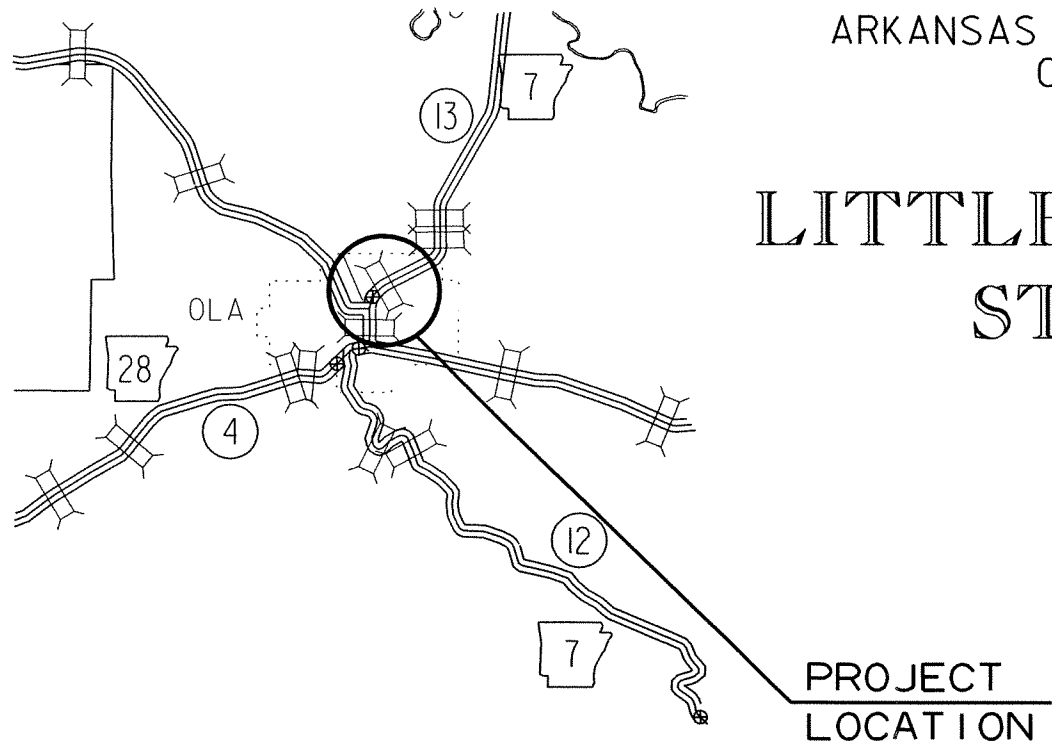


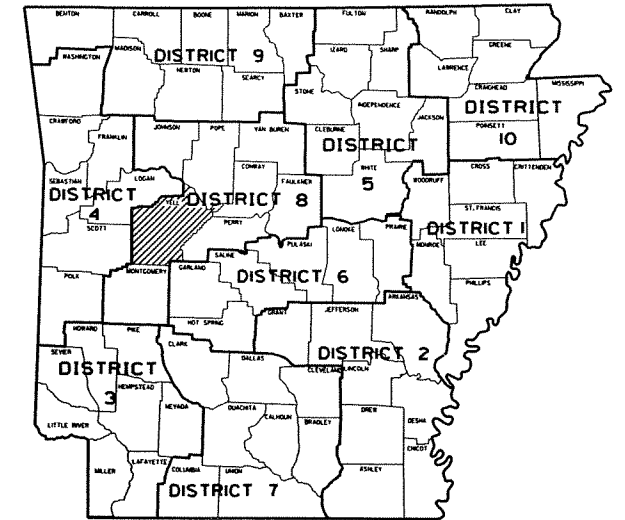
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

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. 080385							1	100
② LITTLE ROCK & WESTERN RR STR. & APPRS. (OLA) (S)								



# LITTLE ROCK & WESTERN RR STR. & APPRS. (OLA) (S)

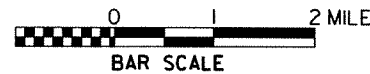
YELL COUNTY  
ROUTE 7 SECTION 13  
JOB 080385  
F.A.P. NO. BRN-0075 (30)



ARK. HWY. DIST. NO. 8

VICINITY MAP

PROJECT LOCATION

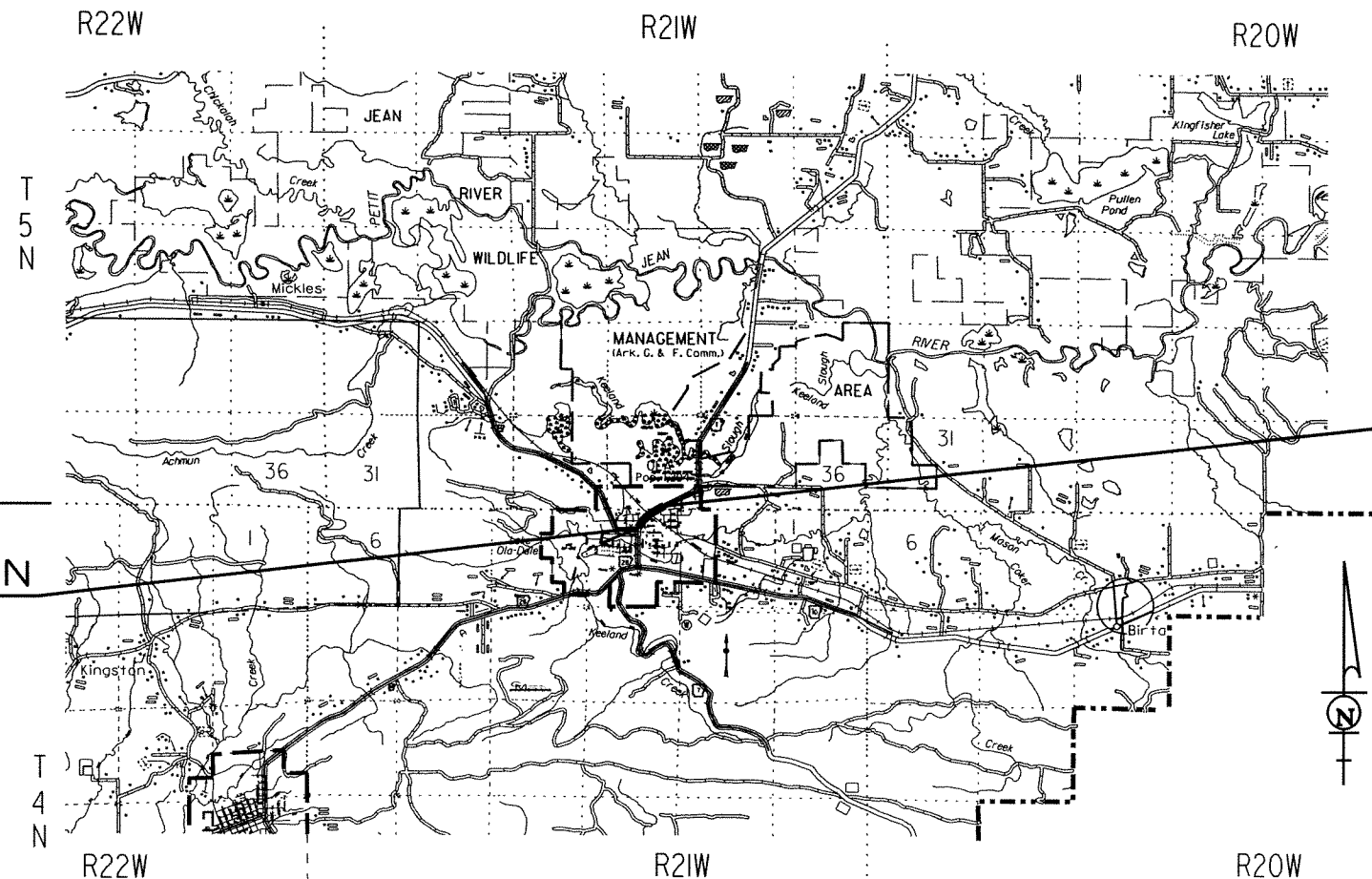


**BRIDGE DATA**

BR. END STA. 108+07.92  
BRIDGE NO. 07227  
40'-0" CLEAR ROADWAY  
236'-2" TOTAL LENGTH  
234'-0" CONT. COMP.  
W-BEAM UNIT (57'-0", 100'-0", 77'-0")  
BR. END STA. 110+44.08

**DESIGN TRAFFIC DATA**

DESIGN YEAR \_\_\_\_\_ 2032  
2012 ADT \_\_\_\_\_ 4500  
2032 ADT \_\_\_\_\_ 5500  
2032 DHV \_\_\_\_\_ 605  
DIRECTIONAL DISTRIBUTION \_\_\_\_\_ 0.60  
TRUCKS \_\_\_\_\_ 13%  
DESIGN SPEED \_\_\_\_\_ 40 MPH



STA. 100+00.00 BEGIN  
JOB 080385  
L.M. 0.095

STA. 121+58.95 END  
JOB 080385

**BEGIN POINT OF PROJECT**  
LATITUDE = N35° 02' 01"  
LONGITUDE = W93° 13' 24"

**MID POINT OF PROJECT**  
LATITUDE = N35° 02' 08"  
LONGITUDE = W93° 13' 15"

**END POINT OF PROJECT**  
LATITUDE = N35° 02' 14"  
LONGITUDE = W93° 13' 02"

GROSS LENGTH OF PROJECT	2158.95 FEET OR	0.409 MILES
NET " " ROADWAY	1922.79 "	0.364 "
NET " " BRIDGES	236.16 "	0.045 "
NET " " PROJECT	2158.52 "	0.409 "

P.E. JOB 080385  
NON-PART.

APPROVED



8/29/12  
DEPUTY DIRECTOR  
AND CHIEF ENGINEER

080385

INDEX OF SHEETS

SHEET NO.	TITLE	BRIDGE NO.	DRAWING NO.	DATE
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2	INDEX OF SHEETS, GOVERNING SPECIFICATIONS, AND GENERAL NOTES			
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6-8	SPECIAL DETAILS			
9-12	TEMPORARY EROSION CONTROL DETAILS			
13-17	MAINTENANCE OF TRAFFIC DETAILS			
18-19	PERMANENT PAVEMENT MARKING DETAILS			
20-23	QUANTITY SHEETS			
24	SCHEDULE OF BRIDGE QUANTITIES	07227	52564	
25	SUMMARY OF QUANTITIES AND REVISIONS			
26-28	SURVEY CONTROL DETAILS			
29-34	PLAN AND PROFILE SHEETS			
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36	LAYOUT OF BRIDGE OVER LITTLE ROCK & WESTERN RR (SHEET 2 OF 2)	07227	52566	
37	LAYOUT OF BRIDGE OVER LITTLE ROCK & WESTERN - EXHIBIT A	07227	52567	
38	DETAILS OF BENT 1	07227	52568	
39	COMMON DETAILS OF BENTS 1 & 4	07227	52569	
40	DETAILS OF BENTS 2 & 3	07227	52570	
41	DETAILS OF BENT 4	07227	52571	
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43	DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 2 OF 7)	07227	52573	
44	DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 3 OF 7)	07227	52574	
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46	DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 5 OF 7)	07227	52576	
47	DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT (SHEET 6 OF 7)	07227	52577	
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50	DETAILS OF CHAIN LINK FENCE	07227	52580	
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52	DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES		1891F	4-10-03
53	DETAILS OF STANDARD B APPROACH GUTTERS		2016B	7-14-10
54	DETAILS OF STANDARD TYPE D BRIDGE NAME PLATES		2387	9-8-11
55	DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS		14991	4-10-03
56	DETAILS OF CONCRETE RIPRAP AND MISCELLANEOUS DETAILS OF STEEL PILING		14995A	4-10-03
57	CONCRETE DITCH PAVING		CDP-1	11-17-10
58	DETAILS OF DRIVEWAYS & ISLANDS		DR-1	11-29-07
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60	FLARED END SECTION		FES-2	10-18-96
61	DETAILS OF DROP INLETS AND SPILLWAY OUTLET		FPC-9N	7-2-98
62	GUARD RAIL DETAILS		GR-8	7-14-10
63	GUARD RAIL DETAILS		GR-9	4-17-08
64	GUARD RAIL DETAILS		GR-9A	4-17-08
65	GUARD RAIL DETAILS		GR-10	7-14-10
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67	GUARD RAIL DETAILS		GRT-1	7-14-10
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70	METAL PIPE CULVERT FILL HEIGHTS & BEDDING		PCM-1	12-15-11
71	PLASTIC PIPE CULVERT (HIGH DENSITY POLYETHYLENE)		PCP-1	12-15-11
72	PLASTIC PIPE CULVERT (PVC F949)		PCP-2	12-15-11
73	PAVEMENT MARKING DETAILS		PM-1	11-17-10
74	DETAILS OF PIPE UNDERDRAIN		PU-1	4-10-03
75	TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC		SE-2	10-18-96
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79	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		TC-3	10-15-09
80	TEMPORARY EROSION CONTROL DEVICES		TEC-1	12-15-11
81	TEMPORARY EROSION CONTROL DEVICES		TEC-2	6-2-94
82	TEMPORARY EROSION CONTROL DEVICES		TEC-3	11-3-94
83	WIRE FENCE TYPE C AND D		WF-4	8-22-02
84	WHEELCHAIR RAMPS NEW CONSTRUCTION AND ALTERATIONS		WR-1	11-10-05
85-100	CROSS SECTIONS			

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

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. 080385	2
								100

2 INDEX OF SHEETS, GOV. SPECS AND GEN. NOTES

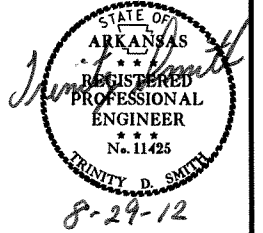
GOVERNING SPECIFICATIONS

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

NUMBER	TITLE
ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
100-2	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
102-1	BIDDING REQUIREMENTS AND CONDITIONS
103-1	DETERMINATION OF DBE PARTICIPATION
105-1	CONSTRUCTION CONTROL MARKINGS
105-2	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
105-3	CONTROL OF WORK
107-1	WORKER VISIBILITY
108-1	LIQUIDATED DAMAGES
110-1	PROTECTION OF WATER QUALITY AND WETLANDS
303-1	AGGREGATE BASE COURSE
404-1	PRODUCTION VERIFICATION OF ASPHALT CONCRETE HOT MIX
404-2	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
409-1	MINERAL AGGREGATES
410-3	DENSITY TESTING FOR ACHM LEVELING COURSES AND BOND BREAKERS
411-1	ASPHALT CONCRETE COLD PLANT MIX
600-1	WATER FOR VEGETATION
603-1	MAINTENANCE OF TRAFFIC
604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
604-2	INSPECTION OF TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
606-1	PIPE CULVERTS FOR SIDE DRAINS
606-2	PIPE CULVERTS
718-2	REFLECTORIZED PAINT PAVEMENT MARKINGS
719-2	THERMOPLASTIC PAVEMENT MARKING MATERIAL
804-1	INSTALLATION OF DOWEL BARS AND TIE BARS
JOB 080385	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 080385	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 080385	CONSTRUCTION, INSURANCE, AND FLAGGING ON RAILROAD RIGHT-OF-WAY (LRWN)
JOB 080385	EXTENSION FOR PIPE CULVERTS
JOB 080385	FLASHING BEACON ASSEMBLY (RELOCATION)
JOB 080385	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 080385	HIGH PERFORMANCE PAVEMENT MARKING
JOB 080385	INTERNET BIDDING
JOB 080385	MAINTENANCE OF TRAFFIC
JOB 080385	NESTING SITES OF MIGRATORY BIRDS
JOB 080385	PARTNERING REQUIREMENTS
JOB 080385	PLASTIC PIPE
JOB 080385	REMOVAL AND DISPOSAL OF GUARDRAIL
JOB 080385	SILICONE JOINT SEALANT
JOB 080385	SOIL STABILIZATION
JOB 080385	STORM WATER POLLUTION PREVENTION PLAN
JOB 080385	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 080385	UTILITY ADJUSTMENTS
JOB 080385	VALUE ENGINEERING
JOB 080385	WARM MIX ASPHALT

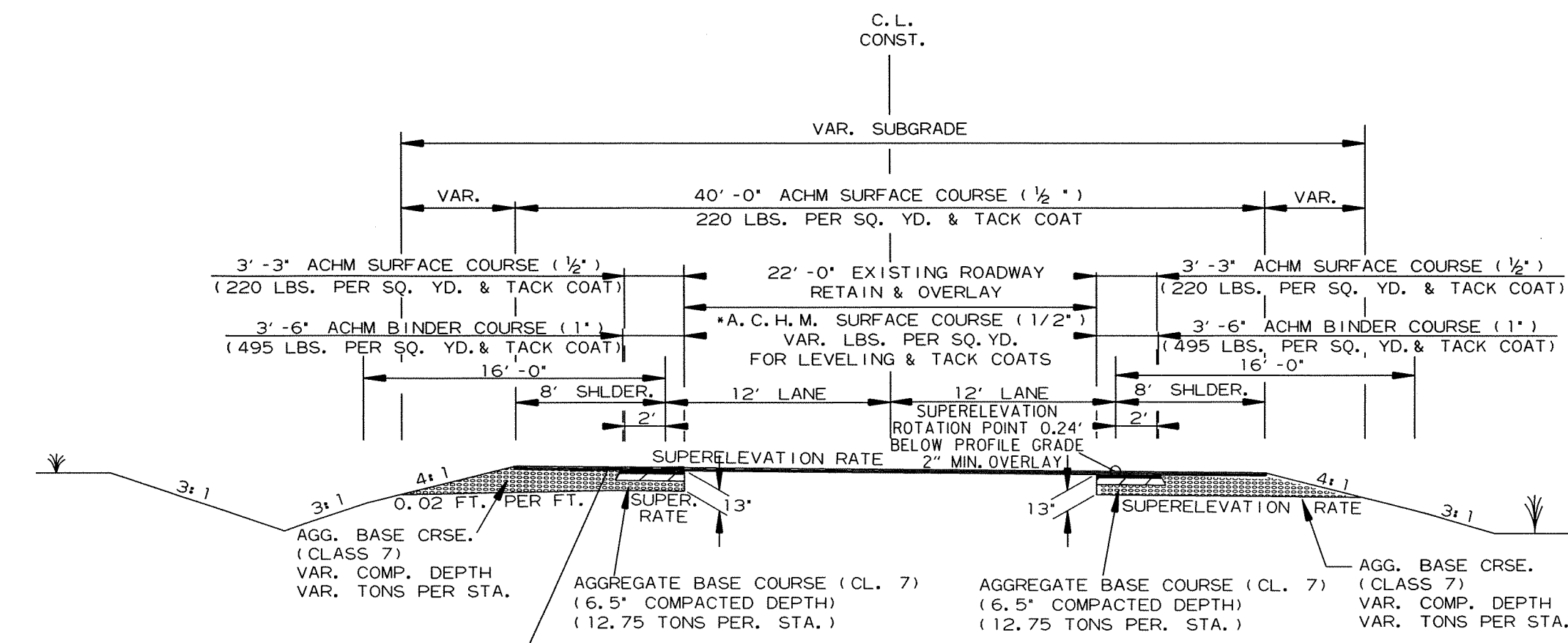
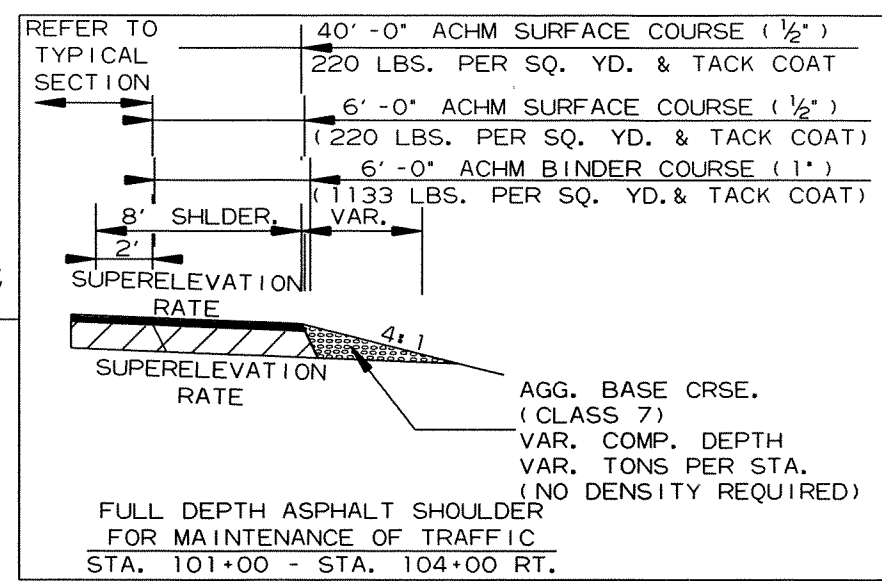
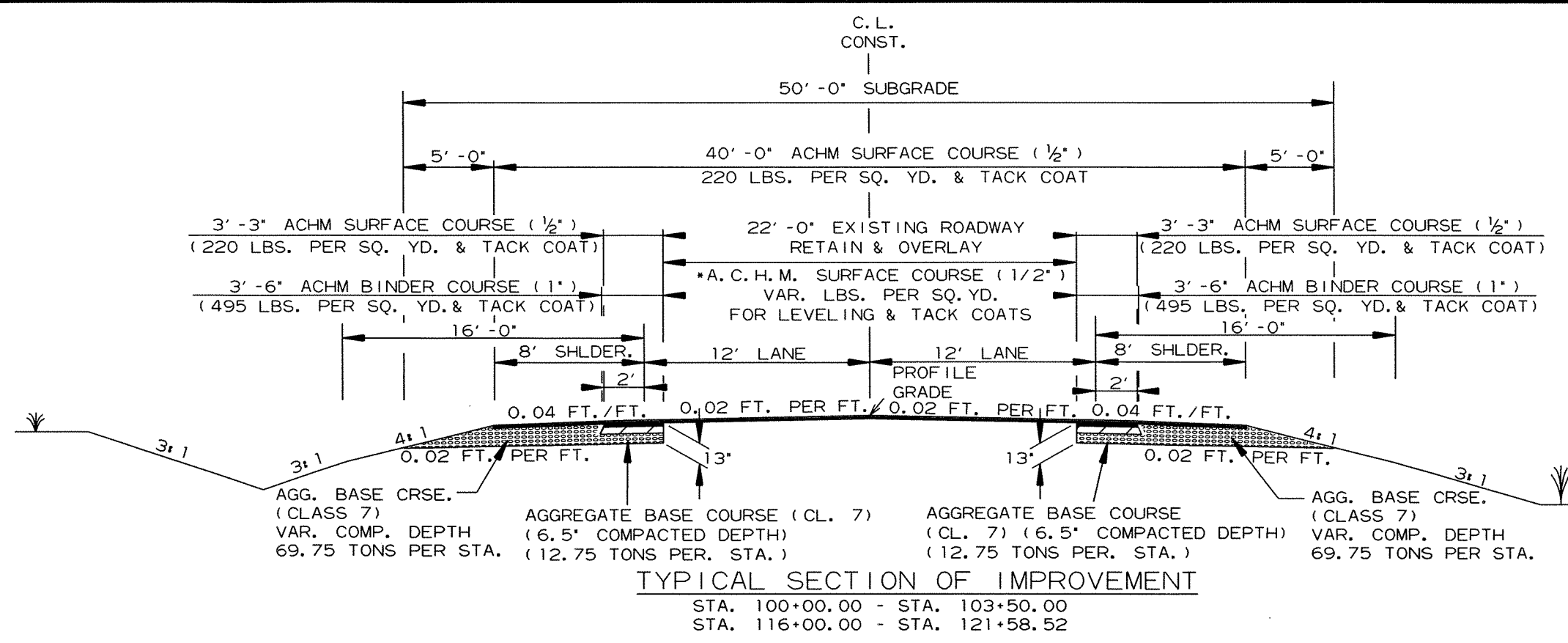
GENERAL NOTES

- 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, EDITION OF 2003.
- ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- 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.



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				6	ARK.			
						JOB NO. 080385	3	100

② TYPICAL SECTIONS OF IMPROVEMENT



TYPICAL SECTION OF IMPROVEMENT  
SUPERELEVATION

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

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

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

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

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

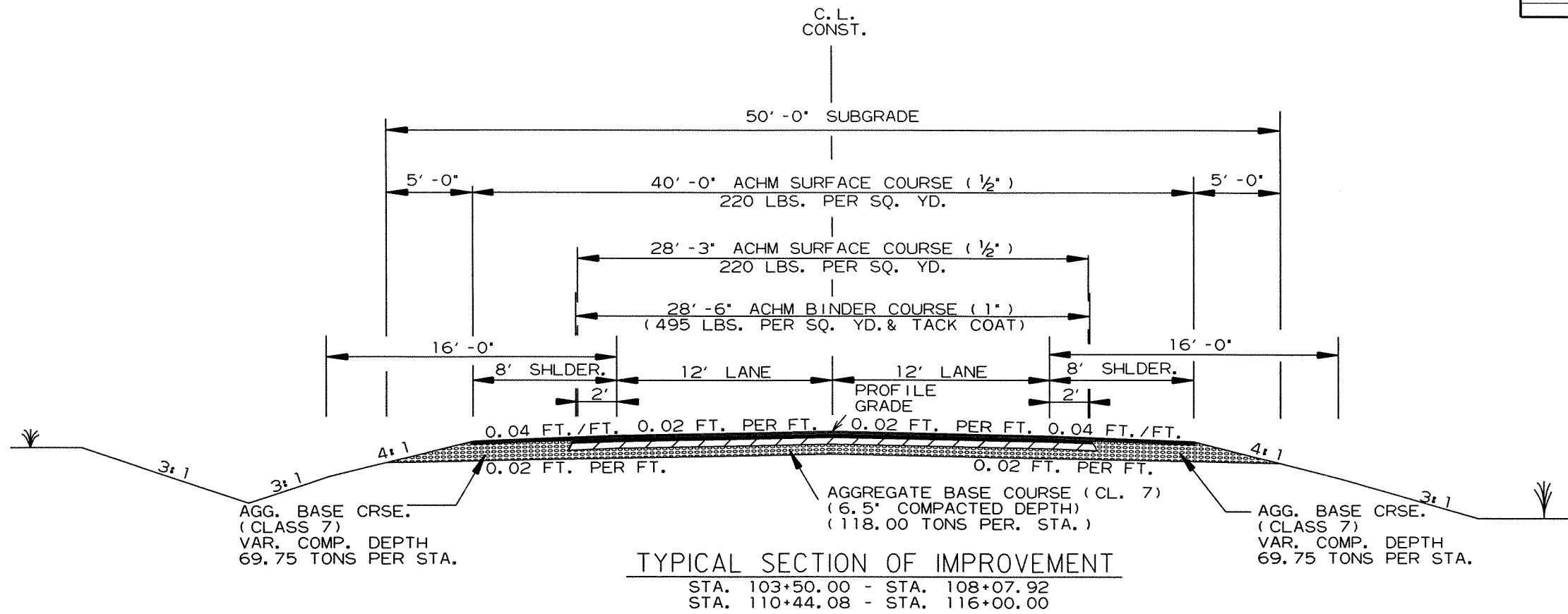
TYPICAL SECTIONS OF IMPROVEMENT

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

11/8/2011  
ZBOROER.CEL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	4	100

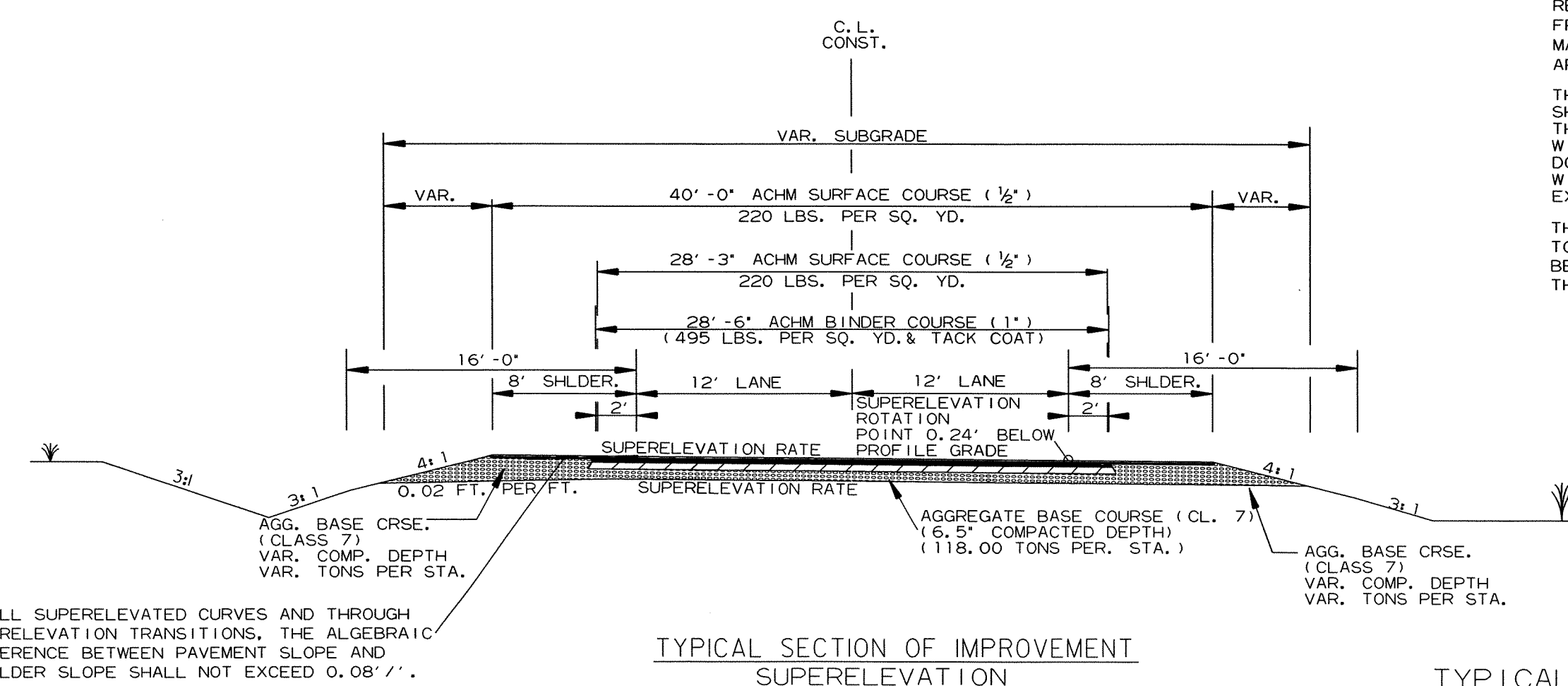
2 TYPICAL SECTIONS OF IMPROVEMENT



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

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

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



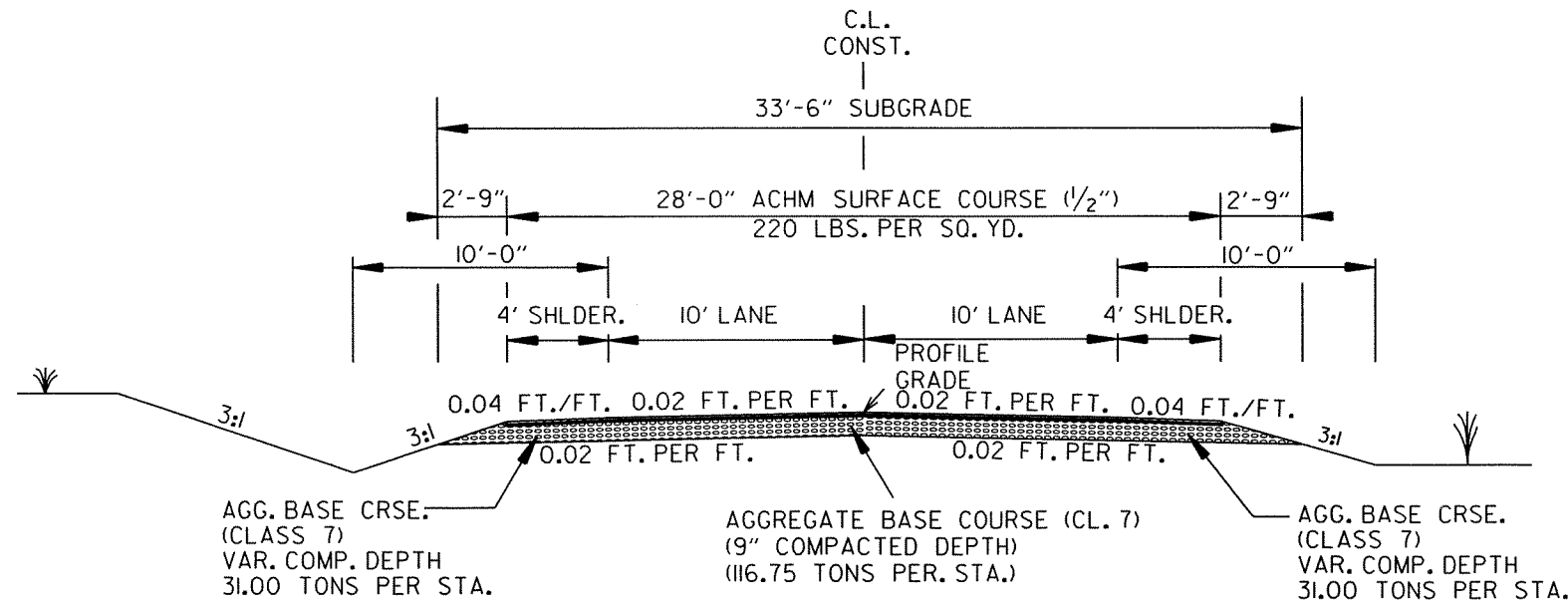
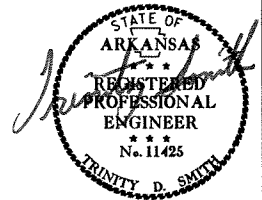
TYPICAL SECTIONS OF IMPROVEMENT

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

8/13/2012  
R080385.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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						JOB NO. 080385	5	100

② TYPICAL SECTIONS OF IMPROVEMENT



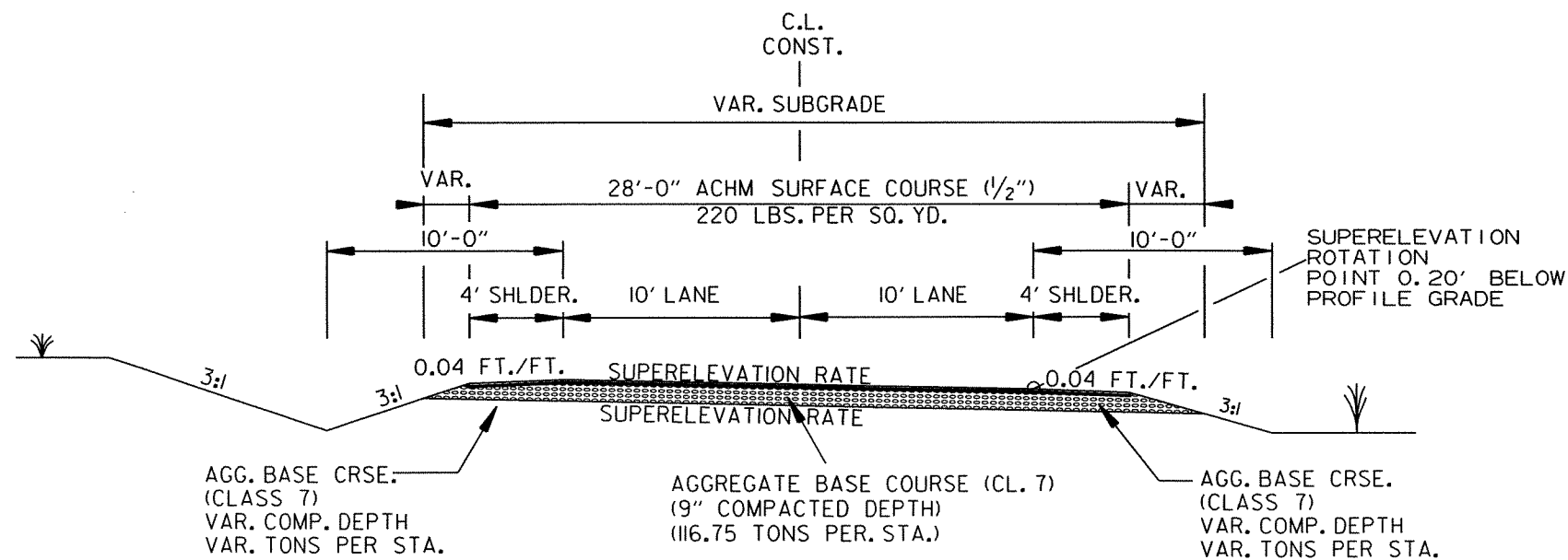
TYPICAL SECTION OF IMPROVEMENT

STA. 200+12.50 - STA. 202+50.00  
 STA. 300+12.00 - STA. 302+50.00  
 STA. 400+12.00 - STA. 403+80.00  
 STA. 500+12.10 - STA. 505+86.85

NOTES:

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

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



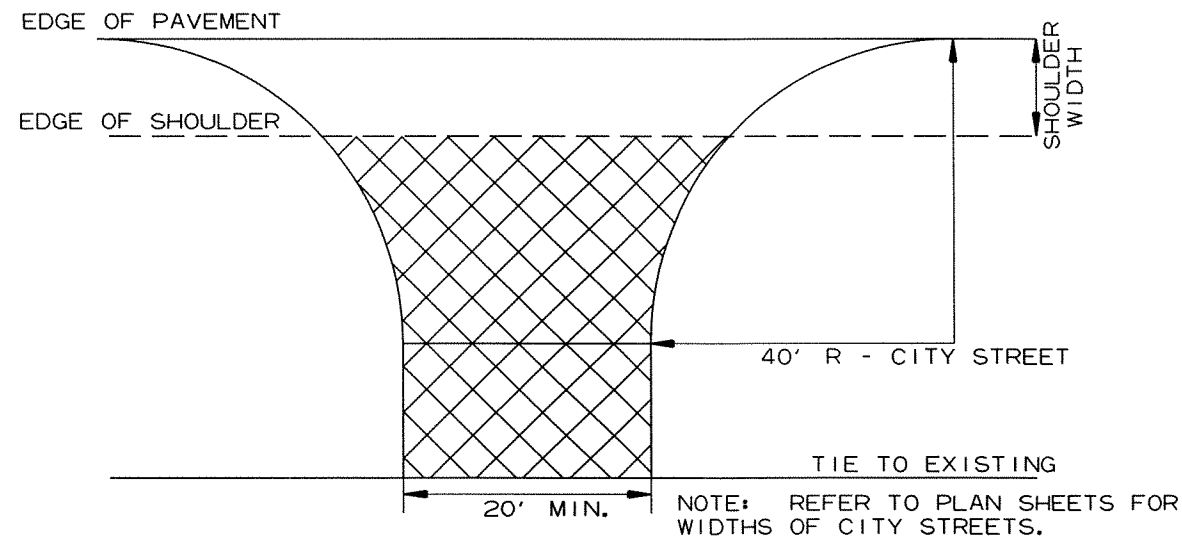
TYPICAL SECTION OF IMPROVEMENT

8/13/2012

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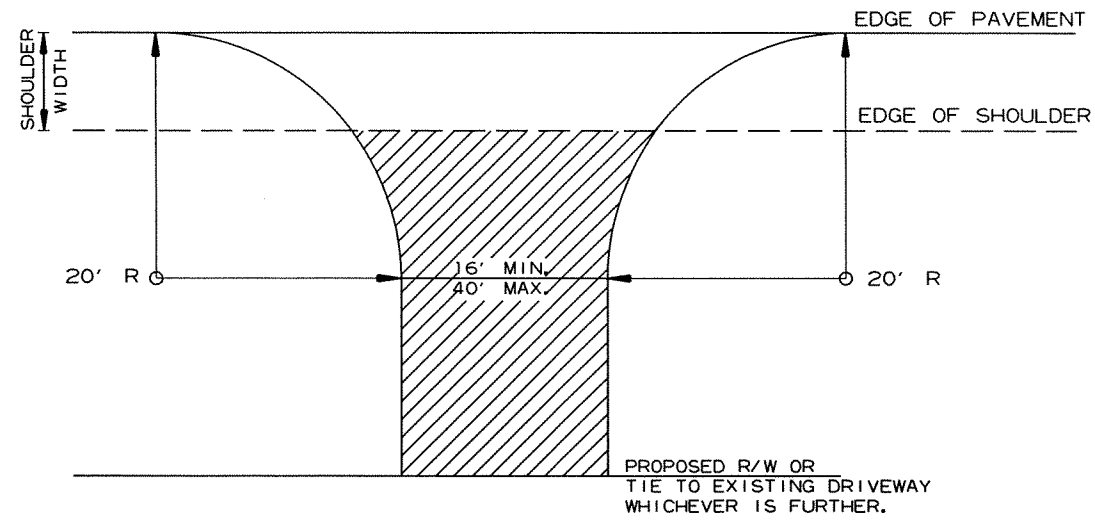
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				6	ARK.			
JOB NO.						080385	6	100

② SPECIAL DETAILS



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

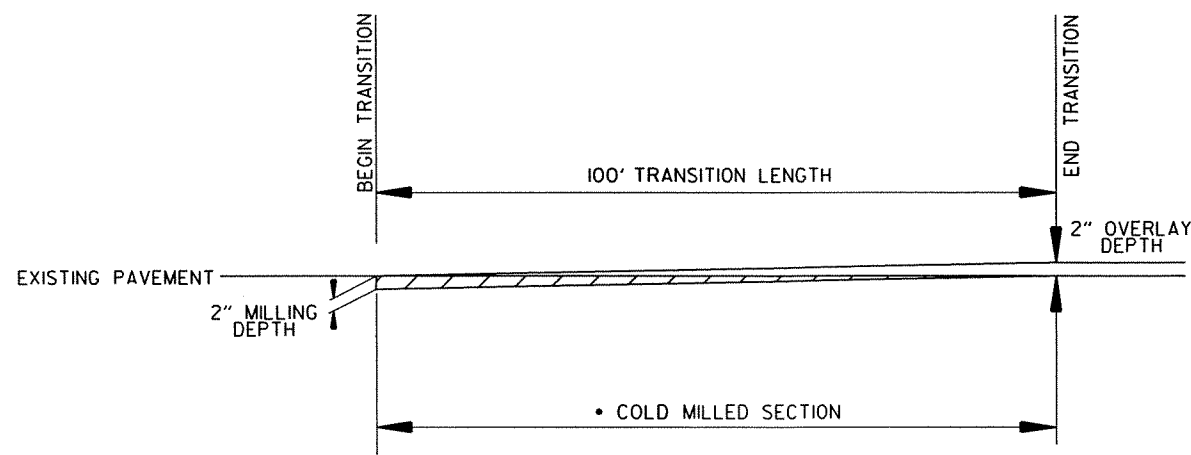
**DETAIL FOR  
CITY STREET TURNOUTS**



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

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

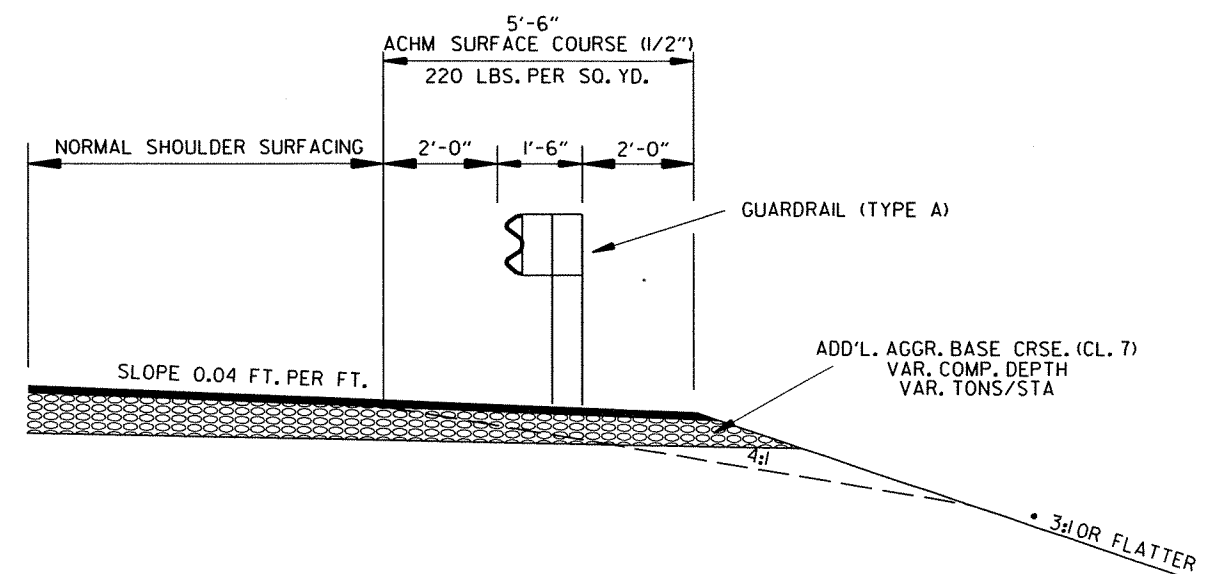
**DETAIL FOR  
DRIVEWAY TURNOUTS  
(ARTERIALS)**



**DETAIL SHOWING TAPER TO EXISTING PAVEMENT**

\* TO BE USED AS DIRECTED BY THE ENGINEER

HWY. 7



**DETAIL OF WIDENING FOR GUARDRAIL**

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

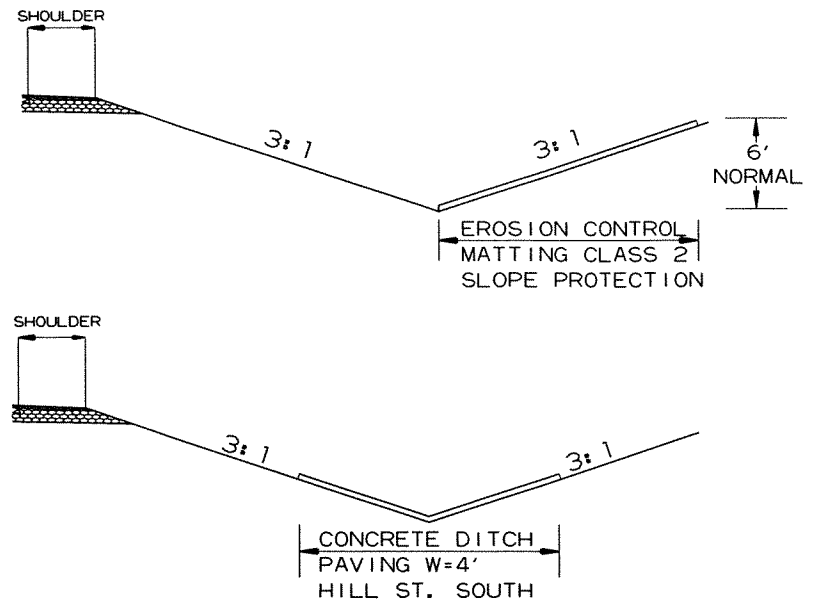
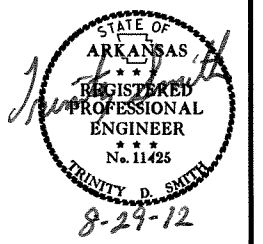
SPECIAL DETAILS

8/13/2012

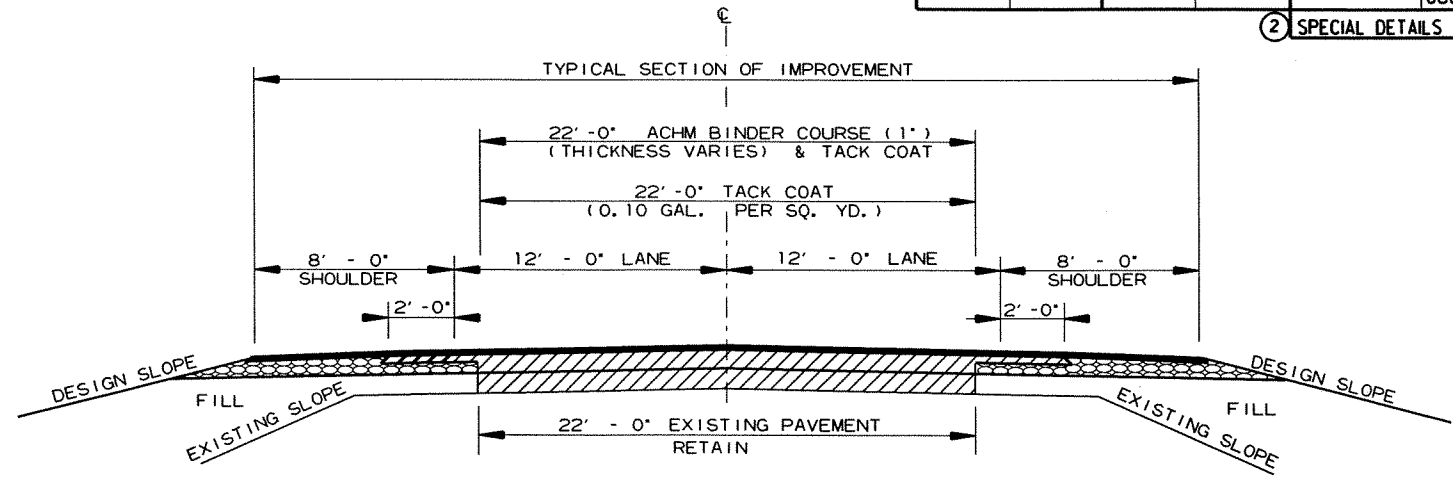
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JOB NO. 080385							7	100

2 SPECIAL DETAILS

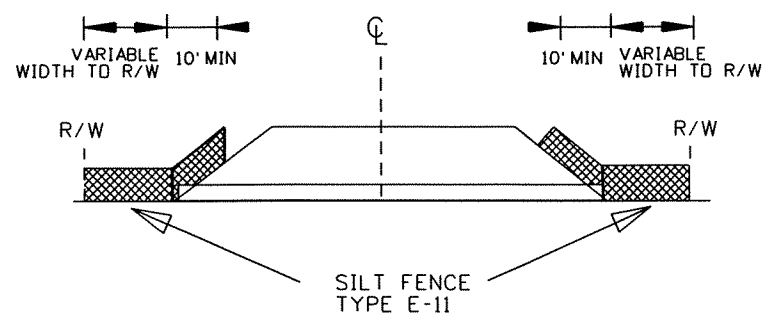
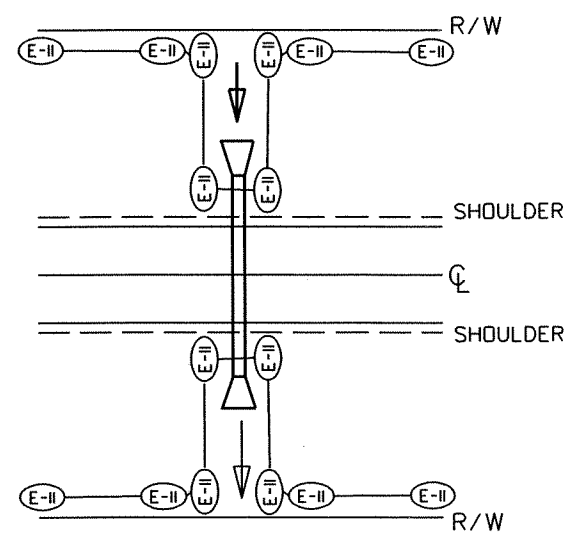


DITCH LINING DETAILS

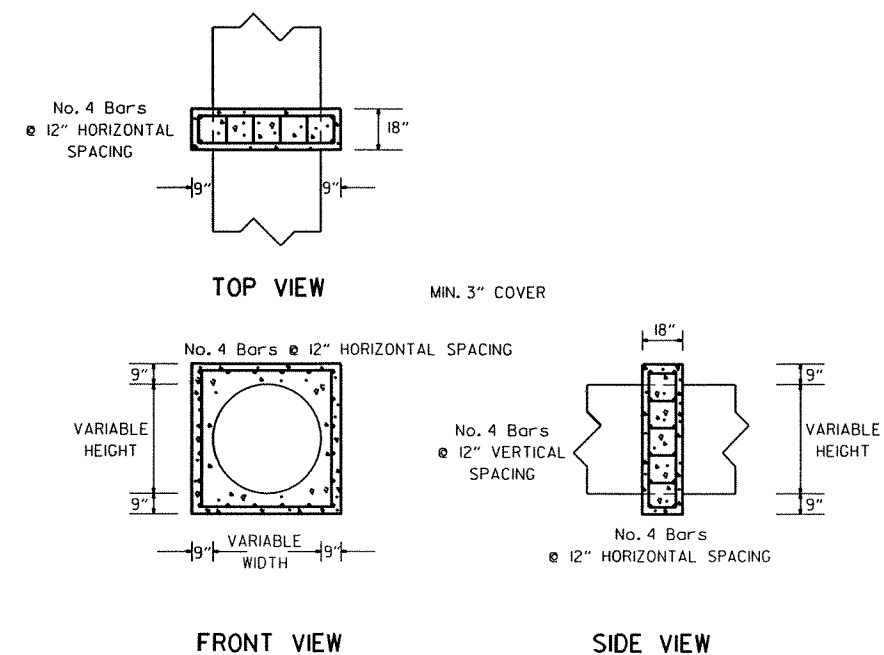


METHOD OF RAISING GRADE

NOTES:  
 (1) THIS DETAIL TO BE USED ONLY WHERE DIRECTED BY THE ENGINEER.  
 (2) QUANTITIES FOR METHOD OF GRADE RAISE USING ASPHALT WERE CALCULATED ON THIS PROJECT AT LOCATIONS WHERE THE DISTANCE BETWEEN THE EXISTING ASPHALT ROADWAY AND THE PROPOSED SUBGRADE WAS ONE FOOT OR LESS.  
 (3) IN LOCATIONS WHERE THE DISTANCE BETWEEN THE PROPOSED SUBGRADE AND THE EXISTING ASPHALT ROADWAY IS MORE THAN ONE FOOT, SCARIFICATION OF THE EXISTING ASPHALT ROADWAY WILL BE REQUIRED AS STATED IN SECTION 210, SUBSECTION 210.09 OF THE STANDARD SPECIFICATIONS, EDITION OF 2003.



DETAIL OF SILT FENCE AT CROSS DRAIN



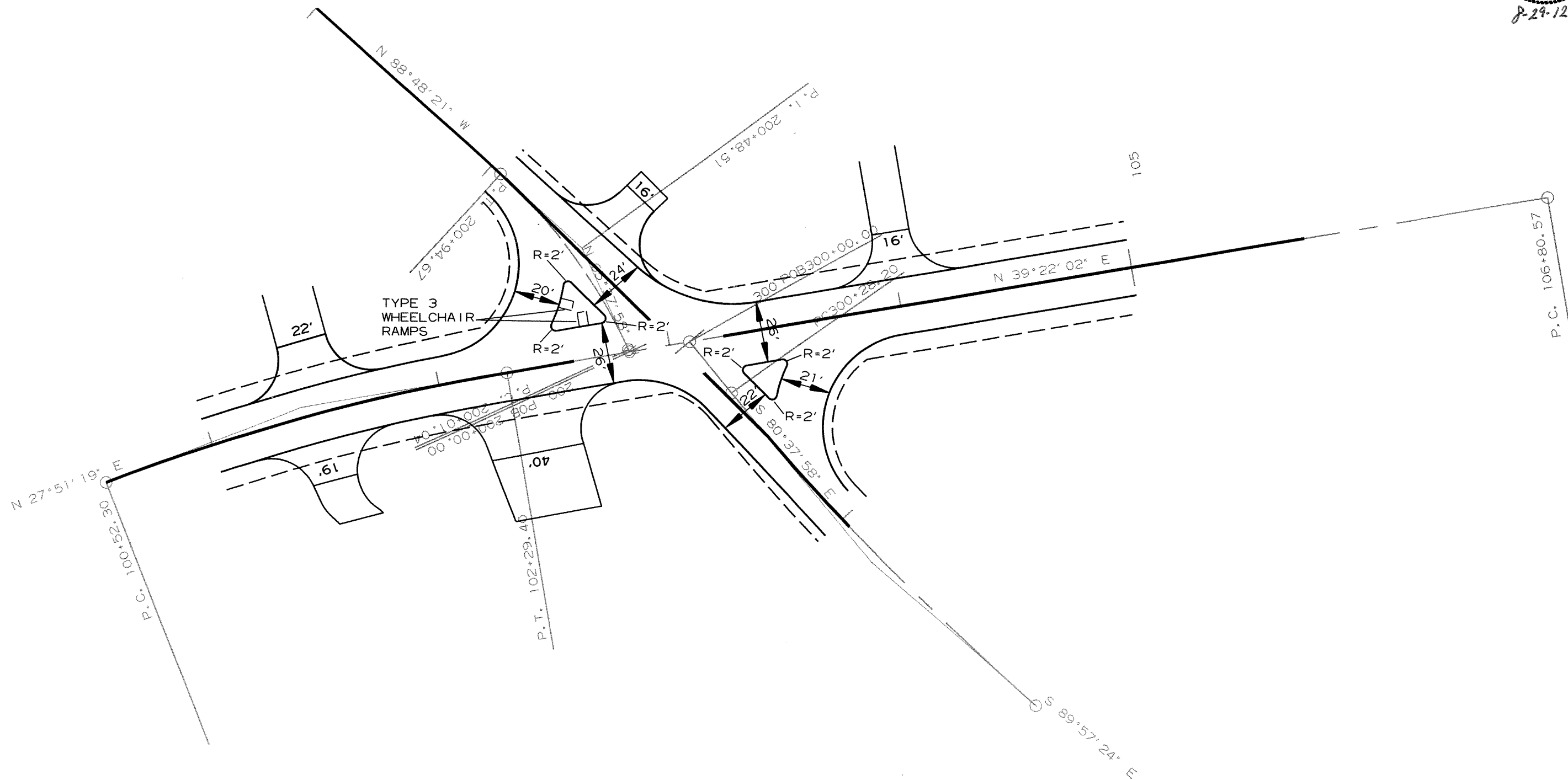
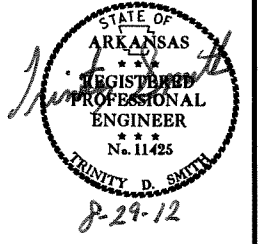
PIPE EXTENSION REINFORCED CONCRETE COLLAR DETAIL

NOTE: PIPE COLLAR TO BE UTILIZED AS APPROVED BY THE ENGINEER.

8/13/2012  
 R080385.DGN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080385		8	100

② SPECIAL DETAILS



SPRING STREET INTERSECTION LAYOUT

SPECIAL DETAILS

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R080385.DCN



**EROSION CONTROL GENERAL NOTES**

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

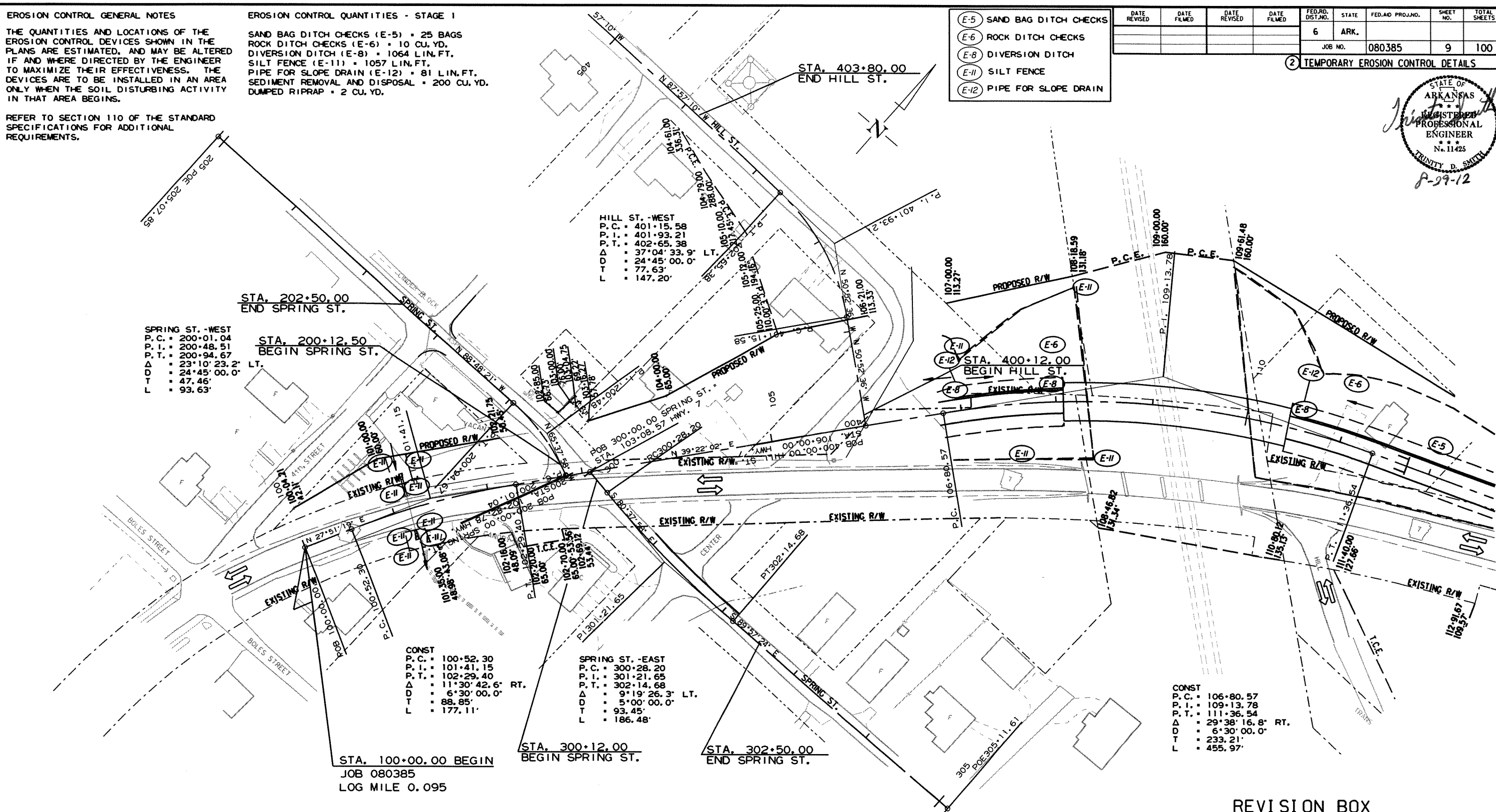
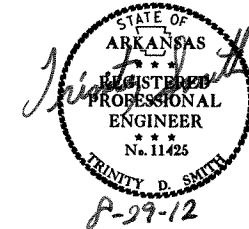
**EROSION CONTROL QUANTITIES - STAGE 1**

SAND BAG DITCH CHECKS (E-5) = 25 BAGS  
 ROCK DITCH CHECKS (E-6) = 10 CU. YD.  
 DIVERSION DITCH (E-8) = 1064 LIN. FT.  
 SILT FENCE (E-11) = 1057 LIN. FT.  
 PIPE FOR SLOPE DRAIN (E-12) = 81 LIN. FT.  
 SEDIMENT REMOVAL AND DISPOSAL = 200 CU. YD.  
 DUMPED RIPRAP = 2 CU. YD.

- (E-5) SAND BAG DITCH CHECKS
- (E-6) ROCK DITCH CHECKS
- (E-8) DIVERSION DITCH
- (E-11) SILT FENCE
- (E-12) PIPE FOR SLOPE DRAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		9	100

**2 TEMPORARY EROSION CONTROL DETAILS**



**SPRING ST. - WEST**  
 P.C. = 200+01.04  
 P.I. = 200+48.51  
 P.T. = 200+94.67  
 Δ = 23°10'23.2" LT.  
 D = 24'45"00.0"  
 T = 47.46'  
 L = 93.63'

**STA. 200+12.50**  
 BEGIN SPRING ST.

**HILL ST. - WEST**  
 P.C. = 401+15.58  
 P.I. = 401+93.21  
 P.T. = 402+65.38  
 Δ = 37°04'33.9" LT.  
 D = 24'45"00.0"  
 T = 77.63'  
 L = 147.20'

**STA. 403+80.00**  
 END HILL ST.

**CONST**  
 P.C. = 100+52.30  
 P.I. = 101+41.15  
 P.T. = 102+29.40  
 Δ = 11°30'42.6" RT.  
 D = 6'30"00.0"  
 T = 88.85'  
 L = 177.11'

**STA. 100+00.00**  
 BEGIN  
 JOB 080385  
 LOG MILE 0.095

**SPRING ST. - EAST**  
 P.C. = 300+28.20  
 P.I. = 301+21.65  
 P.T. = 302+14.68  
 Δ = 9°19'26.3" LT.  
 D = 5'00"00.0"  
 T = 93.45'  
 L = 186.48'

**STA. 300+12.00**  
 BEGIN SPRING ST.

**STA. 302+50.00**  
 END SPRING ST.

**CONST**  
 P.C. = 106+80.57  
 P.I. = 109+13.78  
 P.T. = 111+36.54  
 Δ = 29°38'16.8" RT.  
 D = 6'30"00.0"  
 T = 233.21'  
 L = 455.97'

SAND BAG DITCH CHECK (E-5)	SIDE	BAG
STA. 112+00	LT.	25

ROCK DITCH CHECK (E-6)	SIDE	CU. YD.
STA. 108+00	LT.	5
STA. 111+00	LT.	5

SILT FENCE (E-11)	LIN. FT.
STA. 107+00 - STA. 108+25	407
STA. 110+00 - STA. 113+00	650

STATION	STATION	SIDE	DIVERSION DITCH LIN. FT.	PIPE FOR SLOPE DRAIN LIN. FT.	DUMPED RIPRAP CU. YD.
107+00	108+08	LT.	108		
107+00		LT.		37	1
110+44	120+00	LT.	956		

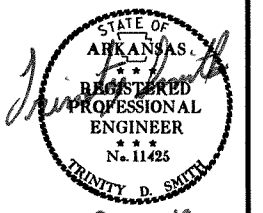
REVISION BOX	
DATE	REVISION

**TEMPORARY EROSION CONTROL DETAILS STAGE 1**

- (E-5) SAND BAG DITCH CHECKS
- (E-8) DIVERSION DITCH
- (E-11) SILT FENCE
- (E-12) PIPE FOR SLOPE DRAIN

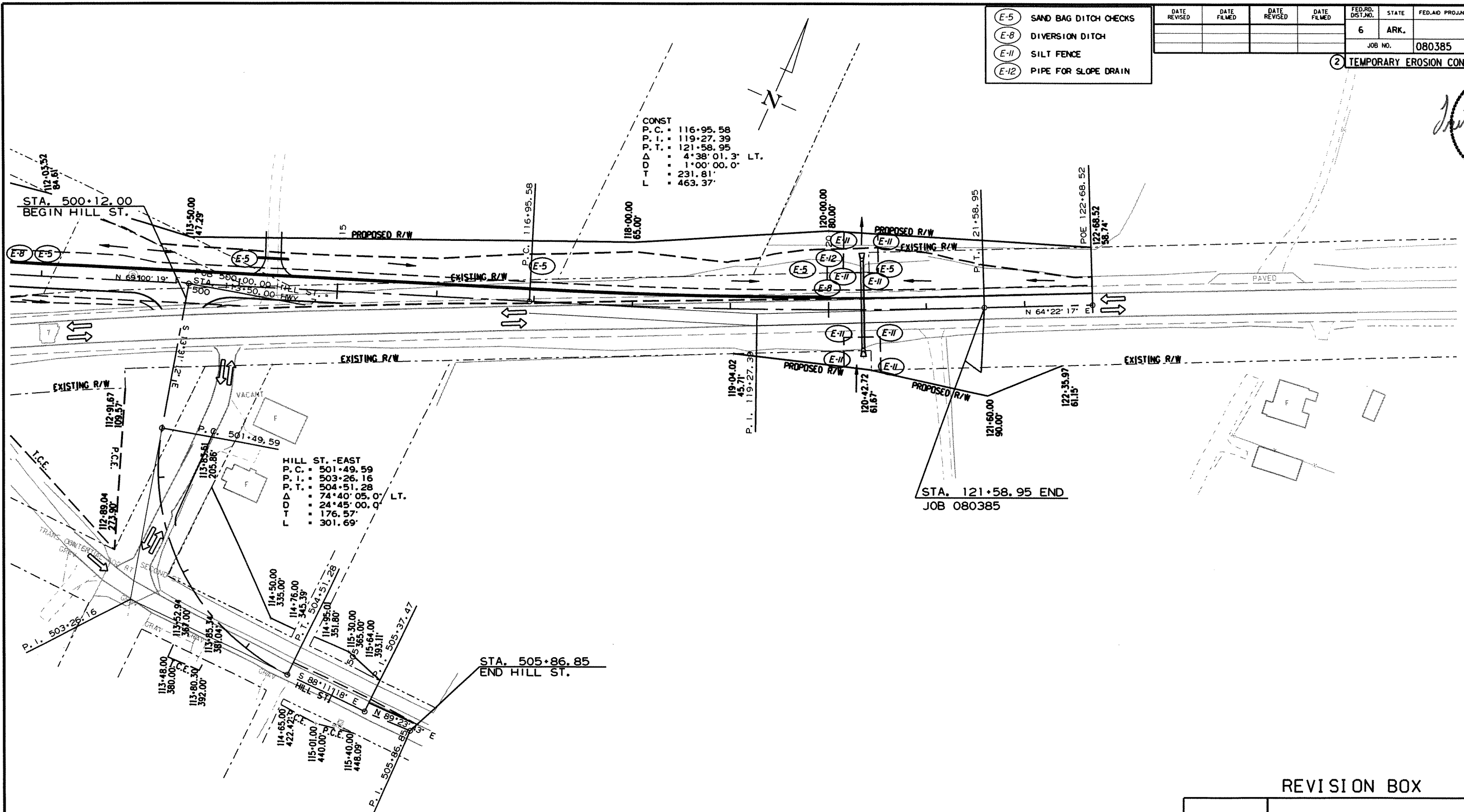
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	10	100

2 TEMPORARY EROSION CONTROL DETAILS



CONST  
 P.C. 116+95.58  
 P.I. 119+27.39  
 P.T. 121+58.95  
 $\Delta$  4°38'01.3" LT.  
 D 1+00'00.0"  
 T 231.81'  
 L 463.37'

HILL ST. - EAST  
 P.C. 501+49.59  
 P.I. 503+26.16  
 P.T. 504+51.28  
 $\Delta$  74°40'05.0" LT.  
 D 24+45'00.0"  
 T 176.57'  
 L 301.69'



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SAND BAG DITCH CHECK (E-5)	SIDE	BAG
STA. 114+00	LT.	25
STA. 117+00	LT.	25
STA. 119+75	LT.	25
STA. 120+75	LT.	25

SILT FENCE (E-11)	SIDE	LIN. FT.
STA. 120+00 - STA. 120+53	RT.	130
STA. 120+00 - STA. 120+53	LT.	150

STATION	STATION	SIDE	DIVERSION DITCH LIN. FT.	PIPE FOR SLOPE DRAIN LIN. FT.	DUMPED RIPRAP CU. YD.
120+00		LT.		44	1

TEMPORARY EROSION CONTROL DETAILS  
 STAGE 1

**EROSION CONTROL GENERAL NOTES**

THE QUANTITIES AND LOCATIONS OF THE EROSION CONTROL DEVICES SHOWN IN THE PLANS ARE ESTIMATED, AND MAY BE ALTERED IF AND WHERE DIRECTED BY THE ENGINEER TO MAXIMIZE THEIR EFFECTIVENESS. THE DEVICES ARE TO BE INSTALLED IN AN AREA ONLY WHEN THE SOIL DISTURBING ACTIVITY IN THAT AREA BEGINS.

REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

**EROSION CONTROL QUANTITIES - STAGE 2**

SAND BAG DITCH CHECKS (E-5) = 325 BAGS  
 SILT FENCE (E-11) = 1917 LIN. FT.  
 EROSION CONTROL MATTING (CLASS 2) = 1000 SQ. YD.  
 SEDIMENT REMOVAL AND DISPOSAL = 100 CU. YD.

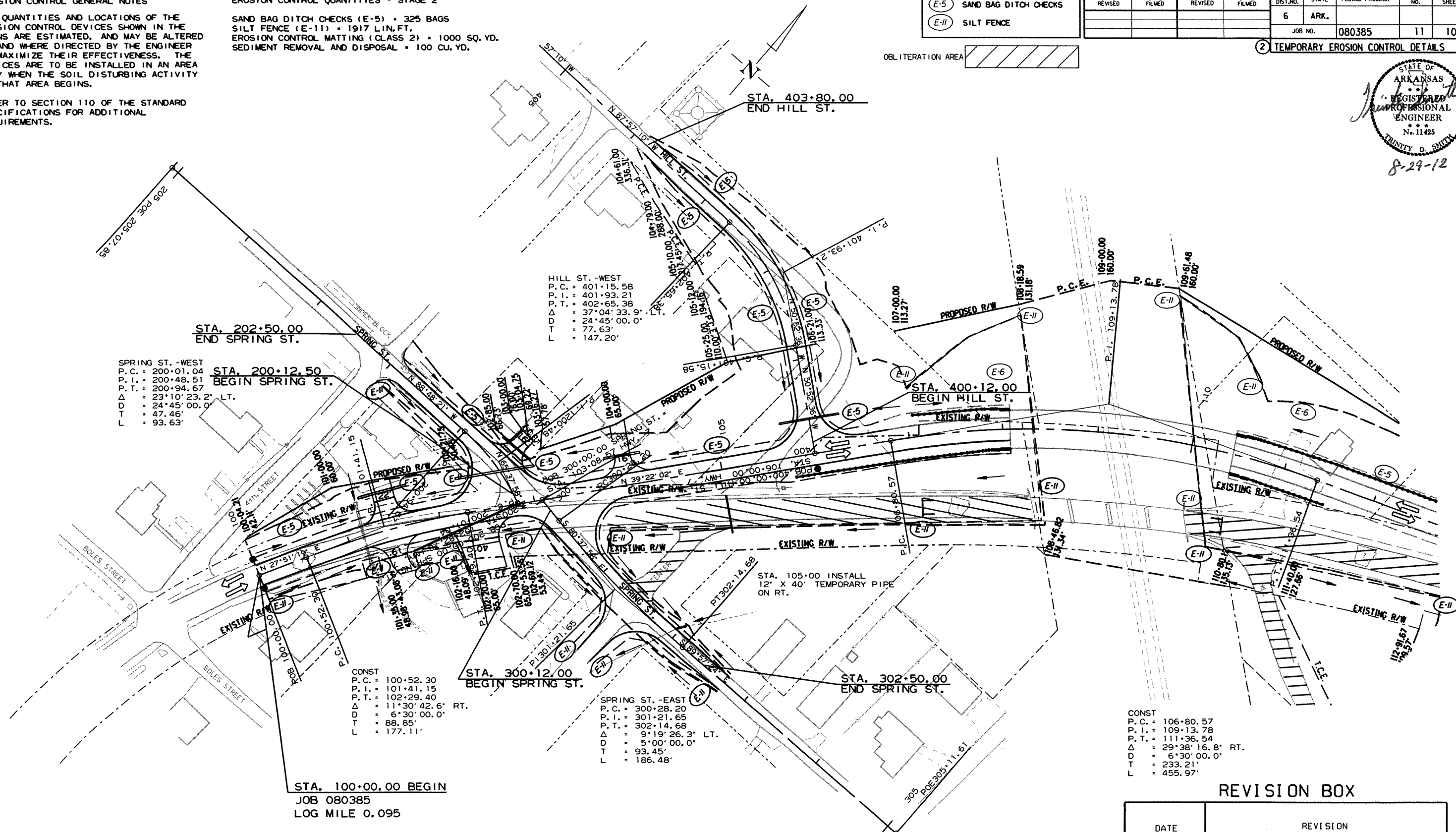
- (E-5) SAND BAG DITCH CHECKS
- (E-11) SILT FENCE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		11	100

2 TEMPORARY EROSION CONTROL DETAILS



8-29-12



STA. 202+50.00  
END SPRING ST.

SPRING ST. - WEST  
 P. C. = 200+01.04  
 P. I. = 200+48.51  
 P. T. = 200+94.67  
 Δ = 23°10'23.2" LT.  
 D = 24°45'00.0"  
 T = 47.46'  
 L = 93.63'

HILL ST. - WEST  
 P. C. = 401+15.58  
 P. I. = 401+93.21  
 P. T. = 402+65.38  
 Δ = 37°04'33.9" LT.  
 D = 24°45'00.0"  
 T = 77.63'  
 L = 147.20'

STA. 200+12.50  
BEGIN SPRING ST.

CONST  
 P. C. = 100+52.30  
 P. I. = 101+41.15  
 P. T. = 102+29.40  
 Δ = 11°30'42.6" RT.  
 D = 6°30'00.0"  
 T = 88.85'  
 L = 177.11'

SPRING ST. - EAST  
 P. C. = 300+28.20  
 P. I. = 301+21.65  
 P. T. = 302+14.68  
 Δ = 9°19'26.3" LT.  
 D = 5°00'00.0"  
 T = 93.45'  
 L = 186.48'

CONST  
 P. C. = 106+80.57  
 P. I. = 109+13.78  
 P. T. = 111+36.54  
 Δ = 29°38'16.8" RT.  
 D = 6°30'00.0"  
 T = 233.21'  
 L = 455.97'

STA. 100+00.00 BEGIN  
 JOB 080385  
 LOG MILE 0.095

STA. 105+00 INSTALL  
 12" X 40' TEMPORARY PIPE  
 ON RT.

SAND BAG DITCH CHECK (E-5)	SIDE	BAG
STA. 100+50	LT.	25
STA. 101+50	LT.	25
STA. 103+25	LT.	25
STA. 105+00	LT.	25
STA. 106+50	LT.	25
STA. 201+00	RT.	25
STA. 401+50	LT.	25
STA. 401+50	RT.	25
STA. 403+00	LT.	25
STA. 403+00	RT.	25

SILT FENCE (E-11)	SIDE	LIN. FT.
STA. 100+00 - STA. 101+00	RT.	100
STA. 101+00 - STA. 101+41	LT.	103
STA. 101+41 - STA. 103+00	RT.	159
STA. 103+65 - STA. 107+00	RT.	335
STA. 110+00 - STA. 113+00	RT.	300
STA. 200+50 - STA. 202+00	LT.	150
STA. 300+28 - STA. 301+22	RT.	170
STA. 301+70 - STA. 302+60	RT.	150

EROSION CONTROL MATTING (CLASS 2)	SIDE	SQ. YD.
STA. 400+37 - STA. 403+00	RT.	500
STA. 400+37 - STA. 403+00	LT.	500

DATE	REVISION

TEMPORARY EROSION CONTROL DETAILS  
 STAGE 2

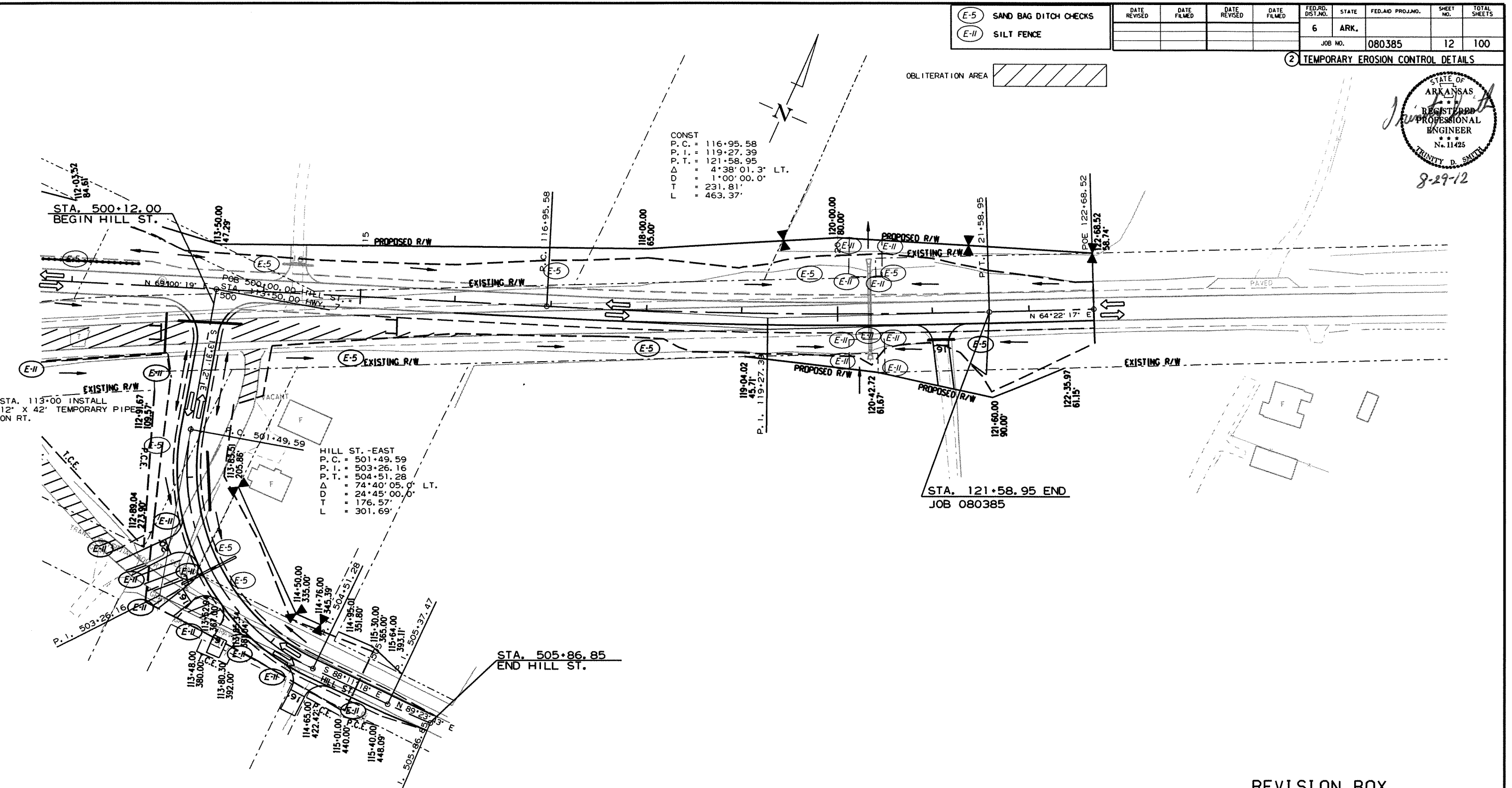
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(E-5) SAND BAG DITCH CHECKS  
 (E-11) SILT FENCE

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	12	100

② TEMPORARY EROSION CONTROL DETAILS



STA. 113+00 INSTALL  
 12" X 42" TEMPORARY PIPE  
 ON RT.

HILL ST. - EAST  
 P.C. = 501+49.59  
 P.T. = 503+26.16  
 P.T. = 504+51.28  
 Δ = 74°40'09" LT.  
 Δ = 24°45'00" LT.  
 L = 176.57'  
 L = 301.69'

CONST  
 P.C. = 116+95.58  
 P.T. = 119+27.39  
 P.T. = 121+58.95  
 Δ = 4°38'01.3" LT.  
 Δ = 1°00'00.0"  
 L = 231.81'  
 L = 463.37'

STA. 121+58.95 END  
 JOB 080385

STA. 505+86.85  
 END HILL ST.

SAND BAG DITCH CHECK (E-5)	SIDE	BAG	SILT FENCE (E-11)	SIDE	LIN. FT.
STA. 115+00	RT.	25	STA. 502+32 - STA. 505+00	RT.	450
STA. 118+00	RT.	25			
STA. 121+50	RT.	25			

REVISION BOX

DATE	REVISION

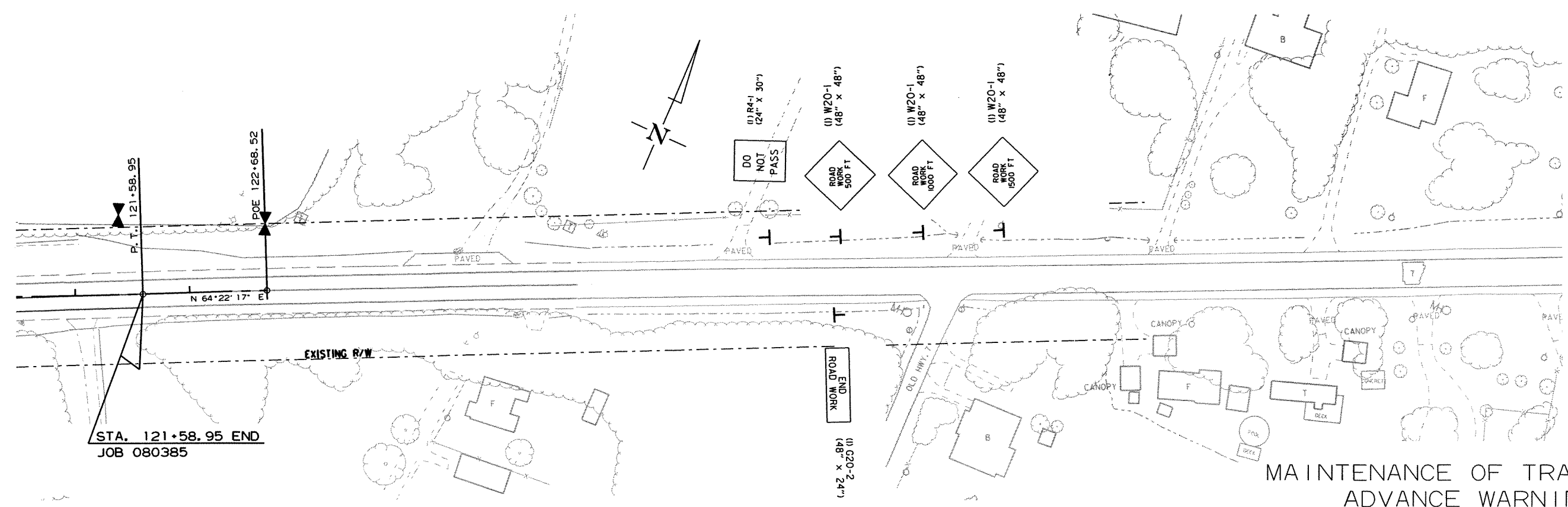
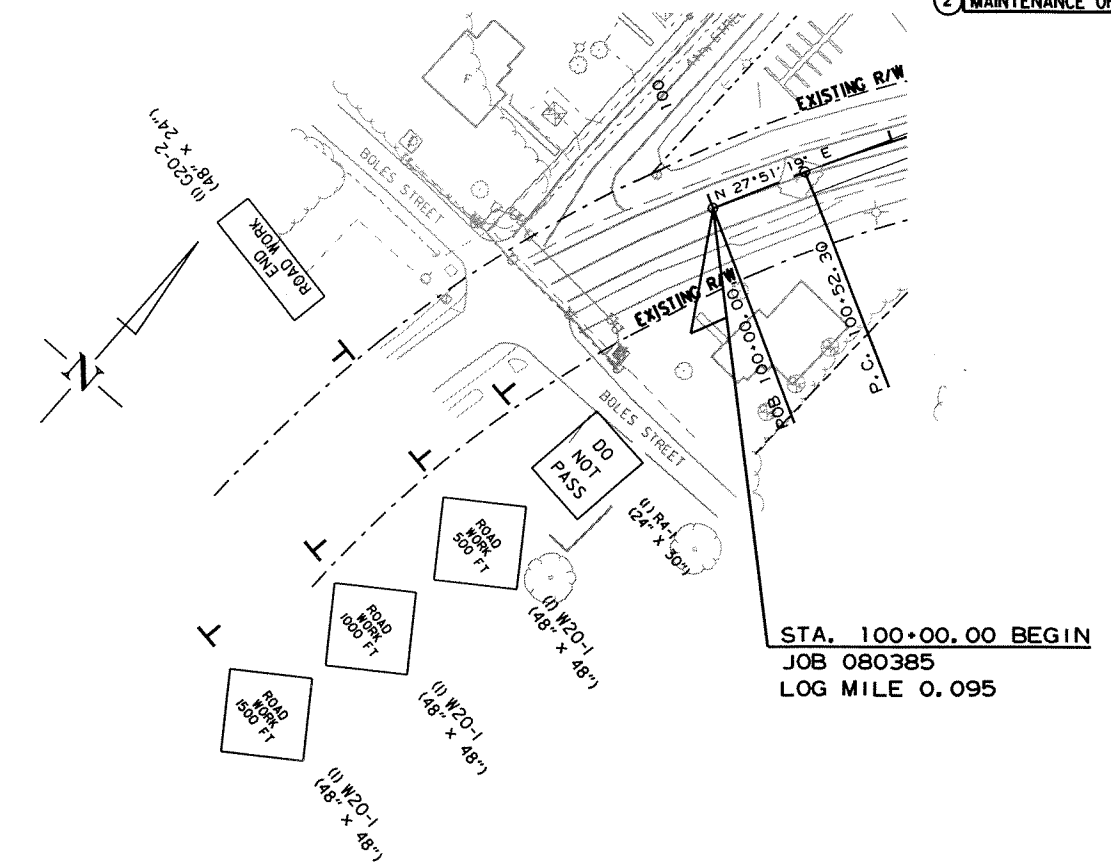
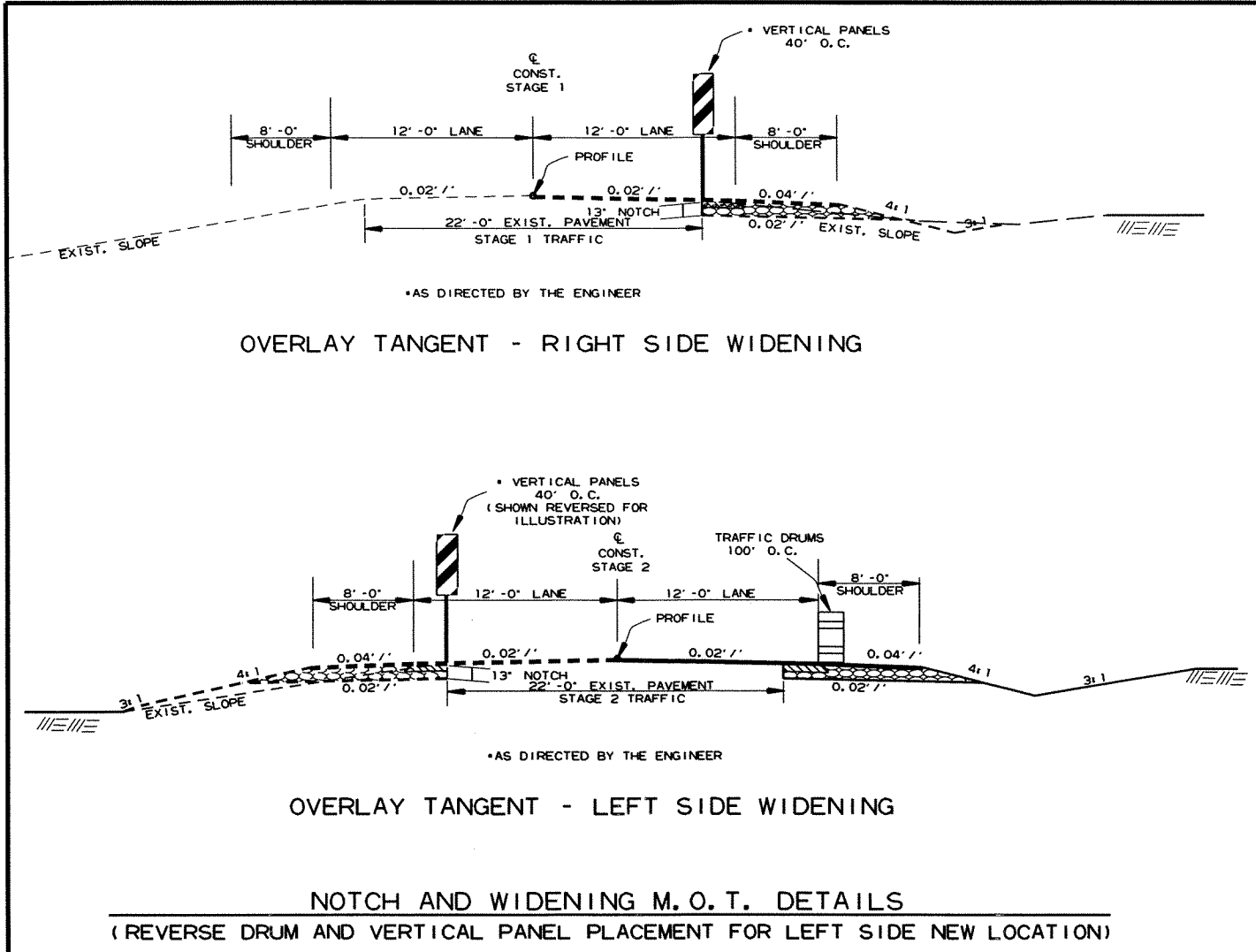
TEMPORARY EROSION CONTROL DETAILS  
 STAGE 2

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		13	100
				JOB NO.	080385			

2 MAINTENANCE OF TRAFFIC DETAILS



MAINTENANCE OF TRAFFIC DETAILS  
ADVANCE WARNING SIGNS

8/13/2012  
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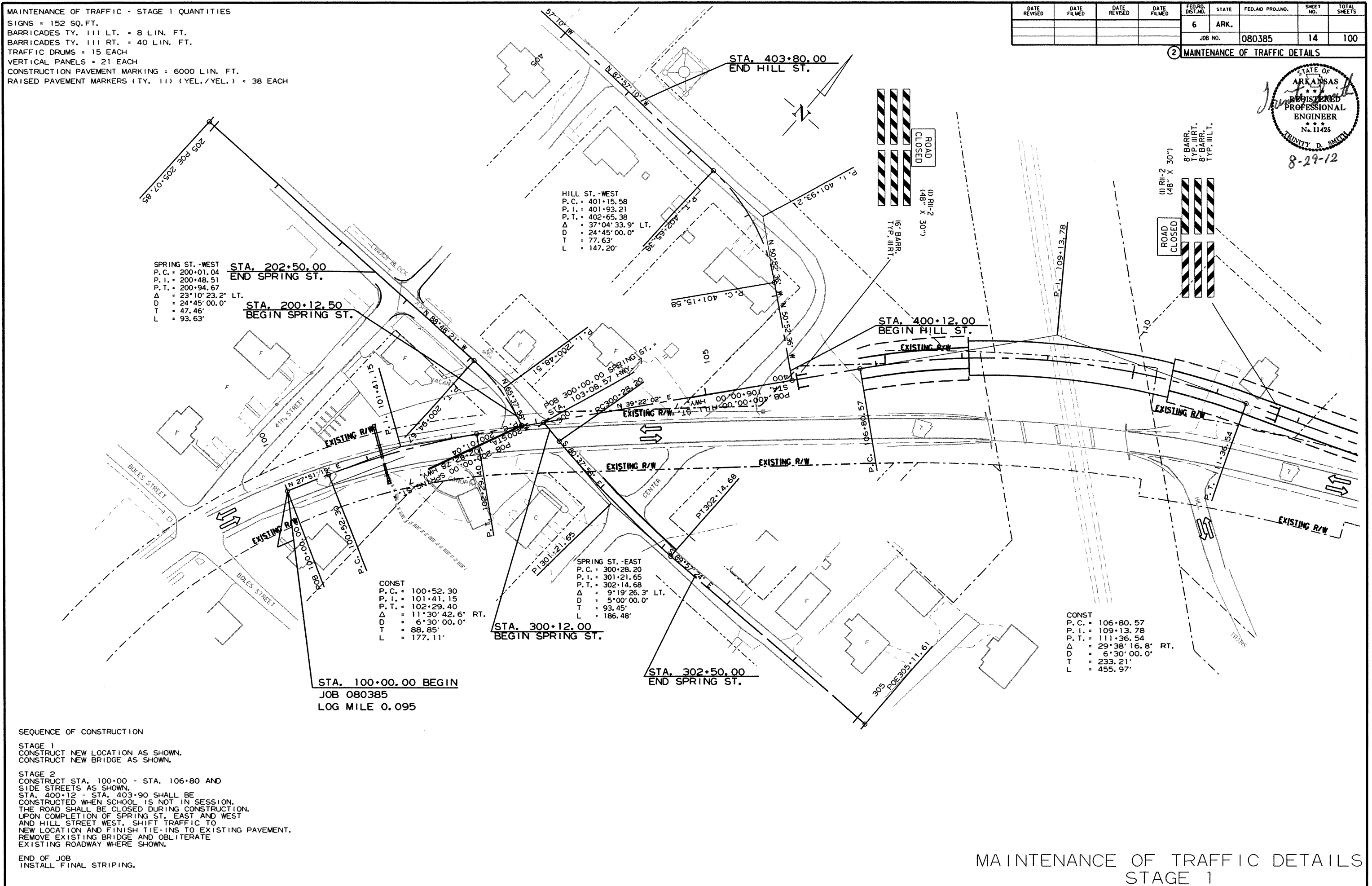
MAINTENANCE OF TRAFFIC - STAGE 1 QUANTITIES  
 SIGNS = 152 SQ. FT.  
 BARRICADES TY. III LT. = 8 LIN. FT.  
 BARRICADES TY. III RT. = 40 LIN. FT.  
 TRAFFIC DRUMS = 15 EACH  
 VERTICAL PANELS = 21 EACH  
 CONSTRUCTION PAVEMENT MARKING = 6000 LIN. FT.  
 RAISED PAVEMENT MARKERS (TY. II) (YEL./YEL.) = 38 EACH

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
				6	ARK.				
							JOB NO. 080385	14	100

2 MAINTENANCE OF TRAFFIC DETAILS



8-29-12



HILL ST. - WEST  
 P.C. = 401+15.58  
 P.I. = 401+93.21  
 P.T. = 402+65.38  
 Δ = 37°04'33.9" LT.  
 D = 24'45" 00.0"  
 T = 77.63'  
 L = 147.20'

SPRING ST. - WEST  
 P.C. = 200+01.04  
 P.I. = 200+48.51  
 P.T. = 200+94.67  
 Δ = 23°10'23.2" LT.  
 D = 24'45" 00.0"  
 T = 47.46'  
 L = 93.63'

STA. 202+50.00  
 END SPRING ST.  
 STA. 200+12.50  
 BEGIN SPRING ST.

SPRING ST. - EAST  
 P.C. = 300+28.20  
 P.I. = 301+21.65  
 P.T. = 302+14.68  
 Δ = 9°19'26.3" LT.  
 D = 5'00" 00.0"  
 T = 93.45'  
 L = 186.48'

CONST  
 P.C. = 100+52.30  
 P.I. = 101+41.15  
 P.T. = 102+29.40  
 Δ = 11°30'42.6" RT.  
 D = 6'30" 00.0"  
 T = 88.85'  
 L = 177.11'

STA. 300+12.00  
 BEGIN SPRING ST.

CONST  
 P.C. = 106+80.57  
 P.I. = 109+13.78  
 P.T. = 111+36.54  
 Δ = 29°38'16.8" RT.  
 D = 6'30" 00.0"  
 T = 233.21'  
 L = 455.97'

STA. 100+00.00 BEGIN  
 JOB 080385  
 LOG MILE 0.095

STA. 302+50.00  
 END SPRING ST.

SEQUENCE OF CONSTRUCTION

STAGE 1  
 CONSTRUCT NEW LOCATION AS SHOWN.  
 CONSTRUCT NEW BRIDGE AS SHOWN.

STAGE 2  
 CONSTRUCT STA. 100+00 - STA. 106+80 AND  
 SIDE STREETS AS SHOWN.  
 STA. 400+12 - STA. 403+90 SHALL BE  
 CONSTRUCTED WHEN SCHOOL IS NOT IN SESSION.  
 THE ROAD SHALL BE CLOSED DURING CONSTRUCTION.  
 UPON COMPLETION OF SPRING ST. EAST AND WEST  
 AND HILL STREET WEST, SHIFT TRAFFIC TO  
 NEW LOCATION AND FINISH TIE-INS TO EXISTING PAVEMENT.  
 REMOVE EXISTING BRIDGE AND OBLITERATE  
 EXISTING ROADWAY WHERE SHOWN.

END OF JOB  
 INSTALL FINAL STRIPING.

MAINTENANCE OF TRAFFIC DETAILS  
 STAGE 1

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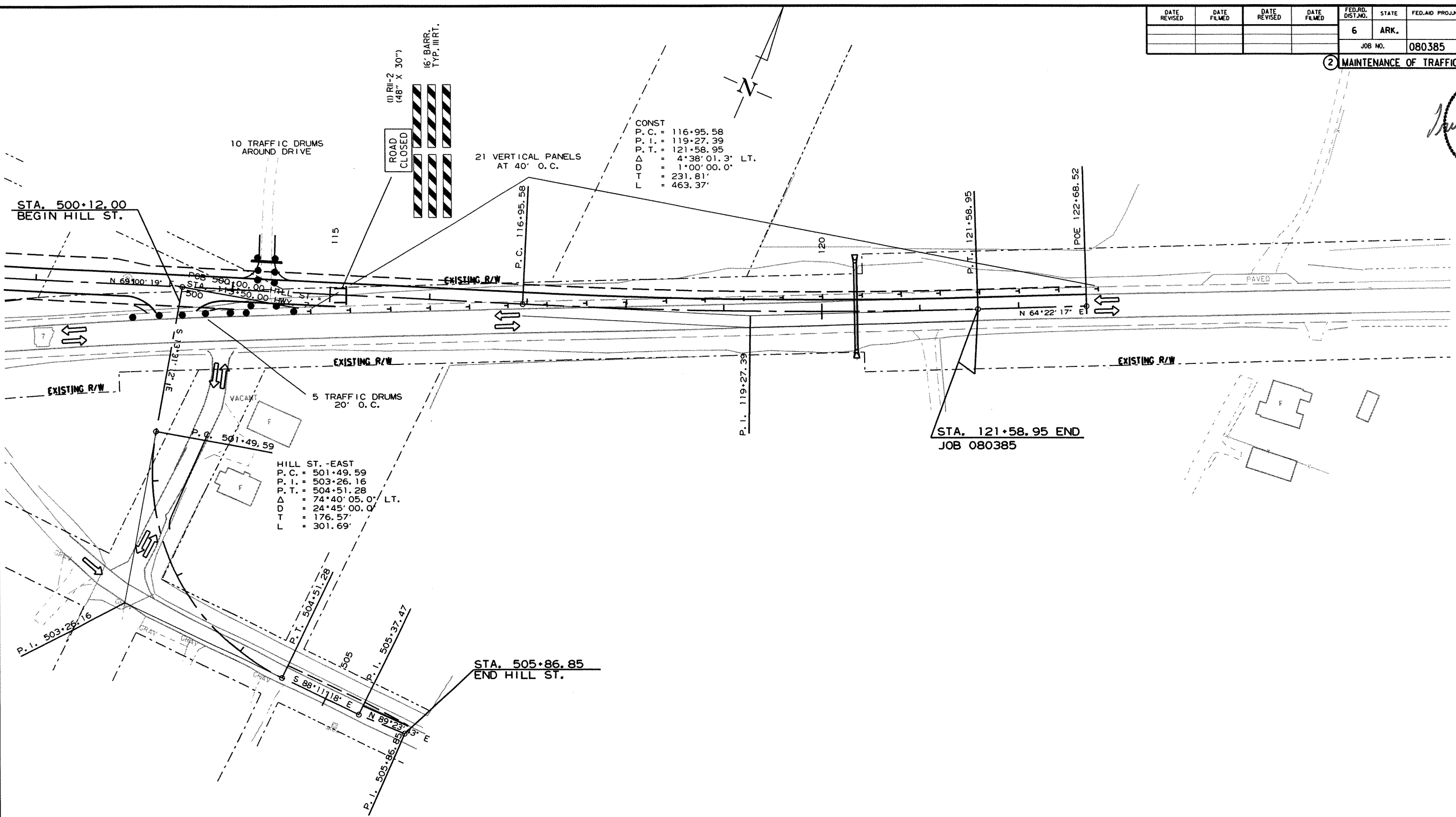
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				6	ARK.			
JOB NO. 080385							15	100

2 MAINTENANCE OF TRAFFIC DETAILS



CONST  
P.C. = 116+95.58  
P.I. = 119+27.39  
P.T. = 121+58.95  
Δ = 4°38'01.3" LT.  
D = 1°00'00.0"  
T = 231.81'  
L = 463.37'



SEQUENCE OF CONSTRUCTION

STAGE 1  
CONSTRUCT NEW LOCATION AS SHOWN.  
CONSTRUCT NEW BRIDGE AS SHOWN.

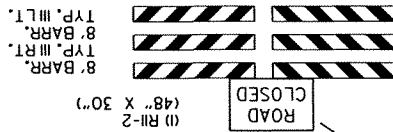
STAGE 2  
CONSTRUCT STA. 100+00 - STA. 106+80 AND  
SIDE STREETS AS SHOWN.  
STA. 400+12 - STA. 403+90 SHALL BE  
CONSTRUCTED WHEN SCHOOL IS NOT IN SESSION.  
THE ROAD SHALL BE CLOSED DURING CONSTRUCTION.  
UPON COMPLETION OF SPRING ST. EAST AND WEST  
AND HILL STREET WEST, SHIFT TRAFFIC TO  
NEW LOCATION AND FINISH TIE-INS TO EXISTING PAVEMENT.  
REMOVE EXISTING BRIDGE AND OBLITERATE  
EXISTING ROADWAY WHERE SHOWN.

END OF JOB  
INSTALL FINAL STRIPING.

MAINTENANCE OF TRAFFIC DETAILS  
STAGE 1

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MAINTENANCE OF TRAFFIC - STAGE 2 QUANTITIES  
 SIGNS = 234 SQ. FT.  
 BARRICADES TY. III LT. = 40 LIN. FT.  
 BARRICADES TY. III RT. = 88 LIN. FT.  
 TRAFFIC DRUMS = 142 EACH  
 CONSTRUCTION PAVEMENT MARKING = 2800 LIN. FT.  
 REMOVAL OF CONSTRUCTION PAVEMENT MARKING = 2800 LIN. FT.  
 RAISED PAVEMENT MARKERS (TY. III) (YEL./YEL.) = 35 EACH  
 12" TEMPORARY CULVERT = 82 LIN. FT.

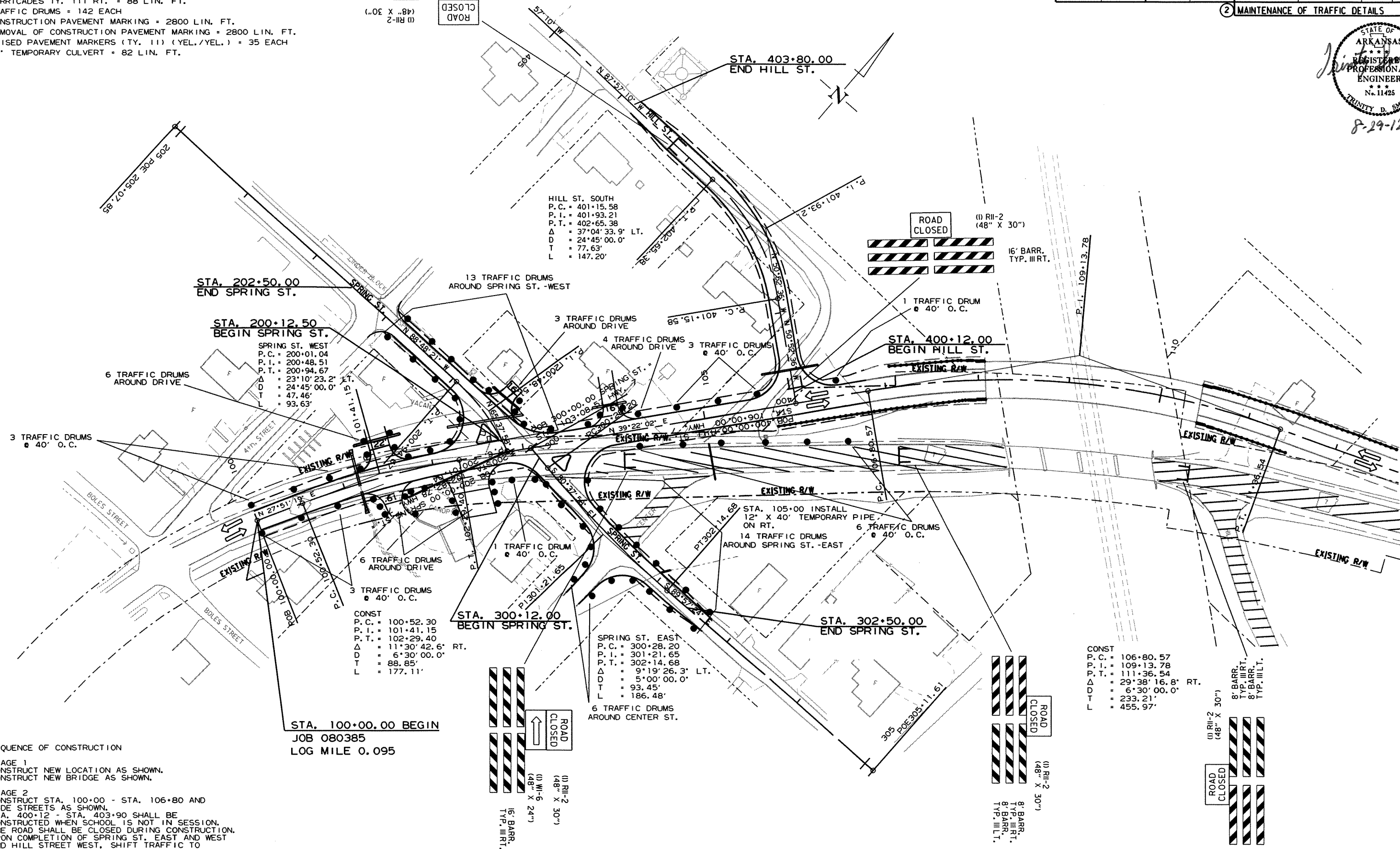


OBLITERATION AREA

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080385	16
						② MAINTENANCE OF TRAFFIC DETAILS		



8-29-12



HILL ST. SOUTH  
 P.C. = 401+15.58  
 P.I. = 401+93.21  
 P.T. = 402+65.38  
 $\Delta = 37^{\circ}04'33.9''$  LT.  
 $D = 24^{\circ}45'00.0''$   
 $L = 77.63'$   
 $L = 147.20'$

STA. 202+50.00  
 END SPRING ST.

STA. 200+12.50  
 BEGIN SPRING ST.

SPRING ST. WEST  
 P.C. = 200+01.04  
 P.I. = 200+48.51  
 P.T. = 200+94.67  
 $\Delta = 23^{\circ}10'23.2''$  LT.  
 $D = 24^{\circ}45'00.0''$   
 $L = 47.46'$   
 $L = 93.63'$

STA. 400+12.00  
 BEGIN HILL ST.

STA. 300+12.00  
 BEGIN SPRING ST.

CONST  
 P.C. = 100+52.30  
 P.I. = 101+41.15  
 P.T. = 102+29.40  
 $\Delta = 11^{\circ}30'42.6''$  RT.  
 $D = 6^{\circ}30'00.0''$   
 $L = 88.85'$   
 $L = 177.11'$

SPRING ST. EAST  
 P.C. = 300+28.20  
 P.I. = 301+21.65  
 P.T. = 302+14.68  
 $\Delta = 9^{\circ}19'26.3''$  LT.  
 $D = 5^{\circ}00'00.0''$   
 $T = 93.45'$   
 $L = 186.48'$

STA. 302+50.00  
 END SPRING ST.

CONST  
 P.C. = 106+80.57  
 P.I. = 109+13.78  
 P.T. = 111+36.54  
 $\Delta = 29^{\circ}38'16.8''$  RT.  
 $D = 6^{\circ}30'00.0''$   
 $T = 233.21'$   
 $L = 455.97'$

SEQUENCE OF CONSTRUCTION

STAGE 1  
 CONSTRUCT NEW LOCATION AS SHOWN.  
 CONSTRUCT NEW BRIDGE AS SHOWN.

STAGE 2  
 CONSTRUCT STA. 100+00 - STA. 106+80 AND  
 SIDE STREETS AS SHOWN.  
 STA. 400+12 - STA. 403+90 SHALL BE  
 CONSTRUCTED WHEN SCHOOL IS NOT IN SESSION.  
 THE ROAD SHALL BE CLOSED DURING CONSTRUCTION.  
 UPON COMPLETION OF SPRING ST. EAST AND WEST  
 AND HILL STREET WEST, SHIFT TRAFFIC TO  
 NEW LOCATION AND FINISH TIE-INS TO EXISTING PAVEMENT.  
 REMOVE EXISTING BRIDGE AND OBLITERATE  
 EXISTING ROADWAY WHERE SHOWN.

END OF JOB  
 INSTALL FINAL STRIPING.

STA. 100+00.00 BEGIN  
 JOB 080385  
 LOG MILE 0.095

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OBLITERATION AREA

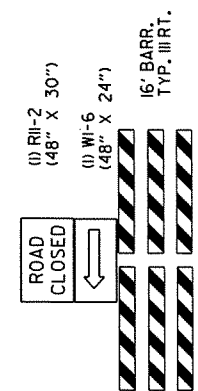
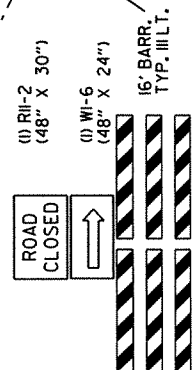
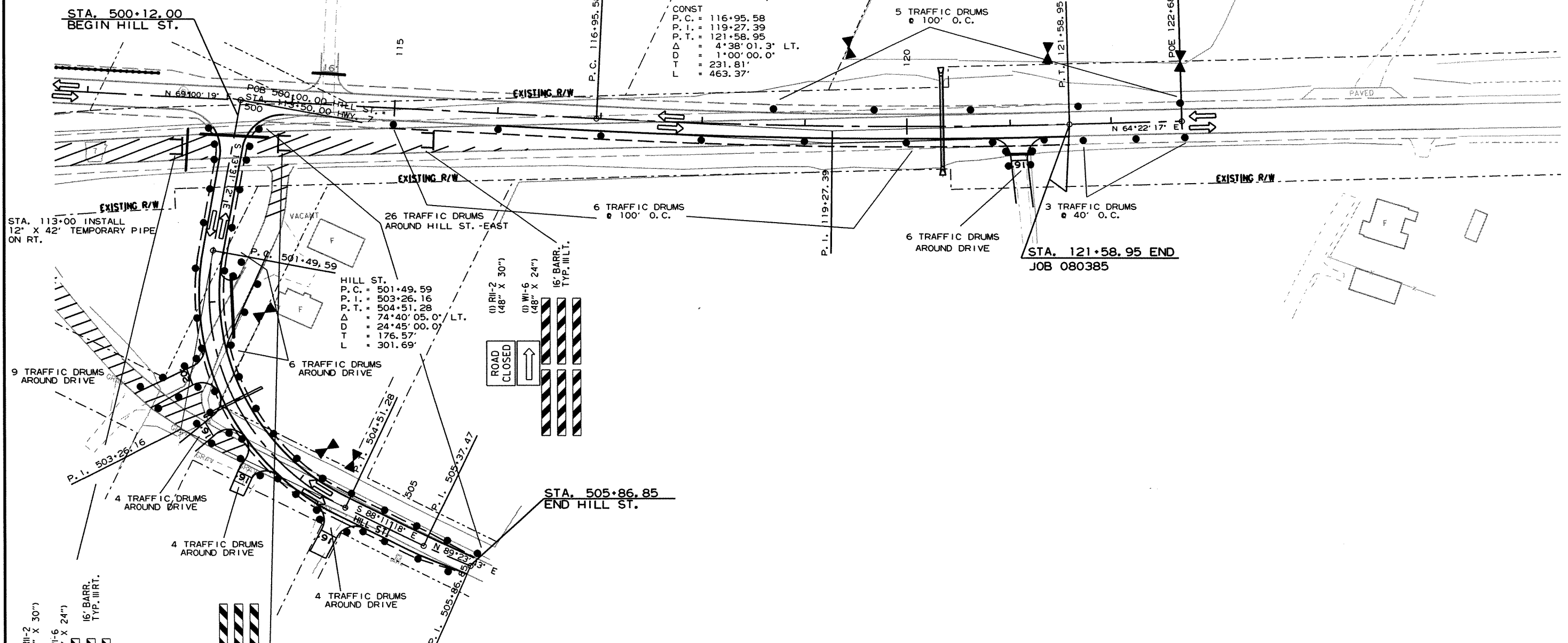
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							JOB NO. 080385	17

2 MAINTENANCE OF TRAFFIC DETAILS



CONST  
 P.C. = 116+95.58  
 P.I. = 119+27.39  
 P.T. = 121+58.95  
 $\Delta$  = 4°38'01.3" LT.  
 D = 1°00'00.0"  
 T = 231.81'  
 L = 463.37'

HILL ST.  
 P.C. = 501+49.59  
 P.I. = 503+26.16  
 P.T. = 504+51.28  
 $\Delta$  = 74°40'05.0"  
 D = 24°45'00.0"  
 T = 176.57'  
 L = 301.69'



SEQUENCE OF CONSTRUCTION  
 STAGE 1  
 CONSTRUCT NEW LOCATION AS SHOWN.  
 CONSTRUCT NEW BRIDGE AS SHOWN.  
 STAGE 2  
 CONSTRUCT STA. 100+00 - STA. 106+80 AND  
 SIDE STREETS AS SHOWN.  
 STA. 400+12 - STA. 403+90 SHALL BE  
 CONSTRUCTED WHEN SCHOOL IS NOT IN SESSION.  
 THE ROAD SHALL BE CLOSED DURING CONSTRUCTION.  
 UPON COMPLETION OF SPRING ST. EAST AND WEST  
 AND HILL STREET WEST, SHIFT TRAFFIC TO  
 NEW LOCATION AND FINISH TIE-INS TO EXISTING PAVEMENT.  
 REMOVE EXISTING BRIDGE AND OBLITERATE  
 EXISTING ROADWAY WHERE SHOWN.  
 END OF JOB  
 INSTALL FINAL STRIPING.

MAINTENANCE OF TRAFFIC DETAILS  
STAGE 2

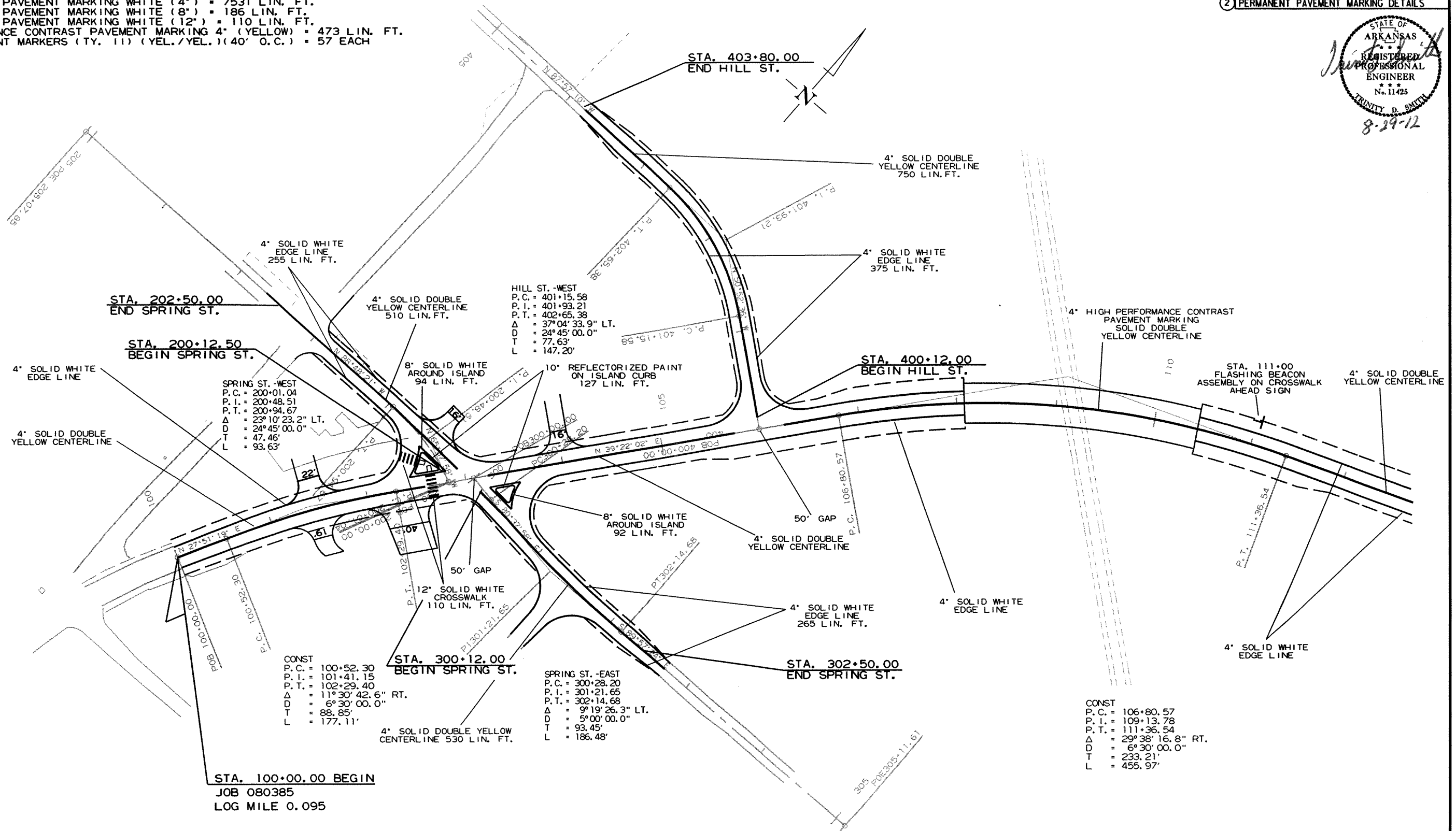
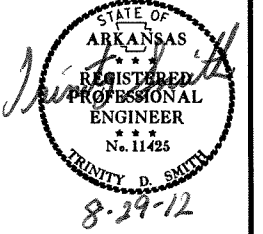
8/13/2012 R080385.DGN

PERMANENT PAVEMENT MARKING QUANTITIES

REFLECTORIZED PAINT PAVEMENT MARKING (10") = 127 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING YELLOW (4") = 7058 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING WHITE (4") = 7531 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING WHITE (8") = 186 LIN. FT.  
 THERMOPLASTIC PAVEMENT MARKING WHITE (12") = 110 LIN. FT.  
 HIGH PERFORMANCE CONTRAST PAVEMENT MARKING 4" (YELLOW) = 473 LIN. FT.  
 RAISED PAVEMENT MARKERS (TY. 11) (YEL./YEL.) (40' O.C.) = 57 EACH

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				6	ARK.			
						JOB NO. 080385	18	100

PERMANENT PAVEMENT MARKING DETAILS



STA. 100+00.00 BEGIN  
 JOB 080385  
 LOG MILE 0.095

8/13/2012

RO80385.DGN

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.	080385		20	100

② QUANTITIES

**MAINTENANCE OF TRAFFIC ITEMS**

LOCATION	BARRICADES		TRAFFIC DRUMS	VERTICAL PANELS	CONSTRUCTION PAVEMENT MARKINGS	REMOVAL OF CONSTRUCTION PAVEMENT MARKINGS	RAISED PAVEMENT MARKERS (TY. II) (YEL./YEL.)
	TY. III RT.	TY. III LT.					
	LIN. FT.		EACH		LIN. FT.		EACH
MAIN LANES-STAGE 1	40	8	15	21	6000		38
MAIN LANES-STAGE 2	88	40	142		5600	2800	35
<b>TOTALS</b>	<b>88</b>	<b>40</b>	<b>142</b>	<b>21</b>	<b>11600</b>	<b>2800</b>	<b>73</b>

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

**CONCRETE ISLAND AND WHEELCHAIR RAMPS**

STATION	STATION	*CONCRETE ISLAND	WHEELCHAIR RAMPS (TYPE 3)
		SQ. YD.	
102+50	102+75	26	
102+55			3
102+65			3
103+29	103+49	21	
<b>TOTALS</b>		<b>47</b>	<b>6</b>

\* TYPE B FACE



**PERMANENT PAVEMENT MARKING ITEMS**

LOCATION	REFLECTORIZED PAINT PAVEMENT MARKING	THERMOPLASTIC PAVEMENT MARKING				HIGH PERFORMANCE CONTRAST PAVEMENT MARKING	RAISED PAVEMENT MARKERS (TY. II)(YEL./YEL.)
	WHITE	WHITE	WHITE	WHITE	YELLOW	YELLOW	
	10"	4"	8"	12"	4"	4"	
	LIN. FT.						EACH
ENTIRE PROJECT	127	7531	186	110	7058	473	57
<b>TOTALS</b>	<b>127</b>	<b>7531</b>	<b>186</b>	<b>110</b>	<b>7058</b>	<b>473</b>	<b>57</b>

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

**TEMPORARY PIPE CULVERT**

LOCATION	TEMPORARY PIPE CULVERT
	12" LIN. FT.
STA. 105+00 ON RT.	40
STA. 113+00 ON RT.	42
<b>TOTAL</b>	<b>82</b>

**SIGNS**

SIGN NO.	DESCRIPTION	SIZE	QUANTITY		MAXIMUM REQUIRED	SIGNS SQ. FT.
			STAGE 1	STAGE 2		
G20-2	END ROAD WORK	48" X 24"	2	2	2	16
R4-1	DO NOT PASS	24" X 30"	2	2	2	10
R11-2	ROAD CLOSED	48" X 30"	3	8	8	80
W1-6	ARROW	48" X 24"		4	4	32
W20-1	ROAD WORK 1500 FT.	48" X 48"	2	2	2	32
W20-1	ROAD WORK 1000 FT.	48" X 48"	2	2	2	32
W20-1	ROAD WORK 500 FT.	48" X 48"	2	2	2	32
<b>TOTAL</b>						<b>234</b>

**FLASHING BEACON ASSEMBLY (RELOCATION)**

LOCATION	FLASHING BEACON ASSEMBLY (RELOCATION)
	EACH
STA. 111+00 ON LT.	1
<b>TOTAL</b>	<b>1</b>

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				6	ARK.			
							JOB NO.	080385
							21	100

② QUANTITIES



8-29-12

**ASPHALT CONCRETE PATCHING FOR MAINT. OF TRAFFIC**

LOCATION	ACHM PATCHING FOR M.O.T.	TACK COAT
	TON	GALLON
ENTIRE PROJECT - IF AND WHERE DIRECTED BY THE ENGINEER.	11	22
<b>TOTALS</b>	<b>11</b>	<b>22</b>

BASIS OF ESTIMATE:  
 PATCHING: 25 TONS PER MILE; TACK COAT: 50 GAL. PER MILE  
 QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**ASPHALT CONCRETE HOT MIX PATCHING OF EXISTING ROADWAY**

LOCATION	ACHM PATCHING OF EXISTING ROADWAY
	TON
ENTIRE PROJECT - IF AND WHERE DIRECTED BY THE ENGINEER.	25
<b>TOTAL</b>	<b>25</b>

QUANTITY ESTIMATED.  
 SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**MAILBOXES**

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

**SELECTED PIPE BEDDING**

LOCATION	SELECTED PIPE BEDDING
	CU. YD.
ENTIRE PROJECT - IF AND WHERE DIRECTED BY THE ENGINEER.	10
<b>TOTAL</b>	<b>10</b>

QUANTITY ESTIMATED.  
 SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**COLD MILLING ASPHALT PAVEMENT**

LOCATION	COLD MILLING ASPHALT PAVEMENT
	SQ. YD.
STA. 99+00.00-STA. 100+00.00	267
STA. 121+58.95-STA. 122+58.95	267
STA. 202+00.00-STA. 203+00.00	222
STA. 302+50.00-STA. 303+50.00	222
STA. 403+82.00-STA. 405+82.00	189
STA. 505+37.47-STA. 506+37.47	200
<b>TOTAL</b>	<b>1367</b>

**CLEARING AND GRUBBING**

STATION	STATION	CLEARING	GRUBBING
		STATION	
103+00	122+00	19	19
<b>TOTALS</b>		<b>19</b>	<b>19</b>

**CONCRETE DITCH PAVING**

LOCATION	TYPE B W=4'	SOLID SODDING	WATER
	SQ.YD.		M.GAL.
STA. 400+37 - STA. 403+00 RT.	117	119	1.5
STA. 400+37 - STA. 403+00 LT.	117	119	1.5
<b>TOTALS</b>	<b>234</b>	<b>238</b>	<b>3.0</b>

BASIS OF ESTIMATE:  
 WATER = 12.6 GAL. PER SQ. YD. SOLID SODDING

**BENCH MARKS**

LOCATION	BENCH MARKS
	EACH
STA. 110+44.08 RT. BRIDGE END	1

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

**PIPE UNDERDRAINS**

LOCATION	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
	LIN. FT.	EACH
ENTIRE PROJECT - IF AND WHERE DIRECTED BY THE ENGINEER.	1000	8
<b>TOTALS</b>	<b>1000</b>	<b>8</b>

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

**GUARDRAIL**

STATION	STATION	SIDE	GUARDRAIL (TY. A)	TERMINAL ANCHOR POSTS (TYPE 1)	THRIE BEAM GUARDRAIL TERMINAL
			LIN. FT.	EACH	
105+79.77	108+07.92	RT.	200	1	1
107+04.77	108+07.92	LT.	75	1	1
110+44.08	111+47.23	RT.	75	1	1
110+44.08	112+72.23	LT.	200	1	1
<b>TOTALS</b>			<b>550</b>	<b>4</b>	<b>4</b>

**SOIL STABILIZATION**

LOCATION	SOIL STABILIZATION
	TON
ENTIRE PROJECT - IF AND WHERE DIRECTED BY THE ENGINEER.	25
<b>TOTAL</b>	<b>25</b>

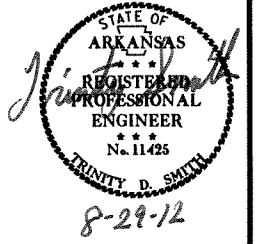
QUANTITY ESTIMATED.  
 SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**APPROACH GUTTERS (TYPE B)**

LOCATION	APPROACH GUTTERS (TY. B) (W=8')	REINFORCING STEEL - RDWY. (GR. 60)	DROP INLETS (TYPE N2)	CONCRETE SPILLWAY (TYPE A)	12" ZINC COATED (GALVANIZED) CORRUGATED STEEL PIPE CULVERT (16 GAUGE)
	CU.YD.	POUND	EACH	LIN. FT.	
STA. 107+80.92-STA. 108+07.92 LT.	6.75	590			
STA. 107+80.92-STA. 108+07.92 RT.	6.75	590	1	1	19
STA. 110+44.08-STA. 110+71.08 LT.	6.75	590			
STA. 110+44.08-STA. 110+71.08 RT.	6.75	590			
<b>TOTALS</b>	<b>27.00</b>	<b>2360</b>	<b>1</b>	<b>1</b>	<b>19</b>

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				6	ARK.			
				JOB NO.	080385		22	100

② QUANTITIES



**BASE AND SURFACING**

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CL. 7)			ACHM BINDER COURSE (1") (495 LBS./SQ. YD.)			ACHM SURFACE COURSE (1/2")						TACK COAT						
				LIN. FT.	TONS/STA.	TON	AVG. WIDTH	SQ. YD.	TON	(220 LBS./SQ. YD.)			*LEVELING			(0.03 GAL./SQ. YD.)			(0.10 GAL./SQ. YD.)			
										AVG. WIDTH	SQ. YD.	TON	AVG. WIDTH	SQ. YD.	LBS./SQ. YD.	TON	AVG. WIDTH	SQ. YD.	GAL.	AVG. WIDTH	SQ. YD.	GAL.
100+00.00	103+50.00	MAIN LANES - NOTCH AND WIDEN	350.00	165.00	578	13.00	505.56	125	52.50	2041.67	225	22.00	855.56	220	94	52.66	2047.89	61	22.00	855.56	86	
103+50.00	108+07.92	MAIN LANES - FULL DEPTH	457.92	257.50	1179	28.50	1450.08	359	68.25	3472.56	382					96.83	4926.71	148				
110+44.08	116+00.00	MAIN LANES - FULL DEPTH	555.92	257.50	1431	28.50	1760.41	436	68.25	4215.73	464					96.83	5981.08	179				
116+00.00	121+68.52	MAIN LANES - NOTCH AND WIDEN	568.52	165.00	938	7.00	442.18	109	46.50	2937.35	323	22.00	1389.72	220	153	45.66	2884.29	87	22.00	1389.72	139	
200+12.50	202+50.00	SPRING ST.-WEST	237.50	178.75	425				28.00	738.89	81											
300+12.00	302+50.00	SPRING ST.-EAST	238.00	62.00	148				28.00	740.44	81							20.00		528.89	53	
400+12.00	403+80.00	HILL ST.-WEST	368.00	178.75	658				28.00	1144.89	126											
500+12.10	505+86.85	HILL ST.-EAST	574.75	178.75	1027				28.00	1788.11	197											
		ADDITIONAL AGGREGATE FOR SUPERELEVATION			326																	
		ADDITIONAL FOR MAIN LANE GRADE RAISE						2344									2400.00	66				
		ADDITIONAL FOR SPRING ST.-EAST GRADE RAISE	200.00		1602																	
		ADDITIONAL FOR SPRING ST.-WEST GRADE RAISE	100.00		470																	
		ADDITIONAL FOR GUARDRAIL WIDENING			290						60											
<b>TOTALS</b>					<b>9072</b>		<b>4158.23</b>	<b>3373</b>		<b>17079.64</b>	<b>1939</b>		<b>2245.28</b>		<b>247</b>		<b>18239.97</b>	<b>541</b>		<b>2774.17</b>	<b>278</b>	

VOLUME CONTROL:

- ACHM BINDER COURSE (1"): MIN. AGGR. 95.5%, ASPHALT BINDER (PG 64-22) 4.5%
- ACHM SURFACE COURSE (1/2"): MIN. AGGR. 94.6%, ASPHALT BINDER (PG 64-22) 5.4%
- Nmax= 115 GYRATIONS
- \*QUANTITY ESTIMATED. IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**EARTHWORK**

STATION	STATION	LOCATION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT
			CU. YD.	
100+00.00	108+46.00	MAIN LANES	4042	9994
110+08.00	121+58.95	MAIN LANES	4868	6030
200+12.50	202+50.00	SPRING ST.-WEST	155	467
300+12.00	302+50.00	SPRING ST.-EAST	63	362
400+12.00	403+80.00	HILL ST.-WEST	7915	1
500+12.10	505+86.85	HILL ST.-EAST	1011	838
		HILL ST. OBLITERATION	304	
		ENTIRE PROJECT DRIVES	20	455
		BRIDGE LAYOUT EXCAVATION	115	
<b>TOTALS</b>			<b>18493</b>	<b>18147</b>

NOTE: EARTHWORK QUANTITIES TO BE PAID AS PLAN QUANTITY.

**DRIVEWAYS**

STATION	DESCRIPTION	SIDE	WIDTH	TURNOUT AREA	EXTENSION AREA	TOTAL DRIVEWAY AREA	*AGGREGATE BASE COURSE (CL. 7)	ACHM SURFACE COURSE (1/2") (220 LB./SQ. YD.)	PIPE CULVERT CONCRETE (CL. III)	SIDE DRAIN		
			LIN. FT.	SQ. YD.	SQ. YD.		TON	TON	15"	18"	24"	
												LIN. FT.
101+48	COMMERCIAL DRIVE	RT.	20	56	39	95	39	10				
101+49	PRIVATE DRIVE	LT.	22	69	55	124	51	14				52
102+41	COMMERCIAL DRIVE	RT.	40	126	118	244	100	27				
102+67	SPRING ST.-WEST											84
104+00	PRIVATE DRIVE	LT.	16	55	60	115	47	13				38
106+00	HILL ST.-WEST											62
113+45	HILL ST.-EAST											68
114+35	PRIVATE DRIVE	LT.	16	55	34	89	36	10				
121+07	PRIVATE DRIVE	RT.	16	55	58	113	46	12				28
200+50	PRIVATE DRIVE	RT.	16	63	14	77	31	8				38
301+98									10			
502+00	PRIVATE DRIVE	RT.	16	159		159	65	17				
502+50	PRIVATE DRIVE	RT.	20	68	122	190	78	21				
503+00												64
503+10	PRIVATE DRIVE	RT.	16	61	49	110	45	12				
503+60	PRIVATE DRIVE	RT.	16	58	32	90	37	10				
504+45	PRIVATE DRIVE	RT.	16	54	53	107	44	12				
	TEMPORARY DRIVES						300					
<b>TOTALS</b>							<b>919</b>	<b>166</b>	<b>10</b>	<b>196</b>	<b>238</b>	

VOLUME CONTROL:

- ACHM SURFACE COURSE (1/2"): MIN. AGGR. 94.6%, ASPHALT BINDER (PG-64-22) 5.4%
- Nmax= 115 GYRATIONS
- \* REFER TO DETAIL FOR DRIVEWAY TURNOUTS (ARTERIALS).
- FOR R.C. PIPE CULVERTS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.
- FOR C.M.. PIPE CULVERTS USE TYPE 2 BEDDING UNLESS OTHERWISE SPECIFIED.

**PAVEMENT REPAIR OVER CULVERTS**

STATION	DESCRIPTION	PAVEMENT REPAIR OVER CULVERTS	
		(CONCRETE)	(ASPHALT)
		CU. YD.	TON
105+00	12" X 40' TEMPORARY PIPE		14
113+00	12" X 42' TEMPORARY PIPE		14
120+34	36" X 89' CONCRETE PIPE CROSS DRAIN	10.1	
<b>TOTALS</b>		<b>10.1</b>	<b>28</b>

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				6	ARK.			
						JOB NO.	080385	23

**SOIL LOG**

STATION	LOCATION	DEPTH	LIQUID LIMIT	PLASTICITY INDEX	AASHTO SOIL CLASS	COLOR
101+00	22'RT	0-5	26	13	A-6(8)	BR/GR
101+00	12'RT	0-5	28	12	A-6(6)	BR/GR
101+00	5'RT	0-5	31	14	A-6(7)	BR/GR
107+00	CL	0-5	24	3	A-4(0)	RD/BR
107+00	CL	0-5	29	11	A-6(4)	BROWN
120+00	25'LT	0-5	25	9	A-4(3)	BROWN
120+00	12'LT	0-5	40	21	A-6(14)	BROWN
120+00	5'LT	0-5	31	14	A-6(7)	BROWN

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

**FENCING ITEMS**

STATION	STATION	SIDE	REMOVAL AND DISPOSAL OF FENCE	WIRE FENCE (TYPE C)
			LIN. FT.	
119+37	122+68	LT.	342	
200+98	201+90	LT.	143	
502+15	504+35	LT.	240	220
<b>TOTALS</b>			<b>725</b>	<b>220</b>

\*NOTE: PROPERTY OWNER WAS COMPENSATED FOR FENCING - REMOVAL AND DISPOSAL ONLY - DO NOT REPLACE. TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**QUANTITIES**



**STRUCTURES - PIPE CULVERTS**

STATION	DESCRIPTION	PIPE CULVERTS CONCRETE (CLASS III)		FLARED END SECTIONS		SOLID SODDING	WATER	STANDARD DRAWINGS
		24"	36"	24"	36"			
		LIN. FT.		EACH		SQ. YD.	M. GAL.	
101+18	EXTEND 24" X 37' R.C. PIPE CULVERT 18' LT. & 4' RT. W/ FES LT. & RT.	30		2		16	0.2	FES-1, FES-2, PCC-1
120+34	CONSTRUCT 36" X 89' CROSS DRAIN W/FES LT. & RT.		90		2	34	0.4	FES-1, FES-2, PCC-1
<b>TOTALS</b>		<b>30</b>	<b>90</b>	<b>2</b>	<b>2</b>	<b>50</b>	<b>0.6</b>	

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

**EROSION CONTROL ITEMS - TEMPORARY**

LOCATION	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DIVERSION DITCH (E-8)	SILT FENCE (E-11)	PIPE FOR SLOPE DRAINS (E-12)	*SEDIMENT REMOVAL & DISPOSAL	EROSION CONTROL MATTING (CLASS 2)	TEMPORARY SEEDING	MULCH COVER	WATER	DUMPED RIPRAP
	BAG	CU. YD.		LIN. FT.		CU. YD.	SQ. YD.	ACRE		M. GAL.	CU. YD.
MAIN LANES-STAGE 1	450	10	1064	606	81	200	1000	4.65	4.65	94.9	2
MAIN LANES-STAGE 2	75			1664		100					
<b>TOTALS</b>	<b>525</b>	<b>10</b>	<b>1064</b>	<b>2270</b>	<b>81</b>	<b>300</b>	<b>1000</b>	<b>4.65</b>	<b>4.65</b>	<b>94.9</b>	<b>2</b>

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

BASIS OF ESTIMATE: WATER 20.4 M.G. PER ACRE TEMP. SEEDING  
\* QUANTITIES ESTIMATED- TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS.

**EROSION CONTROL ITEMS - PERMANENT**

LOCATION	SEEDING	LIME	MULCH COVER	SECOND SEEDING APPL.	WATER	SOLID SODDING
	ACRE	TON	ACRE		M. GAL.	SQ. YD.
MAIN LANES	3.25	7	3.25	3.25	347.6	1278
SPRING ST. WEST					10.9	869
SPRING ST. EAST	0.13	0	0.13	0.13	13.3	
HILL ST. SOUTH	0.49	1	0.49	0.49	50.0	
HILL ST.	0.59	1	0.59	0.59	60.2	
OBLITERATION AREA HILL ST.	0.19	0	0.19	0.19	19.4	
<b>TOTALS</b>	<b>4.65</b>	<b>9</b>	<b>4.65</b>	<b>4.65</b>	<b>501.4</b>	<b>2147</b>

BASIS OF ESTIMATE: LIME: 2 TONS PER ACRE SEEDING.  
WATER: 102.0 M.GAL. PER ACRE SEEDING.  
WATER: 12.6 GAL. PER SQ. YD. SOLID SODDING.

**REMOVAL AND DISPOSAL OF PIPE CULVERTS**

STATION	SIDE	DESCRIPTION	EACH
102+67	LT.	30" X 21" X 48' ARCH PIPE CULVERT	1
104+69	LT.	18" X 40' R.C. PIPE CULVERT	1
105+36	LT.	21" X 15" X 65' C.M. ARCH PIPE CULVERT	1
114+35	LT.	21" X 15" X 25' C.M. ARCH PIPE CULVERT	1
120+34		36" X 79' C.M. CROSS DRAIN	1
121+07	RT.	16" X 24' C.M. PIPE CULVERT	1
200+50	RT.	18" X 24' PIPE CULVERT	1
<b>TOTAL</b>			<b>7</b>

REMOVAL AND DISPOSAL OF PIPE CULVERTS INCLUDES HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

**REMOVAL AND DISPOSAL ITEMS**

STATION	STATION	DESCRIPTION	SIDE	REMOVAL AND DISPOSAL ITEMS									
				BUILDING	*GUARDRAIL	SIGN	SIGN FOUNDATION	DROP INLETS	WELLS	RETAINING WALLS	POSTS	WALKS	
				EACH	LIN. FT.		EACH			LIN. FT.	EACH	SQ. YD.	
100+44		SIGN	LT.			1	1						
100+52	101+17	WALKS	LT.										54
104+08		BUILDING	LT.	1									
104+61		RETAINING WALL	LT.							20			
104+70		POST	LT.								1		
104+75		POST	LT.								1		
105+60		RETAINING WALL	LT.							60			
105+61		DROP INLET	RT.					1					
105+65		BUILDING	LT.	1									
105+77		POST	RT.								1		
107+05	108+26	GUARDRAIL	RT.		228								
105+05	110+81	GUARDRAIL	RT.		112								
111+43		BUILDING	LT.	1					1				
113+32		POST	RT.								8		
<b>TOTALS</b>				<b>3</b>	<b>340</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>80</b>	<b>11</b>	<b>54</b>	

\* REFER TO SPECIAL PROVISION "REMOVAL AND DISPOSAL OF GUARDRAIL".

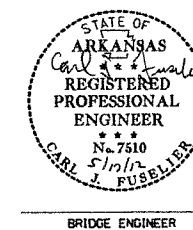
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		080385	24	100
				① 07227		QUANTITIES	52564	

**SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 080385**

BRIDGE NO. CODE NO. NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	205	619	801	802	802	803	SS & 804	SS & 804	805	805	807	808	812	816	SP JOB 080385
		ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. )	7' STEEL CHAIN LINK FENCE	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S (AE) CONCRETE-BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	① STEEL PILING (HP 12X53)	PREBORING	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	SILICONE JOINT SEALANT
		UNIT	LUMP SUM	LIN. FT.	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	CU. IN.	EACH	CU. YD.	LIN. FT.
07227 X171 LITTLE ROCK AND WESTERN RR	BENT NO. 1					31.26		0.3	3,260		170	144	825	978.8		35	
	BENT NO. 2			300		110.69			13,794					1,957.5			
	BENT NO. 3			317		110.15			13,716					2,121.0			
	BENT NO. 4					31.30		0.3	3,260		105	83	825	2,283.7		31	
	234'-0" CONT. COMP. W-BEAM UNIT		468				307.10	24.5		73,290			291,580		1		86
SITE NO. 1 (BR. NO. 02490)			1														
TOTALS FOR JOB NO. 080385				468	② 617	283.40	307.10	25.1	34,030	73,290	275	227	293,230	7,341.0	1	66	86

- ① All steel piling are required to have approved driving points which will not be paid for directly, but shall be considered subsidiary to the item "Steel Piling (HP12x53)".
- ② Quantity includes 617 cu. yd. of rock excavation.

STEWART LINZ  
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES  
LITTLE ROCK & WESTERN RR STR. & APPRS. (OLA)(S)  
YELL COUNTY  
ROUTE 7 SEC. 13  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: RBR DATE: 02/03/12 FILENAME: b080385.qldgn  
CHECKED BY: CSL DATE: May 17, 2012 SCALE: NO SCALE  
DESIGNED BY: DATE: BRIDGE ENGINEER  
BRIDGE NO. 07227 DRAWING NO. 52564





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	26	100

SURVEY CONTROL COORDINATES

Project Name: s080385  
 Date: 10/1/2010  
 Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.  
 Units: U.S. SURVEY FOOT

2 SURVEY CONTROL DETAILS



Point Name	Northing	Easting	Elev	Feature	Description
1	256823.0615	946080.6926	360.471	CTL	*5/8" Rebar with 2" Aluminum Cap
2	257242.8552	946161.0839	360.108	CTL	*5/8" Rebar with 2" Aluminum Cap
3	257589.5454	946540.8688	370.299	CTL	*5/8" Rebar with 2" Aluminum Cap
4	257913.7010	946938.9534	393.174	CTL	*5/8" Rebar with 2" Aluminum Cap
5	258367.7404	947869.8885	362.342	CTL	*5/8" Rebar with 2" Aluminum Cap
6	258614.8546	948282.9065	367.028	CTL	*5/8" Rebar with 2" Aluminum Cap
7	256998.0024	947947.2434	356.710	CTL	*5/8" Rebar with 2" Aluminum Cap
8	256655.7315	947899.9074	348.025	CTL	*5/8" Rebar with 2" Aluminum Cap
9	257537.8817	947942.0355	379.514	CTL	*5/8" Rebar with 2" Aluminum Cap
100	258092.9625	947142.8501	399.561	GPS	*AHTD GPS 750005
101	259111.7975	949421.3643	350.224	GPS	*AHTD GPS 750005A
900	257101.6739	947897.9377	358.031	TBM	**CH. SQ. IN CENTER OF W/HW
901	258700.5870	948578.6078	360.228	TBM	**CH. SQ. IN CENTER OF E/HW
902	256943.8865	946146.2024	358.703	TBM	**CH. SQ. IN S/W COR OF DI
990	257771.7136	946731.0882	363.030	BM	*NGS MARK E 47
991	261169.2507	941866.9524	317.290	BM	*NGS MARK D 47

CONST POINT NO.	TYPE	STATION	NORTHING	EASTING
8002	POB	100+00.00	257226.3078	946193.3936
8003	PC	100+52.30	257272.5439	946217.8283
8004	PT	102+29.40	257419.7912	946315.7010
8005	PC	106+80.57	257768.5867	946601.8708
8006	PT	111+36.54	258032.4335	946967.5179
8007	PC	116+95.58	258232.7298	947489.4492
8008	PT	121+58.95	258416.0505	947914.8772
8009	POE	122+68.52	258463.4433	948013.6673

\*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 0.999966119 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 s080385gi.CTL  
 HORIZONTAL DATUM: NAD 83 (1997)  
 VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE  
 AT A SPECIFIC POINT.

SPRING ST. -WEST				
POINT NO.	TYPE	STATION	NORTHING	EASTING
8200	POB	200+00.00	257461.0594	946349.5595
8201	PC	200+01.04	257461.4894	946348.6100
8203	PT	200+94.67	257482.0610	946257.9221
8204	POE	205+07.85	257490.6715	945844.8313

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

SPRING ST. -EAST				
POINT NO.	TYPE	STATION	NORTHING	EASTING
8300	POB	300+00.00	257480.9946	946365.9154
8301	PC	300+28.20	257476.4048	946393.7389
8303	PT	302+14.68	257461.1249	946579.3850
8304	POE	305+11.61	257460.9008	946876.3117

BASIS OF BEARING:  
 ARKANSAS STATE PLANE GRID BEARINGS - 0301-NORTH ZONE  
 DETERMINED FROM GPS CONTROL POINTS: 750005 - 750005A  
 CONVERGENCE ANGLE: 0-42-30.69 LEFT AT LT: 35-02-13.03 LG: 093-13-03.4  
 GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

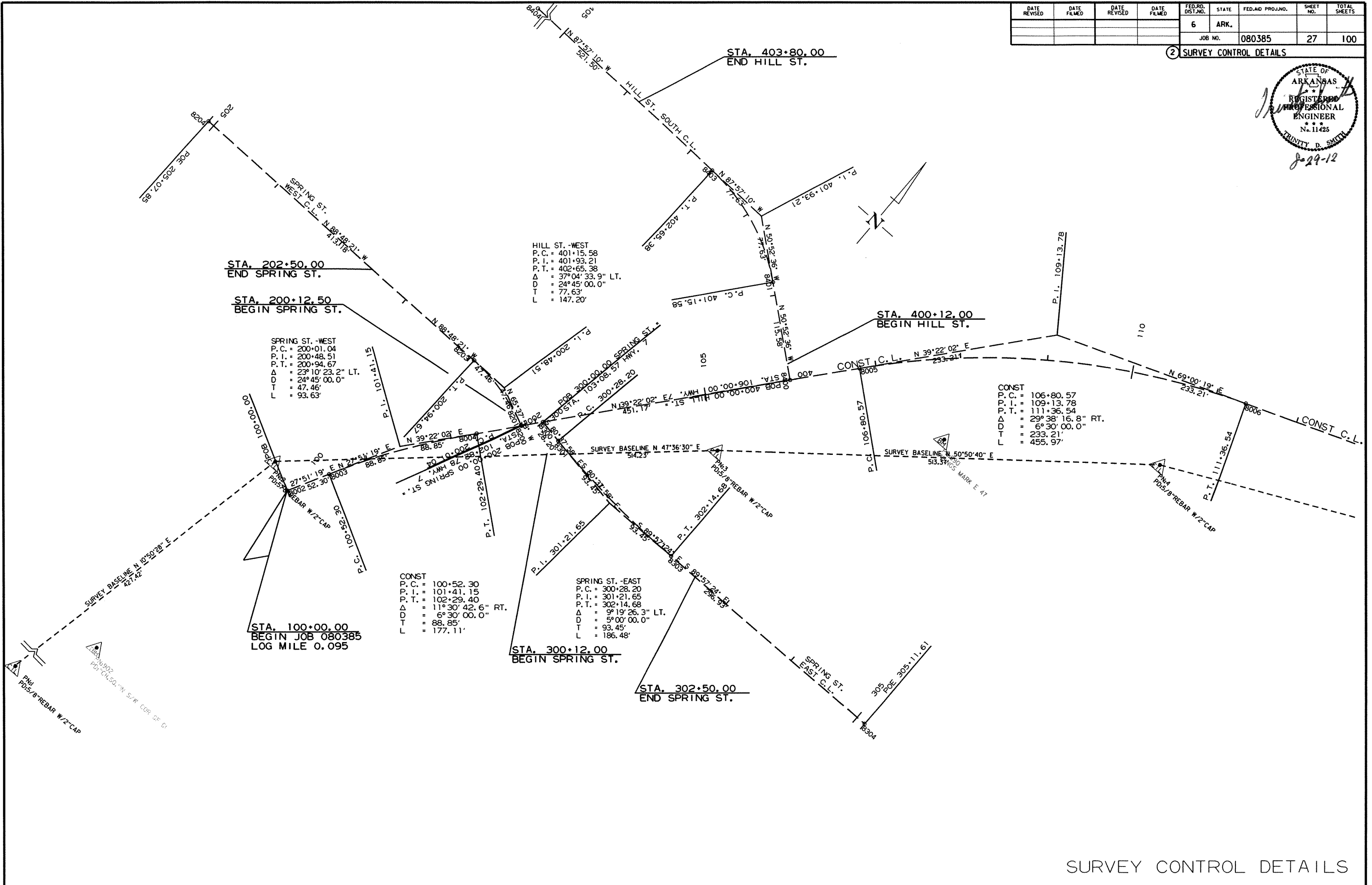
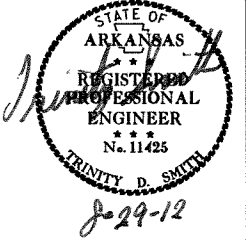
HILL ST. -WEST				
POINT NO.	TYPE	STATION	NORTHING	EASTING
8400	POB	400+00.00	257706.3003	946550.7678
8401	PC	401+15.58	257779.2300	946461.1022
8403	PT	402+65.38	257830.9864	946323.2987
8404	POE	407+86.88	257849.6156	945802.1338

HILL ST. -EAST				
POINT NO.	TYPE	STATION	NORTHING	EASTING
8500	POB	500+00.00	258108.9139	947166.8102
8501	PC	501+49.59	257963.4710	947201.7816
8503	PT	504+51.28	257786.2094	947419.5448
8504	POE	510+05.12	257768.6975	947973.1092

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.	080385
							SHEET NO.	27
							TOTAL SHEETS	100

2 SURVEY CONTROL DETAILS

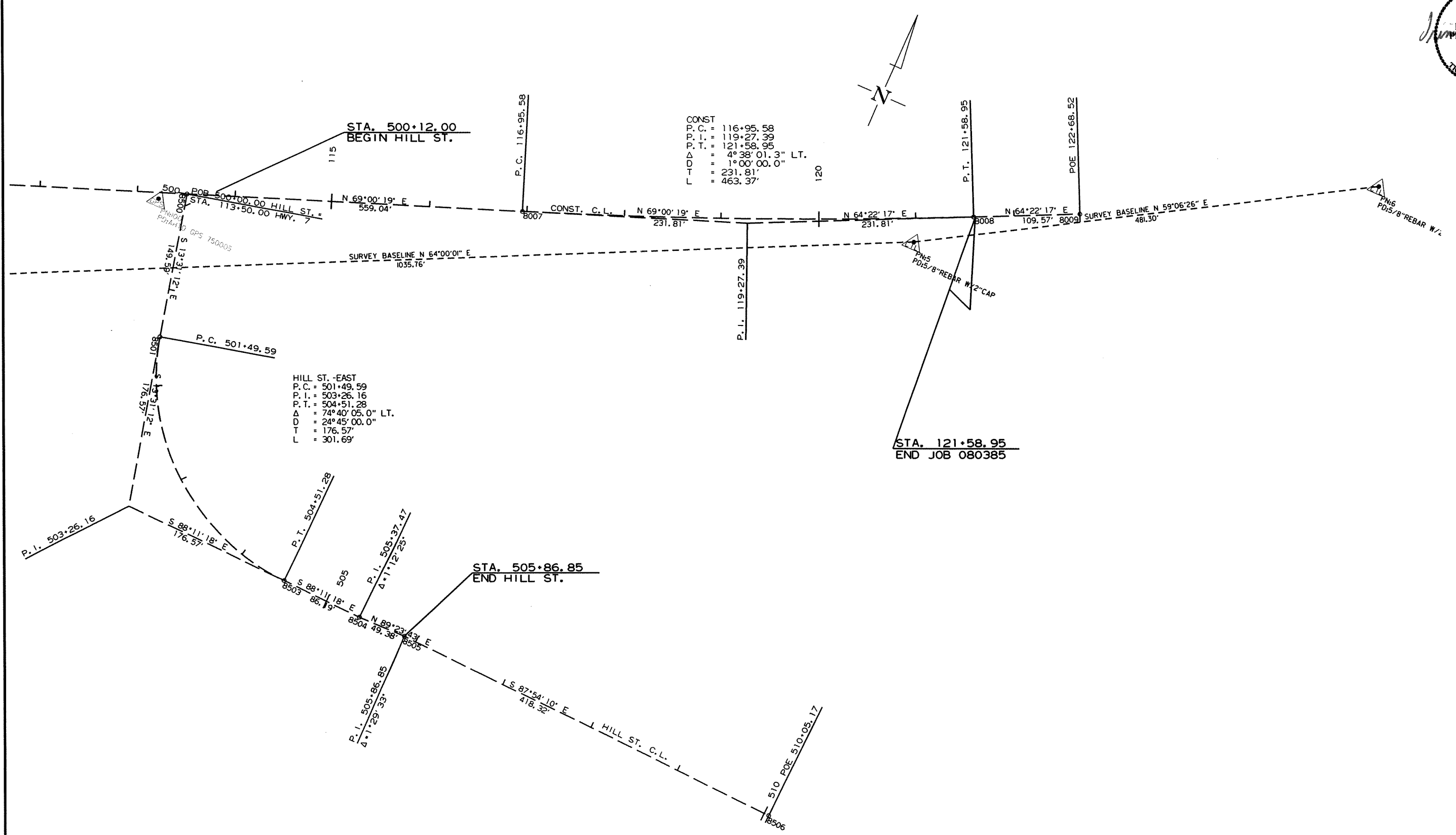


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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080385	28
							100	

② SURVEY CONTROL DETAILS



8/13/2012  
R080385.DGN

STA. 101.49 INSTALL  
24" X 52" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH= 110 CU. YD.

STA. 102.67 IN PLACE  
30" X 21" X 48"  
PIPE CULVERT LT. SIDE DRAIN  
REMOVE AND INSTALL  
24" X 83" PIPE CULVERT  
LT. SIDE DRAIN

STA. 104.00 INSTALL  
24" X 38" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH= 55 CU. YD.

CONST. LIMITS

BR. END STA. 108.07.92  
BRIDGE NO. 07227  
40'-0" CLEAR ROADWAY  
236'-2" TOTAL LENGTH  
234'-0" CONT. COMP.  
W-BEAM UNIT  
(57'-0", 100'-0", 77'-0")  
BR. END STA. 110.44.08

STA. 106.00 INSTALL  
18" X 62" PIPE CULVERT  
LT. SIDE DRAIN

2 PLAN & PROFILE SHEETS STA. 100+00-115+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.	080385		29	100



STA. 114.35 IN PLACE  
21" X 15" X 25" C.M. ARCH  
PIPE CULVERT LT. SIDE DRAIN  
REMOVE AND INSTALL  
18" X 32" PIPE CULVERT  
LT. SIDE DRAIN  
CONSTRUCT APPROACH= 20 CU. YD.

STA. 101.48 CONSTRUCT  
APPROACH ON RT. = 15 CU. YD.  
STA. 102.41 CONSTRUCT  
APPROACH ON RT. = 105 CU. YD.

STA. 100+00.00  
BEGIN JOB 080385  
LOG MILE 0.095

CONST  
P.C. = 100+52.30  
P.I. = 101+41.15  
P.T. = 102+29.40  
Δ = 11°30'42.6" RT.  
D = 6°30'00.0"  
T = 88.85'  
L = 177.11'  
e = 0.074'/'  
Ls = 250.00'

STA. 101.18 IN PLACE  
24" X 37" R.C. PIPE CULVERT  
WITH HDWLS. LT. & RT.  
REMOVE HDWLS. LT. & RT. AND EXTEND  
18' LT. AND 4' RT.  
(CLASS III) (TYPE 2 BEDDING) WITH  
FES LT. & RT.  
Q50 = 15 CFS D.A. = 3.4 ACRES  
24" R.C. PIPE = 30 LIN. FT.  
24" FES = 2 EA.

STA. 108.32.39 - STA. 110.08.81 IN PLACE  
24" X 162" BRIDGE M02490 CONSISTING OF  
STEEL BEAM, STRINGER/GIRDER, AND CONCRETE DECK  
REMOVE AS EXISTING BRIDGE STRUCTURE (SITE NO. 1) = 1.00 LUMP SUM

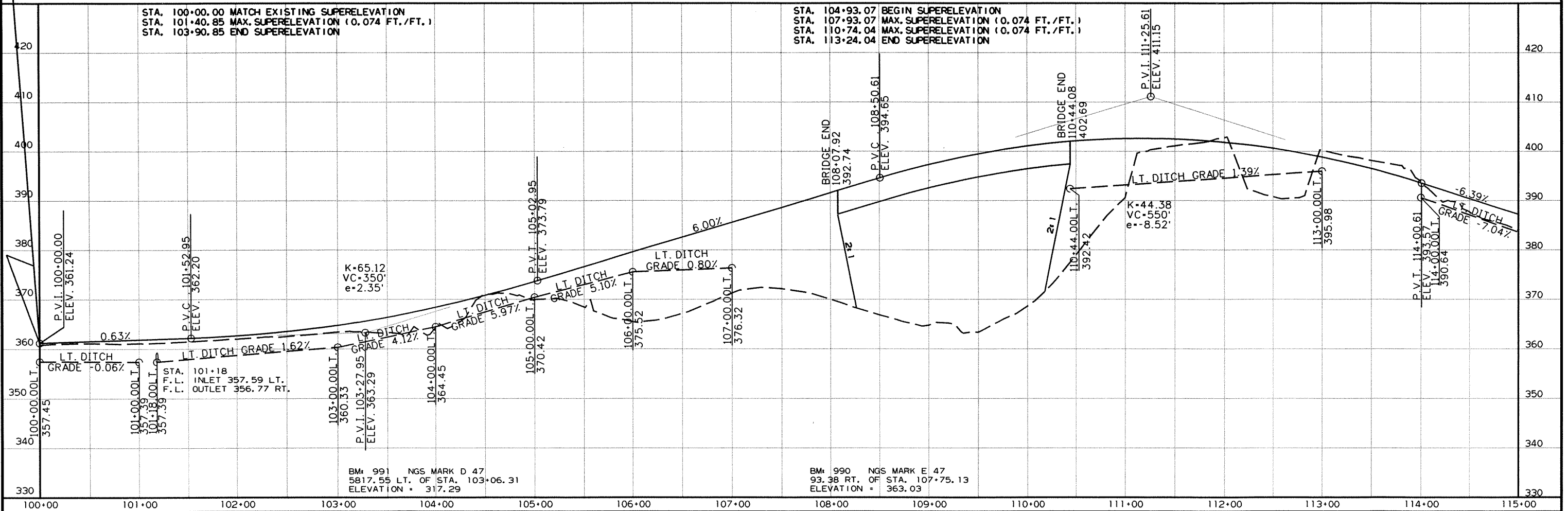
STA.	STA.	GUARDRAIL (TYPE A) LIN. FT.	THREE BEAM GUARDRAIL TERMINAL (EA)	TERMINAL ANCHOR POSTS (TYPE 1) (EA)	CONST
105+79.77	108+07.92	RT. 200	1	1	P.C. = 106+80.57
107+04.77	108+07.92	LT. 75	1	1	P.I. = 109+13.78
110+44.08	112+72.23	LT. 200	1	1	P.T. = 111+36.54
110+44.08	111+47.23	RT. 75	1	1	Δ = 29°38'16.8" RT.
					D = 6°30'00.0"
					T = 233.21'
					L = 455.97'
					e = 0.074'/'
					Ls = 250.00'

STA. 107.95 CONST.  
TYPE N2 DROP INLET ON RT.  
12" X 19" PIPE OUTLET  
CONNECTED TO A  
CONCRETE SPILLWAY

STA. 113.45 INSTALL  
18" X 68" PIPE CULVERT  
RT. SIDE DRAIN

STA. 100+00.00 MATCH EXISTING SUPERELEVATION  
STA. 101+40.85 MAX. SUPERELEVATION (0.074 FT./FT.)  
STA. 103+90.85 END SUPERELEVATION

STA. 104.93.07 BEGIN SUPERELEVATION  
STA. 107.93.07 MAX. SUPERELEVATION (0.074 FT./FT.)  
STA. 110.74.04 MAX. SUPERELEVATION (0.074 FT./FT.)  
STA. 113.24.04 END SUPERELEVATION



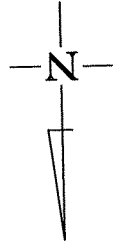
BM: 991 NGS MARK D 47  
5817.55 LT. OF STA. 103+06.31  
ELEVATION = 317.29

BM: 990 NGS MARK E 47  
93.38 RT. OF STA. 107+75.13  
ELEVATION = 363.03

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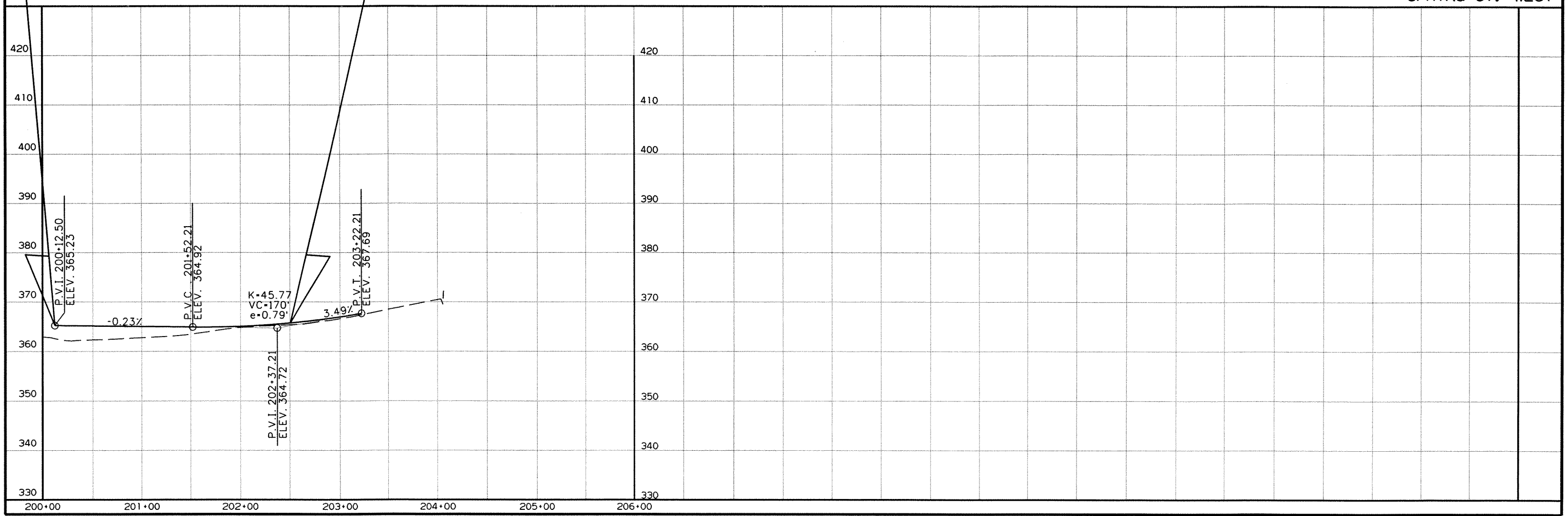
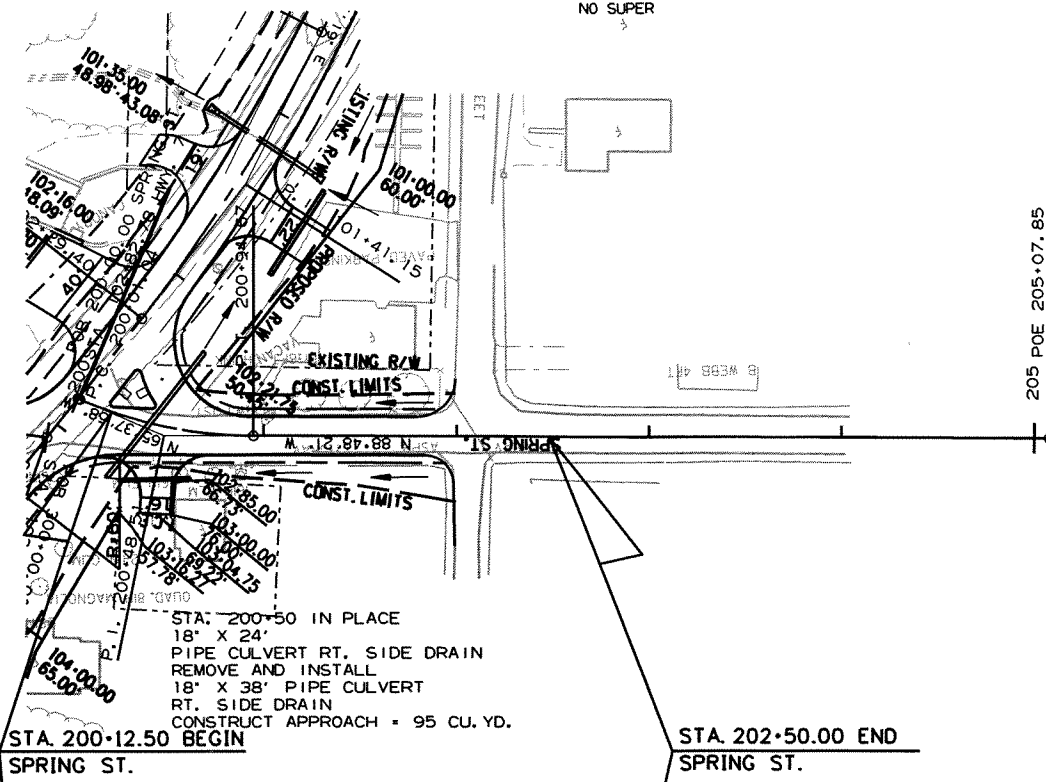


SPRING ST. -WEST  
 P.C. = 200+01.04  
 P.I. = 200+48.51  
 P.T. = 200+94.67  
 $\Delta$  = 23°10'23.2" LT.  
 $D$  = 24°45'00.0"  
 $T$  = 47.46'  
 $L$  = 93.63'  
 NO SUPER



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080385		31	100

2 PLAN & PROFILE SHEET-SPRING ST.-WEST



RO80385.DCN 8/13/2012

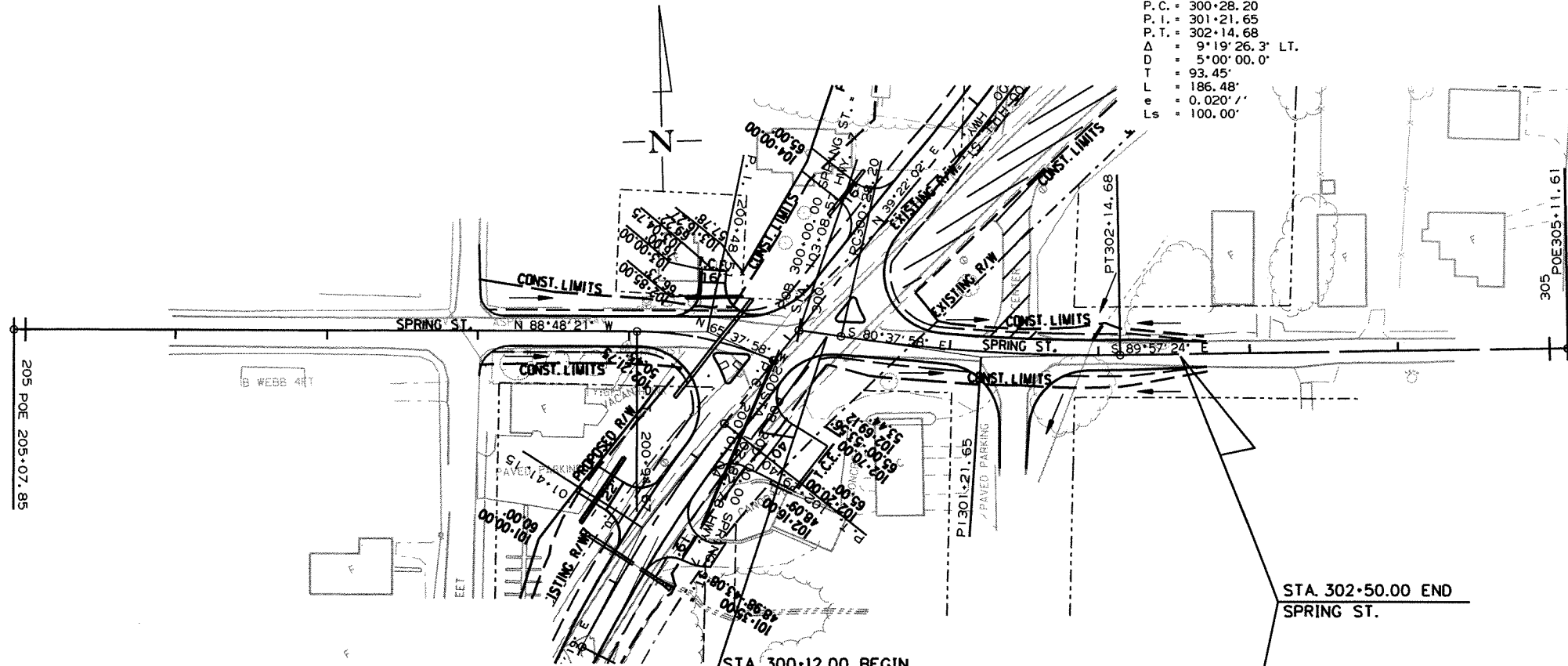
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080385		32	100

② PLAN & PROFILE SHEET-SPRING ST.-EAST



f-29-12

SPRING ST. -EAST  
P. C. = 300+28.20  
P. I. = 301+21.65  
P. T. = 302+14.68  
Δ = 9°19'26.3" LT.  
D = 5°00'00.0"  
T = 93.45'  
L = 186.48'  
e = 0.020'/'  
Ls = 100.00'



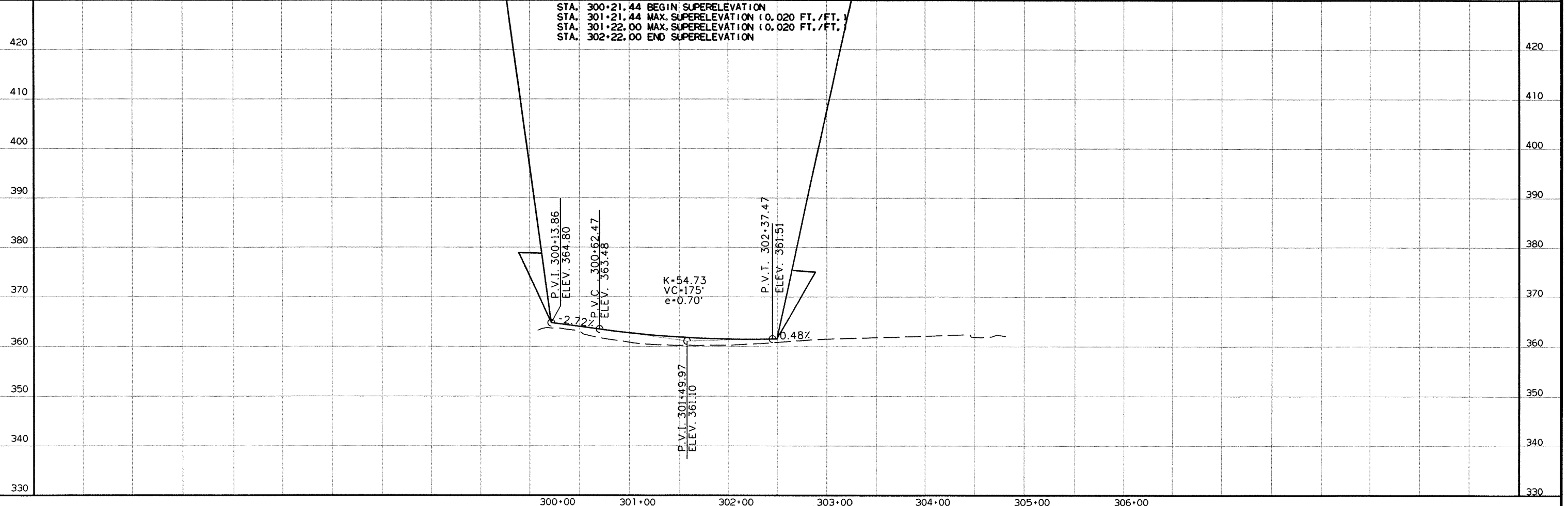
STA. 300+12.00 BEGIN  
SPRING ST.

STA. 301+98 IN PLACE  
15" X 102" R.C. PIPE CULVERT  
EXTEND 10' CROSS DRAIN  
ON A 33° LT. FWD. SKEW

STA. 300+21.44 BEGIN SUPERELEVATION  
STA. 301+21.44 MAX. SUPERELEVATION (0.020 FT./FT.)  
STA. 301+22.00 MAX. SUPERELEVATION (0.020 FT./FT.)  
STA. 302+22.00 END SUPERELEVATION

STA. 302+50.00 END  
SPRING ST.

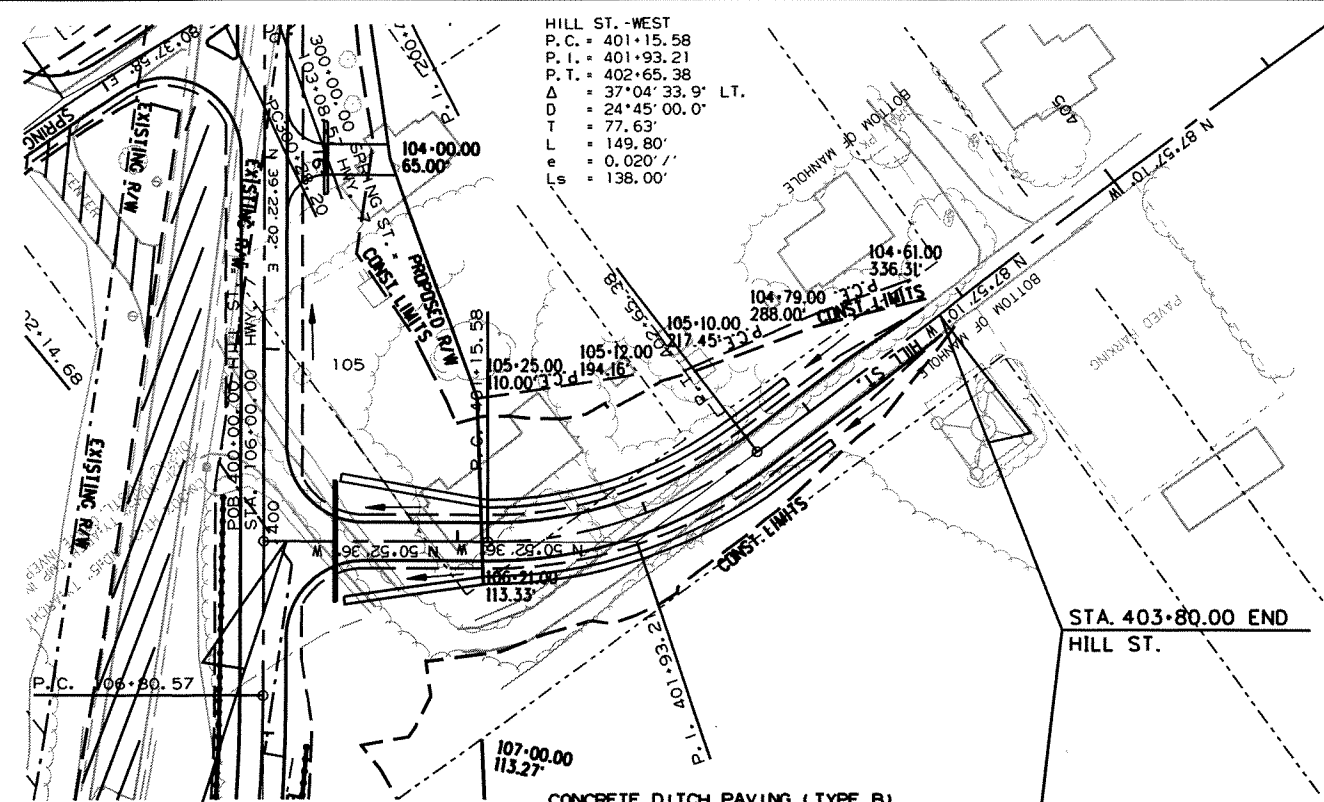
SPRING ST. -EAST





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	080385		33	100

2 PLAN & PROFILE SHEET-HILL ST.-WEST



CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	W'	SO. YD.
400+37	403+00	RT.	4'	117
400+37	403+00	LT.	4'	117

STA. 400+12.00 BEGIN HILL ST.

STA. 403+80.00 END HILL ST.

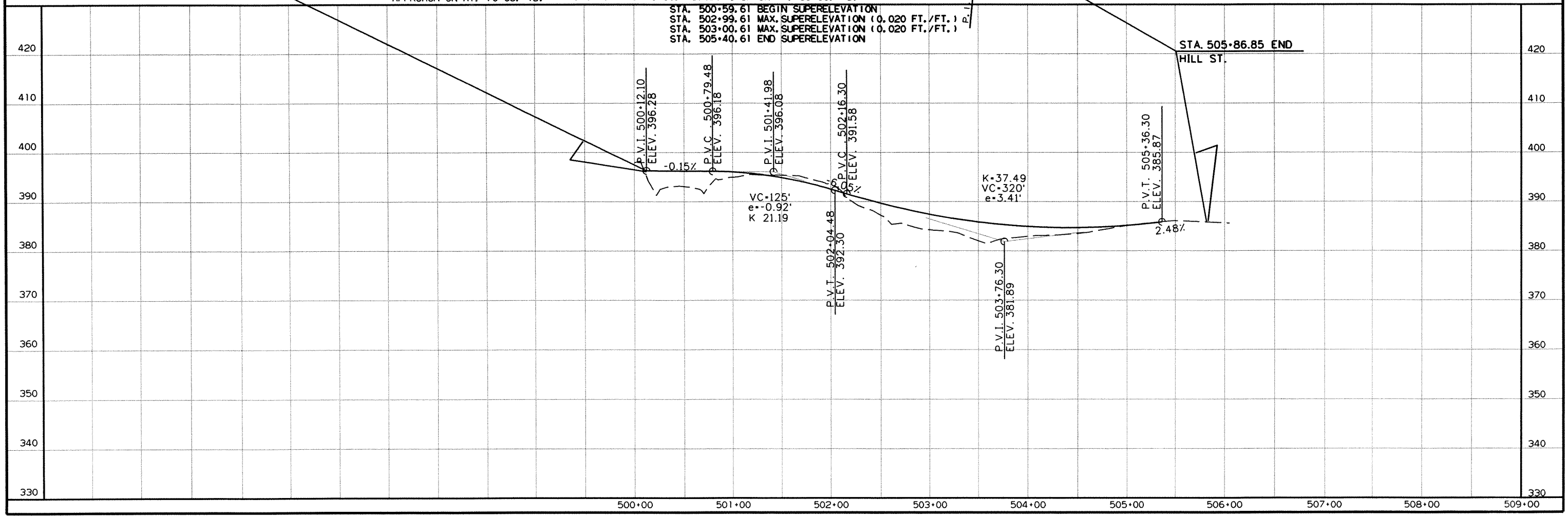
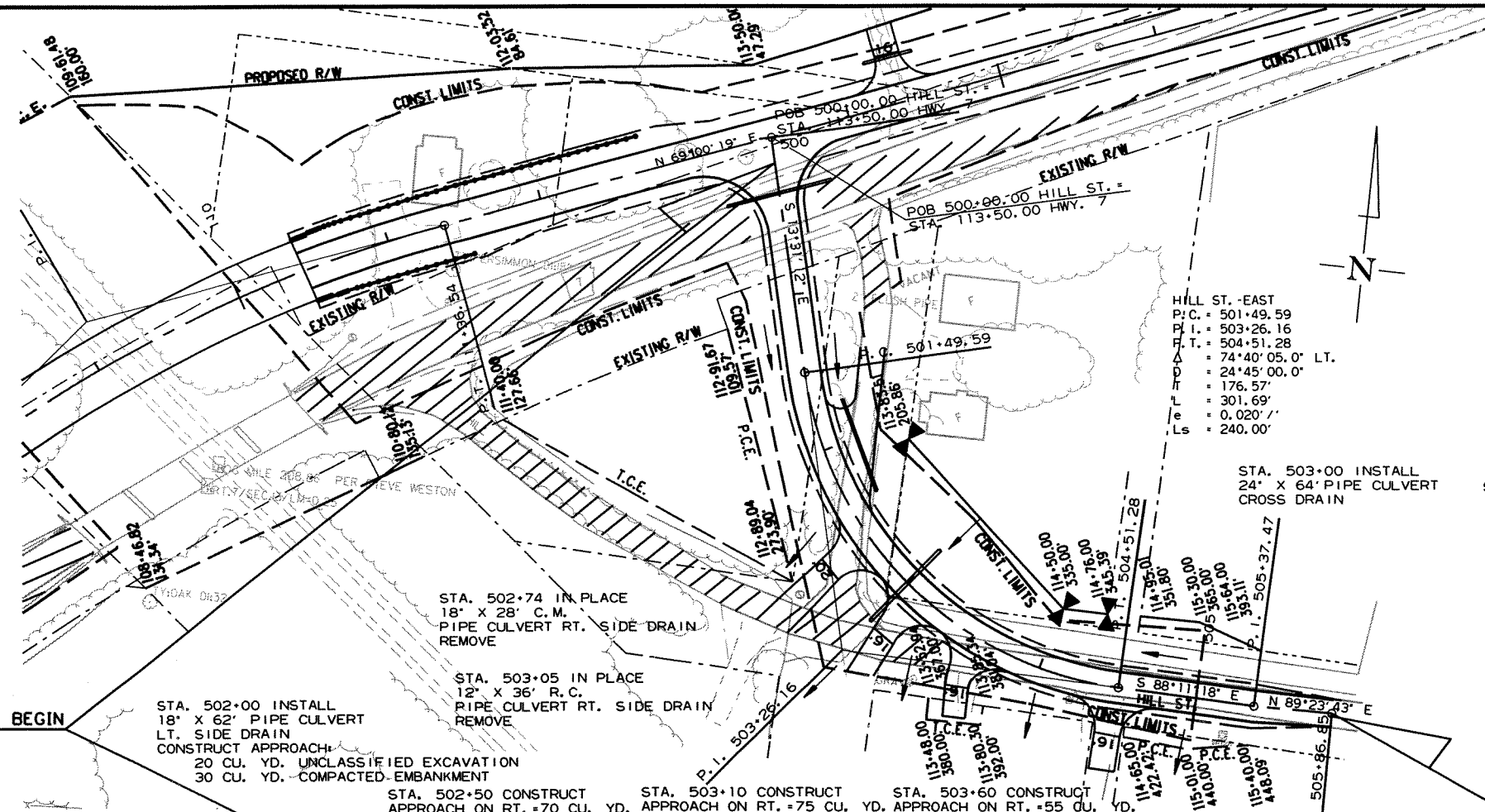
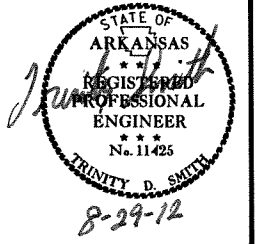
HILL ST. -WEST



R080385.DGN 8/13/2012

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO.	080385	34

2 PLAN & PROFILE SHEET-HILL ST.-EAST



R080385.DGN 8/13/2012



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	36	100
						07227	LAYOUT	52566

BORING LEGEND

AI-SHALE - Brown, Highly Weathered, Soft  
 BI-SHALE - Brown, Highly Weathered, Medium Hard  
 CI-SHALE - Brown and Gray, Laminated, Highly Weathered, Soft to Medium Hard, with Slight Dip  
 DI-SHALE WITH WEATHERED SHALE LAYERS - Dark Gray, Laminated, Medium Hard, with Slight Dip  
 EI-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip  
 FI-SHALE WITH WEATHERED SHALE SEAMS - Dark Gray, Laminated, Medium Hard, with Slight Dip  
 GI-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip  
 HI-SHALE - Brown and Gray, Highly Weathered, Soft  
 JI-SHALE - Gray, Highly Weathered, Medium Hard  
 KI-SHALE - Gray, Laminated Weathered, Medium Hard, with Slight Dip  
 LI-SHALE WITH WEATHERED SHALE LAYERS - Dark Gray, Laminated, Medium Hard, with Slight Dip and some Slickensides  
 MI-SHALE - Brown and Gray, Highly Weathered, Medium Hard  
 NI-SHALE WITH WEATHERED SHALE SEAMS - Dark Gray, Laminated, Medium Hard, with Moderate to Steep Dip  
 PI-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Moderate Dip  
 QI-SHALE - Reddish Brown and Gray, Highly Weathered, Soft  
 RI-SHALE - Reddish Brown and Gray, Highly Weathered, Medium Hard  
 SI-SHALE - Reddish Brown, Highly Weathered, Medium Hard  
 TI-SHALE WITH WEATHERED SHALE LAYERS - Dark Gray, Laminated, Medium Hard, with Moderate Dip  
 UI-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Moderate Dip and some Slickensides  
 VI-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip and some Slickensides

"N" VALUES

Sta. 108+07 - 30' Right of Center Line of Construction

4.3- 5.3, N=14  
 9.3- 9.7, N=60(5')

Sta. 108+56 - Center Line of Construction

5.3- 6.3, N=49  
 10.3- 10.5, N=60(2')

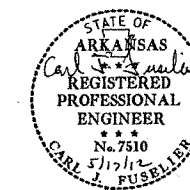
Sta. 109+69 - 3' Right of Center Line of Construction

4.0- 5.0, N=48  
 8.5- 8.8, N=60(4')  
 13.9- 14.3, N=60(5')

Sta. 110+54 - 14' Left of Center Line of Construction

4.3- 5.3, N=18  
 9.3- 10.1, N=73(9')  
 15.6- 16.4, N=83(10')  
 21.9- 22.3, N=49(5')  
 27.7- 27.7, N=60(6')  
 32.7- 33.1, N=60(5')

SHEET 2 OF 2  
 LAYOUT OF BRIDGE OVER  
 LITTLE ROCK & WESTERN RR  
 LITTLE ROCK & WESTERN RR STR. & APPRS. (OLA)(S)  
 YELL COUNTY



BRIDGE ENGINEER

ROUTE 7 SEC. 13  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

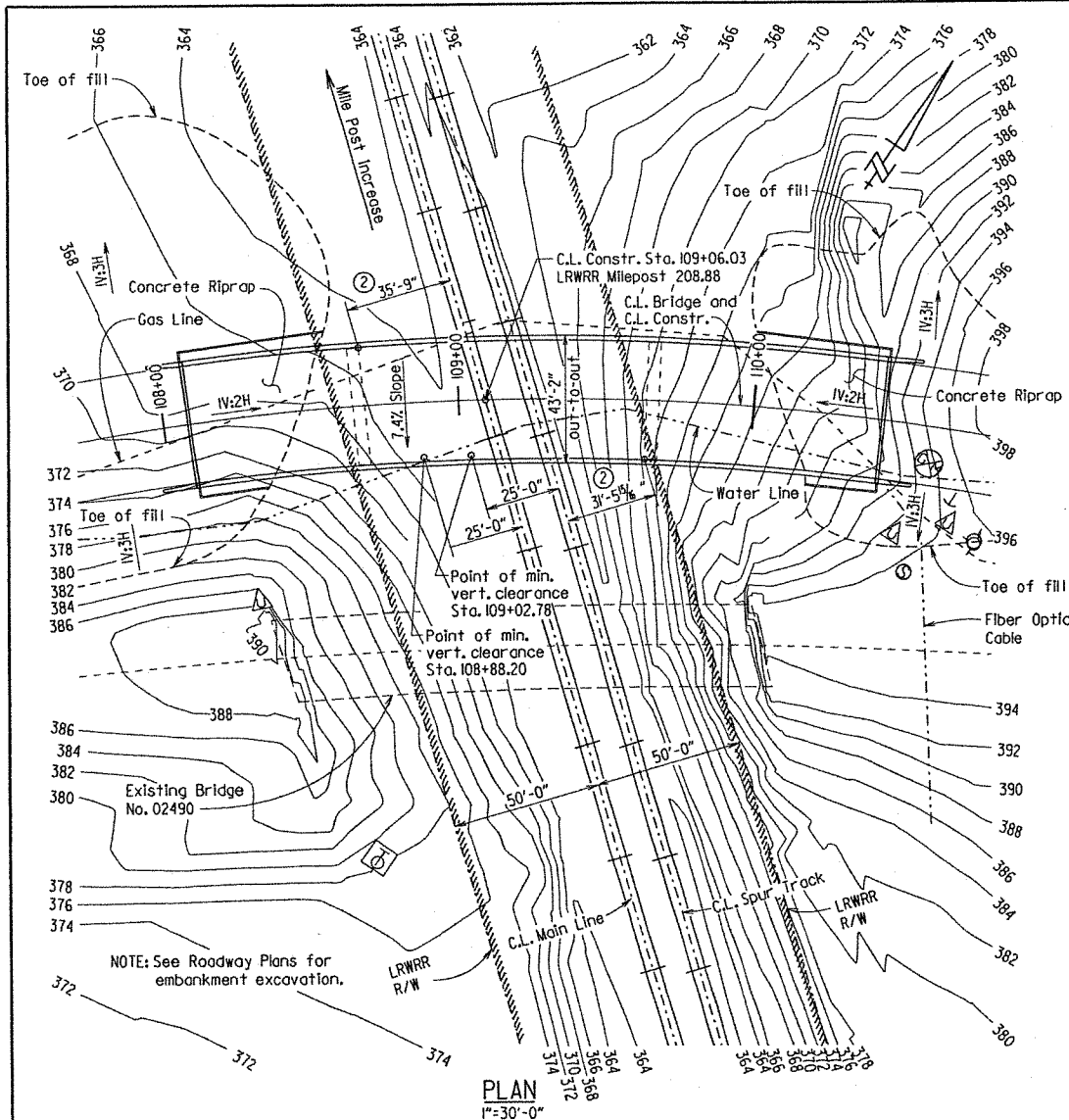
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CHECKED BY: RBR DATE: 5/11/12 SCALE: 1" = 30'-0"

DESIGNED BY: CSL DATE: Nov 2010

BRIDGE NO. 07227 DRAWING NO. 52566

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.		080385	37	100
				07227	EXHIBIT "A"			52567



**GENERAL NOTES:**

All demolitions within the Railroad's Right-Of-Way and/or demolitions that may impact the Railroad's tracks or operations shall comply with the Railroad's demolition requirements.

Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation. Erection over the Railroad's track shall be developed such that it enables the track(s) to remain open to traffic per the Railroad's requirements.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.

Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment when trains are present.

The following statement is in the "State Rail Agreement": The State shall not plow ice, snow, or sleet over the sides of the structure. In consideration of this practice, the Carrier waives its request for the State to attach splash boards to sides of the structure.

Shoring shall comply with the Little Rock & Western Railroad Requirements. Construction shall comply with the requirements of SP Job 080385 "Insurance, Construction, and Flagging requirements on Railroad property (LR&WRR)." Railroad review and approval of Shoring, Erection, and False work is required. Allow a minimum of four weeks for the review and approval of each submittal.

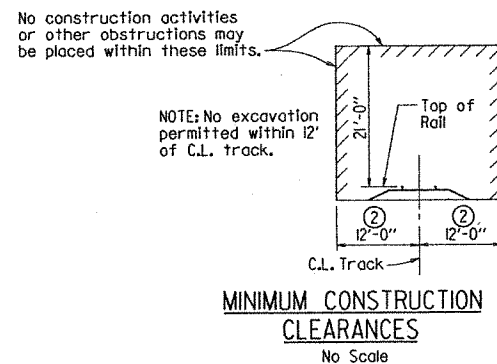
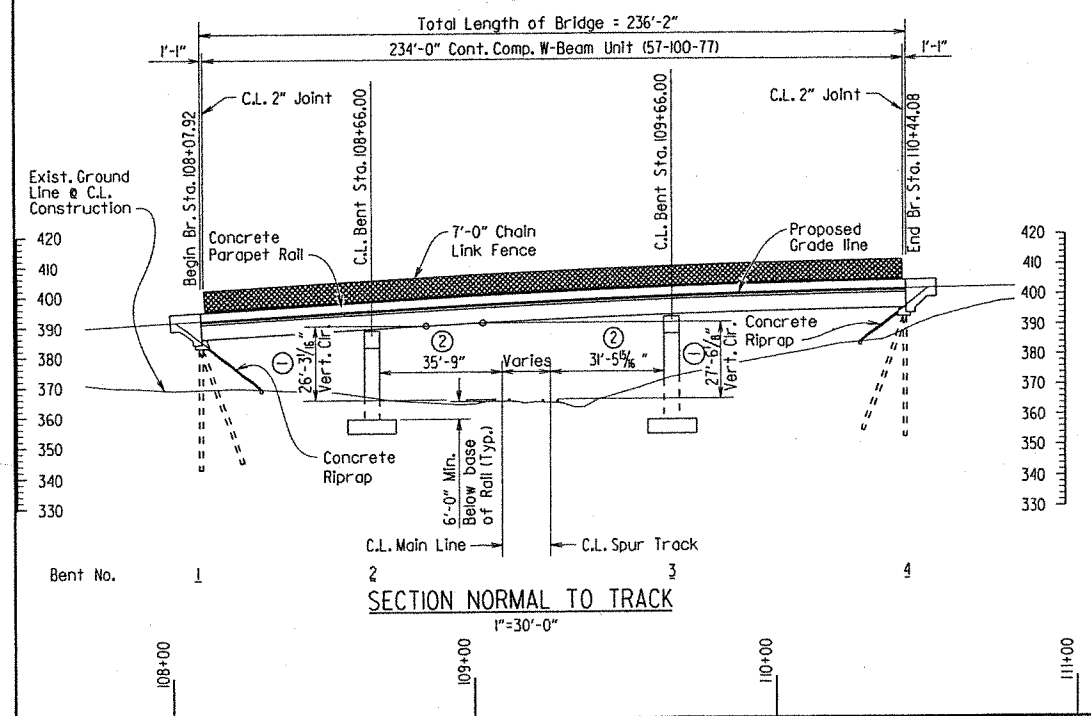
Currently there are no known utilities on the railroad right-of-way other than shown.

The proposed bridge drainage construction will not change the quantity and/or characteristics of the flow within the Railroad right-of-way.

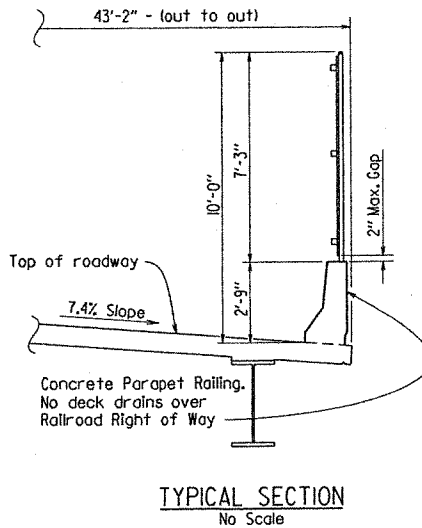
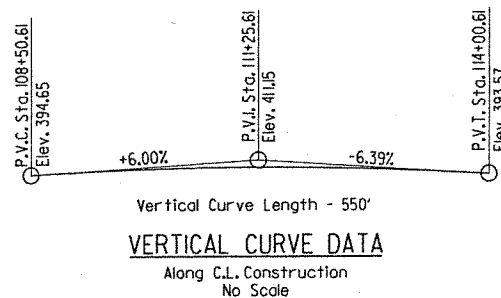
Closed Parapet Railing (No Deck Drains) over Railroad right-of-way.

All permanent clearances shall be verified before project closing.

For Railroad coordination refer to Railroad Minimum Requirements of SP Job 080385 "Insurance, Construction, and Flagging requirements on Railroad property (LR&WRR)."



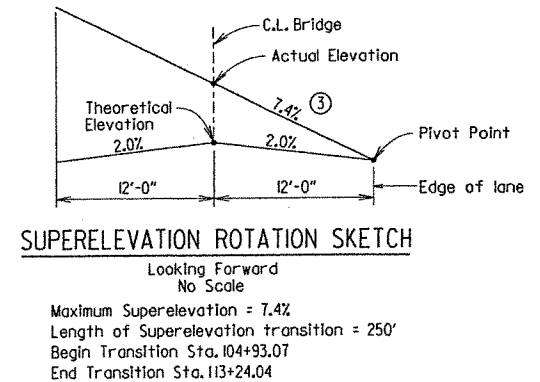
- NOTES:**
- Minimum Vertical Clearance above Top of Rail within 25' of Center Line Track.
  - Minimum Horizontal Clearance measured normal to track.
  - Full superlevation from Sta. 107+43.07 to Sta. 110+74.04



**TOP OF RAIL ELEVATIONS**

MAIN LINE			SPUR TRACK		
Milepost	Elev. South Rail	Elev. North Rail	Milepost	Elev. South Rail	Elev. North Rail
208.75	363.95	363.95	208.76	363.67	363.69
208.76	364.26	364.26	208.77	363.98	363.99
208.78	364.57	364.57	208.78	364.36	364.38
208.79	364.98	364.92	208.80	364.64	364.60
208.80	365.31	365.31	208.81	365.07	365.07
208.82	365.64	365.64	208.83	365.22	365.22
208.83	366.15	366.03	208.84	365.18	365.15
208.84	366.20	366.17	208.85	365.32	365.21
208.85	366.11	366.09	208.87	365.39	365.29
208.87	365.91	365.84	208.88	365.18	365.03
208.88	365.74	365.67	208.89	364.62	364.51
208.89	365.35	365.30	208.90	364.11	363.92
208.91	365.02	365.00	208.92	363.44	363.21
208.92	364.52	364.51	208.93	362.98	362.75
208.94	364.21	364.09	208.94	362.59	362.33
208.95	363.69	364.69	208.96	362.34	362.13
208.96	363.45	363.29	208.97	361.90	361.68
208.97	363.11				

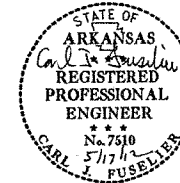
**NOTE:**  
The Contractor shall verify the elevation of the top of rail profile prior to beginning construction. All discrepancies shall be brought to the attention of the Engineer prior to construction.



**NOTE:** Stations and Elevations shown are along C.L. Bridge and C.L. Construction. Elevations are the actual elevation. Longitudinal lines shall be constructed on curves concentric to C.L. Bridge and C.L. Construction. C.L. Joint and C.L. Intermediate bents are on radial lines to C.L. Bridge and C.L. Construction.

**HORIZONTAL CURVE DATA**  
P.I. Sta. 109+13.78  
D = 6°30'00"  
Δ = 29°38'17" Rt.  
L = 455.97'  
T = 233.21'  
R = 881.47'

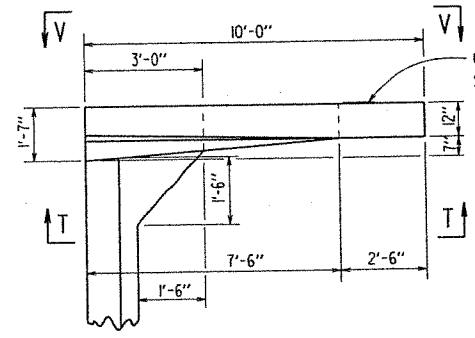
Lat. = N 35°02'08.43"  
Long. = W 93°13'14.5"



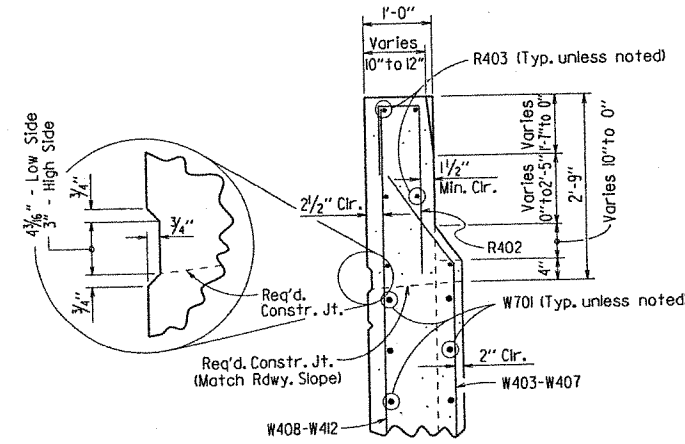
**EXHIBIT A**  
**LITTLE ROCK & WESTERN RR STR. & APPRS. (OLA)(S)**  
**YELL COUNTY**  
ROUTE 7 SEC. 13  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.  
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CHECKED BY: RBR DATE: 5/13/12 SCALE: 1" = 30'-0"  
DESIGNED BY: CSL DATE: Nov 2010  
BRIDGE NO. 07227 DRAWING NO. 52567



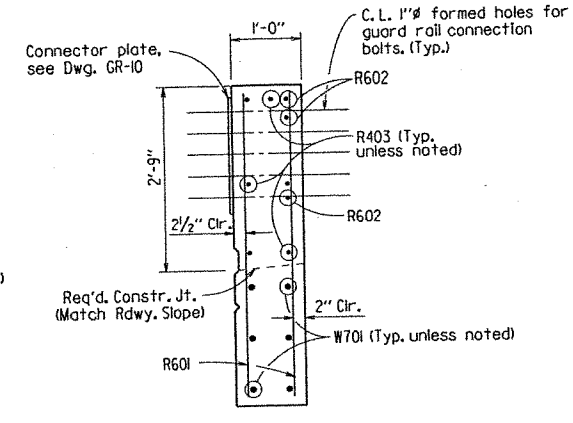
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				JOB NO.	080385	39	100	
				07227	END BENT DETAILS	52569		



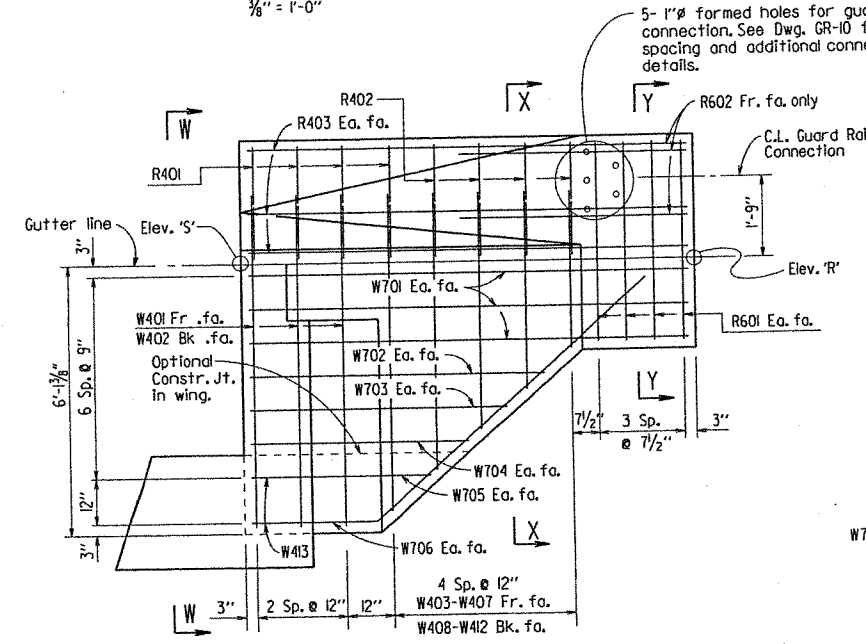
PLAN OF RAIL  
3/8" = 1'-0"



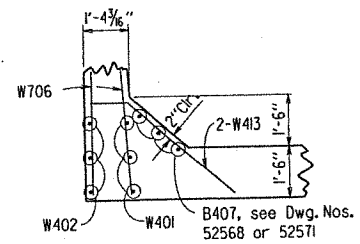
SECTION X-X  
3/4" = 1'-0"



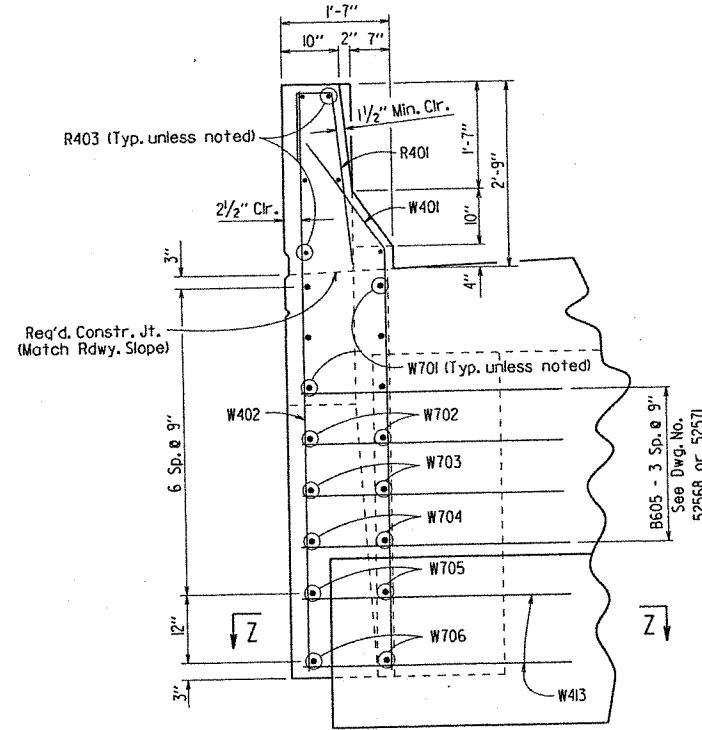
SECTION Y-Y  
3/4" = 1'-0"



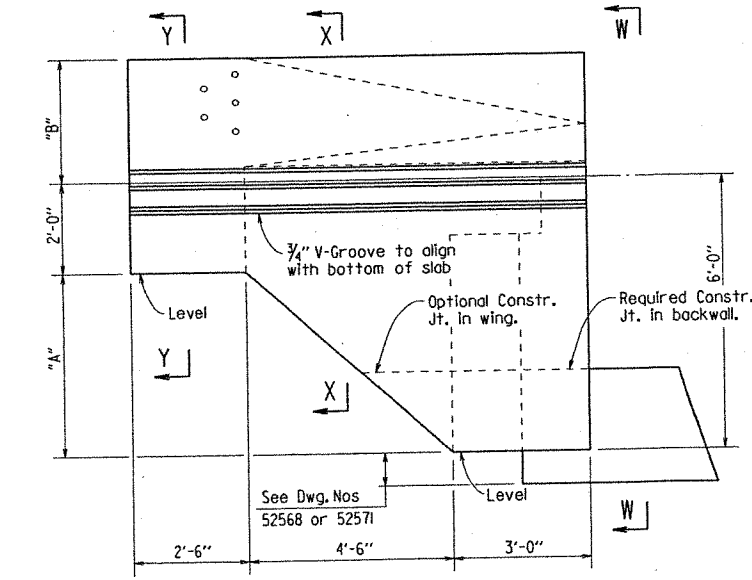
VIEW T-T  
1/2" = 1'-0"



SECTION Z-Z  
3/8" = 1'-0"



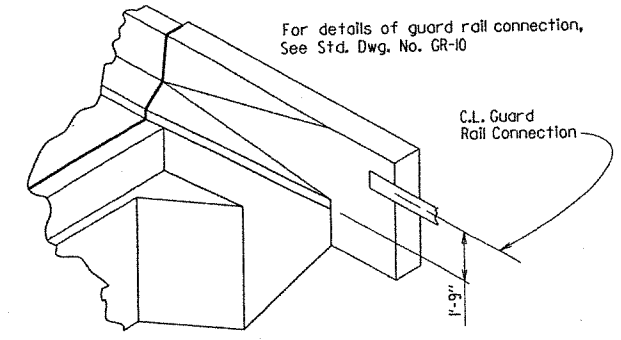
VIEW W-W  
3/4" = 1'-0"



VIEW V-V  
1/2" = 1'-0"

TABLE OF VARIABLES

BENT	WING	Elev. 'S'	Elev. 'R'	'A'	'B'
1	A	391.32	390.70	3'-4 3/8"	2'-10 3/8"
	B	394.28	393.69	3'-4 1/4"	2'-7 1/8"
4	A	404.15	404.31	4'-1 1/4"	2'-10 3/8"
	B	401.9	401.35	4'-1 1/4"	2'-7 1/8"



THREE DIMENSIONAL VIEW OF RAIL  
No Scale

BAR LIST-PER BENT

Mark	No.	Length	Pin Dia.
B401	47	8'-1"	2"
B402	47	4'-3"	Str.
B403	12	42'-11"	Str.
B404	2	4'-9"	Str.
B405	56	1'-11"	2"
B406	10	7'-6"	2"
B407	6	4'-5"	Str.
B601	6	9'-0"	4 1/2"
B602	6	4'-9"	Str.
B603	6	43'-0"	4 1/2"
B604	7	4'-8"	Str.
B605	8	7'-5"	4 1/2"
R401	8	3'-11"	2"
R402	8	4'-0"	2"
R403	12	9'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	6	8'-1"	2"
W402	6	8'-5"	Str.
W403-W407	2 ea.	7'-0" to 3'-5"	2"
W408-W412	2 ea.	8'-1" to 4'-6"	Str.
W413	4	5'-1"	2"
W701	12	9'-8"	Str.
W702	4	6'-5"	Str.
W703	4	5'-7"	Str.
W704	4	4'-9"	Str.
W705	4	3'-11"	Str.
W706	4	10'-8"	5 1/4"

Bending Diagram

Dimensions are out to out of bars.

GENERAL NOTES

All concrete shall be Class 'S' with a minimum 28-day compressive strength  $f'_c = 3500$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 ( $f_y = 60,000$  psi).

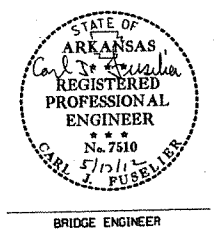
Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

Structural steel in backwall shall be AASHTO M270, Gr. 50W and shall be paid for as 'Structural Steel in Beam Spans (M270, Gr. 50W)'.

No portion of the backwall shall be poured before the beams are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until all deck pours have been made. Refer to the 'Expansion Device Installation' note, see Dwg. No. 52578. No heavy construction equipment shall be allowed directly behind the backwall until the concrete placement for the span has been completed.

Special care shall be taken to properly and thoroughly consolidate the concrete in the vicinity of the expansion joint device in the backwall. See subsection 802.09 (a)(3).

For additional information see layout.



COMMON DETAILS OF BENTS 1 & 4

ROUTE \_\_\_\_\_ SEC. \_\_\_\_\_

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RBR DATE: 8/29/11 FILENAME: b080385\_bil.dgn  
 CHECKED BY: DHP DATE: 5-11-12 SCALE: AS NOTED  
 DESIGNED BY: RBR DATE: 7/11

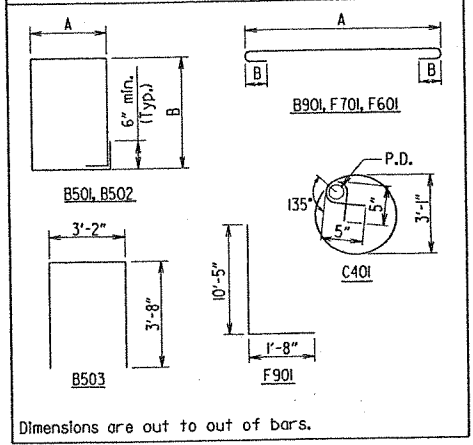
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				6	ARK.		40	100
				JOB NO.	080385			
				07227	INTERMEDIATE BENT DETAILS			52570

**BAR LIST PER BENT**

MARK	NO. REQ'D.	LENGTH	A	B	P.D.
B401	10	41'-8"			Str.
B501	10	14'-2"	3'-2"	3'-8"	2 1/2"
B502	64	12'-0"	2'-1"	3'-8"	2 1/2"
B503	12	10'-4"			2 1/2"
B901	6	44'-2"	41'-8"	10"	9"
B902	8	41'-8"			Str.
C401	'F'	10'-9"			3"
C901	11	'G'			Str.
C902	11	'H'			Str.
C903	11	'J'			Str.
F601	81	11'-10"	10'-6"	6"	4 1/2"
F801	63	15'-4"	13'-6"	8"	6"
F901	33	11'-10"			9"

**BENDING DIAGRAMS**



**GENERAL NOTES**

All concrete shall be Class "S" with a minimum 28-day compressive strength  $f'_c = 3500$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 1/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi). Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

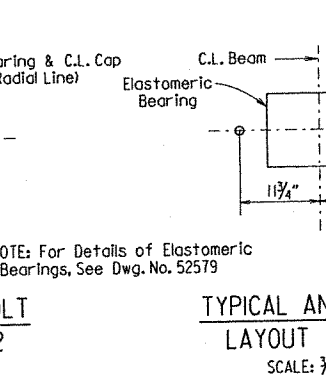
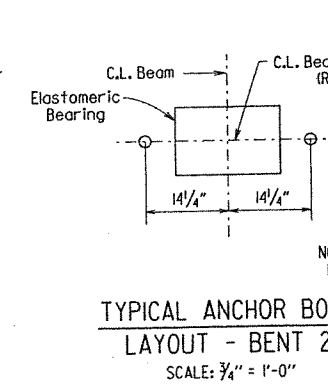
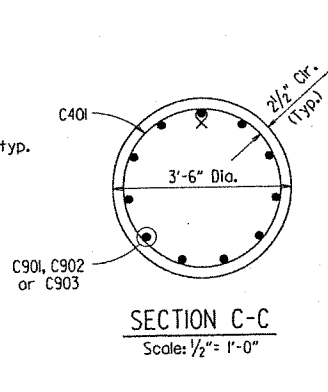
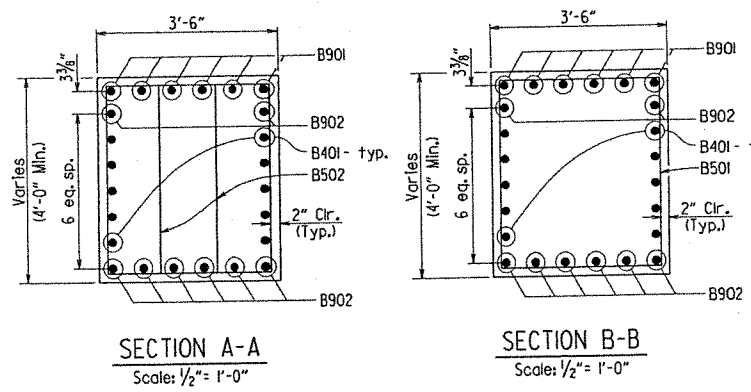
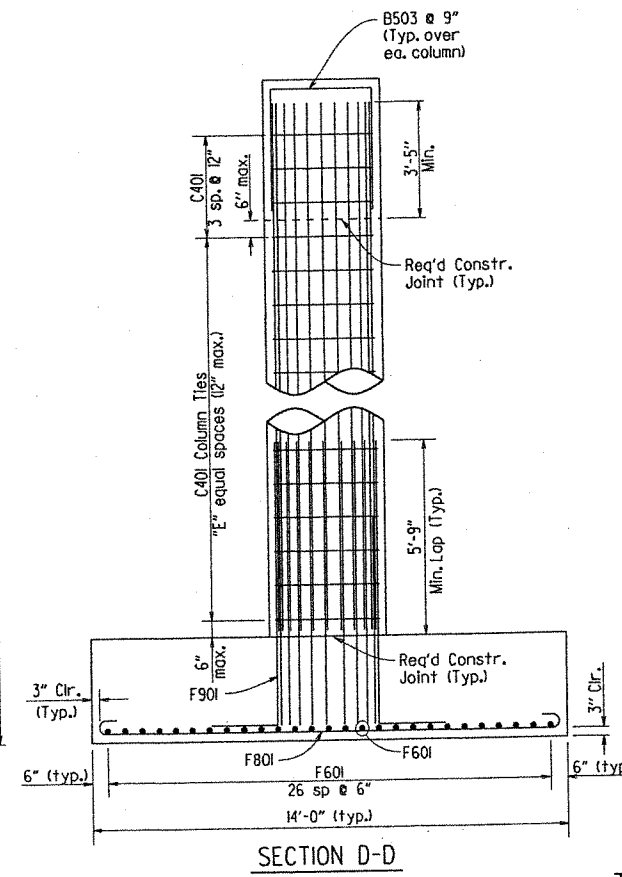
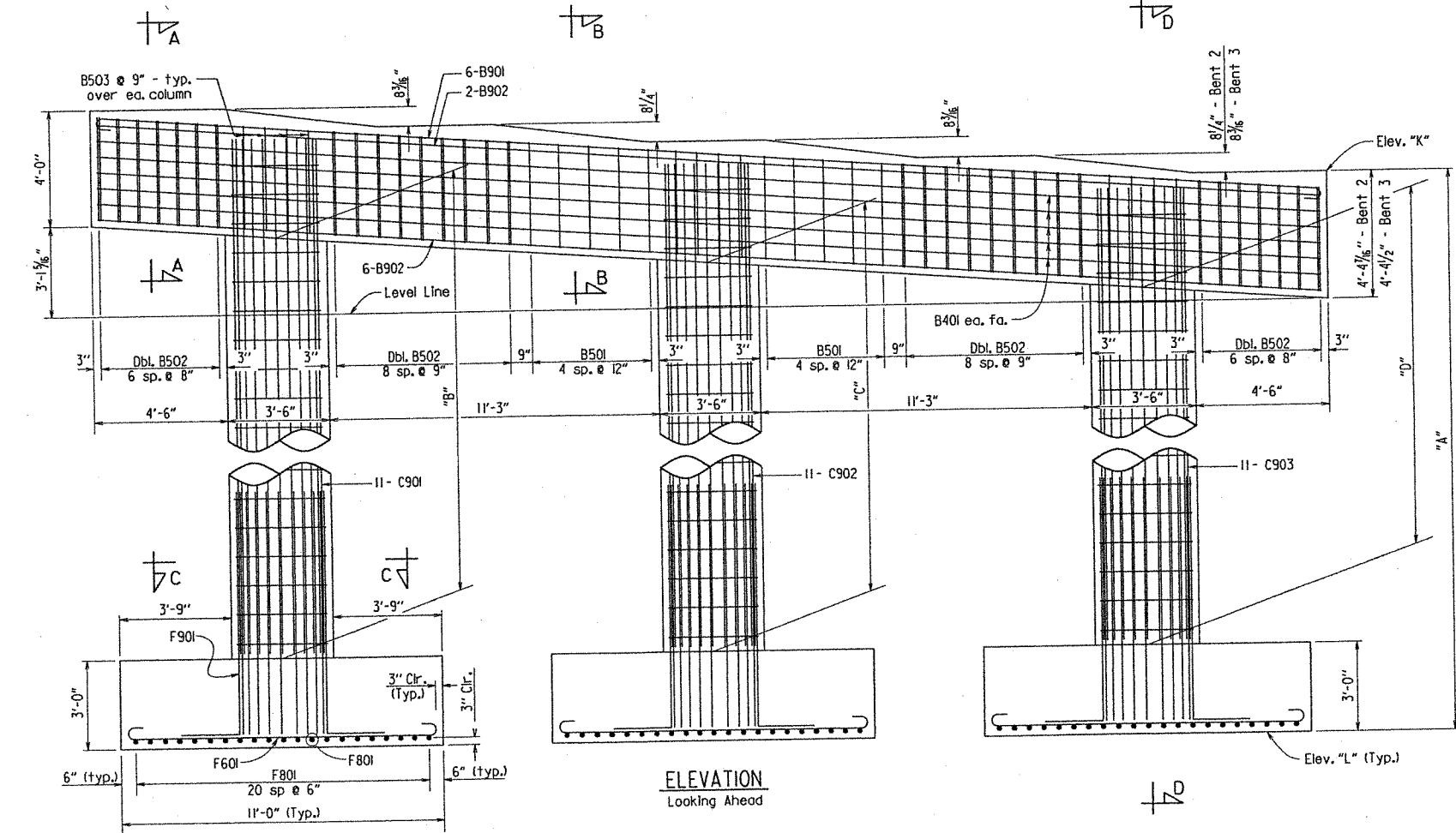
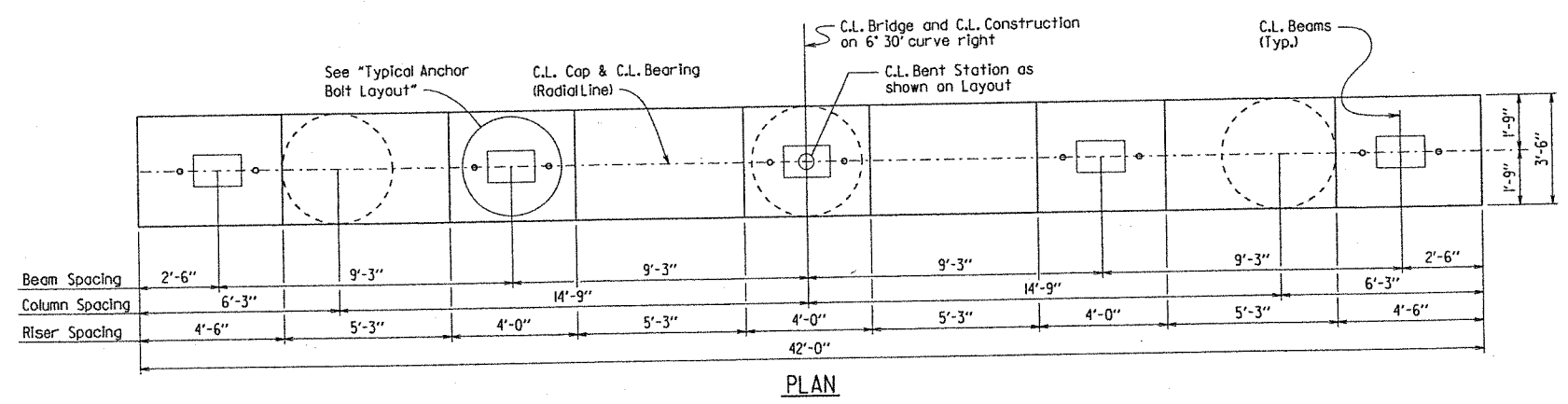
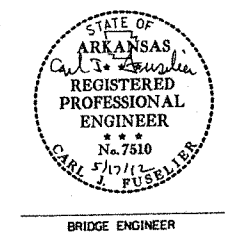
For additional information, see Layout.

**TABLE OF VARIABLES**

Bent No.	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"Elev. K"	"Elev. L"
2	39'-6"	35'-3 3/8"	34'-2 1/4"	33'-1 1/8"	35	117	38'-8"	37'-7"	36'-6"	390.50	351.00
3	39'-0"	34'-9 1/4"	33'-8 3/8"	32'-7 1/8"	34	114	38'-2"	37'-1"	36'-0"	395.02	356.02

**DETAILS OF BENTS 2 & 3**  
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.

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 DESIGNED BY: RBR DATE: 7/11  
 BRIDGE NO. 07227 DRAWING NO. 52570

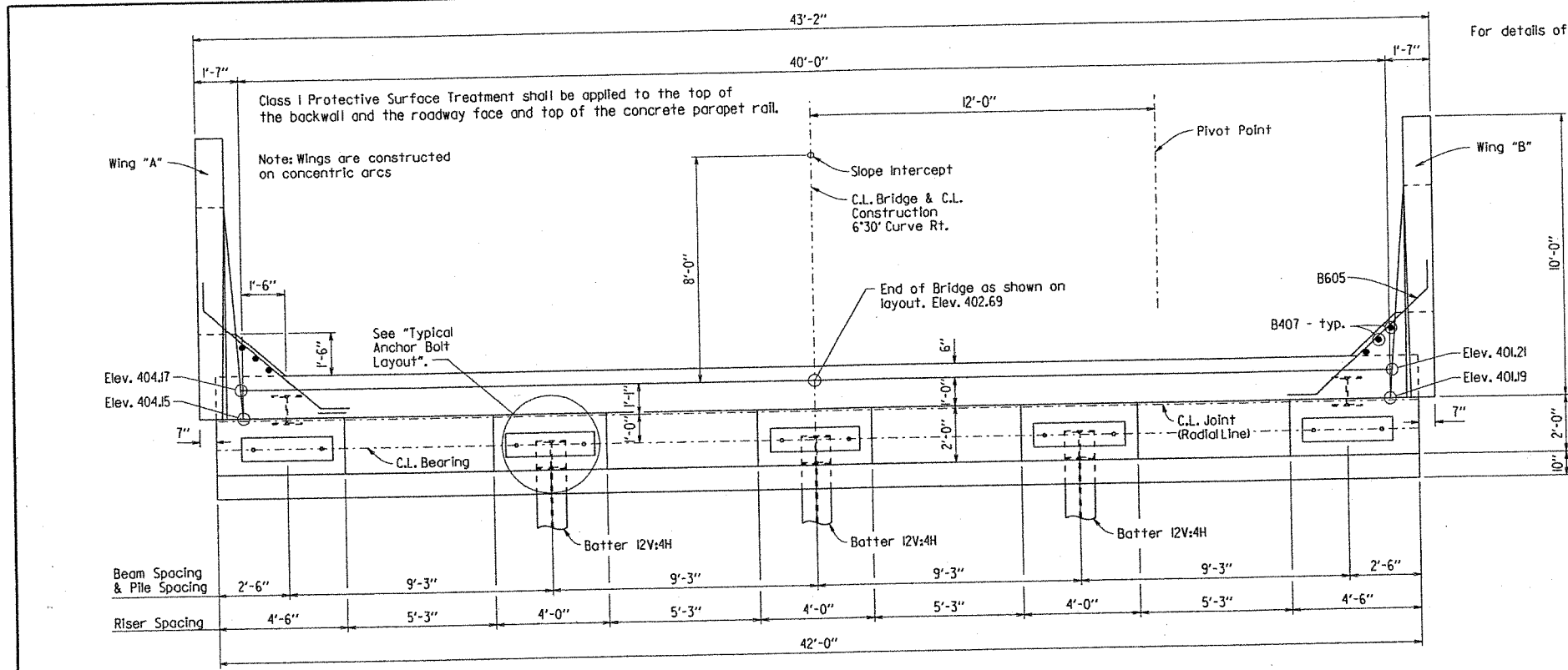


NOTE: For Details of Elastomeric Bearings, See Dwg. No. 52579

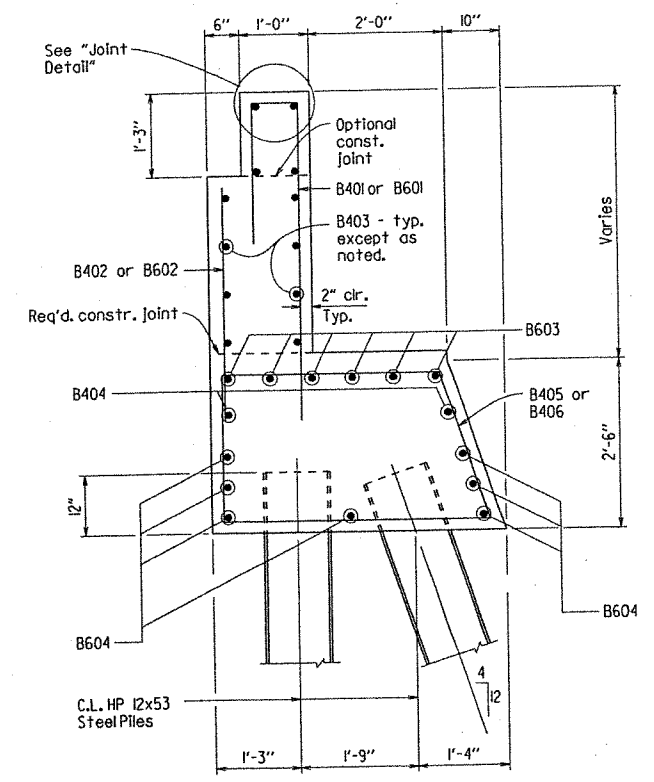
BRIDGE ENGINEER



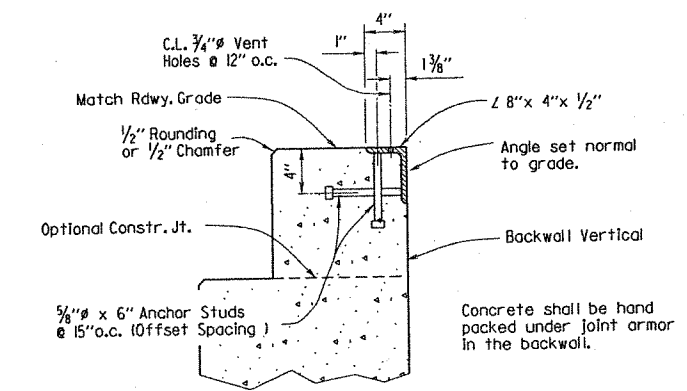
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				07227	END BENT DETAILS			52571



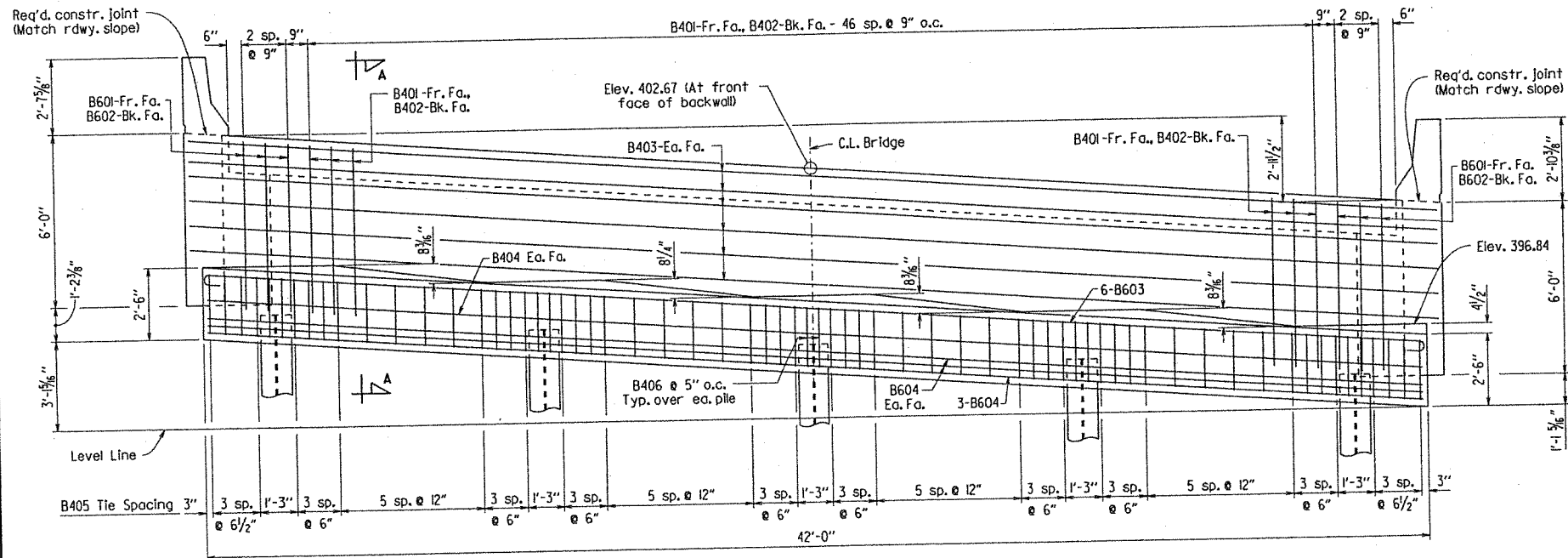
**PLAN**  
Scale: 3/8" = 1'-0"



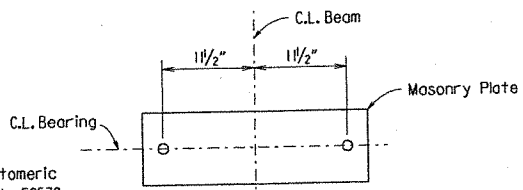
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For additional Joint Details, see Dwg. No. 52578  
**JOINT DETAIL**  
No Scale



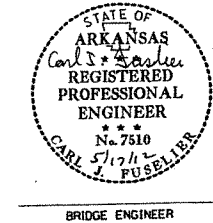
**ELEVATION**  
Looking Ahead  
Scale: 3/8" = 1'-0"



**TYPICAL ANCHOR BOLT LAYOUT**  
No Scale

For Details of Elastomeric Bearings, See Dwg. No. 52579

See Dwg. No. 52569 for End Bent General Notes and Reinforcing Bar List



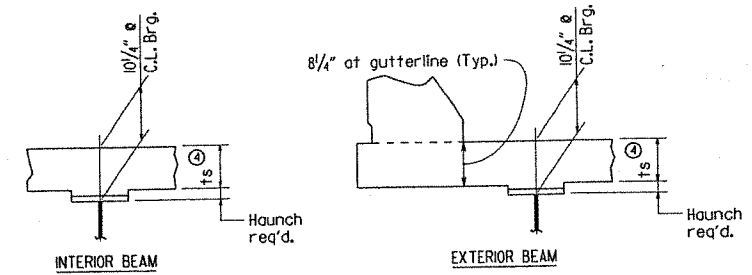
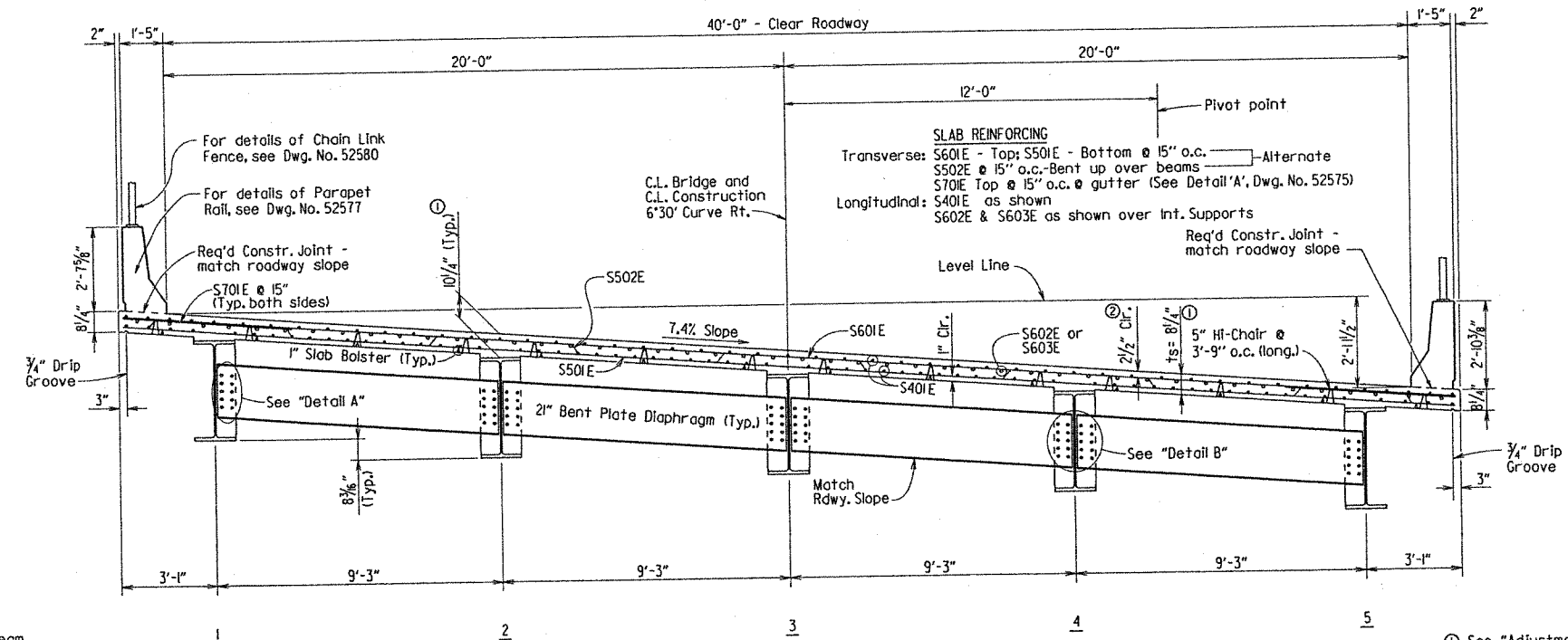
**DETAILS OF BENT 4**  
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.

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CHECKED BY: DHP DATE: 5-11-12 SCALE: 3/8" = 1'-0" or as noted  
DESIGNED BY: RBR DATE: 7/11  
BRIDGE NO. 07227 DRAWING NO. 52571

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.	080385	42	100	
				07227	SPAN DETAILS		52572	

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the face and top of the concrete parapet rail.

At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.



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

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

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. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

**ADJUSTMENT FOR SLAB THICKNESS TOLERANCE**  
NO SCALE

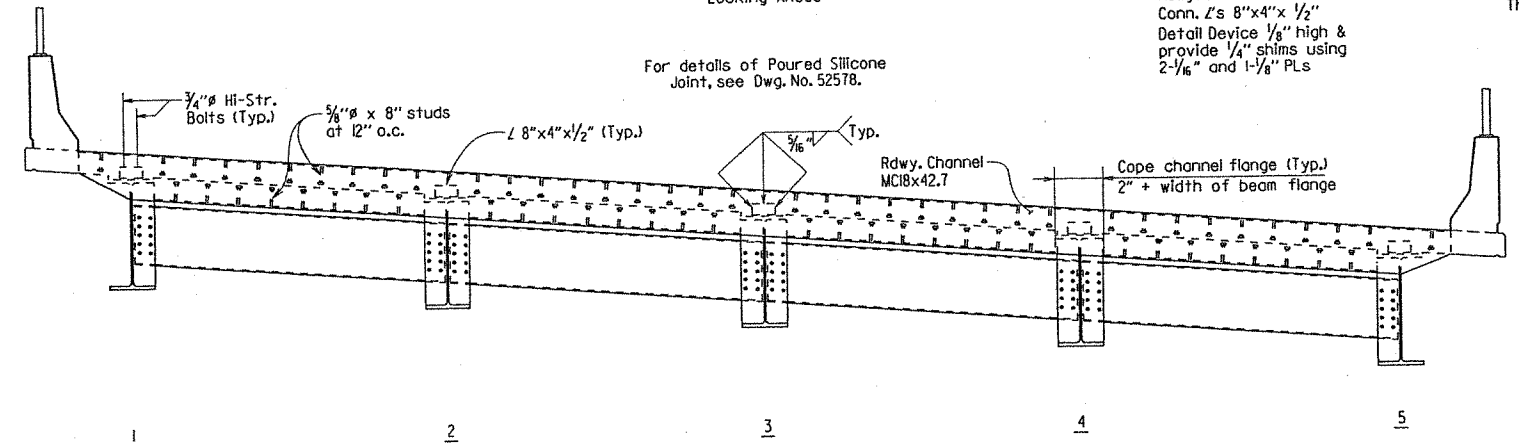
**TYPICAL ROADWAY SECTION**  
Looking Ahead

Expansion Device:  
Rdwy. Channel - MC18x42.7  
Conn. L's 8"x4"x 1/2"  
Detail Device 1/8" high & provide 1/4" shims using 2-1/16" and 1-1/8" PLs

- ① See "Adjustment for Slab Thickness Tolerance".
- ② Tolerance: Minus =  $1/4$ "; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".

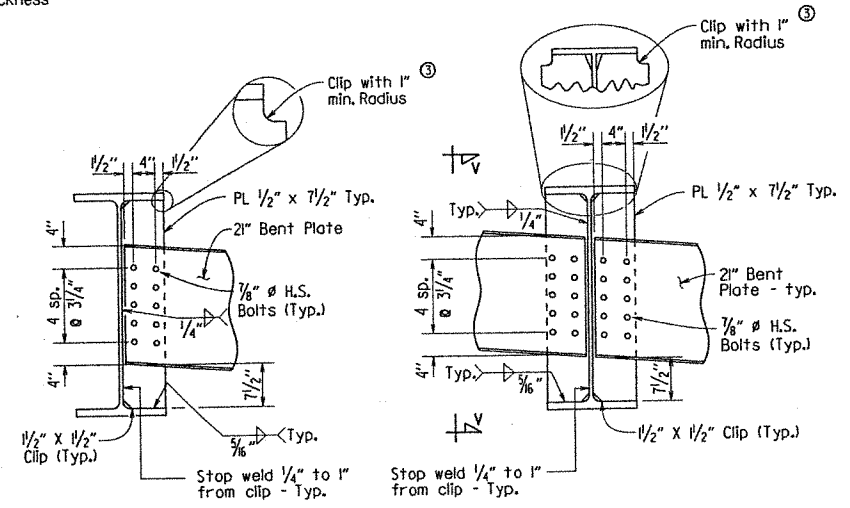
Beam

Beam



**SECTION THRU JOINT**  
Looking Ahead

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



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

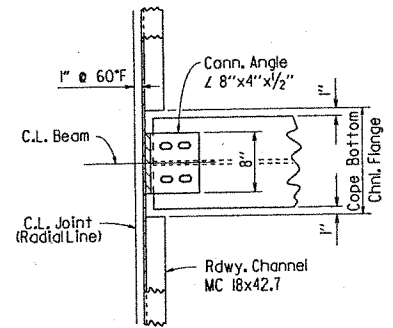
**DETAIL B**  
Scale: 3/4" = 1'-0"

③ If permanent deck forms are used, the fabricator shall clip the plate as necessary to accommodate the support angle.

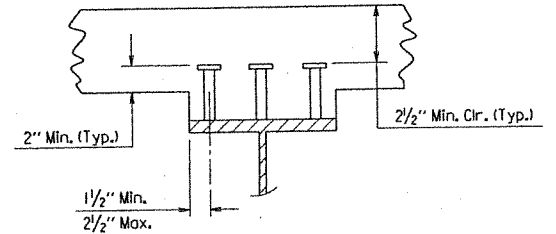
**TABLE FOR WELD**

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	Yes
Over 3/4"	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.

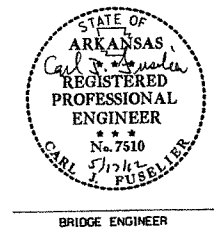


**CHANNEL CONNECTION DETAILS**  
No Scale



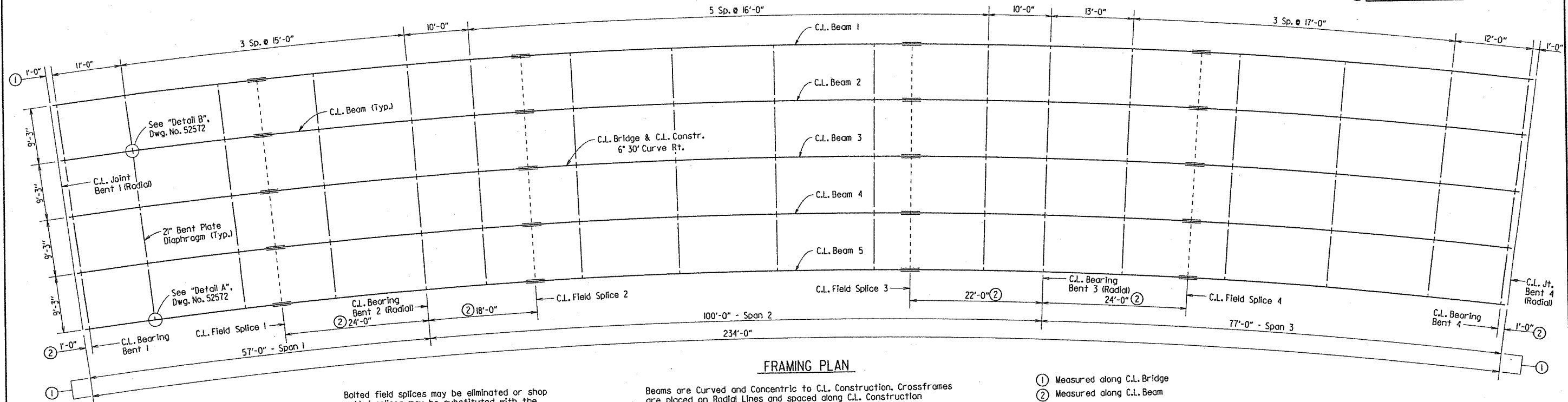
**SHEAR CONNECTOR DETAIL**  
No Scale

Stud Shear Connectors shown shall be 7/8" x 4 1/2" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 3/4" studs may be used in place of the 7/8" studs shown, at the ratio of 1.361 - 3/4" studs in place of one 7/8" stud. 7/8" studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 24"



**SHEET 1 OF 7**  
**DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT**  
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.  
DRAWN BY: MRE DATE: 07/29/11 FILENAME: b080385\_sl.dgn  
CHECKED BY: DHP DATE: 5-11-12 SCALE: 3/4" = 1'-0"  
DESIGNED BY: RBK DATE: 7/11  
BRIDGE NO. 07227 DRAWING NO. 52572

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.	080385		43	100
				07227	SPAN DETAILS		52573	

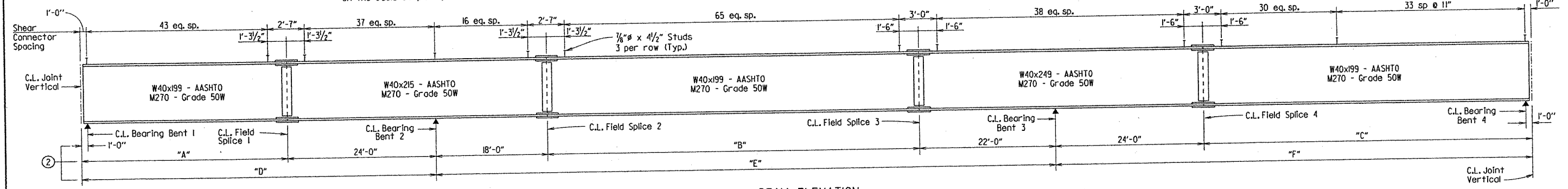


**FRAMING PLAN**

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

Beams are Curved and Concentric to C.L. Construction. Crossframes are placed on Radial Lines and spaced along C.L. Construction

- ① Measured along C.L. Bridge
- ② Measured along C.L. Beam



**BEAM ELEVATION**

No Scale

**TABLE OF VARIABLES**

Beam No.	"A"	"B"	"C"	"D"	"E"	"F"
1	34'-2 3/8"	62'-1 3/8"	54'-7 3/8"	58'-2 3/8"	102'-1 3/8"	78'-7 3/8"
2	33'-7 3/8"	61'-0 3/8"	53'-9 3/8"	57'-7 3/8"	101'-0 3/8"	77'-9 3/8"
3	33'-0"	60'-0"	53'-0"	57'-0"	100'-0"	77'-0"
4	32'-4 3/8"	58'-11 3/8"	52'-2 3/8"	56'-4 3/8"	98'-11 3/8"	76'-2 3/8"
5	31'-9 3/8"	57'-10 3/8"	51'-4 3/8"	55'-9 3/8"	97'-10 3/8"	75'-4 3/8"



BRIDGE ENGINEER

**SHEET 2 OF 7**  
**DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT**  
 ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
 LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 07/29/11 FILENAME: b080385\_sldgn  
 CHECKED BY: DHP DATE: 5-11-12 SCALE: 1/8" = 1'-0" or as shown  
 DESIGNED BY: RBR DATE: 7/11  
 BRIDGE NO. 07227 DRAWING NO. 52573

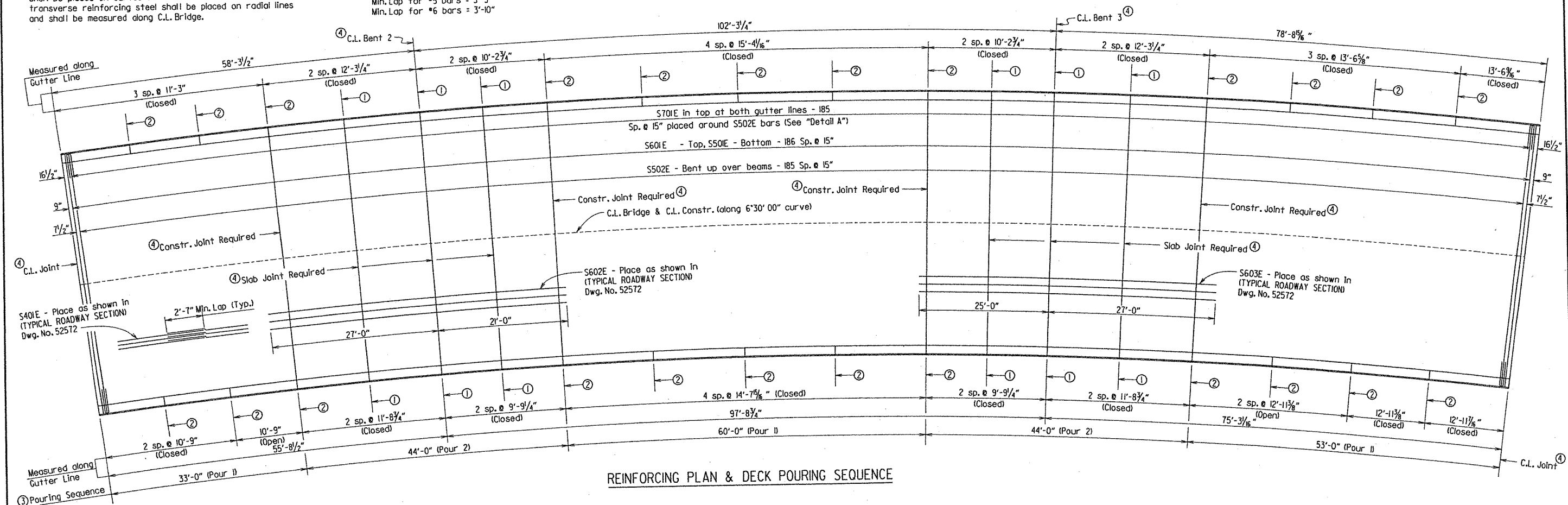


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				07227	SPAN DETAILS		52575	

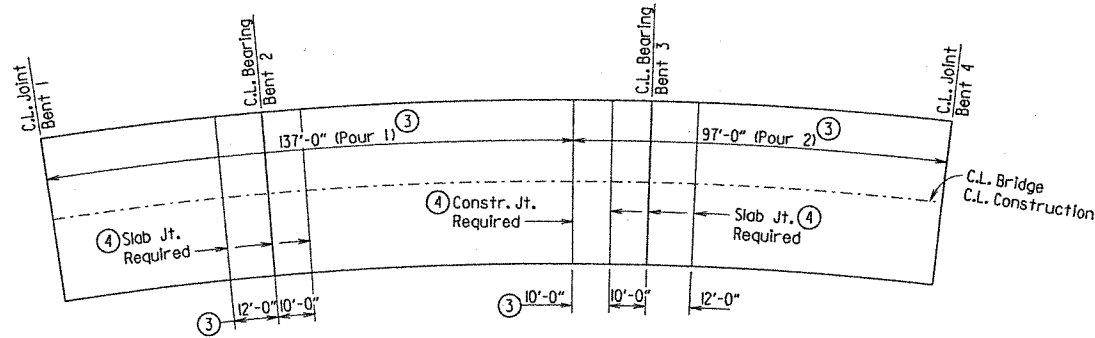
All longitudinal lines and longitudinal reinforcing steel shall be placed on curves concentric with C.L. Bridge. All transverse reinforcing steel shall be placed on radial lines and shall be measured along C.L. Bridge.

Unless otherwise noted:  
 Min. Lap for #4 bars = 2'-7"  
 Min. Lap for #5 bars = 3'-3"  
 Min. Lap for #6 bars = 3'-10"

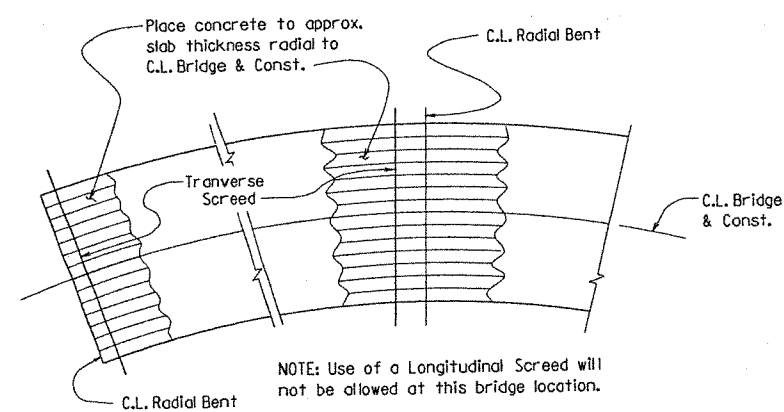
See Dwg. No. 52577 for Bar List.



Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed, 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour. Any rolling pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

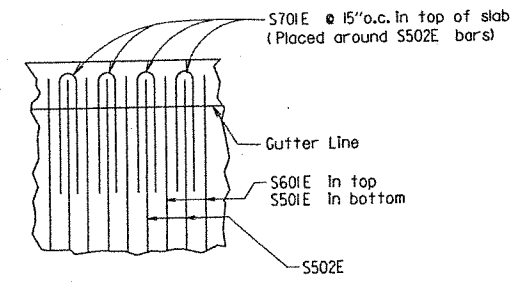


1/2" x 1" Type 3, 4 or 6 Joint Sealer. See subsections 50L02 (h) and 50L05 (j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class 5 (AE) Concrete - Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joint shall be installed before the 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 and pouring sequence joints shall align with parapet open joints.

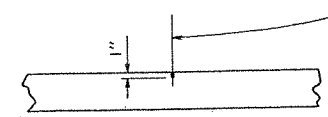


CONCRETE PLACEMENT PROCEDURE  
No Scale

- ① C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) Stop 4" from top of slab.
- ② C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) Stop 1'-2" from top of slab.
- ③ Measured along C.L. Bridge
- ④ Radial Line



DETAIL A  
No Scale



SLAB JOINT DETAIL  
No Scale



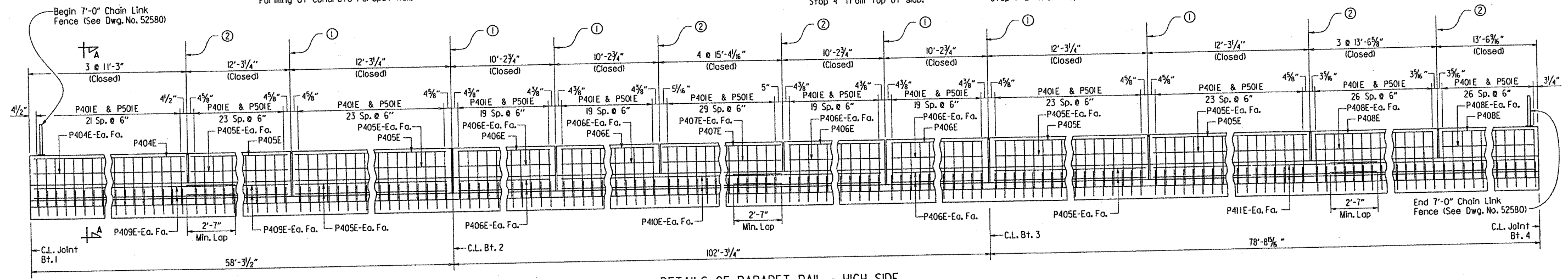
SHEET 4 OF 7  
 DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT  
 ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 DRAWN BY: MRE DATE: 07/29/11 FILENAME: b080385.sldgn  
 CHECKED BY: DHP DATE: 5-11-12 SCALE: 1/8" = 1'-0" or as shown  
 DESIGNED BY: RGR DATE: 7/11  
 BRIDGE NO. 07227 DRAWING NO. 52575

BRIDGE ENGINEER

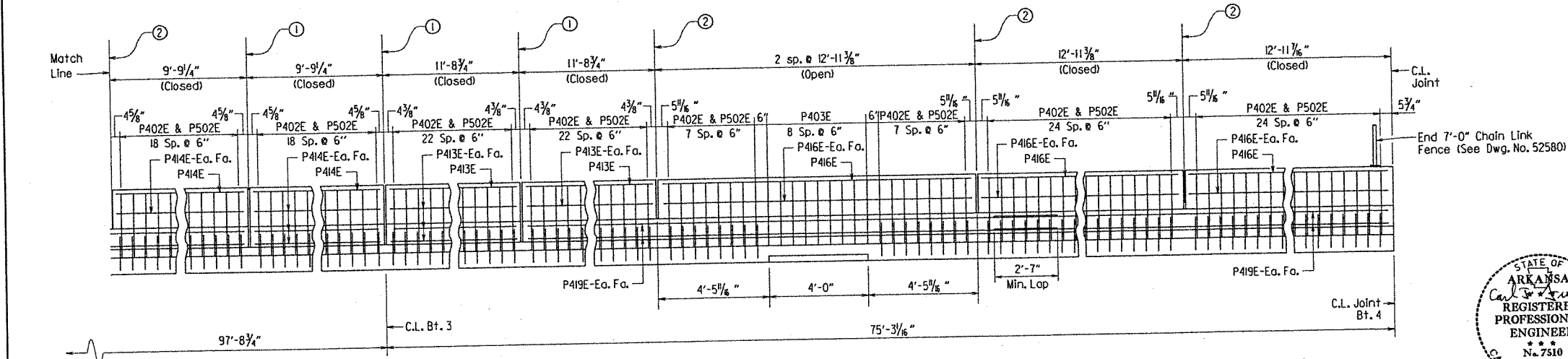
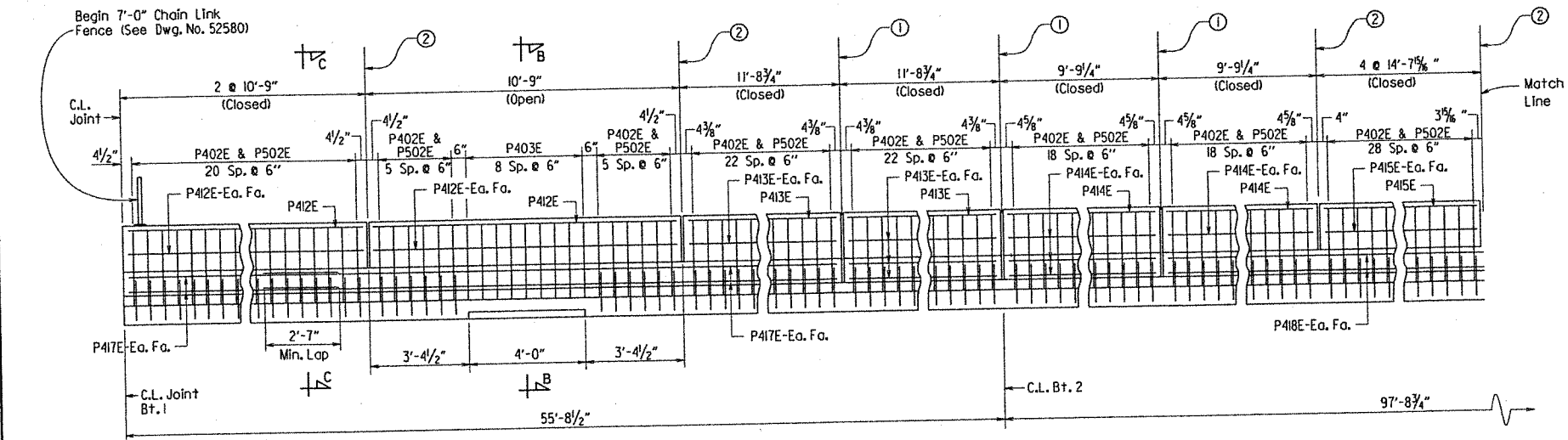
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		46	100
				JOB NO.	080385		46	100
				07227	SPAN DETAILS			52576

See Dwg. No. 52577 for Sections A-A, B-B, C-C, Name Plate Detail and Detail of Optional Slip Forming of Concrete Parapet Rail.

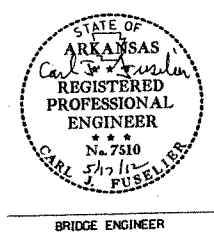
- ① C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 52575. Stop 4" from top of slab.
- ② C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) as shown in "Reinforcing Plan & Deck Pouring Sequence" Dwg. No. 52575. Stop 1'-2" from top of slab.



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



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



SHEET 5 OF 7  
 DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT  
 ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 06-24-11 FILENAME: b080385.sl.dgn  
 CHECKED BY: DHP DATE: 5-11-12 SCALE: As shown  
 DESIGNED BY: RB/R DATE: 7/11  
 BRIDGE NO. 07227 DRAWING NO. 52576



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.		080385	48	100
				07227		SPAN DETAILS		52578

**GENERAL NOTES**

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

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

LIVE LOADING: HL-93

**MATERIALS AND STRENGTHS:**

Concrete: All concrete shall be Class (SAE) with a minimum 28 day strength  $f'_c = 4000$  psi.

Reinforcing Steel: Reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (Yield Strength = 60,000 psi.).

Structural Steel: Structural steel shall conform to AASHTO M270, Gr. 50W ( $F_y = 50,000$  psi.) or AASHTO M270 Gr. 36 ( $F_y = 36,000$  psi.).

**STRUCTURAL STEEL:**

All Structural Steel shall be AASHTO M270, Gr. 50W unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50W)". Structural Steel completely embedded in concrete may be AASHTO M270, Gr. 36. AASHTO M270, Gr. 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e) unless noted otherwise.

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

Beams, web and flange splice plates, diaphragms and connection 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 Beam Spans (M270, Gr. 50W)".

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

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

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

All beams shall be blocked in their true position in the shop as specified in subsection 807.54 (b)(2). The camber, length of sections, distance between bearings, and opening of joints shall be measured with the beams in their true position and this information shall become part of the permanent record of this job. The component parts shall be match marked in this assembly and those marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 60 degrees F. A tolerance of  $1/4"$  (plus or minus) allowed for camber.

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

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

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck.

Elastomeric Bearings with Masonry Plates shall be seated in accordance with subsection 807.66, all other bearings shall be seated in accordance with Subsection 808.08. This work and material will not be paid for directly but will be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr. 50W)".

**REINFORCING STEEL:**

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports, sufficient in size and number, to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

**CONCRETE:**

All concrete shall be Class (SAE) with a minimum 28 day compressive strength  $f'_c = 4000$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered  $3/4"$  unless otherwise noted. 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 Tine Finish in accordance with subsection 802.19 for Class 5, Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. The use of a longitudinal screed is prohibited.

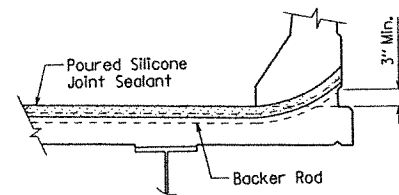
**CLASS I PROTECTIVE SURFACE TREATMENT:** Class I protective surface treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail.

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

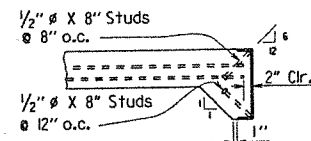
Load Distribution  
Dead Load:

A. To W-Beam	Beam No. 1 & 5	795	plf + Wt. of Structural Steel
	Beam 2, 3 & 4	954	plf + Wt. of Structural Steel
B. To Composite Beam	Beam No. 1, 2, 3, 4 & 5	348	plf <sup>②</sup>

<sup>②</sup> Includes 192 plf future wearing surface.

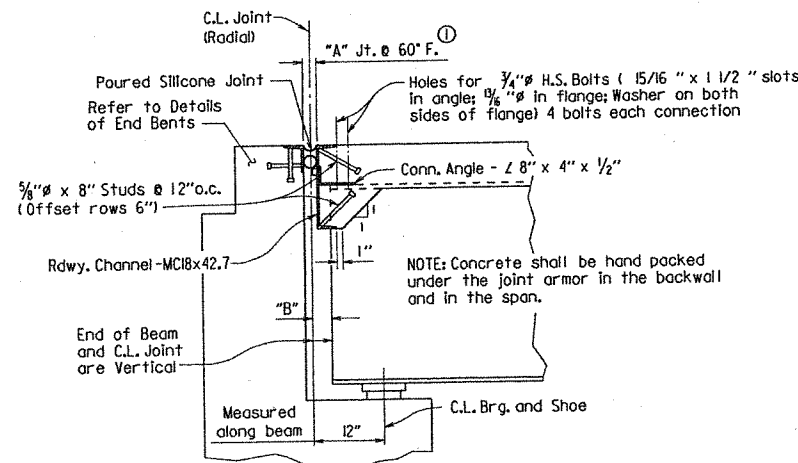


**JOINT SEAL PLACEMENT AT CURB**  
No Scale

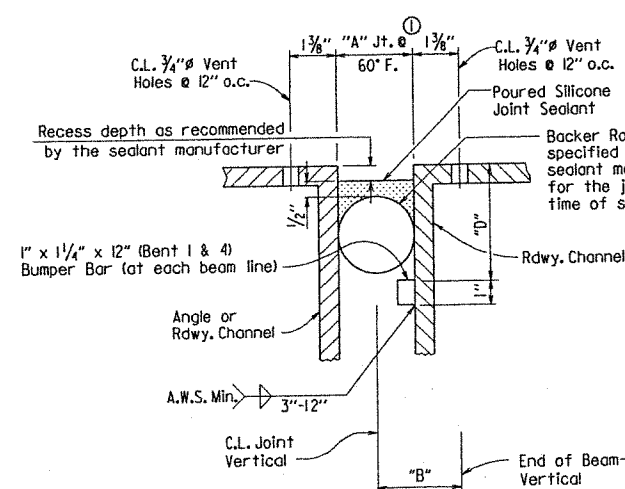


NOTE: As an alternate to  $1/2"$  studs,  $1/2"$  x 8" studs spaced as shown may be used. Use weight of  $1/2"$  stud as basis of measurement of structural steel in anchors.

**DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT**  
No Scale



**SECTION THRU JOINT AT BENTS 1 & 4**  
Scale:  $3/4" = 1'-0"$



**DETAIL OF POURED SILICONE JOINT SEAL**  
NO SCALE

**SILICONE JOINT DATA**

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature <sup>①</sup> of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1	2 1/8"	2"	1 3/8"	3 1/8" ±	1" x 1 1/4"	5"
4	2 1/4"	2"	1 3/4"	3 1/8" ±	1" x 1 1/4"	5"

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

NOTES: The temperature limitations recommended by the sealant manufacturer shall be observed.

The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

**BACKER ROD NOTE:**

Use an appropriately sized backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing.

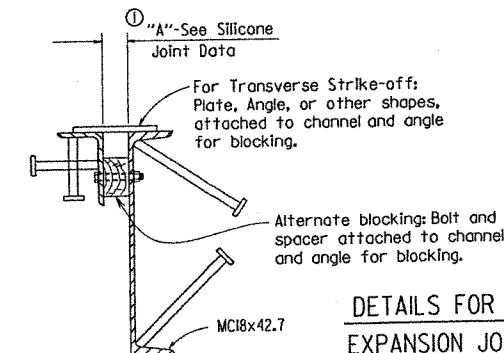
Except as noted, do not install more backer rod than can be sealed in the same day.

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

**EXPANSION DEVICE INSTALLATION AT END BENTS:**

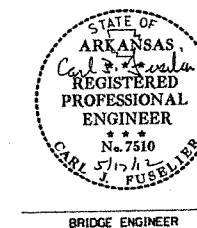
The Contractor may elect to install the expansion device using one of the following two alternatives.

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



**DETAILS FOR BLOCKING EXPANSION JOINT DEVICE**  
NO SCALE

NOTE: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension "A", and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.



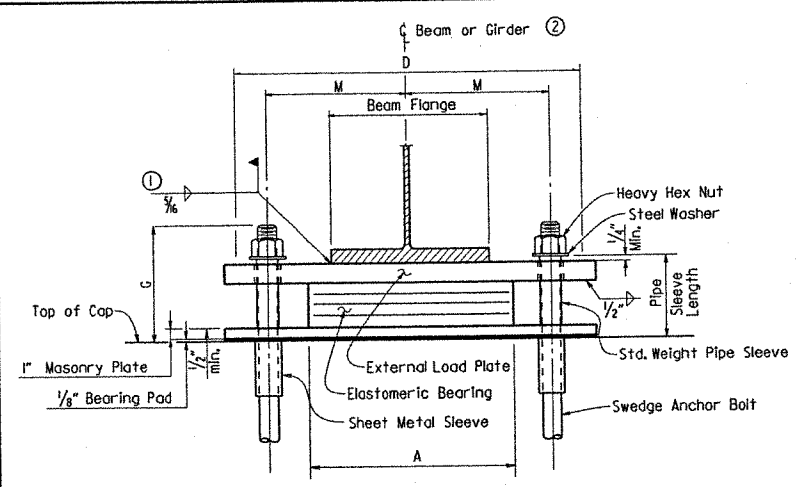
BRIDGE ENGINEER

**SHEET 7 OF 7**  
**DETAILS OF 234'-0" CONTINUOUS COMPOSITE W-BEAM UNIT**  
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.

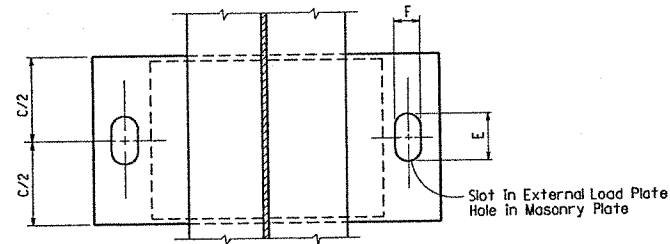
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DESIGNED BY: RBC DATE: 7/11  
BRIDGE NO. 07227 DRAWING NO. 52578



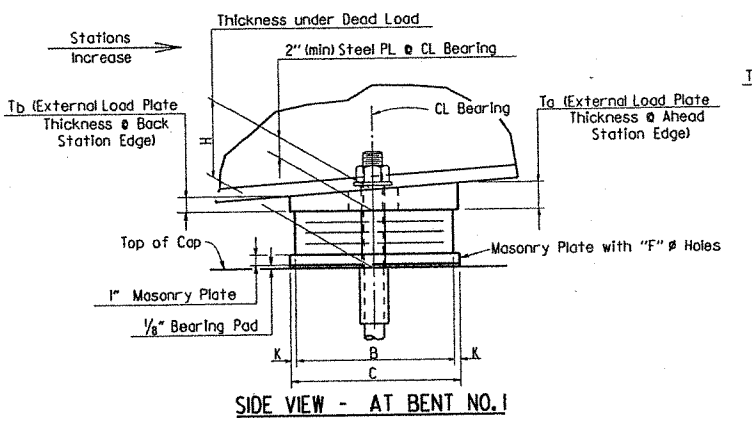
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				JOB NO. 080385		49	100	
				07227		ELASTO. BRGS.		52579



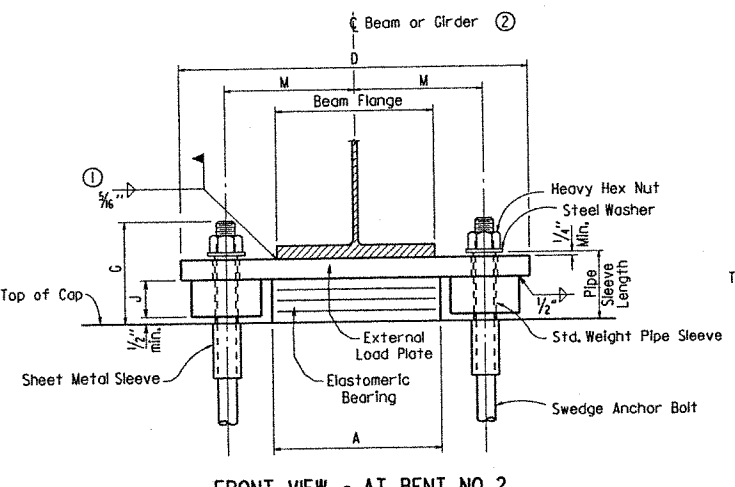
FRONT VIEW - AT BENT NO. 1



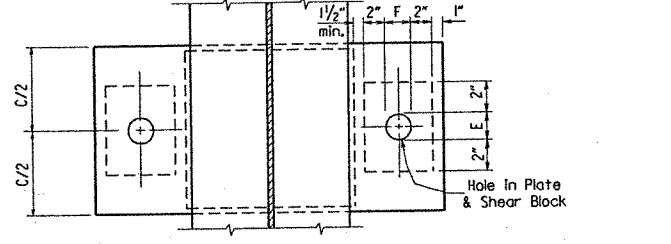
PLAN VIEW - AT BENT NO. 1



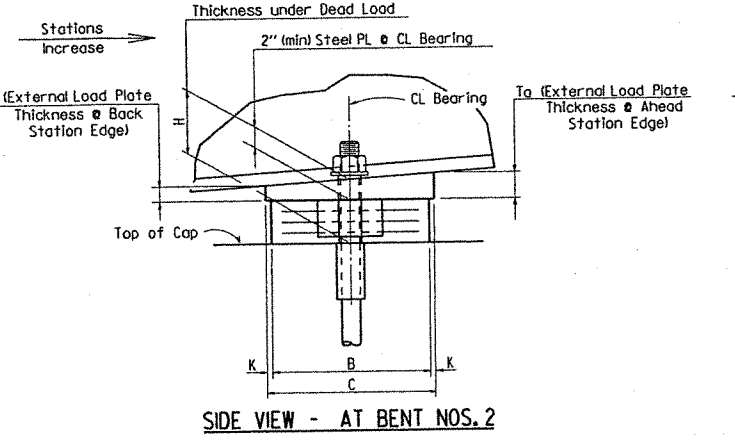
SIDE VIEW - AT BENT NO. 1



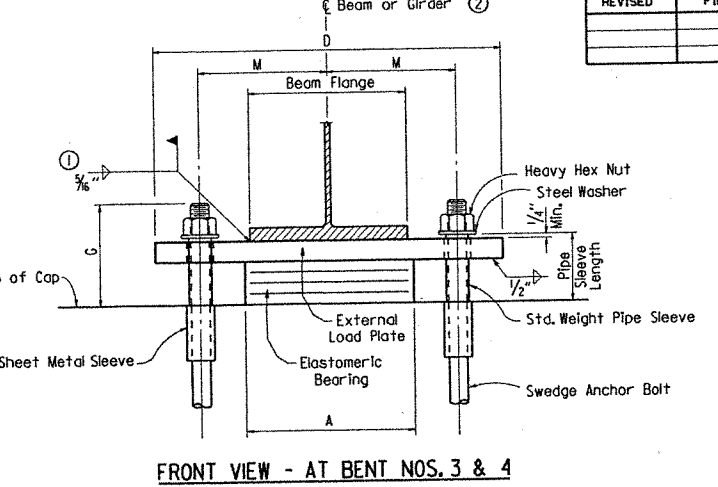
FRONT VIEW - AT BENT NO. 2



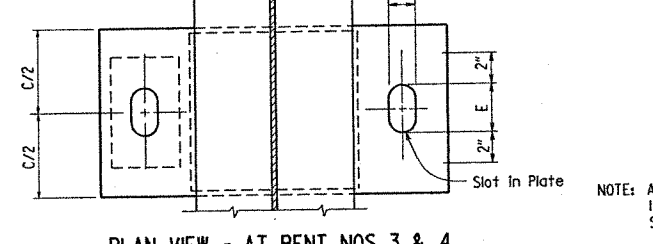
PLAN VIEW - AT BENT NO. 2



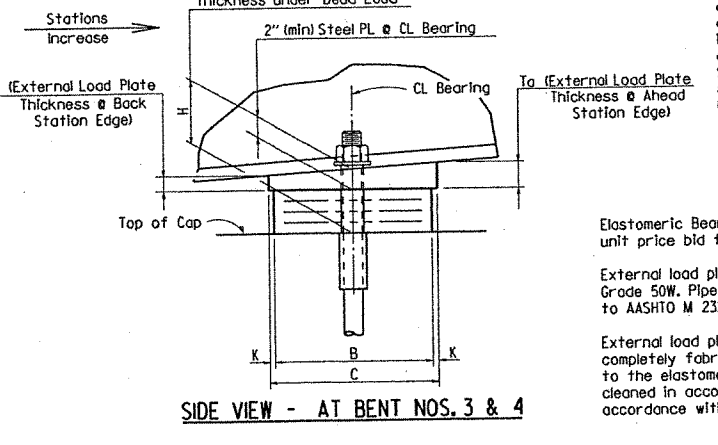
SIDE VIEW - AT BENT NOS. 2



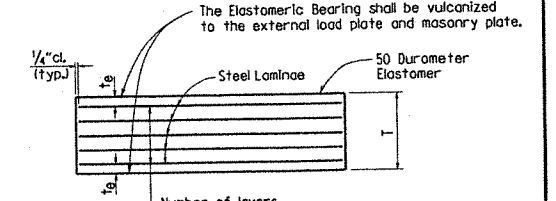
FRONT VIEW - AT BENT NOS. 3 & 4



PLAN VIEW - AT BENT NOS. 3 & 4

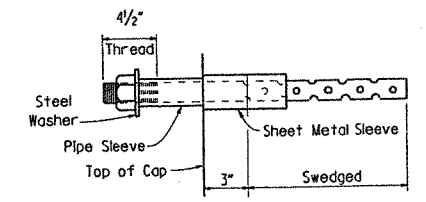


SIDE VIEW - AT BENT NOS. 3 & 4



The Elastomeric Bearing shall be vulcanized to the external load plate and masonry plate.  
 $t_e$  = 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



ANCHOR BOLT DETAIL

NOTE: Anchor Bolts may be cast in place or drilled and grouted in 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 Beam Spans (M 270, Gr. 50W)."

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

External load plates, masonry plates, and external load plates with shear blocks shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces 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 weathering steel.

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr.50W)". External load plates, shear blocks masonry plates, and 1/8" bearing pads will not be measured or paid for separately but will be considered included in the unit bid price for "Elastomeric Bearings".

Bearings with masonry plates shall be seated in accordance with subsection 807.66.

Tabular Data by: MRE Date: 7-22-11  
 Checked by: DHP Date: 5-11-12  
 Designed by: RBR Date: 7/11



DETAILS OF ELASTOMERIC BEARINGS  
 ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 7-22-11 FILENAME: b080385\_el.dgn  
 CHECKED BY: DATE: SCALE: No Scale  
 DESIGNED BY: Std. DATE: BRIDGE NO. 07227 DRAWING NO. 52579

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.

TABLE OF FABRICATOR VARIABLES

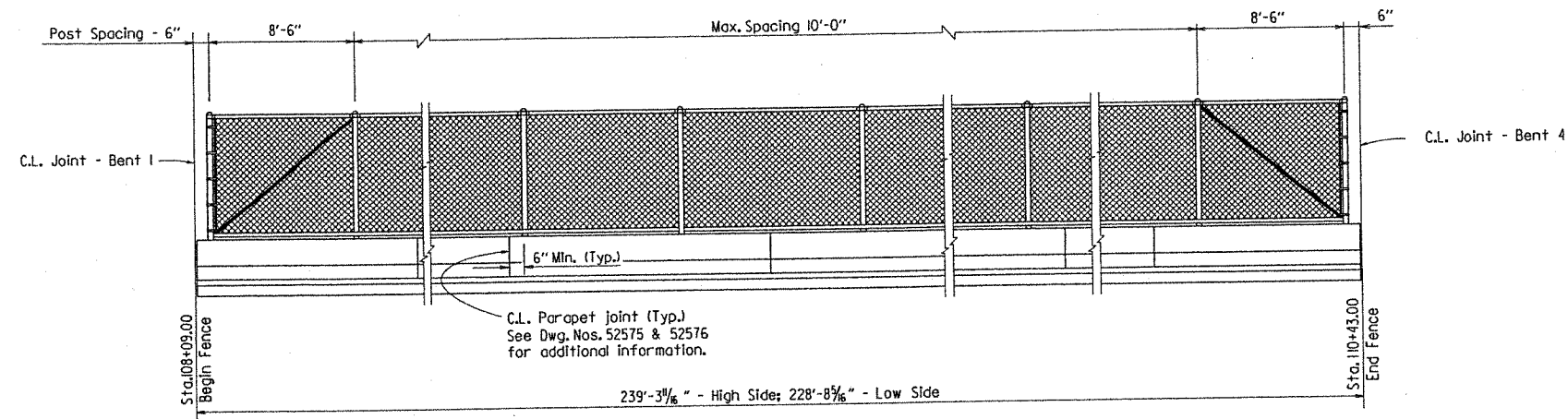
BRIDGE NO.	BENT NOS.	LOCATION UNIT BEAM NO.	BEARING TYPE	NO. OF BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD																EXTERNAL LOAD PLATE				ANCHOR BOLT			
						G	H	A	B	N	t <sub>1</sub>	t <sub>e</sub>	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	T <sub>a</sub>	T <sub>b</sub>	ANCHOR BOLT		PIPE SLEEVE SIZE	SHEET METAL SLEEVE SIZE	STEEL WASHER SIZE	
						(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)
07227	1	I	I-5	Exp.	5	87.00	7 3/4"	4 1/4"	18"	6"	2	1/2"	1/4"	3 @ 12 Ga.	1 1/8"	7"	28"	3/4"	2 1/4"	NA	1/2"	11 1/4"	2.21"	1.79"	1 1/2" x 25"	55	1 1/2" x 5 1/4"	3" x 6"	3"
	2	I	I-5	Fix.	5	263.00	7 1/4"	3 3/8"	18"	12"	2	1/2"	1/4"	3 @ 12 Ga.	1 1/8"	13"	37 3/4"	3/8"	3/8"	1 1/4"	1/2"	14 1/4"	2.37"	1.63"	2" x 29"	55	2 1/2" x 4 1/8"	4" x 6"	3 3/4"
	3	I	I-5	Exp.	5	295.00	7 1/2"	3 3/8"	18"	13"	2	1/2"	1/4"	3 @ 12 Ga.	1 1/8"	14"	30"	4 1/8"	3/8"	NA	1/2"	11 3/4"	2.24"	1.76"	2 1/4" x 32"	55	2 1/2" x 4 1/8"	4" x 6"	4"
	4	I	I-5	Exp.	5	108.00	8 3/4"	5 3/8"	18"	7"	5	1/2"	1/4"	6 @ 12 Ga.	3 3/8"	8"	29"	5 1/2"	2 5/8"	NA	1/2"	11 1/2"	2.07"	1.93"	1 3/4" x 29"	55	2" x 5 1/8"	4" x 6"	3 3/8"

\* Maximum Design Load = Service I Limit State

\*\* The dimension "E" does not apply to masonry plates - See "SIDE VIEW - AT BENT NO. 1."

BRIDGE ENGINEER

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.		080385	50	100
				07227	CHAIN LINK FENCE DETAILS			52580



LONGITUDINAL VIEW OF CHAIN LINK FENCE

NOTES:

Fence layout shall conform to the vertical and horizontal bridge alignments. Fence posts shall be set plumb (true vertical position). Parapet rail concrete shall be at least 7 days old before stretching and securing fabric to posts.

Cast in place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M164 or ASTM A354-Grade BC galvanized in accordance with AASHTO M232, or M298, Class 40 or 50.

Nuts: Nuts shall conform to AASHTO M292, Gr. 8A (stainless steel) or galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Threads: Threads on bolts, screws, and nuts shall conform to American Standard Course Series, Class 2 Ft, ASA Specification Bl.

Washers: Washers shall be stainless steel and conform to the requirements of ASTM A276 or A167-Type 302 with dimensions meeting ASTM F436, or high strength steel conforming to AASHTO M293 and galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

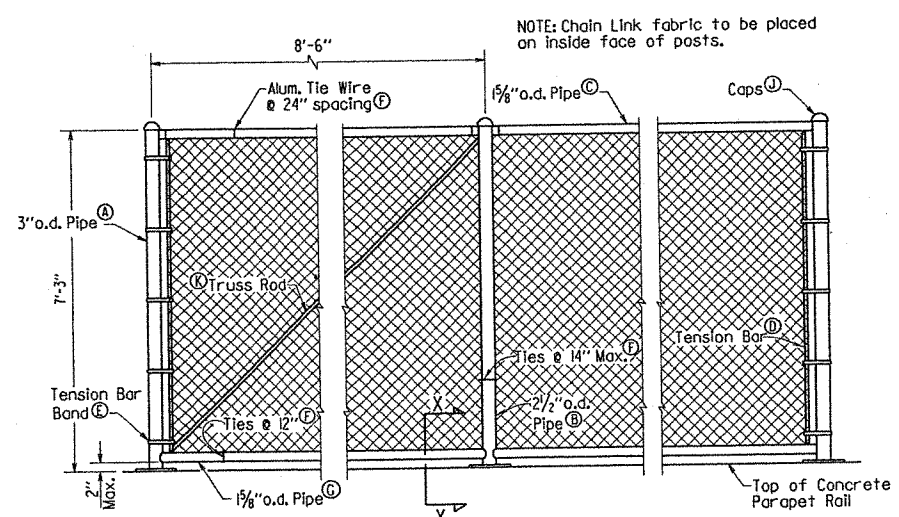
Base plates shall not be placed upon areas that are improperly finished, deformed, or irregular.

Plate Washers shall be stainless steel and conform to the requirements of ASTM A167-Type 302 or AASHTO M270, Gr. 36, galvanized in accordance with AASHTO M232 or M298, Class 40 or 50. Plate Washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series).

Chain Link Fence attached to Bridge shall be paid for as "7' Steel Chain Link Fence". For additional details of Chain Link Fence, See Standard Drawing WF-3.

Neoprene pad and template plates shall not be paid for directly, but shall be considered incidental to the unit price bid for Item "7' Steel Chain Link Fence".

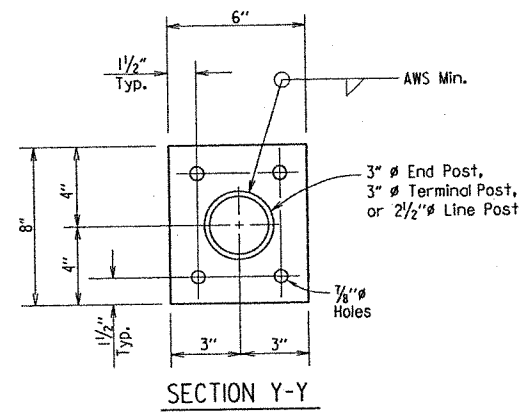
Mixing of stainless steel and galvanized fasteners will not be permitted.



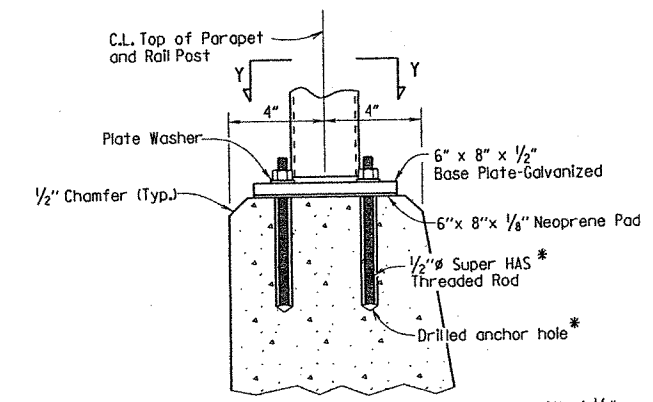
DETAIL OF CHAIN LINK FENCE

- (A) END POST: 3" O.D.
- (B) LINE POST: 2 1/2" O.D.
- (C) TOP RAIL: 1 1/2" O.D.
- (D) TENSION BAR: 3/8" x 3/4" Bar
- (E) TENSION BAR BAND: 3/4" x .074 w/5/16" x 1/4" Bolt (1 Band Top and Bottom w/15" Max. spaces)
- (F) TIE WIRE: 9 Ga. Aluminum
- (G) BOTTOM RAIL: 1 1/2" O.D.
- (H) FABRIC: 9 Ga. 2" Mesh w/Knocklug or Twisting Selvage
- (I) CAPS: All Posts shall be Capped and Shall Conform to ASTM F626-84
- (K) TRUSS ROD: Min. of 3/8" Round with Tighteners and Fittings

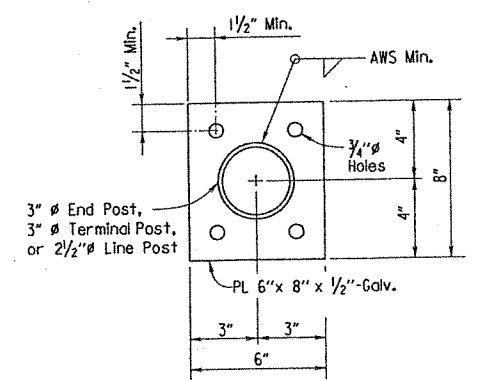
NOTE: Chain Link Fence attached to Bridge shall be paid for as "7' Steel Chain Link Fence". For additional details of Chain Link Fence, See Standard Drawing WF-3.



SECTION Y-Y

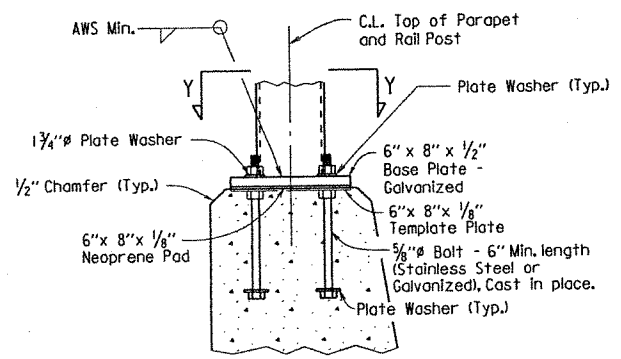


SECTION X-X



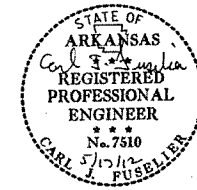
SECTION Y-Y

DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)



SECTION X-X

DETAILS OF POST ANCHOR SYSTEM



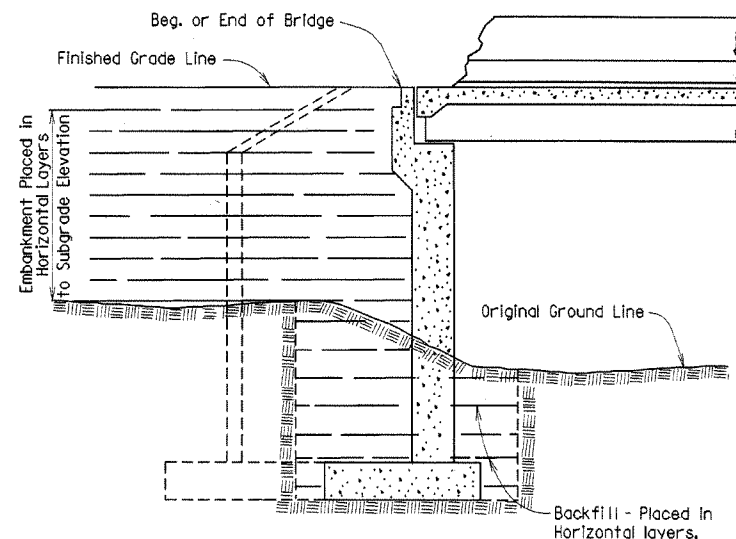
BRIDGE ENGINEER

DETAILS OF CHAIN LINK FENCE  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

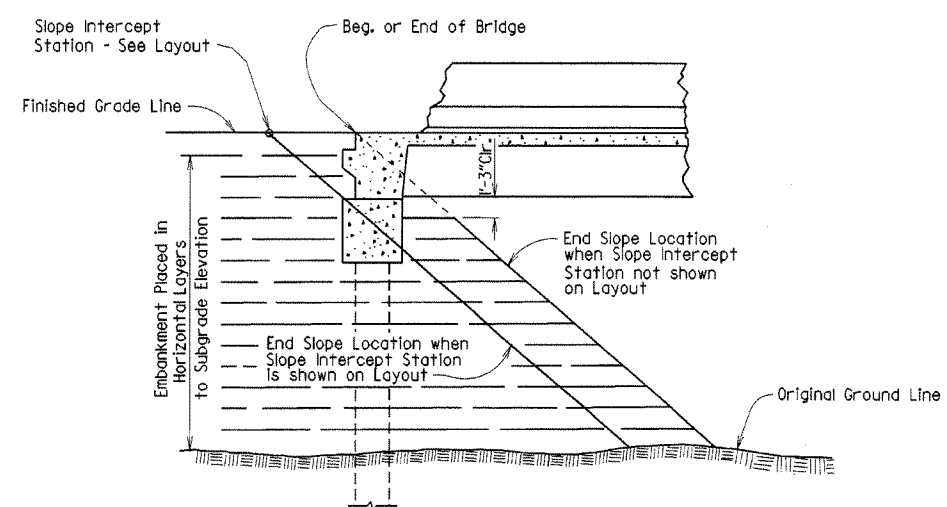
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CHECKED BY: RBR DATE: 5/11/12 SCALE: No Scale  
DESIGNED BY: Std. DATE: 08/22/02  
BRIDGE NO. 07227 DRAWING NO. 52580

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.		51	
							JOB NO.	

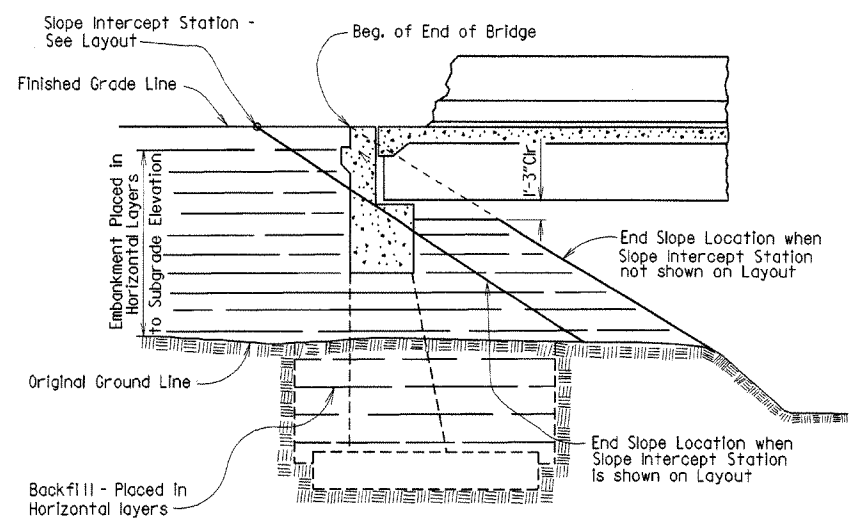
EMBANKMENT & BACKFILL 1888A



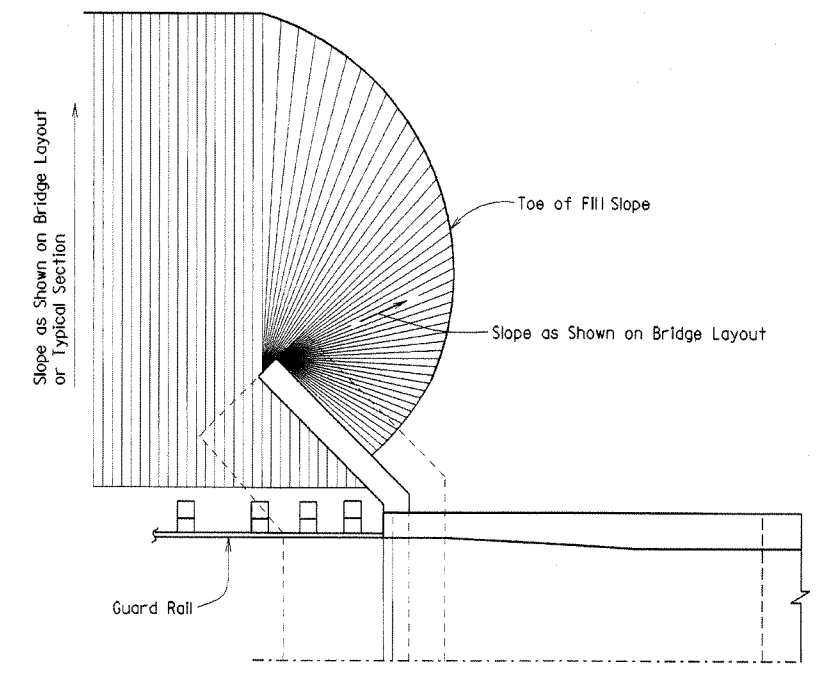
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



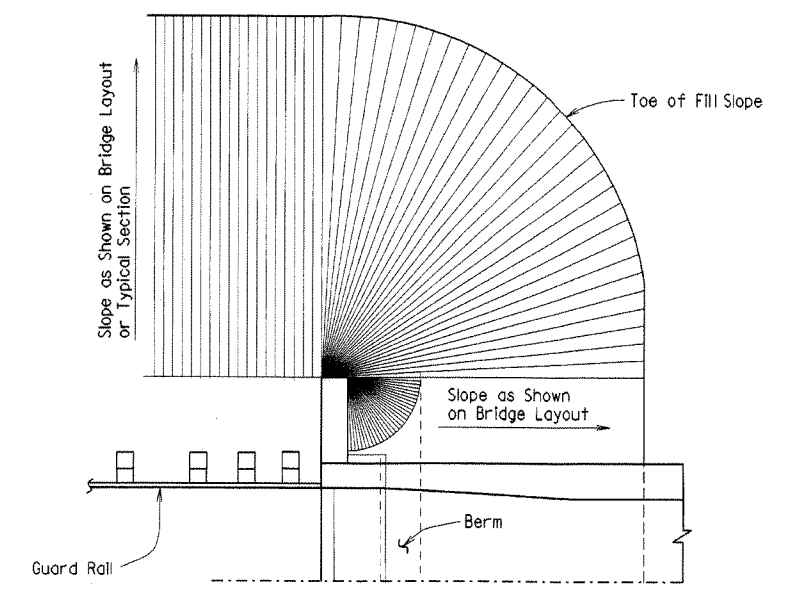
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



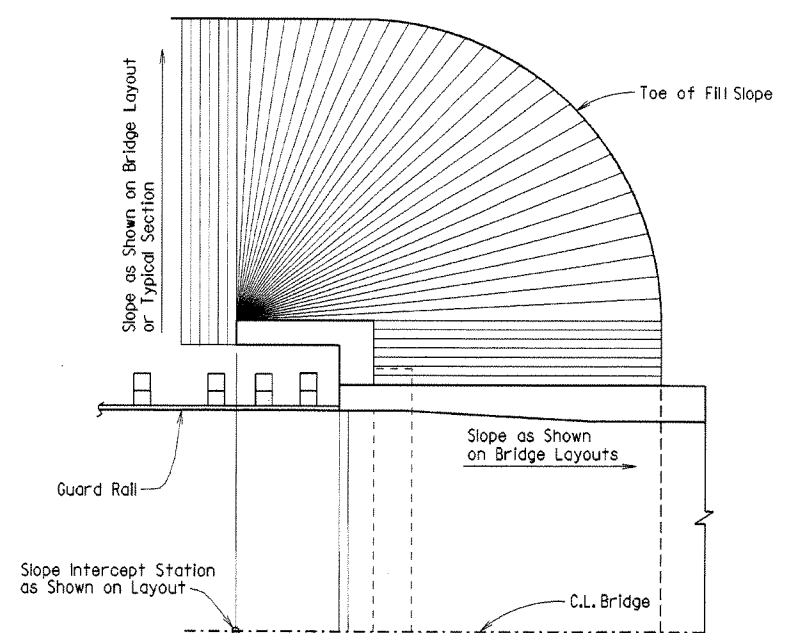
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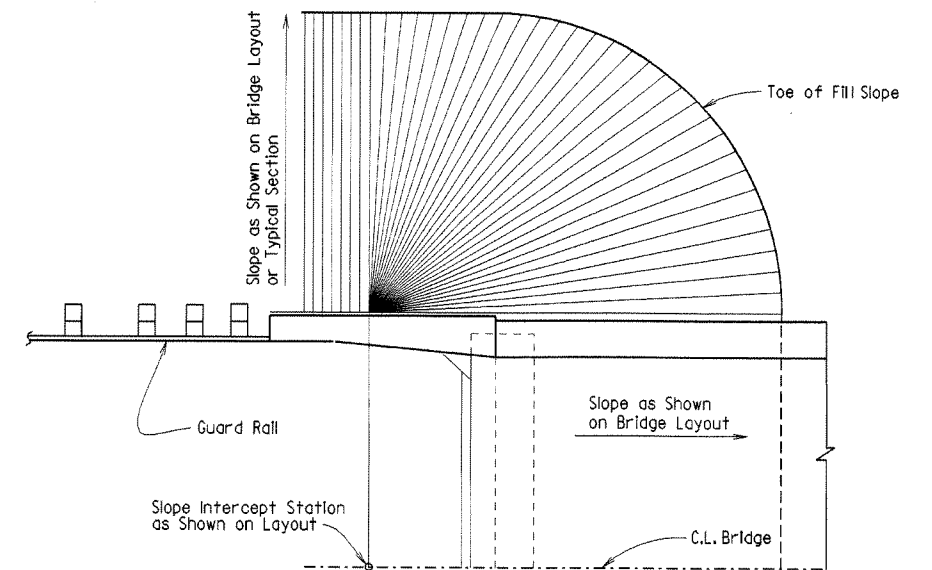
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

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

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

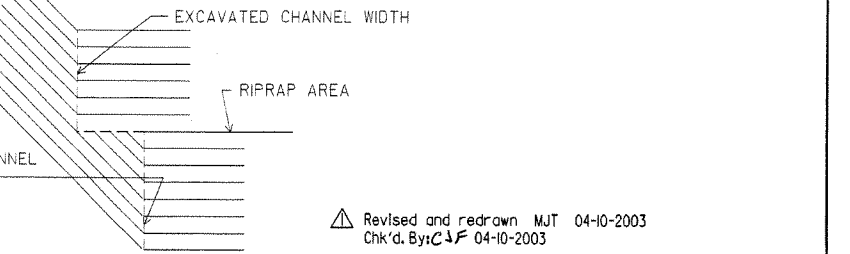
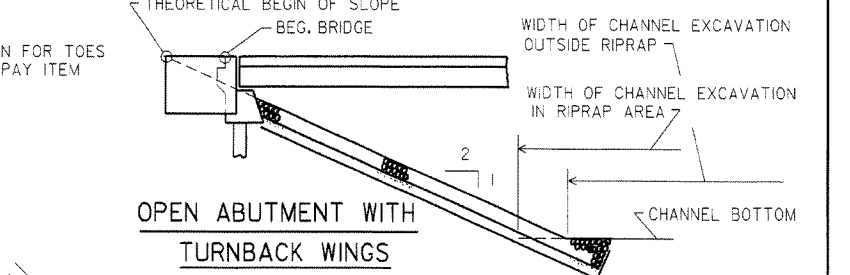
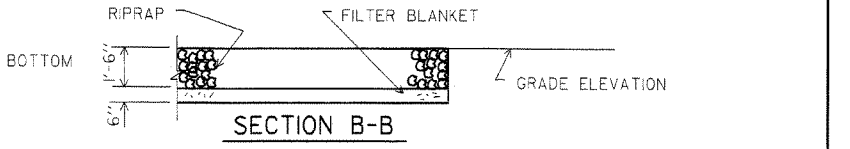
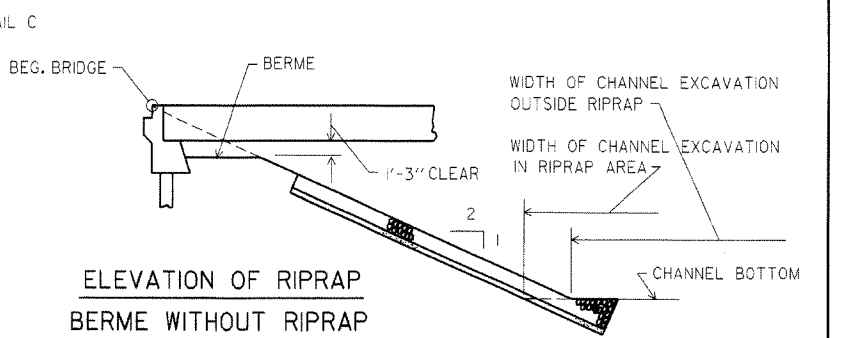
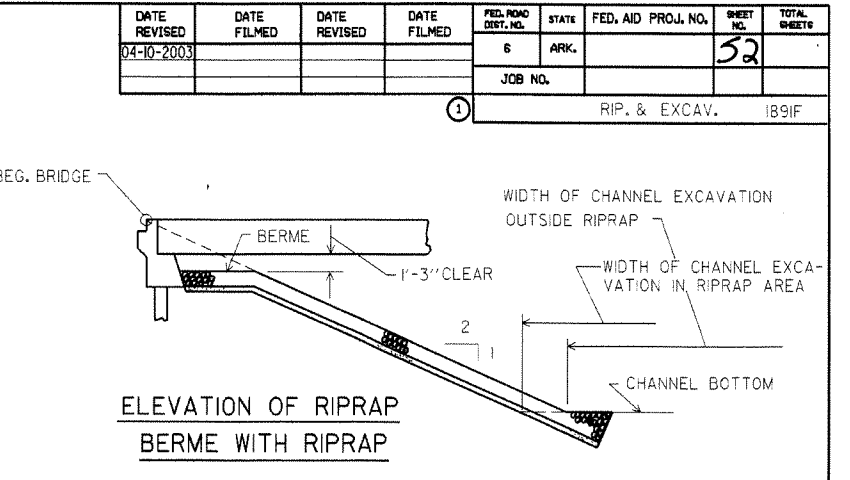
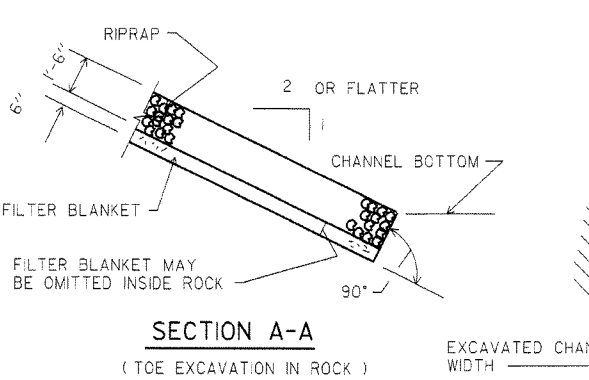
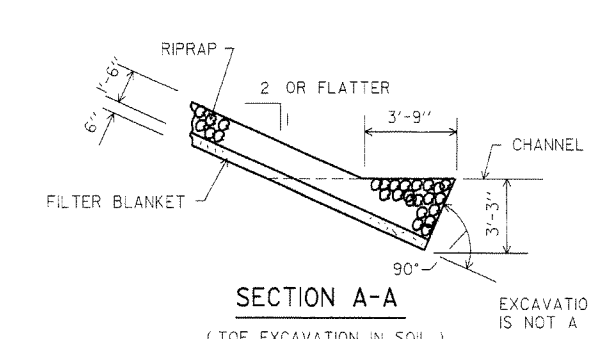
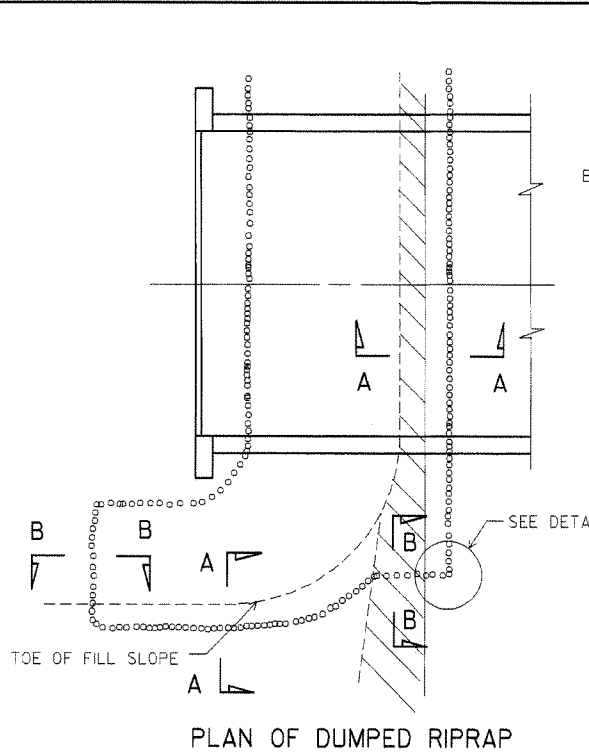
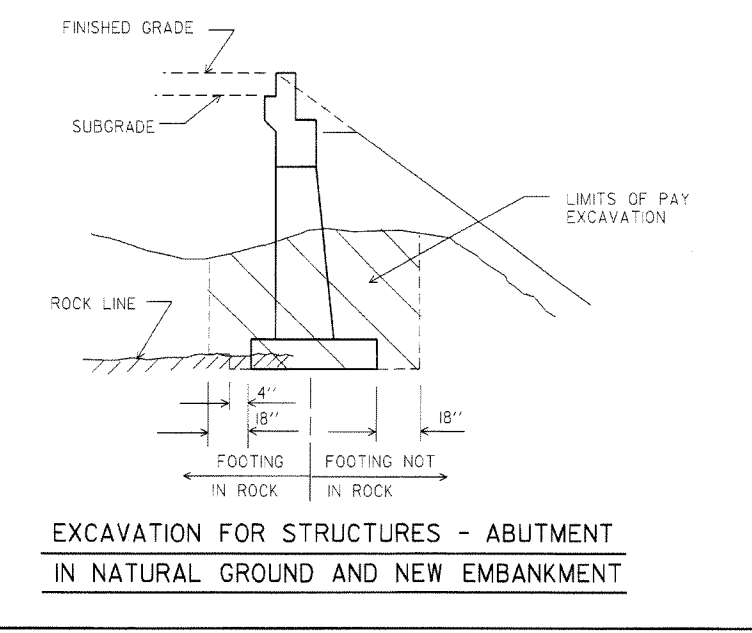
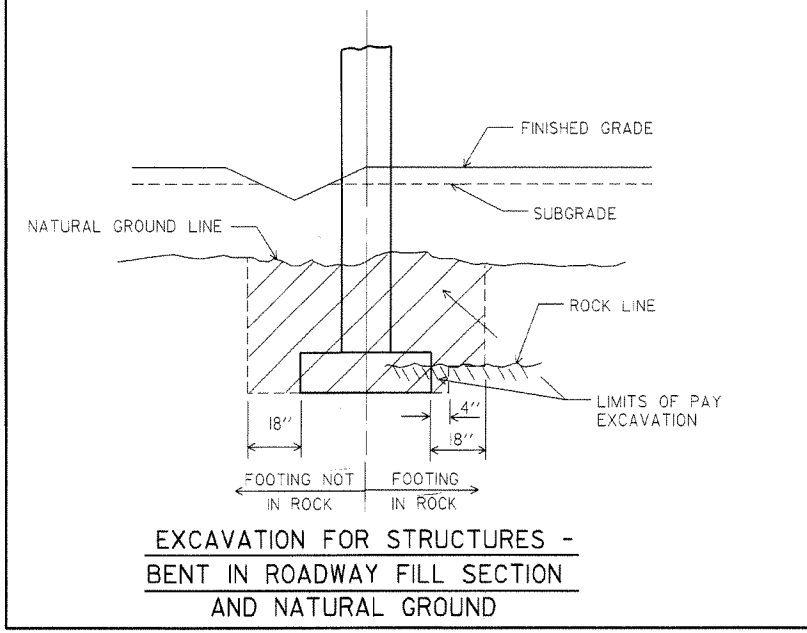
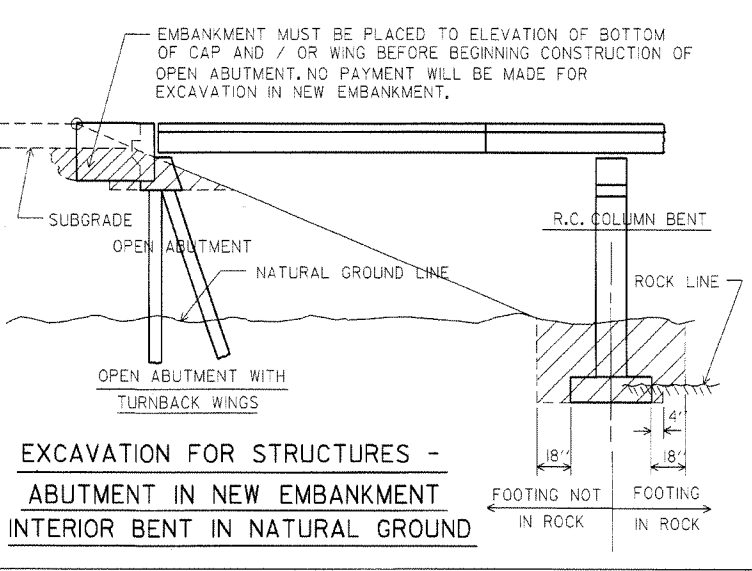
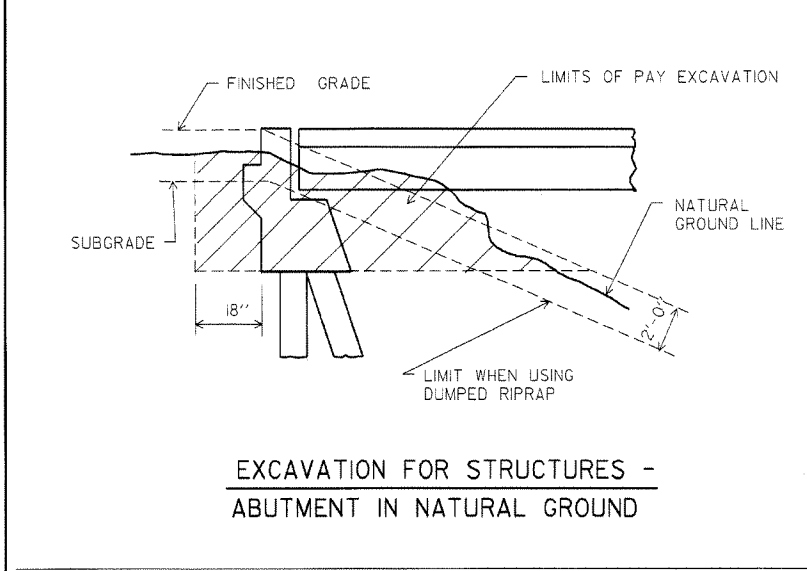
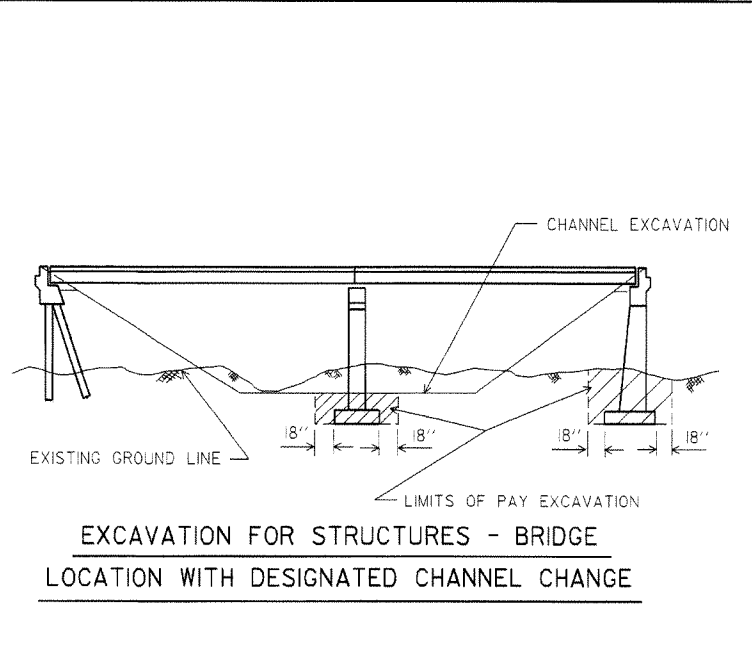
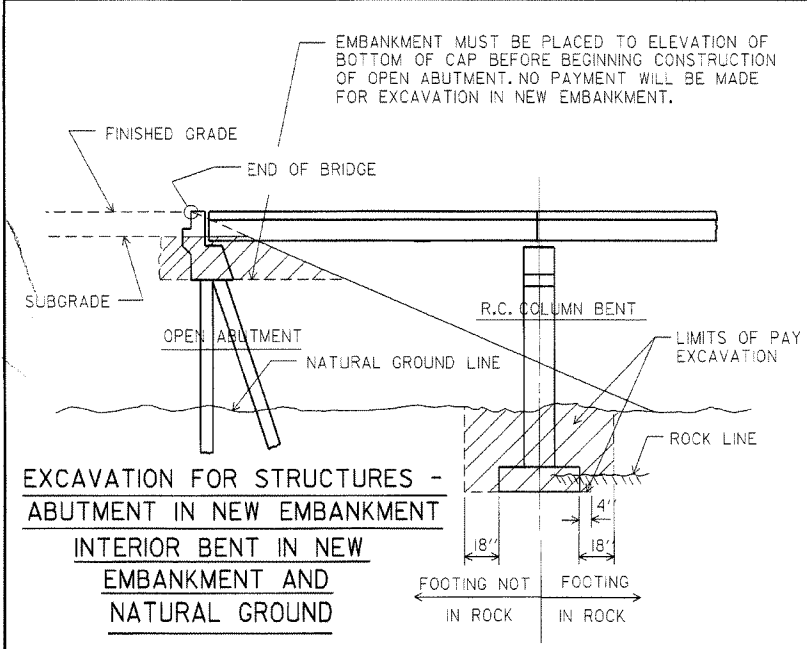


BRIDGE ENGINEER

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

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

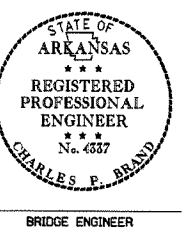
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		52	
JOB NO.							1891F	



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(a) 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.



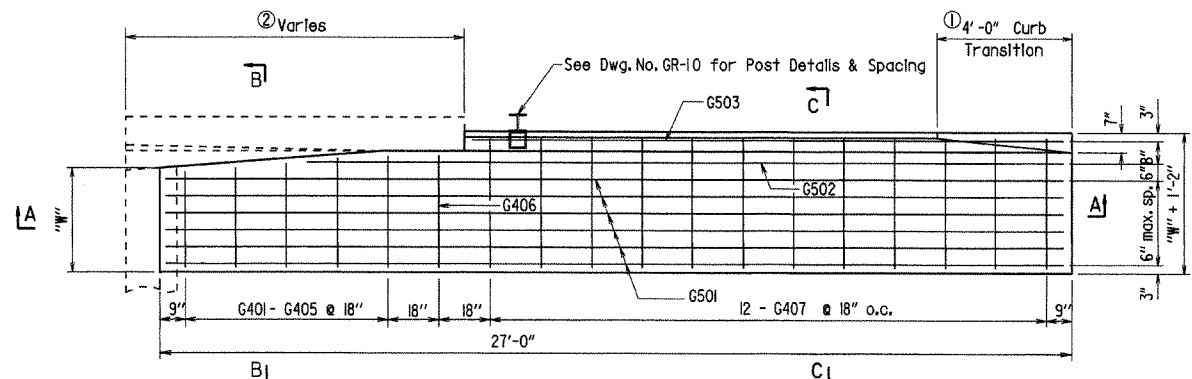
Revised and redrawn MJT 04-10-2003  
 Chk'd. By: CJF 04-10-2003

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

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

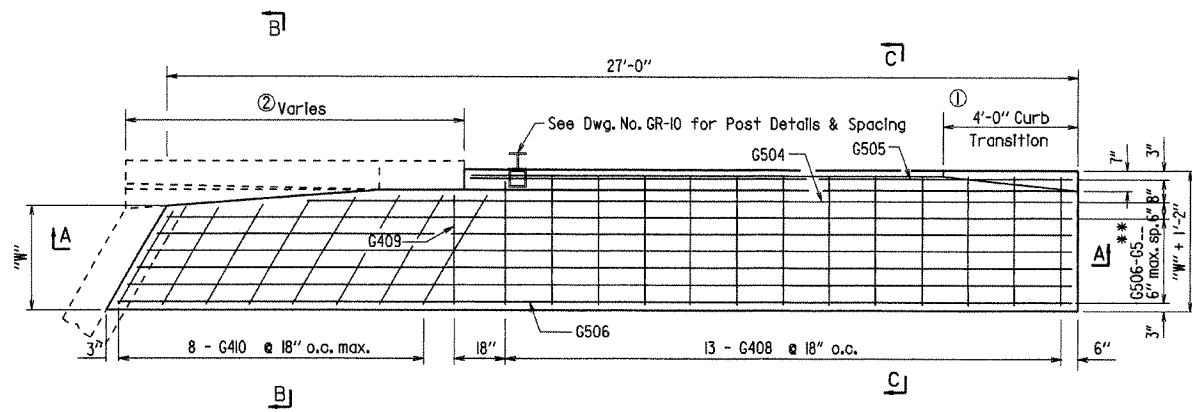
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 CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE  
 DESIGNED BY: STD DATE: BRIDGE NO. DRAWING NO. 1891F

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



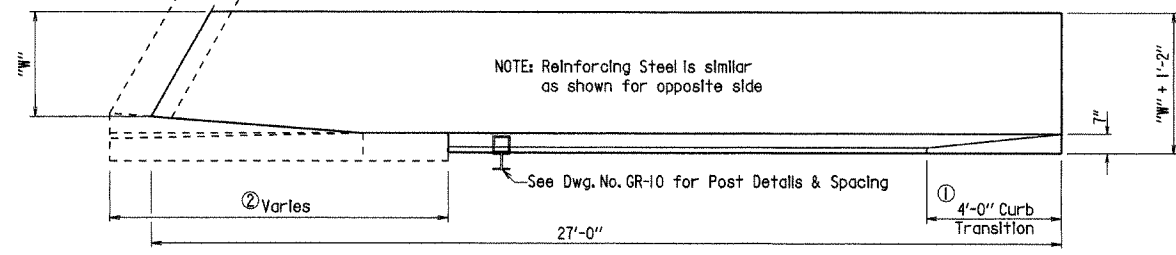
HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

② Length varies. See End Bent details for actual length. Quantities shown are for 10'-0" Transition Roll.



PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE

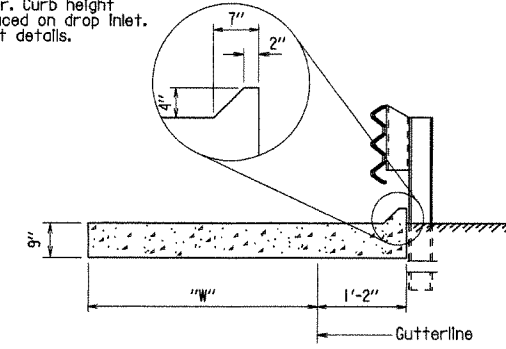
NOTE: Reinforcing Steel is similar as shown for opposite side



SECTION A - A

Slab Depth Varies - See Span and Bent Details

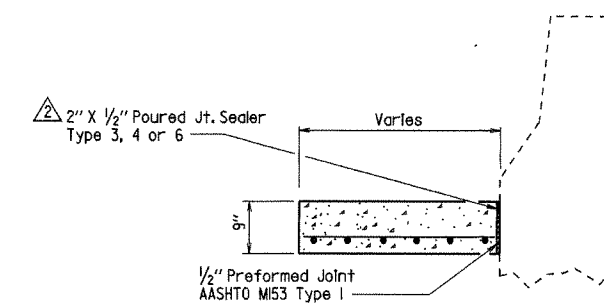
① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.  
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



SECTION C - C  
N.T.S.

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
3	252	3.00
4	319	3.75
6	459	5.25
8	590	6.75



SECTION B - B  
N.T.S.

\*\*\* BAR LIST ②  
TYPE B GUTTER

Mark	No. Required for Width "W"				Length	Square or Skewed
	3'-0"	4'-0"	6'-0"	8'-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	12	12	12	12	"W" + 10"	Square
G408	13	13	13	13	"W" + 10"	Skewed
G409	1	1	1	1	"W" + 3"	Skewed
G410	8	8	8	8	*	Skewed
G501	6	8	12	16	26'-8"	Square
G502	1	1	1	1	22'-2"	Square
G503	1	1	1	1	17'-8"	Square
G504	1	1	1	1	*	Skewed
G505	1	1	1	1	*	Skewed
G506-G5... **	1 each	1 each	1 each	1 each	*	Skewed

\* Bar Lengths vary with Skew,  
\*\* G512 for "W" = 3'  
G514 for "W" = 4'  
G518 for "W" = 6'  
G522 for "W" = 8'

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

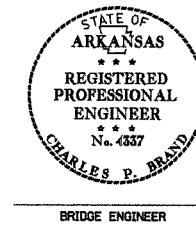
GENERAL NOTES

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

① Revised and redrawn 4-10-2003. By KDH. Ck. By: CJF 4-10-2003  
② Added joint sealer type & revised transition roll length 07-14-2010 by MJT. Checked by: CJF 07-14-2010

DETAILS OF STANDARD TYPE B APPROACH GUTTERS

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016B.STD  
CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/8" = 1'-0"  
DESIGNED BY: STD DATE: BRIDGE NO. DRAWING NO. 2016B



BRIDGE ENGINEER

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.		54	
JOB NO.							NAME PLATE	2387

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

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

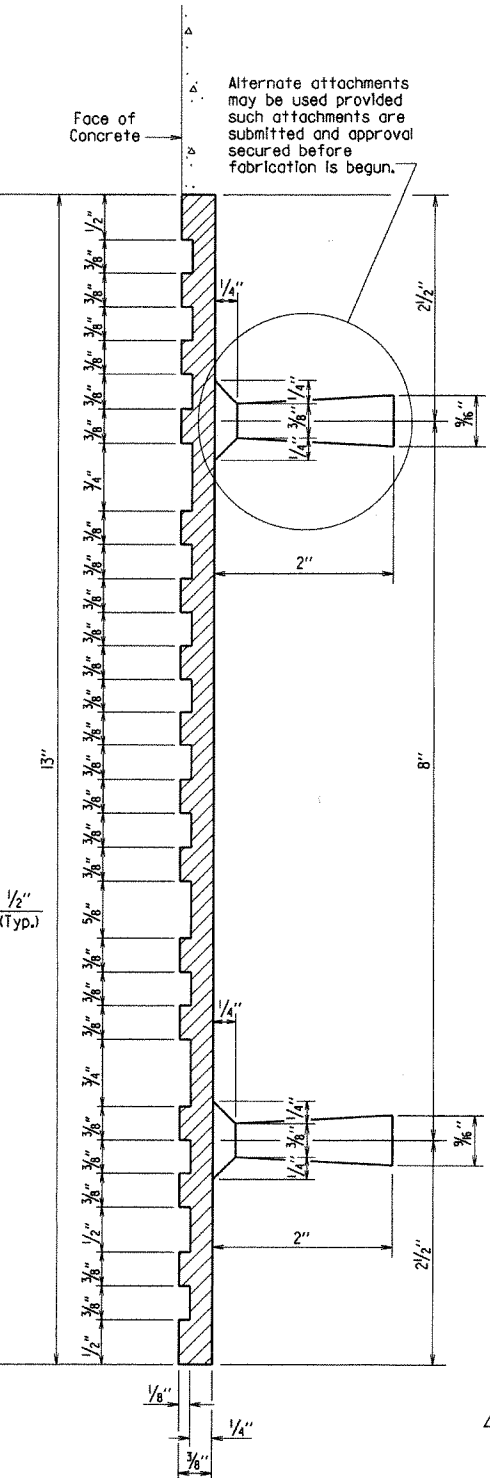
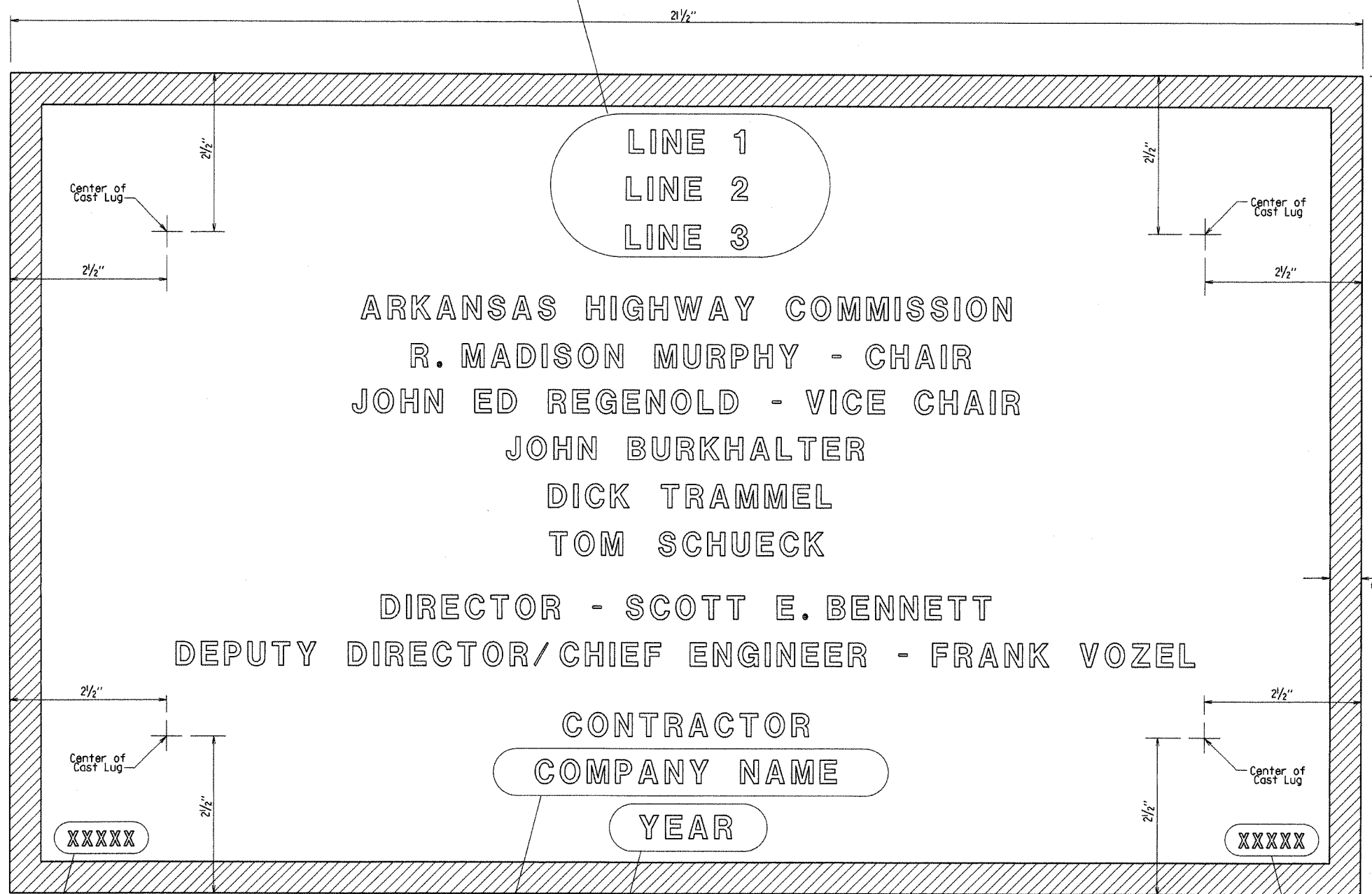
**GENERAL NOTES**

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

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

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

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



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

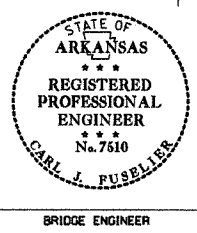
Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example: 2001

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

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

**TYPICAL BRIDGE NAME PLATE**

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

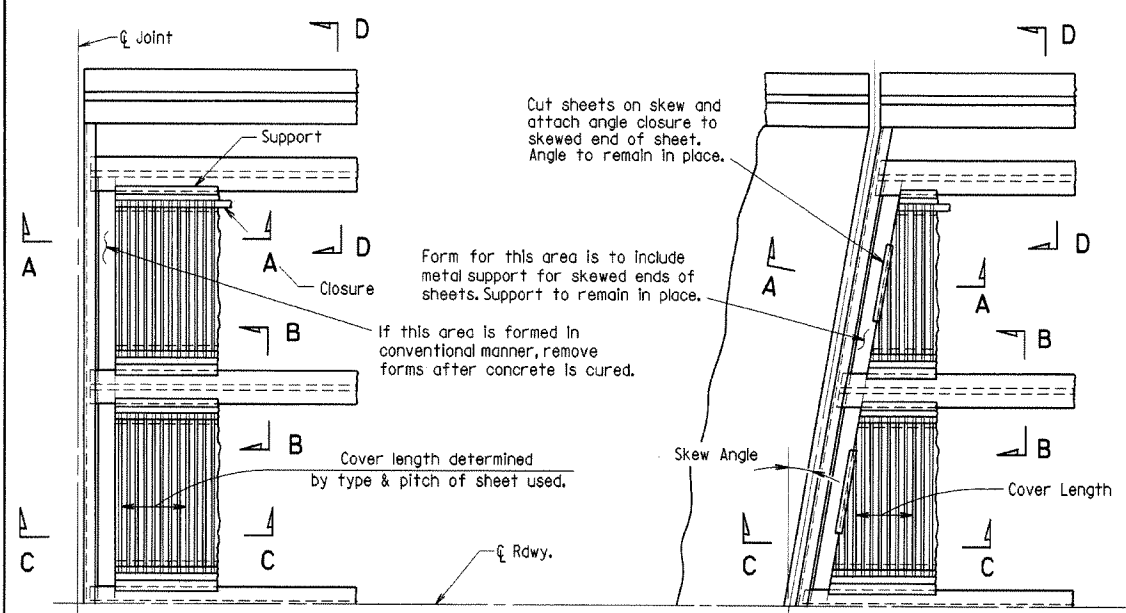


**DETAILS OF STANDARD TYPE D BRIDGE NAME PLATE**  
 ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
 LITTLE ROCK, ARK.

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

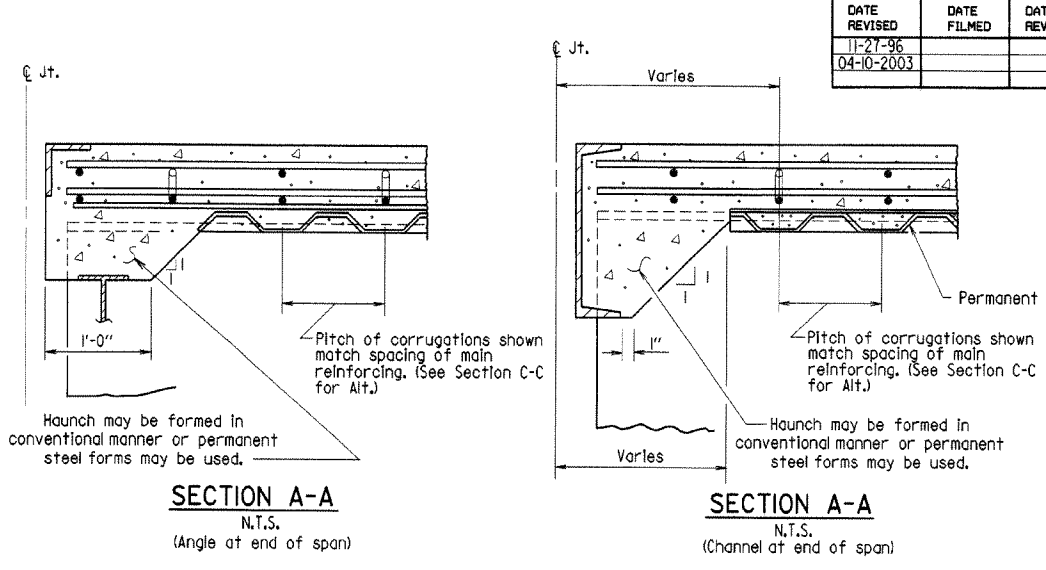
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		55	
04-10-2003										

BR. DECK FORMS 14991



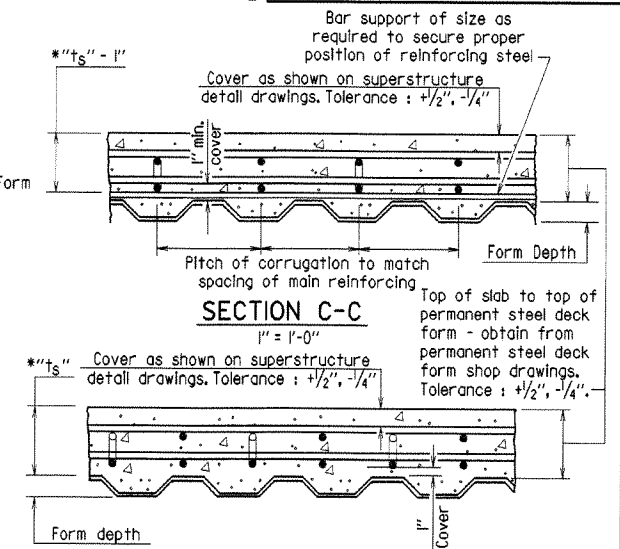
**PART PLAN - SQUARE SPAN**  
3/8" = 1'-0"

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



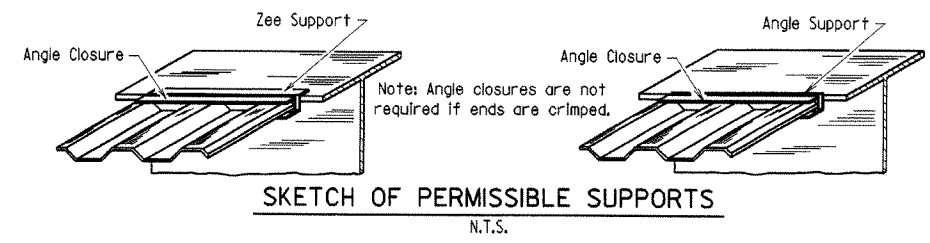
**SECTION A-A**  
N.T.S.  
(Angle at end of span)

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

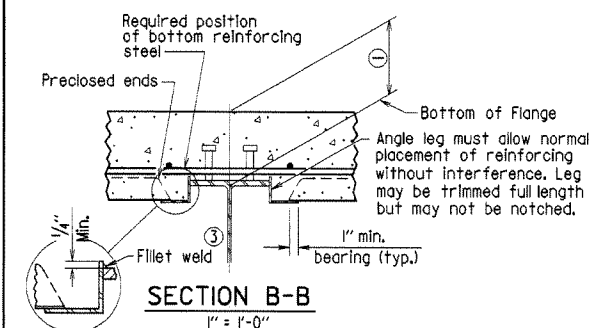


**SECTION C-C**  
1" = 1'-0"

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

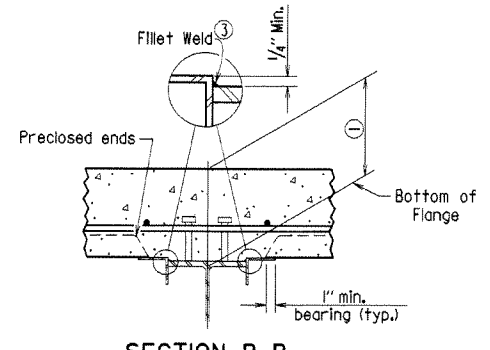


**SKETCH OF PERMISSIBLE SUPPORTS**  
N.T.S.



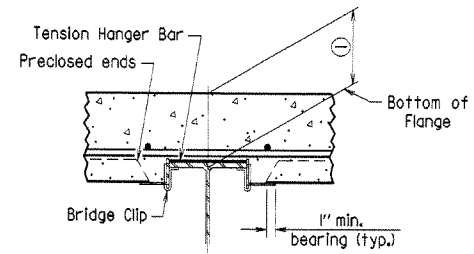
**SECTION B-B**  
1" = 1'-0"

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



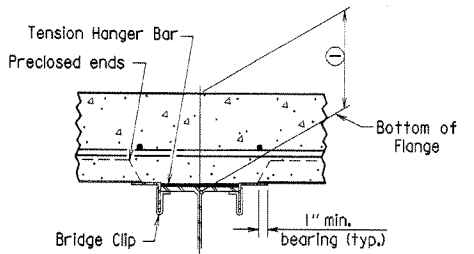
**SECTION B-B**  
1" = 1'-0"

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



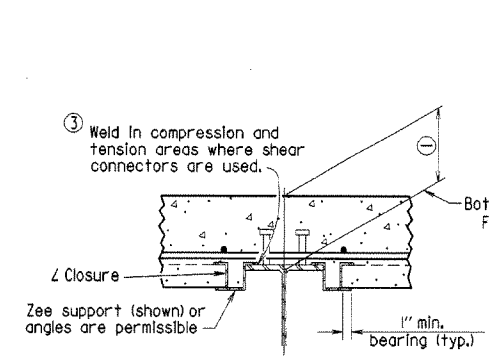
**SECTION B-B**  
1" = 1'-0"

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



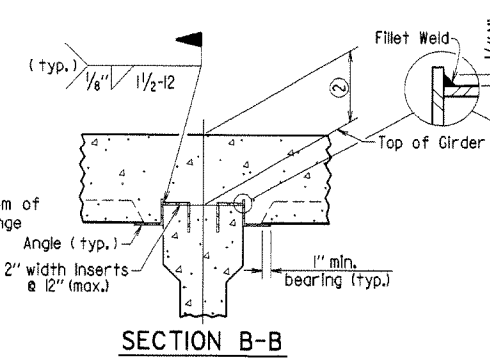
**SECTION B-B**  
1" = 1'-0"

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



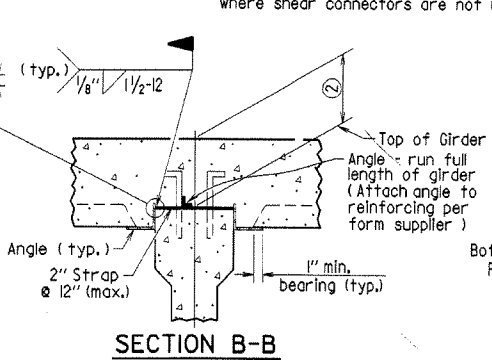
**SECTION B-B**  
1" = 1'-0"

(Showing Z Closure)



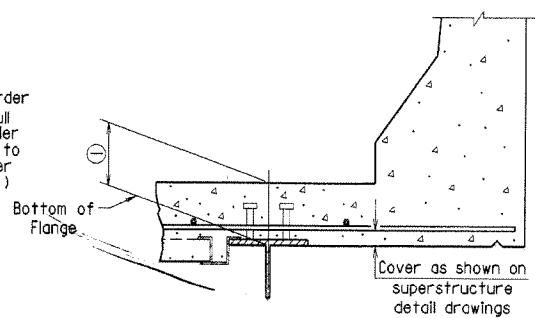
**SECTION B-B (FOR CONCRETE GIRDERS)**  
1" = 1'-0"

(Showing support by insert cast in girder)



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

(Showing support by Strap)



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

Note: Only Bottom Reinforcing is shown.

GENERAL NOTES  
\*<sub>s</sub> = slab thickness as shown on superstructure detail drawings.

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 802J4(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.

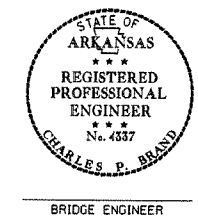
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.

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.

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

Redrawn and revised 11/27/96; MJT



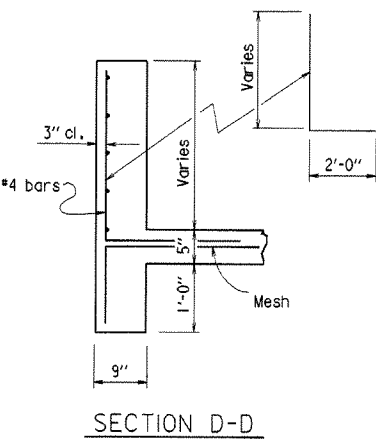
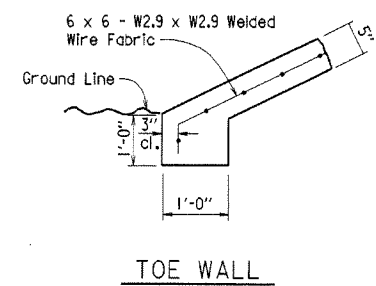
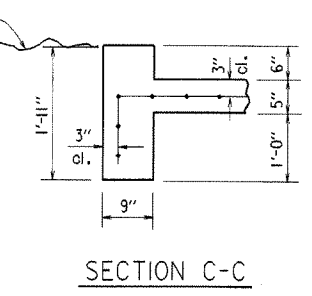
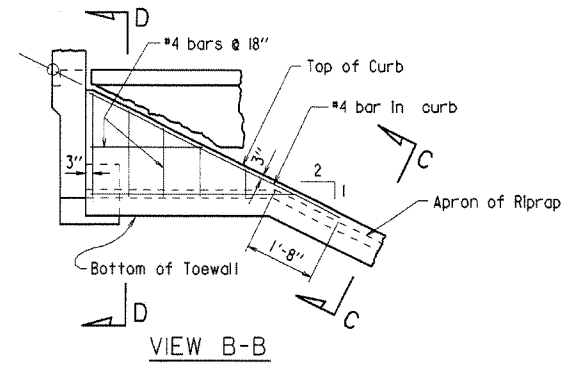
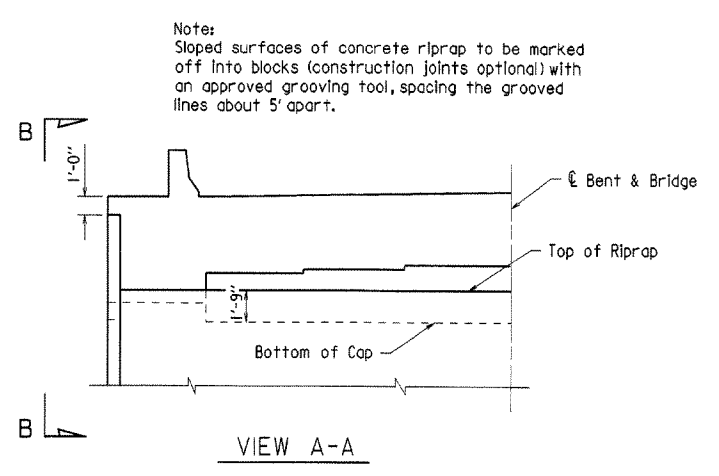
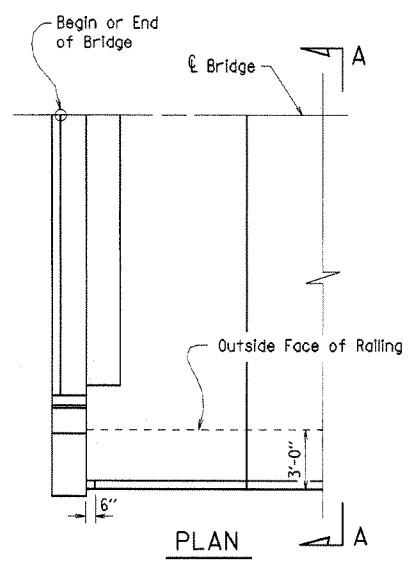
**DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS**

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

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

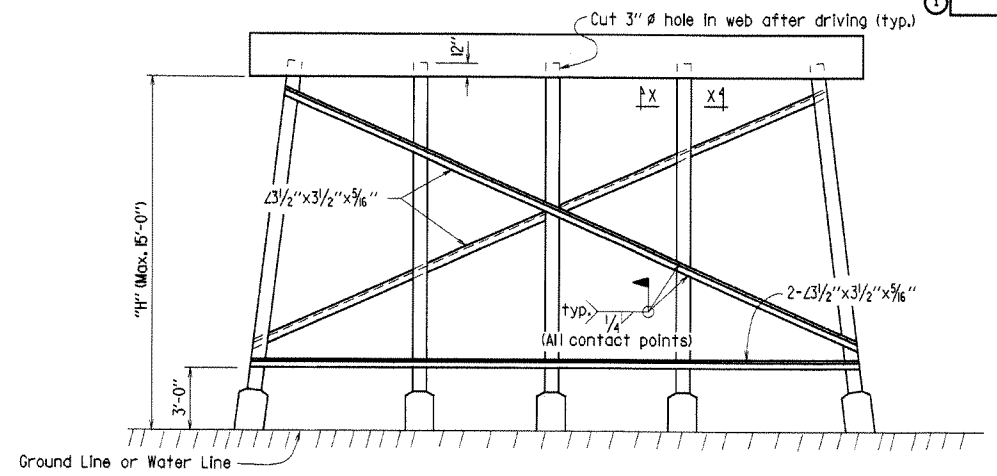
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		56	

JOB NO. \_\_\_\_\_  
RIPRAP & PILE - 14995A



DETAILS OF CONCRETE RIPRAP

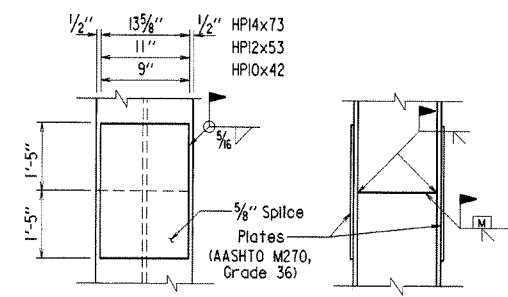
Note:  
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



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.

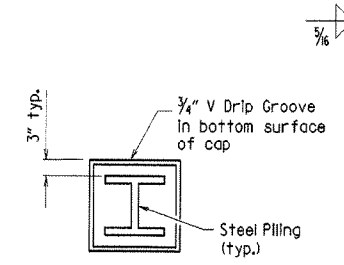
Note:  
Where required by the bridge layout sheet, pile encasements shall be constructed.  
Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

TYPICAL BRACING FOR INT. STEEL PILE BENTS

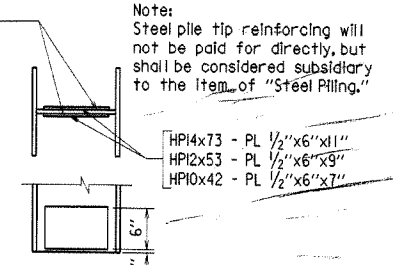


Note:  
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

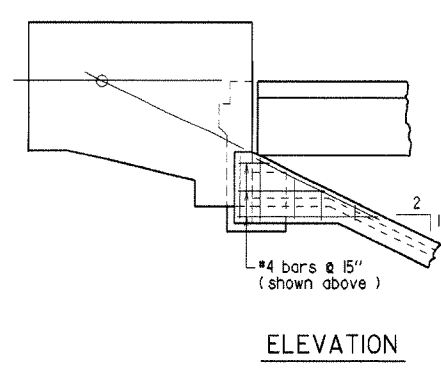
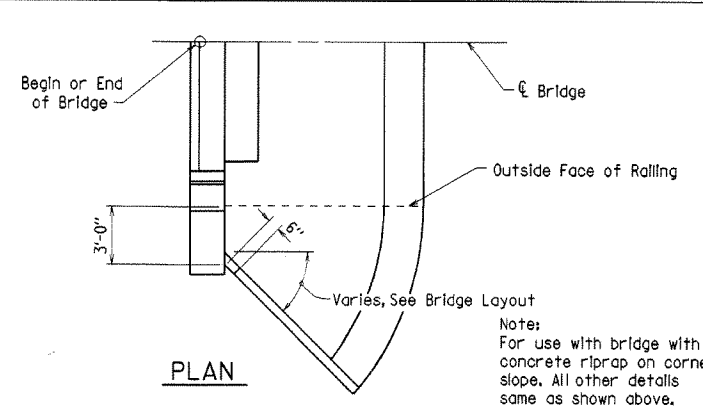
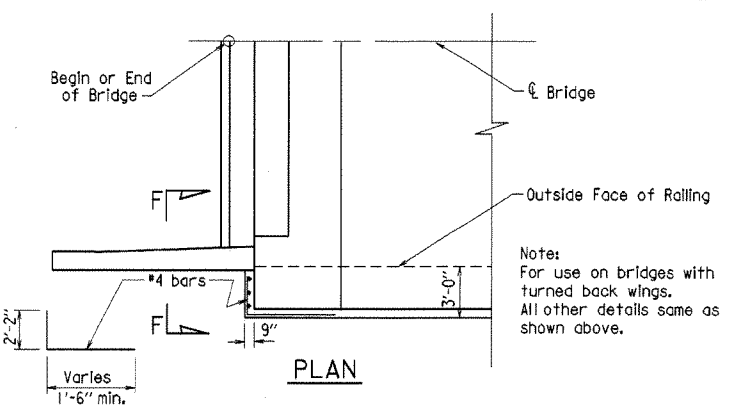


VIEW X-X

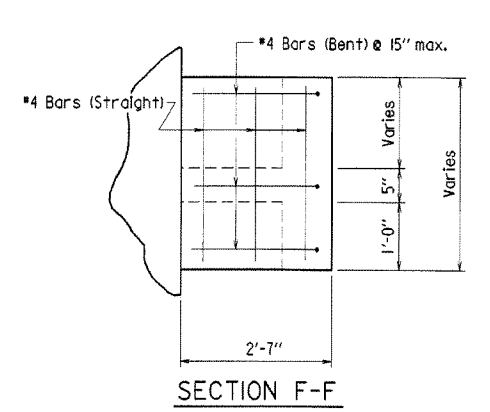


REINFORCING DETAIL FOR STEEL PILE TIP

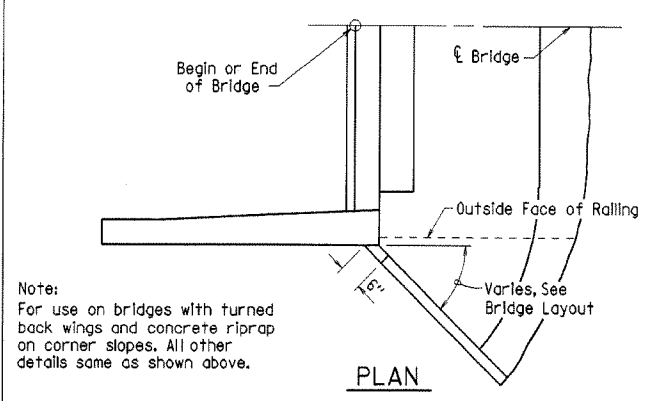
Scale: 1" = 1'-0"



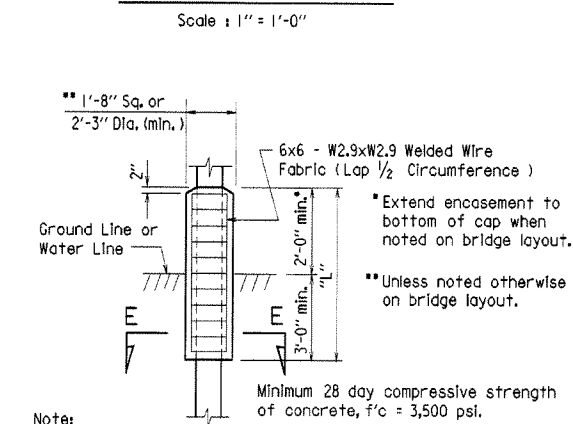
ELEVATION



SECTION F-F



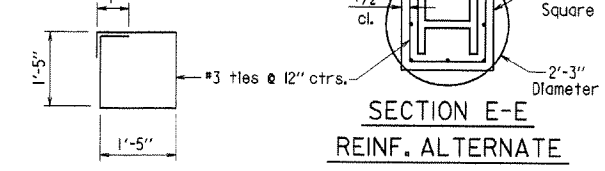
PLAN



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, fy = 60,000 psi.



SECTION E-E REIN. ALTERNATE



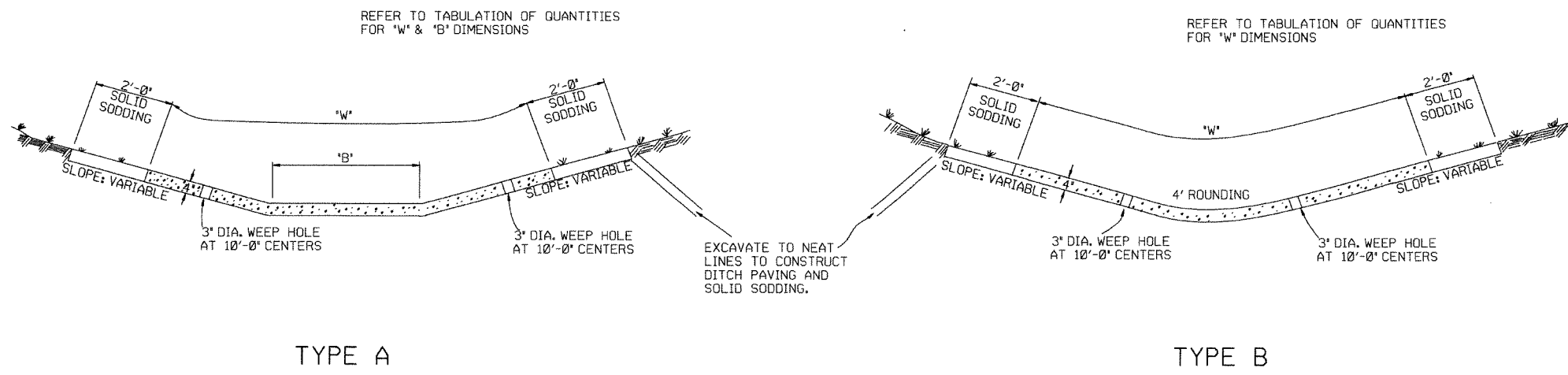
Revised and redrawn MJT 04-10-2003  
Chk'd. By: CJF 04-10-2003

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: B14995A.STD  
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted  
DESIGNED BY: STD. DATE: \_\_\_\_\_  
BRIDGE NO. \_\_\_\_\_ DRAWING NO. 14995A

BRIDGE ENGINEER

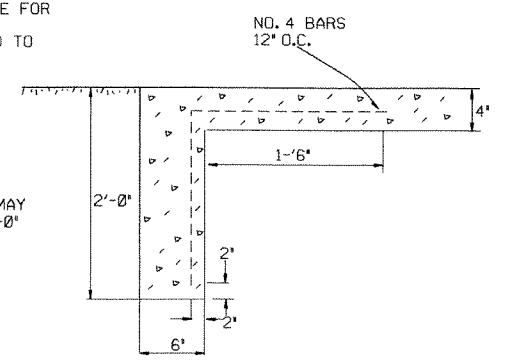




TYPE A

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.'



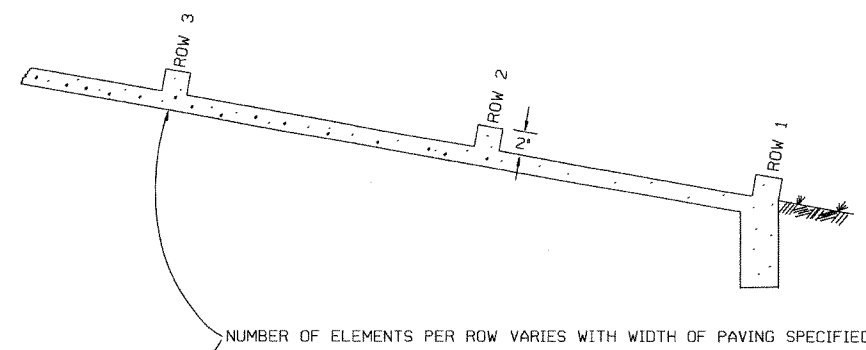
TOE WALL DETAIL FOR CONCRETE DITCH PAVING

GENERAL NOTES:

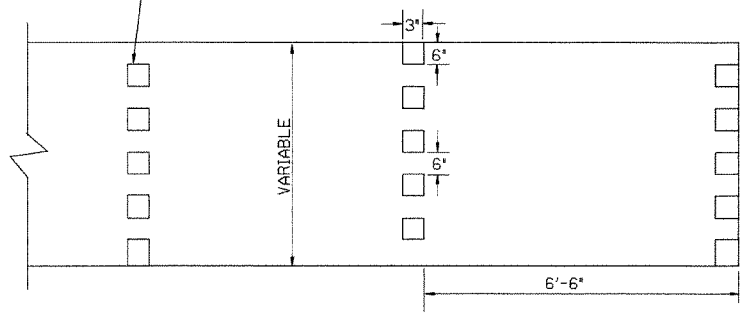
THE FULL WIDTH OF EACH SECTION SHALL BE POURED MONOLITHICALLY. TOE WALLS TO BE CONSTRUCTED FULL WIDTH AT EACH END OF DITCH PAVING, AND POURED MONOLITHICALLY.

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.



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 UNINCLUDED IN THE PRICE BID FOR CONCRETE DITCH PAVING.



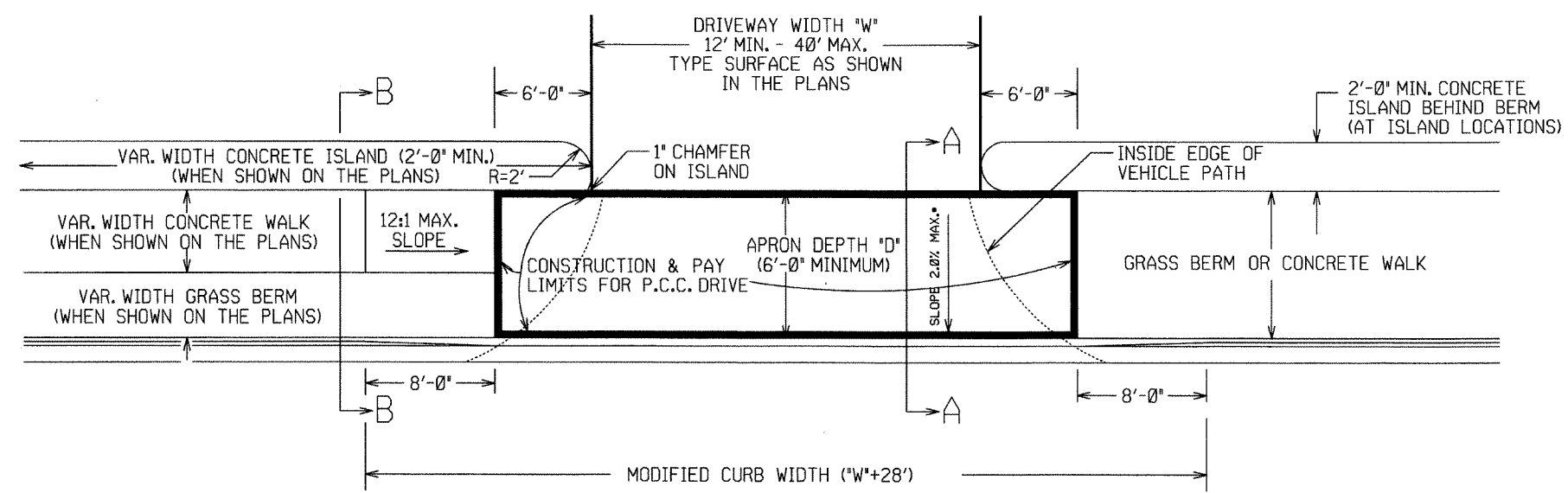
ENERGY DISSIPATORS  
(NO SCALE)

11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	11-30-89
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	EXCAVATION DETAILS ADDED	
	TYPED A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72
DATE	REVISION	DATE FILM'D

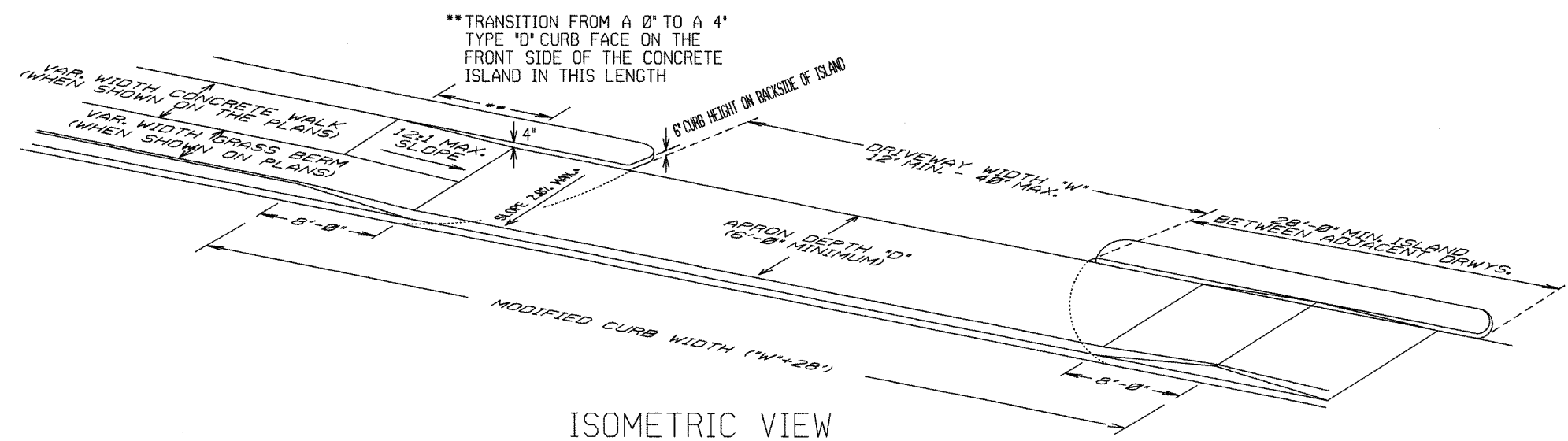
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

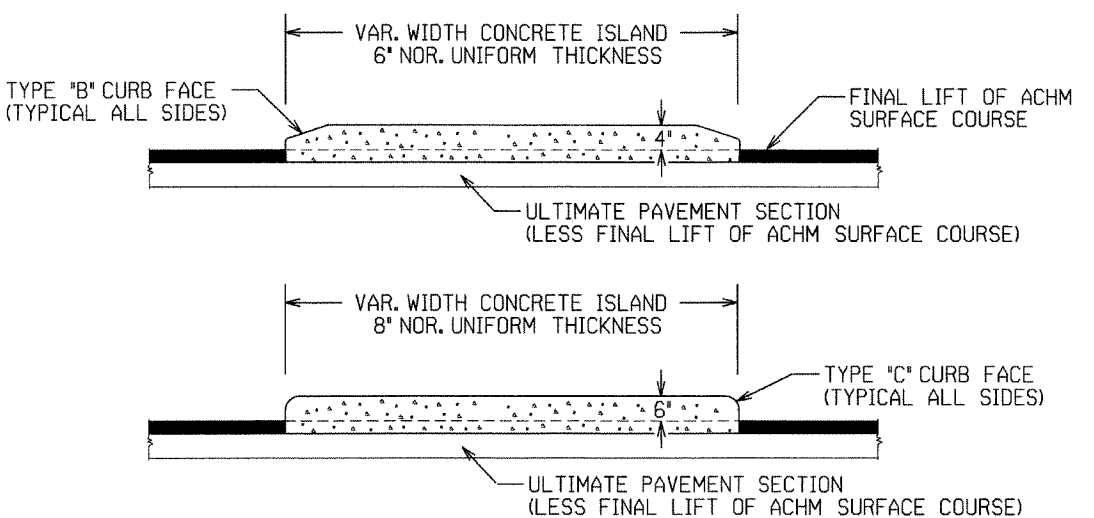
STANDARD DRAWING CDP-1



PLAN VIEW

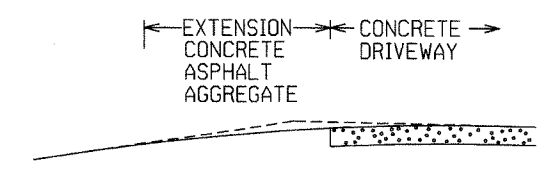


ISOMETRIC VIEW



CURBED ISLANDS FOR CHANNELIZATION

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

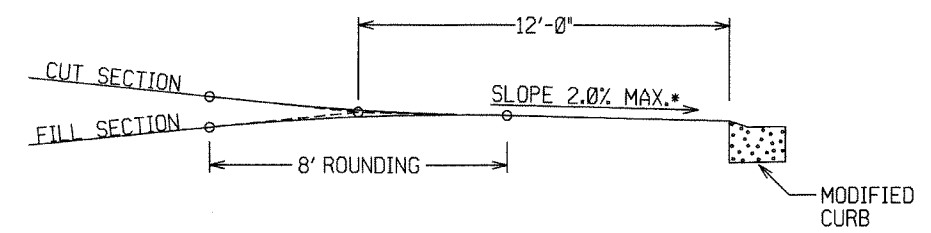


EXTENSION TYPICAL SECTIONS

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

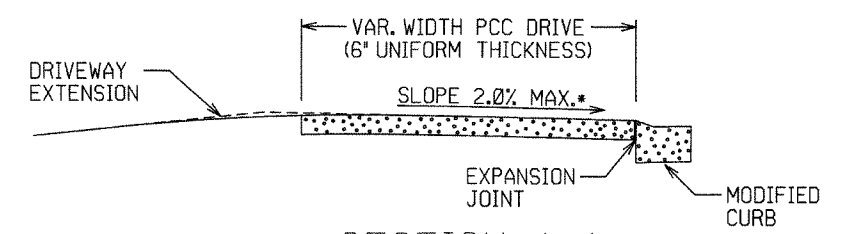
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

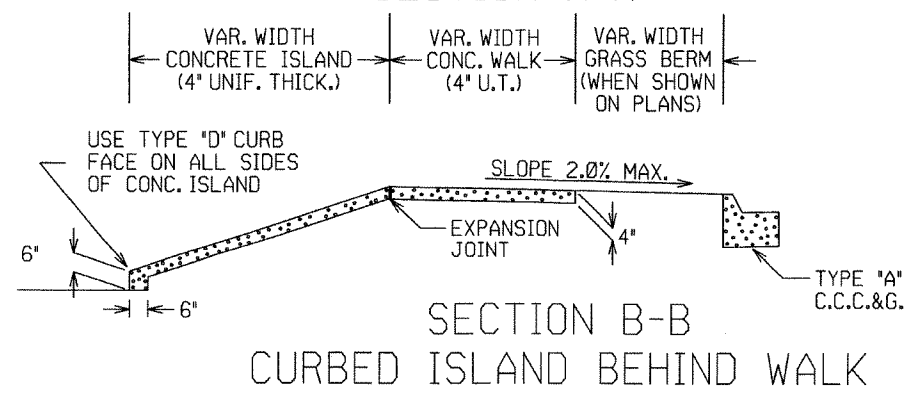


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



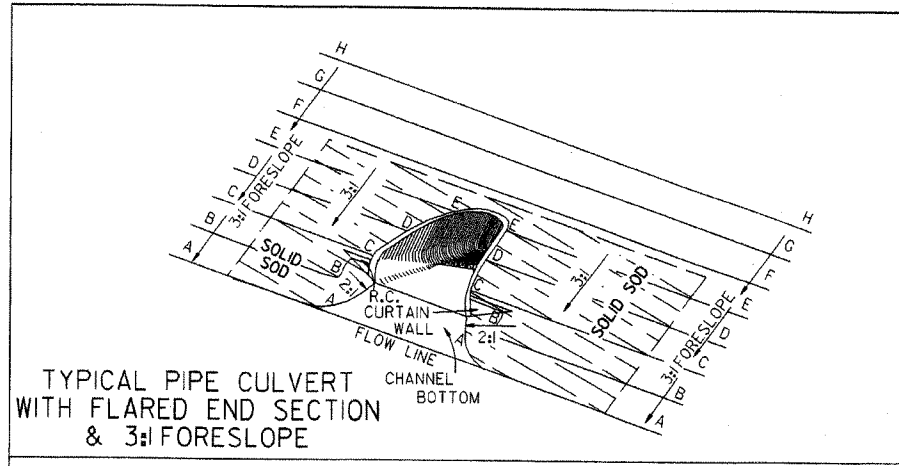
SECTION A-A



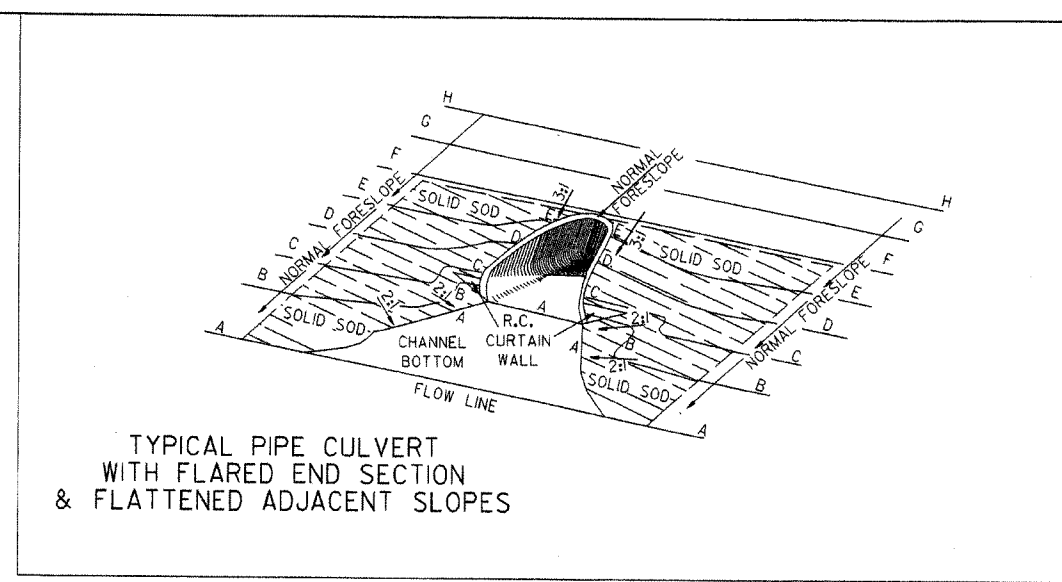
SECTION B-B  
CURBED ISLAND BEHIND WALK

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

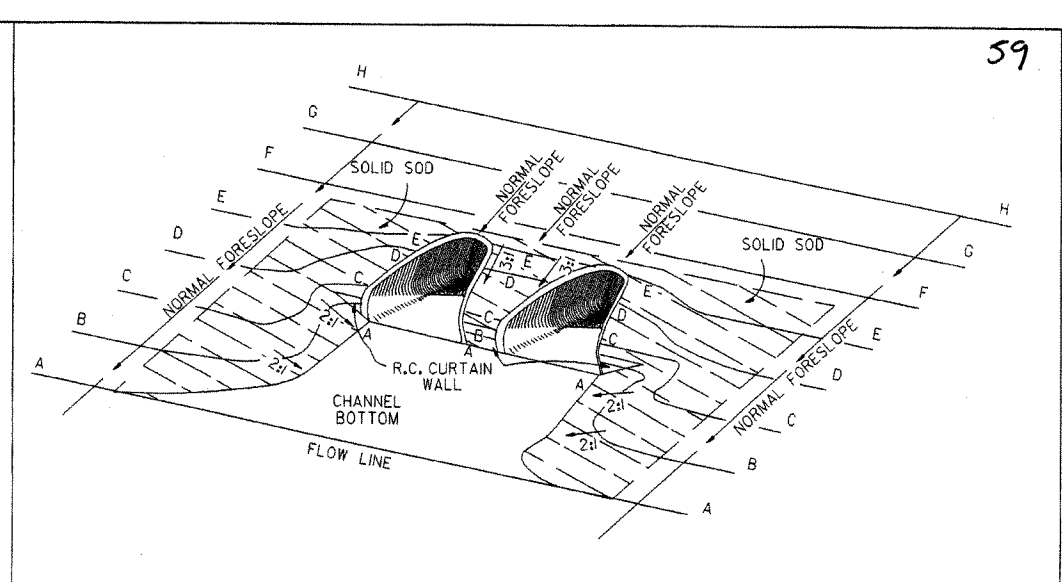
ARKANSAS STATE HIGHWAY COMMISSION  
DETAILS OF DRIVEWAYS & ISLANDS  
STANDARD DRAWING DR-1



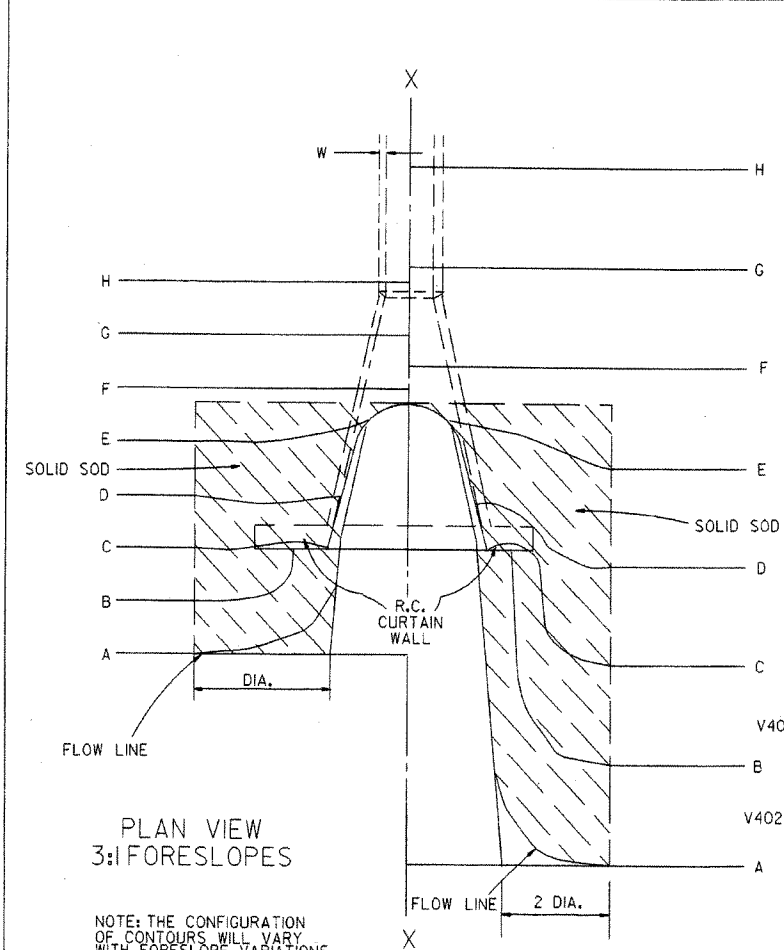
TYPICAL PIPE CULVERT WITH FLARED END SECTION & 3:1 FORESLOPE



TYPICAL PIPE CULVERT WITH FLARED END SECTION & FLATTENED ADJACENT SLOPES



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



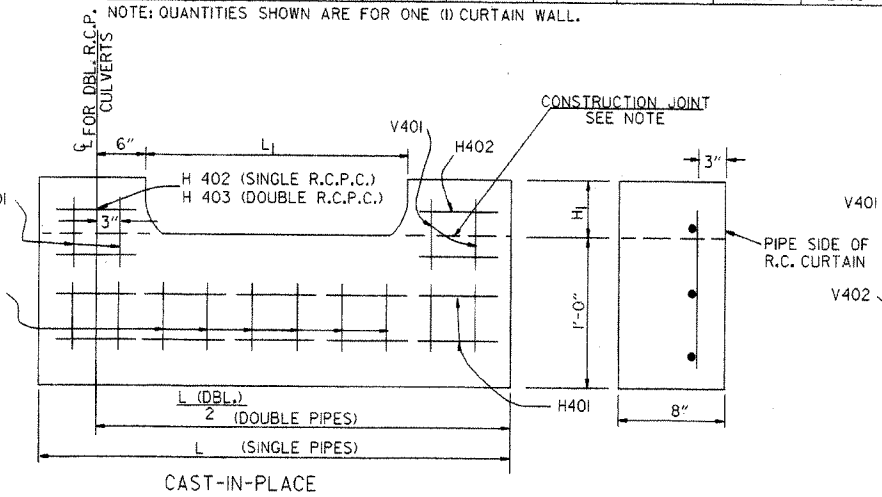
PLAN VIEW 3:1 FORESLOPES

PLAN VIEW FLATTENED FORESLOPES

R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

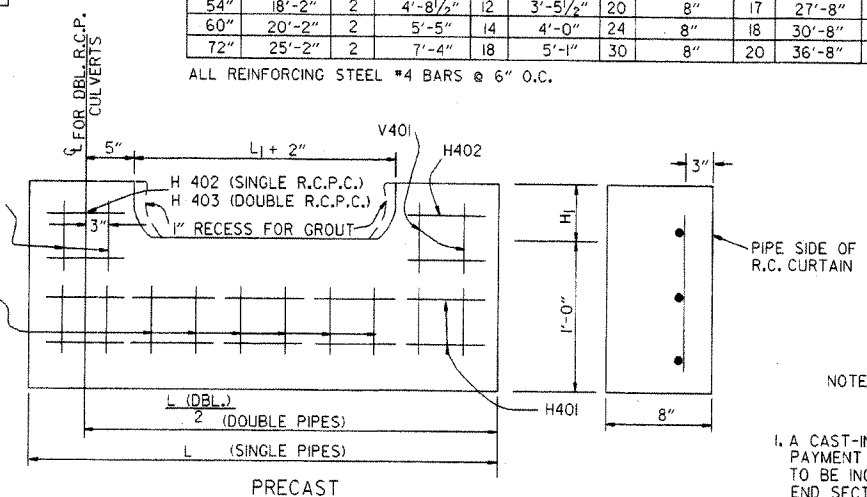
PIPE DIA.	H <sub>1</sub>	L <sub>1</sub>	L	L (DBL.) / 2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
18"	1 1/2"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0 1/2"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3 1/2"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"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

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



R.C. CURTAIN WALL DETAILS

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



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

REINFORCING STEEL SCHEDULE

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

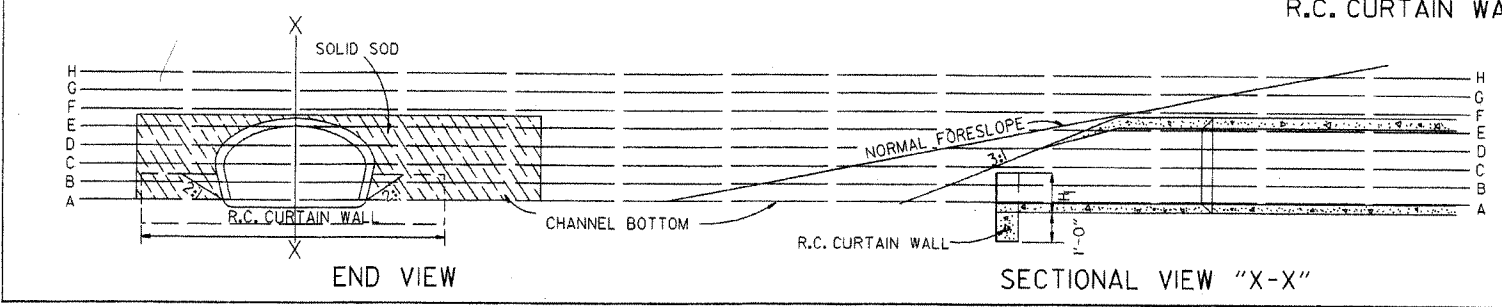
ALL REINFORCING STEEL #4 BARS @ 6" O.C.

SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3:1	4:1	6:1	3:1	4:1	6:1
18"	5	7	12	6	8	13
24"	8	11	19	9	13	20
30"	13	18	29	14	19	30
36"	17	26	41	18	28	43
42"	23	35	55	25	37	57
48"	29	46	68	31	48	70
54"	35	57	85	37	59	87
60"	45	62	104	48	65	107
72"	64	92	156	67	95	159

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

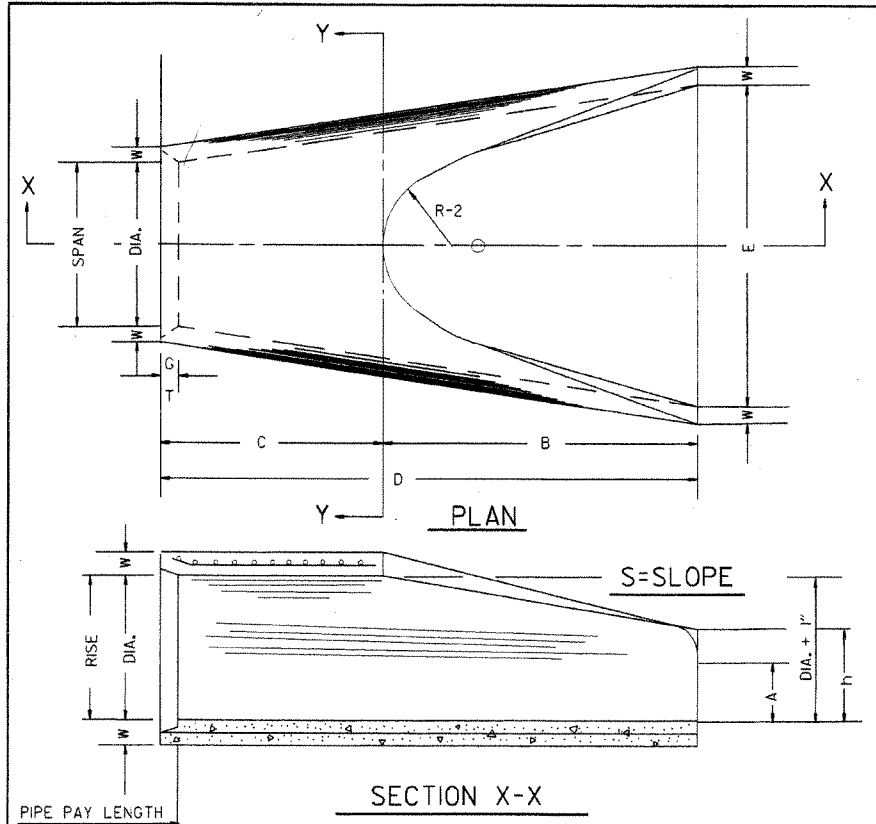
- GENERAL NOTES
1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS INCLUDING REINFORCING STEEL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



END VIEW

SECTIONAL VIEW "X-X"

10-18-96	ADDED NOTE TO SOLID SODDING		
10-12-95	CORRECTED SPELLING	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
11-3-94	ADDED GENERAL NOTE NO. 4		
8-15-91	REV. CURTAIN WALL QUANT., STEEL SCH. & SOLID SOD QUANT.		
3-2-81	ALLOW PRECAST IN 2 OR MORE PIECES CHAMFER EDGES		
5-15-80	ADDED PRECAST WALL & GENERAL NOTES		
10-2-72	REVISED AND REDRAWN		
DATE	REVISION	FILMED	STANDARD DRAWING FES-1



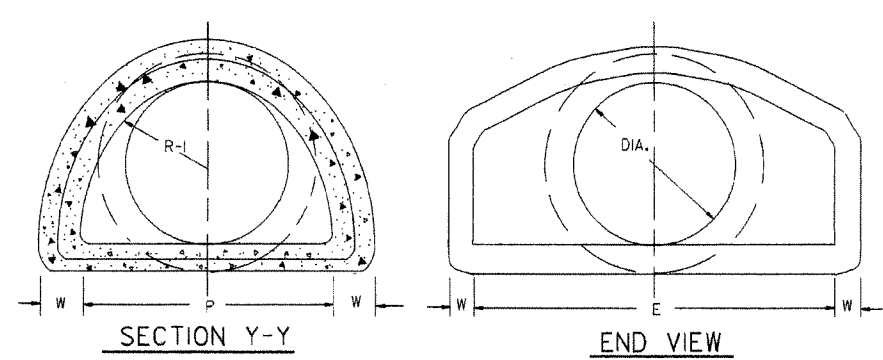
### TABLE OF DIMENSIONS

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

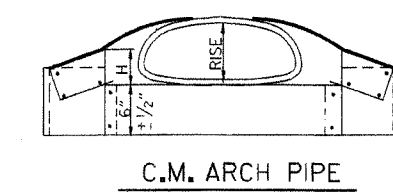
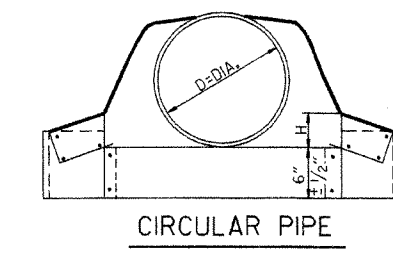
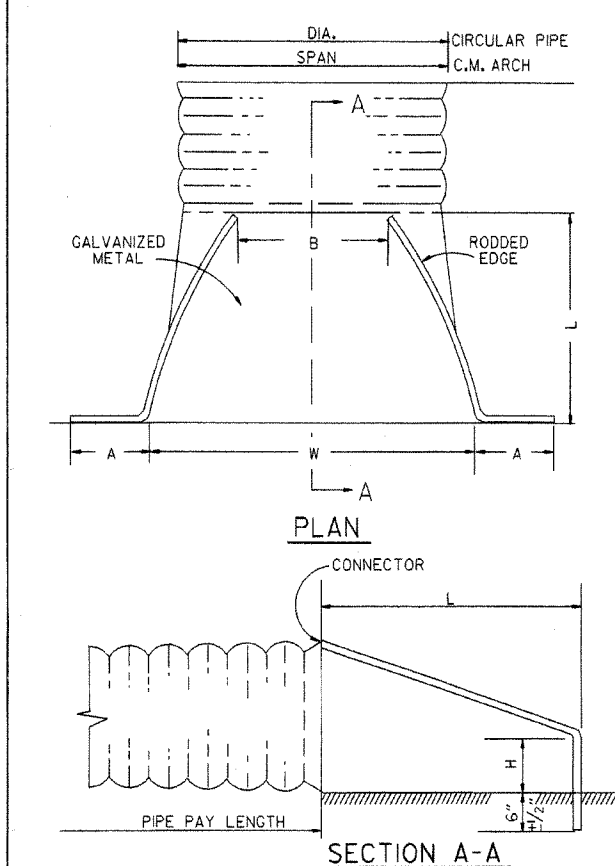
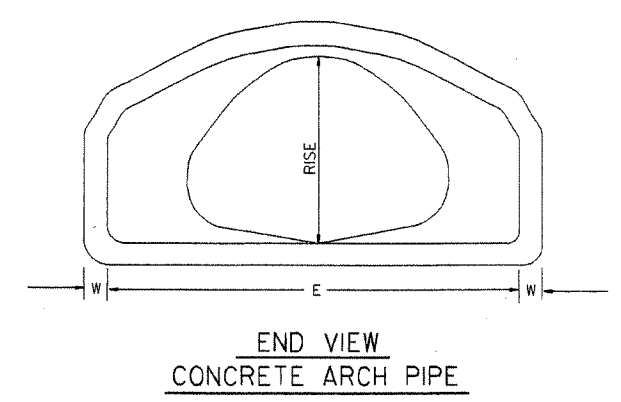
### ARCH PIPE

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

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



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

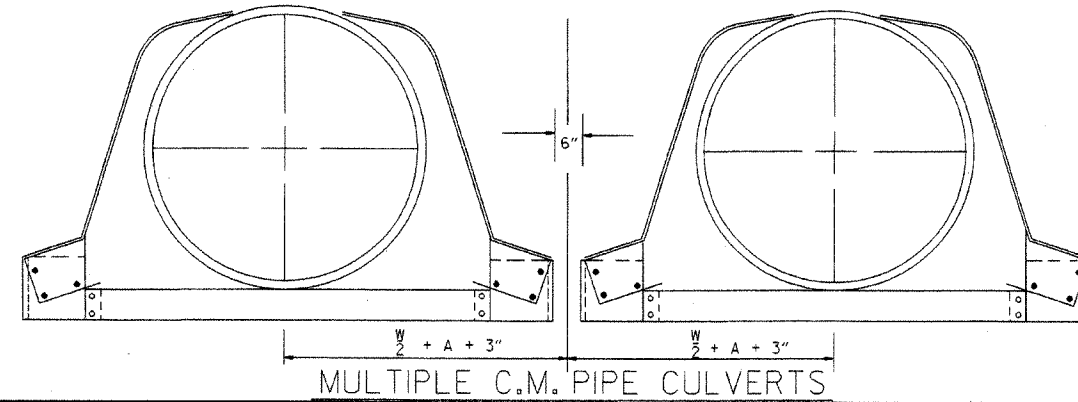
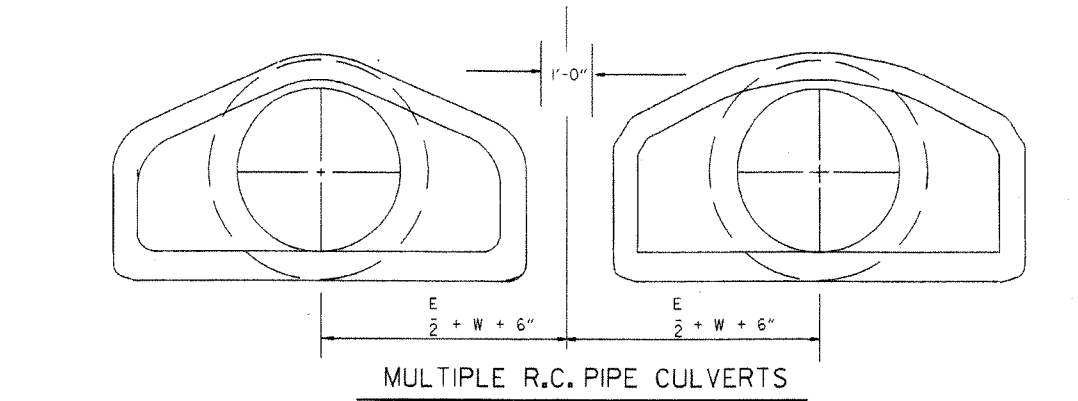


### CIRCULAR PIPE

D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1/2" ±	W 2" ±	S
12	16	6	6	6	21	24	2 1/2:1
15	16	7	8	6	26	30	2 1/2:1
18	16	8	10	6	31	36	2 1/2:1
21	16	9	12	6	36	42	2 1/2:1
24	16	10	13	6	41	48	2 1/2:1
30	14	12	16	8	51	60	2 1/2:1
36	14	14	19	9	60	72	2 1/2:1
42	12	16	22	11	69	84	2 1/2:1
48	12	18	27	12	76	90	2 1/2:1
54	12	18	30	12	84	102	2:1
60	12	18	33	12	87	114	1 3/4:1
66	12	18	36	12	87	120	1 1/2:1
72	12	18	39	12	87	126	1 1/3:1

### C.M. ARCH PIPE

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

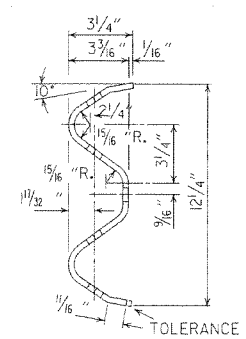
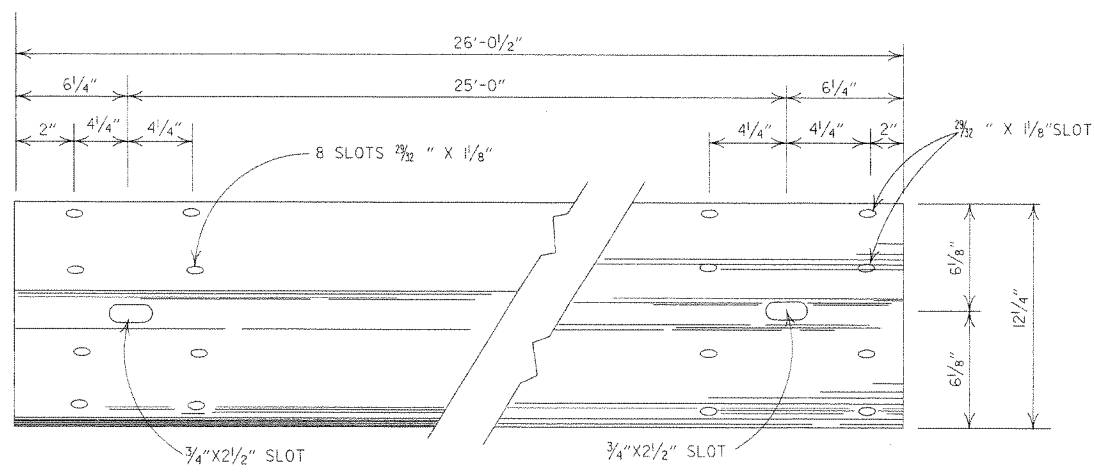


NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

### END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

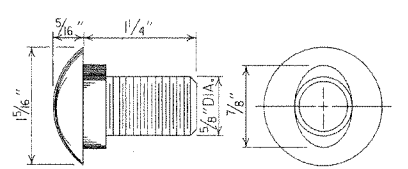
10-18-96	REVISED ASTM REF. TO AASHTO	10-18-96	ARKANSAS STATE HIGHWAY COMMISSION
5-15-80	REVISED DISTANCE BETWEEN MULTIPLE R.C.P. F.E.S.	664-5-15-80	
7-14-78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES	752-7-14-78	
8-22-75	ADDED MULTIPLE PIPE CULVERTS	517-8-22-75	FLARED END SECTION
12-5-74	REMOVED NOTE RE REINF. FOR R.C. F.E.S.	500-12-5-74	
5-24-73	CMP END SECTION, SHOW PIPE PAY LENGTH	627-5-24-73	
10-2-72	REVISED AND REDRAWN	760-10-2-72	STANDARD DRAWING FES-2
DATE	REVISION	FILE NO.	



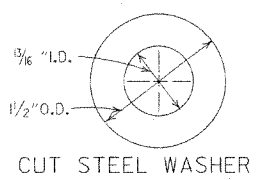


DETAILS OF W-BEAM GUARD RAIL

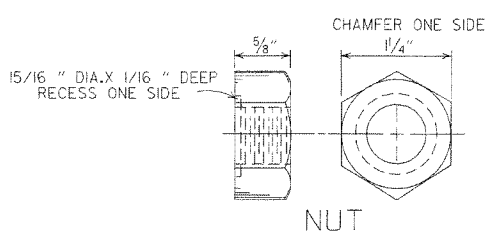
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



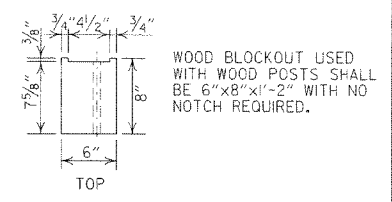
SPLICE BOLT  
POST BOLT - SAME EXCEPT LENGTH



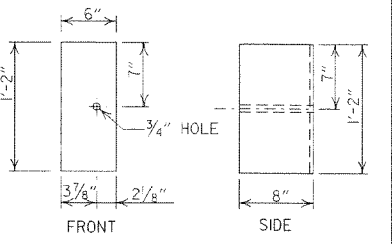
CUT STEEL WASHER



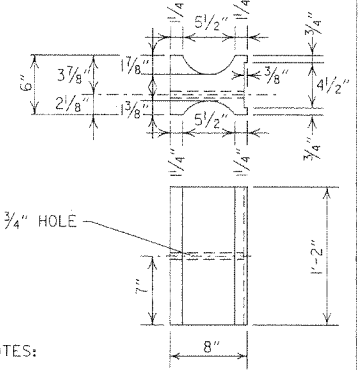
NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6" X 8" X 1'-2" WITH NO NOTCH REQUIRED.

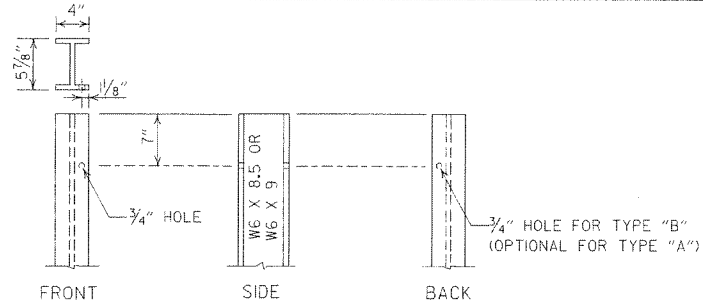


WOOD BLOCKOUT (W-BEAM)

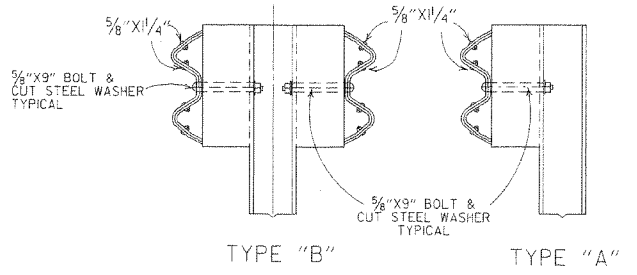


NOTES:  
1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET NCHRP-350 TEST LEVEL 3 SPECIFICATIONS OR REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).  
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

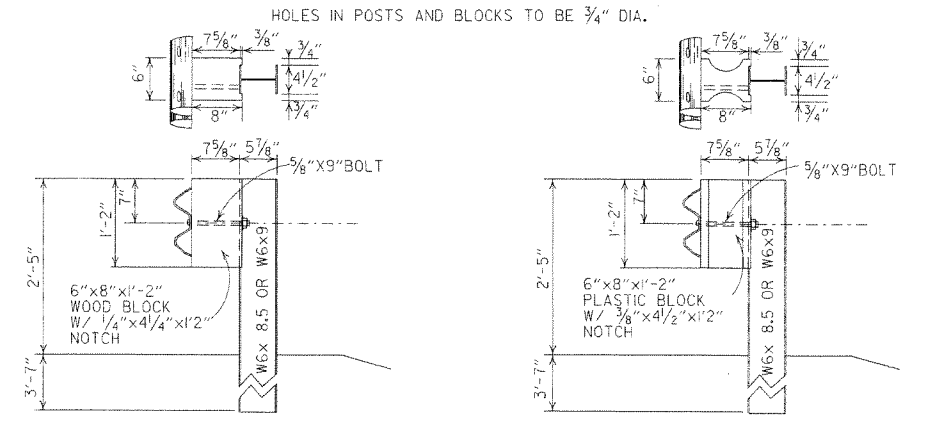
PLASTIC BLOCKOUT (W-BEAM)



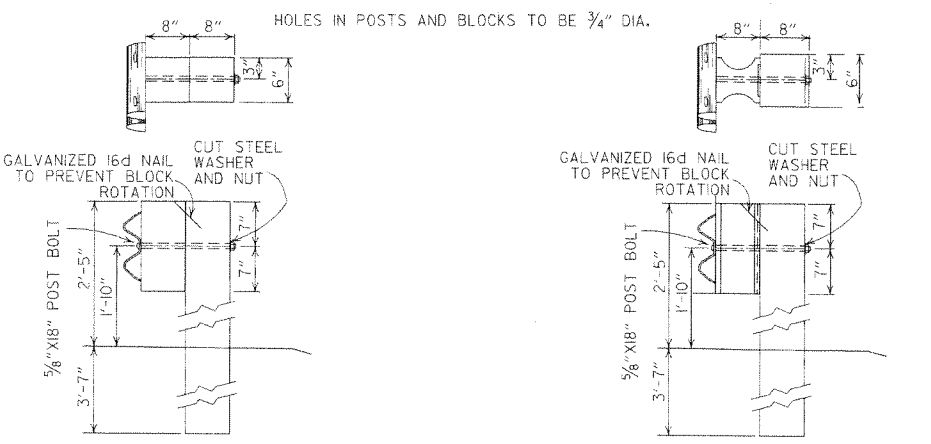
STEEL POST



DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



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



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

-GENERAL NOTES-

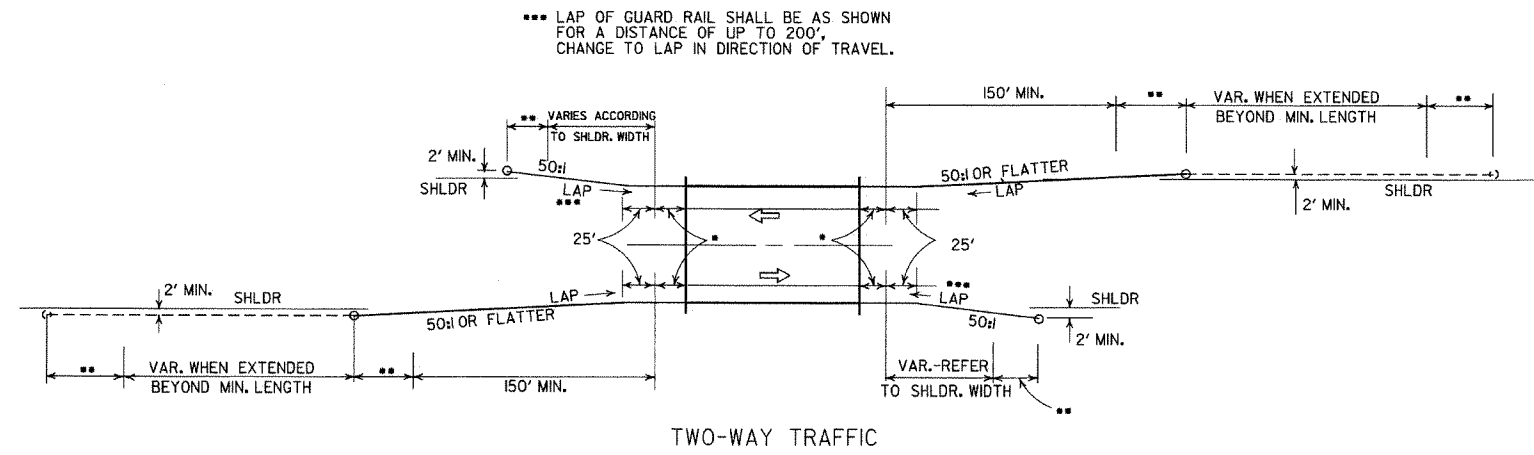
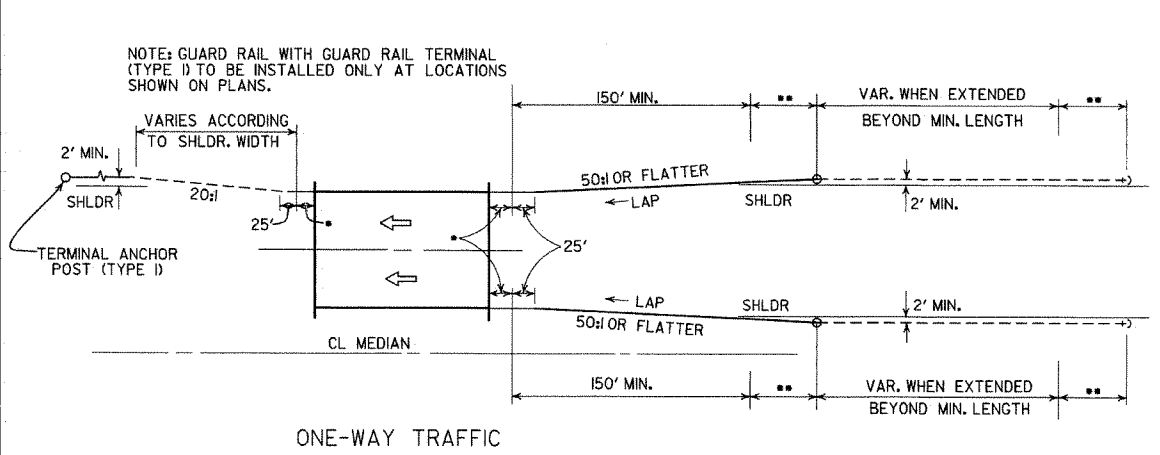
ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.  
WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.  
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE 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. 1 350 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.

7-4-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-5-09	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	
1-2-00	ADDED PLASTIC BLOCKOUT	
8-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF GUARD RAIL REPLACE. BEHIND CURB & DET. OF POST PLACE IN SOLID ROCK, & ADDED DETAILS OF STEEL LINE POST CONN. REMOVED BACK-UP PLATE, REVISED HOLES IN STEEL POLES	
4-3-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
6-2-94	ADDED ALT. STEEL POST SIZE	
8-5-93	REVISED STEEL POST SIZE	8-5-93
10-1-92	REDRAWN & REVISED	10-1-92
8-15-91	REVISED WASHER NOTE	8-15-91
8-2-90	REV. GEN. NOTE & DET. 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 FILE

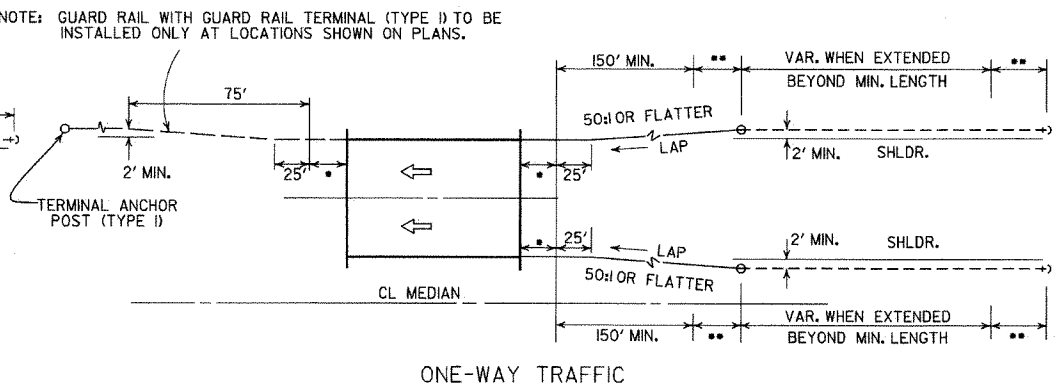
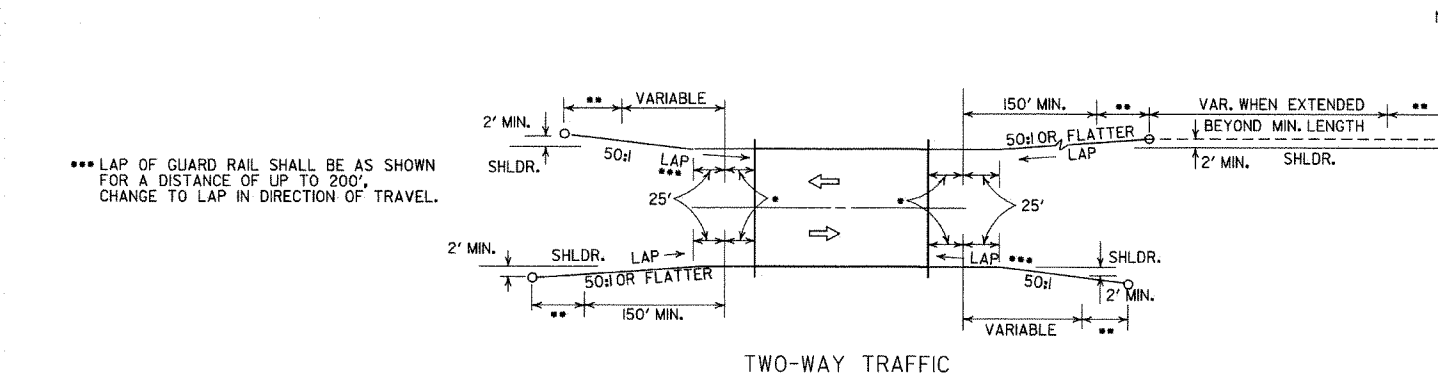
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

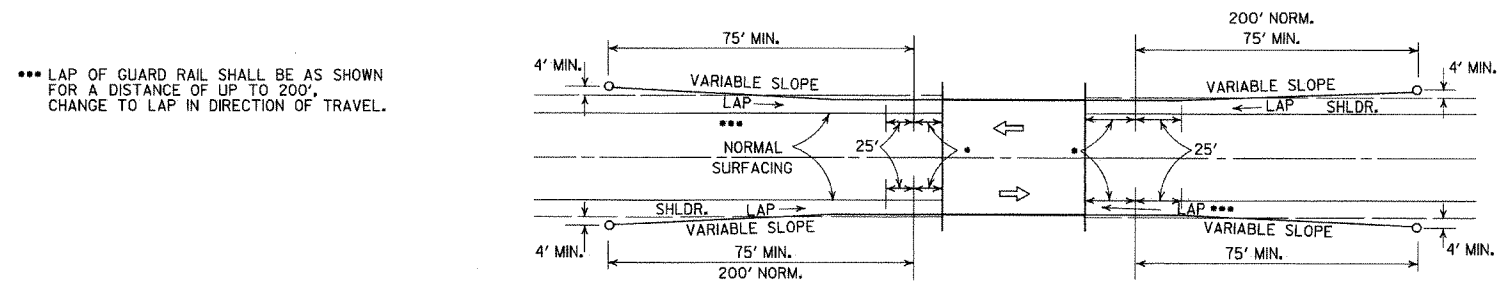
STANDARD DRAWING GR-8



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)

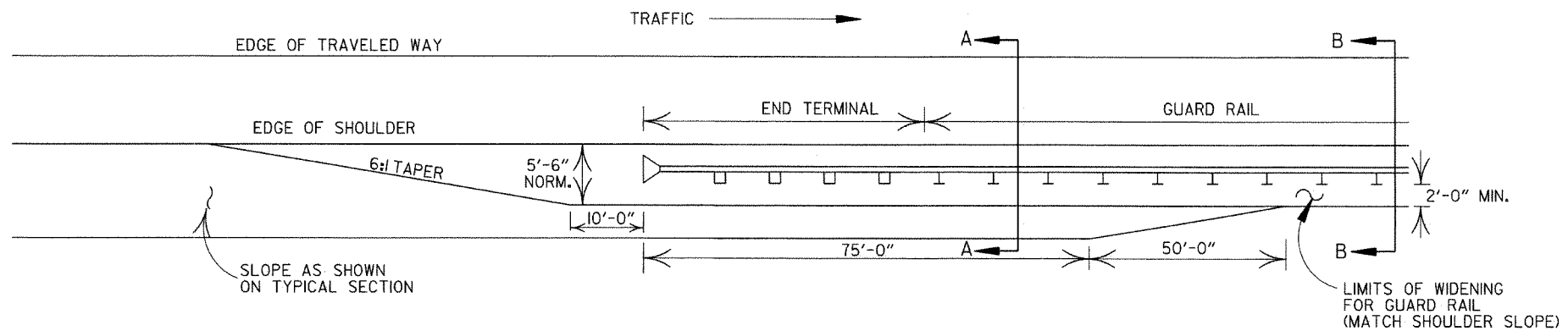


LEGEND

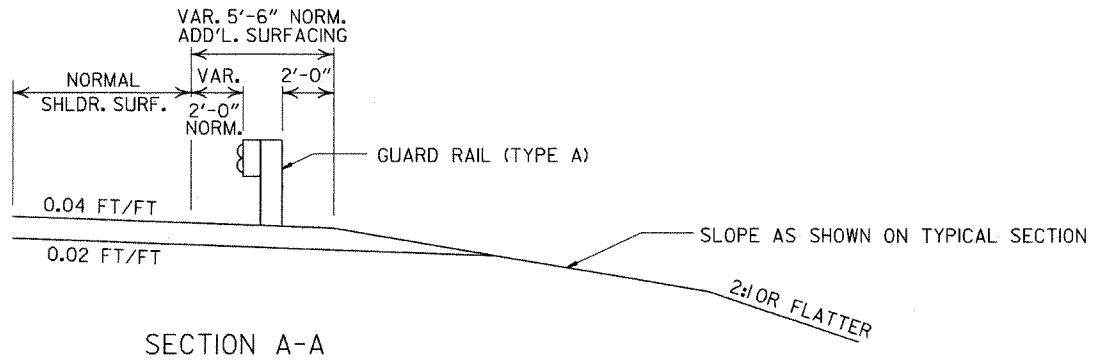
- THREE BEAM GUARD RAIL TERMINAL
- GUARD RAIL TERMINAL (TYPE 2)

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

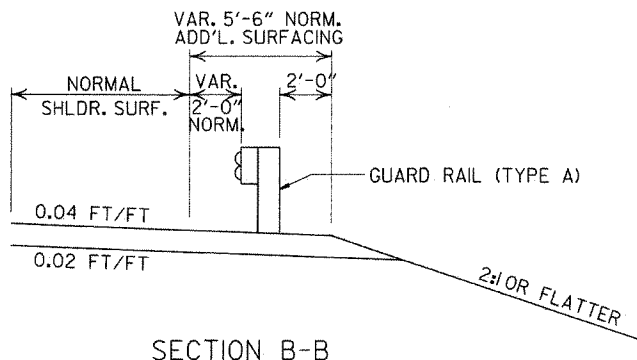
ARKANSAS STATE HIGHWAY COMMISSION		
GUARD RAIL DETAILS		
STANDARD DRAWING GR-9		
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. 1)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT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



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

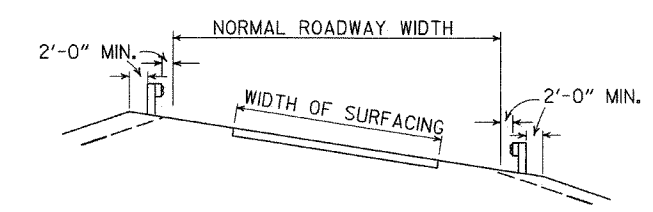
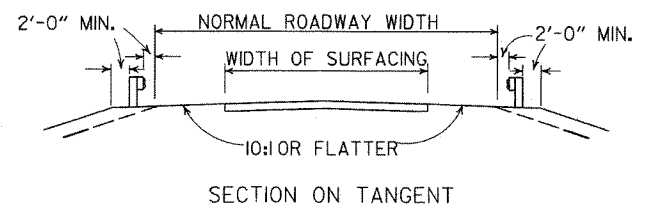


SECTION A-A

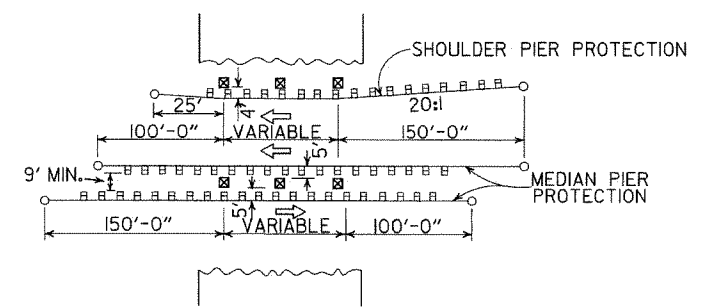


SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL



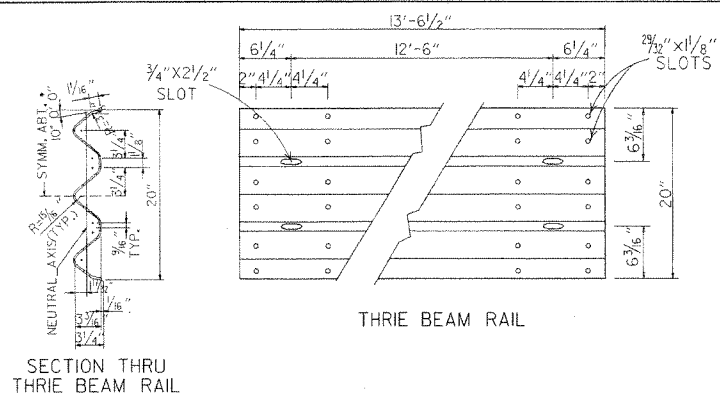
DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



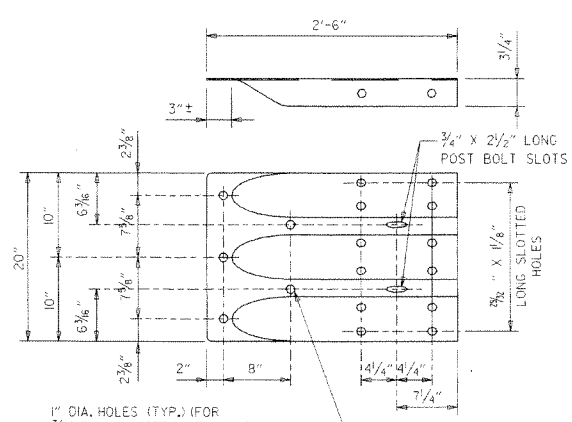
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

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

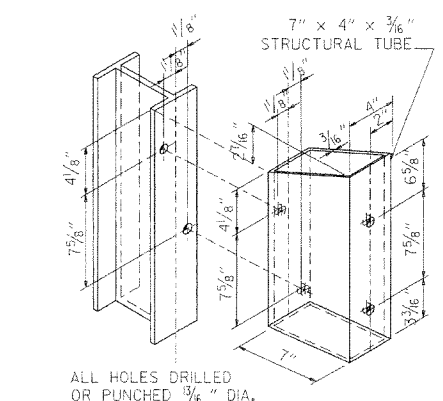




THRIE BEAM RAIL

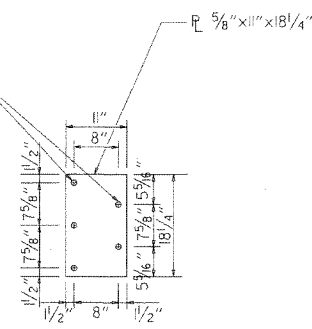


SPECIAL END SHOE



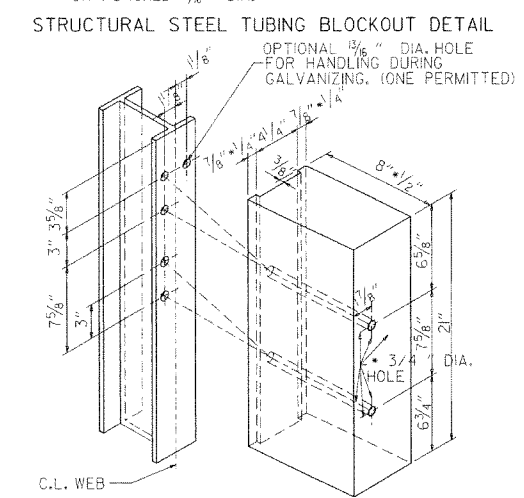
ATTACH BLOCKOUT TO POST USING 5/8" DIA. HEX HEAD BOLTS WITH 1/2" O.D. CUT STEEL WASHERS AND NUT.

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



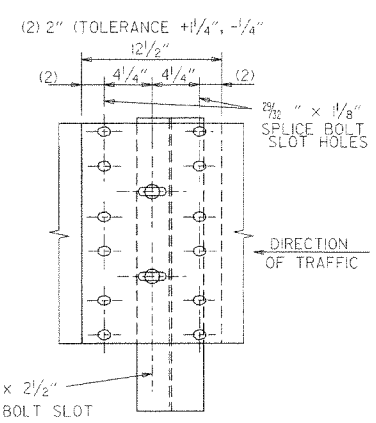
CONNECTOR PLATE

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 7/8" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.

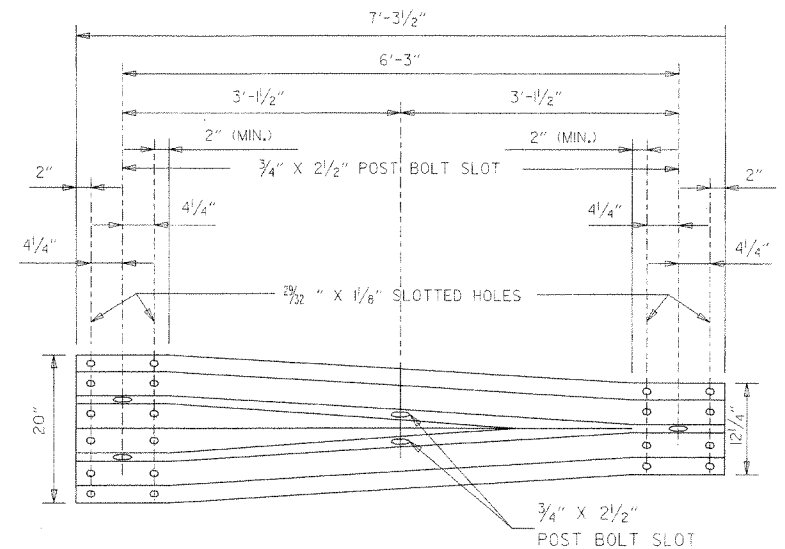


ALL HOLES 3/8" DIAMETER EXCEPT AS NOTED  
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

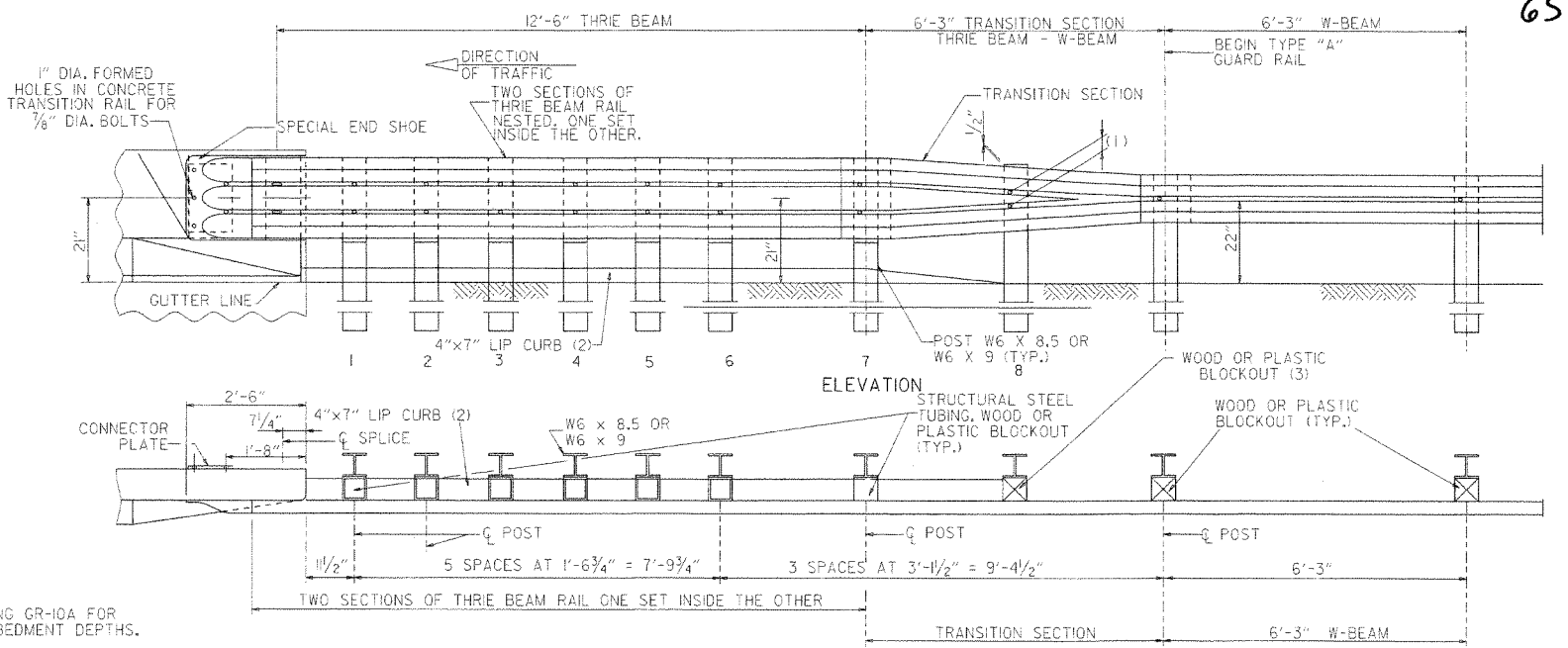
NOTE: BLOCKS SHALL BE THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.



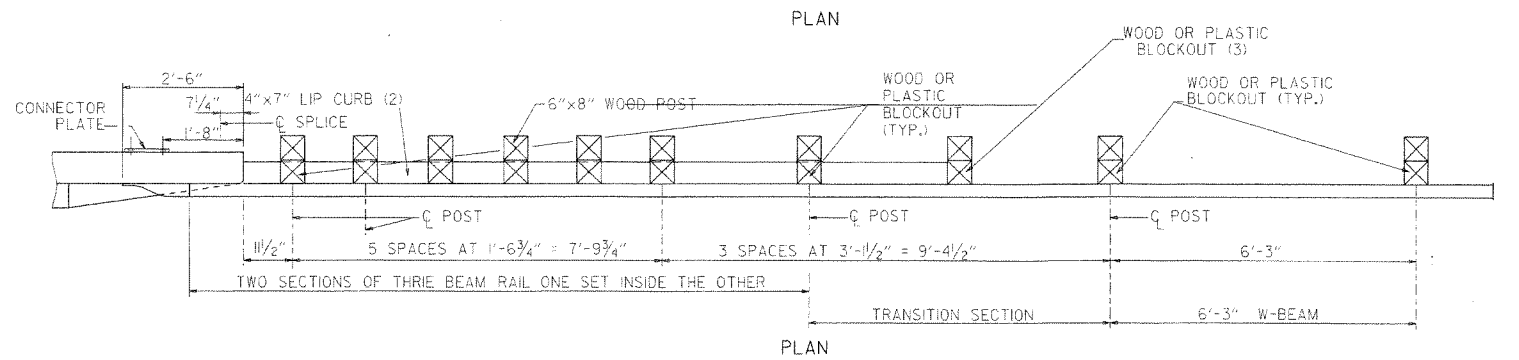
THRIE BEAM RAIL SPLICE AT POST



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.

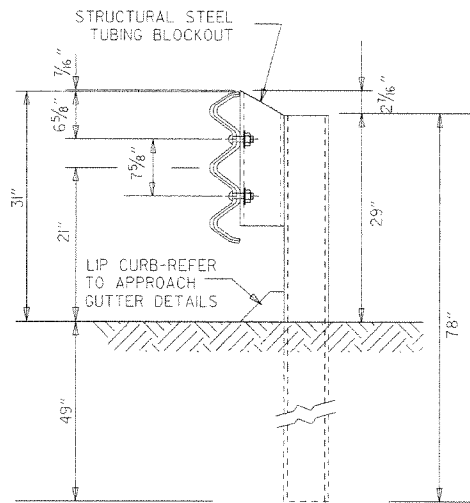
THRIE BEAM GUARD RAIL CONNECTION AT BRIDGE ENDS

GENERAL NOTES:

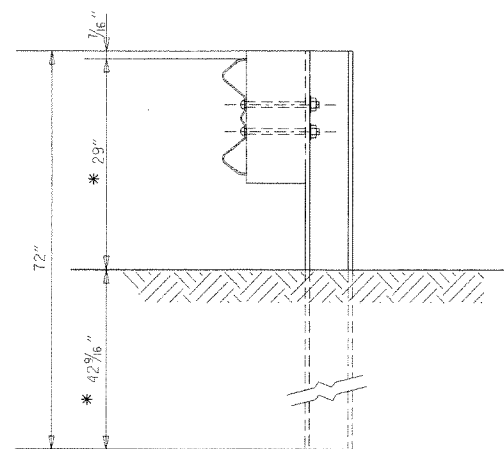
THE THRIE BEAM RAIL, SPECIAL END SHOE, AND THE TRANSITION SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE. ZINC COATING SHALL BE TYPE 1. RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION. ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL 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.

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

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

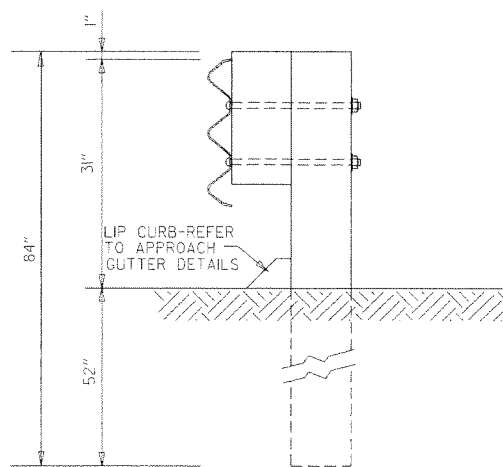


THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT AND STEEL POST  
POSTS 1-7

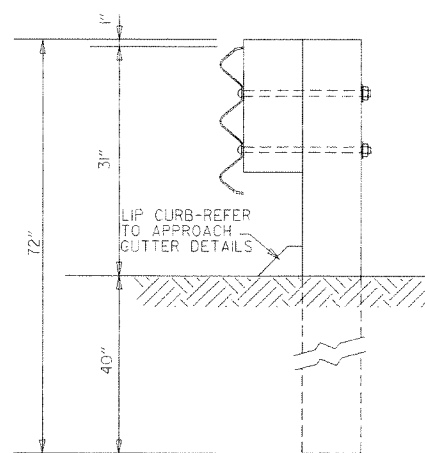


W-BEAM TO THRIE BEAM TRANSITION RAIL WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST  
POST 8

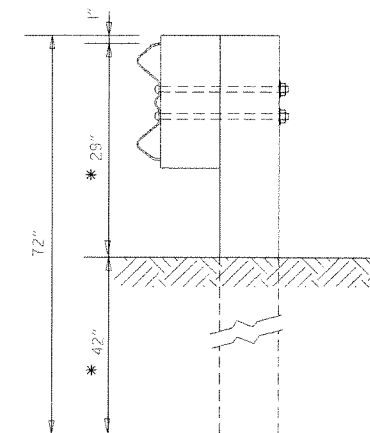
\* NOTE:  
THESE DIMENSIONS WILL NEED TO BE ADJUSTED IN THE FIELD TO MAKE THE TRANSITION FROM 21" MID POINT OF THRIE BEAM TO 22" MID POINT OF W-BEAM.



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



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



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

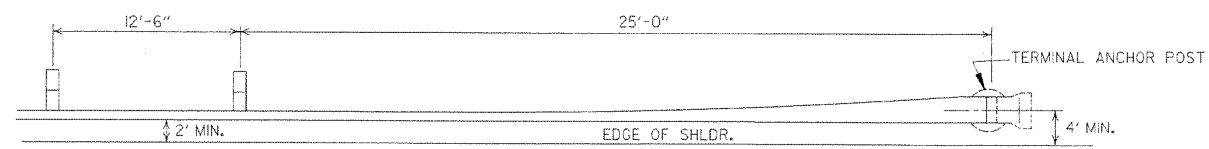
GENERAL NOTES:  
RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.  
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

ARKANSAS STATE HIGHWAY COMMISSION

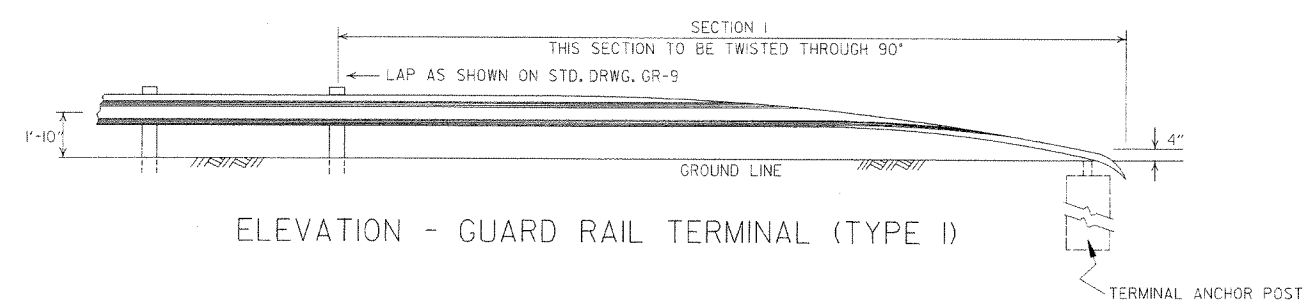
GUARD RAIL DETAILS

STANDARD DRAWING GR-10A

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

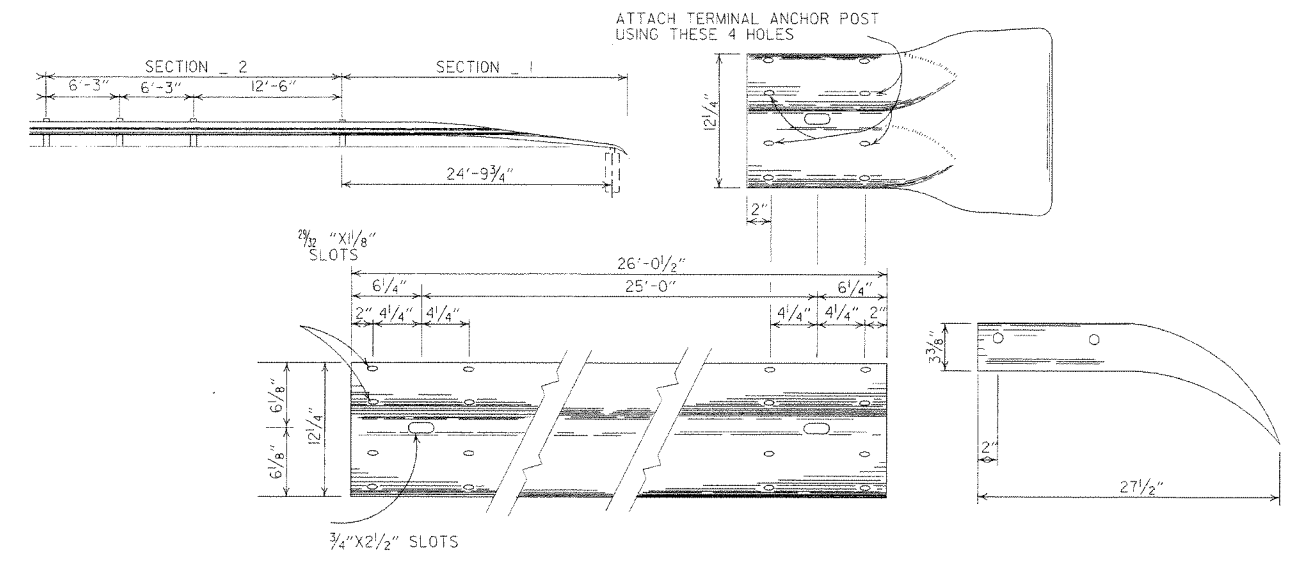


PLAN - GUARD RAIL TERMINAL (TYPE I)



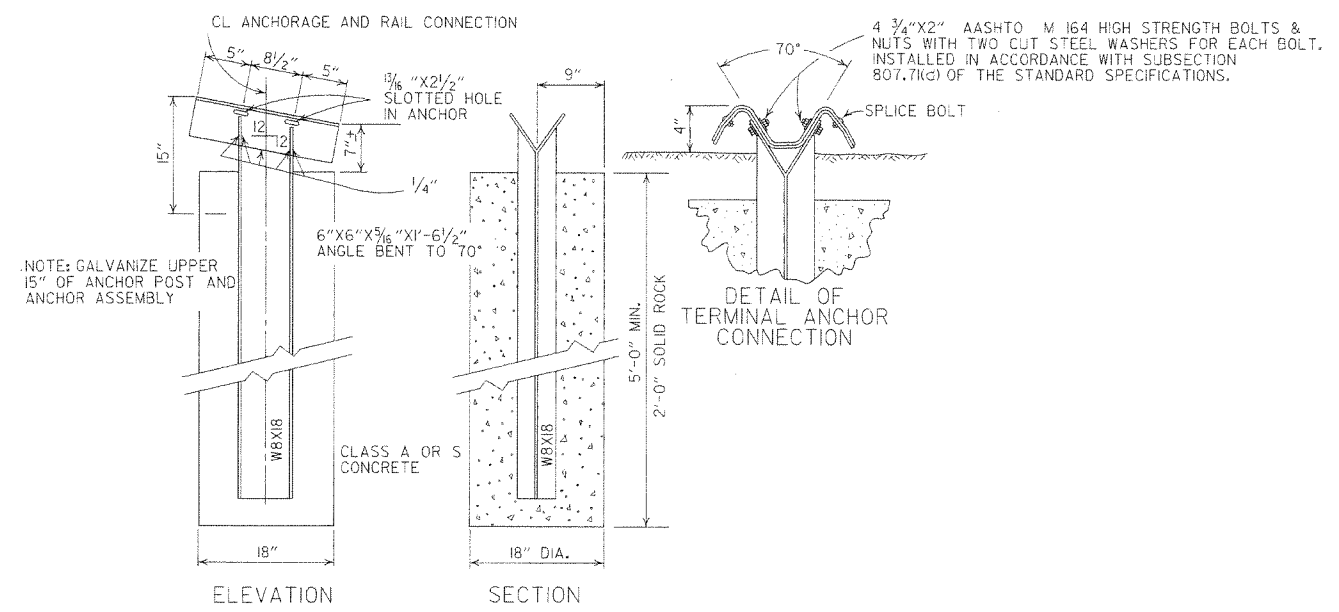
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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 CONNECTION

NOTE: GALVANIZE UPPER 15" OF ANCHOR POST AND ANCHOR ASSEMBLY

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.

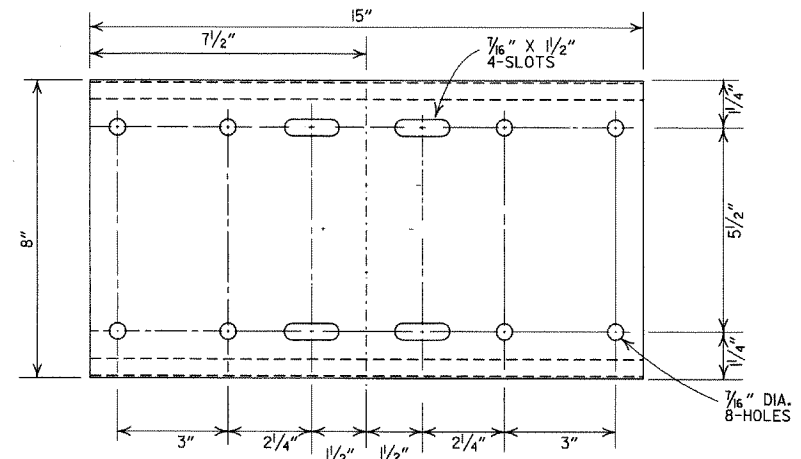
DETAIL OF TERMINAL ANCHOR POST (TYPE I)

DATE	REVISION	DATE FILM
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

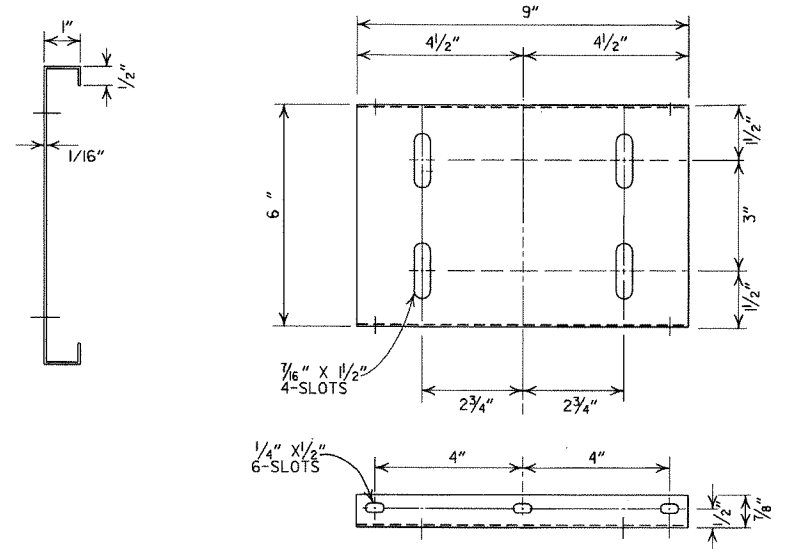
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

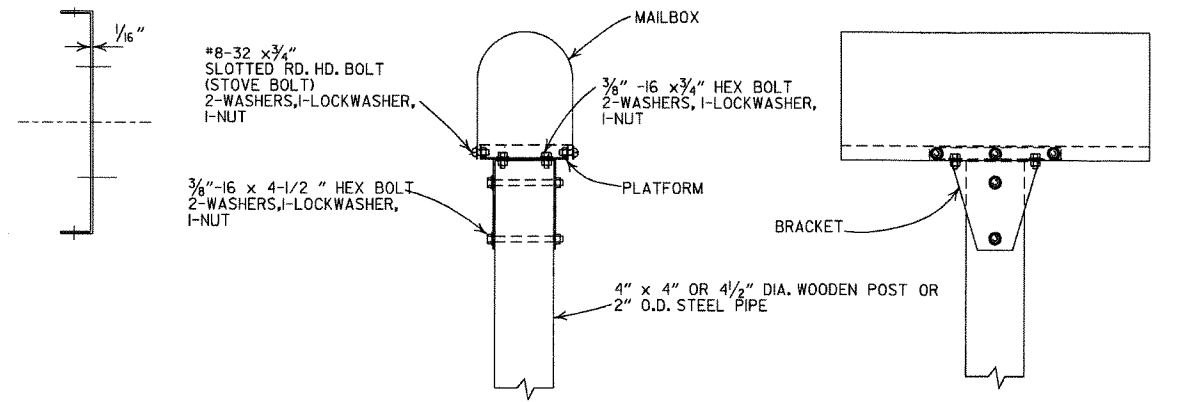
STANDARD DRAWING GRT-1



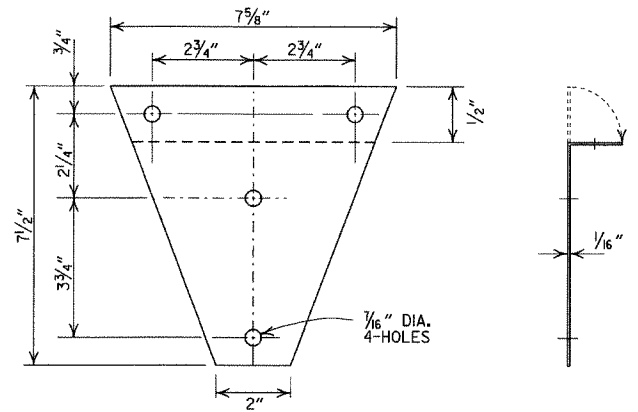
SHELF



PLATFORM

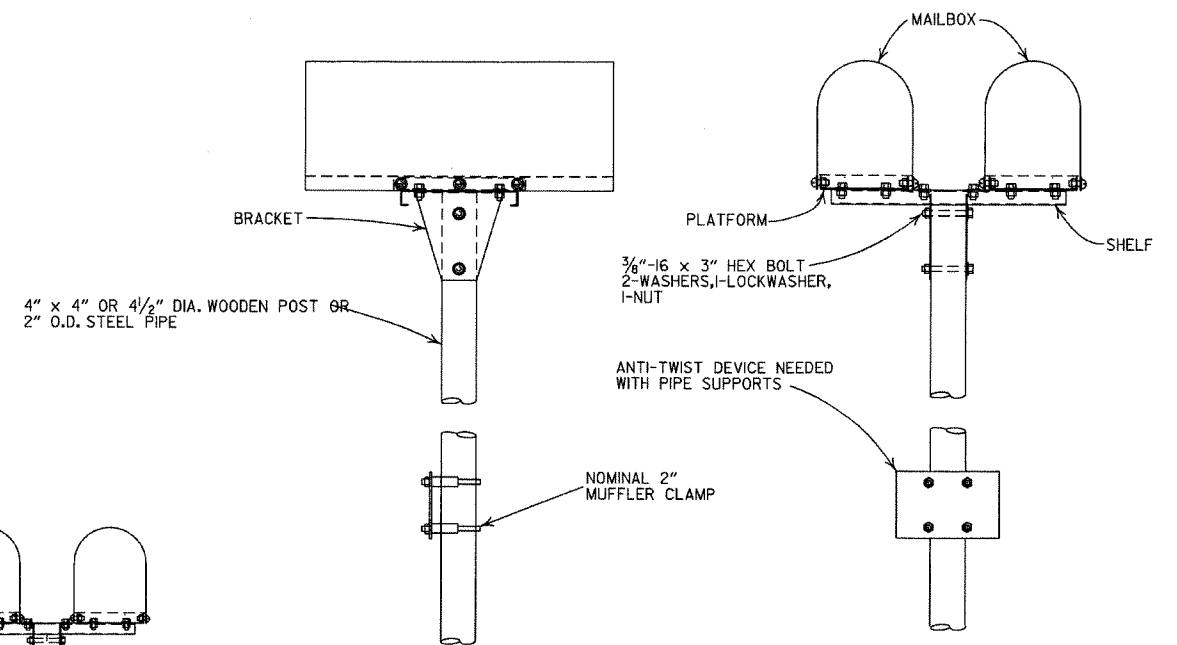


SINGLE INSTALLATION

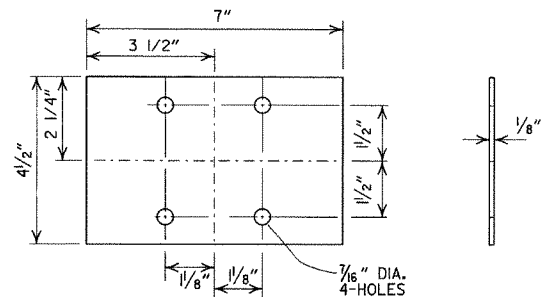


BRACKET

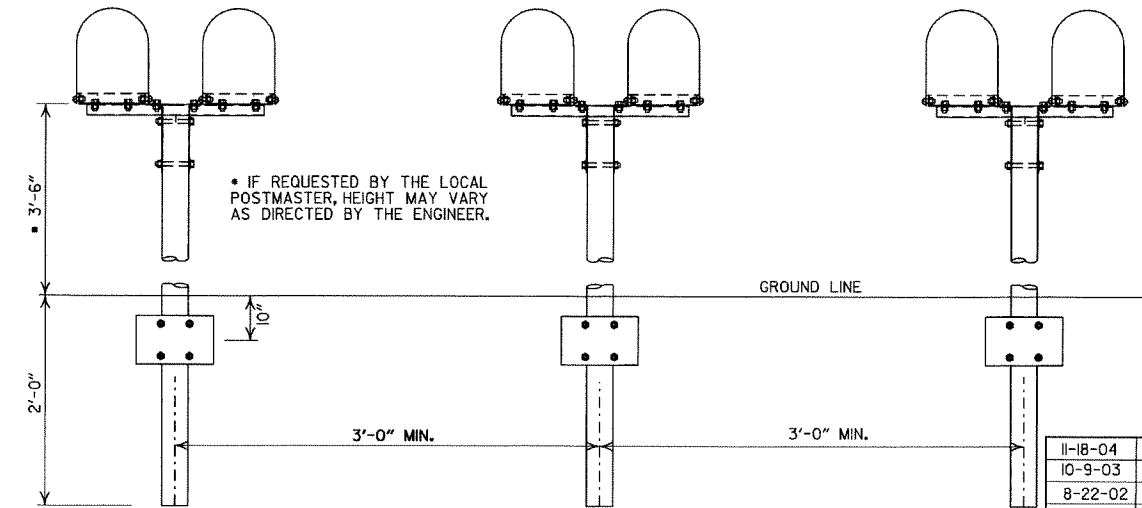
- GENERAL NOTES
1. MAILBOX POSTS MAY BE WOOD OR METAL. WOOD POSTS SHALL BE PRESSURE TREATED FOR GROUND CONTACT IN ACCORDANCE WITH SECTION 637.02 OF THE STANDARD SPECIFICATIONS.
  2. ANTI-TWIST PLATES SHALL BE USED ONLY ON METAL POSTS.
  3. MAILBOX SHELF, BRACKET & PLATFORM SHALL BE GALVANIZED OR PAINTED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



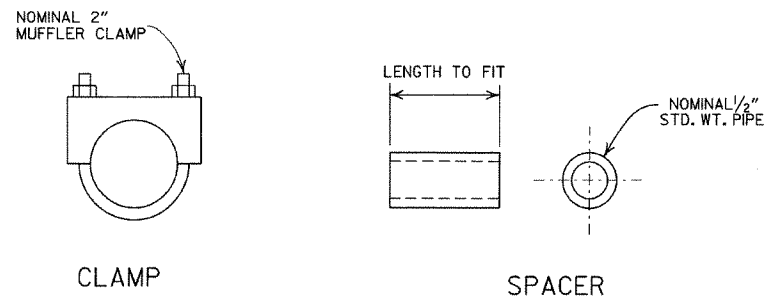
DOUBLE INSTALLATION



ANTI-TWIST PLATE



SPACING FOR MULTIPLE POST INSTALLATION



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

ARKANSAS STATE HIGHWAY COMMISSION

MAILBOX DETAILS  
STANDARD DRAWING MB-1

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	SPAN		RISE	
	AASHTO M 206	AHTD NOMINAL	AASHTO M 206	AHTD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/8	44	26 3/8	27
42	51 1/8	51	31 3/8	31
48	58 1/2	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77 1/2	77
108	138	138	87 1/8	87
120	154	154	96 3/8	97
132	168 3/4	169	106 1/2	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

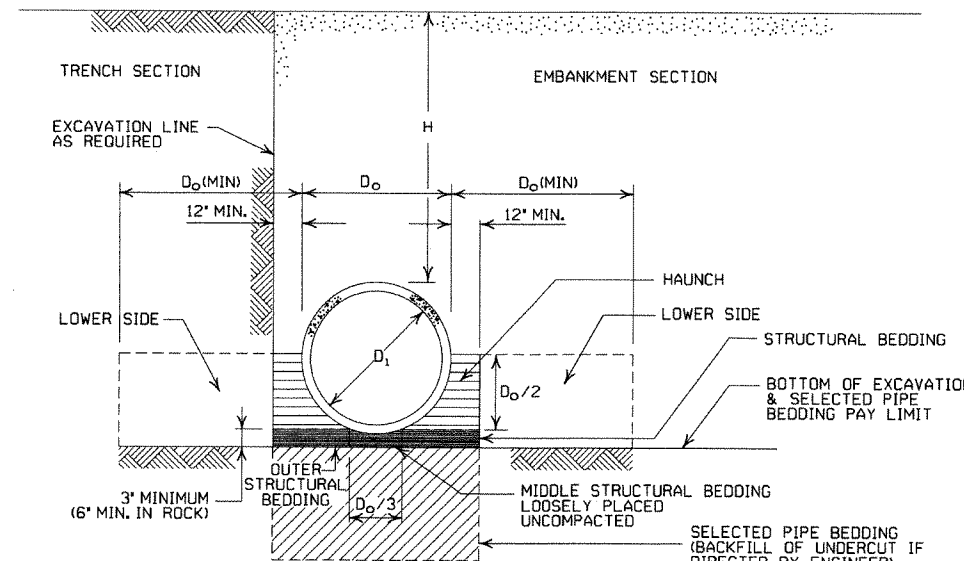
- LEGEND -

- D<sub>1</sub> = NORMAL INSIDE DIAMETER OF PIPE
- D<sub>o</sub> = OUTSIDE DIAMETER OF PIPE
- H = FILL COVER HEIGHT OVER PIPE (FEET)
- MIN. = MINIMUM
- UNDISTURBED SOIL

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

\* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT  
FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINIMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
2 3/8 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	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

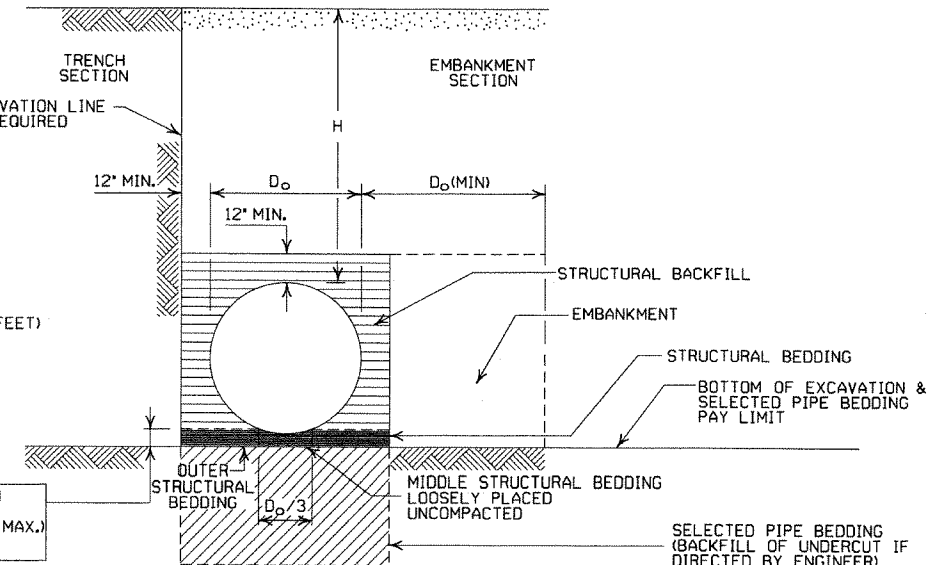
1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE. DO NOT COMPACT.
2. INSTALL PIPE TO GRADE.
3. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
4. COMPLETE STRUCTURAL BACKFILL OPERATION BY WORKING FROM SIDE TO SIDE OF THE PIPE. THE SIDE TO SIDE STRUCTURAL BACKFILL DIFFERENTIAL SHALL NOT 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
  - [Symbol] = 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				
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)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)		MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.)			
				INSTALLATION TYPE 1	INSTALLATION TYPE 1		INSTALLATION TYPE 1	INSTALLATION 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				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.

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

ARKANSAS STATE HIGHWAY COMMISSION

METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1



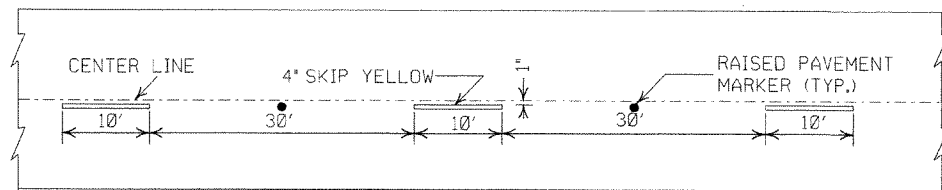




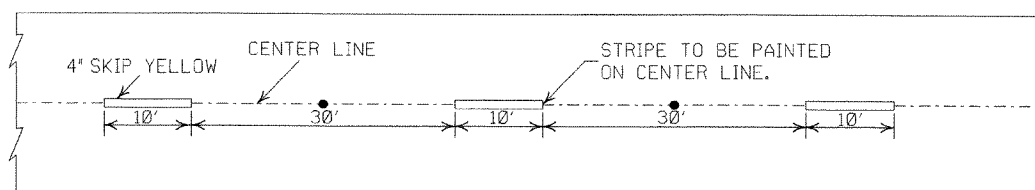


NOTES:

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.

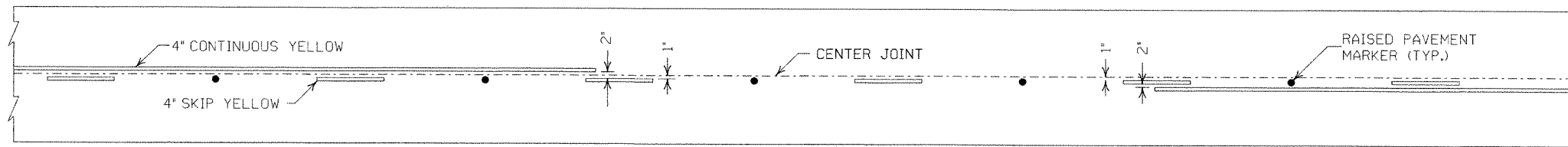


CONCRETE PAVEMENT

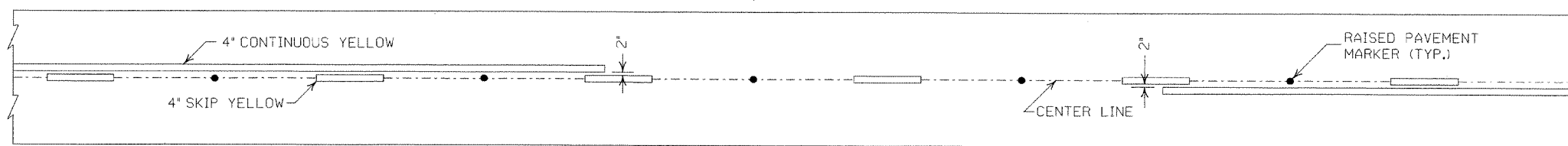


ASPHALT PAVEMENT

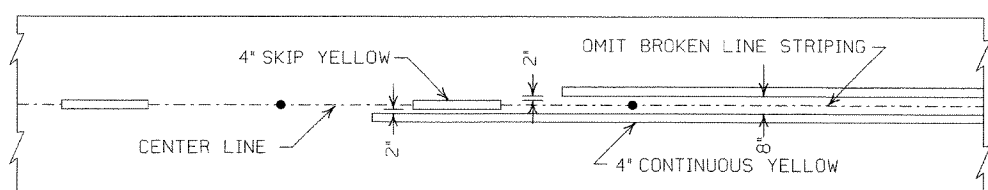
BROKEN LINE STRIPING



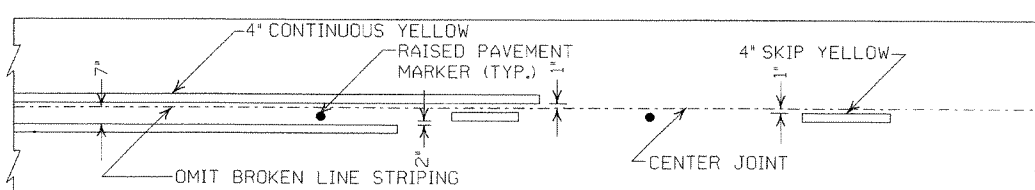
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

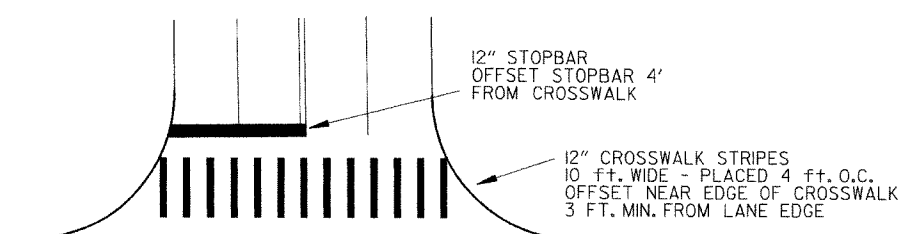


ASPHALT PAVEMENT



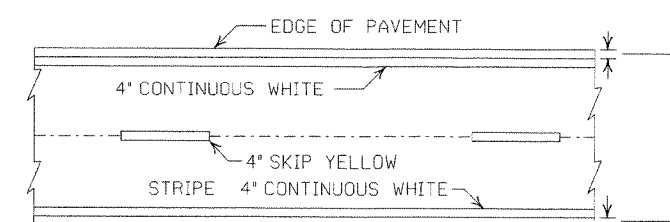
CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

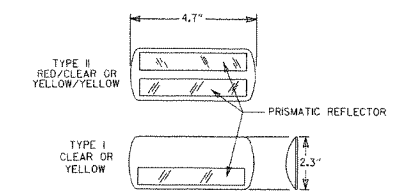


CROSSWALK AND STOPBAR DETAILS

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

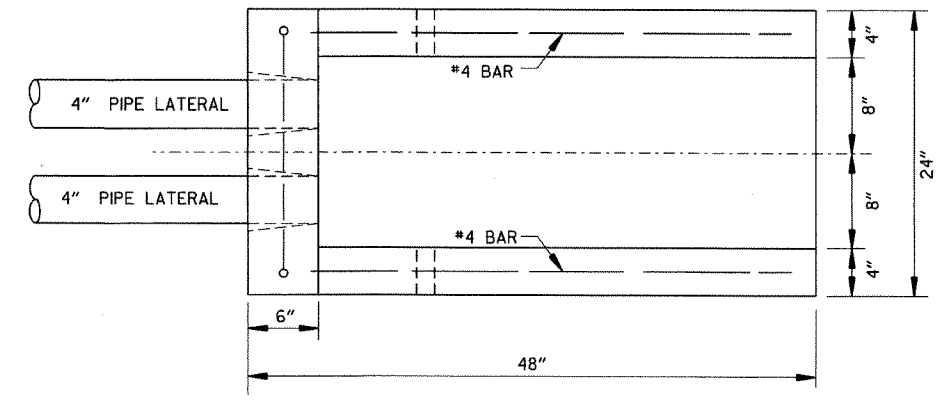
GENERAL NOTES:  
THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND RAISED PAVEMENT MARKERS SHALL BE DETERMINED BY THE ENGINEER.  
  
THIS DRAWING SHOULD BE USED IN CONJUNCTION WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.

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.

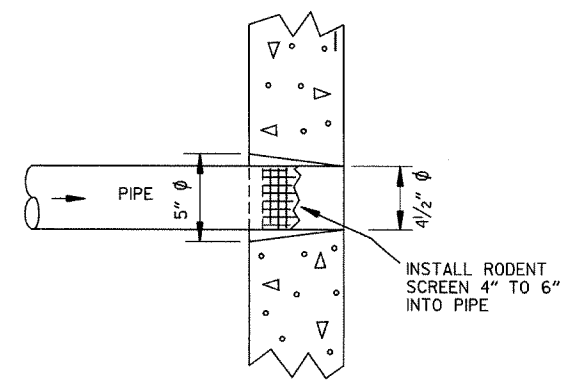
DATE	REVISION	FILMED
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80

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

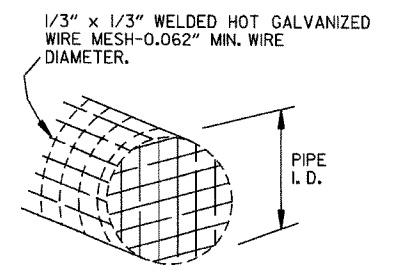
NOTE:  
 1. GRANULAR BACKFILL TO BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 2. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.  
 3. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC, LAP FABRIC 12" OR THE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



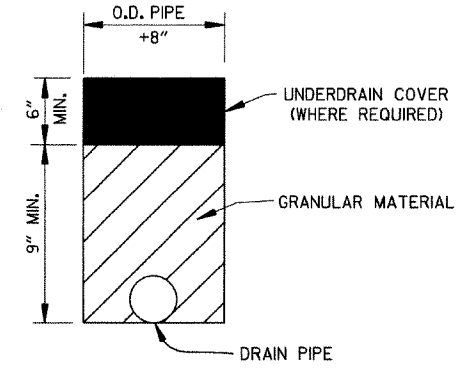
PLAN VIEW



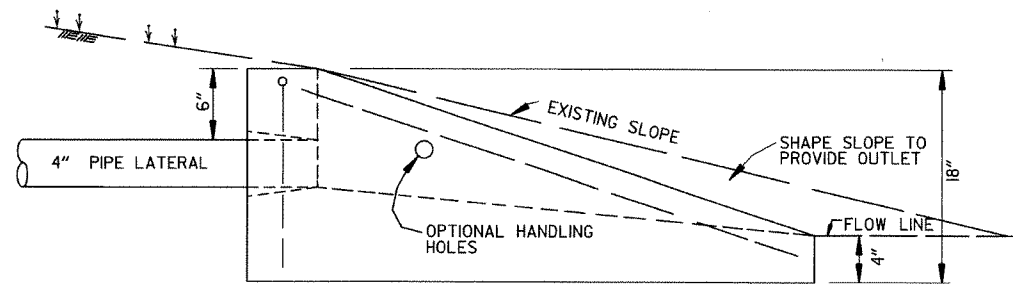
DETAIL OF HOLE FOR 4" PIPE



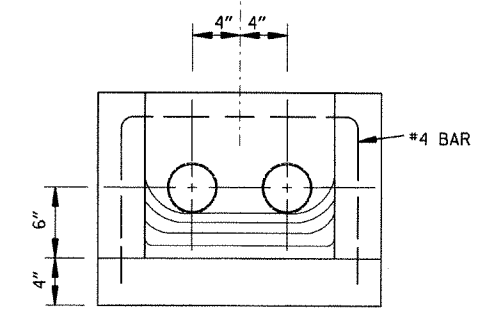
DETAIL OF RODENT SCREEN



DETAILS OF PIPE UNDERDRAIN



SIDE VIEW

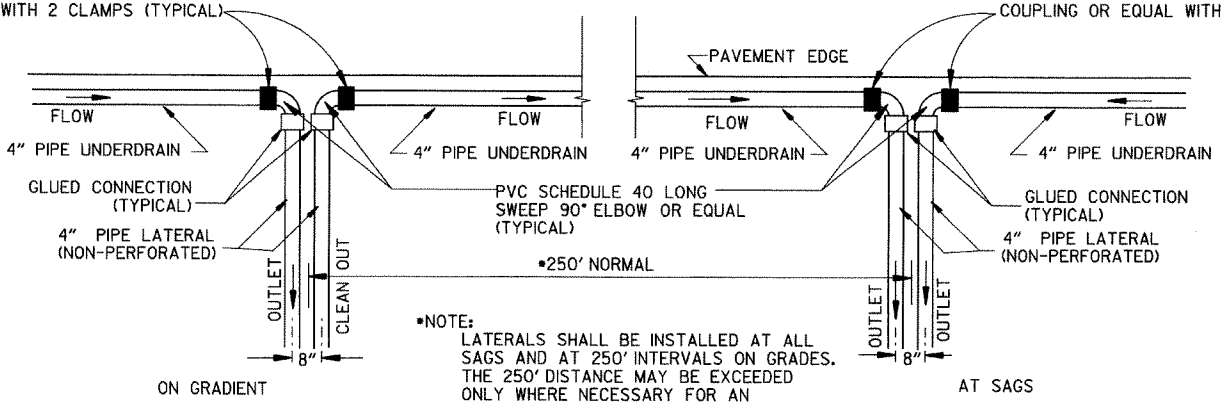


FRONT VIEW

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.

DATE	REVISION	DATE FILMED
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

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.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 15'	R.C.		N.C.		N.C.		N.C.		N.C.		N.C.	
2° 30'	0.021		0.021		0.021		0.021		0.021		0.021	
2° 45'	0.023		0.023		0.023		0.023		0.023		0.023	
3° 00'	0.025		0.025		0.025		0.025		0.025		0.025	
3° 15'	0.027		0.027		0.027		0.027		0.027		0.027	
3° 30'	0.029		0.029		0.029		0.029		0.029		0.029	
3° 45'	0.031		0.031		0.031		0.031		0.031		0.031	
4° 00'	0.033		0.033		0.033		0.033		0.033		0.033	
4° 30'	0.037		0.037		0.037		0.037		0.037		0.037	
5° 00'	0.040		0.040		0.040		0.040		0.040		0.040	
5° 30'	0.043		0.043		0.043		0.043		0.043		0.043	
6° 00'	0.046		0.046		0.046		0.046		0.046		0.046	
6° 30'	0.050		0.050		0.050		0.050		0.050		0.050	
7° 00'	0.053		0.053		0.053		0.053		0.053		0.053	
7° 30'	0.056		0.056		0.056		0.056		0.056		0.056	
8° 00'	0.058		0.058		0.058		0.058		0.058		0.058	
8° 30'	0.061		0.061		0.061		0.061		0.061		0.061	
9° 00'	0.063		0.063		0.063		0.063		0.063		0.063	
10° 00'	0.068	150	0.068		0.068		0.068		0.068		0.068	
11° 00'	0.072	175	0.072		0.072		0.072		0.072		0.072	
12° 00'	0.076	200	0.076		0.076		0.076		0.076		0.076	
13° 00'	0.080	225	0.080		0.080		0.080		0.080		0.080	
14° 00'	0.083	250	0.083		0.083		0.083		0.083		0.083	
15° 00'	0.086	275	0.086		0.086		0.086		0.086		0.086	
16° 00'	0.089	300	0.089		0.089		0.089		0.089		0.089	
17° 00'	0.091	325	0.091		0.091		0.091		0.091		0.091	
18° 00'	0.093	350	0.093		0.093		0.093		0.093		0.093	
19° 00'	0.095	375	0.095		0.095		0.095		0.095		0.095	
20° 00'	0.097	400	0.097		0.097		0.097		0.097		0.097	
21° 00'	0.098	425	0.098		0.098		0.098		0.098		0.098	
22° 00'	0.099	450	0.099		0.099		0.099		0.099		0.099	
23° 00'	0.099	475	0.099		0.099		0.099		0.099		0.099	
24° 00'	0.100	500	0.100		0.100		0.100		0.100		0.100	

D MAX = 24' 45"

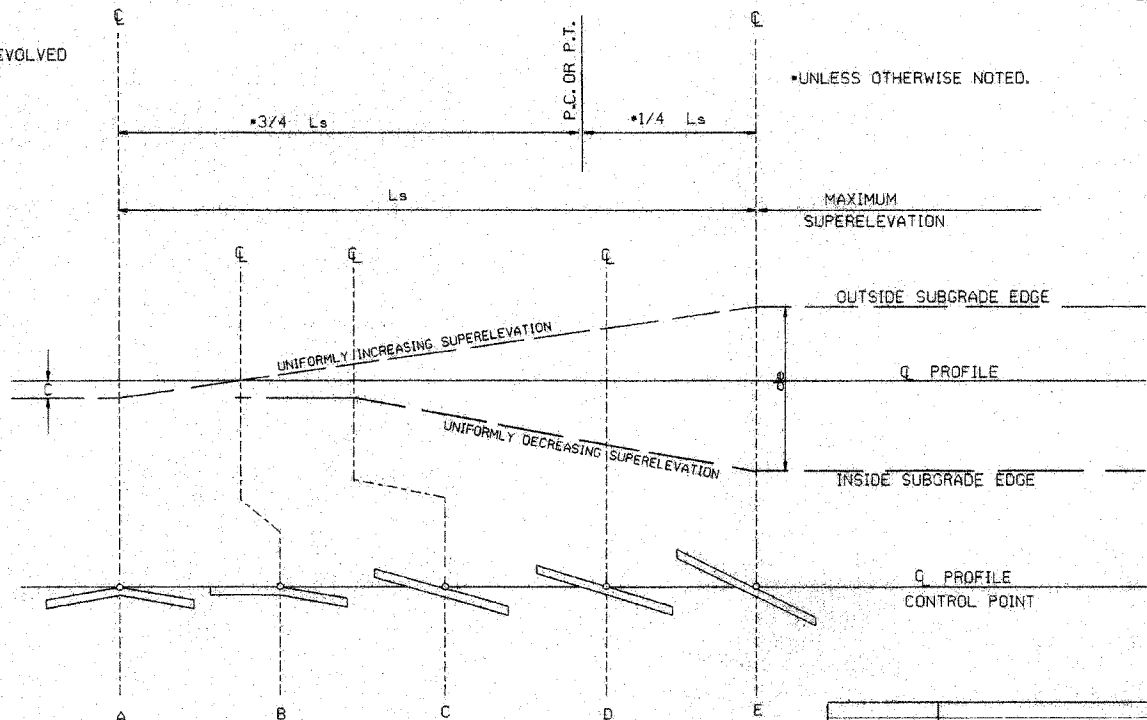
ABBREVIATIONS

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

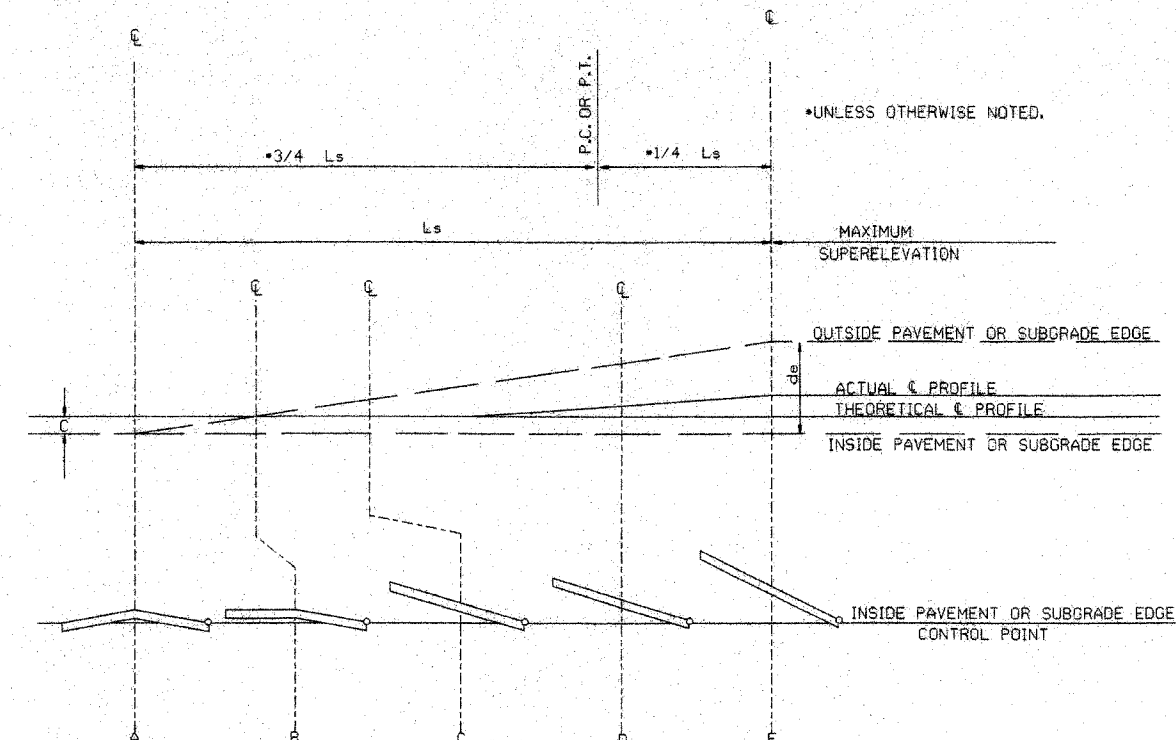
GENERAL NOTES

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

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



STANDARD METHOD WHEN SUPERELEVATION REVOLVES AROUND CENTER LINE



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

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

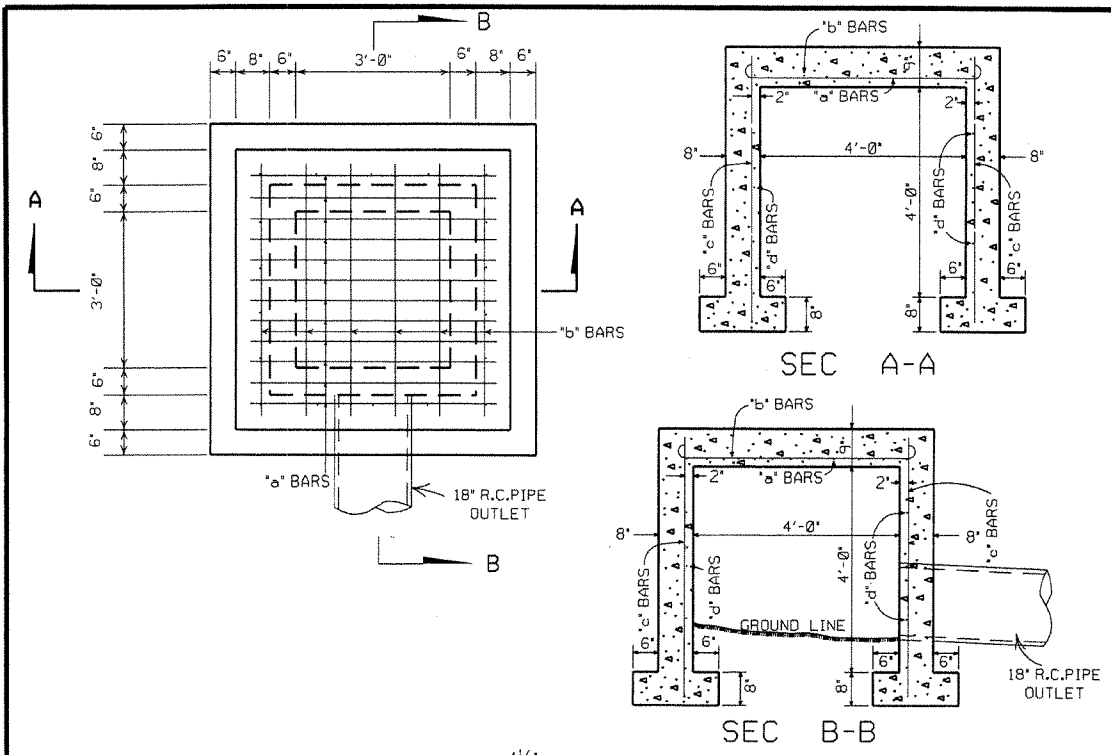
SUPERELEVATION FORMULA =  $\frac{Lde}{Ls}$

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

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



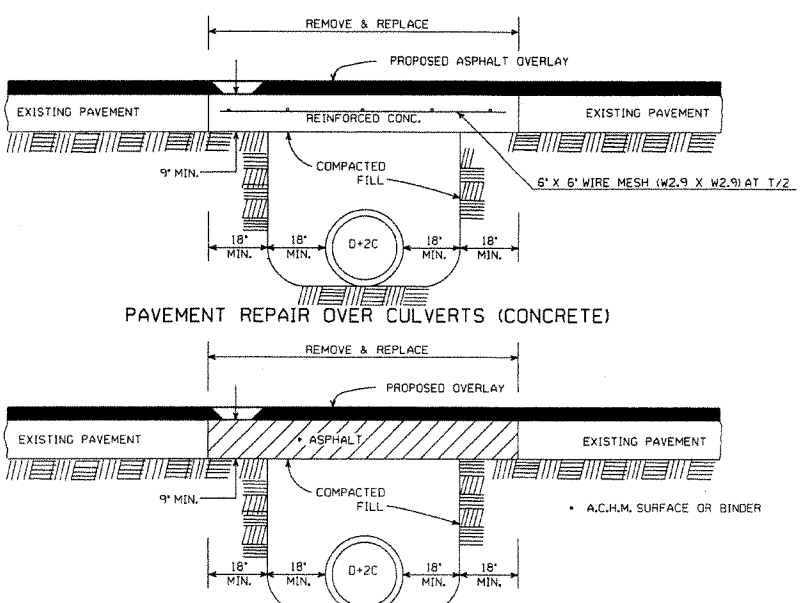
STEEL SCHEDULE

BAR	NUMBER	LENGTH	SPACING
'a'	11	6'-0"	5"
'b'	6	6'-0"	10"
'c'	16	5'-1"	12"
'd'	16	5'-0"	12"

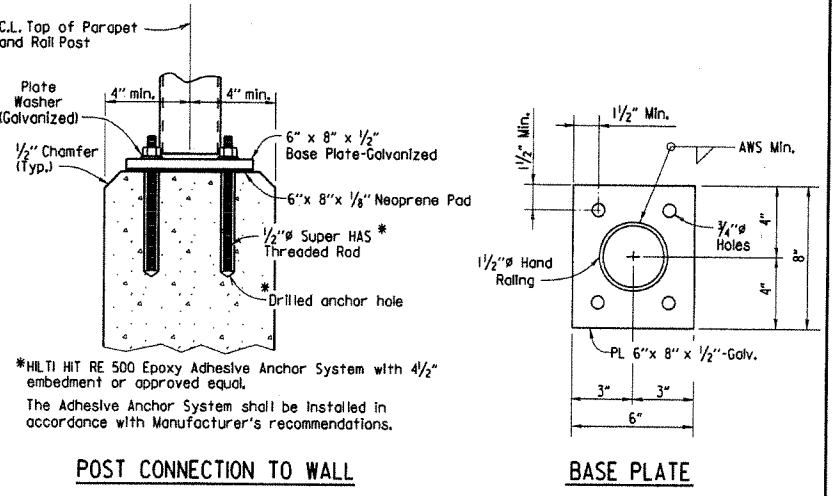
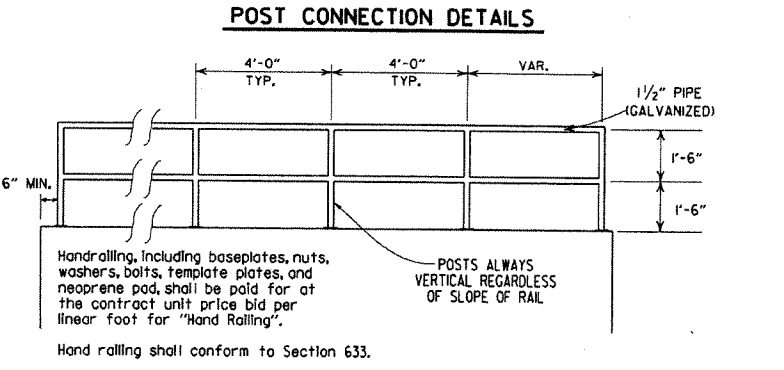
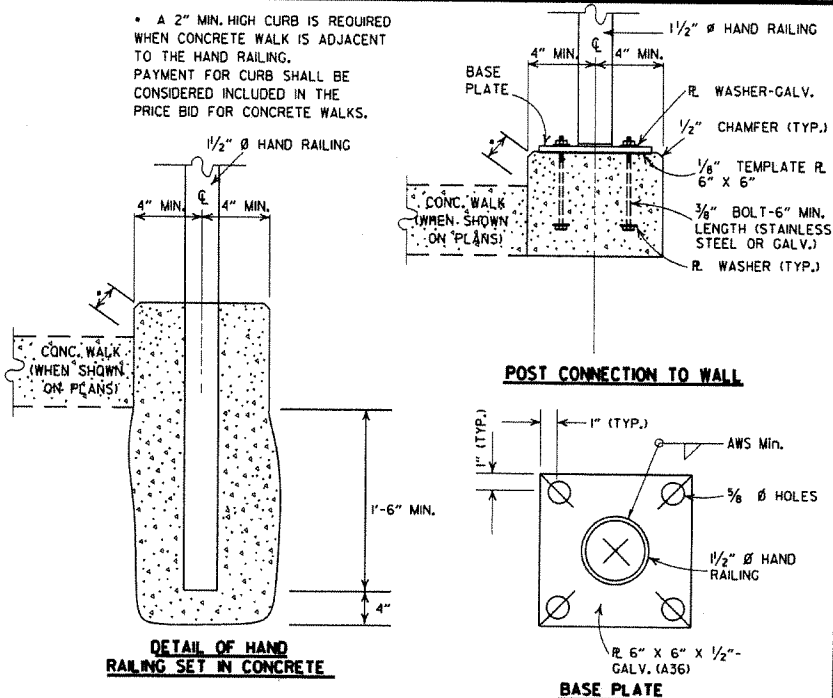
QUANTITIES  
 'a' & 'b' BARS 5'-0"  
 CONCRETE 3.40 CU. YDS.  
 REINFORCING STEEL 176 LB.

GENERAL NOTE:  
 THE PAY ITEMS FOR REINFORCED CONCRETE SPRING BOXES SHALL BE FOR THE QUANTITIES OF CONCRETE OF THE CLASS SPECIFIED, REINFORCING STEEL, EXCAVATION FOR STRUCTURES AND 18" R.C. PIPE CULVERT.

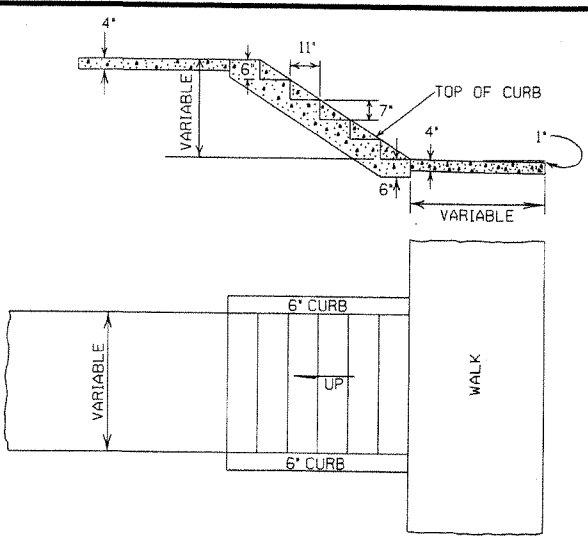
REINFORCED CONCRETE SPRING BOX



DETAIL SHOWING REPAIR OF EXISTING PAVEMENT AT CULVERT INSTALLATIONS



DETAILS OF ALTERNATE POST ANCHOR SYSTEM (EPOXY ADHESIVE ANCHORS)



DETAILS OF CONCRETE STEPS & WALKS

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

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF SPECIAL ITEMS

STANDARD DRAWING SI - 1

ADVANCE DISTANCES (XXXX)

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


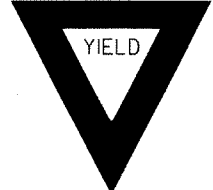
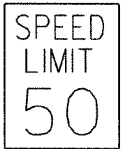
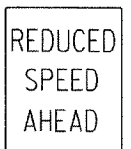





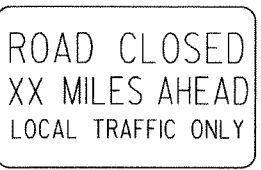
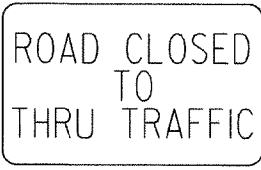
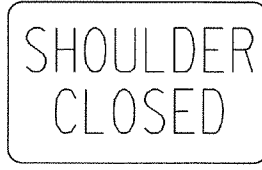
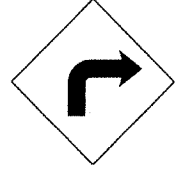
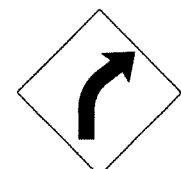



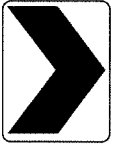
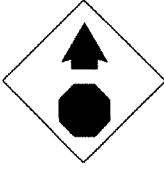
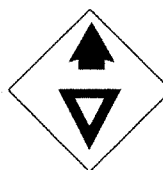
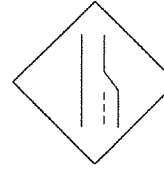



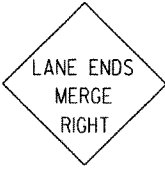


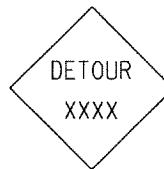



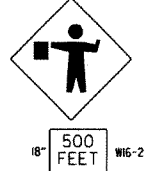


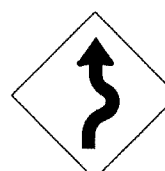
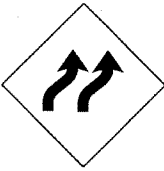

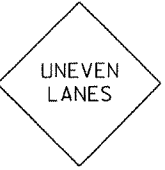
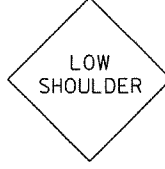
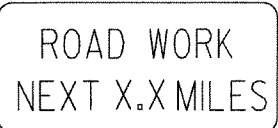
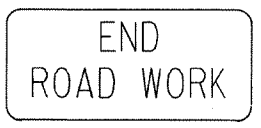
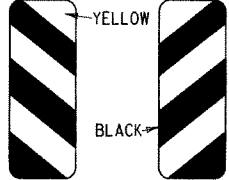


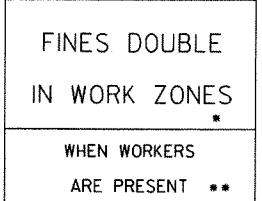
GENERAL NOTES:

- ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
- EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACTO, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
- POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
- ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

- FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
- R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

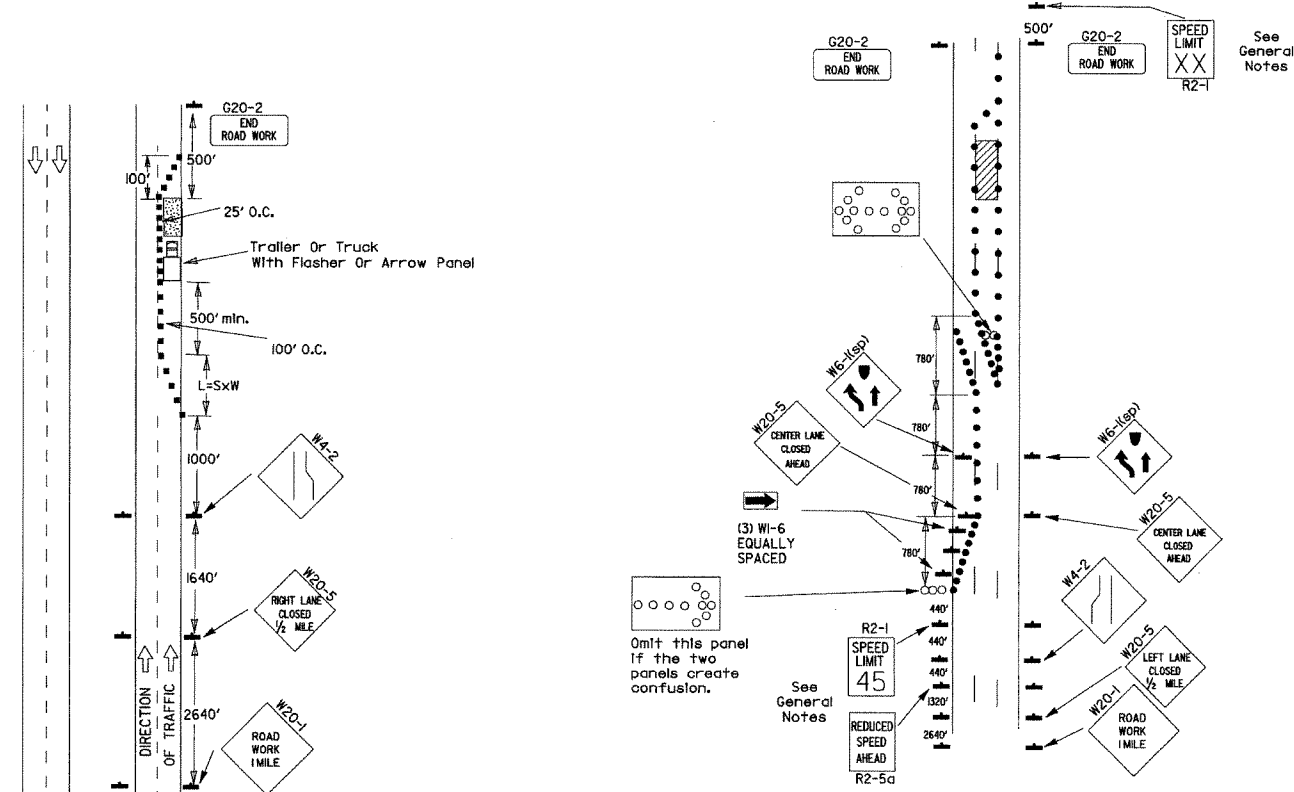
NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9c & 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	
1-16-01	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	
8-5-91	DRAWN AND PLACED IN USE	
DATE	REVISION	FILMED

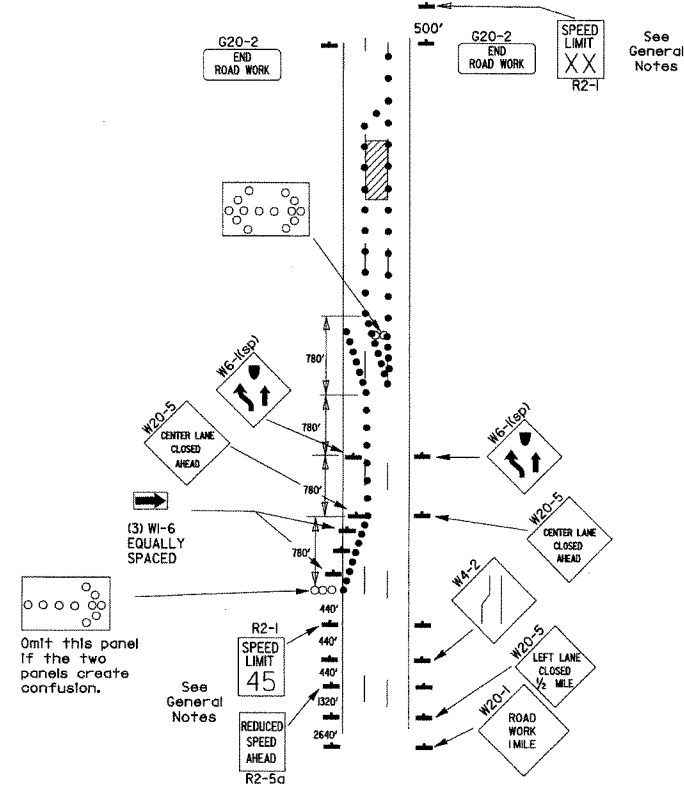
<p>RI-1</p>  <p>STANDARD 30"x30" EXPRESSWAY 36"x36" SPECIAL 48"x48"</p>	<p>RI-2</p>  <p>STD. 36"x36"x36" EXPWY. 48"x48"x48" FWY. 60"x60"x60"</p>	<p>R2-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5A</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R2-5C</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-1</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>	<p>R4-2</p>  <p>STD. 24"x30" EXPWY. 36"x48" FWY. 48"x60"</p>
<p>R5-1</p>  <p>STD. 30"x30" EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>R11-2</p>  <p>48"x30"</p>	<p>R11-3A</p>  <p>60"x30"</p>	<p>R11-4</p>  <p>60"x30"</p>	<p>RSP-1</p>  <p>48"x30"</p>	<p>WI-1</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>WI-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>WI-3</p>  <p>STD. 48"x48"</p>	<p>WI-4</p>  <p>STD. 48"x48"</p>	<p>WI-6</p>  <p>STD. 48"x24" SPECIAL 60"x30"</p>	<p>WI-8</p>  <p>STD. 18"x24" SPECIAL 24"x30" EXPWY. 30"x36" FWY. 36"x48"</p>	<p>W3-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W3-2</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W4-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>
<p>W5-1</p>  <p>STD. 36"x36" SPECIAL 48"x48"</p>	<p>W6-3</p>  <p>EXPWY. 36"x36" SPECIAL 48"x48"</p>	<p>W8-7</p>  <p>EXPWY. 36"x36" FWY. 48"x48"</p>	<p>W9-2</p>  <p>STD. 36"x36" FWY. 48"x48"</p>	<p>W13-1</p>  <p>STD. 24"x24"</p>	<p>W20-1</p>  <p>STD. 48"x48"</p>	<p>W20-2</p>  <p>STD. 48"x48"</p>
<p>W20-3</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>WI-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>				



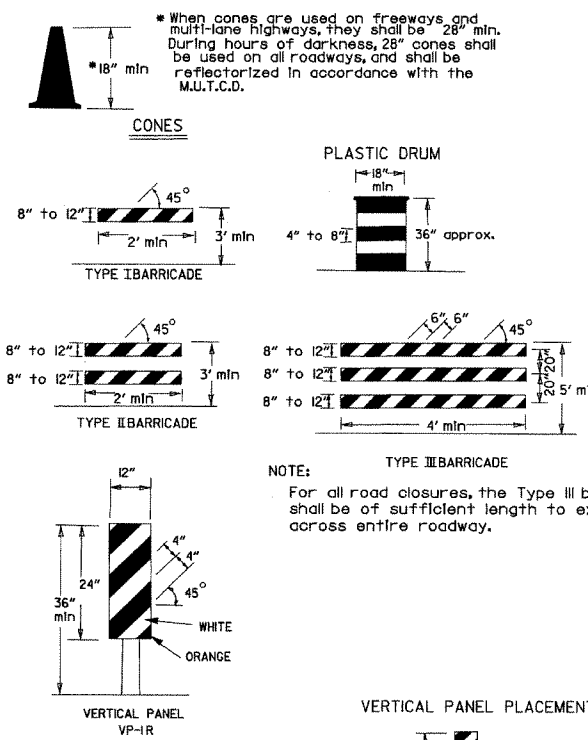
Channelizing devices



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



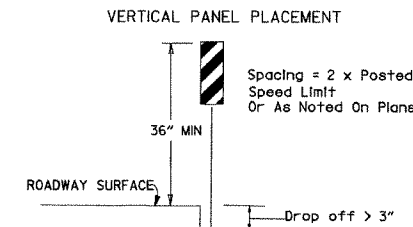
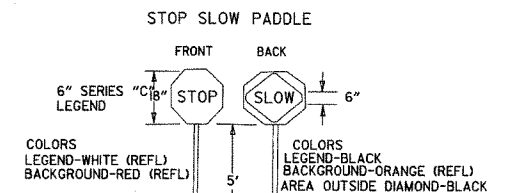
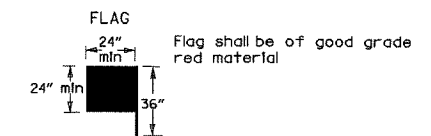
(B) Typical application - 3-lane oneway roadway where center lane is closed.



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

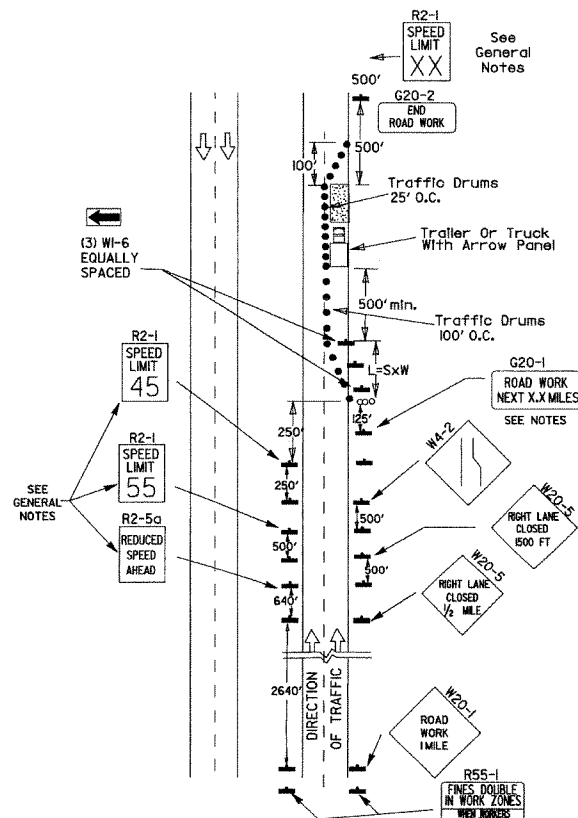
\* When shown on the plans concrete barrier will be used.  
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



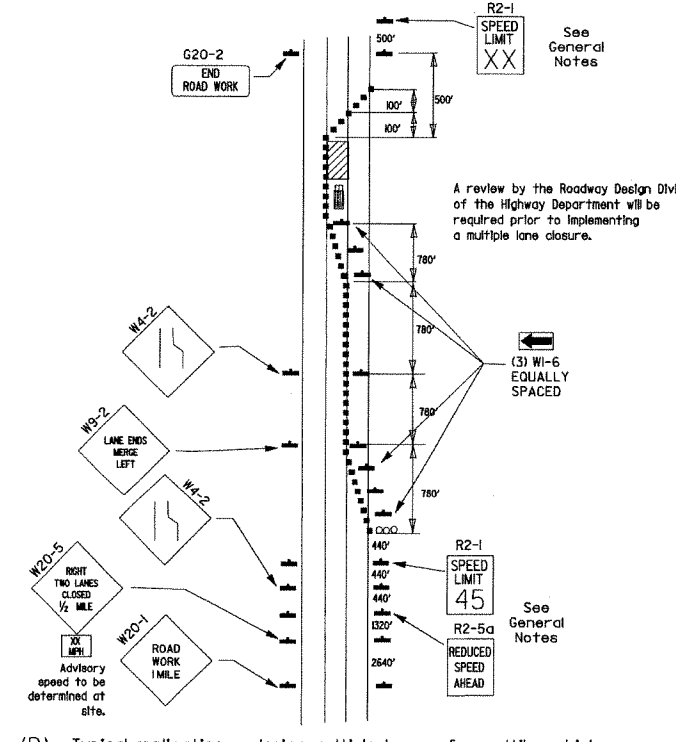
- KEY:
- Arrow Panel (if Required)
  - Channelizing Device
  - Traffic drum

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(45) shall be omitted and the R2-5A shall be installed at that location. Additional R2-145mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1XX shall be installed to match original speed limit.
- When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-155mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1XX shall be installed to match original speed limit.
- The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
- Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
- Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
- The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
- Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
- All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual for Assessing Safety Hardware (MASH).
- Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

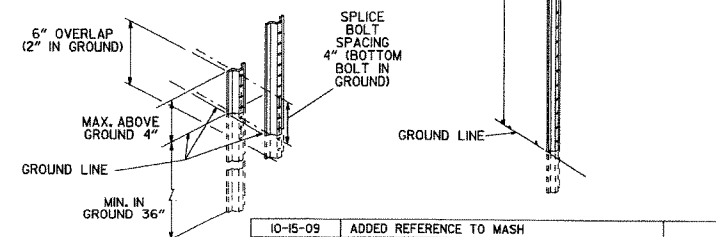


(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.



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

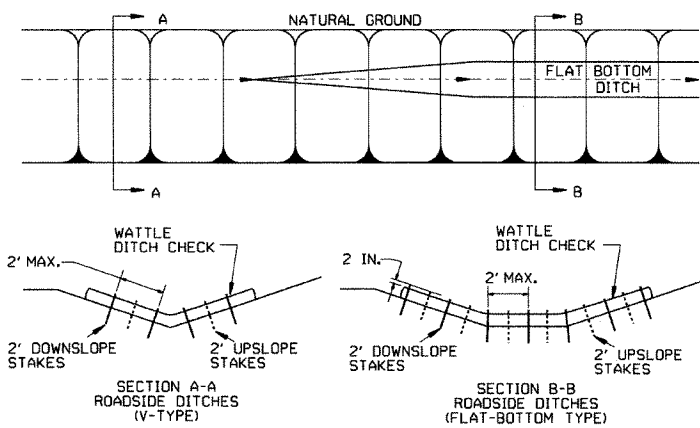
NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)  
NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARriage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



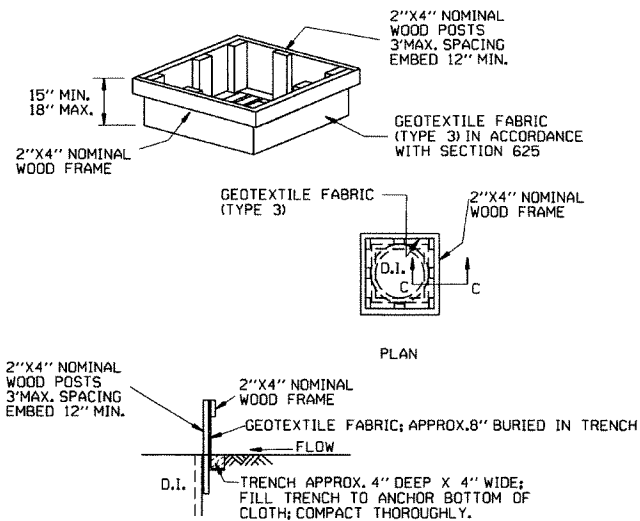
DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED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

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

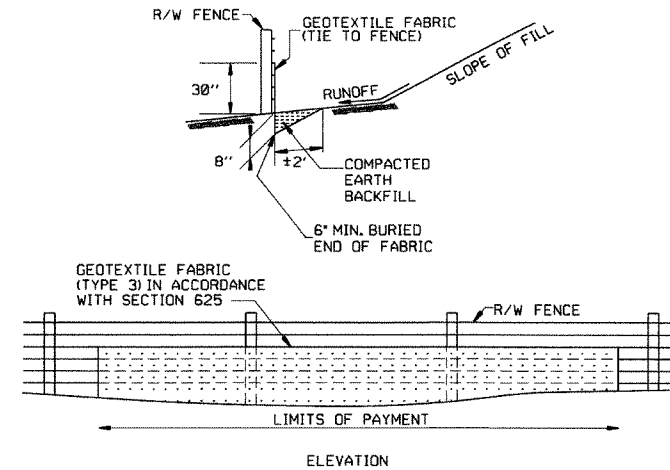
GENERAL NOTES  
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



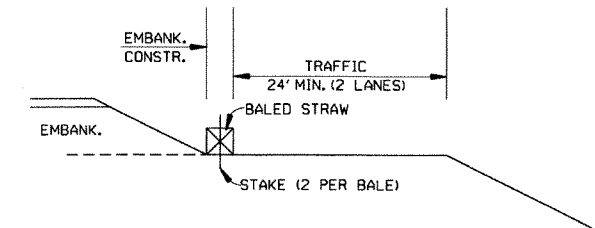
DROP INLET SILT FENCE (E-7)



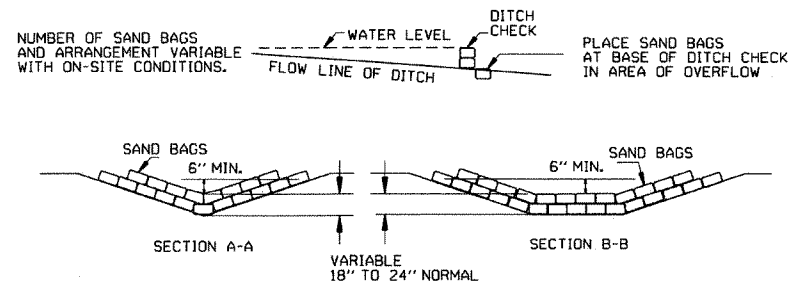
SILT FENCE ON R/W FENCE (E-4)

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

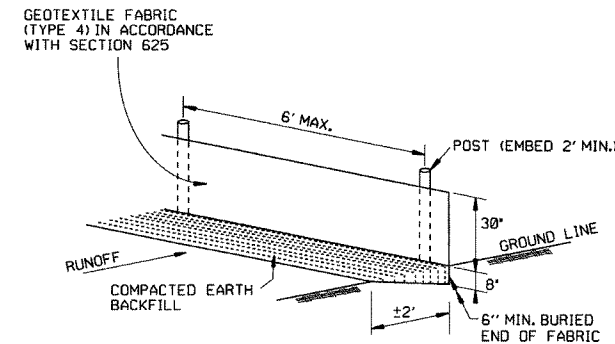
GENERAL NOTES  
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.  
2. NO GAPS SHALL BE LEFT BETWEEN BALES.  
3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)

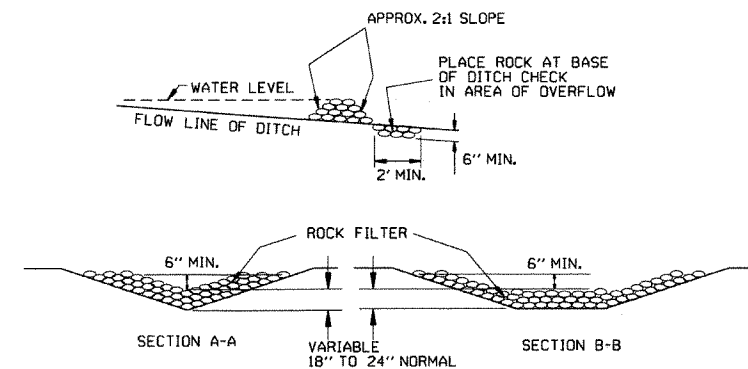


SAND BAG DITCH CHECK (E-5)



SILT FENCE (E-11)

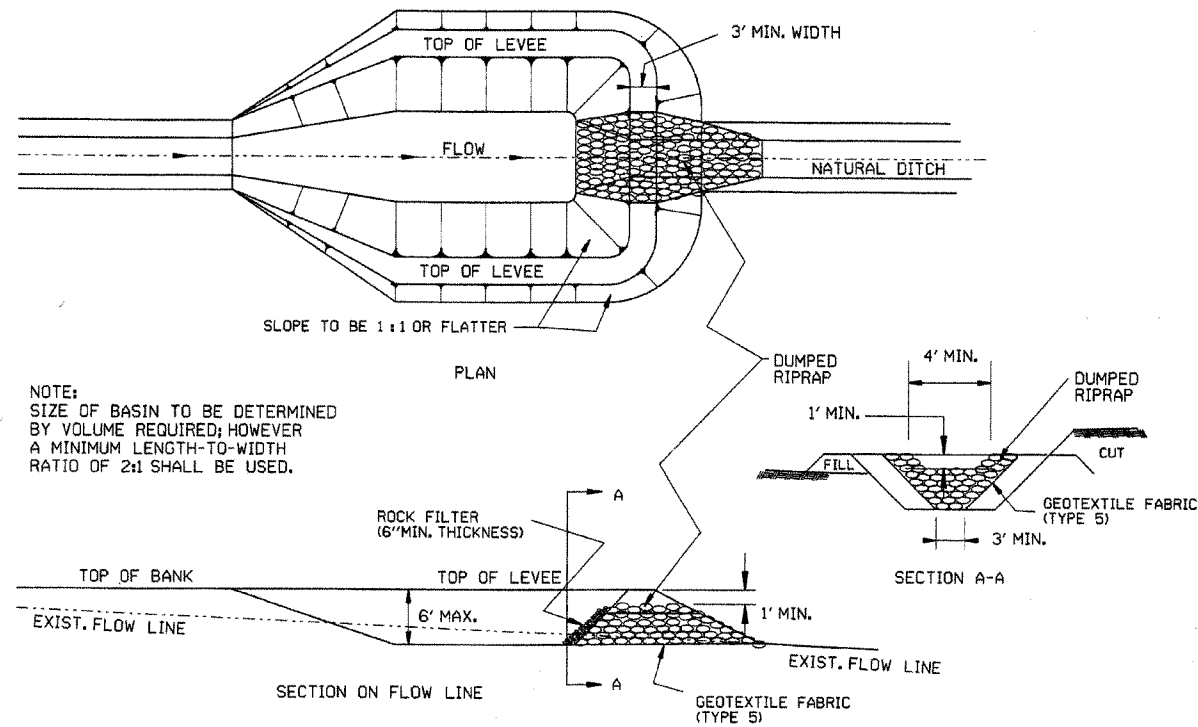
GENERAL NOTES  
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST, OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



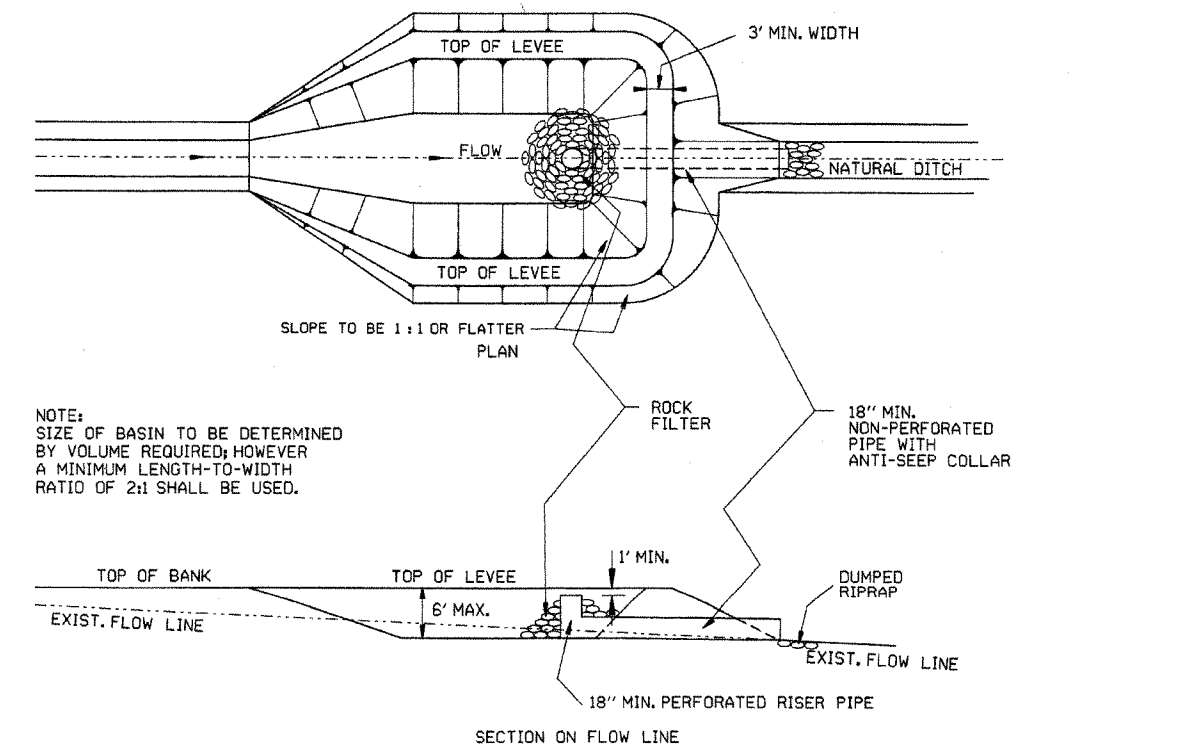
ROCK DITCH CHECK (E-6)

12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK		ARKANSAS STATE HIGHWAY COMMISSION
11-18-98	ADDED NOTES		TEMPORARY EROSION CONTROL DEVICES
7-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)		
7-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95	STANDARD DRAWING TEC-1
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	

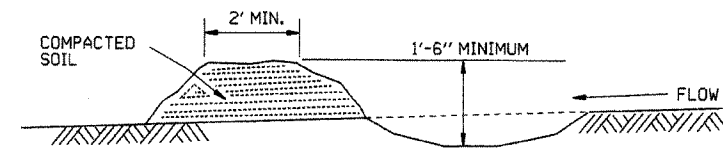




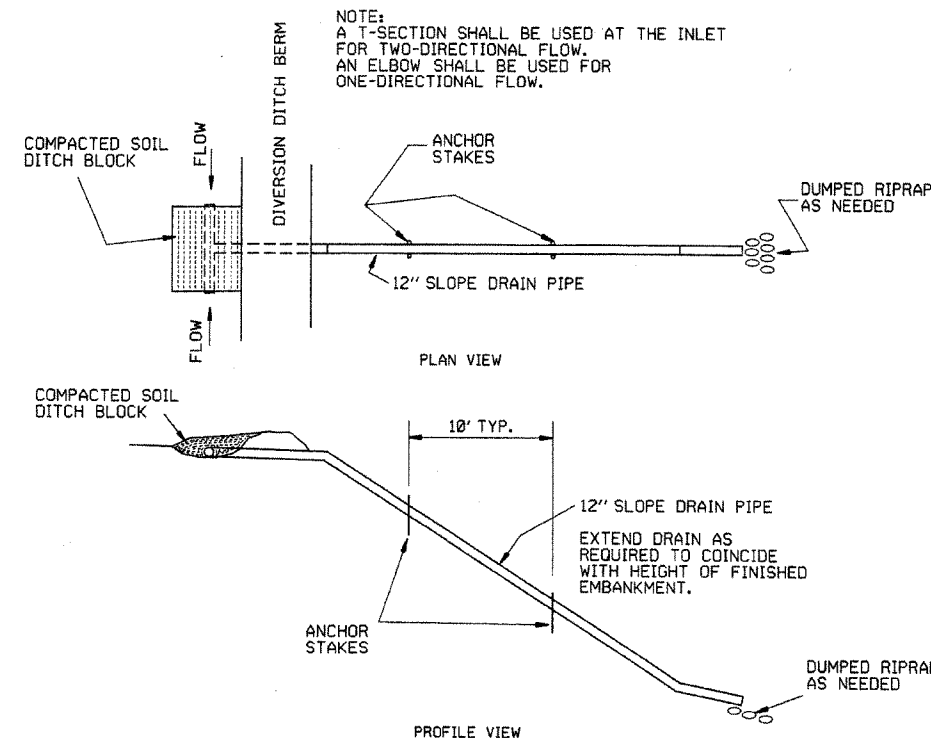
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



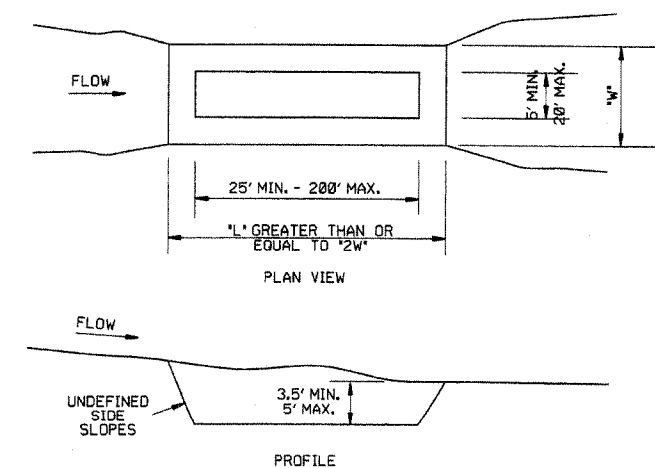
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

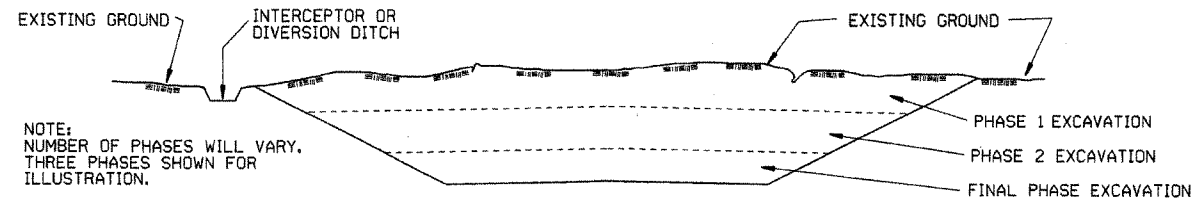
		ARKANSAS STATE HIGHWAY COMMISSION	
		TEMPORARY EROSION CONTROL DEVICES	
6-2-94	Revised E-8 & E-12; Added E-14 & Deleted E-13		
4-1-93	ISSUED		
DATE	REVISION		FILMED

# CLEARING AND GRUBBING

## CONSTRUCTION SEQUENCE

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

# EXCAVATION



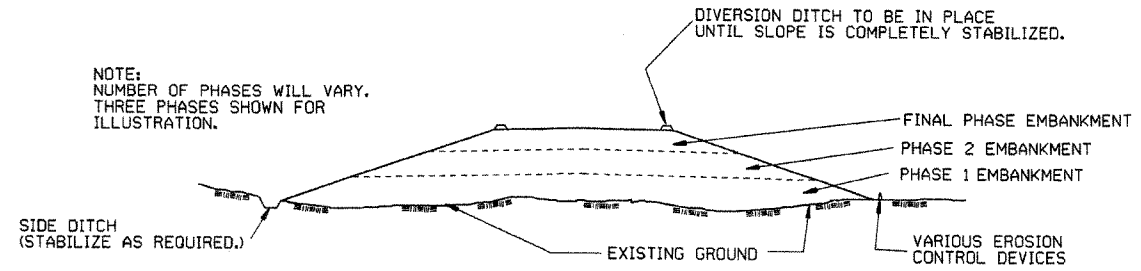
## GENERAL NOTE

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

## CONSTRUCTION SEQUENCE

1. EXCAVATE AND STABILIZE INTERCEPTOR AND/OR DIVERSION DITCHES.
2. PERFORM PHASE 1 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
3. PERFORM PHASE 2 EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING.
4. PERFORM FINAL PHASE OF EXCAVATION. PLACE PERMANENT OR TEMPORARY SEEDING. STABILIZE DITCHES, CONSTRUCT DITCH CHECKS, DIVERSION DITCHES, SEDIMENT BASINS, OR OTHER EROSION CONTROL DEVICES AS REQUIRED.

# EMBANKMENT



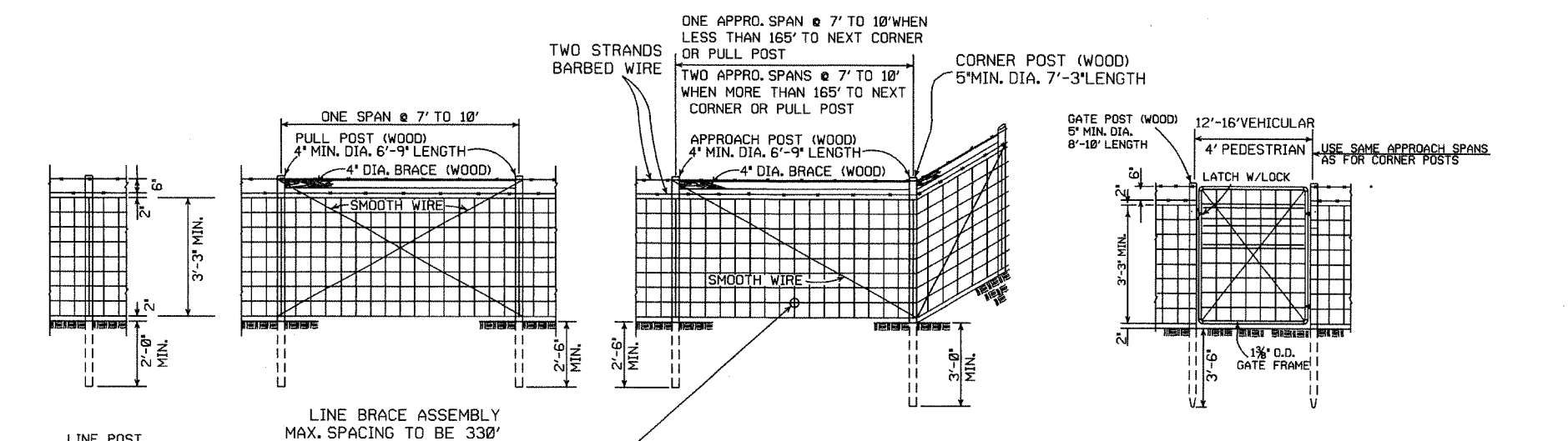
## GENERAL NOTE

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

## CONSTRUCTION SEQUENCE

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

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



**GENERAL NOTES:**

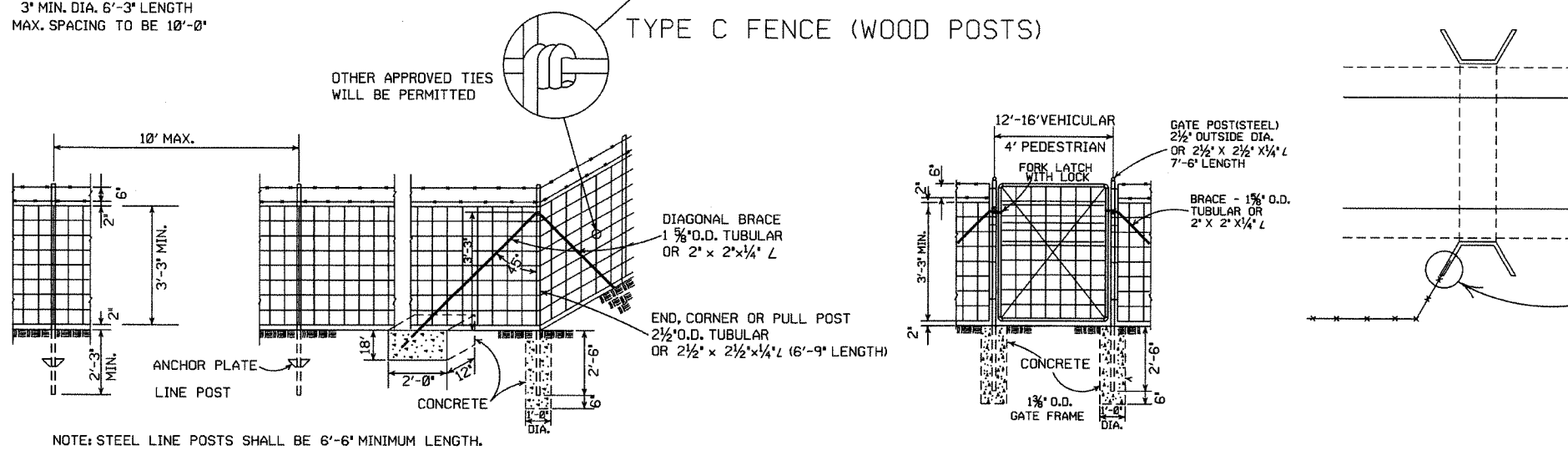
STEEL LINE POSTS SHALL BE PAINTED OR GALVANIZED. TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK). APPROVED ALTERNATES ARE ACCEPTABLE.

AN ACCEPTABLE TOLERANCE IN LENGTH OF TUBULAR OR WOODEN POSTS SHALL BE -1" TO +2". TUBULAR POSTS MUST BE PAINTED OR GALVANIZED.

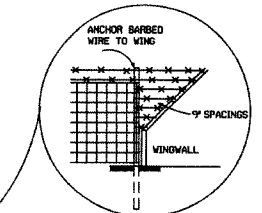
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

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

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



NOTE: USE 3/4" x 1 1/2" LAG BOLT & SHIELD OR AS APPROVED BY THE ENGINEER.



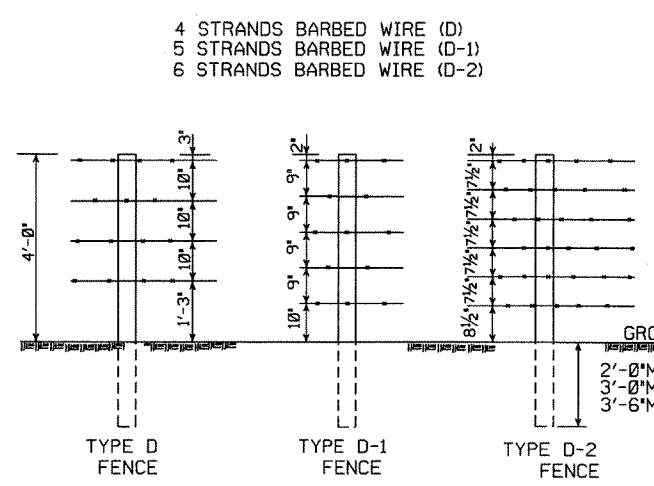
DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

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

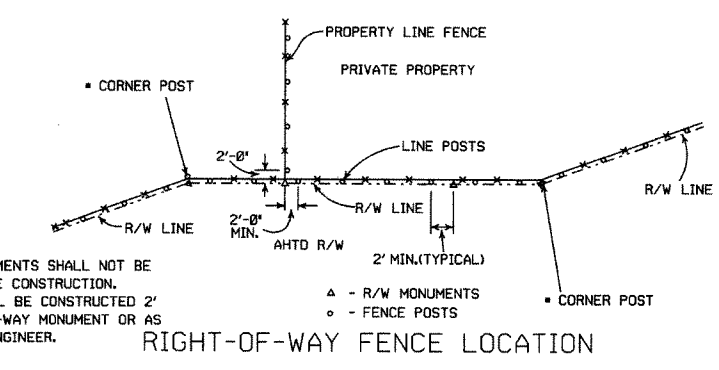
SPLICE FOR WOVEN WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE 'WESTERN UNION METHOD' AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE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

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

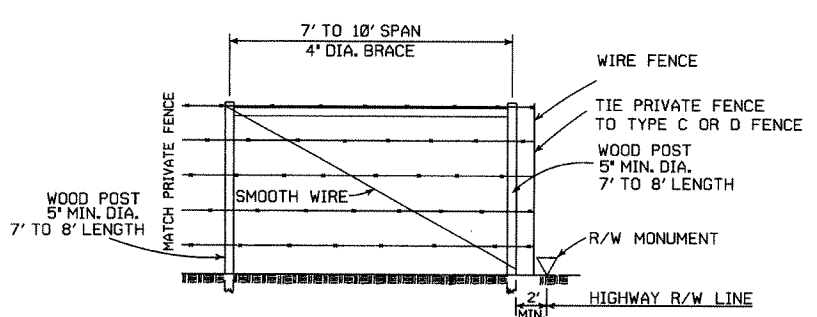
**TYPE C FENCE (STEEL POSTS)**



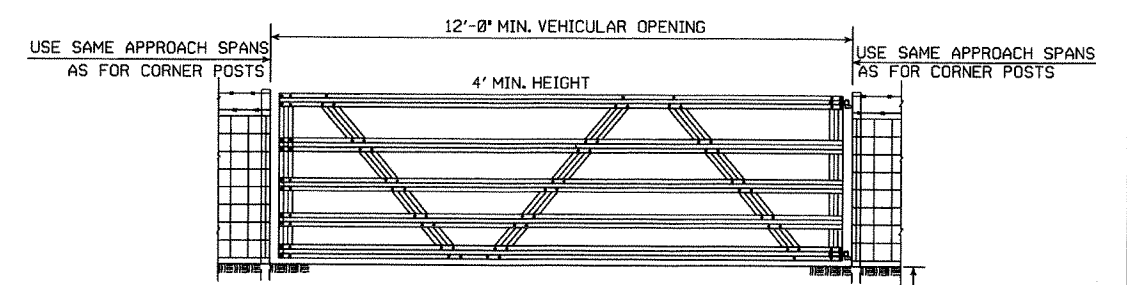
NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.



RIGHT-OF-WAY FENCE LOCATION



PRIVATE FENCE TERMINAL INSTALLATION WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.



TYPICAL VEHICULAR GATES (ALTERNATE TYPE)

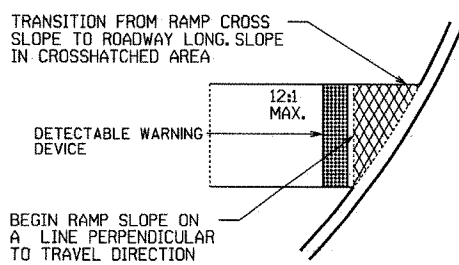
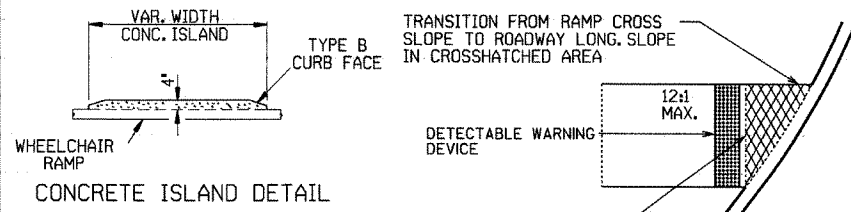
OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.

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

ARKANSAS STATE HIGHWAY COMMISSION

**WIRE FENCE TYPE C AND D**

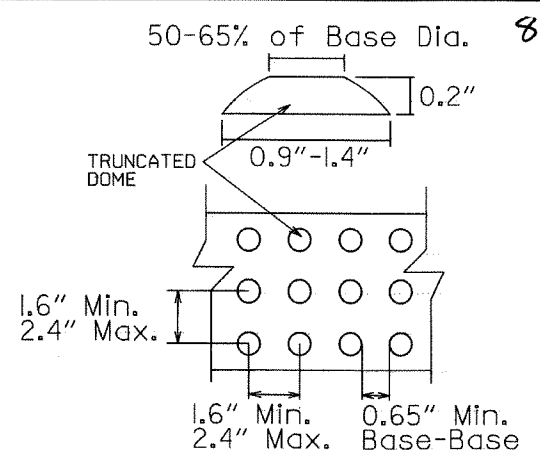
STANDARD DRAWING WF-4



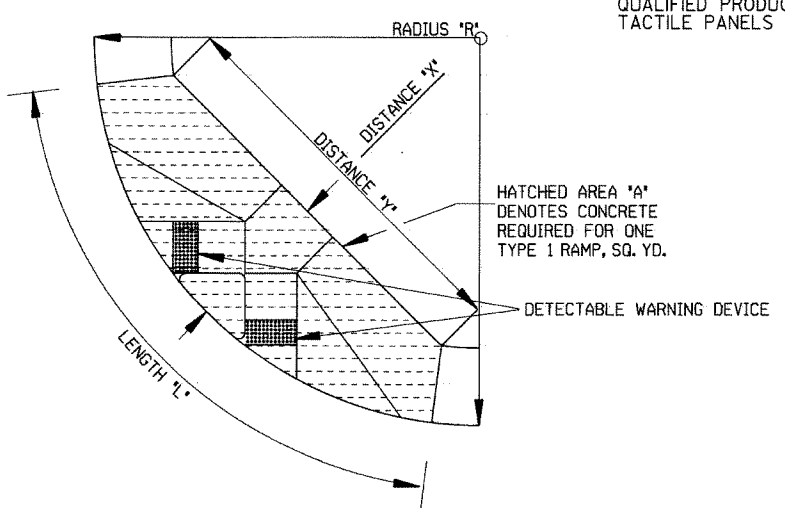
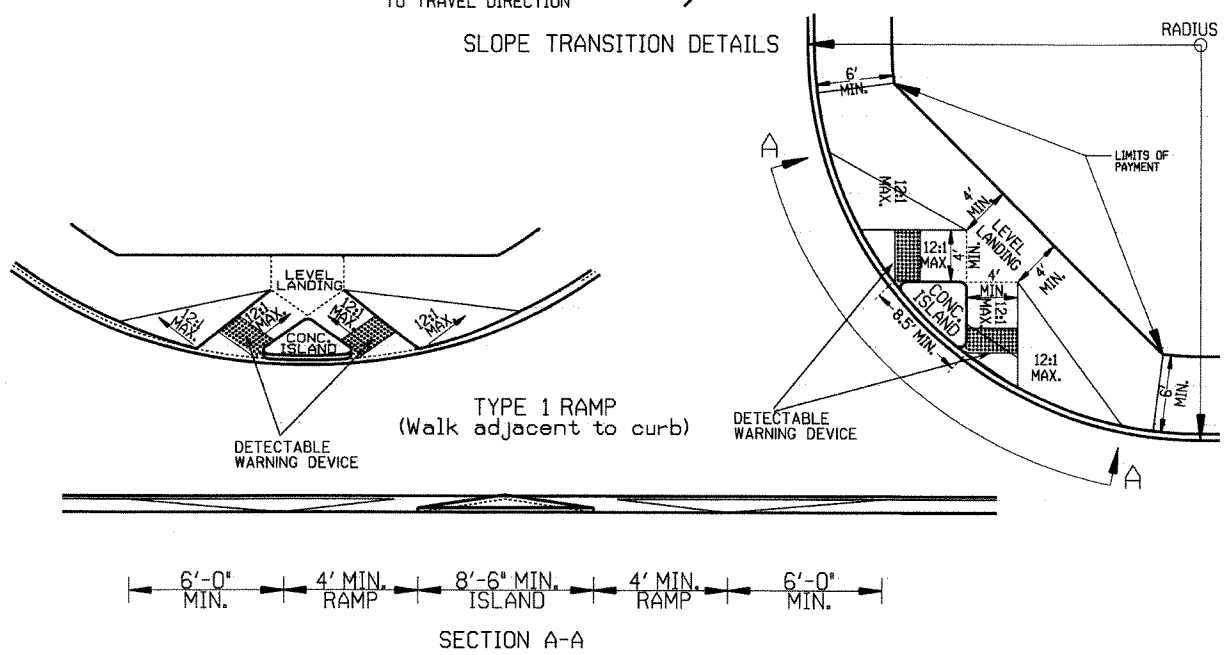
TYPE 1 RAMP DIMENSIONS AND QUANTITIES

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

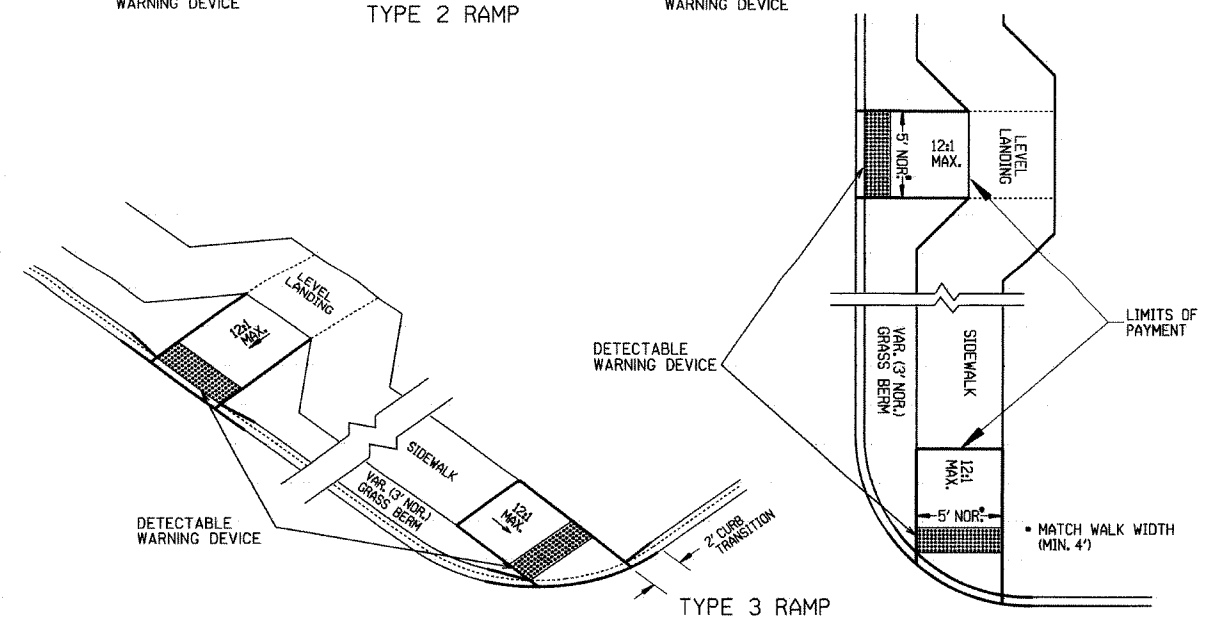
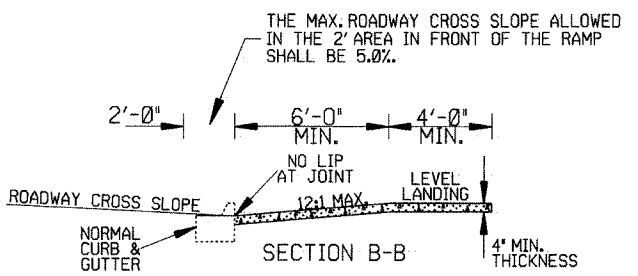
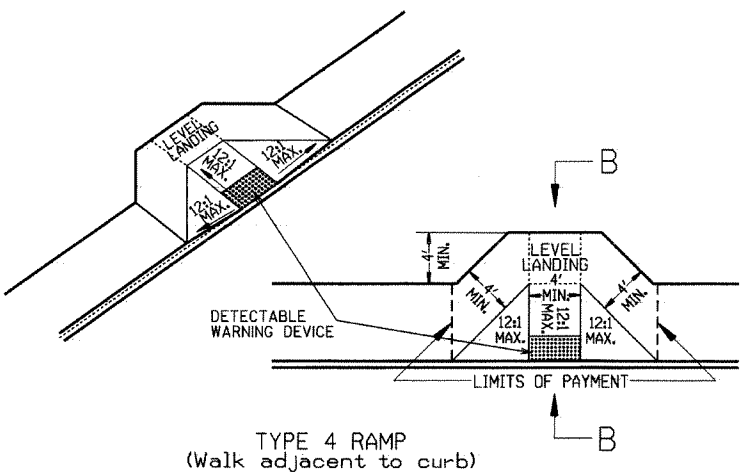
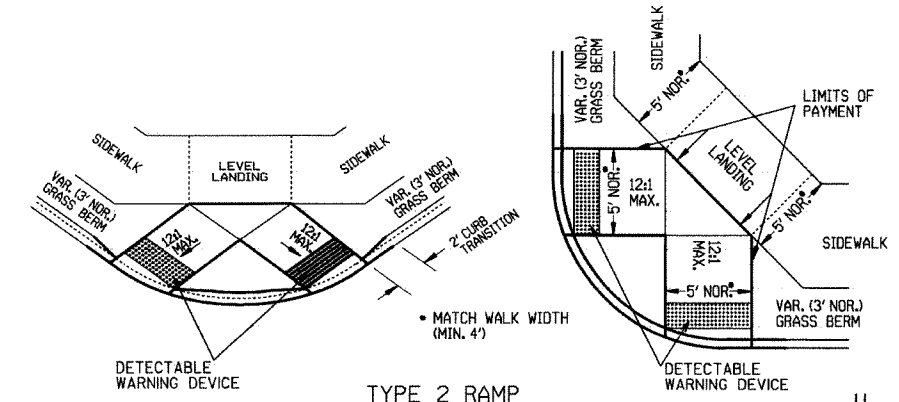
GENERAL NOTES FOR DETECTABLE WARNING DEVICES  
 THE DETECTABLE WARNING DEVICE SHALL BE LOCATED SO THAT THE NEAREST EDGE OF THE DEVICE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.  
 TRUNCATED DOMES IN THE DETECTABLE WARNING SURFACE SHALL MEET THE REQUIREMENTS OF THE GEOMETRIC CONFIGURATION SHOWN.  
 DOMES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



DETECTABLE WARNING DEVICE DETAIL



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



GENERAL NOTES:

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

RAMP SELECTION CRITERIA

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

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

DATE	REVISION	DATE FILM
11-0-05	REVISED TO NEW SIDEWALK POLICY	
10-9-03	REVISED GEN. NOTES & ADDED NOTE	
4-10-03	REV. DETECTABLE WARNING DEVICES	
8-22-02	ADD DETECTABLE WARNING DEVICES	
3-30-00	ADD SLOPE TRANS. & REV. ISL. DIMS.	
11-18-98	REVISED NOTES	
8-12-98	REVISED TEXTURE	
7-02-98	REDRAWN & REISSUED	10-18-96
10-18-96	CORRECTED DIMENSIONS	5-24-90
5-24-90	FROM 10:1 MAX. SLOPES	652-7-15-88
7-15-88	ADJUSTED MAX. SLOPE	
7-14-88	INCLUD. CONC. ISLD. IN PAY ITEM	
6-02-76	ISSUED-P.H.D.	299-7-28-76

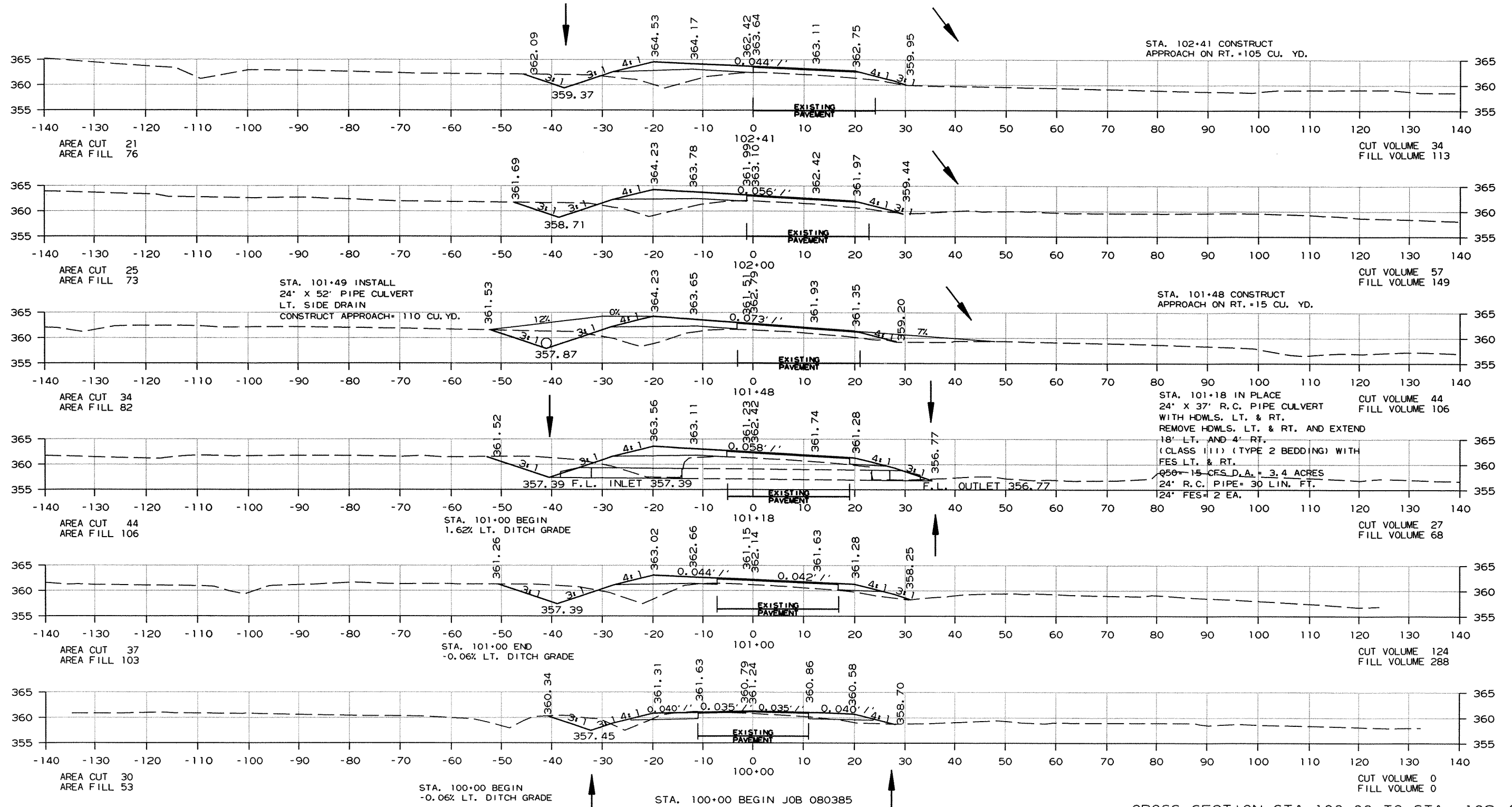
ARKANSAS STATE HIGHWAY COMMISSION

WHEELCHAIR RAMPS  
 NEW CONSTRUCTION  
 AND ALTERATIONS

STANDARD DRAWING WR-1

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	85	100

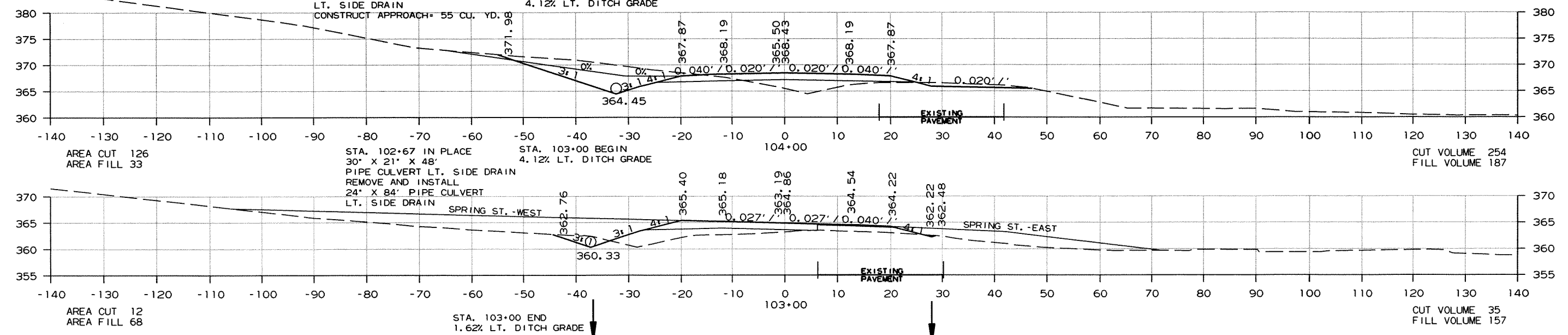
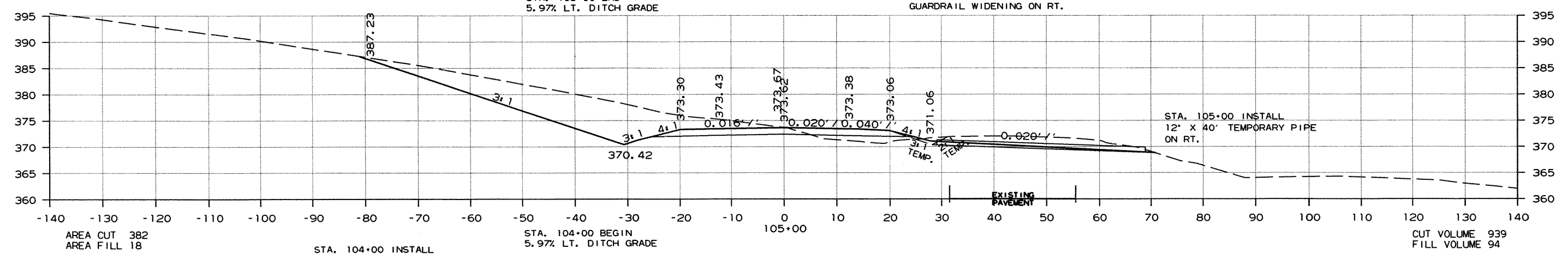
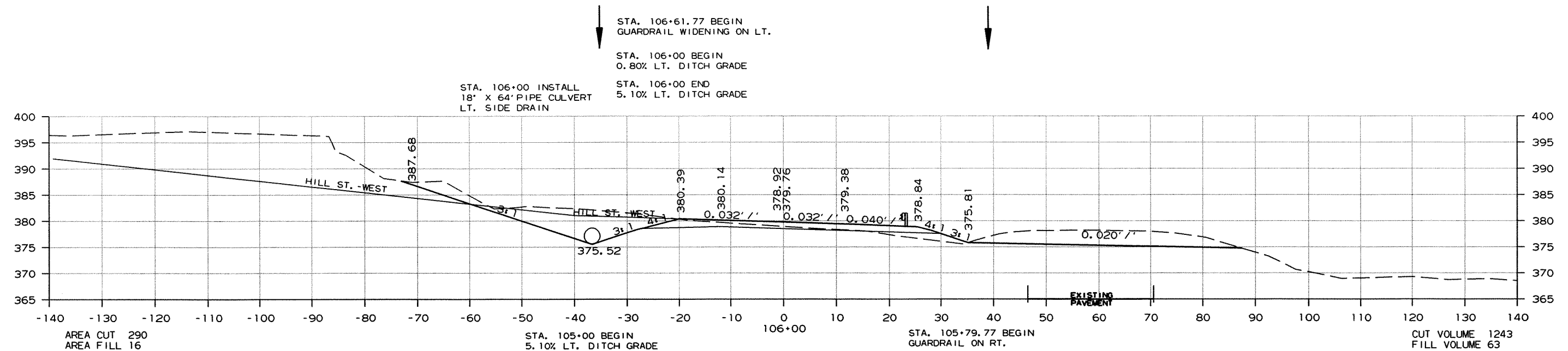
2 CROSS SECTIONS



CROSS SECTION STA. 100+00 TO STA. 102+41

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	86	100

2 CROSS SECTIONS



CROSS SECTION STA. 103+00 TO STA. 106+00

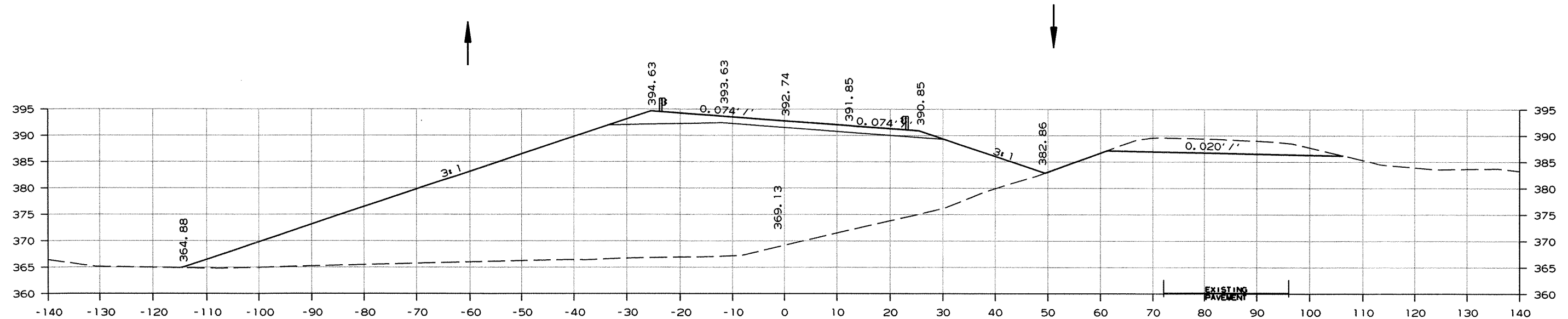
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				6	ARK.			
						JOB NO. 080385	87	100

② CROSS SECTIONS

AREA CUT 0  
AREA FILL 0

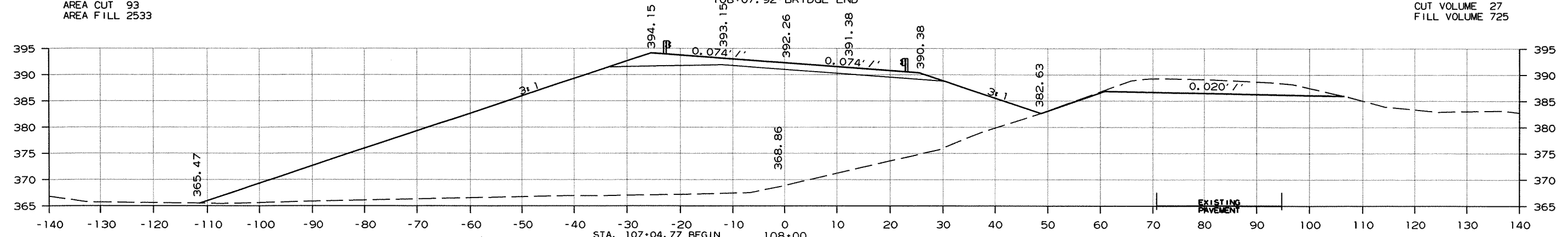
108+46.00-TOE OF SLOPE

CUT VOLUME 66  
FILL VOLUME 1786



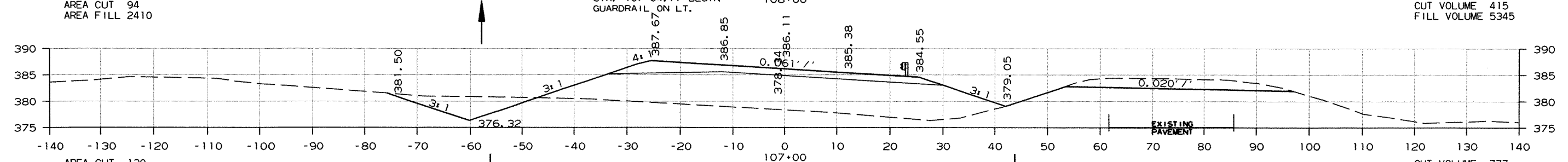
AREA CUT 93  
AREA FILL 2533

CUT VOLUME 27  
FILL VOLUME 725



AREA CUT 94  
AREA FILL 2410

CUT VOLUME 415  
FILL VOLUME 5345



AREA CUT 130  
AREA FILL 477

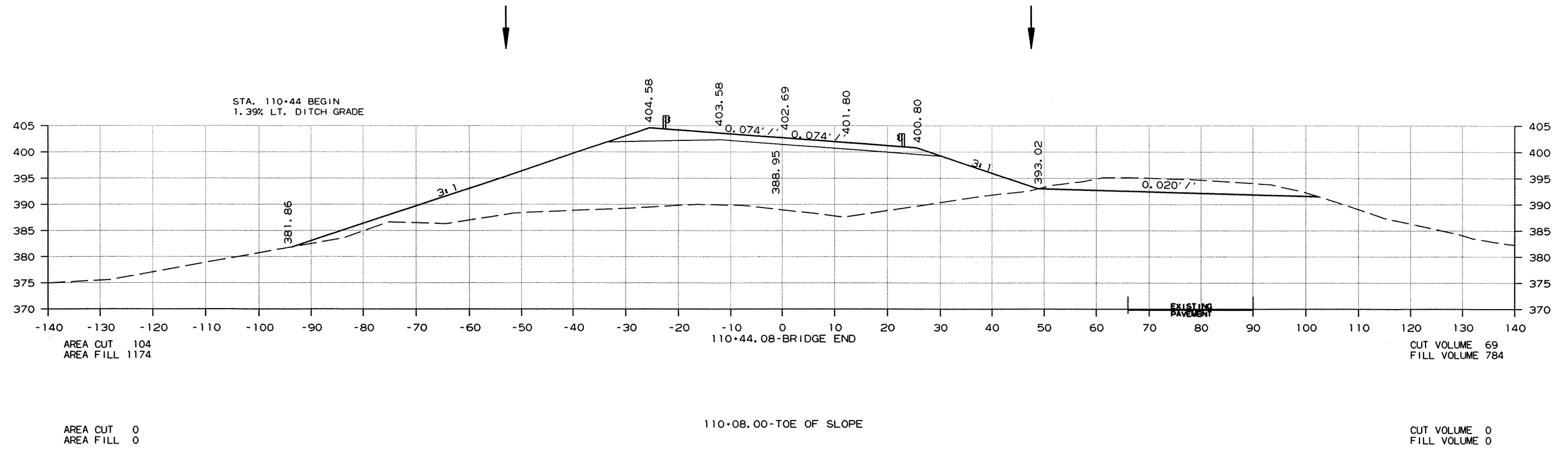
CUT VOLUME 777  
FILL VOLUME 913

STA. 107+00 END  
0.80% LT. DITCH GRADE

CROSS SECTION STA. 107+00 TO STA. 108+46

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	88	100

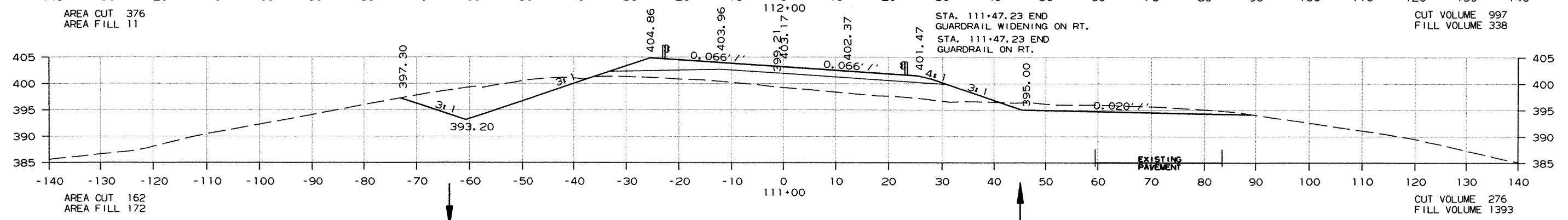
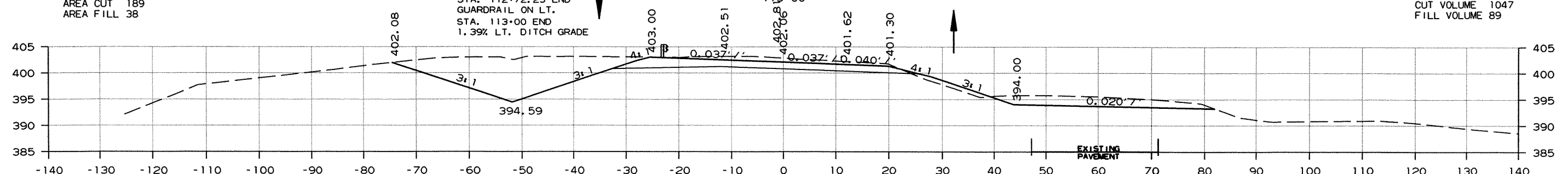
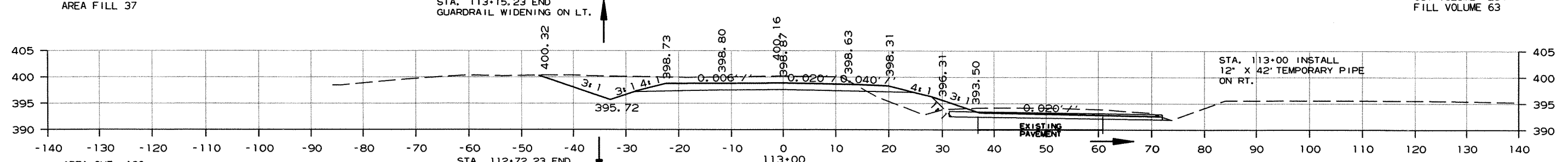
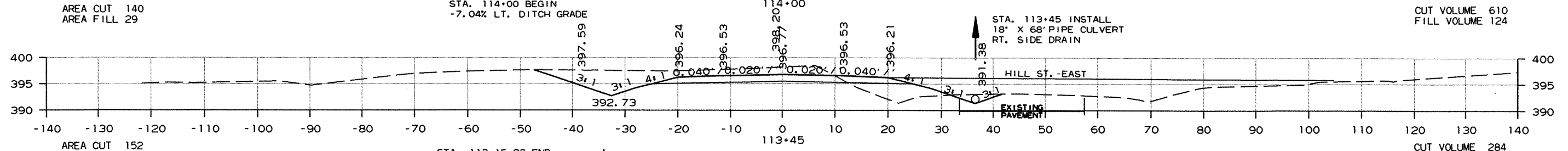
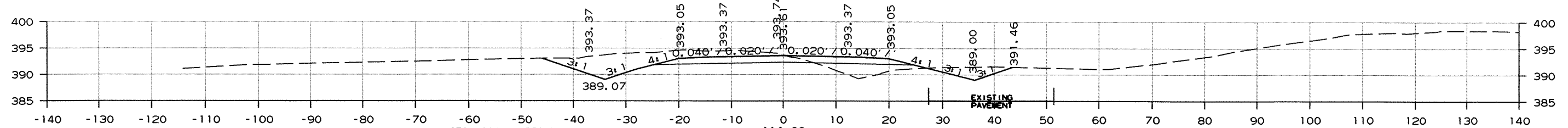
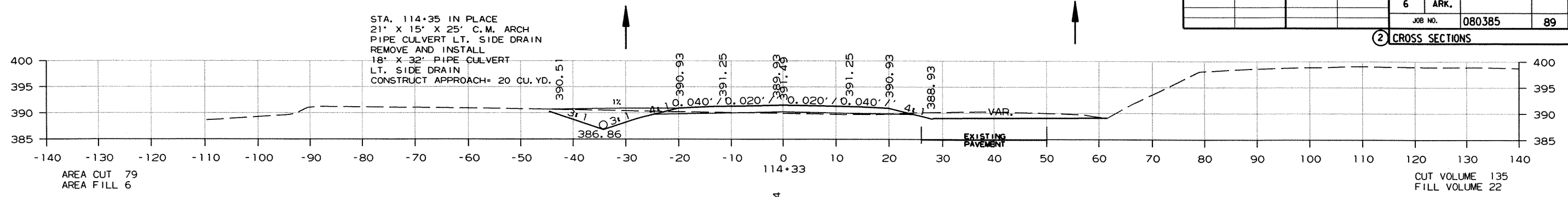
② CROSS SECTIONS





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	89	100

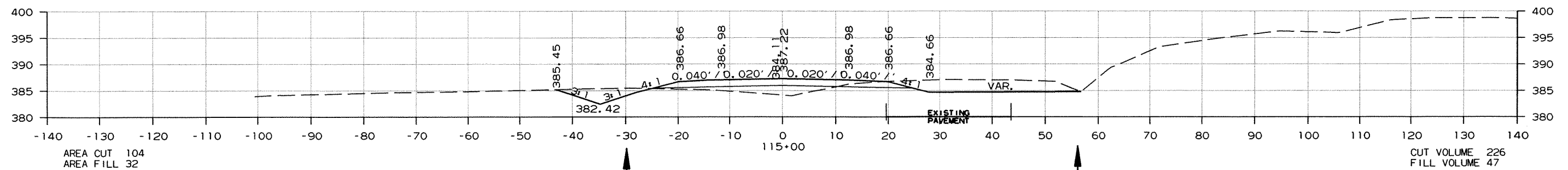
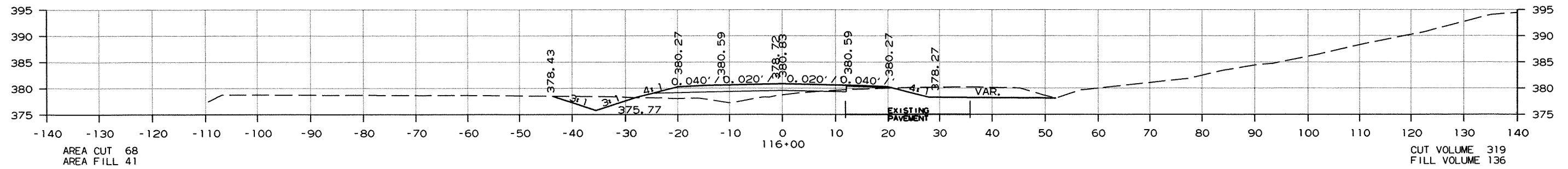
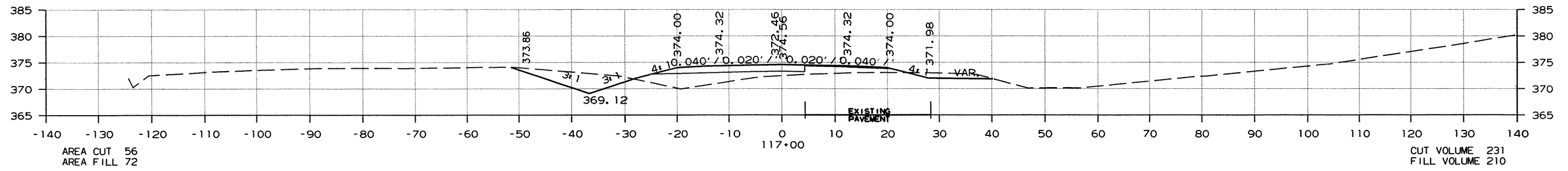
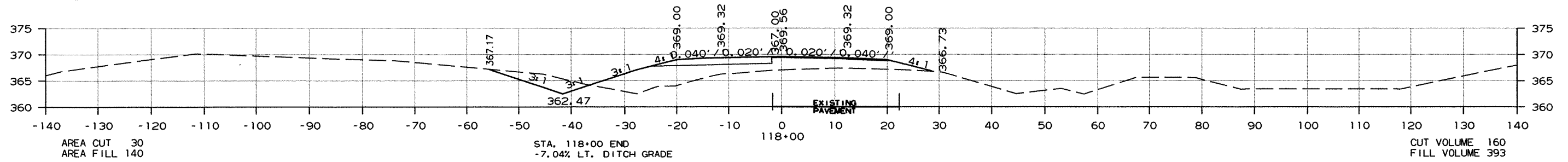
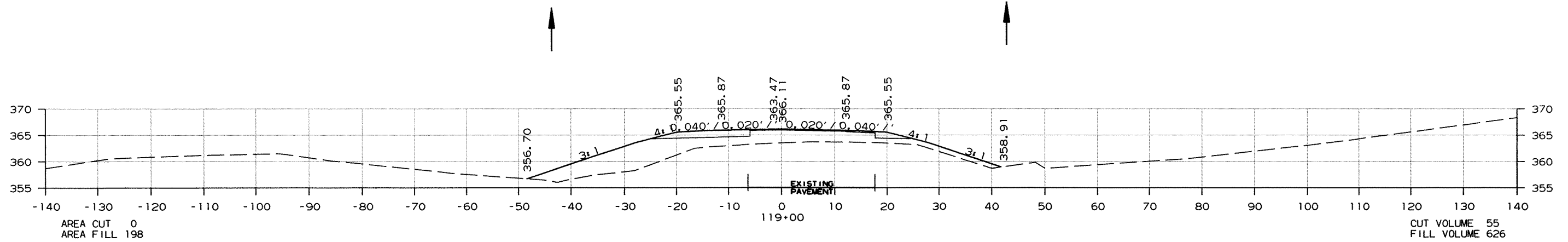
2 CROSS SECTIONS



CROSS SECTION STA. 111+00 TO STA. 114+33

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	90	100

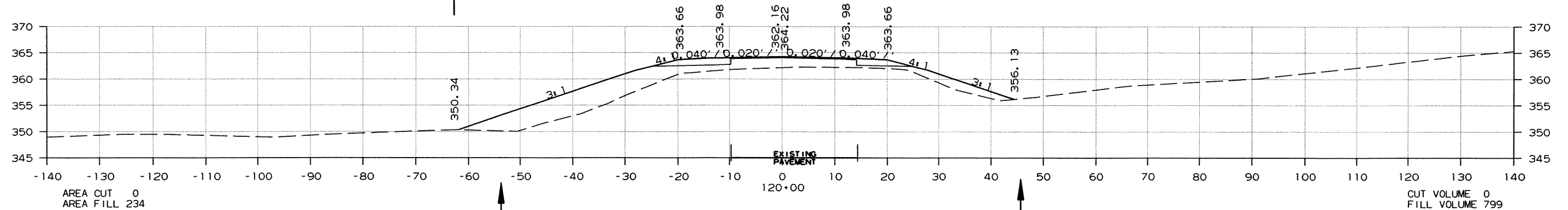
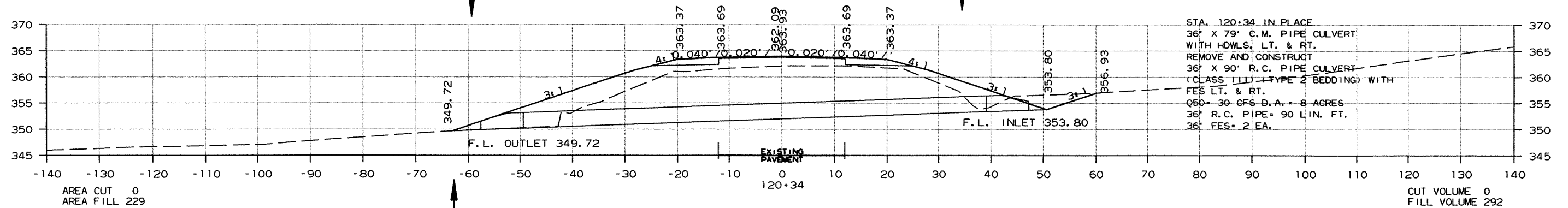
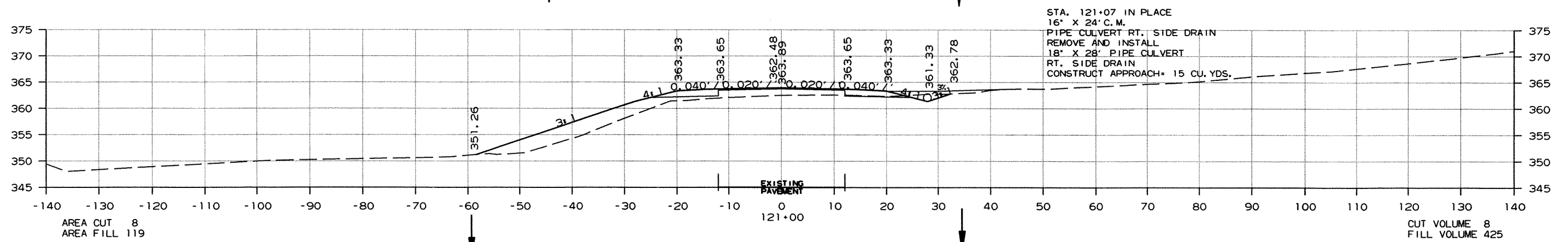
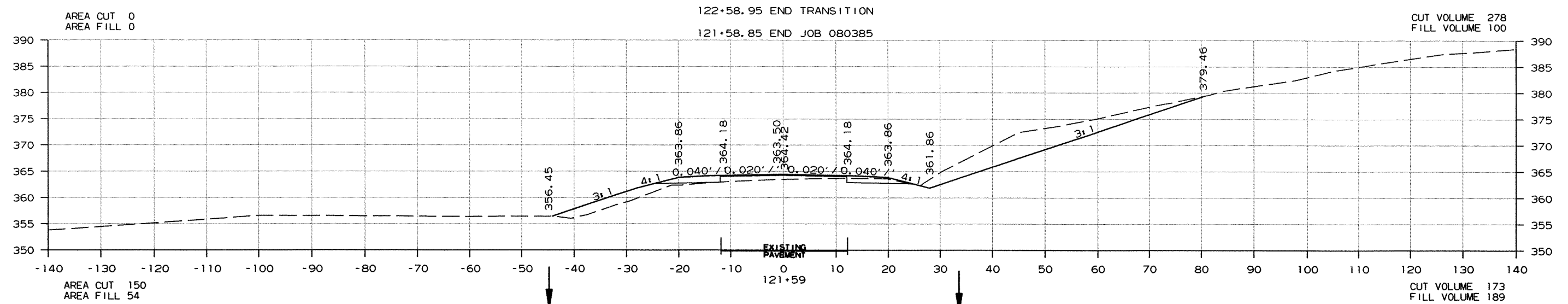
② CROSS SECTIONS



CROSS SECTION STA. 115+00 TO STA. 119+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	91	100

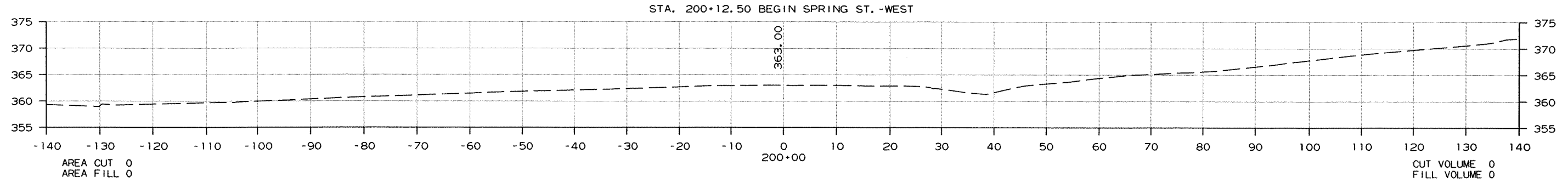
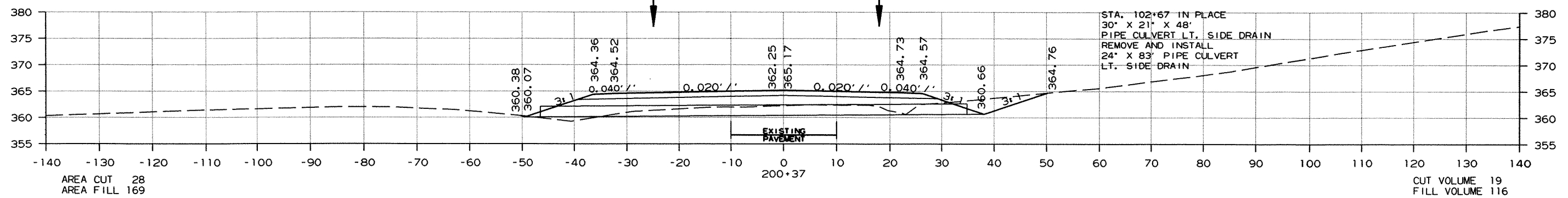
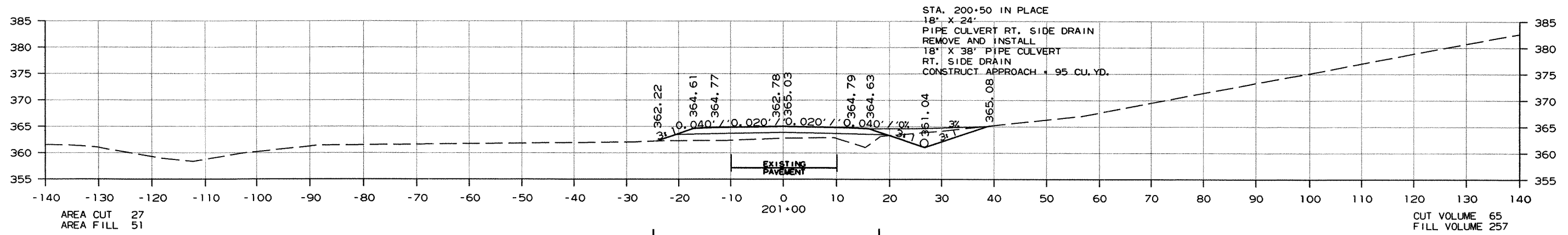
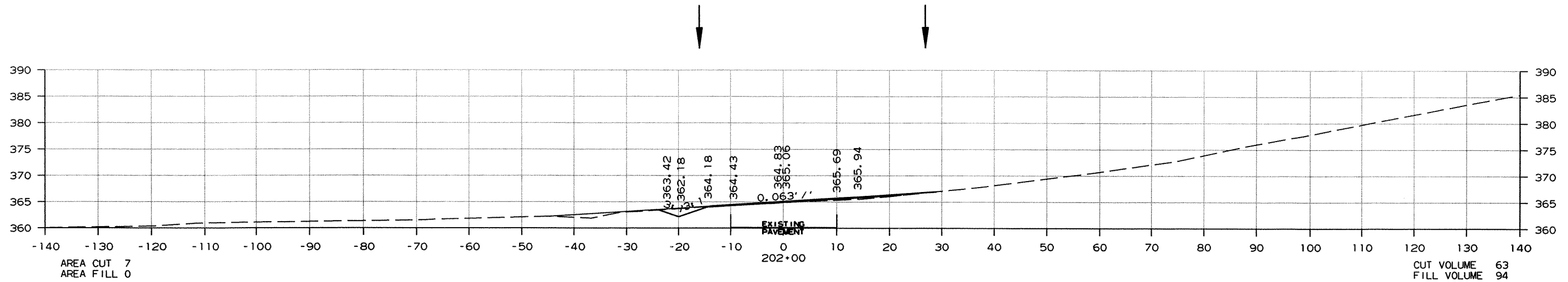
2 CROSS SECTIONS



CROSS SECTION STA. 120+00 TO STA. 121+59

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	92	100

2 CROSS SECTIONS-SPRING ST.-WEST

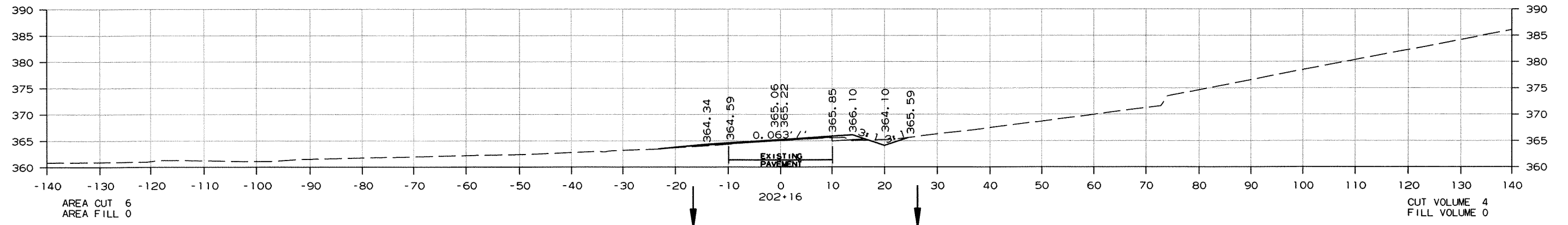
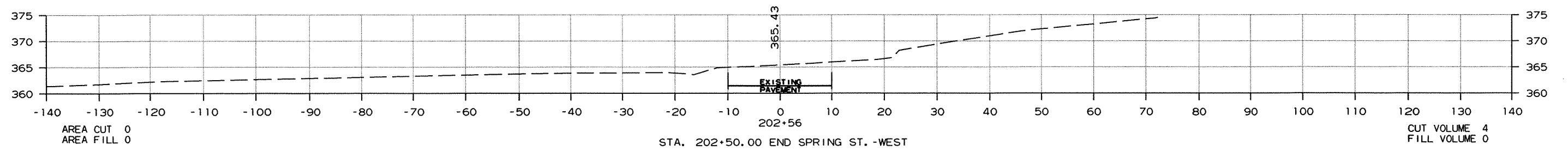


STA. 200+12.50 BEGIN SPRING ST. -WEST

CROSS SECTION STA. 200+00 TO STA. 202+00

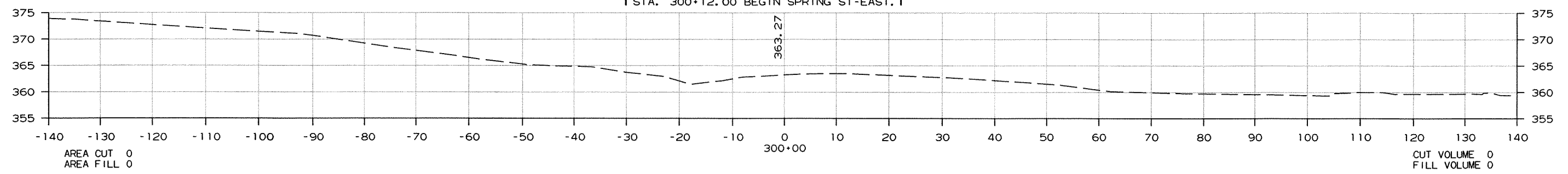
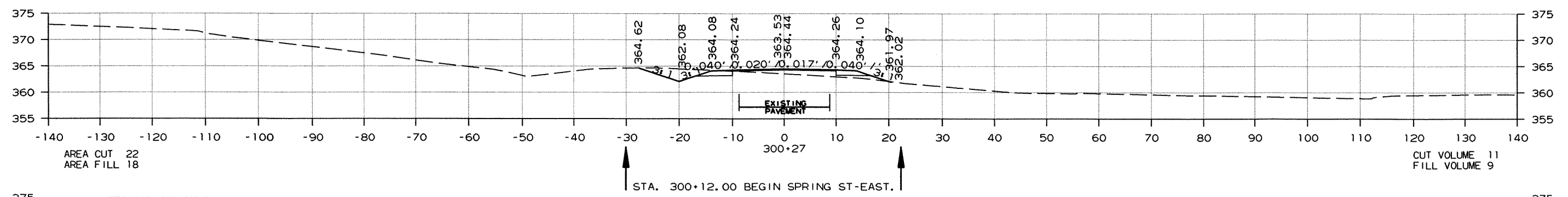
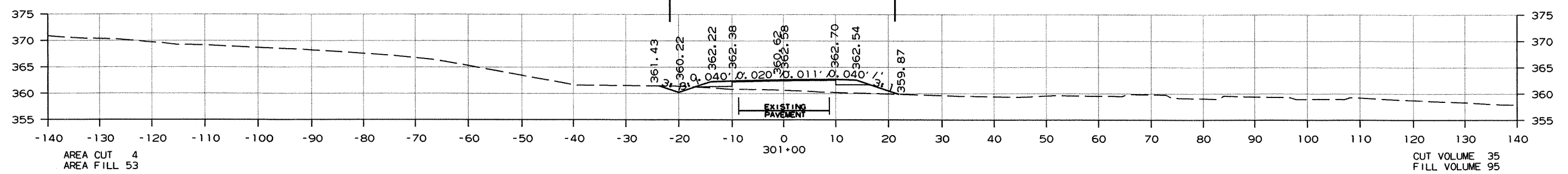
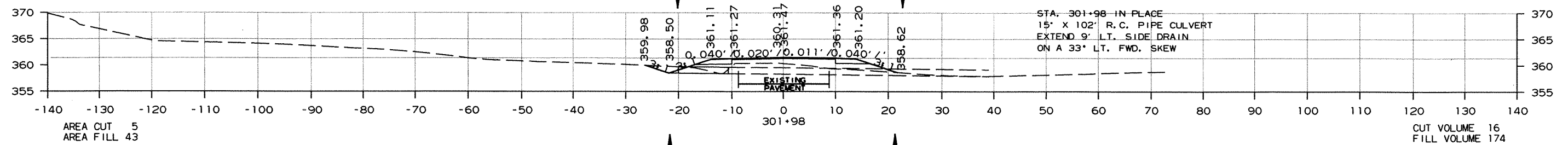
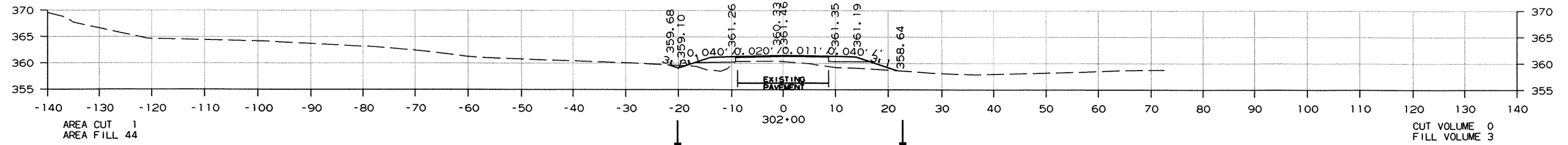
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	93	100

② CROSS SECTIONS-SPRING ST.-WEST



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	94	100

2 CROSS SECTIONS-SPRING ST.-EAST

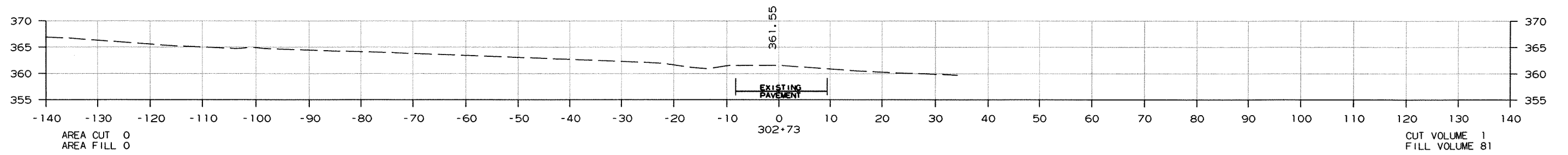


CROSS SECTION STA. 300+00 TO STA. 302+00

R080385.DGN 3/29/2011

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.		080385	95	100

② CROSS SECTIONS-SPRING ST.-EAST

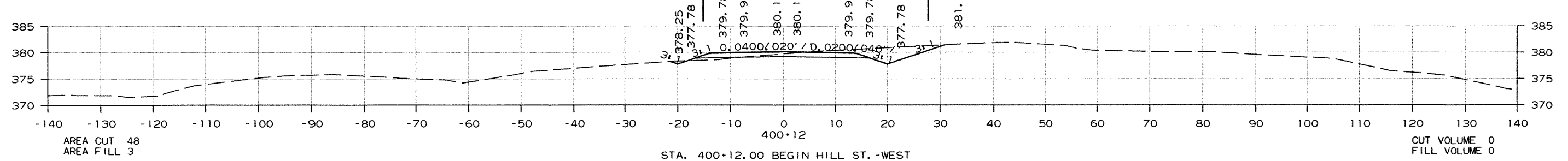
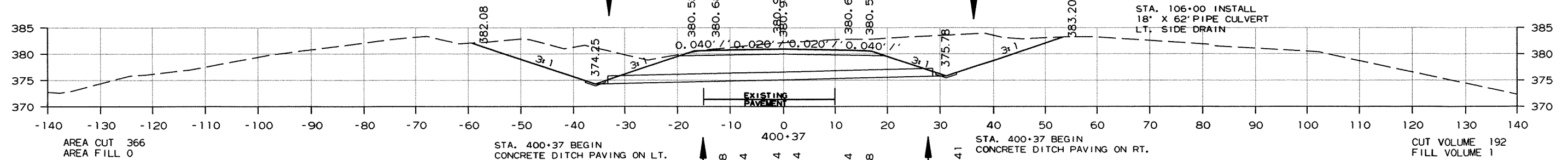
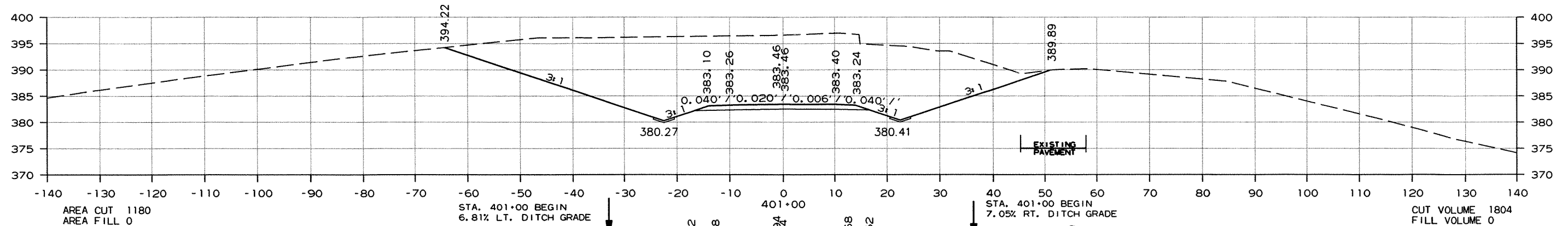
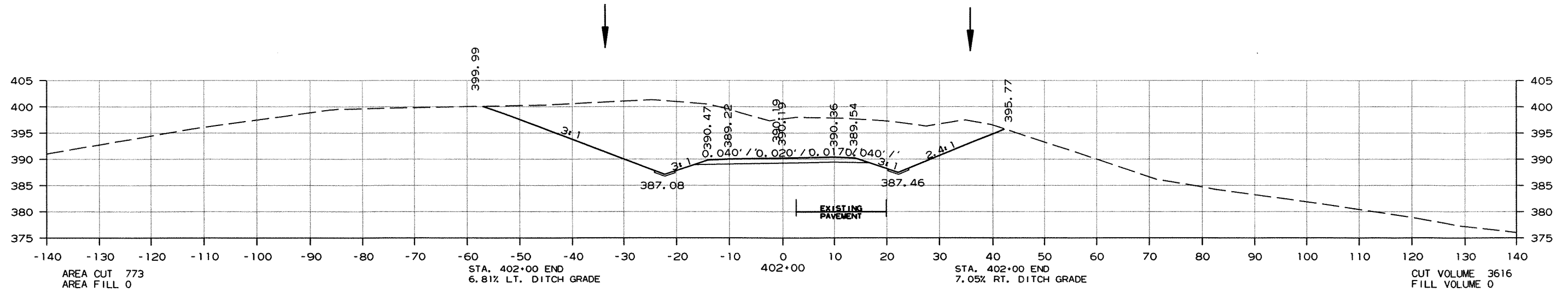


STA. 302+50.00 END SPRING ST. -EAST

CROSS SECTION STA. 302+73

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	96	100

② CROSS SECTIONS-HILL ST.-WEST



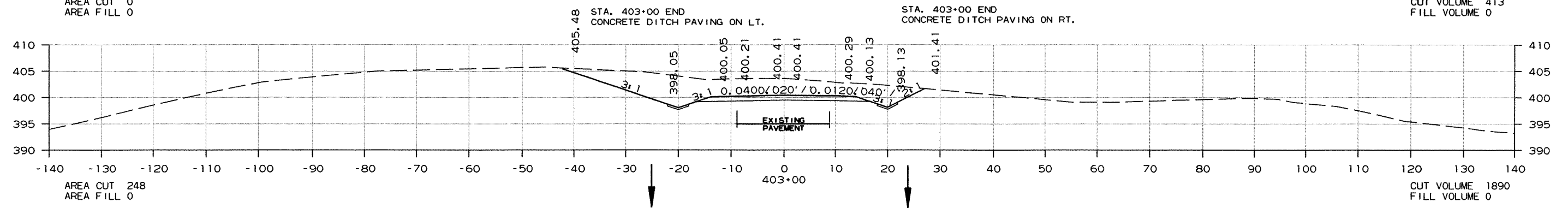
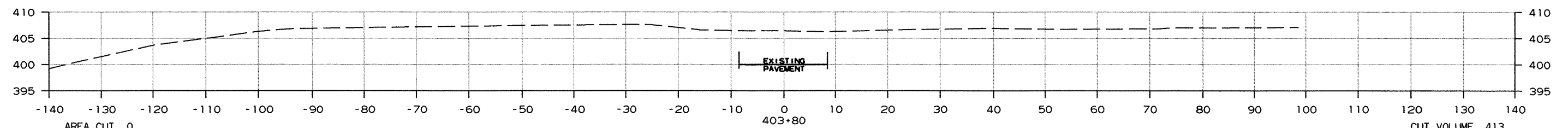
CROSS SECTION STA. 400+12 TO STA. 402+00



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. 080385	97	100

② CROSS SECTIONS-HILL ST.-WEST

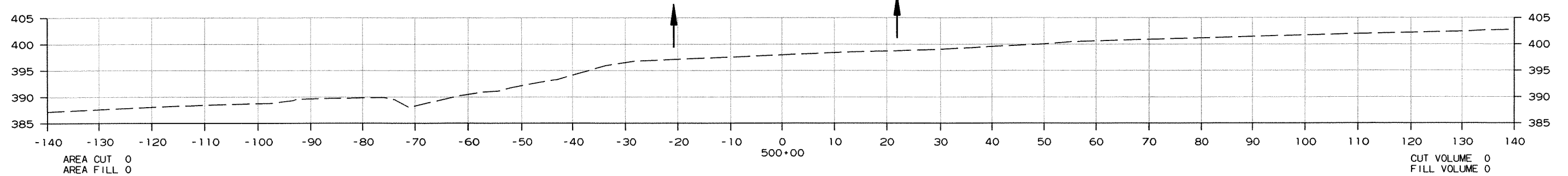
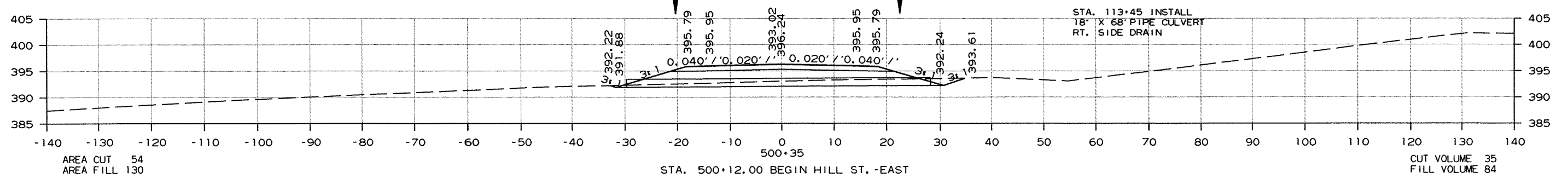
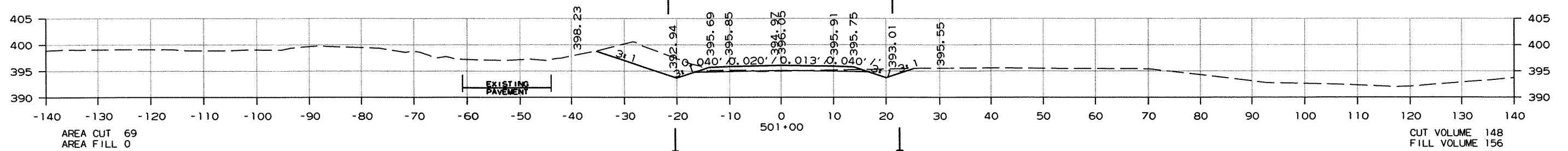
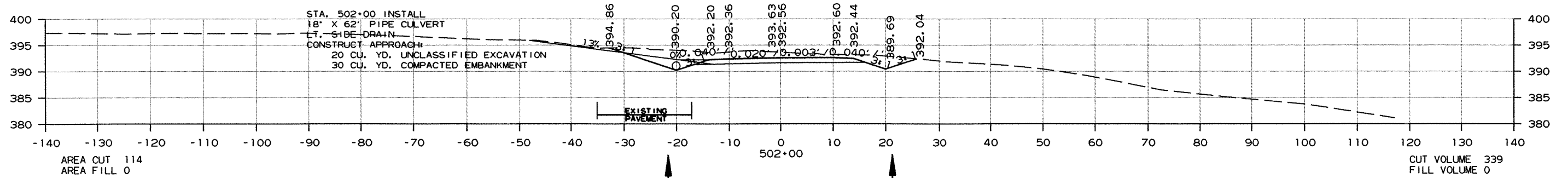
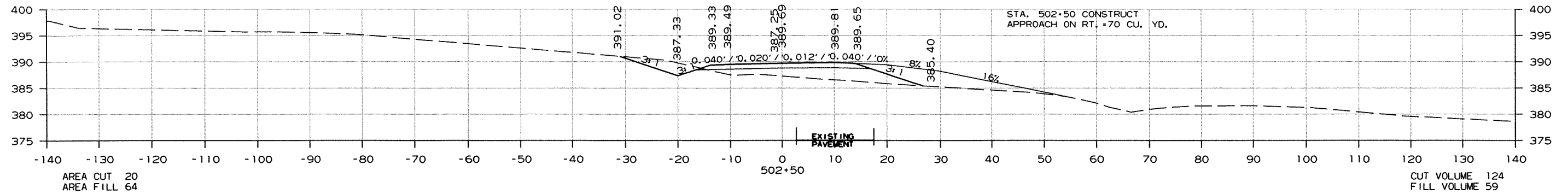
STA. 403+80.00 END HILL ST. -WEST



CROSS SECTION STA. 403+00 TO STA. 403+80

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	98	100

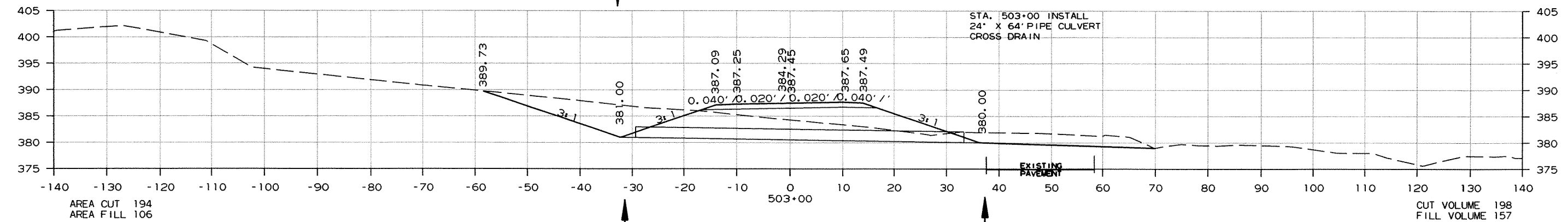
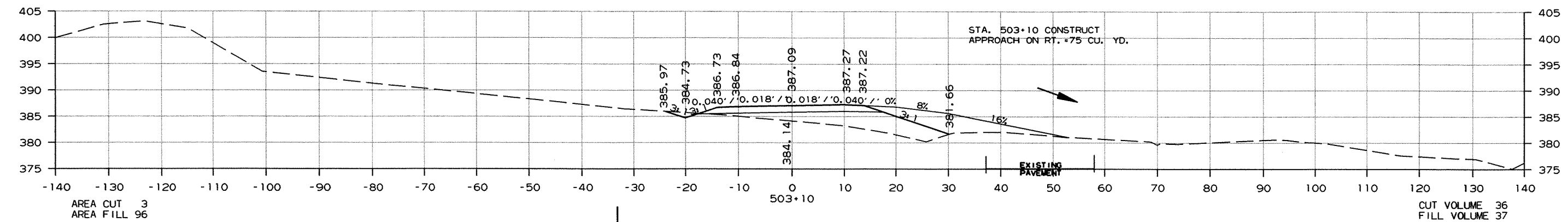
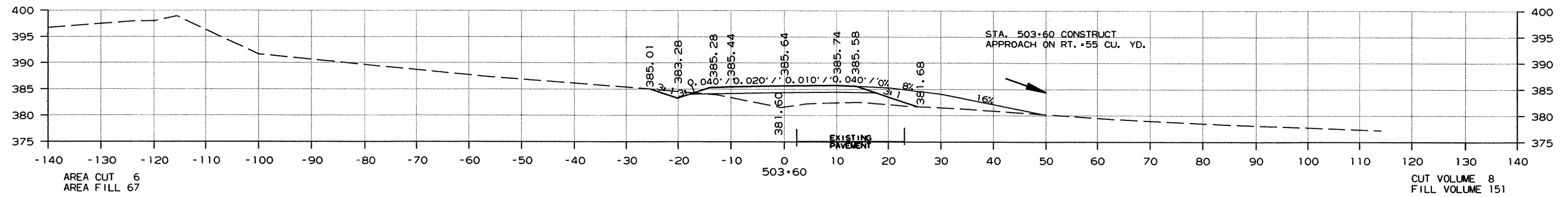
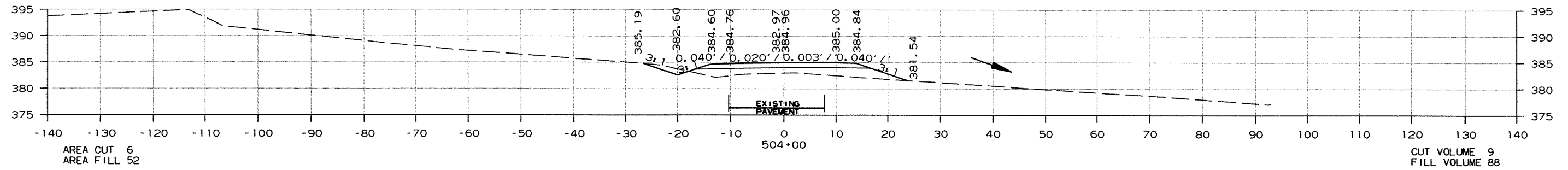
2 CROSS SECTIONS-HILL ST.-EAST



CROSS SECTION STA. 500+00 TO STA. 502+50

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						JOB NO. 080385	99	100

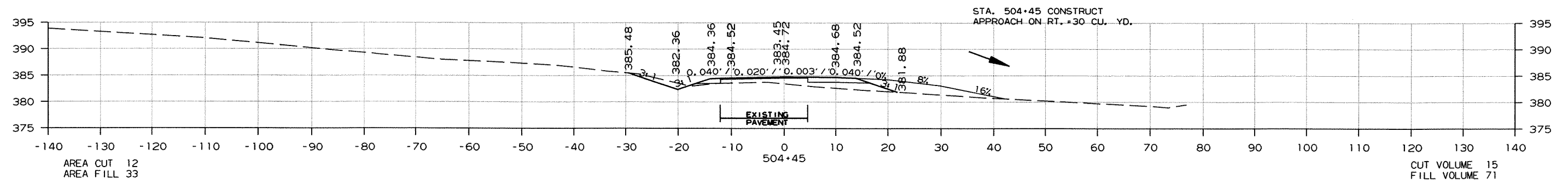
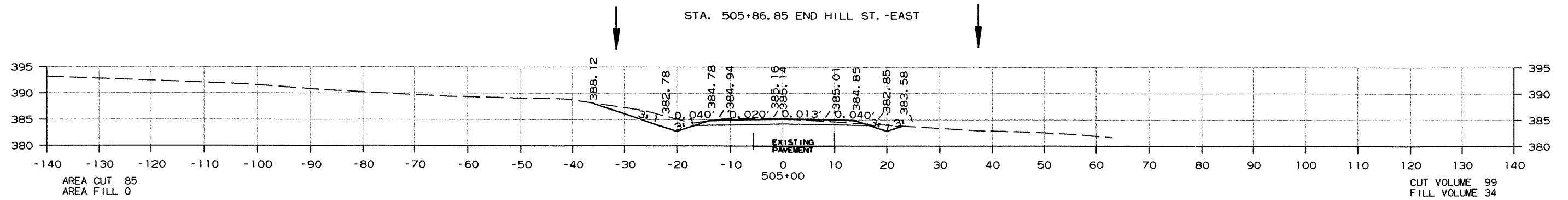
② CROSS SECTIONS-HILL ST.-EAST



CROSS SECTION STA. 503+00 TO STA. 504+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. 080385	100	100

② CROSS SECTIONS-HILL ST.-EAST



CROSS SECTION STA. 504+45 TO STA. 505+00