaft Foundations".

For all "Sections", see Dwg. No. 52543.

① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job 050228 "Drilled Shaft Foundations". Permanent casing shall not extend below top of competent rock.

② The column reinforcing cage, consisting of bars C501 and D1101, 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.

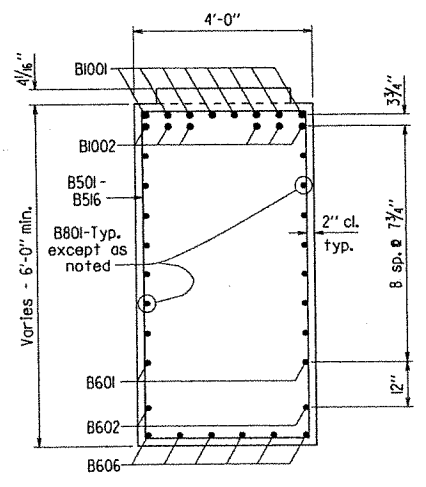


SHEET 1 OF 2  
DETAILS OF BENT 5  
MIDWAY BRANCH

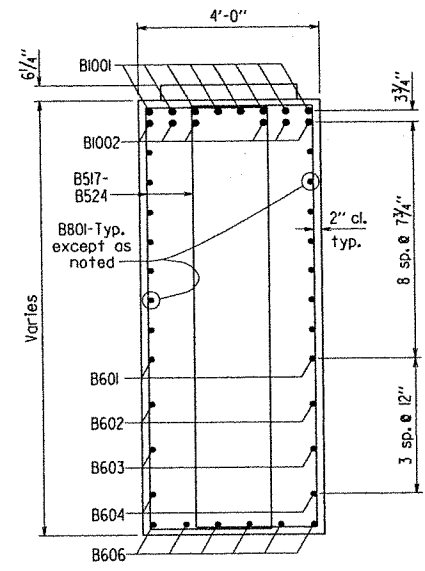
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

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CHECKED BY: SWP DATE: 12-5-11 SCALE: AS NOTED  
DESIGNED BY: SWP DATE: 11/20/11  
BRIDGE NO. 07235 DRAWING NO. 52542

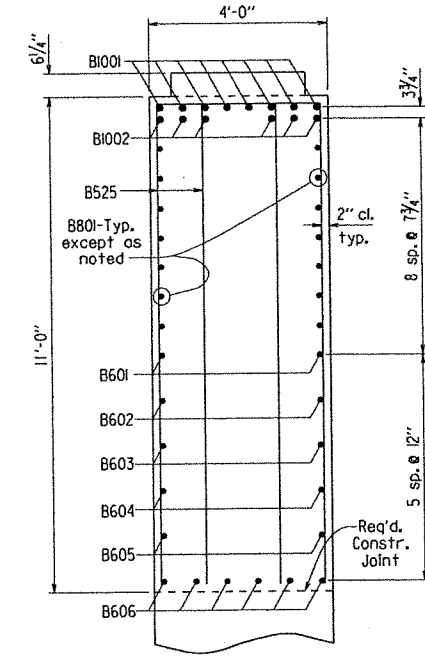
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				JOB NO.		07235 - INT. BENTS		52543



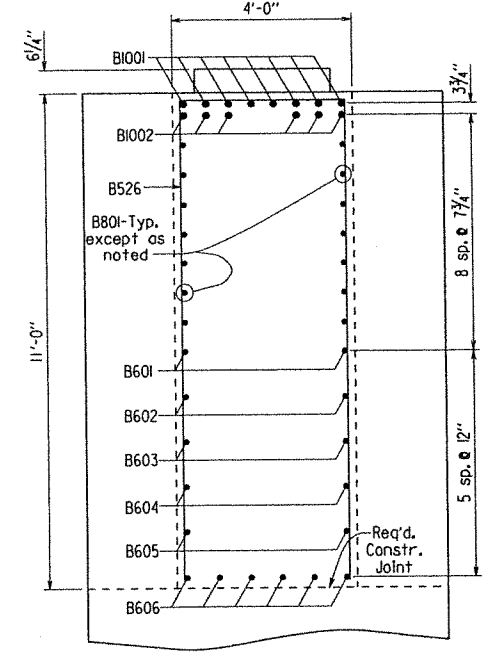
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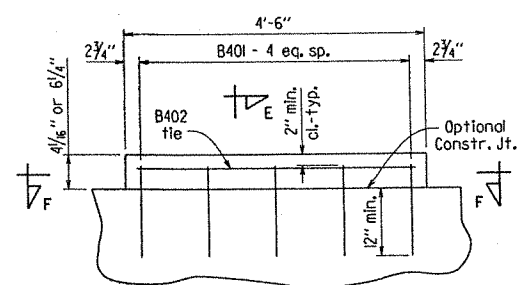
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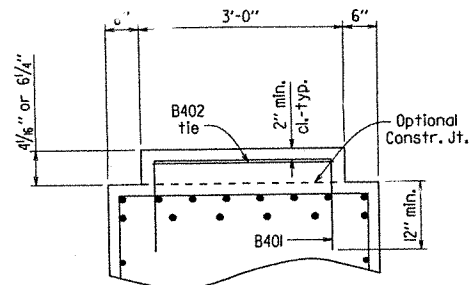
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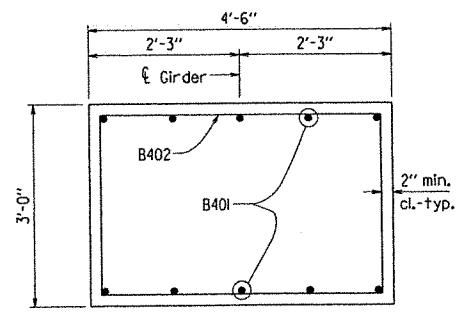
**SECTION D-D**  
Scale: 1/2" = 1'-0"



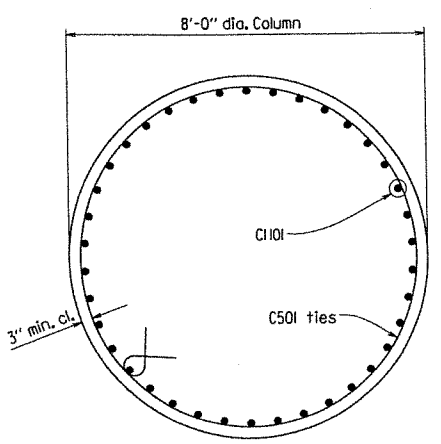
**TYPICAL PEDESTAL DETAILS**  
Scale: 3/4" = 1'-0"



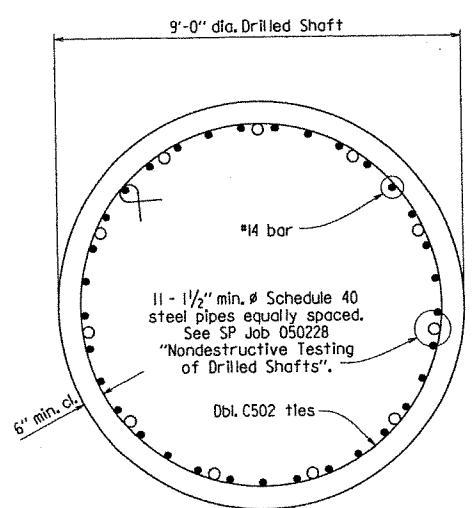
**SECTION E-E**  
Scale: 3/4" = 1'-0"



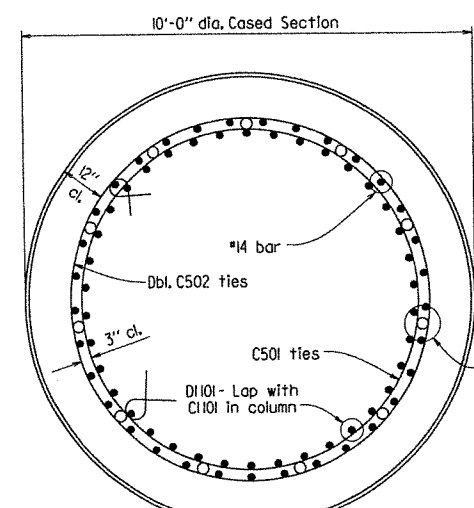
**SECTION F-F**  
Scale: 3/4" = 1'-0"



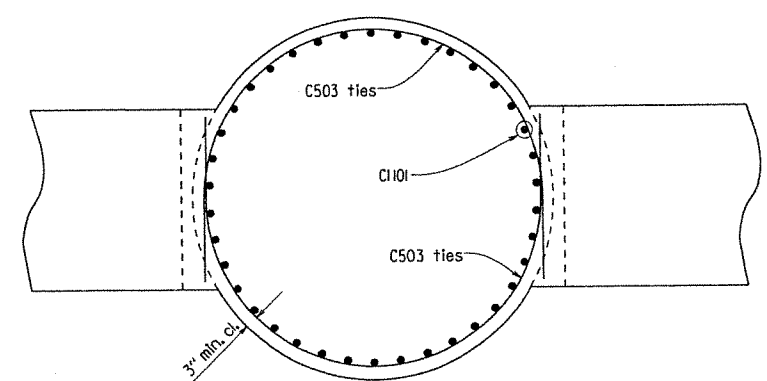
**SECTION G-G**  
Scale: 1/2" = 1'-0"



**SECTION H-H**  
Scale: 1/2" = 1'-0"



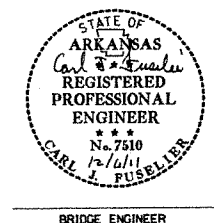
**SECTION J-J**  
Scale: 1/2" = 1'-0"



**SECTION K-K**  
Scale: 1/2" = 1'-0"

BAR LIST				BENDING DIAGRAMS	
MARK	NO. REQ'D.	LENGTH	P.D.	Dimensions are out to out of bars.	
B401	20	5'-3"	2"	3'-8"	
B402	4	14'-0"	2"	2'-8"	
B501-B516	2 each	Var. 19'-4" to 25'-9"	2 1/2"	2'-8"	
B517-B524	4 each	Var. 24'-2" to 27'-2"	2 1/2"	2'-8"	
B525	16	23'-10"	2 1/2"	2'-8"	
B526	5	24'-10"	2 1/2"	2'-8"	
C501	29	24'-11"	3 3/4"	2'-6 1/2"	
C502	162	26'-6"	3 3/4"	2'-6 1/2"	
C503	20	15'-5"	3 3/4"	2'-6 1/2"	
B601	2	31'-8"	Str.	10'-8"	
B602	2	27'-7"	Str.	10'-8"	
B603	2	22'-11"	Str.	10'-8"	
B604	2	18'-2"	Str.	10'-8"	
B605	2	13'-6"	Str.	10'-8"	
B606	6	33'-7"	4 1/2"	10'-8"	
B801	14	31'-8"	Str.	10'-8"	
B1001	8	34'-6"	10"	10'-8"	
B1002	6	31'-8"	Str.	10'-8"	
C101	38	36'-3"	Str.	10'-8"	
D101	38	14'-6"	Str.	10'-8"	
#14 bars	33	40'-9"	Str.	10'-8"	

④ Non-pay Item - Subsidiary to SP Job 050228 "Drilled Shaft Foundations"

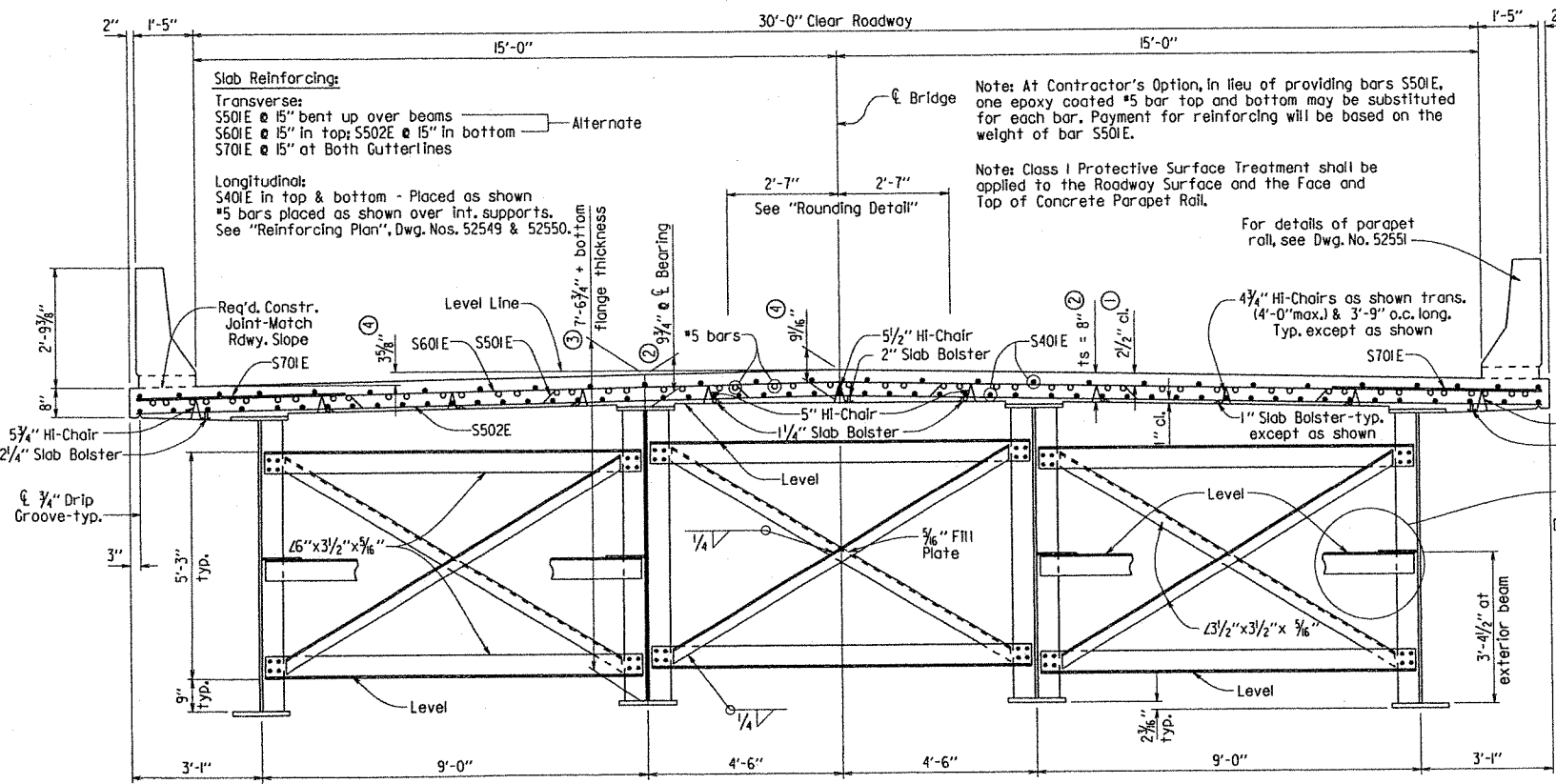


SHEET 2 OF 2  
DETAILS OF BENT 5  
MIDWAY BRANCH

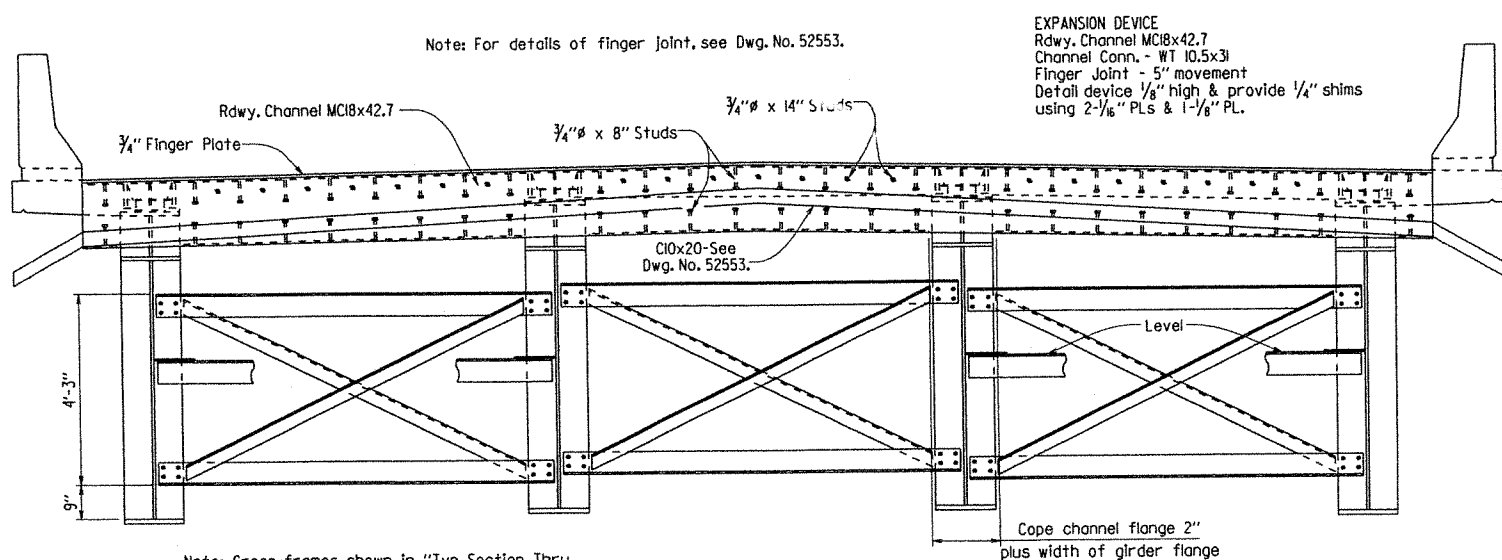
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 5-26-11 FILENAME: b050228.b5.dgn  
CHECKED BY: SWP DATE: 12-5-11 SCALE: AS NOTED  
DESIGNED BY: SWP DATE: 11/2/11  
BRIDGE NO. 07235 DRAWING NO. 52543

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						050228	46	96
				07235 -	900 FT. UNIT			52544

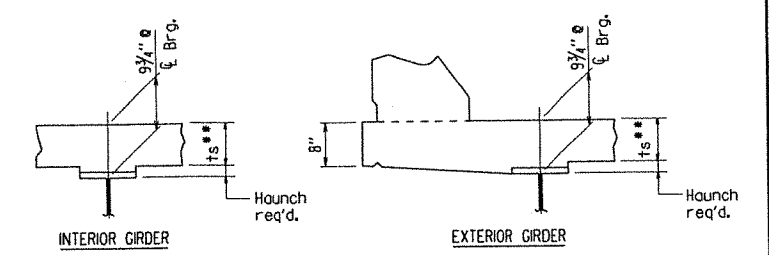
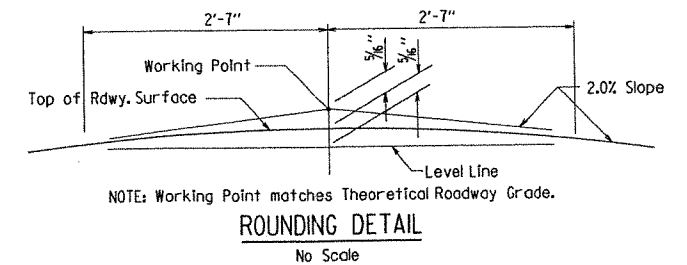


**TYP. SECTION THRU ROADWAY**  
 Scale: 1/2" = 1'-0"



**TYP. SECTION THRU JOINT**  
 Scale: 1/2" = 1'-0"

- ① Tolerance: Minus = 1/4", Plus equal to amount of Slab Thickening used to meet Slab Thickness Tolerance - see "Adjustment for Slab Thickness Tolerance".
- ② Refer to "Adjustment for Slab Thickness Tolerance".
- ③ Measured at  $\bar{\ell}$  Bearing &  $\bar{\ell}$  Girder
- ④ To Working Point - See "Rounding Detail"



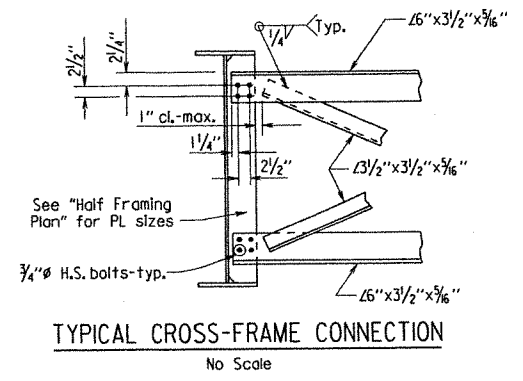
•• Tolerance when removable deck forming is used is +1/2", -1/4". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note: ts = slab thickness as shown in "Typ. Section Thru Roadway".

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 1/4". 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. 1499I for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

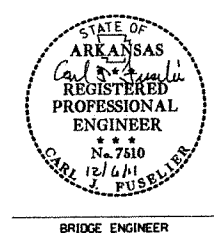
**ADJUSTMENT FOR SLAB THICKNESS TOLERANCE**  
 No Scale



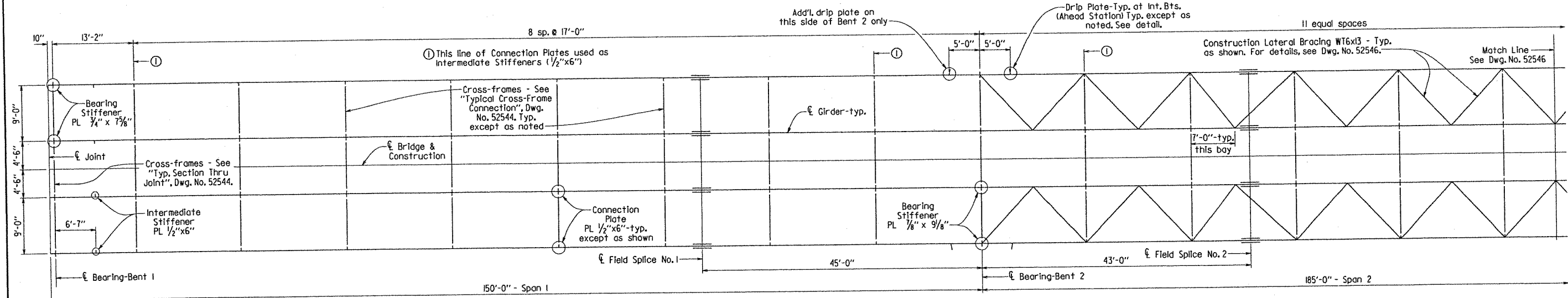
SHEET 1 OF 9  
 DETAILS OF 900' CONTINUOUS  
 COMPOSITE PLATE GIRDER UNIT  
 MIDWAY BRANCH

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

DRAWN BY: KDH DATE: 4-7-11 FILENAME: b050228.sl.dgn  
 CHECKED BY: [Signature] DATE: 06-23-11 SCALE: AS NOTED  
 DESIGNED BY: [Signature] DATE: 04-11  
 BRIDGE NO. 07235 DRAWING NO. 52544

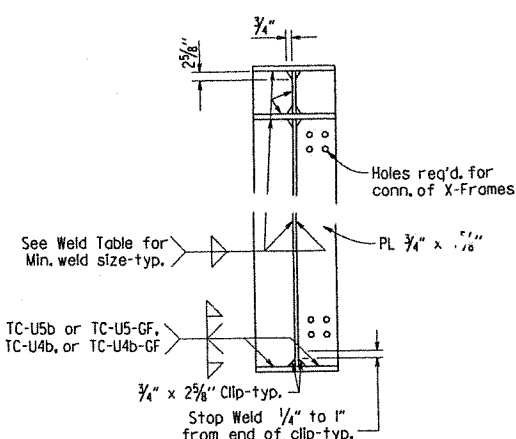


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		47	96
				JOB NO.	050228			
				07235 - 900 FT. UNIT		- 52545		



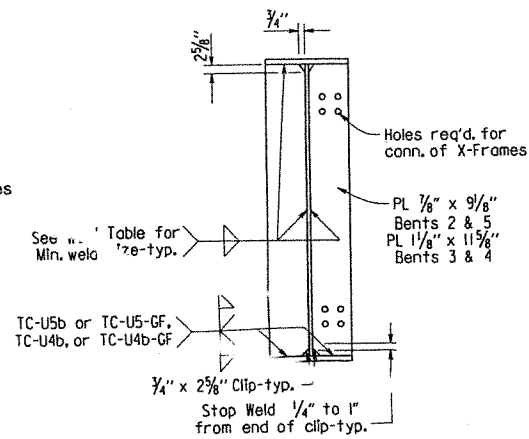
HALF FRAMING PLAN

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



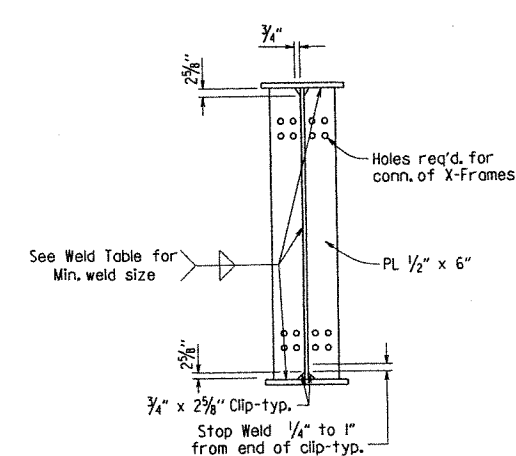
END BEARING STIFFENER DETAIL

No Scale



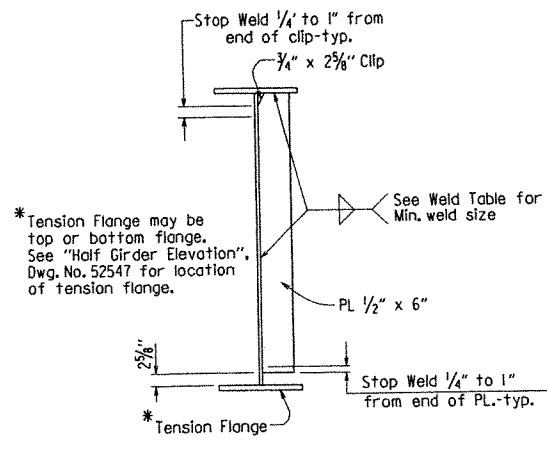
INT. BEARING STIFFENER DETAIL

No Scale



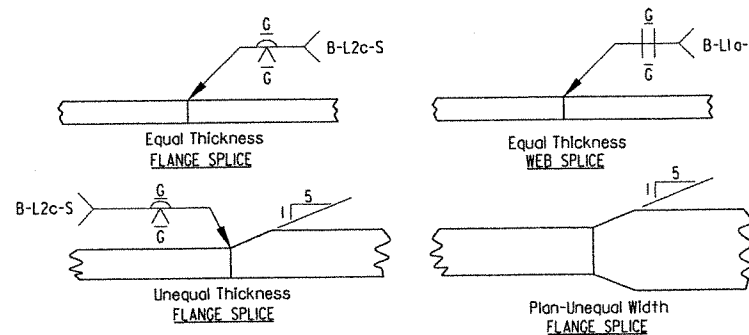
CROSS FRAME CONNECTION DETAIL

No Scale



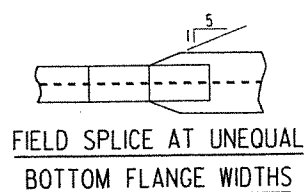
INT. STIFFENER DETAIL

No Scale



DETAILS OF WELDED SPLICES

No Scale



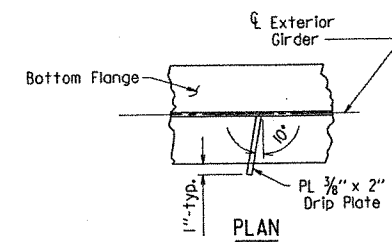
FIELD SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS

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	$\frac{1}{4}''$	Be Used
Over $\frac{3}{4}''$	$\frac{5}{16}''$	

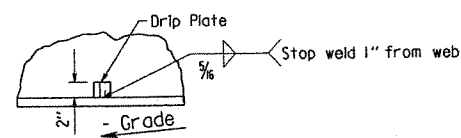
NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.



PLAN

Note:

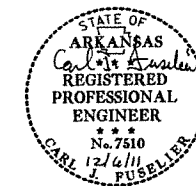
Bottom flange drip plate to be welded to the outside flange of the exterior girders only. Locate drip plate 5'-0" from CL Bearing on both sides of Bent 2, and on the high side of Bents 3 - 5.



ELEVATION

BOTTOM FLANGE DRIP PLATE

No Scale



BRIDGE ENGINEER

SHEET 2 OF 9  
 DETAILS OF 900' CONTINUOUS  
 COMPOSITE PLATE GIRDER UNIT  
 MIDWAY BRANCH

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

DRAWN BY: KDH DATE: 4-10-11 FILENAME: b050228\_sl.dgn

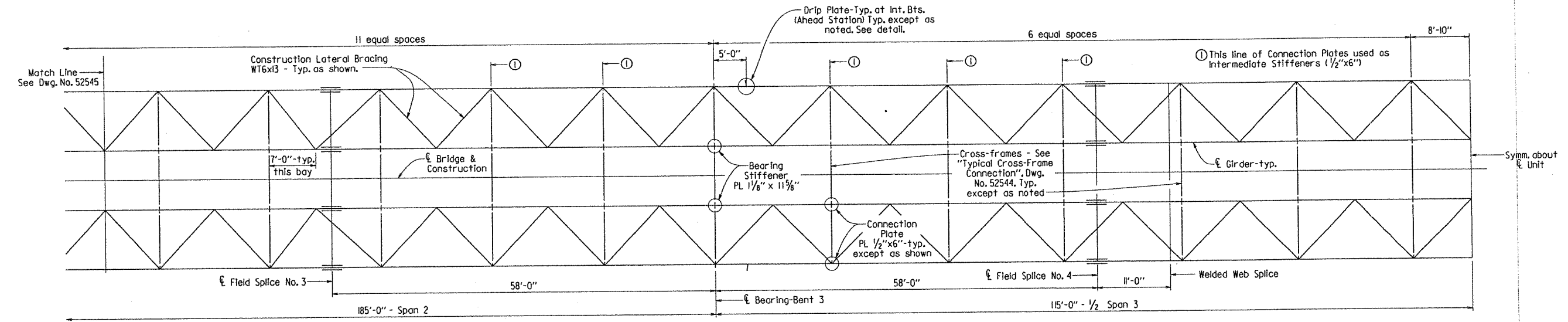
CHECKED BY: [Signature] DATE: 06-23-11 SCALE: AS NOTED

DESIGNED BY: [Signature] DATE: 04-11

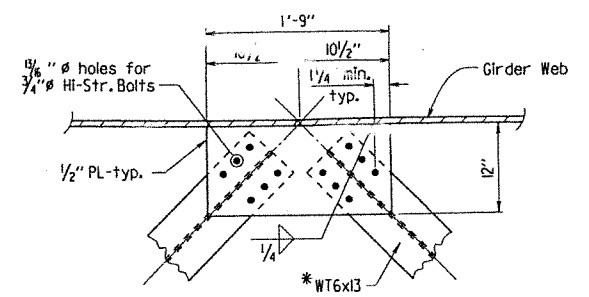
BRIDGE NO. 07235

DRAWING NO. 52545

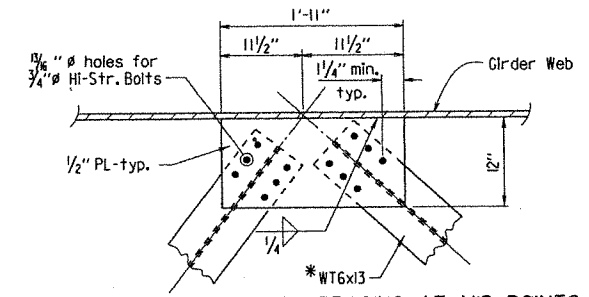
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	050228	48	96
				JOB NO.		07235 - 900 FT. UNIT		52546



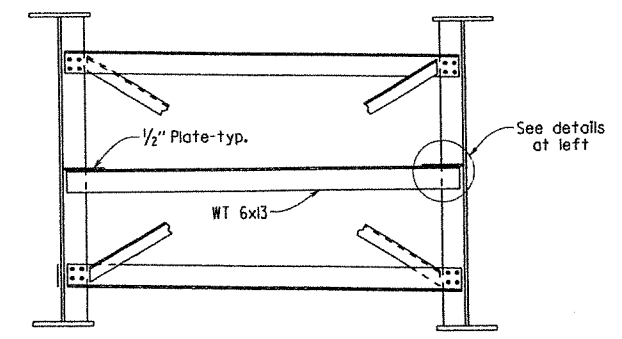
**HALF FRAMING PLAN**  
Scale: 1/8" = 1'-0"



**CONSTRUCTION LATERAL BRACING AT MID-POINTS**  
Typ. except in the bays of Field Splice Nos. 2 & 3  
No Scale

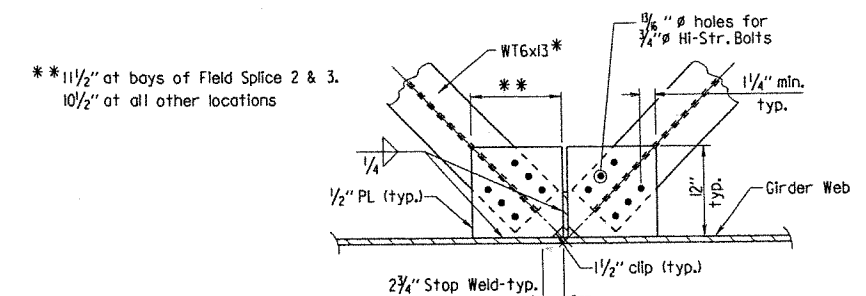


**CONSTRUCTION LATERAL BRACING AT MID-POINTS**  
Typ. in the bays of Field Splice Nos. 2 & 3  
No Scale



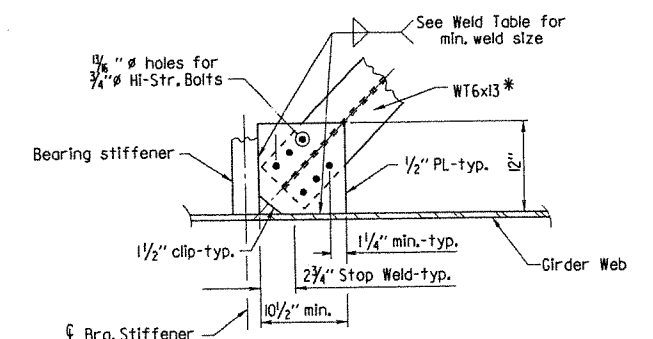
**CONSTRUCTION LATERAL BRACING DETAILS**  
Scale: 1/2" = 1'-0"

\*See "Half Framing Plan" for location of construction lateral bracing.

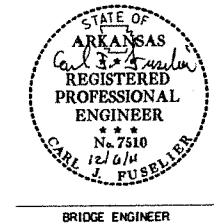


**CONSTRUCTION LATERAL BRACING AT CROSS-FRAME CONNECTION PLATES**  
No Scale

\* 11 1/2" at bays of Field Splice 2 & 3.  
10 1/2" at all other locations



**CONSTRUCTION LATERAL BRACING AT BEARING STIFFENERS**  
No Scale



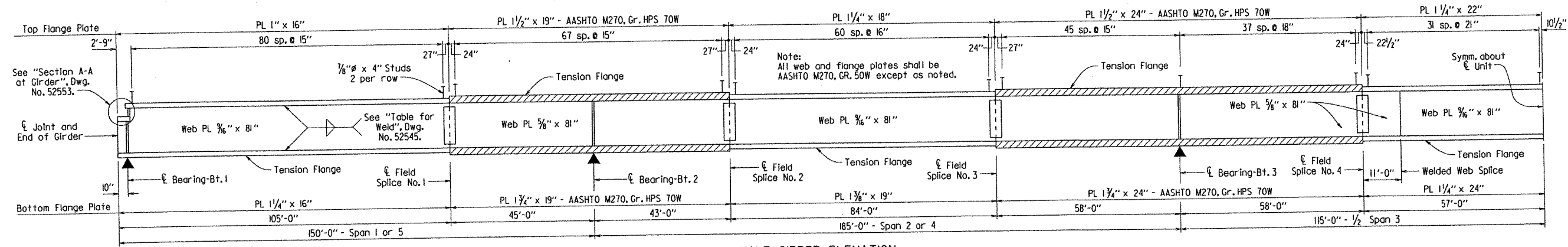
SHEET 3 OF 9  
DETAILS OF 900' CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
MIDWAY BRANCH

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

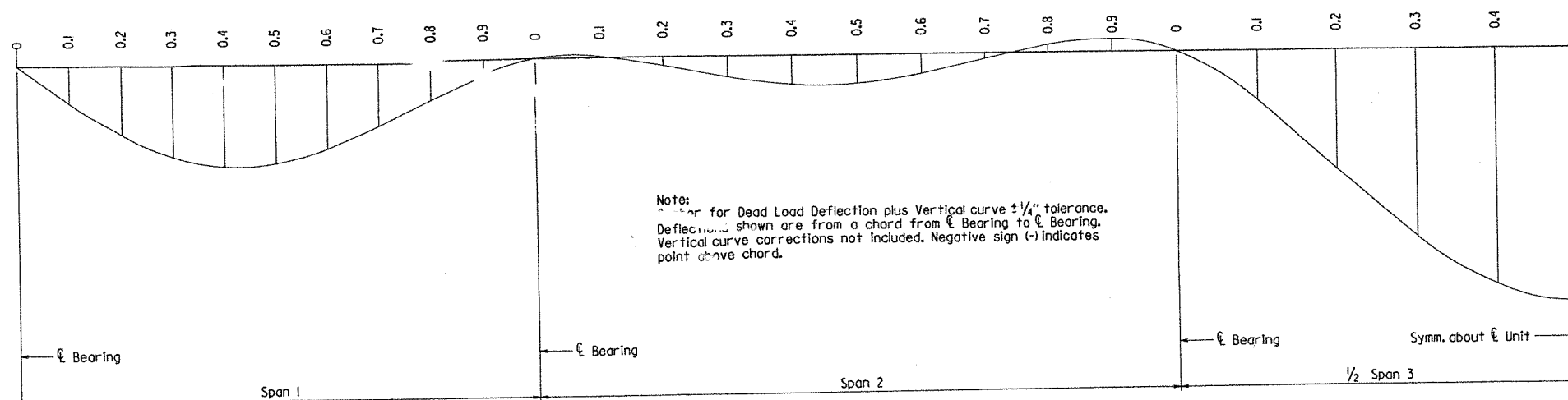
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CHECKED BY: [Signature] DATE: 06-23-11 SCALE: AS NOTED  
DESIGNED BY: [Signature] DATE: 04-11  
BRIDGE NO. 07235 DRAWING NO. 52546



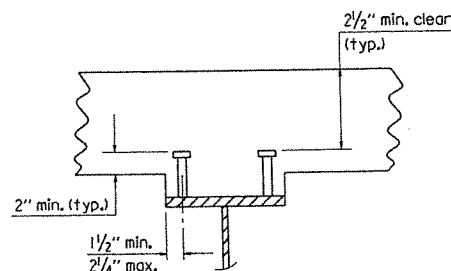
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	050228	49	96
				JOB NO.		07235 - 900 FT. UNIT		52547



HALF GIRDER ELEVATION  
No Scale



DEAD LOAD DEFLECTION DIAGRAM  
No Scale



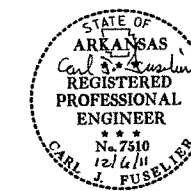
Stud Shear Connectors shown shall be 3/8" x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer. 3/4" studs may be used in place of the 1/2" studs shown, at the ratio of 1.361 - 3/4" studs in place of one 1/2" stud. 1/8" studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24".

SHEAR CONNECTOR DETAIL  
No Scale

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
Span 1	0	0	0	0	0	0	0
	0.1	0.219	0.210	0.995	0.834	1.082	0.925
	0.2	0.405	0.387	1.837	1.540	1.998	1.708
	0.3	0.533	0.509	2.419	2.027	2.631	2.249
	0.4	0.590	0.564	2.680	2.246	2.915	2.492
	0.5	0.573	0.548	2.608	2.186	2.837	2.426
	0.6	0.490	0.469	2.238	1.875	2.436	2.082
	0.7	0.360	0.343	1.652	1.384	1.799	1.537
	0.8	0.212	0.202	0.989	0.828	1.077	0.920
	0.9	0.080	0.076	0.388	0.324	0.422	0.360
Span 2	0	0	0	0	0	0	0
	0.1	0.012	0.013	-0.032	-0.023	-0.033	-0.025
	0.2	0.094	0.092	0.233	0.203	0.257	0.228
	0.3	0.185	0.180	0.559	0.480	0.614	0.537
	0.4	0.239	0.232	0.768	0.656	0.843	0.733
	0.5	0.232	0.225	0.758	0.647	0.832	0.724
	0.6	0.164	0.159	0.524	0.447	0.576	0.501
	0.7	0.057	0.056	0.151	0.130	0.169	0.148
	0.8	-0.044	-0.042	-0.199	-0.168	-0.215	-0.185
	0.9	-0.087	-0.084	-0.334	-0.283	-0.364	-0.314
1/2 Span 3	0	0	0	0	0	0	0
	0.1	0.362	0.350	1.317	1.119	1.438	1.245
	0.2	0.870	0.841	3.157	2.682	3.448	2.984
	0.3	1.367	1.322	4.968	4.220	5.425	4.695
	0.4	1.721	1.664	6.261	5.319	6.836	5.917
	0.5	1.848	1.787	6.726	5.713	7.344	6.355

Table is symm. about centerline



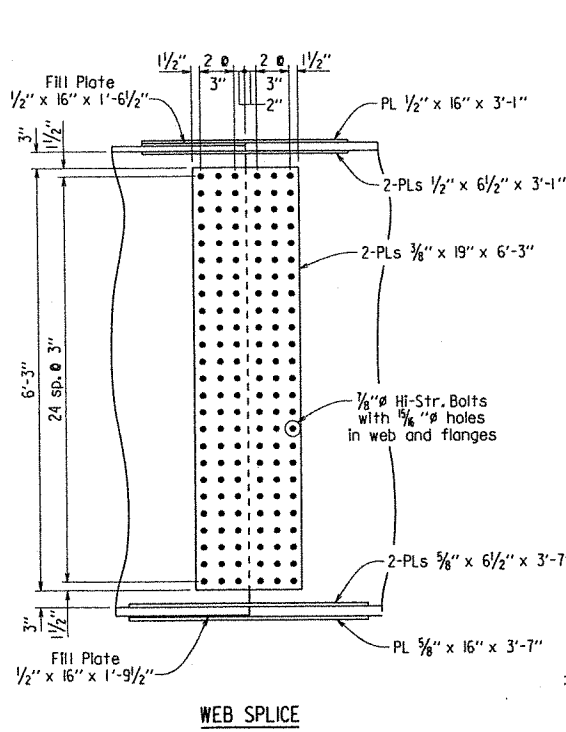
BRIDGE ENGINEER

SHEET 4 OF 9  
 DETAILS OF 900' CONTINUOUS  
 COMPOSITE PLATE GIRDER UNIT  
 MIDWAY BRANCH

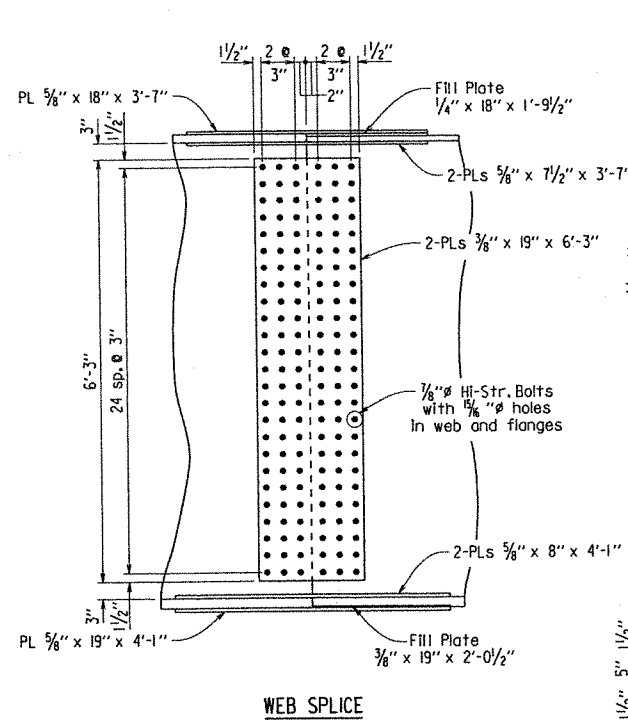
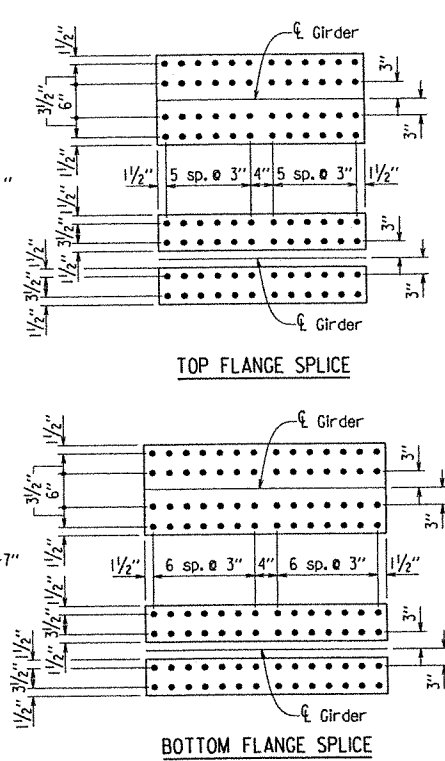
ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-13-11 FILENAME: b050228\_sl.dgn  
 CHECKED BY: [Signature] DATE: 06-23-11 SCALE: AS NOTED  
 DESIGNED BY: [Signature] DATE: 09-11  
 BRIDGE NO. 07235 DRAWING NO. 52547

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.	050228	5096		
				07235 -	900 FT. UNIT	-	52548	

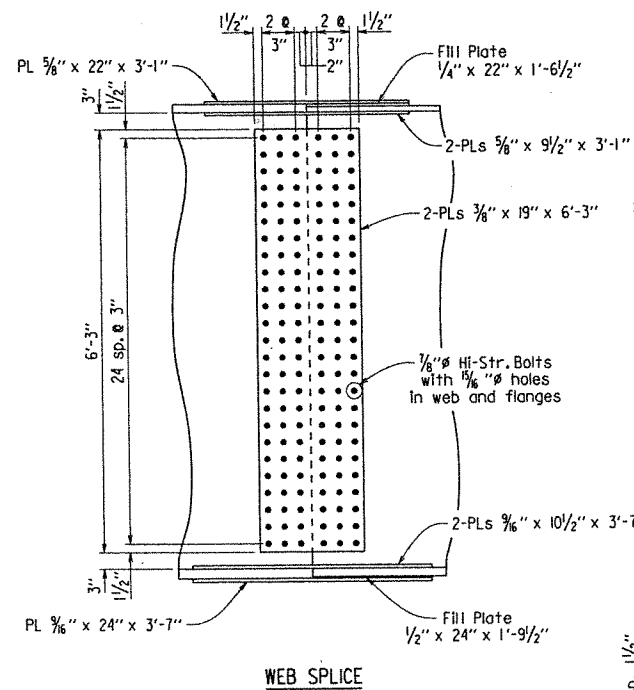
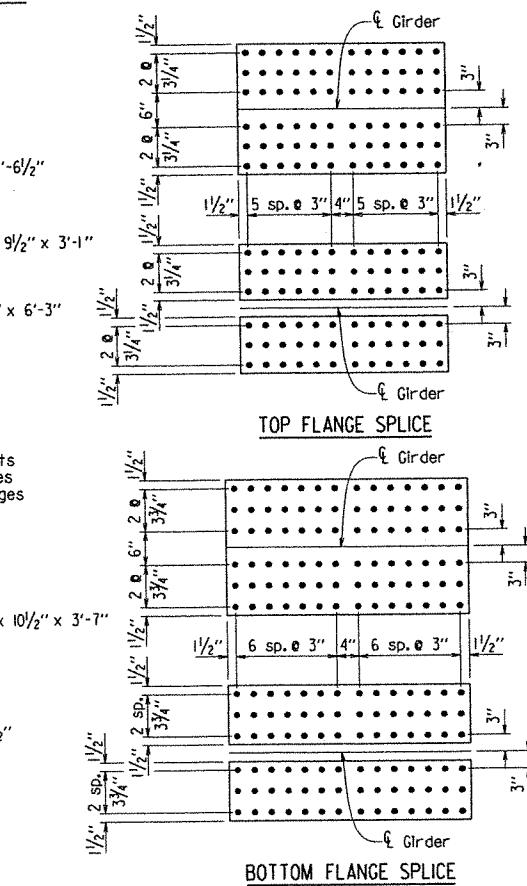


FIELD SPLICE NO. 1  
Scale: 3/4" = 1'-0"

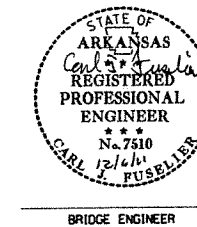


FIELD SPLICE NOS. 2 & 3  
Scale: 3/4" = 1'-0"

Note: All splice plates shall be AASHTO M270, Grade 50W.



FIELD SPLICE NO. 4  
Scale: 3/4" = 1'-0"

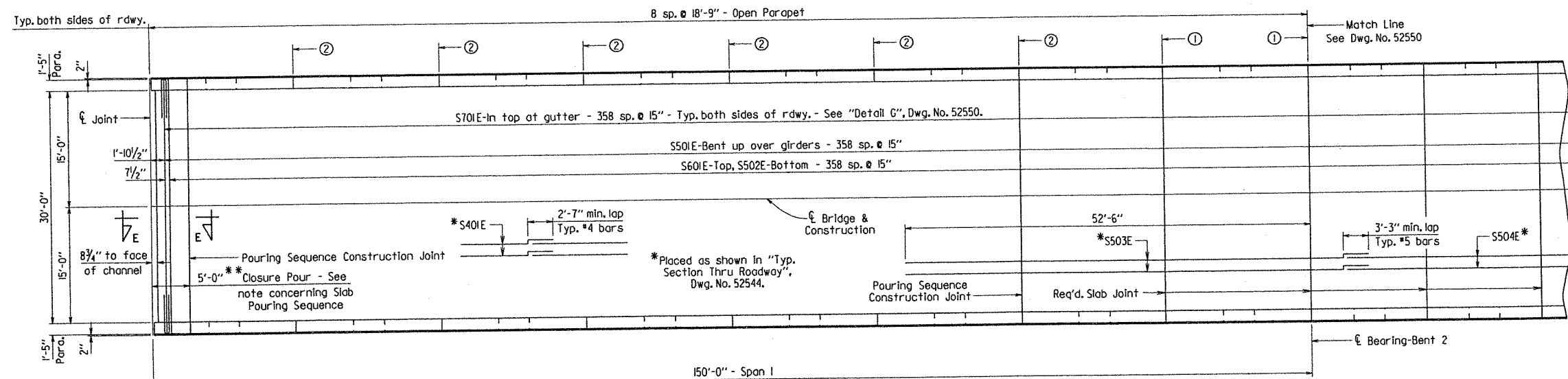


SHEET 5 OF 9  
DETAILS OF 900' CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
MIDWAY BRANCH

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

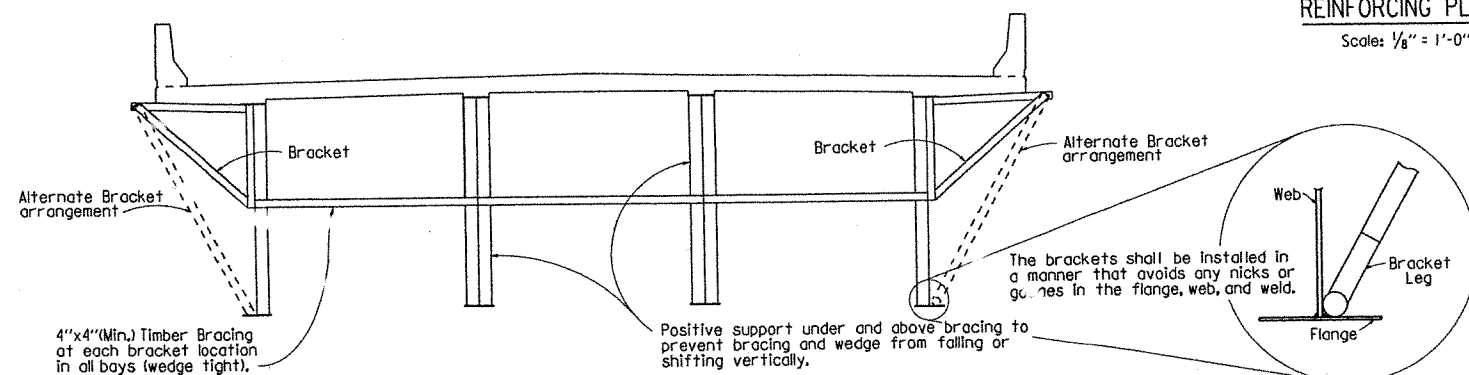
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CHECKED BY: [Signature] DATE: 06-23-11 SCALE: AS NOTED  
DESIGNED BY: [Signature] DATE: 04-11  
BRIDGE NO. 07235 DRAWING NO. 52548

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.		050228	51	96
				①	07235 -	900 FT. UNIT	- 52549	



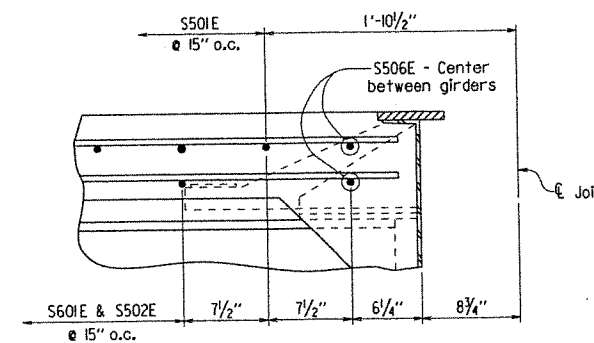
- ① Full Depth Parapet Joint (1/4" - 1" max.) Stop 4" from top of slab.
- ② Partial Depth Parapet Joint (1/4" - 1" max.) Stop 1'-2" from top of slab.

**REINFORCING PLAN**  
Scale: 1/8" = 1'-0"

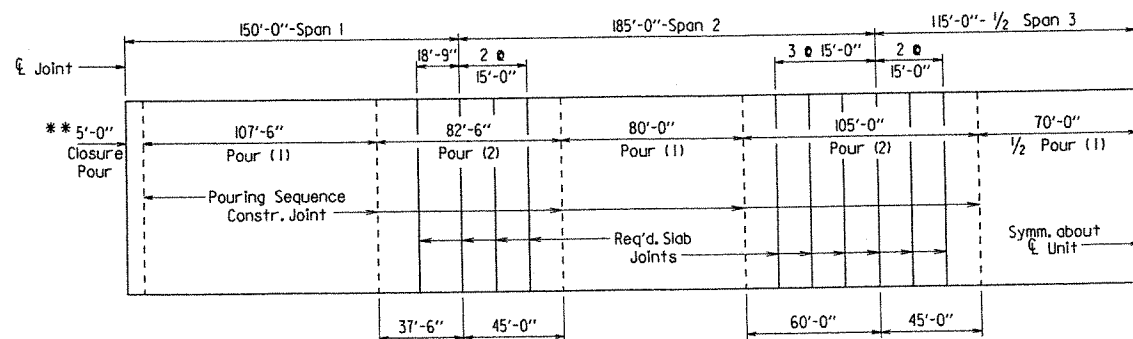


Note: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 1/2" x 6" web stiffeners are welded to 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 location of the web and bottom flange. The stiffener shall conform to the details for intermediate connection plates shown on "Int. Stiffener Detail", Dwg. No. 52545. 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 (A270, Gr. 50W)."

**SCREED RAIL SUPPORT**  
No Scale



**SECTION E-E**  
No Scale



**DECK POURING SEQUENCE**  
No Scale

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.

\*\* Closure pours at the finger joints shall be made after all incremental pours on the unit have been placed. 48 hours shall elapse between the last incremental pour and the closure pours.

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



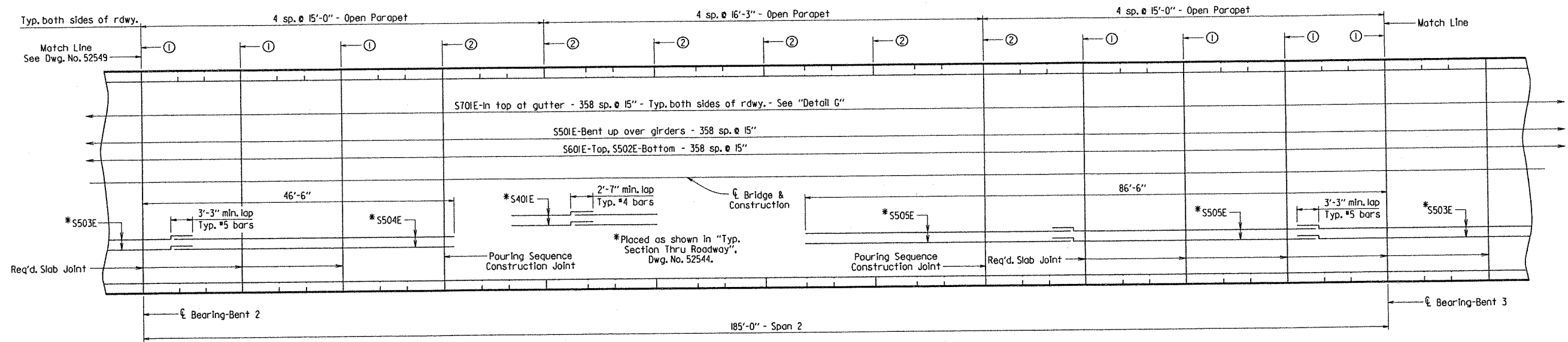
BRIDGE ENGINEER

SHEET 6 OF 9  
DETAILS OF 900' CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
MIDWAY BRANCH

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

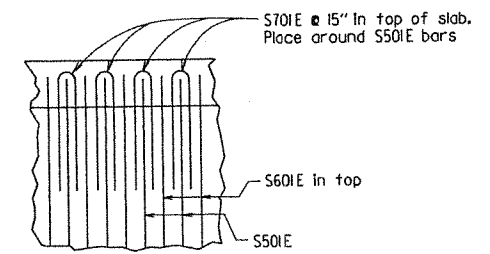
DRAWN BY: KDH DATE: 4-14-11 FILENAME: b050228\_sl.dgn  
CHECKED BY: JH DATE: 06-23-11 SCALE: AS NOTED  
DESIGNED BY: JH DATE: 06-09  
BRIDGE NO. 07235 DRAWING NO. 52549

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.	050228		52	96
				07235 - 900 FT. UNIT		- 52550		



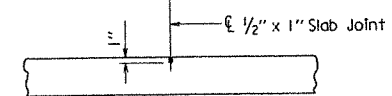
**REINFORCING PLAN**  
Scale: 1/8" = 1'-0"

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

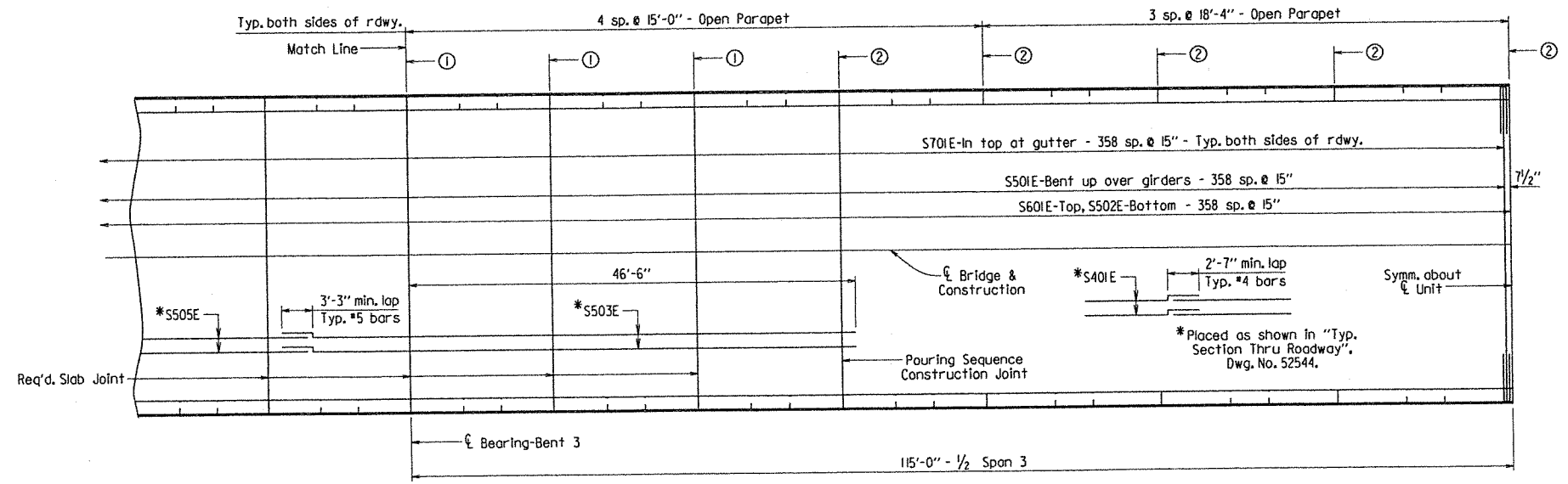


**DETAIL G**  
No Scale

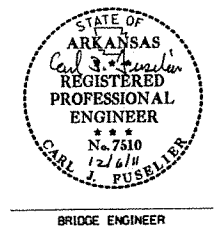
Use Type 3, 4, or 6 Joint Sealer. See subsections 501.02 (h) and 501.05 (j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class SIAE Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet rail is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck slab (gutterline to gutterline). Slab joints shall align with parapet open joints except for slab joint at 5'-0" closure pour at finger joints.



**SLAB JOINT DETAIL**  
No Scale



**REINFORCING PLAN**  
Scale: 1/8" = 1'-0"



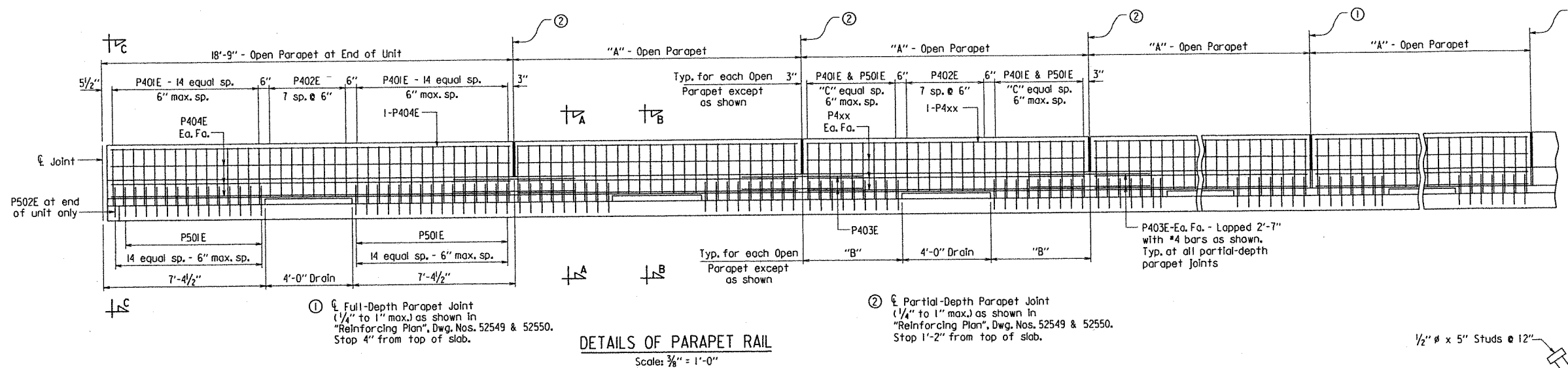
SHEET 7 OF 9  
DETAILS OF 900' CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
MIDWAY BRANCH

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

BRIDGE NO. 07235      DRAWING NO. 52550

DRAWN BY: KDH      DATE: 4-14-11      FILENAME: b050228\_sl.dgn  
CHECKED BY: [Signature]      DATE: 06-23-11      SCALE: AS NOTED  
DESIGNED BY: [Signature]      DATE: 04-11

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
	①			6	ARK.		53	96
				JOB NO.	050228		07235 - 900 FT. UNIT - 52551	

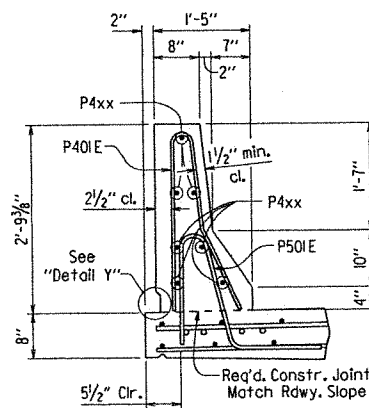


**DETAILS OF PARAPET RAIL**  
Scale: 3/8" = 1'-0"

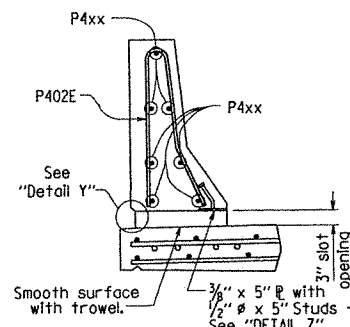
**TABLE OF PARAPET RAIL VARIABLES**  
Except for Open Parapet at End of Unit

"A" Open Parapet	"B"	"C"	P4xx Bar
18'-9"	7'-4 1/2"	14	P404E
15'-0"	5'-6"	10	P405E
16'-3"	6'-1 1/2"	12	P406E
18'-4"	7'-2"	14	P407E

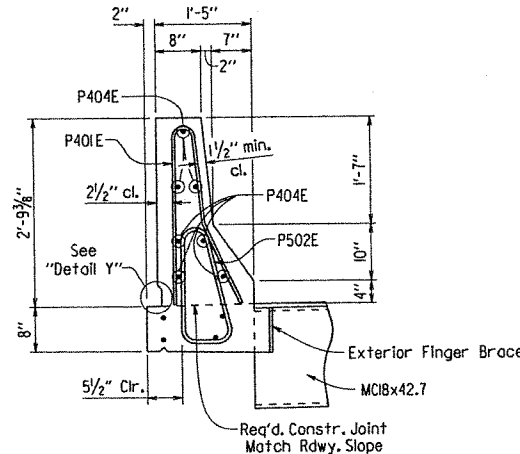
Note: For location of Open Parapet panels, see "Reinforcing Plan", Dwg. Nos. 52549 & 52550.



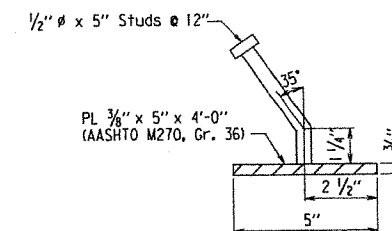
**SECTION A-A**  
Scale: 3/4" = 1'-0"



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



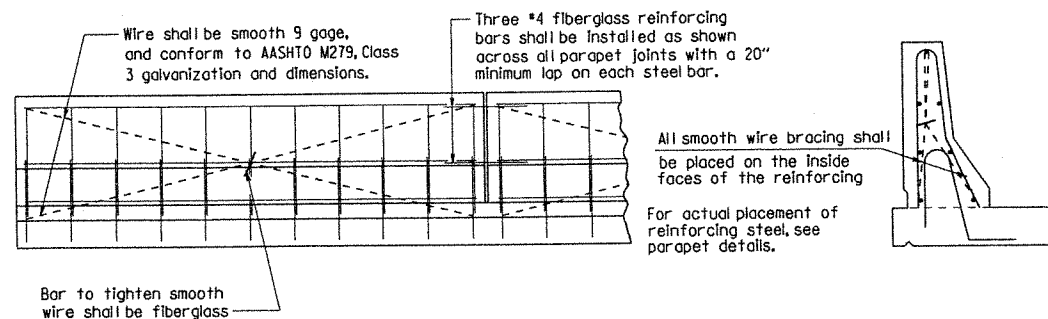
**SECTION C-C**  
Scale: 3/4" = 1'-0"



**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)".



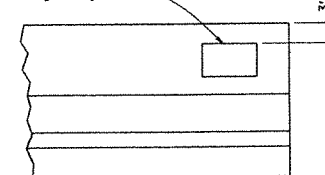
All panels shall be braced as required to prevent racking. All parapet joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved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

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

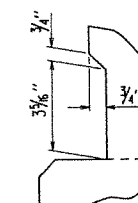
**DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL**

No Scale

Place Type D Bridge Name Plate on right parapet rail approx. 2'-0" from front face of backwall. (Beg. of bridge only)



**NAME PLATE DETAIL**  
No Scale



**DETAIL Y**  
No Scale



BRIDGE ENGINEER

SHEET 8 OF 9  
DETAILS OF 900' CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
MIDWAY BRANCH  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 4-15-11 FILENAME: b050228\_sl.dgn  
CHECKED BY: [Signature] DATE: 04-23-11 SCALE: AS NOTED  
DESIGNED BY: [Signature] DATE: 04-11  
BRIDGE NO. 07235 DRAWING NO. 52551

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.		050228	5496	
				07235 -	900 FT. UNIT			52552

**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 Fifth Edition (2010) with 2010 Interim specifications.

**MATERIALS AND STRENGTHS:**

Class S(AE) Concrete	$f'_c = 4,000$ psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)	$f_y = 60,000$ psi
Structural Steel (M270, Gr. HPS 70W)	$F_y = 70,000$ psi
Structural Steel (M 270, Gr. 50W)	$F_y = 50,000$ psi
Structural Steel (M 270, Gr. 36)	$F_y = 36,000$ psi

CONCRETE: Concrete shall be poured in the dry and all exposed corners to be chamfered  $\frac{3}{4}$ " unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength  $f'_c = 4,000$  psi. The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 1499I 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 ralling. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet ralling. Any ralling 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 is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the Item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL: Flange plates noted on Girder Elevation as AASHTO M270, Gr. HPS 70W shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. HPS 70W)." All other structural steel shall be AASHTO M270, Grade 50W unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M 270, Gr. 50W)". Grade HPS 70W and Grade 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.8(4)(e). Structural steel completely embedded in concrete may be AASHTO M270, Grade 36 unless otherwise noted.

Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted and approval secured before fabrication is begun.

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

Girder web and flange plates and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the Item "Structural Steel in Plate Girder Spans (M270, Gr. 50W)" or "Structural Steel in Plate Girder Spans (M270, Gr. HPS 70W)". All girders shall be blocked in their true position in the shop, in groups of a minimum of three (3) sections as specified in subsection 807.54(b)(2). Girders shall be blocked with webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the girders in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60 degrees F. A tolerance of  $\frac{1}{4}$ " +/- is allowed for camber.

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

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If the Contractor or Erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Engineer for approval; however, additional welds used for attaching falsework devices or screed rail supports to the structural steel that does not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26 and Special Provision Job 050228 "Grade HPS 70W Structural Steel".

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

Groove welds in web and flange plates shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the governing specifications in subsection 807.23(b). Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the Contractor's expense.

Field connections shall be bolted with high-strength bolts and shall be  $\frac{3}{4}$ " bolts unless otherwise noted. Open Holes shall be  $\frac{1}{8}$ " unless otherwise noted. Holes for  $\frac{3}{4}$ " high-strength bolts may be  $\frac{5}{16}$ " if a washer is supplied for use under both the nut and head of the bolt. Bolts shall be placed with heads on the outside face of the exterior girder webs and on the bottom of the girder flanges.

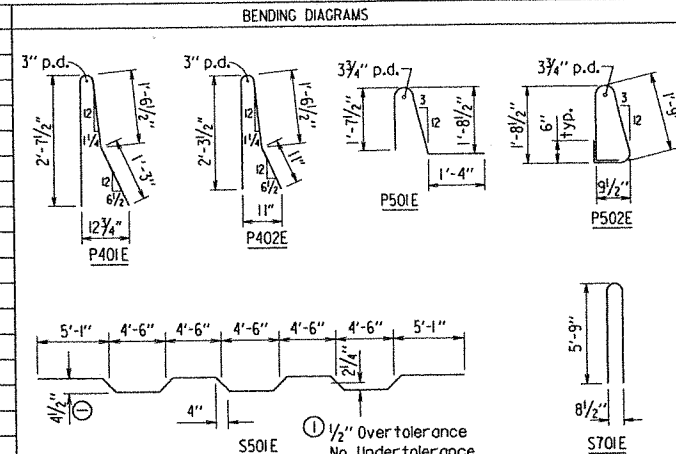
Cross-Frames and construction lateral bracing shall be installed as girders are erected. All bolts in cross-frames and construction lateral bracing and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck.

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 "Elastomeric Bearings."

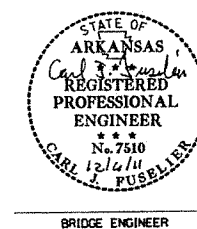
**BAR LIST**

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	1944	39'-11"	Str.
P401E	2792	5'-6"	3"
P402E	864	4'-10"	3"
P403E	264	5'-6"	Str.
P404E	224	18'-5"	Str.
P405E	336	14'-8"	Str.
P406E	112	15'-11"	Str.
P407E	84	18'-0"	Str.
S501E	718	33'-4"	3"
S502E	717	32'-10"	Str.
S503E	216	60'-0"	Str.
S504E	108	42'-3"	Str.
S505E	216	39'-9"	Str.
S506E	12	7'-8"	Str.
P501E	2788	4'-10"	3 $\frac{3}{4}$ "
P502E	4	5'-0"	3 $\frac{3}{4}$ "
S601E	717	32'-10"	Str.
S701E	1436	11'-10"	6 $\frac{3}{4}$ "



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

Dimensions are out to out of bars.



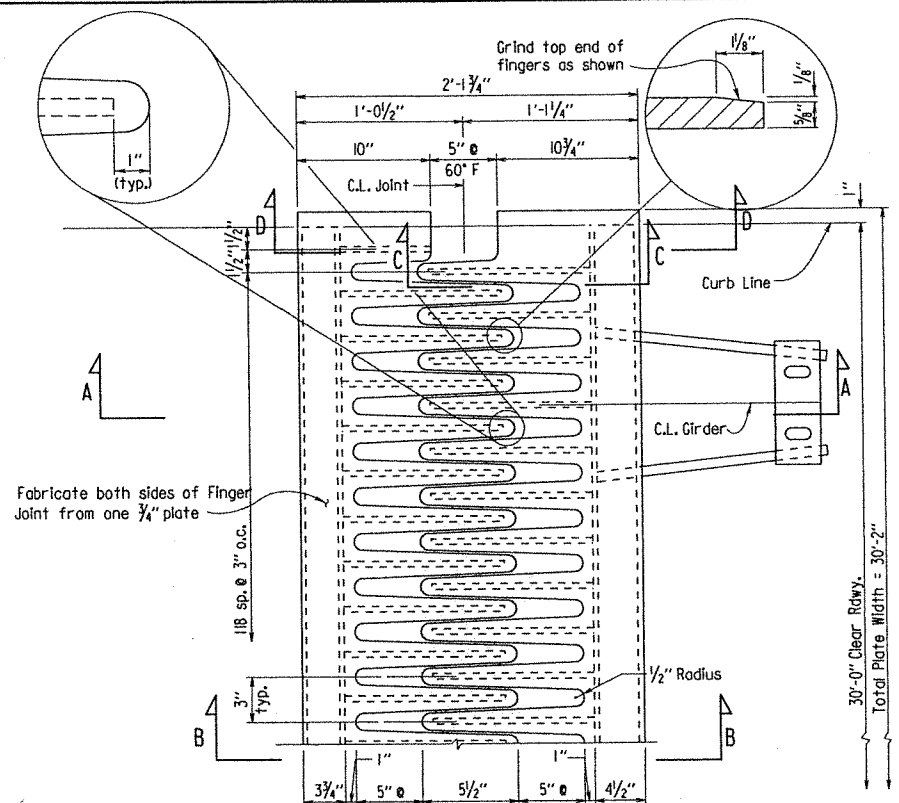
SHEET 9 OF 9  
 DETAILS OF 900' CONTINUOUS  
 COMPOSITE PLATE GIRDER UNIT  
 MIDWAY BRANCH

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

DRAWN BY: KDH DATE: 4-16-11 FILENAME: b050228-sl.dgn  
 CHECKED BY: RJK DATE: 06-23-11 SCALE: NONE  
 DESIGNED BY: RJK DATE: 04-11  
 BRIDGE NO. 07235 DRAWING NO. 52552

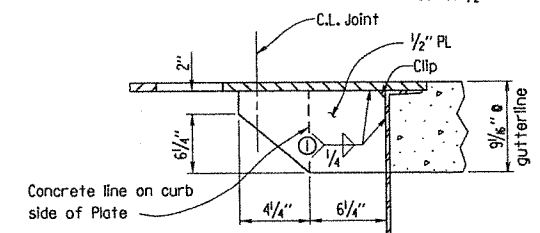
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050228	55	96

07235 - FINGER JOINTS - 52553



EXPANSION PLATE DETAIL  
Scale: 1/2" = 1'-0"

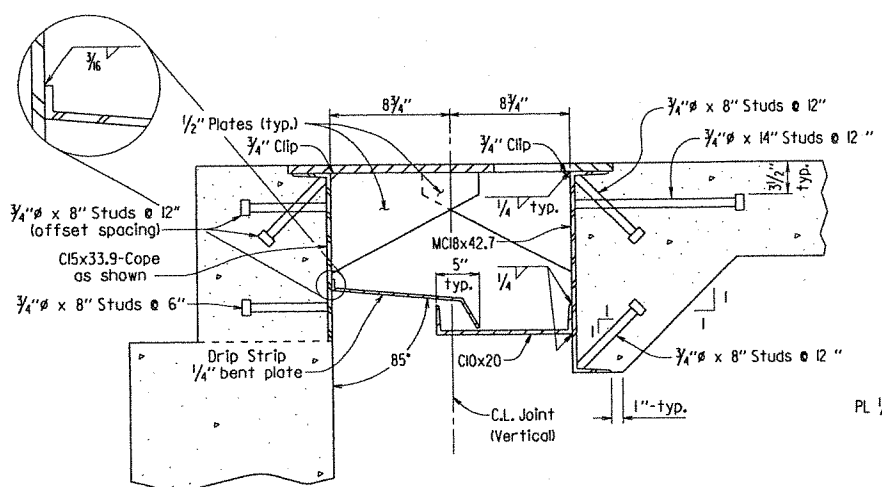
NOTE: Top of expansion joints shall conform to the profile grade of the roadway surfaces. Dimensions shown are at 60° F.



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

Joint Width at 24 hour average temperature of:			
40° F	60° F	80° F	
5 7/8"	5"	4 5/8"	

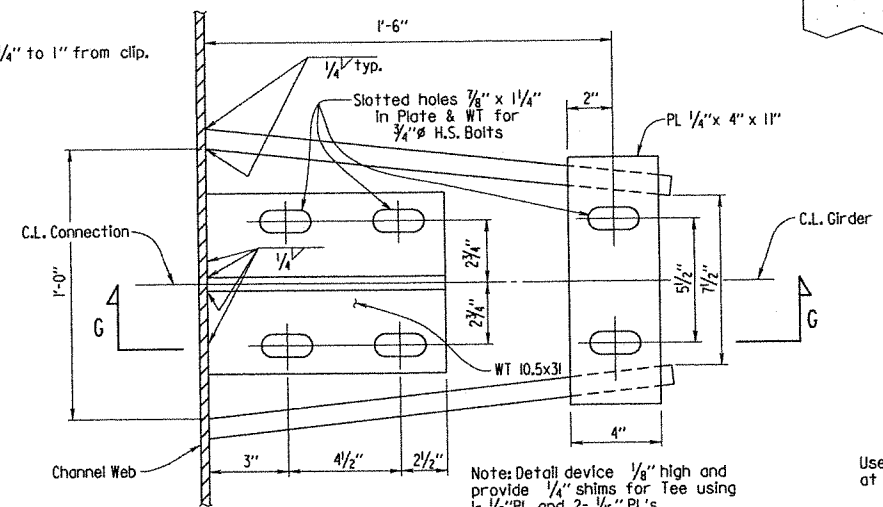
NOTE: Finger joint shall be set and adjusted for grade before closure pours are made. Set joint width by interpolating from table.



SECTION B-B  
No Scale

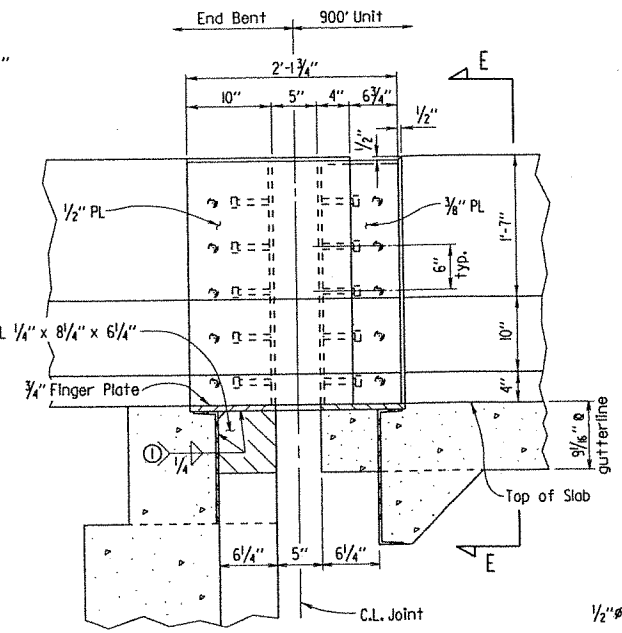
Note: The 3/4" Stud bolts shown shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the channel in accordance with recommendations of the manufacturer.

Stop weld 1/4" to 1" from clip.



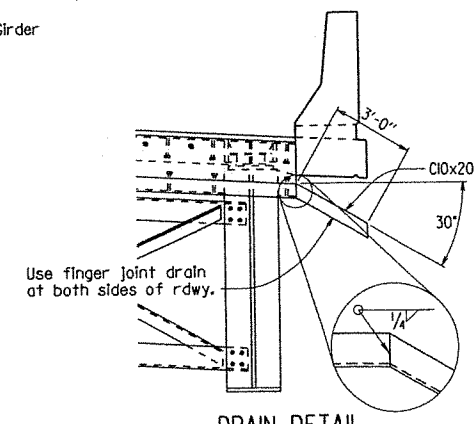
PLAN OF CONNECTION TO GIRDER  
Scale: 3" = 1'-0"

Note: Detail device 1/8" high and provide 1/4" shims for Tee using 1-1/8" PL and 2-1/8" PL's.



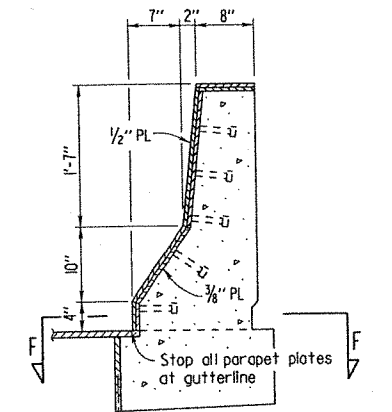
SECTION D-D  
Scale: 1" = 1'-0"

Use finger joint drain at both sides of rdwy.

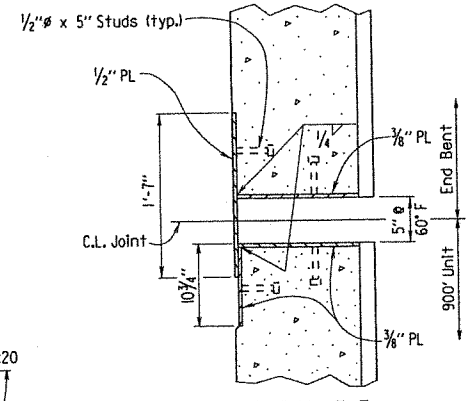


DRAIN DETAIL  
No Scale

Note: All structural steel in Finger Joints shall be M270 Gr. 50W.

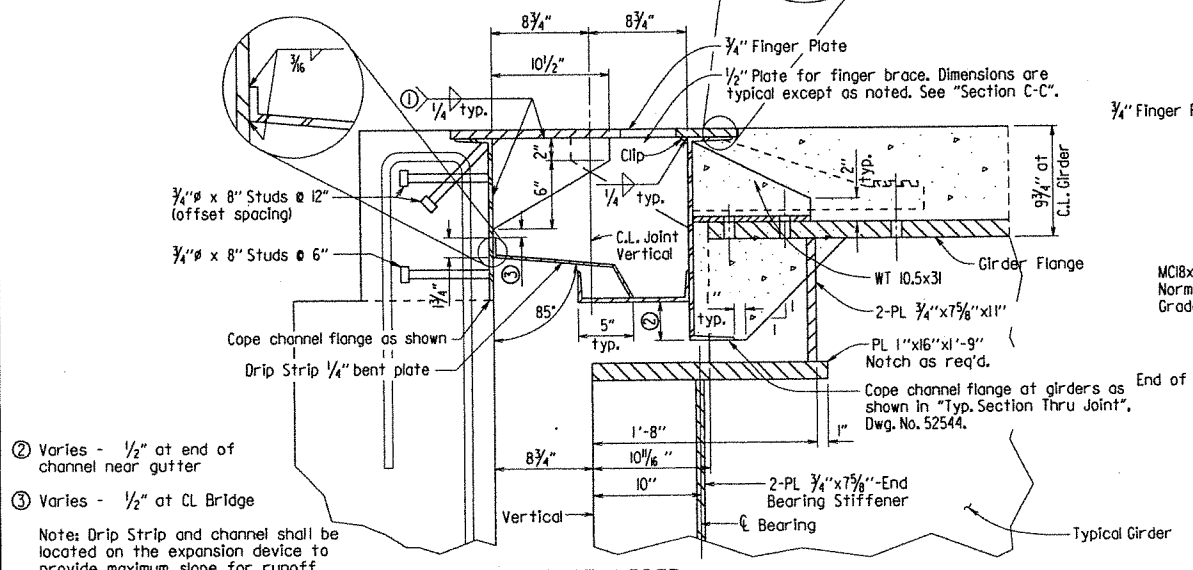


SECTION E-E  
Scale: 1" = 1'-0"



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

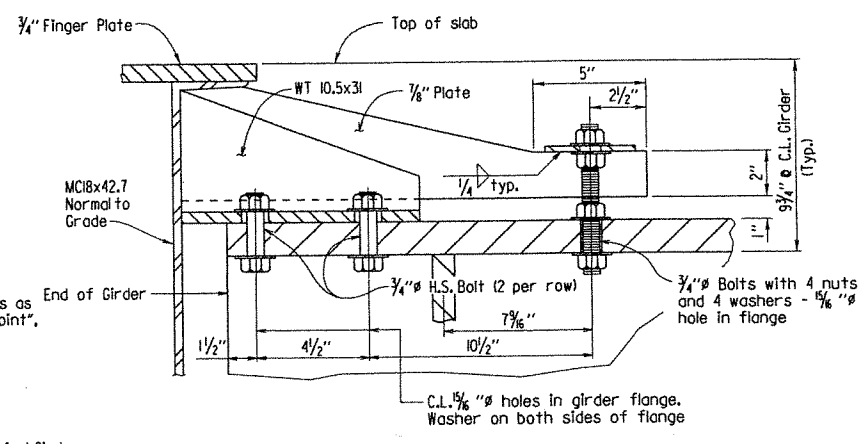
Note: The 1/2" Stud bolts shall be granular flux filled, solid fluxed, or equal and automatically end welded to the PL's in accordance with recommendations of the manufacturer.



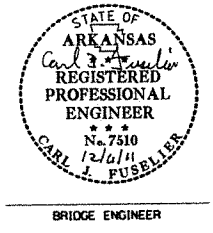
SECTION A-A AT GIRDER  
Scale: 1/2" = 1'-0"

- Varies - 1/2" at end of channel near gutter
- Varies - 1/2" at CL Brldge

Note: Drip Strip and channel shall be located on the expansion device to provide maximum slope for runoff.

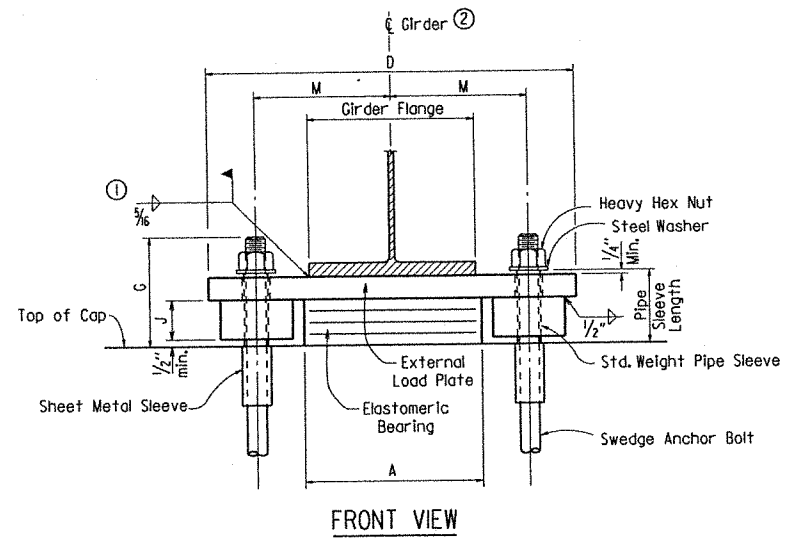


SECTION G-G AT GIRDER  
Scale: 3" = 1'-0"

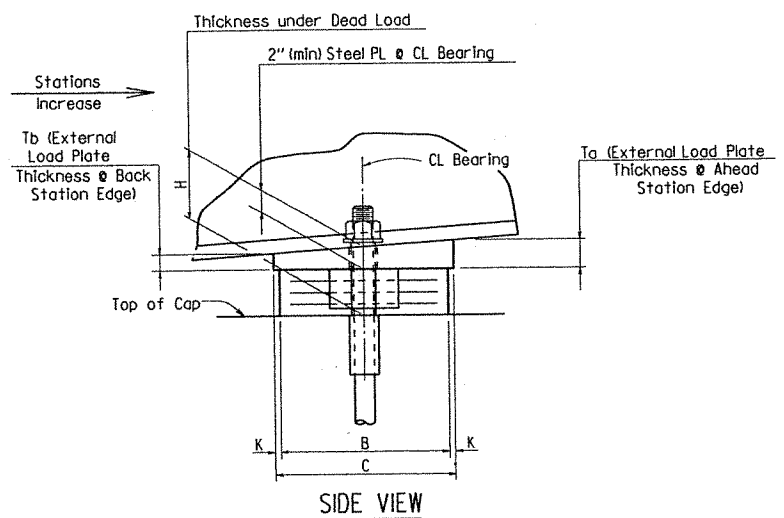


DETAILS OF JOINTS  
MIDWAY BRANCH  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: KDH  
CHECKED BY: [Signature]  
DESIGNED BY: [Signature]  
DATE: 4-7-11  
DATE: 06-23-11  
DATE: 04-11  
FILENAME: b050228 JL.dgn  
SCALE: AS NOTED  
BRIDGE NO. 07235  
DRAWING NO. 52553

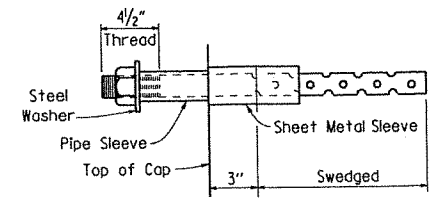
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	050228	56	96
				07235 - ELASTO. BRGS. - 52554				



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



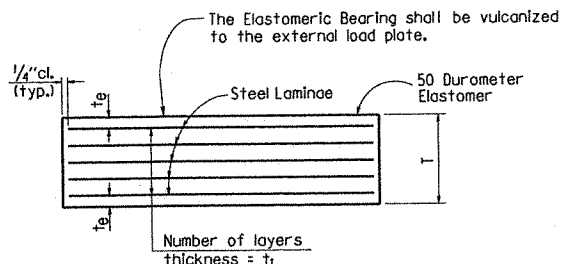
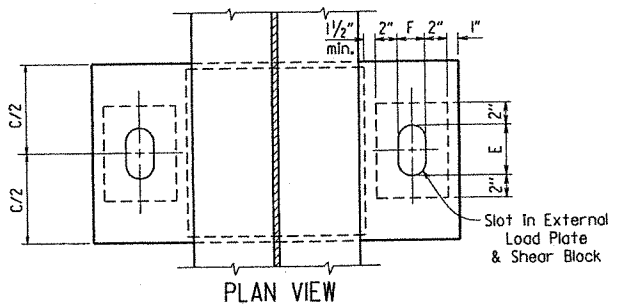
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external 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.



**ANCHOR BOLT DETAIL**

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".



$t_e$  = thickness of elastomer cover on top and bottom of pad  
 $t_1$  = thickness of elastomer between steel laminae  
 $N$  = number of elastomer layers of thickness  $t_1$

**ELASTOMERIC BEARING**

**GENERAL NOTES**

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

External load plates and shear blocks shall conform to AASHTO M270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

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

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

Pipe sleeves, anchor bolts, washers and nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 50W)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "Elastomeric Bearings".

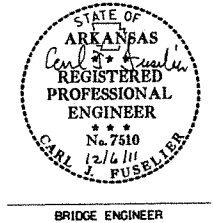
Bearings shall be firmly seated in accordance with Subsection 808.08. This work and materials shall be considered subsidiary to the item "Elastomeric Bearings" and shall not be paid for directly.

**TABLE OF FABRICATOR VARIABLES**

BRIDGE NO.	LOCATION		BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD						EXTERNAL LOAD PLATE										ANCHOR BOLT					
	BENT NO(S)	UNIT						GIRDER NO.	A	B	N	$t_1$	$t_e$	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	$T_a$	$T_b$	ANCHOR BOLT (Ø x L)	PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)	
07235	1	900'	All	Exp.	4	199	12 5/8"	10 7/8"	16"	13 1/2"	14	7/8"	1/4"	15 @ 12 Gauge	8 3/8"	14 1/2"	33"	8 3/4"	2"	7 1/2"	1 1/2"	12 1/2"	1.88"	2.12"	1 1/4"Ø x 26 1/2"	55	1 1/4"Ø x 10 3/8"	3"Ø x 6"	2 1/2"
	2	900'	All	Fix	4	531	7 7/8"	4 3/8"	24"	13"	3	1/2"	1/4"	4 @ 12 Gauge	2 7/8"	14"	43 3/8"	3 3/8"	3 3/8"	1 3/8"	1/2"	17 1/4"	2.00"	2.00"	2 1/4"Ø x 34 1/2"	55	2 1/2"Ø x 4 5/8"	4"Ø x 14"	4"
	3	900'	All	Fix	4	634	7 7/8"	4 3/8"	28 1/2"	12 1/2"	3	1/2"	1/4"	4 @ 12 Gauge	2 7/8"	13 1/2"	48 3/8"	3 3/8"	3 3/8"	1 3/8"	1/2"	19 1/2"	2.13"	1.87"	2 1/4"Ø x 34 1/2"	55	2 1/2"Ø x 4 5/8"	4"Ø x 14"	4"
	4	900'	All	Fix	4	634	7 7/8"	4 3/8"	28 1/2"	12 1/2"	3	1/2"	1/4"	4 @ 12 Gauge	2 7/8"	13 1/2"	48 3/8"	3 3/8"	3 3/8"	1 3/8"	1/2"	19 1/2"	2.29"	1.71"	2 1/4"Ø x 34 1/2"	55	2 1/2"Ø x 4 5/8"	4"Ø x 14"	4"
	5	900'	All	Fix	4	531	7 7/8"	4 3/8"	24"	13"	3	1/2"	1/4"	4 @ 12 Gauge	2 7/8"	14"	43 3/8"	3 3/8"	3 3/8"	1 3/8"	1/2"	17 1/4"	2.31"	1.69"	2 1/4"Ø x 34 1/2"	55	2 1/2"Ø x 4 5/8"	4"Ø x 14"	4"
	6	900'	All	Exp.	4	199	12 5/8"	10 7/8"	16"	13 1/2"	14	7/8"	1/4"	15 @ 12 Gauge	8 3/8"	14 1/2"	33"	8 3/4"	2"	7 1/2"	1 1/2"	12 1/2"	2.33"	1.67"	1 1/4"Ø x 26 1/2"	55	1 1/4"Ø x 10 3/8"	3"Ø x 6"	2 1/2"

\* Maximum Design Load = Service I Limit State

Tabular Data by: DM Date: 4-11  
 Checked by: JSA Date: 06-23-11  
 Designed by: JSA Date: 04-11



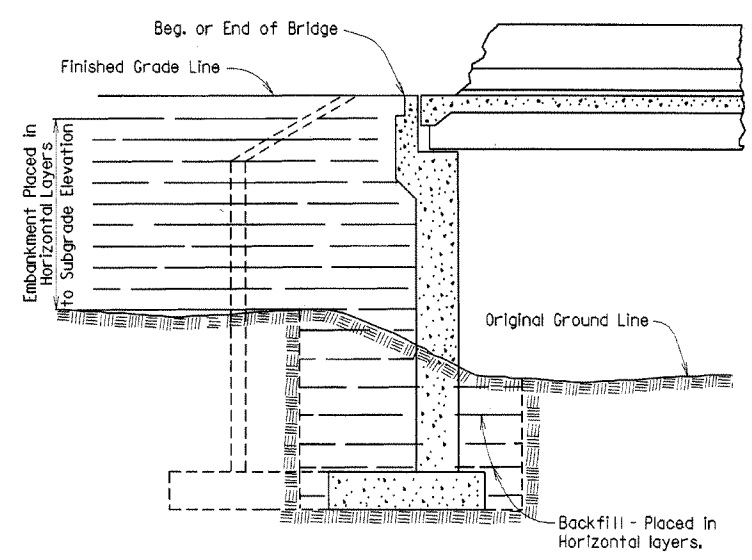
BRIDGE ENGINEER

**DETAILS OF ELASTOMERIC BEARINGS WITH SHEAR BLOCKS MIDWAY BRANCH**  
 ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
 LITTLE ROCK, ARK.

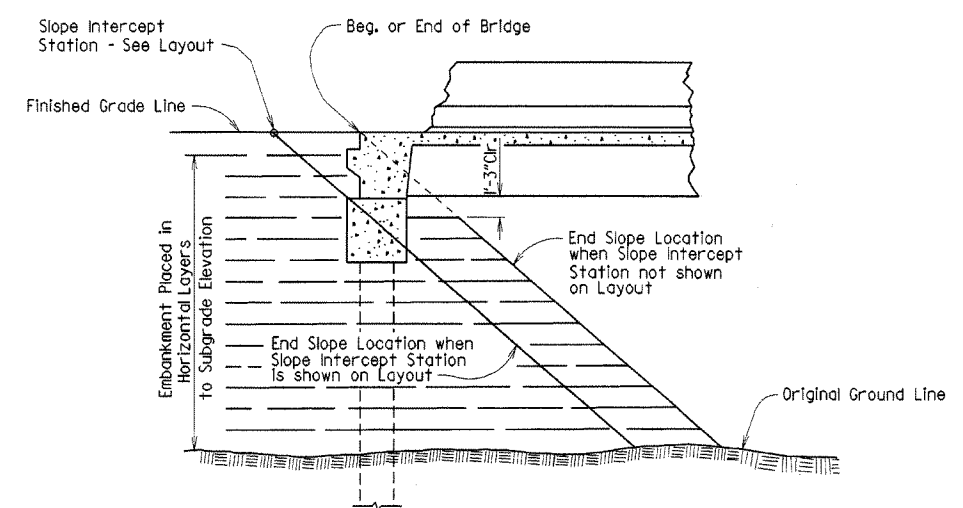
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 BRIDGE NO. 07235 DRAWING NO. 52554



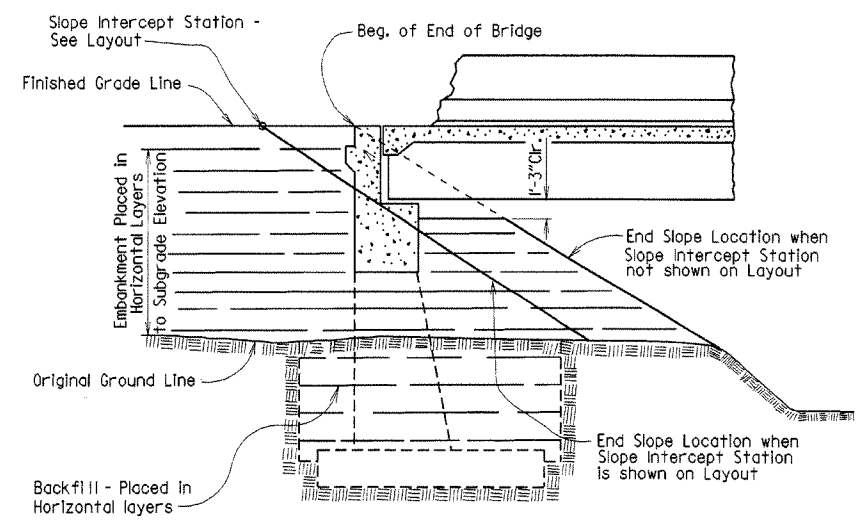
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		57	
JOB NO.							EMBANKMENT & BACKFILL 1888A	



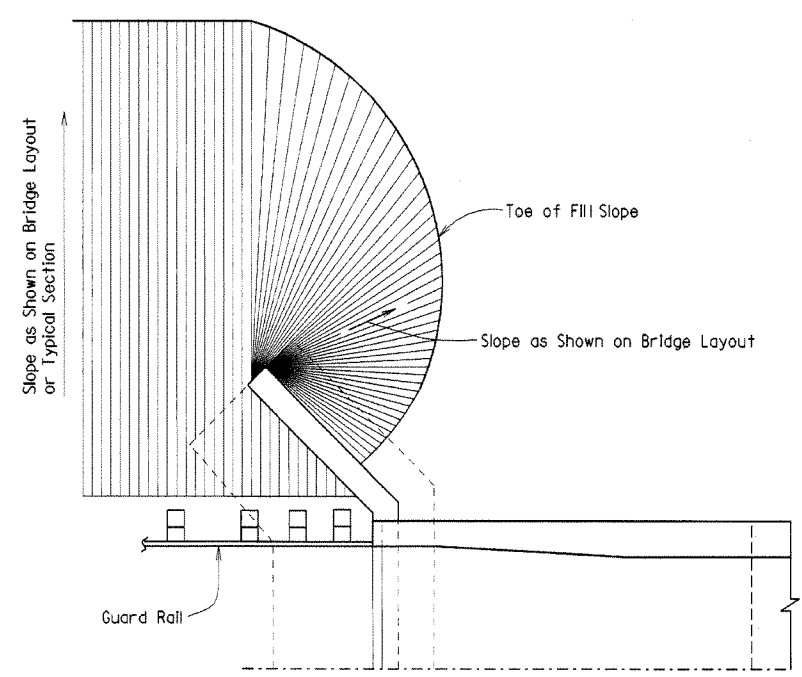
**EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS**



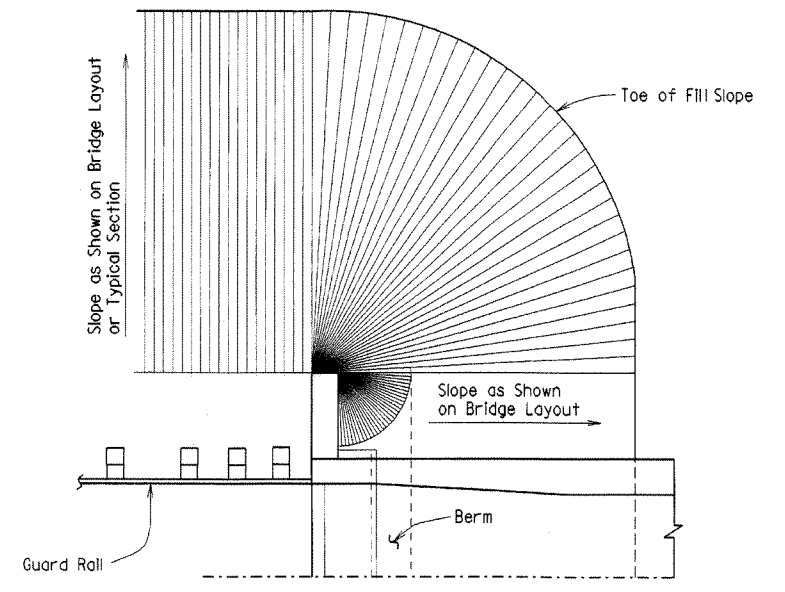
**EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS**



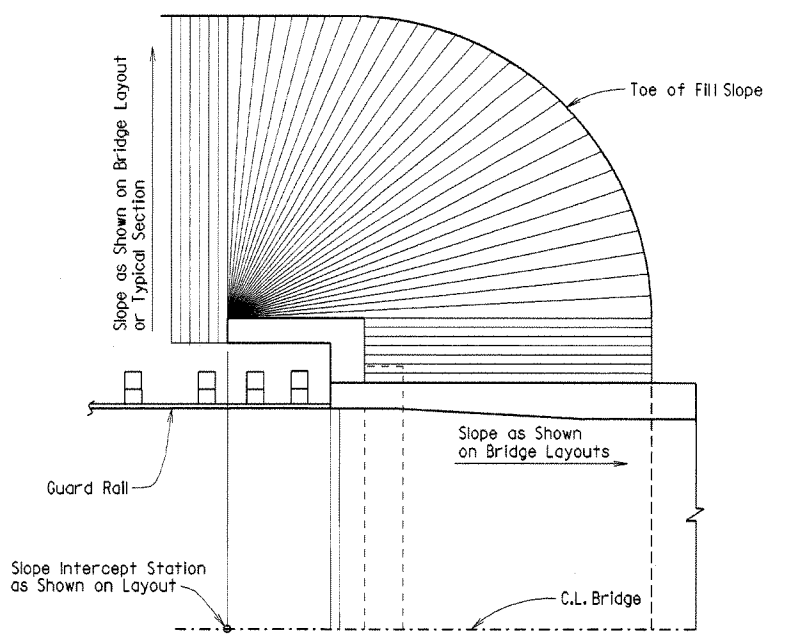
**EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS**



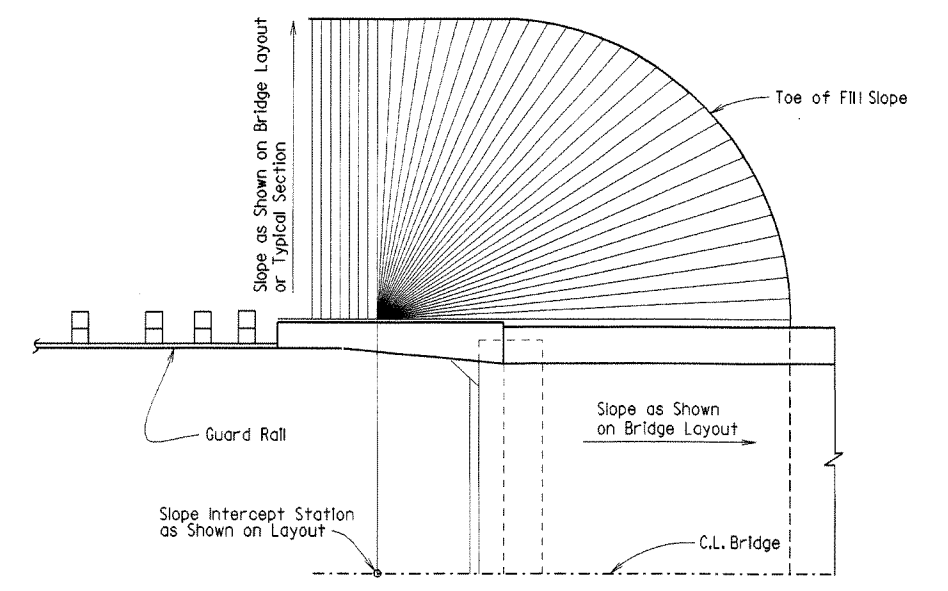
**VERTICAL WALL ABUTMENTS**



**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.



BRIDGE ENGINEER

**EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS**

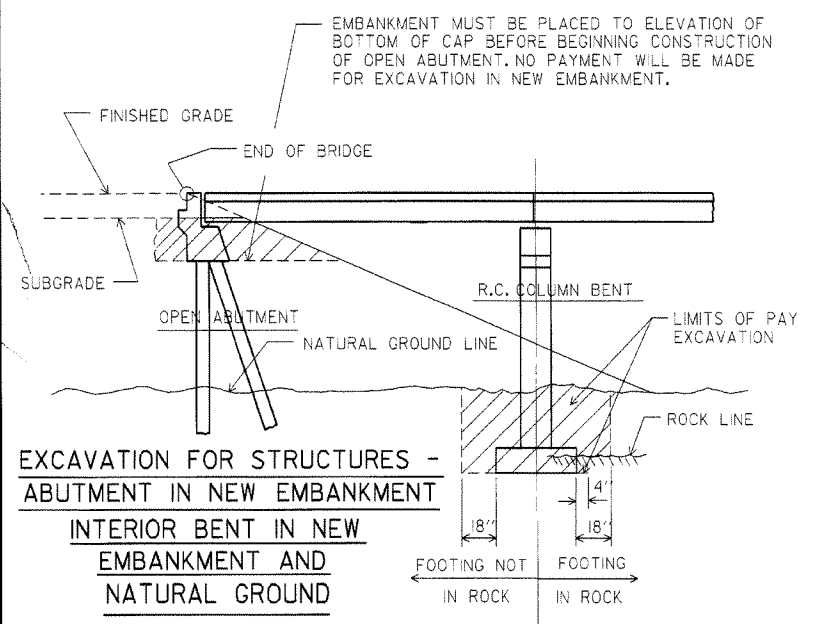
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
 LITTLE ROCK, ARK.

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

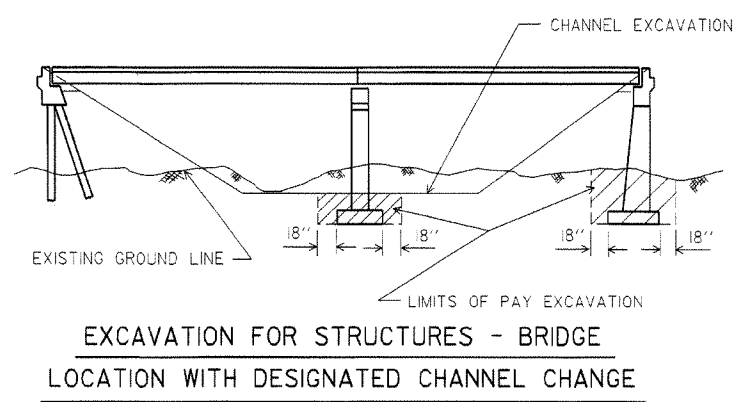
Revised and redrawn MJT 04-10-2003  
 Chk'd. By: csf 04-10-2003

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.		58	

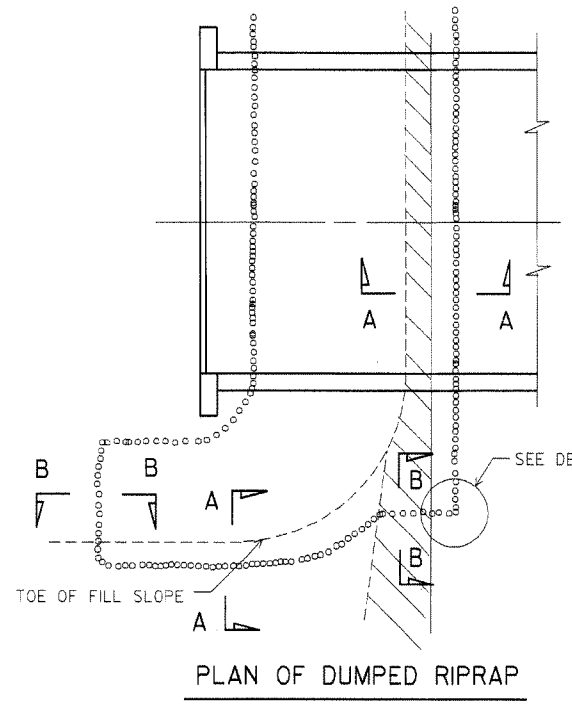
JOB NO. 1891F  
RIP. & EXCAV. 1891F



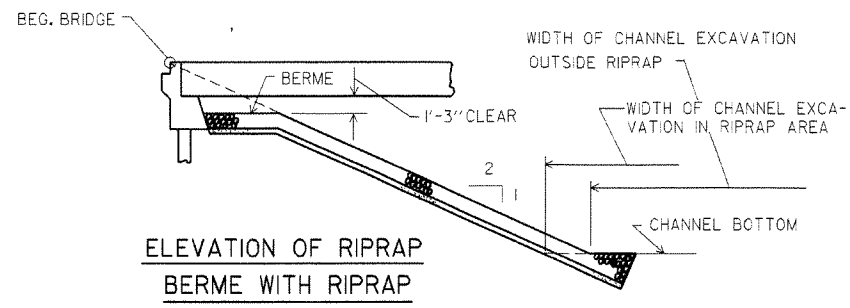
**EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND**



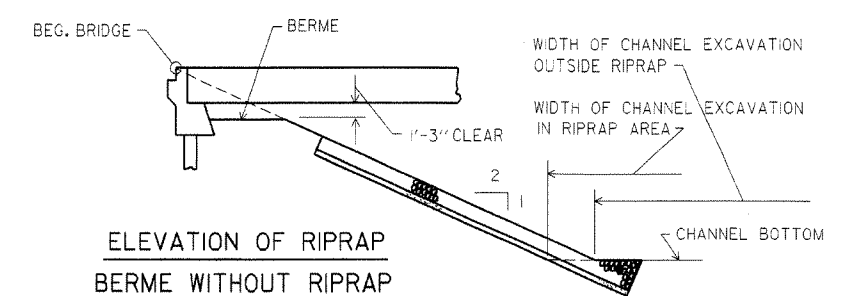
**EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE**



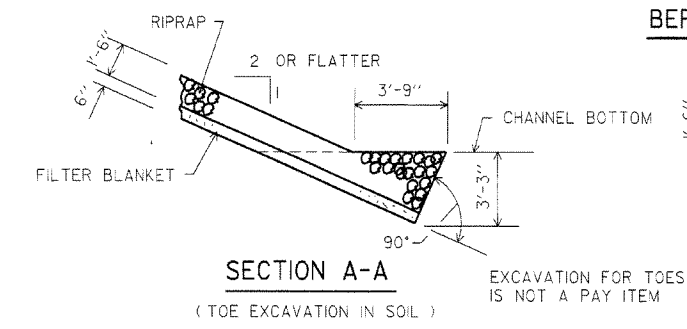
**PLAN OF DUMPED RIPRAP**



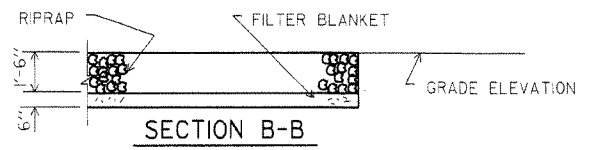
**ELEVATION OF RIPRAP BERME WITH RIPRAP**



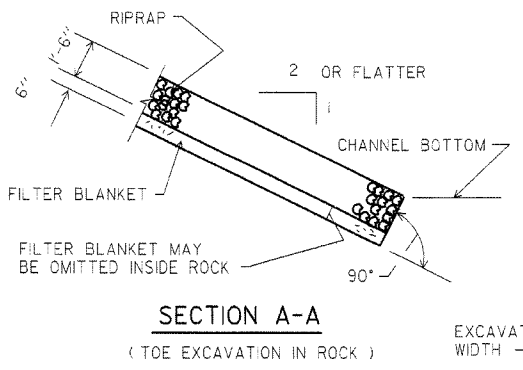
**ELEVATION OF RIPRAP BERME WITHOUT RIPRAP**



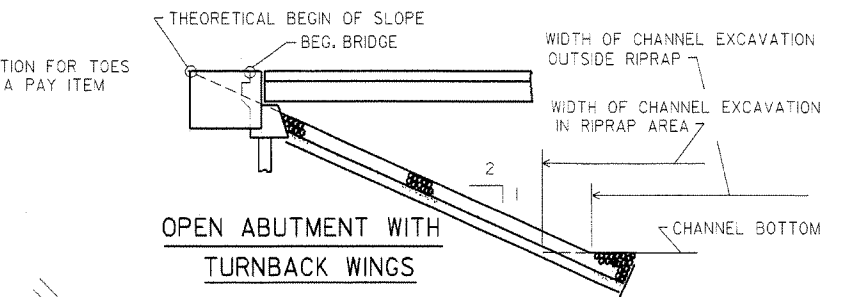
**SECTION A-A (TOE EXCAVATION IN SOIL)**



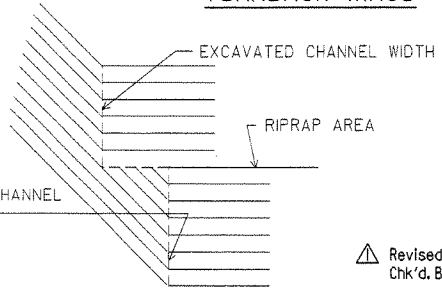
**SECTION B-B**



**SECTION A-A (TOE EXCAVATION IN ROCK)**



**OPEN ABUTMENT WITH TURNBACK WINGS**

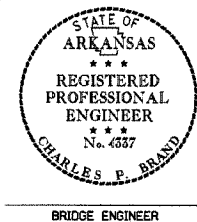


**DETAIL C**

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

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

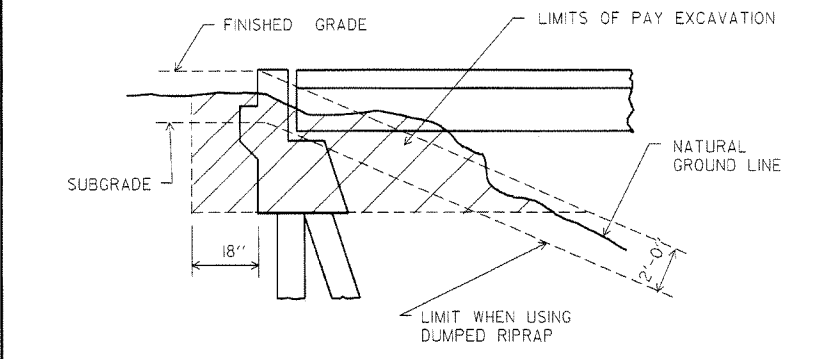
NOTE: DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



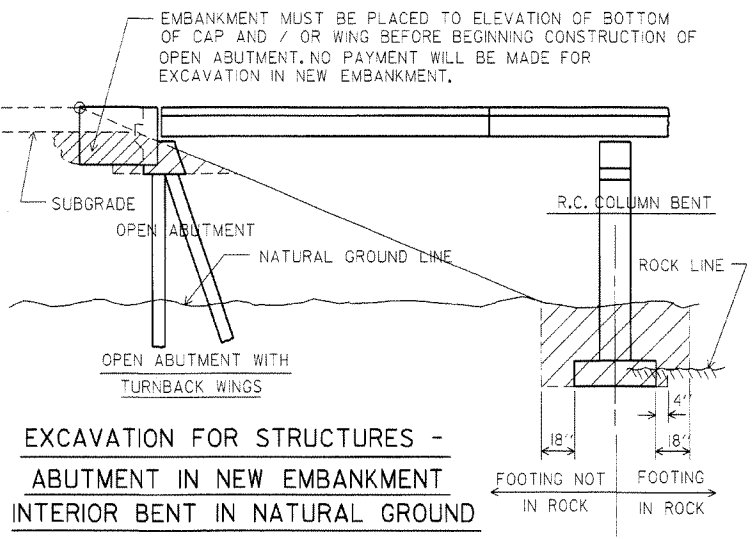
Revised and redrawn MJT 04-10-2003  
Chk'd. By: CJF 04-10-2003

**DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES**  
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.

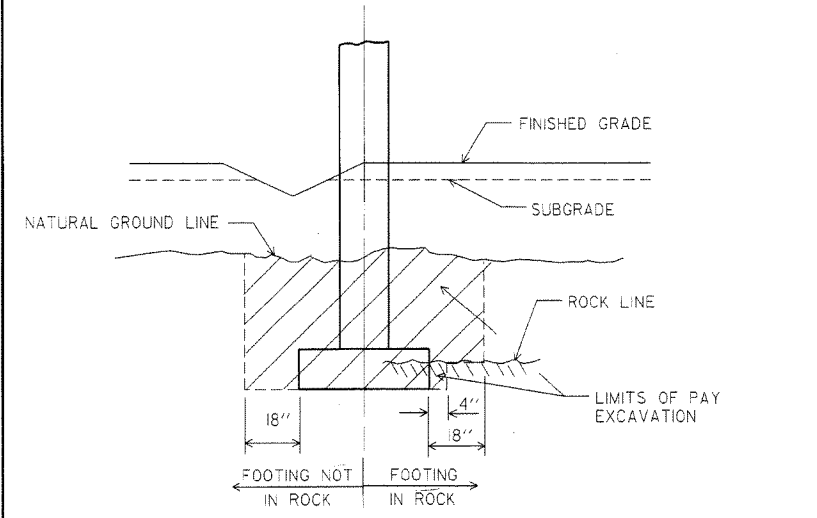
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DESIGNED BY: STD. DATE: BRIDGE NO. DRAWING NO. 1891F



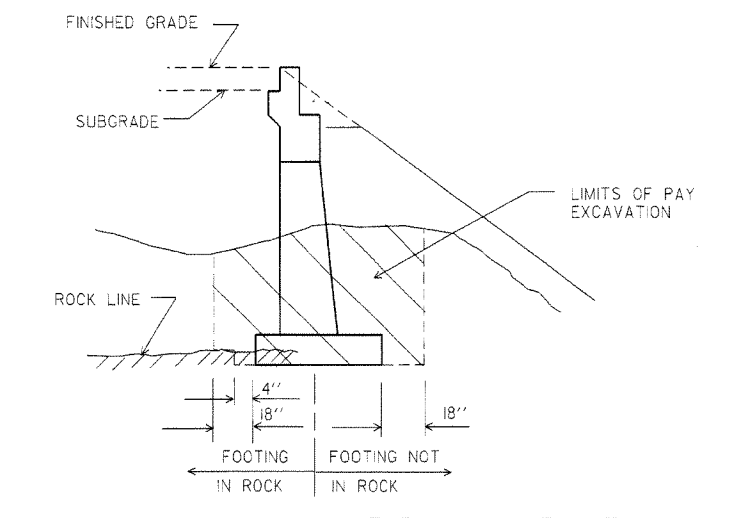
**EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND**



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



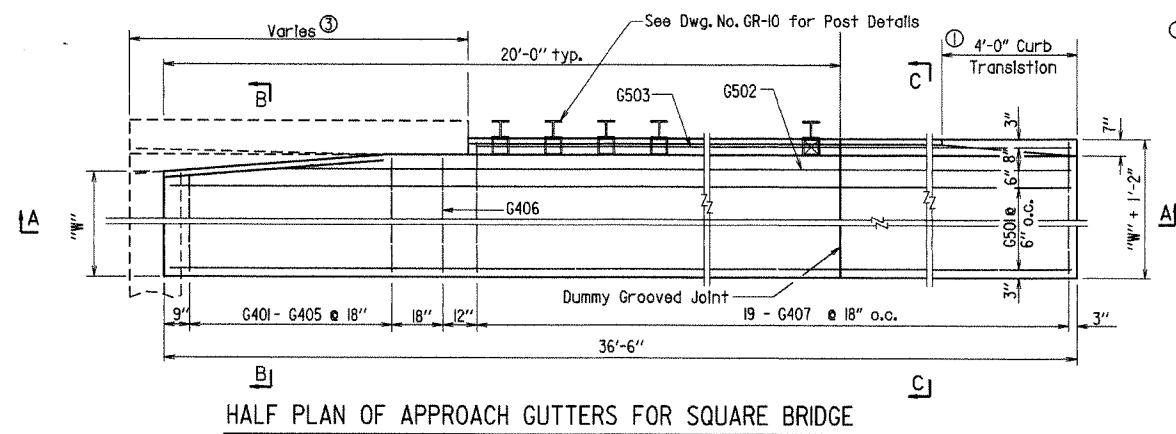
**EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND**



**EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT**

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.		59	
07-14-2010								

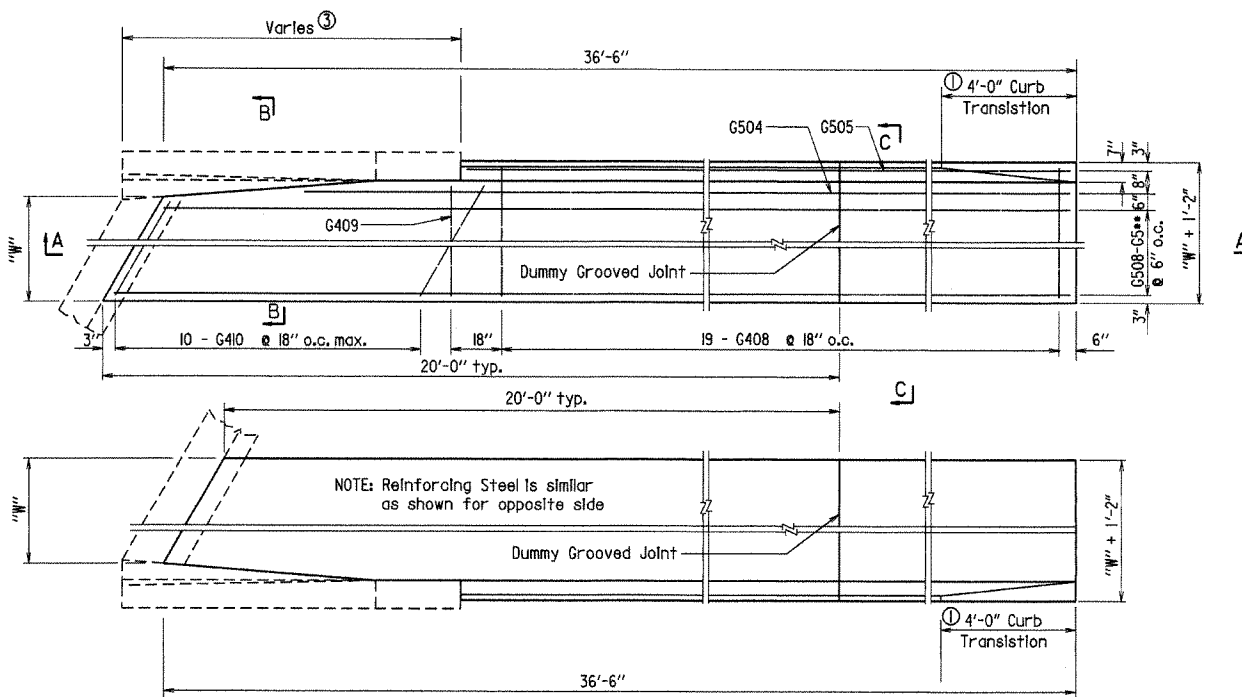
① TYPE C GUTTERS - 2016C



HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

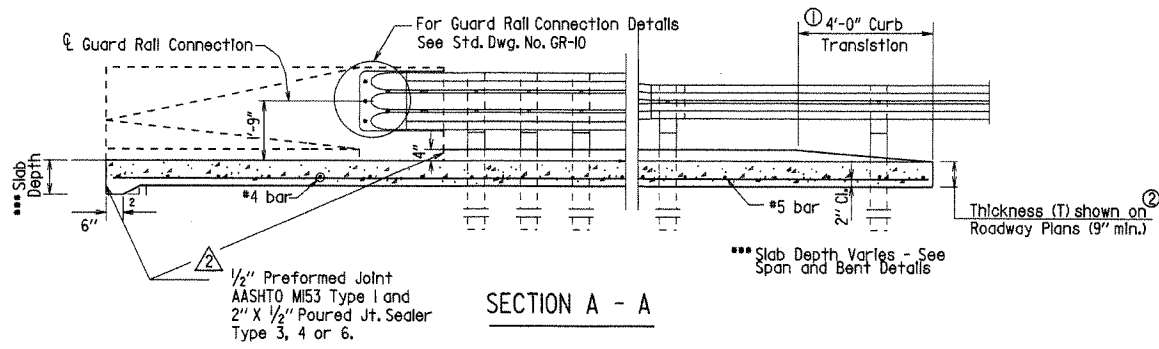
① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.  
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

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

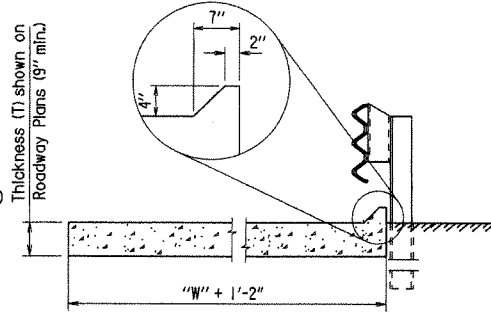


PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

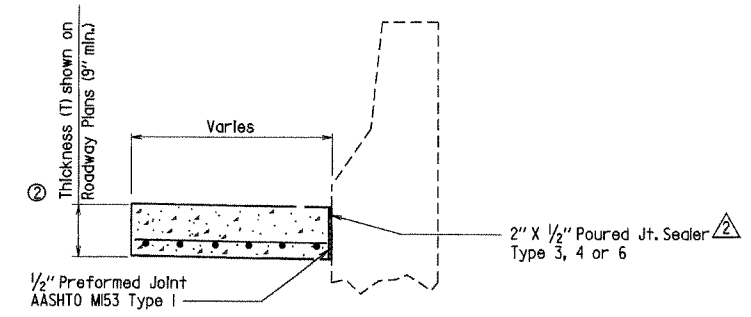
② Thickness shall match Approach Slab Thickness. Thickness shall be 9" if Approach Slab is not used.



SECTION A - A



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

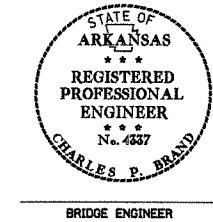
\*\*\* Special bar list required when skew angle exceeds 35° for W = 10'; 40° for W = 8'; 50° for W = 6'; or 60° for W = 4'.

\* 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 ③

"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



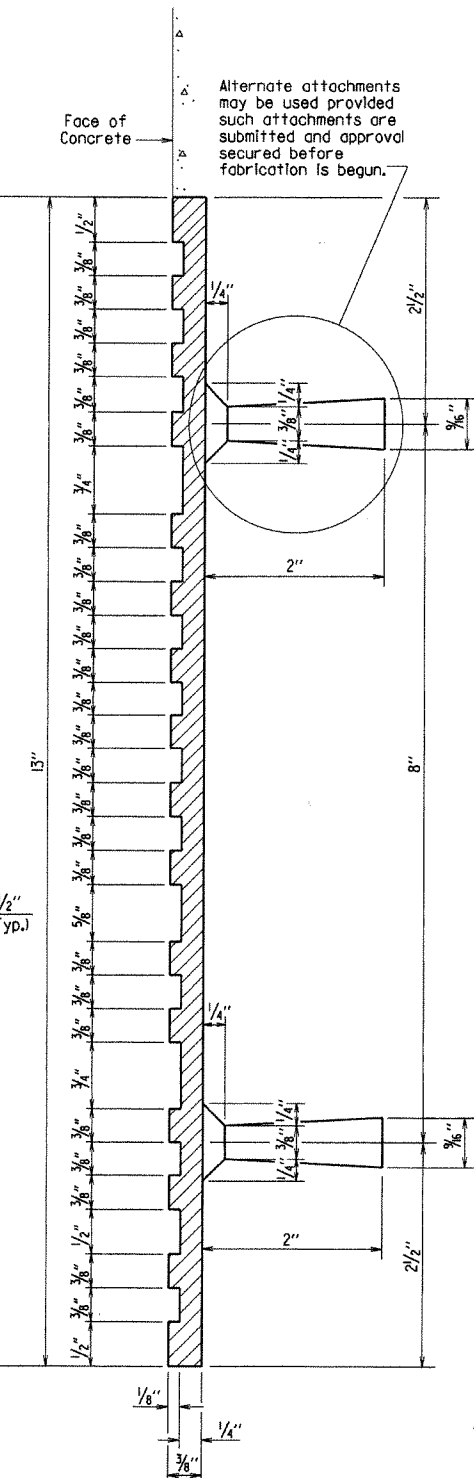
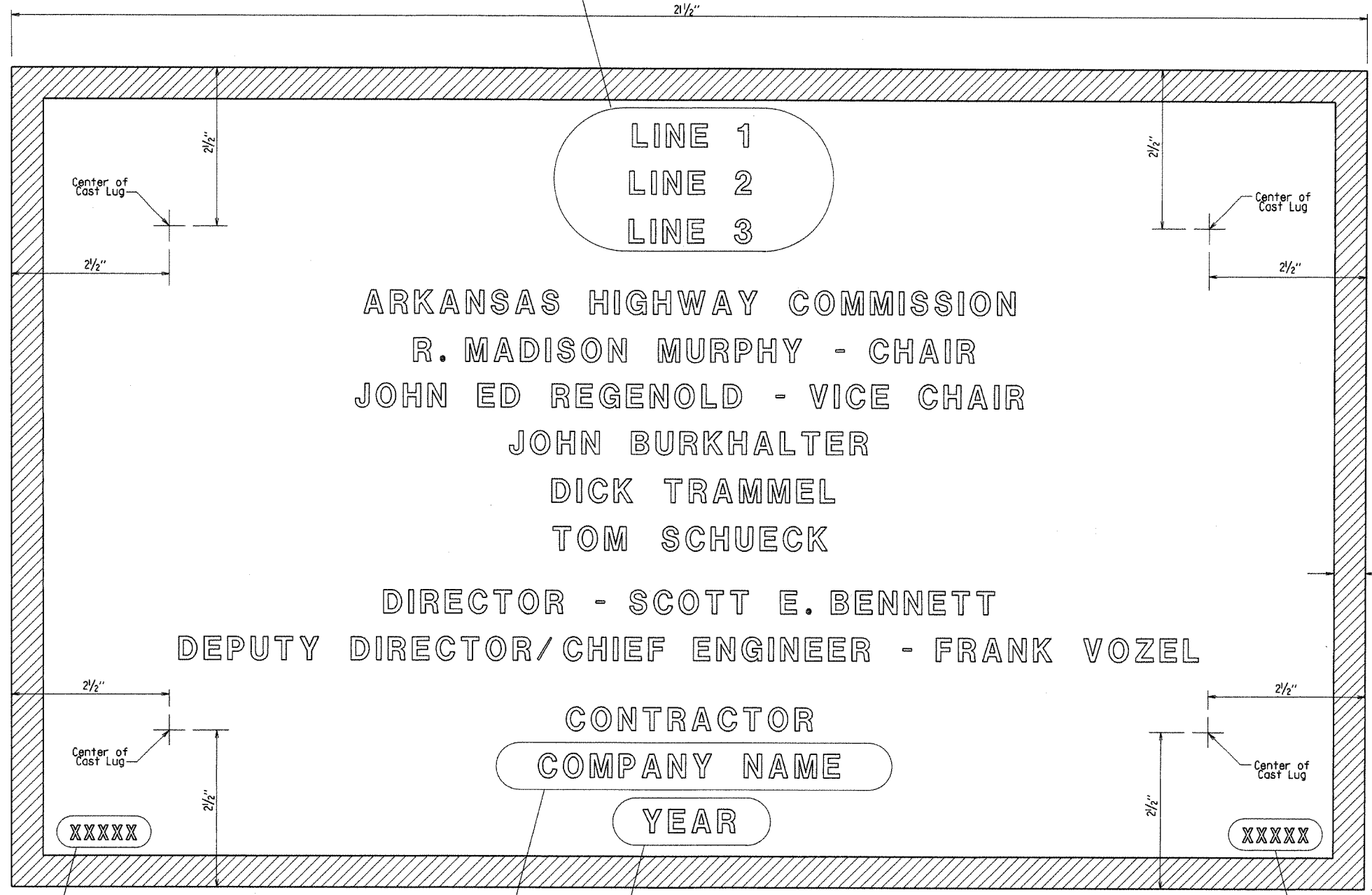
DETAILS OF STANDARD TYPE C APPROACH GUTTERS  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016C.STD  
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"  
DESIGNED BY: STD. DATE:  
BRIDGE NO. DRAWING NO. 2016C

GENERAL NOTES  
Concrete shall be Class S or Class (SAE) 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. Ch. By: CJF 4-10-2003  
Added Joint sealer type 07-14-2010 by MJT Checked by: CJF 7-14-2010

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.		60	
							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	
Line 2	Relief	Rail Road	River	Highway 5
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 7/8" 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

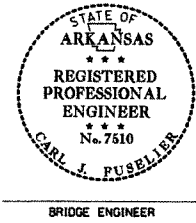
Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example: 2001

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

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



**DETAILS OF STANDARD TYPE D BRIDGE NAME PLATE**

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

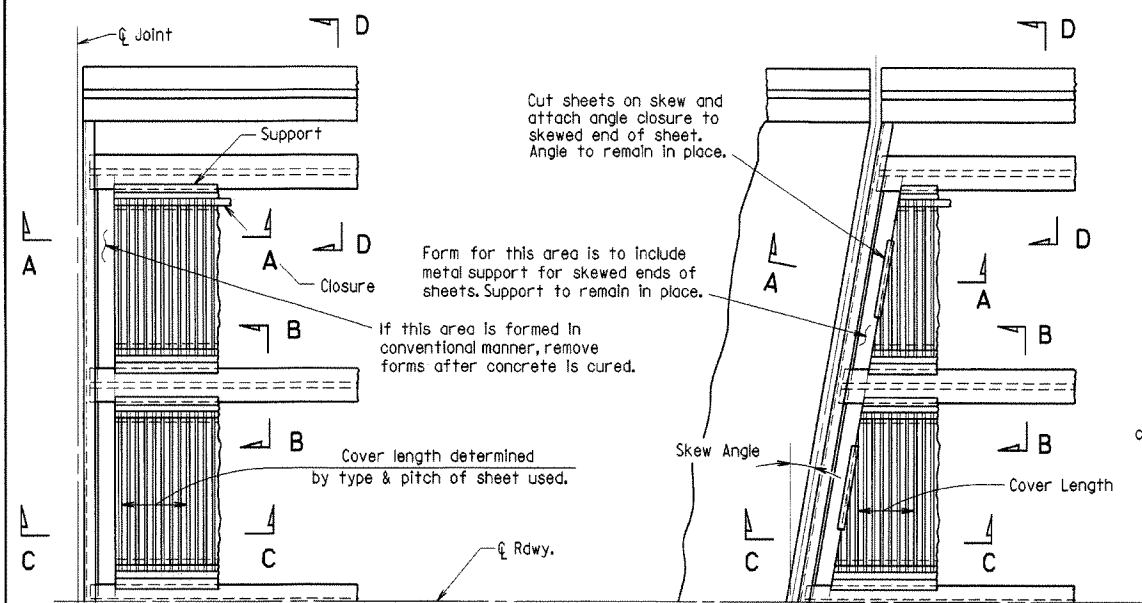
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-8-11 FILENAME: B2387.STD  
 CHECKED BY: CRE DATE: 9-8-11 SCALE: 1" = 0' - 0"  
 DESIGNED BY: STD. DATE: OR AS NOTED

BRIDGE NO. DRAWING NO. 2387

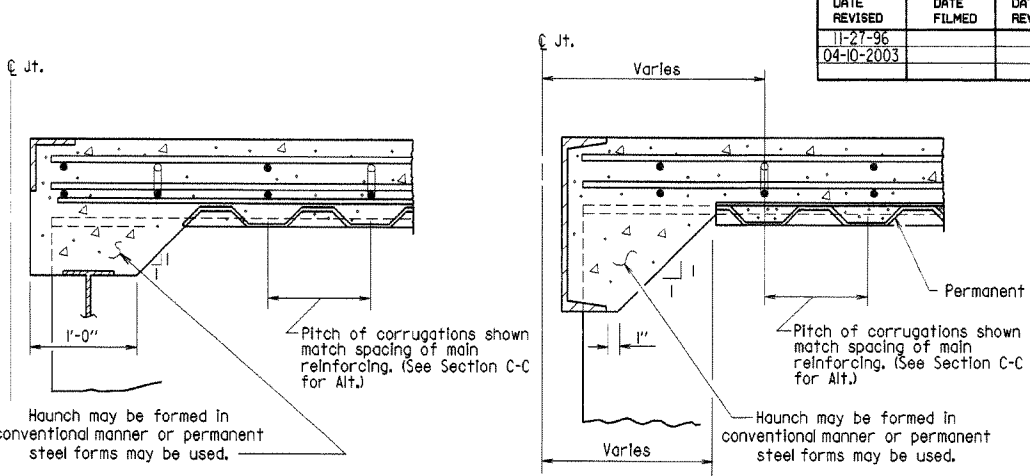
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		61	
04-10-2003										

BR. DECK FORMS 14991



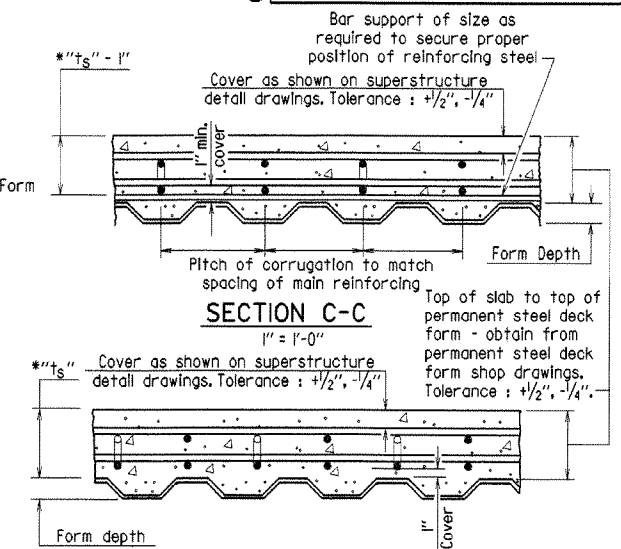
**PART PLAN - SQUARE SPAN**  
3/8" = 1'-0"

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



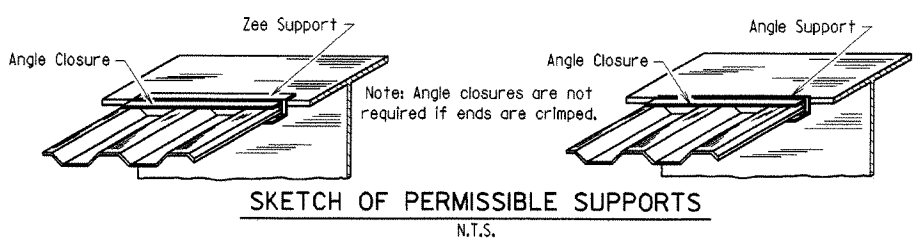
**SECTION A-A**  
N.T.S.  
(Angle at end of span)

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

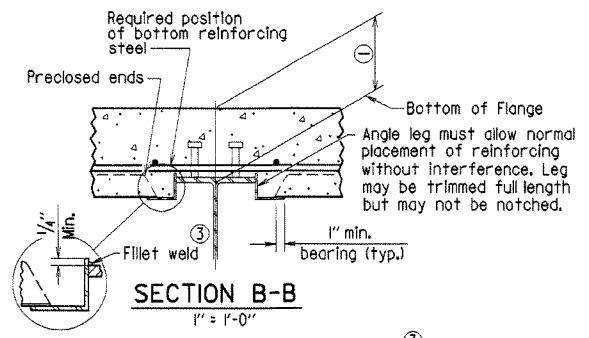


**SECTION C-C**  
1" = 1'-0"

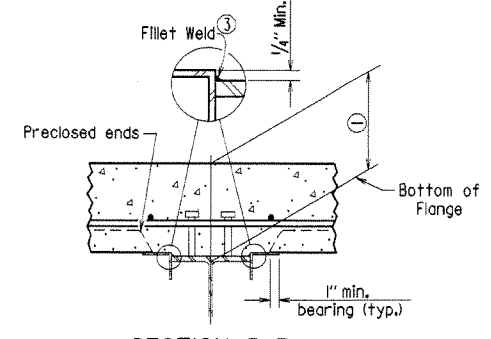
**SECTION C-C - ALTERNATE**  
1" = 1'-0"



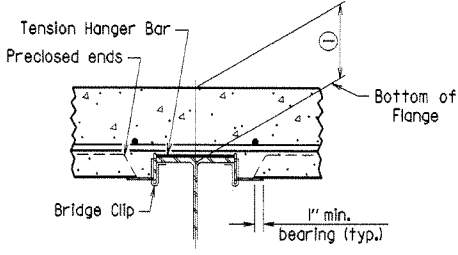
**SKETCH OF PERMISSIBLE SUPPORTS**  
N.T.S.



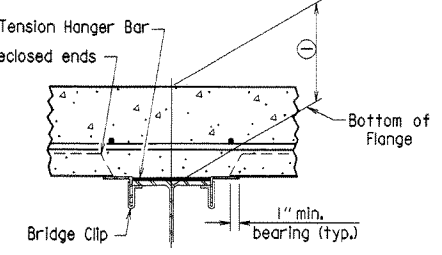
**SECTION B-B**  
1" = 1'-0"



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



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



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

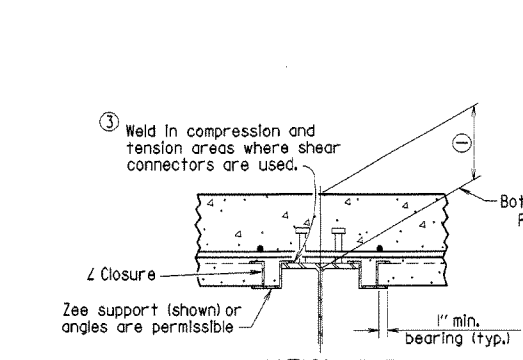
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

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

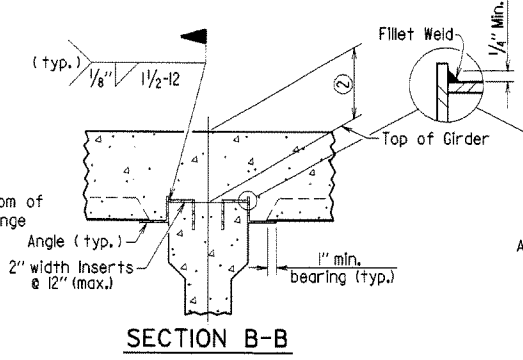
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)

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

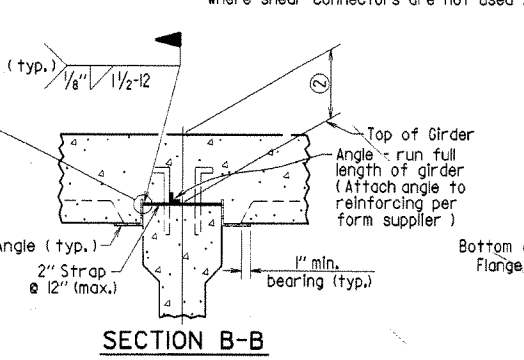
(Showing permissible support for tension flange where shear connectors are not used)



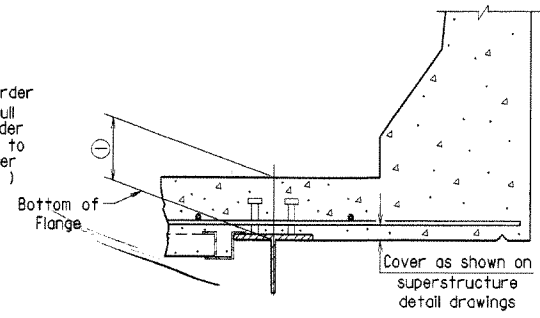
**SECTION B-B**  
1" = 1'-0"



**SECTION B-B (FOR CONCRETE GIRDERS)**  
1" = 1'-0"



**SECTION B-B (FOR CONCRETE GIRDERS)**  
1" = 1'-0"



**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.

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  
DESIGNED BY: STD. DATE: ---  
SCALE: as noted



BRIDGE ENGINEER

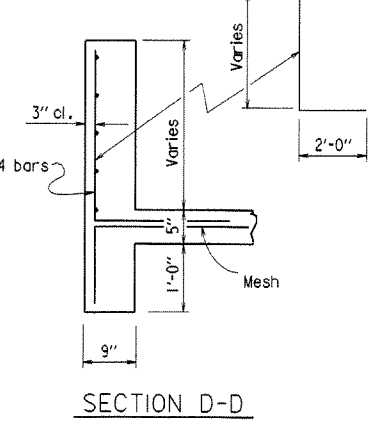
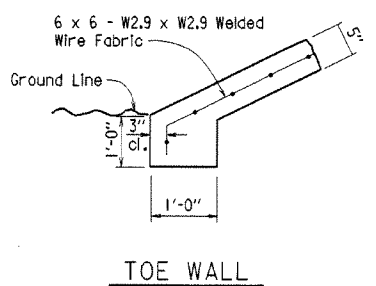
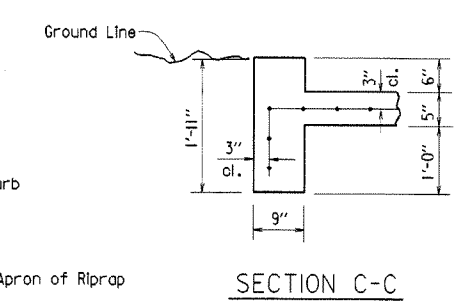
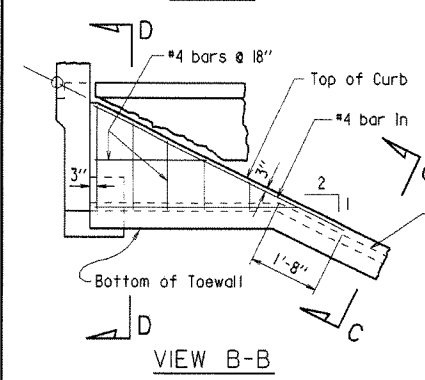
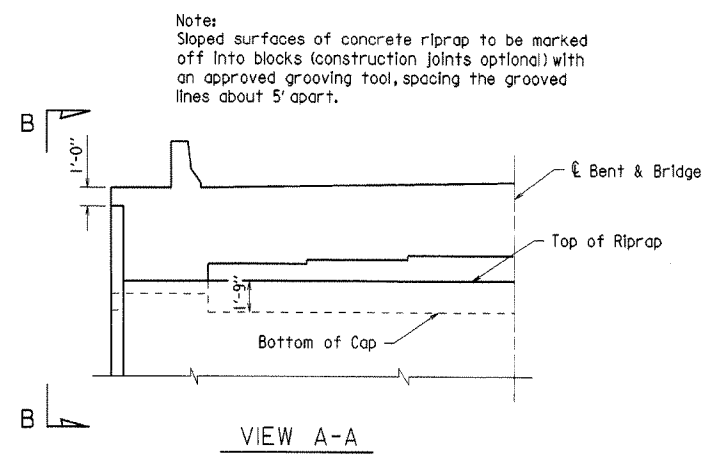
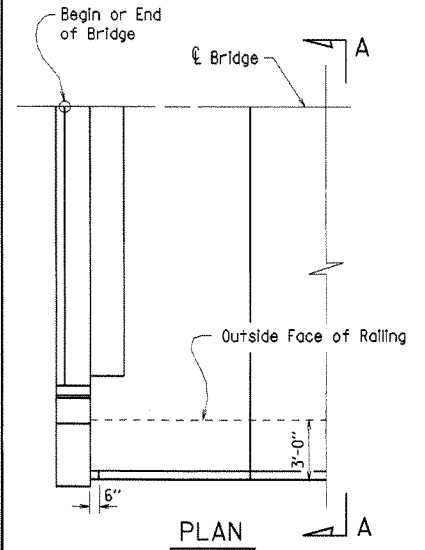
BRIDGE NO.

DRAWING NO. 14991

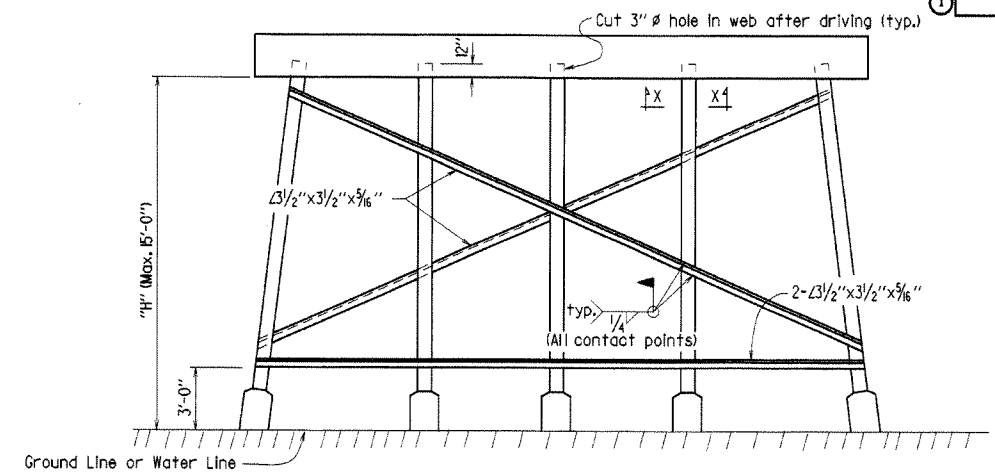
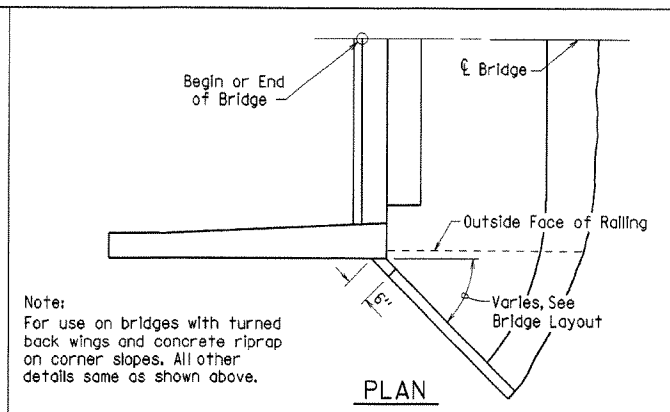
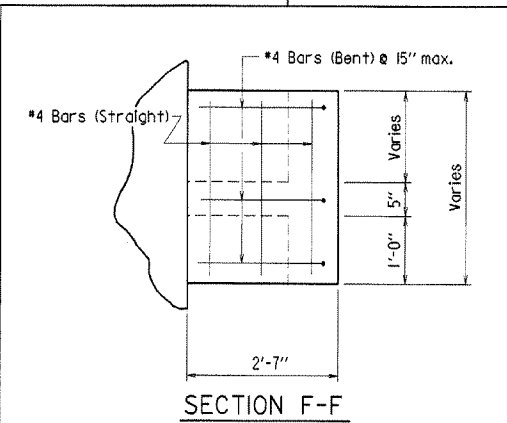
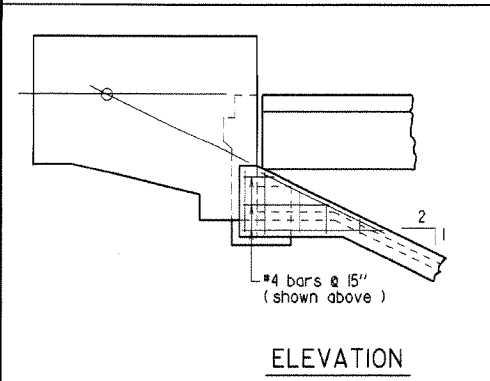
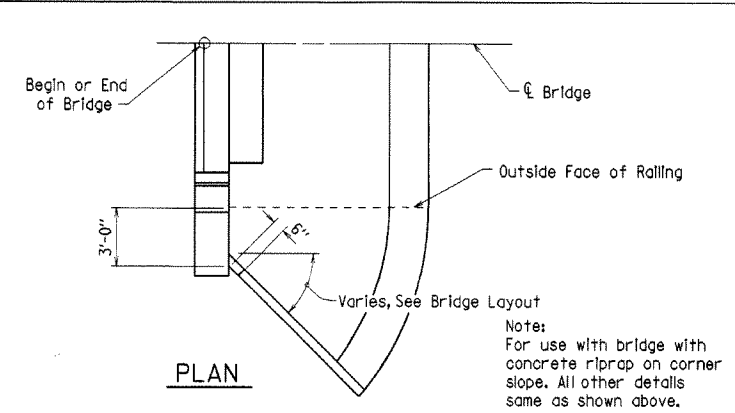
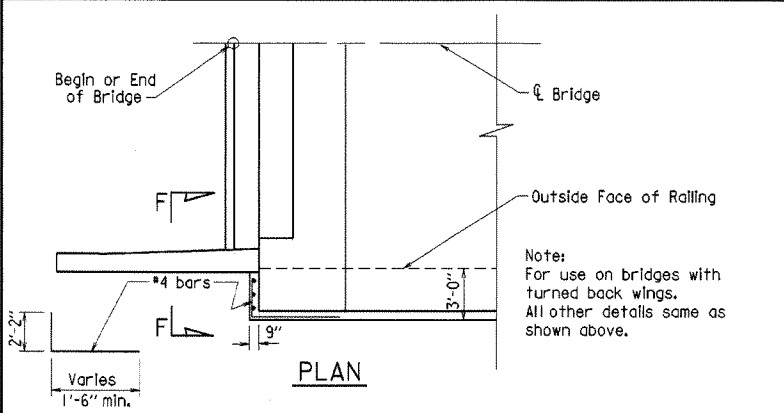
Revised for 2003 AHTD Construction Specifications and CPB Seal, MJT 04-10-2003  
Chk'd. By: cdf 04-10-2003

Redrawn and revised 11/27/96; MJT

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.		62	
				JOB NO.		RIPRAP & PILE - 14995A		



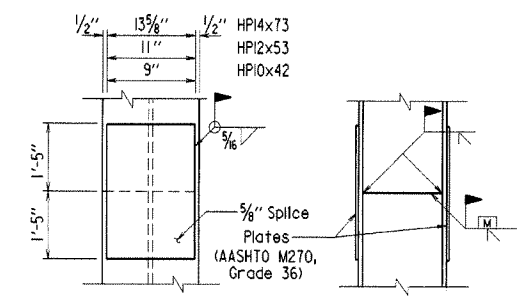
DETAILS OF CONCRETE RIPRAP



Note:  
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.  
Omit bottom bracing where "H" is less than 10 ft. Omit all bracing where "H" is less than 5 ft.

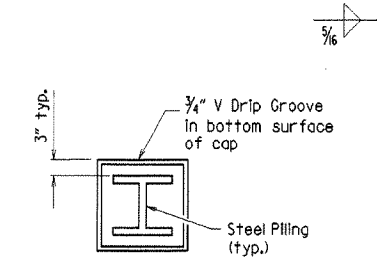
Note:  
Where required by the bridge layout sheet, pile encasements shall be constructed.  
Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

TYPICAL BRACING FOR INT. STEEL PILE BENTS

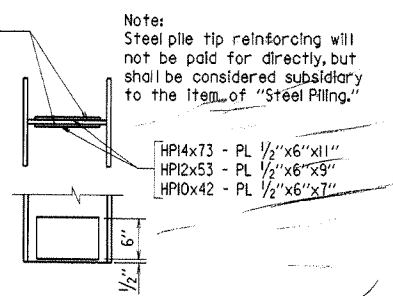


Note:  
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

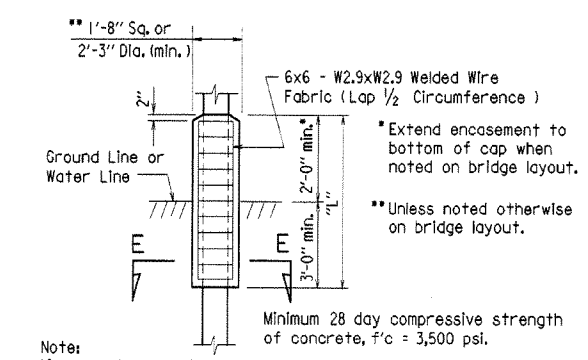
PILE SPICE DETAIL



VIEW X-X



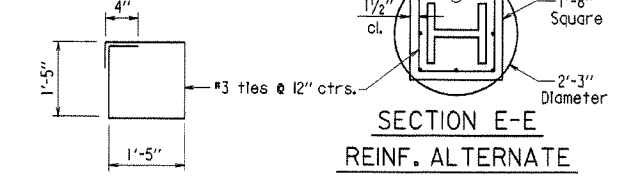
REINFORCING DETAIL FOR STEEL PILE TIP



Note:  
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

PILE ENCASEMENT DETAIL

Reinforcing Alternate  
#3 Vertical - 8 per encasement  
#3 ties @ 12" ctrs.  
Yield Strength,  $f_y = 60,000$  psi.



SECTION E-E REIN. ALTERNATE



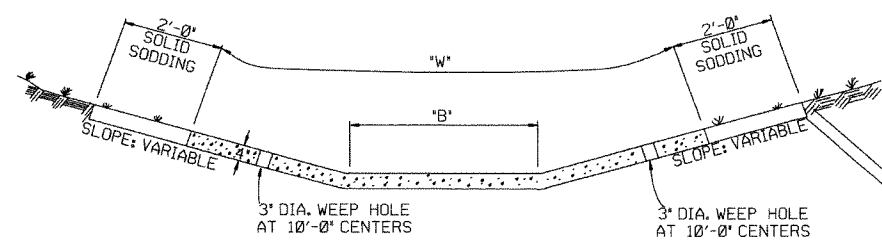
DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING

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

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BH995A.STD  
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted  
DESIGNED BY: STD DATE: \_\_\_\_\_  
BRIDGE NO. \_\_\_\_\_ DRAWING NO. 14995A

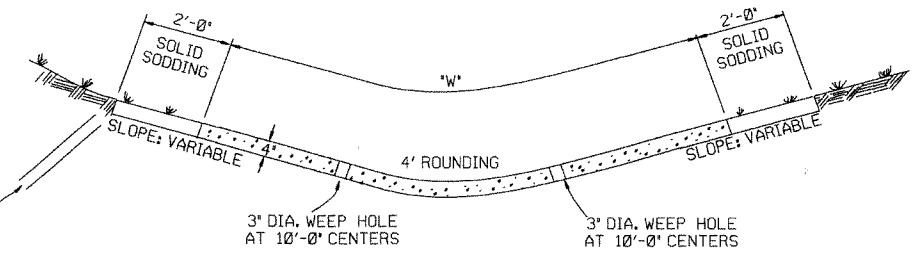
Revised and redrawn MJT 04-10-2003  
Chk'd. By: CJF 04-10-2003

REFER TO TABULATION OF QUANTITIES FOR 'W' & 'B' DIMENSIONS



TYPE A

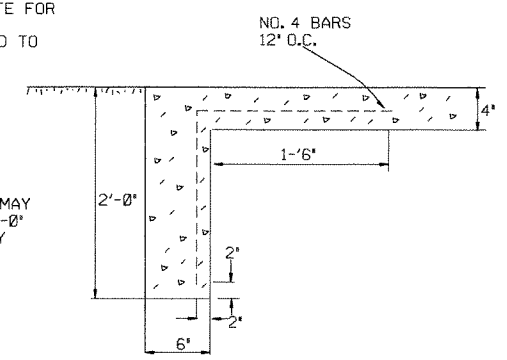
REFER TO TABULATION OF QUANTITIES FOR 'W' DIMENSIONS



TYPE B

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

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



TOE WALL DETAIL FOR CONCRETE DITCH PAVING

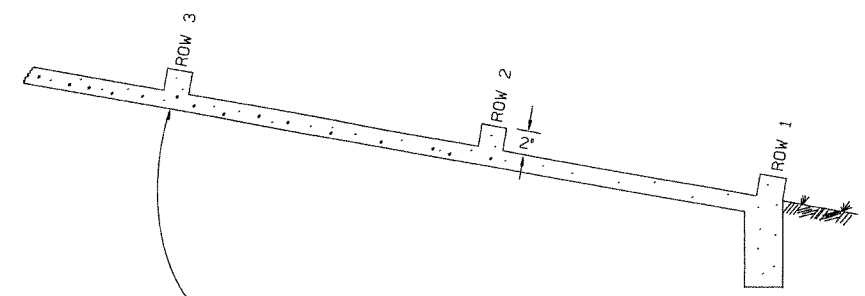
GENERAL NOTES:

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.

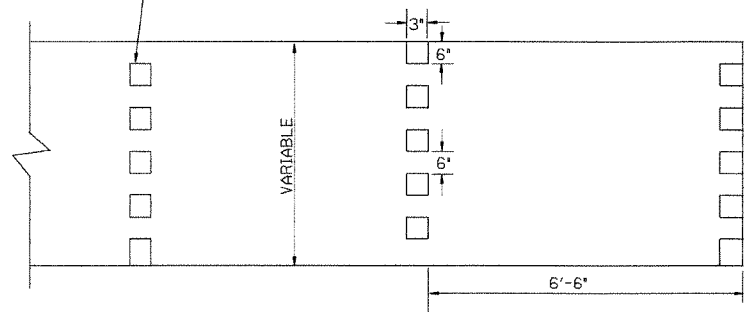
SOLID SOD ALONG DITCH PAVING TO BE PLACED WITHIN 14 DAYS OF DITCH PAVING CONSTRUCTION.

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.



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 UNCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



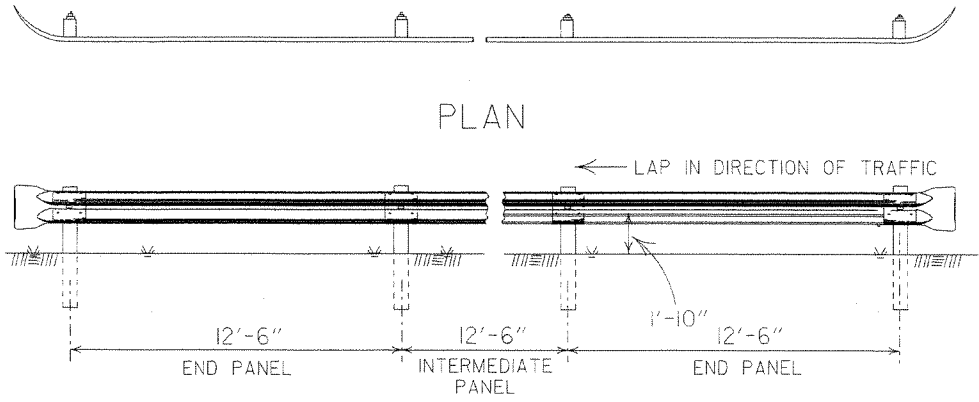
ENERGY DISSIPATORS  
(NO SCALE)

11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-9-87	MODIFIED NOTE ON ENERGY DISS.	532-1-9-87
11-3-86	ADDED NOTE TO ENERGY DISS.	599-12-1-86
11-1-84	ENERGY DISSIPATOR DETAILS	508-11-1-84
11-1-84	ADDED EXCAVATION DETAILS	
10-2-72	TYPED A & B REVISED AND REDRAWN	508-10-2-72
DATE	REVISION	DATE FILM'D

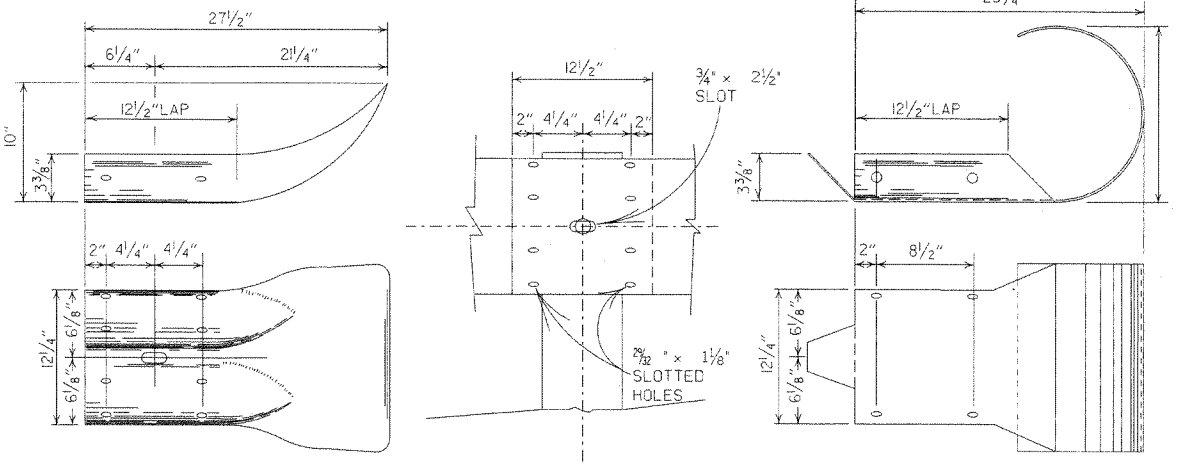
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

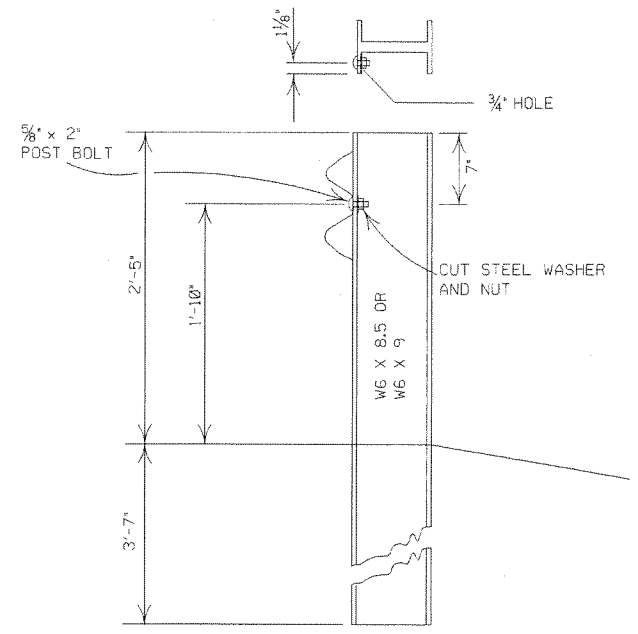
STANDARD DRAWING CDP-1



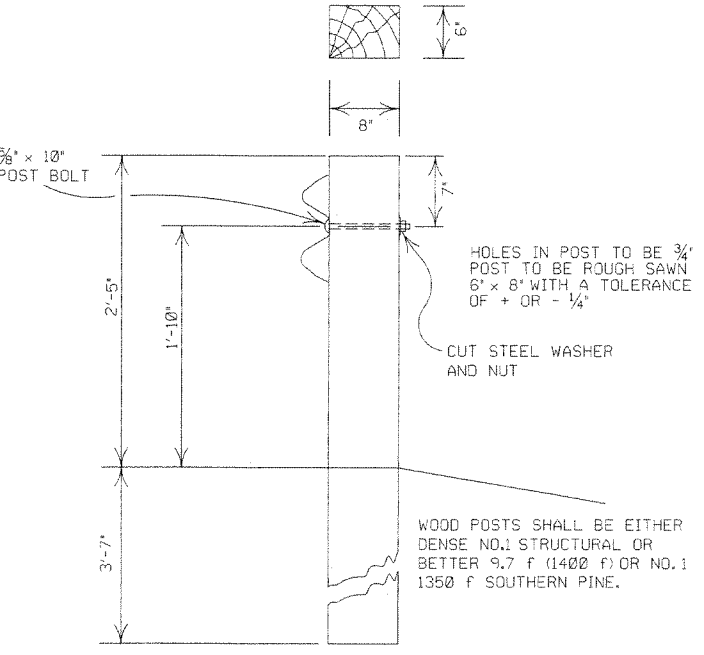
PLAN



ELEVATION



STEEL POST

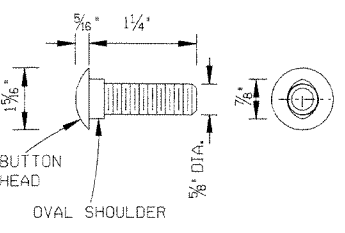


WOOD POST

TERMINAL SECTION

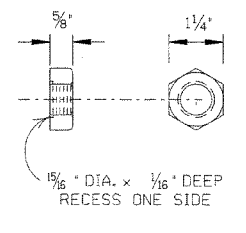
RAIL SPLICE

TERMINAL SECTION

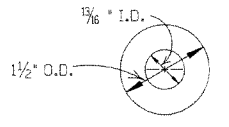


SPLICE BOLT

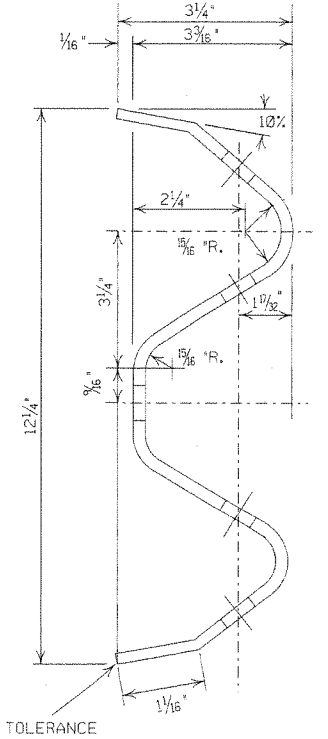
NOTE: POST BOLT SAME EXCEPT LENGTH.



NUT



CUT STEEL WASHER



SECTION THRU RAIL

DETAILS OF POST CONNECTIONS

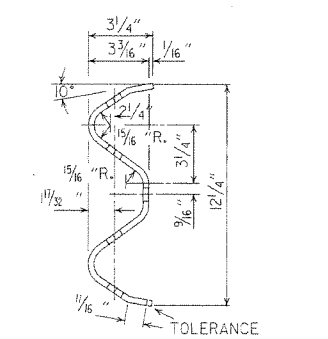
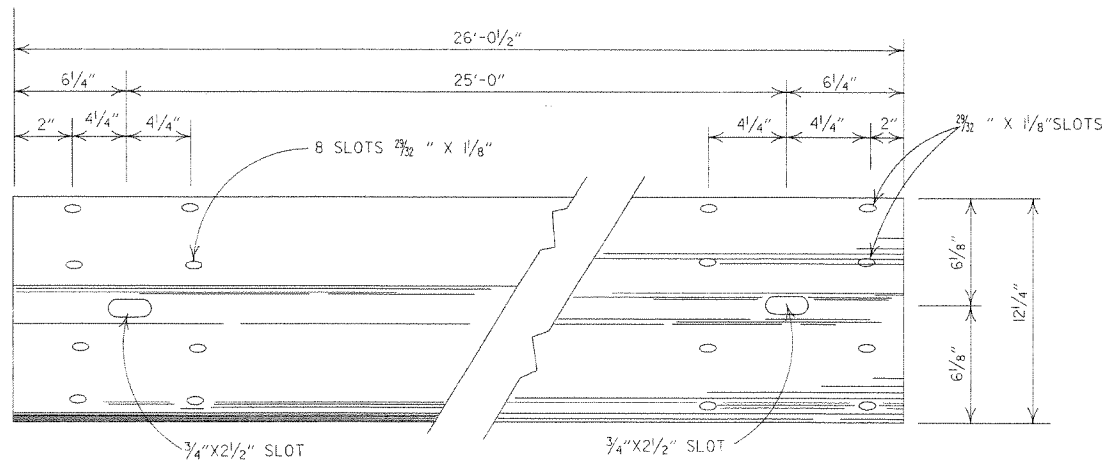
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
8-22-22	REVISED DIMENSION ON STEEL POST	
11-16-01	REVISED STEEL AND WOOD POST	
8-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
6-2-94	ADDED ALTERNATE STEEL POST SIZE	
8-5-93	REVISED STEEL POSTS SIZE	8-5-93
8-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
10-30-87	REMOVED DET. PLCMNT. ON HWY.	555-11-20-87
1-4-83	GRADE FOR WOOD POSTS	679-1-4-83
10-1-77	HARDENED WASHER	922-10-1-72
10-2-72	REVISED & REDRAWN	521-10-2-72
DATE	REVISION	DATE FILM

ARKANSAS STATE HIGHWAY COMMISSION

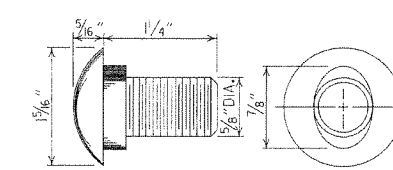
GUARD RAIL DETAILS  
(TYPE C)  
STREET / ROAD BARRICADE OR  
TEMPORARY INSTALLATION

STANDARD DRAWING GR-7

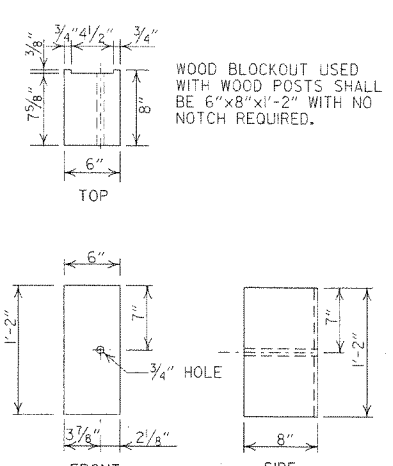
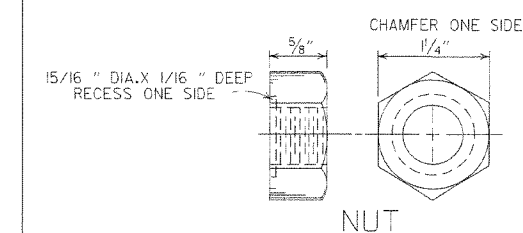
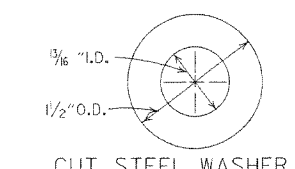




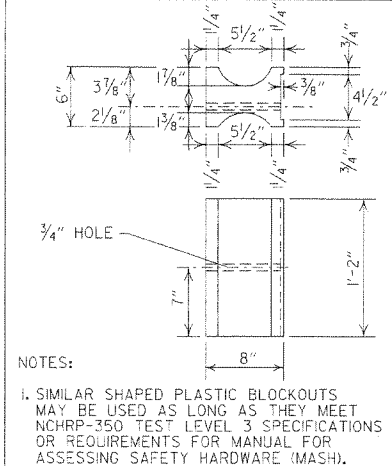
DETAILS OF W-BEAM GUARD RAIL  
 RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



SPLICE BOLT  
 POST BOLT - SAME EXCEPT LENGTH

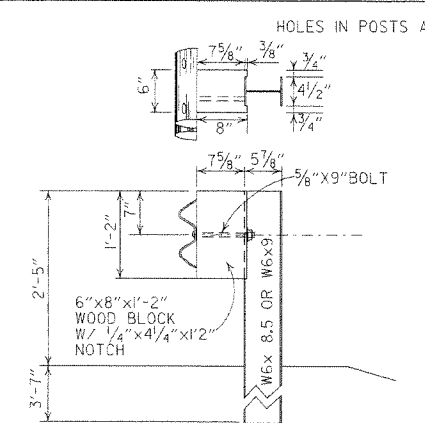


WOOD BLOCKOUT (W-BEAM)

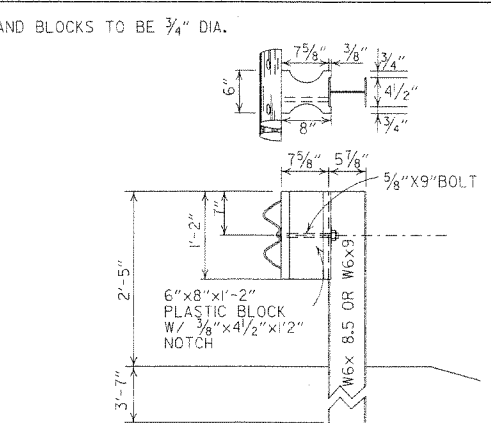


PLASTIC BLOCKOUT (W-BEAM)

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.

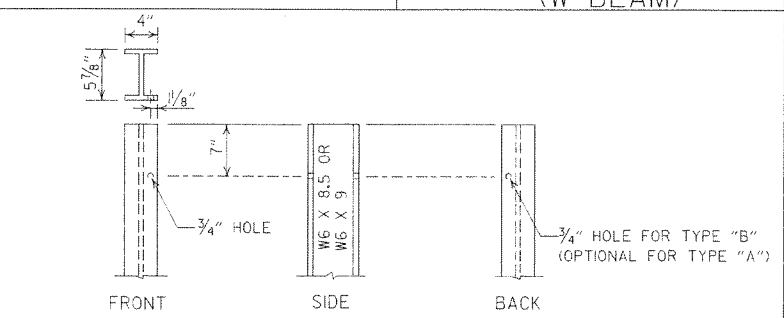


WOOD BLOCKOUT CONNECTIONS

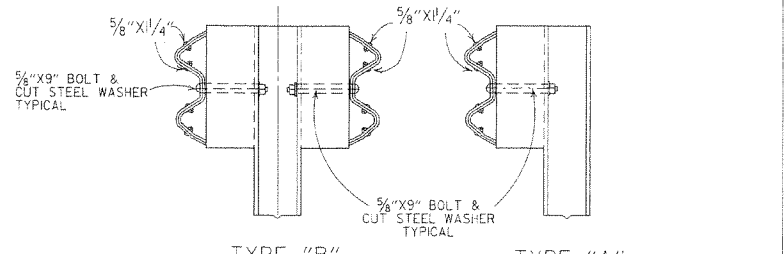


PLASTIC BLOCKOUT CONNECTIONS

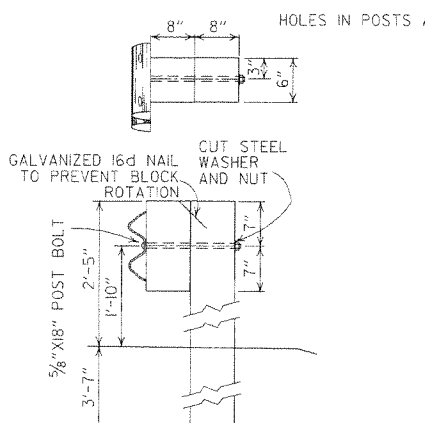
DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



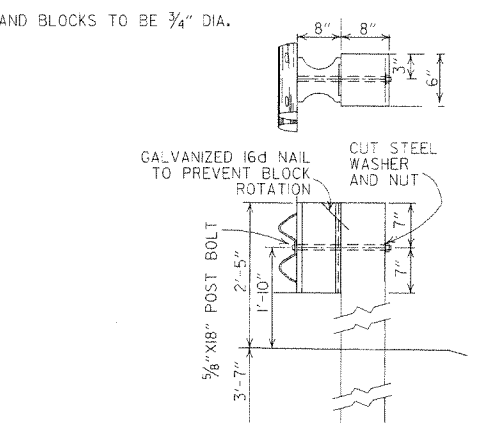
STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



WOOD BLOCKOUT CONNECTIONS



PLASTIC BLOCKOUT CONNECTIONS

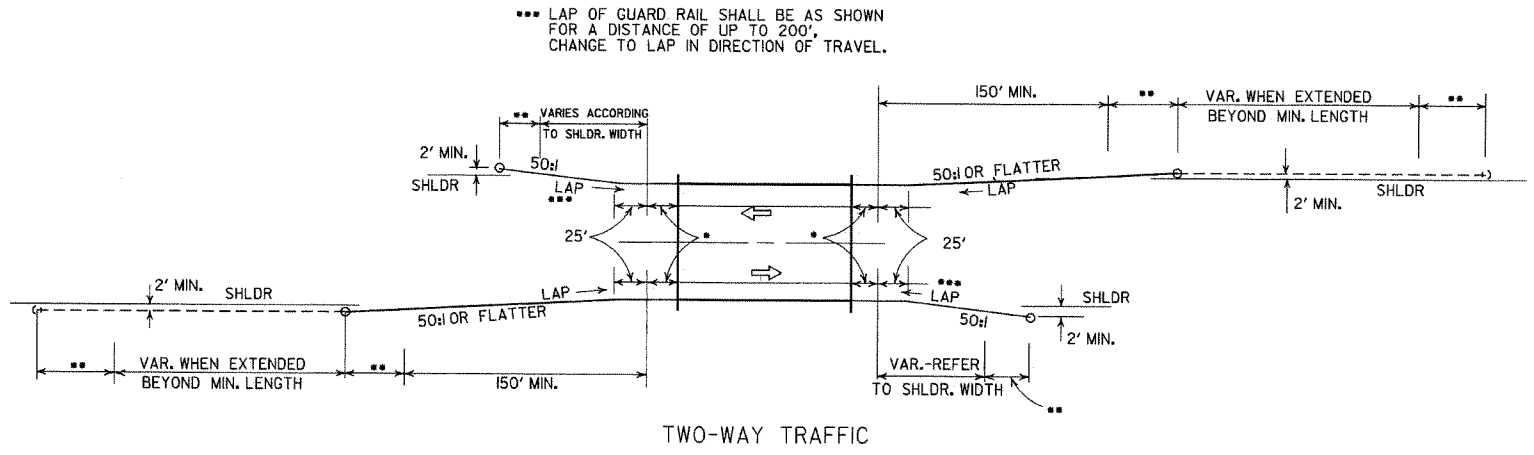
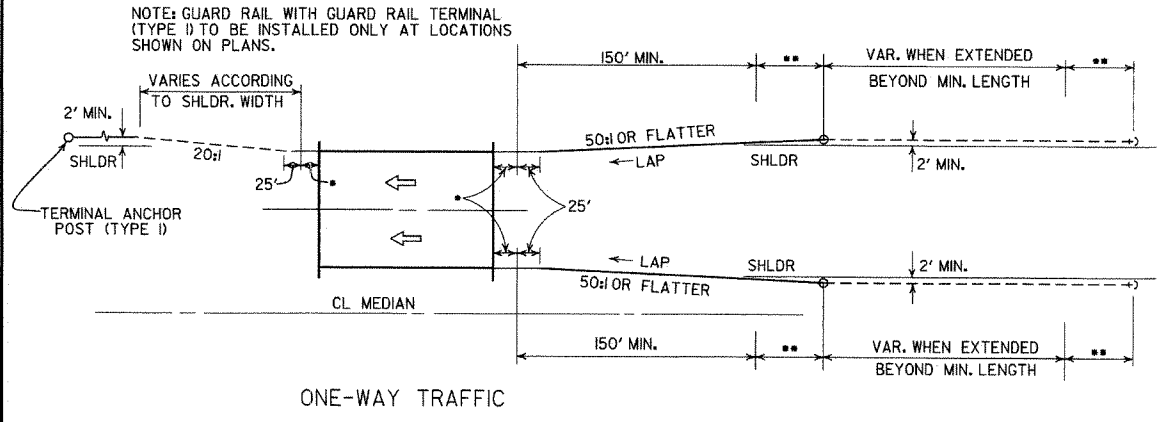
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

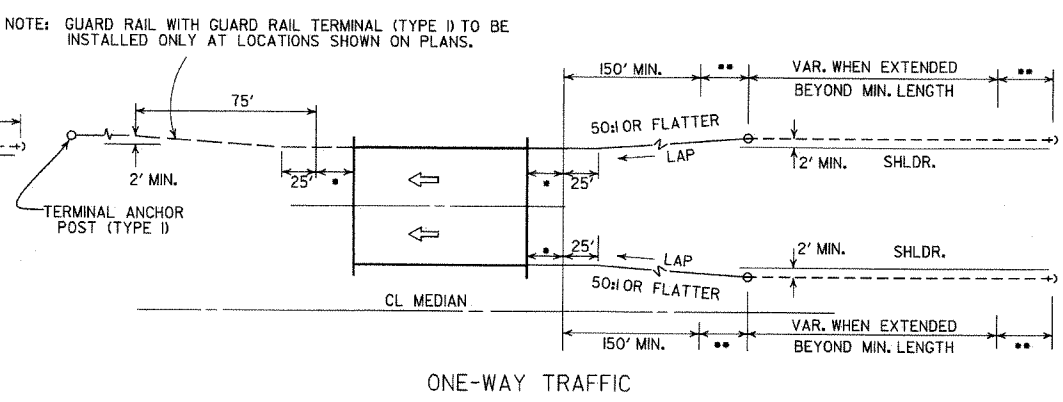
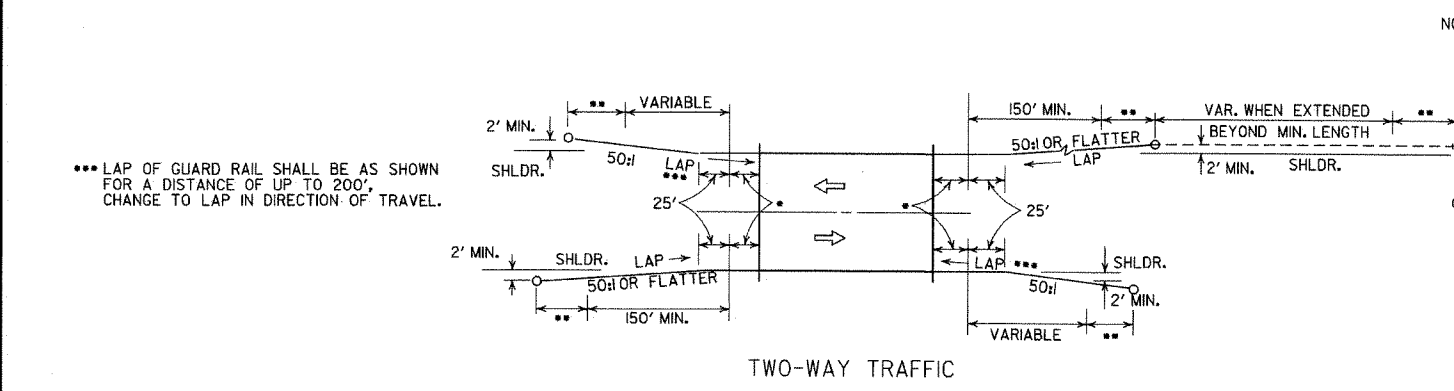
ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.  
 WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.  
 W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.  
 USE W-BEAM GUARD RAIL COMPONENTS OF SAME MATERIAL FOR ENTIRE JOB. FOR EXTENSIONS OR MODIFICATION OF EXISTING GUARD RAIL, W-BEAM GUARD RAIL COMPONENTS OF THE SAME TYPE AS THOSE EXISTING SHALL BE USED.  
 ANY BACKFILLING UNDER OR AROUND POST SHALL BE DAMP SAND THOROUGHLY TAMPED IN PLACE.  
 WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 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"	
10-15-09	ADDED REFERENCE TO MASH	
4-10-03	REVISED GENERAL NOTES	
8-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & ON STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
3-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
1-12-00	ADDED PLASTIC BLOCKOUT	
8-12-99	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

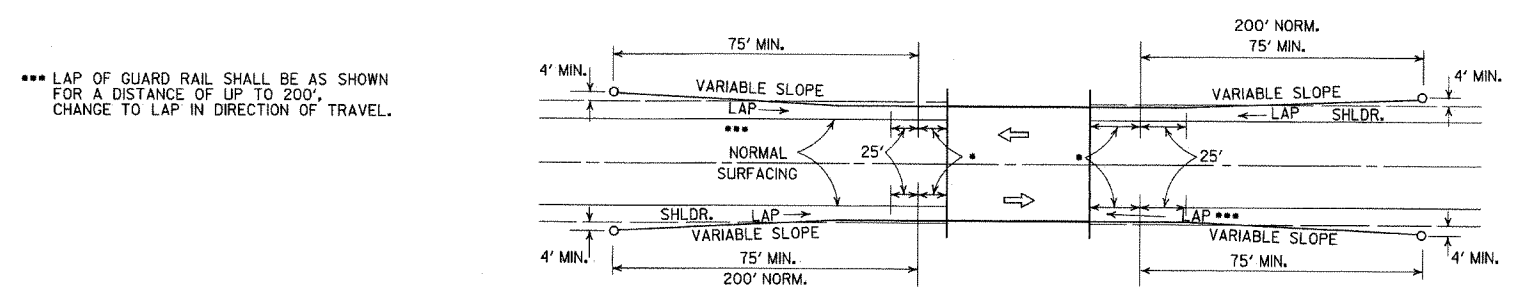
ARKANSAS STATE HIGHWAY COMMISSION  
 GUARD RAIL DETAILS  
 STANDARD DRAWING GR-8



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)

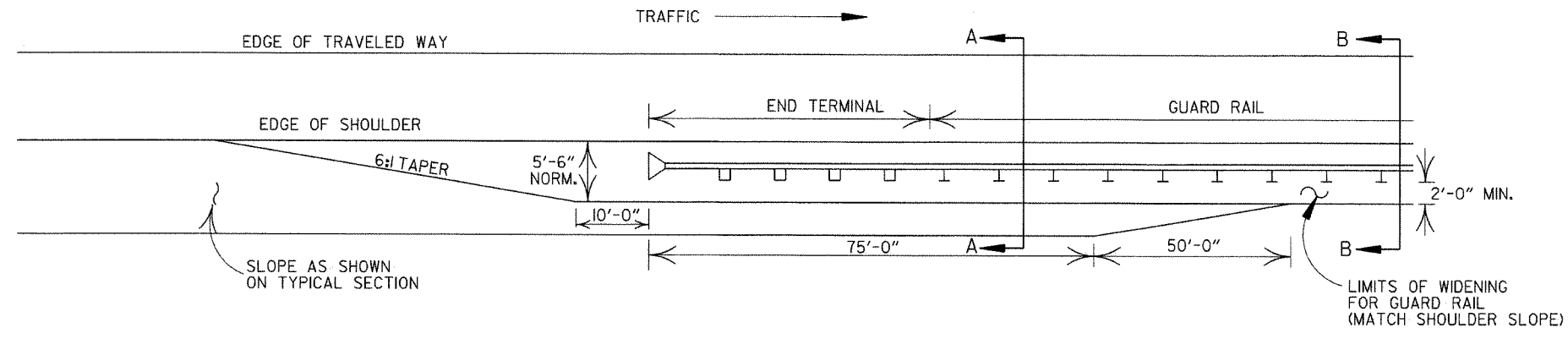


LEGEND

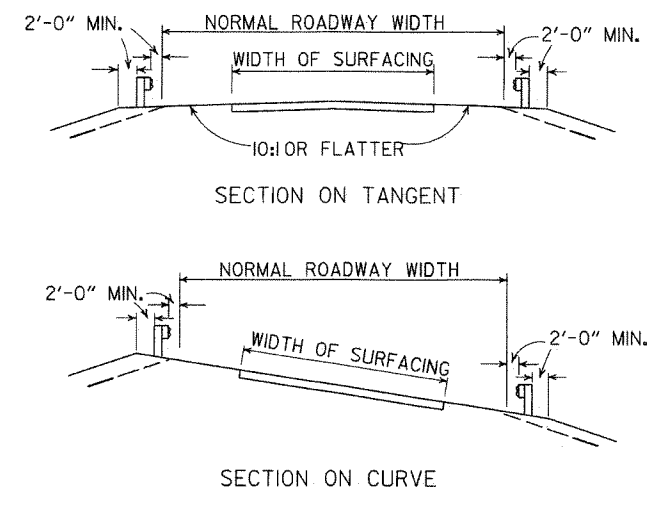
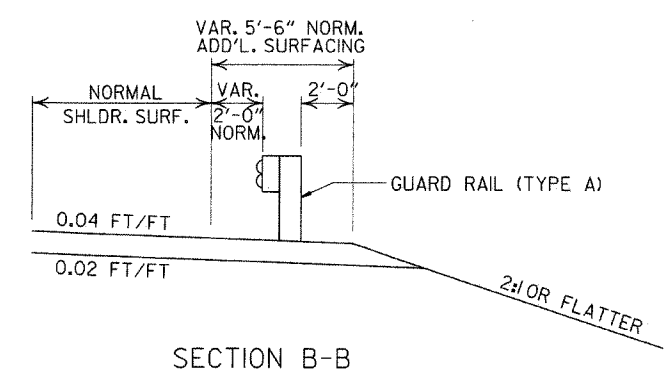
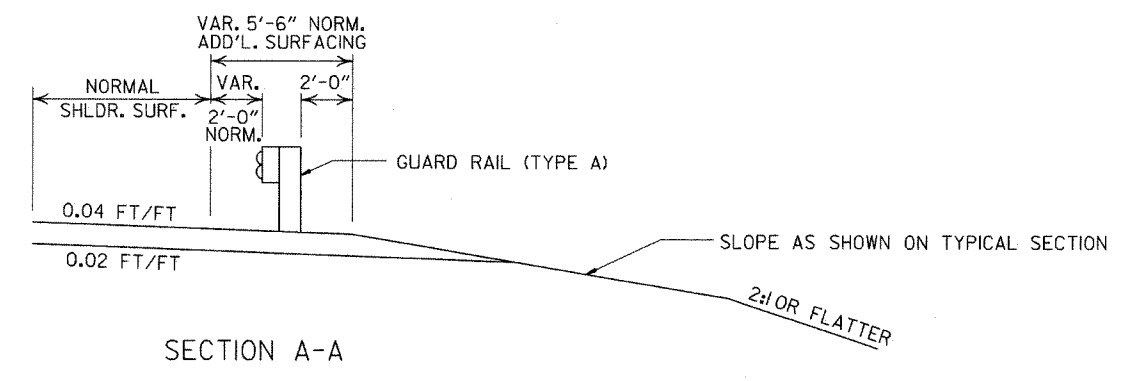
- THRIE BEAM GUARD RAIL TERMINAL
- GUARD RAIL TERMINAL (TYPE 2)

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 FILED

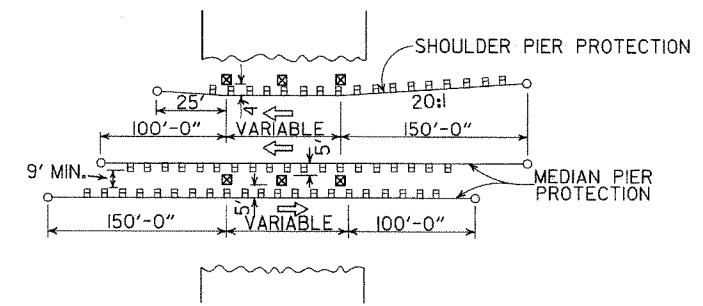


NOTE: NORMAL SECTION TO BE WIDENED APPROX. 5'-6" EACH SIDE TO SUPPORT GUARD RAIL.



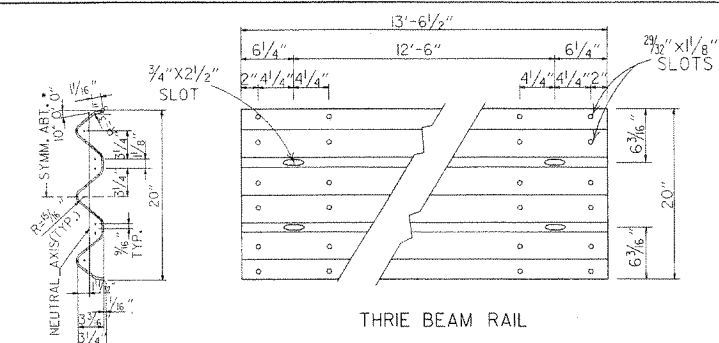
DETAILS OF WIDENING FOR GUARD RAIL

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



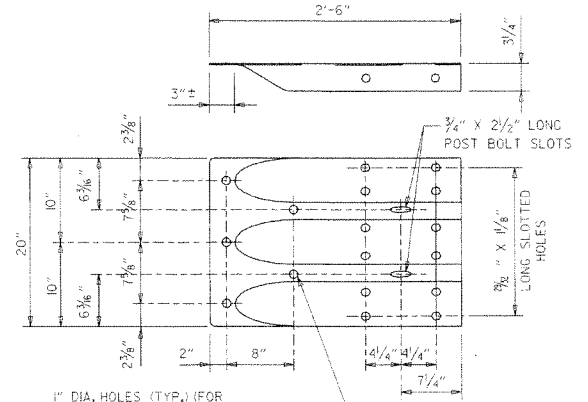
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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



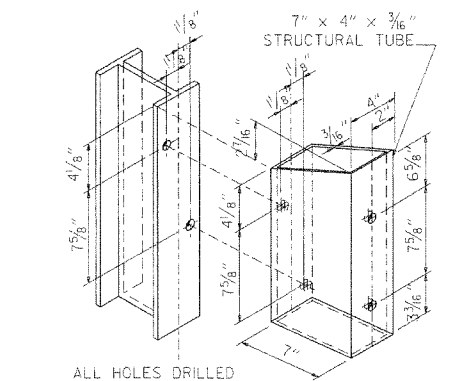
THRIE BEAM RAIL

SECTION THRU THRIE BEAM RAIL



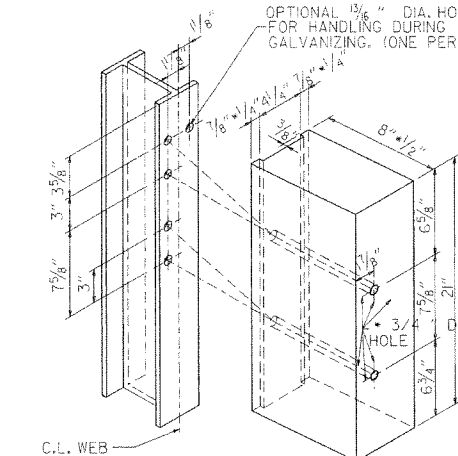
SPECIAL END SHOE

1" DIA. HOLES (TYP.) FOR 7/8" DIA. HIGH STRENGTH BOLTS WITH HEX HEADS, NUTS AND WASHERS)



STRUCTURAL STEEL TUBING BLOCKOUT DETAIL

ALL HOLES DRILLED OR PUNCHED 3/16" DIA.

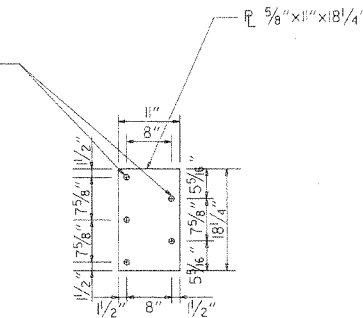


HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

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

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

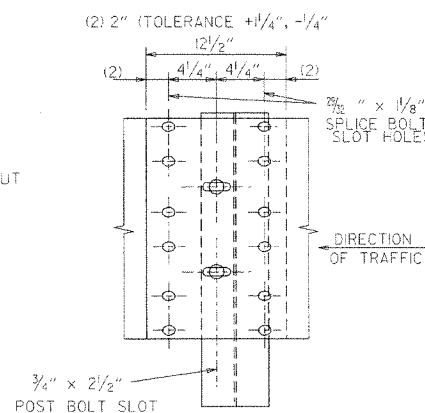
1" DIA. HOLES (TYP.) FOR 7/8" DIA. HIGH-STRENGTH BOLTS



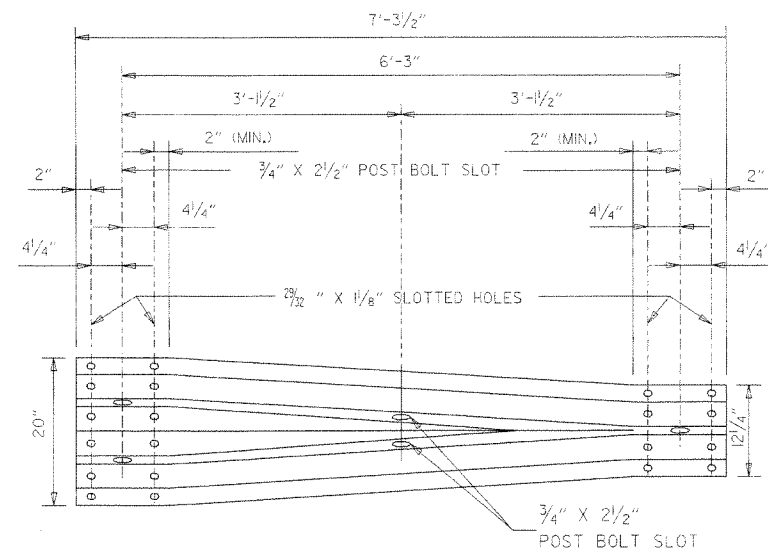
CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING 1/2" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.

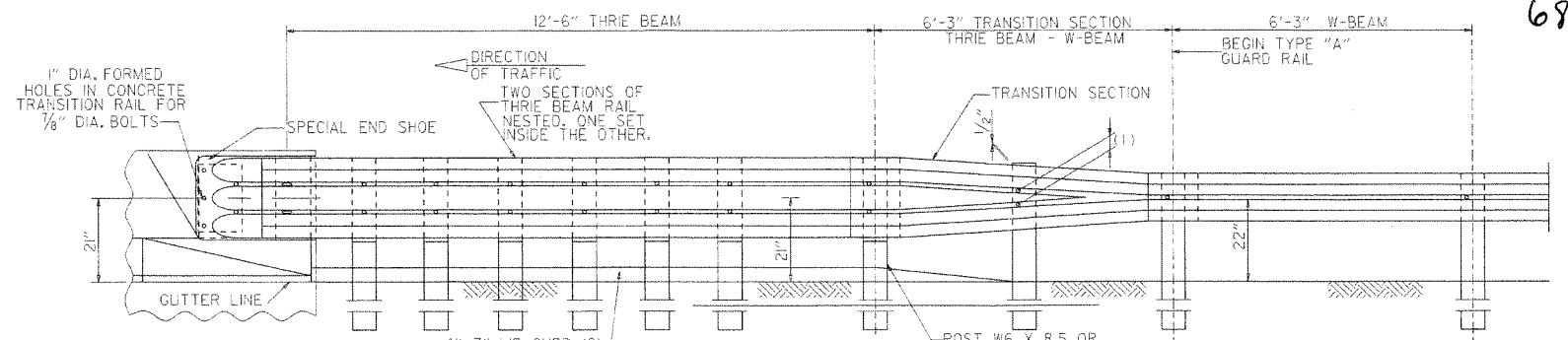
NOTE: SEE STANDARD DRAWING GR-10A FOR GUARD RAIL POST EMBEDMENT DEPTHS.



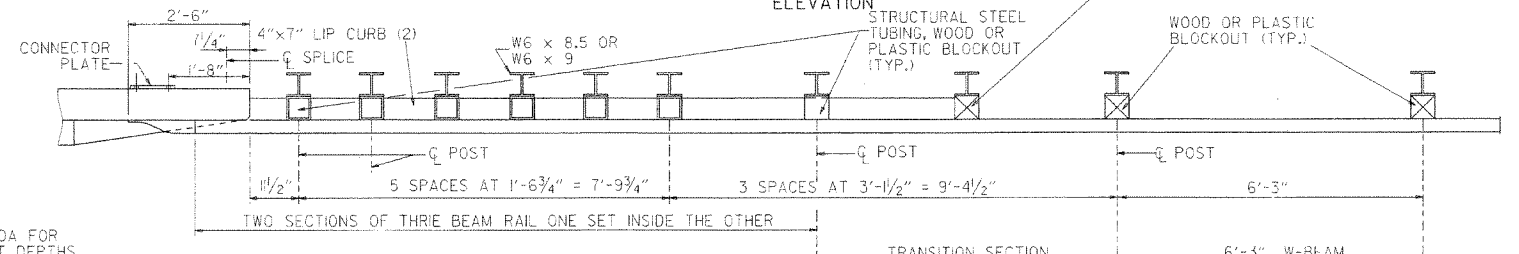
THRIE BEAM RAIL SPLICE AT POST



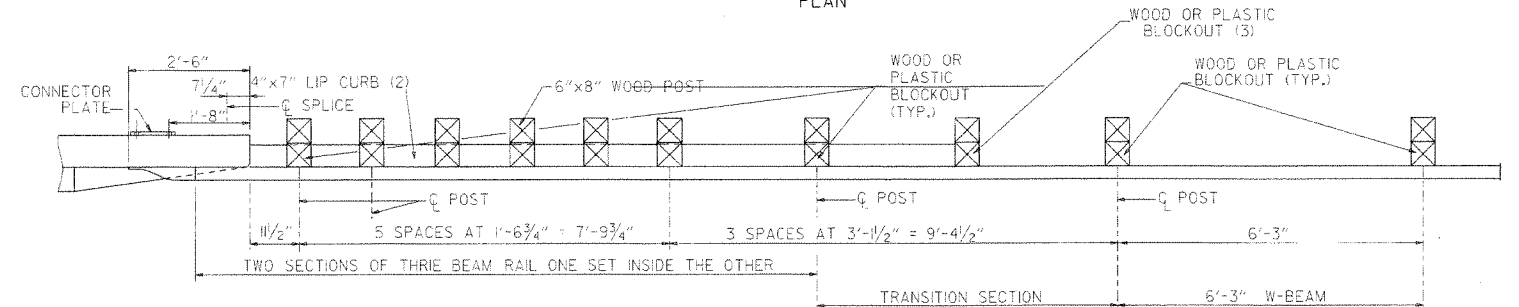
TRANSITION SECTION



ELEVATION



PLAN



PLAN

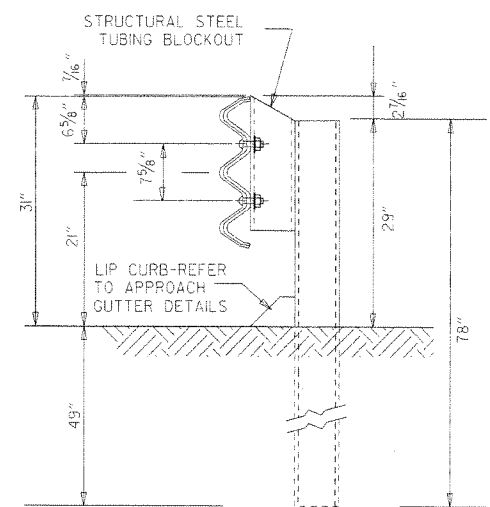
- (1) VERIFY BOLT SPACING FROM RAIL TRANSITION PRODUCER.
- (2) REFER TO APPROACH GUTTER DETAILS.
- (3) LENGTH OF BLOCKOUT ON POST 8 TO BE MODIFIED TO FIT RAIL WIDTH.

THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

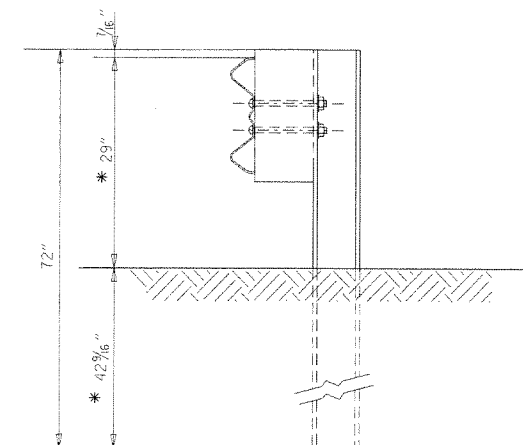
GENERAL NOTES:

- 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. 1 350 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.

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

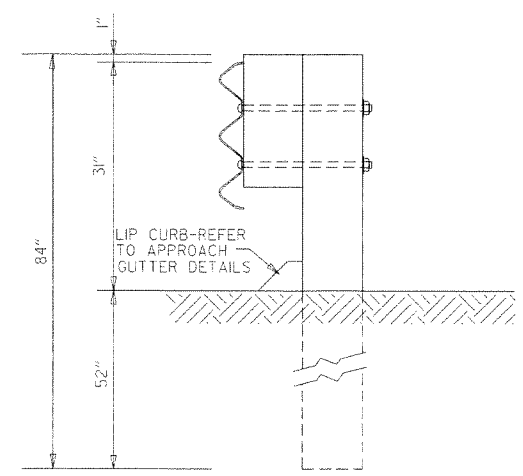


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST  
POSTS 1-7

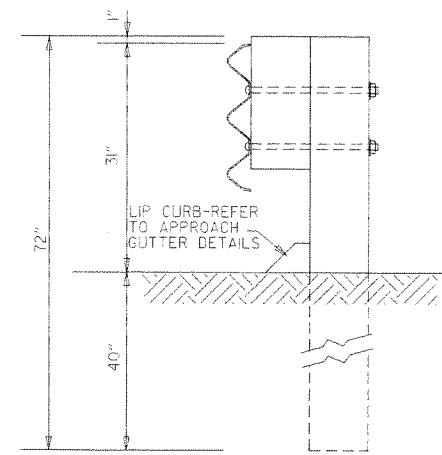


W-BEAM TO THRIE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST  
POST 8

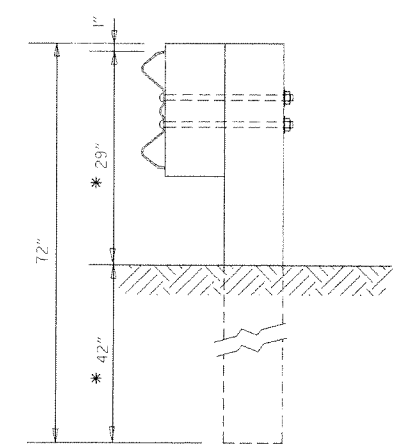
\* NOTE:  
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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

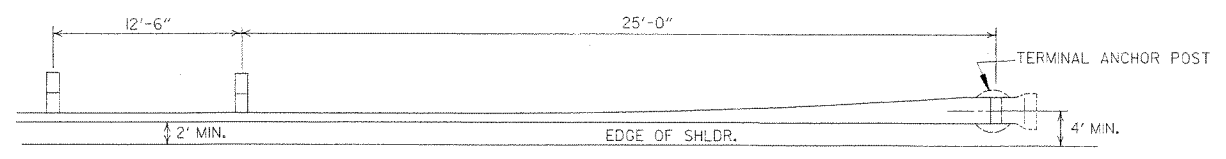
GENERAL NOTES:  
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.  
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 3.7f (3400 f) OR NO. 1 (350 f) SOUTHERN PINE.

ARKANSAS STATE HIGHWAY COMMISSION

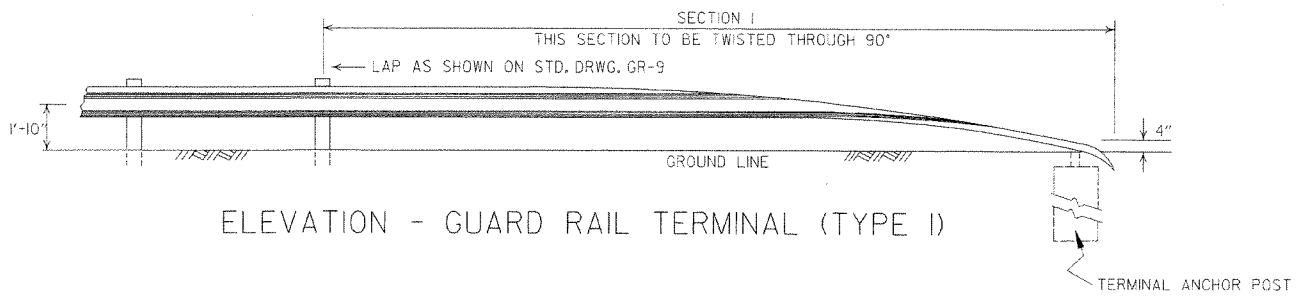
GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

DATE	REVISION	DATE FILED
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	

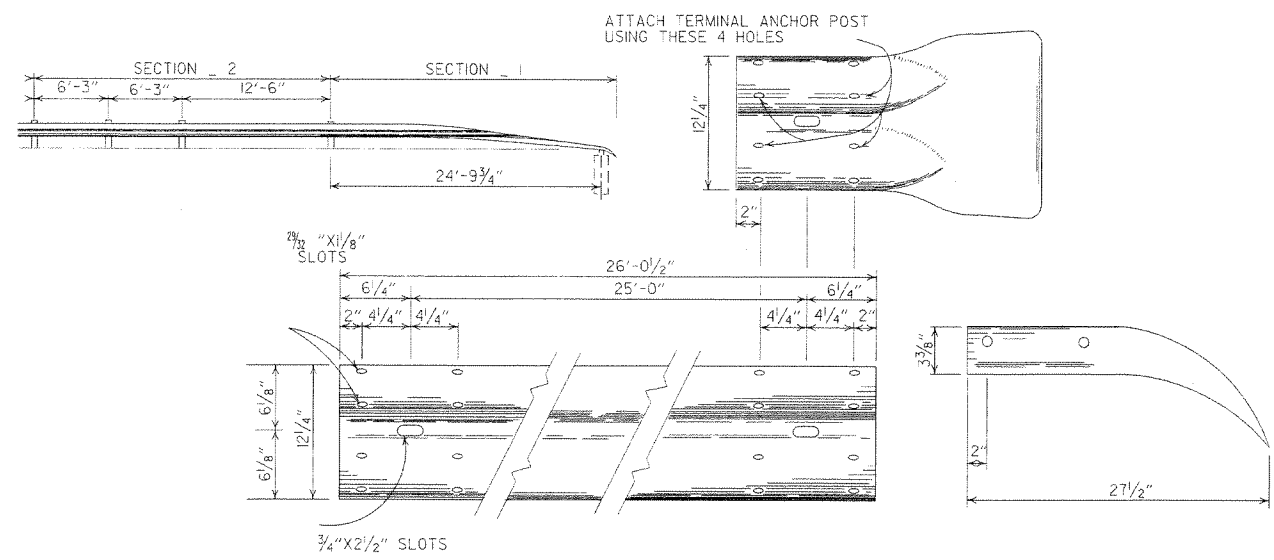


PLAN - GUARD RAIL TERMINAL (TYPE I)



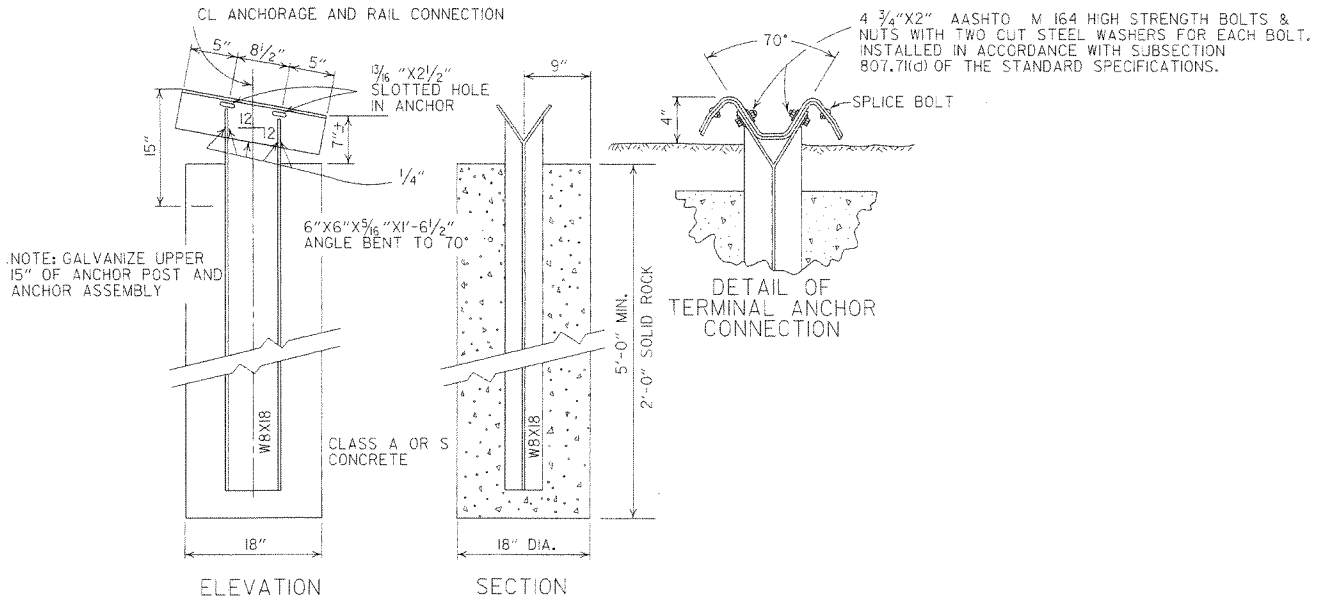
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

NOTE:  
SECTIONS 1 AND 2 OF GUARD RAIL TERMINAL  
SHALL BE PAID FOR AT THE PRICE BID PER  
LINEAR FOOT OF THE TYPE OF GUARD RAIL SPECIFIED.



SECTION 1

TERMINAL SECTION

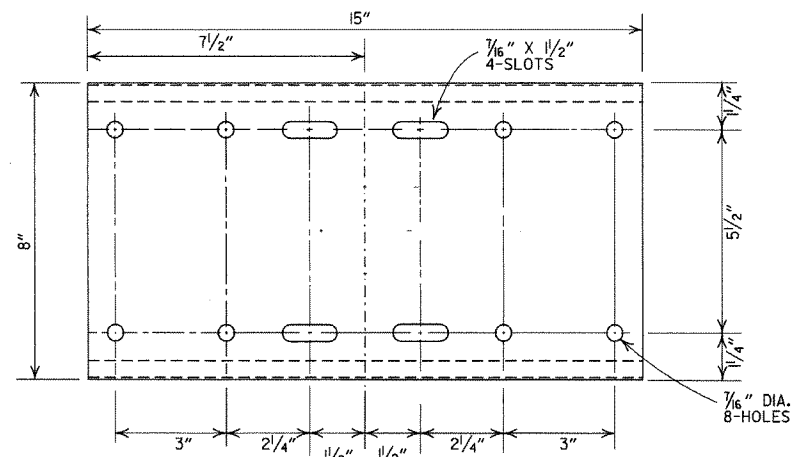


ELEVATION SECTION

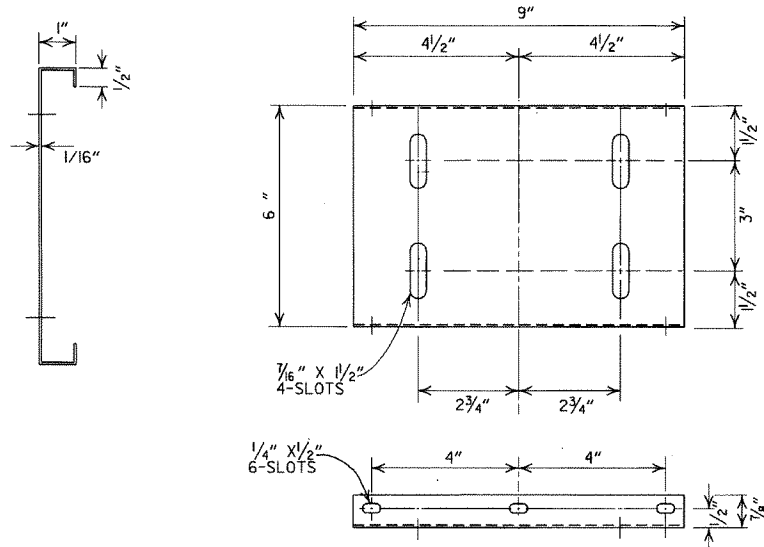
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

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

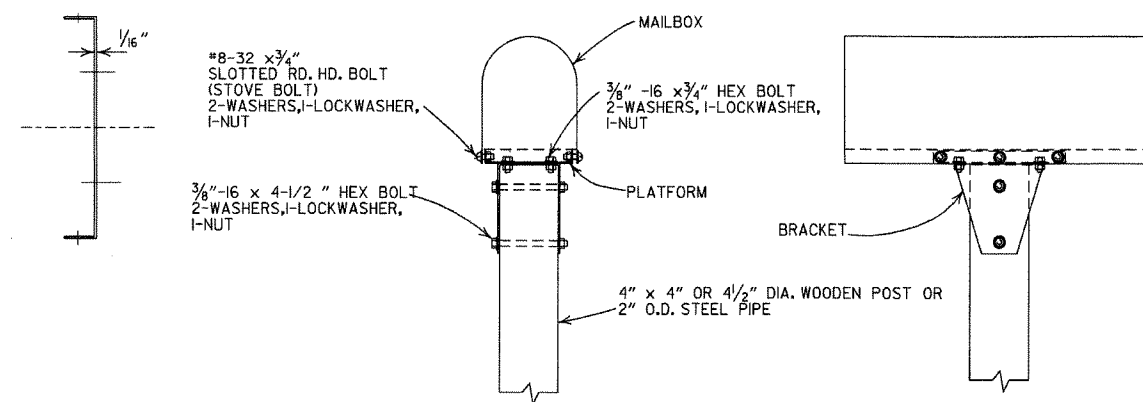
ARKANSAS STATE HIGHWAY COMMISSION		
GUARD RAIL DETAILS		
STANDARD DRAWING GRT-1		
7-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
6-26-97	REVISED LAP NOTE	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-3-94	DIMENSION TERMINAL DETAIL	
11-11-92	ADDED NOTE FOR PAYMENT	11-11-92
10-1-92	DRAWN & ISSUED	10-1-92
DATE	REVISION	DATE FILED



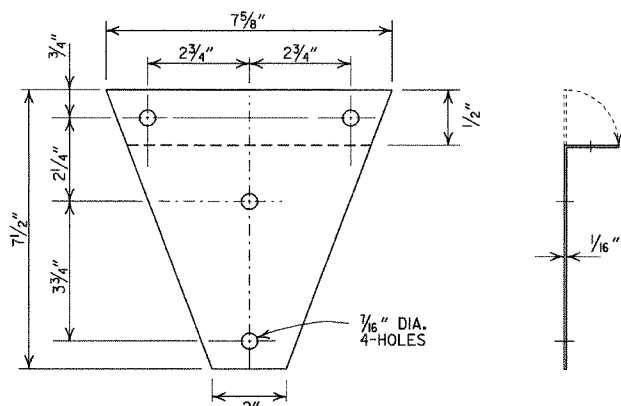
SHELF



PLATFORM



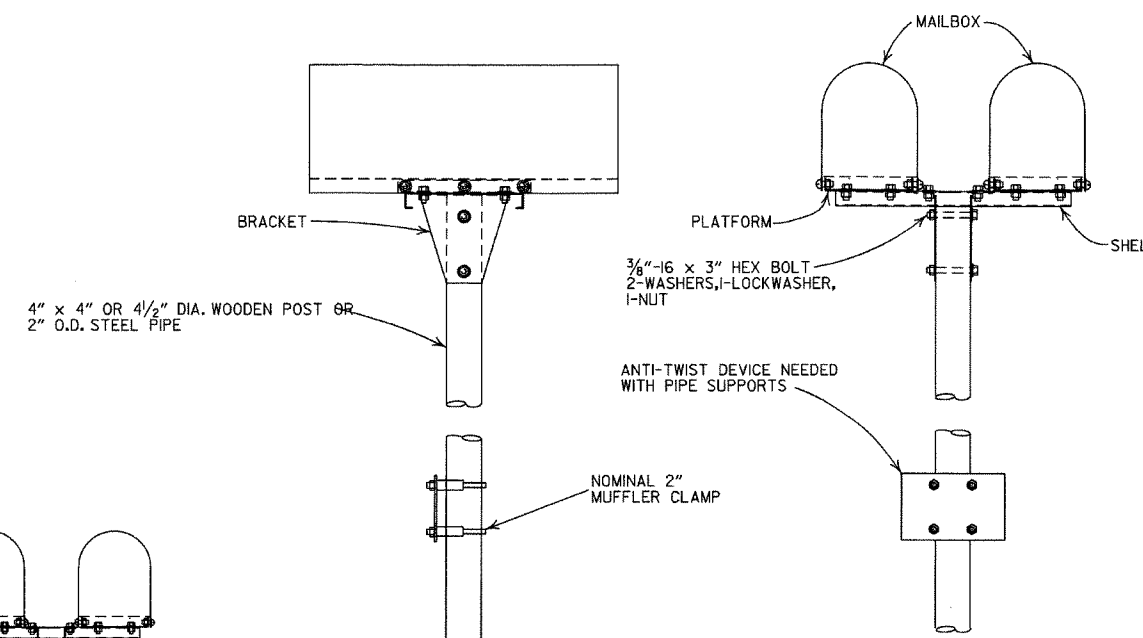
SINGLE INSTALLATION



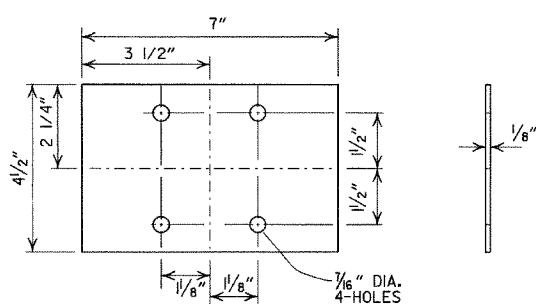
BRACKET

GENERAL NOTES

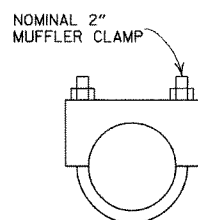
- MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
- ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
- MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED STEEL, HOWEVER TREATED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



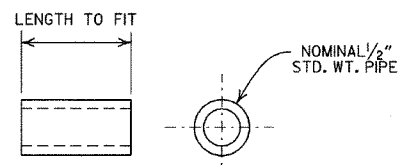
DOUBLE INSTALLATION



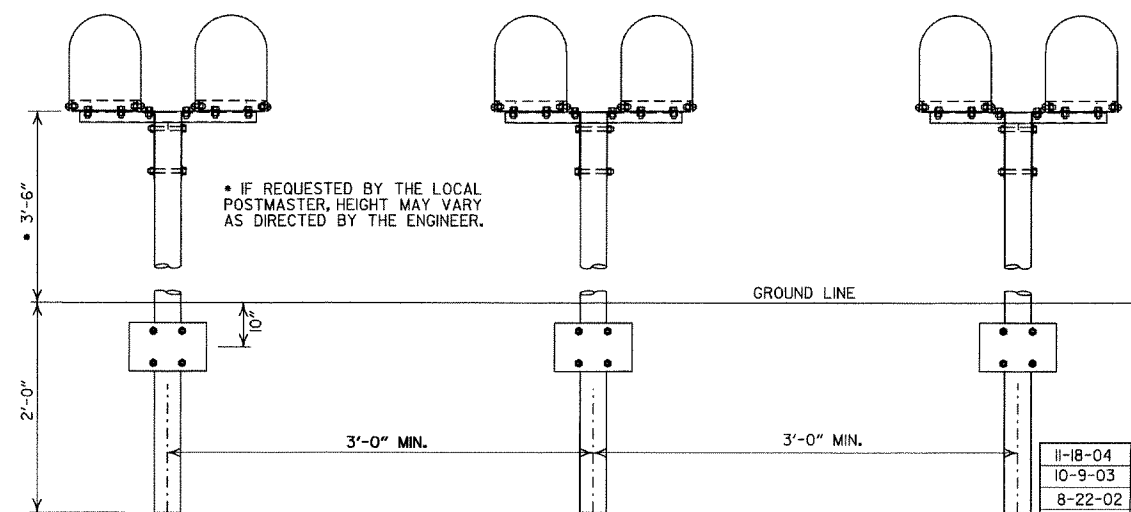
ANTI-TWIST PLATE



CLAMP



SPACER



SPACING FOR MULTIPLE POST INSTALLATION

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

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS

STANDARD DRAWING MB-1

**CORRUGATED STEEL PIPE (ROUND)**

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	36	47			
36	2	30	39		41	
42	2	43	67		70	73
48	2	37	58		61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

**CONSTRUCTION SEQUENCE**

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

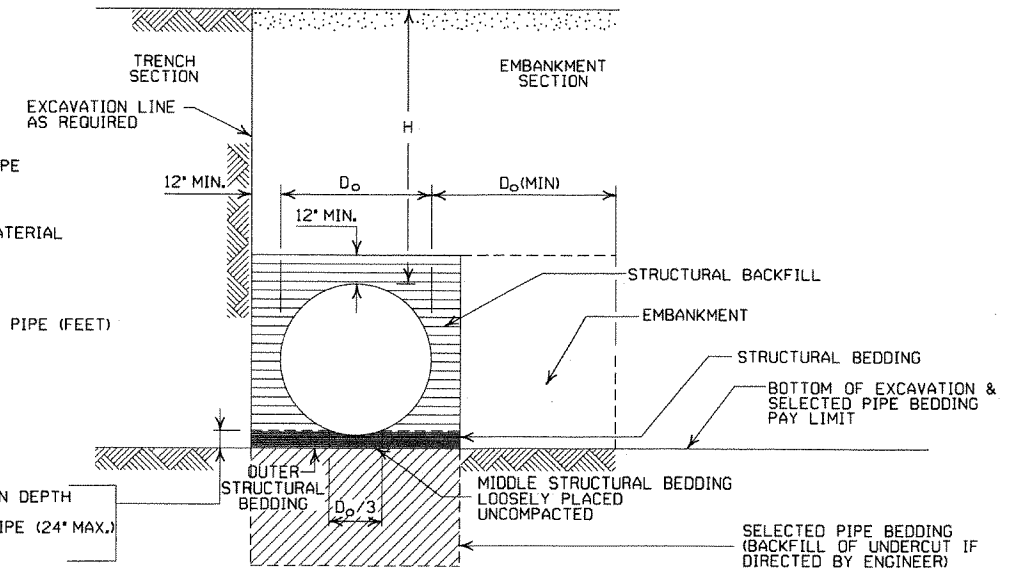
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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

③ SM-3 WILL NOT BE ALLOWED.

**- LEGEND -**

- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- MAX. = MAXIMUM
- MIN. = MINIMUM
- [Symbol] = STRUCTURAL BACKFILL MATERIAL
- [Symbol] = UNDISTURBED SOIL
- EQUIV. DIA. = EQUIVALENT DIAMETER
- H = FILL COVER HEIGHT OVER PIPE (FEET)



**EMBANKMENT AND TRENCH INSTALLATIONS**

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALLATION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2 3/8" x 1/2" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" x 1" OR 5" x 1" CORRUGATION.

**GENERAL NOTES**

1. METAL PIPE CULVERT CONSTRUCTION SHALL CONFORM TO ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2003 EDITION), WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED IN THE PLANS, SECTION AND SUBSECTION REFER TO THE STANDARD CONSTRUCTION SPECIFICATIONS.
2. METAL PIPE CULVERT DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION (2010) WITH 2010 INTERIMS.
3. METAL PIPE CULVERT MATERIALS AND INSTALLATIONS SHALL CONFORM TO SECTION 606 AND JOB SPECIAL PROVISION "METAL PIPE".
4. ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT.
5. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS.
6. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED.
7. IMPERVIOUS MATERIAL SHOULD BE PLACED AS DIRECTED BY THE ENGINEER AT THE ENDS OF THE CULVERT TO PREVENT LOSS OF STRUCTURAL BEDDING WHEN PERVIOUS MATERIAL IS USED FOR STRUCTURAL BEDDING AND/OR BACKFILL.
8. WHEN DIRECTED BY THE ENGINEER, UNSUITABLE MATERIAL THAT IS ENCOUNTERED AT THE BOTTOM OF THE EXCAVATED TRENCH (BELOW THE AREA IDENTIFIED AS "STRUCTURAL BEDDING" ABOVE) WILL BE EXCAVATED AND REPLACED WITH SELECTED PIPE BEDDING. THE QUANTITY OF MATERIAL REQUIRED TO BACKFILL THE UNDERCUT AREA UP TO THE SELECTED PIPE BEDDING PAY LIMIT DESIGNATED ABOVE WILL BE MEASURED AND PAID FOR AS "SELECTED PIPE BEDDING."
9. WHEN THE EXISTING MATERIAL EXCAVATED FOR THE PIPE TRENCH IS DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING THE PIPE (ABOVE THE AREA IDENTIFIED AS STRUCTURAL BACKFILL), BORROW MATERIAL OR MATERIAL FROM THE ROADWAY EXCAVATION WILL BE USED TO BACKFILL THE PIPE. IF SUITABLE MATERIAL IS NOT AVAILABLE, THE ENGINEER MAY AUTHORIZE THE USE OF "SELECTED PIPE BACKFILL."

**CORRUGATED ALUMINUM PIPE (ROUND)**

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM						
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

**EQUIVALENT METAL THICKNESSES AND GAUGES**

METAL THICKNESS IN INCHES			GAUGE NUMBER	
STEEL				
ZINC COATED	UNCOATED	ALUMINUM		
0.064	0.0598	0.060		16
0.079	0.0747	0.075		14
0.109	0.1046	0.105		12
0.138	0.1345	0.135		10
0.168	0.1644	0.164		8

**CORRUGATED METAL PIPE ARCHES**

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	MIN. THICKNESS REQUIRED INCHES	STEEL		MIN. THICKNESS REQUIRED INCHES	ALUMINUM		
				① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)		① MIN. HEIGHT OF FILL, "H" (FT.)	MAX. HEIGHT OF FILL, "H" (FT.)	
				INSTALLATION	INSTALLATION		INSTALLATION	INSTALLATION	
				TYPE 1	TYPE 1		TYPE 1	TYPE 1	
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM									
15	17x13	3	0.064	2	15	0.060	2	15	
18	21x15	3	0.064	2	15	0.060	2	15	
21	24x18	3	0.064	2.25	15	0.060	2.25	15	
24	28x20	3	0.064	2.5	15	0.075	2.5	15	
30	35x24	3	0.079	3	12	0.075	3	12	
36	42x29	3 1/2	0.079	3	12	0.105	3	12	
42	49x33	4	0.079	3	12	0.105	3	12	
48	57x38	5	0.109	3	13	0.135	3	13	
54	64x43	6	0.109	3	14	0.135	3	14	
60	71x47	7	0.138	3	15	0.164	3	15	
66	77x52	8	0.168	3	15				
72	83x57	9	0.168	3	15				
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM									
				INSTALLATION					
				TYPE 2	TYPE 1	TYPE 2	TYPE 1		
36	40x31	5	0.079	3	2	12	15		
42	46x36	6	0.079	3	2	13	15		
48	53x41	7	0.079	3	2	13	15		
54	60x46	8	0.079	3	2	13	15		
60	66x51	9	0.079	3	2	13	15		
66	73x55	12	0.079	3	2	15	15		
72	81x59	14	0.079	3	2	15	15		
78	87x63	14	0.079	3	2	15	15		
84	95x67	16	0.109	3	2	15	15		
90	103x71	16	0.109	3	2	15	15		
96	112x75	18	0.109	3	2	15	15		
102	117x79	18	0.109	3	2	15	15		
108	128x83	18	0.138	3	2	15	15		

- ① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.
- ② WHERE THE STANDARD 2 2/3" x 1/2" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

DATE	REVISION	DATE FILMED
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

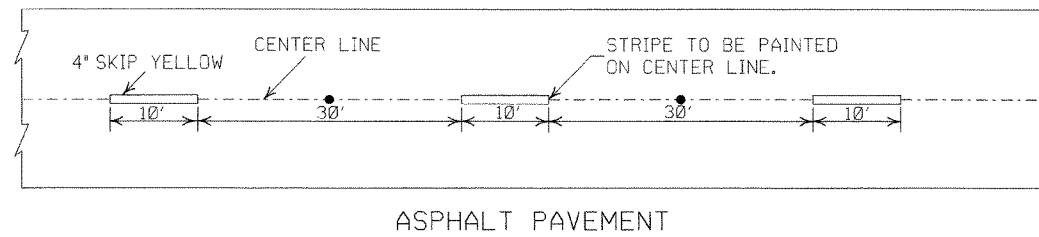
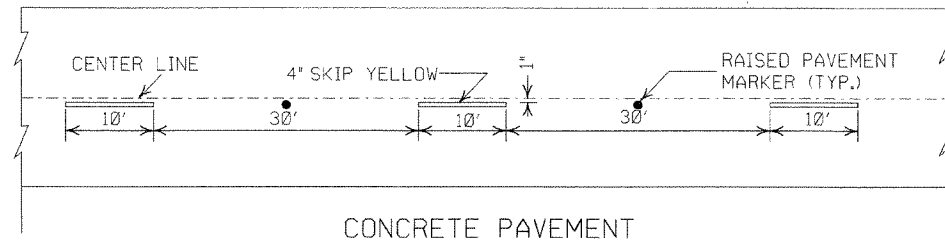
**METAL PIPE CULVERT  
FILL HEIGHTS & BEDDING**

STANDARD DRAWING PCM-1

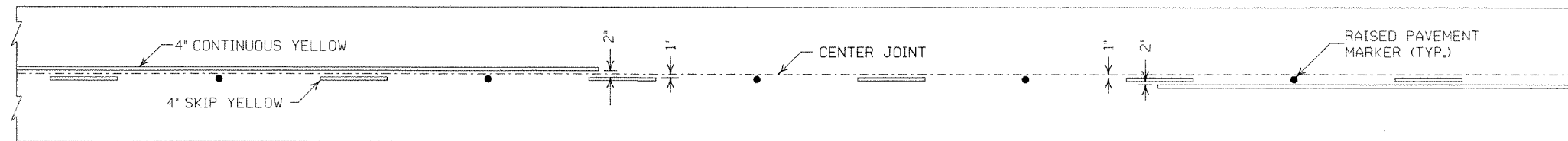


NOTES:

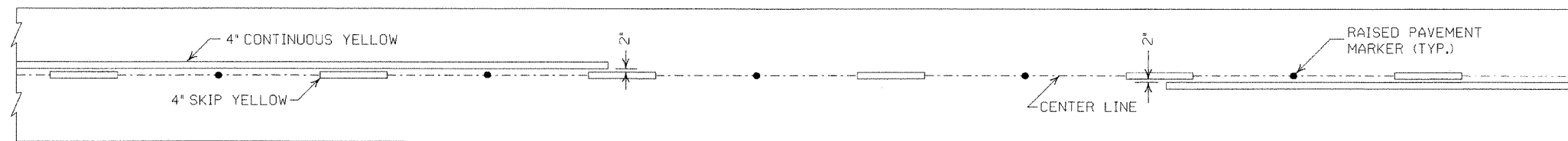
1. ALL LINES SHALL HAVE A WIDTH OF 4 INCHES.
2. THE THICKNESS AND RATE OF PAINT APPLICATION SHALL BE AS SPECIFIED IN SECTION 718 OF THE STANDARD SPECIFICATIONS.
3. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
4. RAISED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



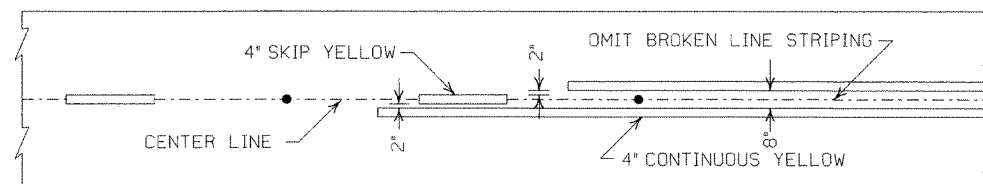
**BROKEN LINE STRIPING**



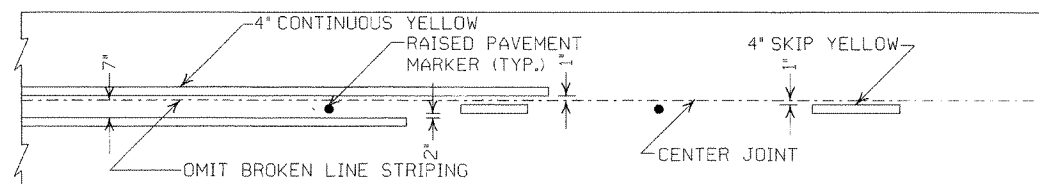
**SOLID LINE STRIPING ON CONCRETE PAVEMENT**



**SOLID LINE STRIPING ON ASPHALT PAVEMENT**



ASPHALT PAVEMENT



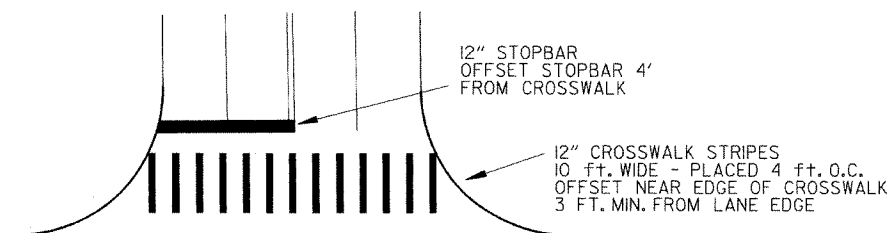
CONCRETE PAVEMENT

**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.

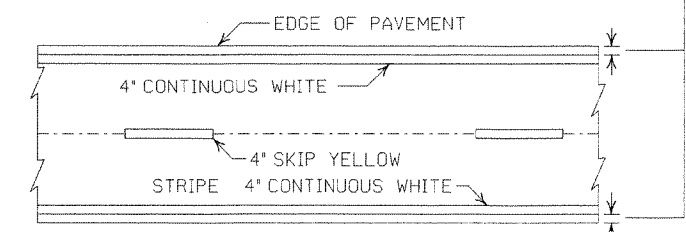
THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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.

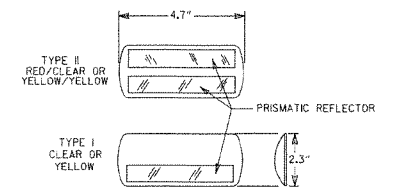


**CROSSWALK AND STOPBAR DETAILS**

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



**PAVEMENT EDGE LINE MARKING**



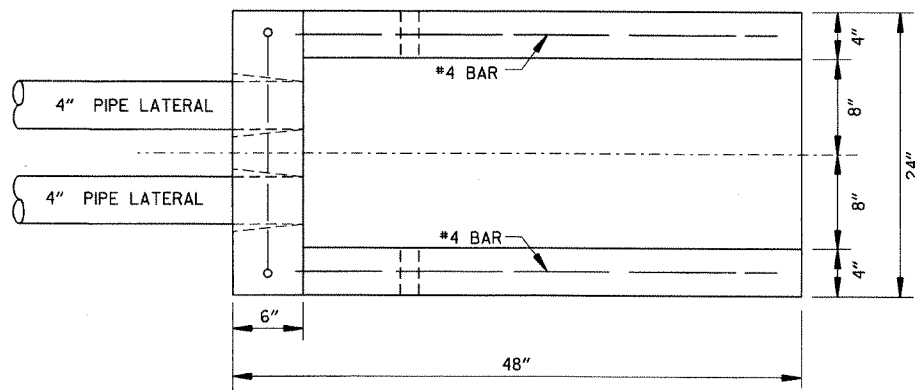
NOTE:  
THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

**DETAIL OF STANDARD RAISED PAVEMENT MARKERS**

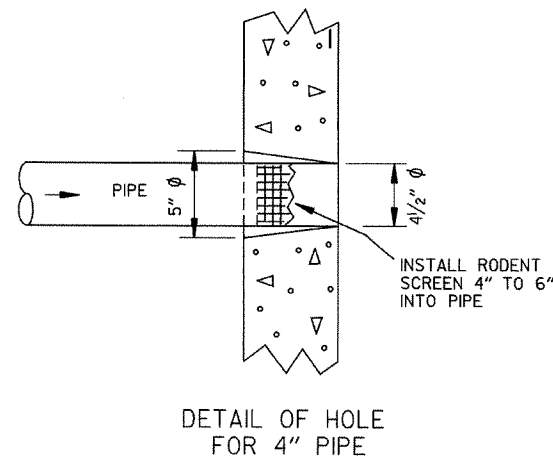
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80
DATE	REVISION	FILMED

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

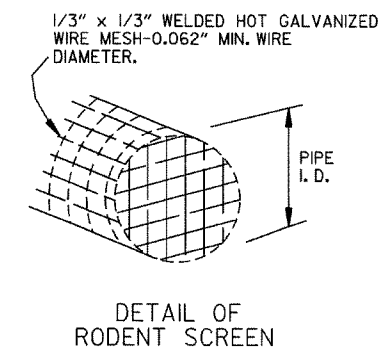
NOTE:  
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE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



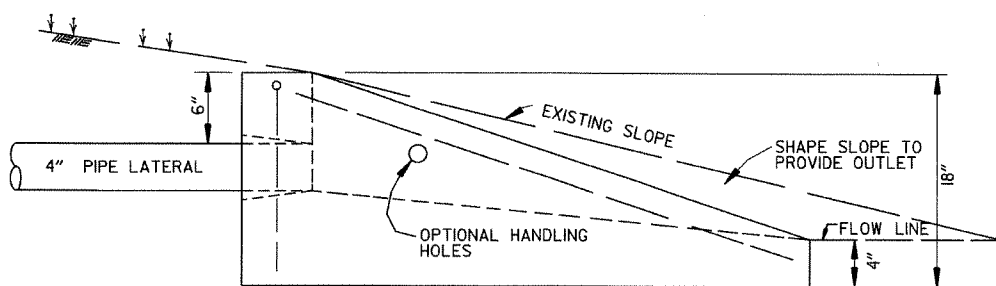
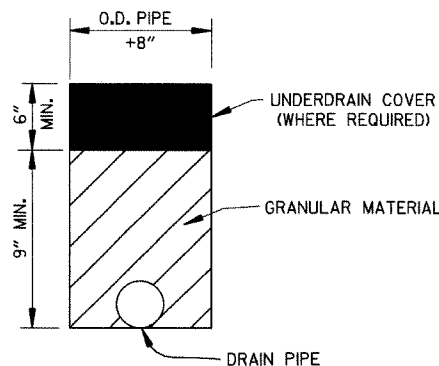
PLAN VIEW



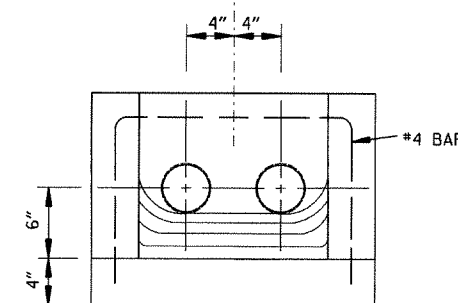
DETAIL OF HOLE FOR 4" PIPE



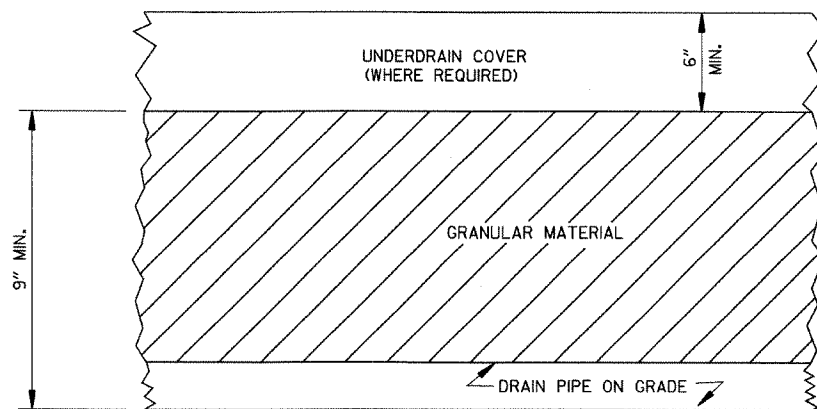
DETAIL OF RODENT SCREEN



SIDE VIEW



FRONT VIEW

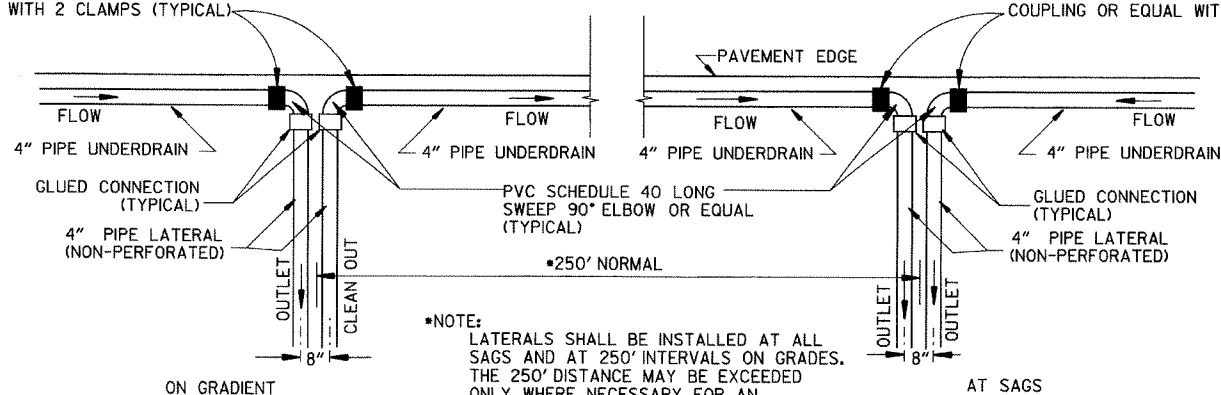


DETAILS OF PIPE UNDERDRAIN

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

UNDERDRAIN OUTLET PROTECTORS

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



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

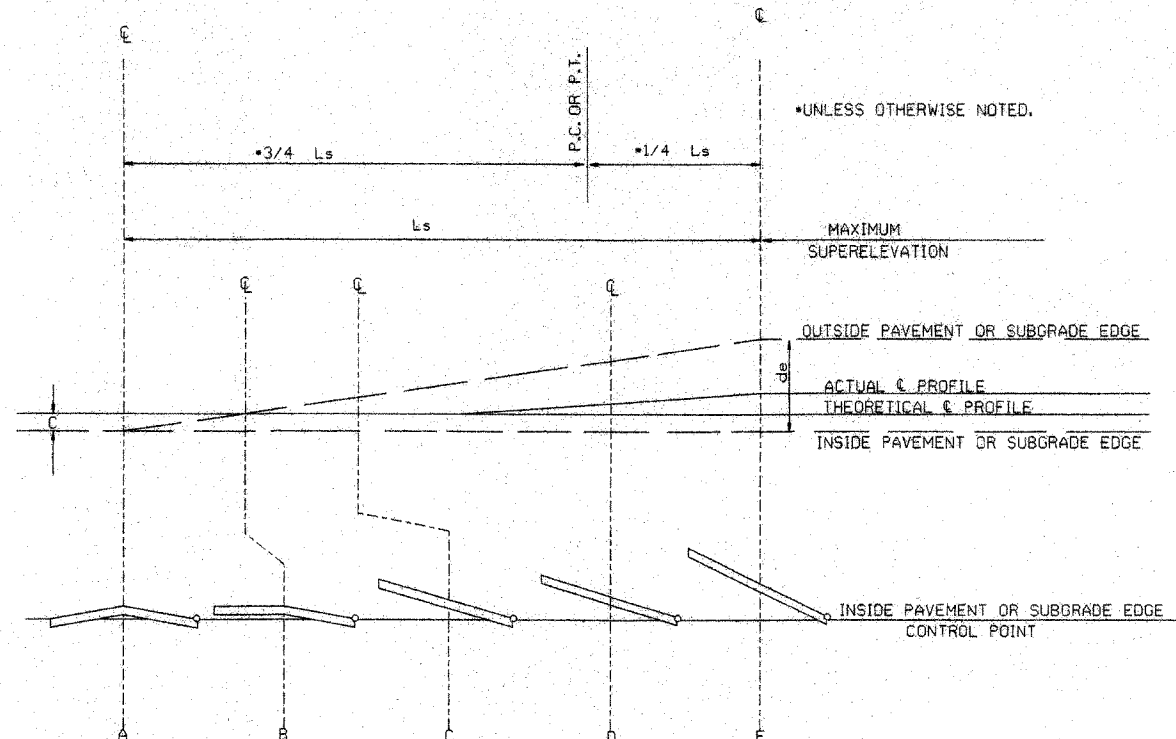
DETAILS OF PIPE UNDERDRAIN

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	
	Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)		Ls (FT)	
	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE	MINIMUM	DESIRABLE
0° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
0° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 00'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 15'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 30'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
1° 45'	N.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 00'	R.C.		0.028		0.040		0.048		0.055		0.062	
2° 15'	R.C.		0.031		0.045		0.053		0.061		0.070	
2° 30'	0.021		0.034		0.049		0.058		0.067		0.078	
2° 45'	0.023		0.037		0.053		0.063		0.072		0.085	
3° 00'	0.025		0.040		0.057		0.067		0.077		0.096	
3° 15'	0.027		0.043		0.061		0.072		0.082		0.098	
3° 30'	0.029		0.046		0.065		0.076		0.086		0.100	
3° 45'	0.031		0.049		0.069		0.080		0.090			
4° 00'	0.033		0.051		0.072		0.083		0.093			
4° 30'	0.037		0.056		0.078		0.087		0.096			
5° 00'	0.040		0.061		0.083		0.091		0.098			
5° 30'	0.043		0.066		0.088		0.094		0.098			
6° 00'	0.046		0.070		0.092		0.096		0.098			
6° 30'	0.050		0.074		0.095		0.098		0.098			
7° 00'	0.053		0.078		0.098		0.098		0.098			
7° 30'	0.056		0.081		0.099		0.099		0.098			
8° 00'	0.058		0.084		0.100		0.100		0.098			
8° 30'	0.061		0.087		0.087		0.087		0.098			
9° 00'	0.063		0.089		0.089		0.089		0.098			
10° 00'	0.068		0.094		0.094		0.094		0.098			
11° 00'	0.072		0.097		0.097		0.097		0.098			
12° 00'	0.076		0.099		0.099		0.099		0.098			
13° 00'	0.080		0.100		0.100		0.100		0.098			
14° 00'	0.083		0.083		0.083		0.083		0.098			
15° 00'	0.086		0.086		0.086		0.086		0.098			
16° 00'	0.089		0.089		0.089		0.089		0.098			
17° 00'	0.091		0.091		0.091		0.091		0.098			
18° 00'	0.093		0.093		0.093		0.093		0.098			
19° 00'	0.095		0.095		0.095		0.095		0.098			
20° 00'	0.097		0.097		0.097		0.097		0.098			
21° 00'	0.098		0.098		0.098		0.098		0.098			
22° 00'	0.099		0.099		0.099		0.099		0.098			
23° 00'	0.099		0.099		0.099		0.099		0.098			
24° 00'	0.100		0.100		0.100		0.100		0.098			

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



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

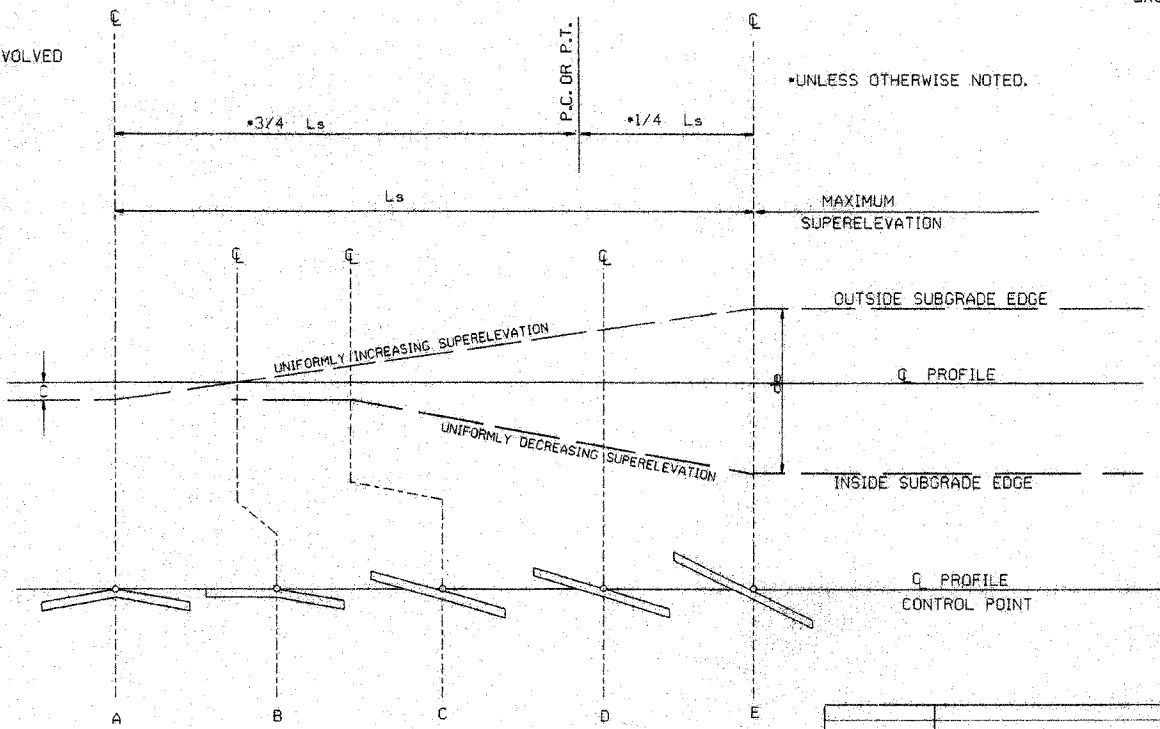
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

**GENERAL NOTES**

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

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

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




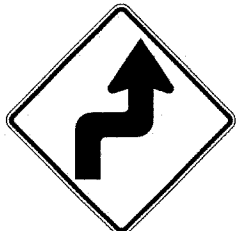
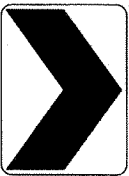



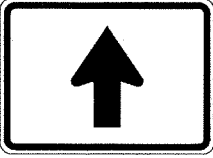
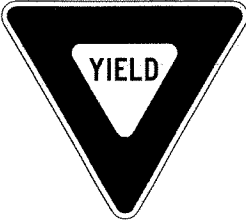

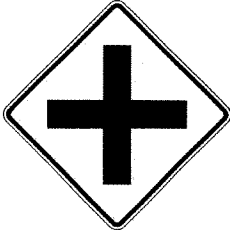



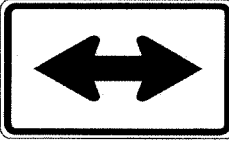
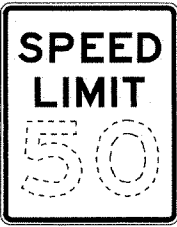
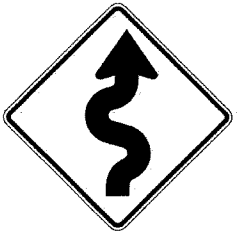
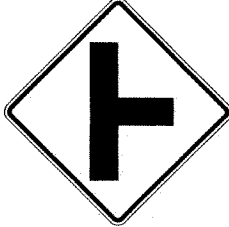





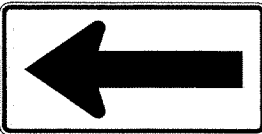
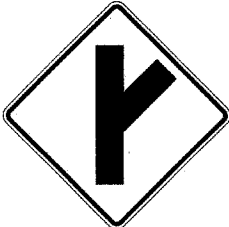

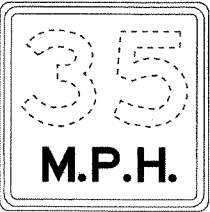
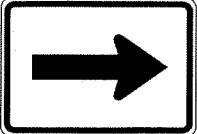
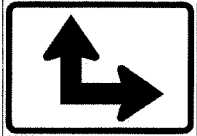

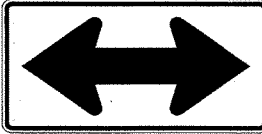
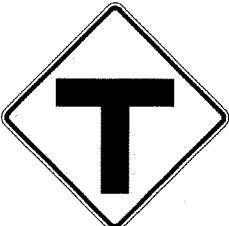

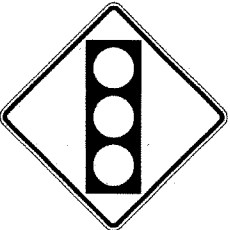



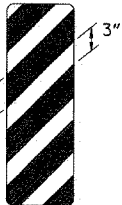
STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE

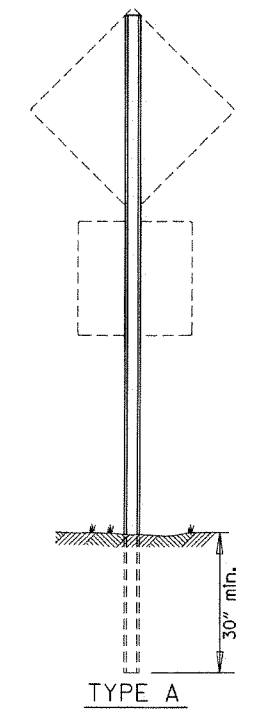
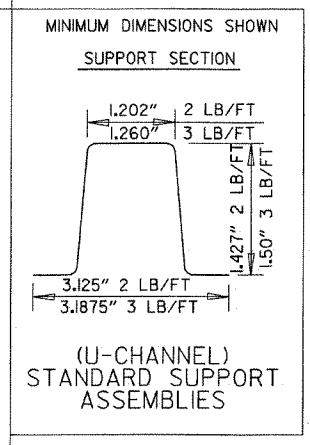
SUPERELEVATION FORMULA =  $\frac{Lde}{Ls}$

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

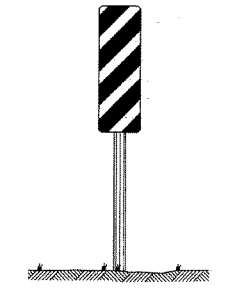
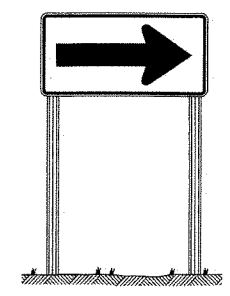
ARKANSAS STATE HIGHWAY COMMISSION  
 TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC  
 STANDARD DRAWING SE-2

FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		76	
JOB NO.				
4 STD. HWY. SIGNS & SUP ASSEMB				

 RI-1 30"X30"	 WI-3 30"X30" (LT. OR RT.)	 WI-8 18"X24"	 W2-5 30"X30"	 W3-1 36"X36"	 W5-1 36"X36"	 M6-3 21"X15"
 RI-2 36"X36"X36"	 WI-4 30"X30" (LT. OR RT.)	 W2-1 30"X30"	 SI-1 36"X36"	 W3-2 36"X36"	 County Route Marker MI-5 24"X24"	 M6-4 21"X15"
 R2-1 24"X30"	 WI-5 30"X30" (LT. OR RT.)	 W2-2 30"X30"	 W5-2 36"X36"	 W8-3 36"X36"	 RI-3 12"X6"	 M6-5 21"X15"
 WI-1 30"X30" (LT. OR RT.)	 WI-6 48"X24"	 W2-3 30"X30" (LT. OR RT.)	 W5-3 36"X36"	 WI3-1 18"X18"	 M6-1 21"X15"	 M6-6 21"X15"
 WI-2 30"X30" (LT. OR RT.)	 WI-7 48"X24"	 W2-4 30"X30"	 W10-1 36" DIAMETER	 W3-3 36"X36"	 M6-2 21"X15"	 S4-3 24"X8"
					 S4-2 24"X10"	 OM-3 12"X36" (LT. OR RT.)



NOTE: LENGTH OF SIGN POSTS SHALL BE DETERMINED SO AS TO PROVIDE FOR MINIMUM VERTICAL CLEARANCES AS CALLED FOR IN THE SPECIFICATIONS PLUS A MINIMUM VERTICAL PENETRATION OF 30" IN THE SOIL.

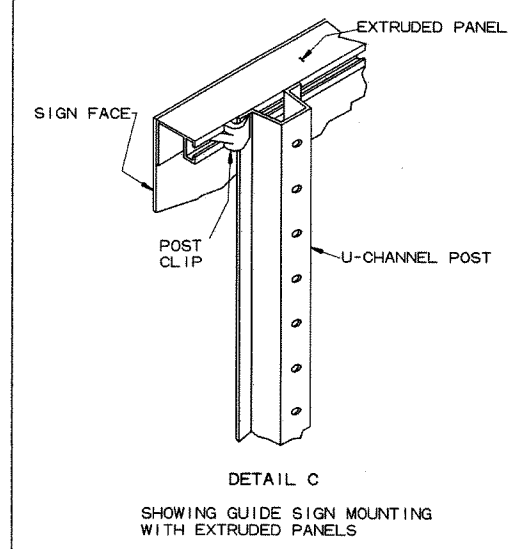
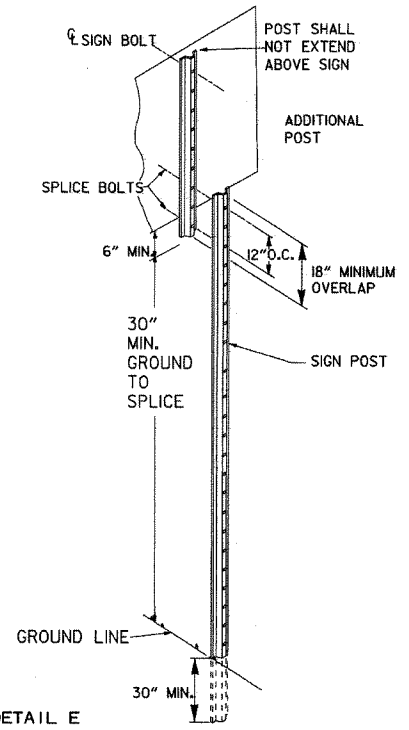
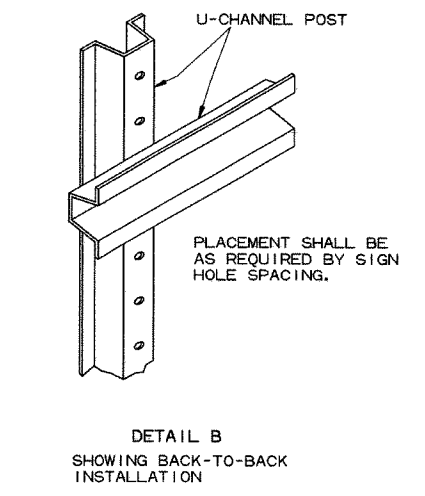
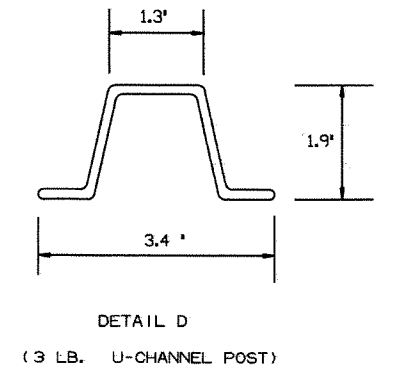
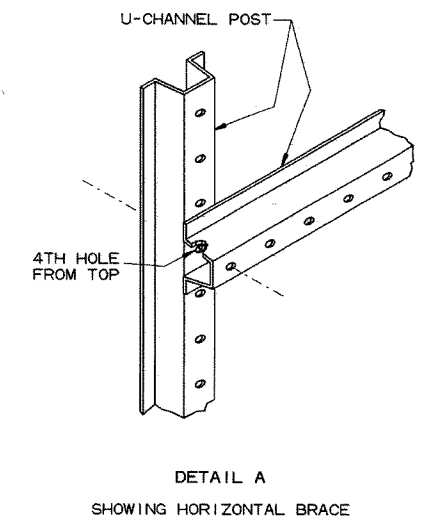
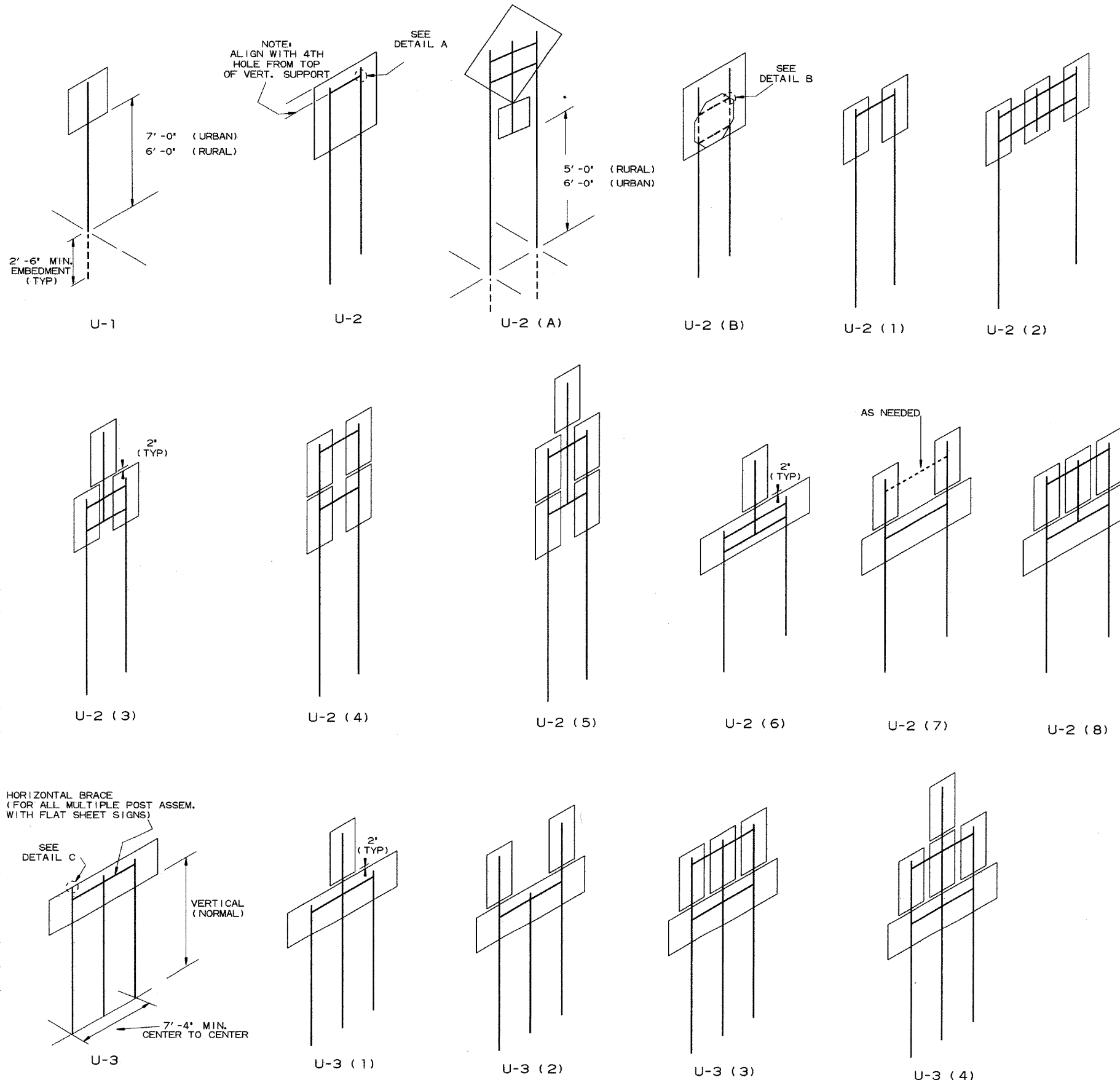


MINIMUM WEIGHT  
TYPE A & B = 3 LBS./FT.  
TYPE C = 2 LBS./FT.

STANDARD HIGHWAY SIGNS

DATE	REVISION	DATE FILMED
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED WI-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED WI4-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2" - 3"	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

SUPPORT ASSEMBLIES  
ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD HIGHWAY SIGNS  
AND SUPPORT ASSEMBLIES  
STANDARD DRAWING SHS-1



NOTES:  
 SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.  
 SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (E).  
 NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. CARRIAGE BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS.  
 ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
10-9-03	REMOVED ROUND POST & REVISED SPACING	10-9-03
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION  
 U-CHANNEL POST ASSEMBLIES  
 STANDARD DRAWING SHS-2

ADVANCE DISTANCES (XXXX)

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


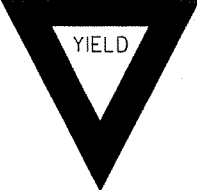
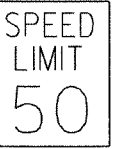


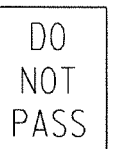
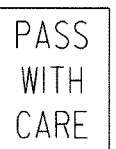


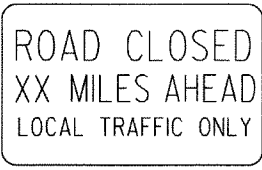
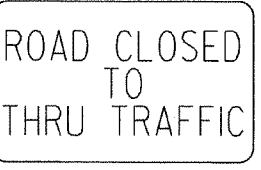

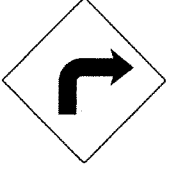
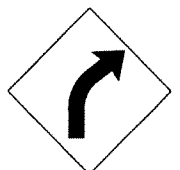
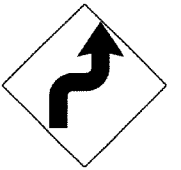

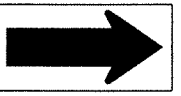
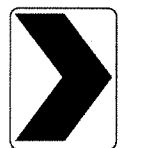
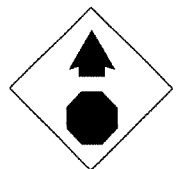
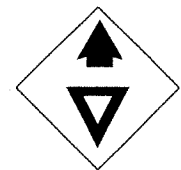
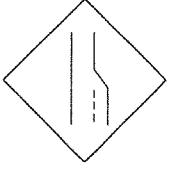

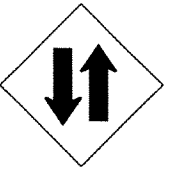

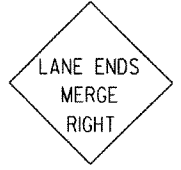


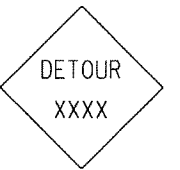



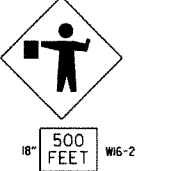


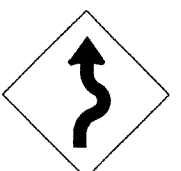
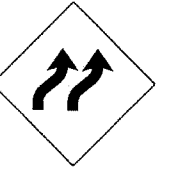

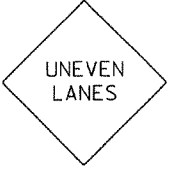
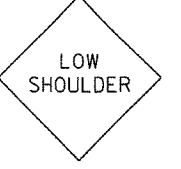
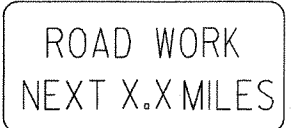
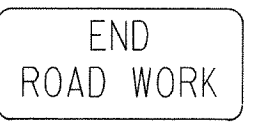
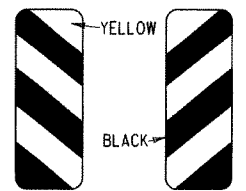


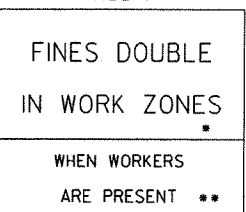
GENERAL NOTES:

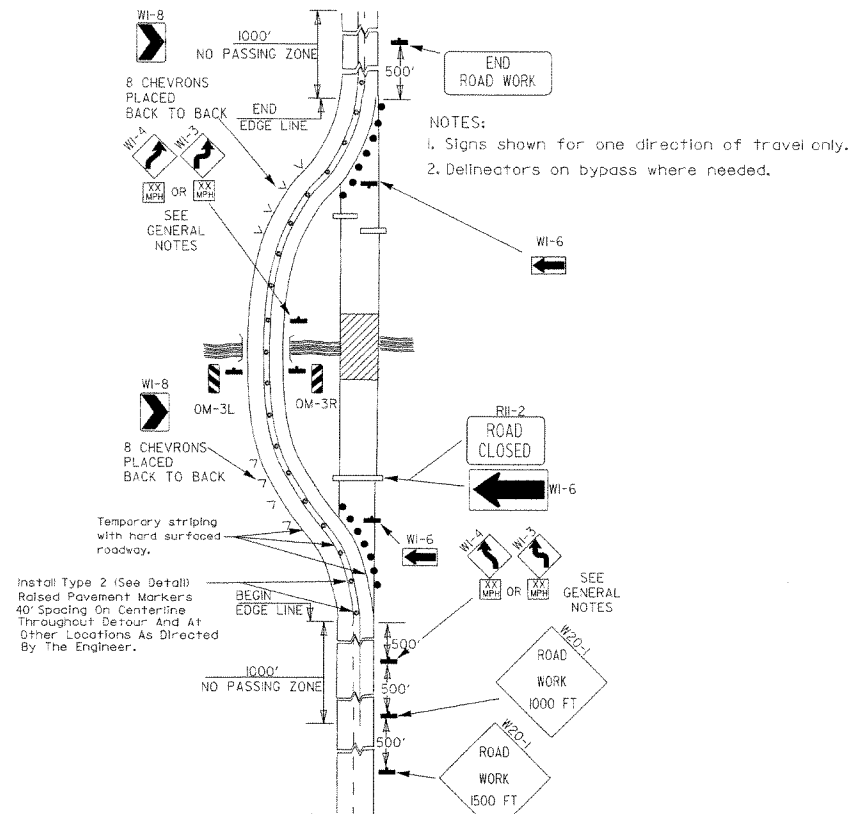
- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START 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, DEFACED, 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.

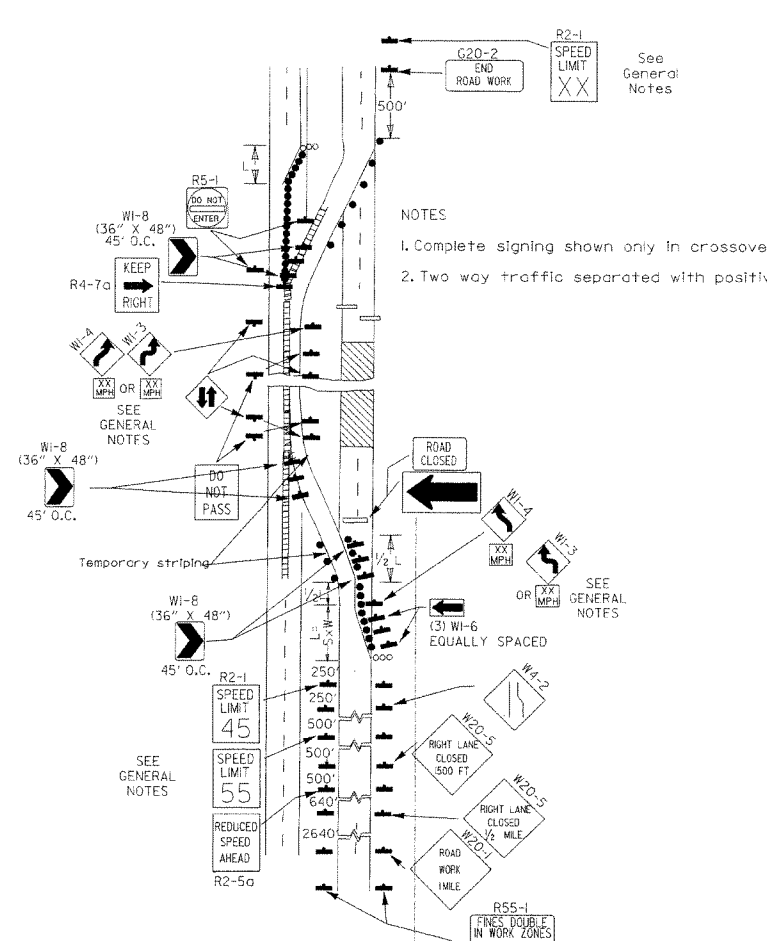
NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

12-15-81	REVISED W24-1	
11-17-10	DELETED W8-9c & 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

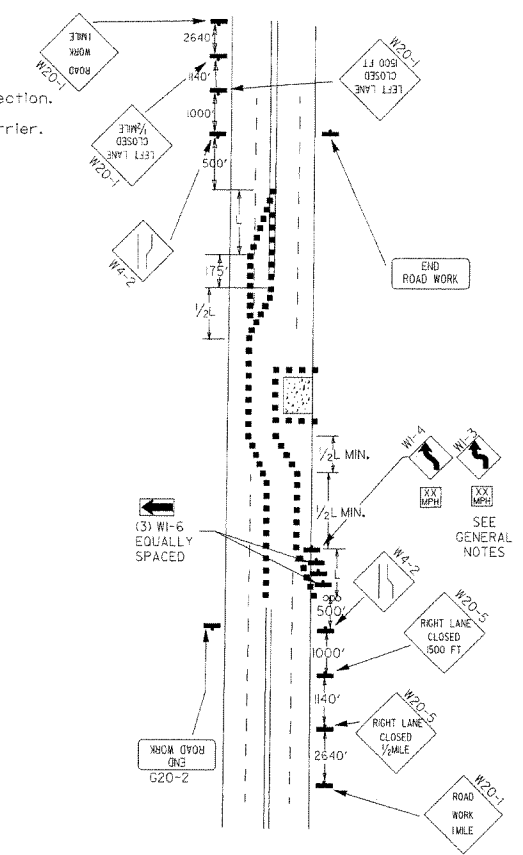
<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 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>W1-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W1-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>W1-3</p>  <p>STD. 48"x48"</p>	<p>W1-4</p>  <p>STD. 48"x48"</p>	<p>W1-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>W1-8</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>W20-3</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>W1-4b</p>  <p>STD. 48"x48"</p>	<p>R56-1</p>  <p>STD. 18"x18"</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>R55-1</p>  <p>36"x60"</p> <p>WHEN WORKERS ARE PRESENT **</p> <p>* USE 6" C LETTERS ** USE 4" D LETTERS</p>				



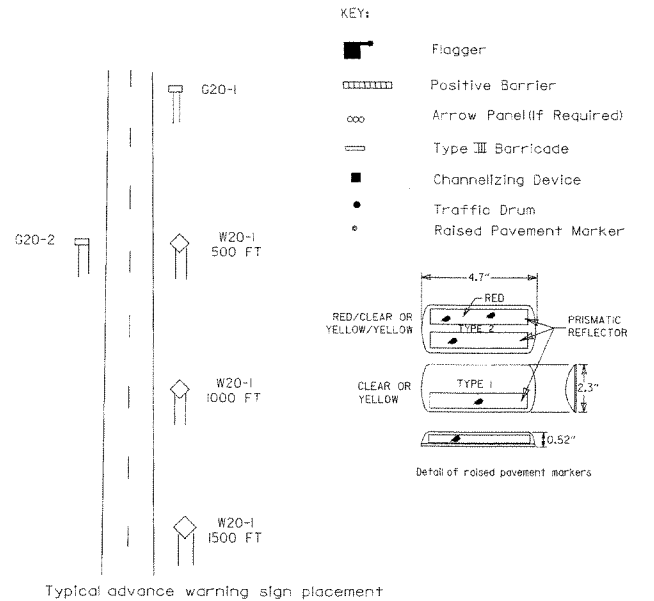
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



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

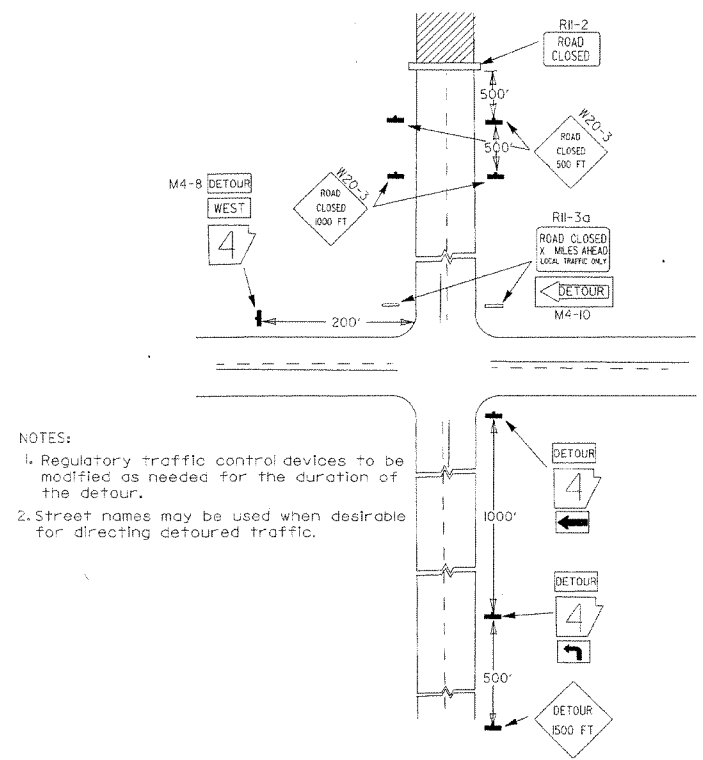


(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.

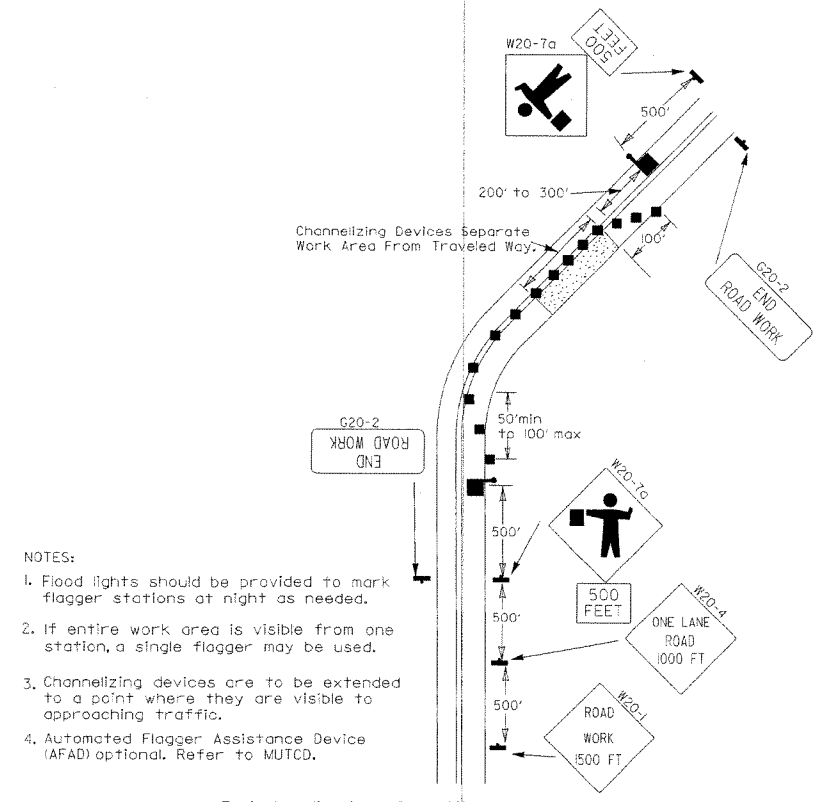


Taper formulae:  
 $L = SxW$  for speeds of 45mph or more.  
 $L = \frac{WS^2}{60}$  for speeds of 40mph or less.  
 Where:  
 L = Minimum length of taper.  
 S = Numerical value of posted speed limit prior to work or 85th percentile speed.  
 W = Width of offset.

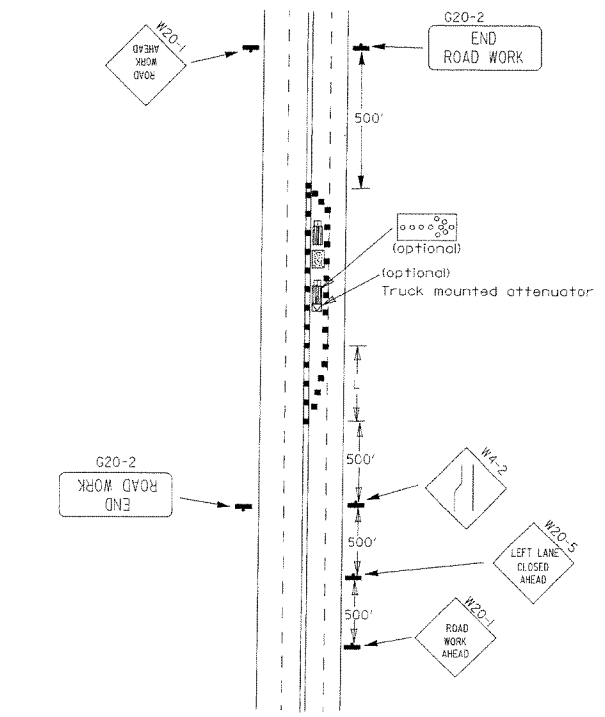
- GENERAL NOTES:
- Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
  - When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-1(45) shall be installed at that location. Additional R2-1 45mph 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(65) shall be omitted. Additional R2-1 55mph 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.



(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.

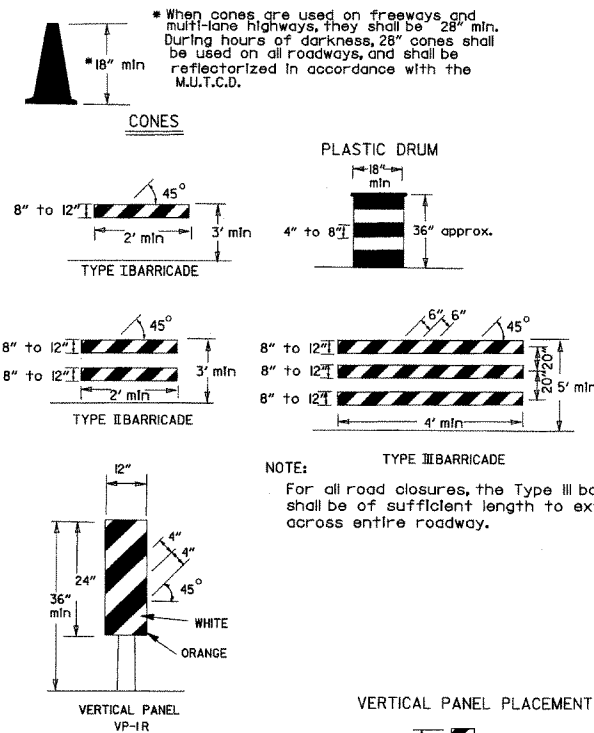


(F) Typical application - 4-lane undivided roadway with inside lane closed.

DATE	REVISION	FILMED
3-11-10	ADDED (AFAD)	
8-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION  
 STANDARD TRAFFIC CONTROLS  
 FOR HIGHWAY CONSTRUCTION  
 STANDARD DRAWING TC 2

Channelizing devices

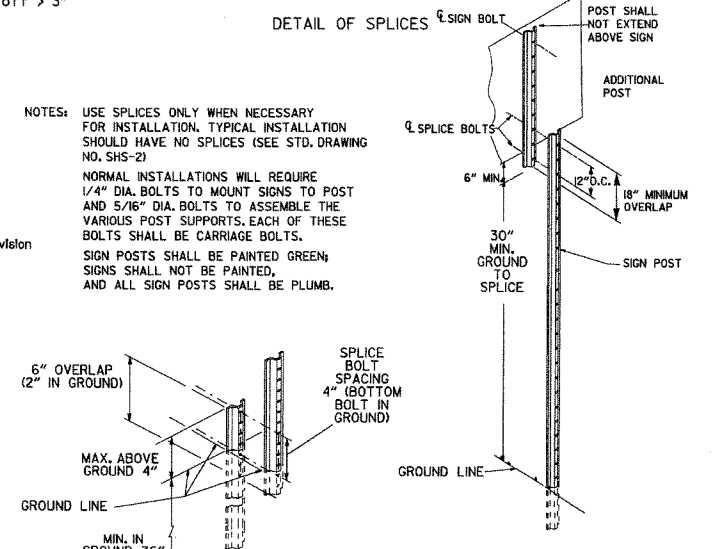
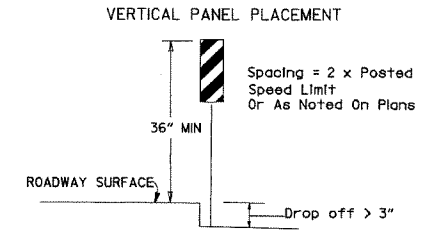
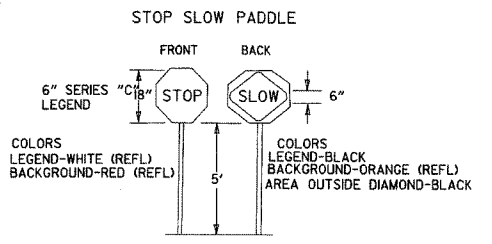
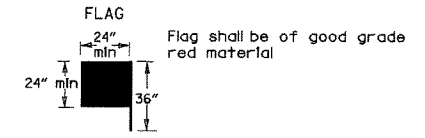


TRAFFIC CONTROL DEVICES FOR VERTICAL PAVEMENT DIFFERENTIALS

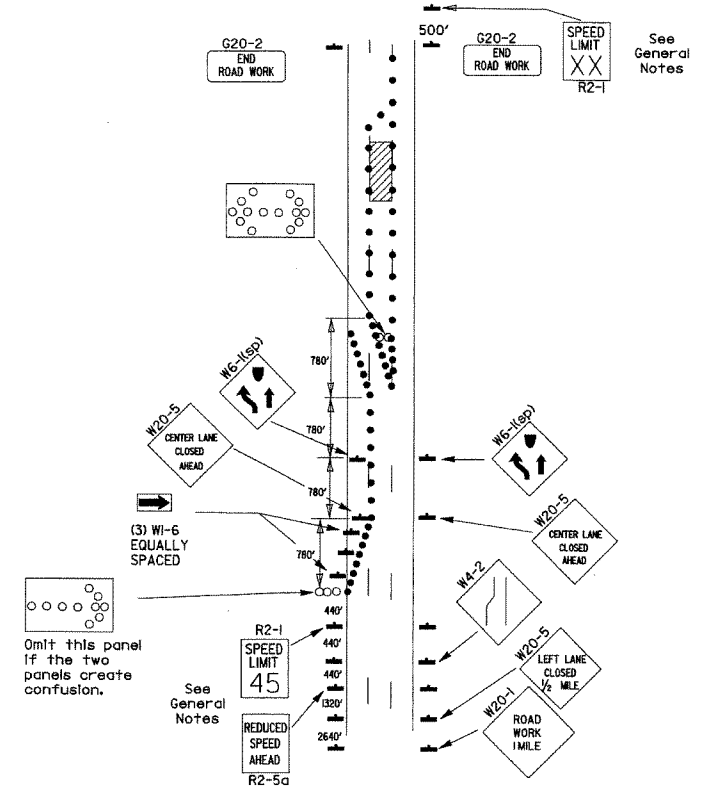
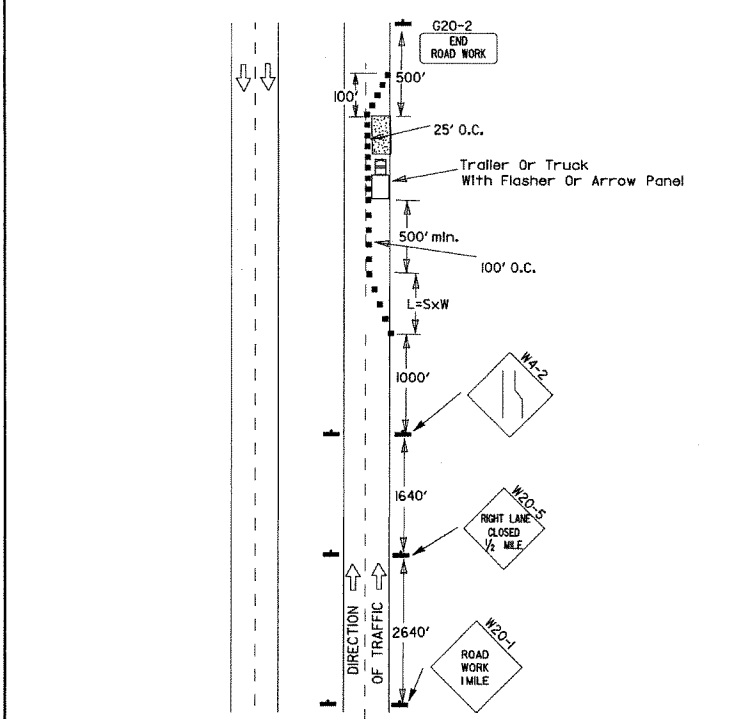
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical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

\* When shown on the plans concrete barrier will be used.

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



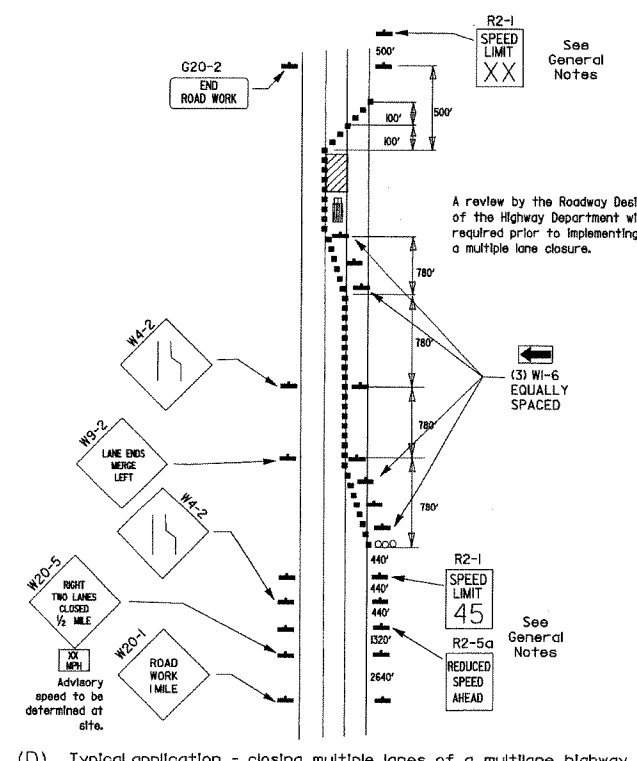
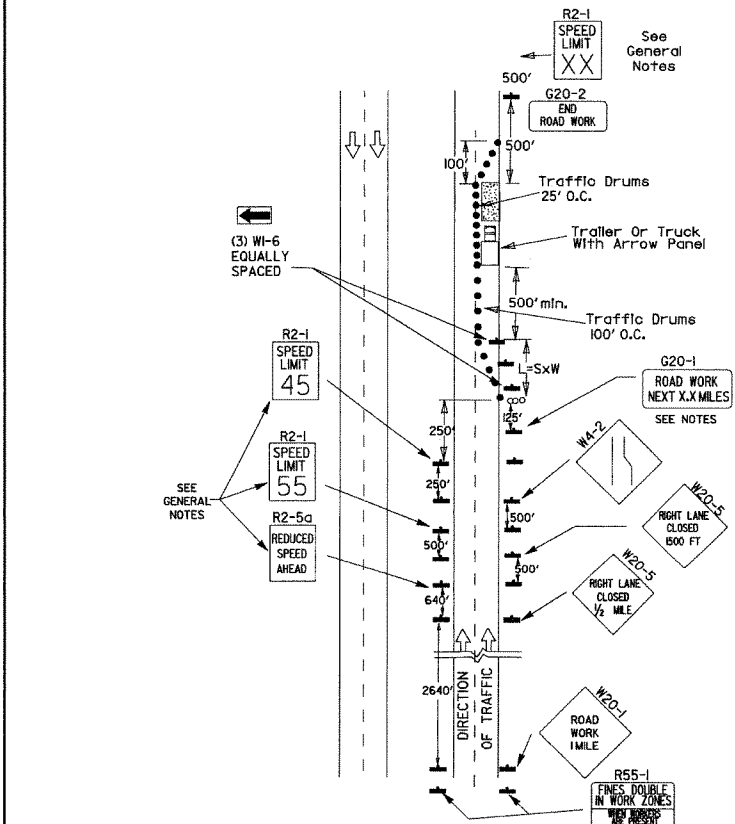
DATE	REVISION	FILED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	



- 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 R2-145mph 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(65) 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.
  - 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(1/2 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.

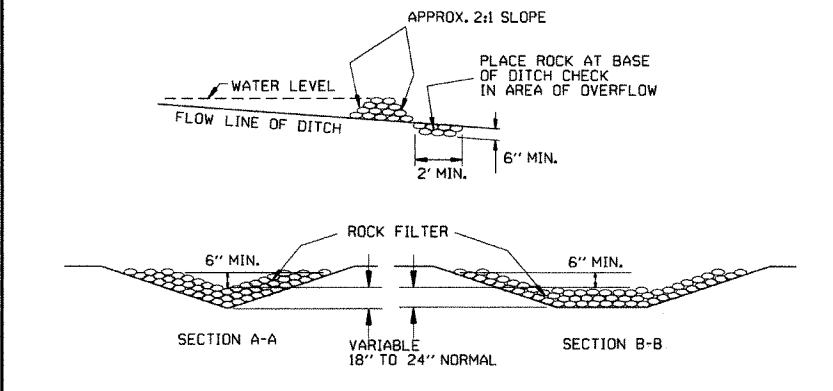
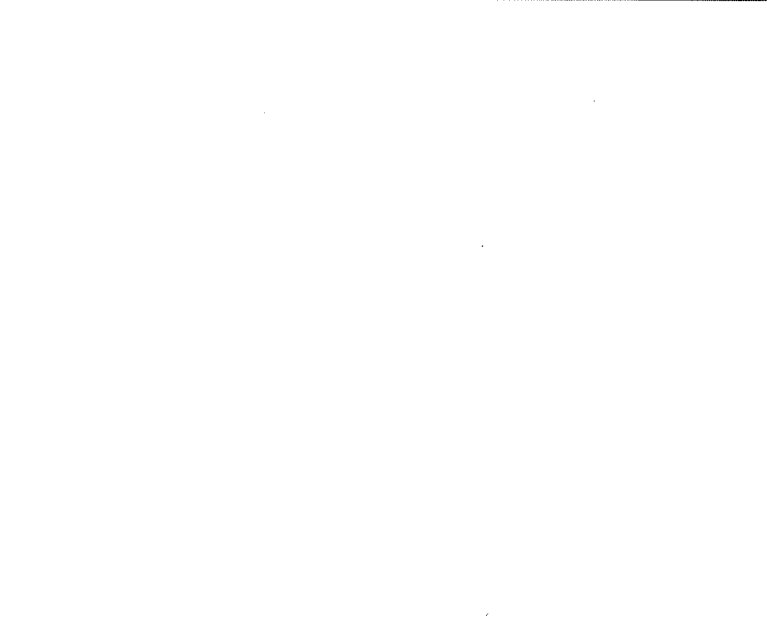
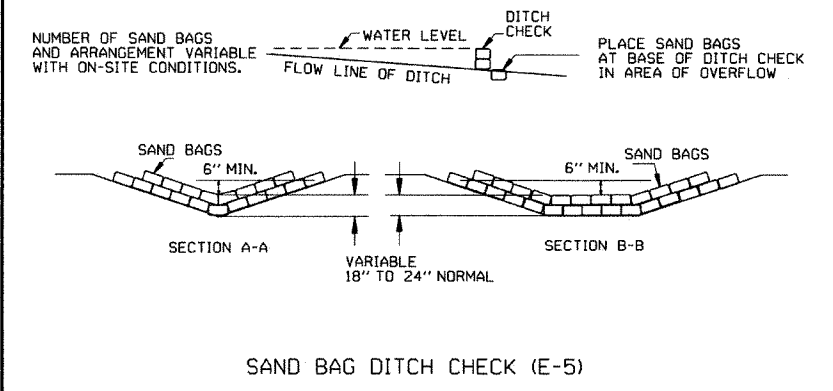
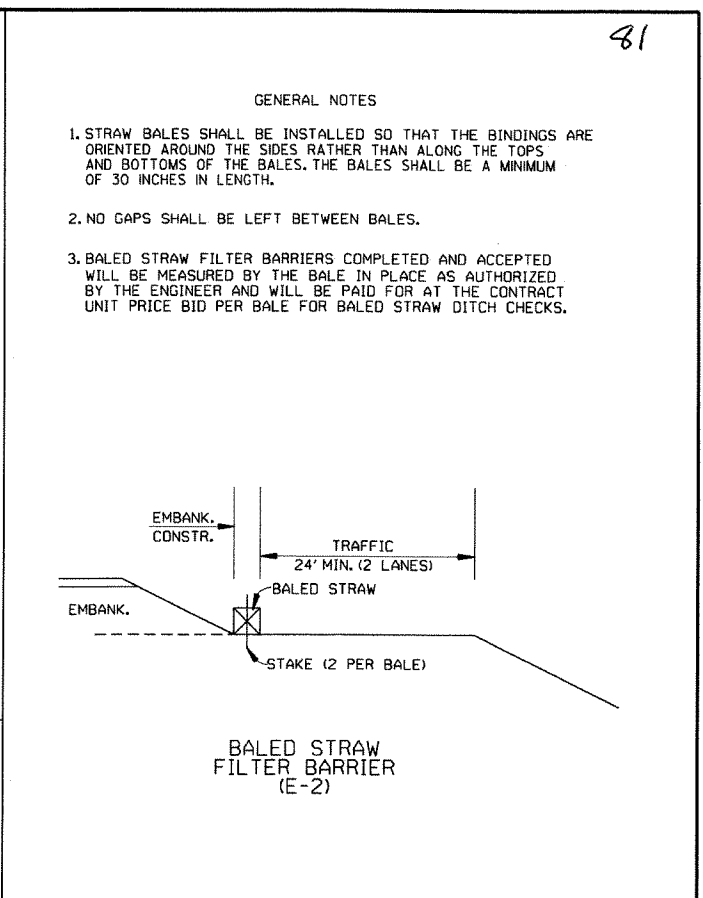
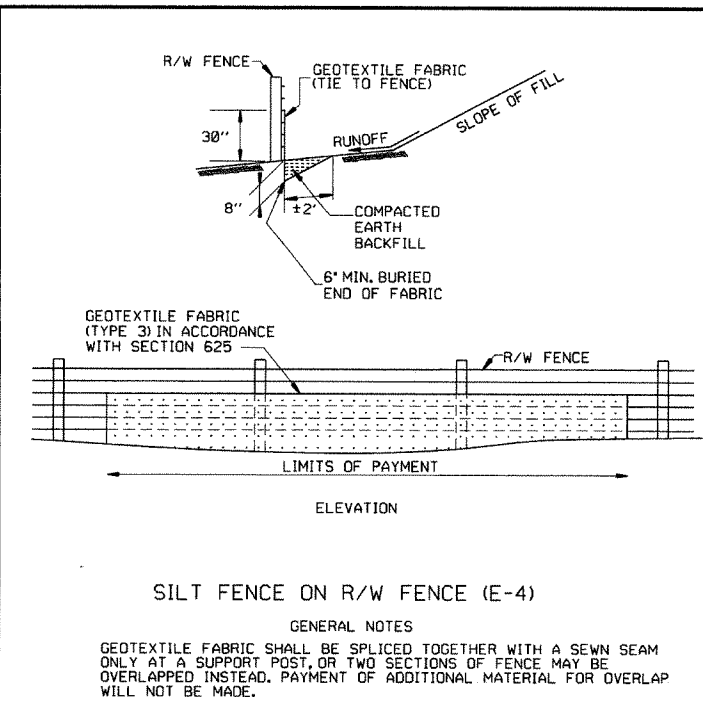
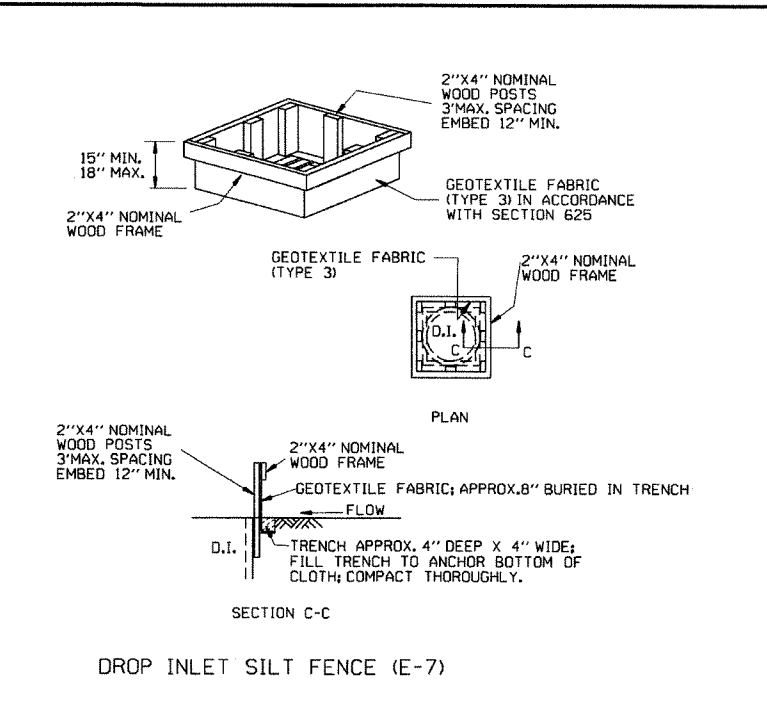
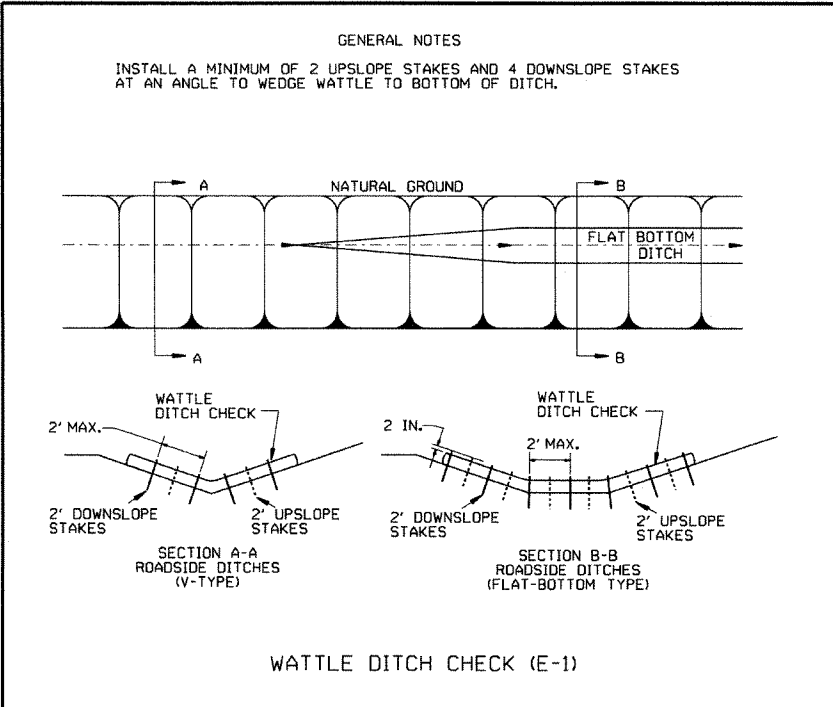
(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



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

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



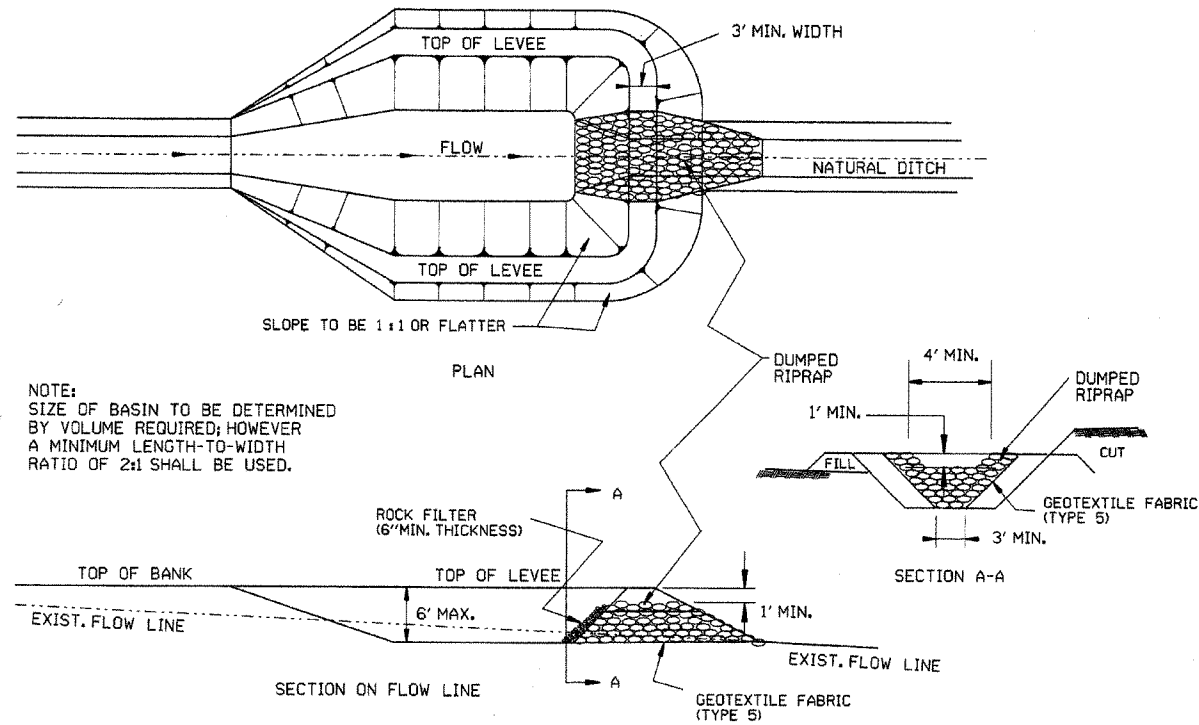


GENERAL NOTES

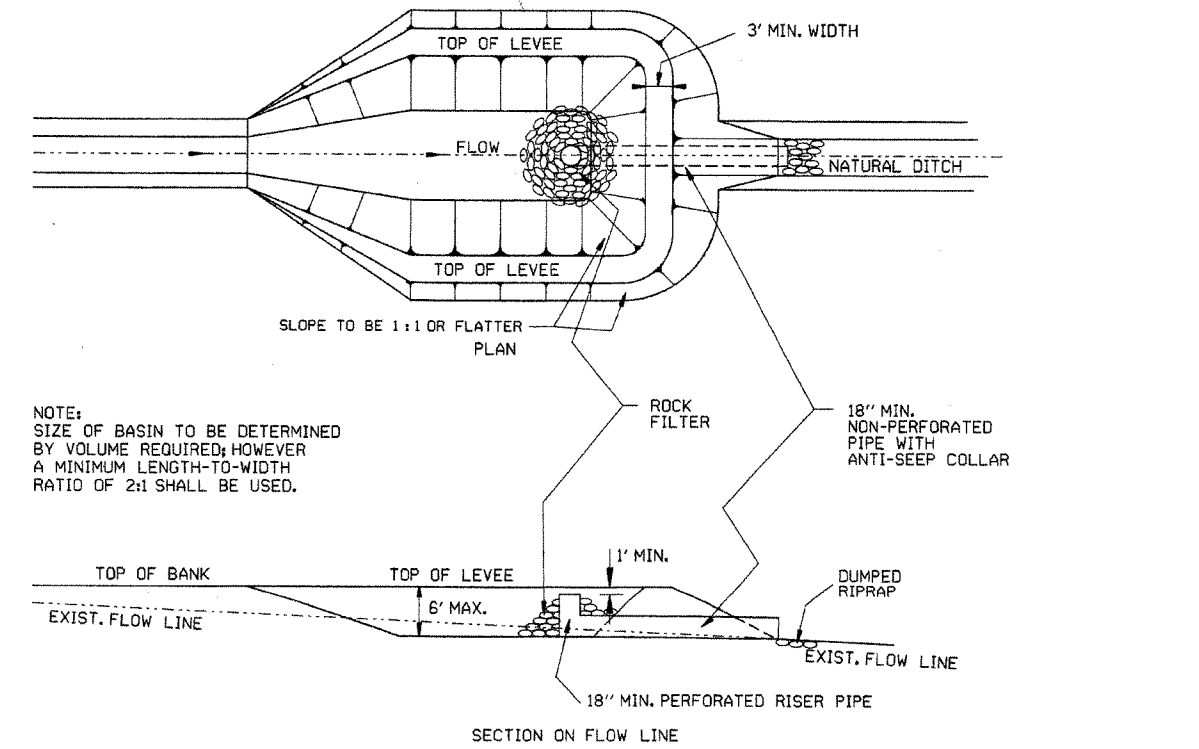
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.

12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
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

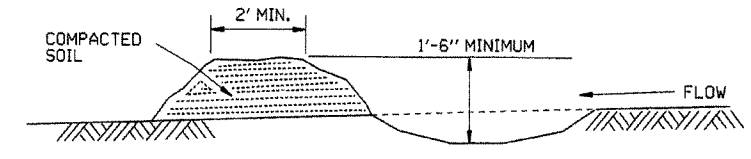
ARKANSAS STATE HIGHWAY COMMISSION	
TEMPORARY EROSION CONTROL DEVICES	
STANDARD DRAWING TEC-1	



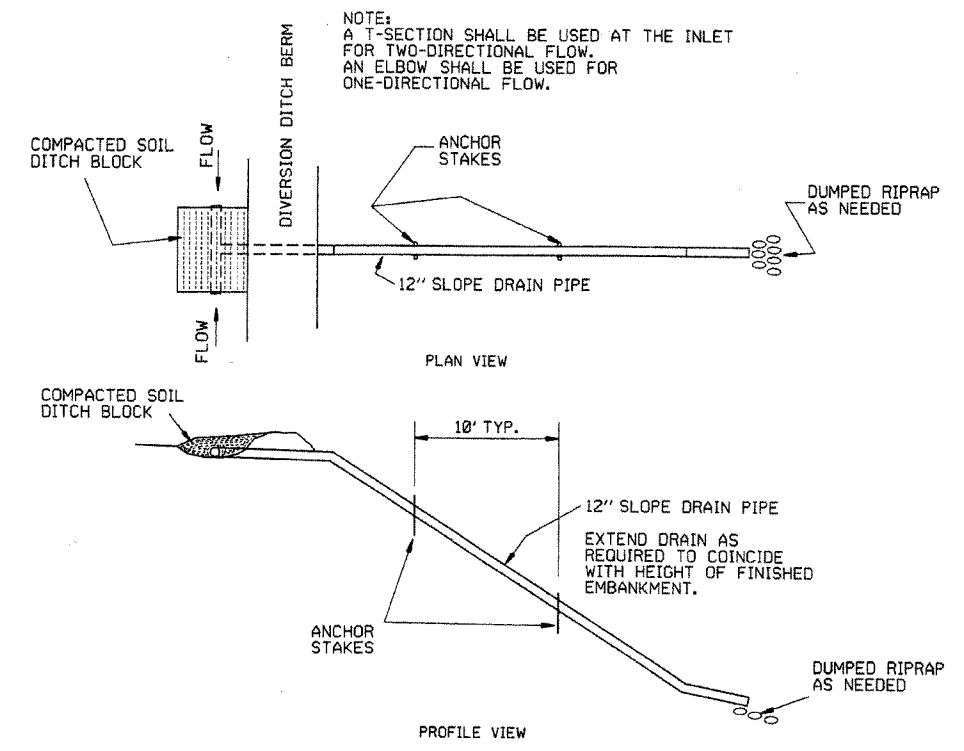
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



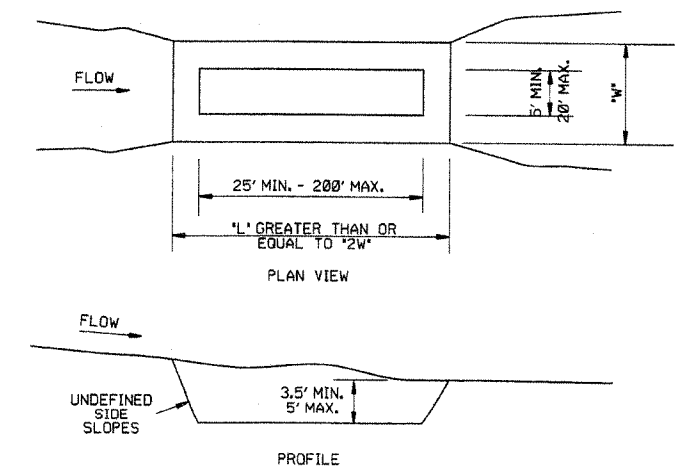
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

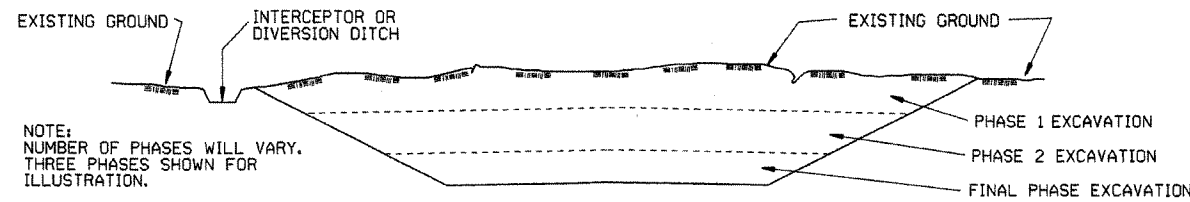
ARKANSAS STATE HIGHWAY COMMISSION  
 TEMPORARY EROSION CONTROL DEVICES  
 STANDARD DRAWING TEC-2

### CLEARING AND GRUBBING

**CONSTRUCTION SEQUENCE**

1. PLACE PERIMETER CONTROLS (I.E. SILT FENCES, DIVERSION DITCHES, SEDIMENT BASINS, ETC.)
2. PERFORM CLEARING AND GRUBBING OPERATION.

### EXCAVATION



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

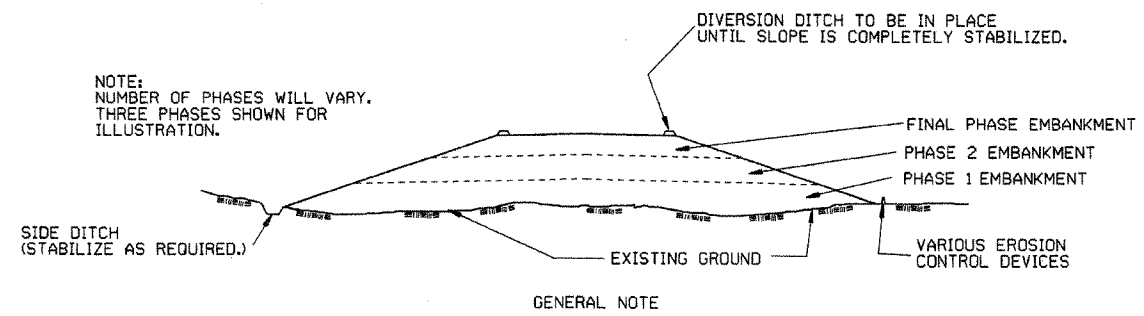
**GENERAL NOTE**

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.

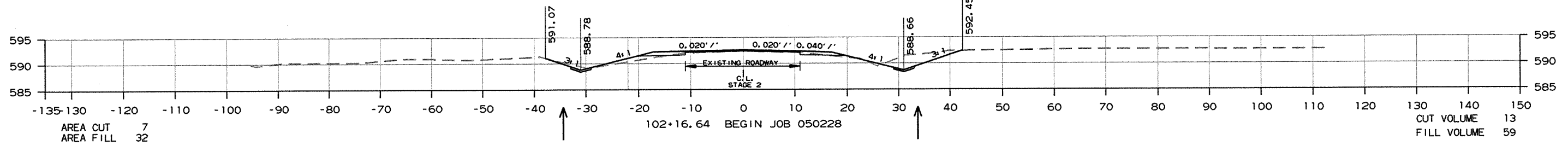
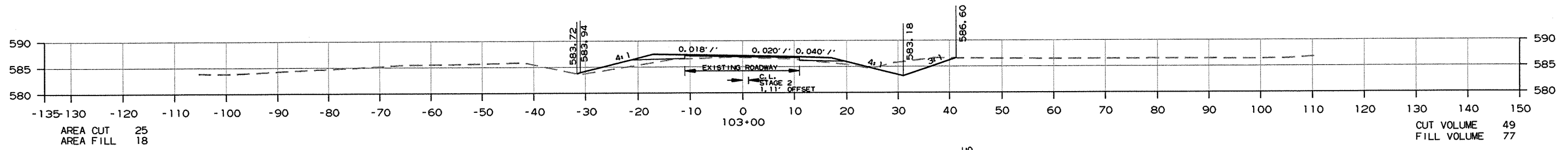
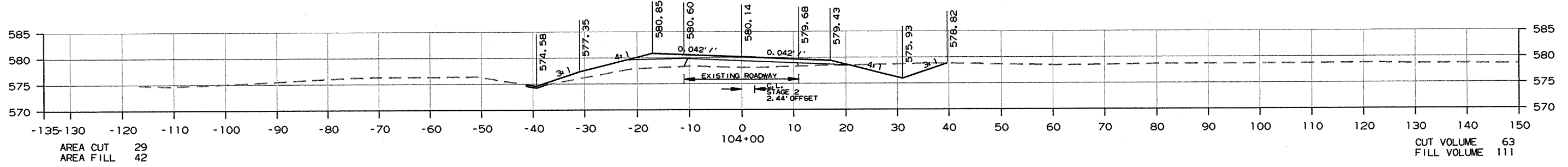
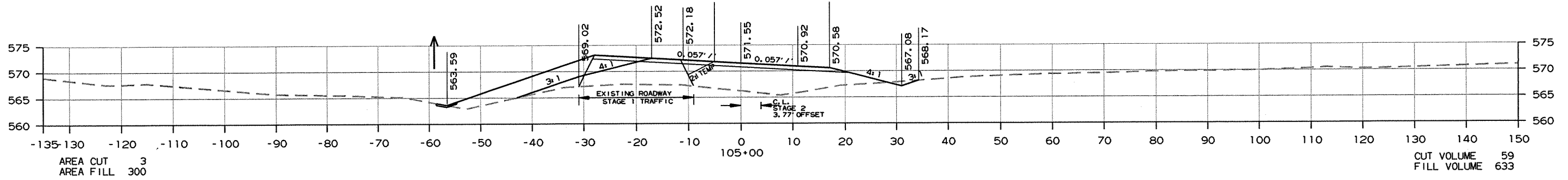
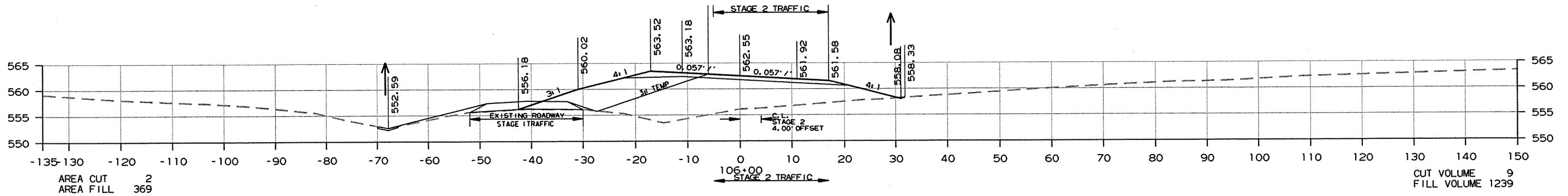
**CONSTRUCTION SEQUENCE**

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		STANDARD DRAWING TEC-3
6-2-94	Drawn & Issued	6-2-94	
DATE	REVISION	FILMED	

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		84	96
JOB NO. 050228								

② CROSS SECTIONS

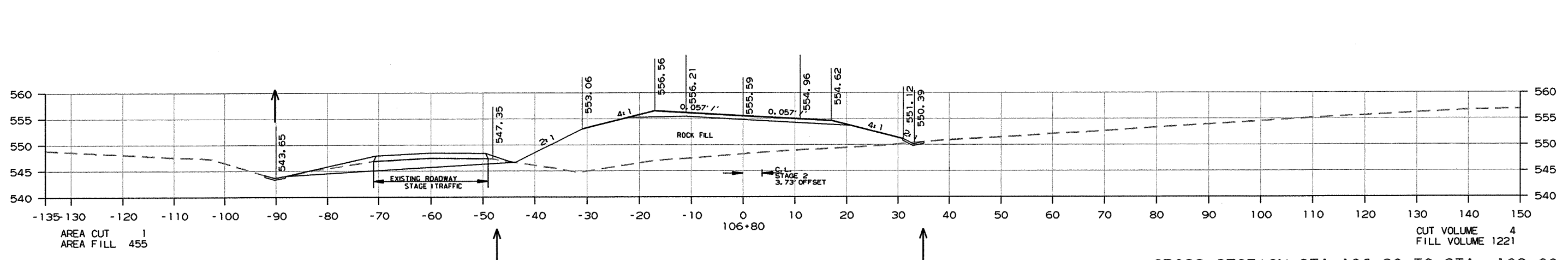
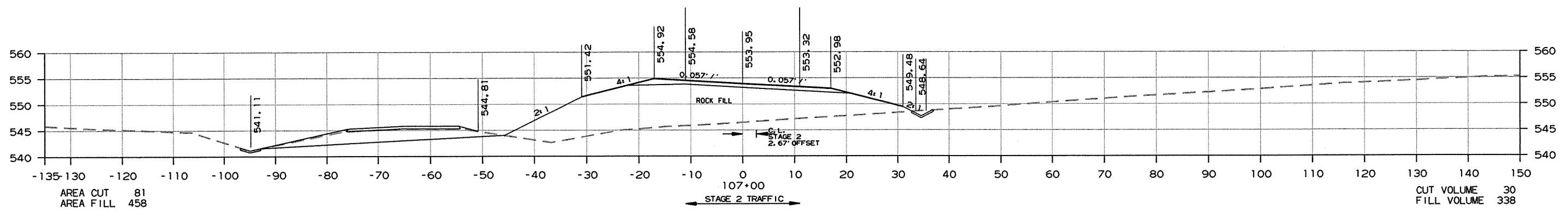
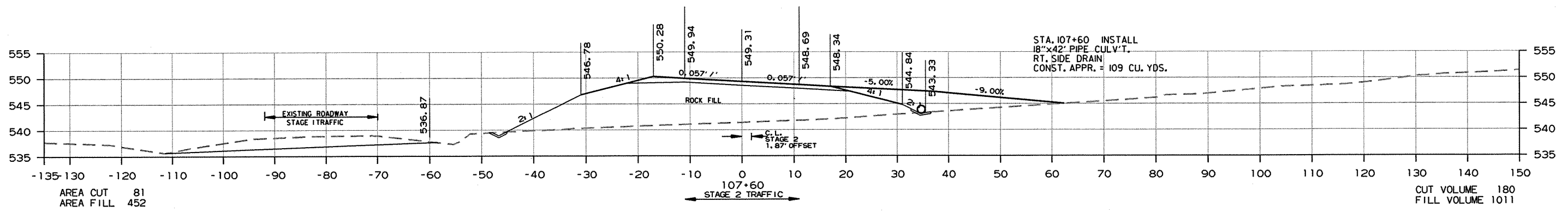
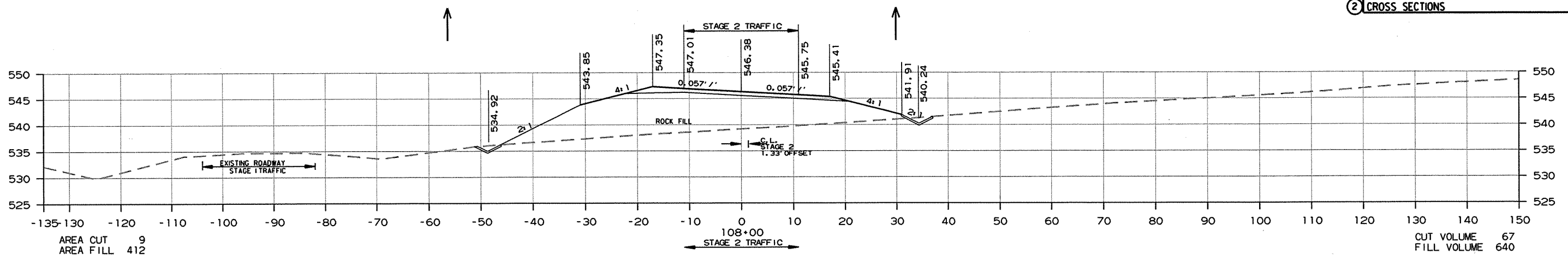


AREA CUT 0  
AREA FILL 0

STA. 101+16.64 BEGIN TRANSITION FROM EXISTING

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							85	96

2 CROSS SECTIONS

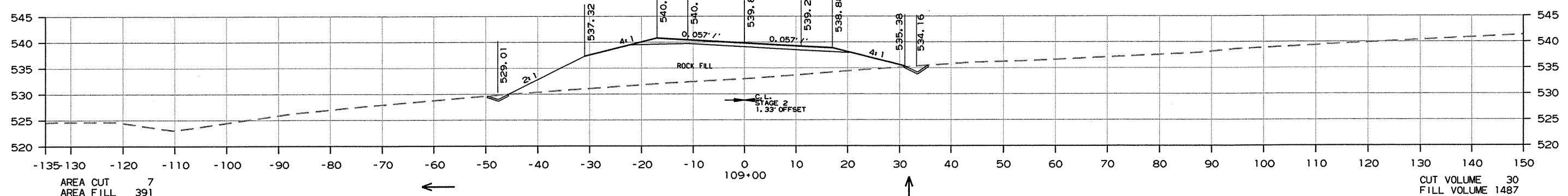
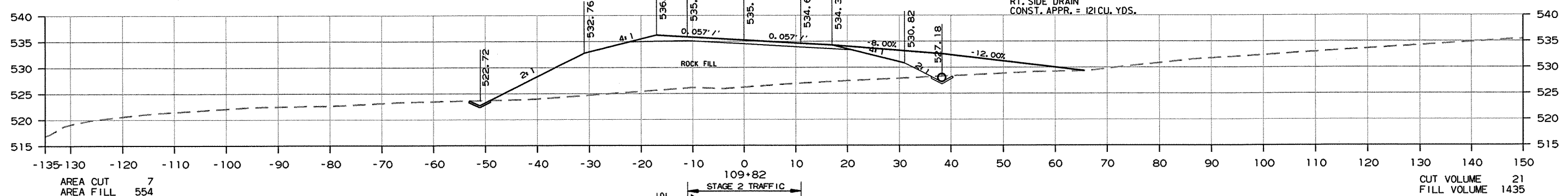
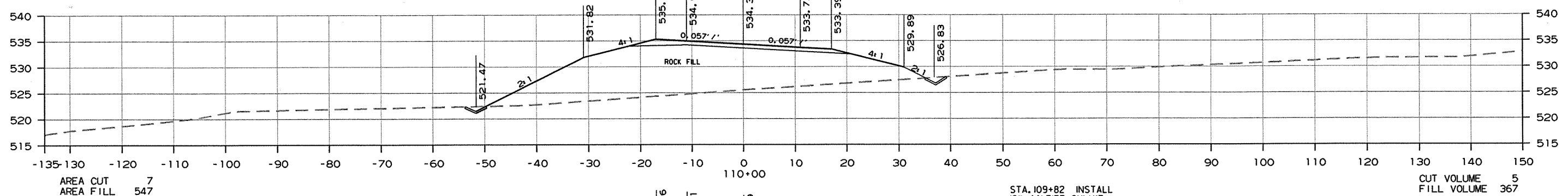
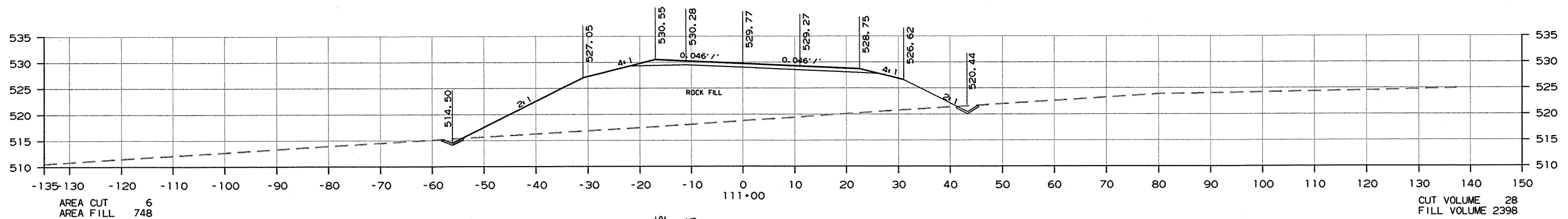


CROSS SECTION STA. 106+80 TO STA. 108+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							86	96

2 CROSS SECTIONS

GUARDRAIL (TYPE A)		THREE BEAM GUARDRAIL	TERMINAL ANCHOR POST
STA. 110+90.12 - STA. 113+08.87	RT.	200 LIN. FT.	1 EACH
STA. 112+15.12 - STA. 113+08.87	LT.	75 LIN. FT.	1 EACH
STA. 122+41.13 - STA. 123+34.88	RT.	75 LIN. FT.	1 EACH
STA. 122+41.13 - STA. 124+59.88	LT.	200 LIN. FT.	1 EACH



CROSS SECTION STA. 109+00 TO STA. 111+00

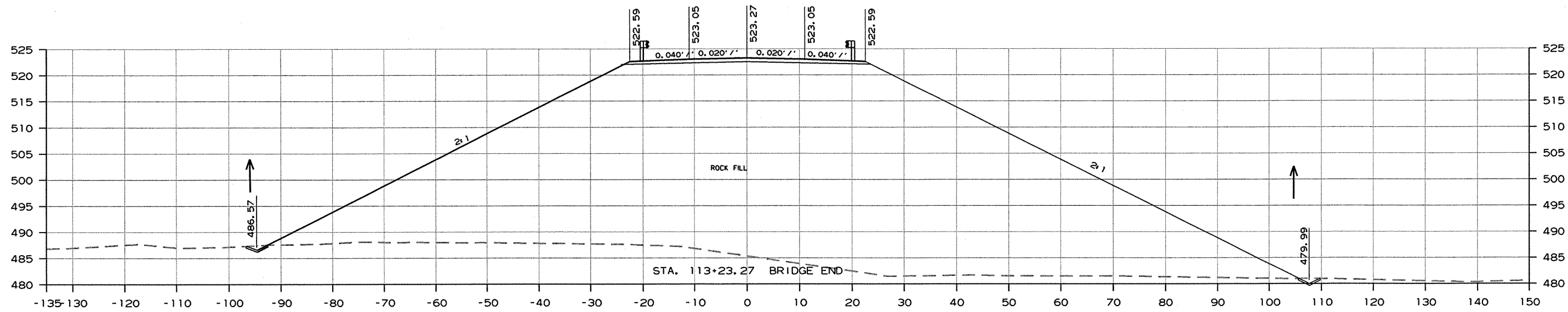
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							87	96

2 CROSS SECTIONS

AREA CUT 0  
AREA FILL 0

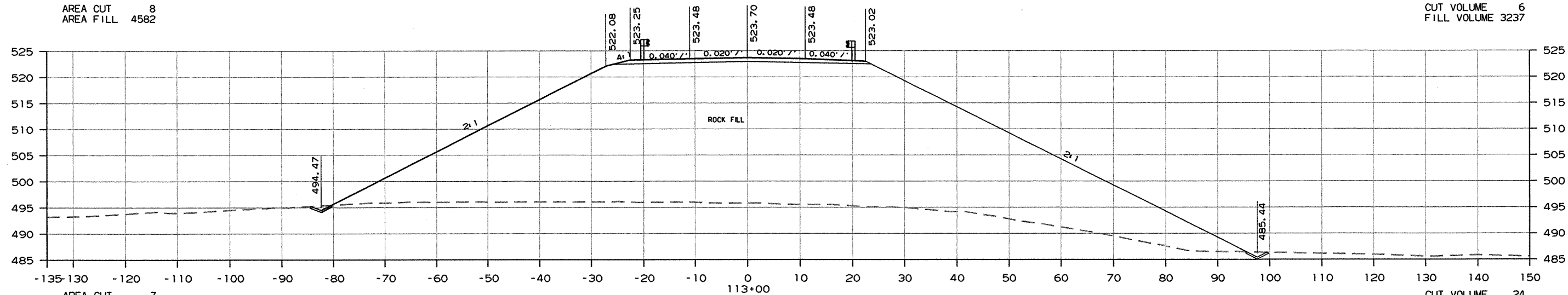
STA. 114+15 - TOE OF SLOPE

CUT VOLUME 14  
FILL VOLUME 7787



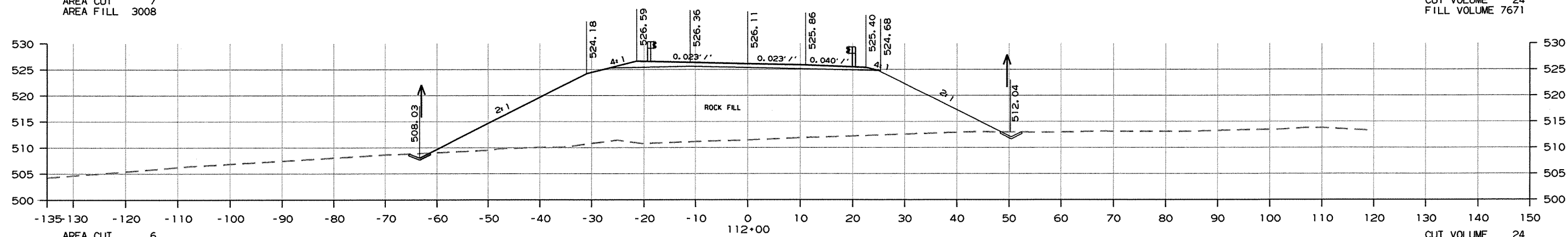
AREA CUT 8  
AREA FILL 4582

CUT VOLUME 6  
FILL VOLUME 3237



AREA CUT 7  
AREA FILL 3008

CUT VOLUME 24  
FILL VOLUME 7671



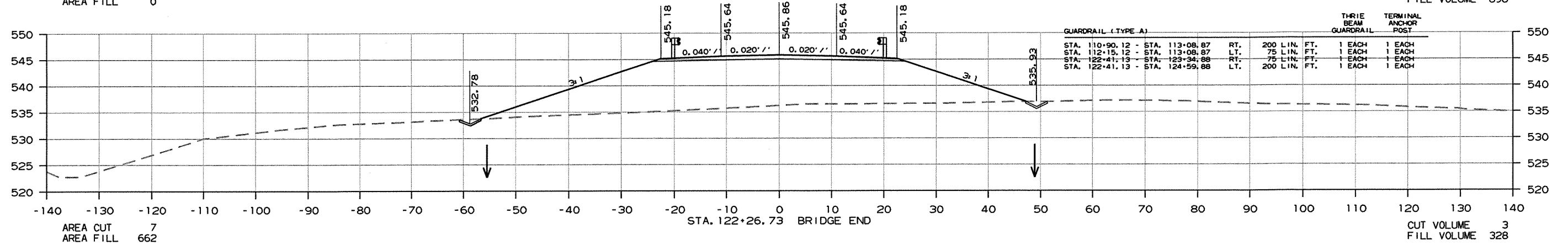
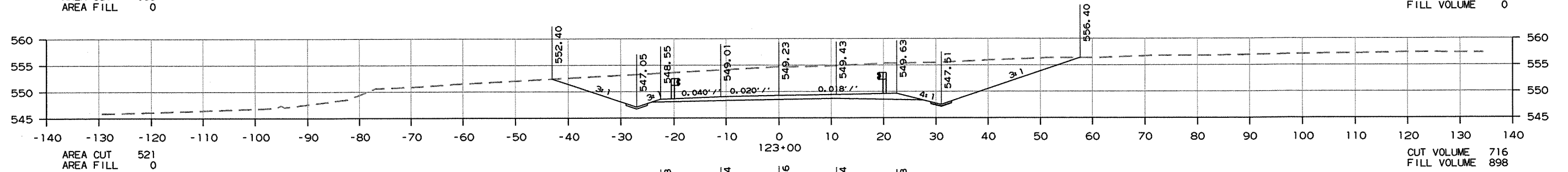
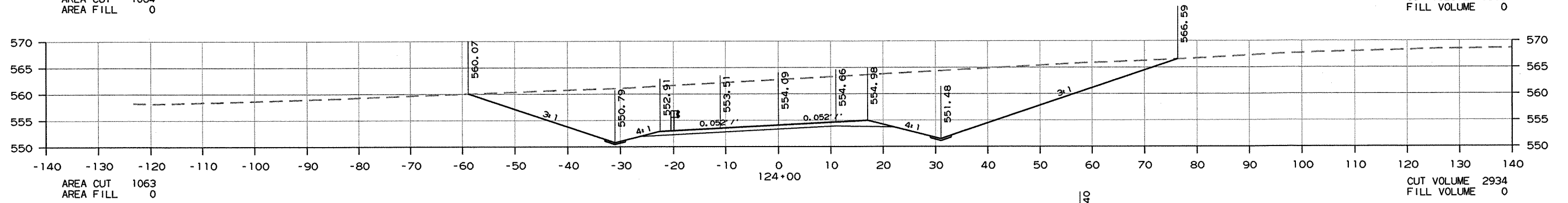
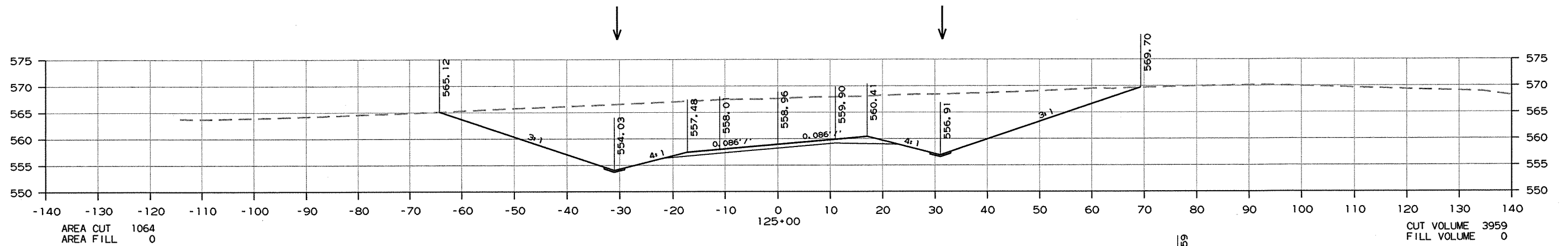
AREA CUT 6  
AREA FILL 1134

CUT VOLUME 24  
FILL VOLUME 3485

CROSS SECTION STA. 112+00 TO STA. 114+15

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							88	96

2 CROSS SECTIONS



GUARDRAIL (TYPE A)		THREE BEAM GUARDRAIL	TERMINAL ANCHOR POST
STA. 110+90.12 - STA. 113+08.87	RT.	200 LIN. FT.	1 EACH
STA. 112+15.12 - STA. 113+08.87	LT.	75 LIN. FT.	1 EACH
STA. 122+41.13 - STA. 123+34.98	RT.	75 LIN. FT.	1 EACH
STA. 122+41.13 - STA. 124+59.88	LT.	200 LIN. FT.	1 EACH

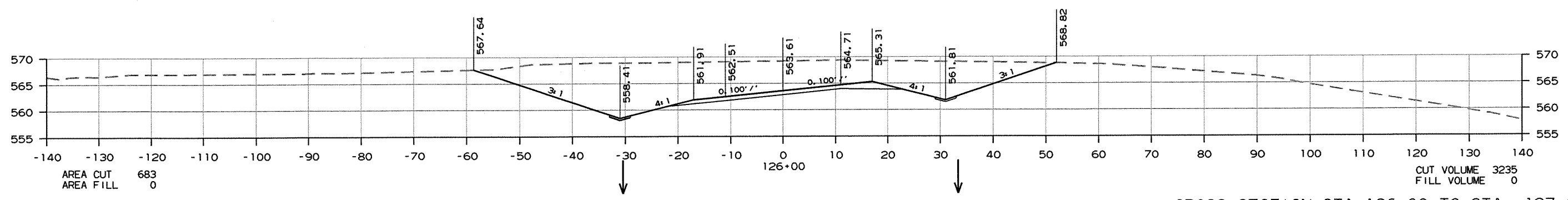
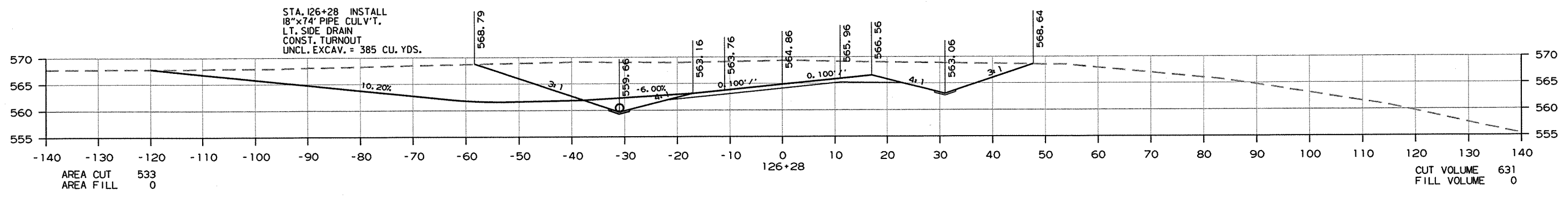
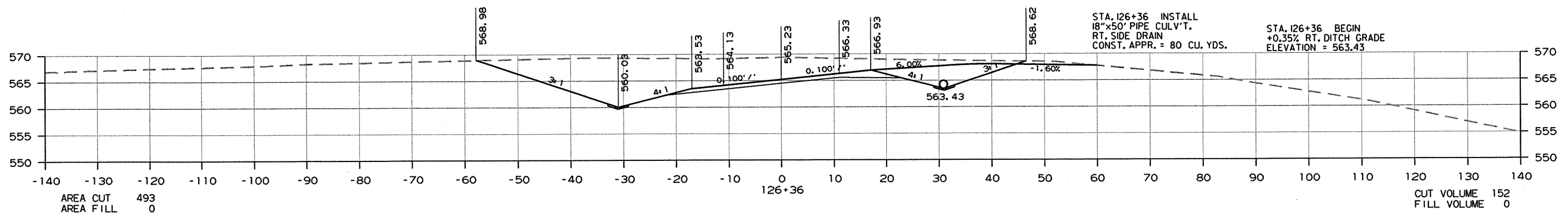
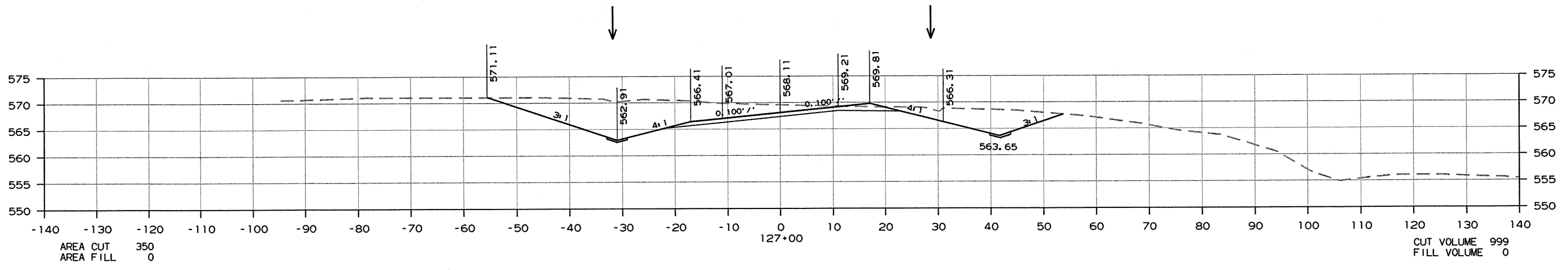
STA. 122+00 - TOE OF SLOPE

CROSS SECTION STA. 122+26.73 TO STA. 125+00



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							89	96

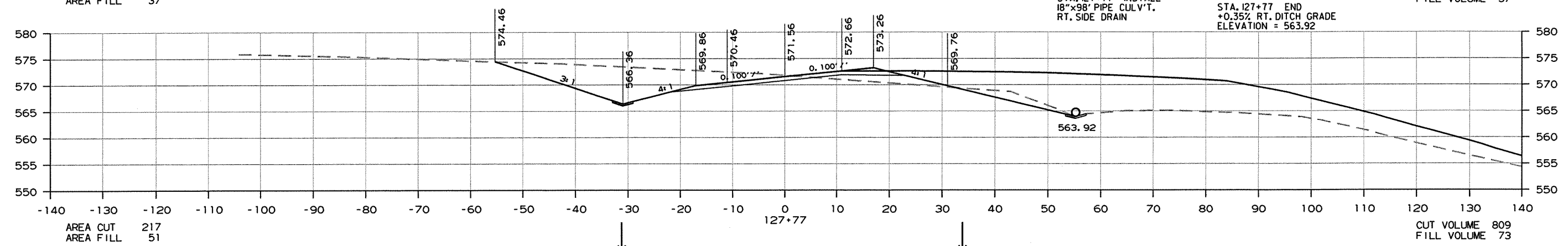
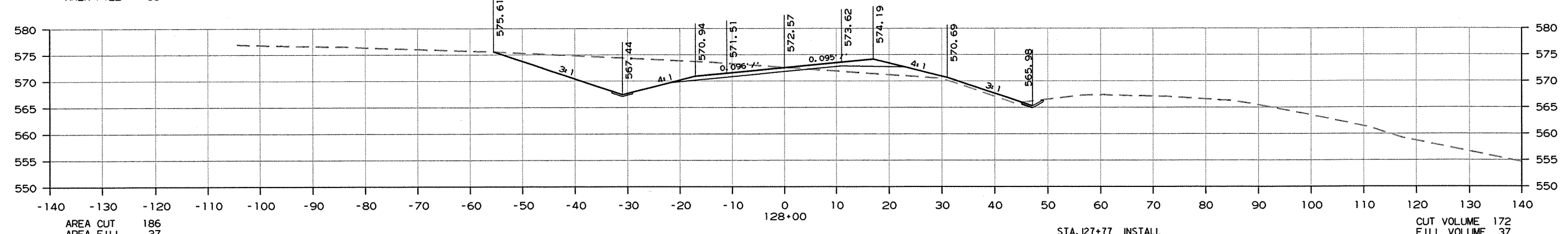
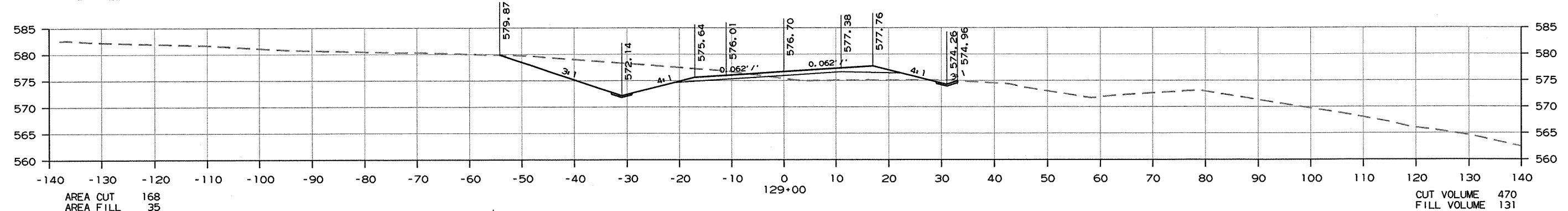
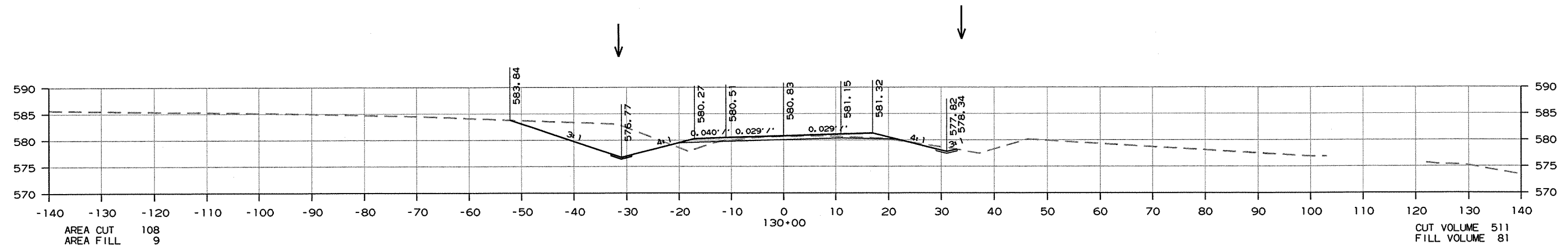
2 CROSS SECTIONS



CROSS SECTION STA. 126+00 TO STA. 127+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		90	96

2 CROSS SECTIONS



CROSS SECTION STA. 127+77 TO STA. 130+00

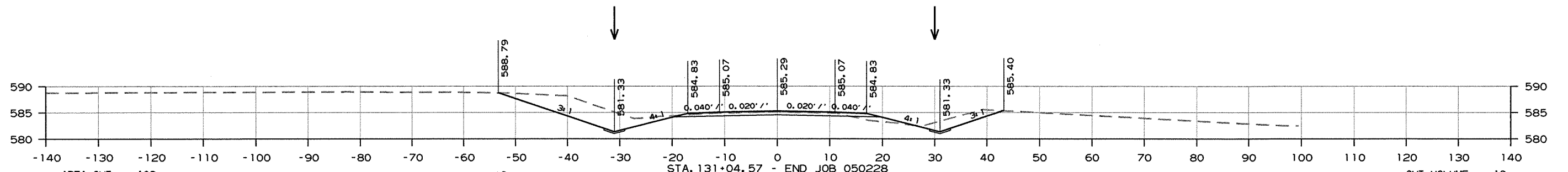
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							91	96

2 CROSS SECTIONS

AREA CUT 0  
AREA FILL 0

STA. 132+04.57 - END TRANSITION

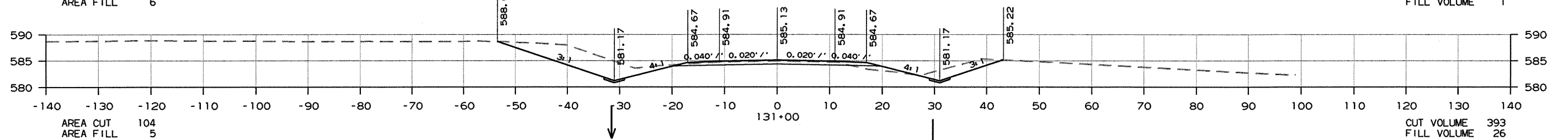
CUT VOLUME 191  
FILL VOLUME 11



AREA CUT 103  
AREA FILL 6

STA. 131+04.57 - END JOB 050228

CUT VOLUME 18  
FILL VOLUME 1



AREA CUT 104  
AREA FILL 5

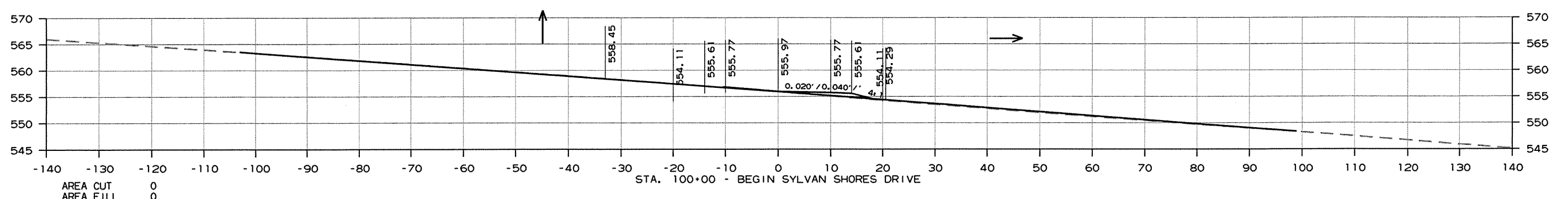
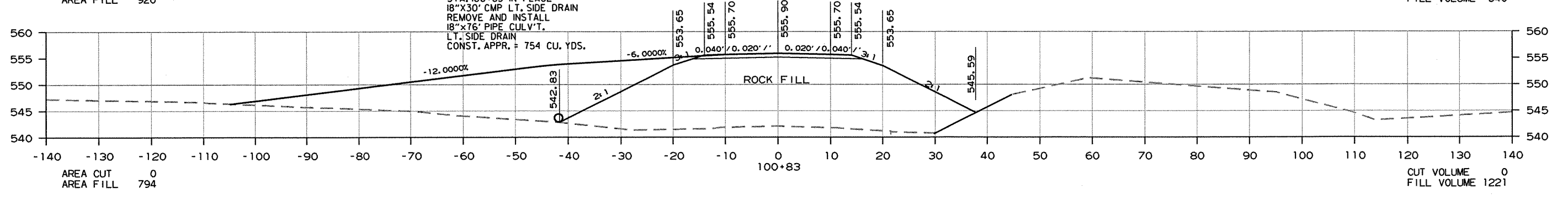
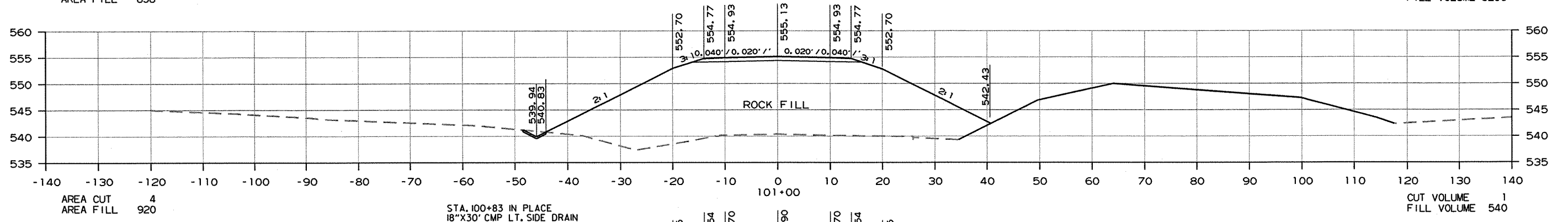
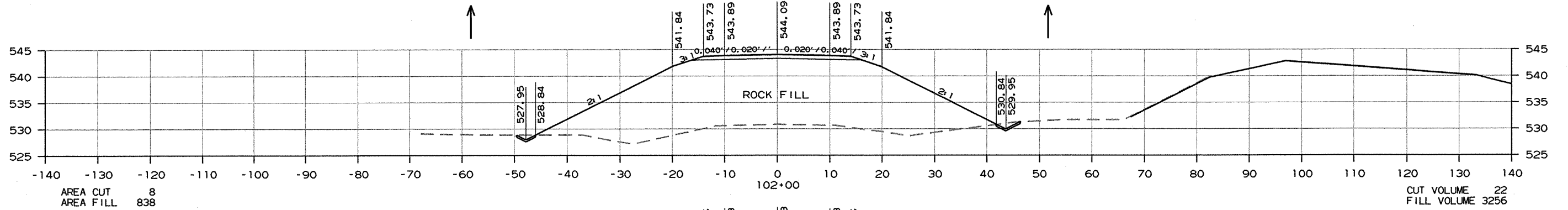
131+00

CUT VOLUME 393  
FILL VOLUME 26

CROSS SECTION STA. 131+00 TO STA. 131+05

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							92	96

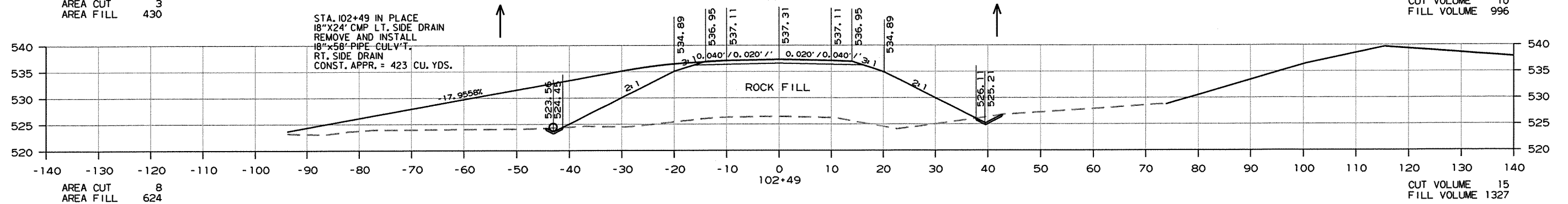
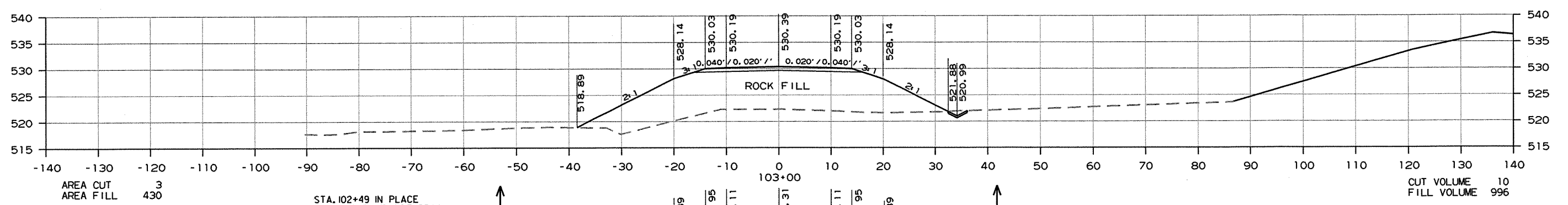
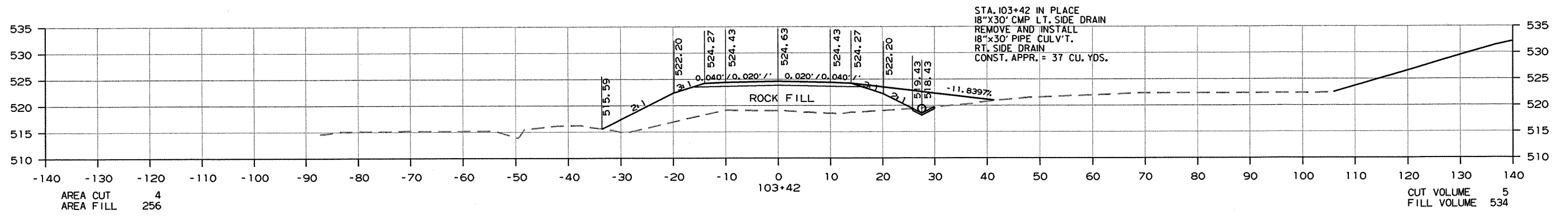
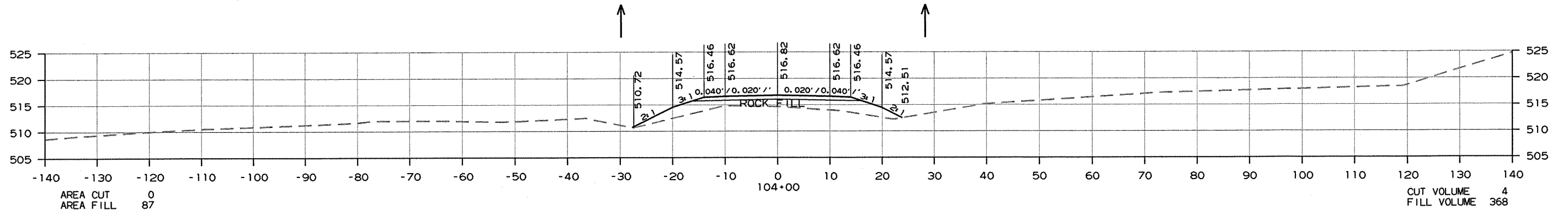
② CROSS SECTIONS - SYLVAN SHORE DRIVE



CROSS SECTION STA. 100+00 TO STA. 102+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							93	96

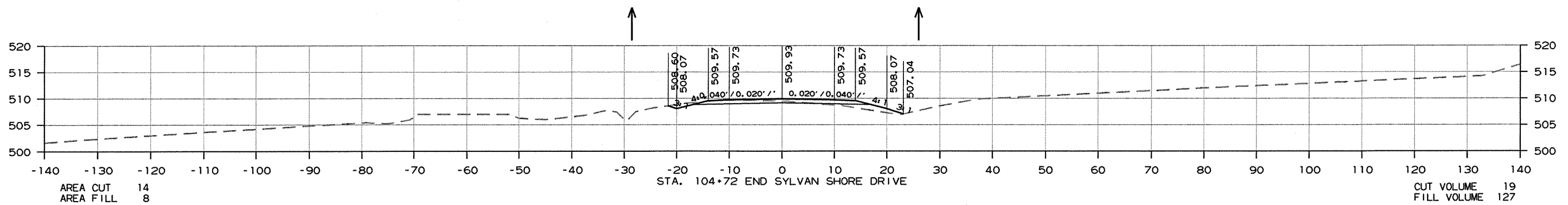
2 CROSS SECTIONS - SYLVAN SHORE DRIVE



CROSS SECTION STA. 102+49 TO STA. 104+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	050228	94
								96

2 CROSS SECTIONS - SYLVAN SHORE DRIVE

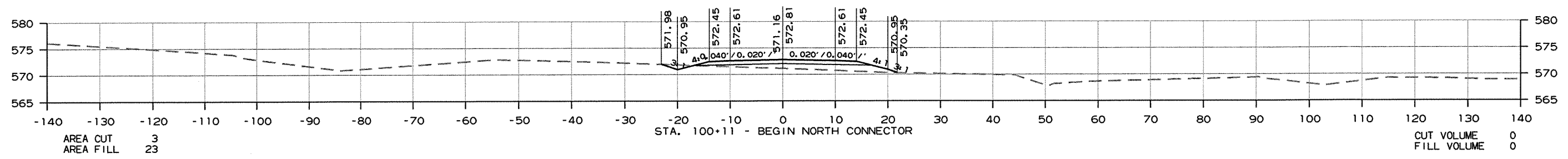
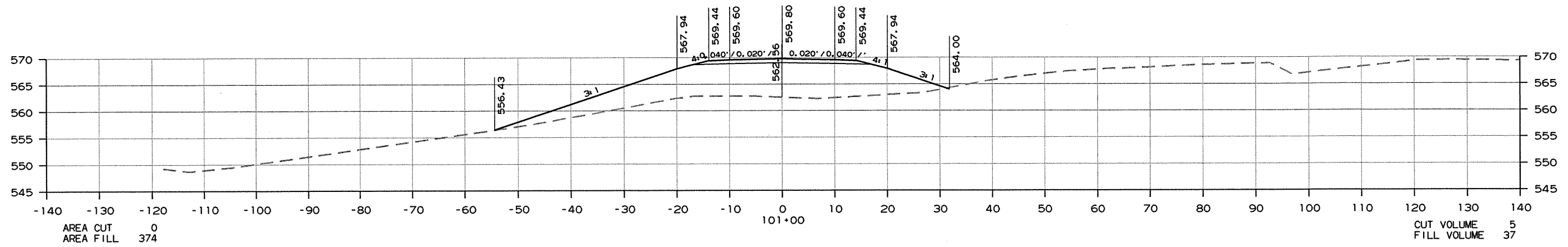
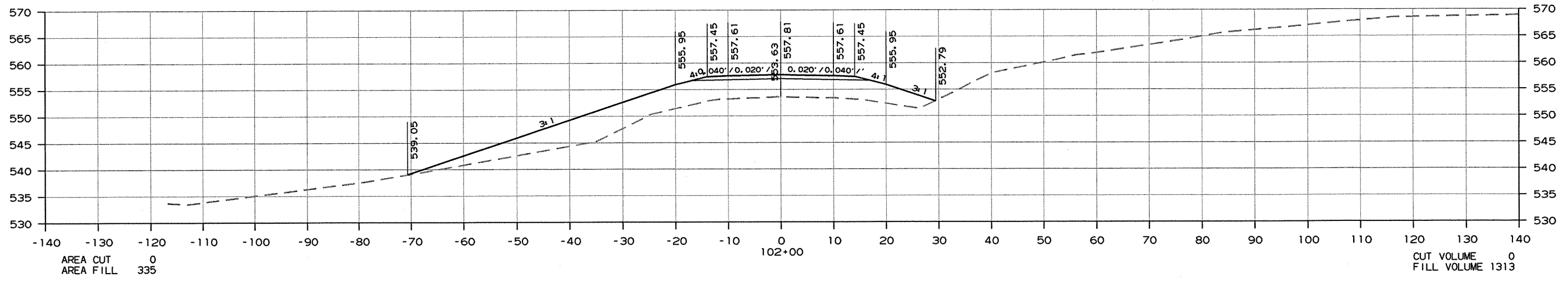


CROSS SECTION STA. 104+72 TO STA. 104+72

R050228.DGN 12/19/2011

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO. 050228							95	96

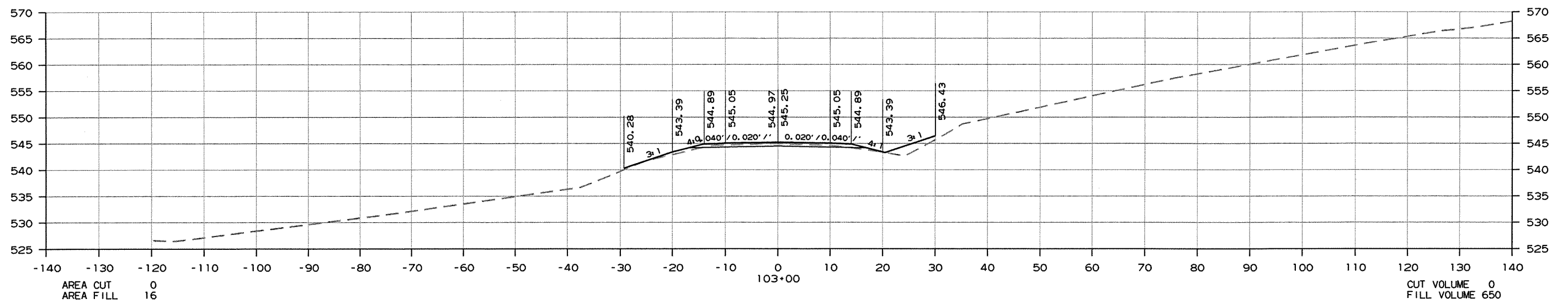
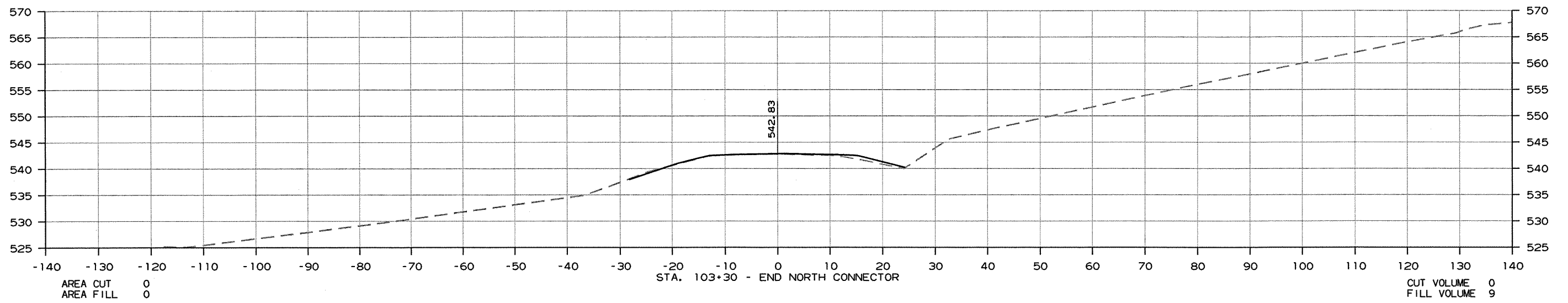
② CROSS SECTIONS - N. CONN.



CROSS SECTION STA. 100+11 TO STA. 102+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
JOB NO.						050228	96	96

② CROSS SECTIONS - N. CONN.



CROSS SECTION STA. 103+00 TO STA. 103+29