DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	1	190
				(2)	I-40 INTERCHANGE (MAUMELLE) (S)			

"THIS PROJECT IS A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS FOR STATE HIGHWAY

I-40 INTERCHANGE (MAUMELLE) (S)

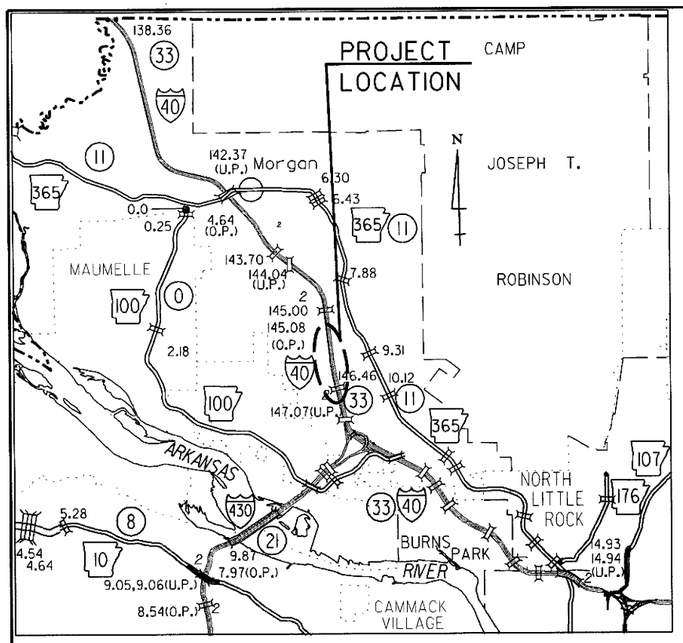
PULASKI COUNTY

ROUTE 40 SECTION 33

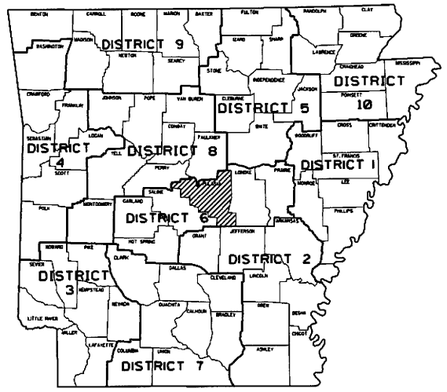
JOB 061190

FED. AID PROJ. HPP2-3745(I)

NOT TO SCALE

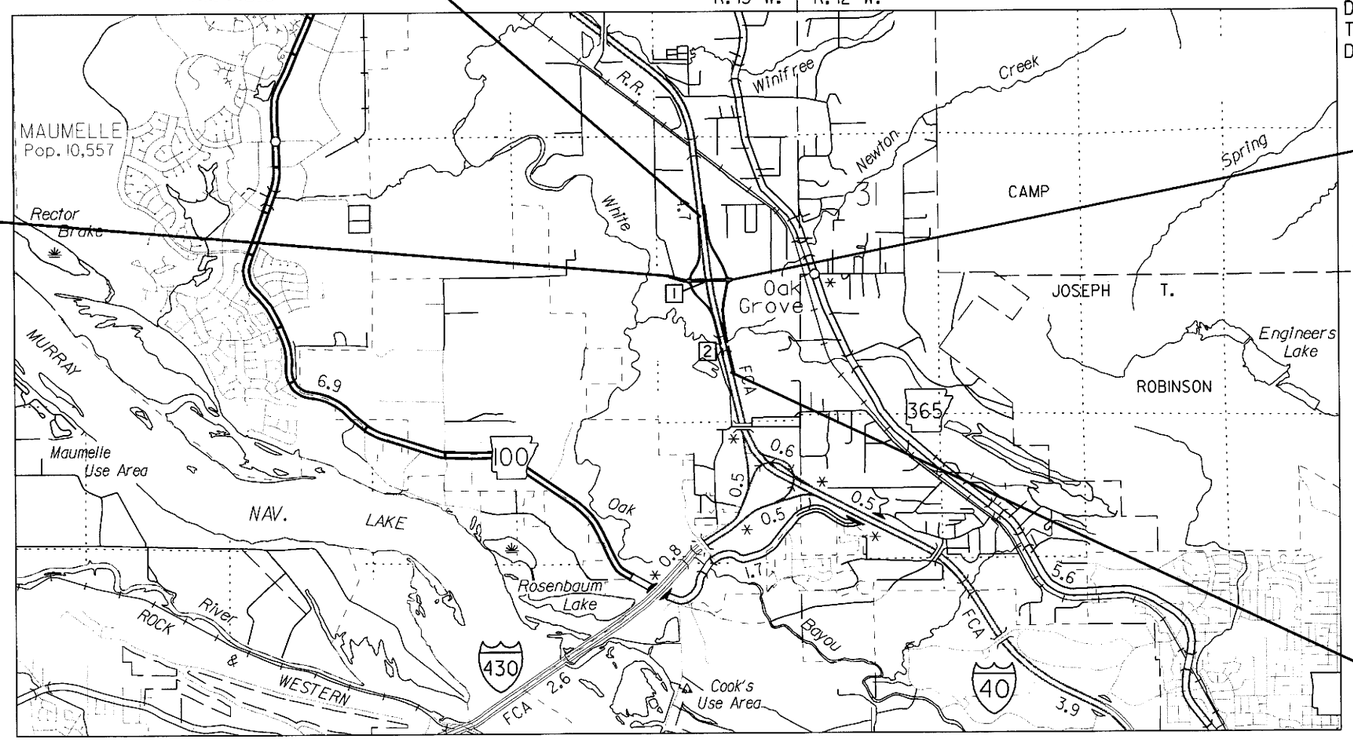


VICINITY MAP



ARK. HWY. DIST. NO. 6

C.L. I-40
STA. 8135+74.75
BEGIN JOB 061190
L.M. 145.6



STA. 169+51.72
BEGIN WHITE
OAK CROSSING

STA. 190+00.00
END WHITE
OAK CROSSING

C.L. I-40
STA. 8189+99.33
END JOB 061190
L.M. 146.6

DESIGN TRAFFIC DATA	I-40	WHITE OAK CROSSING
DESIGN YEAR	2039	2030
2019 ADT	74,000	N/A
2039 ADT	89,000	11,500
2039 DHV	9,790	1,265
DIRECTIONAL DISTRIBUTION	0.60	0.60
TRUCKS	14%	4%
DESIGN SPEED	70 MPH	50 MPH

BRIDGE CONSTRUCTION DATA

[1] STA. 181+28.89 BRIDGE END
BRIDGE NO. 07418 OVER I-40
324'-0" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(162' - 162')
75' CLEAR ROADWAY
326' - 2 3/4" BRIDGE LENGTH
STA. 184+55.11 BRIDGE END

[2] I-40 LT. LANES STA. 8181+04.33 BRIDGE END A
I-40 RT. LANES STA. 8179+71.70 BRIDGE END B
EXISTING BRIDGE NOS. A3233 AND B3233
90'-0" R.C. DECK GIRDER
(30' - 30' - 30')
68' CLEAR ROADWAY
I-40 LT. LANES STA. 8181+94.33 BRIDGE END A
I-40 RT. LANES STA. 8180+61.70 BRIDGE END B
RETAIN AND WIDEN 8'

	BEGIN OF PROJECT	MID-POINT OF PROJECT	END PROJECT
LATITUDE	N 34^50'52"	N 34^50'26"	N 34^49'59"
LONGITUDE	W 92^20'58"	W 92^20'56"	W 92^20'49"
STATION	8135+74.75	8162+87.04	8189+99.33

NO LENGTH INVOLVED

GROSS LENGTH OF PROJECT	0000.00	FEET OR	0.000	MILES
NET LENGTH OF ROADWAY	0000.00	FEET OR	0.000	MILES
NET LENGTH OF BRIDGES	0000.00	FEET OR	0.000	MILES
NET LENGTH OF PROJECT	0000.00	FEET OR	0.000	MILES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
9-13-2018

London.Miller 9/13/2018 10:37:39 AM
WORKSPACE: AHTD
Y:\Projects\MAUMELLE.I54459.I-40_Interchange\06-Design\Drawings\P061190.01.CO-001.dgn
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	2	190
				(2)	INDEX OF SHEETS & STANDARD DRAWINGS			

INDEX OF SHEETS

SHEET NO.		TITLE	BRIDGE NO.	DRWG.NO.
1		TITLE SHEET		
2		INDEX OF SHEETS AND STANDARD DRAWINGS		
3		GOVERNING SPECIFICATIONS AND GENERAL NOTES		
4 - 8		TYPICAL SECTIONS OF IMPROVEMENT		
9 - 12		SPECIAL DETAILS		
13 - 27		TEMPORARY EROSION CONTROL DETAILS		
28 - 53		MAINTENANCE OF TRAFFIC DETAILS		
54 - 59		PERMANENT PAVEMENT MARKING DETAILS		
60		SOIL BORING LOGS		
61 - 65		QUANTITY SHEETS		
66		SCHEDULE OF BRIDGE QUANTITIES	07418, A3233 & B3233	60015
67 - 68		SUMMARY OF QUANTITIES AND REVISIONS		
69 - 76		SURVEY CONTROL DETAILS		
77 - 86		PLAN AND PROFILE SHEETS		
87		INTERCHANGE LAYOUT		
88		INTERCHANGE RIGHT OF WAY		
89		PERMANENT SIGNING QUANTITIES		
90 - 96		PERMANENT SIGNING PLANS		
97		LIGHTING LAYOUT, SCHEDULE, & QUANTITIES		
98 - 100		ELECTRICAL DETAILS & SCHEDULE		
101		LAYOUT OF BRIDGE - WHITE OAK CROSSING OVER I-40 (SHEET 1 OF 5)	07418	60016
102		LAYOUT OF BRIDGE - WHITE OAK CROSSING OVER I-40 (SHEET 2 OF 5)	07418	60017
103		LAYOUT OF BRIDGE - WHITE OAK CROSSING OVER I-40 (SHEET 3 OF 5)	07418	60018
104		LAYOUT OF BRIDGE - WHITE OAK CROSSING OVER I-40 (SHEET 4 OF 5)	07418	60019
105		LAYOUT OF BRIDGE - WHITE OAK CROSSING OVER I-40 (SHEET 5 OF 5)	07418	60020
106		END BENT DETAILS - WHITE OAK CROSSING OVER I-40 (SHEET 1 OF 4)	07418	60021
107		END BENT DETAILS - WHITE OAK CROSSING OVER I-40 (SHEET 2 OF 4)	07418	60022
108		END BENT DETAILS - WHITE OAK CROSSING OVER I-40 (SHEET 3 OF 4)	07418	60023
109		END BENT DETAILS - WHITE OAK CROSSING OVER I-40 (SHEET 4 OF 4)	07418	60024
110		DETAILS OF INTERMEDIATE BENT 2 - WHITE OAK CROSSING OVER I-40 (SHEET 1 OF 2)	07418	60025
111		DETAILS OF INTERMEDIATE BENT 2 - WHITE OAK CROSSING OVER I-40 (SHEET 2 OF 2)	07418	60026
112		DETAILS OF ELASTOMERIC BEARINGS - WHITE OAK CROSSING OVER I-40	07418	60027
113		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 1 OF 10)	07418	60028
114		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 2 OF 10)	07418	60029
115		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 3 OF 10)	07418	60030
116		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 4 OF 10)	07418	60031
117		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 5 OF 10)	07418	60032
118		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 6 OF 10)	07418	60033
119		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 7 OF 10)	07418	60034
120		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 8 OF 10)	07418	60035
121		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 9 OF 10)	07418	60036
122		DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT - WHITE OAK CROSSING OVER I-40 (SHEET 10 OF 10)	07418	60037
123		DETAILS OF TYPE SPECIAL 1 APPROACH SLAB - WHITE OAK CROSSING OVER I-40	07418	60038
124		LAYOUT OF BRIDGE OVER NEWTON CREEK (BR. A3233) (SHEET 1 OF 3)	A3233	60039
125		LAYOUT OF BRIDGE OVER NEWTON CREEK (BR. B3233) (SHEET 2 OF 3)	B3233	60040
126		LAYOUT OF BRIDGE OVER NEWTON CREEK (BR. A3233 & B3233) (SHEET 3 OF 3)	A3233 & B3233	60041
127		TYPICAL SECTION - I-40 OVER NEWTON CREEK	A3233 & B3233	60042
128		DETAILS OF BENTS 1 & 4 - I-40 OVER NEWTON CREEK	A3233 & B3233	60043
129		DETAILS OF INTERMEDIATE BENTS 2 & 3 - I-40 OVER NEWTON CREEK (SHEET 1 OF 2)	A3233 & B3233	60044
130		DETAILS OF INTERMEDIATE BENTS 2 & 3 - I-40 OVER NEWTON CREEK (SHEET 2 OF 2)	A3233 & B3233	60045
131		DETAILS OF DECK GIRDER SPANS - I-40 OVER NEWTON CREEK (SHEET 1 OF 4)	A3233 & B3233	60046
132		DETAILS OF DECK GIRDER SPANS - I-40 OVER NEWTON CREEK (SHEET 2 OF 4)	A3233 & B3233	60047
133		DETAILS OF DECK GIRDER SPANS - I-40 OVER NEWTON CREEK (SHEET 3 OF 4)	A3233 & B3233	60048
134		DETAILS OF DECK GIRDER SPANS - I-40 OVER NEWTON CREEK (SHEET 4 OF 4)	A3233 & B3233	60049
135		DETAILS OF TYPE SPECIAL 2 APPROACH SLAB	A3233 & B3233	60050
136		DETAILS OF TYPE SPECIAL 1 & 2 APPROACH GUTTERS	A3233 & B3233	60051
137		DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE (SHEET 1 OF 5)		60052
138		DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE (SHEET 2 OF 5)		60053
139		DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE (SHEET 3 OF 5)		60054
140		DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE (SHEET 4 OF 5)		60055
141		DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE (SHEET 5 OF 5)		60056
142		LAYOUT OF BRIDGE MOUNTED SIGN STRUCTURE A & B - NORMAN ROAD		60057
143		DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE B (SHEET 1 OF 2) - NORMAN ROAD		60058
144		DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE B (SHEET 2 OF 2) - NORMAN ROAD		60059
145		DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE 3 (SHEET 1 OF 3) - E-S RAMP		60060
146		DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE 3 (SHEET 2 OF 3) - E-S RAMP		60061
147		DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE 3 (SHEET 3 OF 3) - E-S RAMP		60062
148 - 190		CROSS SECTIONS		

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

BRIDGE STANDARD DRAWINGS

DRWG.NO.		TITLE	DATE
55000		STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	2-27-14
55001		STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	2-27-14
55002		STANDARD DETAILS FOR CONCRETE RIPRAP	2-27-14
55005		STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	3-24-16
55006		STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES	9-02-15
55007		STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES	2-11-16
55010		STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	1-17-17
55020		STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	3-24-16
55030C		STANDARD DETAILS FOR TYPE C APPROACH GUTTERS	2-27-14

ROADWAY STANDARD DRAWINGS

DRWG.NO.		TITLE	DATE
CDP-1		CONCRETE DITCH PAVING	12-08-16
DR-1		DETAILS OF DRIVEWAYS & ISLANDS	2-27-14
FES-1		FLARED END SECTION	10-18-96
FES-2		FLARED END SECTION	10-18-96
FPC-9		DETAILS OF DROP INLETS & JUNCTION BOXES	11-16-01
FPC-9D		DETAILS OF DROP INLETS	8-22-02
FPC-9N		DETAILS OF DROP INLETS AND SPILLWAY OUTLET	7-02-98
FPC-9S		DETAILS OF DROP INLET AND JUNCTION BOXE (TYPE ST)	7-26-12
GR-7		GUARD RAIL DETAILS (TYPE C) STREET/ROAD BARRICADE OR TEMPORARY INSTALLLATION	11-16-17
GR-8		GUARD RAIL DETAILS	11-16-17
GR-8A		GUARD RAIL DETAILS	11-16-17
GR-9		GUARD RAIL DETAILS	4-17-08
GR-9A		GUARD RAIL DETAILS	4-17-08
GR-10		GUARD RAIL DETAILS	11-16-17
GR-11		GUARD RAIL DETAILS	11-16-17
GR-12		GUARD RAIL DETAILS	11-16-17
GRT-1		GUARD RAIL DETAILS	11-16-17
PCC-1		CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	2-27-14
PM-1		PAVEMENT MARKING DETAILS	6-01-17
PM-2		PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS	12-08-16
PU-1		DETAILS OF PIPE UNDERDRAIN	12-08-16
RCB-1		REINFORCED CONCRETE BOX CULVERT DETAILS	7-26-12
RCB-2		EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS	11-20-03
RCB-3		METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS	10-12-95
SD-6		HEAVY DUTY PULL BOX	11-16-17
SD-11		STEEL POLE WITH MAST ARM	11-16-17
SE-1		TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC	1-09-87
SE-2		TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC	10-18-96
SHS-1		STANDARD HIGHWAY SIGNS AND SUPPORTS ASSEMBLIES	9-12-13
SHS-2		U-CHANNEL POST ASSEMBLIES	2-27-14
SHS-3		DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS	9-12-13
SHS-4		DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS	9-12-13
SHS-5		DETAILS OF GUIDE SIGN PANELS	9-12-13
SHS-7		DETAIL OF OMNI-DIRECTIONAL BREAKWAY SIGN SUPPORTS	9-12-13
SHS-8		TYPICAL DELINEATOR PLACEMENT ALONG THE INTERSTATE SYSTEM	11-16-17
TC-1		STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	4-13-17
TC-2		STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-3		STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	9-02-15
TC-4		STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	2-27-14
TC-5		STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	10-15-09
TEC-1		TEMPORARY EROSION CONTROL DEVICES	11-16-17
TEC-2		TEMPORARY EROSION CONTROL DEVICES	6-02-94
TEC-3		TEMPORARY EROSION CONTROL DEVICES	11-03-94
TEC-4		TEMPORARY EROSION CONTROL DEVICES	7-26-12
TR-1A		DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)	08-22-02
WF-1		WIRE FENCE TYPE A AND B	08-22-02
WF-2		WIRE FENCE WATER GAPS	04-20-79
WF-4		WIRE FENCE TYPE C AND D	08-22-02
R-130X-0		DETAILS OF STANDARD BARREL SECTION FOR REINFORCED CONCRETE BOX CULVERTS	2-24-64
W-X303-1		DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS	5-10-66

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
Aug 1 2008

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
09-18-2018				6	ARK.			
				JOB NO.		061190	3	190
				(2) GOVERNING SPECIFICATIONS & GENERAL NOTES				

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

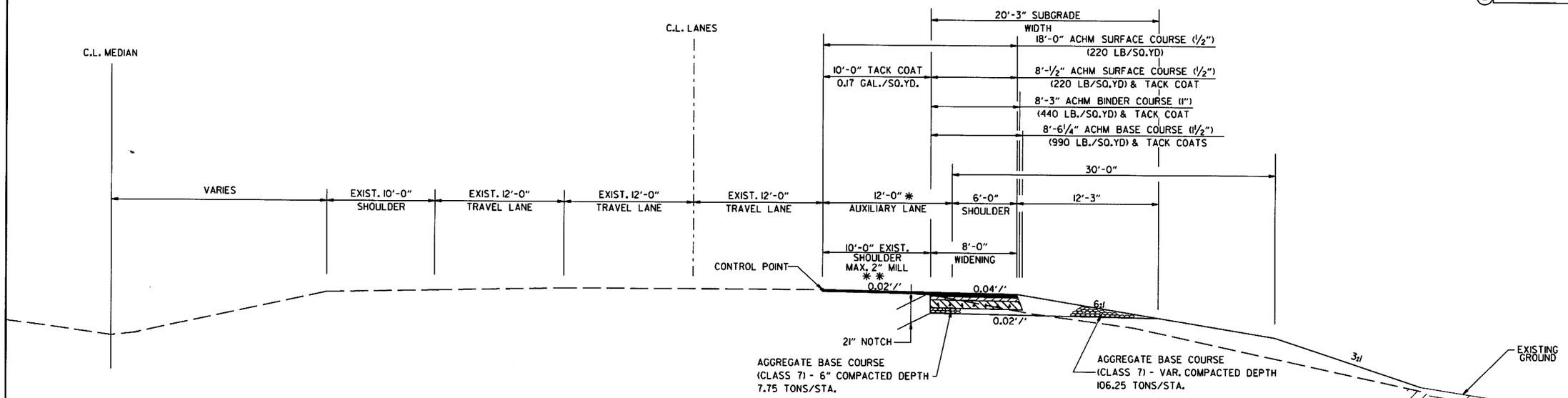
NUMBER	TITLE
ERRATA___	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273_	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273_	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273_	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273_	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273_	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273_	SUPPLEMENT - TRAINING PROGRAM - JOB 061190
FHWA-1273_	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273_	SUPPLEMENT - WAGE RATE DETERMINATION
100-3 _____	CONTRACTOR'S LICENSE
100-4_____	DEPARTMENT NAME CHANGE
102-2 _____	ISSUANCE OF PROPOSALS
108-1 _____	LIQUIDATED DAMAGES
108-2 _____	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
110-1 _____	PROTECTION OF WATER QUALITY AND WETLANDS
303-1 _____	AGGREGATE BASE COURSE
400-1 _____	TACK COATS
400-4 _____	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
400-5 _____	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
400-6 _____	LIQUID ANTI-STRIP ADDITIVE
410-1 _____	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
604-1 _____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1 _____	CONCRETE DITCH PAVING
606-1 _____	PIPE CULVERTS FOR SIDE DRAINS
617-1 _____	GUARDRAIL TERMINAL (TYPE 2)
620-1 _____	MULCH COVER
632-1 _____	CONCRETE ISLAND
800-1 _____	STRUCTURES
JOB 061190_	ARCHITECTURAL FINISH
JOB 061190_	ASSESSMENT OF WORKING DAYS-MAINTENANCE OF TRAFFIC
JOB 061190_	BIDDING REQUIREMENTS AND CONDITIONS
JOB 061190_	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS
JOB 061190_	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 061190_	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 061190_	CARGO PREFERENCE ACT REQUIREMENTS
JOB 061190_	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 061190_	CONCRETE DITCH PAVING
JOB 061190_	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 061190_	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 061190_	DELAY IN RIGHT OF WAY OCCUPANCY
JOB 061190_	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 061190_	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 061190_	DRILLED SHAFT FOUNDATIONS
JOB 061190_	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB 061190_	ENHANCED THERMOPLASTIC PAVEMENT MARKING
JOB 061190_	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB 061190_	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 061190_	LED ROADWAY ILLUMINATION POLE
JOB 061190_	LIGHT POLE FOUNDATION
JOB 061190_	MAINTENANCE OF TRAFFIC
JOB 061190_	MANDATORY ELECTRONIC CONTRACT
JOB 061190_	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 061190_	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 061190_	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT
JOB 061190_	PARTNERING REQUIREMENTS
JOB 061190_	PERCENT WITHIN LIMITS/PAVEMENT SMOOTHNESS
JOB 061190_	POLYMER OVERLAY
JOB 061190_	PORTABLE CONSTRUCTION LIGHTING
JOB 061190_	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 061190_	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB 061190_	RETAINING WALLS
JOB 061190_	SETTLEMENT AGREEMENT
JOB 061190_	SHORING FOR CULVERTS
JOB 061190_	SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB 061190_	SOIL STABILIZATION
JOB 061190_	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 061190_	SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS
JOB 061190_	STEEL SIGN STRUCTURES
JOB 061190_	STORM WATER POLLUTION PREVENTION PLAN
JOB 061190_	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 061190_	TEXTURED COATING FINISH
JOB 061190_	TRAFFIC CONTROL SUPERVISOR
JOB 061190_	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 061190_	TRENCHING AND SHOULDER PREPARATION FOR TEMPORARY WIDENING
JOB 061190_	UTILITY ADJUSTMENTS
JOB 061190_	VALUE ENGINEERING
JOB 061190_	WARM MIX ASPHALT

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.
2. ALL PIPE LINES, POWER, TELEPHONE, AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.
3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNERS UNLESS OTHERWISE PROVIDED.
4. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.
5. 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.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY, OR IN LIEU THEREOF, THE CONTRACTOR AT HIS OWN EXPENSE, MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
7. THIS PROJECT IS COVERED UNDER A SECTION 404 NATIONWIDE 14 PERMIT. REFER TO SECTION 110 OF THE STANDARD SPECIFICATIONS, EDITION OF 2014, FOR PERMIT REQUIREMENTS.
8. ALL FLEXIBLE BASE AND ASPHALTIC PAVEMENTS REMOVED SHALL BE PAID FOR UNDER THE ITEM NO. 210 - UNCLASSIFIED EXCAVATION.
9. 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.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
9-18-2018

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	4	190
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



I-40 NOTCH & WIDEN WITH AUXILIARY LANE TYPICAL SECTION (10' FULL DEPTH EXIST. SHLD.)

(SHOWN IN THE DIRECTION OF TRAFFIC)

I-40 C.L. RT. LANES STA. 8139+94.98 TO STA. 8146+60.83
I-40 C.L. LT. LANES STA. 8136+58.84 TO STA. 8146+58.84
I-40 C.L. RT. LANES STA. 8173+73.10 TO STA. 8179+35.42
I-40 C.L. LT. LANES STA. 8176+56.63 TO STA. 8180+68.25

* VARIES FROM 0' AT STA. 8136+58.84 TO 12' AT STA. 8139+58.84

* * CONTRACTOR SHALL VERIFY DEPTH AND PAVEMENT WIDTH

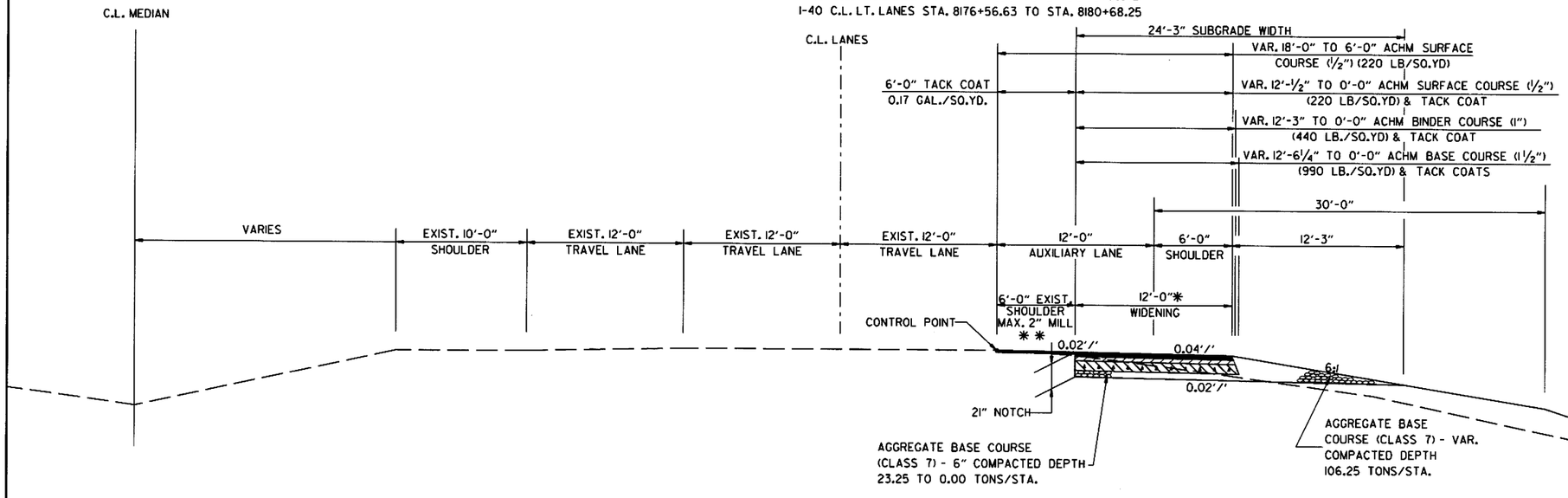
NOTES:

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

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

3. 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 TO THE PAVEMENT THAT IS TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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



I-40 NOTCH & WIDEN WITH AUXILIARY LANE TYPICAL SECTION (6' FULL DEPTH EXIST. SHLD.)

(SHOWN IN THE DIRECTION OF TRAFFIC)

I-40 C.L. LT. LANES STA. 8182+30.80 TO STA. 8190+79.21

* VARIES FROM 12' AT STA. 8182+30.80 TO 0' AT STA. 8190+79.21

* * CONTRACTOR SHALL VERIFY DEPTH AND PAVEMENT WIDTH

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER * * * No.10887 SCOTT P. THORNSBERRY
7-23-2018

TYPICAL SECTIONS OF IMPROVEMENT

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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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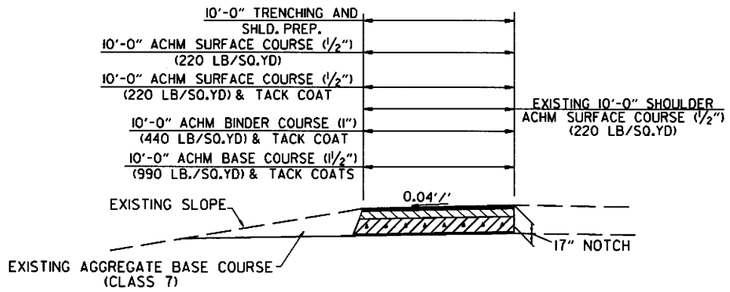
				JOB NO.		061190	5	190
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			



I-40 RT. LANES TRENCH AND SHOULDER PREPARATION FOR MAINTENANCE OF TRAFFIC (INSIDE SHOULDER)

I-40 C.L. RT. LANES STA. 8172+50.00 TO STA. 8176+00 (LT. OF C.L.)

NOTES:

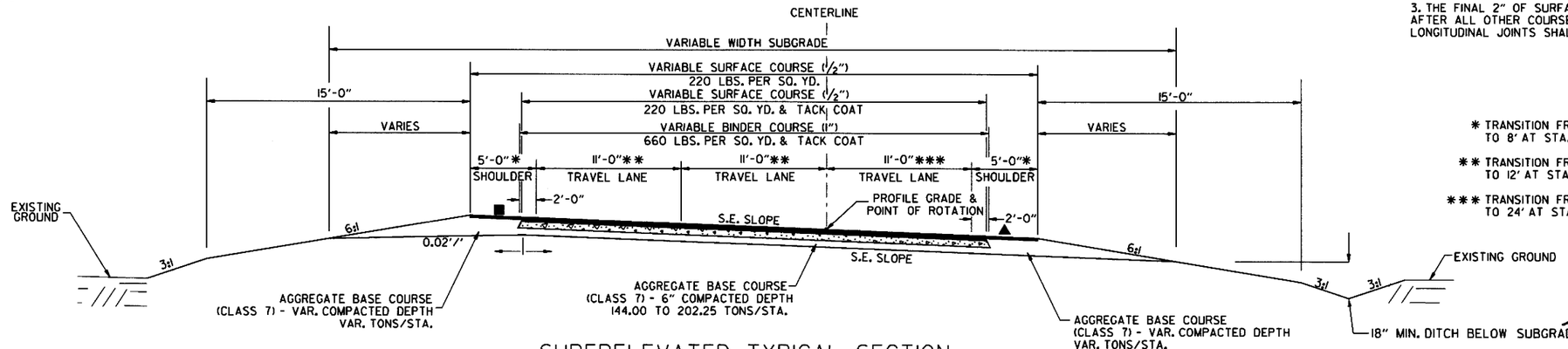
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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

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

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

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



* TRANSITION FROM 5' AT STA. 169+51.72 TO 8' AT STA. 170+51.72

** TRANSITION FROM 11' AT STA. 169+51.72 TO 12' AT STA. 170+51.72

*** TRANSITION FROM 11' AT STA. 169+51.72 TO 24' AT STA. 170+51.72

SUPERELEVATED TYPICAL SECTION WHITE OAK CROSSING

STA. 169+51.72 TO STA. 170+51.72

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
* * *
No. 10887
SCOTT P. THORNSBERRY
7-23-2018

TYPICAL SECTIONS OF IMPROVEMENT

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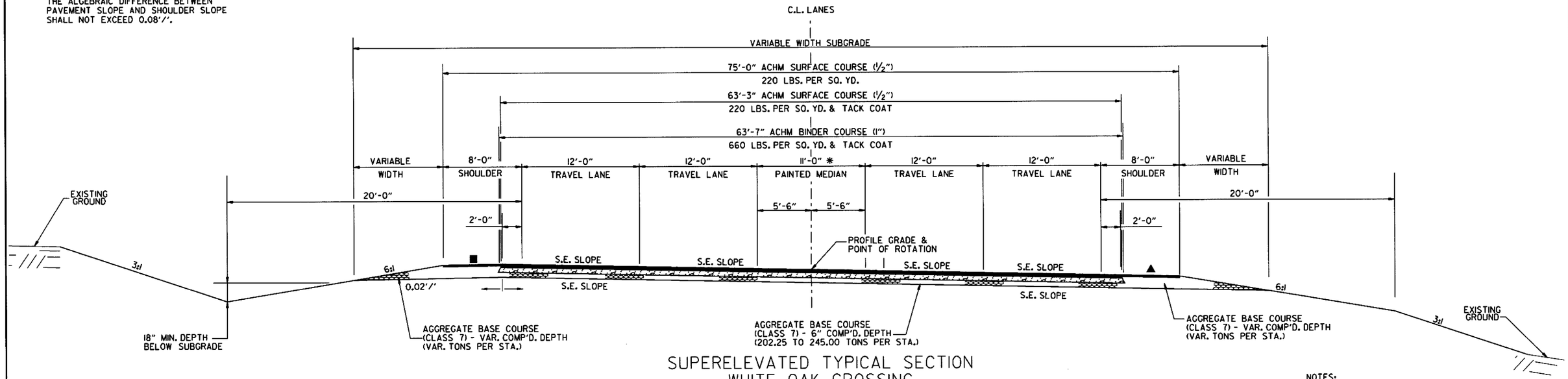
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	6	190
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

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



SUPERELEVATED TYPICAL SECTION WHITE OAK CROSSING

STA. 169+51.72 TO STA. 178+54.57

* TRANSITION FROM 0' AT STA. 170+51.72 TO 11' AT STA. 173+51.72

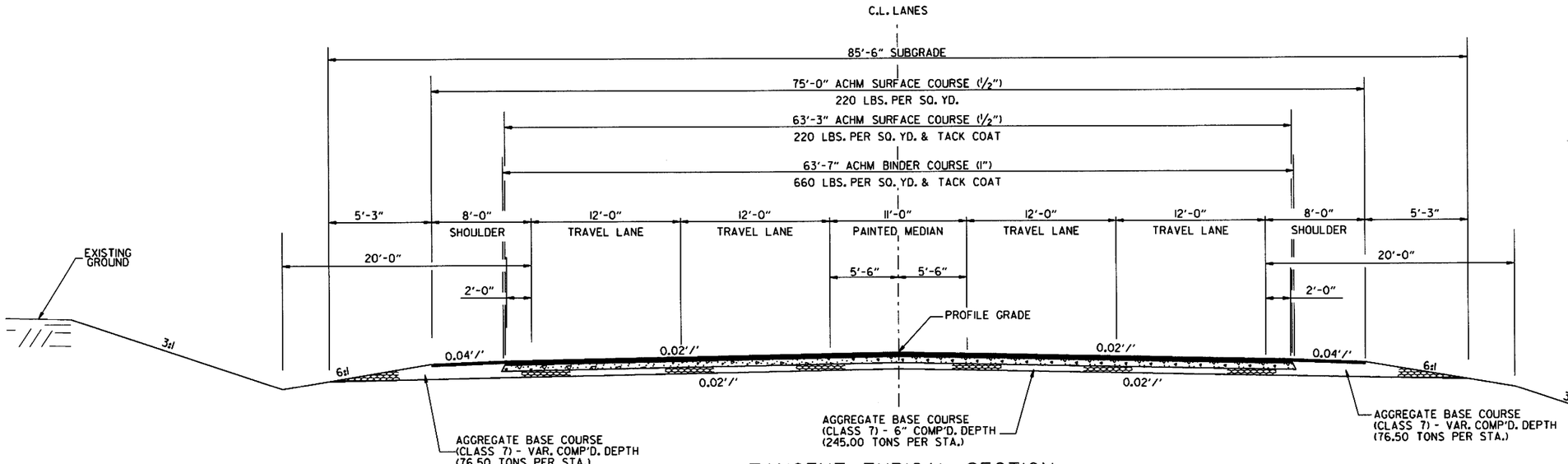
NOTES:

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

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

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

4. 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 COURSE (1"2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.



TANGENT TYPICAL SECTION WHITE OAK CROSSING

STA. 178+54.57 TO STA. 180+87.78
STA. 184+96.19 TO STA. 190+00.00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-28-2018

TYPICAL SECTIONS OF IMPROVEMENT

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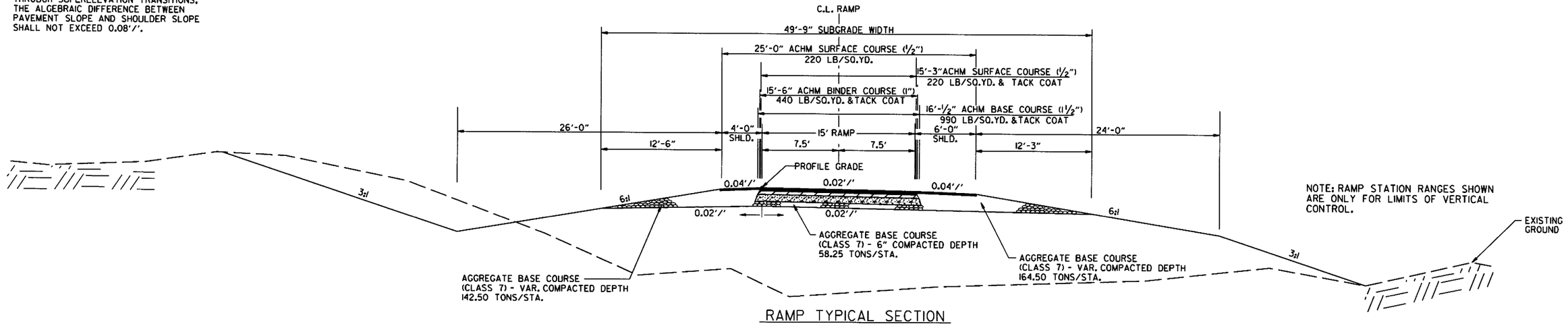
				6	ARK.			
				JOB NO.		061190	7	190
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

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



RAMP TYPICAL SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP 1 STA. 8144+49.85 TO STA. 8147+55.42
RAMP 1 STA. 8156+37.60 TO STA. 8156+38.56
RAMP 2 STA. 8163+49.05 TO STA. 8163+50.67
RAMP 2 STA. 8173+50.52 TO STA. 8173+73.35
RAMP 4 STA. 8153+73.30 TO STA. 8153+88.57

NOTE: RAMP STATION RANGES SHOWN ARE ONLY FOR LIMITS OF VERTICAL CONTROL.

NOTES:

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

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

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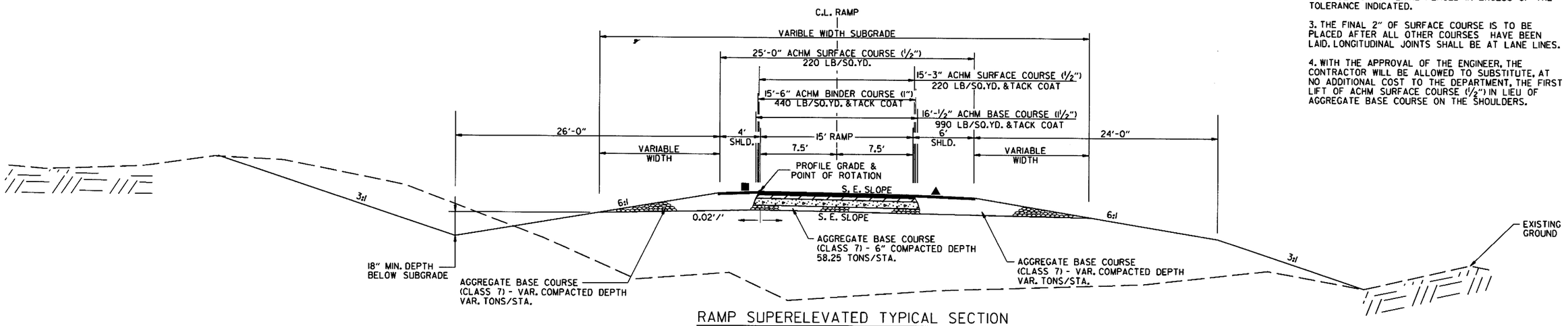
4. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR WILL BE ALLOWED TO SUBSTITUTE, AT NO ADDITIONAL COST TO THE DEPARTMENT, THE FIRST LIFT OF ACHM SURFACE COURSE (1/2") IN LIEU OF AGGREGATE BASE COURSE ON THE SHOULDERS.



RAMP SUPERELEVATED TYPICAL SECTION

(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP 1 STA. 8147+55.42 TO STA. 8156+37.60
RAMP 1 STA. 8156+38.56 TO STA. 8159+16.24
RAMP 2 STA. 8157+03.57 TO STA. 8163+49.05
RAMP 2 STA. 8163+50.67 TO STA. 8173+50.51
RAMP 4 STA. 8146+56.36 TO STA. 8153+73.30
RAMP 4 STA. 8153+88.57 TO STA. 8161+42.37

NOTE: RAMP STATION RANGES SHOWN ARE ONLY FOR LIMITS OF VERTICAL CONTROL.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

TYPICAL SECTIONS OF IMPROVEMENT

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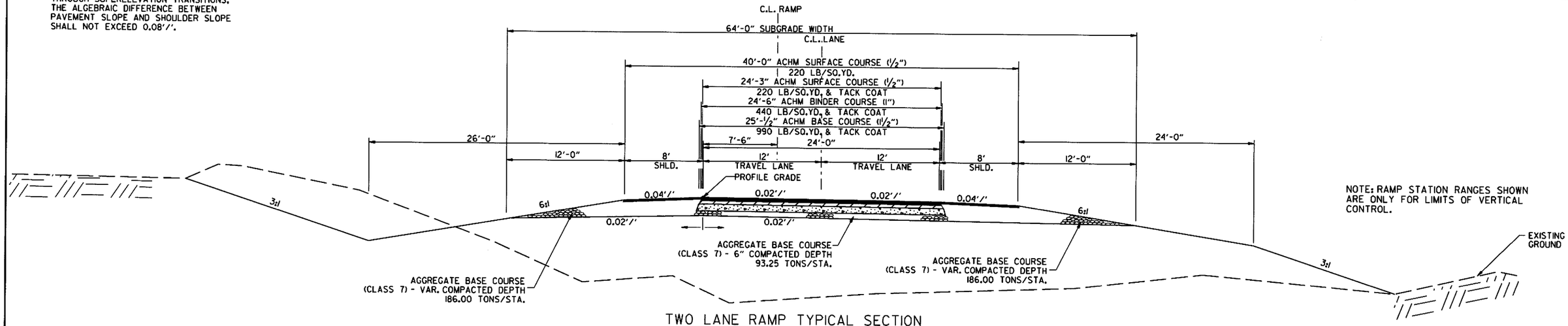
				6	ARK.			
				JOB NO.		061190	8	190
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

▲ SLOPE = 0.04'/' OR S.E. SLOPE WHICHEVER IS GREATER

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



TWO LANE RAMP TYPICAL SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP 3 STA. 8162+85.00 TO STA. 8165+40.57
RAMP 3 STA. 8175+09.88 TO STA. 8176+57.90

NOTE: RAMP STATION RANGES SHOWN ARE ONLY FOR LIMITS OF VERTICAL CONTROL.

NOTES:

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

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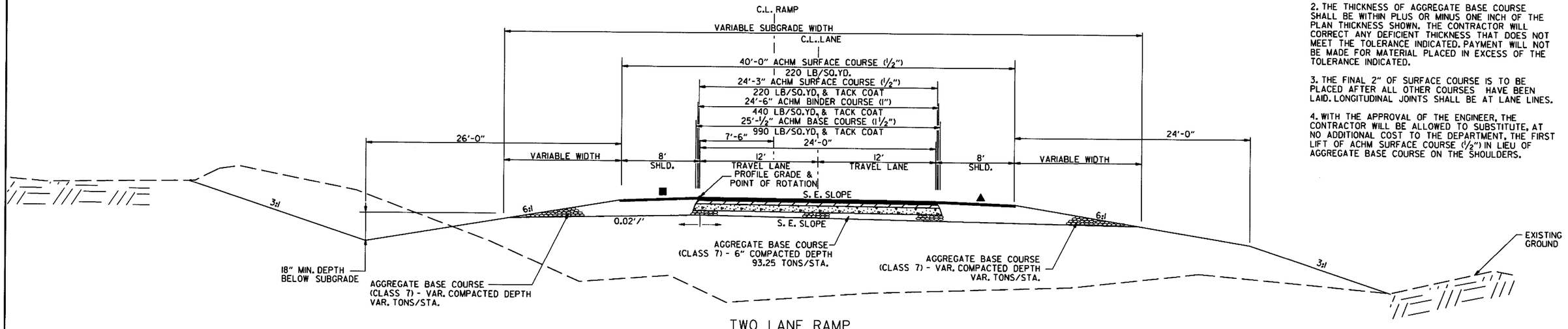

TWO LANE RAMP
SUPERELEVATED TYPICAL SECTION
(SHOWN IN THE DIRECTION OF TRAFFIC)

RAMP 3 STA. 8161+02.85 TO STA. 8162+85.00
RAMP 3 STA. 8165+40.57 TO STA. 8175+09.88

NOTE: RAMP STATION RANGES SHOWN ARE ONLY FOR LIMITS OF VERTICAL CONTROL.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
1-23-2018

TYPICAL SECTIONS OF IMPROVEMENT

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	9	190
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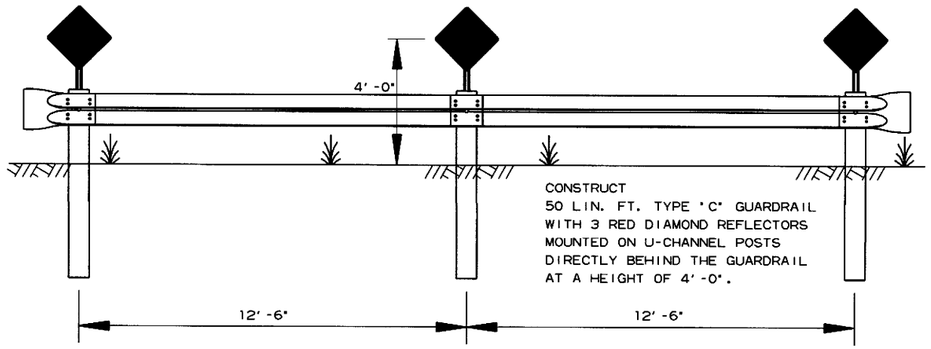
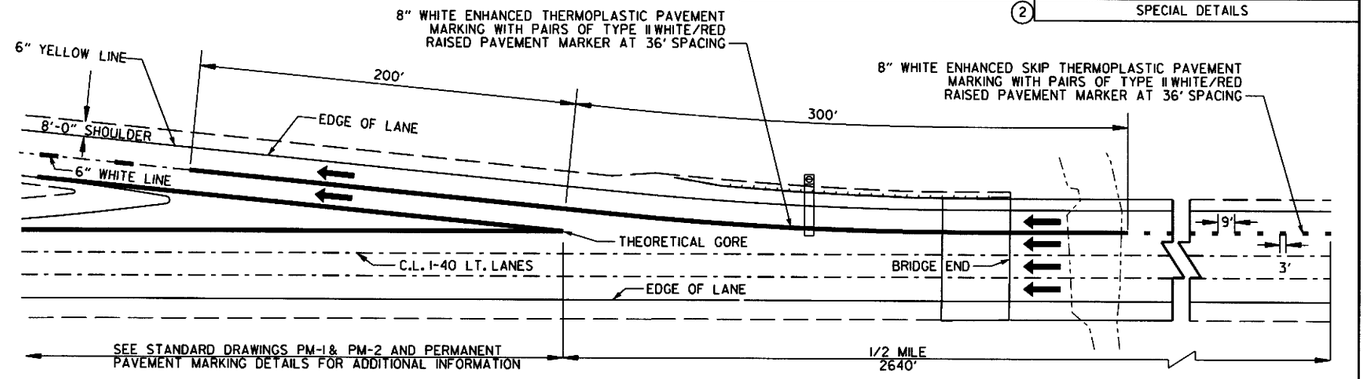
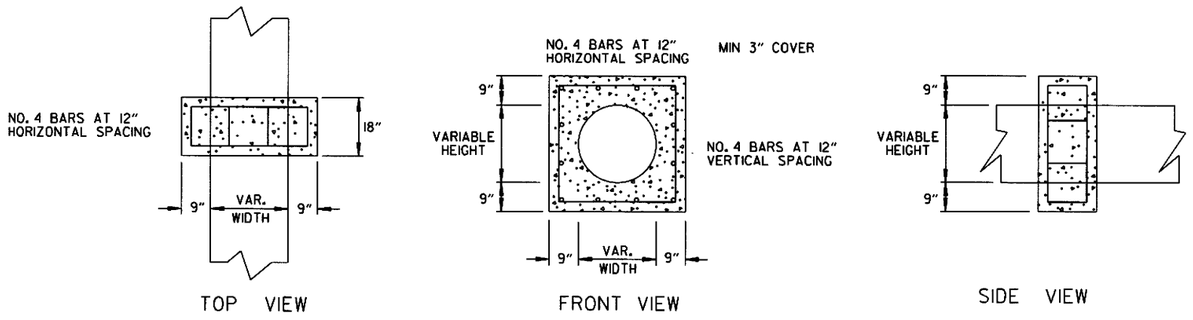


ROAD CLOSED DETAIL

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

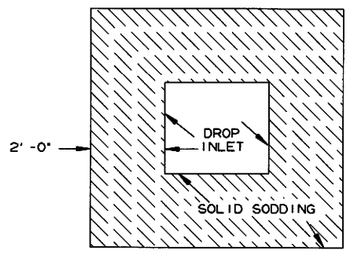


PERMANENT PAVEMENT MARKING DETAIL - RAMP 3 AUXILIARY LANE

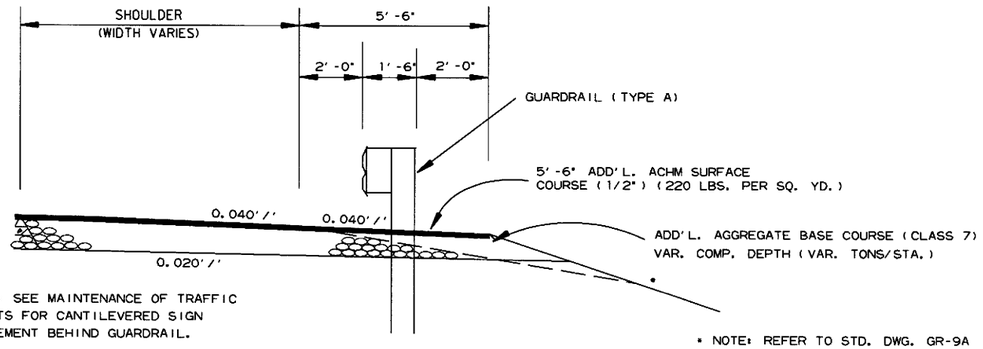


PIPE EXTENSION
REINFORCED CONCRETE COLLAR DETAIL

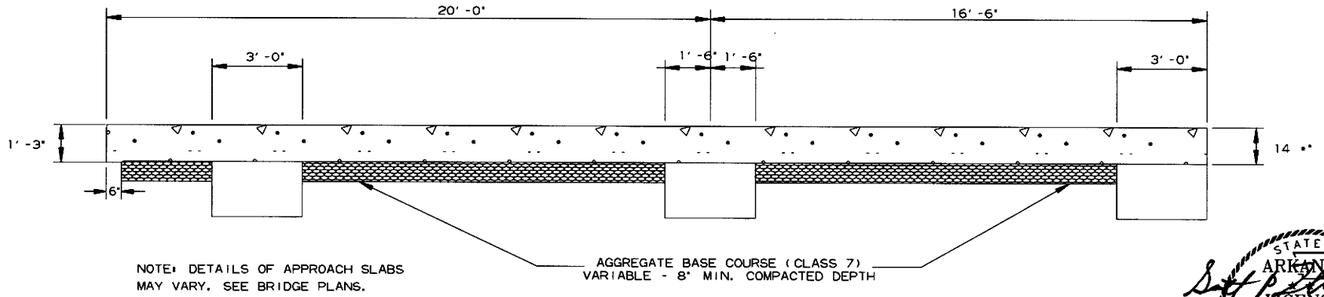
NOTE: PIPE COLLAR TO BE UTILIZED AS APPROVED BY THE ENGINEER.



DETAIL FOR SOLID SODDING
AROUND DROP INLETS



WIDENING FOR GUARDRAIL



SECTION OF APPROACH SLAB

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

SPECIAL DETAILS

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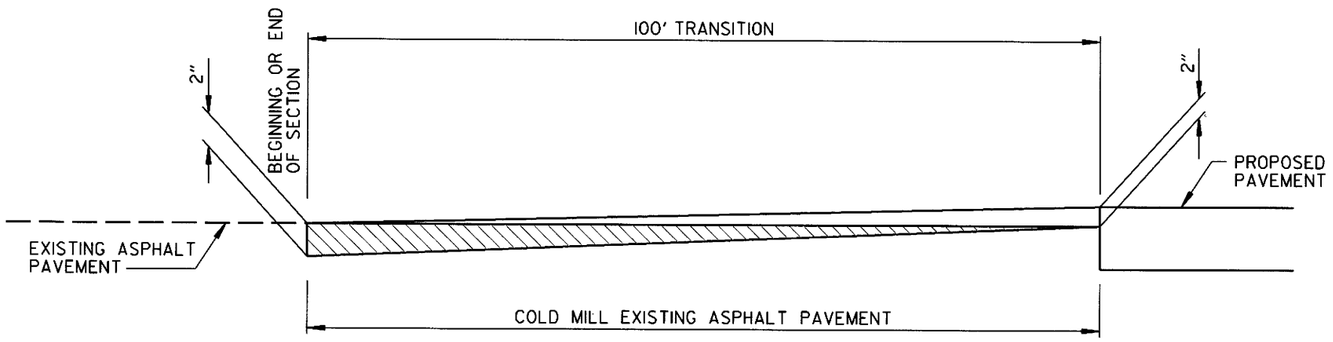
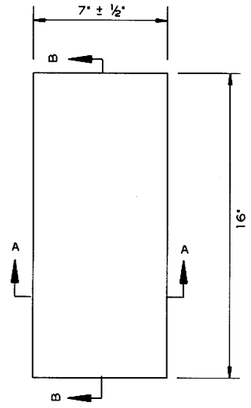
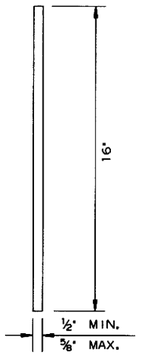


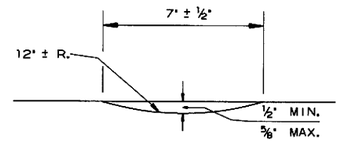
DETAIL FOR TRANSITIONS



PLAN



SECTION B-B

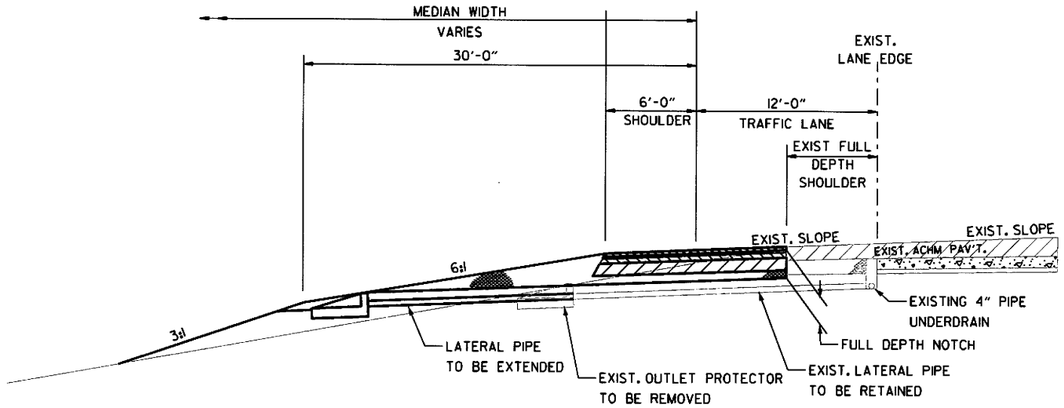


SECTION A-A

DETAILS OF RUMBLE STRIPS

NOTES:

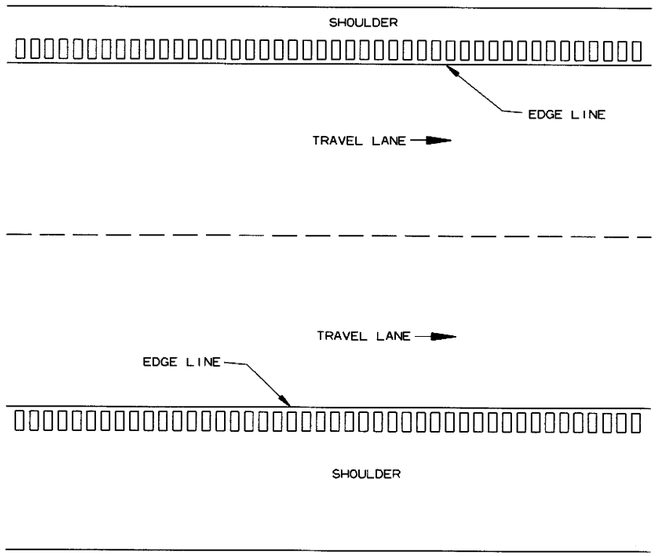
1. ALIGNMENT OF RUMBLE STRIPS SHALL GENERALLY BE STRAIGHT AND OFFSET APPROXIMATELY 4" FROM THE OUTER EDGE OF THE EDGE LINE. THIS OFFSET MAY BE ADJUSTED TO ACCOMMODATE VARIATIONS IN THE EDGE LINE.
2. THE ½" DEPTH SHALL GENERALLY APPLY FOR THE ENTIRE 16" LENGTH. SOME VARIATION TO SUIT SHOULDER SLOPE BREAKS MAY BE NECESSARY.
3. RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS, APPROACH SLABS, OR ACROSS TRANSVERSE JOINTS OF CONCRETE SHOULDERS.



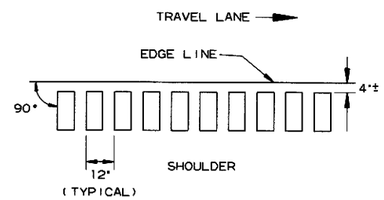
TYPICAL SECTION OF EXISTING PIPE UNDERDRAINS TO BE RETAINED AND EXTENDED

NOTES:

1. EXISTING 4" PIPE UNDERDRAIN LATERALS SHALL BE EXTENDED WHERE SHOWN ON PLANS OR WHERE DIRECTED BY THE ENGINEER. EXISTING OUTLET PROTECTORS SHOULD BE REMOVED AND RECONSTRUCTED. PAYMENT SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR 4" PIPE UNDERDRAINS.
2. ANY PIPE UNDERDRAIN OR LATERAL TO REMAIN IN PLACE THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
3. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" THERMOPLASTIC PAVEMENT MARKING AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.



PLAN VIEW



LOCATION PLAN OF RUMBLE STRIPS
LEFT OR RIGHT SHOULDER

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

SPECIAL DETAILS

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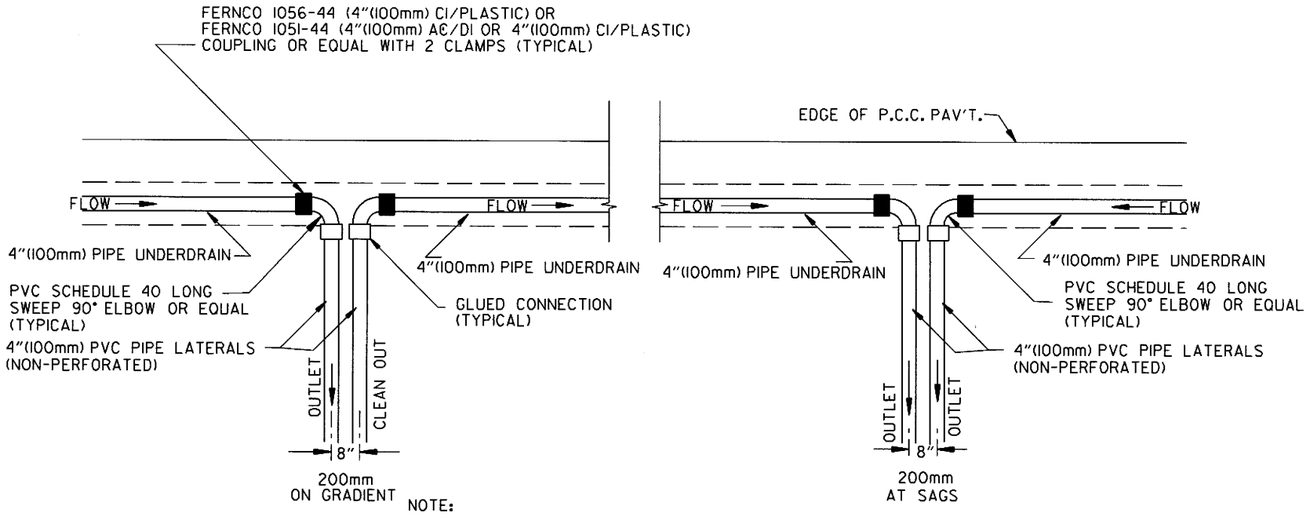
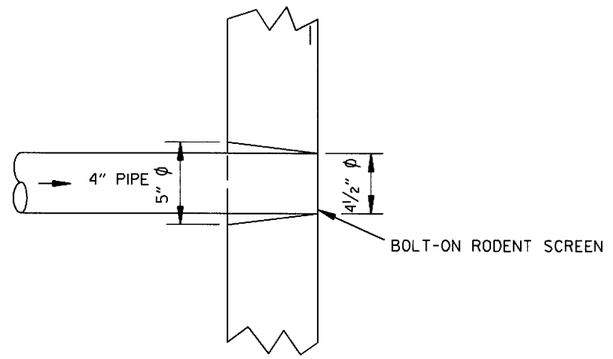
				JOB NO.		061190	11	190

(2) SPECIAL DETAILS

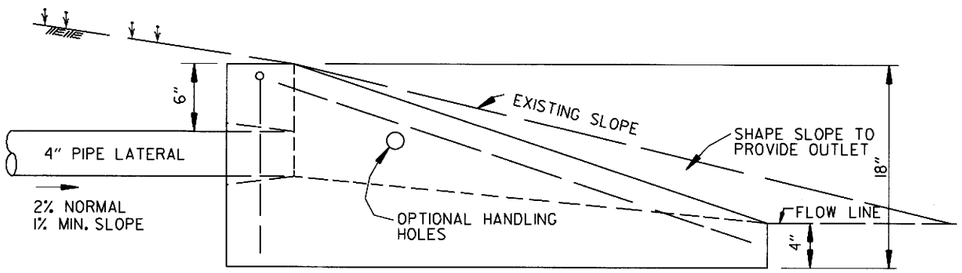


NOTE:
PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE. UNDERDRAIN OUTLET PROTECTORS SHALL BE INSTALLED ON NEW LATERALS. (REFER TO STD. DWG. PU-1.)

PLAN DETAIL OF PIPE UNDERDRAIN LATERALS

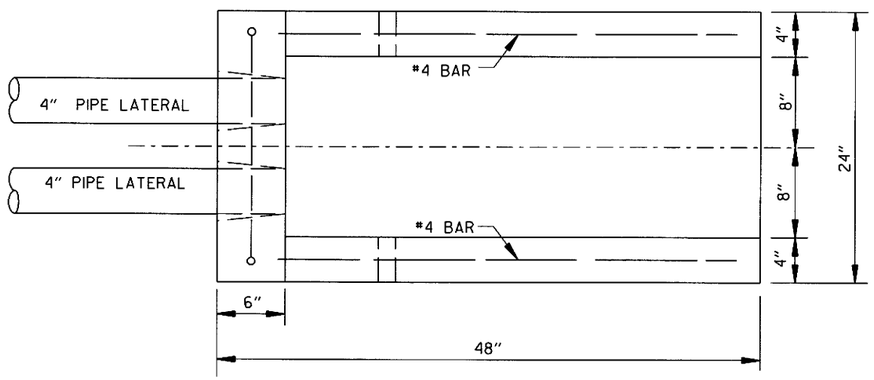


DETAIL OF HOLE FOR 4" PIPE

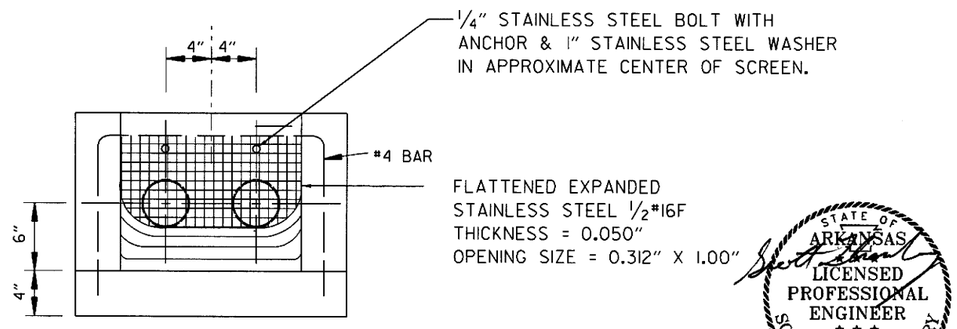


UNDERDRAIN OUTLET PROTECTORS

SIDE VIEW



PLAN VIEW



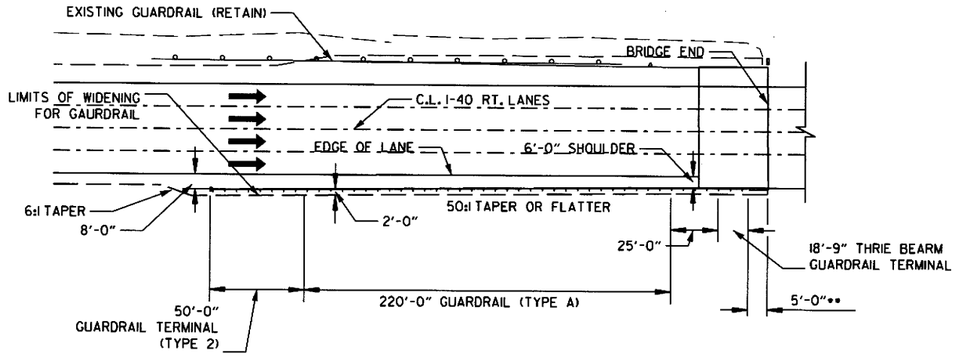
FRONT VIEW

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
8-29-2018

SPECIAL DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	12	190

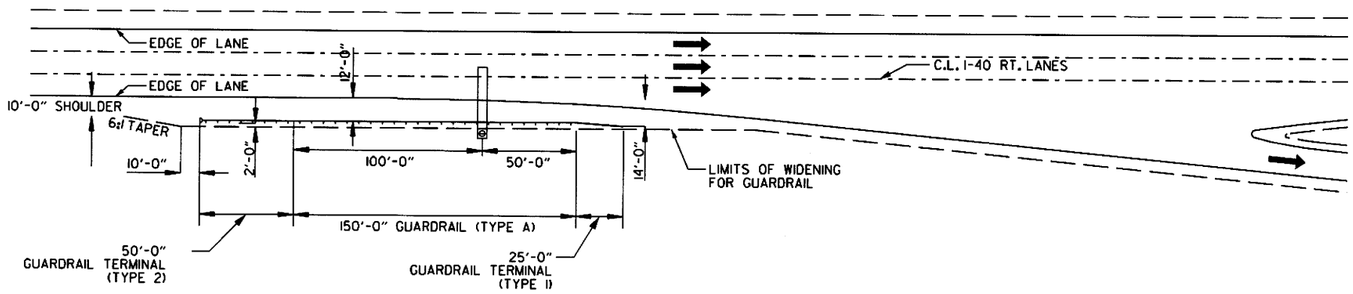
(2) SPECIAL DETAILS



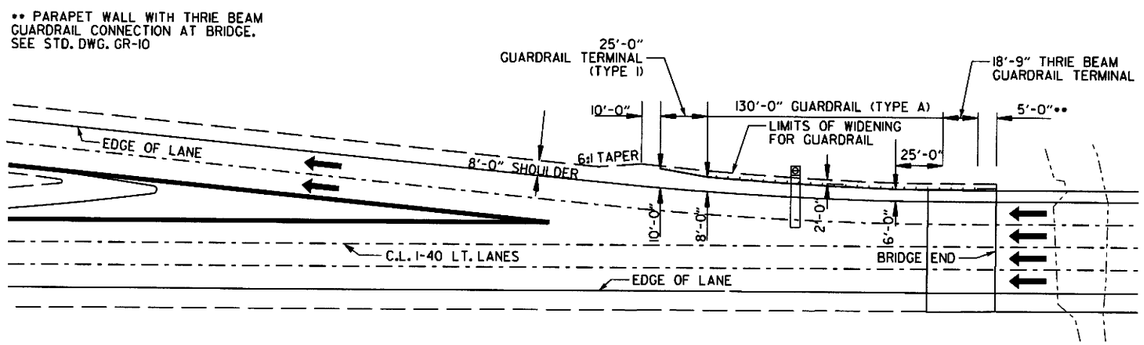
•• PARAPET WALL WITH THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE. SEE STD. DWG. GR-10.

GUARDRAIL DETAIL FOR I-40 RT. LANES AT NEWTON CREEK

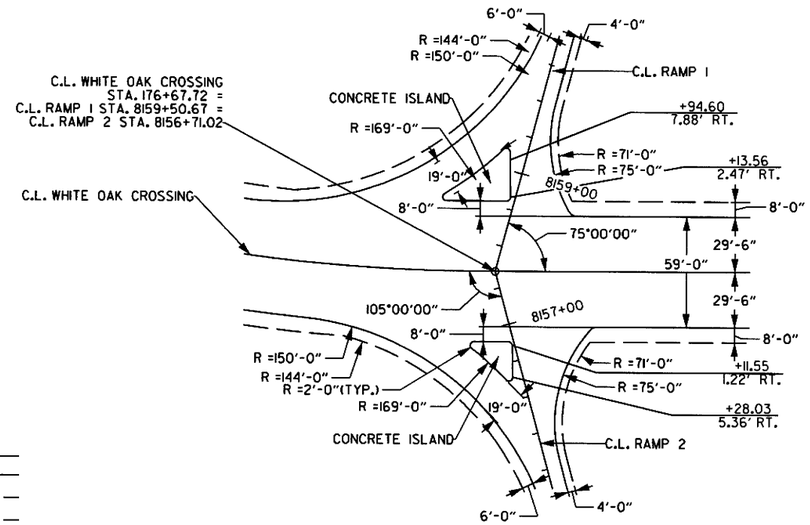
NOTE: REFER TO STD. DWG. GR-8, GR-9, GR-10, GR-11 & GR-12 FOR ADDITIONAL INFORMATION.



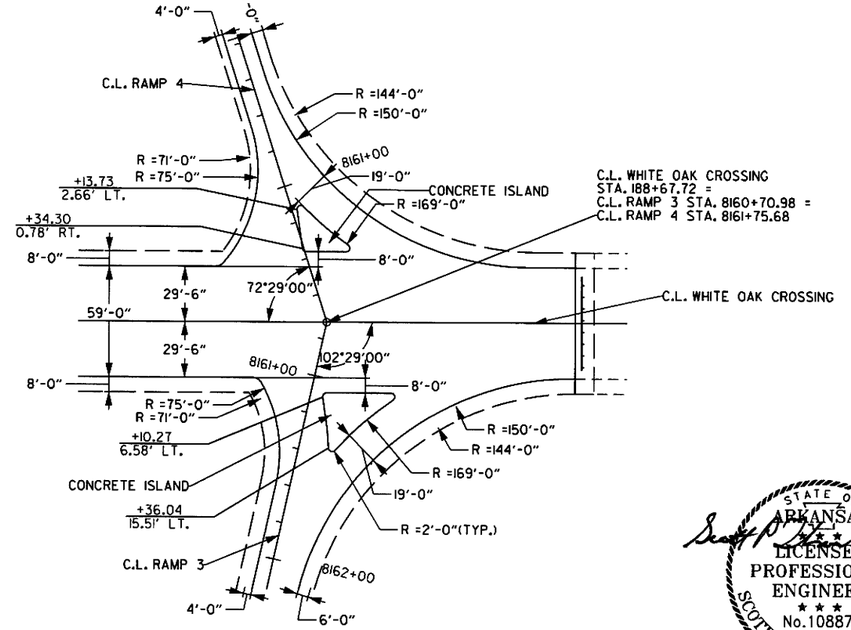
GUARDRAIL DETAIL FOR CANTILEVER SIGN STRUCTURE - RAMP 1



GUARDRAIL DETAIL FOR CANTILEVER SIGN STRUCTURE - RAMP 3



INTERSECTION DETAIL WHITE OAK CROSSING, RAMP 1 & RAMP 2



INTERSECTION DETAIL WHITE OAK CROSSING, RAMP 3 & RAMP 4

STATE OF ARKANSAS
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SCOTT P. THORNSBERRY
No.10887
7-23-2018

SPECIAL DETAILS

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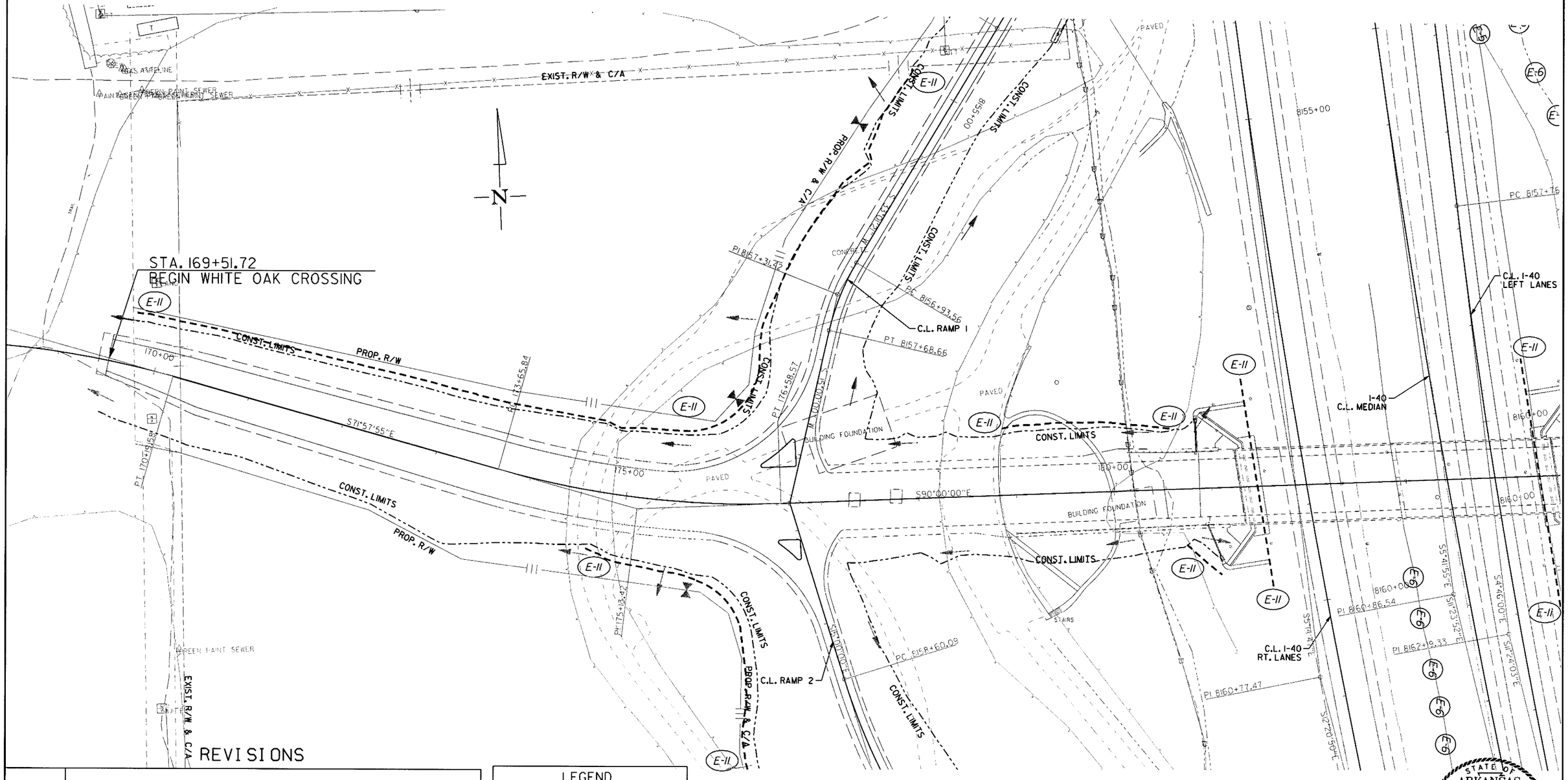
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	13	190

(2) TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-11 = SILT FENCE

E-6 = ROCK DITCH CHECKS

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

WHITE OAK CROSSING

SILT FENCE	E-11	LIN FT.
STA. 169+75 TO 176+00	LT.	625
STA. 174+50 TO 176+00	RT.	125
STA. 179+00 TO 180+75	LT.	175
STA. 180+75 TO 181+15	RT.	40

C.L. I-40 RT. LANES

SILT FENCE	E-11	LIN FT.
STA. 8157+50 TO 8159+75	RT.	225

STATE OF ARKANSAS
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★ ★ ★
No.10887
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TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

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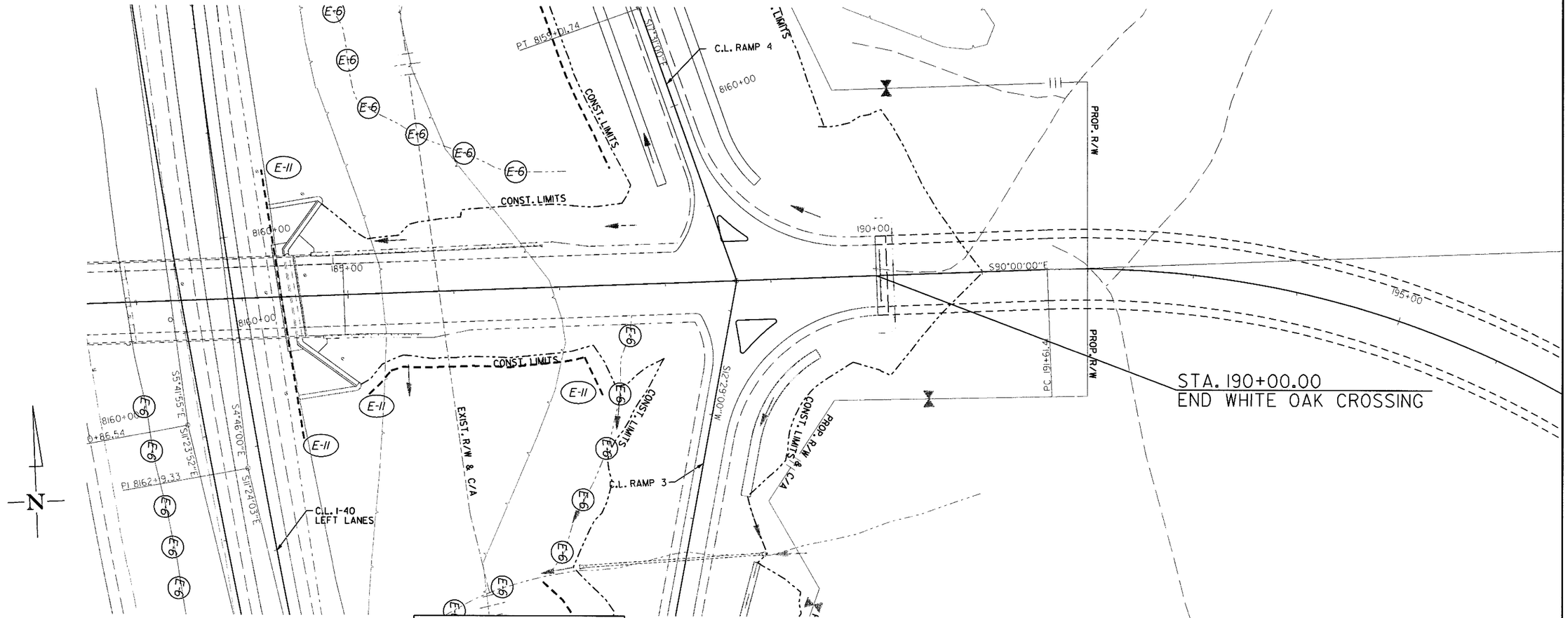
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	14	190
				(2)	TEMPORARY EROSION CONTROL DETAILS			



REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

WHITE OAK CROSSING

SILT FENCE	(E-11)		LIN FT.
STA. 185+00 TO 187+50	RT.		250

C.L. I-40 LT. LANES

SILT FENCE	(E-11)		LIN FT.
STA. 8159+50 TO 8162+00	LT.		250

I-40 C.L. MEDIAN

SAND BAG DITCH CHECKS	(E-6)		INSTALLATION
STA. 8160+50 TO 8162+50	RT. =		3
ROCK DITCH CHECKS	(E-6)		INSTALLATION
STA. 8161+00 TO 8162+00	RT. =		2

STATE OF ARKANSAS
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TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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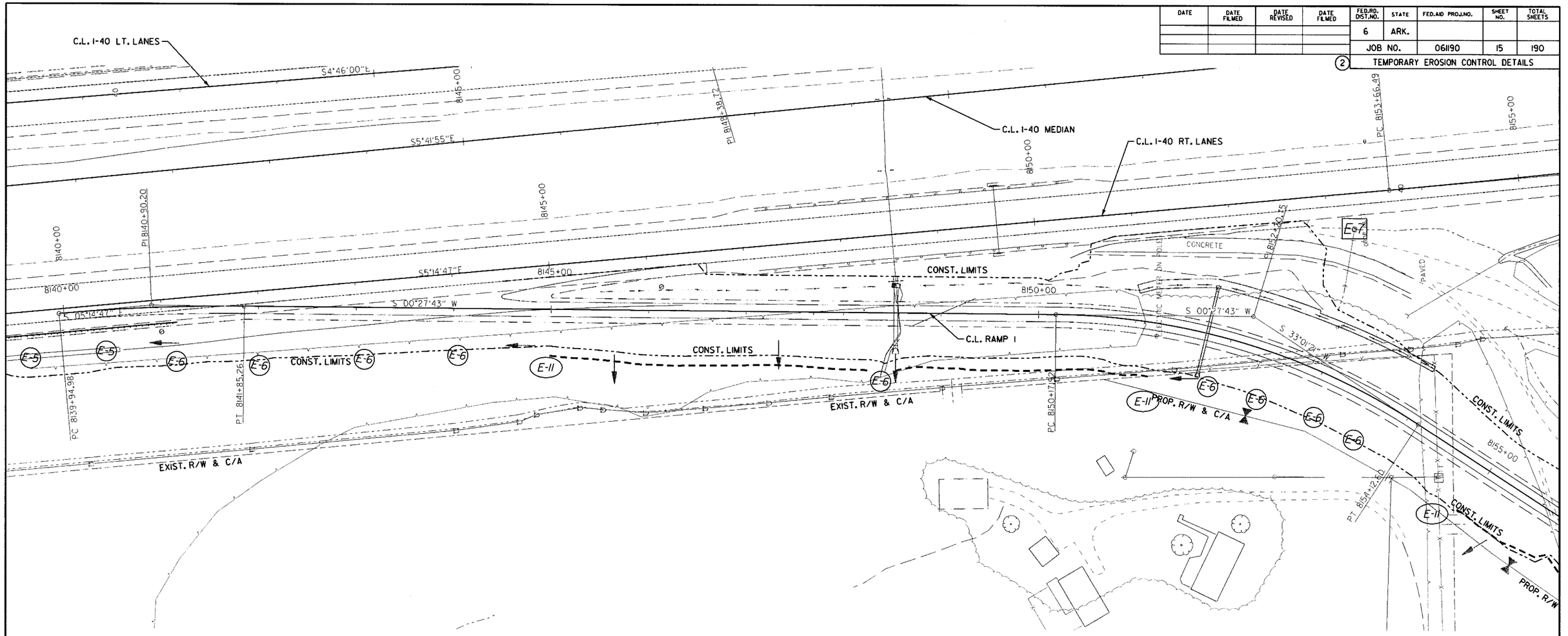
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	15	190

(2) TEMPORARY EROSION CONTROL DETAILS



LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- [E-7] = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

RAMP I

SILT FENCE (E-11)		LIN FT.
STA. 8145+00 TO 8151+20	RT.	620

DROP INLET SILT FENCE [E-7]		LIN FT.
STA. 8153+00	LT.	20

SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 8139+50 TO 8140+50	RT. =	2

ROCK DITCH CHECKS (E-6)		INSTALLATION
STA. 8141+00 TO 8144+00	RT. =	4
STA. 8148+50	RT. =	1
STA. 8152+00 TO 8154+00	RT. =	4

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
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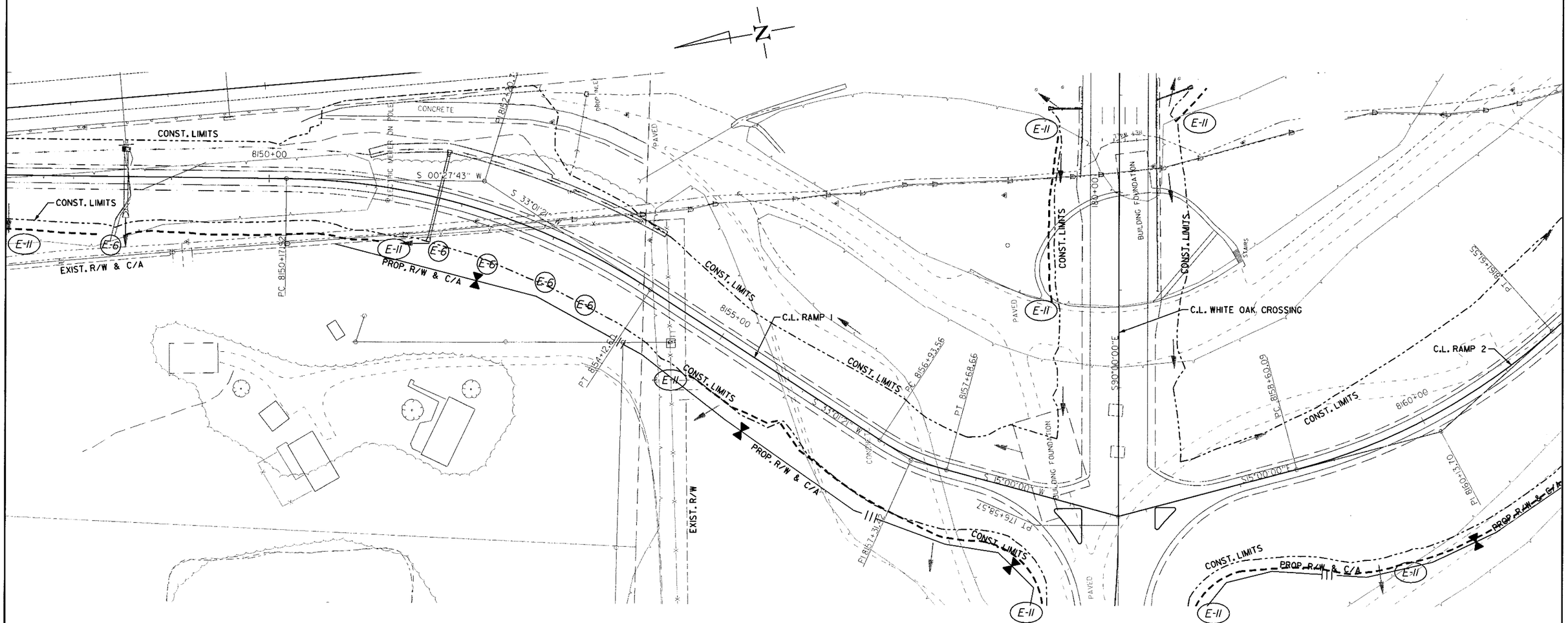
No.10887
SCOTT P. THORNSBERRY
7-23-2018

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	16	190

(2) TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-11 = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

RAMP 1

SILT FENCE	E-11	LIN FT.
STA. 8155+00 TO 8159+00	RT.	400

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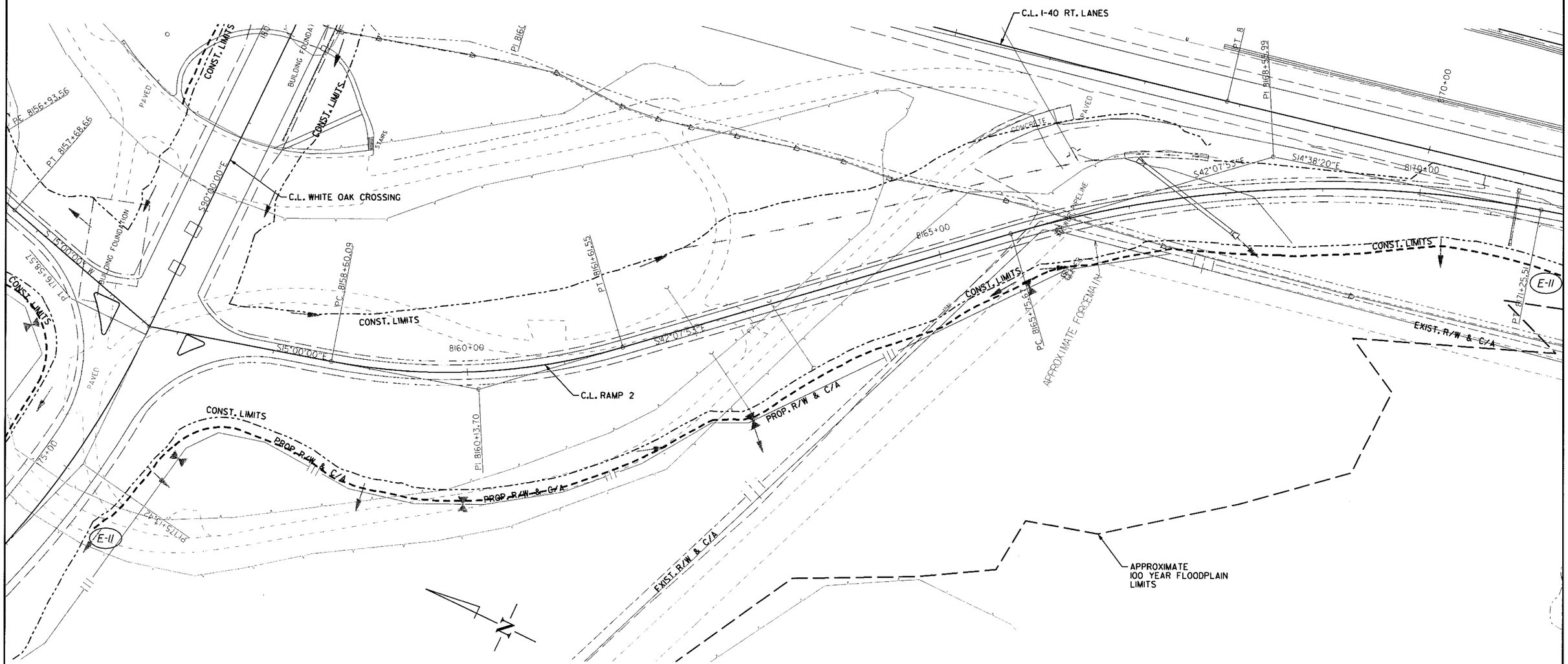
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	17	190
				(2)	TEMPORARY EROSION CONTROL DETAILS			



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-II = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

RAMP 2

SILT FENCE	E-II	LIN FT.
STA. 8157+00 TO 8170+00	RT.	1300

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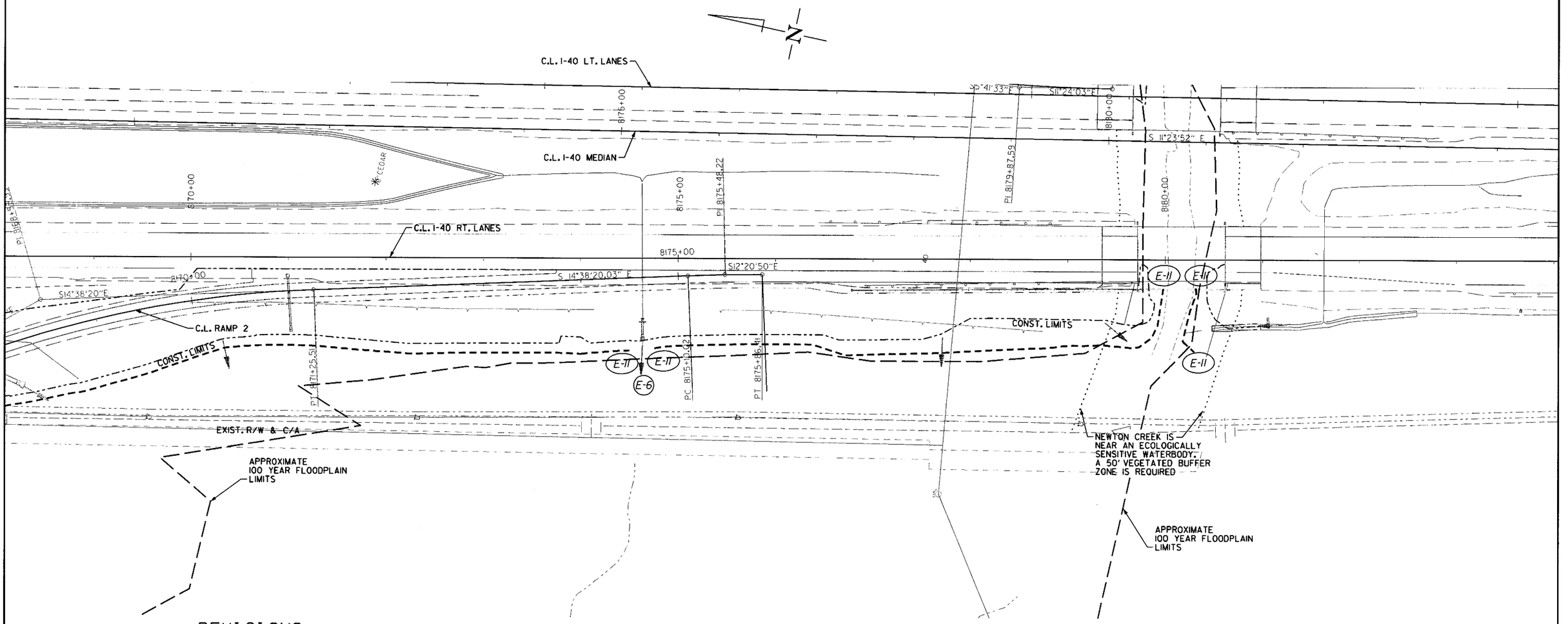
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	18	190

(2) TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-11 = SILT FENCE

E-6 = ROCK DITCH CHECKS

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

RAMP 2

SILT FENCE	E-11	LIN FT.
STA. 8170+00 TO 8175+86	RT.	586

ROCK DITCH CHECKS	E-6	INSTALLATION
STA. 8174+50	RT. =	1

I-40 RT. LANES

SILT FENCE	E-11	LIN FT.
STA. 8175+86 TO 8180+00	RT.	414
STA. 8180+25 TO 8180+50	RT.	75

STATE OF ARKANSAS
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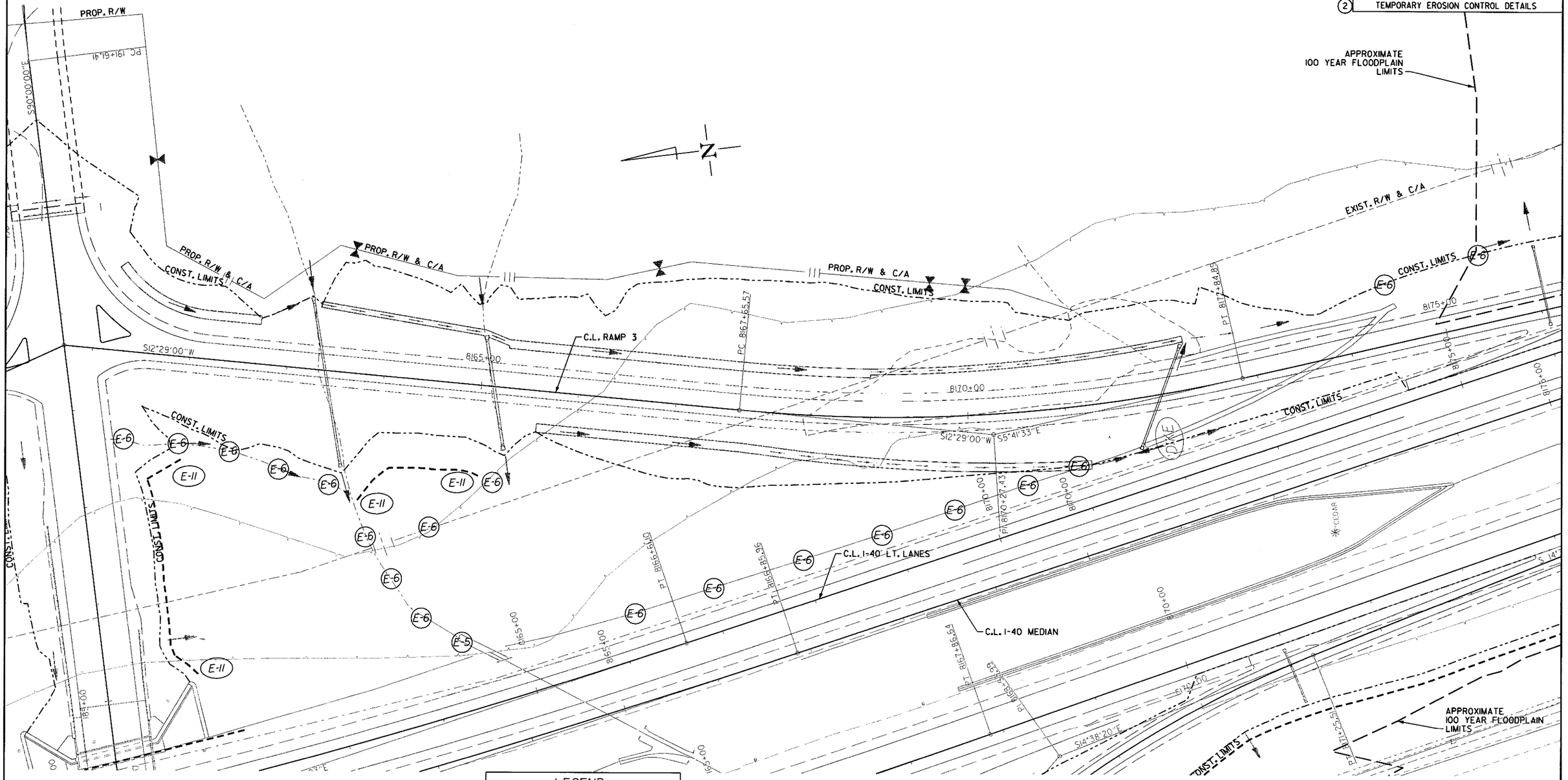
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	19	190
				(2)	TEMPORARY EROSION CONTROL DETAILS			



REVISIONS

DATE OF REVISION	REVISION

LEGEND

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

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

RAMP 3

SILT FENCE (E-11)	LIN FT.
STA. 8163+75 TO 8165+25 RT.	150

RAMP 3

ROCK DITCH CHECKS (E-6)	INSTALLATION
STA. 8162+00 TO 8164+50 RT. =	8

I-40 LT. LANES

SAND BAG DITCH CHECKS (E-5)	INSTALLATION
STA. 8164+50 LT. =	1

ROCK DITCH CHECKS (E-6)	INSTALLATION
STA. 8164+00 TO 8171+00 LT. =	9

STATE OF ARKANSAS
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TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	20	190
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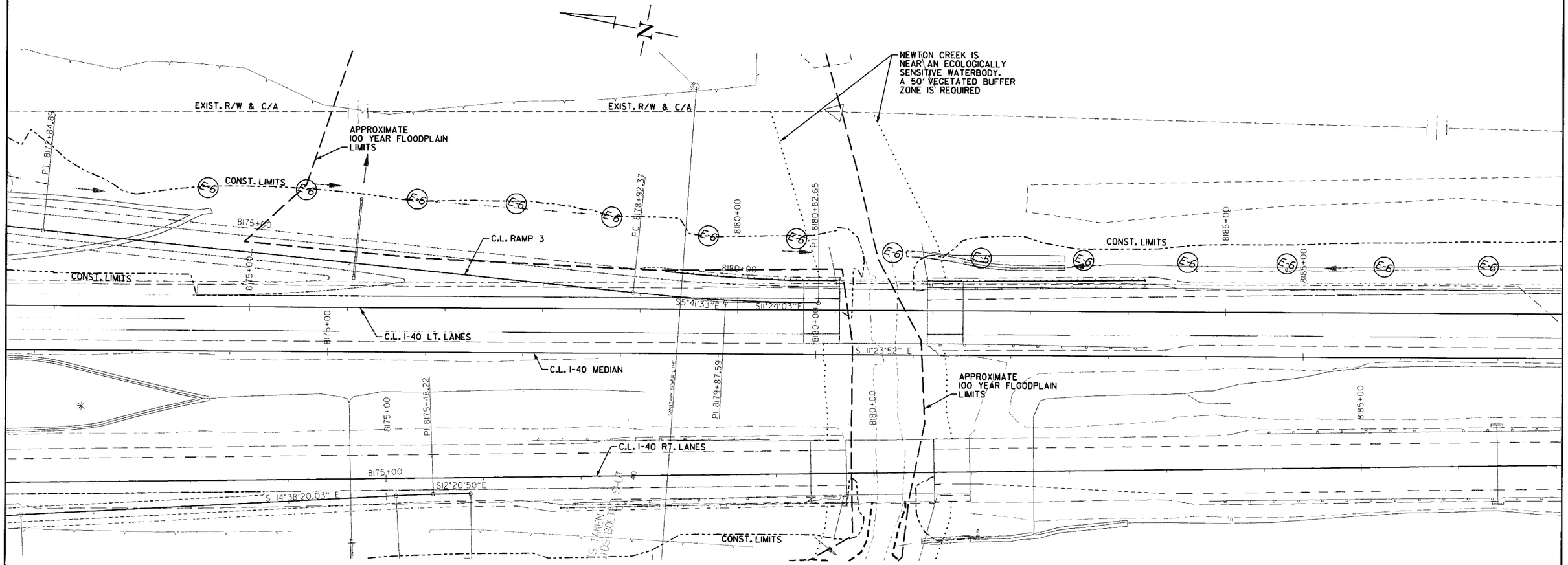

REVISIONS

DATE OF REVISION	REVISION

LEGEND

(E-5) = SAND BAG DITCH CHECKS

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

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RAMP 3

SAND BAG DITCH CHECKS	(E-5)	INSTALLATION
STA. 8182+50	LT. =	1

I-40 LT. LANES

ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 8174+50 TO 8187+50	LT. =	13

STATE OF ARKANSAS
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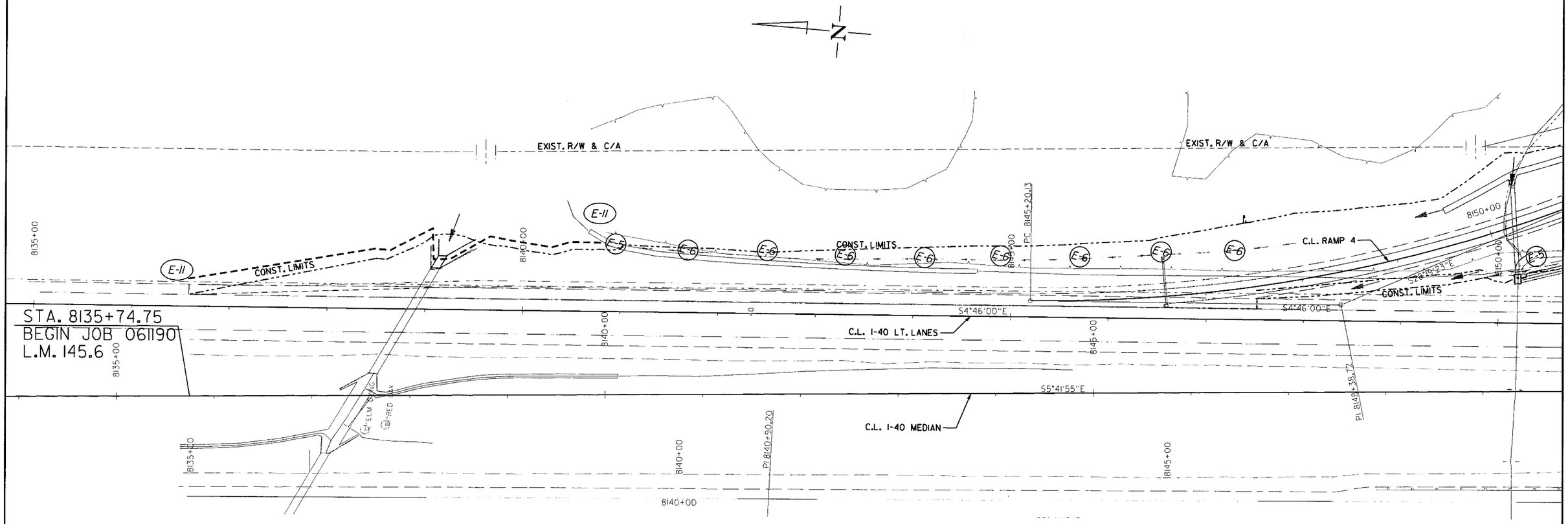
7-25-2018

TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	21	190
				(2)	TEMPORARY EROSION CONTROL DETAILS			



STA. 8135+74.75
BEGIN JOB 061190
L.M. 145.6

REVISIONS

DATE OF REVISION	REVISION

LEGEND

E-5 = SAND BAG DITCH CHECKS

E-6 = ROCK DITCH CHECKS

E-11 = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

C.L. I-40 LT. LANE
SILT FENCE (E-11) LIN FT.
STA. 8136+50 TO 8141+00 RT. 450

C.L. I-40 LT. LANES
SAND BAG DITCH CHECKS (E-5) INSTALLATION
STA. 8141+00 LT. = 1

C.L. I-40 LT. LANES
ROCK DITCH CHECKS (E-6) INSTALLATION
STA. 8141+50 TO 8147+50 LT. = 8

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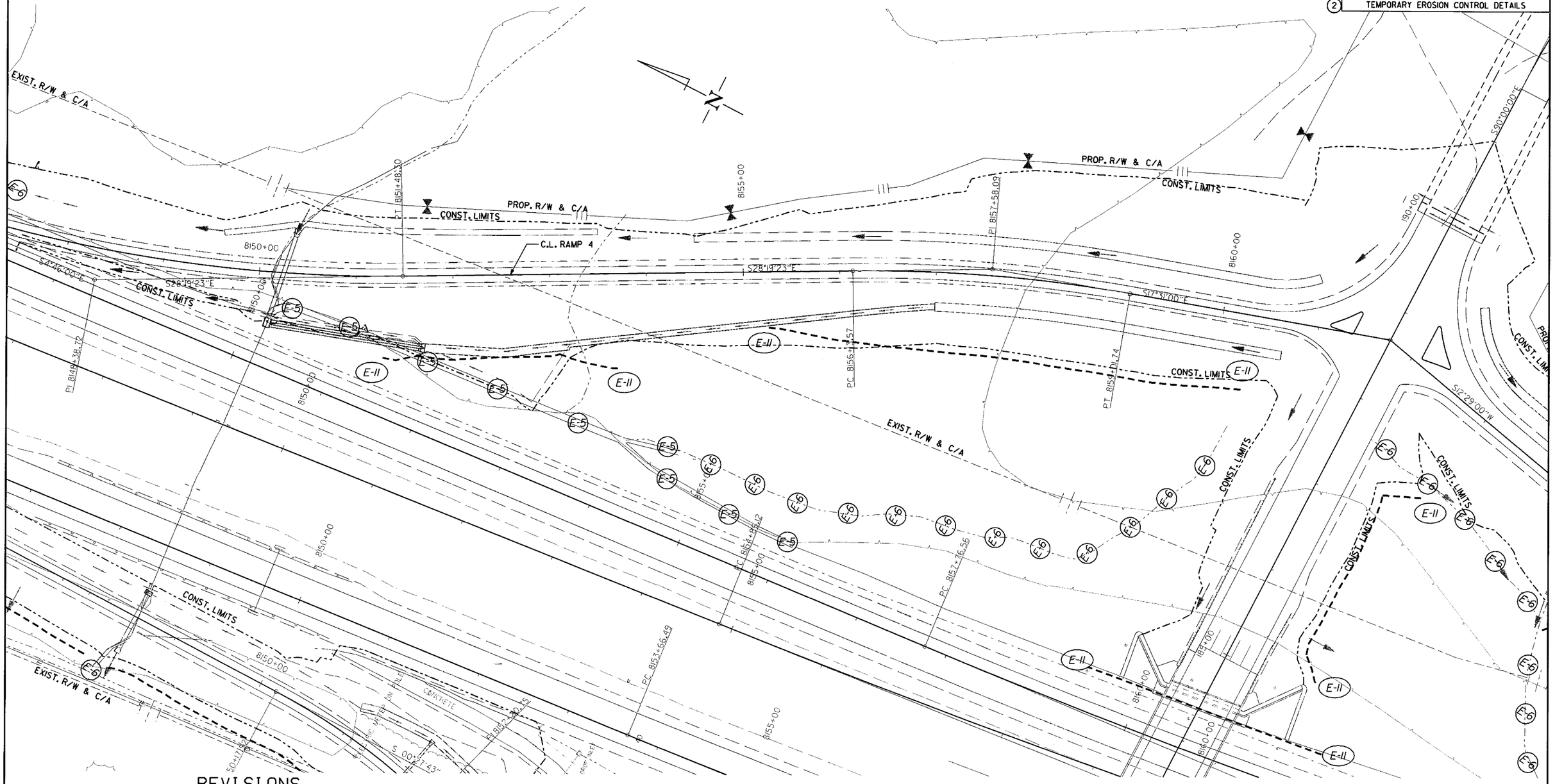
TEMPORARY EROSION CONTROL DETAILS
CLEARING AND GRUBBING

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	22	190
				(2)	TEMPORARY EROSION CONTROL DETAILS			



REVISIONS

DATE OF REVISION	REVISION

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

LEGEND

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

C.L. RAMP 4

SILT FENCE (E-11)		LIN FT.
STA. 8151+50 TO 8153+75	RT.	225
STA. 8155+25 TO 8160+25	RT.	500

I-40 LT. LANES

SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 8150+50 TO 8156+00	LT. =	9

ROCK DITCH CHECKS (E-6)		INSTALLATION
STA. 8155+00 TO 8160+00	LT. =	12

STATE OF ARKANSAS
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TEMPORARY EROSION CONTROL DETAILS CLEARING AND GRUBBING

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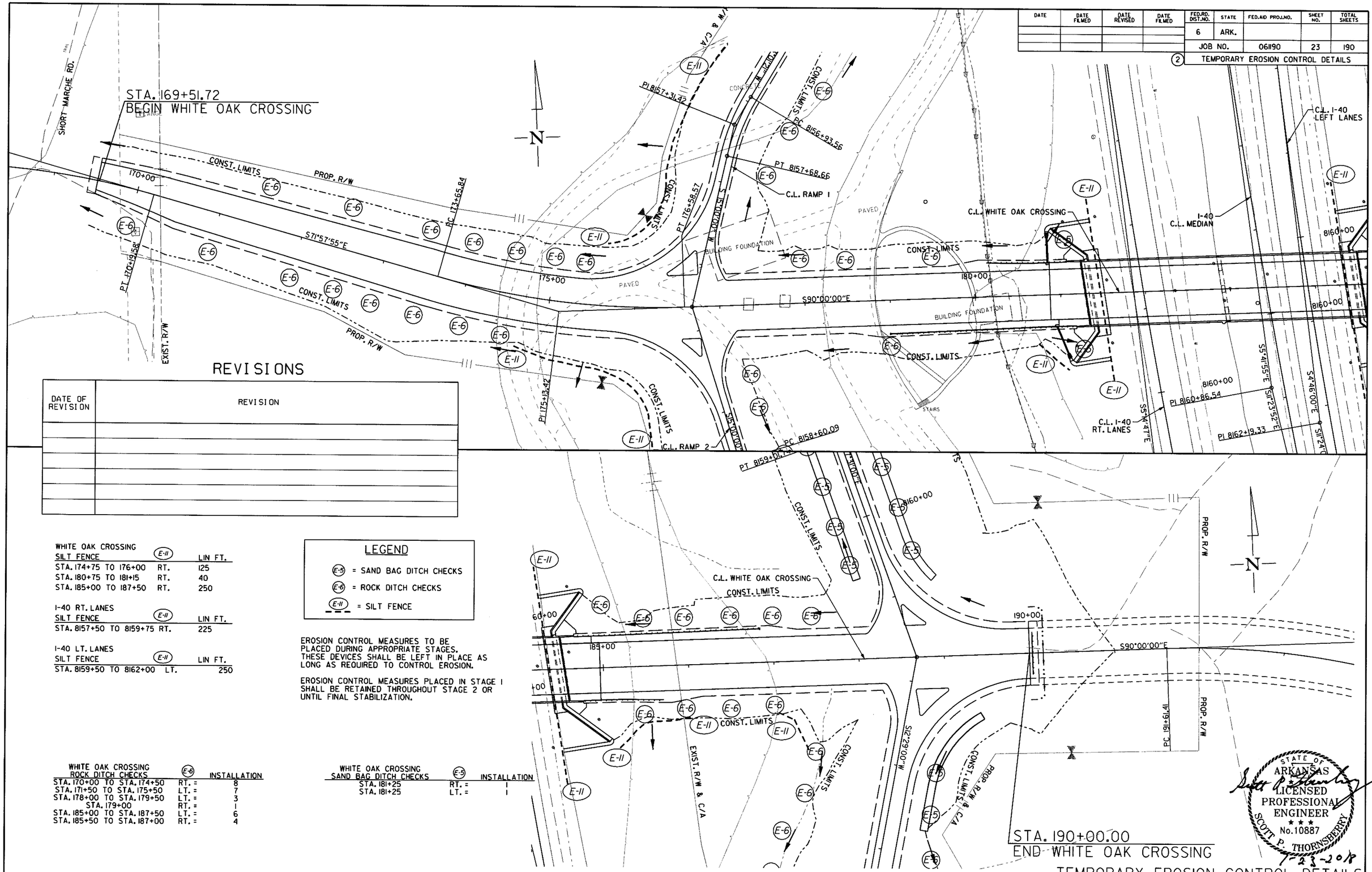
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	23	190

(2) TEMPORARY EROSION CONTROL DETAILS



REVISIONS

DATE OF REVISION	REVISION

WHITE OAK CROSSING
SILT FENCE (E-11)

		LIN FT.
STA. 174+75 TO 176+00	RT.	125
STA. 180+75 TO 181+15	RT.	40
STA. 185+00 TO 187+50	RT.	250

I-40 RT. LANES
SILT FENCE (E-11)

		LIN FT.
STA. 8157+50 TO 8159+75	RT.	225

I-40 LT. LANES
SILT FENCE (E-11)

		LIN FT.
STA. 8159+50 TO 8162+00	LT.	250

LEGEND

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

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

WHITE OAK CROSSING
ROCK DITCH CHECKS (E-6)

		INSTALLATION
STA. 170+00 TO STA. 174+50	RT. =	8
STA. 171+50 TO STA. 175+50	LT. =	7
STA. 178+00 TO STA. 179+50	LT. =	3
STA. 179+00	RT. =	1
STA. 185+00 TO STA. 187+50	LT. =	6
STA. 185+50 TO STA. 187+00	RT. =	4

WHITE OAK CROSSING
SAND BAG DITCH CHECKS (E-5)

		INSTALLATION
STA. 181+25	RT. =	1
STA. 181+25	LT. =	1

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10887
SCOTT P. THORNSBERRY
7-23-2018

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	24	190

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

REVISIONS

DATE OF REVISION	REVISION

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- E-7 = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

RAMP I ROCK DITCH CHECKS	(E-6)	INSTALLATION
STA. 8152+00 TO STA. 8154+00	RT. =	5
STA. 8154+00 TO STA. 8157+50	LT. =	7
RAMP I SAND DITCH CHECKS	**(E-5)**	**INSTALLATION**
STA. 8150+00 TO STA. 8153+00	LT. =	3

SILT FENCE	(E-11)	LIN FT.
STA. 8145+00 TO 8151+20	RT.	620
STA. 8155+00 TO 8159+00	RT.	400
DROP INLET SILT FENCE	**E-7**	**LIN FT.**
STA. 8148+50	LT.	20

TEMPORARY EROSION CONTROL DETAILS
STAGE I

Leonard Speed
WORKSPACE AMID
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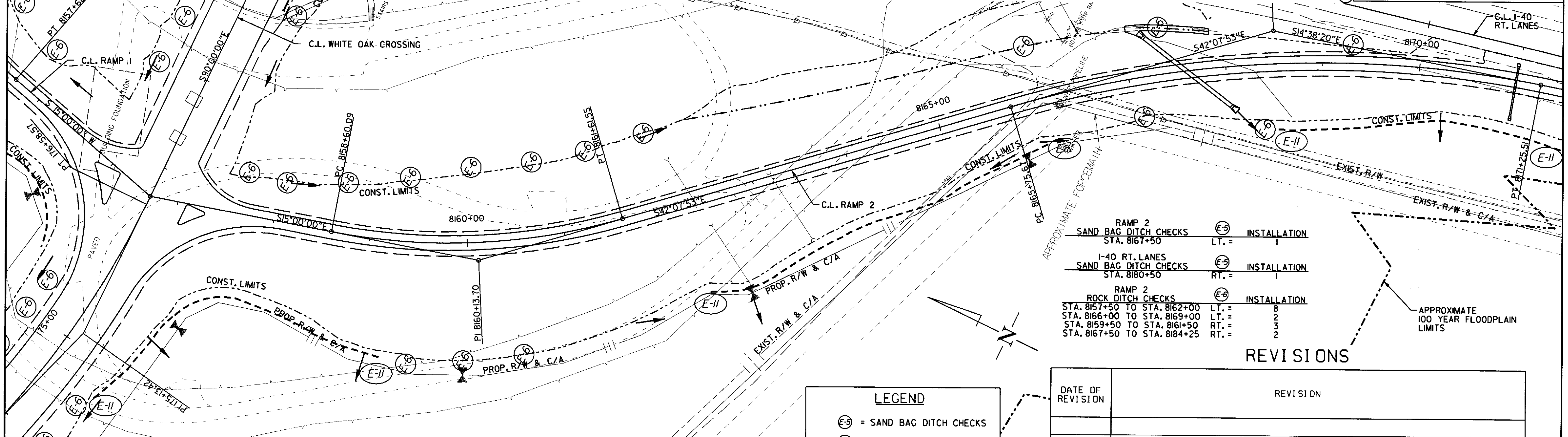
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	25	190

(2) TEMPORARY EROSION CONTROL DETAILS



RAMP 2 SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 8167+50	LT. =	1

I-40 RT. LANES SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 8180+50	RT. =	1

RAMP 2 ROCK DITCH CHECKS (E-6)		INSTALLATION
STA. 8157+50 TO STA. 8162+00	LT. =	8
STA. 8166+00 TO STA. 8169+00	LT. =	2
STA. 8159+50 TO STA. 8161+50	RT. =	3
STA. 8167+50 TO STA. 8184+25	RT. =	2

REVISIONS

DATE OF REVISION	REVISION

LEGEND

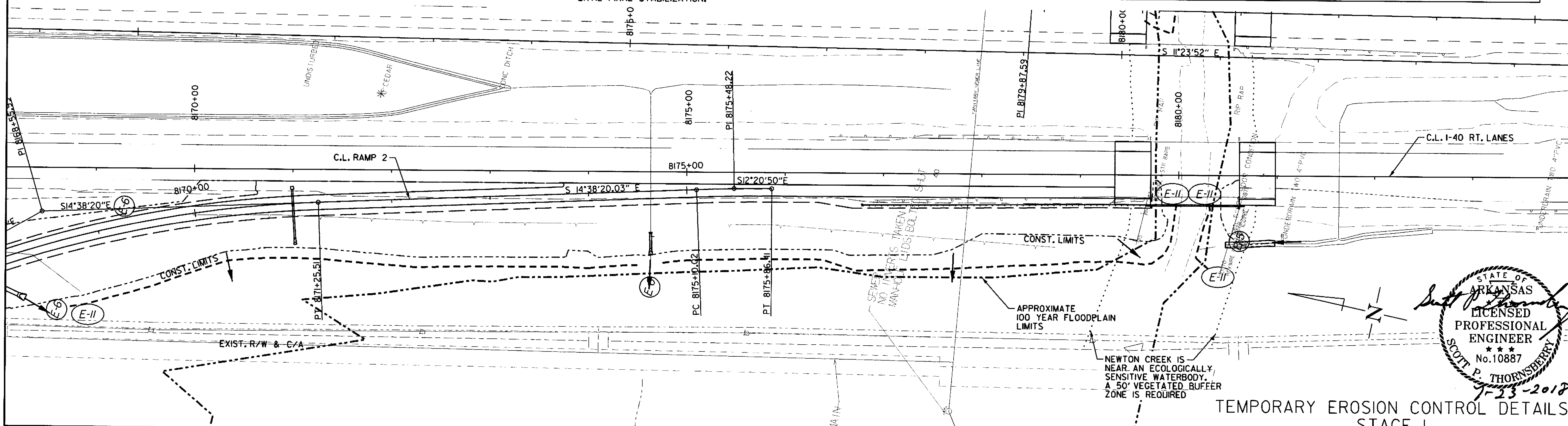
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- [E-7] = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

RAMP 2 SILT FENCE (E-11)	LIN FT.
STA. 8157+00 TO 8159+50 RT.	250
STA. 8162+50 TO 8166+00 RT.	350
STA. 8168+50 TO 8175+86 RT.	736

I-40 RT SILT FENCE (E-11)	LIN FT.
STA. 8175+86 TO 8180+00 RT.	414
STA. 8180+25 TO 8180+50 RT.	75

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.



STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.10887 SCOTT P. THORNSBERRY
7-23-2018

TEMPORARY EROSION CONTROL DETAILS
STAGE I

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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	26	190

(2) TEMPORARY EROSION CONTROL DETAILS

RAMP 3
SAND BAG DITCH CHECKS (E-5)

		INSTALLATION
STA. 8162+00 TO STA. 8162+50	LT.	2
STA. 8163+50 TO STA. 8164+50	LT.	3
STA. 8166+00 TO STA. 8172+00	LT.	13
STA. 8166+00 TO STA. 8171+00	RT.	11

RAMP 3
ROCK DITCH CHECKS (E-6)

		INSTALLATION
STA. 8163+00	LT. =	1
STA. 8165+50	RT. =	1
STA. 8172+50 TO STA. 8175+00	RT. =	4
STA. 8172+50 TO STA. 8175+50	LT. =	7

I-40 LT. LANES
SAND BAG DITCH CHECKS (E-5)

		INSTALLATION
STA. 8182+50	LT.	1

RAMP 3
DROP INLET SILT FENCE (E-7)

		LIN FT.
STA. 8176+06	RT.	20

LEGEND
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- [E-7] = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

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

EROSION CONTROL MEASURES PLACED IN STAGE 1 SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

REVISIONS

DATE OF REVISION	REVISION

S90°00'W
S12°29'00"W
S5°41'33"E
S11°24'03"E
S 11°23'52" E
S12°20'50"E
S 14°
PC 8167+65.57
PT 8172+84.89
PC 8178+92.37
PT 8180+82.65
PI 8179+87.53
PI 8175+48.22
PI 8170+27.43
8165+85.96
8165+00
8170+00
8175+00
8180+00
8185+00
8190+00
C.L. RAMP 3
C.L. WHITE OAK CROSSING
C.L. I-40 LT. LANES
C.L. I-40 RT. LANES
I-40 C.L. MEDIAN
PROP. R/W & C/A
CONST. LIMITS
EXIST. R/W & C/A
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
NEWTON CREEK IS NEAR AN ECOLOGICALLY SENSITIVE WATERBODY. A 50' VEGETATED BUFFER ZONE IS REQUIRED
DIKE
E-6
E-11
E-5
E-7
N
Z

STA. 8189+99.33
END JOB 061190
L.M. 146.6

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No. 10887
7-23-2018

TEMPORARY EROSION CONTROL DETAILS
STAGE 1

Leonard Speed
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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	27	190

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No. 10887
SCOTT P. THORNSBERRY
7-23-18

EXIST. R/W & C/A

300' TAPER

700' ACCELERATION LANE

STA. 8136+58.84

STA. 8136+58.84

STA. 8146+58.84

PC 8145+20.13

CONST. LIMITS

CONST. LIMITS

CONST. LIMITS

8135+00

8140+00

8145+00

8150+00

C.L. RAMP 4

S28°19'23"E

S4°46'00"E

S4°46'00"E

C.L. I-40 LT. LANES

C.L. I-40 MEDIAN

S5°41'55"E

PI 8149+38.72

STA. 8135+74.75
BEGIN JOB 061190
L.M. 145.6

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

EROSION CONTROL MEASURES PLACED IN STAGE I SHALL BE RETAINED THROUGHOUT STAGE 2 OR UNTIL FINAL STABILIZATION.

LEGEND

- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- [E-7] = DROP INLET SILT FENCE
- (E-11) = SILT FENCE

RAMP 4

DROP INLET SILT FENCE [E-7]		LIN FT.
STA. 8146+59	RT.	20
STA. 8150+01	RT.	20

RAMP 4

SAND BAG DITCH CHECKS (E-5)		INSTALLATION
STA. 8150+50 TO STA. 8153+50	LT.	7
STA. 8150+50	RT.	1
STA. 8154+50 TO STA. 8159+50	RT.	13
STA. 8154+50 TO STA. 8159+50	LT.	13

RAMP 4

ROCK DITCH CHECKS (E-6)		INSTALLATION
STA. 8138+00 TO STA. 8139+00	LT. =	2
STA. 8154+00	LT. =	1

REVISIONS

DATE OF REVISION	REVISION

EXIST. R/W & C/A

PROP. R/W & C/A

CONST. LIMITS

PT 8151+48.30

8155+00

8157+58.09

8160+00

C.L. WHITE OAK CROSSING

S17°31'00"E

S90°00'00"E

S12°29'00"W

PC 8156+13.57

PT 8159+01.74

EXIST. R/W & C/A

C.L. I-40 MEDIAN

8155+86.42

CONST. LIMITS

CONST. LIMITS

CONST. LIMITS

TEMPORARY EROSION CONTROL DETAILS
STAGE I

Leonard Speed
WSP USA Inc. AUD
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
10-18-18				6	ARK.			
				JOB NO.		061190	28	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

CONSTRUCTION SEQUENCE

STAGE 1:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS. CONSTRUCT TRENCH AND SHOULDER PREP OF RT. INSIDE LANES.

INSTALL PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT DRAINAGE, RAMPS, WHITE OAK CROSSING, AND I-40 NOTCH & WIDENING AS SHOWN IN THE STAGE 1 MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT NEWTON CREEK BRIDGES WIDENING ON OUTSIDE LANES.

STAGE 2:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

INSTALL PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS. PLACE TRAFFIC DRUMS AT LOCATIONS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

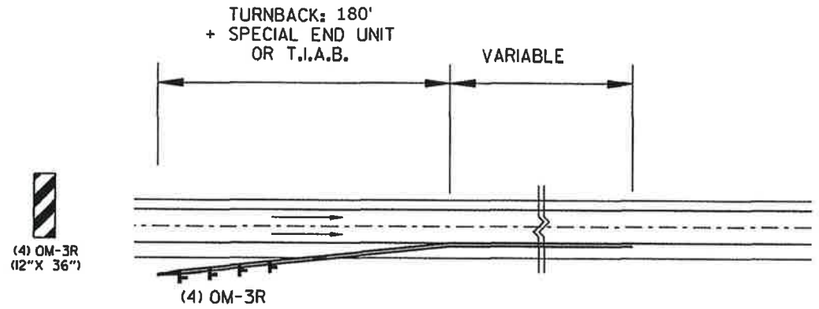
RECONSTRUCT OUTSIDE LANES APPROACH SLABS AND GUTTERS, BRIDGE DECK REPAIR, AND POLYMER OVERLAY ON NEWTON CREEK BRIDGES. CONSTRUCT MILL AND INLAY ON I-40 AUXILIARY LANES.

STAGE 3:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

INSTALL PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS. PLACE TRAFFIC DRUMS AT LOCATIONS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

RECONSTRUCT INSIDE LANES APPROACH SLABS AND GUTTERS, BRIDGE DECK REPAIR, AND POLYMER OVERLAY ON NEWTON CREEK BRIDGES.



REFER ALSO TO STANDARD DRAWING TC-5 FOR DETAILS OF PLACEMENT OF PCCB TURNBACKS.

NOTE: OM-3R SIGNS SHALL BE EQUALLY SPACED ALONG P.C.C.B. TURNBACK.

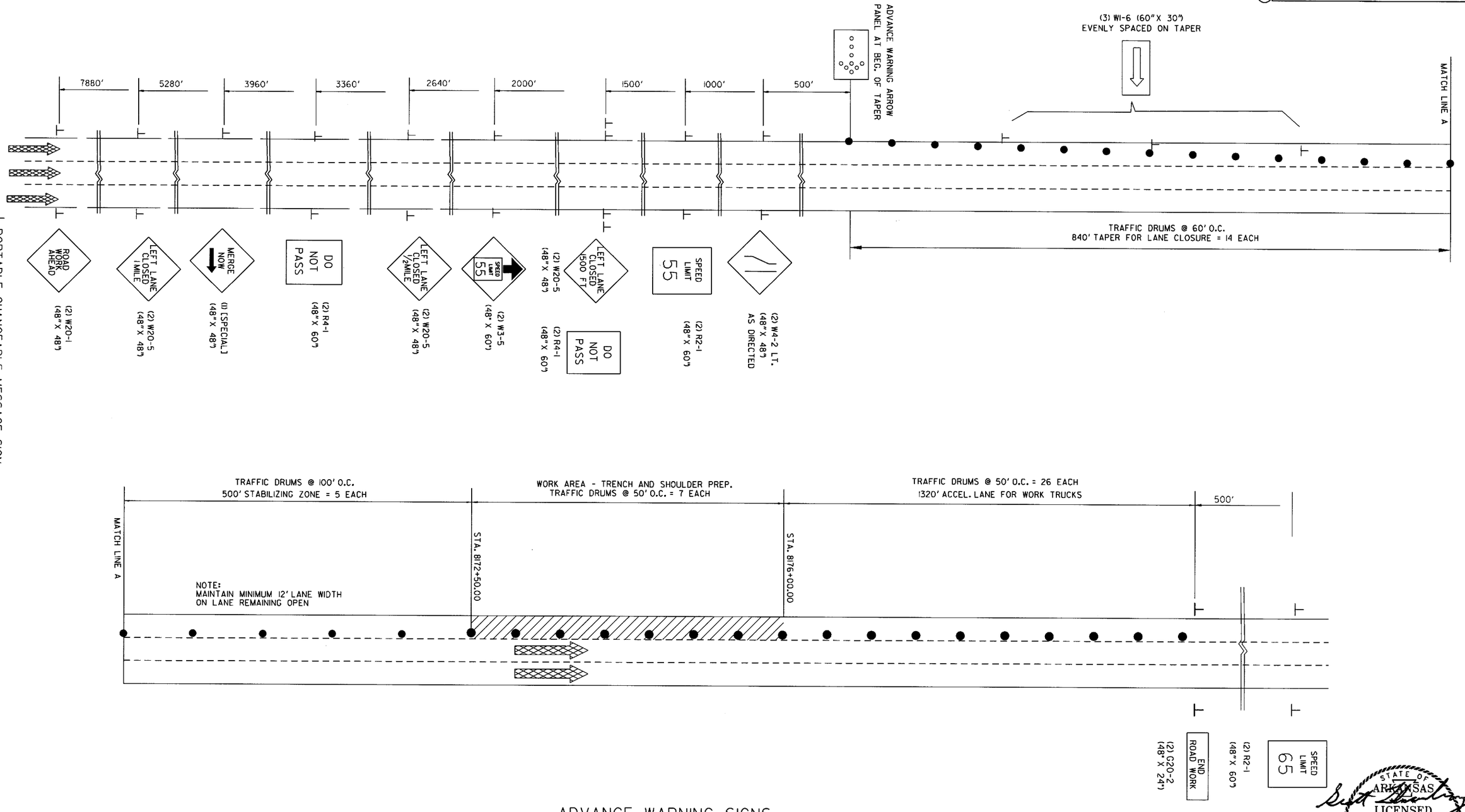
DETAIL OF OBJECT MARKERS
AT PRECAST CONCRETE BARRIER TURNBACKS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10887
SCOTT P. THORNSBERRY
10-18-18

MAINTENANCE OF TRAFFIC DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	29	190

(2) MAINTENANCE OF TRAFFIC DETAILS



ADVANCE WARNING SIGNS
I-40 RT. LANES - INSIDE LANE CLOSURE
STAGE IA

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
9-13-18

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

London Miller
WORK PLACE: MTD 9/13/2018 10:24:32 AM
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REVISED DATE: ##REVDATE##

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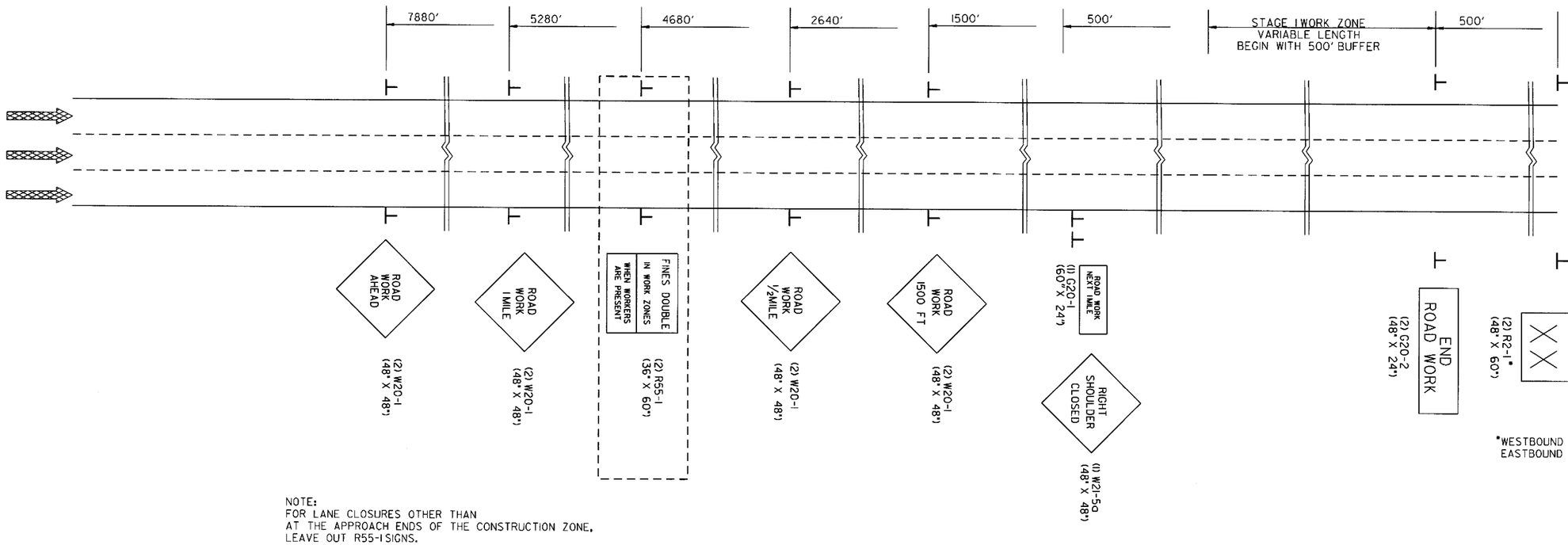
				6	ARK.			
				JOB NO.		061190	30	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

PORTABLE CHANGEABLE
MESSAGE SIGN TO BE USED
IF AND WHERE DIRECTED BY
THE ENGINEER



NOTE:
FOR LANE CLOSURES OTHER THAN
AT THE APPROACH ENDS OF THE CONSTRUCTION ZONE,
LEAVE OUT R55-1 SIGNS.

ADVANCE WARNING SIGNS FOR SHOULDER CLOSURE STAGE IB

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10887
SCOTT P. THORNSBERRY
9-13-18

MAINTENANCE OF TRAFFIC DETAILS ADVANCE SIGNS AT JOB ENDS

London Miller
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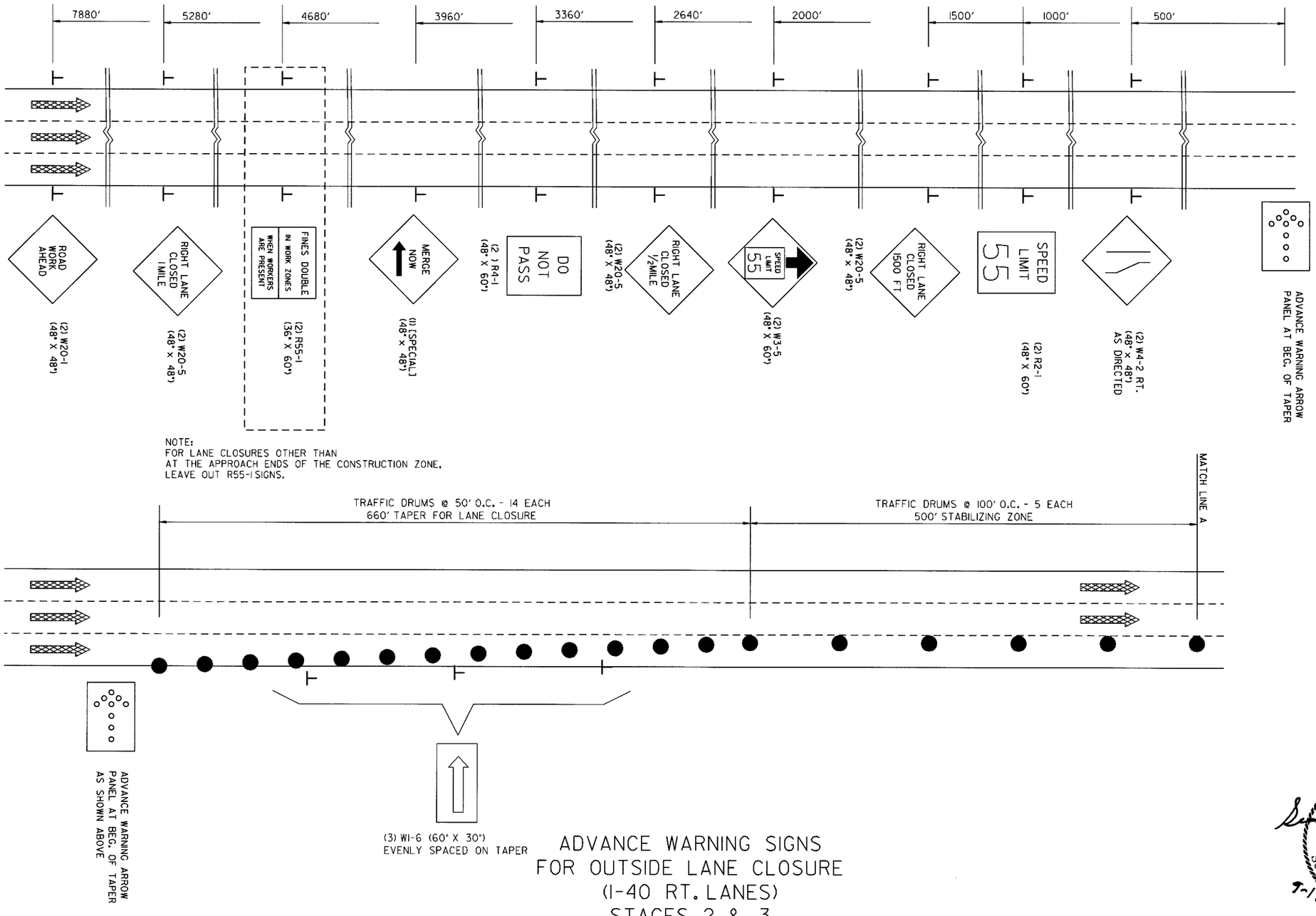
XYZ COORDINATE SYSTEM:
REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	31	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER



NOTE:
FOR LANE CLOSURES OTHER THAN AT THE APPROACH ENDS OF THE CONSTRUCTION ZONE, LEAVE OUT R55-1 SIGNS.

ADVANCE WARNING SIGNS FOR OUTSIDE LANE CLOSURE (I-40 RT. LANES) STAGES 2 & 3

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-15-08

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

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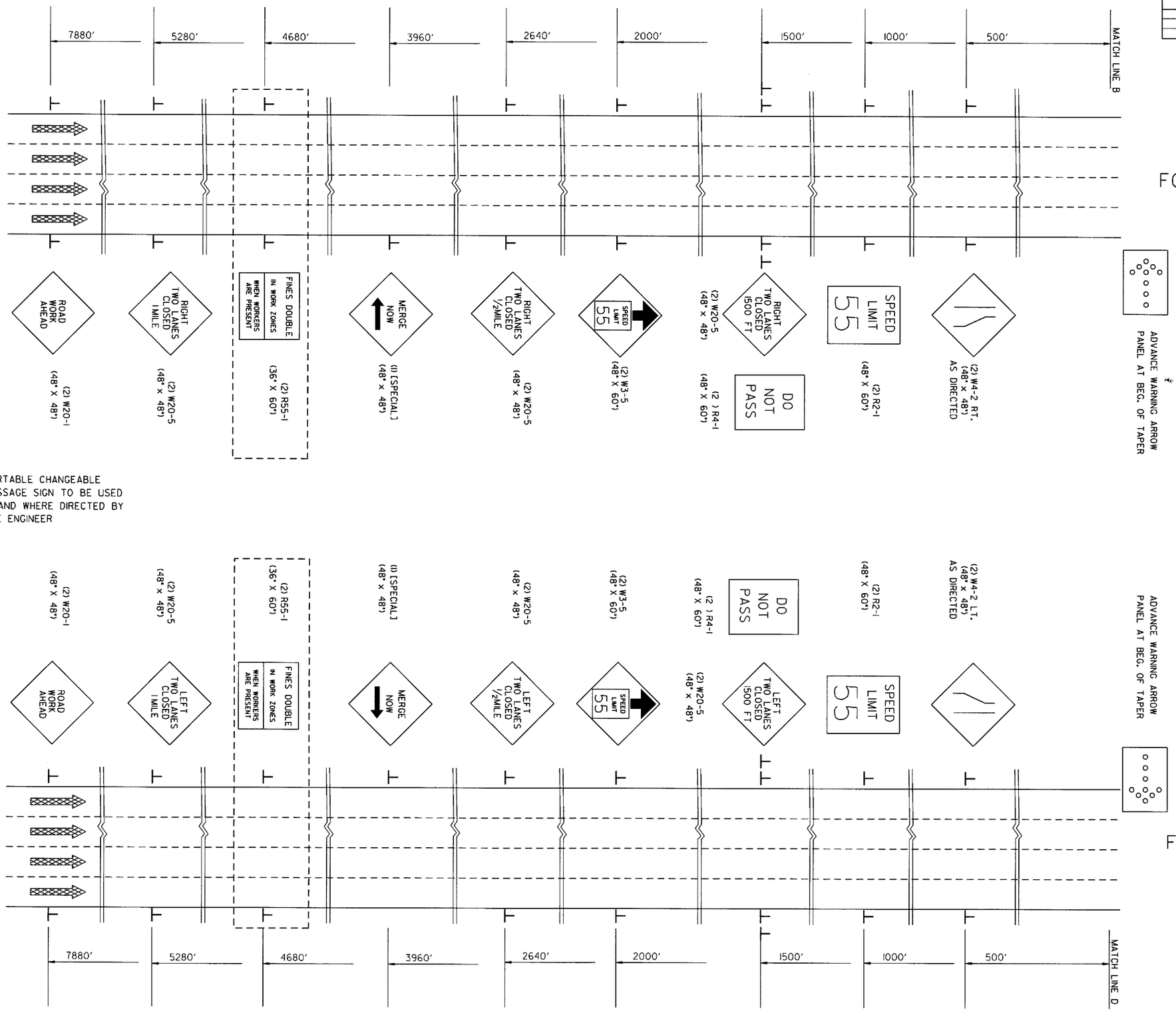
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	32	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			



ADVANCE WARNING SIGNS FOR RIGHT TWO LANES LANE CLOSURES (I-40 LT. LANES) STAGE 2

PORTABLE CHANGEABLE MESSAGE SIGN TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

NOTE:
FOR LANE CLOSURES OTHER THAN AT THE APPROACH ENDS OF THE CONSTRUCTION ZONE, LEAVE OUT R55-1 SIGNS.

ADVANCE WARNING SIGNS FOR INSIDE & MIDDLE LANE CLOSURES (I-40 LT. LANES) STAGE 3

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
9-13-18

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

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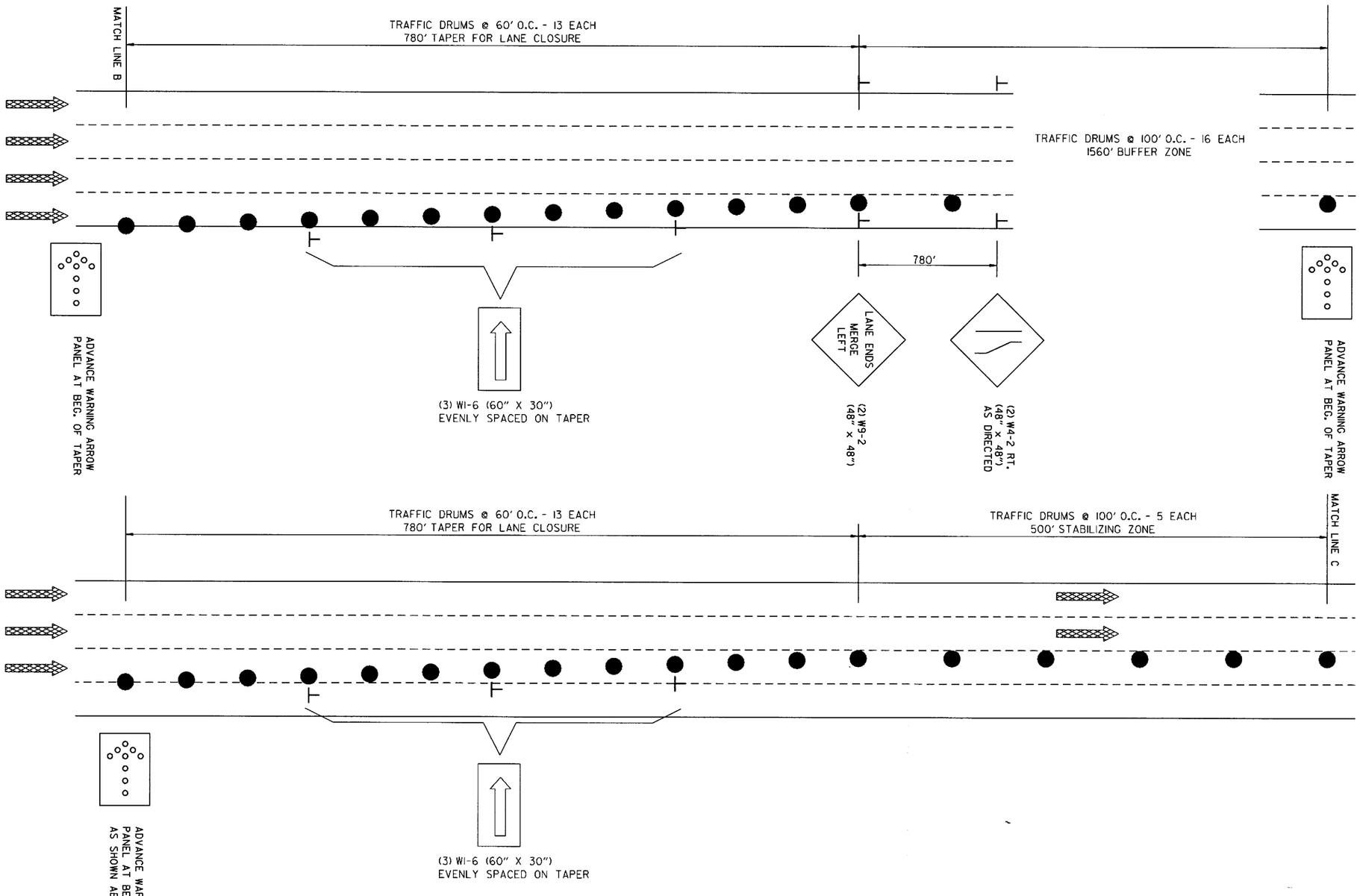
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	33	190

(2) MAINTENANCE OF TRAFFIC DETAILS



ADVANCE WARNING SIGNS AND TYPICAL DRUM LAYOUT
FOR OUTSIDE AND MIDDLE LANE CLOSURE
(I-40 LT. LANES)
STAGE 2

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-31-2018

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

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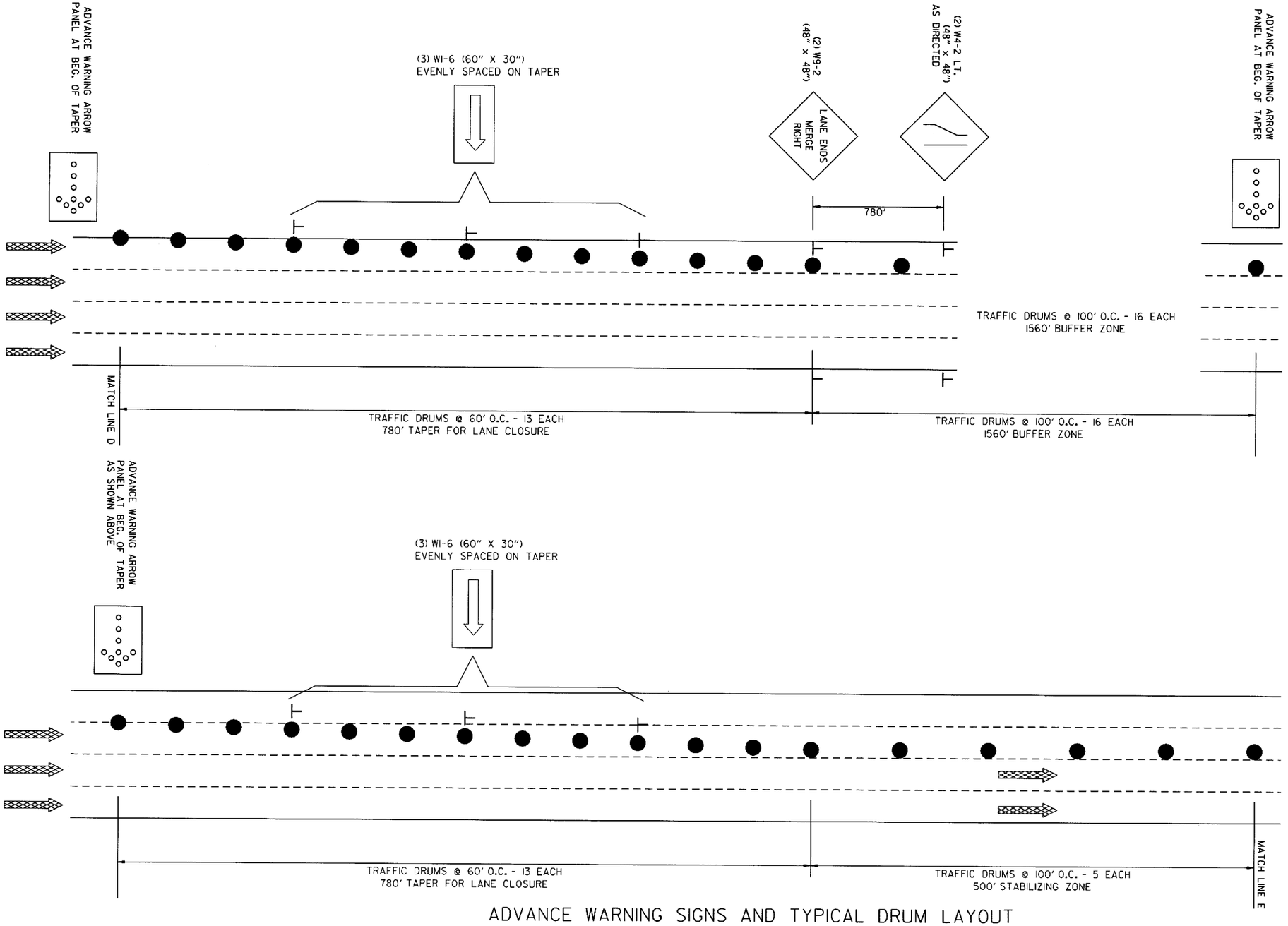
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	34	190

(2) MAINTENANCE OF TRAFFIC DETAILS

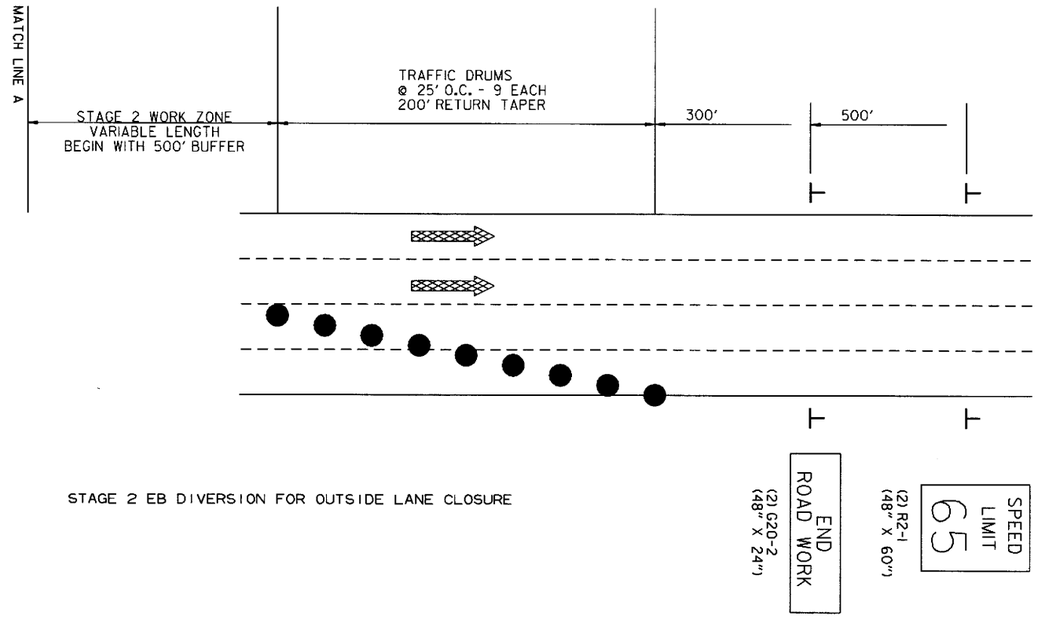


ADVANCE WARNING SIGNS AND TYPICAL DRUM LAYOUT
FOR INSIDE AND MIDDLE LANE CLOSURE
(I-40 LT. LANES)
STAGE 3

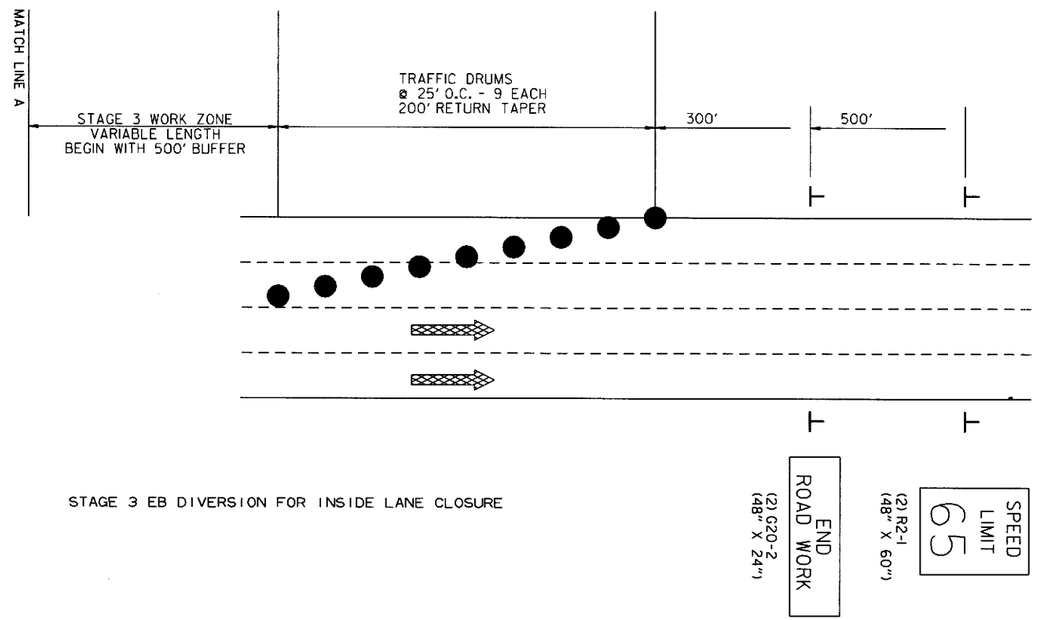
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

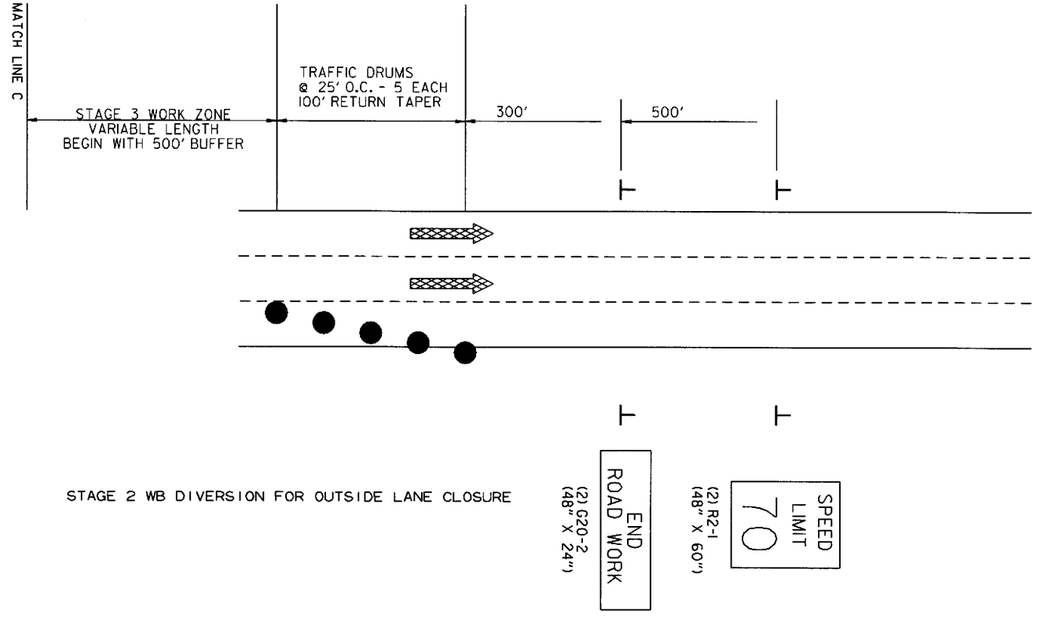
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	35	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			



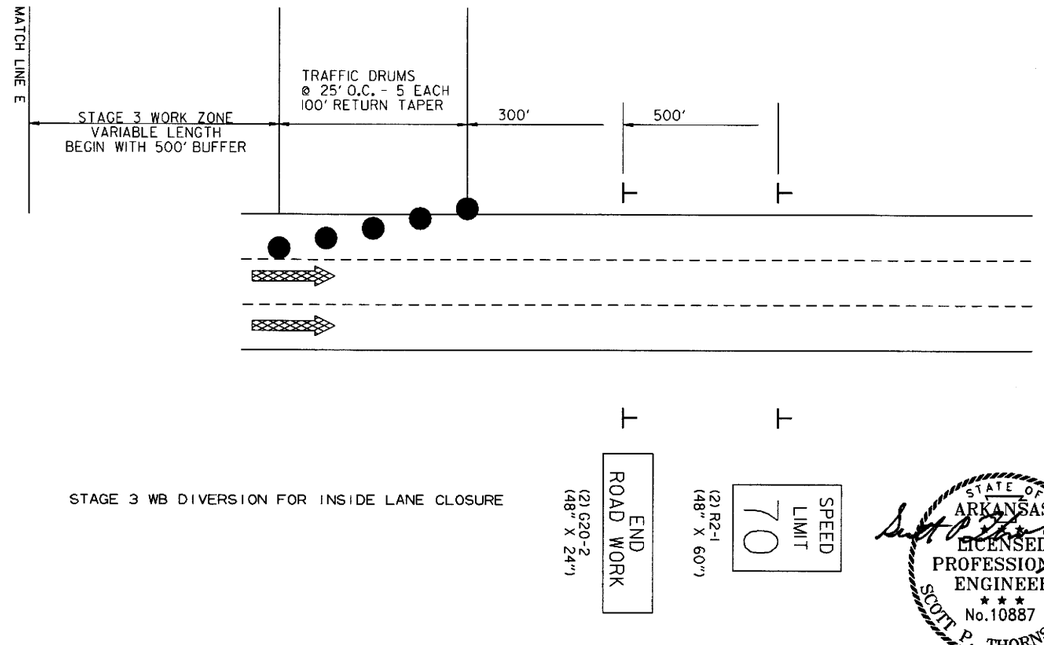
STAGE 2 EB DIVERSION FOR OUTSIDE LANE CLOSURE



STAGE 3 EB DIVERSION FOR INSIDE LANE CLOSURE



STAGE 2 WB DIVERSION FOR OUTSIDE LANE CLOSURE



STAGE 3 WB DIVERSION FOR INSIDE LANE CLOSURE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE SIGNS AT JOB ENDS

LeonardSpeed 7/23/2018 12:47:09 PM
WORKSPACE: MTD
Y:\Projects\MAUMELLE.I54459.1-40.Interchange\06-Design\Drawings\r06h90_06_MOT_002.dgn
REVISED DATE: ##REVDATE##

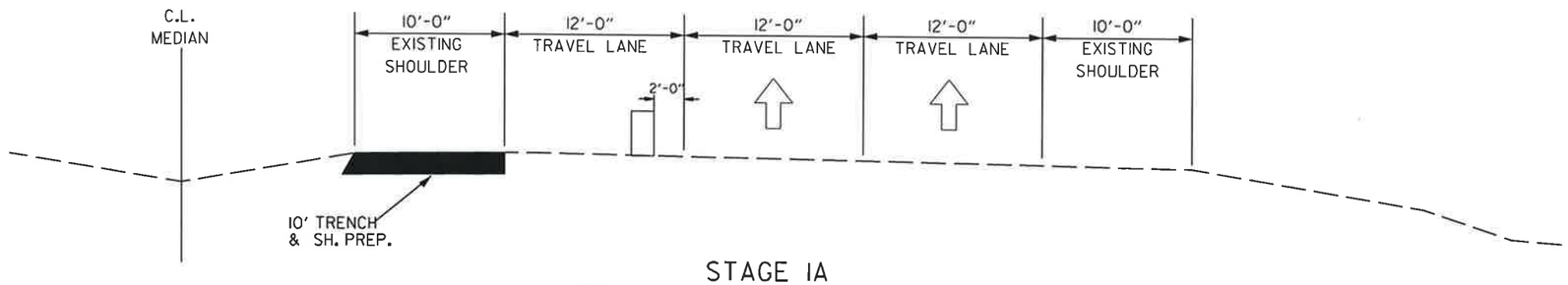
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
⚠ 10-17-18				JOB NO.		061190	36	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

⚠CONSTRUCTION SEQUENCE

STAGE IA:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

CONSTRUCT TRENCH AND SHOULDER PREP. OF RT. INSIDE LANES.



STAGE IA
TRENCH & SHOULDER PREP.
(I-40 RT. LANES)

STA. 8172+50 TO STA. 8176+00.00

⚠CONSTRUCTION SEQUENCE

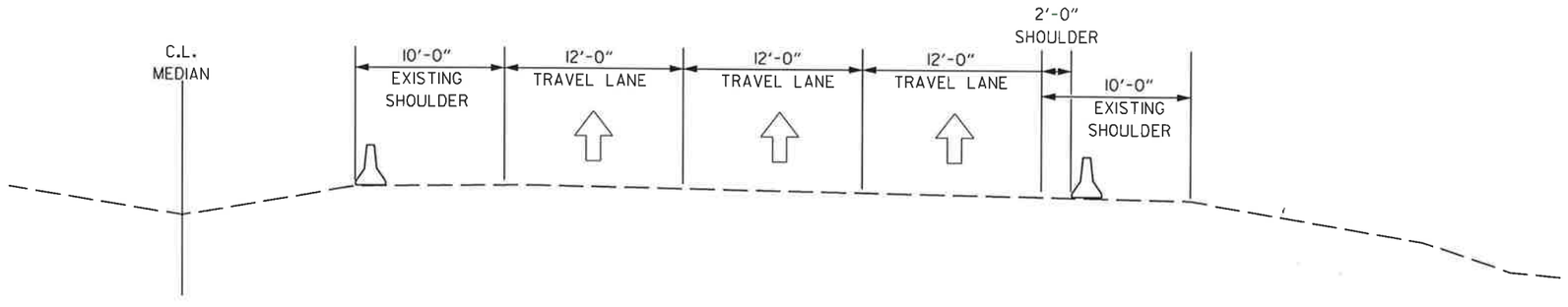
STAGE IB:

INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

INSTALL PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE IB MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT DRAINAGE, RAMPS, WHITE OAK CROSSING AND I-40 NOTCH & WIDENING AS SHOWN IN THE STAGE IB MAINTENANCE OF TRAFFIC DETAILS.

CONSTRUCT NEWTON CREEK BRIDGES WIDENING ON OUTSIDE LANES.



STAGE IB
BARRIER WALL LOCATION (TYPICAL)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
10-17-18

MAINTENANCE OF TRAFFIC DETAILS
STAGE I

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	37	190
				2	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
9-13-18

STA. 8135+74.75
BEGIN JOB 061190
L.M. 145.6

SPECIAL END UNIT
40' TAPER
60' TAPER
TEMPORARY IMPACT ATTENUATION BARRIER
CONST. LIMITS
PRECAST CONCRETE BARRIER C.L. I-40 LT. LANES STA. 8136+00 TO STA. 8191+50 LT. OF C.L.
C.L. RAMP 4
PRECAST CONCRETE BARRIER C.L. I-40 LT. LANES STA. 8159+25 TO STA. 8165+50 RT. OF C.L.
I-40 C.L. LT. LANES
I-40 C.L. MEDIAN
I-40 C.L. RT. LANES
PRECAST CONCRETE BARRIER C.L. I-40 RT. LANES STA. 8154+00 TO STA. 8160+50 LT. OF C.L.
TEMPORARY IMPACT ATTENUATION BARRIER
PRECAST CONCRETE BARRIER C.L. I-40 RT. LANES STA. 8139+25 TO STA. 8181+75 RT. OF C.L.
C.L. RAMP 1
C.L. WHITE OAK CROSSING
POND
8130+00
8135+00
8140+00
8145+00
8150+00
8155+00
8160+00
180+00
185+00
175+00

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	38	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STA. 169+51.72
BEGIN WHITE
OAK CROSSING

C.L. WHITE OAK CROSSING

C.L. RAMP 1

C.L. RAMP 4

PRECAST CONCRETE BARRIER
C.L. I-40 LT. LANES
STA. 8136+00 TO
STA. 8191+50 LT. OF C.L.

PRECAST CONCRETE BARRIER
C.L. I-40 RT. LANES
STA. 8154+00 TO
STA. 8160+50 LT. OF C.L.

PRECAST CONCRETE
BARRIER C.L. I-40 LT. LANES
STA. 8159+25 TO
STA. 8165+50 RT. OF C.L.

(2) RII-2
(48"x30")
ROAD
CLOSED

(1) 16' BARR.
TYP. III LT.

(1) 16' BARR.
TYP. III RT.

SPECIAL END UNIT

I-40 C.L. LT. LANES

I-40 C.L. MEDIAN

I-40 C.L. RT. LANES

TEMPORARY IMPACT
ATTENUATION BARRIER

C.L. RAMP 3

C.L. RAMP 2

PRECAST CONCRETE BARRIER
C.L. I-40 RT. LANES
STA. 8139+25 TO
STA. 8181+75 RT. OF C.L.

STA. 190+00.00
END WHITE
OAK CROSSING

CONST. LIMITS

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No.10887
SCOTT P. THORNSBERRY
9-13-18

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB

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WORKSPACE: AHTD
WORKGROUPS: MICHELLE.I54459.I-40_interchange\06-Design\Drawings\r06190_06_MOT_005.dgn
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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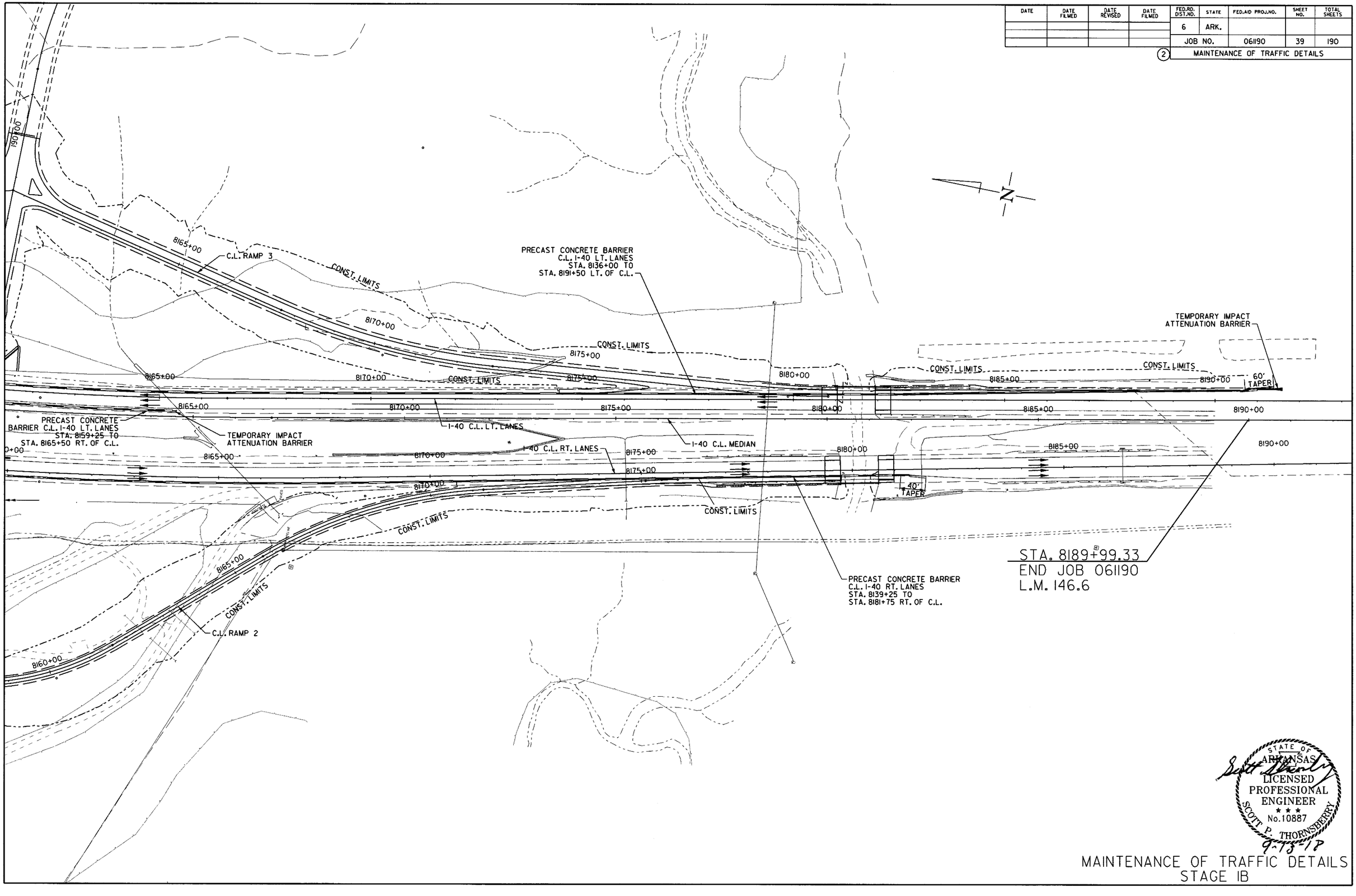
				JOB NO.		061190	39	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
9-13-18

MAINTENANCE OF TRAFFIC DETAILS
STAGE IB

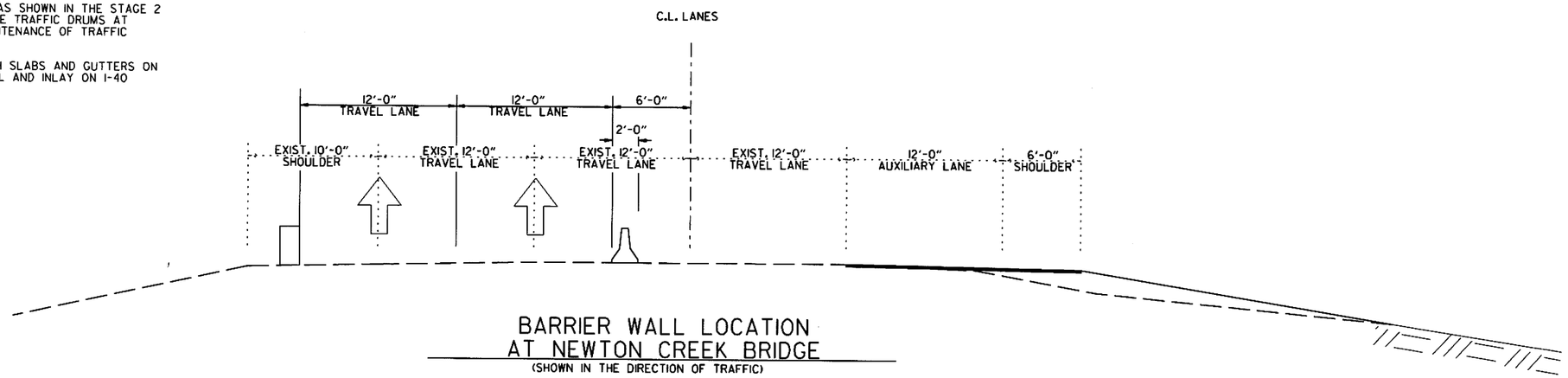
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	061190		40	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE 2:

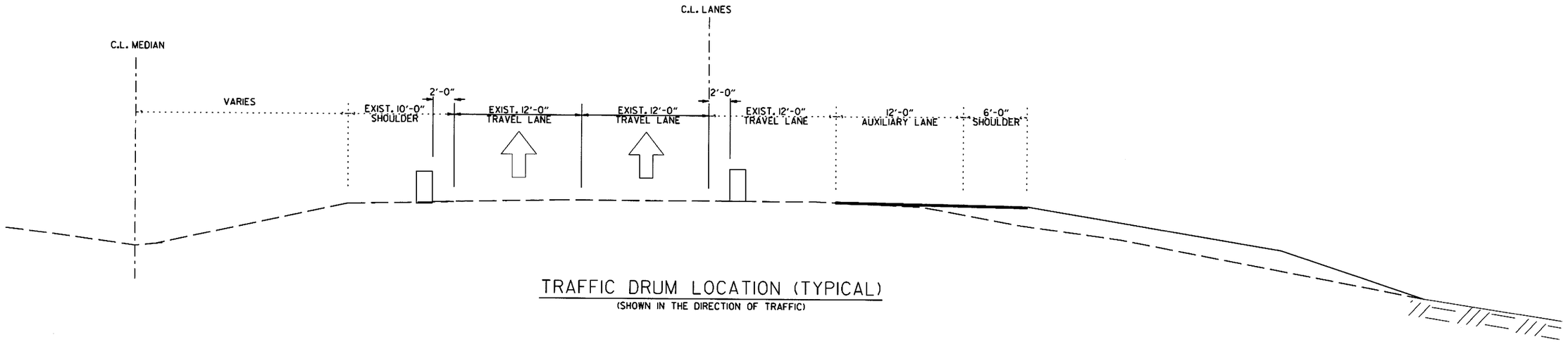
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

INSTALL PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS. PLACE TRAFFIC DRUMS AT LOCATIONS SHOWN IN THE STAGE 2 MAINTENANCE OF TRAFFIC DETAILS.

RECONSTRUCT OUTSIDE LANES APPROACH SLABS AND GUTTERS ON NEWTON CREEK BRIDGES. CONSTRUCT MILL AND INLAY ON I-40 AUXILIARY LANES.



BARRIER WALL LOCATION
AT NEWTON CREEK BRIDGE
(SHOWN IN THE DIRECTION OF TRAFFIC)



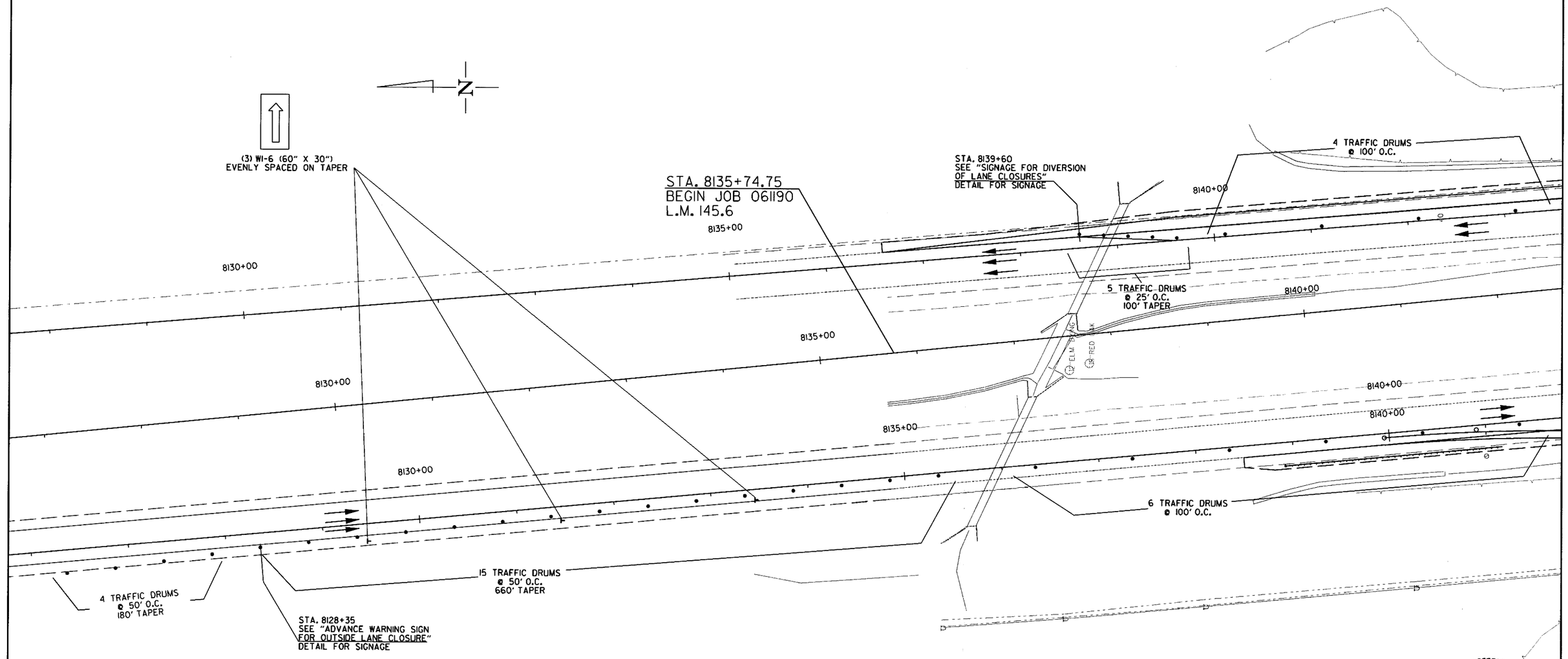
TRAFFIC DRUM LOCATION (TYPICAL)
(SHOWN IN THE DIRECTION OF TRAFFIC)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-13-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	41	190

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	42	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

C.L. RAMP 4

8150+00

8155+00

8145+00

16 TRAFFIC DRUMS @ 100' O.C.

C.L. RAMP 1

(1) RII-2 (48"x30")
ROAD CLOSED

(1) 16' BARR. TYP. III LT.

CONCRETE

ELECTRIC METER ON POLE

GRADE BREAK

PAVED

TRAIL

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

Leonard.Speed
WORKSPACE: MTD
YOUR Files: \MLUMELLE_I54459_I-40_Interchange\06-Design\Drawings\r061190_06_MOT_009.dgn
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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	43	190

(2) MAINTENANCE OF TRAFFIC DETAILS

8160+00
8165+00
C.L. RAMP 3
8170+00
8175+00
185+00
8160+00
8165+00
8170+00
8175+00
8160+00
8165+00
16 TRAFFIC DRUMS @ 100' O.C.
8170+00
14 TRAFFIC DRUMS @ 100' O.C.
CEDAR
8160+00
8165+00
8170+00
8170+00
7 TRAFFIC DRUMS @ 50' O.C. 165' LANE SHIFT
(2) WI-4bL (48" X 48") AS DIRECTED
PAVED CONCRETE
C.L. RAMP 2
180+00
BUILDING FOUNDATION
STAIRS
8165+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

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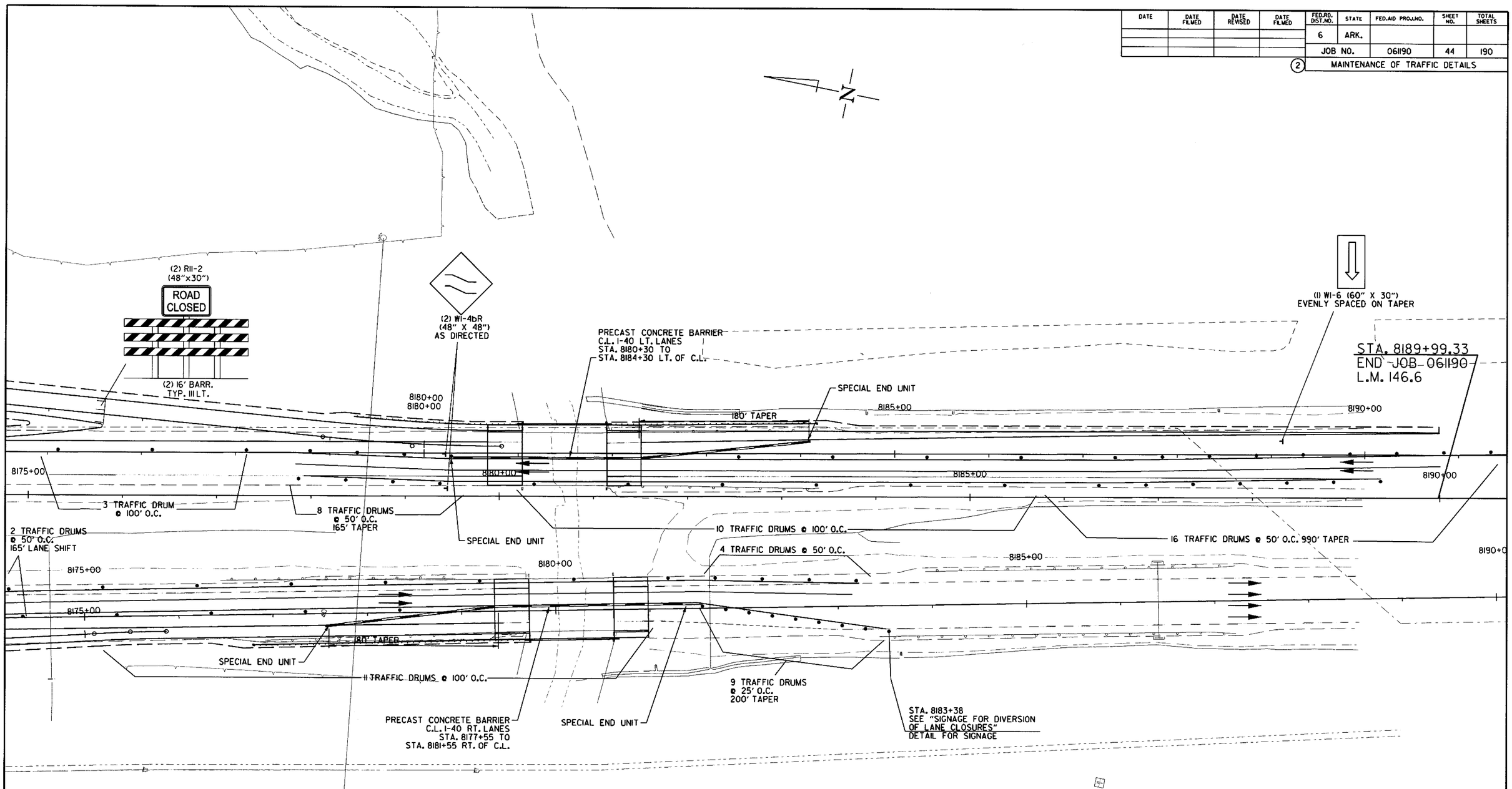
WORKSPACE: AHD
WORKSET: MAINTENANCE_I54459_I-40_Interchange\06-Design\Drawings\r061190.06_MOT_010.dgn
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	44	190

(2) MAINTENANCE OF TRAFFIC DETAILS

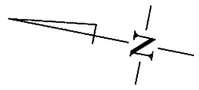


STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	45	190

(2) MAINTENANCE OF TRAFFIC DETAILS



ADVANCE WARNING ARROW PANEL AT BEG. OF TAPER

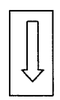
13 TRAFFIC DRUMS @ 50' O.C.
990' TAPER

11 TRAFFIC DRUMS @ 100' O.C.

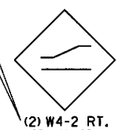
8195+00

8200+00

8205+00



(2) W1-6 (60" X 30")
EVENLY SPACED ON TAPER



(2) W4-2 RT.
(48" X 48")
AS DIRECTED

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-25-2017

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

Leonard.Speed
WORKSITE: MID
YOUR DOCS\MAUMELLE.I54459.I-40.Interchange\06-Design\Drawings\r061190.06.MOT.002.dgn
REVISED DATE: ##REVDATE##
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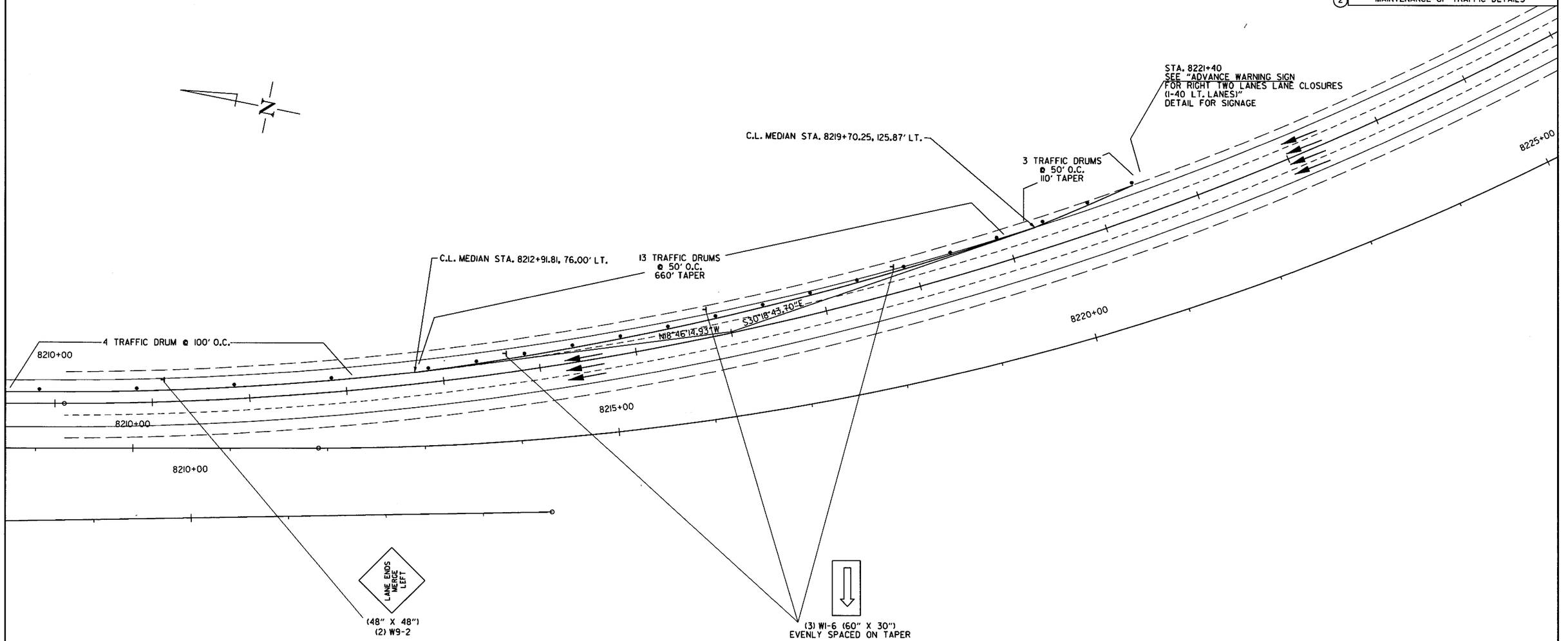
DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	46	190

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 2

Leonard.Speed 7/23/2018 12:47:27 PM
WORKSPACE: AHTD
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REVISED DATE: ##REVDATE##

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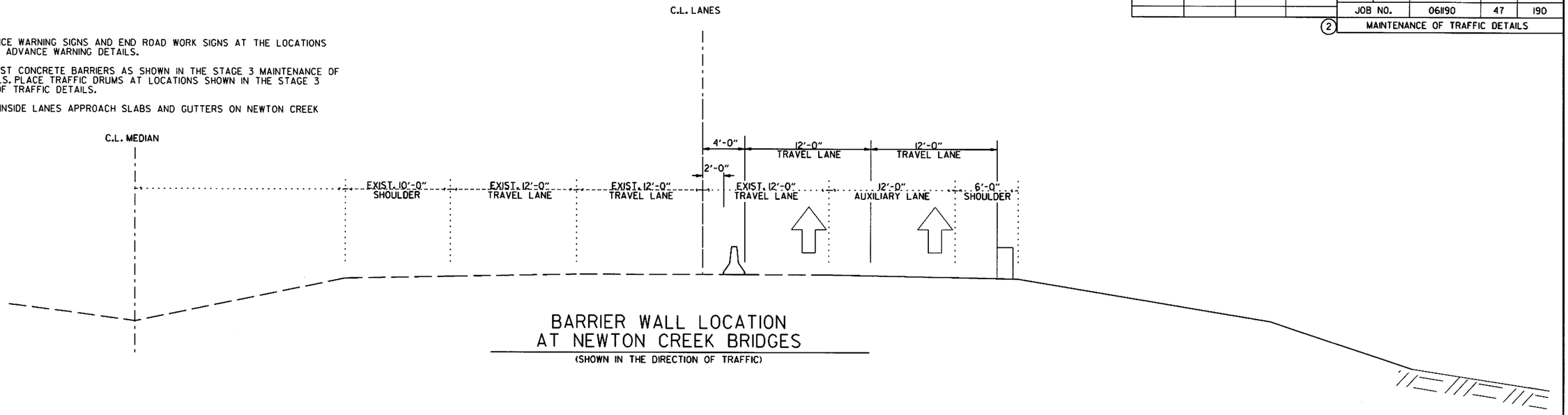
				6	ARK.			
				JOB NO.		061190	47	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STAGE 3:

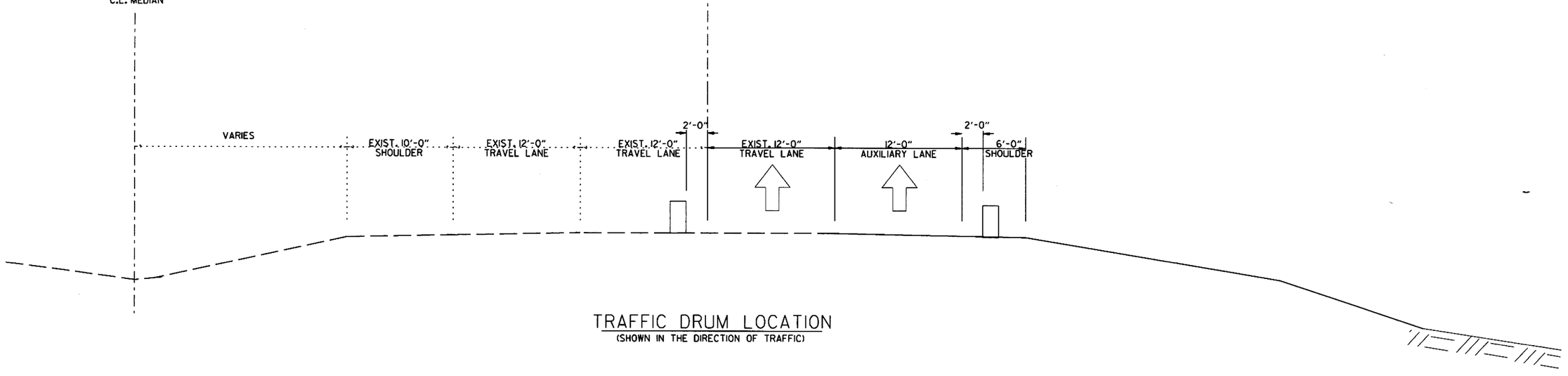
INSTALL ADVANCE WARNING SIGNS AND END ROAD WORK SIGNS AT THE LOCATIONS LISTED ON THE ADVANCE WARNING DETAILS.

INSTALL PRECAST CONCRETE BARRIERS AS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS. PLACE TRAFFIC DRUMS AT LOCATIONS SHOWN IN THE STAGE 3 MAINTENANCE OF TRAFFIC DETAILS.

RECONSTRUCT INSIDE LANES APPROACH SLABS AND GUTTERS ON NEWTON CREEK BRIDGES.



BARRIER WALL LOCATION
AT NEWTON CREEK BRIDGES
(SHOWN IN THE DIRECTION OF TRAFFIC)



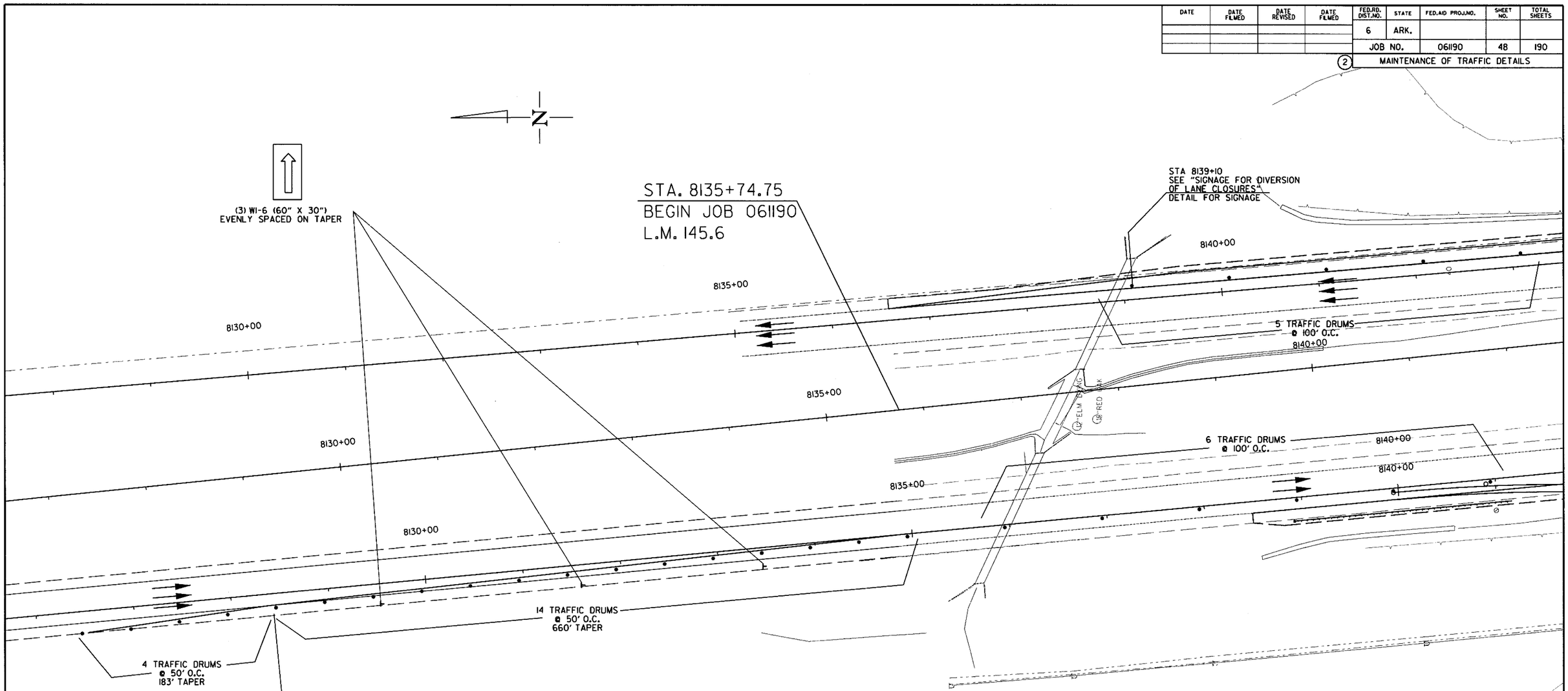
TRAFFIC DRUM LOCATION
(SHOWN IN THE DIRECTION OF TRAFFIC)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	48	190

(2) MAINTENANCE OF TRAFFIC DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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REVISED DATE: $$REVDATE$$

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	49	190

(2) MAINTENANCE OF TRAFFIC DETAILS

8155+00

8150+00

8150+00

8145+00

8155+00

4 TRAFFIC DRUMS @ 50' O.C. 183' TAPER

8150+00

8145+00

8155+00

5 TRAFFIC DRUMS @ 100' O.C.

16 TRAFFIC DRUMS @ 100' O.C.

8150+00

8145+00

8145+00

8150+00

(1) R11-2 (48"x30")

ROAD CLOSED

(1) 16' BARR. TYP. III LT.

CONCRETE

ELECTRIC METER ON POLE

DROP INLET

PAVED

TREE

8155+00

STATE OF ARKANSAS

LICENSED PROFESSIONAL ENGINEER

SCOTT P. THORNSBERRY

No.10887

7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	50	190

(2) MAINTENANCE OF TRAFFIC DETAILS

8165+00

8170+00

8175+

185+00

8160+00

8165+00

8170+00

8160+00

8165+00

8170+00

3 TRAFFIC DRUMS @ 25' O.C. 100' TAPER

CEDAR

8 TRAFFIC DRUMS @ 100' O.C.

8160+00

8165+00

33 TRAFFIC DRUM @ 50' O.C. 840' TAPER

8170+00

8170+00

(2) WI-4b (48" X 48") AS DIRECTED

CONCRETE

PAVED

180+00

BUILDING FOUNDATION

STAIRS

8165+00

GAS PIPELINE

WATER

APPROXIMATE FORCEMAIN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

Leonard.Speed 7/23/2018 12:47:33 PM
WORKSPACE AREA
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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	51	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

R11-2
(48"x30")
ROAD CLOSED

(2) 16' BARR.
TYP. III LT.

(2) W1-4b
(48" X 48")
AS DIRECTED

PRECAST CONCRETE BARRIER
C.L. I-40 LT. LANES
STA. 8180+30 TO
STA. 8184+30

20 TRAFFIC DRUMS
@ 50' O.C.
480' SHIFT

8 TRAFFIC DRUMS @ 100' O.C.

15 TRAFFIC DRUMS @ 50' O.C. 880' TAPER

STA. 8189+99.33
END JOB 061190
L.M. 146.6

8180+00
8180+00

8185+00

8190+00

180' TAPER

8175+00

2 TRAFFIC DRUMS
@ 25' O.C.
100' TAPER

STA. 8183+38
SEE "SIGNAGE FOR DIVERSION
OF LANE CLOSURES"
DETAIL FOR SIGNAGE

9 TRAFFIC DRUMS
@ 25' O.C.
200' TAPER

8180+00

180' TAPER

9 TRAFFIC DRUMS @ 100' O.C.

3 TRAFFIC DRUMS
@ 50' O.C.
840' TAPER

PRECAST CONCRETE BARRIER
C.L. I-40 RT. LANES
STA. 8177+55 TO
STA. 8181+55

6 TRAFFIC DRUMS
@ 25' O.C.
110' TAPER

(3) W1-6 (60" X 30")
EVENLY SPACED ON TAPER

STATE OF ARKANSAS
LICENSED
PROFESSIONAL
ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

Leonard Speed
WORK ORDER NO.
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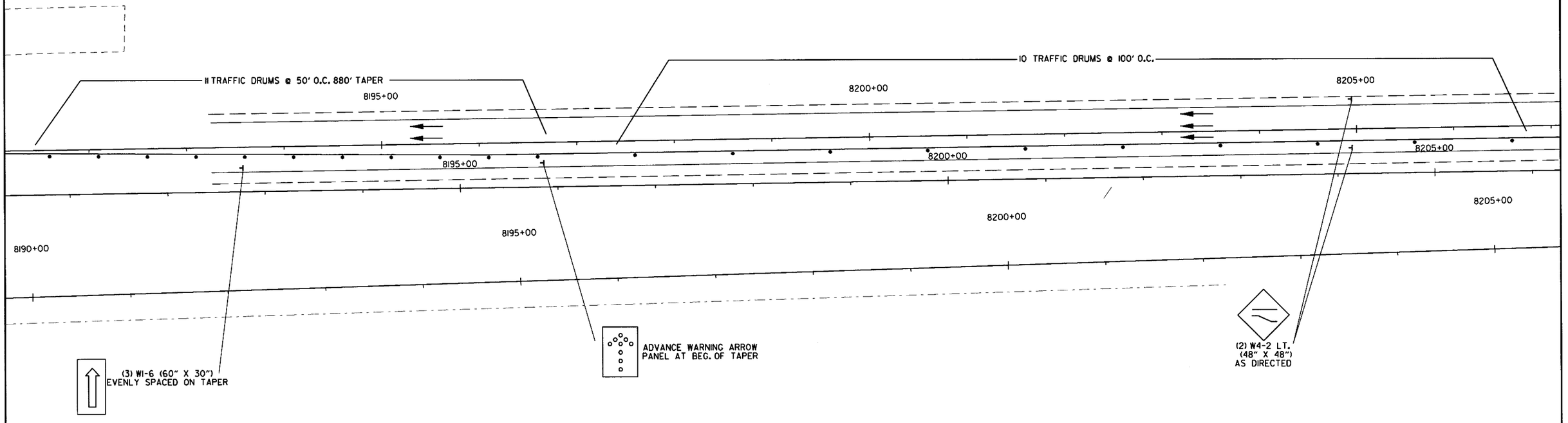
REVISED DATE: **REVDATE**
7/23/2018 12:47:35 PM

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	52	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

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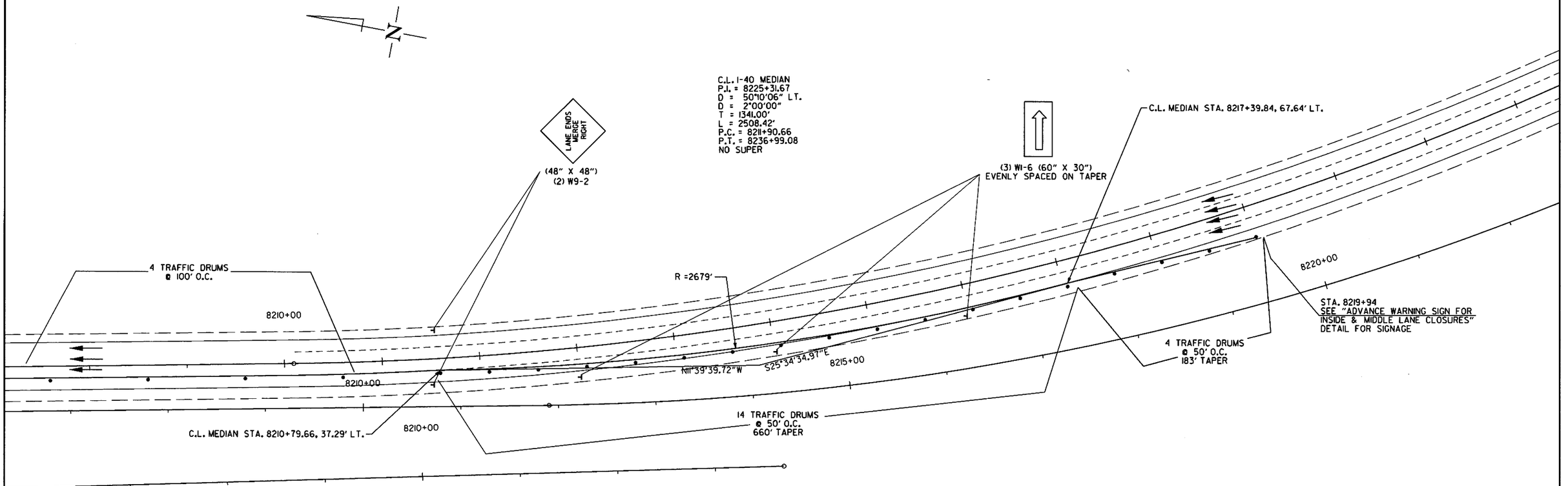
REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	53	190
				(2)	MAINTENANCE OF TRAFFIC DETAILS			



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
7-23-2018

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	54	190

(2) PERMANENT PAVEMENT MARKINGS DETAILS

STA. 169+51.72
BEGIN WHITE OAK CROSSING

6" CONT. DOUBLE YELLOW
6" CONT. WHITE LINE
EDGE OF PAVEMENT
LANE USE ARROWS
WORD (ONLY)
6" CONT. WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
PC 173+65.84
10" WHITE SOLID LINE (TYP. CURB FACE OF ISLANDS)
6" SKIP WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
PT 176+58.57
N 00°00'51" E
PI 8157+31.42
C.L. RAMP 1
PC 8156+93.56
PT 8157+68.66
CONCRETE ISLAND
8" WHITE SOLID LINE (TYP. AROUND ISLANDS)
6" SKIP WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
C.L. WHITE OAK CROSSING
EDGE OF PAVEMENT
6" CONT. DBL. YELLOW
LANE USE ARROW
I-40 C.L. LT. LANES
I-40 C.L. MEDIAN
6" CONT. WHITE EDGE LINE
8160+00
PAVED SHOULDER
170+00
PAVED SHOULDER
PT 170+19.58
175+00
180+00
6" DBL. YELLOW
6" CONT. WHITE EDGE LINE
6" SKIP WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
HATCH OUT TAPER 12" YELLOW, 45° SLANT, 20' O.C.
6" CONT. WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
EDGE OF PAVEMENT
WORD (ONLY)
6" DBL. YELLOW W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
LANE USE ARROW
PI 175+13.42
YIELD LINE
10" WHITE SOLID LINE (TYP. CURB FACE OF ISLANDS)
CONCRETE ISLAND
EDGE OF PAVEMENT
YIELD LINE
R =217'
R =3'
S30°00'00"E
PAVED SHOULDER
HATCH OUT TAPER 12" WHITE, 45° SLANT, 15' O.C.
EDGE OF PAVEMENT
8" WHITE SOLID LINE (TYP. AROUND ISLANDS)
C.L. RAMP 2
PC 8158+60.09
S15°00'00"E
6" CONT. WHITE LINE
6" DBL. YELLOW W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
I-40 C.L. RT. LANES
S5°41'55"E
8160+00
PI 8160+86.54
S4°46'00"E
PI 8162+19.33
S11°23'52"E
S5°14'47"E
S11°24'0

PT 8159+01.
S11°00'E
C.L. RAMP 4
RAMP MARKINGS SEE RAMP MARKING SHEETS (TYP.)
8160+00
YIELD LINE
8" WHITE SOLID LINE
EDGE OF PAVEMENT
CONCRETE ISLAND
10" WHITE SOLID LINE (TYP. CURB FACE OF ISLANDS)
6" CONT. WHITE EDGE LINE
6" DBL. YELLOW W/ TYPE II YELLOW/YELLOW RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
EDGE OF PAVEMENT
6" CONT. WHITE EDGE LINE
6" CONT. WHITE EDGE LINE
6" SKIP WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
LANE USE ARROW
190+00
185+00
R =218'
R =3'
24'
25'
N 00°00'51" E
6" CONT. WHITE EDGE LINE
6" SKIP WHITE W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
6" CONT. WHITE EDGE LINE
EDGE OF PAVEMENT
10" WHITE SOLID LINE (TYP. CURB FACE OF ISLANDS)
8" WHITE SOLID LINE (TYP. AROUND ISLANDS)
6" CONT. WHITE EDGE LINE
6" CONT. WHITE EDGE LINE
HATCH OUT TAPER 12" WHITE, 45° SLANT, 15' O.C.
24" STOP LINE
6" CONT. WHITE EDGE LINE
C.L. RAMP 3
PC 191+61.41
S90°00'00"E
195+00
S90°00'00"E
PI 197+77.01
S22°59'44"E

80' (TYP.)
15' 10' 40' (TYP.) 15'
6" SKIP WHITE (TYP.)
30' 10'
TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)
SKIP LINE DETAIL

STA. 190+10.00
END WHITE OAK CROSSING

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
9-23-16

PERMANENT PAVEMENT MARKINGS DETAILS

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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	55	190

(2) PERMANENT PAVEMENT MARKINGS DETAILS

C.L. RAMP 4
S4°46'00"E
8145+00
C.L. I-40 LT. LANES
PI 8148+38.12
S5°41'55"E
I-40 C.L. MEDIAN
8140+00
PI 8140+90.20
375'
S5°14'47"E
8145+00
I-40 C.L. RT. LANES
8150+00
PC 8153+66.49
8155+00
8" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING WITH TYPE II R.P.M. @ 10' O.C. SEE STANDARD DETAIL PM-2
PAVED SHOULDER EDGE OF PAVEMENT
6" YELLOW ENHANCED THERMOPLASTIC PAVEMENT MARKING
PI 8152+20.75
S 05°14'47" E
S 00°27'43" W
280'
PAVED SHOULDER
BEGIN RAMP PAVEMENT MARKING
C.L. RAMP 1
EDGE OF PAVEMENT
S 00°27'43" W
S 33°01'21" W
PC 8139+94.98
PT 8141+85.26
DIRECTIONAL ARROW
6" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
PC 8150+17.92
PAVED SHOULDER
8155+00
8154+12.60
S12°20'50"E
8165+
PT 8167+86.64
PI 8168+55.93
PI 8160+77.47
8155+00
EDGE OF PAVEMENT
6" YELLOW ENHANCED THERMOPLASTIC PAVEMENT MARKING
PAVED SHOULDER
C.L. RAMP 1
S 33°01'21" W
PC 8156+93.56
PT 8157+68.66
6" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
8158+53.62 RAMP 1 STRIPING
S 15°00'00" E
PI 8157+31.42
EDGE OF PAVEMENT
PAVED SHOULDER
THERMOPLASTIC WRONG-WAY PAVEMENT ARROWS
PT 176+58.57
180+00
S 15°00'00" E
SEE MARKING SHEET FOR WHITE OAK CROSSING
PC 8158+60.09
8157+76.47 RAMP 2 STRIPING
S 15°00'00" E
PI 8161+61.55
PAVED SHOULDER
8160+00
S42°07'53"E
6" YELLOW ENHANCED THERMOPLASTIC PAVEMENT MARKING
C.L. RAMP 2
8165+00
PC 8165+21.47
S14°38'20"E
S42°07'53"E
6" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKING
EDGE OF PAVEMENT
PAVED SHOULDER
THERMOPLASTIC WRONG-WAY PAVEMENT ARROWS
160+13.70

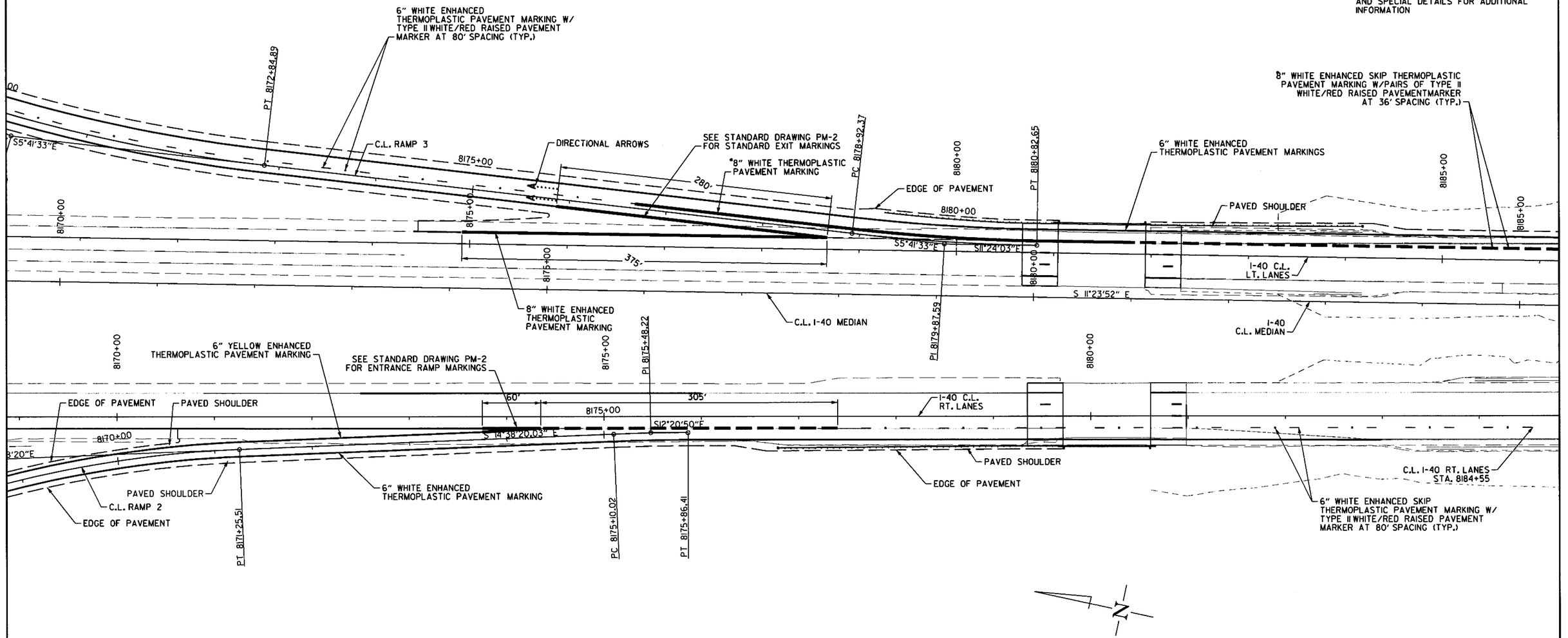
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
9-23-18

PERMANENT PAVEMENT MARKINGS DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	56	190

(2) PERMANENT PAVEMENT MARKINGS DETAILS

*SEE STANDARD DRAWING PM-2 AND SPECIAL DETAILS FOR ADDITIONAL INFORMATION



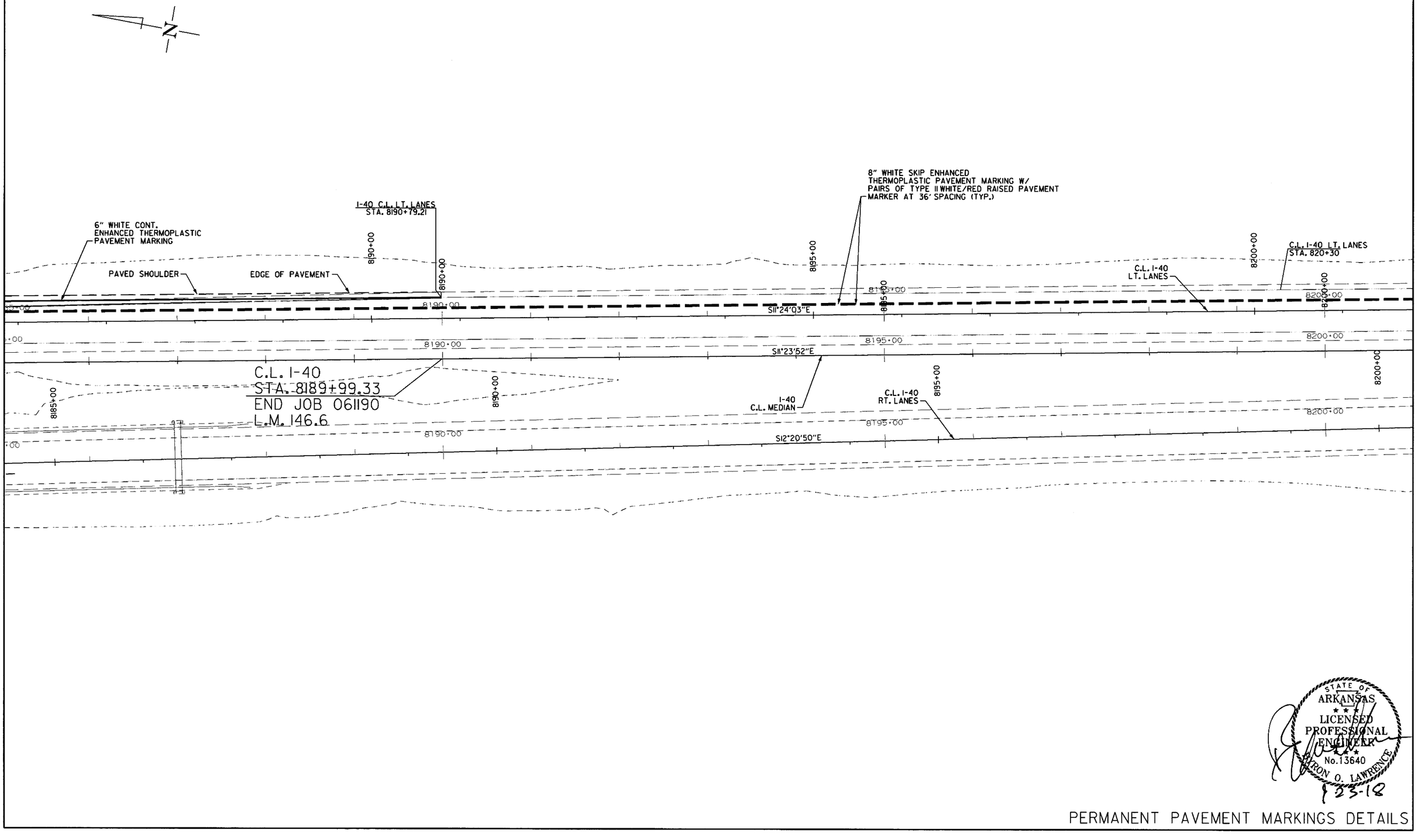
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
9-23-18

PERMANENT PAVEMENT MARKINGS DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	57	190

(2) PERMANENT PAVEMENT MARKINGS DETAILS



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
7-23-18

PERMANENT PAVEMENT MARKINGS DETAILS

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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	58	190
				(2)	PERMANENT PAVEMENT MARKINGS DETAILS			

STATE OF ARKANSAS
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No.13640
BYRON O. LAWRENCE
-2318

N

SEE MARKING SHEET FOR WHITE OAK CROSSING

190+00

THERMOPLASTIC WRONG-WAY PAVEMENT ARROW

6" WHITE CONT. ENHANCED THERMOPLASTIC PAVEMENT MARKING

PAVED SHOULDER

EDGE OF PAVEMENT

8160+00

S13°38'00"W

8161+60.43 RAMP 3 MARKINGS

HATCH OUT TAPER 12" WHITE THERMOPLASTIC 45 DEG., 15' O.C.

6" WHITE CONT. ENHANCED THERMOPLASTIC PAVEMENT MARKING

8165+00

EDGE OF PAVEMENT

PAVED SHOULDER

LANE REDUCTION ARROW

PC 8167+65.57

LANE REDUCTION ARROW

6" WHITE SKIP ENHANCED THERMOPLASTIC PACEMENT MARKING W/ TYPE II WHITE/RED RAISED PAVEMENT MARKER AT 80' SPACING (TYP.)

6'

24'

4'

8170+00

S12°29'00"W

S5°41'33"E

EDGE OF PAVEMENT

S14°31'00"E

8160+65.22 RAMP 4 MARKINGS

PI 8157+58.09

C.L. RAMP 4

PI 8159+01.74

EDGE OF PAVEMENT

PAVED SHOULDER

6" YELLOW CONT. ENHANCED THERMOPLASTIC PAVEMENT MARKING

6" YELLOW CONT. ENHANCED THERMOPLASTIC PAVEMENT MARKING

C.L. RAMP 3

LANE USE ARROW

8110+00

PI 8170+27.43

8110+00

I-40 C.L. LT. LANES

PT 8166+61.10

PT 8166+85.96

8165+00

I-40 C.L. MEDIAN

PI 8157+76.56

8155+00

6" WHITE CONT. ENHANCED THERMOPLASTIC PAVEMENT MARKING

PAVED SHOULDER

EDGE OF PAVEMENT

S28°19'23"E

PC 8156+13.57

EDGE OF PAVEMENT

PAVED SHOULDER

6" YELLOW CONT. ENHANCED THERMOPLASTIC PAVEMENT MARKING

C.L. RAMP 4

PI 8151+48.30

8150+00

SEE NEXT SHEET FOR MARKINGS

PC 8145+20.13

8145+00

S4°46'00"E

8150+00

S28°19'23"E

8145+00

S4°46'00"E

8150+00

I-40 C.L. LT. LANES

8155+00

PC 8154+86.12

8155+00

PC 8157+76.56

S5°41'55"E

PI 8140+90.20

PI 8148+38.72

I-40 C.L. MEDIAN

145+00

PERMANENT PAVEMENT MARKINGS DETAILS

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WORKSPACE: AHTD
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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	59	190
(2) PERMANENT PAVEMENT MARKINGS DETAILS				

C.L. I-40
STA. 8135+74.75
BEGIN JOB 061190
L.M. 145.6

I-40 C.L. LT. LANES
STA. 8136+58.59

6" WHITE ENHANCED THERMOPLASTIC PAVEMENT MARKINGS

EDGE OF PAVEMENT

PAVED SHOULDER

8135+00

8140+00

8145+00

PC 8145+20.13

SEE STANDARD DRAWING PM-2
FOR ENTRANCE RAMP MARKINGS

EDGE OF PAVEMENT

PAVED SHOULDER

8150+00

C.L. RAMP 4

S28°19'23"E

S4°46'00"E

S4°46'00"E

305'

60'

C.L. I-40
LT. LANES

PI 8149+38.72

S5°41'55"E

I-40 C.L.
MEDIAN

I-40 C.L.
RT. LANES

PI 8140+90.20

S5°14'47"E

S 05°14'47" E

S 00°21'45" W

PC 8139+94.98

PT 8141+85.26

SEE MARKING SHEET
FOR RAMP 1

STATE OF
ARKANSAS
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ENGINEER
No.13640
BYRON O. LAWRENCE
7-23-18

PERMANENT PAVEMENT MARKINGS DETAILS

Leonard.Speed 7/23/2018 12:47:47 PM
WORKSPACE: AHTD
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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	60	190
				(2)	SOIL BORING LOGS			

SUMMARY SOIL CLASSIFICATION TEST RESULTS - MAUMELLE INTERCHANGE BRIDGE & RAMPS

BORING NO.	APPROX. STATION	SAMPLE DEPTH (ft.)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
4	184+19, CL	0.5-1.5	13	25	16	9	31	GC	A-2-4
6	181+69, 60' RT	0.5-1.5	9	29	19	10	44	GC	A-4
8	184+28, 65' RT	0.5-1.5	6	-NON-PLASTIC-			19	GM	A-2-4
8	184+28, 65' RT	4-4.5	8	35	19	16	—	SHALE	
R1	8145+00, CL	4.5-5.5	24	64	19	45	96	CH	A-7-6
R2	8152+90, 100' LT	2.5-3.5	23	41	16	25	95	CL	A-7-6
R2	8152+90, 100' LT	9-10	22	48	22	26	93	CL	A-7-6
R3	8159+30, 80' RT	1-2	28	43	18	25	90	CL	A-7-6
R3	8159+30, 80' RT	4.5-5.5	10	38	20	18	34	GC	A-2-6
R4	8162+90, CL	2.5-3.5	18	31	14	17	86	CL	A-6
R4	8162+90, CL	6.5-7	11	29	17	12	—	SHALE	
R5	8173+30, CL	6.5-7.5	26	75	29	46	84	CH	A-7-6
R6	8175+00, 30' RT	2.5-3.5	9	31	18	13	47	GC	A-6
R7	8166+20, CL	1-2	9	28	18	10	25	GC	A-2-4
R8	8160+80, CL	0.5-1.5	14	32	19	13	41	GC	A-6
R9	8155+00, CL	1-2	24	76	32	44	67	CH	A-7-5
R10	8146+90, CL	2.5-3.5	23	58	21	37	94	CH	A-7-6
R10	8146+90, CL	6.5-7.5	29	59	21	38	99	CH	A-7-6

SUMMARY SOIL CLASSIFICATION TEST RESULTS - NEWTON CREEK CROSSING

BORING NO.	APPROX. STATION	SAMPLE DEPTH (ft.)	WATER CONTENT (%)	ATTERBERG LIMITS			PERCENT PASSING #200	UNIFIED CLASS.	AASHTO CLASS.
				LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
9	8179+73, 84' RT	0.5-1.5	10	36	20	16	34	GC	A-2-6
9	8179+73, 84' RT	6.5-7.5	21	22	17	5	55	CL-ML	A-4
10	8180+65, 30' RT	2.5-3.5	7	31	18	13	34	GC	A-2-6
11	8180+90, 29' LT	2.5-3.5	8	29	18	11	21	GC	A-2-6
11	8180+90, 29' LT	14-15	19	21	16	5	64	CL-ML	A-4
12	8182+8, 57' LT	4.5-5.5	18	39	21	18	80	CL	A-6

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No. 10887
9-25-2018

SOIL BORING LOGS

LeonardSpeed 7/23/2018 12:47:48 PM
WORKSPACE: ACAD
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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	61	190
				(2)	QUANTITY SHEETS			

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1A	STAGE 1B	STAGE 2	STAGE 3	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		CONSTRUCTION INFORMATION SIGN UPDATE	TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	RELOCATING PRECAST CONCRETE BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR. (REPAIR)	* ADVANCE WARNING ARROW PANEL	* PORTABLE CHANGEABLE MESSAGE SIGN
												LEFT	RIGHT						
			EACH					NO.	SQ. FT.	EACH				LIN. FT.		EACH		DAY	WEEK
G20-1	ROAD WORK NEXT 1 MILE	60"x24"		2			2	2	20.0										
G20-2	END ROAD WORK	48"x24"	2	4	4	4	4	4	32.0										
R2-1	SPEED LIMIT XX	48"X60"	4	4	8	8	8	8	160.0										
R4-1	DO NOT PASS	48"X60"	4		4	4	4	4	80.0										
R11-2	ROAD CLOSED	48"X30"		2	5	5	5	5	50.0										
R55-1	FINES DOUBLE IN WORK ZONES	36"X60"		4	4	4	4	4	60.0										
W21-5a	RT. SHOULDER CLOSED	48"x48"		2			2	2	32.0										
OM-3R	OBJECT MARKER	12"X36"			8	8	8	8	24.0										
W1-4bR	LANE SHIFT RT.	48"X48"			2	2	2	2	32.0										
W1-4BL	LANE SHIFT LT.	48"X48"			2	2	2	2	32.0										
W1-6	ARROW	60"X30"	3		9	9	9	9	112.5										
W3-5	REDUCED SPEED AHEAD	48"X60"	2		4	4	4	4	80.0										
W4-2L	MERGE RT.	48"X48"	2			6	6	6	96.0										
W4-2R	MERGE LT.	48"X48"			6		6	6	96.0										
W9-2	LANE ENDS MERGE LEFT	48"X48"			2		2	2	32.0										
W9-2	LANE ENDS MERGE RIGHT	48"X48"				2	2	2	32.0										
W20-1	ROAD WORK AHEAD	48"x48"	2	4	4	4	4	4	64.0										
W20-1	ROAD WORK 1 MILE	48"x48"		4			4	4	64.0										
W20-1	ROAD WORK 1/2 MILE	48"x48"		4			4	4	64.0										
W20-1	ROAD WORK 1500 FT.	48"x48"		4			4	4	64.0										
W20-5	RIGHT LANE CLOSED 1 MILE	48"X48"			2	2	2	2	32.0										
W20-5	RIGHT TWO LANES CLOSED 1 MILE	48"X48"			2		2	2	32.0										
W20-5	LEFT LANE CLOSED 1 MILE	48"X48"	2				2	2	32.0										
W20-5	LEFT TWO LANES CLOSED 1 MILE	48"X48"				2	2	2	32.0										
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"X48"			2	2	2	2	32.0										
W20-5	LEFT LANE CLOSED 1/2 MILE	48"X48"	2				2	2	32.0										
W20-5	RIGHT TWO LANES CLOSED 1/2 MILE	48"X48"			2		2	2	32.0										
W20-5	LEFT TWO LANES CLOSED 1/2 MILE	48"X48"				2	2	2	32.0										
W20-5	RIGHT LANE CLOSED 1500 FT.	48"X48"			2	2	2	2	32.0										
W20-5	LEFT LANE CLOSED 1500 FT.	48"X48"	2				2	2	32.0										
W20-5	RIGHT TWO LANES CLOSED 1500 FT.	48"X48"			2		2	2	32.0										
W20-5	LEFT TWO LANES CLOSED 1500 FT.	48"X48"				2	2	2	32.0										
SPECIAL	MERGE NOW (LEFT)	48"X48"			2	1	2	2	32.0										
SPECIAL	MERGE NOW (RIGHT)	48"X48"	1			1	1	1	16.0										
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN	60"X84"		4			4	4	140.0										
SPECIAL	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE				4	4	4			8									
	TRAFFIC DRUMS		52		216	210	216				216								
	TYPE III BARRICADE-LT. (16')			1	4	4	4					64							
	TYPE III BARRICADE-RT. (16')			1	1	1	1						16						
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			11080			11080							11080					
	RELOCATING PRECAST CONCRETE BARRIER				800	800	800								800				
	TEMPORARY IMPACT ATTENUATION BARRIER			4			4									4			
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)																4		
	ADVANCE WARNING ARROW PANEL		1		3	3	3											9	
	PORTABLE CHANGEABLE MESSAGE SIGN		1	2	2	2	2												104
TOTALS:								1798.5		8	216	64	16	11080	800	4	4	9	104

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

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

MAINTENANCE OF TRAFFIC ITEMS

STATION	STATION	LOCATION	TRAFFIC CONTROL SUPERVISOR	PORTABLE CONSTRUCTION LIGHTING	
			LUMP SUM	TOTAL NO.	DAY
ENTIRE PROJECT IF AND WHERE DIRECTED BY ENGINEER		I-40	1.00	4	24
TOTALS:			1.00	4	24

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
EXPIRON O. LAWRENCE
09 13 2018

QUANTITY SHEETS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	62	190
				(2)	QUANTITY SHEETS			

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3	END OF JOB	REMOVAL OF PERMANENT PAVEMENT MARKINGS		REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		RAISED PAVEMENT MARKERS		ENHANCED THERMOPLASTIC PAVEMENT MARKING			THERMOPLASTIC PAVEMENT MARKING								REFLECTORIZED PAINT PAVEMENT MARKING
									TYPE II	TYPE II	6"		8"	6"		8"	12"		24"	YIELD LINE	WORDS	ARROWS	10"
	LIN. FT. - EACH				6" WHITE LIN. FT.	ARROW EACH	WHITE	BLACKOUT	(WHITE/RED)	(YEL/YEL)	WHITE	YELLOW	WHITE	WHITE	YELLOW	WHITE	WHITE	YELLOW	WHITE				WHITE
							LIN. FT.		EACH		LIN. FT.										EACH		LIN. FT.
REMOVAL OF PERMANENT PAVEMENT MARKINGS				1080	1080																		50
REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)				3		3																	
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)	281	6816	9300				16397																
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (BLACKOUT)	281	4544	6200					11025															
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)				512					512														
RAISED PAVEMENT MARKERS TYPE II (YEL/YEL)				46						46													
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	281			10591							10872												
ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")				5774								5774											
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")				2715									2715										
THERMOPLASTIC PAVEMENT MARKING WHITE (6")				7595										7595									
THERMOPLASTIC PAVEMENT MARKING YELLOW (6")				7255											7255								
THERMOPLASTIC PAVEMENT MARKING WHITE (8")				687												687							
THERMOPLASTIC PAVEMENT MARKING WHITE (12")				411													411						
THERMOPLASTIC PAVEMENT MARKING YELLOW (12")				197														197					
THERMOPLASTIC PAVEMENT MARKING WHITE (24")				156															156				
THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)				51																51			
THERMOPLASTIC PAVEMENT MARKING (WORDS)				3																	3		
THERMOPLASTIC PAVEMENT MARKING (ARROWS)				11																		11	
REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")				385																			385
* ENTIRE PROJECT TO BE USED IF AND					1000																		
WHERE DIRECTED BY ENGINEER																							
TOTALS:					**2080**	**3**	**16397**	**11025**	**512**	**46**	**10872**	**5774**	**2715**	**7595**	**7255**	**687**	**411**	**197**	**156**	**51**	**3**	**11**	**385**

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

NOTE: NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED UNTIL A MINIMUM OF 3 DAYS AFTER ALL MAIN LANE PAVING HAS BEEN COMPLETED. IN ADDITION, NO PERMANENT PAVEMENT MARKINGS SHALL BE PLACED DURING THE TIME PERIOD FROM DECEMBER 21 TO MARCH 15, INCLUSIVE.

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

CONCRETE DITCH PAVING

STATION	STATION	LOCATION	LENGTH	"W"	CONC. DITCH PAVING (TYPE B)	SOLID SODDING	WATER
			LIN. FT.	FEET	SQ. YD.	SQ. YD.	M. GAL.
180+86.71	181+57.14	WHITE OAK CROSSING LT. & RT. OF C.L	390.67	4.00	173.63	173.63	2.19
184+27.89	185+09.00	WHITE OAK CROSSING LT. & RT. OF C.L	426.16	4.00	189.40	189.40	2.39
8151+00.00	8152+75.00	RAMP 1 LT.	175.00	9.00	175.00	77.78	0.98
8152+75.00	8153+96.60	RAMP 1 LT.	121.60	6.00	81.07	54.04	0.68
8167+05.00	8167+86.00	RAMP 2 LT.	81.00	6.00	54.00	36.00	0.45
8161+23.50	8162+70.00	RAMP 3 LT.	146.50	9.00	146.50	65.11	0.82
8163+30.00	8165+25.00	RAMP 3 LT.	195.00	6.00	130.00	86.67	1.09
8165+25.00	8169+00.00	RAMP 3 LT.	375.00	9.00	375.00	166.67	2.10
8165+60.00	8171+20.00	RAMP 3 RT.	560.00	9.00	560.00	248.89	3.14
8169+00.00	8172+31.00	RAMP 3 LT.	331.00	6.00	220.67	147.11	1.85
8149+60.00	8153+50.00	RAMP 4 LT.	390.00	6.00	260.00	173.33	2.18
8151+60.00	8153+20.00	RAMP 4 RT.	160.00	9.00	160.00	71.11	0.90
8153+20.00	8157+00.00	RAMP 4 RT.	380.00	6.00	253.33	168.89	2.13
8154+50.00	8160+95.00	RAMP 4 LT.	645.00	9.00	645.00	286.67	3.61
8157+00.00	8160+67.00	RAMP 4 RT.	367.00	9.00	367.00	163.11	2.06
8180+48.00	8180+98.00	I-40 C.L. RT. LANES RT.	50.00	6.00	33.33	22.22	0.28
8181+73.00	8183+35.00	I-40 C.L. LT. LANES LT.	162.00	6.00	108.00	72.00	0.91
TOTALS:					**3931.93**	**2202.63**	**27.76**

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

CONCRETE ISLAND

STATION	LOCATION	CURB FACE TYPE	CONCRETE ISLAND SQ.YD.
8159+10 15' RT	RAMP 1	B	62
8157+15 10' RT	RAMP 2	B	31
8161+15 25' LT	RAMP 3	B	41
8161+30 10' LT	RAMP 4	B	72
TOTAL:			**206**

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
8139+31	WINGWALL OF R.C. BOX CULVERT	1
TOTAL:		**1**

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

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)	GUARDRAIL (TYPE C)
			LIN. FT.	EACH			LIN. FT.
190+05.00	190+05.00	END OF WHITE OAK CROSSING					50
178+98.77	181+17.52	WHITE OAK CROSSING RT. OF C.L.	150	1	1		
180+14.56	181+08.31	WHITE OAK CROSSING LT. OF C.L.	50	1		1	
184+66.48	186+85.23	WHITE OAK CROSSING LT. OF C.L.	150	1	1		
184+75.69	185+69.44	WHITE OAK CROSSING RT. OF C.L.	50	1		1	
8138+90.00	8141+15.00	C.L. RT. LANES I-40 RT. OF C.L.	150		1	1	
8176+77.95	8179+66.70	C.L. RT. LANES I-40 RT. OF C.L.	220	1	1		
8179+25.58	8180+99.33	CL. LT. LANES I-40 LT. OF C.L.	130	1		1	
8181+99.33	8184+18.08	C.L. LT. LANES I-40 LT. OF C.L.	150	1	1		
TOTALS:			**1050**	**7**	**5**	**4**	**50**

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE C)	* 16'-0" GATES
			LIN. FT.	EACH
8150+70	8154+82	RAMP 1 RT.	1011	
8162+83	8167+35	RAMP 2 RT.	1326	
8160+71	8171+24	RAMP 3 LT.	1207	
8150+30	8161+36	RAMP 4 LT.	1276	
8080+92	8181+01	I-40 LT. LANES LT. OF C.L.	50	1
8181+88	8181+97	I-40 LT. LANES LT. OF C.L.	12	
TOTALS:			**4882**	**1**

* DENOTES ALTERNATE BID ITEM.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
AARON O. LAWRENCE
9-23-08

QUANTITY SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1 10-18-18				6	ARK.			
				JOB NO.		061190	63	190
				2	QUANTITY SHEETS			

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	CURB AND GUTTER	RETAINING WALLS	CONCRETE DITCH PAVING	CONCRETE PAVEMENT	APPROACH SLAB AND GUTTERS	WALKS	SIGN FOUNDATIONS	HEADWALLS	GUARDRAIL	BUILDINGS	SEPTIC SYSTEMS	SIGNS	PLANTERS
			LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	EACH	SQ. YD.	EACH	EACH	LIN. FT.	EACH	EACH	EACH	EACH
174+54	174+73	WHITE OAK CROSSING LT. & RT. OF C.L.				283									
174+59	175+00	WHITE OAK CROSSING LT. OF C.L.													
175+00	179+00	WHITE OAK CROSSING LT. & RT. OF C.L.	1100												
175+00	177+00	WHITE OAK CROSSING LT. & RT. OF C.L.				786									
175+30	176+20	WHITE OAK CROSSING RT. OF C.L.										6			
176+69	176+95	WHITE OAK CROSSING LT. OF C.L.										2			
176+73	176+90	WHITE OAK CROSSING LT. OF C.L.													
177+18	177+40	WHITE OAK CROSSING RT. OF C.L.										2			
177+20		WHITE OAK CROSSING LT. OF C.L.													
177+60	177+88	WHITE OAK CROSSING LT. OF C.L.										2			
177+60	178+00	WHITE OAK CROSSING LT. OF C.L.													
178+12	178+25	WHITE OAK CROSSING RT. OF C.L.										2			
178+35		WHITE OAK CROSSING LT. OF C.L.													
178+45	180+22	WHITE OAK CROSSING RT. OF C.L.										7			
178+75	180+00	WHITE OAK CROSSING RT. OF C.L.						160							
180+22		WHITE OAK CROSSING C.L.											1		
180+50		WHITE OAK CROSSING C.L.		40											
8140+99		I-40 RT. LANES LT. & RT. OF C.L.							2						
8141+00	8144+65	I-40 LT. LANES LT. OF C.L.			365										
8150+16	8152+00	I-40 LT. LANES LT. OF C.L.			184										
8158+09	8158+09	I-40 LT. LANES LT. OF C.L.							1						
8162+54	8163+05	RAMP 2 LT. OF C.L.				115									
8164+10	8167+53	RAMP 2 LT. OF C.L.				145									
8171+74	8174+55	RAMP 3 LT. & RT. OF C.L.			290										
8173+38		I-40 LT. LANES LT. OF C.L.							1						
8177+03		I-40 LT. LANES LT. OF C.L.							1						
8179+35	8180+8	I-40 RT. LANES C.L.					2								
8180+33		I-40 LT. LANES LT. OF C.L.							1						
8180+48	8180+98	I-40 RT. LANES RT. OF C.L.			34										
8180+68	8182+31	I-40 LT. LANES C.L.					2								
8172+37		I-40 RT. LANES RT. OF C.L.							1						
8176+91	8179+72	I-40 RT. LANES RT. OF C.L.									281				
8181+72	8183+35	I-40 LT. LANES LT. OF C.L.			93										
8181+94	8184+20	I-40 LT. LANES LT. OF C.L.									226				
8184+66		I-40 LT. LANES LT. OF C.L.							1						
* ENTIRE	PROJECT	TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	275	10	242	332		40	2	4	127			2	0
TOTALS:			1375	50	1208	1661	4	200	10	4	634	21	1	2	0

NOTE: THE QUANTITY SHOWN ABOVE FOR THE REMOVAL AND DISPOSAL OF GUARDRAIL SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL GUARDRAIL TERMINALS AND TERMINAL ANCHOR POSTS. ⚠

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

REMOVAL AND DISPOSAL OF CULVERTS AND DROP INLETS

STATION	DESCRIPTION	PIPE CULVERTS	JUNCTION BOXES	DROP INLETS
		EACH	EACH	EACH
8162+36	RAMP 2 LT. OF C.L.	1		
8162+48	RAMP 2 RT. OF C.L.	1		
8163+20	RAMP 2 RT. OF C.L.	1		
* ENTIRE PROJECT TO BE USED IF AND		8	2	2
WHERE DIRECTED BY THE ENGINEER				
TOTALS:		11	2	2

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

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	WIRE FENCE	6' CHAIN LINK	GATES
			LIN. FT.		EACH
8149+00	8170+65	I-40 LT. OF C.L.	2165		1
8151+30	8154+75	I-40 RT. OF C.L.	345		
8154+30	8154+75	I-40 RT. OF C.L.		160	
8165+94	8168+30	I-40 RT. OF C.L.	330		1
8179+58	8179+69	I-40 RT. OF C.L.	12		
8180+42	8180+64	I-40 RT. OF C.L.	12		
8180+92	8181+01	I-40 LT. OF C.L.	50		1
	8181+97	I-40 LT. OF C.L.	12		
TOTALS:			2926	160	3

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
169+52	181+19	WHITE OAK CROSSING	12	12
184+65	190+00	WHITE OAK CROSSING	6	6
8139+95	8159+20	RAMP 1	20	20
8157+00	8175+86	RAMP 2	19	19
8175+86	8180+98	RAMP 2 AUXILIARY LANE	6	6
8135+20	8161+45	RAMP 4	27	27
8161+00	8180+83	RAMP 3	20	20
8180+83	8190+79	RAMP 3 AUXILIARY LANE	10	10
TOTALS:			120	120

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL								
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	WATTLE (20") DITCH CHECKS (E-1)	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	DROP INLET SILT FENCE (E-7)	SILT FENCE (E-11)	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	LIN. FT.	BAG	CU.YD.	LIN. FT.	LIN. FT.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						29.60	29.60	603.8		374	186	20	6410	317
ENTIRE	PROJECT	STAGE 1	29.60	59.20	29.60	3019.2	29.60	14.80	14.80	301.9		1562	216	80	3735	284
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER			7.40	14.80	7.40	754.8	7.40	11.10	11.10	226.4	450	402	112	25	2536	95
TOTALS:			37.00	74.00	37.00	3774.0	37.00	55.50	55.50	1132.1	450	2338	514	125	12681	696

BASIS OF ESTIMATE:
LIME .....2 TONS / ACRE OF SEEDING
WATER.....102.0 M.G. / ACRE OF SEEDING
WATER.....20.4 M.G. / ACRE OF TEMPORARY SEEDING
WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING
WATTLE DITCH CHECKS.....9 LIN. FT. / LOCATION
SAND BAG DITCH CHECKS.....22 BAGS / LOCATION
ROCK DITCH CHECKS.....3 CU.YD./LOCATION

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

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
10-18-18

QUANTITY SHEETS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	64	190
				(2)	QUANTITY SHEETS			

STRUCTURES

STATION	DESCRIPTION	REINFORCED CONCRETE PIPE CULVERT (CLASS III) 18"	(CLASS III) 24"	(CLASS III) 30"	(CLASS IV) 48"	SIDE DRAIN 12"	FLARED END SECTIONS FOR R.C. PIPE CULVERTS 18"	24"	30"	48"	DROP INLETS TYPE ST	RM	N-3	JUNCT. BOXES (TYPE E)	SPAN	HEIGHT	LENGTH	CLASS S CONCRETE - ROADWAY	REINF. STEEL-ROADWAY (GRADE 60)	UNCL.EXC. FOR STRUCTURES - ROADWAY	SOLID SODDING	WATER	STD. DWG. NOS.
		LIN. FT.					EACH								LIN. FT.			CU.YD.	POUND	CU.YD.	SQ.YD.	M.GAL.	
180+86	WHITE OAK CROSSING LT.					30							1										FPC-9N
180+95	WHITE OAK CROSSING RT.					35							1										FPC-9N
8148+54	RAMP 1 DROP INLET				64					1		1									29	0.37	FES-1, FES-2, FPC-9D, PCC-1
8151+75	RAMP 1 CROSS DRAIN			84					2												26	0.33	FES-1, FES-2, PCC-1
8167+60	RAMP 2 CROSS DRAIN				113					2											58	0.73	FES-1, FES-2, PCC-1
8171+00	RAMP 2 DROP INLET	50					1				1										5	0.06	FES-1, FES-2, FPC-9S, PCC-1
8174+64	RAMP 2 PIPE EXTENSION		16					1													8	0.10	FES-1, FES-2, PCC-1
8138+86	I-40 LT. LANES BOX EXTENSION														7	8	15	27.45	2385	11	22	0.28	R-130X-0,W-X303-1
8146+59	RAMP 4 DROP INLET	43					1				1										5	0.06	FES-1, FES-2, FPC-9S, PCC-1
8150+12	RAMP 4 JUNCTION BOX													1									FES-1, FES-2, FPC-9, PCC-1
8150+25	RAMP 4 CROSS DRAIN				89					1											29	0.37	FES-1, FES-2, PCC-1
8151+70	RAMP 4 SIDE DRAIN			314					2												26	0.33	FES-1, FES-2, PCC-1
8163+39	RAMP 3 CROSS DRAIN		164					2													16	0.20	FES-1, FES-2, PCC-1
8165+13	RAMP 3 CROSS DRAIN			106					2												26	0.33	FES-1, FES-2, PCC-1
8172+00	RAMP 3 CROSS DRAIN		102					2													16	0.20	FES-1, FES-2, PCC-1
8176+06	RAMP 3 DROP INLET	75					1				1										5	0.06	FES-1, FES-2, FPC-9S, PCC-1
TOTALS:		**168**	**282**	**504**	**266**	**65**	**3**	**5**	**6**	**4**	**3**	**1**	**2**	**1**				**27.45**	**2385**	**11**	**271**	**3.42**	

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

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

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

EARTHWORK

	STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
				CU. YD.		TON
	169+52	190+00	WHITE OAK CROSSING	29335	12420	
	8139+95	8159+21	RAMP 1	3206	19583	
	8157+04	8180+00	RAMP 2	4427	51723	
	8161+03	8190+00	RAMP 3	65996	16224	
	8137+00	8161+42	RAMP 4	56342	7082	
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE			500
			DIRECTED BY THE ENGINEER			
	TOTALS:			**159306**	**107032**	**500**

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

4" PIPE UNDERDRAIN

STATION	STATION	LOCATIONS	4" PIPE UNDERDRAINS	UNDERDRAIN OUTLET PROTECTORS
			LIN. FT.	EACH
8184+71	LT.	I-40 LT. LANES	22	1
8185+62	LT.	I-40 LT. LANES	22	1
8188+44	LT.	I-40 LT. LANES	16	1
* ENTIRE PROJECT TO BE USED IF AND			25	2
WHERE DIRECTED BY THE ENGINEER				
TOTALS:			**85**	**5**

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

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING
	CU.YD.
ENTIRE PROJECT TO BE USED IF	
AND WHERE DIRECTED BY THE	100
ENGINEER	
TOTAL:	**100**

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

RETAINING WALL

	STATION	STATION	LOCATION	RETAINING WALL	SELECT GRANULAR BACKFILL	AGGREGATE BASE COURSE (CLASS 7) (UNDERCUT BACKFILL)	UNCLASSIFIED EXCAVATION
				SQ.FT.	CU.YDS.	TONS	CU.YDS.
	180+88	181+58	WHITE OAK CROSSING - WALL NO. 1	3037	1417		1594
	184+28	185+08	WHITE OAK CROSSING - WALL NO. 2	4224	2511		2341
*	ENTIRE	PROJECT	TO BE USED IF AND WHERE			210	
			DIRECTED BY THE ENGINEER				
	TOTALS:			**7261**	**3928**	**210**	**3935**

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

APPROACH GUTTERS AND SLABS

STATION	STATION	LOCATION	APPROACH GUTTER (TYPE A)	APPROACH SLABS	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)
			CU.YD.	CU.YD.	POUND	TON
180+92.39	181+28.89	WHITE OAK CROSSING	28.77	144.59	19215	131.35
184+55.11	184+91.61	WHITE OAK CROSSING	28.77	144.59	19215	131.35
8179+35.20	8179+71.70	I-40 RT. LANES NEWTON CREEK	29.95	97.96	13234	102.81
8180+61.70	8180+98.20	I-40 RT. LANES NEWTON CREEK	29.95	97.96	13234	102.81
8180+67.83	8181+04.33	I-40 LT. LANES NEWTON CREEK	29.95	97.96	13234	102.81
8181+94.33	8182+30.83	I-40 LT. LANES NEWTON CREEK	29.95	97.96	13234	102.81
TOTALS:			**177.34**	**681.02**	**91366**	**673.94**

COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
169+26.72	169+51.72	WHITE OAK CROSSING	43.00	119.44
8138+48.63	8146+60.83	I-40 C.L. RT. LANES	10.00	902.44
8173+73.10	8179+35.42	I-40 C.L. RT. LANES	10.00	624.80
8180+98.20	8182+99.92	I-40 C.L. RT. LANES	18.00	403.44
8136+58.84	8146+58.84	I-40 C.L. LT. LANES	10.00	1111.11
8174+45.76	8180+67.83	I-40 C.L. LT. LANES	10.00	691.19
8182+30.80	8190+79.21	I-40 C.L. LT. LANES	6.00	565.61
TOTAL:				**4418.03**

NOTE: AVERAGE MILLING DEPTH 1".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
Aug. 1, 2018

QUANTITY SHEETS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	65	190
				(2)	QUANTITY SHEETS			

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	AGGREGATE BASE COURSE (CLASS 7)		TACK COAT				ACHM BASE COURSE (1 1/2")				ACHM BINDER COURSE (1")				ACHM SURFACE COURSE (1/2")							
				TON / STATION	TON	AVG. WID.	SQ.YD.	GAL. / SQ.YD.	GAL.	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	AVG. WID.	SQ.YD.	POUND / SQ.YD.	PG 76-22	TOTAL PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON	FEET			TON	TON
WHITE OAK CROSSING																										
178+54.57	180+87.78	WHITE OAK CROSSING	233.21	398.00	928.18	126.83	3286.45	0.05	164.32					63.58	1647.50	660.00	543.68	63.25	1638.95	220.00	180.28	75.00	1943.42	220.00	213.78	394.06
184+96.19	192+00.00	WHITE OAK CROSSING	703.81	398.00	2801.16	126.83	9918.25	0.05	495.91					63.58	4972.03	660.00	1640.77	63.25	4946.22	220.00	544.08	75.00	5865.08	220.00	645.16	1189.24
169+51.72	170+51.72	WHITE OAK CROSSING SUPERELEVATED	100.00	326.06	326.06	89.83	998.11	0.05	49.91					45.08	500.89	660.00	165.29	44.75	497.22	220.00	54.69	53.50	594.44	220.00	65.39	120.08
170+51.72	173+51.72	WHITE OAK CROSSING SUPERELEVATED	300.00	376.61	1129.83	115.83	3861.00	0.05	193.05					58.08	1936.00	660.00	638.88	57.75	1925.00	220.00	211.75	69.50	2316.67	220.00	254.83	466.58
170+51.72	178+54.57	WHITE OAK CROSSING SUPERELEVATED	802.85	398.00	3195.34	126.83	11313.94	0.05	565.70					63.58	5671.69	660.00	1871.66	63.25	5642.25	220.00	620.65	75.00	6690.42	220.00	735.95	1356.60
180+87.78	180+96.99	WHITE OAK CROSSING SHOULDER RT.	9.21	60.94	5.61	12.42	12.71	0.05	0.64					6.29	6.44	660.00	2.13	6.13	6.27	220.00	0.69	8.00	8.19	220.00	0.90	1.59
184+87.01	184+96.19	WHITE OAK CROSSING SHOULDER LT.	9.18	60.94	5.59	12.42	12.67	0.05	0.63					6.29	6.42	660.00	2.12	6.13	6.25	220.00	0.69	8.00	8.16	220.00	0.90	1.59
I-40 C.L. RT. LANES																										
8139+94.98	8146+60.83	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) RT LANES (FULL DEPTH)	665.85	141.44	941.78	27.96	2068.57	0.05	103.43	9.57	708.02	990.00	350.47	9.30	688.05	440.00	151.37	9.09	672.51	220.00	73.98	9.05	669.55	220.00	73.65	147.63
8138+48.63	8146+60.83	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) RT LANES (OVERLAY)	812.20			10.00	902.44	0.17	153.41									10.00	902.44	110.00	49.63	10.00	902.44	220.00	99.27	148.90
8173+73.10	8175+86.41	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) RT LANES (FULL DEPTH)	213.31	145.80	311.01	31.32	742.32	0.05	37.12	10.69	253.36	990.00	125.41	10.42	246.97	440.00	54.33	10.21	241.99	220.00	26.62	10.17	241.04	220.00	26.51	53.13
8175+86.41	8179+35.42	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) RT LANES (FULL DEPTH)	349.01	135.65	473.43	23.49	910.92	0.05	45.55	8.08	313.33	990.00	155.10	7.81	302.86	440.00	66.63	7.60	294.72	220.00	32.42	7.56	293.17	221.00	32.40	64.82
8173+73.10	8179+35.42	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) RT LANES (OVERLAY)	562.32			10.00	624.80	0.17	106.22									10.00	624.80	110.00	34.36	10.00	624.80	220.00	68.73	103.09
8180+98.20	8182+99.92	I-40 OVERLAY	201.72																			18.00	403.44	220.00	44.38	44.38
8172+50.00	8176+00.00	I-40 RT. LANES TRENCH AND SHLD. PREP. FOR MOT (INSIDE SHLD.)	350.00			30.00	1166.67	0.17	198.33	10.00	388.89	990.00	192.50	10.00	388.89	440.00	85.56	10.00	388.89	220.00	42.78	10.00	388.89	220.00	42.78	85.56
I-40 C.L. LT. LANES																										
8137+64.92	8139+58.84	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) LT LANES (- TAPER)	193.92	123.13	238.77	13.83	297.99	0.05	14.90	4.86	104.72	990.00	51.84	4.59	98.90	440.00	21.76	4.38	94.37	220.00	10.38	4.34	93.51	220.00	10.29	20.67
8139+58.84	8145+20.13	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) LT LANES (- ACCEL LANE)	561.29	138.61	778.00	25.77	1607.16	0.05	80.36	8.84	551.31	990.00	272.90	8.57	534.47	440.00	117.58	8.36	521.38	220.00	57.35	8.32	518.88	220.00	57.08	114.43
8145+20.13	8146+58.84	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) LT LANES (- APPROACH)	138.71	147.04	203.96	32.28	497.51	0.05	24.88	11.01	169.69	990.00	84.00	10.74	165.53	440.00	36.42	10.53	162.29	220.00	17.85	10.49	161.67	220.00	17.78	35.63
8136+58.84	8146+58.84	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) LT LANES (OVERLAY)	1000.00			10.00	1111.11	0.17	188.89									10.00	1111.11	110.00	61.11	10.00	1111.11	220.00	122.22	183.33
8174+45.76	8180+67.83	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) LT LANES (FULL DEPTH)	622.07	169.99	1057.46	49.98	3454.56	0.05	172.73	16.91	1168.80	990.00	578.56	16.64	1150.14	440.00	253.03	16.43	1135.62	220.00	124.92	16.39	1132.86	220.00	124.61	249.53
8174+45.76	8180+67.83	I-40 NOTCH & WIDEN (10' EXIST. SHLD.) LT LANES (OVERLAY)	622.07			10.00	691.19	0.17	117.50									10.00	691.19	110.00	38.02	10.00	691.19	220.00	76.03	114.05
8182+30.80	8190+79.21	I-40 NOTCH & WIDEN (6' EXIST. SHLD.) LT LANES (FULL DEPTH)	848.41	129.39	1097.76	18.66	1759.04	0.05	87.95	6.47	609.91	990.00	301.91	6.20	584.46	440.00	128.58	5.99	564.66	220.00	62.11	5.95	560.89	220.00	61.70	123.81
8182+30.80	8190+79.21	I-40 NOTCH & WIDEN (6' EXIST. SHLD.) LT LANES (OVERLAY)	848.41			6.00	565.61	0.17	96.15									6.00	565.61	110.00	31.11	6.00	565.61	220.00	62.22	93.33
RAMP SECTIONS																										
8144+49.85	8149+58.15	RAMP 1	508.30	281.25	1429.59	46.63	2633.56	0.05	131.68	15.88	896.87	550.00	246.64	15.50	875.41	440.00	192.59	15.25	861.29	220.00	94.74	25.00	1411.94	220.00	155.31	250.05
8155+56.21	8155+59.49	RAMP 1	3.28	281.25	9.23	46.63	16.99	0.05	0.85	15.88	5.79	550.00	1.59	15.50	5.65	440.00	1.24	15.25	5.56	220.00	0.61	25.00	9.11	220.00	1.00	1.61
8149+58.15	8155+56.21	RAMP 1 SUPERELEVATED	598.06	391.25	2339.91	46.63	3098.62	0.05	154.93	15.88	1055.24	550.00	290.19	15.50	1029.99	440.00	226.60	15.25	1013.38	220.00	111.47	25.00	1661.28	220.00	182.74	294.21
8155+59.49	8159+21.27	RAMP 1 SUPERELEVATED	361.78	391.25	1415.46	46.63	1874.42	0.05	93.72	15.88	638.34	550.00	175.54	15.50	623.07	440.00	137.08	15.25	613.02	220.00	67.43	25.00	1004.94	220.00	110.54	177.97
8163+49.05	8163+50.67	RAMP 2	1.62	281.25	4.56	46.63	8.39	0.05	0.42	15.88	2.86	550.00	0.79	15.50	2.79	440.00	0.61	15.25	2.75	220.00	0.30	25.00	4.50	220.00	0.50	0.80
8173+50.51	8173+75.28	RAMP 2	24.77	281.25	69.67	46.63	128.34	0.05	6.42	15.88	43.71	550.00	12.02	15.50	42.66	440.00	9.39	15.25	41.97	220.00	4.62	25.00	68.81	220.00	7.57	12.19
8157+03.57	8163+49.05	RAMP 2 SUPERELEVATED	645.48	383.50	2475.42	46.63	3344.30	0.05	167.22	15.88	1138.91	550.00	313.20	15.50	1111.66	440.00	244.57	15.25	1093.73	220.00	120.31	25.00	1793.00	220.00	197.23	317.54
8163+50.67	8173+50.51	RAMP 2 SUPERELEVATED	999.84	383.50	3834.39	46.63	5180.28	0.05	259.01	15.88	1764.16	550.00	485.14	15.50	1721.95	440.00	378.83	15.25	1694.17	220.00	186.36	25.00	2777.33	220.00	305.51	491.87
8162+85.00	8165+40.57	RAMP 3	255.57	316.25	808.24	73.63	2090.85	0.05	104.54	24.88	706.51	550.00	194.29	24.50	695.72	440.00	153.06	24.25	688.62	220.00	75.75	34.00	965.49	220.00	106.20	181.95
8175+09.88	8176+57.90	RAMP 3	148.02	316.25	468.11	73.63	1210.97	0.05	60.55	24.88	409.19	550.00	112.53	24.50	402.94	440.00	88.65	24.25	398.83	220.00	43.87	34.00	559.19	220.00	61.51	105.38
8161+02.85	8162+85.00	RAMP 3 SUPERELEVATED	182.15	557.50	1015.49	73.63	1490.19	0.05	74.51	24.88	503.54	550.00	138.47	24.50	495.85	440.00	109.09	24.25	490.79	220.00	53.99	34.00	688.12	220.00	75.69	129.68
8165+40.57	8175+09.88	RAMP 3 SUPERELEVATED	969.31	557.50	5403.90	73.63	7930.03	0.05	396.50	24.88	2679.60	550.00	736.89	24.50	2638.68	440.00	580.51	24.25	2611.75	220.00	287.29	34.00	3661.84	220.00	402.80	690.09
8153+73.30	8153+88.57	RAMP 4	15.27	281.25	42.95	46.63	79.12	0.05	3.96	15.88	26.94	550.00	7.41	15.50	26.30	440.00	5.79	15.25	25.87	220.00	2.85	25.00	42.42	220.00	4.67	7.52
8146+56.36	8153+73.30	RAMP 4 SUPERELEVATED	716.94	400.50	2871.34	46.63	3714.55	0.05	185.73	15.88	1265.00	550.00	347.88	15.50	1234.73	440.00	271.64	15.25	1214.82	220.00	133.63	25.00	1991.50	220.00	219.07	352.70
8153+88.57	8161+42.37	RAMP 4 SUPERELEVATED	753.80	400.50	3018.97	46.63	3905.52	0.05	195.28	15.88	1330.04	550.00	365.76	15.50	1298.21	440.00	285.61	15.25	1277.27	220.00	140.50	25.00	2093.89	220.00	230.33	370.83
GUARDRAIL WIDENING																										
8138+48.63	8138+80.01	I-40 C.L. RT. LANES - RAMP 1 TAPER	31.38	33.61	10.55																	2.75	9.59	220.00	1.05	1.05
8138+80.01	8141+20.35	I-40 C.L. RT. LANES - RAMP 1	240.34	67.22	161.56																	5.50	146.87	220.00	16.16	16.16
8141+20.35	8141+84.56	I-40 C.L. RT. LANES - RAMP 1 TAPER	64.21	42.92	27.56																	3.01	21.47	220.00	2.36	2.36
8176+34.61	8176+67.98	I-40 C.L. RT. LANES - NEWTON CK. BRIDGE TAPER	33.37	35.48	11.84																	2.75	10.20	220.00	1.12	1.12
8176+67.98	8179+71.70	I-40 C.L. RT. LANES -NEWTON CK. BRIDGE	303.72	70.96	215.52																	5.50	185.61	220.00	20.42	20.42
8181+94.33	8182+37.89	I-40 C.L. LT. LANES - NEWTON CK. BRIDGE	43.56	45.15	19.67																	3.50	16.94	220.00	1.86	1.86
8182+37.89	8184+28.05	I-40 C.L. LT. LANES - NEWTON CK. BRIDGE TAPER OUT	190.16	59.22	112.61																	4.59	96.98	220.00	10.67	10.67
8184+28.05	8184+62.07	I-40 C.L. LT. LANES - NEWTON CK. BRIDGE TAPER IN	34.02	35.48	12.07																	2.75	10.40	220.00	1.14	1.14
178+55.08	181+17.52	WHITE OAK CROSSING OVERPASS BRIDGE RT.	262.44	53.67	140.85																	4.16	121.31	220.00	13.34	13.34
179+69.14	181+08.31	WHITE OAK CROSSING OVERPASS BRIDGE LT.	139.17	50.31	70.02																	3.90	60.31	220.00	6.63	6.63
184+66.48	187+28.92	WHITE OAK CROSSING OVERPASS BRIDGE LT.	262.44	53.67	140.85																	4.16	121.31	220.00	13.34	13.34
184+75.69	186+14.85	WHITE OAK CROSSING OVERPASS BRIDGE RT.	139.16	50.31	70.01																	3.90	60.30	220.00	6.63	6.63
TOTALS:					39694.28		82509.15		4732.90		16734.73		5541.03		31106.85		8465.05		34667.56		3599.19		45380.08		4991.95	8591.14

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....95.2% MIN. AGGR.....4.8% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.8% MIN. AGGR.....4.2% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.4% MIN. AGGR.....3.6% ASPHALT BINDER
MAXIMUM NUMBER OF GYRATIONS = 205 FOR PG 76-22
TACK COAT QUANTITIES WERE CALCULATED USING THE EMULSIFIED ASPHALT RATES. REFER TO SS-400-1 FOR THE RESIDUAL ASPHALT APPLICATION RATES.

BASE AND SURFACING - SHOULDER RECONSTRUCTION

STATION	STATION	LOCATION	LENGTH	TRENCHING AND SHOULDER PREP.	
				AVG. WID.	STA.
			FEET	FEET	
I-40 C.L. RT. LANES - TRENCHING & SHOULDER PREPARATION					
8172+50.00	8176+00.00	I-40 RT. LANES TRENCH AND SHLD. PREP. FOR MOT (INSIDE SHOULDER)	350.00	10.00	3.50
TOTAL:					3.50

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
8144+50	8146+60	I-40 C.L. RT. LANES RT. OF C.L.	210
8170+62	8183+00	I-40 C.L. RT. LANES RT. OF C.L.	1238
8136+58	8147+52	I-40 C.L. LT. LANES LT. OF C.L.	1094
8174+46	8200+30	I-40 C.L. LT. LANES LT. OF C.L.	2584
TOTAL:			5126

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
9-23-18

QUANTITY SHEETS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	66	190

(1) 07418, A3233, & B3233 - QUANTITIES - 60015

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 061190

BRIDGE NUMBER	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NUMBER	801	SS & 802	SS, SP & 802	803	804	804	SS & 805	SS & 805	SS & 805	SS, SP & 807	SS & 807	808	SS & 809	812	816	816	816	821	SP JOB 061190	SP JOB 061190	SP JOB 061190	SP JOB 061190	SP JOB 061190	SP JOB 061190	SP JOB 061190	SP JOB 061190
			ITEM	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)	(1) STEEL PILING (HP 14x73)	PREBORING	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GRADE 50)	PAINTING STRUCTURAL STEEL	ELASTOMERIC BEARINGS	SILICONE JOINT SEALANT	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	DUMPED RIPRAP	FILTER BLANKET	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO.XXXXX)	ARCHITECTURAL FINISH	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS	CORING DRILLED SHAFT	CROSSHOLE SONIC LOGGING (48" DIA.)	DRILLED SHAFT (48" DIA.)	PERMANENT STEEL CASING (54" DIA.)	POLYMER OVERLAY	TEXTURED COATING FINISH
			UNIT	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LB.	TON	CU. IN.	LIN. FT.	EACH	CU. YD.	CU. YD.	SQ. YD.	LUMP SUM	SQ. FT.	SQ. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.
07418	WHITE OAK CROSSING OVER I-40	END BENT NO. 1			95.44		0.2	10,445		66	476	331	1,862		6,105	79		9				61.5							101
		INTERMEDIATE BENT NO. 2		220	284.51			52,540					868		11,655							1,692.0							315
		END BENT NO. 3			96.05		0.2	10,445		76	561	314	1,862		6,105	79		9				61.5							100
		324'-0" CONT. COMP. PLATE GIRDER UNIT				727.80	53.9		162,400				979,688	492.2								1,458.0							513
		TOTAL FOR BRIDGE NO. 07418		220	476.00	727.80	54.3	73,430	162,400	142	1,037	645	984,280	492.2	23,865	158	1	18				3,273.0							1,029
A3233	NEWTON CREEK	END BENT NO. 1			3.20			366		44									195	389									
		INTERMEDIATE BENT NO. 2			4.85			1,064																19	1	19	8		
		INTERMEIDATE BENT NO. 3			4.85			1,064																19	1	19	6		
		END BENT NO. 4			3.20			366		30									108	216									
		3-30' CONCRETE DECK GIRDER SPANS				49.90	1.6		10,360														486					640	
		TOTAL FOR BRIDGE NO. A3233			16.10	49.90	1.6	2,860	10,360	74							1		303	605	1		486	38	2	38	14	640	
B3233	NEWTON CREEK	END BENT NO. 1			3.20			366		44									128	257									
		INTERMEDIATE BENT NO. 2			4.85			1,064																21	1	21	9		
		INTERMEIDATE BENT NO. 3			4.85			1,064																21	1	21	9		
		END BENT NO. 4			3.20			366		44									159	319									
		3-30' CONCRETE DECK GIRDER SPANS				49.90	1.6		10,360														486					640	
		TOTAL FOR BRIDGE NO. B3233			16.10	49.90	1.6	2,860	10,360	88							1		287	576	1		486	42	2	42	18	640	
		TOTALS FOR JOB NO. 061190		(2) 220	508.20	827.60	57.5	79,150	183,120	304	1,037	645	984,280	492.2	23,865	158	3	18	590	1,181		3,273.0	(3) 972	80	4	80	32	1,280	1,029

(1) Steel Piles are required to be Grade 50 and have approved driving points which will not be paid for directly, but shall be considered subsidiary to item "Steel Piling (HP 12x53)" or "Steel Piling (HP 14x73)". All piles shall conform to Std. Dwg. No. 55020.

(2) Approx. 160 cu. yds. of rock excavation.

(3) Quantity shown is for estimating and bidding purposes only. Acutal quantity, if any, will be determined in the field.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14501 STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SCHEDULE OF BRIDGE QUANTITIES
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HSS/MKL DATE: 10/13/17 FILENAME: B061190XX_QXI.dgn
CHECKED BY: SFH DATE: 12/17
DESIGNED BY: - DATE: -----
BRIDGE NO. 07418, A3233, & B3233 DRAWING NO. 60015 SCALE: No Scale

Megan.Land 9/17/2018 2:08:09 PM
WORKSPACE: AHTD_Bridge
Y:\Projects\MAUMELLE\154459.I-40.interchange\06-Design\Drawings\Bridge\B061190XX_QXI-2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1 10-18-18				6	ARK.			
				JOB NO.		061190	67	190
				2 SUMMARY OF QUANTITIES				

SUMMARY OF QUANTITIES (BOX 1 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
201	CLEARING	120	STATION
201	GRUBBING	120	STATION
202	REMOVAL AND DISPOSAL OF CURB AND GUTTER	1375	LIN. FT.
202	REMOVAL AND DISPOSAL OF FENCE	3086	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES	3	EACH
202	REMOVAL AND DISPOSAL OF RETAINING WALLS	50	LIN. FT.
202	REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	1661	SQ. YD.
202	REMOVAL AND DISPOSAL OF CONCRETE ISLANDS	4	SQ. YD.
1 202	REMOVAL AND DISPOSAL OF APPROACH SLAB AND GUTTERS	4	EACH
202	REMOVAL AND DISPOSAL OF WALKS	200	SQ. YD.
202	REMOVAL AND DISPOSAL OF SIGN FOUNDATIONS	10	EACH
202	REMOVAL AND DISPOSAL OF JUNCTION BOXES	2	EACH
202	REMOVAL AND DISPOSAL OF DROP INLETS	2	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	11	EACH
202	REMOVAL AND DISPOSAL OF HEADWALLS	4	EACH
202	REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING	1208	SQ. YD.
202	REMOVAL AND DISPOSAL OF GUARDRAIL	634	LIN. FT.
202	REMOVAL AND DISPOSAL OF BUILDINGS	21	EACH
202	REMOVAL AND DISPOSAL OF SIGNS	2	EACH
202	REMOVAL AND DISPOSAL OF SEPTIC SYSTEM	1	EACH
210	UNCLASSIFIED EXCAVATION	163241	CU. YD.
SP	SELECT GRANULAR BACKFILL	3928	CU. YD.
210	COMPACTED EMBANKMENT	107032	CU. YD.
SP & 210	SOIL STABILIZATION	500	TON
SP & 215	TRENCHING AND SHOULDER PREPARATION	4	STATION
SS & 303	AGGREGATE BASE COURSE (CLASS 7)	40578	TON
SS & 401	TACK COAT	4733	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	5342	TON
SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")	199	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	8109	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")	356	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	8179	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")	412	TON
412	COLD MILLING ASPHALT PAVEMENT	4418	SQ. YD.
504	APPROACH SLABS	681.02	CU. YD.
504	APPROACH GUTTERS	177.34	CU. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1.00	EACH
SP & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SP & 603	TRAFFIC CONTROL SUPERVISOR	1.00	LUMP SUM
SP, SS, & 604	CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	8	EACH
SS & 604	BARRICADES	80	LIN. FT.
SS & 604	TRAFFIC DRUMS	216	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	11080	LIN. FT.
604	RELOCATING PRECAST CONCRETE BARRIER	800	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	27422	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS	2080	LIN. FT.
604	REMOVAL OF PERMANENT PAVEMENT MARKINGS (ARROWS)	3	EACH
604	ADVANCE WARNING ARROW PANEL	9	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN	104	WEEK
SP	PORTABLE CONSTRUCTION LIGHTING	24	DAY
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)	3932	SQ. YD.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	168	LIN. FT.
606	24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	282	LIN. FT.
606	30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	504	LIN. FT.
606	48" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	266	LIN. FT.
SS & 606	12" SIDE DRAIN	65	LIN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	3	EACH
606	24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	5	EACH
606	30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	6	EACH
606	48" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	4	EACH
606	SELECTED PIPE BEDDING	100	CU. YD.
609	DROP INLETS (TYPE N3)	2	EACH
609	DROP INLETS (TYPE RM)	1	EACH
609	DROP INLETS (TYPE ST)	3	EACH
609	JUNCTION BOXES (TYPE E)	1	EACH
611	UNDERDRAIN OUTLET PROTECTORS	5	EACH
611	4" PIPE UNDERDRAINS	85	LIN. FT.
617	GUARDRAIL (TYPE A)	1050	LIN. FT.
617	GUARDRAIL (TYPE C)	50	LIN. FT.
617	TERMINAL ANCHOR POSTS (TYPE 1)	4	EACH
SS & 617	GUARDRAIL TERMINAL (TYPE 2)	5	EACH
617	THRIE BEAM GUARDRAIL TERMINAL	7	EACH
619	WIRE FENCE (TYPE C)	4882	LIN. FT.
* 619	16' STEEL GATES (ALTERNATE NO. 1)	1	EACH
* 619	16' ALUMINUM GATES (ALTERNATE NO. 2)	1	EACH
620	LIME	74	TON
620	SEEDING	37.00	ACRE
SS & 620	MULCH COVER	92.50	ACRE
620	WATER	4937.3	M. GAL.
621	TEMPORARY SEEDING	55.50	ACRE
621	SILT FENCE	12681	LIN. FT.
621	SAND BAG DITCH CHECKS	2338	BAG
621	DROP INLET SILT FENCE	125	LIN. FT.
621	SEDIMENT REMOVAL AND DISPOSAL	696	CU. YD.

* DENOTES ALTERNATE BID ITEM

SUMMARY OF QUANTITIES (BOX 2 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
621	ROCK DITCH CHECKS	514	CU. YD.
621	WATTLE (20")	450	LIN. FT.
623	SECOND SEEDING APPLICATION	37.00	ACRE
624	SOLID SODDING	2474	SQ. YD.
SS & 632	CONCRETE ISLAND	206	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL	1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS	5126	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/6 A.W.G.)	4344	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	4344	LIN. FT.
710	NON-METALLIC CONDUIT (1")	3412	LIN. FT.
710	NON-METALLIC CONDUIT (2")	701	LIN. FT.
SP	LIGHT POLE FOUNDATION	10	EACH
SP	LED ROADWAY ILLUMINATION POLE (17,675 LUMENS, SHOE BOX, SHOE BASE, 30')	17	EACH
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	385	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (6")	7595	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (8")	687	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	411	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING WHITE (24")	156	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	7255	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING YELLOW (12")	197	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (YIELD LINE)	51	LIN. FT.
719	THERMOPLASTIC PAVEMENT MARKING (WORDS)	3	EACH
719	THERMOPLASTIC PAVEMENT MARKING (ARROWS)	11	EACH
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	10872	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (8")	2715	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	5774	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)	558	EACH
SP	STEEL BRIDGE MOUNTED SIGN STRUCTURE (BM-040-60-45A)	1	EACH
SP	STEEL BRIDGE MOUNTED SIGN STRUCTURE (BM-040-60-45B)	1	EACH
SP	STEEL BRIDGE MOUNTED SIGN STRUCTURE (BM-040-60-52)	1	EACH
SP	STEEL CANTILEVER SIGN STRUCTURE (OC-040-60-50)	1	EACH
SP	STEEL CANTILEVER SIGN STRUCTURE (OC-040-60-51)	1	EACH
725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	67	SQ. FT.
725	GUIDE SIGN-OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)	1471	SQ. FT.
726	STANDARD SIGN	683	SQ. FT.
727	EXIT NUMBER PANEL (TYPE A)	143	SQ. FT.
728	DELINEATOR (TYPE 2)	98	EACH
729	CHANNEL POST SIGN SUPPORT (TYPE U-1)	6	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	2294	POUND
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)	3	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)	23	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-2)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-3)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-4)	2	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-5)	2	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER	4	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	4	EACH
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	11	CU. YD.
SS & 802	CLASS S CONCRETE-ROADWAY	27.45	CU. YD.
SP	RETAINING WALL	7261	SQ. FT.
804	REINFORCING STEEL-ROADWAY (GRADE 60)	93751	POUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
10-18-18

SUMMARY OF QUANTITIES

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WORKSPACE: AHTD_Bridge
Y:\Projects\MAUMELLE_I540\I-40_Interchange\06-Design\Drawings\r061190_08_01T_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
09-18-2018				6	ARK.			
10-17-2018				JOB NO.		061190	68	190
10-18-2018				(2)	SUMMARY OF QUANTITIES AND REVISIONS			

STRUCTURES OVER 20' SPAN (BOX 3 OF 3)

ITEM NUMBER	ITEM	QUANTITY	UNIT
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	220	CU. YD.
SP	ARCHITECTURAL FINISH	3273	SQ. FT.
SP	TEXTURED COATING FINISH	1029	SQ. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	57.5	GAL.
804	REINFORCING STEEL-BRIDGE (GRADE 60)	79150	POUND
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	183120	POUND
SS & 805	STEEL PILING (HP 12X53)	304	LIN. FT.
SS & 805	STEEL PILING (HP 14X73)	1037	LIN. FT.
SP	CORING DRILLED SHAFT	80	LIN. FT.
SP	DRILLED SHAFT (48" DIAMETER)	80	LIN. FT.
SP	PERMANENT STEEL CASING (54" DIAMETER)	32	LIN. FT.
SS & 805	PREBORING	645	LIN. FT.
SP	CROSSHOLE SONIC LOGGING (48" DIAMETER)	4	EACH
SP, SS & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50)	984280	POUND
SS & 807	PAINTING STRUCTURAL STEEL	492.2	TON
808	ELASTOMERIC BEARINGS	23865	CU. IN.
SS & 809	SILICONE JOINT SEALANT	158	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	3	EACH
816	FILTER BLANKET	1181	SQ. YD.
816	DUMPED RIPRAP	590	CU. YD.
816	CONCRETE RIPRAP	18	CU. YD.
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. A3233)	1.00	LUMP SUM
821	MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO. B3233)	1.00	LUMP SUM
SP	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS	972	SQ. FT.
SP	POLYMER OVERLAY	1280	SQ. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
9/18/2018	ADDED SS 400-5 PERCENT AIR VOIDS FOR ACHM MIX DESIGNS	3, 68
10/17/2018	ADDED FACTORED BEARING RESISTANCE FOR MSE WALLS AND SPECIFIED METHOD A BACKFILL CONSTRUCTION	36,68,104
	UPDATED MAINTENANCE OF TRAFFIC CONSTRUCTION SEQUENCE	
10/18/2018	UPDATED MAINTENANCE OF TRAFFIC CONSTRUCTION SEQUENCE, DELETED MAINTENANCE OF TRAFFIC NOTE	28,63,67,68,135
	ADDED REMOVAL AND DISPOSAL OF APPROACH SLAB AND GUTTERS, REVISED MAINTENANCE OF TRAFFIC SP	

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10887
SCOTT P. THORNSBERRY
10-18-2018

SURVEY CONTROL COORDINATES
Project Name: 061317
Date: 3/20/2017

Coordinate System: Arkansas State Plane Coordinates
Based on AHTD
GPS PTS : *600023A RESET – 600062A,600013 – 600068*

Units: Projected to Ground Coordinates
U.S. Survey Foot

COORDINATES LISTED BELOW ARE GROUND (Localized) COORDINATES !!!!

887	201199.1091	1198504.8578	275.36	CTL	5/8"REBAR W/2"CAP
888	200668.2328	1198786.1125	272.48	CTL	5/8"REBAR W/2"CAP
889	200855.2367	1198864.6940	272.75	CTL	5/8"REBAR W/2"CAP
890	199974.5880	1199349.0065	268.90	CTL	5/8"REBAR W/2"CAP
891	200174.2878	1199455.5664	269.27	CTL	5/8"REBAR W/2"CAP
892	199388.6393	1199843.2855	268.89	CTL	5/8"REBAR W/2"CAP
893	199531.5285	1200013.4799	274.03	CTL	5/8"REBAR W/2"CAP
894	198713.5302	1200384.4765	282.18	CTL	5/8"REBAR W/2"CAP
895	198867.5359	1200575.7137	294.95	CTL	5/8"REBAR W/2"CAP
896	198094.8512	1200816.6994	277.56	CTL	5/8"REBAR W/2"CAP
897	198184.4589	1201031.3227	287.73	CTL	5/8"REBAR W/2"CAP
898	197416.6954	1201230.2357	268.66	CTL	5/8"REBAR W/2"CAP
899	197441.3796	1201429.6313	269.70	CTL	5/8"REBAR W/2"CAP
998	193154.8197	1203458.2466	267.41	BM	NGS MARK M 70
999	190246.5905	1206999.0536	301.25	BM	NGS MARK L 290
1000	196674.8448	1201734.8184	268.22	CTL	5/8"REBAR W/2"CAP
1001	196047.3229	1202219.1469	267.85	CTL	5/8"REBAR W/2"CAP
1002	195576.3386	1202708.4621	269.64	CTL	5/8"REBAR W/2"CAP
1003	195031.8645	1203323.9260	267.12	CTL	5/8"REBAR W/2"CAP
1004	194552.2360	1203890.6719	267.79	CTL	5/8"REBAR W/2"CAP
1005	193807.8116	1203869.0624	268.17	CTL	5/8"REBAR W/2"CAP
1006	194309.5036	1203923.4594	285.79	CTL	5/8"REBAR W/2"CAP
1007	194901.7229	1203957.5682	281.89	CTL	5/8"REBAR W/2"CAP
1008	195731.0176	1204026.4164	261.24	CTL	5/8"REBAR W/2"CAP
1009	194323.6119	1204352.7312	267.16	CTL	5/8"REBAR W/2"CAP
1010	194035.5794	1204431.9965	267.19	CTL	5/8"REBAR W/2"CAP
1011	193780.5990	1205027.9433	267.03	CTL	5/8"REBAR W/2"CAP
1012	193493.5418	1205075.6027	270.66	CTL	5/8"REBAR W/2"CAP
1013	193120.1868	1205844.8364	274.21	CTL	5/8"REBAR W/2"CAP
1014	192936.1044	1205739.1621	276.47	CTL	5/8"REBAR W/2"CAP
1015	192604.9780	1206389.8984	281.65	CTL	5/8"REBAR W/2"CAP
1016	192496.3839	1206172.1624	279.32	CTL	5/8"REBAR W/2"CAP
1017	191982.9901	1206808.8870	284.64	CTL	5/8"REBAR W/2"CAP
1018	191786.4661	1206667.5968	286.88	CTL	5/8"REBAR W/2"CAP
1019	191206.2721	1207095.2126	305.45	CTL	5/8"REBAR W/2"CAP
1020	190933.2687	1206927.1604	313.09	CTL	5/8"REBAR W/2"CAP
1021	190426.2011	1207197.6438	317.47	CTL	5/8"REBAR W/2"CAP
1022	190223.2932	1206929.9666	316.09	CTL	5/8"REBAR W/2"CAP
1023	191030.2631	1206133.0771	278.57	CTL	5/8"REBAR W/2"CAP
1024	190535.0629	1206697.7589	291.85	CTL	5/8"REBAR W/2"CAP
1025	190027.3135	1207266.3569	294.79	CTL	5/8"REBAR W/2"CAP
1026	189587.6173	1207886.4092	278.22	CTL	5/8"REBAR W/2"CAP
1027	189636.5132	1207262.9096	305.85	CTL	5/8"REBAR W/2"CAP
1028	189361.5517	1207007.7915	295.83	CTL	5/8"REBAR W/2"CAP
1029	188715.5102	1207348.1512	282.42	CTL	5/8"REBAR W/2"CAP
1030	188545.6843	1207081.9143	283.96	CTL	5/8"REBAR W/2"CAP
1031	187892.3293	1207416.1140	276.04	CTL	5/8"REBAR W/2"CAP
1032	187728.4650	1207157.1070	277.97	CTL	5/8"REBAR W/2"CAP
1033	187033.5017	1207487.8143	272.93	CTL	5/8"REBAR W/2"CAP
1034	186880.2973	1207235.5494	274.87	CTL	5/8"REBAR W/2"CAP
1035	186210.3358	1207558.7674	279.63	CTL	5/8"REBAR W/2"CAP
1036	186093.8908	1207305.4890	278.96	CTL	5/8"REBAR W/2"CAP
1037	185427.1592	1207625.7973	295.73	CTL	5/8"REBAR W/2"CAP
1038	185194.7816	1207395.2306	298.05	CTL	5/8"REBAR W/2"CAP
1039	184637.0836	1207718.3357	295.93	CTL	5/8"REBAR W/2"CAP
1040	183616.8503	1207683.6179	268.96	CTL	5/8"REBAR W/2"CAP
1041	183730.6543	1207899.6739	274.31	CTL	5/8"REBAR W/2"CAP
1042	182073.8009	1208025.0883	273.16	CTL	5/8"REBAR W/2"CAP
1043	182348.1550	1208181.0446	271.29	CTL	5/8"REBAR W/2"CAP
1044	181381.9845	1208176.0658	280.02	CTL	5/8"REBAR W/2"CAP
1045	181474.9734	1208354.9352	280.47	CTL	5/8"REBAR W/2"CAP
1046	180566.2555	1208353.7519	291.97	CTL	5/8"REBAR W/2"CAP
1047	180740.1489	1208502.9247	289.83	CTL	5/8"REBAR W/2"CAP
1048	179899.3068	1208113.6495	315.06	CTL	5/8"REBAR W/2"CAP
1049	179862.0512	1208943.4079	345.53	CTL	5/8"REBAR W/2"CAP
1050	180207.2045	1208947.7379	314.68	CTL	5/8"REBAR W/2"CAP
1051	178652.6377	1209822.6007	337.51	CTL	5/8"REBAR W/2"CAP
1052	179744.2950	1208531.2010	312.20	CTL	5/8"REBAR W/2"CAP
1053	179956.8608	1208669.3724	310.71	CTL	5/8"REBAR W/2"CAP
1054	179139.1719	1208726.9389	321.10	CTL	5/8"REBAR W/2"CAP
1055	179251.0123	1208967.4019	320.76	CTL	5/8"REBAR W/2"CAP
1056	178510.7662	1209133.8989	327.30	CTL	5/8"REBAR W/2"CAP
1057	178714.2518	1209332.6036	326.14	CTL	5/8"REBAR W/2"CAP
1058	177994.4931	1209756.5879	330.89	CTL	5/8"REBAR W/2"CAP
1059	178174.1465	1209937.7692	334.21	CTL	5/8"REBAR W/2"CAP
1060	177529.9342	1210618.4092	308.61	CTL	5/8"REBAR W/2"CAP
1061	177740.9794	1210798.2975	315.98	CTL	5/8"REBAR W/2"CAP
1062	177157.5713	1211318.6389	291.84	CTL	5/8"REBAR W/2"CAP
1063	177392.5113	1211434.4392	298.10	CTL	5/8"REBAR W/2"CAP
1064	176719.8080	1212109.6326	303.63	CTL	5/8"REBAR W/2"CAP
1065	176912.6490	1212176.8781	308.86	CTL	5/8"REBAR W/2"CAP
1066	176456.8713	1212866.0653	322.26	CTL	5/8"REBAR W/2"CAP
1067	178293.7657	1210287.4121	353.24	CTL	5/8"REBAR W/2"CAP
1068	178489.3953	1208680.1864	335.00	CTL	5/8"REBAR W/2"CAP
1069	178343.5388	1209070.9686	357.07	CTL	5/8"REBAR W/2"CAP
1070	177681.9619	1208724.1554	345.50	CTL	5/8"REBAR W/2"CAP
1071	176991.1293	1208443.4164	331.58	CTL	5/8"REBAR W/2"CAP
1072	176331.4103	1208118.0160	310.25	CTL	5/8"REBAR W/2"CAP
1073	175921.6735	1207530.7718	288.44	CTL	5/8"REBAR W/2"CAP
1074	175578.3163	1206994.2903	271.72	CTL	5/8"REBAR W/2"CAP
1075	176687.3647	1208719.6150	327.57	CTL	5/8"REBAR W/2"CAP
1076	177000.9937	1209584.5942	337.22	CTL	5/8"REBAR W/2"CAP
1077	177185.8400	1210020.6829	344.24	CTL	5/8"REBAR W/2"CAP
1078	177517.9560	1210309.8935	352.74	CTL	5/8"REBAR W/2"CAP
1079	177163.6202	1210358.0614	315.86	CTL	5/8"REBAR W/2"CAP
1080	176412.5397	1213343.0687	342.64	CTL	STD AHTD MON STAMPED PN:1080
1081	176189.9711	1212920.9354	347.10	CTL	STD AHTD MON STAMPED PN:1081
1082	176141.8621	1212278.8804	331.55	CTL	STD AHTD MON STAMPED PN:1082
1083	176044.2243	1213620.3323	318.48	CTL	STD AHTD MON STAMPED PN:1083
1084	175599.6099	1214382.3512	297.29	CTL	STD AHTD MON STAMPED PN:1084
1085	175275.1784	1215156.9950	277.39	CTL	STD AHTD MON STAMPED PN:1085
1086	175433.8892	1215873.0329	271.96	CTL	STD AHTD MON STAMPED PN:1086
1087	174992.9939	1215701.5472	290.69	CTL	STD AHTD MON STAMPED PN:1087
1088	174714.6923	1215534.4344	292.87	CTL	STD AHTD MON STAMPED PN:1088
1089	174341.7249	1214984.7783	278.66	CTL	STD AHTD MON STAMPED PN:1089
1090	174701.5803	1215910.3328	266.93	CTL	STD AHTD MON STAMPED PN:1090
1091	173924.2175	1216505.0559	263.04	CTL	STD AHTD MON STAMPED PN:1091
1092	173226.6916	1216932.2503	263.98	CTL	STD AHTD MON STAMPED PN:1092
1093	172493.5767	1217276.5698	283.70	CTL	STD AHTD MON STAMPED PN:1093
1094	172587.1125	1217433.5905	274.58	CTL	STD AHTD MON STAMPED PN:1094
1095	171976.1475	1217677.4062	300.99	CTL	STD AHTD MON STAMPED PN:1095
1096	171392.2203	1218122.9825	306.31	CTL	STD AHTD MON STAMPED PN:1096
9933	200623.2266	1198683.3770	270.00	TBM	CHL SQ
9934	199487.1628	1199747.3951	265.97	TBM	CHL SQ
9935	200907.4085	1198904.6315	272.41	TBM	CHL SQ
9936	198370.6474	1200475.7386	272.86	TBM	
9937	199745.8965	1199843.1036	266.86	TBM	CHL SQ
9938	197973.0322	1200863.2175	271.24	TBM	CHL SQ
9939	198122.9800	1201105.7003	278.14	TBM	CHL SQ
9940	197469.5846	1201180.7444	267.34	TBM	CHL SQ
9941	197580.3652	1201376.3205	269.61	TBM	CHL SQ
9942	196732.8539	1201724.7793	263.04	TBM	CHL SQ
9943	195649.2826	1202530.6458	271.05	TBM	ALUM DISK
9944	195649.4308	1202732.7789	268.68	TBM	CHL SQ
9945	194948.6818	1203456.3244	261.63	TBM	CHL SQ
9946	193592.1439	1203662.7874	268.63	TBM	CPS
9947	194376.8305	1203958.8624	288.49	TBM	CHL SQ
9948	194827.2525	1203986.2011	285.45	TBM	CHL SQ
9949	195763.2738	1203974.3638	261.11	TBM	CPS
9950	194378.5157	1204152.4640	260.65	TBM	CHL SQ
9951	193572.4911	1205173.6279	267.70	TBM	CHL SQ
9952	193030.2311	1205881.3802	270.33	TBM	CHL SQ
9953	191649.7164	1206643.2300	282.33	TBM	CHL SQ
9954	191726.9263	1206850.8062	281.79	TBM	CHL SQ
9955	190651.0610	1206894.8900	313.30	TBM	ALUM CAP
9956	189992.6695	1207232.0095	312.29	TBM	ALUM DISK
9957	191015.1299	1206094.8738	279.79	TBM	CPS
9958	189646.1753	1207752.8544	280.07	TBM	CPS
9959	188853.8364	1207268.1498	281.77	TBM	CHL SQ
9960	187335.1605	1207160.0986	265.86	TBM	CHL SQ
9961	187176.6732	1207493.0329	268.32	TBM	CHL SQ
9962	186056.3710	1207287.0983	274.80	TBM	CHL SQ
9963	186072.1184	1207589.5282	278.41	TBM	CHL SQ
9964	184422.5355	1207594.9863	283.01	TBM	CHL SQ
9965	182941.5965	1208059.5258	268.94	BM	
9966	182978.1042	1207827.7934	268.98	BM	
9967	181737.3633	1208322.1011	273.19	TBM	CHL SQ
9968	181825.6835	1208058.3202	269.46	TBM	CHL SQ
9969	180886.2435	1208493.5946	282.64	TBM	CHL SQ
9970	180957.8660	1208254.1909	280.11	BM	
9971	179867.4480	1208467.0731	330.17	TBM	CHL SQ
9972	179824.3743	1208498.7295	310.08	BM	
9973	180224.2871	1208952.1017	313.92	TBM	CHL SQ
9974	178915.9902	1208947.4872	313.61	TBM	CUT SQ IN CENTER HW
9975	178323.6328	1209098.9047	356.20	TBM	CUT SQ SE BR COR
9976	178545.4908	1209635.0717	354.23	BM	CUT SQ NW BR COR
9977	178093.6441	1209597.5350	329.83	TBM	CUT SQ IN SIGN BASE
9978	178262.6311	1210264.9496	352.82	TBM	CHL SQ
9979	177527.1699	1210309.5313	355.09	BM	
9980	177795.5596	1210654.1501	318.16	TBM	SQ CUT IN BASE OF SIGN
9981	177257.5630	1211127.4767	292.60	BM	CUT SQ IN DI
9982	176992.4444	1211623.7521	293.85	TBM	CUT SQ IN BASE SIGN
9983	176741.4490	1212541.4278	318.92	TBM	SQ CUT IN SIGN BASE
9984	176189.1432	1212925.1442	347.33	TBM	ACAP
9985	177461.0085	1208654.6429	342.46	TBM	SQ CUT S SIDE DI
9986	176406.4329	1208250.1689	306.94	TBM	CH.SQUARE
9987	175862.5166	1207456.0424	284.34	TBM	CH.SQUARE
9988	175221.1986	1206649.9946	270.22	TBM	CH.SQUARE
9989	176838.0995	1209212.1525	331.45	TBM	CHL SQ
9990	191880.8717	1205033.5705	271.07	TBM	CPS
9991	175604.8879	1214175.8305	300.58	TBM	CH. SQ. IN CNTR HW
9992	175414.7092	1215901.3919	270.96	TBM	CPS IN PP
9993	174797.7122	1215514.8864	293.89	TBM	CH. SQ. ON BRDG END
9994	174205.1791	1214723.7616	273.37	TBM	CPS IN PP
9995	173605.3980	1216736.3716	258.46	TBM	CH. SQ. IN DI
9996	172356.7899	1217596.2293	284.54	TBM	CH SQ IN HW
9997	171638.5790	1217757.5540	330.70	TBM	CH SQ IN BRIDGE END
9998	182712.7731	1212483.5809	316.89	BM	NGS MARK K 290
9999	175817.1121	1218284.6300	267.37	BM	NGS MARK J 290
100	174996.8970	1206314.9654	274.10	GPS	AHTD GPS 600013
110	200550.3569	1198617.5281	272.50	GPS	AHTD GPS 600023A RESET
103	182896.8266	1207918.9890	268.83	GPS	AHTD GPS 600062A
101	184317.4905	1207507.0281	286.80	GPS	AHTD GPS 600068
105	174050.8766	1205640.6075	293.94	GPS	AHTD GPS 600013A RESET

*STANDARD PRIMARY CONTROL MONUMENT – REBAR AND CAP – STANDARD – 5/8" X 24" REBAR WITH 2?ALUMINUM CAP STAMPED: ?(INCLUDE ALL COMMON INFORMATION HERE)? PLUS OTHER MARKINGS INDICATED IN THE POINT DESCRIPTION OF THE INDIVIDUAL POINT. AHTD MONUMENTS WILL BE STAMPED "ARKANSAS HWY & TRANS DEPT" WITH "PN: ###" & "JOB ######". MONUMENTS THAT ARE SET BY CONSULTANTS WILL BE STAMPED "ARKANSAS HWY & TRANS DEPT" WITH "PN:###", "JOB######", & "PS####". THE CONSULTANT PROFESSIONAL SURVEYOR IN CHARGE WILL STAMP HIS/HER PS LICENSE NUMBER ON THE CAP.

**STANDARD GPS CONTROL POINT MONUMENT – 5/8" X 48" REBAR WITH 2.5?ALUMINUM CAP STAMPED: "(INCLUDE ALL COMMON INFORMATION HERE)" PLUS OTHER
MARKINGS INDICATED IN THE POINT DESCRIPTION OF THE INDIVIDUAL POINT. THESE MONUMENTS WILL BE STAMPED "ARK. STATE HWY TRANS. DEPT.", "GPS SURVEY", &
"POINT NO. ######". SX, SY, SZ ? REPRESENTS THE STANDARD ERROR ESTIMATE OF THE COORDINATE VALUES OF EACH POINT AT THE 67% CONFIDENCE LEVEL (ONE SIGMA) BASED ON THE LEAST SQUARES ANALYSIS OF THE CONTROL NETWORK. SEE THE AASHTO SDMS TECHNICAL DATA GUIDE DATA TAG DEFINITION FOR SX:, SY:, AND SZ: FOR ADDITIONAL INFORMATION. THESE VALUES SHALL BE USED WHEN CONTROL POINTS ARE ADDED AND THE ENTIRE NETWORK IS REPROCESSED
USING LEAST SQUARE ANALYSIS. A VALUE OF 0.001 IS DEFINED AS FIXED (NO ADJUSTMENT) IN THE LEAST SQUARE ANALYSIS PROCESS. A VALUE OF 30 IS DEFINED
AS LOCATION BY HANDHELD GPS DEVICE OR SCALED FROM USGS QUADMAP.

REFERENCE CONTROL POINTS (1500 SERIES) SHALL BE USED TO RE-ESTABLISH HORIZONTAL DATUM IF THE PRIMARY CONTROL HAS BEEN DESTROYED. THESE REFERENCE CONTROL POINTS SHALL NOT BE USED FOR VERTICAL CONTROL UNLESS THE ELEVATION HAS BEEN ESTABLISHED FROM THE PROJECT DATUM WITH 3-WIRE LEVEL TECHINIQUES.

ALL ADDITIONAL PROJECT CONTROL SHALL BE OCCUPIED, MEASURED, AND ADJUSTED WITH DIRECT SURVEY TIES TO AT LEAST TWO OF THE CONTROL POINTS LISTED IN THE TABLE ABOVE. NEW SURVEY CONTROL SHALL NOT BE INDEPENDENT OF THE SURVEY CONTROL LISTED ABOVE. THIS INCLUDES HORIZONTAL COORDINATES AND ELEVATIONS.

POSITIONAL ACCURACY:
HORIZONTAL – GPS (1.0 CM± 1PPM) PN: 100,101,103,105,110
HORIZONTAL – PRIMARY (2.0CM± 20PPM): PN:887–1096
HORIZONTAL – SECONDARY (3 CM ± 50PPM): PN:N/A
VERTICAL – NGS 1ST ORDER (±4MM X vDIST IN KM) PN:998–999
VERTICAL – NGS 2ND ORDER (±6MM X vDIST IN KM) PN:N/A
VERTICAL – NGS 3RD ORDER (±8MM X vDIST IN KM) PN:N/A

HORIZONTAL DATUM:
NAD 1983 (1997) STATE PLANE ZONE: 0301 – NORTH ZONE
THE ADJUSTMENT YEAR IS BASED ON METADATA IN THE SDMS CONTROL FILE
A PROJECT CAF OF: 1.000001521 HAS BEEN USED TO COMPUTE THE ABOVE COORDINATES.
THE PROJECT CAF SHALL HAVE A MINIMUM PRECISION OF 9 DIGITS RIGHT OF THE DECIMAL.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS ONLY.
GRID DISTANCE = GROUND DISTANCE X CAF
IF COORDINATES ARE LISTED AS GROUND:
TO COMPUTE GRID COORDINATES, MULTIPLY THE GROUND COORDINATES BY CAF ABOUT THE ORIGIN OF X=0 & Y=0

IF COORDINATES ARE LISTED AS GRID:
TO COMPUTE GROUND COORDINATES, DIVIDE THE GRID COORDINATES BY CAF ABOUT THE ORIGIN OF X=0 & Y=0

VERTICAL DATUM:
NAVD 1988 BASED NGS BM: M 70 & L 290
A PROJECT ELEVATION FACTOR OF: 0.9999860027 HAS BEEN COMPUTED AND INCORPORATED IN THE ABOVE CAF.

THIS IS BASED ON THE AVERAGE ELEVATION OF THE PROJECT: 292.63 FEET
3-WIRE LEVELING TECHNIQUES HAVE BEEN USED TO ESTABLISH ELEVATIONS ON POINTS: 887–1096, 100–110 FROM NGS BM: M 70 & L 290

BASIS OF BEARING:
GRID BEARINGS BASED ON AHTD GPS POINTS: 600023A RESET – 600062A,600013 – 600068
CONVERGENCE ANGLE IS: 0°20'46.38" RIGHT AT PN: 1025
LT: 34–51–18 N LG: 092–21–01 W
GRID AZIMUTH = ASTRONOMICAL AZIMUTH – CONVERGENCE ANGLE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
9-25-2017

NOTE: INFORMATION IN ITALICS IS FOR CLARIFICATION ONLY. IT IS NOT TO BE PART OF THE ACTUAL CONTROL TABLE OR CONTROL DETAIL SHEETS.

SURVEY CONTROL DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	69	190
				(2)	SURVEY CONTROL DETAILS			

LeonardSpeed 7/23/2018 12:47:59 PM
I:\061317\Civil\Dgn\061317_SURVEY_CONTROL_DETAILS.dgn
Y:\Projects\WAUMELLE_I540\59_I-40_Interchange\06-Design\Drawings\r061190_IL_SC_001.dgn
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	70	190
				(2)	SURVEY CONTROL DETAILS			

ALIGNMENT NAME : C.L. MEDIAN

POINT	STATION	TYPE	NORTHING	EASTING
8060	8042+84.34	POB	195107.5221	1203269.1982
8061	8077+65.62	PC	192893.1611	1205955.4393
	8089+46.4	PI	192142.0661	1206866.5925
8062		CC	190682.6173	1204133.2120
8063	8100+05.69	PT	190967.0784	1206983.8431
8064	8154+86.12	PC	185513.7352	1207528.0257
	8160+86.5	PI	184916.2876	1207587.6443
8065		CC	186711.4661	1219530.6832
8066	8166+85.96	PT	184327.7138	1207706.2986
8067	8211+90.66	PC	179911.8479	1208596.5209
	8225+31.6	PI	178597.2933	1208861.5303
8068		CC	180477.9891	1211404.8122
8069	8236+99.08	PT	177958.7854	1210040.7637
8070	8278+20.85	POE	175996.2344	1213665.3164

ALIGNMENT NAME : WHITE OAK CROSSING

POINT	STATION	TYPE	NORTHING	EASTING
8000	158+18.67	POB	185039.0920	1205111.3851
8001	164+97.48	PC	185204.8155	1205769.6532
	167+65.61	PI	185270.2761	1206029.6686
8002		CC	184302.9570	1205996.7022
8003	170+19.58	PT	185187.2651	1206284.6241
8004	173+65.84	PC	185080.0652	1206613.8724
	175+13.42	PI	185034.3734	1206754.2079
8005		CC	185964.3734	1206901.7944
8006	176+58.57	PT	185034.3734	1206901.7944
8007	191+61.41	PC	185034.3734	1208404.6320
	197+77.01	PI	185034.3734	1209020.2370
8008		CC	184104.3734	1208404.6320
8009	202+48.99	PT	184467.6876	1209260.7295
8010	210+40.17	PC	183739.3823	1209569.8107
	214+34.84	PI	183376.0752	1209723.9925
8011		CC	184102.6966	1210425.9081
8012	217+86.67	PT	183234.5482	1210092.4138
8013	224+75.90	POE	182987.3926	1210735.8062

ALIGNMENT NAME : I-40 C.L. LT. LANES

POINT	STATION	TYPE	NORTHING	EASTING
8080	8103+28.3	POB	190743.0833	1207142.2570
8081	8113+82.6	PC	189692.5976	1207232.0654
	8115+28.7	PI	189546.9903	1207244.5137
8082		CC	191644.8147	1230067.0796
8083	8116+74.9	PT	189401.5536	1207258.8178
8084	8119+35.3	PC	189142.3683	1207284.3095
	8121+05.4	PI	188973.0963	1207300.9579
8085		CC	186899.1072	1184476.0477
8086	8122+75.5	PT	188803.5958	1207315.0921
8087	8157+76.5	PC	185314.6733	1207606.0243
	8162+19.3	PI	184873.4377	1207642.8178
8088		CC	185949.5028	1215219.0390
8089	8166+61.10	PT	184439.4072	1207730.3400
8090	8210+09.60	POE	180176.7175	1208589.9110

ALIGNMENT NAME : I-40 C.L. RT. LANES

POINT	STATION	TYPE	NORTHING	EASTING
8100	8101+37.2	POB	190752.1754	1206911.0061
8101	8109+48.2	PC	189944.6443	1206986.2451
	8111+13.0	PI	189780.6054	1207001.5289
8102		CC	187818.5153	1184166.7666
8103	8112+77.7	PT	189616.3638	1207014.4528
8104	8115+82.3	PC	189312.7464	1207038.3440
	8117+31.7	PI	189163.7599	1207050.0675
8105		CC	191110.5948	1229886.0302
8106	8118+81.2	PT	189014.9389	1207063.7330
8107	8153+66.4	PC	185544.2723	1207382.4267
	8160+77.4	PI	184836.2645	1207447.4394
8108		CC	186592.1002	1218793.5753
8109	8167+86.64	PT	184141.7234	1207599.4737
8110	8213+70.71	POE	179663.6823	1208579.7121

ALIGNMENT NAME : RAMP 1

POINT	STATION	TYPE	NORTHING	EASTING
8014	8139+94.9	PC	186909.6256	1207252.5343
	8140+90.2	PI	186814.8069	1207261.2410
8015		CC	186734.9876	1205350.6762
8016	8141+85.2	PT	186719.5923	1207260.4735
8017	8150+17.9	PC	185886.9523	1207253.7614
	8152+20.7	PI	185684.1340	1207252.1264
8018		CC	185892.5506	1206559.2896
8019	8154+12.6	PT	185514.0740	1207141.5935
8020	8156+93.5	PC	185278.4978	1206988.4774
	8157+31.4	PI	185246.7543	1206967.8453
8021		CC	185148.3964	1207188.6445
8022	8157+68.66	PT	185210.1850	1206958.0466
8120	8159+50.67	POE	185034.3734	1206910.9380

ALIGNMENT NAME : RAMP 2

POINT	STATION	TYPE	NORTHING	EASTING
8120	8156+71.0	POB	185034.3734	1206910.9380
8030	8158+60.0	PC	184851.7500	1206959.8718
	8160+13.7	PI	184703.3733	1206999.6292
8031		CC	185016.5194	1207574.7993
8032	8161+61.5	PT	184589.4540	1207102.6764
8033	8165+75.6	PC	184282.3388	1207380.4818
	8168+55.9	PI	184074.4481	1207568.5322
8034		CC	183513.6212	1206530.6607
8035	8171+25.5	PT	183803.2242	1207639.3774
8036	8175+10.0	PC	183431.1996	1207736.5523
	8175+48.2	PI	183394.2401	1207746.2063
8037		CC	182948.5281	1205888.6912
8038	8175+86.41	PT	183356.9242	1207754.3747

ALIGNMENT NAME : RAMP 3

POINT	STATION	TYPE	NORTHING	EASTING
8046	8160+70.9	POB	185034.3734	1208110.9380
8047	8167+65.5	PC	184356.1996	1207960.7968
	8170+27.4	PI	184100.5354	1207904.1951
8048		CC	184002.3465	1209559.1178
8049	8172+84.8	PT	183839.9720	1207930.1682
8050	8178+92.3	PC	183235.4787	1207990.4244
	8179+87.5	PI	183140.7306	1207999.8690
8051		CC	183424.9156	1209890.8655
8052	8180+82.65	PT	183047.3918	1208018.691

ALIGNMENT NAME : RAMP 4

POINT	STATION	TYPE	NORTHING	EASTING
8040	8145+20.1	PC	186568.1331	1207518.0588
	8148+38.7	PI	186250.6491	1207544.5330
8041		CC	186695.0990	1209040.6618
8042	8151+48.3	PT	185970.2025	1207695.6840
8043	8156+13.5	PC	185560.6318	1207916.4284
	8157+58.0	PI	185433.4168	1207984.9929
8044		CC	184835.7354	1206571.4506
8045	8159+01.74	PT	185295.6025	1208028.4895
8046	8161+75.6	POE	185034.3734	1208110.938

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

SURVEY CONTROL DETAILS

LeonardSpeed 7/23/2018 12:48:01PM
WORKSPACE: ANTD
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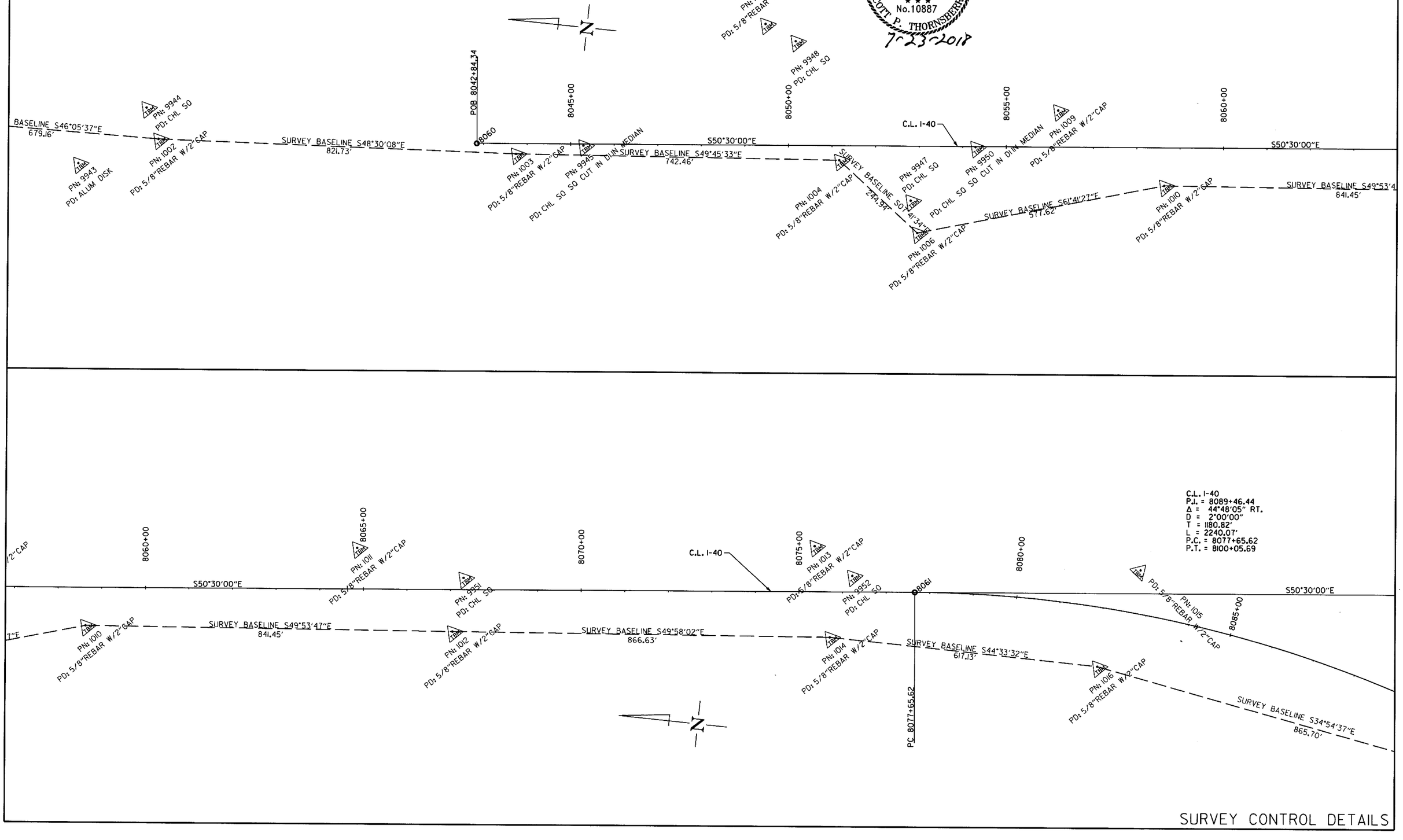
REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	71	190

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018



SURVEY CONTROL DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	72	190

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
7-23-2018

C.L. I-40
P.I. = 8089+46.44
Δ = 44°48'05" RT.
D = 2°00'00"
T = 1180.82'
L = 2240.07'
P.C. = 8077+65.62
P.T. = 8100+05.69

PI 8089+46.44

S50°30'00"E

S05°41'55"E

SURVEY BASELINE S16°55'16"E 891.81'

SURVEY BASELINE S34°54'37"E 865.70'

PN: 1015 PD: 5/8"REBAR W/2"CAP

PN: 1017 PD: 5/8"REBAR W/2"CAP

PN: 1018 PD: 5/8"REBAR W/2"CAP

PN: 9954 PD: CHL SQ

PN: 9953 PD: CHL SQ

PN: 1019 PD: 5/8"REBAR W/2"CAP

PN: 1020 PD: 5/8"REBAR W/2"CAP

PT 8100+05.69

POB 8101+37.25

PN: 9955 PD: ALUM CAP

PN: 1024 PD: 5/8"REBAR W/2"CAP

C.L. I-40

SURVEY BASELINE S59°46'30"E 389.32'

SURVEY BASELINE S00°13'35"E 709.98'

S05°19'23"E

PN: 1022 PD: 5/8"REBAR W/2"CAP

PN: 999 PD: NGS MARK L 290 RTK ELEV

C.L. I-40 RT. LANES

C.L. I-40 RT. LANES
P.I. = 8111+13.03
Δ = 00°49'25" RT.
D = 00°15'00"
T = 164.75'
L = 329.49'
P.C. = 8109+48.28
P.T. = 8112+77.77

PC 8109+48.28

PT 8112+77.77

C.L. I-40 LT. LANES
P.I. = 8115+28.79
Δ = 00°43'50" LT.
D = 00°15'00"
T = 146.14'
L = 292.27'
P.C. = 8113+82.65
P.T. = 8116+74.92

POB 8103+28.33

PC 8113+82.65

PN: 1025 PD: 5/8"REBAR W/2"CAP

SURVEY BASELINE S00°30'19"W 390.82'

C.L. I-40 LT. LANES S04°53'11"E

PN: 9956 PD: ALUM DISK

PN: 1027 PD: 5/8"REBAR W/2"CAP

PI 8111+13.03

PI 8115+28.79

S04°

PN: 1021 PD: 5/8"REBAR W/2"CAP

C.L. I-40 LT. LANES
P.I. = 8115+28.79
Δ = 00°43'50" LT.
D = 00°15'00"
T = 146.14'
L = 292.27'
P.C. = 8113+82.65
P.T. = 8116+74.92

C.L. I-40 LT. LANES
P.I. = 8121+05.45
Δ = 00°51'02" RT.
D = 00°15'00"
T = 170.09'
L = 340.17'
P.C. = 8119+35.36
P.T. = 8122+75.53

STA. 8135+74.75
BEGIN JOB 061190
L.M. 145.6

PT 8116+74.92

PI 8121+05.45

SURVEY BASELINE S05°17'16"E

S05°37'02"E 924.94'

PN: 1027 5/8"REBAR W/2"CAP

PN: 1029 PD: 5/8"REBAR W/2"CAP

PN: 9959 PD: CHL SQ

SURVEY BASELINE S04°43'11"E 825.98'

S04°46'00"E

PN: 1031 PD: 5/8"REBAR W/2"CAP

SURVEY BASELINE S04°46'20"E 861.82'

PN: 9961 PD: CHL SQ

PN: 1033 PD: 5/8"REBAR W/2"CAP

SURVEY BASELINE S04°55'35"E 826.22'

PC 8145+20.13

C.L. I-40

C.L. I-40 LT. LANES

S05°41'55"E

PI 8115+28.79

PC 8115+82.33

PT 8118+81.22

PC 8119+35.36

PT 8122+75.53

PI 8140+30.20

S04°29'57"E

S05°14'47"E

PN: 1028 PD: 5/8"REBAR W/2"CAP

PN: 1030 PD: 5/8"REBAR W/2"CAP

PN: 1032 PD: 5/8"REBAR W/2"CAP

PN: 9960 PD: CHL SQ CHSD SQ IN HW

PN: 1034 PD: 5/8"REBAR W/2"CAP

S0°27'43"W

C.L. I-40 RT. LANES

PT 8112+77.77

PI 8117+31.77

C.L. I-40 RT. LANES
P.I. = PI 8117+31.77
Δ = 00°44'50" LT.
D = 00°15'00"
T = 149.45'
L = 298.89'
P.C. = 8115+82.33
P.T. = 8118+81.22

PC 8139+94.98

PT 8141+85.26

C.L. RAMP 1
P.I. = 8140+90.20
Δ = 05°42'30" RT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. = 8139+94.98
P.T. = 8141+85.26
NO SUPER

SURVEY CONTROL DETAILS

Leonard Speed
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Y:\PROJECTS\MAUMELLE.I540459.I-40.interchange\06-Design\Drawings\061190.IL.SC.004.dgn
REVISED DATE: ##REVDATE##
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				6	ARK.			
				JOB NO.		061190	73	190

(2) SURVEY CONTROL DETAILS

STA. 190+00.00
END WHITE
OAK CROSSING

C.L. RAMP 4
P.I. = 8157+58.09
Δ = 10°48'23" RT.
D = 3°45'00"
T = 144.52'
L = 288.17'
P.C. = 8156+13.57
P.T. = 8159+01.74
e = 0.069 '/'
Ls = 300'

C.L. RAMP 4
P.I. = 8148+38.72
Δ = 23°33'23" LT.
D = 3°45'00"
T = 318.59'
L = 628.17'
P.C. = 8145+20.13
P.T. = 8151+48.30
e = 0.069 '/'
Ls = 300'

C.L. RAMP 3
P.I. = 8170+27.43
Δ = 18°10'33" LT.
D = 3°30'00"
T = 261.85'
L = 519.31'
P.C. = 8167+65.57
P.T. = 8172+84.89
e = 0.065 '/'
Ls = 300'

C.L. RAMP 3 STA. 8160+70.98=
C.L. RAMP 4 STA. 8161+75.68=
C.L. WHITE OAK CROSSING STA. 188+67.71

C.L. I-40 LT. LANES
P.I. = 8162+19.33
Δ = 06°38'03" LT.
D = 00°45'00"
T = 442.77'
L = 884.54'
P.C. = 8157+76.56
P.T. = 8166+61.10
NO SUPER

C.L. I-40 MEDIAN
P.I. = 8160+86.54
Δ = 05°41'57.0" LT.
D = 00°28'30"
T = 600.41'
L = 1199.84'
P.C. = 8154+86.12
P.T. = 8166+85.96
NO SUPER

C.L. I-40 LT. LANES
P.I. = 8160+77.47
Δ = 07°06'03" LT.
D = 00°30'00"
T = 710.99'
L = 1420.15'
P.C. = 8153+66.49
P.T. = 8167+86.64
NO SUPER

C.L. RAMP 2
P.I. = 8168+55.99
Δ = 27°29'33" RT.
D = 5°00'00"
T = 280.32'
L = 549.85'
P.C. = 8165+75.67
P.T. = 8171+25.51
e = 0.083 '/'
Ls = 300'

C.L. RAMP 2
P.I. = 8175+48.22
Δ = 02°17'30" RT.
D = 3°00'00"
T = 38.20'
L = 76.39'
P.C. = 8175+10.02
P.T. = 8175+86.41
NO SUPER

C.L. RAMP 1
P.I. = 8152+20.75
Δ = 32°33'38" RT.
D = 8°15'00"
T = 202.82'
L = 394.67
P.C. = 8150+17.92
P.T. = 8154+12.60
e = 0.010 '/'
Ls = 350'/300'

C.L. RAMP 1
P.I. = 8157+31.42
Δ = 18°01'21" LT.
D = 24°00'00"
T = 37.86'
L = 75.09'
P.C. = 8156+93.56
P.T. = 8157+68.66
e = 0.03 '/'
Ls = 91.67'

C.L. RAMP 2
P.I. = 8160+13.70
Δ = 27°07'53" LT.
D = 9°00'00"
T = 153.61'
L = 301.46'
P.C. = 8158+60.09
P.T. = 8161+61.55
e = 0.063 '/'
Ls = 150'/250'

C.L. RAMP 1 STA. 8159+50.67=
C.L. RAMP 2 STA. 8156+71.02=
C.L. WHITE OAK CROSSING STA. 176+67.72

C.L. WHITE OAK CROSSING
P.I. = 175+13.42
Δ = 18°02'05" LT.
D = 6°09'39"
T = 147.59'
L = 292.73'
P.C. = 173+65.84
P.T. = 176+58.57
e = 0.04 '/'
Ls = 300'

PN: 1035
PD: 5/8"REBAR W/2"CAP

PN: 1036
PD: 5/8"REBAR W/2"CAP

PN: 1037
PD: 5/8"REBAR W/2"CAP

PN: 1038
PD: 5/8"REBAR W/2"CAP
C.L. WHITE OAK CROSSING

PN: 1039
PD: 5/8"REBAR W/2"CAP

PN: 1040
PD: 5/8"REBAR W/2"CAP

PN: 1041
PD: 5/8"REBAR W/2"CAP

PN: 9963
PD: CHL SQ

PN: 9964
PD: CHL SQ

PN: 101
PD: AHTD GPS 600068

SURVEY BASELINE S04°53'31"E 786.04'
S04°46'00"E
SURVEY BASELINE S06°40'49"E 795.48'
SURVEY BASELINE S11°18'41"E 924.39'
S11°24'03"E
S11°23'52"E
S55°41'33"E
S17°31'00"E
S28°19'23"E
S12°29'00"W
S20°00'00"E
S90°00'00"E
S15°00'00"W
S15°00'00"E
S42°07'53"E
S12°20'50"E
S14°38'20"E
S05°41'55"E
S05°14'47"E
S0°27'43"W
S0°27'43"W
S33°01'21"W
S33°01'21"W

C.L. I-40 LT. LANES
C.L. I-40 RT. LANES
C.L. I-40
C.L. RAMP 3
C.L. RAMP 4
C.L. RAMP 1
C.L. RAMP 2
I-40 C.L. LT. LANES

PC 191+61.41
PI 8157+58.09
PT 8153+01.74
PC 8153+66.49
PT 8151+48.30
PC 8154+86.12
PC 8157+76.56
PT 8166+61.10
PT 8166+85.96
PC 8167+65.57
PT 8172+84.89
PI 8148+38.72
PI 8152+20.75
PI 8160+86.54
PI 8162+19.33
PI 8160+77.47
PI 8168+55.99
PI 8175+48.22
PC 8175+10.02
PC 8150+17.92
PT 8154+12.60
PC 8156+93.56
PT 8157+68.66
PC 8158+60.09
PT 8161+61.55
PC 8165+75.67
PT 8171+25.51
PI 8160+13.70
PI 8157+31.42
PI 176+58.57
PC 173+65.84
PI 175+13.42
PC 8175+86.41

8007 8008 8046 8026 8045 8043 8042 8047 8049 8039 8031 8064 8066 8089 8109 8035 8036 8038 8107 8017 8019 8020 8022 8030 8032 8033 8120 8006 8004 8005 8018 8044

185+00 180+00 175+00 190+00 8160+00 8165+00 8170+00 8175+00 8155+00 8150+00 8145+00 8140+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★★★
No.10887
SCOTT P. THORNSBERRY
7-23-2018

SURVEY CONTROL DETAILS

LeonardSpeed 7/23/2018 12:48:06 PM
MICROSTATION V8 (MED)
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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	74	190
				(2)	SURVEY CONTROL DETAILS			

C.L. RAMP 1
P.I. = 8152+20.75
Δ = 32°33'38" RT.
D = 8°15'00"
T = 202.82'
L = 394.67
P.C. = 8150+17.92
P.T. = 8154+12.60
e = 0.010 '/'
Ls = 350'/300'

C.L. RAMP 1
P.I. = 8157+31.42
Δ = 18°01'21" LT.
D = 24°00'00"
T = 37.86'
L = 75.09'
P.C. = 8156+93.56
P.T. = 8157+68.66
e = 0.03 '/'
Ls = 91.67'

C.L. RAMP 1 STA. 8159+50.67=
C.L. RAMP 2 STA. 8156+71.02=
C.L. WHITE OAK CROSSING STA. 176+67.72

C.L. RAMP 2
P.I. = 8160+13.70
Δ = 27°07'53" LT.
D = 9°00'00"
T = 153.61'
L = 301.46'
P.C. = 8158+60.09
P.T. = 8161+61.55
e = 0.063 '/'
Ls = 150'/250'

C.L. WHITE OAK CROSSING
P.I. = 175+13.42
Δ = 18°02'05" LT.
D = 6°09'39"
T = 147.59'
L = 292.73'
P.C. = 173+65.84
P.T. = 176+58.57
e = 0.04 '/'
Ls = 300'

C.L. WHITE OAK CROSSING
P.I. = 167+65.61
Δ = 32°09'56" RT.
D = 6°09'39"
T = 268.13'
L = 522.10'
P.C. = 164+97.48
P.T. = 170+19.58
e = 0.04 '/'
Ls = 300'

STA. 169+51.72
BEGIN WHITE
OAK CROSSING

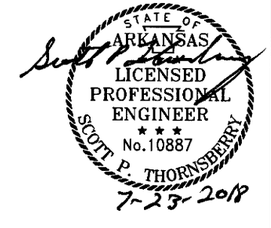
C.L. WHITE OAK CROSSING

S33°01'21"W
S15°00'00"W
S15°00'00"E
S71°57'55"E
N75°52'09"E

PC 8154+12.60
PT 8154+12.60
PC 8157+68.66
PT 8157+68.66
PC 8158+60.09
PI 176+58.57
PI 175+13.42
PC 173+65.84
PI 170+19.58
PI 167+65.61
PC 164+97.48
PI 160+13.70
POB 158+18.67

8005 8018 8020 8022 8030 8006 8004 8003 8001 8000 8044 8034 8002

175+00 170+00 165+00 160+00



SURVEY CONTROL DETAILS

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WORKSPACE: MID
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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	75	190

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
7-23-2018

C.L. WHITE OAK CROSSING
P.I. = 197+77.01
Δ = 67°00'16" RT.
D = 06°09'39"
T = 615.60'
L = 1087.59'
P.C. = 191+61.41
P.T. = 202+48.99
e = 0.04 '/'
Ls = 300'

STA. 190+00.00
END WHITE
OAK CROSSING

C.L. RAMP 4
P.I. = 8157+58.09
Δ = 10°48'23" RT.
D = 3°45'00"
T = 144.52'
L = 288.17'
P.C. = 8156+13.57
P.T. = 8159+01.74
e = 0.069 '/'
Ls = 300'

C.L. RAMP 4
P.I. = 8148+38.72
Δ = 23°33'23" LT.
D = 3°45'00"
T = 318.59'
L = 628.17'
P.C. = 8145+20.13
P.T. = 8151+48.30
e = 0.069 '/'
Ls = 300'

C.L. RAMP 3
P.I. = 8170+27.43
Δ = 18°10'33" LT.
D = 3°30'00"
T = 261.85'
L = 519.31'
P.C. = 8167+65.57
P.T. = 8172+84.89
e = 0.065 '/'
Ls = 300'

C.L. RAMP 3 STA. 8160+70.98=
C.L. RAMP 4 STA. 8161+75.68=
C.L. WHITE OAK CROSSING STA. 188+67.71

PN: 1035
PD: 5/8"REBAR
W/2"CAP

PN: 1037
PD: 5/8"REBAR
W/2"CAP

PN: 1039
PD: 5/8"REBAR W/2"CAP

PN: 1041
PD: 5/8"REBAR
W/2"CAP

PN: 9963
PD: CHL SQ

PN: 9964
PD: CHL SQ

PN: 1040

SURVEY BASELINE S04°53'31"E
786.04'
S04°46'00"E

SURVEY BASELINE S06°40'49"E
795.48'

SURVEY BASELINE S11°18'41"E
924.39'
S11°24'03"E
S11°23'52"E

S17°31'00"E
S28°19'23"E
S22°59'44.2"E
S30°00'00"E
S12°29'00"W
S12°20'50"E
S14°38'20"E
S5°41'33"E
S05°41'55"E

C.L. I-40 LT. LANES
C.L. I-40
C.L. I-40 RT. LANES
C.L. WHITE OAK CROSSING
C.L. RAMP 4
C.L. RAMP 3

PC 191+61.41
PT 202+48.99
PI 197+77.01
PC 8157+58.09
PT 8159+01.74
PC 8156+13.57
PT 8151+48.30
PC 8154+86.12
PC 8153+66.45
PC 8167+65.57
PT 8172+84.89
PT 8166+85.96
PT 8166+61.10
PT 8161+86.84
PT 8165+55.96
PT 8170+27.43
PT 8173+48.32

8145+00 8148+38.72 8150+00 8151+48.30 8152+20.75 8153+66.45 8154+86.12 8155+00 8156+13.57 8157+76.56 8159+01.74 8160+00 8161+75.68 8162+19.33 8165+00 8165+55.96 8166+61.10 8166+85.96 8167+65.57 8170+00 8170+27.43 8172+84.89 8173+48.32 8175+00 8176+00

8042 8043 8045 8046 8026 8007 8008 8064 8031 8089 8066 8047 8049 8036 8038 8109

SURVEY CONTROL DETAILS

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WORKSPACE: MID
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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	76	190

(2) SURVEY CONTROL DETAILS

C.L. RAMP 3
P.I. = 8179+87.59
Δ = 5°42'30" LT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. = 8178+92.37
P.T. = 8180+82.65
NO SUPER

STA. 8189+99.33
END JOB 061190
L.M. 146.6

PC 8178+92.37
PT 8180+82.65
PI 8179+87.59
PI 8179+48.22
PC 8175+10.02
PT 8175+86.41

S5°41'33"E
SURVEY BASELINE S11°30'14"E
1410.84'
SURVEY BASELINE S29°36'58"W
315.58'
S11°24'03"E
S11°23'52"E
S12°20'50"E
SURVEY BASELINE S12°18'39"E
708.10'
SURVEY BASELINE S12°17'19"E
834.86'
S11°24'

C.L. I-40 LT. LANES
C.L. I-40
C.L. I-40 RT. LANES

PN: 9965 PD:
PN: 1043 PD: 5/8"REBAR W/2"CAP
PN: 9967 PD: CHL SQ
PN: 1045 PD: 5/8"REBAR W/2"CAP
PN: 9969 PD: CHL SQ
PN: 1047 PD: 5/8"REBAR W/2"CAP
PN: 103 PD: AHTD GPS 600062A RTK ELEV RTK ELEV
PN: 9966 PD: CHL SQ BRASS CAP
PN: 1042 PD: 5/8"REBAR W/2"CAP
PN: 9968 PD: CHL SQ
PN: 1044 PD: 5/8"REBAR W/2"CAP
PN: 9970 PD: CHL SQ
PN: 1046 PD: 5/8"REBAR W/2"CAP

C.L. RAMP 2
P.I. = 8175+48.22
Δ = 02°17'30" RT.
D = 3°00'00"
T = 38.20'
L = 76.39'
P.C. = 8175+10.02
P.T. = 8175+86.41
NO SUPER

C.L. I-40
P.I. = 8225+31.67
Δ = 50°10'06" LT.
D = 2°00'00"
T = 1341.00'
L = 2508.42'
P.C. = 8211+90.66
P.T. = 8236+99.08

S6°33'58"E

PN: 9973 PD: CHL SQ
PN: 1050 PD: 5/8"REBAR W/2"CAP
PN: 1049 PD: 5/8"REBAR W/2"CAP
PN: 1055 PD: 5/8"REBAR W/2"CAP
PN: 1057 PD: 5/8"REBAR W/2"CAP
PN: 1056 PD: 5/8"REBAR W/2"CAP
PN: 9975 PD: CUT SQ SE BR COR
PN: 1053 PD: 5/8"REBAR W/2"CAP
PN: 9974 PD: CUT SQ IN CENTER HW E OF I-40 E BND
PN: 1069 PD: 5/8"REBAR W/2"CAP
PN: 1054 PD: 5/8"REBAR W/2"CAP
PN: 9971 PD: CHL SQ
PN: 9972 PD:
PN: 1052 PD: 5/8"REBAR W/2"CAP
PN: 1068 PD: 5/8"REBAR W/2"CAP

SURVEY BASELINE S27°22'51"E
686.28'
SURVEY BASELINE S33°01'28"W
253.53'
SURVEY BASELINE S17°55'29"E
635.99'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-25-2018

SURVEY CONTROL DETAILS

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	77	190

(2) PLAN & PROFILE-STA. 169+51.72 TO STA. 184+00

	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE I)
STA. 178+98.77 TO STA. 181+17.52 RT. OF C.L. WHITE OAK CROSSING	= 150 LIN. FT.	1 EACH	1 EACH	1 EACH
STA. 180+14.56 TO STA. 181+08.31 LT. OF C.L. WHITE OAK CROSSING	= 50 LIN. FT.			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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No.10887
7-23-2018

MILL AND OVERLAY 2 INCHES FOR 10 FT OF WHITE OAK CROSSING FOR PAVEMENT TIE

SHORT MARCHE RD.

EXIST. R/W

GREEN PAINT SEWER

CONST. LIMITS

PROP. R/W

S71°57'55"E

STA. 170+58.72

STA. 173+51.72

BEGIN C/A

END C/A

C.L. WHITE OAK CROSSING
P.I. = 167+65.61
Δ = 32°09'56" RT.
D = 6°09'39"
T = 268.13'
L = 522.10'
P.C. = 164+97.48
P.T. = 170+19.58
e = 0.04 '/'
Ls = 300'

C.L. WHITE OAK CROSSING
P.I. = 175+13.42
D = 18°02'05" LT.
D = 6°09'39"
T = 147.59'
L = 292.73'
P.C. = 173+65.84
P.T. = 176+58.57
e = 0.04 '/'
Ls = 300'

C.L. WHITE OAK CROSSING
STA. 176+67.72 =
C.L. RAMP 1 STA. 8159+50.67 =
C.L. RAMP 2 STA. 8156+71.02

C.L. RAMP 1

C.L. RAMP 2

PC 8156+93.56

PT 8157+68.66

PC 8158+60.09

PT 8158+81.46

STA. 181+28.89 TO STA. 184+55.11
CONSTRUCT 324'-0" X 75'-0" CLEAR ROADWAY WIDTH
326'-22" CONTINUOUS COMPOSITE PLATE GIRDER UNIT
(162'-/162')

I-40 C.L. RT. LANES

I-40 C.L. MEDIAN

I-40 C.L. LEFT LANES

UNDERDRAIN TWO 4"PVC

C.L. WHITE OAK CROSSING

BUILDING FOUNDATION

PAVED

R =150'

R =75'

75°00'00"

S90°00'00"E

S71°41'55"E

S14°23'52"E

S46°00'E

S55°14'47"E

STA. 181+96.75 C.L. WHITE OAK CROSSING =
STA. 8158+81.46 I-40 C.L. RT. LANES

STA. 183+42.35 C.L. WHITE OAK CROSSING =
STA. 8159+68.96 I-40 C.L. MEDIAN

STA. 183+91.39 C.L. WHITE OAK CROSSING =
STA. 8160+58.33 I-40 C.L. LT. LANES

PI 8160+86.54

PI 8162+19.33

INTERSTATE 40

WHITE OAK CROSSING

STA. 169+51.72 EXIST. SUPERELEVATION (0.04'/')
STA. 169+71.58 MAX SUPERELEVATION (0.04'/')
STA. 171+87.58 END SUPERELEVATION

STA. 171+87.58 BEGIN SUPERELEVATION
STA. 174+21.84 MAX SUPERELEVATION (0.04'/')
STA. 176+02.57 MAX SUPERELEVATION (0.04'/')
STA. 178+54.57 END SUPERELEVATION

WHITE OAK CROSSING
STA. 180+85.87 36.5' LT. CONSTRUCT
TYPE N-3 DROP INLET WITH
12" X 30' SIDE DRAIN
WITH TYPE A SPILLWAY LT.
Q50=3.9 CFS D.A.=1 ACRE
12" SIDE DRAIN = 30 LIN. FT.

WHITE OAK CROSSING
STA. 180+94.85 36.5' RT. CONSTRUCT
TYPE N-3 DROP INLET WITH
12" X 35' SIDE DRAIN
WITH TYPE A SPILLWAY RT.
Q50=3.8 CFS D.A.=1 ACRE
12" SIDE DRAIN = 35 LIN. FT.

STA. 169+51.72
BEGIN WHITE OAK CROSSING

PVI 169+51.72
ELEV. 284.60

PVC 170+60.00
ELEV. 286.88

VC=400.00'
K=148
e=1.35'

2.10%

4.80%

PVI 172+60.00
ELEV. 291.08

PVT 174+60.00
ELEV. 300.68

PVC 176+70.00
ELEV. 310.76

PROFILE GRADE

EXIST WHITE OAK CROSSING ROAD

PVI 179+00.00
ELEV. 321.80

VC=460.00'
K=121
e=2.19'

1.00%

EXISTING GROUND

BEGIN BRIDGE
STA. 181+28.89

TYPE N-3 D.I. LT.
TOP=322.85
FL RT.=319.85
FL LT.=312.60

TYPE N-3 D.I. RT.
TOP=322.97
FL LT.=319.97
FL RT.=314.47

PVC 183+30.00
ELEV. 325.10

VC=540.00'
K=98
e=3.71'

PVT 184+30.00
ELEV. 327.05

WHITE OAK CROSSING

360 350 340 330 320 310 300 290 280 270

169+00 170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00

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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	78	190

(2) PLAN & PROFILE - STA. 185+00 TO STA. 190+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No. 10887
SCOTT P. THORNSBERRY
7-23-2018

	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE 1)
STA. 184+66.48 TO STA. 186+85.23 LT. OF C.L. WHITE OAK CROSSING =	150 LIN. FT.	1 EACH	1 EACH	
STA. 184+75.69 TO STA. 185+69.44 RT. OF C.L. WHITE OAK CROSSING =	50 LIN. FT.	1 EACH		1 EACH

	GUARDRAIL (TYPE C)
STA. 190+05.00 ACROSS C.L. WHITE OAK CROSSING =	50 LIN. FT.

C.L. WHITE OAK CROSSING
P.I. = 197+77.01
D = 67°00'16" RT.
D = 06°09'39"
T = 615.60'
L = 1087.59'
P.C. = 191+61.41
P.T. = 202+48.99
e = 0.04 '/'
Ls = 300'

PC 8157+76.56
PT 8159+01.74
STA. 8160+00
C.L. RAMP 4
CONST. LIMITS
& C/A
C.L. WHITE OAK CROSSING
STA. 188+67.72 =
C.L. RAMP 3 STA. 8160+70.98 =
C.L. RAMP 4 STA. 8161+75.68
END C/A
+10
880'
+75
640.28'
PROP. R/W
R =150'
R =75'
72°29'00"
77°31'00"
185+00
190+00
195+00
S90°00'00"E
PI 197+77.01
S22°59'44"E
C.L. WHITE OAK CROSSING
STA. 183+91.39 C.L. WHITE OAK CROSSING =
STA. 8160+58.33 I-40 C.L. LT. LANES
S41°26'00"E
I-40 C.L. LT. LANES
EXIST. R/W
C.L. RAMP 3
PROP. R/W & C/A
PC 191+61.41
+80
589.80'
+25
825'
BEGIN C/A
+65
WHITE OAK CROSSING

STA. 190+00.00
END WHITE OAK CROSSING

EXISTING GROUND
PVI 195+00.00
ELEV. 387.30
6.56%
-7.93%
3H
1H
VC=540.00'
K=98
e=3.71'
VC=1260.00'
K=87
e=-22.72'
STA. 184+55.11
END BRIDGE
ELEV. 327.05
1.00%
6.50%
PROFILE GRADE
PVI 186+00.00
ELEV. 328.80
PVRC 188+70.00
ELEV. 346.35
10' GRAVEL PAD W/ 2' DITCH BEFORE CUT OUT TO GRADE
FUTURE CONSTRUCTION

410 400 390 380 370 360 350 340 330 320 310
184+00 185+00 186+00 187+00 188+00 189+00 190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00

WHITE OAK CROSSING

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DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	79	190

(2) PLAN & PROFILE - STA. 8144+49.85 TO STA. 8153+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

RAMP I
STA. 8151+75 INSTALL
30" X 84' R.C. PIPE CULVERT
(CLASS III)(TYPE 3 BEDDING)
WITH FES LT. AND RT.
050=16.9 CFS D.A.=5 ACRES
30" R.C. PIPE= 84 LIN. FT.
30" FES= 2 EACH

C.L. I-40 RT. LANES STA. 8149+61.11
IN PLACE OVERHEAD SIGN STRUCTURE
RETAIN

I-40 C.L. LT. LANES
S 4°46'00" E
I-40 C.L. MEDIAN
S 5°41'55" E
I-40 C.L. RT. LANES
S 5°14'47" E
RAMP I STA. 8144+51.36, 12.50' LT.=
C.L. I-40 RT. LANES STA. 8144+50.96, 28.00' RT.
S 00°27'43" W
S 05°14'47" E
S 33°01'21" W
UNDISTURBED
CONST. LIMITS
EXIST. R/W & C/A
PROP. R/W & C/A
4'
15'
6'
CONCRETE
ELECTRIC METER ON POLE
RAMP FES.07FILL
8140+00
8145+00
8150+00

C.L. RAMP I
P.I. = 8140+90.20
Δ = 05°42'30" RT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. = 8139+94.98
P.T. = 8141+85.26
NO SUPER

PC 8139+94.98
PT 8141+85.26
PI 8140+90.20
PI 8149+38.72
PI 8152+20.45

C.L. RAMP I
P.I. = 8152+20.75
Δ = 32°33'38" RT.
D = 8°15'00"
T = 202.82'
L = 394.67'
P.C. = 8150+17.92
P.T. = 8154+12.60
e = 0.100 '/'
Ls = 350'/300'

PC 8150+17.92
+40.89 302.54'
+30 306.91'
+30 380'

ORANGE PAINT PIN FLAG

REMOVAL AND DISPOSAL OF FENCE
STA. 8151+30 TO STA. 8154+75 RT. OF C.L. I-40 = 345 LIN. FT.

REMOVAL AND DISPOSAL OF CHAINLINK FENCE
STA. 8154+30 TO STA. 8154+75 RT. OF C.L. I-40 = 160 LIN. FT.

	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	TERMINAL ANCHOR POST (TYPE II)
STA. 8138+90.00 TO 8141+15.00 RT. OF I-40 RT. LANES =	150 LIN. FT.	1 EACH	1 EACH

I-40 RT. LANES
STA. 8148+54.00 IN PLACE
48" X 109' R.C. PIPE CULVERT
WITH FES LT. AND HDWL RT.
RETAIN FES LT. AND REMOVE HDWL RT.
ATTACH TO PROPOSED D.I. 28' LT. OF
RAMP I STA. 8148+54.00
050=56.0 CFS D.A.=36 ACRES
48" R.C. PIPE= 4 LIN. FT.

RAMP I
STA. 8148+54.00 28' LT. CONSTRUCT
TYPE RM DROP INLET
(3'-0" X 7'-0" X H= 5'-3") WITH
48" X 60' R.C. PIPE OUTLET
WITH FES RT.
(CLASS IV)(TYPE 3 BEDDING)
050=62.8 CFS D.A.=37 ACRES
48" R.C. PIPE= 60 LIN. FT.
48" FES= 1 EACH

STA. 8147+55.42 BEGIN SUPERELEVATION
STA. 8151+05.42 MAX SUPERELEVATION (-0.100'/')
STA. 8153+37.60 MAX SUPERELEVATION (-0.100'/')
STA. 8156+37.60 END SUPERELEVATION

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8151+00.00	8152+75.00	LT. =	175 LIN. FT.	9'- 0"	175.00
8152+75.00	8153+00.00	LT. =	25 LIN. FT.	6'- 0"	16.67

BEGIN RAMP I
TIE TO I-40 RT. LANE WIDENING
PVI 8144+49.85
ELEV. 276.82

PVC 8148+20.00
ELEV. 277.08

VC=560.00'
K=112
e=3.51'

PROFILE GRADE
EXISTING GROUND
ELEV. 299.63

0.07%
-0.16% LT. DT. GR.
-0.59% LT. DT. GR.
0.45% LT. DT. GR.
2.31% LT. DT. GR.
4.67% LT. DT. GR.
3.36% LT. DT. GR.

TOP = 274.55
FL LT. = 269.30
FL RT. = 267.92
FL LT. = 274.59
FL RT. = 273.98

+50.00 LT. 275.56
+30.00 LT. 275.20
+54.00 LT. 274.55
+75.00 LT. 275.10
+00.00 LT. 277.98
PVI 8151+00.00
ELEV. 277.28
+75.00 LT. 274.49

RAMP I

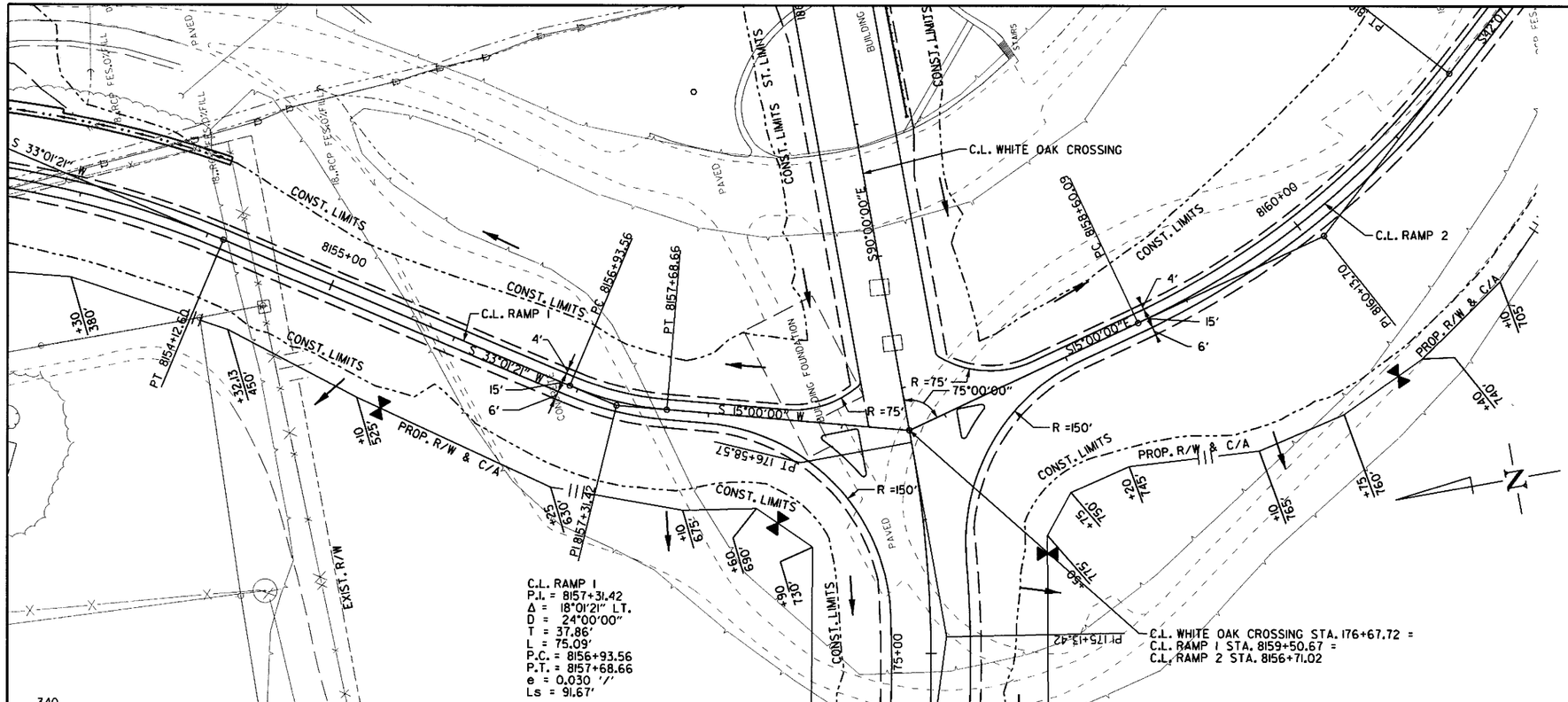
340 330 320 310 300 290 280 270 260 250 240

8138+00 8139+00 8140+00 8141+00 8142+00 8143+00 8144+00 8145+00 8146+00 8147+00 8148+00 8149+00 8150+00 8151+00 8152+00 8153+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	80	190

(2) PLAN & PROFILE - STA. 8153+00 TO STA. 8159+20.13

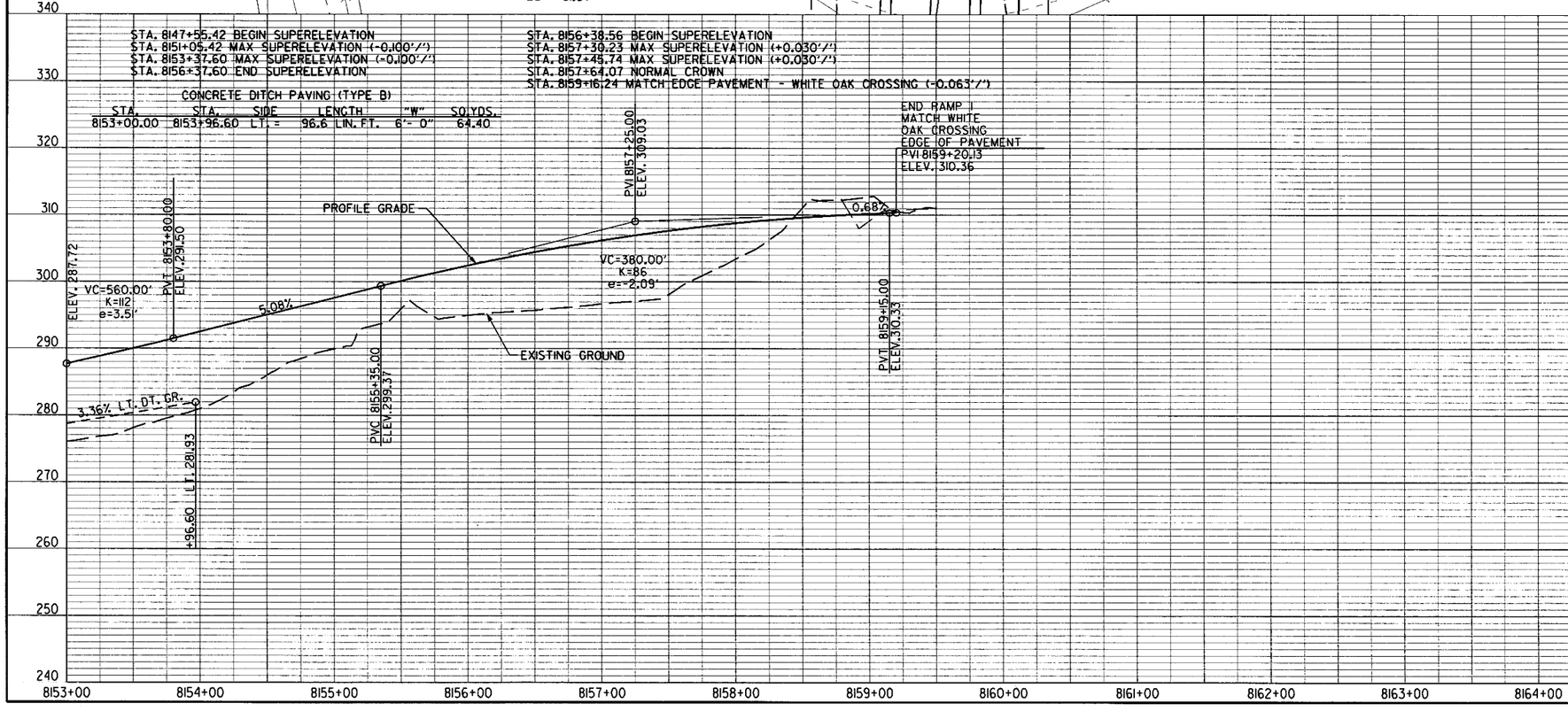


STA. 8147+55.42 BEGIN SUPERELEVATION
STA. 8151+05.42 MAX SUPERELEVATION (-0.100'/')
STA. 8153+37.60 MAX SUPERELEVATION (-0.100'/')
STA. 8156+37.60 END SUPERELEVATION

STA. 8156+38.56 BEGIN SUPERELEVATION
STA. 8157+30.23 MAX SUPERELEVATION (+0.030'/')
STA. 8157+45.74 MAX SUPERELEVATION (+0.030'/')
STA. 8157+64.07 NORMAL CROWN
STA. 8159+16.24 MATCH EDGE PAVEMENT - WHITE OAK CROSSING (-0.063'/')

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8153+00.00	8153+96.60	LT. =	96.6 LIN. FT.	6'- 0"	64.40



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

RAMP I

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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	81	190

(2) PLAN & PROFILE - STA. 8157+03.57 TO STA. 8171+00

REMOVAL AND DISPOSAL OF FENCE
STA. 8165+94 TO STA. 8168+30 RT. OF C.L. I-40 = 330 LIN. FT.

REMOVAL AND DISPOSAL GATE
STA. 8165+94 TO STA. 8168+30 RT. OF C.L. I-40 = 1GATE

C.L. RAMP 2
P.I. = 8160+13.70
D = 27°07'53" LT.
D = 9°00'00"
T = 153.61'
L = 301.46'
P.C. = 8158+60.09
P.T. = 8161+61.55
e = 0.063 '/'
Ls = 150'/250'

RAMP 2
STA. 8162+36 IN PLACE
18' RCP WITH FES
LT. & RT.
REMOVE

RAMP 2
STA. 8162+48 IN PLACE
18' RCP WITH FES
LT. & RT.
REMOVE

RAMP 2
STA. 8163+20 IN PLACE
18' RCP WITH FES
LT. & RT.
REMOVE

C.L. RAMP 2
P.I. = 8168+55.99
Δ = 27°29'33" RT.
D = 5°00'00"
T = 280.32'
L = 549.85'
P.C. = 8165+75.67
P.T. = 8171+25.51
e = 0.083 '/'
Ls = 300'

RAMP 2
STA. 8167+60.00 INSTALL
48" X 113' R.C. PIPE CULVERT
45° RT. FWD, SKEW
WITH FES LT. AND RT.
(CLASS IV) (TYPE 3 BEDDING)
Q50=86.4 CFS D.A.=22 ACRES
48" R.C. PIPE = 113 LIN.FT.
48" FES = 2 EACH

C.L. WHITE OAK CROSSING STA. 176+67.72 =
C.L. RAMP 1 STA. 8159+50.67 =
C.L. RAMP 2 STA. 8156+71.02

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

RAMP 2

STA. 8157+03.57 MATCH EXIST. - 0.049'/' - BEGIN SUPERELEVATION
STA. 8157+70.09 NORMAL CROWN
STA. 8159+20.09 MAX SUPERELEVATION (+0.063'/')
STA. 8160+99.05 MAX SUPERELEVATION (0.063'/')
STA. 8163+49.05 END SUPERELEVATION

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8167+05.00	8167+86.00	LT.=	81 LIN. FT.	6'- 0"	54.00

STA. 8163+50.67 BEGIN SUPERELEVATION
STA. 8166+50.67 MAX SUPERELEVATION (-0.083'/')
STA. 8170+50.51 MAX SUPERELEVATION (-0.083'/')
STA. 8173+50.51 END SUPERELEVATION

BEGIN RAMP 2
MATCH WHITE OAK CROSSING
EDGE OF FULL DEPTH PAVEMENT
PVI 8157+03.57
ELEV. 312.01

PVI 8159+00.00
ELEV. 309.45

PVC 8161+00.34
ELEV. 298.64

PVC 8157+20.00
ELEV. 311.79

PVT 8160+80.00
ELEV. 299.73

PVI 8163+00.00
ELEV. 287.85

PVT 8164+99.66
ELEV. 284.10

PVT 8171+25.51
ELEV. 272.80

VC=360.00'
K=88
e=-1.84'

VC=399.33'
K=114
e=1.76'

3.13% (WHITE OAK CROSSING)
-1.30%
-0.40%
-0.39% LT. DT. GR.
-1.88%
-5.49% LT. DT. GR.

PROFILE GRADE
EXISTING GROUND

+50.00 LT. 272.79
+12.06 LT. 271.00
+91.00 LT. 275.34

FL LT. = 271.00
FL RT. = 266.56

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	82	190

(2) PLAN & PROFILE - STA. 8171+00 TO STA. 8173+75.28

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-25-2018

LEGEND
MILL AND INLAY

RAMP 3 STA. 8176+56.39, 12.50' RT.=
C.L. I-40 LT. LANES STA. 8176+56.63, 28.00' LT.

C.L. RAMP 3
C.L. RAMP 2
I-40 C.L. LT. LANES
I-40 C.L. RT. LANES
I-40 C.L. MEDIAN

I-40 RT. LANES STA. 8179+71.70 TO 8180+61.70
EXISTING BRIDGE NO. B3233 90'X68' R.C. DECK GIRDER (3@30') & SUPERSTRUCTURE COMPOSED OF 4-COLUMN BENTS ON SPREAD FOOTINGS.
RETAIN AND WIDEN 8'

RAMP 2 STA. 8173+73.35, 9.50' LT.=
C.L. I-40 RT. LANES STA. 8173+73.10, 14.00' RT.

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

EXIST. R/W & C/A

CONST. LIMITS

C.L. I-40 RT. LANES
STA. 8179+35.20
BEGIN APPROACH
SLAB RECONSTRUCTION

C.L. I-40 RT. LANES
STA. 8180+98.20
END APPROACH
SLAB RECONSTRUCTION

C.L. RAMP 2
P.I. = 8168+55.99
Δ = 27°29'33" RT.
D = 5°00'00"
T = 280.32'
L = 549.85'
P.C. = 8165+75.67
P.T. = 8171+25.51
e = 0.083 '/'
Ls = 300'

RAMP 2
STA. 8171+00.00 CONSTRUCT
TYPE ST DROP INLET 15' LT. IN MEDIAN (3' X 3' X H=7'-0")
WITH 18" X 50' R.C. PIPE OUTLET ON LT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES. LT.
Q50=4.0 CFS D.A.=1 ACRE
18" R.C. PIPE = 50 LIN.FT.
18" FES = 1EACH

C.L. RAMP 2
P.I. = 8175+48.22
Δ = 02°17'30" RT.
D = 3°00'00"
T = 38.20'
L = 76.39'
P.C. = 8175+10.02
P.T. = 8175+86.41
NO SUPER

RAMP 2
STA. 8163+50.67 BEGIN SUPERELEVATION
STA. 8166+50.67 MAX SUPERELEVATION (-0.083'/')
STA. 8170+50.5 MAX SUPERELEVATION (-0.083'/')
STA. 8173+50.5 END SUPERELEVATION

REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 8176+91 TO STA. 8179+72 RT. OF I-40 RT. LANES = 281 LIN. FT.

REMOVAL AND DISPOSAL OF FENCE
STA. 8179+58 TO STA. 8179+69 I-40 RT. LANES RT. OF C.L. = 12 LIN. FT.
STA. 8180+42 TO STA. 8180+64 I-40 RT. LANES RT. OF C.L. = 12 LIN. FT.

RAMP 2
STA. 8174+63.53 IN PLACE
24" X 143' R.C. PIPE CULVERT
WITH FES. LT. AND HDWL. RT.
RETAIN FES. LT. AND REMOVE HDWL. RT.
EXTEND R.C. PIPE 12' RT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES RT.
Q50=21.5 CFS D.A.=6 ACRES
24" R.C. PIPE = 16 LIN. FT.
24" FES= 1EACH

REMOVE AND DISPOSE OF CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8180+48.00	8180+98.00	RT.=	162 LIN. FT.	6'-0"	33.33

CONCRETE DITCH PAVING (TYPE B)
I-40 C.L. RT. LANES

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8180+48.00	8180+98.00	RT.=	50 LIN. FT.	6'-0"	33.33

	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
STA. 8176+77.95 TO STA. 8179+66.70 C.L. RT. LANES I-40 RT. OF C.L. =	220 LIN. FT.	1EACH	1EACH

PVC 8171+55.00
ELEV. 271.76
ELEV. 272.80
-1.88%
VC=220.00'
K=137
e=0.44'
PROFILE GRADE
EXISTING GROUND
PVI 8172+65.00
ELEV. 269.69
PVT 8173+75.00
ELEV. 269.39
-0.28%
END RAMP 2
TIE TO I-40 RT. LANE WIDENING
PVI 8173+75.28
ELEV. 269.39
FL LT. EXIST = 255.63
FL RT. = 254.26

RAMP 2

340 330 320 310 300 290 280 270 260 250 240

8171+00 8172+00 8173+00 8174+00 8175+00 8176+00 8177+00 8178+00 8179+00 8180+00 8181+00 8182+00 8183+00 8184+00 8185+00 8186+00

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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	83	190

(2) PLAN & PROFILE - STA. 8161+02.85 TO STA. 8175+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

RAMP 3
STA. 8163+39.24 INSTALL
24" X 164' R.C. PIPE CULVERT
14°RT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS III) (TYPE 3 BEDDING)
Q50=8.8 CFS D.A.=3 ACRES
24" R.C. PIPE = 164 LIN.FT.
24" FES = 2 EACH

RAMP 3
STA. 8165+13.13 INSTALL
30" X 106' R.C. PIPE CULVERT
15°RT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS III) (TYPE 3 BEDDING)
Q50=7.6 CFS D.A.=3 ACRES
30" R.C. PIPE = 106 LIN.FT.
30" FES = 2 EACH

REMOVAL AND DISPOSAL OF FENCE
STA. 8149+00 TO STA. 8170+65 LT. OF C.L. I-40 = 2165 LIN. FT.

C.L. WHITE OAK CROSSING STA. 188+67.72 =
C.L. RAMP 3 STA. 8160+70.98=
C.L. RAMP 4 STA. 8161+75.68

C.L. RAMP 3
P.I. = 8170+27.43
Δ = 18°10'33" LT.
D = 3°30'00"
T = 261.85'
L = 519.31'
P.C. = 8167+65.57
P.T. = 8172+84.89
e = 0.065 '/'
Ls = 300'

RAMP 3
STA. 8172+00.00 INSTALL
24" X 102' R.C. PIPE CULVERT
30° LT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS III) (TYPE 3 BEDDING)
Q50=18.9 CFS D.A.=2 ACRES
24" R.C. PIPE = 102 LIN.FT.
24" FES = 2 EACH

RAMP 3
STA. 8172+00.00 INSTALL
DIKE IN DITCH ON RT.

S90°00'W
589.80'
+80
+60
540'
+65
505'
PROP. R/W & C/A
CONST. LIMITS
R =150'
S12°29'00"W
R =75'
+10
415'
+20
425'
PROP. R/W & C/A
CONST. LIMITS
+10
285'
+65
244.18'
EXIST. R/W & C/A
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
CONST. LIMITS
PT 8172+84.89
8175+00
S5°41'33"E
8165+00
C.L. RAMP 3
PC 8167+65.57
8'
24'
8'
8170+00
S12°29'00"W S5°41'33"E
DIKE
CONST. LIMITS
S11°24'03"E
S 11°23'52" E
TOXIC DITCH
CONST. LIMITS
C.L. WHITE OAK CROSSING
EXIST. R/W & C/A
PT 8166+61.10
PT 8166+85.96
I-40 C.L. LT. LANES
PT 8170+27.43
8170+00
I-40 C.L. MEDIAN
UNDISTURBED
CEDAR
I-40 C.L. RT. LANES
S12°20'50"E
RAMP 3

BEGIN RAMP 3
MATCH WHITE OAK CROSSING
EDGE OF FULL DEPTH PAVEMENT
PVI 8161+02.85
ELEV. 344.70

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8161+24.75	8162+70.00	LT. =	145.25 LIN. FT.	9'- 0"	145.25
8163+30.00	8165+25.00	LT. =	195 LIN. FT.	6'- 0"	130.00
8165+25.00	8169+00.00	LT. =	375 LIN. FT.	9'- 0"	375.00
8165+60.00	8171+20.00	RT. =	560 LIN. FT.	9'- 0"	560.00
8169+00.00	8172+31.00	LT. =	331 LIN. FT.	6'- 0"	220.67

STA. 8161+02.85 MATCH EDGE PAVEMENT - WHITE OAK CROSSING (-0.060'/')
STA. 8162+85.00 NORMAL CROWN
STA. 8165+40.57 BEGIN SUPER ELEVATION
STA. 8168+40.57 MAX SUPERELEVATION (+0.065'/')
STA. 8172+09.88 MAX SUPERELEVATION (+0.065'/')
STA. 8175+09.88 END SUPERELEVATION

-3.32% (WHITE OAK CROSSING)
-2.92% LT. DT. GR.
-4.66% LT. DT. GR.
-5.47%
-1.72% RT. DT. GR.
-6.01% LT. DT. GR.
-1.57% LT. DT. GR.
EXISTING GROUND
PROFILE GRADE
FL LT. = 318.96
FL RT. = 305.39
+30.00 LT. 320.66
FL LT. = 316.00
FL RT. = 307.41
+00.00 LT. 316.00
+25.00 LT. 317.16
+00.00 RT. 303.07
+00.00 LT. 295.39
PVC 8172+05.00
ELEV. 284.47
VC=450.00'
K=98
e=2.58'
FL RT. = 277.78
FL LT. = 275.53
+20.00 RT. 278.38
+31.00 LT. 275.50
+00.00 LT. 274.42
PVI 8174+30.00
ELEV. 272.17
ELEV. 272.63
RAMP 3

360 350 340 330 320 310 300 290 280 270 260
8160+00 8161+00 8162+00 8163+00 8164+00 8165+00 8166+00 8167+00 8168+00 8169+00 8170+00 8171+00 8172+00 8173+00 8174+00 8175+00

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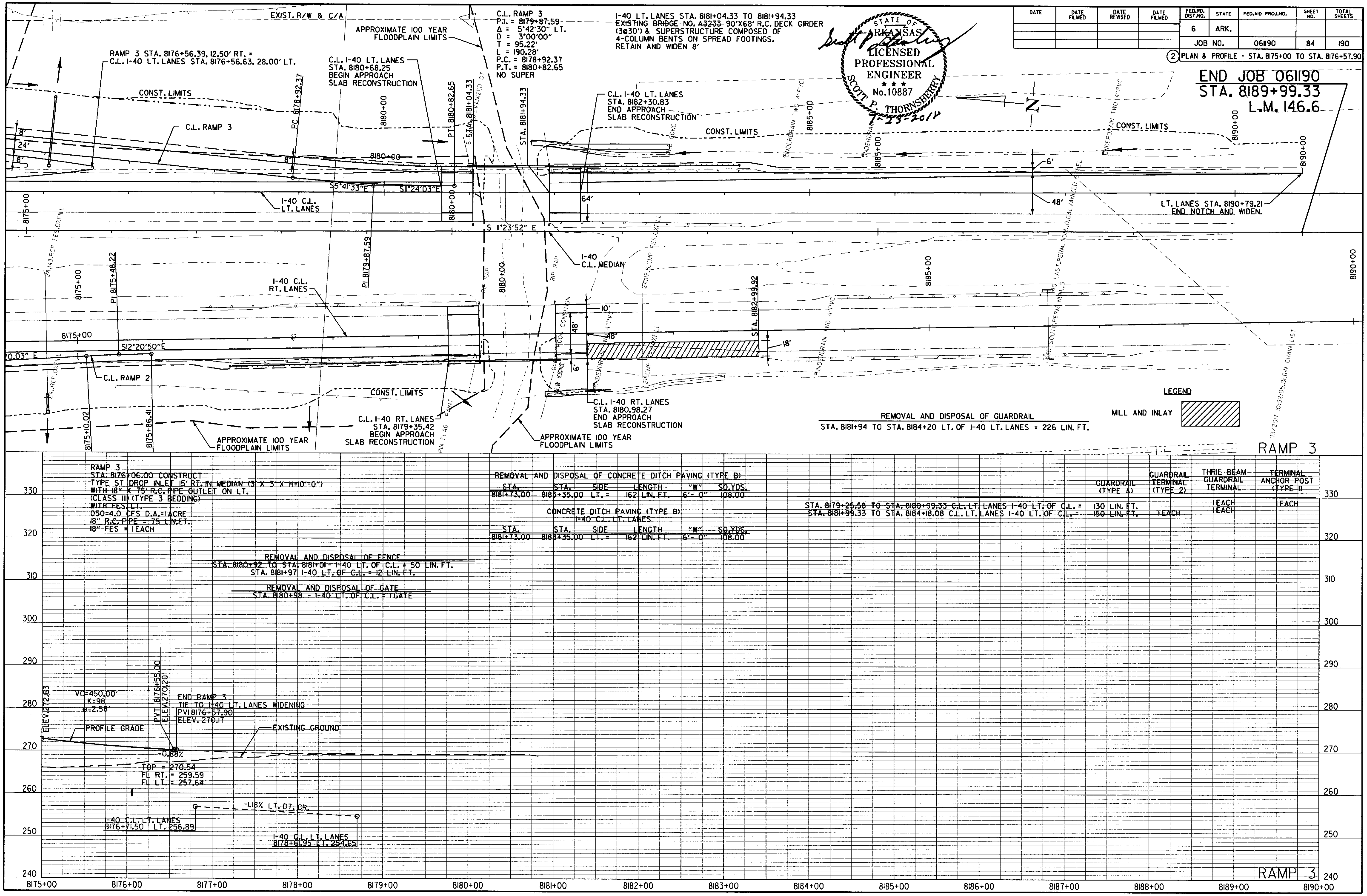
REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	84	190

(2) PLAN & PROFILE - STA. 8175+00 TO STA. 8176+57.90



END JOB 061190
STA. 8189+99.33
L.M. 146.6
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.10887 SCOTT P. THORNSBERRY
EXIST. R/W & C/A
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
C.L. RAMP 3
P.I. = 8179+87.59
Δ = 5°42'30" LT.
D = 3°00'00"
T = 95.22'
L = 190.28'
P.C. = 8178+92.37
P.T. = 8180+82.65
NO SUPER
I-40 LT. LANES STA. 8181+04.33 TO 8181+94.33
EXISTING BRIDGE NO. A3233 90'X68' R.C. DECK GIRDER (3@30') & SUPERSTRUCTURE COMPOSED OF 4-COLUMN BENTS ON SPREAD FOOTINGS. RETAIN AND WIDEN 8'
RAMP 3 STA. 8176+56.39, 12.50' RT. = C.L. I-40 LT. LANES STA. 8176+56.63, 28.00' LT.
C.L. I-40 LT. LANES STA. 8180+68.25 BEGIN APPROACH SLAB RECONSTRUCTION
C.L. I-40 LT. LANES STA. 8182+30.83 END APPROACH SLAB RECONSTRUCTION
CONST. LIMITS
C.L. RAMP 3
I-40 C.L. LT. LANES
S5°41'33"E
S11°24'03"E
S 11°23'52" E
I-40 C.L. MEDIAN
I-40 C.L. RT. LANES
LT. LANES STA. 8190+79.21 END NOTCH AND WIDEN.
S12°20'50"E
C.L. RAMP 2
C.L. I-40 RT. LANES STA. 8179+35.42 BEGIN APPROACH SLAB RECONSTRUCTION
C.L. I-40 RT. LANES STA. 8180.98.27 END APPROACH SLAB RECONSTRUCTION
APPROXIMATE 100 YEAR FLOODPLAIN LIMITS
LEGEND
MILL AND INLAY
REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 8181+94 TO STA. 8184+20 LT. OF I-40 LT. LANES = 226 LIN. FT.
RAMP 3
RAMP 3 STA. 8176+06.00 CONSTRUCT TYPE ST DROP INLET 15' RT. IN MEDIAN (3' X 3' X H=10'-0") WITH 18" X 75' R.C. PIPE OUTLET ON LT. (CLASS III) (TYPE 3 BEDDING) WITH FES LT.
Q50=4.0 CFS D.A.=1ACRE
18" R.C. PIPE = 75 LIN.FT.
18" FES = 1EACH
REMOVAL AND DISPOSAL OF CONCRETE DITCH PAVING (TYPE B)
STA. 8181+73.00 STA. 8183+35.00 SIDE LT. = LENGTH 162 LIN. FT. "W" 6'-0" SQ.YDS. 108.00
CONCRETE DITCH PAVING (TYPE B) I-40 C.L. LT. LANES
STA. 8181+73.00 STA. 8183+35.00 SIDE LT. = LENGTH 162 LIN. FT. "W" 6'-0" SQ.YDS. 108.00
GUARDRAIL (TYPE A) / GUARDRAIL TERMINAL (TYPE 2) / THRIE BEAM GUARDRAIL TERMINAL / TERMINAL ANCHOR POST (TYPE 1)
STA. 8179+25.58 TO STA. 8180+99.33 C.L. LT. LANES I-40 LT. OF C.L. = 130 LIN. FT. 1EACH 1EACH
STA. 8181+99.33 TO STA. 8184+18.08 C.L. LT. LANES I-40 LT. OF C.L. = 150 LIN. FT. 1EACH 1EACH
REMOVAL AND DISPOSAL OF FENCE
STA. 8180+92 TO STA. 8181+01 - I-40 LT. OF C.L. = 50 LIN. FT.
STA. 8181+97 I-40 LT. OF C.L. = 12 LIN. FT.
REMOVAL AND DISPOSAL OF GATE
STA. 8180+98 - I-40 LT. OF C.L. = 1GATE
VC=450.00'
K=98
e=2.58'
ELEV. 272.63
PROFILE GRADE
PVT 8176+55.00 ELEV. 270.20
END RAMP 3 TIE TO I-40 LT. LANES WIDENING PVI 8176+57.90 ELEV. 270.17
EXISTING GROUND
-0.88%
TOP = 270.54
FL RT. = 259.59
FL LT. = 257.64
-1.18% LT. DT. GR.
I-40 C.L. LT. LANES 8176+71.50 LT. 256.89
I-40 C.L. LT. LANES 8178+61.95 LT. 254.65
330 320 310 300 290 280 270 260 250 240
8175+00 8176+00 8177+00 8178+00 8179+00 8180+00 8181+00 8182+00 8183+00 8184+00 8185+00 8186+00 8187+00 8188+00 8189+00 8190+00
RAMP 3

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WORKSPACE: AHTD
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REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	85	190

(2) PLAN & PROFILE - STA. 8146+56.36 TO STA. 8150+00

STA. 8138+86.41 IN PLACE
8' X 7' X 127' R.C. BOX CULVERT
30° LT. FWD. SKEW
WITH 3:1 WINGS LT. AND RT.
RETAIN AND EXTEND 15' LT.
FOR A COMPLETED LENGTH OF 142'

+25.86
249.42'

EXIST. R/W & C/A

300' TAPER

700' ACCELERATION LANE

RAMP 4 STA. 8146+58.18, 9.50' RT. =
C.L. I-40 LT. LANES STA. 8146+58.84, 13.27' LT.

STA. 8136+58.84

STA. 8139+58.84

STA. 8146+58.84

PC 8145+20.13

8135+00

8140+00

8145+00

8150+00

CONST. LIMITS

6'

12'

15'

14'

S28°19'23"E

C.L. RAMP 4

PRESERVE VEGETATION

S4°46'00"E

BEGIN JOB 061190
STA. 8135+74.75
L.M. 145.6

I-40 C.L.
LT. LANES

S5°41'55"E

PI 8148+38.72

C.L. I-40
MEDIAN

RAMP 4
STA. 8146+59.00 9.5' RT. CONSTRUCT
TYPE ST DROP INLET
(3' X 3' X H=7'-0")
WITH 18" X 43' R.C. PIPE OUTLET ON LT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT.
18" R.C. PIPE = 43'
18" FES = 1 EACH

C.L. RAMP 4
P.I. = 8148+38.72
D = 23°33'23" LT.
D = 3°45'00"
T = 318.59'
L = 628.17'
P.C. = 8145+20.13
P.T. = 8151+48.30
e = 0.069 '/'
Ls = 300'

PI 8140+90.20

I-40 C.L.
RT. LANES

S5°14'47"E

S 05°14'47" E

S 00°27'43" W

C.L. RAMP 1

98'

26'

RAMP 4

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No. 10887
7-23-2018

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8149+60.00	8150+00.00	LT. =	40 LIN. FT.	6'-0"	26.67

MAIN LANES
STA. 8142+95.13 BEGIN SUPERELEVATION
STA. 8145+95.13 MAX SUPERELEVATION (+0.069'/')
STA. 8146+56.84 MATCH RAMP 4 SUPER (+0.069'/')

RAMP 4
STA. 8146+56.36 MATCH I-40 LEFT LANE WIDENING SUPER (+0.069'/')
STA. 8150+73.30 MAX SUPERELEVATION (+0.069'/')
STA. 8153+73.30 END SUPERELEVATION

BEGIN RAMP 4
TIE TO I-40 LT. LANE WIDENING
PVI 8146+56.36
ELEV. 278.74

PVC 8147+00.00
ELEV. 279.03

PVI 8150+00.00
ELEV. 281.09

ELEV. 284.73

PROFILE GRADE

VC=600.00'
K=123
e=3.65'

0.68%

0.25% RT.
DT. GR.

EXISTING GROUND

-3.14% LT.
DT. GR.

0.50% LT. DT. GR.

2.25% LT. DT. GR.

2.62% LT. DT. GR.

TOP = 278.76
FL RT. = 271.76
FL LT. = 271.47

+56.36 LT. = RAMP 4 =
+56.84 LT. = I-40 C.L. LT. LANES
ELEV. 271.46

+59.00 LT. 271.47'

+00.00 LT. 274.64

+60.00 LT. 278.09

+80.00 RT. 278.61

+0.00 LT. 265.52
I-40 C.L. LT. LANES

+50.00 LT. 269.42
I-40 C.L. LT. LANES

FL RT. EXIST. = 258.67
FL LT. = 260.45

330
320
310
300
290
280
270
260
250
240
230

8135+00 8136+00 8137+00 8138+00 8139+00 8140+00 8141+00 8142+00 8143+00 8144+00 8145+00 8146+00 8147+00 8148+00 8149+00 8150+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	86	190

(2) PLAN & PROFILE - STA. 8150+00 TO STA. 8161+42.37

C.L. RAMP 4
P.I. = 8148+38.72
D = 23°33'23" LT.
D = 3°45'00"
T = 318.59'
L = 628.17'
P.C. = 8145+20.13
P.T. = 8151+48.30
e = 0.069 '/'
Ls = 300'

I-40 LT. LANES
STA. 8150+20.00 IN PLACE
48"/X 80' R.C. PIPE CULVERT
WITH FES RT. AND LT.
RETAIN FES RT. AND REMOVE FES LT.
ATTACH TO PROPOSED JUCTION BOX
RT. OF RAMP 4 STA. 8150+12.00
Q50=35.5 CFS D.A.= 31 ACRES

RAMP 4
STA. 8150+12.00 52' RT. CONSTRUCT
TYPE E JUNCTION BOX
IN MEDIAN (6' X 9' X H=5'-0")
WITH 48" X 89' R.C. PIPE INLET
STA. 8150+25.00
15° LT. FWD. SKEW
WITH FES LT.
(CLASS IV) (TYPE 3 BEDDING)
Q50=29.2 CFS D.A.=23 ACRES
48" R.C. PIPE = 89 LIN. FT.
48" FES = 1EACH

RAMP 4
STA. 8151+70.00 75' RT. INSTALL
DBL. 30" X 157' R.C. PIPE CULVERT
WITH FES
ATTACH TO PROPOSED JUNCTION BOX
RT. OF RAMP 4 STA. 8150+12.00
Q50=6.4 CFS D.A.=8 ACRES
30" R.C. PIPE = 314 LIN. FT.
30" FES = 2 EACH

REMOVAL AND DISPOSAL OF FENCE
STA. 8149+00 TO STA. 8170+65 LT. OF C.L. I-40 = 2165 LIN. FT.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

PROP. R/W & C/A
CONST. LIMITS
EXIST. R/W & C/A
C.L. I-40 LT. LANES
C.L. I-40 MEDIAN
C.L. RAMP 4
C.L. RAMP 3
C.L. WHITE OAK CROSSING
C.L. WHITE OAK CROSSING STA. 188+67.72 =
C.L. RAMP 3 STA. 8160+70.98 =
C.L. RAMP 4 STA. 8161+75.68
PT 8151+48.30
PI 8157+58.09
PC 8156+13.57
PT 8159+01.74
S28°19'23"E
S17°31'00"E
N80°00'00"E
S12°29'00"W
R =150'
R =75'
8150+00
8155+00
8160+00
+00 250.83
+20 280'
+00 375'
+00 440'
+00 495'
+64 550'
+75 640.28'
190+00
+80 589.80'
+55 510'
+60 540'
8' 59' 8'
8' 24' 8'
6'
5'
4'
FES, 60' FULL
CONCRETE FES, 0' FULL
UNDISTURBED
PERM. NUMBER, G.S. TYPE
NUM. 0.3

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ.YDS.
8150+00.00	8153+50.00	LT. =	350 LIN. FT.	6'- 0"	233.33
8151+60.00	8153+20.00	RT. =	160 LIN. FT.	9'- 0"	160.00
8153+20.00	8157+00.00	RT. =	380 LIN. FT.	6'- 0"	253.33
8154+50.00	8160+95.00	LT. =	645 LIN. FT.	9'- 0"	645.00
8157+00.00	8160+67.00	RT. =	367 LIN. FT.	9'- 0"	367.00

RAMP 4
STA. 8146+56.36 MAX SUPERELEVATION (+0.069'/')
STA. 8150+73.30 MAX SUPERELEVATION (+0.069'/')
STA. 8153+73.30 END SUPERELEVATION

STA. 8153+88.57 BEGIN SUPERELEVATION
STA. 8156+88.57 MAX SUPERELEVATION (-0.069'/')
STA. 8158+26.74 MAX SUPERELEVATION (-0.069'/')
STA. 8161+42.37 MATCH EDGE PAVEMENT - WHITE OAK CROSSING (-0.055'/')

END RAMP 4
MATCH WHITE OAK CROSSING
EDGE OF FULL DEPTH PAVEMENT
PVI 8161+42.37
ELEV. 344.51

EXISTING GROUND
PROFILE GRADE
3.82% (WHITE OAK CROSSING)
5.55%
8.75% RT. DT. GR.
PVI 8150+00.00 ELEV. 284.73
ELEV. 281.09
PVT 8153+00.00
ELEV. 297.74
VC=600.00'
K=123
e=3.65'
+00.00 RT. 315.54
LT. 293.80
+60.00
0.62% RT. DT. GR.
5.68% LT. DT. GR.
3.14% LT. DT. GR.
33.33% RT. DT. GR.
2.24% RT. DT. GR.
0.25% RT. DT. GR.
FL IN = 274.44
FL OUT = 273.89
+39.59 LT. 275.59
FL LT. = 275.62
FL RT. = 273.89
TOP = 278.89
+12.00 RT. 278.53
+50.00 RT. 276.25
+69.50 RT. 274.44
+60.00 RT. 277.61

RAMP 4

360 350 340 330 320 310 300 290 280 270 260

8150+00 8151+00 8152+00 8153+00 8154+00 8155+00 8156+00 8157+00 8158+00 8159+00 8160+00 8161+00 8162+00 8163+00 8164+00 8165+00

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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	87	190

(2) INTERCHANGE LAYOUT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

STA. 190+00.00
END WHITE OAK CROSSING

STA. 183+42.35 C.L. WHITE OAK CROSSING =
STA. 8159+68.96 I-40 C.L. MEDIAN

C.L. WHITE OAK CROSSING
STA. 188+67.72 =
C.L. RAMP 3
STA. 8160+70.98 =
C.L. RAMP 4
STA. 8161+75.68

RAMP 4 STA. 8146+58.18 9.50' RT.=
C.L. I-40 LT. LANES STA. 8146+58.84 13.27' LT.

RAMP 3 STA. 8176+56.39. 12.50' RT.=
C.L. I-40 LT. LANES STA. 8176+56.63, 28.00' LT.

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

RAMP 1 STA. 8144+51.36 12.50' LT.=
C.L. I-40 RT. LANES STA. 8144+50.96 28.00' RT.

RAMP 2 STA. 8173+73.25. 9.50' LT.=
C.L. I-40 RT. LANES STA. 8173+73.10, 14.30' RT.

STA. 8135+74.75
C.L. I-40 MEDIAN
BEGIN JOB 061190
L.M. 145.6

STA. 8189+99.33
C.L. I-40 MEDIAN
END JOB 061190
L.M. 146.6

STA. 169+51.72
BEGIN WHITE OAK CROSSING

C.L. WHITE OAK CROSSING
STA. 176+67.72 =
C.L. RAMP 1
STA. 8159+50.67 =
C.L. RAMP 2
STA. 8156+71.02

C.L. I-40 LT. LANES
C.L. I-40 RT. LANES
C.L. I-40 MEDIAN
C.L. RAMP 1
C.L. RAMP 2
C.L. RAMP 3
C.L. RAMP 4
300' TAPER
700' ACCELERATION LANE
CONST. LIMITS

CURVE DATA

CURVE	PC	PI	PT	RADIUS (FT)	DELTA	DEGREE OF CURVE	LENGTH OF CURVE (FT)	TANGENT OF CURVE (FT)	ALIGNMENT	e	Ls	DESIGN SPEED
C1	164+97.48	167+65.61	170+19.58	930.00	32°09'56" RT.	6°09'39"	522.10	268.13	WHITE OAK CROSSING	0.040 '/'	216'	50 MPH
C2	173+65.84	175+13.42	176+58.57	930.00	18°02'05" LT.	6°09'39"	292.73	147.59	WHITE OAK CROSSING	0.040 '/'	252'	50 MPH
C3	8153+66.49	8160+77.47	8167+86.64	11459.16	7°06'03" LT.	0°30'00"	1420.15	710.99	I-40 EB	NO SUPER	N/A	70 MPH
C4	8157+76.56	8162+19.33	8166+61.10	7639.44	6°38'03" LT.	0°45'00"	884.54	442.77	I-40 WB	NO SUPER	N/A	70 MPH
C5	8139+94.98	8140+90.20	8141+85.26	1909.86	5°42'30" RT.	3°00'00"	190.28	95.22	RAMP 1	NO SUPER	N/A	50 MPH
C6	8150+17.92	8152+20.75	8154+12.60	694.49	32°33'38" RT.	8°15'00"	394.67	202.82	RAMP 1	0.100 '/'	350'/300	50 MPH
C7	8156+93.56	8157+31.42	8157+68.66	238.73	18°01'21" LT.	24°00'00"	75.09	37.86	RAMP 1	0.030 '/'	92'	30 MPH
C8	8158+60.09	8160+13.70	8161+61.55	636.62	27°07'53" LT.	9°00'00"	301.46	153.61	RAMP 2	0.063 '/'	300'	30 MPH
C9	8165+75.67	8168+55.99	8171+25.51	1145.92	27°29'33" RT.	5°00'00"	549.85	280.32	RAMP 2	0.083 '/'	150'/250	50 MPH
C10	8175+10.02	8175+48.22	8175+86.41	1909.86	02°17'30" RT	3°00'00"	76.39	38.20	RAMP 2	NO SUPER	N/A	50 MPH
C11	8167+65.57	8170+27.43	8172+84.89	1637.02	18°10'33" LT.	3°30'00"	519.31	261.85	RAMP 3	0.065 '/'	300'	50 MPH
C12	8178+92.37	8179+87.59	8180+82.65	1909.86	5°42'30" LT.	3°00'00"	190.28	95.22	RAMP 3	NO SUPER	N/A	50 MPH
C13	8145+20.13	8148+38.72	8151+48.30	1527.89	23°33'23" LT.	3°45'00"	628.17	318.59	RAMP 4	0.069 '/'	300'	50 MPH
C14	8156+13.57	8157+58.09	8159+01.74	1527.89	10°48'23" RT.	3°45'00"	288.17	144.52	RAMP 4	0.069 '/'	300'	50 MPH
C15	191+61.41	197+77.01	202+48.99	930.00	67°00'16" RT.	6°09'39"	1087.59	615.60	WHITE OAK CROSSING	0.040 '/'	216'	50 MPH

INTERCHANGE LAYOUT

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DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	88	190

(2) INTERCHANGE RIGHT OF WAY

PI 197+77.01

200+00

195+00

PT 202+48.99

C.L. WHITE OAK CROSSING

STA. 190+00.00
END WHITE OAK CROSSING

C.L. WHITE OAK CROSSING STA. 188+67.71 =
C.L. RAMP 3 STA. 8160+70.98 =
C.L. RAMP 4 STA. 8161+75.68

PROP. R/W

PC 191+61.41

STA. 183+42.35 C.L. WHITE OAK CROSSING =
STA. 8159+68.96 I-40 C.L. MEDIAN

RAMP 3 STA. 8176+56.39, 12.50' RT.=
C.L. I-40 LT. LANES STA. 8176+56.63, 28.00' LT.

RAMP 4 STA. 8146+58.18 9.50' RT.=
C.L. I-40 LT. LANES STA. 8146+58.84 13.27' LT.

PI 8151+48.30

PI 8158+58.09

C.L. RAMP 4

PROP. R/W & C/A

EXIST. R/W & C/A

PC 8145+20.13

PI 8140+80.20

8135+00

8140+00

8145+00

8150+00

8155+00

8160+00

8165+00

8170+00

8175+00

8180+00

8185+00

8190+00

8195+00

I-40 C.L. MEDIAN

S28°19'23"E

S17°31'00"E

PT 8159+00.74

190+00

S12°49'00"W

C.L. RAMP 3

PC 8167+65.57

PT 8172+84.88

PI 8175+48.22

PC 8178+92.37

PT 8180+82.65

EXIST. R/W & C/A

C.L. I-40 LT. LANES

S05°41'33"E

PI 8168+55.99

PI 8170+27.40

C.L. I-40 LT. LANES

C.L. I-40 RT. LANES

PI 8148+38.12

PI 8152+20.75

S30°27'33"W

EXIST. R/W & C/A

C.L. RAMP 1

PROP. R/W & C/A

PC 8139+94.98

PT 8141+85.26

PC 8155+33.56

PI 8157+68.66

S30°27'33"W

PC 8158+60.09

S14°38'20"E

CONST. LIMITS

PI 8171+25.51

PC 8175+10.02

PT 8175+86.41

PI 8179+87.59

EXIST. R/W & C/A

C.L. I-40 RT. LANES

PI 8161+91.55

S42°07'57"E

C.L. RAMP 2

PC 8165+75.67

RAMP 1 STA. 8144+54.36 12.50' LT.=
C.L. I-40 RT. LANES STA. 8144+50.96 28.00' RT.

RAMP 2 STA. 8173+73.25, 9.50' LT.=
C.L. I-40 RT. LANES STA. 8173+73.10, 14.30' RT.

STA. 8135+74.75
C.L. I-40 / MEDIAN
BEGIN JOB 061190
L.M. 145.6

PC 8153+17.92

PT 8154+92.60

PI 8156+58.57

S15°00'00"W

PROP. R/W & C/A

PC 8160+00

S15°00'00"E

PROP. R/W & C/A

PI 8160+13.08

PI 8175+13.42

EXIST. R/W & C/A

PI 8157+31.42

EXIST. R/W & C/A

END PROP. C/A

PROP. R/W

PC 173+65.84

END PROP. R/W

S65°59'06"E

PROP. R/W

EXIST. R/W & C/A

PT 170+19.58

C.L. WHITE OAK CROSSING STA. 176+67.72 =
C.L. RAMP 1 STA. 8159+50+67 =
C.L. RAMP 2 STA. 8156+71.02

PI 167+65.61

PC 164+97.48

STA. 169+51.72
BEGIN WHITE OAK CROSSING

STA. 8189+99.33
C.L. I-40 MEDIAN
END JOB 061190
L.M. 146.6

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

INTERCHANGE RIGHT OF WAY

Layout Space 7/23/2018 12:48:31 PM
WORKSPACE: HTD
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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	89	190

(2) PERMANENT SIGNING QUANTITIES

GUIDE SIGN AND EXIT SIGN QUANTITIES

SIGN NO./ LOCATION	CL	BM	G-2	G2-4*	G2-5*	GUIDE SIGN LENGTH LIN. FT.	GUIDE SIGN HEIGHT LIN. FT.	GUIDE SIGN SQ. FT.	STEEL SECT. A-572 BEAM	STEEL SECT. A-572 LBS	SIGN POST LENGTH H-1 LIN. FT.	SIGN POST LENGTH H-2 LIN. FT.	STUB POST H-1 LIN. FT.	STUB POST H-2 LIN. FT.	FOOTINGS DIA. LIN. FT.	FOOTINGS DEPTH LIN. FT.	FOOTINGS EMBED LIN. FT.	SIGN POST AND STUB POUND	LEGEND	EXIT PANEL TYPE A SQ. FT.
C.L. WHITE OAK CROSSING			EACH																	
GM-175+75EB					1	7.00	3.50	24.50												
GM-179+00WB				1		6.17	1.50	9.26												
GM-186+50EB				1		5.17	2.00	10.34												
GM-190+00WB					1	6.50	3.50	22.75												
I-40 C.L. MEDIAN																				
OH-8074+90EB-B						22.00	9.00	198.00											146	23.75
EX-8145+45EB			1			8.00	5.00	40.00	W-6	9	14.25	14.25	2.33	2.33	1.50	3.00	2.00	298.44		
EX-8174+40WB			1			8.00	5.00	40.00	W-6	9	14.25	14.25	2.33	2.33	1.50	3.00	2.00	298.44		
BM-8209+98WB-A		1				15.00	8.00	120.00												
BM-8209+98WB-B		1				23.50	11.50	270.25											146	23.75
BM-8229+10WB		1				22.00	9.00	198.00											146	23.75
I-40 RT. LANES																				
OH-8140+40EB	1					26.00	7.00	182.00											146	23.75
I-40 LT. LANES																				
GM-8158+09WB TO 8135+00WB**			1						W8	18	13.35	14.38	5.00	5.00	2.50	7.00	4.67	679.14		
GM-8173+38WB TO 8157+75WB**			1						W10	22	17.23	18.36	5.33	5.33	3.00	7.50	5.00	1017.50		
OH-8179+95WB	1					22.50	10.00	225.00											146	23.75
I-430 RAMP 4																				
OH-8212+90WB						22.00	9.00	198.00											146	23.75
GUIDE SIGNS ROADSIDE MOUNTED TOTALS:								66.85												
GUIDE SIGNS OVERHEAD MOUNTED TOTALS: (SIGNS ONLY)								1471.25												
TOTALS:	2	3	4					1538.10										2293.52		142.50

NOTE:
BREAKAWAY SIGN SUPPORT TOTAL IS CALCULATED BY TAKING THE LENGTH OF H-1, H-2, AND EACH STUB POST AND MULTIPLYING BY THE BEAM WEIGHT (LBS)

*STRUCTURE TYPE QUANTIFIED IN THE OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS TABLE
**EXISTING SIGN AND STRUCTURE TO BE REMOVED AND REPLACED

STANDARD SIGN QUANTITIES

STANDARD ROADSIDE SIGNS SHEET ALUMINUM 0.125" THICKNESS (GREATER THAN 5 SQ. FT.)

SIGN NO.	SIZE OF SIGN	UNIT AREA (SQ.FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ.FT.)	LEGEND/BACKGROUND
M1-1	36"X36"	9.00	1	9.0	WHITE/BLUE
R1-1	48"X48"	16.00	8	128.0	WHITE/RED
R2-1"40"	36"X48"	12.00	1	12.0	BLACK/WHITE
R2-1"70"	48"X60"	20.00	1	20.0	BLACK/WHITE
R3-7R	36"X30"	7.50	2	15.0	BLACK/WHITE
R3-7R	30"X30"	6.25	2	12.5	BLACK/WHITE
R5-1	36"X36"	9.00	6	54.0	WHITE/RED
R5-1A	42"X30"	8.75	4	35.0	WHITE/RED
R6-1R	54"X18"	6.75	6	40.5	BLACK/WHITE
R6-1L	54"X18"	6.75	6	40.5	BLACK/WHITE
W3-1	48"X48"	16.00	4	64.0	BLACK/YELLOW
W4-1R	48"X48"	16.00	1	16.0	BLACK/YELLOW
W4-2	48"X48"	16.00	1	16.0	BLACK/YELLOW
W4-3R	48"X48"	16.00	1	16.0	BLACK/YELLOW
W8-13	36"X36"	9.00	2	18.0	BLACK/YELLOW
W9-1	48"X48"	16.00	1	16.0	BLACK/YELLOW
W9-2	48"X48"	16.00	1	16.0	BLACK/YELLOW
W13-2*	24"X30"	20.00	2	40.0	BLACK/YELLOW
TOTAL 0.125" THICKNESS:				568.5	

*TO BE ROADSIDE MOUNTED ON CORRESPONDING OVERHEAD/CANTILEVER STRUCTURE.

STANDARD SIGN QUANTITIES

STANDARD ROADSIDE SIGNS SHEET ALUMINUM 0.100" THICKNESS (5 SQ. FT. OR LESS)

SIGN NO.	SIZE OF SIGN	UNIT AREA	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ.FT.)	LEGEND/BACKGROUND
OM-3R	12"X36"	3.0	2	6.0	BLACK/YELLOW
OM-3L	12"X36"	3.0	2	6.0	BLACK/YELLOW
R1-2	48"X48"X48"	6.8	4	27.2	WHITE/RED
R1-3	18"X6"	0.8	6	4.8	WHITE/RED
M1-1	24"X24"	4.0	6	24.0	WHITE/BLUE
M3-2	24"X12"	2.0	3	6.0	WHITE/BLUE
M3-4	24"X12"	2.0	3	6.0	WHITE/BLUE
M3-2	30"X15"	3.1	1	3.1	WHITE/BLUE
M6-1R	21"X15"	2.2	2	4.4	WHITE/BLUE
M6-1L	21"X15"	2.2	2	4.4	WHITE/BLUE
M6-3	21"X15"	2.2	2	4.4	WHITE/BLUE
TOTAL 0.100" THICKNESS:				96.3	

SIGNING SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
725	GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	67	SQ. FT.
725	GUIDE SIGN-OVERHEAD MOUNTED (DEMOUNTABLE LEGEND)	1471	SQ. FT.
726	STANDARD SIGN	683	SQ. FT.
727	EXIT NUMBER PANEL (TYPE A)	143	SQ. FT.
728	DELINEATOR (TYPE 2)	98	EACH
729	CHANNEL POST SIGN SUPPORT (TYPE U-1)	6	EACH
730	BREAKAWAY SIGN SUPPORT (TYPE G-2)	2294	POUND
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)	3	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)	23	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-2)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-3)	4	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-4)	2	EACH
SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-5)	2	EACH
SP	STEEL BRIDGE MOUNTED SIGN STRUCTURE (BM-040-60-45A)	1	EACH
SP	STEEL BRIDGE MOUNTED SIGN STRUCTURE (BM-040-60-45B)	1	EACH
SP	STEEL BRIDGE MOUNTED SIGN STRUCTURE (BM-040-60-52)	1	EACH
SP	STEEL CANTILEVER SIGN STRUCTURE (OC-040-60-50)	1	EACH
SP	STEEL CANTILEVER SIGN STRUCTURE (OC-040-60-51)	1	EACH

STANDARD SIGN QUANTITIES

STANDARD SIGNS FLAT SHEET OMNI-DIRECTIONAL BREAKWAY SIGN SUPPORTS

SIGN NO./ LOCATION	STANDARD ROADSIDE SIGNS TO BE MOUNTED	TYPE G-1 EA.	TYPE G2-1 EA.	TYPE G2-2 EA.	TYPE G2-3 EA.	TYPE G2-4 EA.	TYPE G2-5 EA.
I-40 RT. LANES							
SS-8140+40EB*	W13-2						
SS-8140+99EB-LT&RT TO 8127+00EB-LT&RT**	R2-1"65"		2				
SS-8127+00EB-LT&RT TO 8119+50EB-LT&RT**	W3-5		2				
SS-8164+50EB	W4-3R		1				
SS-8172+37EB TO 8168+00EB**	W8-13		1				
SS-8186+40EB*	M1-1"40", M3-2						
I-40 LT. LANES							
SS-8153+50WB	W4-1R		1				
SS-8177+03WB TO 8128+00WB LT.**	R2-1"70"		1				
8128+00WB RT.	R2-1"70"		1				
SS-8179+95WB*	W13-2						
SS-8180+33WB TO 8125+00WB**	R4-3		1				
SS-8184+66WB TO 8133+00WB**	M1-1"40",M3-4	1					
WHITE OAK CROSSING							
SS-172+35WB	R3-5R,R3-7R	1					
SS-174+00EB	R3-5R,R3-7R	1					
SS-173+25WB	R2-1"40"		1				
SS-175+75EB	M1-1"40"(2),M3-2,M3-4,M6-1R, M6-3						1
SS-176+30EB	R1-2				1		
SS-176+70EB	R1-1,R1-3P			1			
SS-177+37WB	R1-1,R1-3P			1			
SS-178+60EB	W8-13		1				
SS-179+00WB	M3-2,M1-1"40",M6-1L					1	
SS-186+50EB	M3-4,M1-1"40",M6-1L					1	
SS-186+60WB	W8-13		1				
SS-188+00EB	R1-1,R1-3P			1			
SS-188+62WB	R1-1,R1-3P			1			
SS-188+70WB	R1-2				1		
SS-190+00WB	M3-4,M3-2,M1-1"40"(2),M6-3,M6-1R						1
RAMP 1							
SS-8156+20RT	R5-1A,W3-1		1				
SS-8156+20LT	R5-1A,W3-1		1				
SS-8159+10RT	R1-1,R6-1R,R6-1L,R5-1,R1-3P		1				
SS-8159+10LT	R1-1,R6-1R,R6-1L,R5-1,R1-3P		1				
SS-8159+00RT	R1-2,R6-1L,R6-1R,R5-1				1		
RAMP 3							
SS-8161+25RT	R1-2,R6-1L,R6-1R,R5-1				1		
SS-8161+15RT	R1-1,R6-1R,R6-1L,R5-1		1				
SS-8161+15LT	R1-1,R6-1R,R6-1L,R5-1		1				
SS-8164+00RT	R5-1A,W3-1		1				
SS-8164+00LT	R5-1A,W3-1		1				
SS-8168+00LT	W4-2		1				
SS-8172+00LT	W9-1		1				
TOTALS:		3	23	4	4	2	2

*TO BE ROADSIDE MOUNTED ON CORRESPONDING OVERHEAD/CANTILEVER STRUCTURE.
**EXISTING SIGN AND STRUCTURE TO BE REMOVED AND REPLACED

STANDARD SIGN QUANTITIES

STANDARD SIGNS FLAT SHEET CHANNEL POST SIGN SUPPORTS

STATION	STATION	STANDARD ROADSIDE SIGNS TO BE MOUNTED	TYPE 2 DELINEATOR YELLOW/RED EACH	TYPE 2 DELINEATOR WHITE/RED EACH	TYPE U-1 EA.	STANDARD SIGN SQ. FT.
I-40 C.L. MEDIAN						
SS-8181+45WB-RT		OM-3R			1	3
SS-8180+32EB-RT		OM-3R			1	3
WHITE OAK CROSSING						
SS-181+30EB		OM-3R			1	3
SS-181+30WB		OM-3L			1	3
SS-184+55EB		OM-3L			1	3
SS-184+55WB		OM-3R			1	3
C.L. RAMP 1*						
8141+85	8159+23		22	27		
C.L. RAMP 3*						
8161+74	8178+90		23	26		
TOTALS			45	53	6	18

* SEE STD. DRAWING SHS-8

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.13640 BYRON O. LAWRENCE 8/29/18

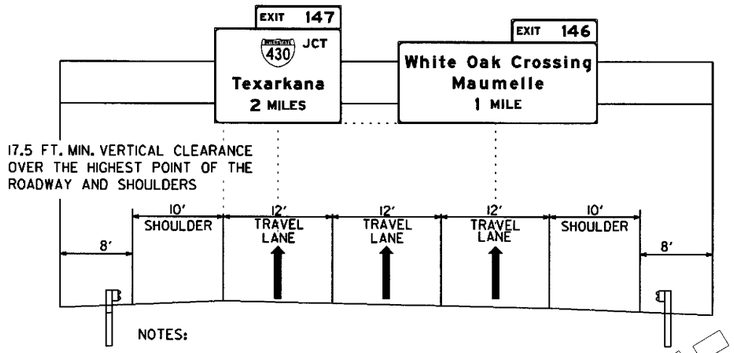
PERMANENT SIGNING QUANTITIES

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	90	190

(2) PERMANENT SIGNING PLANS

MOVE EXISTING
OH-40-STA8074+90EB-A

INSTALL
OH-40-STA8074+90EB-B



NOTES:

PLACE ON EXISTING OVERHEAD SIGN STRUCTURE.
SHIFT EXISTING SIGN OVER TO ALLOW FOR NEW SIGN PLACEMENT.

NOTES:

THE CONTRACTOR WILL VERIFY SIGN PLACEMENT AND MAKE ANY ADJUSTMENTS NECESSARY TO ALIGN SIGNS OVER INTENDED LANES.

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N

0 100' 200'
SCALE
1"=100'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

PERMANENT SIGNING PLANS

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REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	91	190
				(2)	PERMANENT SIGNING PLANS			

INSTALL CL-40-STA8140+40EB

EXIT 146

White Oak Crossing Maumelle

17.5 FT. MIN. VERTICAL CLEARANCE OVER THE HIGHEST POINT OF THE ROADWAY.

2' 12' TRAVEL LANES 10' SHOULDER 10'-3" 7'

INSTALL SS-40-STA8140+40EB

EXIT 35 MPH

Conway 22 Fort Smith 148

REMOVE AND REPLACE GM-40-STA8158+09WB TO STA. 8135+00WB

INSTALL GM-40-STA8153+50WB

INSTALL SS-WHITE OAK CROSSING-STA188+70WB

INTSTALL SS-WHITE OAK CROSSING-STA190+00WB

Little Rock Conway EAST WEST

INSTALL SS-WHITE OAK CROSSING-STA188+62WB

STOP

REMOVE AND REPLACE GM-40-STA8173+38WB TO STA8157+75WB

Veterans Memorial Highway Purple Heart Trail

BRIDGE ICES BEFORE ROAD

INSTALL SS-WHITE OAK CROSSING-STA186+60WB

INSTALL SS-WHITE OAK CROSSING-STA184+55WB

INSTALL SS-RAMP 3-STA8161+25LT

INSTALL SS-RAMP 3-STA8161+15RT&LT

INSTALL SS-RAMP 3-STA8172+00LT

RIGHT LANE ENDS

INSTALL SS-RAMP 3-STA8168+00LT

STOP

INSTALL SS-WHITE OAK CROSSING-STA188+00EB

Conway

INSTALL SS-RAMP 3-STA8164+00RT&LT

INSTALL SS-WHITE OAK CROSSING-STA186+50EB

WRONG WAY

INSTALL SS-WHITE OAK CROSSING-STA184+55EB

I-40 C.L. LT. LANES

I-40 C.L. MEDIAN

I-40 C.L. RT. LANES

MAINTAIN OH-40-STA8149+41EB(A&B)

SPEED LIMIT 65

REMOVE AND REPLACE SS-40-STA8140+99EBLT&RT TO STA8127+00EBLT&RT

EXIT 146

INSTALL GM-40-STA8145+45EB

INSTALL SS-RAMP 1-STA8156+20RT&LT

WRONG WAY

INSTALL SS-WHITE OAK CROSSING-STA181+30WB

INSTALL SS-WHITE OAK CROSSING-STA179+00WB

INSTALL SS-WHITE OAK CROSSING-STA178+60EB

BRIDGE ICES BEFORE ROAD

REMOVE AND REPLACE SS-40-STA8172+37EB TO STA8168+00EB

INSTALL SS-WHITE OAK CROSSING-STA177+37WB

STOP

INSTALL SS-40-STA8164+50EB

YIELD

STOP

INSTALL SS-RAMP 1-STA8159+10RT&LT

INSTALL SS-WHITE OAK CROSSING-STA176+30EB

INSTALL SS-WHITE OAK CROSSING-STA176+70EB

INSTALL SS-RAMP 1-STA8159+00RT

ONE WAY

INSTALL SS-WHITE OAK CROSSING-STA173+25WB

INSTALL SS-WHITE OAK CROSSING-STA175+75EB

SPEED LIMIT 40

ONLY

RIGHT LANE MUST TURN RIGHT

INSTALL SS-WHITE OAK CROSSING-STA172+35WB

WEST EAST 40 40

Conway Little Rock

INSTALL SS-WHITE OAK CROSSING-STA174+00EB

NOTES:

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0 100' 200'
SCALE 1"=100'

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

PERMANENT SIGNING PLANS

Leonard Speed 7/23/2018 12:48:38 PM
WORKSPACE: MD
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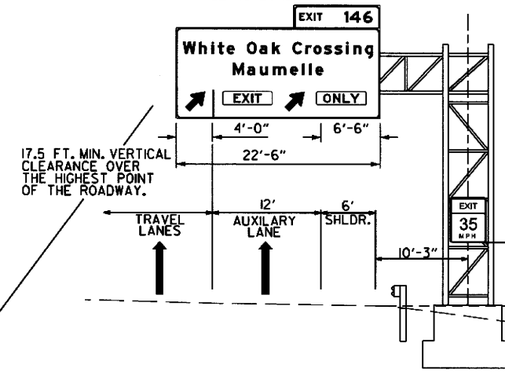
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	92	190
				(2)	PERMANENT SIGNING PLAN			

INSTALL
CL-40-STA8179+95WB



INSTALL
SS-40-STA8179+95WB

INSTALL
EX-40-STA8174+40WB

REMOVE AND REPLACE
SS-40-STA8177+03
TO
STA8128+00RT&LTWB

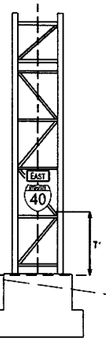
REMOVE AND REPLACE
SS-40-STA8180+33WB
TO
STA8125+00WB

REMOVE AND REPLACE
SS-40-STA8183+84WB
TO
SS-40-STA8133+00WB

MAINTAIN
SS-40-STA.8192+10WB

PT 8172+84.89
8170+00
8175+00
8175+00
8175+00
PC 8178+92.37
8180+00
8180+00
PT 8180+82.65
8185+00
8185+00
8190+00
8190+00
8195+00
8195+00
8200+00
8200+00
I-40 C.L. LT. LANES
I-40 C.L. MEDIAN
I-40 C.L. RT. LANES
8170+00
8170+00
8175+00
8175+00
PI 8175+48.2
8180+00
MAINTAIN
8185+00
8190+00
I-40 C.L. LT. LANES
I-40 C.L. MEDIAN
8195+00
8200+00
I-40 C.L. RT. LANES
PT 8171+25.51
PC 8175+10.02
PT 8175+86.41
PI 8179+87.59
REMOVE AND REPLACE
SS-8180+32EB-RT
SS-8181+45WB-RT
MAINTAIN OVERHEAD SIGN STRUCTURE RT. LANES STA. 8186+40

INSTALL
SS-40-STA.8186+40EB



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STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
7-23-2018

PERMANENT SIGNING PLAN

Leonard Speed
Work Order: MTD
Y:\Projects\MAUMELLE_I54459_I-40_Interchange\06-Design\Drawings\r061190_18_SGN_003.dgn
REVISED DATE: **REVDATE**
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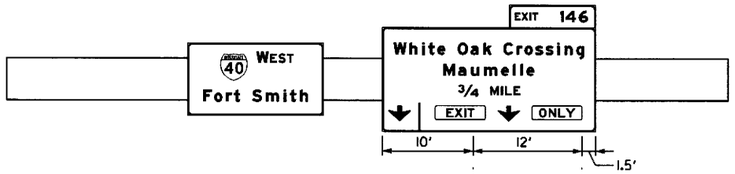
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	93	190

(2) PERMANENT SIGNING PLAN

INSTALL
BM-40-STA8209+98WB-A

REPLACE
BM-40-STA8209+98WB-B



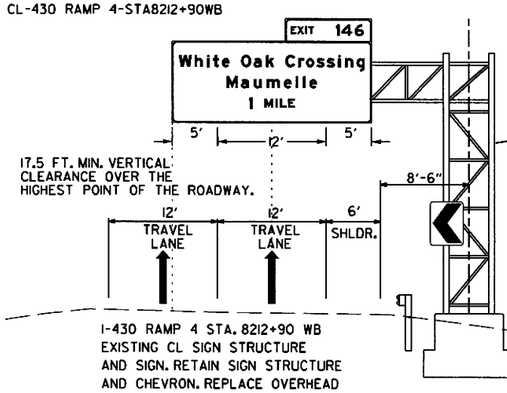
17.5 FT. MIN. VERTICAL CLEARANCE OVER THE HIGHEST POINT OF THE ROADWAY.

SHOULDER	12' TRAFFIC LANE	12' TRAFFIC LANE	12' TRAFFIC LANE	12' TRAFFIC LANE	SHOULDER

NOTE:

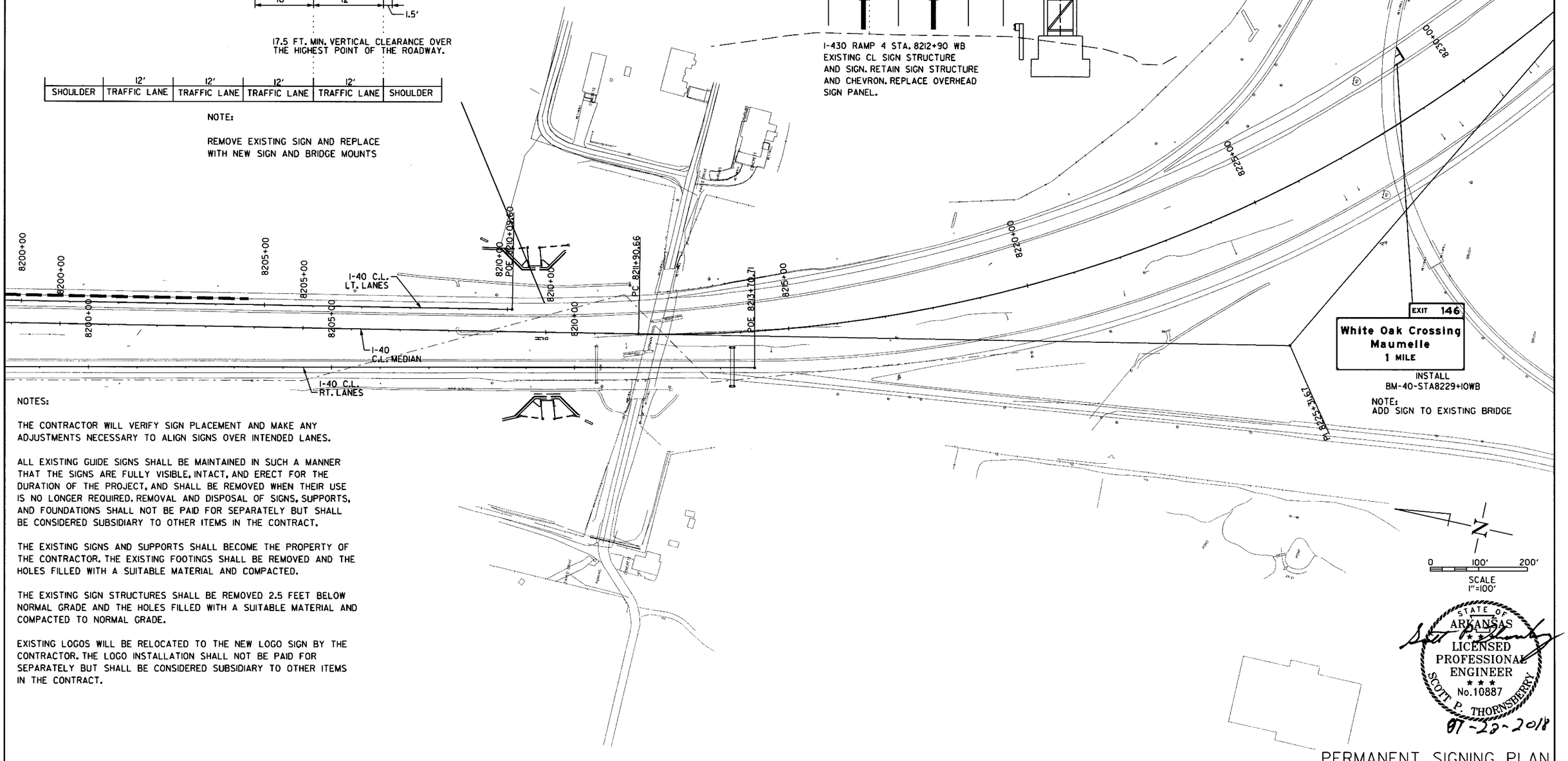
REMOVE EXISTING SIGN AND REPLACE WITH NEW SIGN AND BRIDGE MOUNTS

REPLACE
CL-430 RAMP 4-STA8212+90WB



17.5 FT. MIN. VERTICAL CLEARANCE OVER THE HIGHEST POINT OF THE ROADWAY.

I-430 RAMP 4 STA. 8212+90 WB
EXISTING CL SIGN STRUCTURE AND SIGN. RETAIN SIGN STRUCTURE AND CHEVRON. REPLACE OVERHEAD SIGN PANEL.



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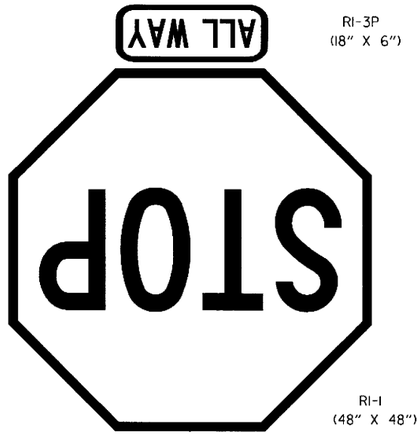
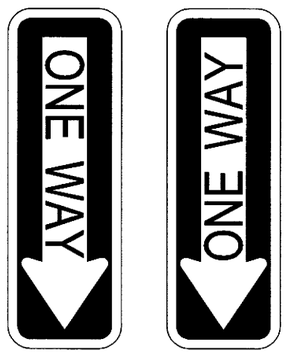
				6	ARK.			
				JOB NO.		061190	94	190

(2) PERMANENT SIGNING PLANS



RI-3P
(18" X 6")

RI-1
(48" X 48")



R6-IR
(54" X 18")

R6-IL
(54" X 18")

R5-1
(36" X 36")

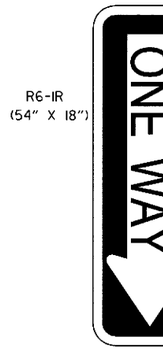
INSTALL
G2-1
SS-RAMP 1-8159+10RT
SS-RAMP 1-8159+10LT
SS-RAMP 3-8161+15RT
SS-RAMP 3-8161+15LT

OM-3L
(12" X 36")
INSTALL
U-1
SS-WHITE OAK CROSSING-181+30WB
SS-WHITE OAK CROSSING-184+55EB

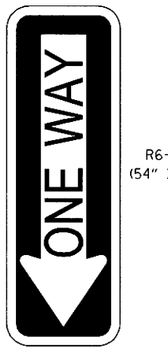
OM-3R
(12" X 36")
INSTALL
U-1
SS-WHITE OAK CROSSING-181+30EB
SS-WHITE OAK CROSSING-184+55WB

INSTALL
G2-3
SS-RAMP 1-8159+00RT
SS-RAMP 3-8161+25LT

RI-2
(48" X 48" X 48")

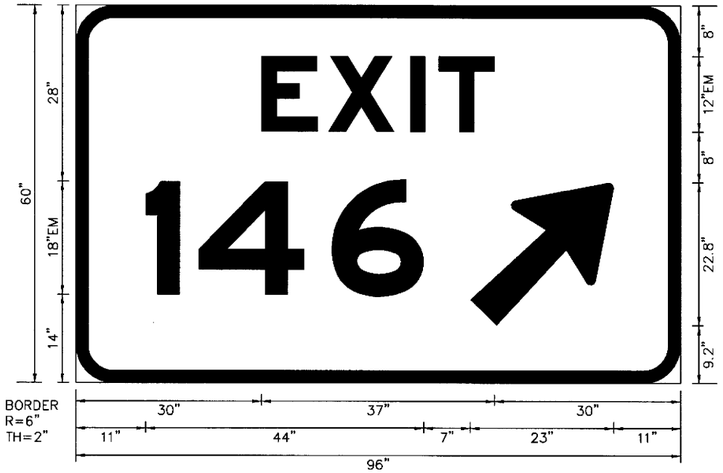


R6-IR
(54" X 18")



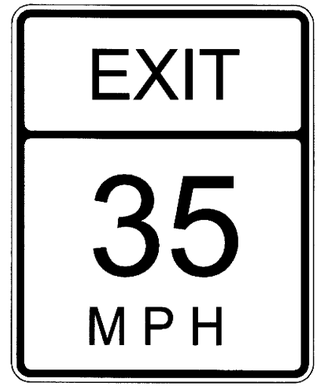
R6-IL
(54" X 18")

R5-1
(36" X 36")

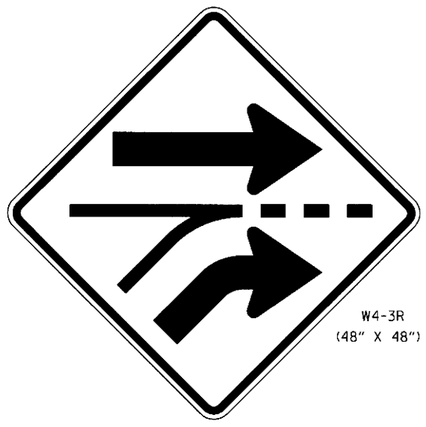


Panel Style: Guide_Fwy_Maumelle_Gore.ssi
M.U.T.C.D.: 2009 Edition

W13-2
(48" X 60")

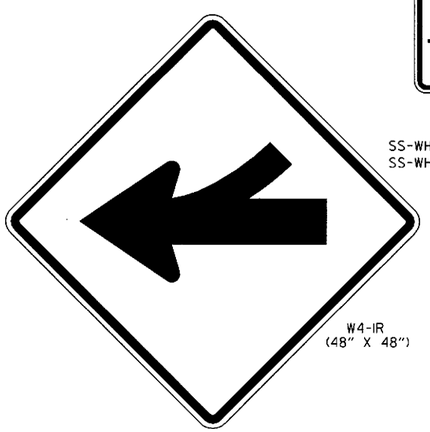


INSTALL
CL-40-STA.8140+40EB
OH-40-STA8179+95WB



W4-3R
(48" X 48")

INSTALL
G2-1
SS-40-8164+50EB

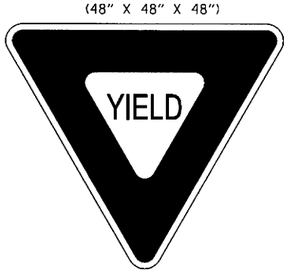


W4-1R
(48" X 48")

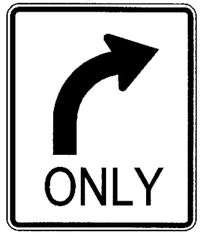
INSTALL
G2-1
SS-40-8153+50WB

INSTALL
G-2
GM-40-STA8145+45EB
GM-40-STA8174+40WB

RI-2
(48" X 48" X 48")



INSTALL
G2-3
SS-WHITE OAK CROSSING-STA176+30EB
SS-WHITE OAK CROSSING-STA188+70WB



R3-5R
(36" X 30")

R3-7R
(30" X 30")

INSTALL
G-1
SS-WHITE OAK CROSSING-172+35WB
SS-WHITE OAK CROSSING-174+00EB

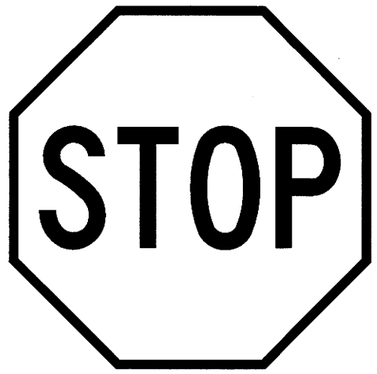
W8-13
(36" X 36")

INSTALL
G2-1
SS-WHITE OAK CROSSING-178+60EB
SS-WHITE OAK CROSSING-186+60WB

R2-1
(36" X 48")

INSTALL
G2-1
SS-WHITE OAK CROSSING-173+25WB

RI-1
(48" X 48")



RI-3P
(18" X 6")

INSTALL
G2-2
SS-WHITE OAK CROSSING-176+70EB
SS-WHITE OAK CROSSING-177+37WB
SS-WHITE OAK CROSSING-188+00EB
SS-WHITE OAK CROSSING-188+62WB

STATE OF ARKANSAS
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No.10887
SCOTT P. THORNSBERRY
7-23-2018

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	95	190

(2) PERMANENT SIGNING PLANS

STATE OF ARKANSAS
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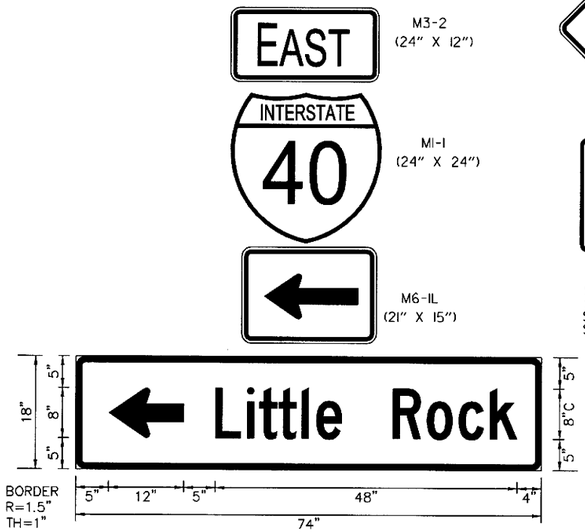
SCOTT P. THORNSBERRY
No.10887
7-23-2018

INSTALL
G2-4
SS-WHITE OAK CROSSING-179+00WB

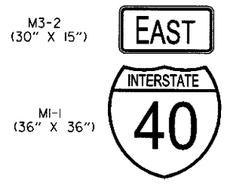


Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition
SS-WHITE OAK CROSSING-STA179+00WB

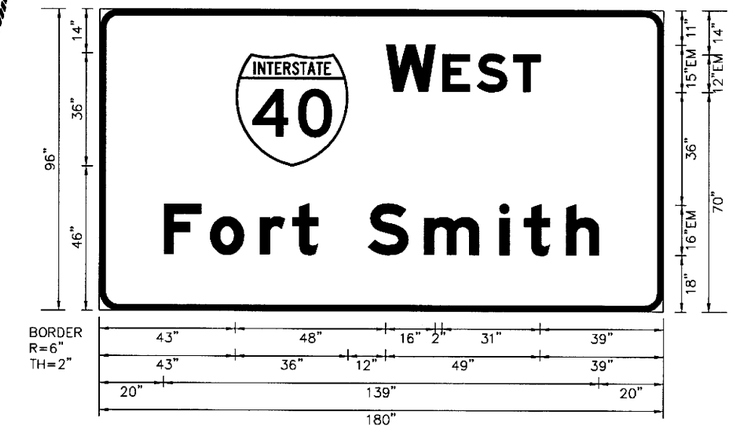
INSTALL
G2-1
SS-RAMP 1-8156+20RT
SS-RAMP 1-8156+20LT
SS-RAMP 3-8164+00RT
SS-RAMP 3-8164+00LT

INSTALL
G2-1
SS-RAMP 3-8168+00LT

INSTALL
G2-1
SS-RAMP 3-8172+00LT



INSTALL
SS-40-STA8186+40EB

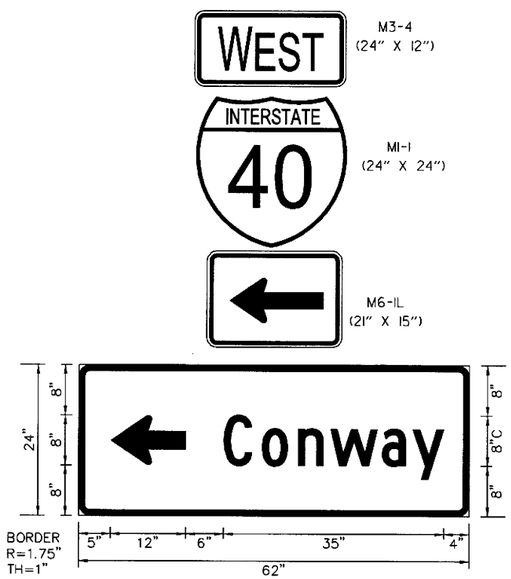


Panel Style: Maumelle Interchange Overhead.ssi
M.U.T.C.D.: 2009 Edition
BM-40-STA8209+98WB-A

R2-1
(48" X 60")

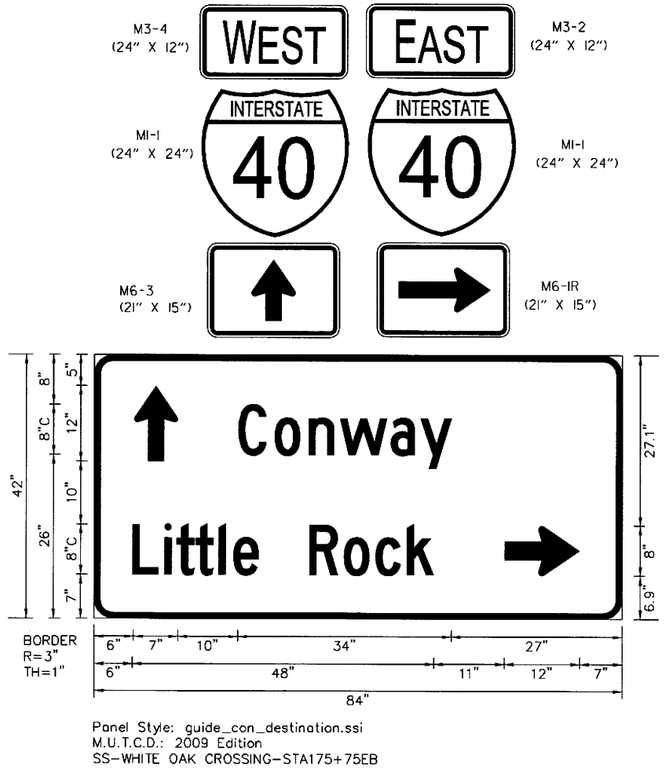
INSTALL
G2-1
SS-40-8128+00WB RT

INSTALL
G2-4
SS-WHITE OAK CROSSING-186+50EB



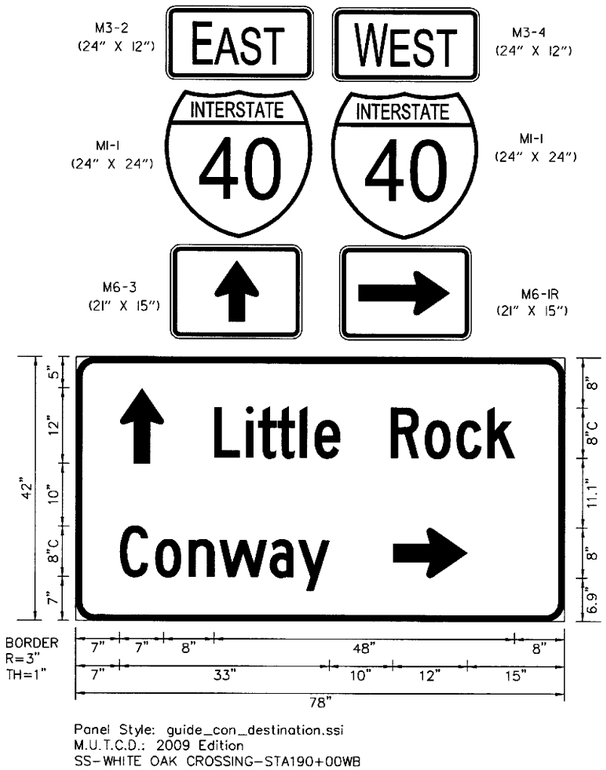
Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition
SS-WHITE OAK CROSSING-STA186+50EB

INSTALL
G2-5
SS-WHITE OAK CROSSING-175+75EB



Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition
SS-WHITE OAK CROSSING-STA175+75EB

INSTALL
G2-5
SS-WHITE OAK CROSSING-190+00WB

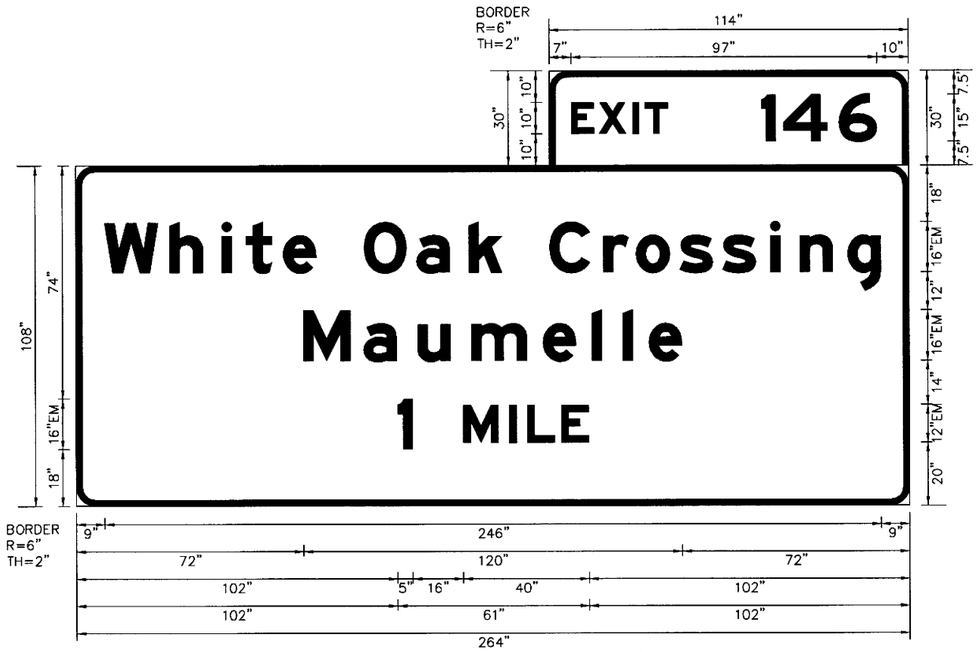


Panel Style: guide_con_destination.ssi
M.U.T.C.D.: 2009 Edition
SS-WHITE OAK CROSSING-STA190+00WB

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	96	190
				(2)	PERMANENT SIGNING PLANS			

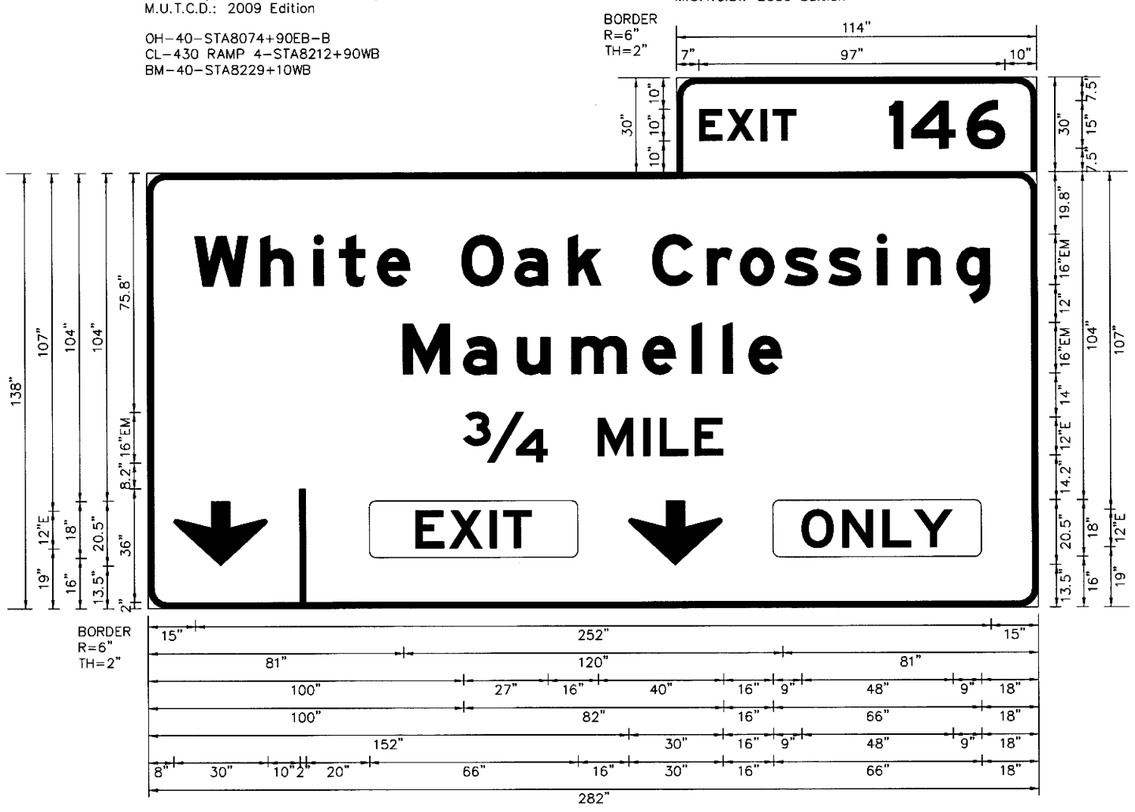
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
7-23-2018

Panel Style: Maumelle Interchange.bsi
M.U.T.C.D.: 2009 Edition



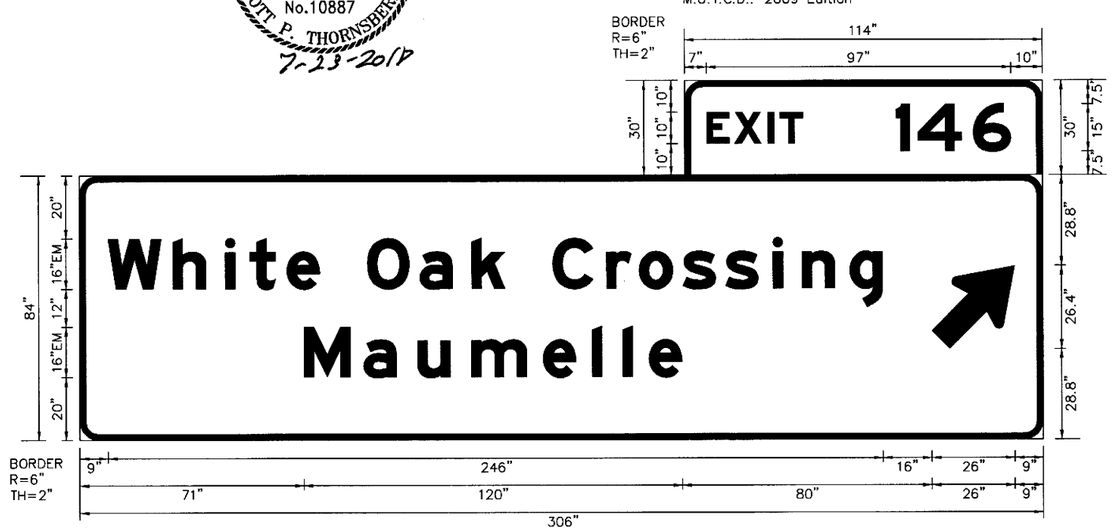
Panel Style: Maumelle Interchange Overhead.ssi
M.U.T.C.D.: 2009 Edition

OH-40-STA8074+90EB-B
CL-430 RAMP 4-STA8212+90WB
BM-40-STA8229+10WB

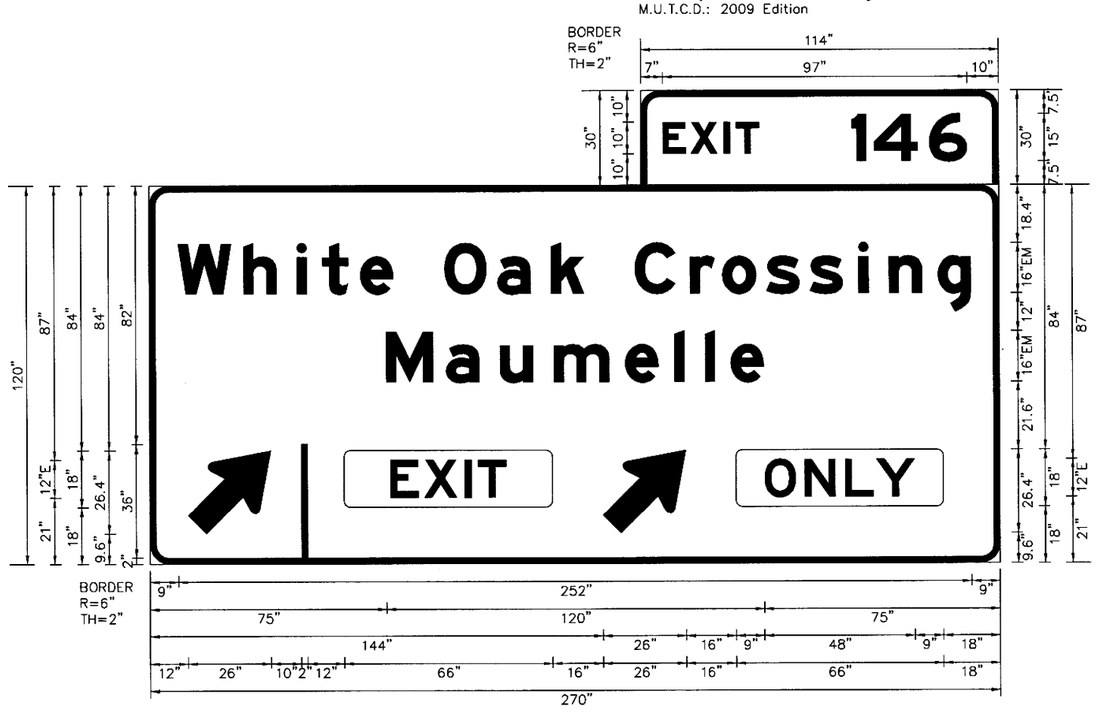


BM-40-STA8209+98WB-B

Panel Style: Maumelle Interchange Overhead.ssi
M.U.T.C.D.: 2009 Edition
CL-40-STA8140+40EB



Panel Style: Maumelle Interchange.bsi
M.U.T.C.D.: 2009 Edition



Panel Style: Maumelle Interchange Overhead.ssi
M.U.T.C.D.: 2009 Edition
CL-40-STA8179+95WB

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	97	190

(2) LIGHTING LAYOUT, SCHEDULE, & QUANTITIES

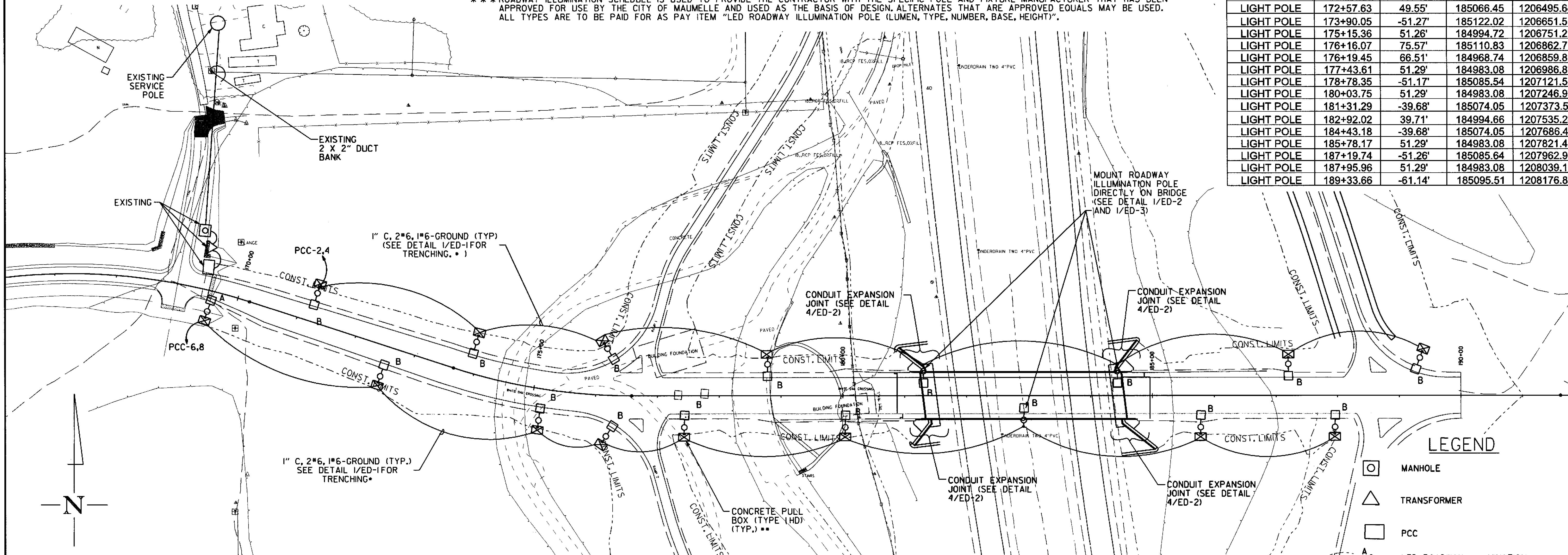
ROADWAY ILLUMINATION POLE SCHEDULE ＊＊＊

TYPE	DESCRIPTION	MOUNTING	MANUFACTURER	SERIES	CATALOG NUMBER	LAMPS QTY	LAMPS TYPE	LAMPS WATTS	LAMPS COLOR	LAMPS CRI	DRIVER QTY	DRIVER TYPE	DRIVER VOLTAGE	DRIVER LOAD (VA)
A	SHOEBOX AREA LIGHT, SINGLE HEAD, TYPE III, 17000LM, LED	POLE	KIM LIGHTING	ARX25	1SA-ARX25-3-4K-40-UV-DB-ST-DF-3-4RD / PTRS30-75120	1	LED	190	4000K	72	1	LED DRIVER	120-277	190
B	SHOEBOX AREA LIGHT, SINGLE HEAD, TYPE IV, 17000LM, LED	POLE	KIM LIGHTING	ARX25	1SA-ARX25-4-4K-40-UV-DB-ST-DF-3-4RD / PTRS30-75120	1	LED	190	4000K	72	1	LED DRIVER	120-277	190

＊＊＊ ROADWAY ILLUMINATION SCHEDULE IS USED TO PROVIDE THE CONTRACTOR WITH THE SPECIFIC POLE AND FIXTURE MANUFACTURER THAT HAS BEEN APPROVED FOR USE BY THE CITY OF MAUMELLE AND USED AS THE BASIS OF DESIGN. ALTERNATES THAT ARE APPROVED EQUALS MAY BE USED. ALL TYPES ARE TO BE PAID FOR AS PAY ITEM "LED ROADWAY ILLUMINATION POLE (LUMEN, TYPE, NUMBER, BASE, HEIGHT)".

LIGHT POLE LOCATIONS

DESCRIPTION	STATION	OFFSET	NORTHING	EASTING
LIGHT POLE	169+57.42	33.95'	185171.61	1206216.59
LIGHT POLE	171+19.76	-47.02'	185200.96	1206394.45
LIGHT POLE	172+57.63	49.55'	185066.45	1206495.64
LIGHT POLE	173+90.05	-51.27'	185122.02	1206651.59
LIGHT POLE	175+15.36	51.26'	184994.72	1206751.28
LIGHT POLE	176+16.07	75.57'	185110.83	1206862.77
LIGHT POLE	176+19.45	66.51'	184968.74	1206859.89
LIGHT POLE	177+43.61	51.29'	184983.08	1206986.83
LIGHT POLE	178+78.35	-51.17'	185085.54	1207121.57
LIGHT POLE	180+03.75	51.29'	184983.08	1207246.98
LIGHT POLE	181+31.29	-39.68'	185074.05	1207373.51
LIGHT POLE	182+92.02	39.71'	184994.66	1207535.24
LIGHT POLE	184+43.18	-39.68'	185074.05	1207686.41
LIGHT POLE	185+78.17	51.29'	184983.08	1207821.40
LIGHT POLE	187+19.74	-51.26'	185085.64	1207962.97
LIGHT POLE	187+95.96	51.29'	184983.08	1208039.18
LIGHT POLE	189+33.66	-61.14'	185095.51	1208176.88



LEGEND

MANHOLE

TRANSFORMER

PCC

A — LED ROADWAY ILLUMINATION POLE (17675, III, I, T, 30) & FOUNDATION (SEE ROADWAY ILLUMINATION POLE SCHEDULE FOR SPECIFIC TYPE AND BASIS OF DESIGN)

B — LED ROADWAY ILLUMINATION POLE (17675, IV, I, T, 30) & FOUNDATION (POLES MOUNTED ON BRIDGE DO NOT INCLUDE FOUNDATION) (SEE ROADWAY ILLUMINATION POLE SCHEDULE FOR SPECIFIC TYPE AND BASIS OF DESIGN)

CONCRETE PULL BOX (TYPE 1HD) **

NOTES:
* DIRECTIONAL BORING SHALL BE USED UNDER ROADWAYS RATHER THAN TRENCHING INSTALLATION METHODS.
** INSTALL CONCRETE PULL BOXES WITHIN 5' OF LUMINAIRE POLE.

ROADWAY LIGHTING SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
710	NON-METALLIC CONDUIT (1")	3412	LIN. FT.
710	NON-METALLIC CONDUIT (2")	701	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/6 A.W.G.)	4344	LIN. FT.
SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.)	4344	LIN. FT.
SP	LIGHT POLE FOUNDATION	10	EACH
SP	LED ROADWAY ILLUMINATION POLE (17,675 LUMENS, SHOE BOX, SHOE BASE, 30')	17	EACH

ROADWAY LIGHTING

STATION	STATION	LOCATION	ELECTRICAL CONDUCTORS-IN-CONDUIT (1C/6 A.W.G.) LIN. FT.	ELECTRICAL CONDUCTORS-IN-CONDUIT (2C/6 A.W.G.) LIN. FT.	NON-METALLIC CONDUIT (1") LIN. FT.	NON-METALLIC CONDUIT (2")* LIN. FT.	LIGHT POLE FOUNDATION EACH	LED ROADWAY ILLUMINATION POLE (17,675 LUMENS, SHOE BOX, SHOE BASE, 30') ‡ EACH	LED ROADWAY ILLUMINATION POLE (17,675 LUMENS, SHOE BOX, SHOE BASE, 30') ‡‡ EACH
169+50	181+35	WHITE OAK CROSSING RT. OF C.L.	1348	1348	1276		5	1	5
181+35	184+59	WHITE OAK CROSSING BRIDGE RT. OF C.L.	365	365		347			1
184+59	188+00	WHITE OAK CROSSING RT. OF C.L.	393	393	371		1		2
169+50	181+25	WHITE OAK CROSSING LT. OF C.L.	1328	1328	1259		3		4
181+25	184+50	WHITE OAK CROSSING BRIDGE LT. OF C.L.	375	375		354			2
184+50	189+20	WHITE OAK CROSSING LT. OF C.L.	535	535	506		1		2
TOTALS:			4344	4344	3412	701	10	1	16

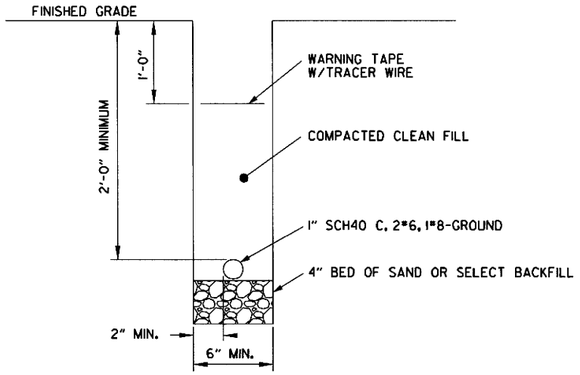
‡ TYPE III LIGHTING DISTRIBUTION (SEE SCHEDULE)
‡‡ TYPE IV LIGHTING DISTRIBUTION (SEE SCHEDULE)

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 13640 BYRON G. LAWRENCE
8/29/18

Leonard.Speed 8/29/2018 10:38:51 AM
WORKSPACE: AHTD
Y:\Projects\MAUMELLE_154459_I-40_Interchange\06-Design\Drawings\r06190_15_E.dgn
REVISED DATE: $$REVDATE$$

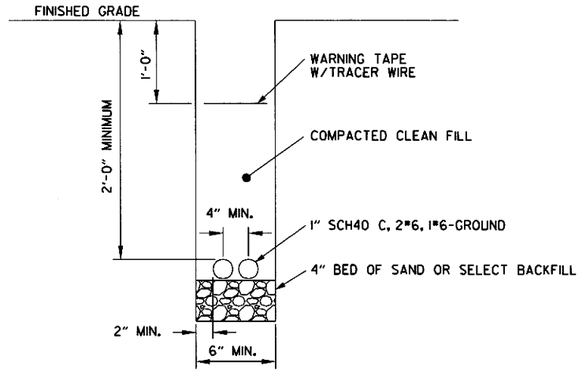
LIGHTING LAYOUT, SCHEDULE, & QUANTITIES

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	98	190
				(2)	ELECTRICAL DETAILS (ED-1)			



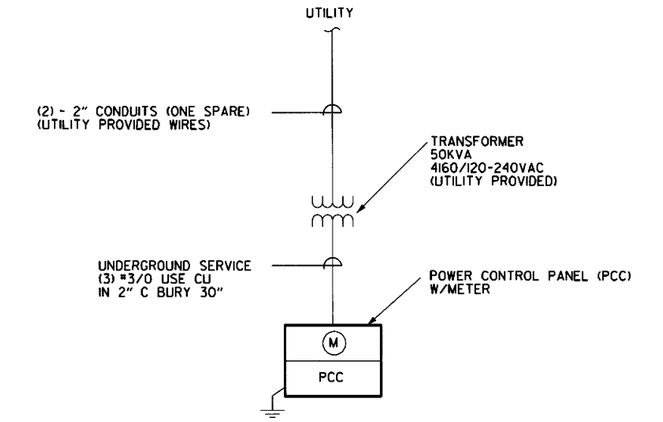
1 SINGLE CONDUIT DUCT BANK DETAIL

NOT TO SCALE



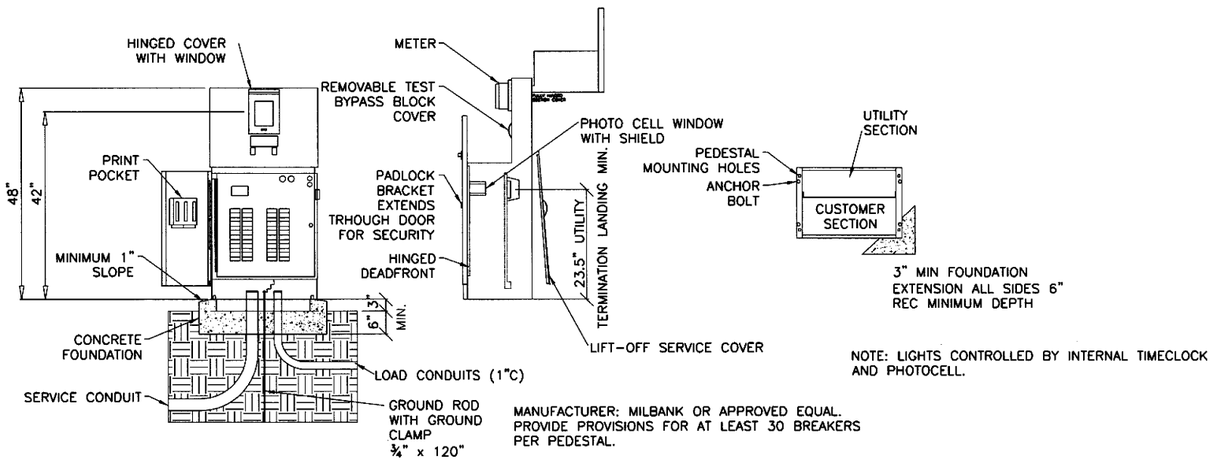
2 DOUBLE CONDUIT DUCT BANK DETAIL

NOT TO SCALE



3 EXISTING ONE-LINE DIAGRAM

NOT TO SCALE



4 EXISTING PCC ELEVATION DETAILS

NOT TO SCALE

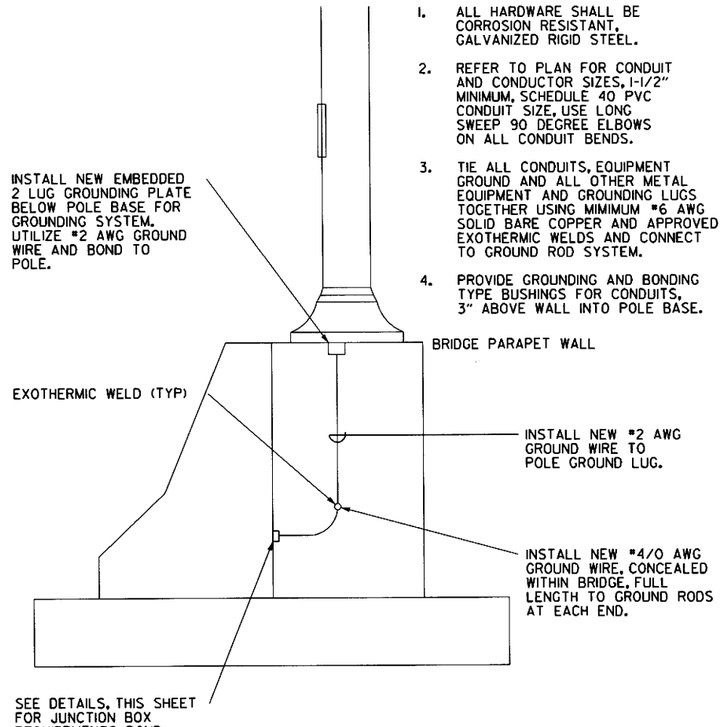
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
Aug 1, 2018

ELECTRICAL DETAILS (ED-1)

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	99	190
				(2)	ELECTRICAL DETAILS (ED-2)			

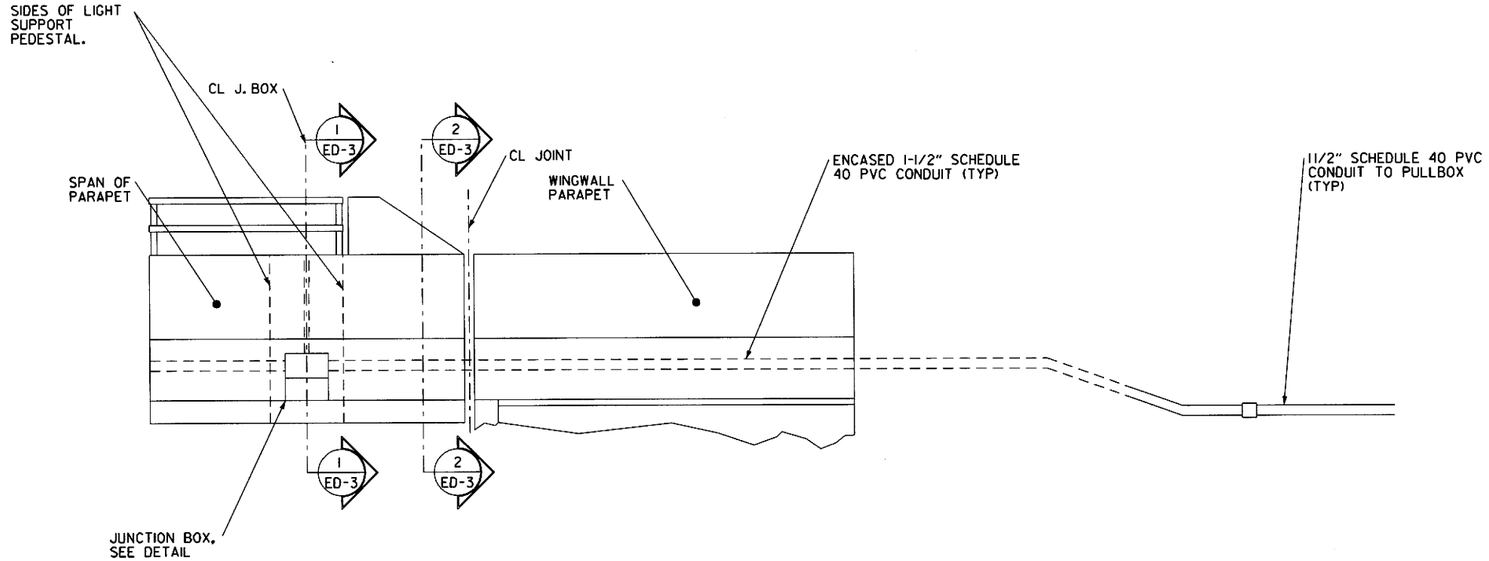
NOTES

1. ALL HARDWARE SHALL BE CORROSION RESISTANT, GALVANIZED RIGID STEEL.
2. REFER TO PLAN FOR CONDUIT AND CONDUCTOR SIZES, 1-1/2" MINIMUM, SCHEDULE 40 PVC CONDUIT SIZE, USE LONG SWEEP 90 DEGREE ELBOWS ON ALL CONDUIT BENDS.
3. TIE ALL CONDUITS, EQUIPMENT GROUND AND ALL OTHER METAL EQUIPMENT AND GROUNDING LUGS TOGETHER USING MIMIMUM #6 AWG SOLID BARE COPPER AND APPROVED EXOTHERMIC WELDS AND CONNECT TO GROUND ROD SYSTEM.
4. PROVIDE GROUNDING AND BONDING TYPE BUSHINGS FOR CONDUITS, 3" ABOVE WALL INTO POLE BASE.



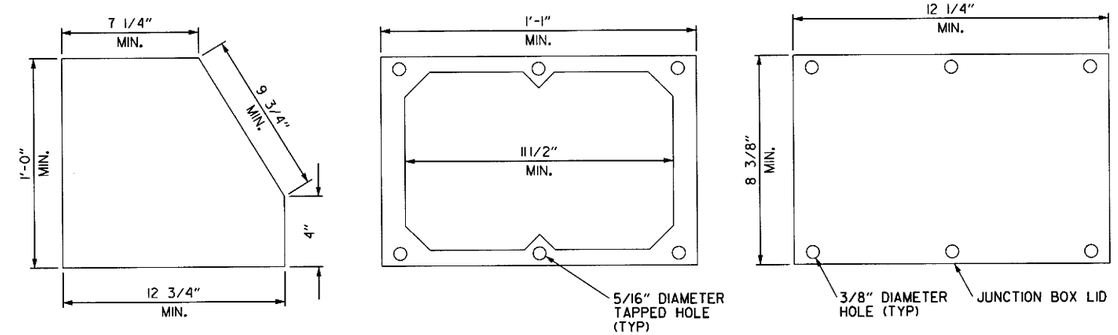
1 TYPICAL ROADWAY LIGHTING FIXTURE DETAIL (BRIDGE)

NOT TO SCALE



2 CONDUIT DETAILS

NOT TO SCALE



NOTES

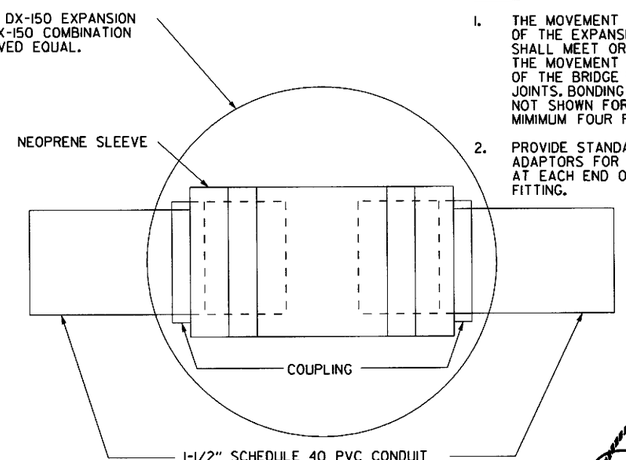
JUNCTION BOX AND LID MATERIAL SHALL BE NEMA 4X STAINLESS STEEL. FASTENERS SHALL BE 5/16" DIAMETER X 3/4" S.S. FH SOCKET SCREWS. THE JUNCTION BOXES SHALL BE ADEQUATELY ANCHORED TO THE PARAPET BY MEANS OF AN APPROVED MECHANICAL DEVICE. JUNCTION BOXES SHALL NOT INTERFERE WITH SLIDER PLATES OR EXPANSION JOINTS. PROVIDE AT LEAST ON 1/2" MIN. DIAMETER DRAINAGE HOLE NEAR THE BOTTOM OF THE JUNCTION BOX.

BOX NOTES

1. NEMA 4X STAINLESS STEEL CONSTRUCTION WITH GASKET, RECESSED IN PARAPET WALL.
2. INTERNAL COPPER GROUND BAR WITH 6 LUGS, SECURED TO BOX INTERIOR.
3. EXTERNAL GROUND LUG, BONDED TO #4/0 GROUND WIRE SYSTEM USING #6 AWG COPPER MINIMUM.
4. INSTALL PULLWIRE IN EACH CONDUIT, SECURED TO PREVENT SLIPPING INTO CONDUIT END.

3 JUNCTION BOX DETAILS

NOT TO SCALE



NOTES

1. THE MOVEMENT RANGE OF THE EXPANSION FITTING SHALL MEET OR EXCEED THE MOVEMENT RANGE OF THE BRIDGE EXPANSION JOINTS. BONDING JUMBER NOT SHOWN FOR CLARITY. MIMIMUM FOUR REQUIRED.
2. PROVIDE STANDARD PVC ADAPTORS FOR CONNECTIONS AT EACH END OF EXPANSION FITTING.

4 CONDUIT EXPANSION JOINT

NOT TO SCALE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BRYON O. LAWRENCE
Aug. 1, 2018

ELECTRICAL DETAILS (ED-2)

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	100	190

(2) ELECTRICAL DETAILS & SCHEDULE (ED-3)

EXISTING PANEL "PCC"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	CABINET:	NOTES:
120/240V, 1 PH, 3 WIRE	22" W x 6" D, BOLT-ON	200 AMPERE MAIN	SHORT MARCHE		

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS

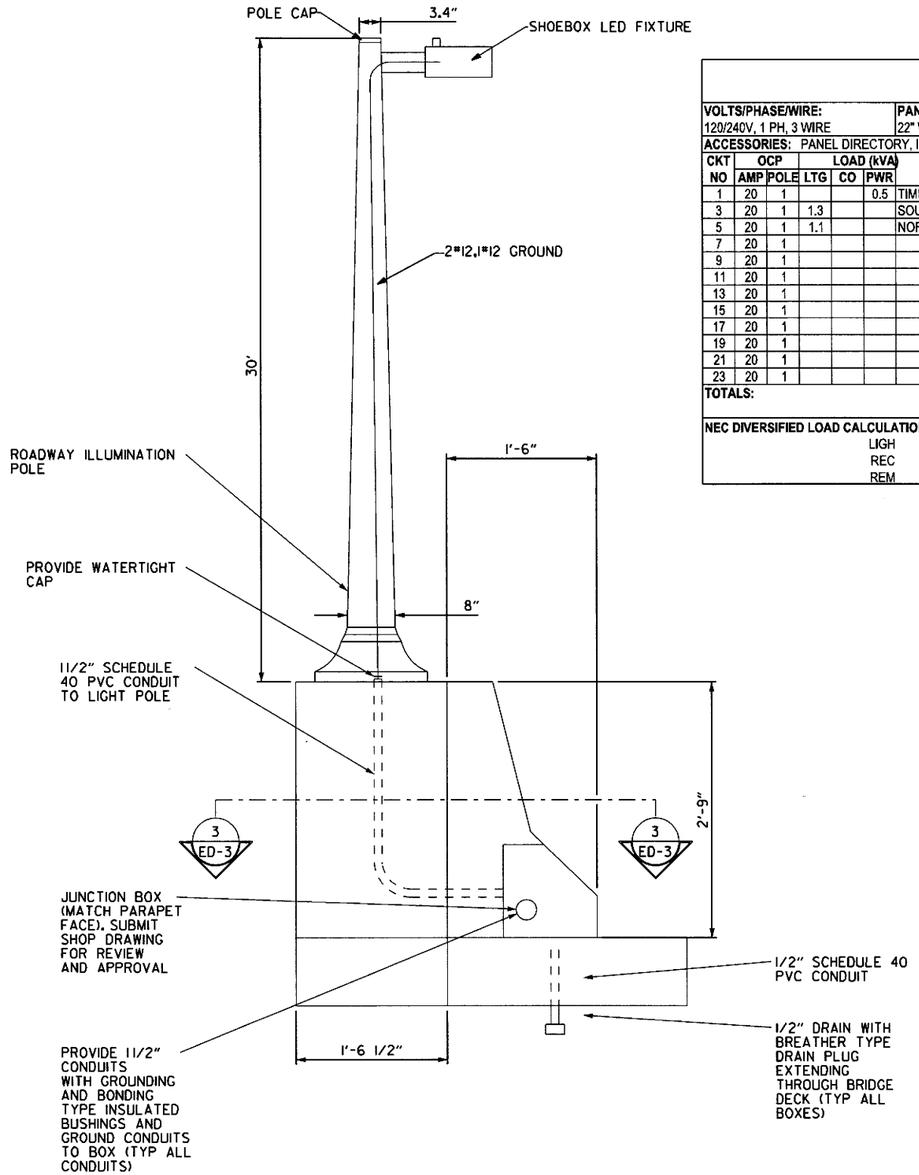
CKT	OCP		LOAD (kVA)				TCL	PHASE	LOAD	TCL		LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR	DESCRIPTION	kVA	A	B	kVA	DESCRIPTION	LTG	CO	PWR	AMP	POLE	NO
1	20	1			0.5	TIME SWITCH (EXISTING)	0.5	1.3		1.0	NORTH INTERCHANGE LIGHTS	0.8			20	2	2
3	20	1	1.3			SOUTH ROADWAY LIGHTS (EXISTING)	1.6		2.1	1.0	-	0.8			-	-	4
5	20	1	1.1			NORTH ROADWAY LIGHTS (EXISTING)	1.4	2.0		1.1	SOUTH INTERCHANGE LIGHTS	0.9			20	2	6
7	20	1					0.0		0.9	1.1	-	0.9			-	-	8
9	20	1					0.0	0.0		0.0					20	1	10
11	20	1					0.0		0.0	0.0					20	1	12
13	20	1					0.0	0.0		0.0					20	1	14
15	20	1					0.0		0.0	0.0					20	1	16
17	20	1					0.0	0.0		0.0					20	1	18
19	20	1					0.0		0.0	0.0					20	1	20
21	20	1					0.0	0.0		0.0					20	1	22
23	20	1					0.0		0.0	0.0					20	1	24
TOTALS:						kVA PER PHASE		3	3		CONNECTED TOTAL kVA						6.3
						AMP		28	25		CONNECTED AVERAGE AMPS PER PHASE						26

NEC DIVERSIFIED LOAD CALCULATIONS

LIGH 7 kVA — ALL OTHER LOADS @100% = 1 kVA — DIVE 8

REC 0 kVA — 25% OF LARGEST MOTOR = 0 kVA — AVE 32

REM 0 kVA



1 LAMP POST SECTION (BRIDGE)

NOT TO SCALE

2 PARAPET SECTION

NOT TO SCALE

3 JUNCTION BOX SECTION

NOT TO SCALE

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.13640 AARON O. LAWRENCE

Aug. 1, 2018

ELECTRICAL DETAILS & SCHEDULE (ED-3)

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WORKSPACE: AHTD
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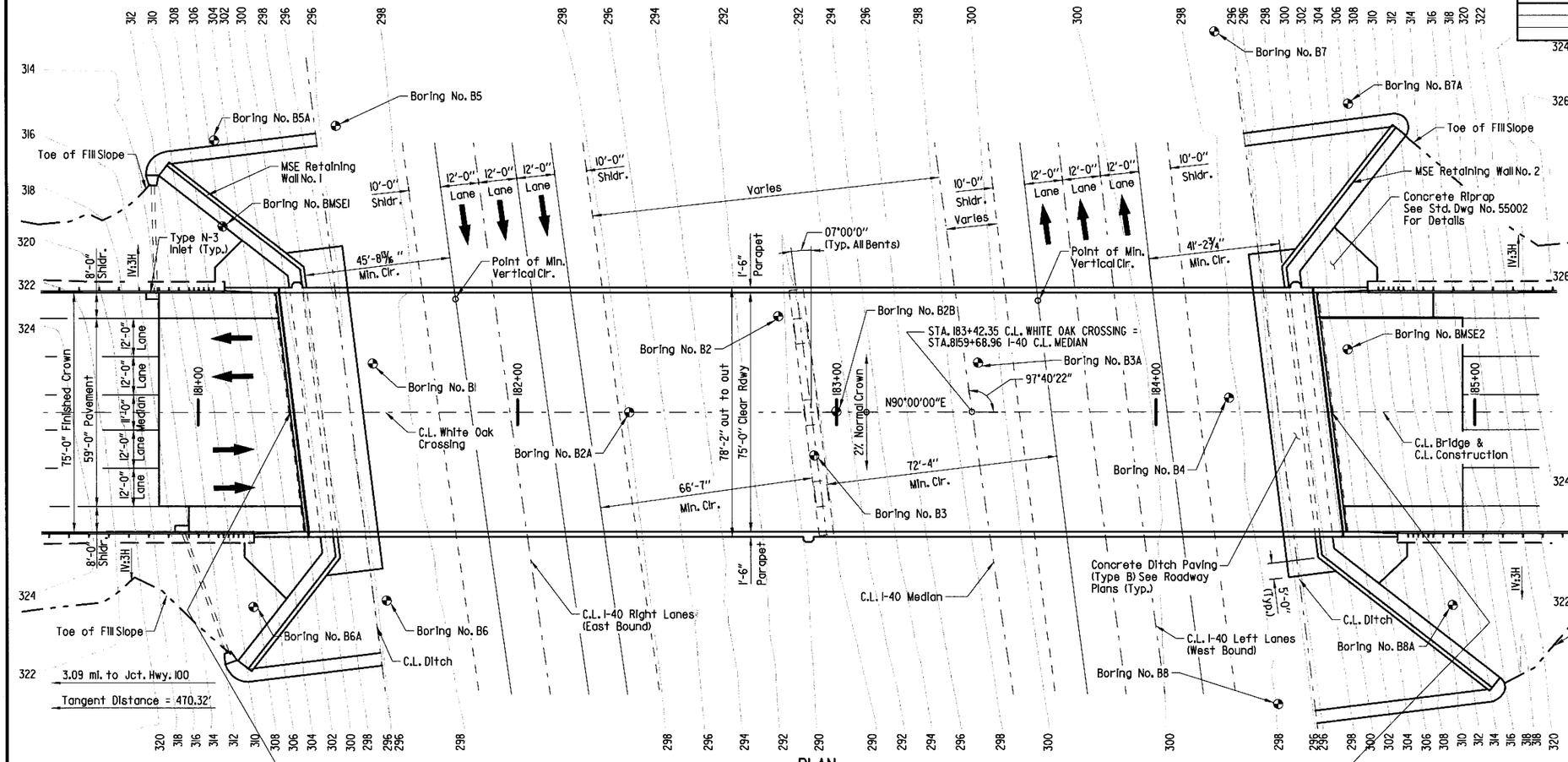
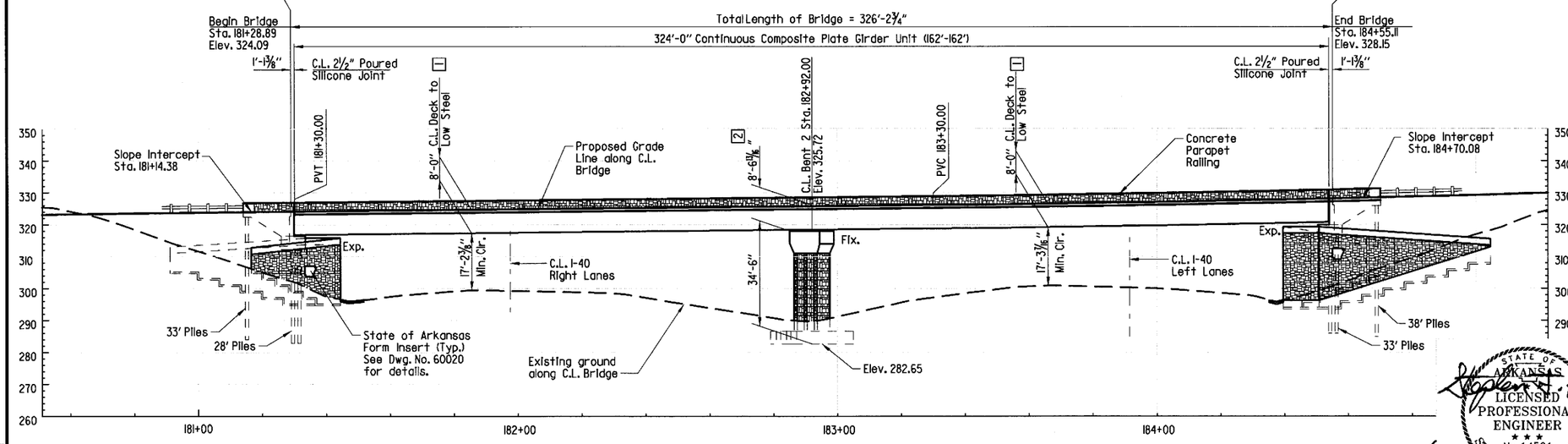
REVISED DATE: $$REVDATE$$

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	101	190
				07418 - LAYOUT - 60016				

For R/W Data and Guard Rail Details, See Roadway Plans.



PLAN



ELEVATION

Note:
Use Type Special Approach Slab and Type C Approach Gutters ("w" = 8'-0") at both ends of bridge, See Dwg. No. 60038 and Std. Dwg. No. 55030C.

[1] Measured to Working Point. See "Rounding Detail" on Dwg. No. 60028.

[2] Top of Deck At C.L. Bridge and C.L. Bent to Low Side Top of Cap.

Notes:
For General Notes, Vertical Curve Data, and Soil Borings See Dwg. No. 60017.

Stations and Elevations Shown are along C.L. Bridge. Elevations Shown are at Working Point.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 1 OF 5
LAYOUT OF BRIDGE
WHITE OAK CROSSING OVER I-40
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS DATE: 06/05/2017 FILENAME: B061190XLLXL.dgn
CHECKED BY: PK DATE: 07/12/2017
DESIGNED BY: SFH DATE: 06/2017 SCALE: 1" = 20'
BRIDGE NO. 07418 DRAWING NO. 60016

Megan.Land
WORKSPACE AUTODESK
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	102	190
				07418 - LAYOUT - 60017				

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Sixth Edition (2012) with current Interim Specifications.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 SDI =0.09 SITE CLASS = B

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A, Gr, 60)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

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

STEEL PILING: All main end bent piling shall be HP14x73 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a safe bearing capacity of 135 tons per pile. Wing wall piling shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a safe bearing capacity of 95 tons per pile. Drive all piles in Bents 1& 3 to a minimum penetration of 10' below leveling pad. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points on all piles.

The contractor may drive the piling in Bents 1 and 3 in one of the following sequences:

Piling may be driven after excavation to bottom of leveling pad is complete, after any required preboring and prior to backfilling.

Piling may be driven after embankment construction. Pile casings shall be used for all piling and shall be installed prior to or during embankment construction extending from bottom of leveling pad to bottom of cap. Pile casing material shall have sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 18". Piles shall be driven after preboring and through the open casings after embankment to bottom of cap is in place. After driving is completed, the pile casing shall be backfilled with an approved non-shrink grout, or other approved material in a single continuous operation to completely fill voids. Pile casings and backfill will not be paid for directly but shall be considered subsidiary to the items "STEEL PILING (HP12x53)" and "STEEL PILING (HP14x73)".

PREBORING: Preboring will be required at Bents 1& 3 to obtain the minimum pile penetration requirements. Preboring shall take place after excavation to the bottom of leveling pad is complete. The size of preboring will be determined by the Engineer. The depth of preboring shall be sufficient to provide the specified minimum penetration and to set the pile tip a minimum of 3' into moderately hard to hard dark gray shale, which ever is greater. Preboring will be measured from bottom of leveling pad. The Contractor shall be responsible for keeping the prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. After driving is completed, the prebored hole shall be backfilled with Class S Concrete to the top of rock and the remaining length of prebored holes shall be backfilled with an approved non-shrink grout, or other approved material to completely fill voids. The cost of preboring, temporary casings and backfill will be included in the item "PREBORING".

FOOTINGS: Footings shall be set a minimum of 1' into material designated as moderately hard to hard dark gray shale on the boring legend. Foundations for footings shall be prepared in accordance with Subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Excavations shall be backfilled and compacted to the level of the existing ground in accordance with Subsection 801.08.

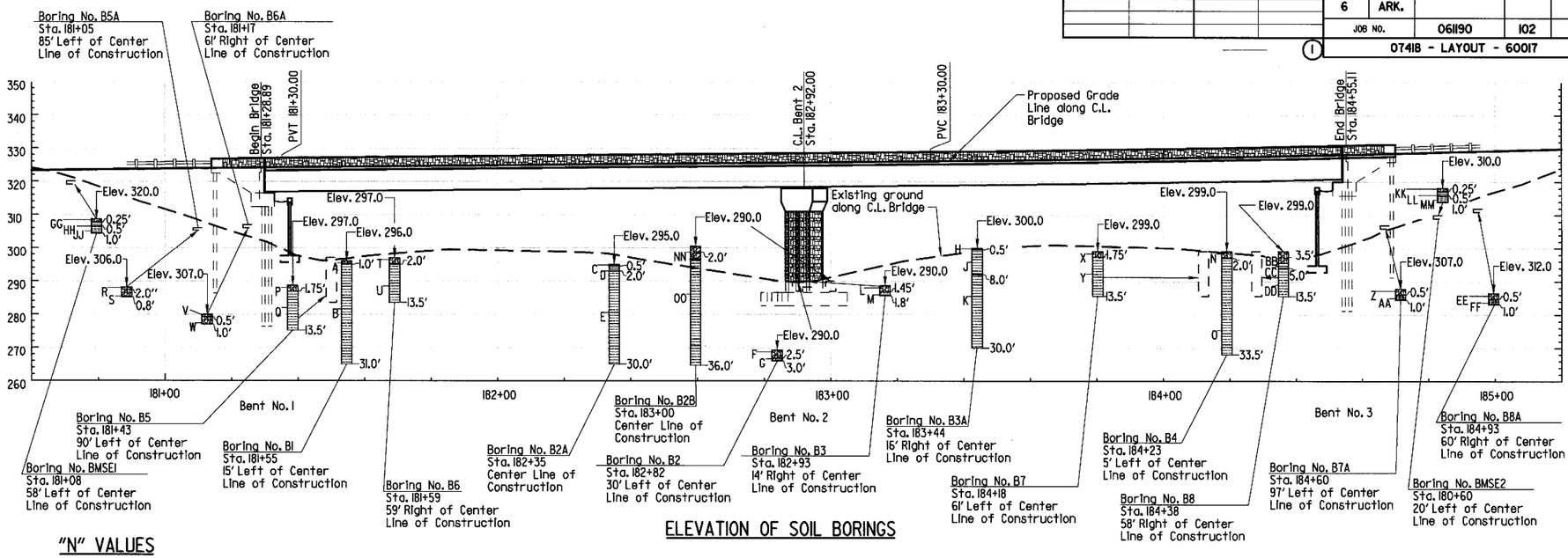
TEXTURED COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision Job No. 061190 "Textured Coating Finish" and in accordance with Subsection 802.19(b)(3). Class 1 Protective Surface Treatment shall not be applied on surfaces where Class 3 Textured Coating Finish is specified.

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

PROTECTIVE SURFACE TREATMENT: Class 1 Protective Surface Treatment shall be applied to the roadway surface. Class 1Protective Surface Treatment shall meet the requirements of Section 803.

PAINT: All Structural Steel except galvanized members, some surfaces in contact with concrete, and as otherwise noted, shall be painted as specified in Subsection 807.75. The color of the paint shall be Dark Brown and shall match Federal Standard 595B, Color Chip No. 20108.

DETAIL DRAWINGS	DRAWING NOS.
End Bents	60021-60024
Intermediate Bent	60025-60026
324'-0" Cont. Comp. Plate Girder Unit	60028-60037
Poured Silicone Joint	60037
Elastomeric Bearings	60027
Type Special Approach Slab	60038
Standard General Notes	55006
Steel Piling	55020
Type C Approach Gutters	55030C



ELEVATION OF SOIL BORINGS

"N" VALUES

Boring No. B1
Sta. 181+55 - 15' Left of Center Line of Construction

0.5 - 1.5	N=31	6.0 - 6.3	N=50/3"
2.0 - 2.2	N=50/2"	8.5 - 8.8	N=50/3"
4.0 - 4.1	N=50/1"		

Boring No. B4
Sta. 184+23 - 5' Left of Center Line of Construction

0.5 - 1.5	N=15	6.0 - 6.2	N=50/2"
2.5 - 2.8	N=50/4"	8.5 - 8.8	N=50/4"
4.0 - 4.1	N=50/1"	13.5 -	N=50/0"

Boring No. B2A
Sta. 182+35 - Center Line of Construction

0.5 - 1.1	N=50/7"	13.5 -	N=50/0"
2.0 - 2.1	N=50/1"	18.5 -	N=50/0"
4.0 -	N=50/0"	23.5 -	N=50/0"
6.0 -	N=50/0"	28.5 -	N=50/0"
8.5 -	N=50/0"		

Boring No. B5
Sta. 184+12 - xx' Left of Center Line of Construction

0.5 - 1.5	N=27	6.0 - 6.1	N=50/1"
2.0 - 2.1	N=50/1"	8.5 -	N=50/0"
4.0 - 4.1	N=50/1"	12.5 -	N=50/0"

Boring No. B2B
Sta. 183+00 - Center Line of Construction

0.5 - 1.5	N=10		
3.5 - 4.5	N=16		
4.0 - 4.2	N=50/2"		
5.9 - 6.0	N=50/1"		

Boring No. B6
Sta. 181+59 - 59' Right of Center Line of Construction

0.5 - 1.5	N=16	6.0 - 6.1	N=50/1"
2.5 - 2.8	N=50/3"	8.0 -	N=50/0"
4.0 -	N=50/0"	12.5 -	N=50/0"

Boring No. B3A
Sta. 183+55 - Center Line of Construction

0.5 - 1.5	N=44	13.5 -	N=50/0"
2.0 - 2.5	N=50/5"	18.5 -	N=50/0"
4.0 - 4.3	N=50/4"	23.5 -	N=50/0"
6.0 - 6.3	N=50/3"	28.5 -	N=50/0"
8.5 -	N=50/0"		

Boring No. B7
Sta. 184+18 - 61' Left of Center Line of Construction

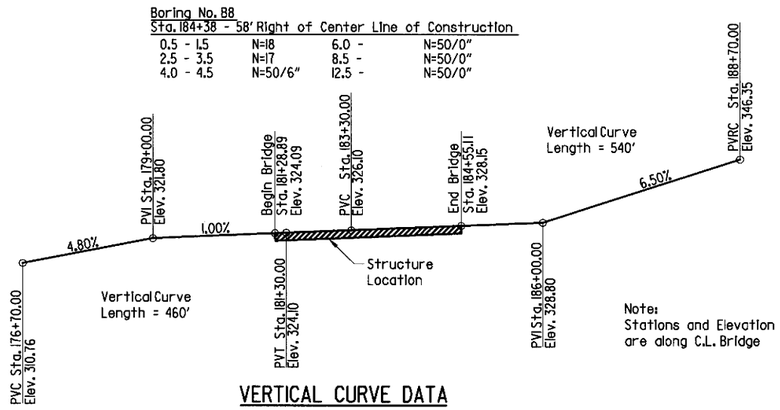
0.5 - 1.5	N=9	5.5 -	N=50/0"
2.0 - 2.2	N=50/2"	8.0 -	N=50/0"
3.5 -	N=50/0"	12.5 -	N=50/0"

BORING LEGEND

A- Stiff gray silty clay w/shale fragments (fill)
B- Moderately hard to hard dark gray shale, +/- 10° dip, thickly bedded, w/numerous pyrite crystals, high angle to vertical fracture at 15.7 - 16.2 ft, quartz inclusion at 20 ft, sandstone seam with quartz veins at 20.3 ft, pyrite inclusions at 21.5 to 21.7 ft, with occasional pyrite inclusions below 22 ft, with occasional sandstone inclusions below 28 ft, healed fracture at 30.7 ft
C- Very stiff brown and tan silty clay w/shale fragments (fill)
D- Moderately hard dark gray and brown slightly weathered shale
E- Moderately hard to hard dark gray shale, flat bedded, water at 12 ft
F- Soft brown, tan and gray silty clay and silt w/shale fragments and trace organics (fill)
G- Moderately hard gray slightly weathered shale
H- Very stiff tan silty clay w/shale fragments (fill)
J- Low hardness gray, dark gray and brown weathered shale
K- Moderately hard to hard dark gray shale
L- Firm to stiff grayish brown and tan silty clay w/sandstone, shale and occasional quartz fragments (fill), more gray with shale fragments below 1 ft
M- Moderately hard dark gray slightly weathered shale
N- Stiff tan, brown and gray silty clay w/shale fragments (fill)
O- Moderately hard to hard dark gray shale, +/- 10° dip, thickly bedded w/numerous pyrite crystals, 45° fracture at 18.3 ft, healed high angle fracture at 18.5 ft, quartz seam at 18.7 ft, with close fractures below 24 ft, slightly carbonaceous zones at 29.5 - 29.7 ft and 30.5 - 30.8 ft
P- Stiff gray and tan silty clay w/shale fragments (fill)
Q- Moderately hard to hard gray shale, dark gray below 3 ft
R- 2 inches: Stiff brown, tan and gray silty clay w/shale fragments (fill)
S- Moderately hard gray and tan moderately weathered shale
T- Stiff tan and gray silty clay w/shale fragments (fill)
U- Moderately hard to hard gray shale, dark gray below 2.5 ft
V- Very stiff brown silty clay w/sandstone and shale fragments(fill)
W- Moderately hard light gray and tan, moderately weathered shale
X- Firm tan, gray and red silty clay w/shale fragments (fill)
Y- Moderately hard to hard gray slightly weathered shale w/ferrous stains in bedding planes, dark gray and fresh below 4 ft
Z- Soft brown silty clay w/shale fragments and rootlets (fill)
AA- Moderately hard dark gray, dark red and tan weathered shale
BB- Stiff tan and gray silt and clay w/shale fragments (fill)
CC- Moderately hard light gray, dark red and tan weathered shale
DD- Moderately hard to hard dark gray slightly weathered shale w/ferrous stains in bedding planes, dark gray, fresh below 8 ft
EE- 8 inches: Soft brown silty clay w/shale fragments and rootlets
FF- Moderately hard tan and light gray moderately weathered shale
GG- 3 inches: Topsoil (fill)
HH- Stiff brown, tan and gray silty clay w/silt and shale fragments (fill)
JJ- Low hardness gray and tan weathered shale
KK- 3 inches: Topsoil (fill)
LL- Stiff brown, tan and gray silty clay w/silt and shale fragments, dry (fill)
MM- Low hardness gray and tan weathered shale
NN- Soft to firm brown and gray silty clay w/ shale fragments (fill)
OO- Moderately hard to hard dark and dark gray shale, carbonaceous, slightly micaceous, apparent 10° dip, soft zone at 11.2 - 11.6 ft, soft seam at 17.2 ft, clayey shale seam at 20.1 ft, sandstone inclusion at 21.3 ft, harder below 21.5 ft, with very close sandstone partings at 21.5 - 22 ft, very close sandstone partings and inclusions at 24.5 - 25 ft

Boring No. B8
Sta. 184+38 - 58' Right of Center Line of Construction

0.5 - 1.5	N=18	6.0 -	N=50/0"
2.5 - 3.5	N=17	8.5 -	N=50/0"
4.0 - 4.5	N=50/6"	12.5 -	N=50/0"



Note:
Stations and Elevation are along C.L. Bridge

VERTICAL CURVE DATA

Theoretical Elevation along C.L. Construction.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
STEPHEN F. HARPER
No. 14501

9/17/18
BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 2 OF 5
LAYOUT OF BRIDGE
WHITE OAK CROSSINGS OVER I-40
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: PK DATE: 07/12/2017
DESIGNED BY: SFH DATE: 06/01/2017 SCALE: 1" = 20'
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REVISED DATE:

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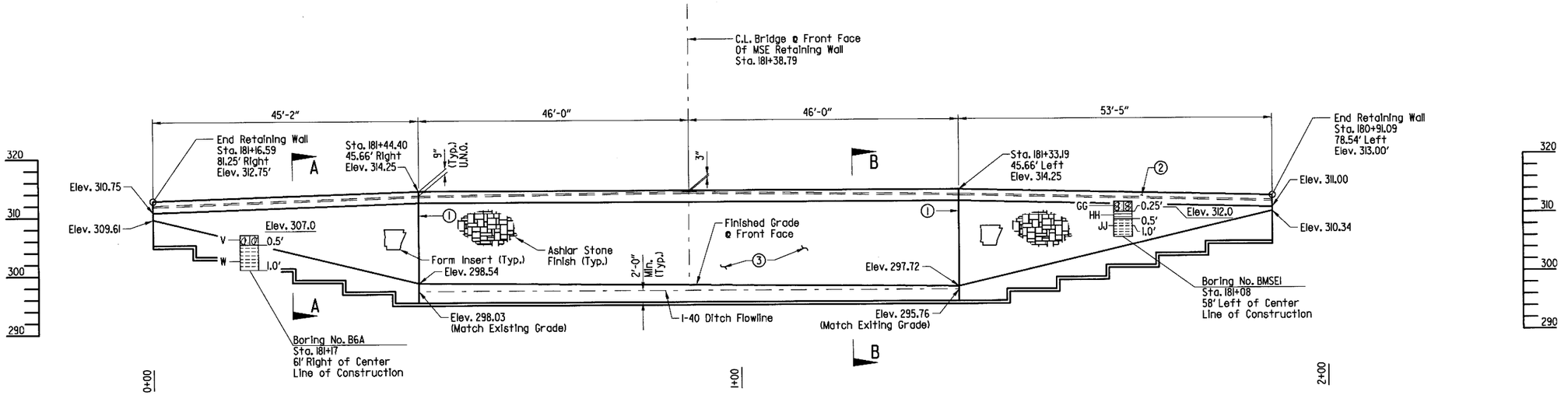
				JOB NO.		061190	103	190
				①	07418 - LAYOUT - 60018			



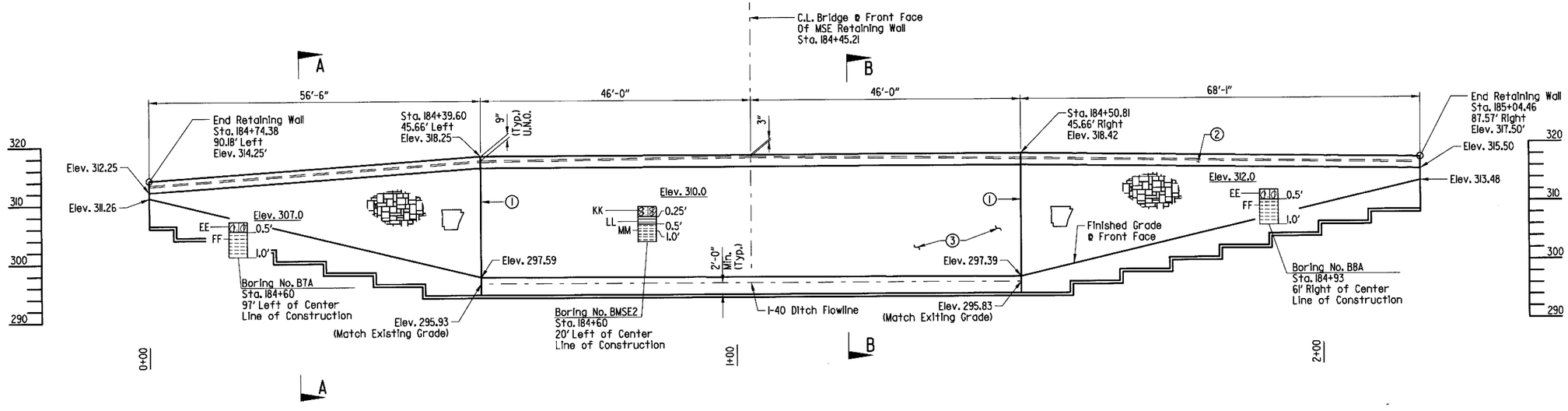
① 45° Break In Horizontal Alignment Of MSE Retaining Wall

② Class 3 Texture Coating Finish (Color = Brown, Color Chip No. 33522)

③ Class 3 Texture Coating Finish (Color = Brown, Color Chip No. 30219) and "Ashlar Stone" Finish

ELEVATION - MSE RETAINING WALL NO. 1

(Looking At Front Face)



ELEVATION - MSE RETAINING WALL NO. 2

(Looking At Front Face)

Note:
For "BORING LEGEND" & "N VALUES", See Dwg. No. 60017.

LEGEND

U.N.O. = Unless Noted Otherwise

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 3 OF 5
LAYOUT OF BRIDGE
WHITE OAK CROSSINGS OVER I-40
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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BRIDGE NO. 07418 DRAWING NO. 60018

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REVISED DATE:

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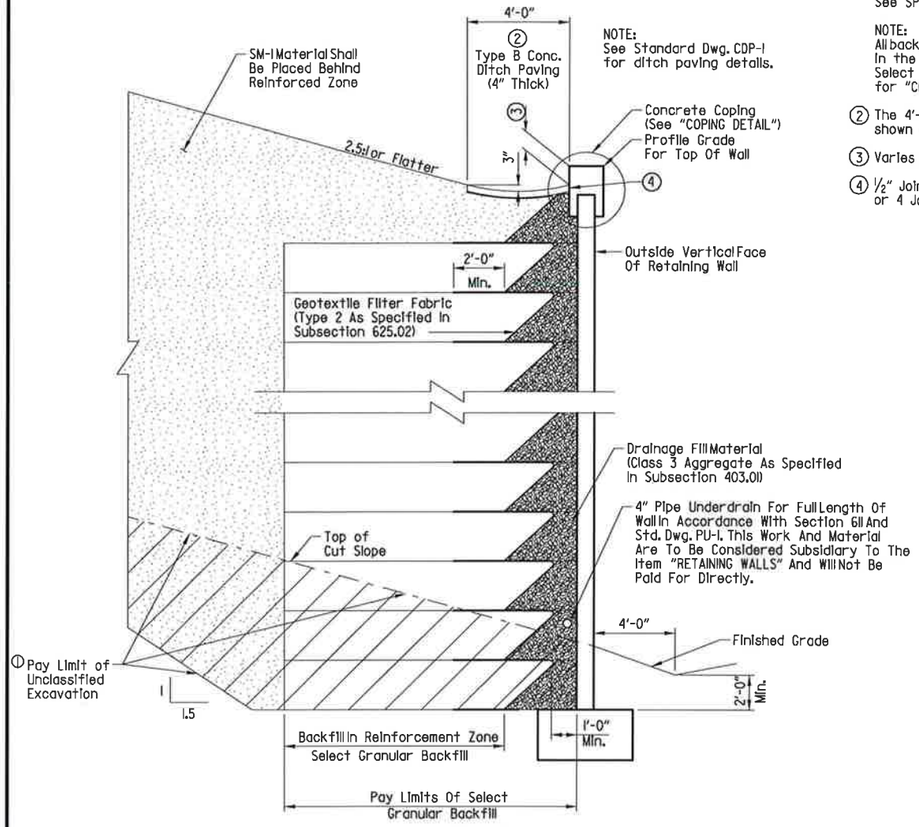
⚠ 10-17-18				JOB NO.		061190	104	190
				① 07418 - LAYOUT - 60019				



SECTION A-A

⚠ (BACKFILL METHOD A)
No Scale

① Excavation required for reinforcing zone, leveling pad and placement of SM-1 material will be paid for under the pay item "UNCLASSIFIED EXCAVATION". See SP JOB 061190 "RETAINING WALLS".

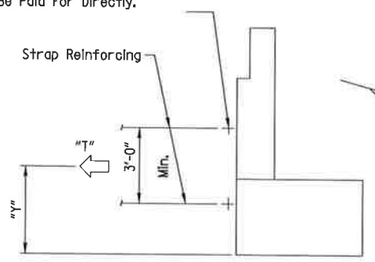
NOTE:
All backfill and drainage fill material within the reinforcement zone shall be included in the price bid for "SELECT GRANULAR BACKFILL".
Select material required behind reinforced zone shall be included in the price bid for "COMPACTED EMBANKMENT". See SP JOB 061190 "RETAINING WALLS".

② The 4'-0" concrete ditch paving shall be constructed without the 3" weep holes shown on Standard Dwg. CDP-1.

③ Varies From 3" To 9". See "ELEVATION".

④ ½" Joint Filler (AASHTO M153, Type I Per Subsection 501.02(h)(1) With ½" x 1" Type 3 or 4 Joint Sealer Per Subsection 501.02(h)(2)

MSE Wall Supplier Shall Design And Furnish Attachments For End Bent. This Work And Material Are To Be Considered Subsidiary To The Item "RETAINING WALLS" And Will Not Be Paid For Directly.



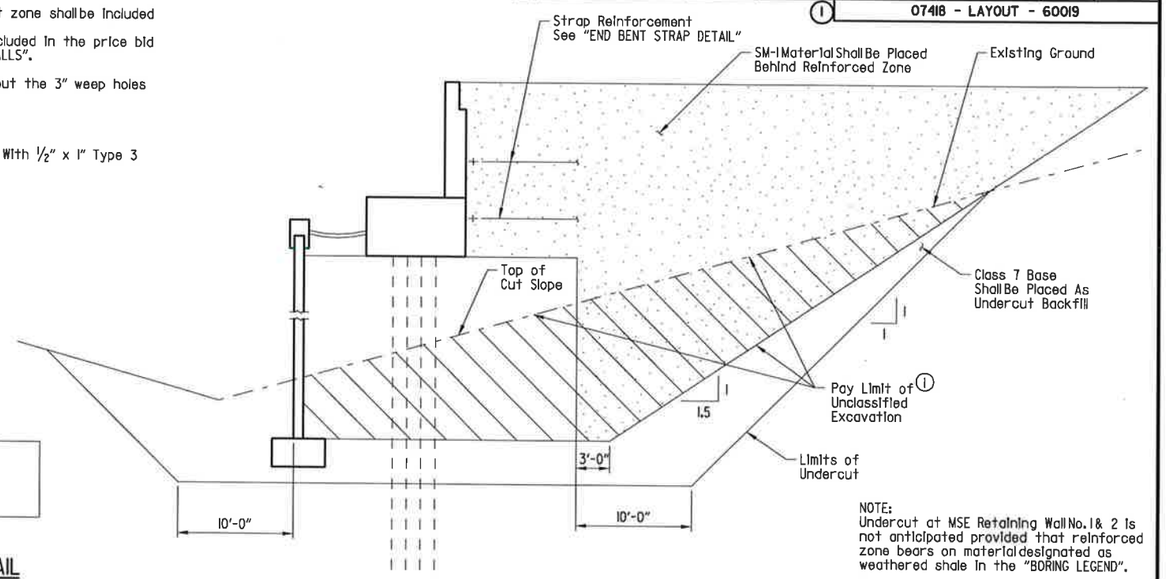
END BENT STRAP DETAIL

No Scale

T = Resultant Force Required To Be Resisted By Strap Reinforcing

Y = Centroid Of Strap Reinforcing

LIMIT STATE	T Kips/Ft.	Y Ft.
Service	5.9	3.0
Strength	8.6	



NOTE:
Undercut at MSE Retaining Wall No. 1 & 2 is not anticipated provided that reinforced zone bears on material designated as weathered shale in the "BORING LEGEND".

EMBANKMENT DETAIL

No Scale

GENERAL NOTES:

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 6th Edition (2012) with Current Interim Revisions
SEISMIC PERFORMANCE ZONE: 1 SDI = 0.09 SITE CLASS: B

4" pipe underdrain shall maintain a minimum slope of ⅛" per foot toward nearest outlet.

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing straps for retaining walls may be affected by end bent construction. See Dwg. Nos. 60021-60024 for pile locations and wingwall details.

For ditch paving, see Standard Dwg. No. CDP-1.

See SP JOB NO. 061190 "RETAINING WALLS" for additional information.

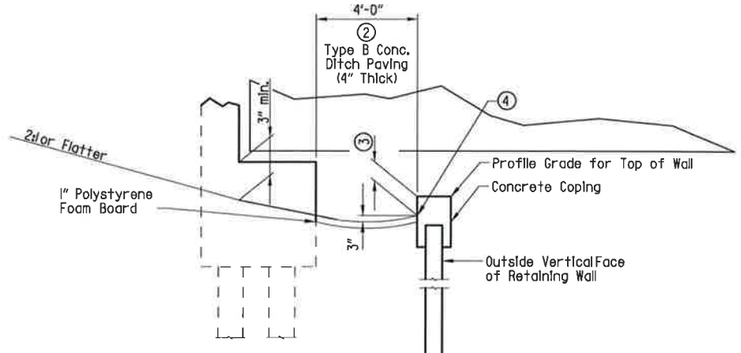
Boring logs, including laboratory results, may be obtained from Programs and Contracts Division.

Joint filler, joint sealer, polystyrene foam board and rodent screen will not be paid for directly but will be considered subsidiary to SP JOB NO. 061190 "RETAINING WALLS".

A Class 3 Textured Coating Finish shall be applied to surfaces as specified in SP JOB NO. 061190 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

⚠ A factored bearing resistance of 13,000 psf is recommended for the existing foundation material based on an estimated width of the reinforced zone.

⚠ Backfill Method A shall be used as described in SP JOB NO. 061190 "RETAINING WALLS".

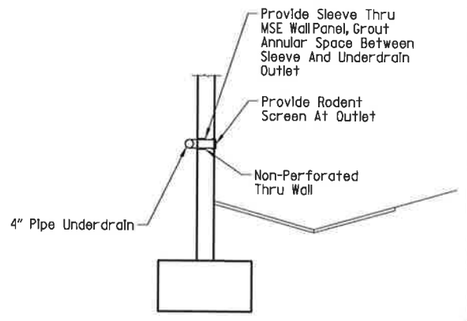


NOTE:
Details not shown of filter fabric, drainage fill, backfill and pay limits of unclassified excavation are similar to "SECTION A-A".

SECTION B-B

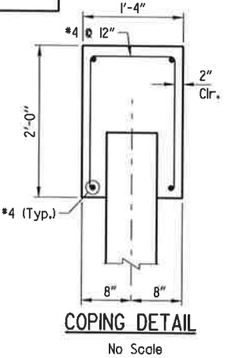
No Scale

Location	ITEM NO.	210	302	SP JOB 061190
	ITEM	UNCLASSIFIED EXCAVATION	SELECT GRANULAR BACKFILL	RETAINING WALLS
	UNIT	CU. YD.	CU. YD.	SQ. FT.
Wall No. 1		1594	1417	3037
Wall No. 2		2341	2511	4224
Total		3935	3928	7261



OUTLET DETAIL

No Scale



COPING DETAIL

No Scale

NOTES:
Reinforcing steel and concrete for concrete coping shall not be paid for directly but will be considered subsidiary to the item "RETAINING WALLS".

Precast concrete coping may be substituted for cast-in-place coping shown.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

10/17/18

BRIDGE ENGINEER
PRINT DATE: 10/17/2018

SHEET 4 OF 5
LAYOUT OF BRIDGE
WHITE OAK CROSSING OVER I-40
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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DESIGNED BY: HS/JPC DATE: 06/29/2017 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60019

megan.land 10/17/2018 1:46:37 PM
WORKSPACE: AHTD_Bridge
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REVISED DATE:

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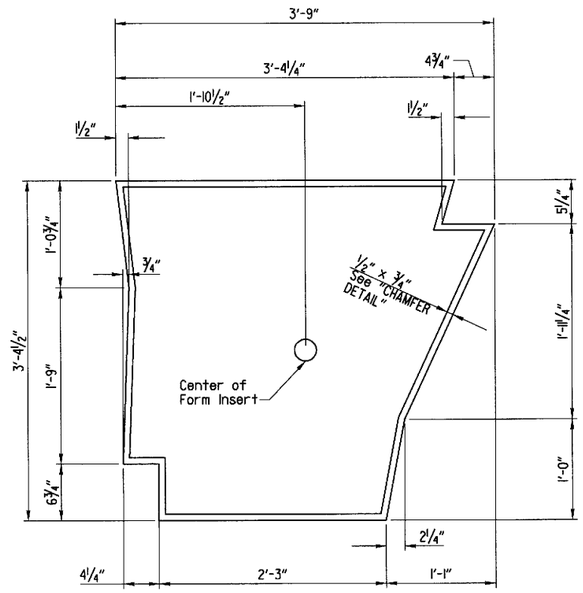
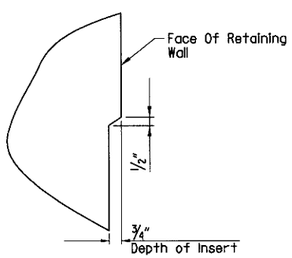
				6	ARK.			
				JOB NO.		061190	105	190
				(1)	07418 - LAYOUT - 60020			



FORM INSERT DETAILS AT MSE WALL
Scale: 1 1/2" = 1'-0"

NOTE:
Use form insert on designated walls as noted on Dwg. No. 60018.



CHAMFER DETAIL
No Scale

NOTES:
Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

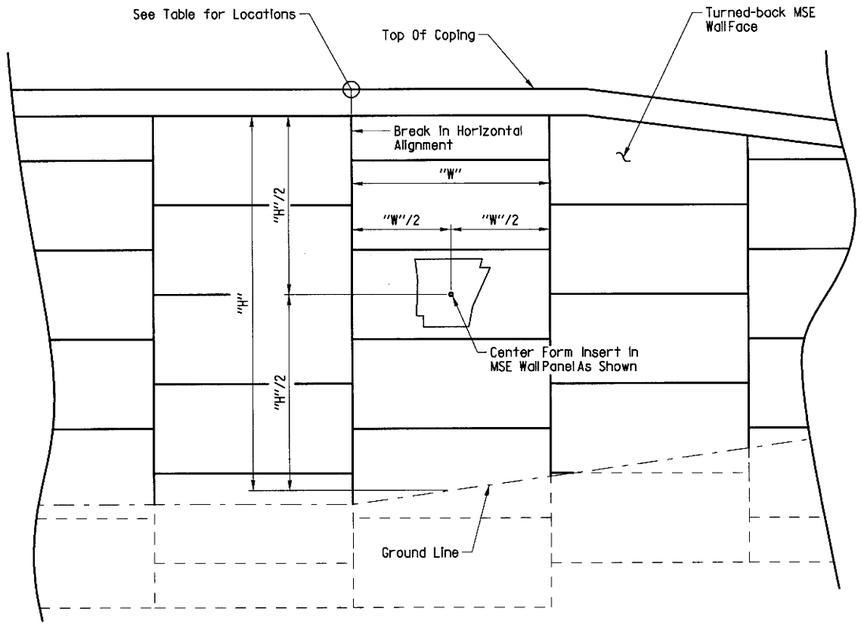
Wash and clean multi-use form inserts before each use.

All work and materials for inserts shall be included in the unit price bid for the item "RETAINING WALLS".

Damaged or worn form inserts shall be replaced at the Contractor's expense.

The form shall be approved by the Engineer before its use.

Recessed image (including chamfers) of State of Arkansas insert shall be given a Class 3 Textured Coating Finish as specified in SP JOB NO. 061190 "TEXTURED COATING FINISH."



DEVELOPED ELEVATION AT MSE WALL
No Scale

LOCATION OF FORM INSERT	
Location	(1) Station
Retaining Wall 1	8158+21
Retaining Wall 2	8161+16

(1) Station shown for MSE Retaining Wall No. 1 are along CL I-40 Right Lanes, Station shown for MSE Retaining Wall No. 2 are along CL I-40 Left Lanes.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

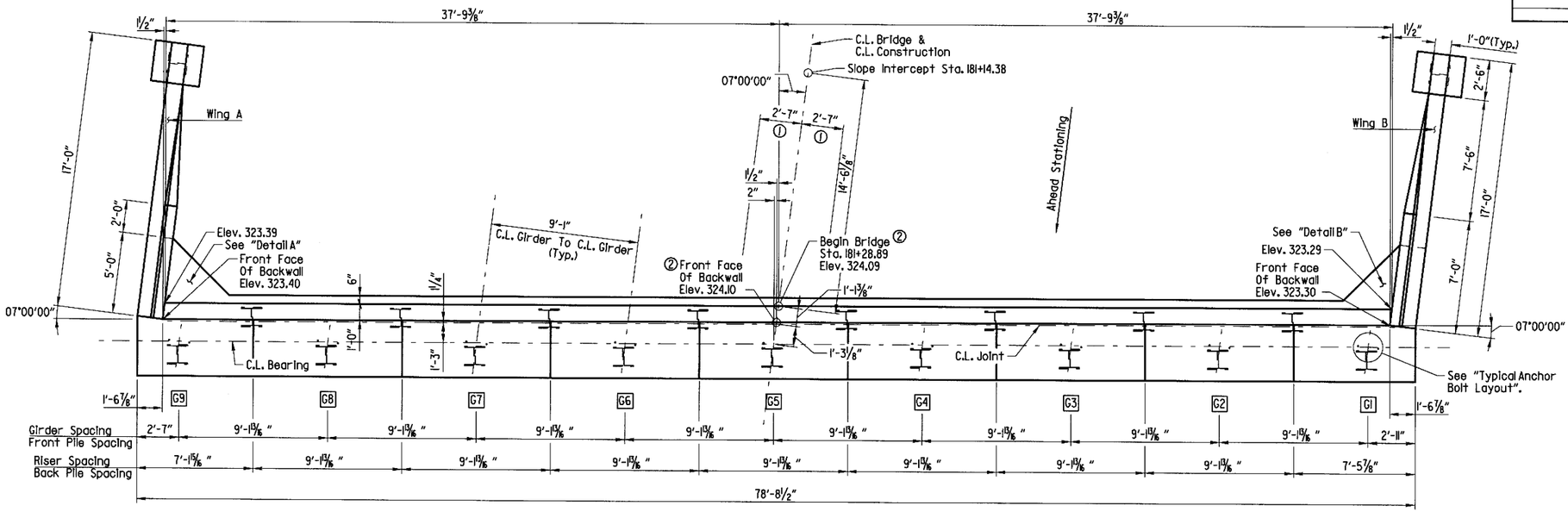
9/17/18
BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 5 OF 5
LAYOUT OF BRIDGE
WHITE OAK CROSSING OVER I-40
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

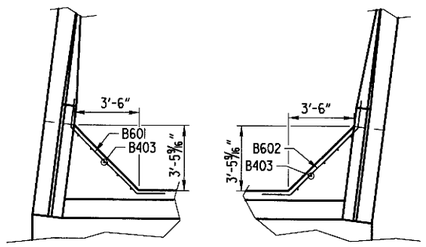
DRAWN BY: HS/JPC DATE: 06/29/2017 FILENAME: B061190XLLX5.dgn
CHECKED BY: SFH DATE: 11/21/2017
DESIGNED BY: HS/JPC DATE: 06/29/2017 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60020

Meagan Land 9/17/2018 2:06:47 PM
WORKSPACE: AHTD_Bridge
Y:\Projects\MAUMELLE_154453_I-40_Interchange\06-Design\Drawings\Bridge\B061190XLLX5.dgn
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	106	190
				(1)	07418 - END BENT DETAILS - 60021			

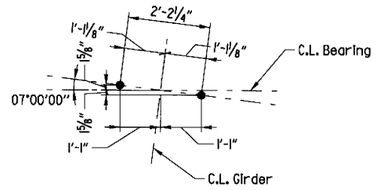


PLAN OF BENT 1
1/4" = 1'-0"

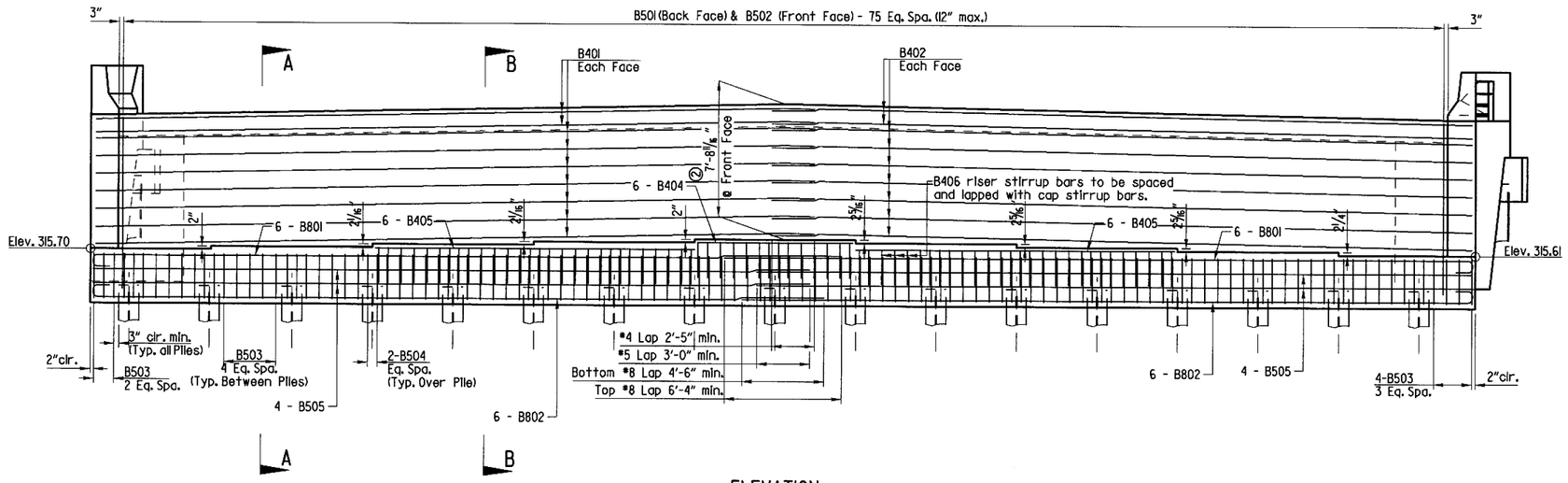


DETAIL A
No Scale

DETAIL B
No Scale



TYPICAL ANCHOR BOLT LAYOUT
No Scale



ELEVATION
Bent 1- Looking Back
1/4" = 1'-0"

Notes:
For Section A-A and B-B, see Dwg. No. 60023.

For details of Wing and Rail, see Dwg. Nos. 60023 and 60024.

For details of elastomeric bearings, See Dwg. No. 60027.

Class I Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB NO. 061190 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class I Protective Surface Treatment is applied.

① See "Rounding Detail" on Dwg. No. 60028.

② Measured to Working Point, See "Rounding Detail" on Dwg. No. 60028.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 1 OF 4
END BENT DETAILS
WHITE OAK CROSSING OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 8/17 FILENAME: B061190XL BII.dgn
CHECKED BY: QYF DATE: 12/17
DESIGNED BY: SFH DATE: 8/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60021

Leonard.Speed 8/20/2018 2:20:01 PM
WORKSPACE: AHTD
Y:\Projects\MAUMELLE.I54459.I-40_Interchange\06-Design\Drawings\Bridge\B061190XL BII.dgn
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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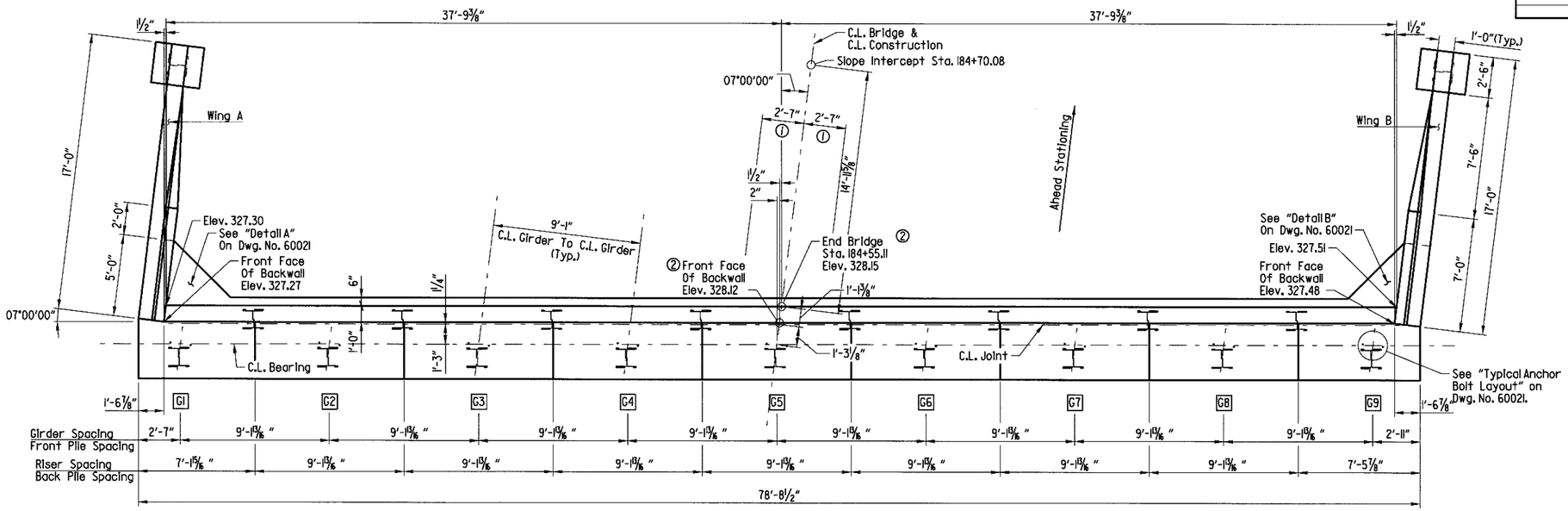
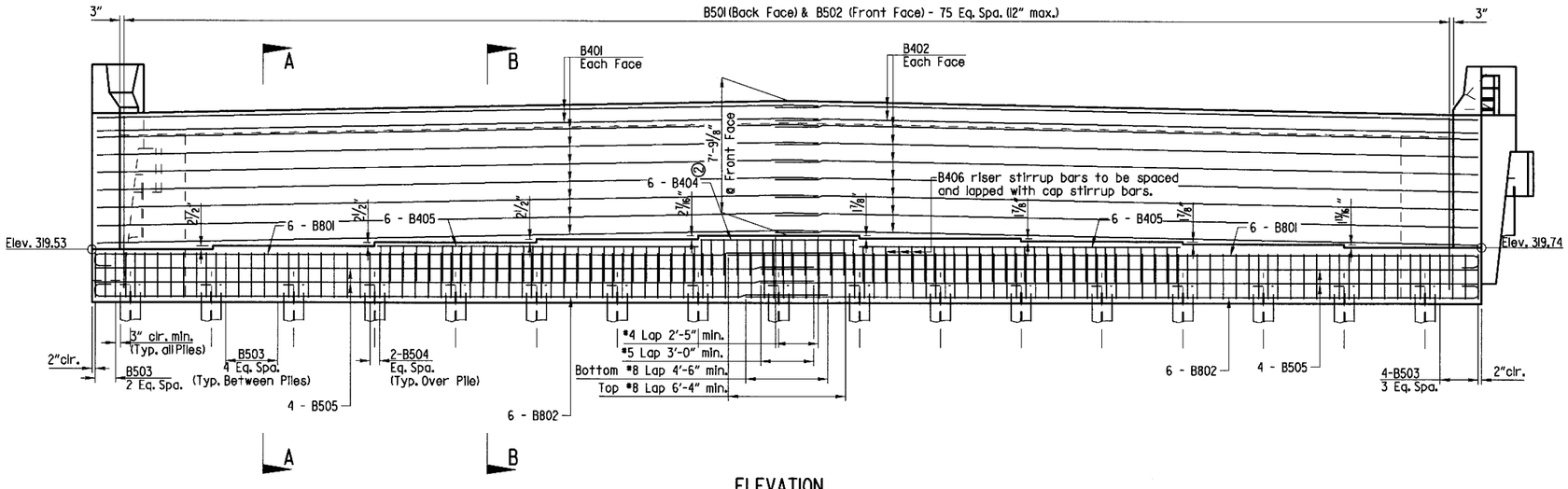
				JOB NO.		061190	107	190
				(1)	07418 - END BENT DETAILS - 60022			



PLAN OF BENT 3
¼" = 1'-0"



ELEVATION
Bent 3 - Looking Ahead
¼" = 1'-0"

Notes:
For Section A-A and B-B, see Dwg. No. 60023.

For details of Wing and Rail, see Dwg. Nos. 60023 and 60024.

For details of elastomeric bearings, See Dwg. No. 60027.

Class I Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB NO. 061190 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class I Protective Surface Treatment is applied.

① See "Rounding Detail" on Dwg. No. 60028.

② Measured to Working Point, See "Rounding Detail" on Dwg. No. 60028.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 2 OF 4
END BENT DETAILS
WHITE OAK CROSSING OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 8/17 FILENAME: B061190XL_B32.dgn
CHECKED BY: QYF DATE: 12/17
DESIGNED BY: SFH DATE: 8/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60022

Leonard.Speed 8/20/2018 2:20:02 PM
WORKSPACE: AHTD
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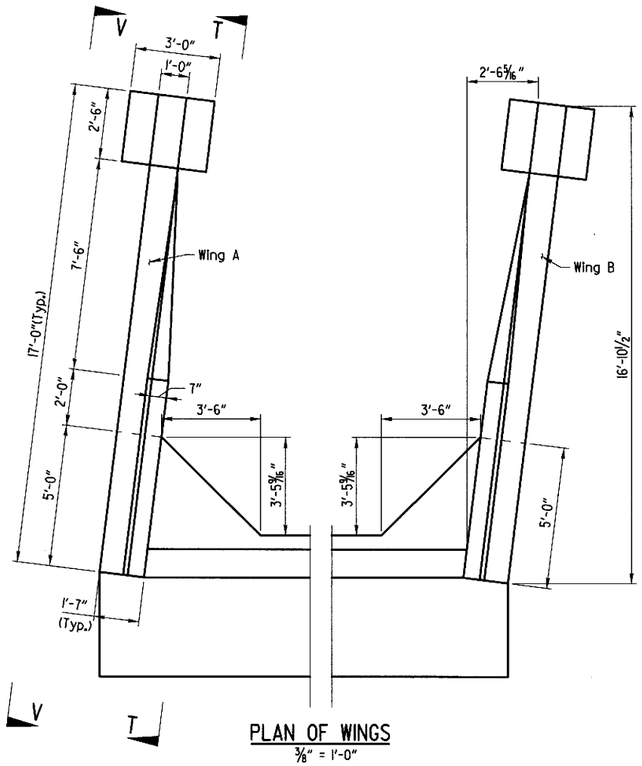
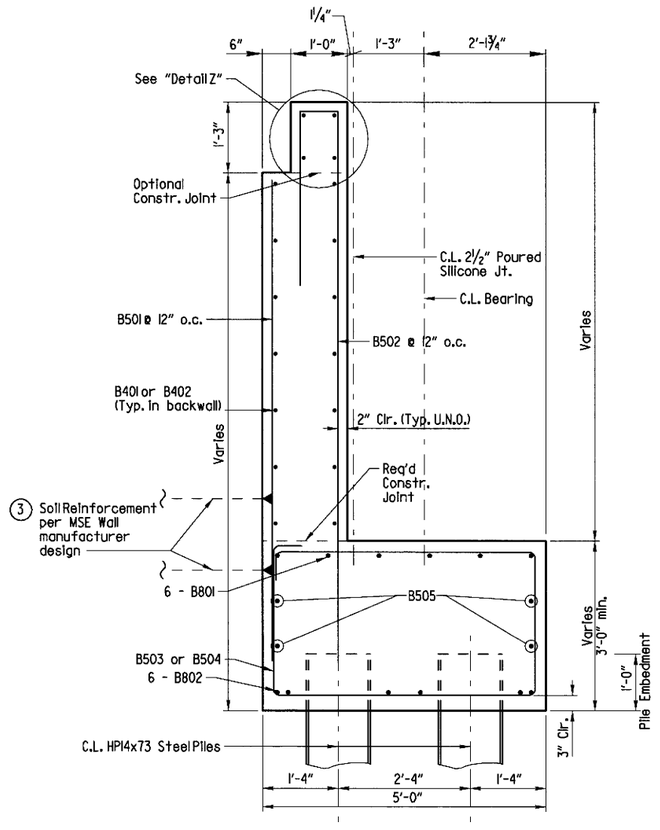
REVISED DATE:

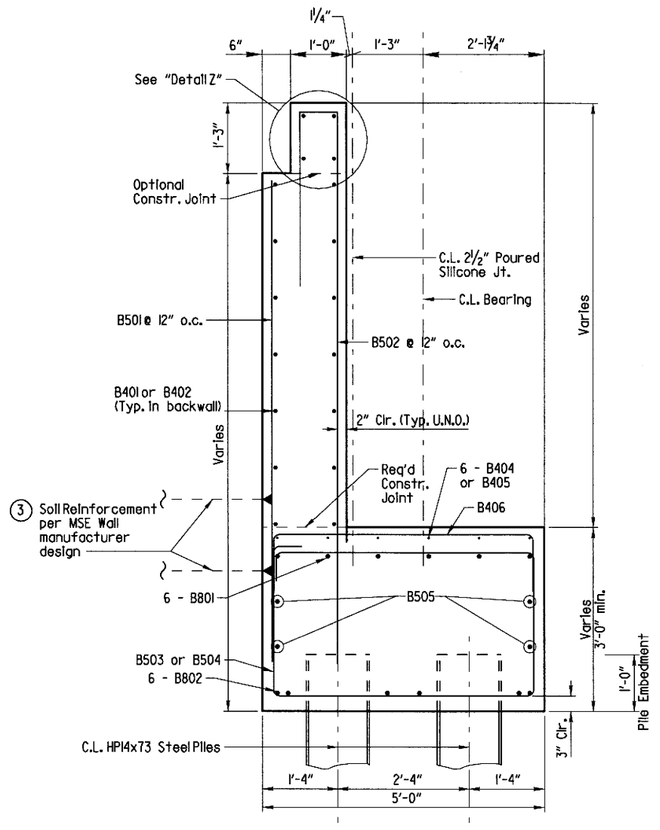
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	108	190
				(1)	07418 - END BENT DETAILS - 60023			



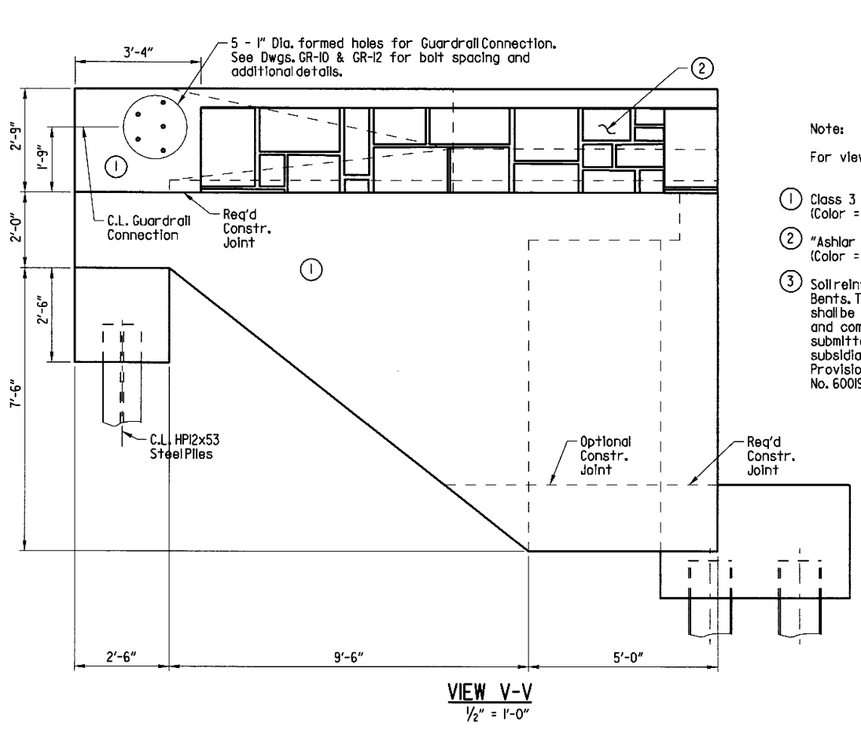
PLAN OF WINGS
3/8" = 1'-0"



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



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



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

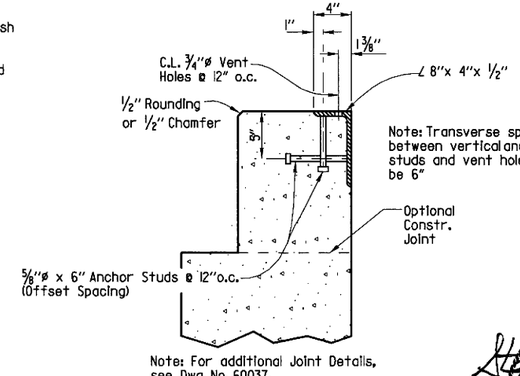
Note:

For view T-T, see Dwg. No. 60024.

(1) Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

(2) "Ashlar Stone" pattern & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

(3) Soil reinforcement shall be attached at the back of End Bents. Type, size, and spacing of soil reinforcement shall be designed by the contractor. The design details and computations shall accompany the wall design submittal for review by the Engineer. Cost shall be subsidiary to Item "Retaining Walls". See Special Provision Job 061190 "Retaining Walls" and Drawing No. 60019 for additional information.



Note: For additional Joint Details, see Dwg. No. 60037.

DETAIL Z
No Scale

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 3 OF 4
END BENT DETAILS
WHITE OAK CROSSING OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 8/17 FILENAME: B06119001_BX3.dgn
CHECKED BY: QYF DATE: 11/17
DESIGNED BY: SEH DATE: 8/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60023

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REVISED DATE:

GENERAL NOTES:

All pilling shall be AASHTO M270 Grade 50, Fy=50 ksi.

No portion of the backwall shall be poured until the girders are in place.

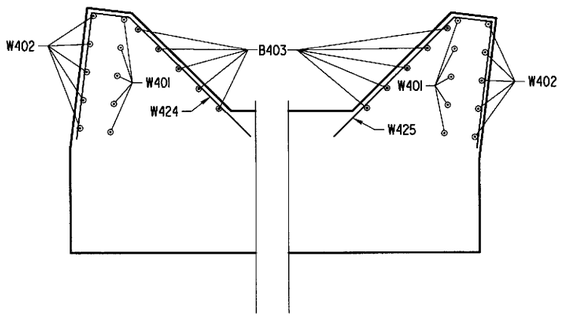
Finish top of backwall to match the bridge deck.

Structural steel in end bents shall be AASHTO M 270, Gr. 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (AASHTO M 270, GR. 50)". Structural Steel shall be cleaned and painted in accordance with Section 807. The color of the paint shall be Dark Brown and shall match Fed. Std. 595B/ Color Chip No. 20108.

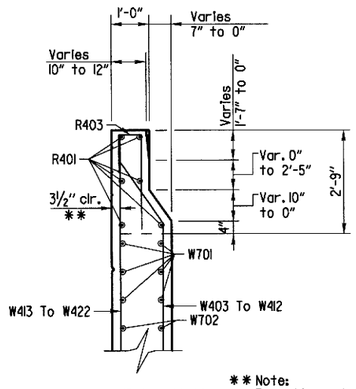
Top reinforcing bars in cap shall be properly placed to avoid damage or interference with anchor bolts or sheet metal sleeves.

Class 1 Protective Surface Treatment shall be applied to the top of backwall. Class 3 Textured Coating Finish shall be applied in accordance with SP JOB NO. 061190 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19. Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

For additional information, see Layout.

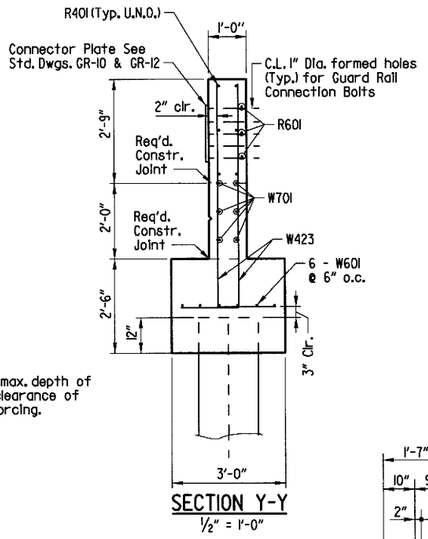


SECTION Z-Z
3/8" = 1'-0"



SECTION X-X
½" = 1'-0"

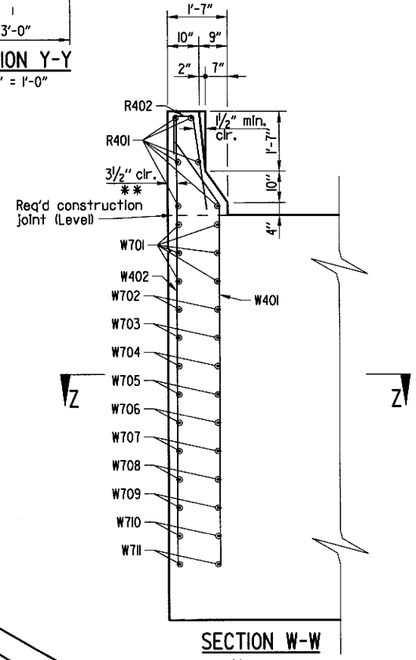
** Note:
Form Liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.



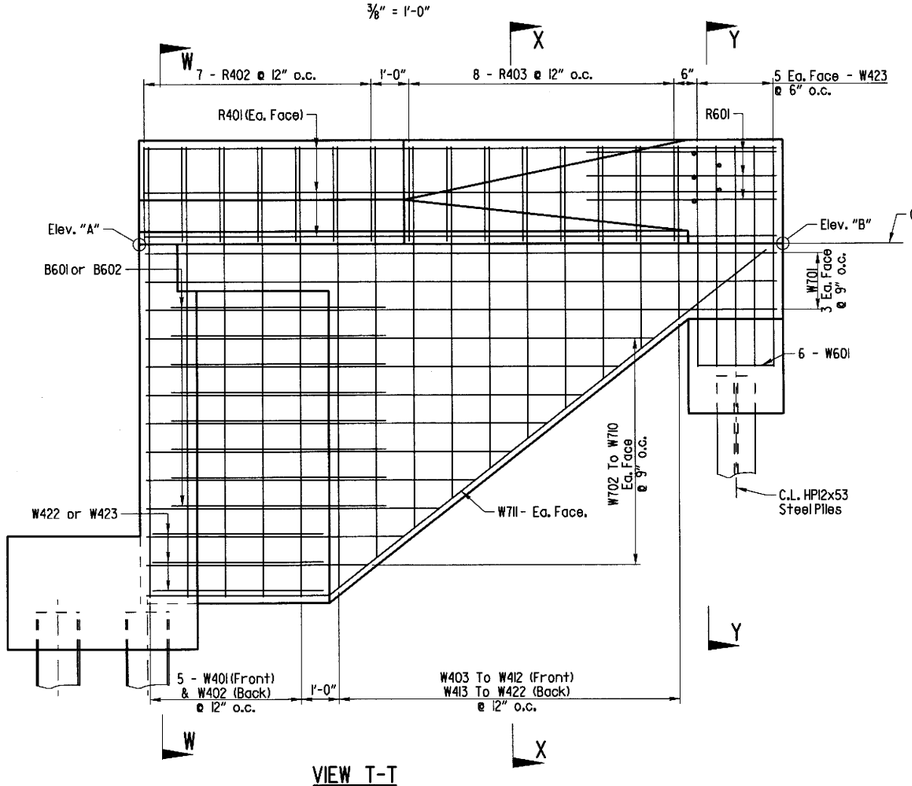
SECTION Y-Y
½" = 1'-0"

TABLE OF VARIABLES

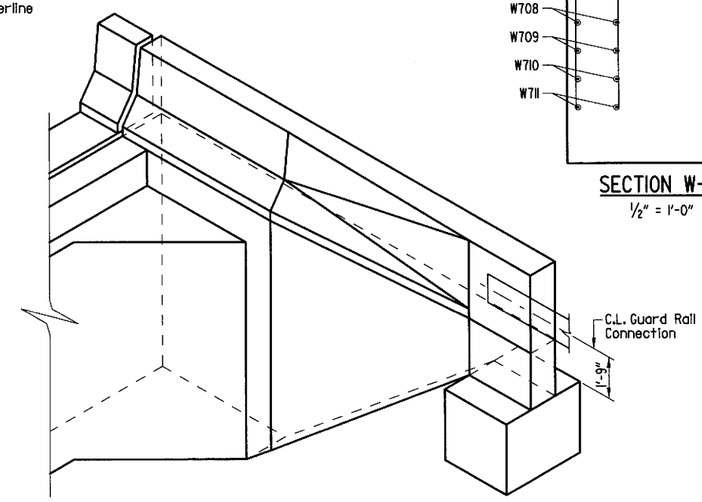
	Bent 1		Bent 3	
	Wing A	Wing B	Wing A	Wing B
Elev. "A"	323.40	323.30	327.27	327.48
Elev. "B"	323.22	323.11	327.63	327.85



SECTION W-W
½" = 1'-0"



VIEW T-T
½" = 1'-0"



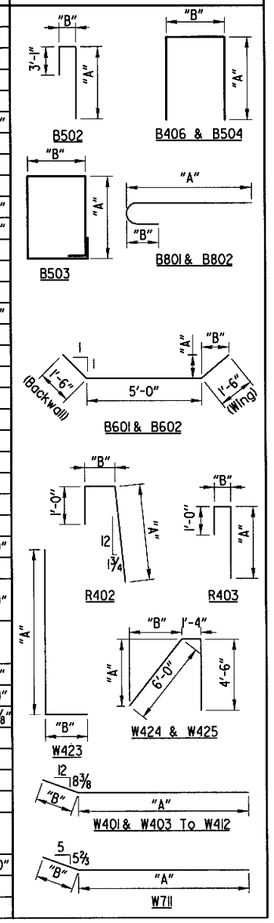
THREE DIMENSIONAL VIEW
WING RAIL AND PARAPET
No Scale

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	109	190
				(1)	07418 - END BENT DETAILS - 60024			

BAR LIST- PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.	"A"	"B"
B401	18	40'-10"	Str.		
B402	18	40'-0"	Str.		
B403	10	7'-11"	Str.		
B404	6	8'-9"	Str.		
B405	12	18'-1"	Str.		
B406	70	8'-6"	2"	2'-0"	4'-8"
B501	76	8'-6"	Str.		
B502	76	13'-4"	2½"	9'-9"	8"
B503	87	15'-0"	2½"	2'-7"	4'-8"
B504	34	9'-8"	2½"	2'-7"	4'-8"
B505	8	40'-9"	Str.		
B601	8	8'-0"	4½"	14¼"	11"
B602	8	8'-0"	4½"	11⅞"	14⅛"
B801	12	43'-4"	6"	42'-5"	8"
B802	12	42'-5"	6"	41'-6"	8"
R401	12	16'-8"	Str.		
R402	14	4'-0"	2"	2'-6½"	6"
R403	16	4'-0"	2"	2'-6½"	7"
R601	6	5'-0"	Str.		
W401	10	11'-7"	2"	9'-7"	2'-0"
W402	10	11'-11"	Str.		
W403 To W412	2 Ea.	11'-3" To 4'-2"	2"	9'-3" To 2'-2"	2'-0"
W413 To W422	2 Ea.	11'-8" To 4'-6"	Str.		
W423	20	7'-2"	3"	5'-10"	1'-6"
W424	3	11'-10"	2"	3'-8"	4'-9"
W425	3	11'-10"	2"	4'-8½"	3'-8⅝"
W601	12	2'-2"	Str.		
W701	12	16'-8"	Str.		
W702 To W710	4 Ea.	13'-6" To 5'-10"	Str.		
W711	4	24'-4"	5¼"	19'-6"	4'-10"

BENDING DIAGRAMS
Dimensions are out to out of bars.



STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/29/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 4 OF 4
END BENT DETAILS
WHITE OAK CROSSING OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 8/17 FILENAME: B06119OXL_BX4.dgn
CHECKED BY: DYF DATE: 11/17
DESIGNED BY: SFH DATE: 8/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60024

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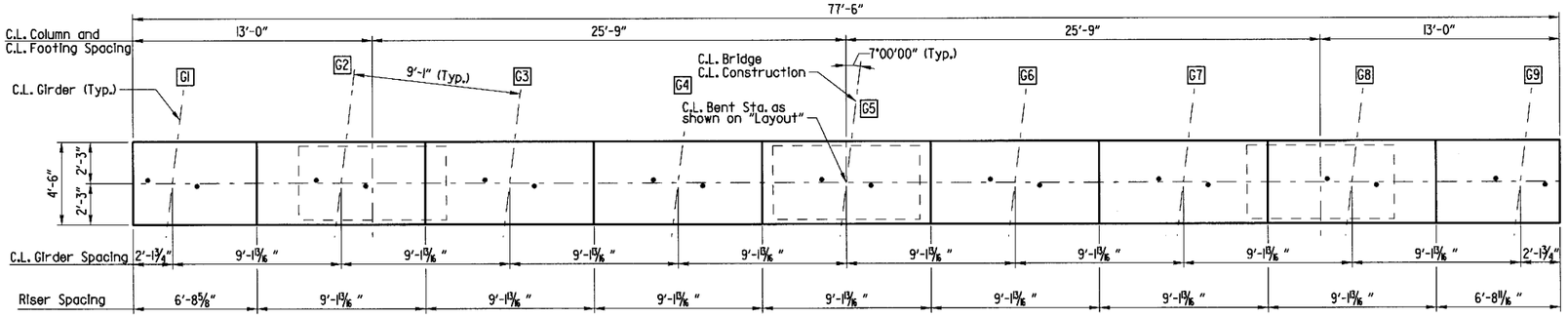
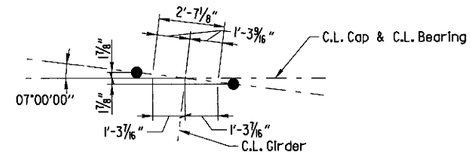
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	110	190
				07418 - INT. BENT - 60025				

(1)

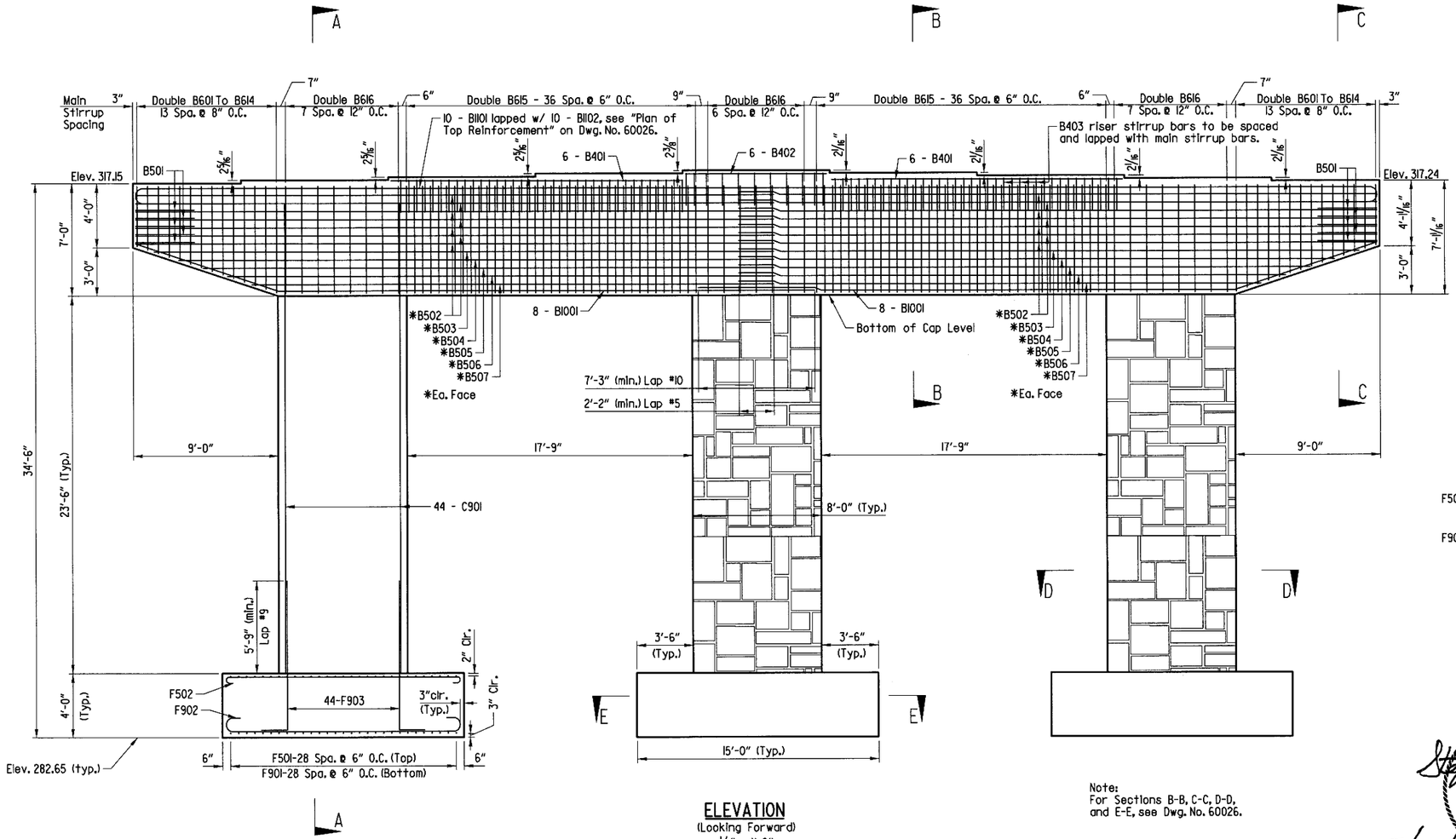


PLAN
1/4" = 1'-0"



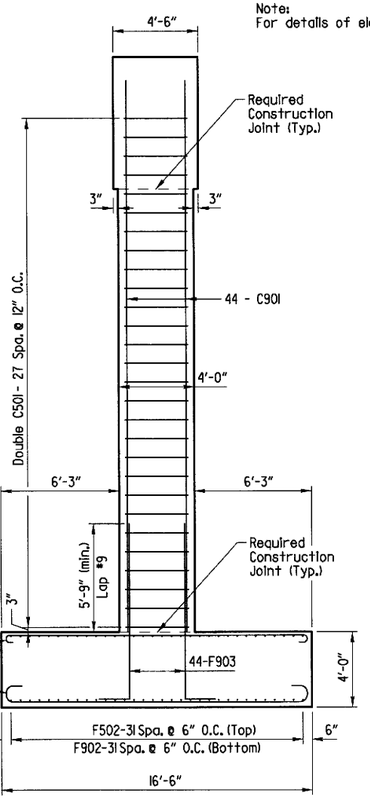
TYPICAL ANCHOR BOLT LAYOUT
No Scale

Note:
For details of elastomeric bearings, See Dwg. No. 60027.



ELEVATION
(Looking Forward)
1/4" = 1'-0"

Note:
For Sections B-B, C-C, D-D, and E-E, see Dwg. No. 60026.



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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

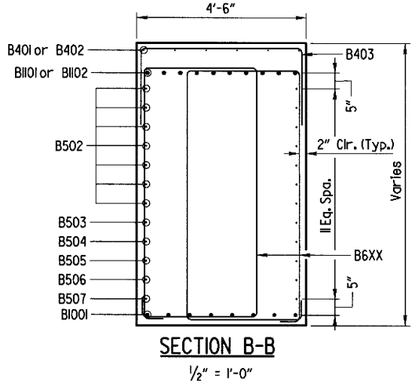
SHEET 1 OF 2
DETAILS OF INTERMEDIATE BENT 2
WHITE OAK CROSSING OVER I-40
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS/MKL DATE: 08/2017 FILENAME: B061190XI_B2I.dgn
CHECKED BY: DYF DATE: 12/2017
DESIGNED BY: SFH DATE: 06/2017 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60025

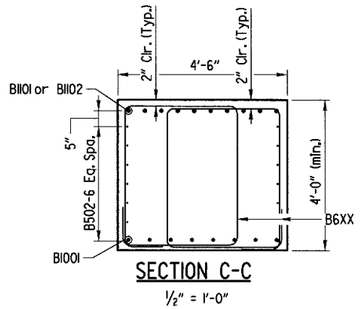
Leonard.Speed 8/20/2018 2:20:07 PM
WORKSPACE: AHTD
Y:\Projects\MAUMELLE..I54459_I-40_Interchange\06-Design\Drawings\Bridge\B061190XI_B2I.dgn
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	III	190
				(1)		07418 - INT. BENT - 60026		



SECTION B-B

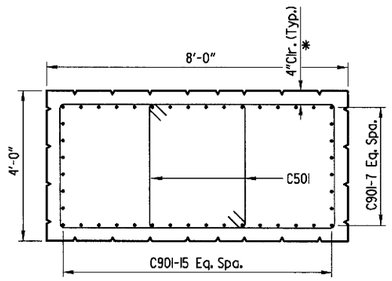
1/2" = 1'-0"



SECTION C-C

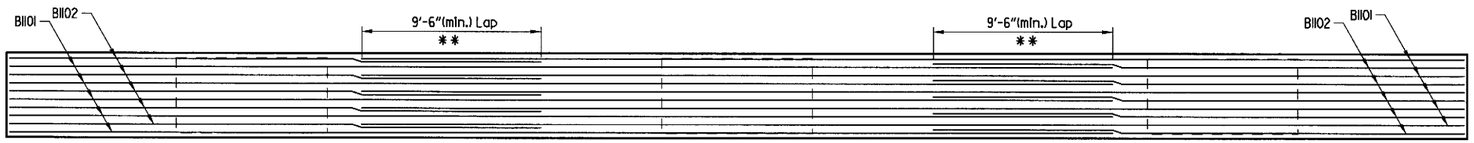
1/2" = 1'-0"

*Form liner recesses shall be a maximum of 2" to provide a minimum clearance of 2". See SP Job 061190 "Architectural Finish".



SECTION D-D

1/2" = 1'-0"



PLAN OF TOP REINFORCEMENT

1/4" = 1'-0"

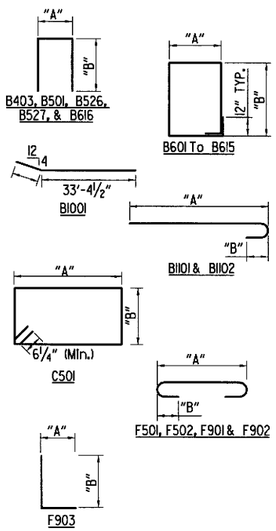
** The Contractor shall alternate the location of the lap splice such that only half of the main top reinforcement is spliced at a given cap section.

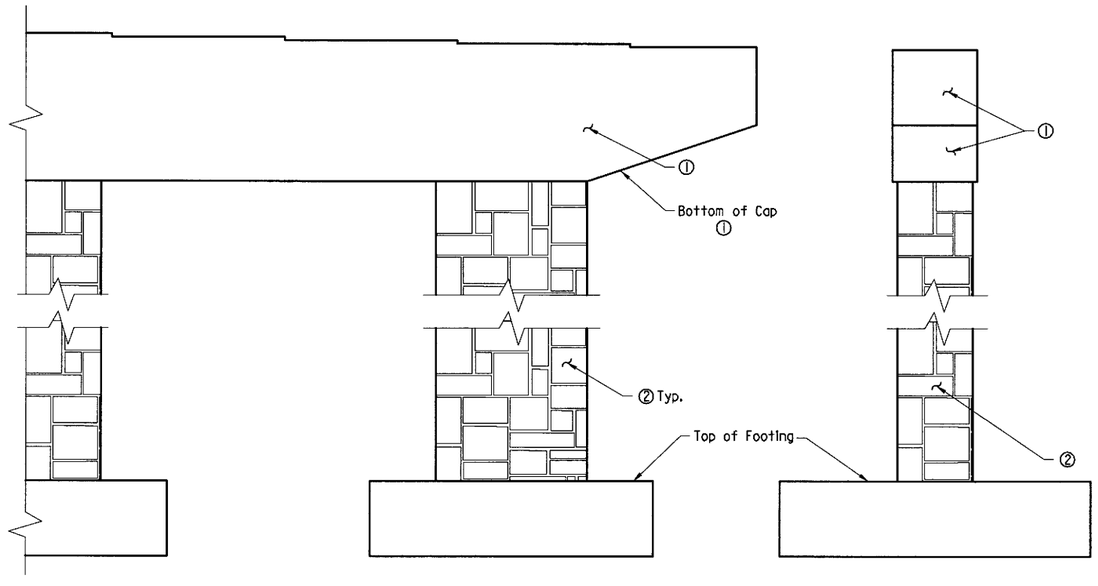
BAR LIST - BENT 2

MARK	NO. REQ'D.	LENGTH	"A"	"B"	P.D.
B401	12	18'-1"			Str.
B402	6	8'-9"			Str.
B403	83	8'-0"	4'-2"	2'-0"	2"
B501	10	7'-10"	4'-0 1/2"	2'-0"	2 1/2"
B502	28	39'-8"			Str.
B503 To B507	4 Each	38'-7" To 32'-6"			Str.
B601 To B614	4 Each	14'-6" To 20'-6"	3'-0"	3'-8" To 6'-8"	4 1/2"
B615	152	20'-6"	3'-0"	6'-8"	4 1/2"
B616	46	16'-0"	3'-0"	6'-8"	4 1/2"
B1001	16	42'-8"			10"
B1101	10	60'-0"	58'-6"	12 1/2"	11 1/4"
B1102	10	29'-8"	28'-2"	12 1/2"	11 1/4"
C501	168	17'-2"	4'-11"	3'-4"	2 1/2"
C901	132	29'-3"			Str.
F501	87	16'-8"	15'-6"	5"	3 3/4"
F502	96	15'-2"	14'-0"	5"	3 3/4"
F901	87	18'-6"	16'-0"	10"	9"
F902	96	17'-0"	14'-6"	10"	9"
F903	132	10'-8"	9'-4"	1'-7 1/4"	9"

BENDING DIAGRAMS

Dimensions are out to out of bars.



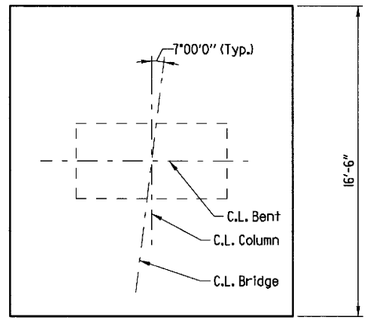


COLUMNS & CAP

COLUMN - END VIEW

ASHLAR STONE PATTERN

1/4" = 1'-0"



SECTION E-E

1/4" = 1'-0"

GENERAL NOTES

A Class 3 Texture Coating Finish shall be applied to bridge surfaces as specified in SP JOB NO. 061190 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

For additional information, see Layout.

① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② "Ashlar Stone" Pattern & Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219)

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER

PRINT DATE: 8/20/2018

SHEET 2 OF 2

DETAILS OF INTERMEDIATE BENT 2 WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: HS/MKL DATE: 08/2017 FILENAME: B061190XL822.dgn

CHECKED BY: QYF DATE: 12/2017

DESIGNED BY: SFH DATE: 06/2017 SCALE: As Noted

BRIDGE NO. 07418 DRAWING NO. 60026

Leonard.Speed 8/20/2018 2:20:08 PM
WORKSPACE: AHTD
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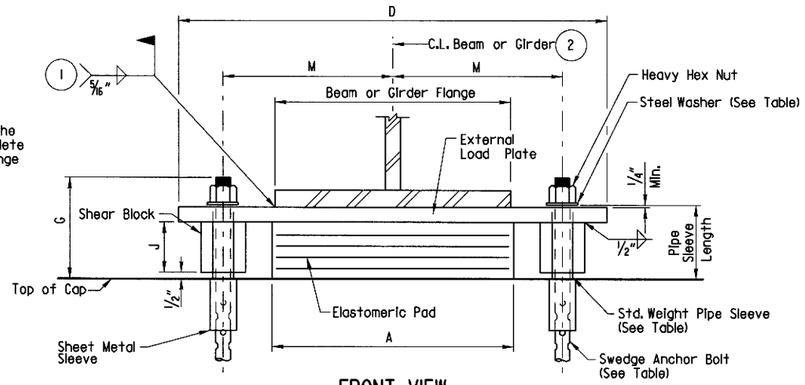
REVISED DATE:

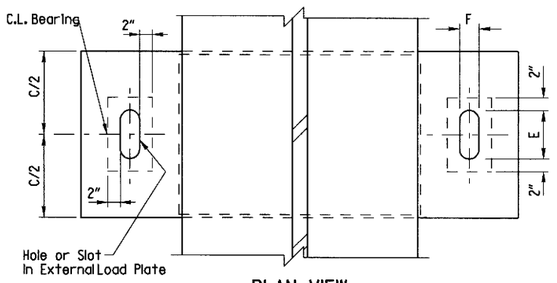
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	112	190
				(1)	07418 - ELAST. BEARINGS - 60027			

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

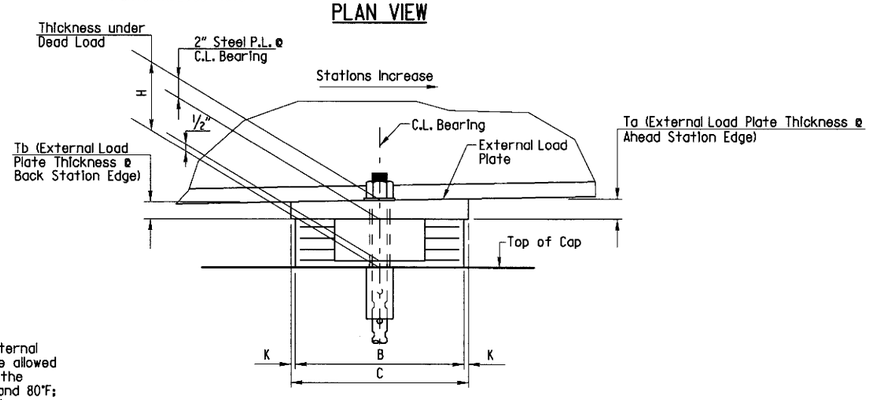
(2) C.L. Elastomeric pad shall be aligned with C.L. Beam or Girder.



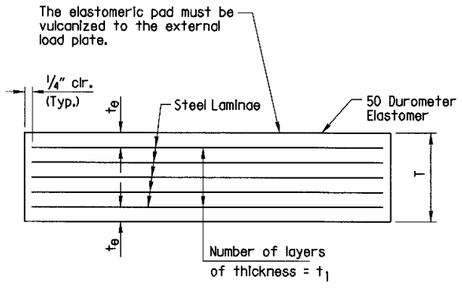
FRONT VIEW



PLAN VIEW

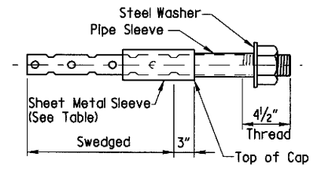


SIDE VIEW



t_1 = thickness of elastomer between steel laminae
t_e = thickness of elastomer cover on top and bottom of pad
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 into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

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

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

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

Note:

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

GENERAL NOTES

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

External load plates shall conform to AASHTO M 270, Grade 50.
Pipe sleeves shall be ASTM A500, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or ASTM B695, Class 50.

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

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 50)". External load plates will not be measured or paid for separately, but will be considered incidental to the unit price bid for "Elastomeric Bearings".

Bearings without masonry plates shall be seated in accordance with Subsection 808.08. This work and materials are considered subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION: BENT NO(S).	LOCATION: UNIT	LOCATION: BEAM OR GIRDER NO. **	BEARING TYPE	NO. OF BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (kips)	ELASTOMERIC PAD: G	ELASTOMERIC PAD: H	ELASTOMERIC PAD: A	ELASTOMERIC PAD: B	ELASTOMERIC PAD: N	ELASTOMERIC PAD: t_1	ELASTOMERIC PAD: t_e	ELASTOMERIC PAD: NO. & THICKNESS OF STEEL LAMINAE	ELASTOMERIC PAD: T	EXTERNAL LOAD PLATE: C	EXTERNAL LOAD PLATE: D	EXTERNAL LOAD PLATE: E	EXTERNAL LOAD PLATE: F	EXTERNAL LOAD PLATE: K	EXTERNAL LOAD PLATE: M	EXTERNAL LOAD PLATE: T_a	EXTERNAL LOAD PLATE: T_b	ANCHOR BOLT: ANCHOR BOLT (Ø x L)	ANCHOR BOLT: ANCHOR BOLT GRADE	ANCHOR BOLT: PIPE SLEEVE SIZE (Ø x L)	ANCHOR BOLT: SHEET METAL SLEEVE SIZE (Ø x L)	ANCHOR BOLT: STEEL WASHER SIZE (O.D.)	ANCHOR BOLT: J
07418	Bent 1	324'	All	Exp.	9	196.7	8"	5 9/16"	17"	11"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	12"	34 1/2"	5 1/4"	2 1/4"	1/2"	13 1/8"	2.06"	1.94"	1 1/2" x 27"	55	1 1/2" x 5 7/8"	3" x 14"	3"	3 1/16"
	Bent 2	324'	All	Fix.	9	566.4	9"	5 9/16"	21"	17"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	18"	40 1/4"	3 1/8"	3 1/8"	1/2"	15 5/16"	2.09"	1.91"	2 1/4" x 36"	55	2 1/2" x 5 1/8"	4" x 14"	4"	3 1/16"
	Bent 3	324'	1 - 4	Exp.	4	196.7	8"	5 9/16"	17"	11"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	12"	34 1/2"	5 1/4"	2 1/4"	1/2"	13 1/8"	2.13"	1.87	1 1/2" x 27"	55	1 1/2" x 5 1/8"	3" x 14"	3"	3 1/16"
	Bent 3	324'	5 - 9	Exp.	5	196.7	8"	5 9/16"	17"	11"	5	1/2"	1/4"	6 @ 12ga.	3 5/8"	12"	34 1/2"	5 1/4"	2 1/4"	1/2"	13 1/8"	2.14"	1.86	1 1/2" x 27"	55	1 1/2" x 5 1/8"	3" x 14"	3"	3 1/16"

*Maximum Load = Service I Limit State.
**See Dwg. No. 60030 for girder numbers.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER 8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

DETAILS OF ELASTOMERIC BEARINGS WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 08/17 FILENAME: B06190XL_EXI.dgn
CHECKED BY: SFH DATE: 11/17
DESIGNED BY: MKL DATE: 08/17 SCALE: No Scale
BRIDGE NO. 07418 DRAWING NO. 60027

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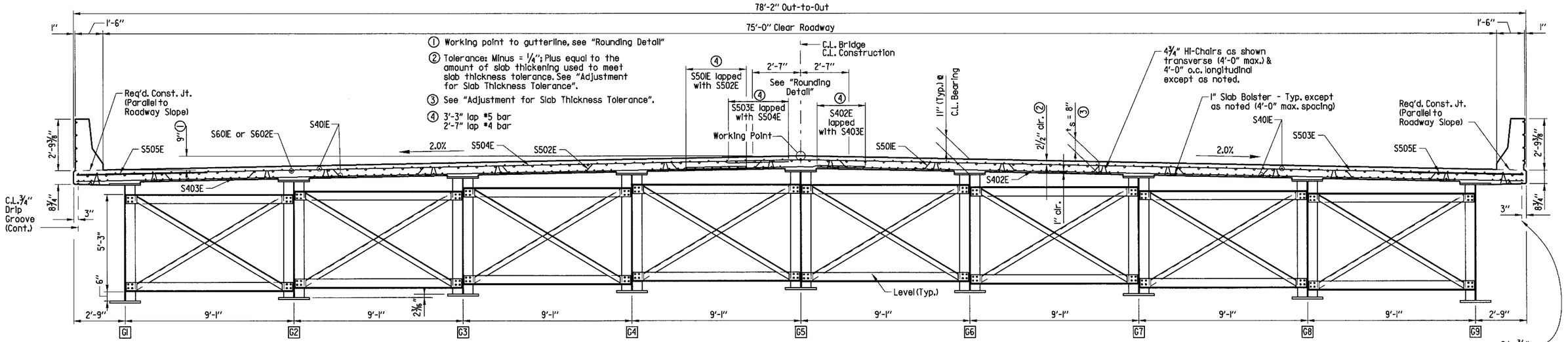
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	113	190
				(1)	07418 - 324'-0" CONT. UNIT - 60028			

Note: At the Contractors option, in lieu of providing bars S501E or S502E, one epoxy coated #5 bar top and bottom may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S501E and S502E. Bars in top and bottom shall be epoxy coated.



TYPICAL SECTION

(LOOKING FORWARD)
⅜" = 1'-0"

Slab Reinforcing

Transverse: S501E @ 12" o.c. bent up over beams and lapped with opposite S502E
S402E @ 12" o.c. in bottom and lapped with opposite S403E — Alternate
S503E @ 12" o.c. in top and lapped with opposite S504E
S505E @ 6" o.c. under each parapet bundled w/ #5 in top @ both gutterlines

Longitudinal: S401E placed as shown in top and bottom
S601E placed as shown over int. supports

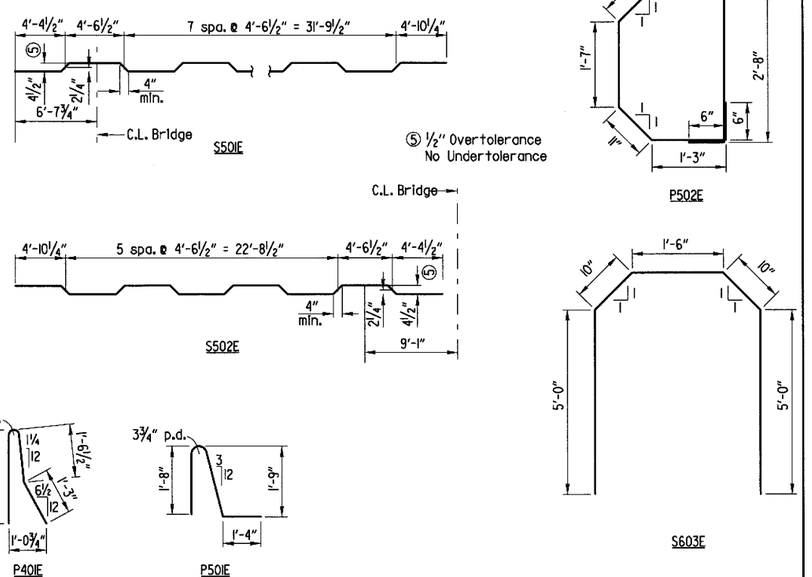
Note: All bars designated with an "E" suffix are to be epoxy coated

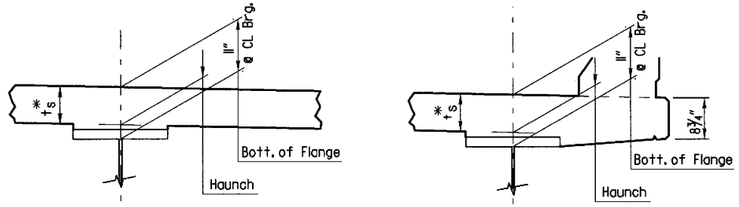
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	1953	38'-4"	Str.
S402E	315	42'-5"	Str.
S403E	315	38'-0"	Str.
S501E	314	46'-6"	3"
S502E	314	37'-3"	3"
S503E	315	42'-10"	Str.
S504E	315	38'-3"	Str.
S505E	1292	7'-9"	Str.
S506E	4	38'-11"	Str.
S507E	4	36'-11"	Str.
S508E	4	34'-10"	Str.
S509E	4	32'-10"	Str.
S510E to S523E	4 ea.	4'-1" to 57'-1"	Str.
S601E	78	60'-0"	Str.
S602E	78	45'-1"	Str.
S603E	6	13'-2"	4½"
S604E	18	5'-8"	Str.
P401E	1232	5'-6"	3"
P402E	64	4'-10"	3"
P403E	160	5'-6"	Str.
P404E	336	10'-8"	Str.
P405E	56	14'-8"	Str.
P501E	1232	4'-10"	3¾"
P502E	18	9'-5"	2½"
P503E	18	3'-1"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.





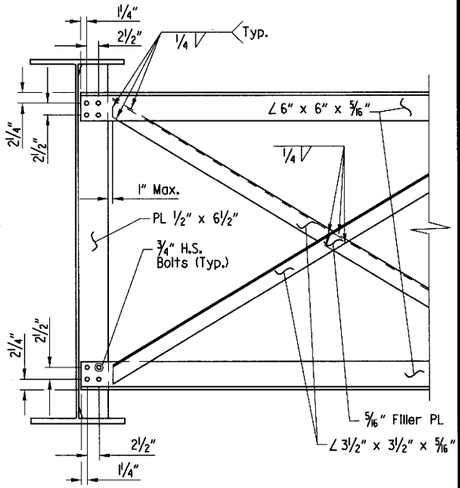
Note:
Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

No Scale

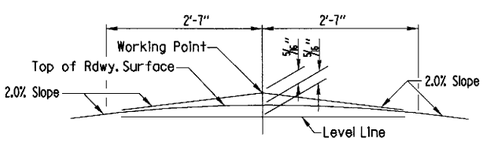
NOTES:
Haunch dimension may very within the following limits to maintain the grade and slab thickness tolerance; Minimum occurs when top flange contacts bottom reinforcing steel; Maximum = top flange thickness plus 1¾". No increase in concrete and structural steel quantities will be made to maintain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

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



TYPICAL CROSSFRAME CONNECTION DETAIL

¾" = 1'-0"



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

No Scale

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 1 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSINGS OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS/JPC DATE: 10/17
CHECKED BY: DYF DATE: 12/17
DESIGNED BY: SFH DATE: 09/17
FILENAME: B061190XI_SXI.dgn
SCALE: As Noted
BRIDGE NO. 07418
DRAWING NO. 60028

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REVISED DATE:

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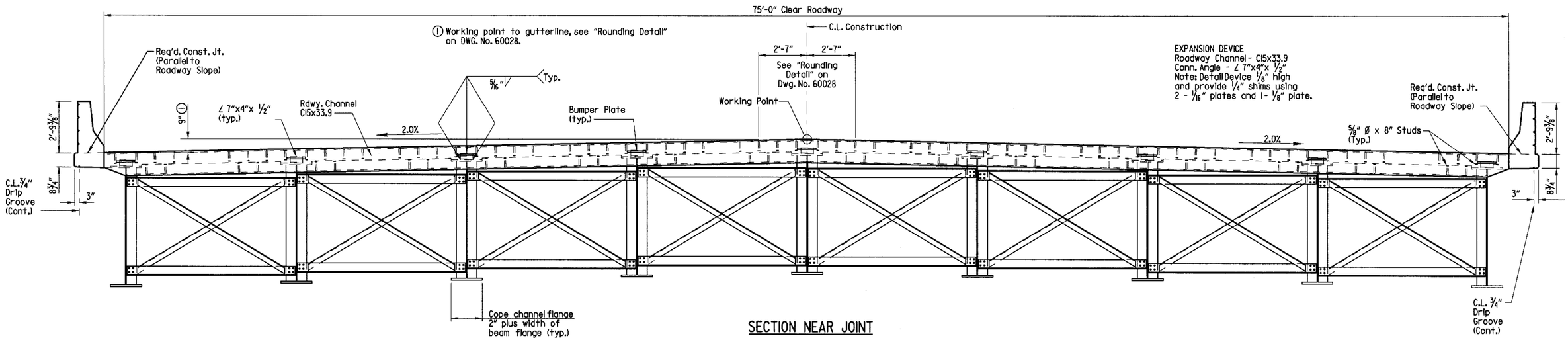
				JOB NO.		061190	114	190
				①	07418 - 324'-0" CONT. UNIT - 60029			



SECTION NEAR JOINT

(LOOKING FORWARD)
⅜" = 1'-0"

② Place Connection Plates and Bearing Stiffeners Parallel to skew.

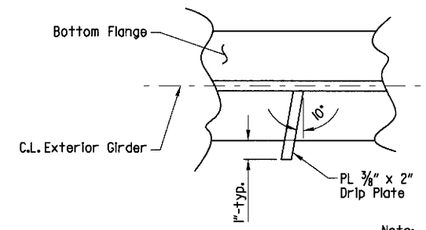
TABLE FOR WELD

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

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

CLIP DIMENSION "L"

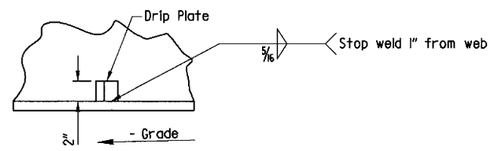
Web Thickness	"L"
⅜"	2½"
⅝"	2¾"



PLAN

Note:
Bottom flange drip plate to be welded to the outside flange of the exterior girders only.

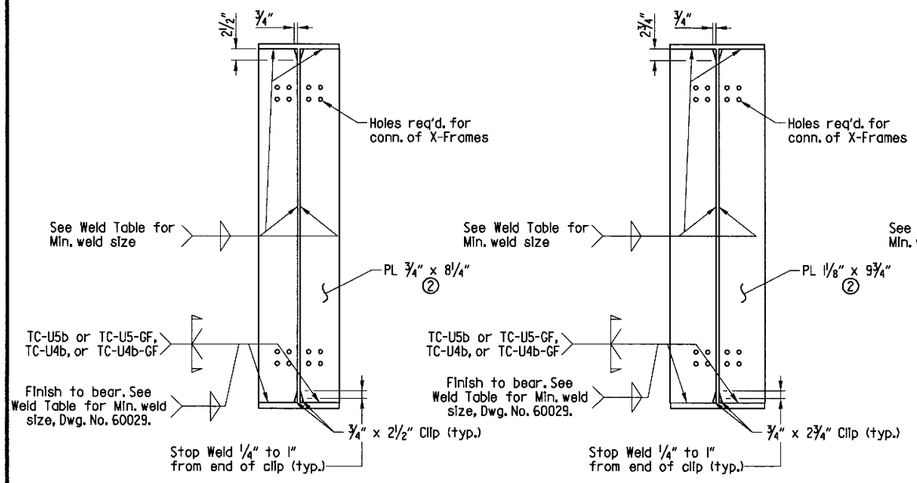
Locate drip plate 5'-0" from C.L. Bearing on the high side of Bents 1 & 2.



ELEVATION

BOTTOM FLANGE DRIP PLATE

No Scale

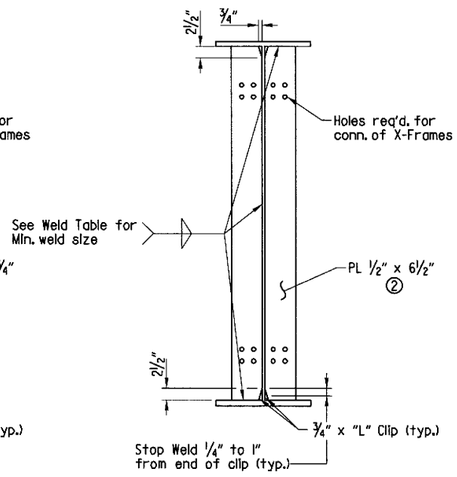


END BEARING STIFFENER DETAIL

(Bent 1 & 3)
¾" = 1'-0"

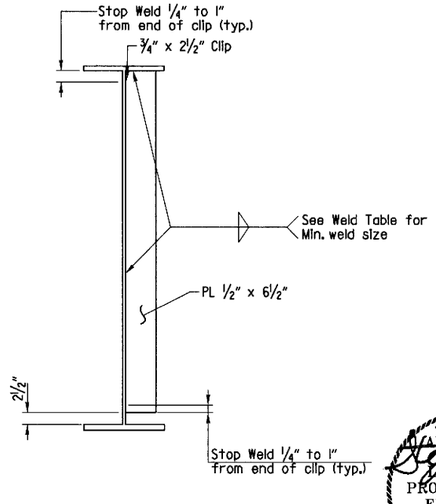
INT. BEARING STIFFENER DETAIL

(Bent 2)
¾" = 1'-0"



CROSS FRAME CONNECTION PLATE DETAIL

¾" = 1'-0"



INT. STIFFENER DETAIL

¾" = 1'-0"

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 2 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS/JPC DATE: 10/17 FILENAME: B061190XL SX2.dgn
CHECKED BY: DYF DATE: 12/17
DESIGNED BY: SFH DATE: 09/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60029

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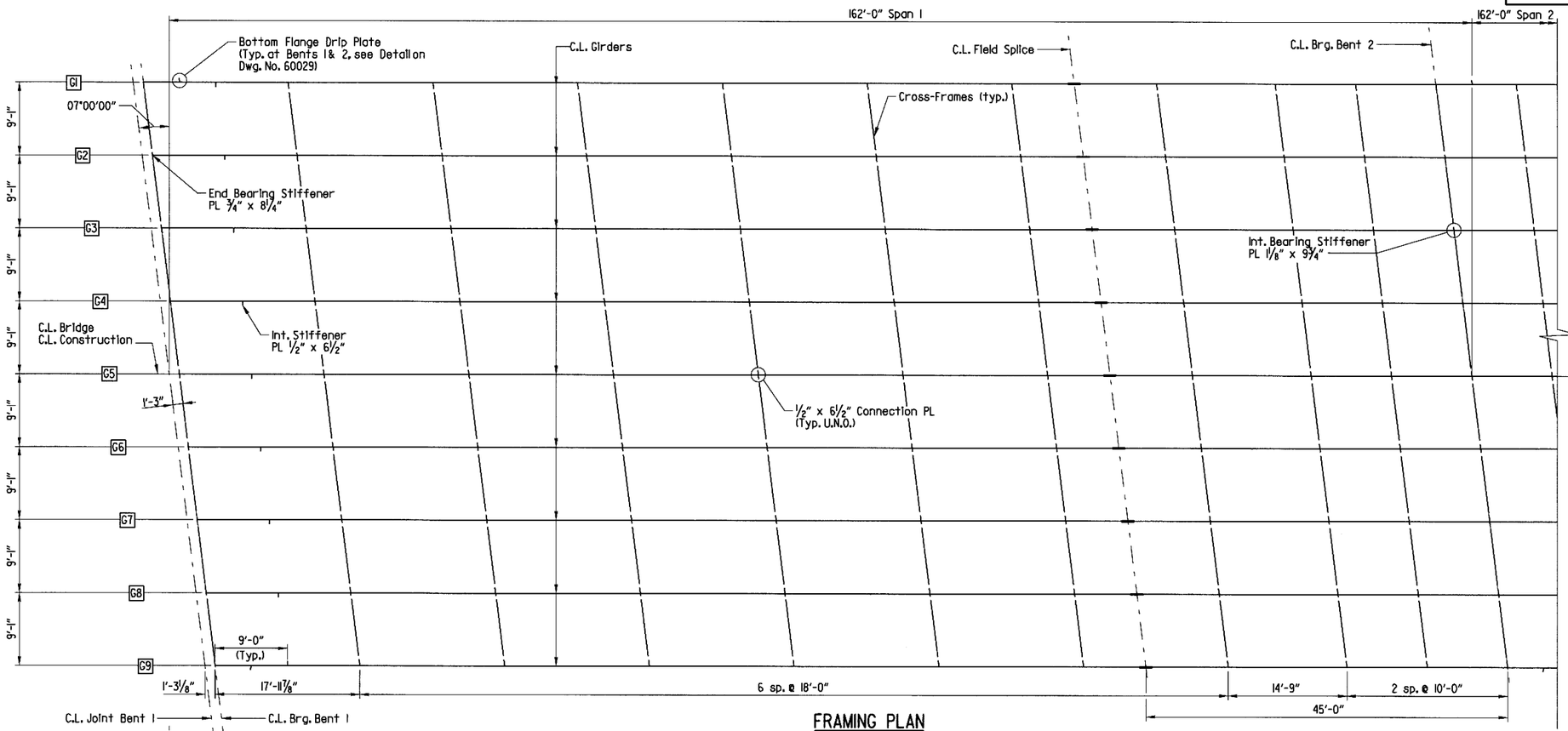
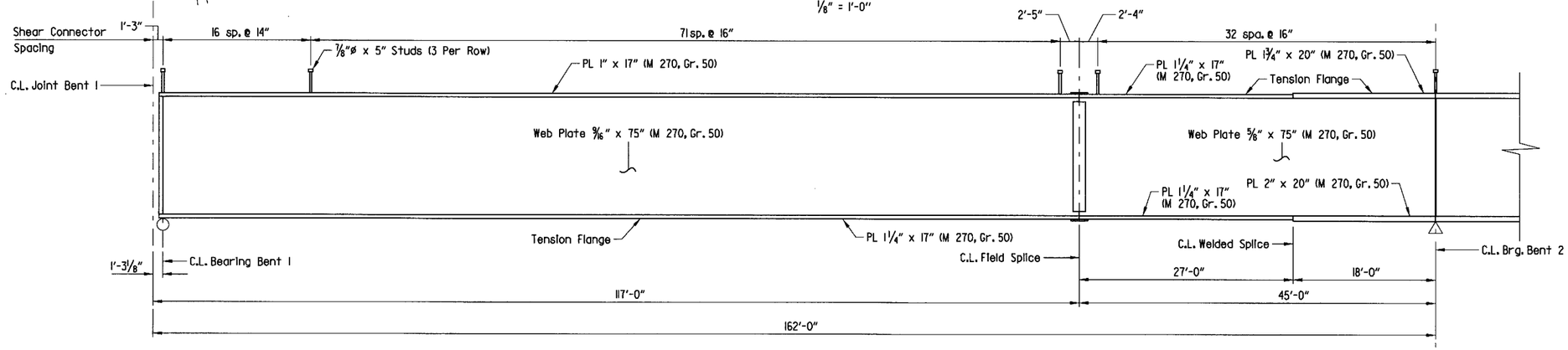
				6	ARK.			
				JOB NO.		061190	115	190
				(1)	07418 - 324'-0" CONT. UNIT - 60030			



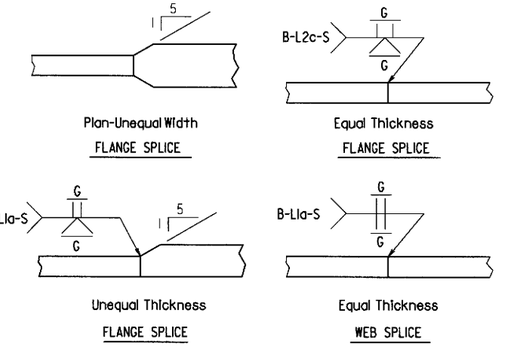
FRAMING PLAN

⅛" = 1'-0"



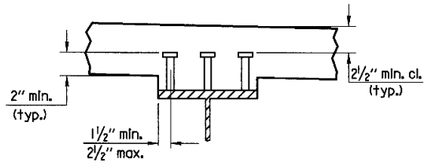
GIRDER ELEVATION

No Scale



DETAILS OF WELDED SPLICES

No Scale



Stud Shear Connectors shown shall be ⅞"ø x 5" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer.

SHEAR CONNECTOR DETAIL

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 3 OF 10
DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: HS/JPC DATE: 11/17 FILENAME: B06I190XLSX3.dgn
CHECKED BY: QYF DATE: 12/17
DESIGNED BY: SFH DATE: 09/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60030

meganland 8/20/2018 3:21:55 PM
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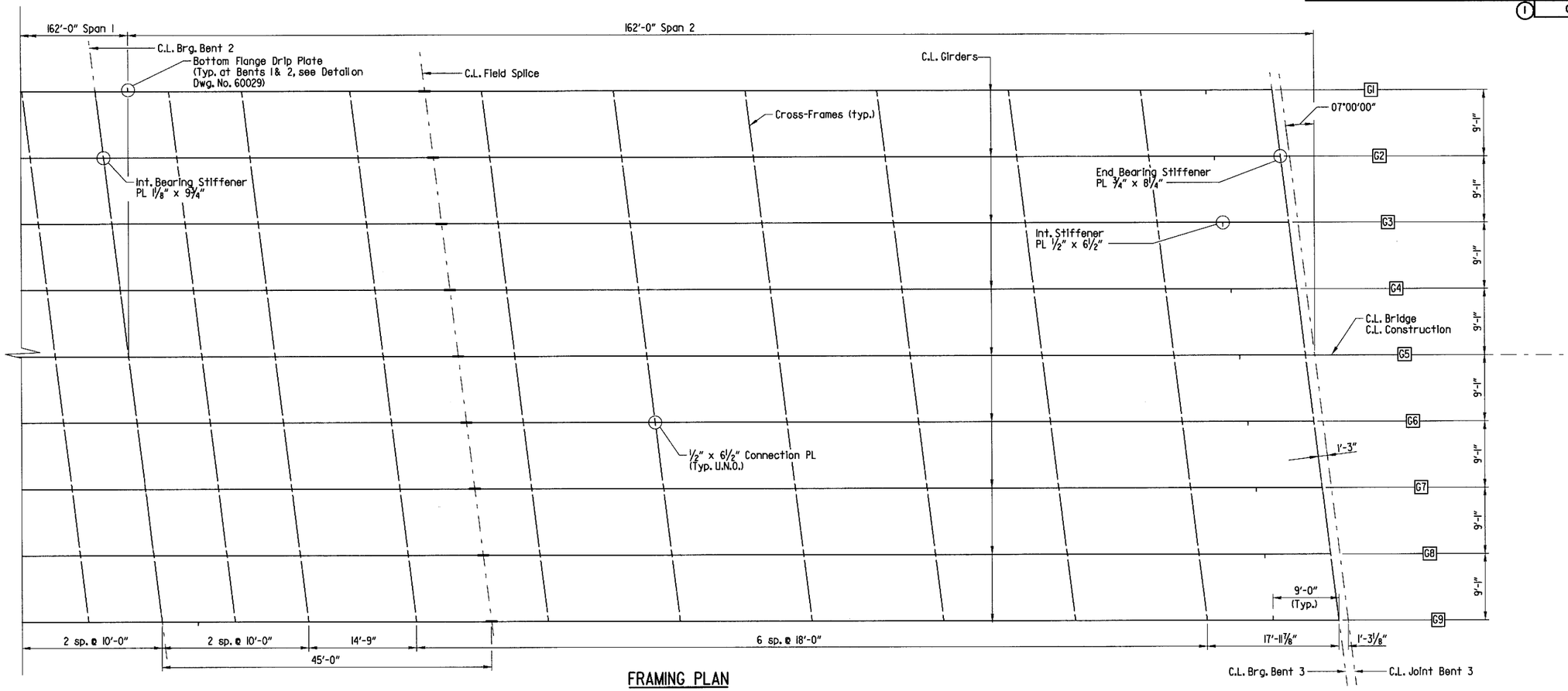
REVISED DATE:

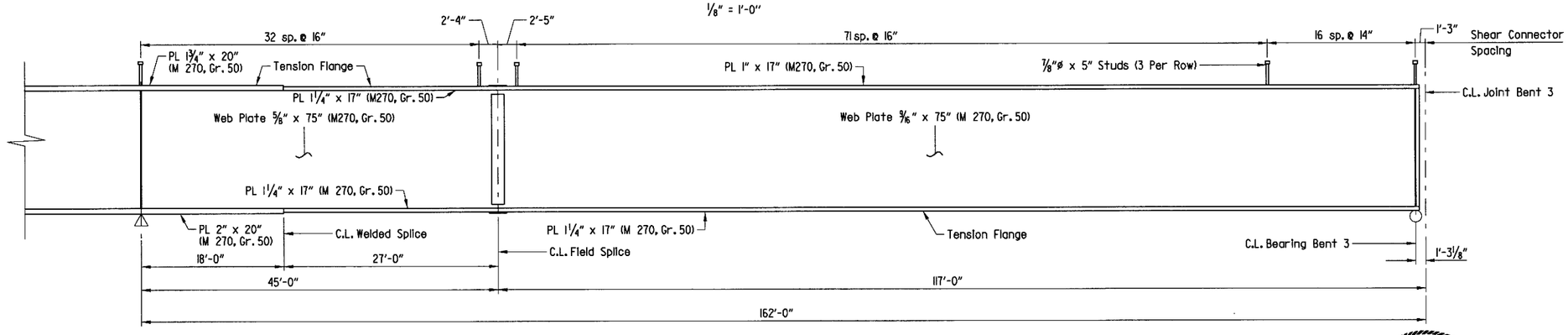
DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	116	190
(1)	07418 - 324'-0" CONT. UNIT - 60031			



FRAMING PLAN

⅛" = 1'-0"



GIRDER ELEVATION

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 4 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS/JPC DATE: 11/17 FILENAME: BD61190XL_SX4.dgn
CHECKED BY: DYF DATE: 12/17
DESIGNED BY: SFH DATE: 09/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60031

meganiand 8/20/2018 3:21:56 PM
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REVISED DATE:

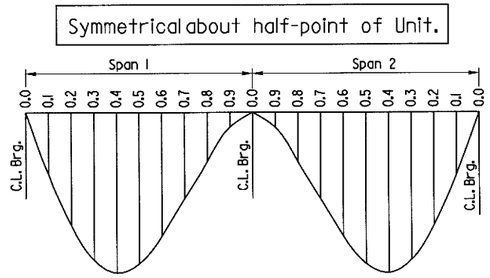
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	117	190
				(1)	07418 - 324'-0" CONT. UNIT - 60032			

TABLE OF DEAD LOAD DEFLECTIONS-INCHES

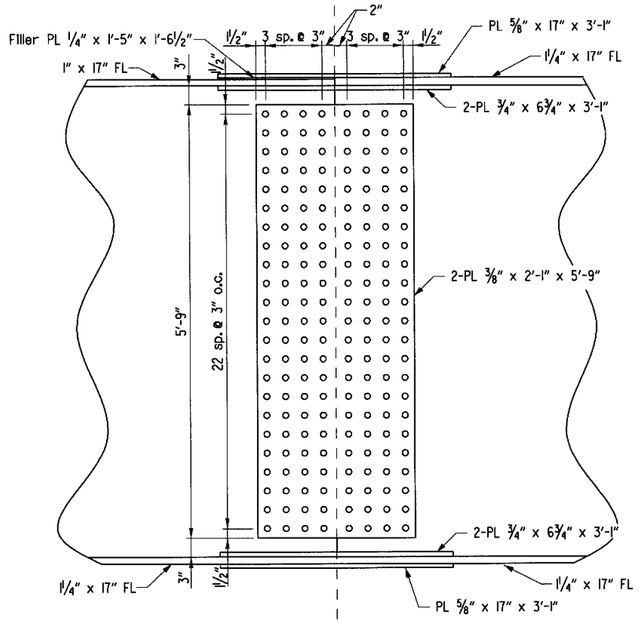
Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Rail	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0	0	0	0	0	0	0
	0.1	0.336	0.336	1.344	1.126	1.460	1.249
	0.2	0.616	0.616	2.462	2.063	2.675	2.289
	0.3	0.800	0.800	3.198	2.680	3.476	2.974
	0.4	0.868	0.868	3.471	2.909	3.774	3.229
	0.5	0.819	0.819	3.274	2.744	3.562	3.048
	0.6	0.669	0.669	2.676	2.242	2.914	2.494
	0.7	0.456	0.456	1.822	1.527	1.986	1.700
	0.8	0.231	0.231	0.925	0.775	1.011	0.866
	0.9	0.064	0.064	0.257	0.215	0.281	0.241
	1.0	0	0	0	0	0	0

Half-point of Unit.

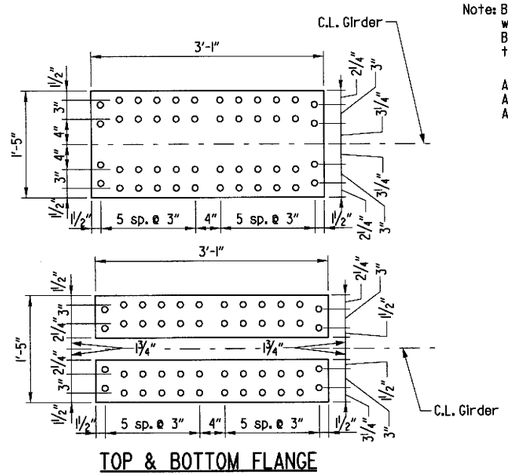
Note: Camber for Dead Load Deflection plus Vertical Curve + or - 1/4" tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing to C.L. Bearing. Vertical curve corrections not included. Negative sign (-) indicates point above chord.



DEAD LOAD DEFLECTION DIAGRAM
No Scale



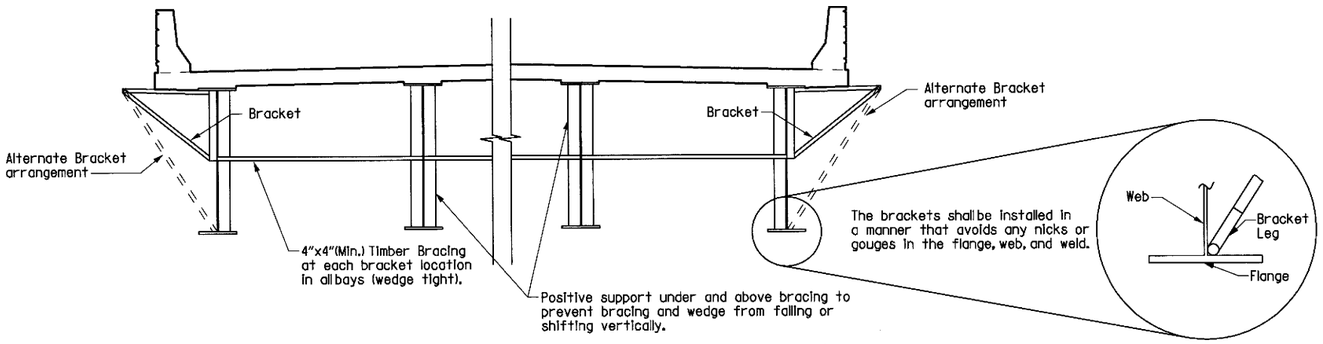
TYPICAL FIELD SPLICE DETAILS
1" = 1'-0"



TOP & BOTTOM FLANGE

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

All field splice bolts shall be 7/8" ø Hi-str. bolts.
All holes for splice bolts shall be 15/16" ø.
All field splice plates shall be AASHTO M270 Gr. 50 steel.



Note: If a transverse finishing machine is used, the rail shall be supported directly over the exterior girders, or as an alternate, the rail may be supported by the overhang brackets if the above strutting system is used. The strutting system may be omitted if 1/2" x 6 1/2" web stiffeners are welded to the insides of the exterior girders at the location of each bracket or if the alternate bracket arrangement shown above is used. The Alternate Bracket arrangement shall extend down to the junction of the web and bottom flange. The stiffener shall conform to the details for cross frame connection plates shown on Drawing No. 60029. No direct payment will be made for brackets, timber bracing, supports, or welded stiffeners. Payment shall be subsidiary to "Structural Steel in Plate Girder Spans (M270, Gr. 50)".

SCREED RAIL SUPPORT
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 5 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 10/17 FILENAME: B061190XL_SX5.dgn
CHECKED BY: DYF DATE: 12/17
DESIGNED BY: SFH DATE: 9/17 SCALE: As Noted
BRIDGE NO. 07418 DRAWING NO. 60032

Leonard,Speed 8/20/2018 2:20:18 PM
WORKSPACE: AHTD
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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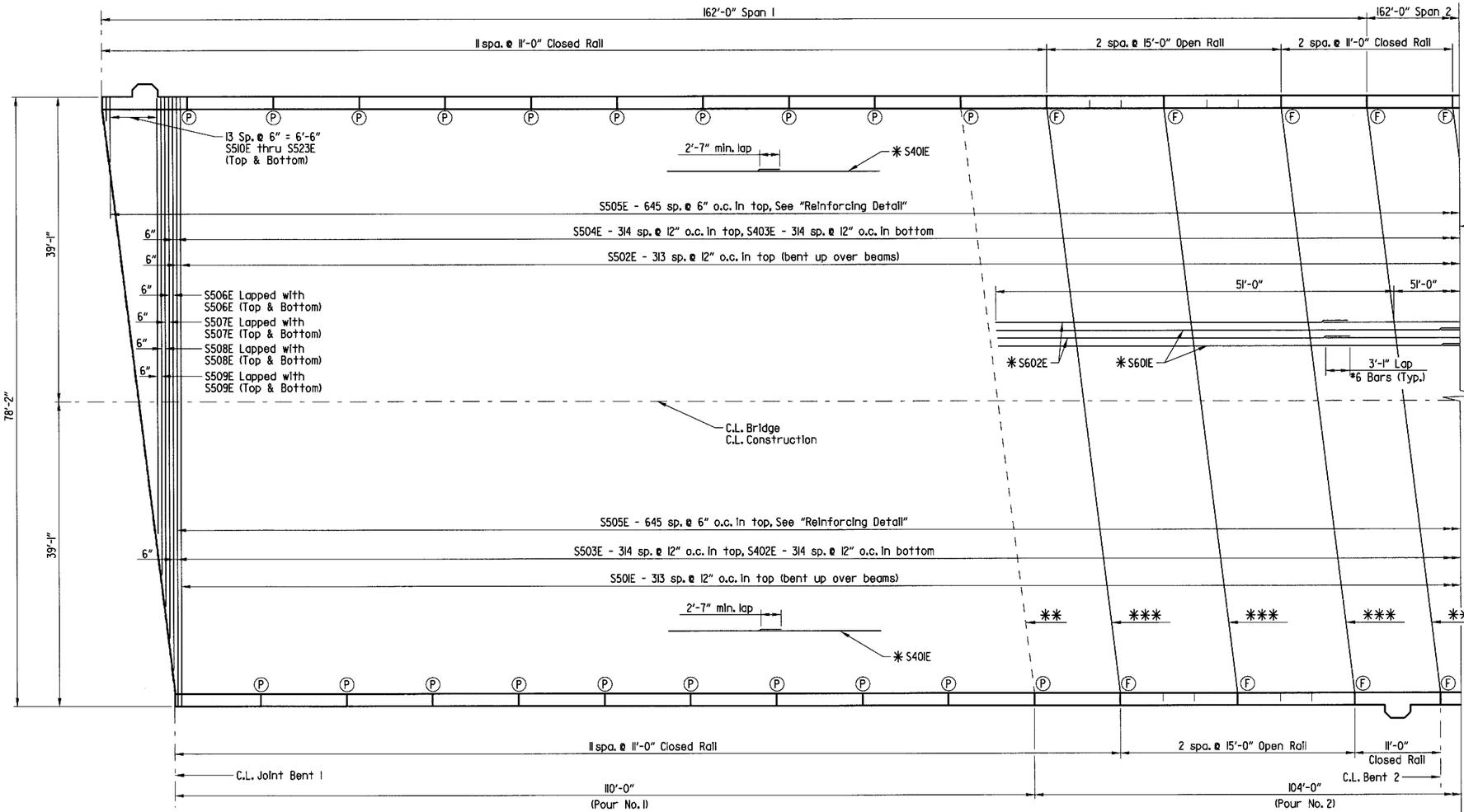
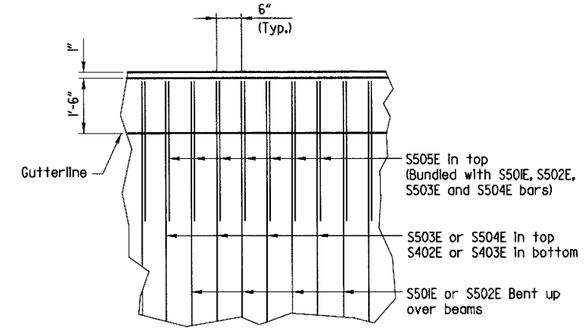
				JOB NO.		061190	118	190
				(1)	07418 - 324'-0" CONT. UNIT - 60033			



Note:
Transverse lap splices not shown for clarity. See Dwg. No. 60028 for locations.

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



REINFORCING DETAIL

No Scale

REINFORCING PLAN AND POURING SEQUENCE

1/8" = 1'-0"

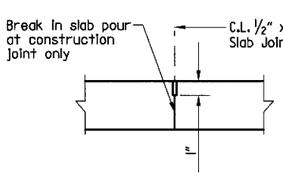
(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of slab)

(F) Full depth parapet joint at this location. (Stop 4" above top of slab)

✱ Placed as shown in "Typical Section", See Dwg. No. 60028.

✱✱ Pouring Sequence Construction Joint

✱✱✱ Required Slab Joint



SLAB JOINT DETAIL

No Scale

Use Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER

PRINT DATE: 8/20/2018

SHEET 6 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 10/19/17 FILENAME: B06190XLSX6.dgn

CHECKED BY: OYF DATE: 12/17

DESIGNED BY: JPC DATE: 09/12/17 SCALE: As Noted

BRIDGE NO. 07418 DRAWING NO. 60033

Leonard.Speed 8/20/2018 2:20:19 PM
WORKSPACE: AHTD
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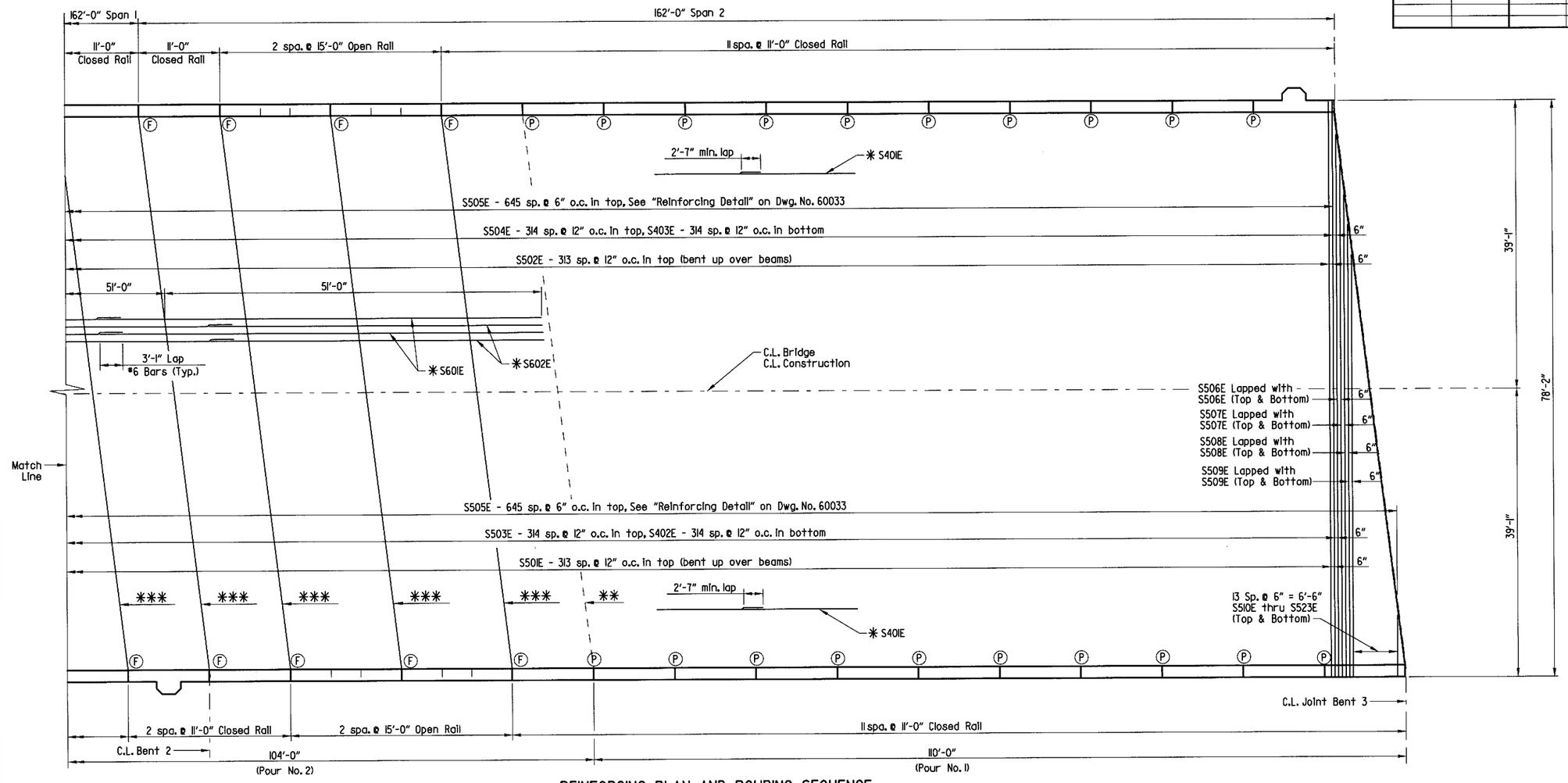
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	119	190
(1)	07418 - 324'-0" CONT. UNIT - 60034			



REINFORCING PLAN AND POURING SEQUENCE

1/8" = 1'-0"

Note:
Transverse lap splices not shown for clarity. See Dwg. No. 60028 for locations.

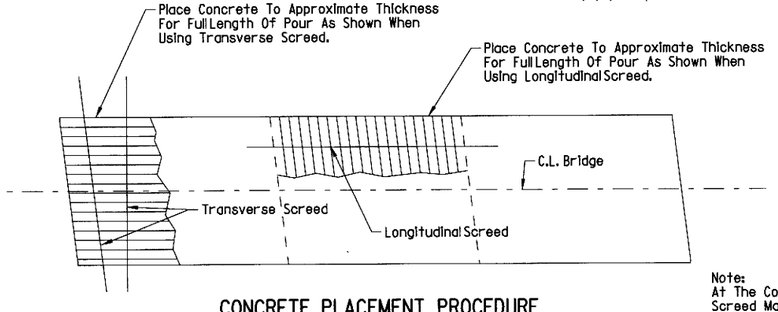
Ⓟ Partial depth parapet joint at this location. (Stop 1'-2" above top of slab)

Ⓕ Full depth parapet joint at this location. (Stop 4" above top of slab)

✱ Placed as shown in "Typical Section", See Dwg. No. 60028.

✱✱ Pouring Sequence Construction Joint

✱✱✱ Required Slab Joint



CONCRETE PLACEMENT PROCEDURE

No Scale

Note:
At The Contractor's Option, The Transverse Screed May Be Placed Parallel To The Skew Or Perpendicular To CL Bridge

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

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BRIDGE ENGINEER
PRINT DATE: 7/23/2018

SHEET 7 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: OYF DATE: 12/17
DESIGNED BY: JPC DATE: 09/12/17 SCALE: As Noted
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REVISED DATE:

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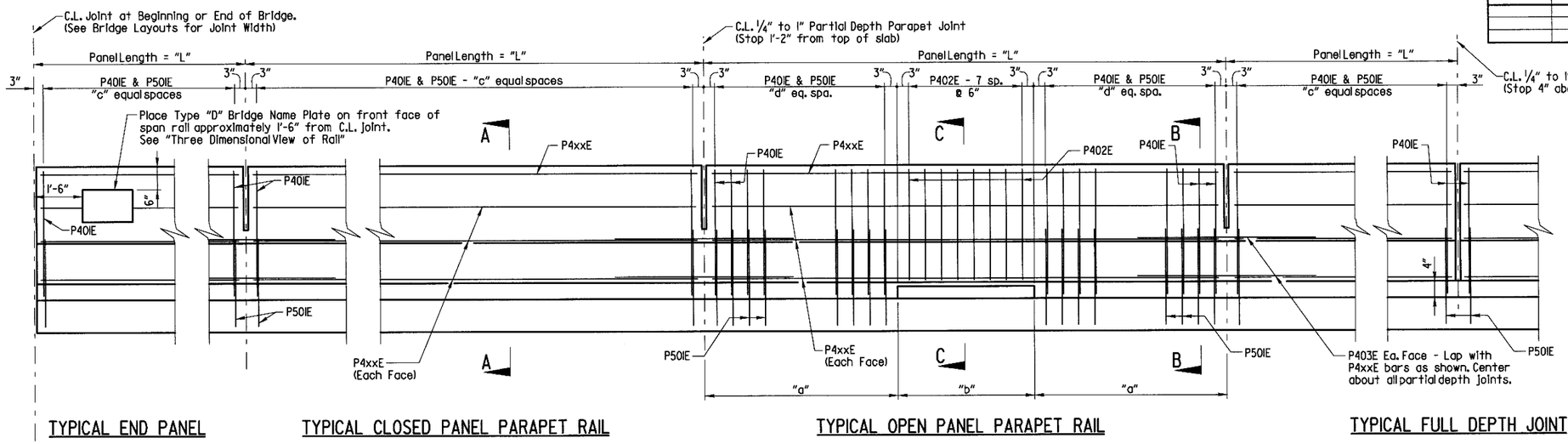
				6	ARK.			
				JOB NO.		061190	120	190
				(1)	07418 - 324'-0" CONT. UNIT - 60035			



TYPICAL END PANEL | TYPICAL CLOSED PANEL PARAPET RAIL | TYPICAL OPEN PANEL PARAPET RAIL | TYPICAL FULL DEPTH JOINT

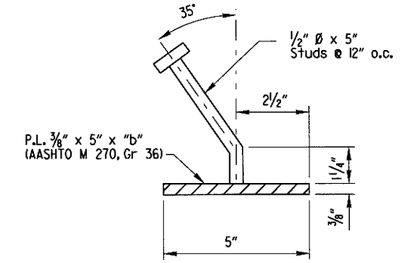
ELEVATION - CONCRETE PARAPET RAIL

(As viewed from roadway side of Parapet)

PARAPET RAIL VARIABLES

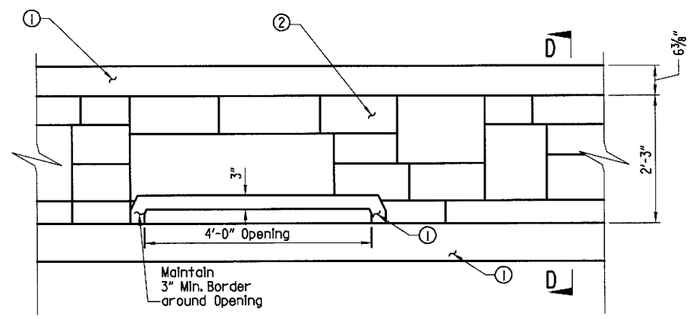
Panel Length "L"	Panel Type	"a"	"b"	"c"	"d"	P4xxE Bars
11'-0"	closed	-----	-----	21	-----	P404E
15'-0"	open	5'-6"	4'-0"	-----	10	P405E

Note:
For location of full and partial depth parapet joints, see Dwg. Nos. 60033 and 60034.



DETAIL Z

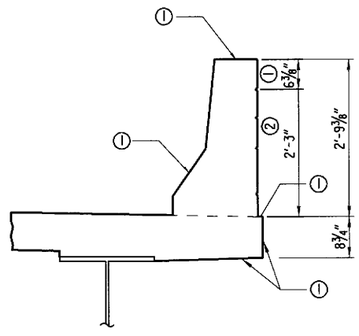
Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Structural Steel In Plate Girder Spans (M 270, Gr. 50)".
The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted in accordance with Section 638 or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel In Plate Girder Spans (M270, Gr 50)"



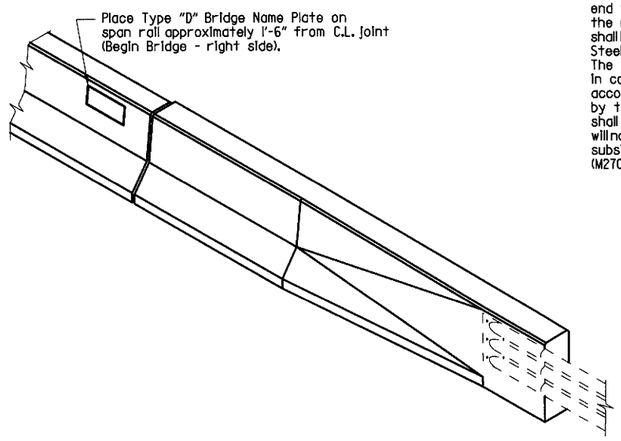
① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)
② Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219) and "Ashlar Stone" Form Liner

DETAILS OF PARAPET ENHANCEMENT

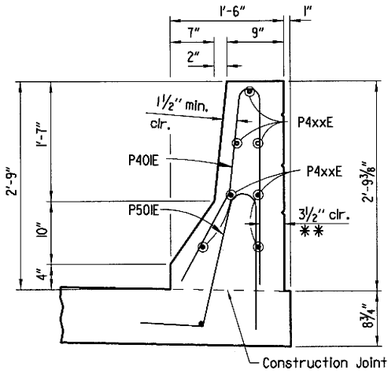
(Showing Outside Face of Parapet)



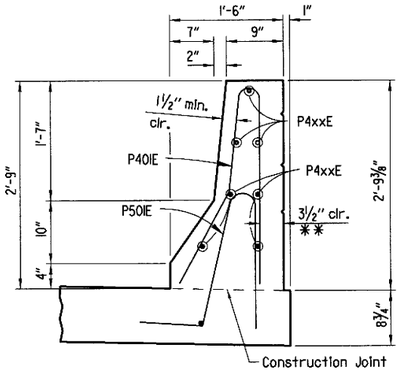
SECTION D-D



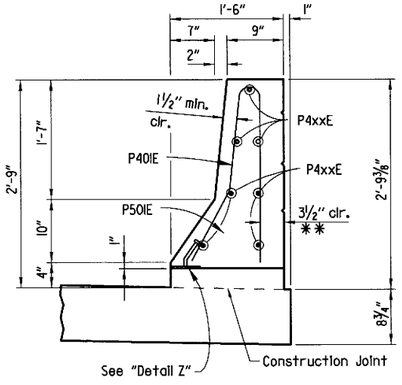
THREE DIMENSIONAL VIEW OF RAIL



SECTION A-A



SECTION B-B



SECTION C-C

** Note:
Form Liner shall be a max. depth of 2" to provide a min. clearance of 1/2" to parapet reinforcing.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 8 OF 10
DETAILS OF 324'-0" CONT. COMP. PLATE GIRDER UNIT WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HSS/JPC DATE: 01/20/17 FILENAME: B06I190XLSX8.dgn
CHECKED BY: QYF DATE: 12/17
DESIGNED BY: HSS DATE: 01/20/17 SCALE: No Scale
BRIDGE NO. 07418 DRAWING NO. 60035

Leonard.Speed 8/20/2018 2:20:22 PM
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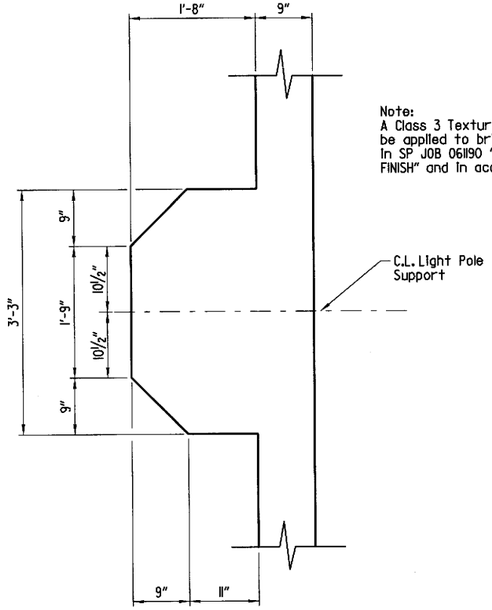
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	121	190
				07418 - 324'-0" CONT. UNIT - 60036				

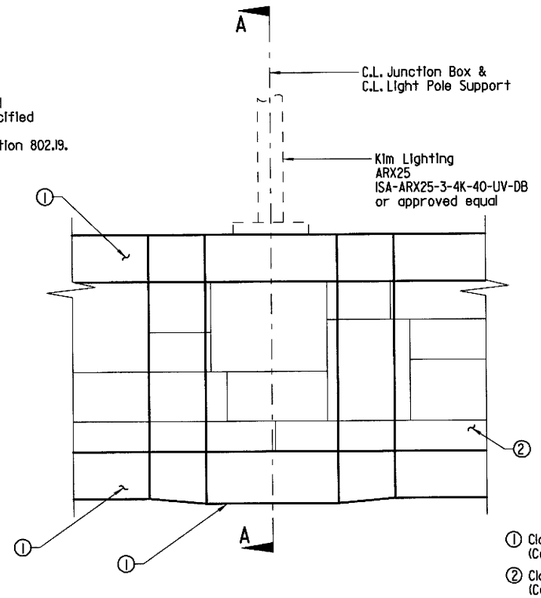
LIGHT POLE SUPPORT LOCATIONS	
Station	Location
181+31.00	LT.
182+91.10	RT.
184+43.90	LT.

Note:
Stations shown are to C.L. light pole support.



Note:
A Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in SP JOB 061190 "TEXTURED COATING FINISH" and in accordance with Subsection 802.19.

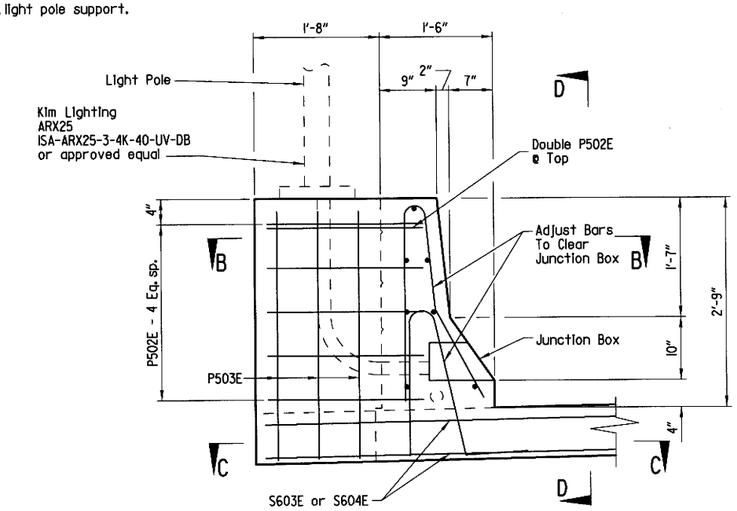
PLAN - LIGHT POLE SUPPORT PEDESTAL



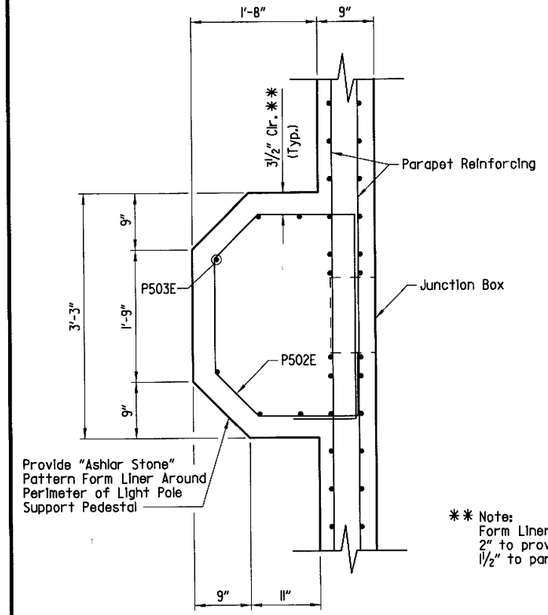
① Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 33522)

② Class 3 Textured Coating Finish (Color = Brown, Color Chip No. 30219) and "Ashlar Stone" Form Liner

ELEVATION - LIGHT POLE SUPPORT PEDESTAL

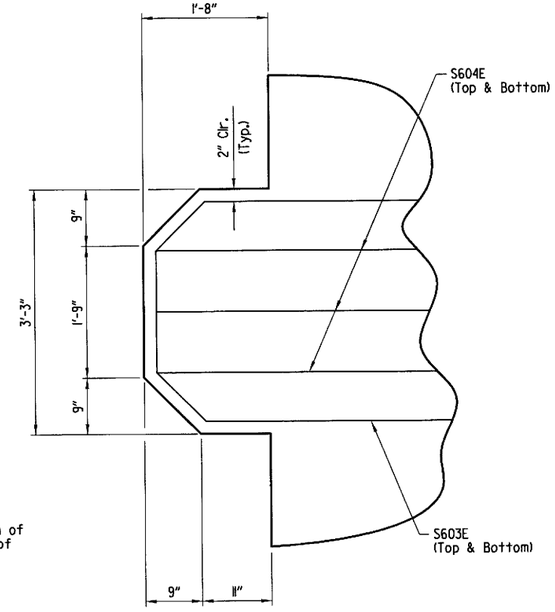


SECTION A-A



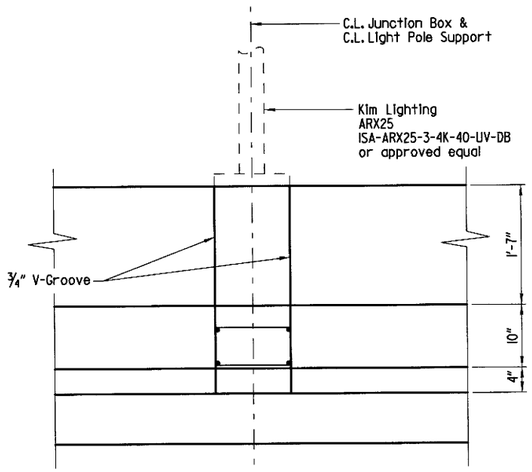
** Note:
Form Liner shall be a max. depth of 2" to provide a min. clearance of 1½" to parapet reinforcing.

SECTION B-B



SECTION C-C

Note:
For anchor bolt, light pole, and electrical details, see Electrical Sheets.



VIEW D-D

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

7/23/18

BRIDGE ENGINEER
PRINT DATE: 7/23/2018

SHEET 9 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: JPC DATE: 11/7/17 FILENAME: B06l109XLSX9.dgn
CHECKED BY: DYF DATE: 12/17
DESIGNED BY: SFH DATE: 11/17 SCALE: 1" = 1'
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REVISED DATE:

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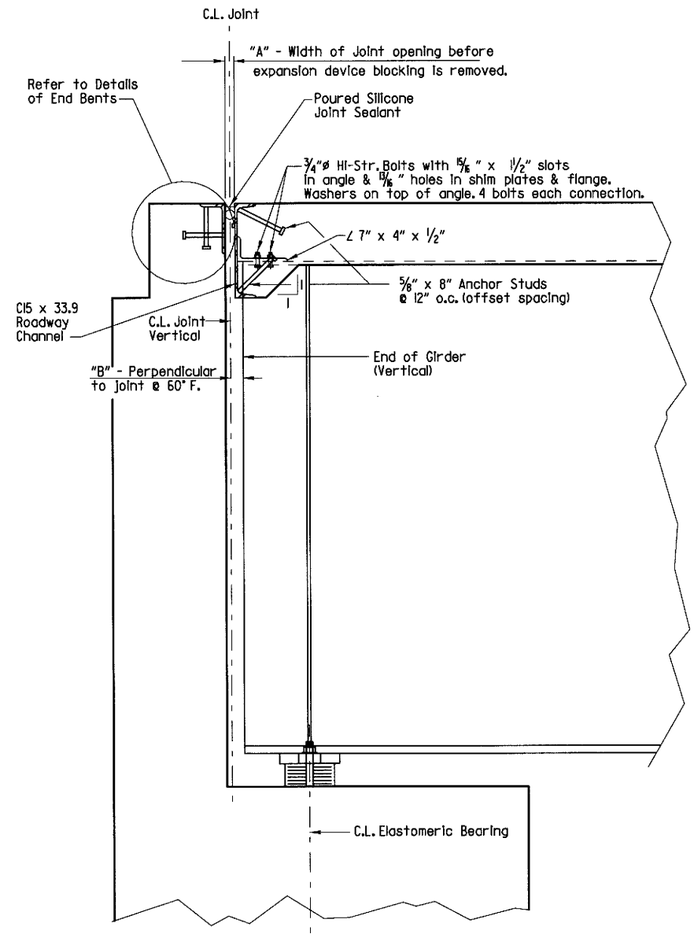
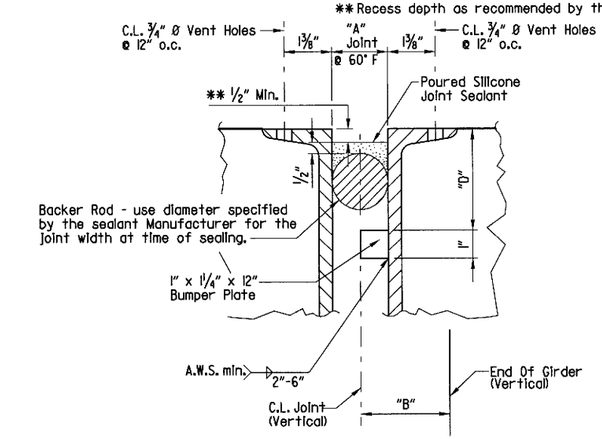
				JOB NO.		061190	122	190
				(1)	07418 - 324'-0" CONT. UNIT - 60037			



SECTION THRU JOINT AT END BENTS

Note: Detail expansion device ⅛" high and provide ¼" shims using 2-1/16" plates and 1-⅛" plate.



DETAIL OF POURED SILICONE JOINT

Note: Concrete shall be hand packed under the joint armor in the span and backwall.

SILICONE JOINT DATA

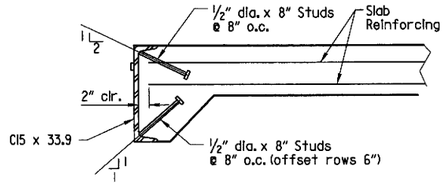
Bridge Location	Bent Nos.	"A" Joint Width Perpendicular To Joint 24 Hour Average Temperature* Of :			"B" Perpendicular To Joint @ 60°F	"D"
		40°F	60°F	80°F		
White Oak Crossing over I-40	1 & 3	2¾"	2½"	2¼"	2½"±	5"

*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.

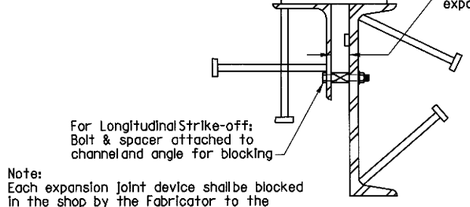
Use an appropriately size backer rod at the depth shown in the manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

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



DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

Note:
As an alternate to 5/8"ø studs, ½"ø x8" studs spaced as shown may be used. Use weight of 5/8"ø stud as basis of measurement of structural steel in anchors.



Note:
Each expansion joint device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F, and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2'-0" of each end of the device and with a maximum spacing of 8'-0".

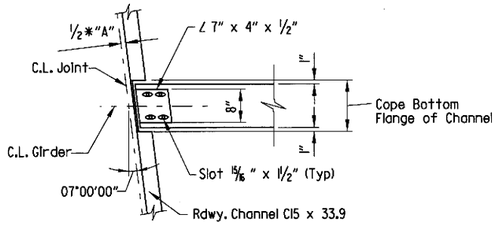
EXPANSION DEVICE INSTALLATION

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

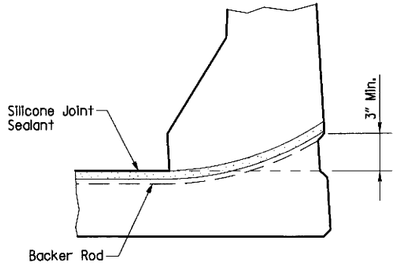
1. The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing 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. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE



TYPICAL CHANNEL CONNECTION DETAIL



JOINT SEAL PLACEMENT AT CURB

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 10 OF 10
DETAILS OF
324'-0" CONT. COMP. PLATE GIRDER UNIT
WHITE OAK CROSSING OVER I-40
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HSS/JPC DATE: 01/20/2017 FILENAME: B061190XLSX10.dgn
CHECKED BY: DYF DATE: 12/17
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BRIDGE NO. 07418 DRAWING NO. 60037

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REVISED DATE:

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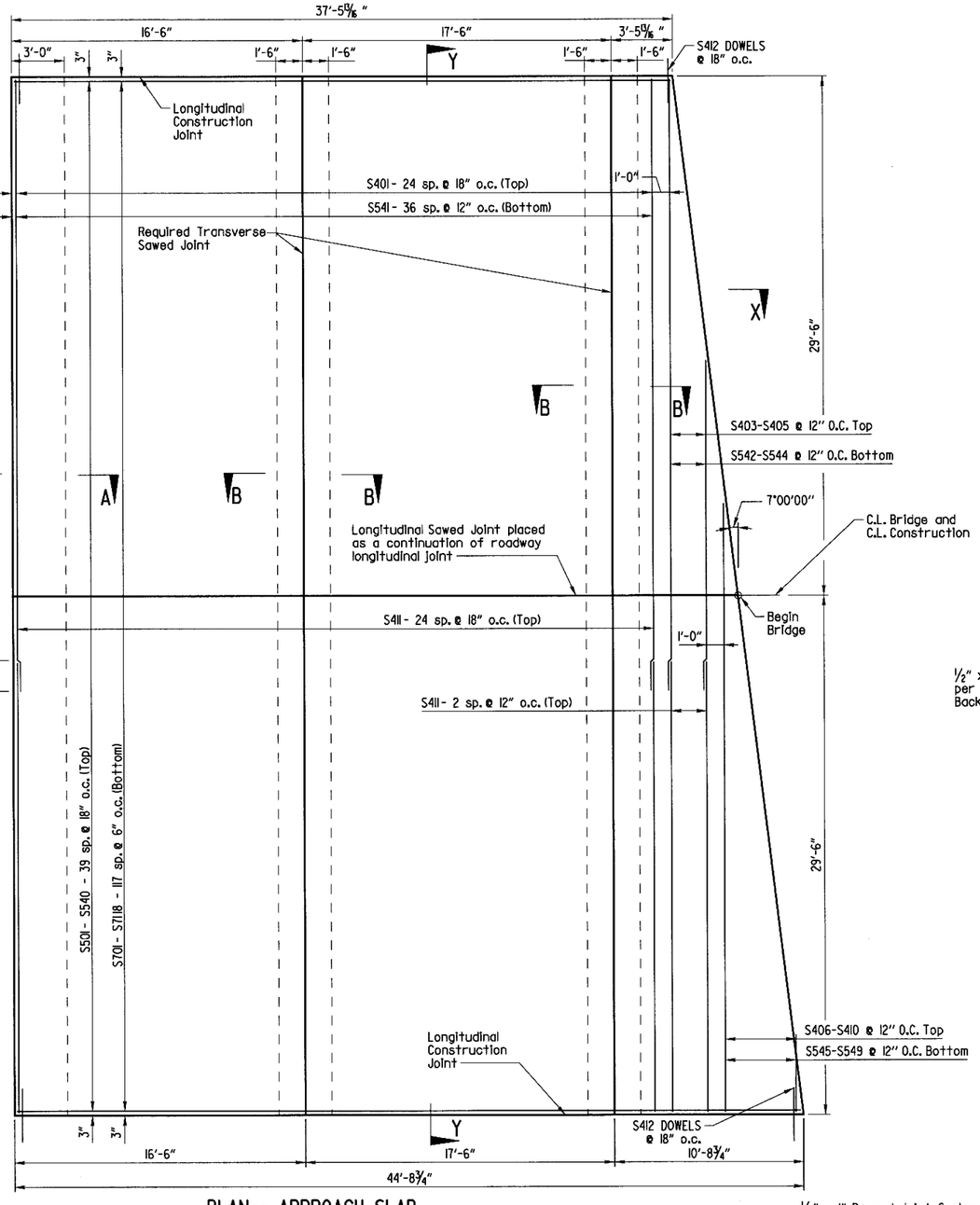
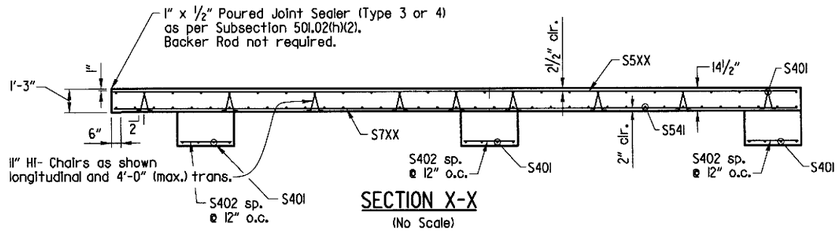
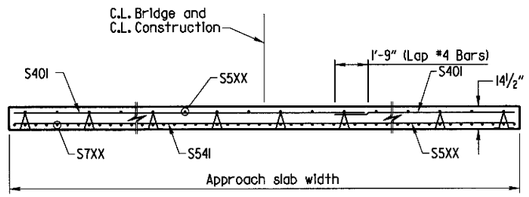
				JOB NO.		061190	123	190
				07418 - APPROACH SLAB - 60038				



PLAN - APPROACH SLAB
(No Scale)
(Shown for Begin Bridge - End Bridge similar)



SECTION X-X
(No Scale)



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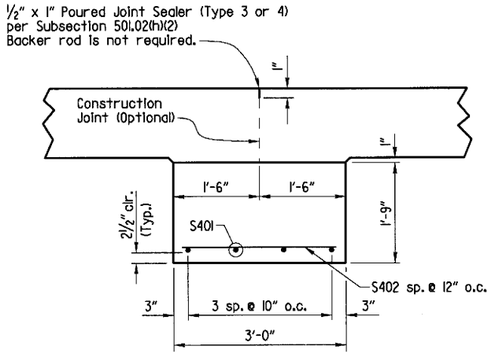

SECTION B-B
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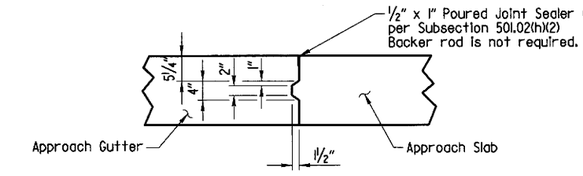
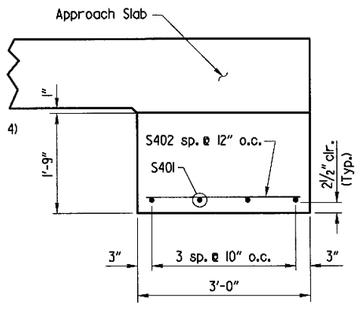


DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
(No Scale)



SECTION A-A
(No Scale)

BAR LIST FOR ONE TYPE SPECIAL I APPROACH SLAB

Mark	No. Req'd	Length	P.D.
S401	37	40'-0"	Str.
S402	180	2'-8"	Str.
S403 To S405	1 Each	24'-0" To 40'-0"	Str.
S406 To S410	1 Each	1'-11" To 34'-6"	Str.
S411	40	20'-5"	Str.
S412	57	3'-0"	Str.
S501 To S540	1 Each	37'-2" To 44'-3"	Str.
S541	37	58'-8"	Str.
S542 To S544	1 Each	42'-8" To 58'-8"	Str.
S545 To S549	1 Each	1'-11" To 34'-6"	Str.
S701 To S718	1 Each	37'-2" To 44'-3"	Str.

QUANTITIES FOR ONE TYPE SPECIAL I APPROACH SLAB

Length (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yds)
37'-5⅝"	16,128	144.59

GENERAL NOTES

Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcement Steel shall conform to AASHTO M31 or M322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Slabs to match that used on the bridge deck.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/29/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

DETAILS OF TYPE SPECIAL I APPROACH SLAB WHITE OAK CROSSING OVER I-40

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS DATE: 07/12/2017 FILENAME: B061190XLASL.dgn
CHECKED BY: SFH DATE: 09/05/2017
DESIGNED BY: HS DATE: 07/2017 SCALE: As Shown
BRIDGE NO. 07418 DRAWING NO. 60038

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REVISED DATE:

For R/W Data and Guard Rail Details, See Roadway Plans.

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	124	190
(1)	A3233 - LAYOUT - 60039			

Place 1'-6" Dumped Riprap on Filter Blanket. See Std. Dwg. 55001. Typical End Bents 1 & 4.

Top of Cut

C.L. Type B Concrete Ditch Paving See Roadway Plans

Toe of Fill Slope

Boring No. B12

Boring No. B12A

Boring No. B11A

Boring No. B11

Newton Creek

1V:3H

10'-0" (Typ.)

6'-0" Proposed Shld.

1'-5" Parapet

10'-0" New Construction

1V:2H

Longitudinal Construction Joint

2% Slope

C.L. Exist. Lanes.

818I+00

8182+00

S11°24'03"E

2'-0"

21'-5"

Exist. 56'-0" Clr. Rdwy

66'-10" out to out

64'-0" Clr. Rdwy

64'-0"

48'-0" Finished Crown

12'-0" Proposed Lane

12'-0" Exist. Lane

12'-0" Exist. Lane

12'-0" Exist. Lane

10'-0" Exist. Shld.

C.L. Proposed Bridge

Existing Riprap

1'-5" Parapet

270

0.91 mi. to I-430

Tangent Distance >500'

4.09 mi. to Hwy. 365

Tangent Distance >500'

PLAN

Note:
Remove Existing Approach Slab and Gutters and Replace with new Type Special 2 Approach Slab and Type Special I & 2 Approach Gutters ("w"=6'-0" for outside shoulders, "w"=10'-0" for inside shoulders) at both ends of the bridge. See Dwg. No. 60050 and Dwg. No. 60051.

TABLE OF VARIABLES

Bent No.	C.L. Exist. Rdwy to Low Side Top of Cap "A"	Low Side Top of Cap to Top of Shaft "B"	Shaft Length "C"
2	3'-10⅝"	14'-1⅛"	19'-0"
3	3'-10⅝"	14'-1⅛"	19'-0"

Elev. 266.0

T 1.25'

U 8.00'

V 16.00'

W 50.00'

[1] Top of Deck at C.L. Exist. Rdwy. to Low Concrete = 3'-2⅝"

Note: Top of Deck elevation is level grade Elev. 269.98 along C.L. Exist. Rdwy. (Elevations taken from Exist. Bridge Plans)

Boring No. B12
Sta. 8181+83
41' Left of Center
Line of Existing Lanes

Elev. 268.0

L 2.0'

M 11.0'

N 18.0'

O 23.0'

P 26.0'

Q 31.0'

R 42.0'

S 45.0'

Boring No. B11
Sta. 8180+88
25' Left of Center
Line of Existing Lanes

Elev. 268.0

AN 2.0'

AO 11.0'

AP 18.0'

AQ 23.0'

AR 26.0'

AS 38.0'

AT 50.0'

Boring No. B11A
Sta. 8180+82
29' Left of Center
Line of Existing Lanes

Begin Bridge Sta. 8181+04.33

Total Length of Bridge = 90'-0"

Three 30'-0" R.C. Deck Girder Spans

End Bridge Sta. 8181+94.33

"A"

"B"

"C"

C.L. Bent 2 Sta. 8181+34.33

C.L. Bent 3 Sta. 8181+64.33

Low Chord to Design H.W. 6.1'

New Concrete Parapet Railing on Left Side

Exp. Fix. Fix. Fix. Fix. Exp.

Historical H.W. Elev. 262.0

Q50 Design H.W. Elev. 260.7

15' Piles

Existing Ground along C.L. Existing Lanes

Elev. 252 (Typ.)

Elev. 246

54" Ø Permanent Casing (Typ.)

48" Ø Drilled Shaft (Typ.)

Elev. 233 (Typ.)

22' Piles

Elev. 244

Bent No. 1 Bent No. 2 Bent No. 3 Bent No. 4

280 270 260 250 240 230

8181+00 8182+00

Elev. 266.0

AU 2.0'

AV 8.0'

AW 16.0'

AX 41.0'

AY 50.0'

Boring No. B12A
Sta. 8181+92
48' Left of Center
Line of Existing Lanes

ELEVATION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 1 OF 3
LAYOUT OF BRIDGE OVER NEWTON CREEK (BR. A3233)
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS DATE: 12/27/2016 FILENAME: B061190A2_LXI.dgn
CHECKED BY: PK DATE: 07/12/2017
DESIGNED BY: SFH DATE: 12/27/2016 SCALE: 1" = 10'
BRIDGE NO. A3233 DRAWING NO. 60039

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MicroStation V8i (SELECTseries 3)
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REVISED DATE:

For R/W Data and Guard Rail Details, See Roadway Plans.

DATE	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.		061190	125	190
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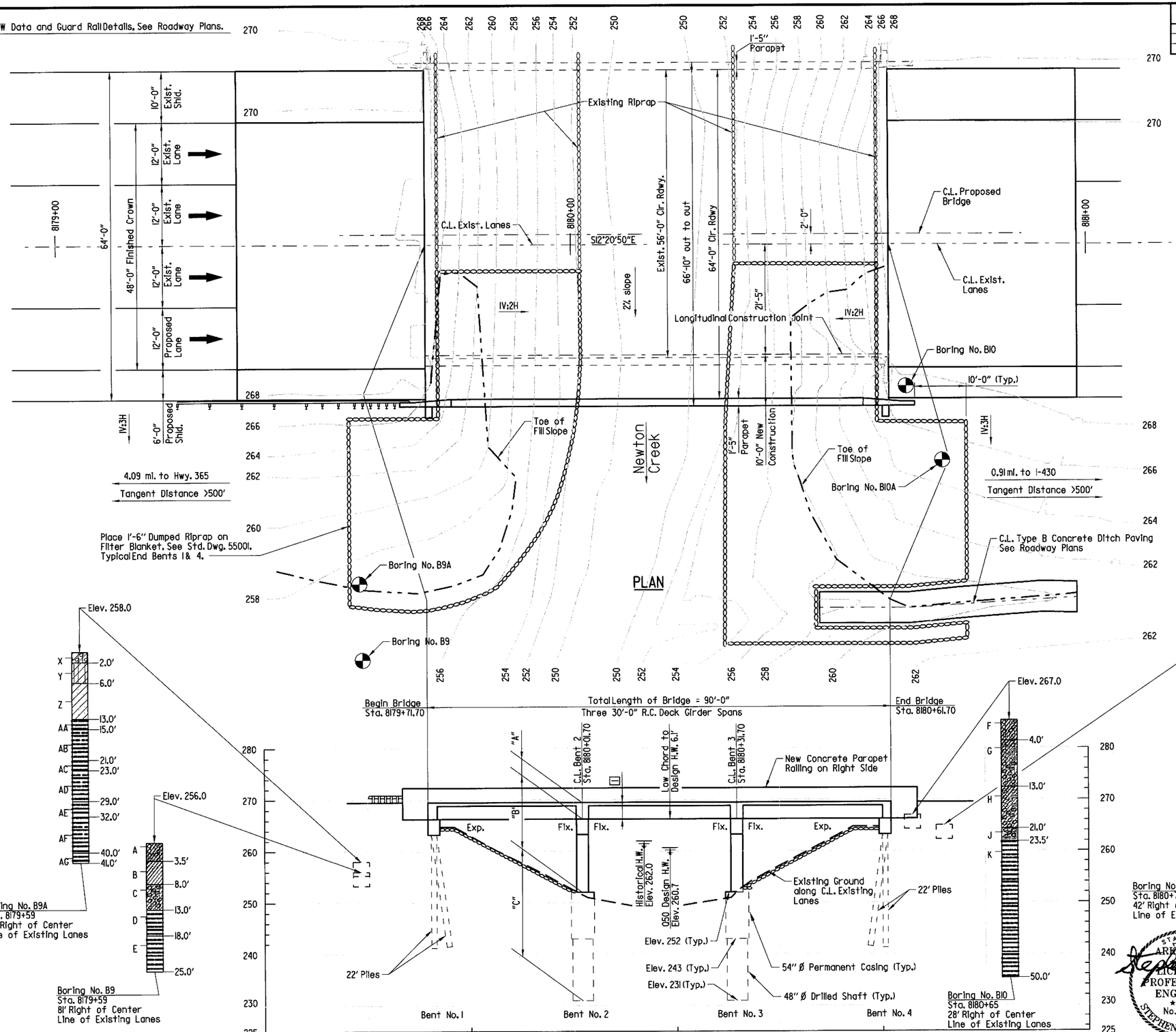

Note:
Remove Existing Approach Slab and Gutters and Replace with new Type Special 2 Approach Slab and Type Special 1 & 2 Approach Gutters ("w"=6'-0" for outside shoulders, "w"=10'-0" for inside shoulders) at both ends of the bridge. See Dwg. No. 60050 and Dwg. No. 60051.

TABLE OF VARIABLES

Bent No.	C.L. Exist. Rdwy to Low Side Top of Cap "A"	Low Side Top of Cap to Top of Shaft "B"	Shaft Length "C"
2	3'-10 5/8"	14'-1 1/8"	21'-0"
3	3'-10 5/8"	14'-1 1/8"	21'-0"

[1] Top of Deck at C.L. Exist. Rdwy. to Low Concrete = 3'-2 9/16"

Note: Top of Deck elevation is level grade Elev. 269.98 along C.L. Exist. Rdwy. (Elevations taken from Exist. bridge Plans)

SHEET 2 OF 3
LAYOUT OF BRIDGE OVER NEWTON CREEK (BR. B3233)
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

DRAWN BY: HS DATE: 12/27/2016 FILENAME: B06190B2_LX2.dgn
CHECKED BY: PK DATE: 07/12/2017
DESIGNED BY: SFH DATE: 12/27/2016 SCALE: 1" = 10'
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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	126	190
				(1) A3233 & B3233 - LAYOUT - 60041				

GENERAL NOTES

BENCH MARK: Vertical Control Data are shown on the Survey Control Data Sheets.

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

DESIGN SPECIFICATIONS: AASHTO Standard Specifications For Highway Bridges (17th Ed.)

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor

SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M 31 or M 322, Type A, Gr. 60)	fy = 60,000 psi
Structural Steel (AASHTO M 270, Gr. 50)	Fy = 50,000 psi
Structural Steel (AASHTO M 270, Gr. 36)	Fy = 36,000 psi

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

STEEL PILING: Piling in Bents 1 & 4 shall be HP 12x53 Gr. 50 and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons and into material designated as moderately hard to hard shale on the boring legend. Piles at Bents 1 & 4 shall be driven after embankment to bottom of cap is in place. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points.

DRILLED SHAFTS: Foundations for intermediate bents shall consist of Drilled Shafts. All Drilled Shafts shall be founded into moderately hard to hard shale and to the minimum rock penetrations and tip elevations shown in the plans. No adjustments in the Plan Tip Elevations shall be made without prior approval from the Engineer. Methods of construction of the drilled shafts shall be in accordance with SP Job No. 061190 "Drilled Shaft Foundations". Any casing used as a means for construction of the drilled shafts, such as to prevent caving, to exclude groundwater, or provide shoring shall not extend below top of rock. The Contractor must obtain approval from the Engineer for any deviation from this requirement.

CROSSHOLE SONIC LOGGING: Nondestructive testing shall be performed in accordance with SP Job No. 061190 "Nondestructive Testing of Drilled Shafts".

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway face and top of both concrete parapet rails. Class I Protective Surface Treatment shall meet the requirements of Section 803.

DETAIL DRAWINGS	DRAWING NOS.
End Bents	60043
Intermediate Bents	60044-60045
30'-0" R.C. Deck Girder Spans	60046-60049
Type Special 2 Approach Slab	60050
Standard General Notes	55006
Steel Piling	55020
Type Special 1 & 2 Approach Gutters	60051

EXISTING BRIDGES: Existing Bridges Nos. A3233 and B3233 (log 146.66) are 58.8' wide and 90' long and consist of 3 - 30' R.C. Deck Girder Spans supported on multi-column concrete bents on spread footings. Plans of the existing structures may be obtained from the Construction Contract Procurement Section of the Program Management Division.

THE PROPOSED WORK CONSISTS OF: Partial removal and widening of the existing bridge superstructure and bents. The partial removal and modification of the existing bridge superstructure and bents, shall be paid for under the item "Modification of Existing Bridge Structure (Br. No. _____)".

VERIFICATION: Except as noted, components of the existing bridge are to be retained and joined to the proposed work. Information and dimensions shown are based on existing bridge plans. The Contractor is to adhere strictly to the requirements for verification of the geometry of the existing bridge and its relationship to the proposed work described in Subsection 821.02 and make necessary adjustments to fit the proposed work to the existing structure. Payment for this work shall be considered subsidiary to the pay item "Modification of Existing Bridge Structure (Br. No. _____)".

REMOVAL AND SALVAGE: All material removed from the existing bridge under Item 821 shall be disposed of according to Section 205. All material removed from the existing bridge shall become the property of the Contractor except for the approach guardrail which shall remain the property of the State.

"N" VALUES

Boring No. B9
Sta. 8179+59 - 81' Right of Center Line of Construction

0.5 -	1.5	N=13	13.5 -		N=50/0"
2.5 -	3.5	N=7	18.5 -		N=50/0"
4.5 -	5.5	N=4	24.5 -		N=30/0"
6.5 -	7.5	N=7			
9.0 -	10.0	N=22			

Boring No. B9A
Sta. 8179+59 - 66' Right of Center Line of Construction

4.0 -	5.0	N=7
9.0 -	10.0	N=6
14.0 -	14.0	N=25/0"

Boring No. B10
Sta. 8180+65 - 28' Right of Center Line of Construction

0.5 -	1.5	N=18	13.5 -	14.0	N=50/6"
2.5 -	3.5	N=14	18.5 -		N=50/0"
4.5 -	5.5	N=13	23.5 -		N=50/0"
6.5 -	7.5	N=24	38.5 -		N=50/0"
9.0 -	10.0	N=20	49.5 -		N=50/0"

Boring No. B10A
Sta. 8180+72 - 42' Right of Center Line of Construction

4.5 -	5.5	N=7
9.0 -	10.0	N=23
14.0 -	15.0	N=24
16.2 -	17.0	N=50/9"

Boring No. B11
Sta. 8180+88 - 25' Left of Center Line of Construction

0.5 -	1.5	N=14	14.0 -	15.0	N=10
2.5 -	3.5	N=17	19.0 -	20.0	N=16
4.5 -	5.5	N=10	24.0 -	24.3	N=50/4"
7.0 -	8.0	N=7	28.5 -		N=50/0"
9.0 -	10.0	N=10			

Boring No. B11A
Sta. 8180+82 - 29' Left of Center Line of Construction

0.5 -	1.5	N=30	24.6 -	25.0	N=50/5"
4.5 -	5.5	N=21			
9.0 -	10.0	N=18			
14.0 -	15.0	N=14			
19.0 -	20.0	N=42			

Boring No. B12
Sta. 8181+83 - 41' Left of Center Line of Construction

2.5 -	3.5	N=42	18.5 -	18.6	N=50/1"
4.5 -	5.5	N=32	38.5 -	39.0	N=50/0"
6.5 -	7.5	N=33	43.5 -		N=50/0"
8.5 -	9.0	N=50/6"	49.5 -		N=50/0"

Boring No. B12A
Sta. 8181+92 - 48' Left of Center Line of Construction

4.0 -	5.0	N=20
8.5 -	9.0	N=50/6"

BORING LEGEND

A- Stiff tan with gray silty clay w/numerous shale fragments (fill), firm below 2 ft
B- Soft tan and gray fine sandy clay, silty, wet, firm below 6 ft
C- Medium dense brownish gray and tan clayey fine to coarse gravel, sandy
D- Moderately hard to hard dark gray with a little tan slightly weathered shale
E- Moderately hard to hard dark gray shale
F- Stiff tan, brown and gray silty clay w/shale fragments, stiff below 3 ft
G- Stiff tan silty clay, sandy w/some sandstone fragments, stiff reddish tan and gray below 6 ft, with ferrous stains below 9 ft
H- Dense to very dense reddish brown and brown clayey fine to coarse gravel, sandy, with cobbles below 16.5 ft
J- Dense to very dense reddish tan sandy fine to coarse gravel
K- Moderately hard to hard dark gray shale, carbonaceous, +/-10° dip, very close healed fractures at 26.2 - 26.5 ft, low angle shear at 26.4 ft, harder, slightly arenaceous at 27 - 27.5 ft
L- Stiff brown silty clay and crushed sandstone fragments (fill)
M- Stiff brown and tan silty clay and shale fragments (fill), reddish tan, brown and tan with sandstone fragments below 4 ft, firm below 6 ft
N- Firm tan silty clay, w/soft pockets, wet
O- Stiff tan and gray silty clay w/ferrous nodules and stains
P- Moderately hard brownish gray and dark gray weathered shale w/ferrous stains
Q- Moderately hard dark gray shale, with very close sandstone partings below 30.5 ft
R- Moderately hard dark gray mudstone w/very close fine-grained sandstone seams, flat bedded, with shale inclusions and healed fractures at 35 - 35.2 ft, with quartz inclusions below 35 ft, high angle shear with healed fractures at 40.9 ft
S- Moderately dark gray siltstone w/fine-grained sandstone inclusions
T- Fill For Access
U- Very stiff tan silty clay, with some gray below 6 ft
V- Dense to very dense reddish tan and red sandy fine to coarse gravel, with cobbles below 12 ft
W- Moderately hard dark gray shale, slightly arenaceous, +/-10° dip, with quartz inclusions below 24 ft, with sandstone inclusions below 25.2 ft
X- Soft brown silty clay w/ some crushed concrete debris (fill)
Y- Firm brown silty clay
Z- Soft brown and tan fine sandy clay, with some fine gravel at 11 - 13 ft
AA- Low hardness to moderately hard dark gray and tan weathered shale w/ occasional sandstone seams
AB- Moderately hard dark gray with brown weathered shale w/ ferrous stains and close fractures, arenaceous zone from 17.2 0 17.6 ft, arenaceous shale below 19.7 ft
AC- Hard dark gray fine-grained greywake sandstone , fractured w/ pyrite inclusions, with gray sandstone inclusions at 22.8 ft
AD- Hard dark gray arenaceous shale, slightly micaceous, highly weathered shale from 24 26 ft; no recovery
AE- Moderately hard dark gray highly weathered clayey shale, 30 - 31 ft no recovery
AF- Moderately hard dark gray shale, with very close very thin sandstone partings below 32 ft, arenaceous shale seam at 32.5 ft
AG- Moderately hard to hard dark gray shale, dip = 35°
AH- Brown clayey silt w/ sandstone fragments (fill)
AI- Firm tan silty clay, sandy, with ferrous concrections below 4.5 ft
AJ- Stiff tan and gray silty clay w/ ferrous stains
AK- Dense to very dense reddish tan sandy fine to coarse gravel, auger refusal at 16 ft
AL- Moderately hard dark gray slightly weathered shale
AM- Moderately hard to hard dark gray shale, high angle shear at 29 ft, 2 in sandstone layer at 33.5 ft, with close sandstone partings and seam below 34 ft, core barrel plugged at 38.5 ft, no recovery at 38.5 - 43.5 ft
AN- Stiff brown silty clay and crushed sandstone fragments (fill)
AO- Stiff brown and tan silty clay and shale fragments (fill), reddish tan, brown and tan with sandstone fragments below 4 ft
AP- Stiff tan silty clay, w/ soft pockets, wet
AQ- Stiff to very stiff tan and gray silty clay w/ ferrous nodules and stains
AR- Moderately hard brownish gray and dark gray weathered shale w/ ferrous stains
AS- Moderately hard dark gray shale, apparent dip ∠ 30°, slightly arenaceous below 31.5 ft, low hardness layer at 33.8 - 35 ft, low hardness layer at 33.8 - 35 ft
AT- Moderately hard to hard dark gray shale, slightly arenaceous, with close sandstone partings and inclusions below 40.5 ft
AU- Firm brown clayey silt w/ sandstone fragments (fill)
AV- Stiff tan silty clay w/ construction debris and crushed rock fragments (fill)
AW- Dense to very dense tan and reddish tan sandy fine to coarse gravel, with cobbles below 10.5 ft
AX- Moderately hard dark gray slightly weathered shale, with very close sandstone inclusions and seams below 25 ft, low angle shear at 25.5 ft, with quartz inclusions below 26 ft, carbonaceous shale interval at 37.2 - 37.8 ft, high angle shear at 39.5 - 40 ft
AY- Hard dark gray shale, thickly bedded, apparent dip ∠ 35°

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	2360	259.27	260.65
Base	100	2720	260.36	261.56
Extreme	500	3650	264.04	264.72
Overtopping	>500	>500	>500	>500

(1) Unconstricted water surface without structure or roadway approaches.

Q100 backwater elevation for existing structure = 261.56 feet.
Proposed Low Bridge Chord Elevation = 266.77 feet.

Drainage area = 5.75 square miles.

Historical H.W. Elev. = 262.0 Feet (from 1995 Construction plans)

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 3 OF 3
LAYOUT OF BRIDGE OVER NEWTON CREEK (BR. A3233 & B3233)
I-40 INTERCHANGE (MAUMELLE) (S)
PULASKI COUNTY
ROUTE 40 SECTION 33
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS DATE: 07/05/2017 FILENAME: B061190X2_LX3.dgn
CHECKED BY: PK DATE: 07/12/2017
DESIGNED BY: SFH DATE: 07/05/2017 SCALE: No Scale
BRIDGE NO. A3233 & B3233 DRAWING NO. 60041

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WORKSPACE: AHTD_Bridge
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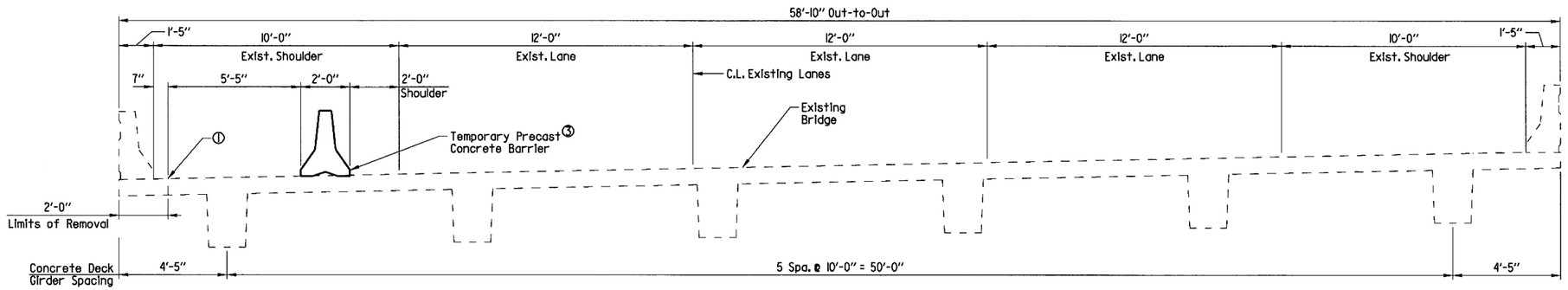
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

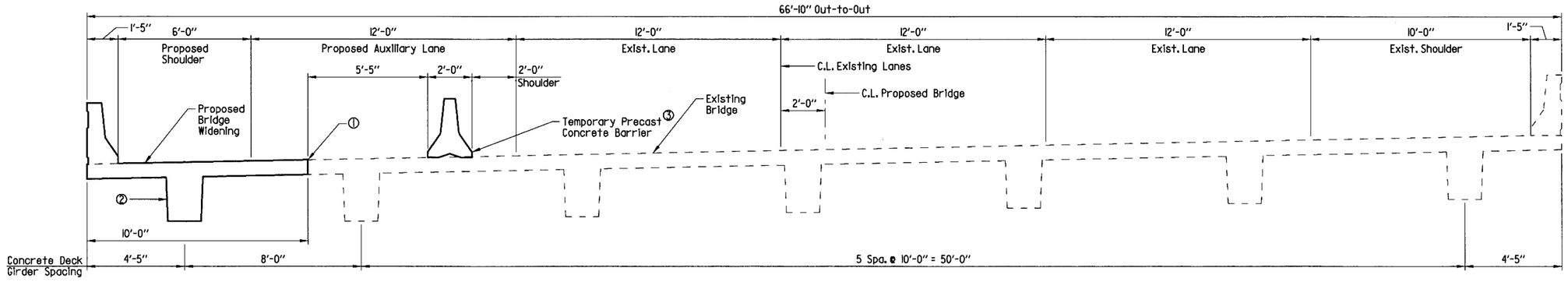
FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	127	190

(1) A3233 & B3233 - TYPICAL SECTION - 60042



TYPICAL SECTION - EXISTING

(Looking Ahead at Br. No. A3233)
(Looking Back at Br. No. B3233)



TYPICAL SECTION - PROPOSED

(Looking Ahead at Br. No. A3233)
(Looking Back at Br. No. B3233)

① Location of longitudinal construction joint and saw cut line. Carefully remove existing deck concrete and parapet as shown. Clean and preserve all existing transverse deck reinforcement and incorporate into new work.

② Low chord elevation and depth of new beam line will be set so as not to further constrict the hydraulic opening.

③ For details of temporary barrier, see Std. Dwg. TC-4. Do not connect the temporary barrier to the existing deck.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

7/23/18

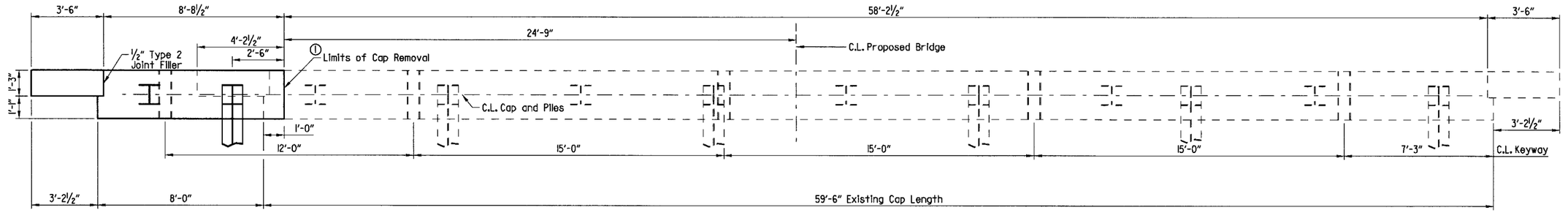
BRIDGE ENGINEER
PRINT DATE: 7/23/2018

TYPICAL SECTION
I-40 OVER NEWTON CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

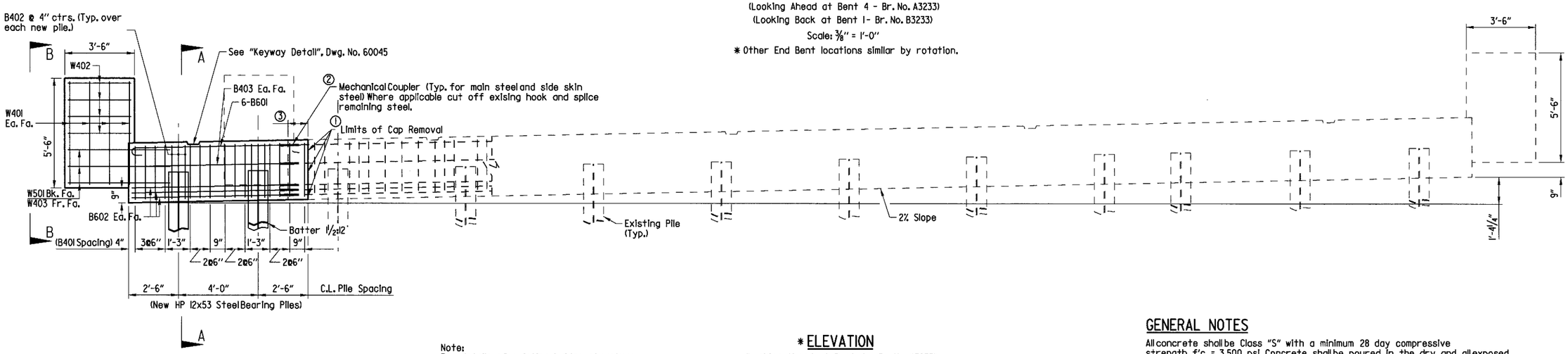
DRAWN BY:	HSS	DATE:	07/05/2017	FILENAME: B061190X2_SXI.dgn
CHECKED BY:	PK	DATE:	07/12/2017	
DESIGNED BY:	SFH	DATE:	07/05/2017	SCALE: 3/8" = 1'-0"
BRIDGE NO.	A3233 & B3233			DRAWING NO. 60042

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	128	190
				(1)	A3233 & B3233 - END BENT - 60043			



* PLAN

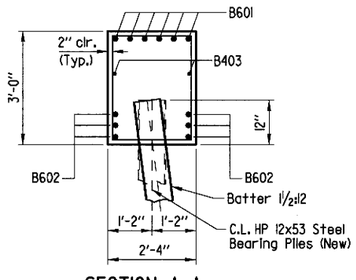
(Looking Ahead at Bent 4 - Br. No. A3233)
(Looking Back at Bent 1- Br. No. B3233)
Scale: ⅜" = 1'-0"
* Other End Bent locations similar by rotation.



Note:
For details of existing bridge structure, See Reference Dwg. No. 37082

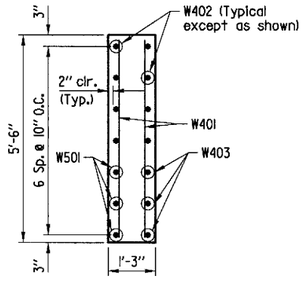
* ELEVATION

(Looking Ahead at Bent 4 - Br. No. A3233)
(Looking Back at Bent 1- Br. No. B3233)
Scale: ⅜" = 1'-0"



SECTION A-A

Scale: ½" = 1'-0"



SECTION B-B

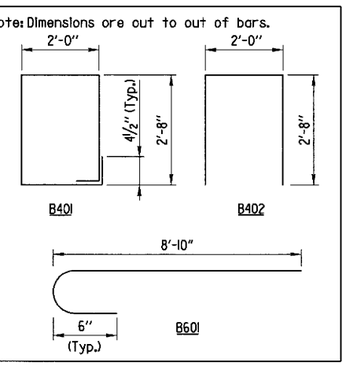
Scale: ½" = 1'-0"

BAR LIST - PER BENT

Mark	No. Req'd	Length	P.D.
B401	14	9'-8"	2"
B402	6	7'-2"	2"
B403	2	8'-10"	Str.
B601	6	9'-6"	4½"
B602	6	8'-10"	Str.
W401	8	5'-2"	Str.
W402	8	3'-2"	Str.
W403	3	4'-9"	Str.
W501	3	5'-2"	Str.

BENDING DIAGRAMS

Note: Dimensions are out to out of bars.



GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength, f'c = 3,500 psi. Concrete shall be poured in the dry and all exposed corners to be chamfered ¾" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M322, Type A with Mill Test Reports, Grade 60 (yield strength = 60,000 psi.).

Top reinforcing bars shall be properly placed to avoid interference with dowel bars.

For additional information, see Layout.

① At location of cap construction joint and saw cut line, carefully remove existing cap concrete as shown. Clean and preserve all existing longitudinal cap reinforcement and incorporate into new work. Any damaged reinforcing steel shall be replaced by dowel bars drilled and grouted into place using a OPL approved non-shrink grout or a resin anchoring system at the Contractor's expense.

② The mechanical rebar splices shall be an approved type in accordance with the ARDOT Qualified Products List (QPL) and shall maintain clearances shown.

The cost of mechanical rebar splices shall not be measured for separate payment but shall be considered subsidiary to the item "Reinforcing Steel- Bridge (Grade 60)". Mechanical splices shall develop at least 125% of the specified yield strength of the reinforcing steel.

③ Remove and replace existing shear stirrups within cap removal area.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

DETAILS OF BENTS 1 & 4
I-40 OVER NEWTON CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 08/17 FILENAME: B061190X2 Al.dgn
CHECKED BY: SFH DATE: 12/17
DESIGNED BY: MKL DATE: 08/17 SCALE: As Shown
BRIDGE NO. A3233 & B3233 DRAWING NO. 60043

Leonard,Speed 8/20/2018 2:20:37 PM
WORKSPACE: ARTD
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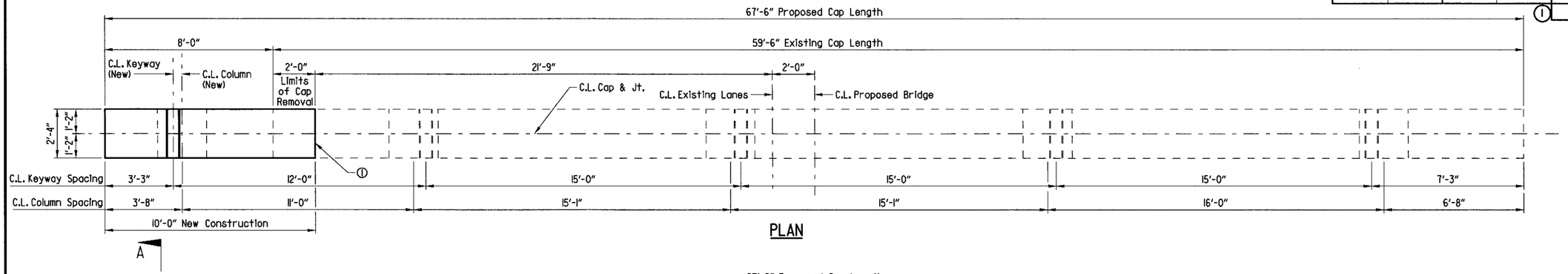
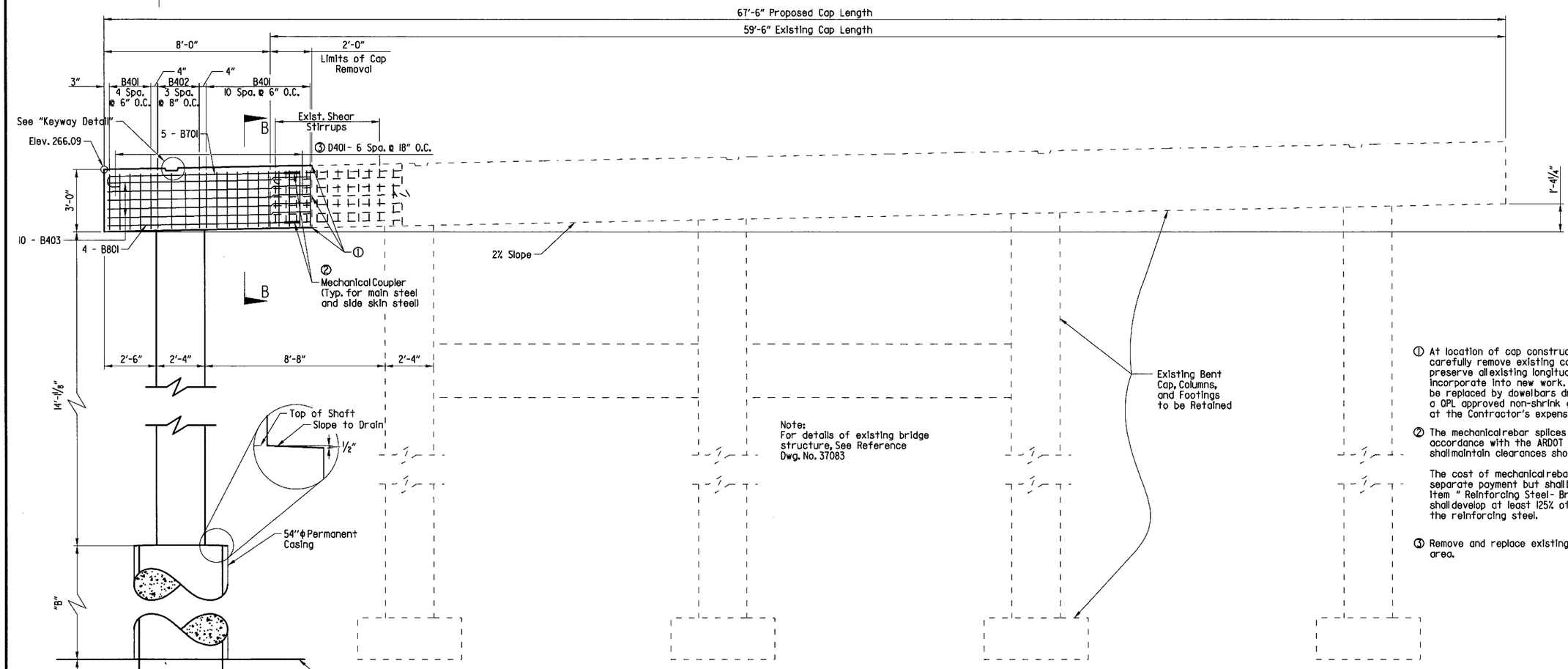
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	129	190
(1)	A3233 & B3233 - INT. BENT - 60044			



PLAN



ELEVATION
(Looking Ahead at Br. No. A3233)
(Looking Back at Br. No. B3233)

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 1 OF 2

DETAILS OF INTERMEDIATE BENTS 2 & 3 I-40 OVER NEWTON CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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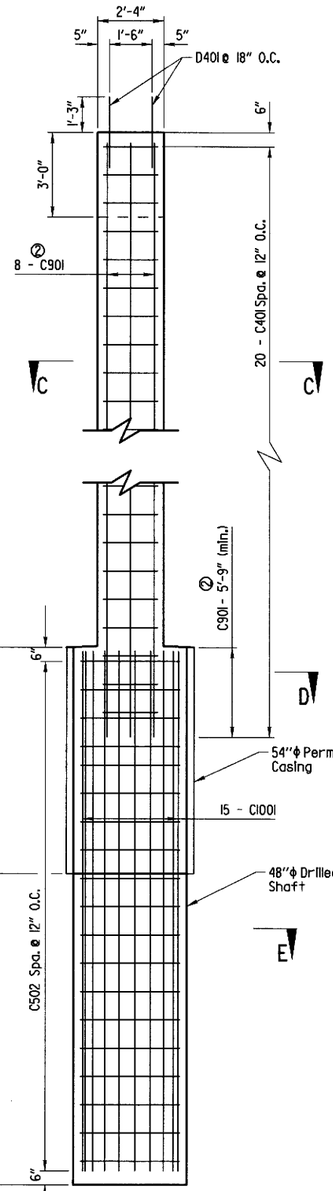
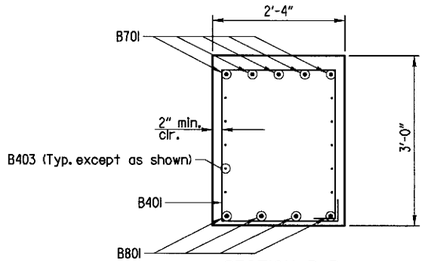
CHECKED BY:	SFH	DATE:	12/17		
DESIGNED BY:	MKL	DATE:	08/17	SCALE:	3/8" = 1'-0"
BRIDGE NO.	A3233 & B3233			DRAWING NO.	60044

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	130	190
				(1)	A3233 & B3233 - INT. BENT - 60045			



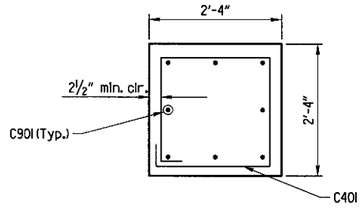
SECTION A-A

3/8" = 1'-0"



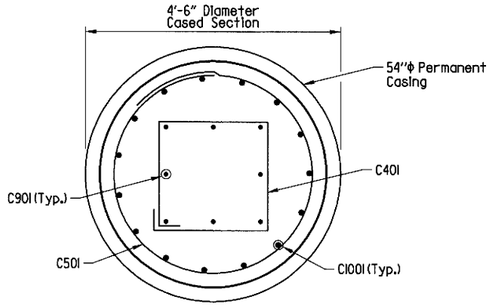
SECTION B-B

3/4" = 1'-0"



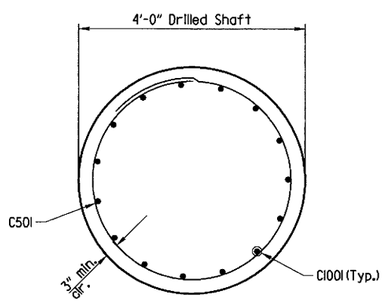
SECTION C-C

3/4" = 1'-0"



SECTION D-D

3/4" = 1'-0"



SECTION E-E

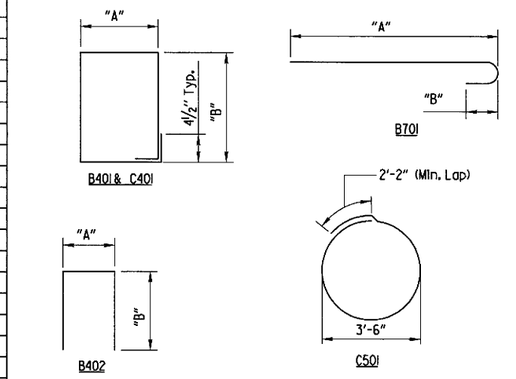
3/4" = 1'-0"

BAR LIST - PER BENT

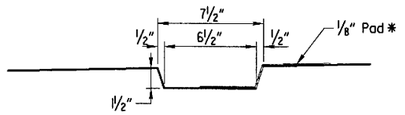
	MARK	NO. REQ'D.	LENGTH	"A"	"B"	P.D.
	B401	16	9'-8"	2'-0"	2'-8"	2"
	B402	4	7'-2"	2'-0"	2'-8"	2"
	B403	10	9'-9"			Str.
	B701	5	10'-7"	9'-9"	7"	5¼"
	B801	4	9'-9"			Str.
	C401	20	8'-0"	1'-11"	1'-11"	2"
④	C501	"C"	13'-0"			
	C901	8	19'-7"			Str.
④	C1001	15	"D"			Str.
	D401	14	2'-6"			Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.



④ Non-Pay Item - Subsidiary to Pay Item "Drilled Shaft (48" Dia.)



KEYWAY DETAIL

No Scale

*⅛" Elastomeric Pad or ⅛" Nylon Reinforced Neoprene Pad to be in full contact with Bent Cap surfaces when placing superstructure concrete.

GENERAL NOTES

Concrete in the cap and column shall be Class S with a minimum 28 day compressive strength, f'c = 3,500 psi., and shall be poured in the dry. Concrete in the drill shaft shall be Class S as modified by SP Job No. 061190 "Drilled Shaft Foundations". All exposed corners to be chamfered ¾" unless otherwise noted.

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

Top reinforcing bars shall be properly placed to avoid interference with dowel bars.

Mechanical rebar splices shall be listed on the approved QPL.

For additional information, see Layout.

Drilled shafts shall conform to SP Job No. 061190 "Drilled Shaft Foundations".

① Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job No. 061190 "Drilled Shaft Foundations". Permanent casing shall not be extend below top of competent rock without approval from the Engineer.

② The column reinforcing cage, consisting of bars C401 and C901, may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top ten feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.

③ Minimum penetration into competent rock below permanent casing.

TABLE OF VARIABLES

Bridge	Bent	"A"	"B"	"C"	"D"
A3233	2	11'-0"	8'-0"	19	18'-8"
	3	13'-0"	6'-0"	19	18'-8"
B3233	2	12'-0"	9'-0"	21	20'-8"
	3	12'-0"	9'-0"	21	20'-8"

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER

PRINT DATE: 8/20/2018

SHEET 2 OF 2
DETAILS OF INTERMEDIATE BENTS 2 & 3
I-40 OVER NEWTON CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 08/17 FILENAME: R061190X2_BX2.dgn
CHECKED BY: SFH DATE: 12/17
DESIGNED BY: MKL DATE: 08/17 SCALE: As Noted
BRIDGE NO. A3233 & B3233 DRAWING NO. 60045

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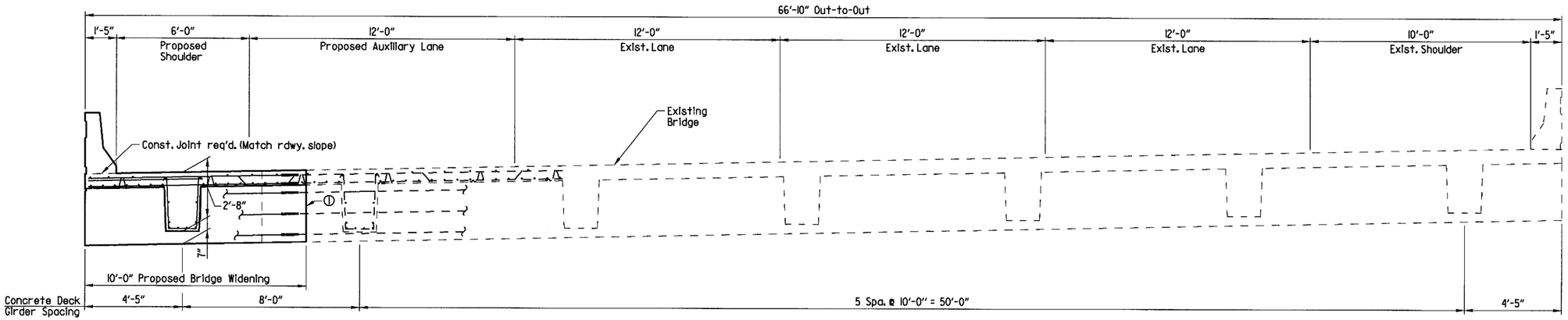
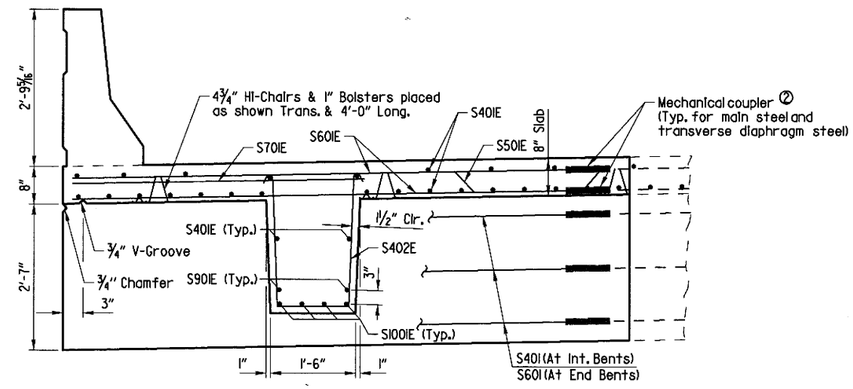
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	131	190
				(1)	A3233 & B3233 - SPAN DETAILS - 60046			



TYPICAL SECTION - PROPOSED

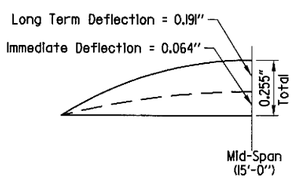
(Looking Ahead at Br. No. A3233)
(Looking Back at Br. No. B3233)
Scale: 3/8" = 1'-0"



TYPICAL SECTION - PROPOSED

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

Note:
See "REINFORCING PLAN" on Dwg. No. 60047
for additional diaphragm reinforcing details.



CAMBER DIAGRAM

No Scale

GENERAL NOTES

All concrete to be Class S(AE). All exposed corners to be chamfered 3/4" unless otherwise noted.

The concrete in the girders, end diaphragms, and deck shall be placed in one continuous pour for the interior span. The concrete in the girders, end diaphragms, deck, and wings shall be placed in one continuous pour for the end spans.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi.) conforming to AASHTO M31 or M322, Type A, with mill test reports.

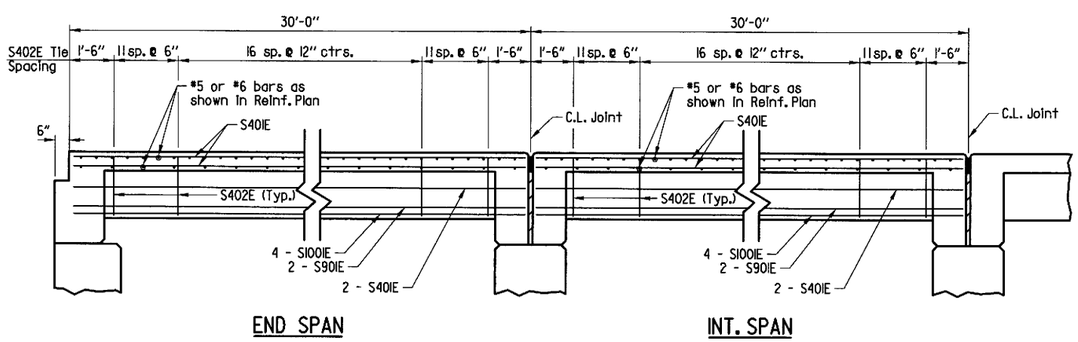
Elastomeric pad, Type 2 joint filler, Type 3 or 4 Joint Sealer, and structural steel shall be measured and paid for as Class S(AE) Concrete. Elastomeric material shall meet the requirements of Section 808.02 of the Standard Specifications and shall be in one piece for the full width and length of the bearing.

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

Design Specifications: AASHTO Standard Specifications for Highway Bridges, (17th Ed.)

Design Live Loading: HS20 — Method of Design: Load Factor

Materials and Strengths:
Class S(AE) Concrete — f'c = 4,000 psi.
Reinforcing Steel Grade 60 — Fy = 60,000 psi.



END SPAN — INT. SPAN

LONGITUDINAL SECTION ALONG C.L. BRIDGE

No Scale

① Location of longitudinal construction joint and saw cut line. Carefully remove existing deck concrete and parapet as shown. Clean and preserve all existing transverse deck reinforcement and incorporate into new work.

② The mechanical rebar splices shall be an approved type in accordance with the ARDOT Qualified Products List (QPL) and shall maintain clearances shown.

The cost of mechanical rebar splices shall not be measured for separate payment but shall be considered subsidiary to the item "Reinforcing Steel-Bridge (Grade 60)". Mechanical splices shall develop at least 125% of the specified yield strength of the reinforcing steel.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

7/23/18

BRIDGE ENGINEER
PRINT DATE: 7/23/2018

SHEET 1 OF 4
DETAILS OF DECK GIRDER SPANS
I-40 OVER NEWTON CREEK
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HSS/MKL DATE: 10/03/2017 FILENAME: B061190X2 SX2.dgn
CHECKED BY: SFH DATE: 12/17
DESIGNED BY: HSS DATE: 07/05/2017 SCALE: As Shown
BRIDGE NO. A3233 & B3233 DRAWING NO. 60046

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WORKSPACE: AHTD
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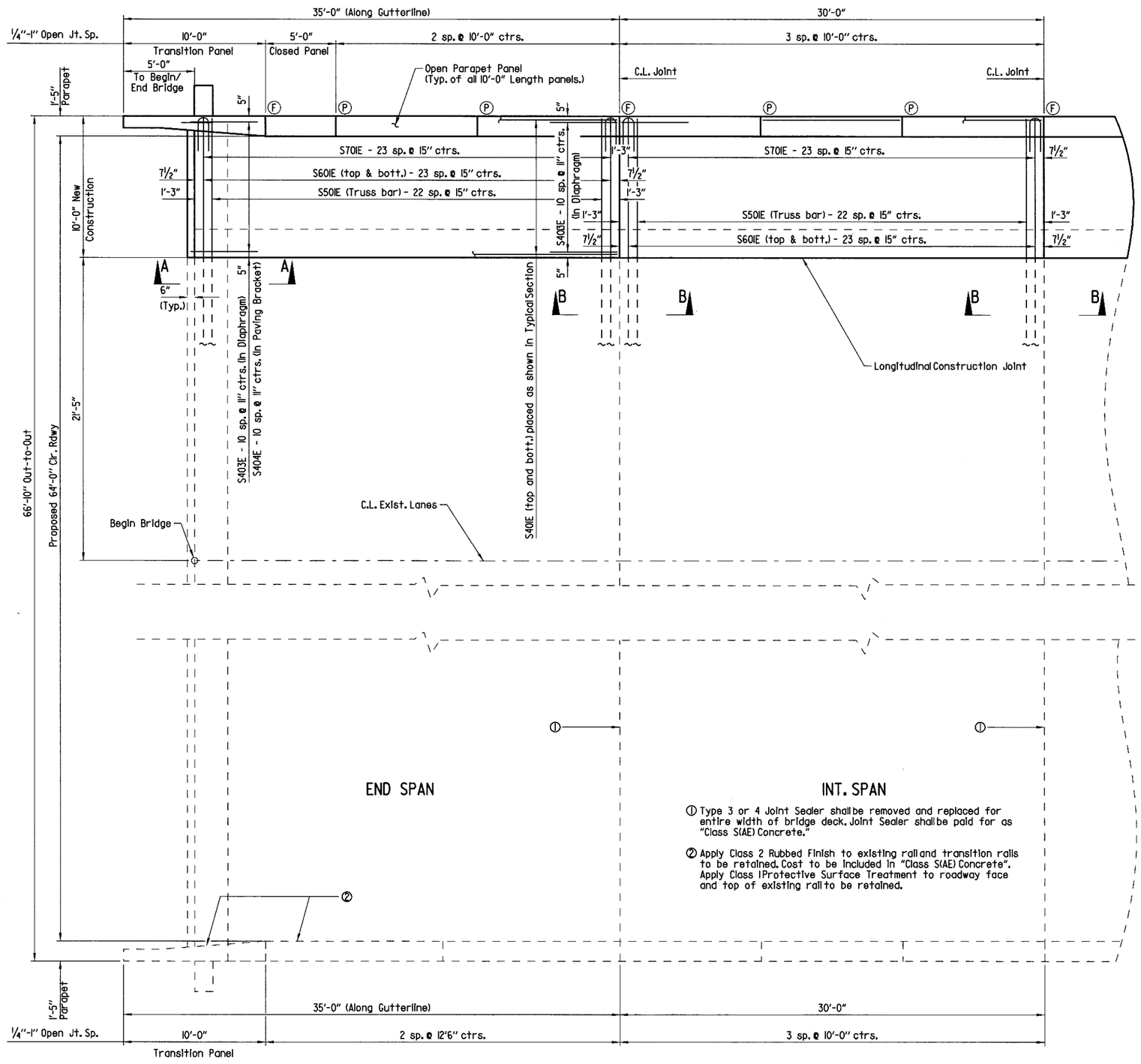
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	132	190
				(1)	A3233 & B3233 - SPAN DETAILS - 60047			



REINFORCING PLAN

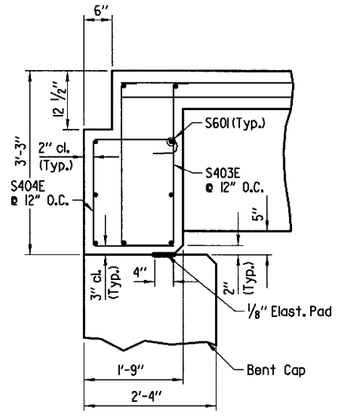
Scale: 1/4" = 1'-0"

(P) Partial depth parapet joint at this location. (Stop 1'-2" above top of slab)

(F) Full depth parapet joint at this location. (Stop 4" above top of slab)

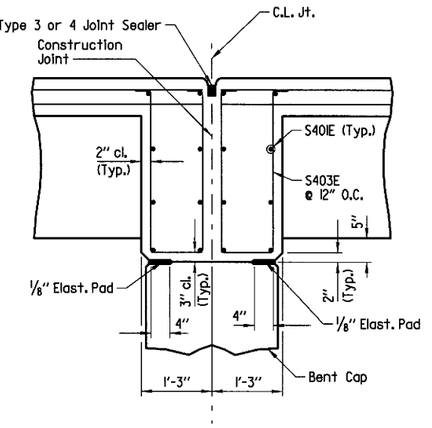
① Type 3 or 4 Joint Sealer shall be removed and replaced for entire width of bridge deck. Joint Sealer shall be paid for as "Class S(AE) Concrete."

② Apply Class 2 Rubbed Finish to existing rail and transition rails to be retained. Cost to be included in "Class S(AE) Concrete". Apply Class I Protective Surface Treatment to roadway face and top of existing rail to be retained.



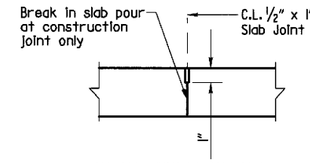
SECTION A-A

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



SECTION B-B

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



SLAB JOINT DETAIL

No Scale

Use Type 3 or 4 Joint Sealer. See Subsections 501.02 (h) and 501.05 (j). Backer rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

7/23/18

BRIDGE ENGINEER

PRINT DATE: 7/23/2018

SHEET 2 OF 4

DETAILS OF DECK GIRDER SPANS

I-40 OVER NEWTON CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	HS/MKL	DATE:	10/03/2017	FILENAME:	B061190X2_SX3.dgn
CHECKED BY:	SFH	DATE:	12/17		
DESIGNED BY:	HSS	DATE:	12/27/2016	SCALE:	As Shown
BRIDGE NO.	A3233 & B3233			DRAWING NO.	60047

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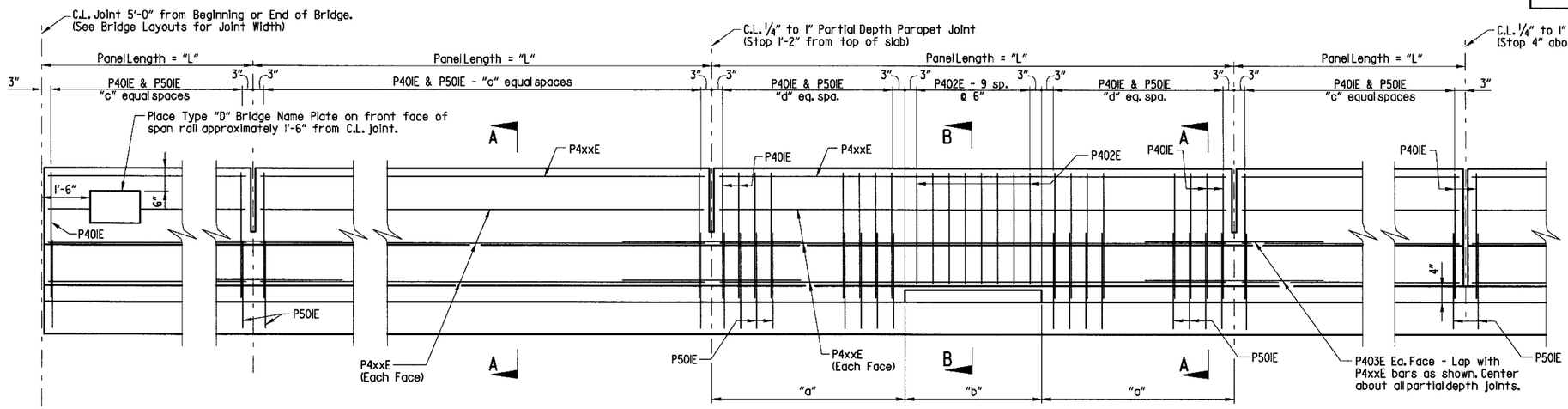
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	133	190

(1) A3233 & B3233 - SPAN DETAILS - 60048



TYPICAL END PANEL

TYPICAL CLOSED PANEL PARAPET RAIL

TYPICAL OPEN PANEL PARAPET RAIL

TYPICAL FULL DEPTH JOINT

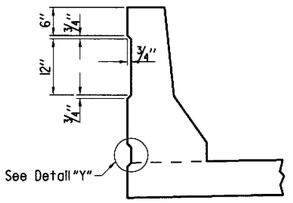
ELEVATION - CONCRETE PARAPET RAIL

(As viewed from roadway side of Parapet)

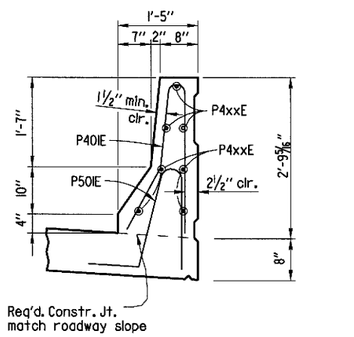
PARAPET RAIL VARIABLES

Panel Length "L"	Panel Type	"a"	"b"	"c"	"d"	P4xxE Bars
5'-0"	closed	-----	-----	9	-----	P404E
10'-0"	open	2'-6"	5'-0"	-----	4	P405E

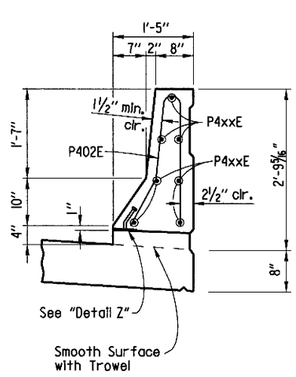
Note:
For location of full and partial depth parapet joints, see Dwg. No. 60047.



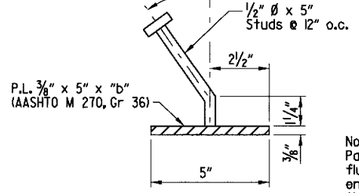
SECTION G-G



SECTION A-A

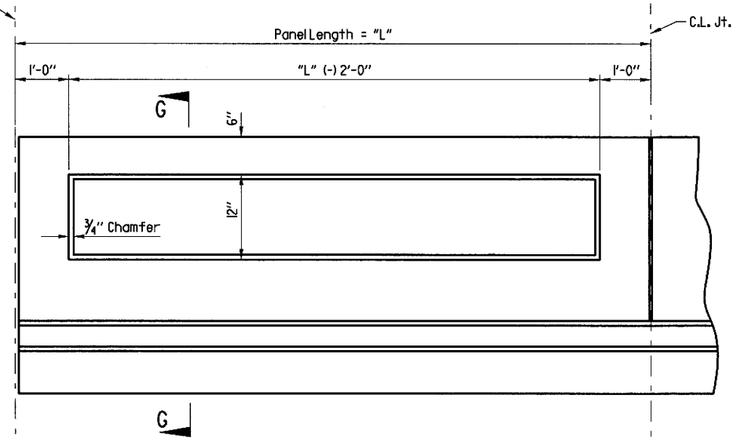


SECTION B-B

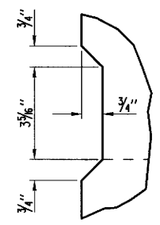


DETAIL Z

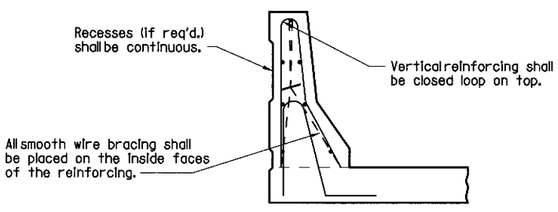
Note:
Parapet Studs shall be 5" long, granular flux filled, solid fluxed, or equal, and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plate shall be measured and paid for as "Class S(AE) Concrete". The surfaces of the ⅜" plates which will not be in contact with concrete shall be painted in accordance with Section 638 or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Class S(AE) Concrete".



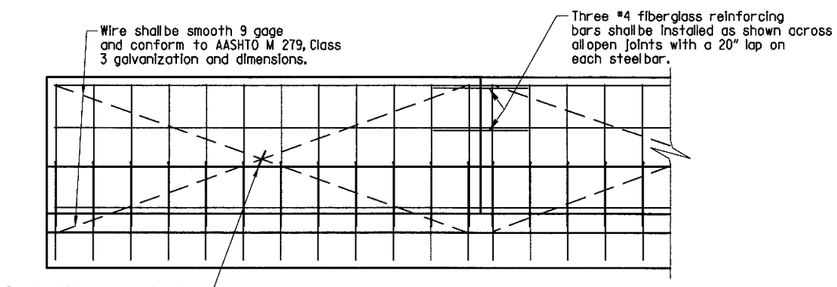
DETAIL OF PARAPET ENHANCEMENT



DETAIL Y



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



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

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 3 OF 4
DETAILS OF DECK GIRDER SPANS I-40 OVER NEWTON CREEK
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS/MKL DATE: 10/03/2017 FILENAME: B061190X2_SX4.dgn
CHECKED BY: SFH DATE: 12/17
DESIGNED BY: HSS DATE: 12/27/2016 SCALE: No Scale
BRIDGE NO. A3233 & B3233 DRAWING NO. 60048

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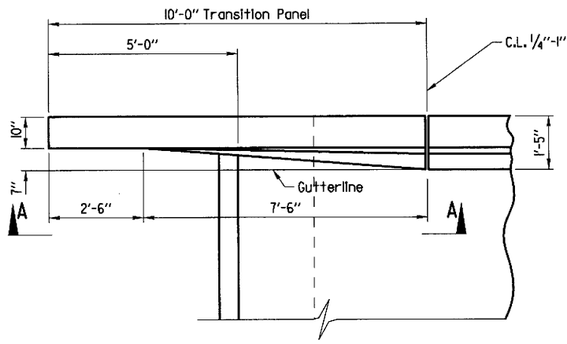
REVISED DATE:

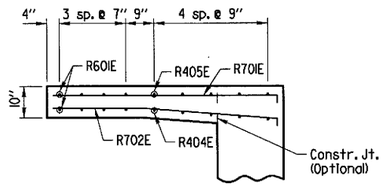
DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	134	190
(1)	A3233 & B3233 - SPAN DETAILS - 60049			



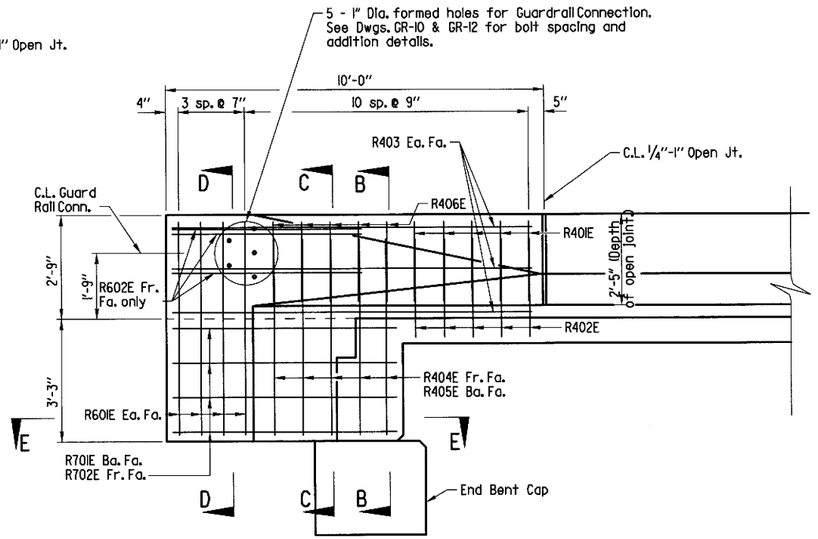
PLAN OF TRANSITION PANEL

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



SECTION E-E

No Scale



SECTION A-A

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

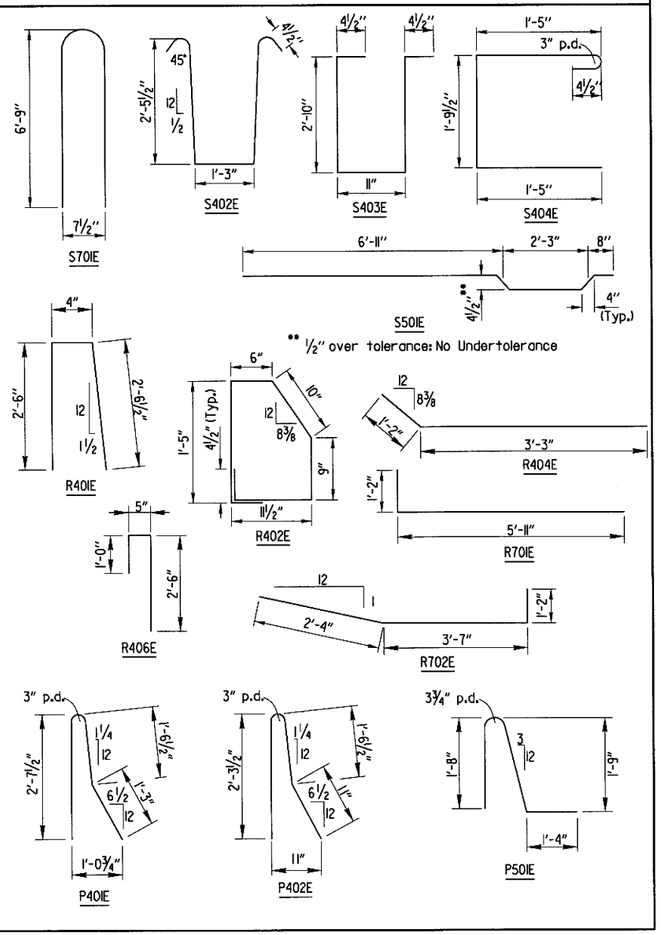
BAR LIST - PER BRIDGE

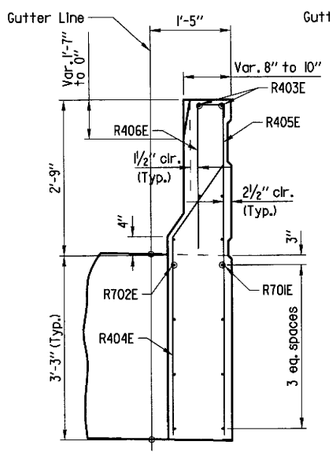
Note: All bars designated with an "E" suffix are to be epoxy coated.

MARK	NO. REQ'D.	LENGTH	P.D.
S401E	78	29'-8"	Str.
S402E	39	6'-9"	2"
S403E	66	7'-0"	2"
S404E	22	5'-0"	2"
S501E	69	10'-1"	3"
S601E	86	9'-10"	Str.
S701E	72	13'-9"	6 1/2"
S901E	6	29'-8"	Str.
S1001E	12	29'-8"	Str.
R401E	10	5'-2"	2"
R402E	10	4'-10"	2"
R403E	12	9'-8"	Str.
R404E	10	4'-5"	2"
R405E	10	5'-8"	Str.
R406E	10	3'-9"	2"
R601E	16	5'-8"	Str.
R602E	6	5'-0"	Str.
R701E	8	6'-11"	5 1/4"
R702E	8	6'-11"	5 1/4"
P401E	90	5'-6"	3"
P402E	70	4'-10"	3"
P403E	24	5'-6"	Str.
P404E	14	4'-8"	Str.
P405E	49	9'-8"	Str.
P501E	90	4'-10"	3 3/4"

BENDING DIAGRAMS

(Note: Dimensions are out to out of bars)





SECTION B-B

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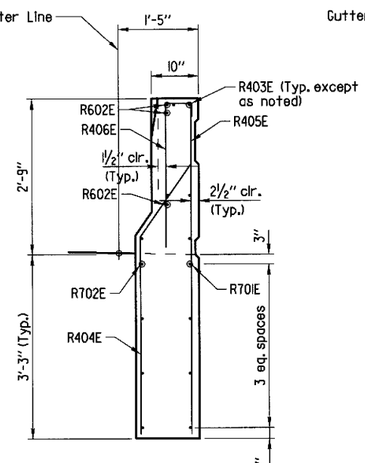

SECTION C-C

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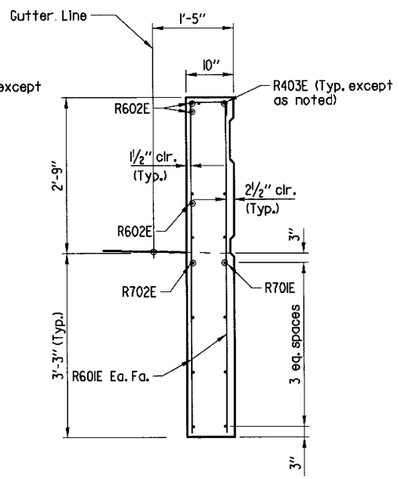

SECTION D-D

No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER

PRINT DATE: 8/20/2018

SHEET 4 OF 4

DETAILS OF DECK GIRDER SPANS I-40 OVER NEWTON CREEK

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

DRAWN BY:	HS/MKL	DATE:	10/03/2017
CHECKED BY:	SFH	DATE:	12/17
DESIGNED BY:	HSS	DATE:	12/27/2016
BRIDGE NO.	A3233 & B3233		

FILENAME: B061190X2_SX5.dgn

SCALE: As Shown

DRAWING NO. 60049

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
⚠ 10-18-18				6	ARK.			
				JOB NO.		061190	135	190
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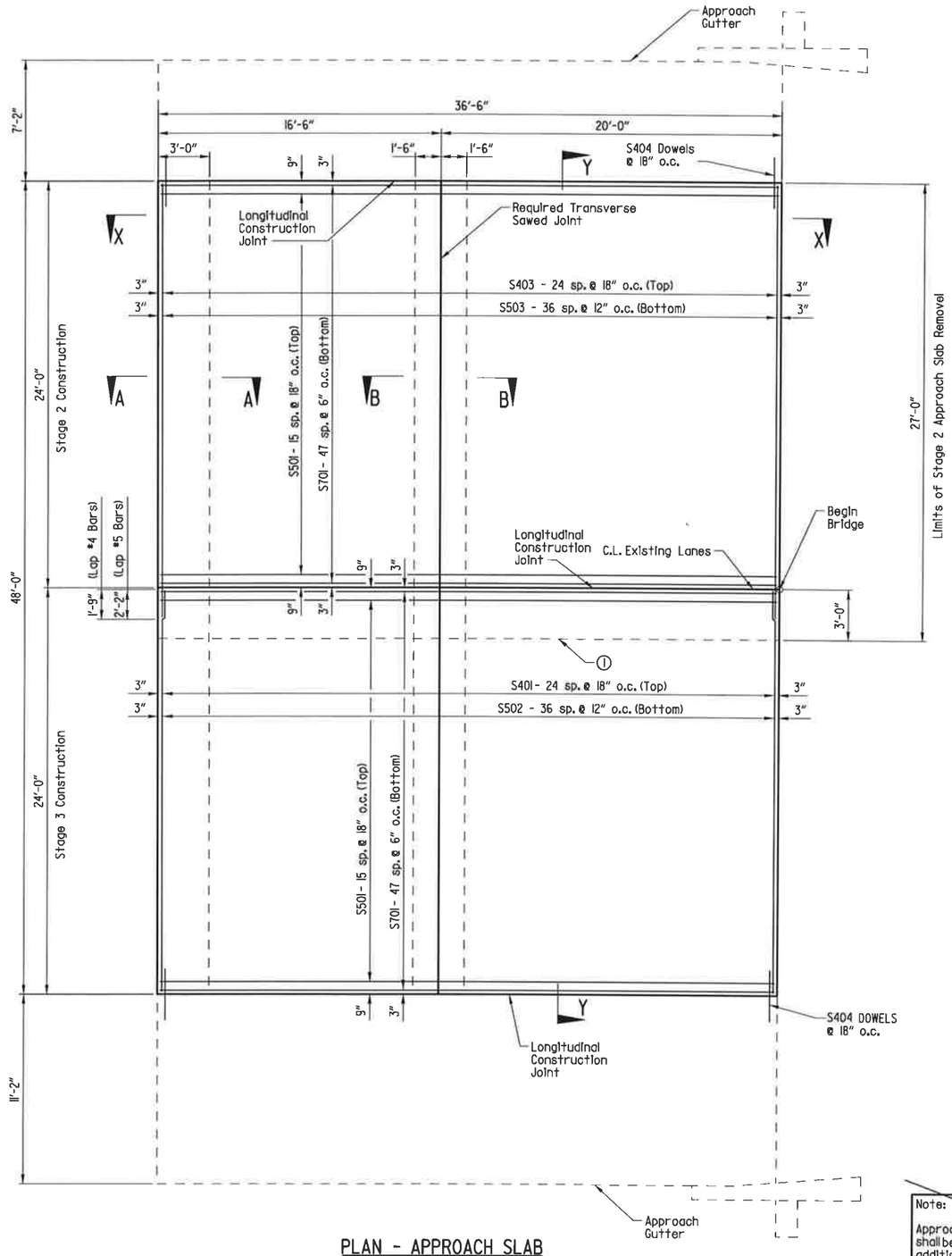
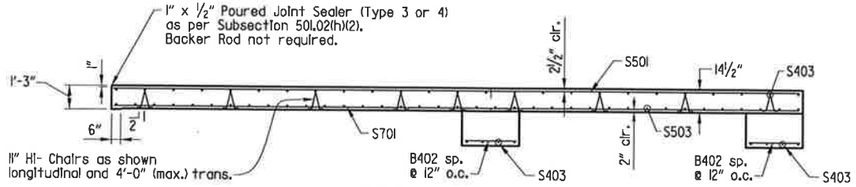


PLAN - APPROACH SLAB
(No Scale)
(Shown for Begin Bridge No. A3233 - Other Locations similar)

① Cut Line for Existing Approach Slab to Maintain a Proper Lap Splice



SECTION X-X
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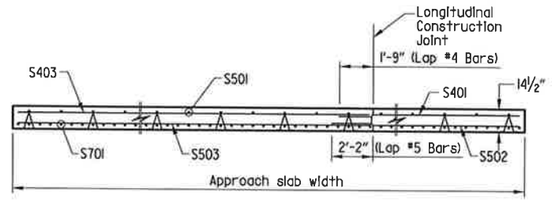

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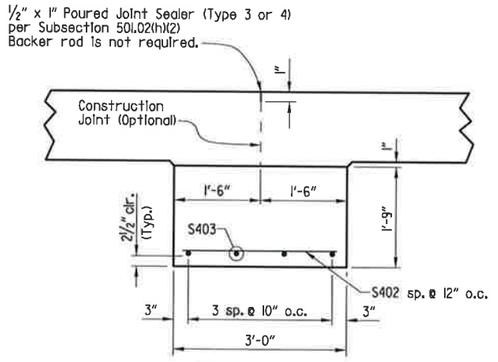
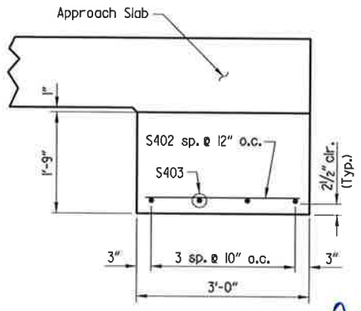
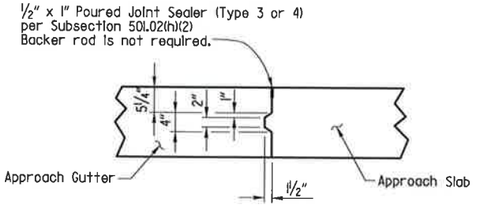


SECTION B-B
(No Scale)



SECTION A-A
(No Scale)

⚠
Note:
Approach Slabs, including adjacent Gutters, shall be placed during a weekend closure. For additional details see Maintenance of Traffic Construction Sequence.



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT
(No Scale)

BAR LIST FOR ONE TYPE SPECIAL 2 APPROACH SLAB

Mark	No. Req'd	Length	P.D.
S401	33	23'-8"	Str.
S402	100	2'-8"	Str.
S403	33	25'-9"	Str.
S404	50	3'-0"	Str.
S501	32	36'-2"	Str.
S502	37	23'-8"	Str.
S503	37	26'-2"	Str.
S701	96	36'-2"	Str.

QUANTITIES FOR ONE TYPE SPECIAL 2 APPROACH SLAB

Length (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yds)
36'-6"	11,595	97.96

GENERAL NOTES

All concrete, including adjacent Gutters, shall be Class S(AE) High Early Strength Concrete Pavement per Section 501.08 of the Standard Specifications (f'c = 4,000 psi).

Reinforcement Steel shall conform to AASHTO M31 or M322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Slabs to match that used on the bridge deck.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

10/18/18

BRIDGE ENGINEER
PRINT DATE: 10/18/2018

DETAILS OF TYPE SPECIAL 2 APPROACH SLAB

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS DATE: 07/12/2017 FILENAME: B061190X2_ASI.dgn
CHECKED BY: SFH DATE: 09/07/2017
DESIGNED BY: HS DATE: 07/2017 SCALE: As Shown
BRIDGE NO. A3233 & B3233 DRAWING NO. 60050

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WORKSPACE: AHTD_Bridge
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REVISED DATE:

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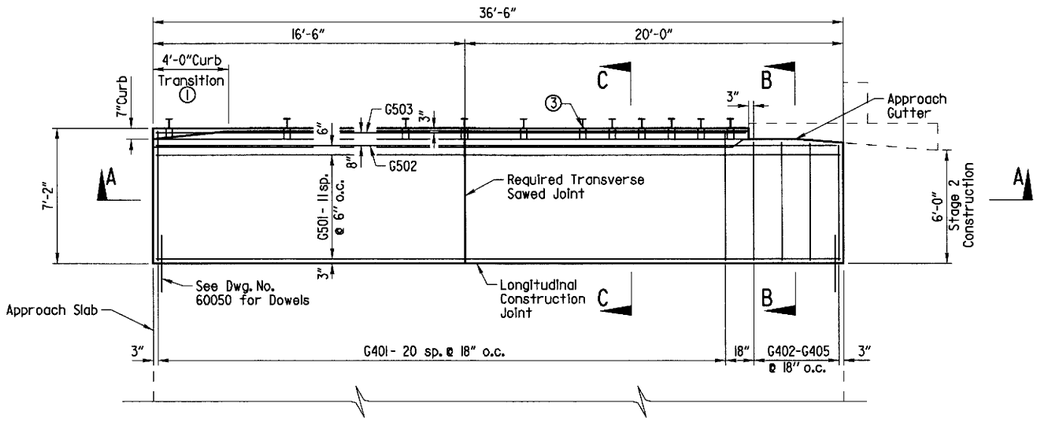
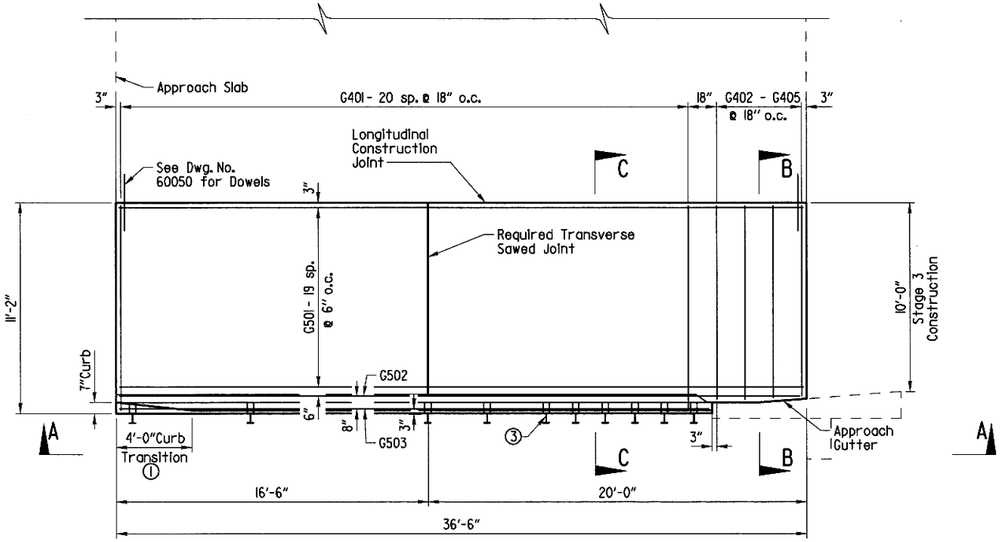
				6	ARK.			
				JOB NO.		061190	136	190

(1) A3233 & B3233 - APPROACH GUTTER - 60051



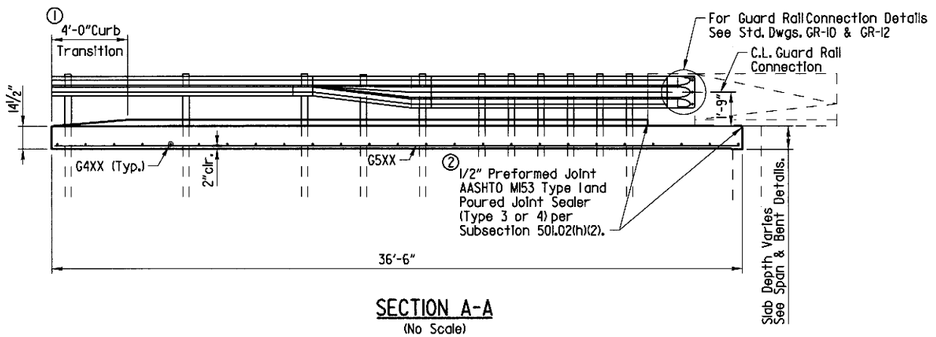
PLAN - TYPE SPECIAL 1 APPROACH GUTTER

(No Scale)
(Shown for Begin Bridge No. A3233 - Other Locations Similar)



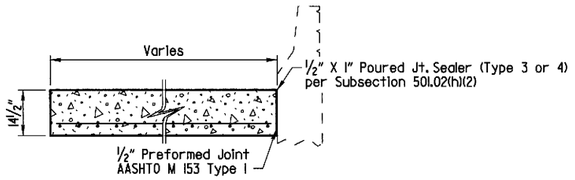
PLAN - TYPE SPECIAL 2 APPROACH GUTTER

(No Scale)
(Shown for Begin Bridge No. A3233 - Other Locations Similar)



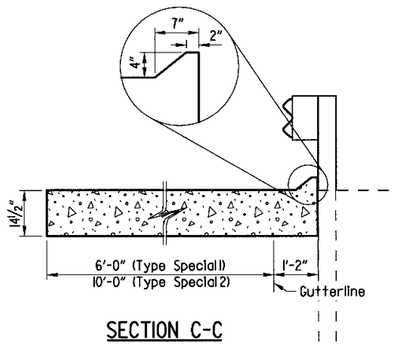
SECTION A-A

(No Scale)



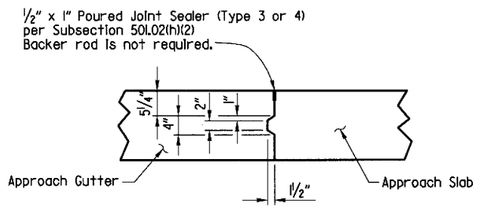
SECTION B-B

(No Scale)



SECTION C-C

(No Scale)



DETAILS OF LONGITUDINAL CONSTRUCTION JOINT

(No Scale)

BAR LIST FOR ONE TYPE SPECIAL 1 APPROACH GUTTER

Mark	No. Req'd	Length	P.D.
G401	21	6'-10"	Str.
G402 To G405	1 Ea.	6'-0" To 6'-3"	Str.
G501	12	36'-2"	Str.
G502	1	36'-0"	Str.
G503	1	31'-2"	Str.

BAR LIST FOR ONE TYPE SPECIAL 2 APPROACH GUTTER

Mark	No. Req'd	Length	P.D.
G401	21	10'-10"	Str.
G402 To G405	1 Ea.	10'-0" To 10'-3"	Str.
G501	20	36'-2"	Str.
G502	1	36'-0"	Str.
G503	1	31'-2"	Str.

QUANTITIES FOR ONE TYPE SPECIAL 1 & 2 APPROACH GUTTERS

	Length (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yds)
Type Special1	36'-6"	635	11.71
Type Special2	36'-6"	1,004	18.24

GENERAL NOTES

Concrete shall be Class S(AE) High Early Strength Portland Cement Concrete Pavement per Section 501.08 of the Standard Specifications (f'c = 4,000 psi).

Reinforcement Steel shall conform to AASHTO M31 or M322, Type A with Mill Test Reports, Gr. 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

Surface finish for Approach Gutters to match that used on the bridge deck.

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

(2) Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls. Poured joint sealer is required, however backer rod shall be eliminated.

(3) See Roadway plans for guardrail placement locations.

Note:

Approach Gutters shall be placed during weekend closure. For additional details see Maintenance of Traffic Construction Sequence.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14501 STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

DETAILS OF TYPE SPECIAL 1 & 2 APPROACH GUTTERS

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: HS/MKL DATE: 09/08/2017 FILENAME: B061190X2_AGI.dgn
CHECKED BY: SFH DATE: 09/29/2017
DESIGNED BY: HS/MKL DATE: 09/2017 SCALE: As Shown
BRIDGE NO. A3233 & B3233 DRAWING NO. 60051

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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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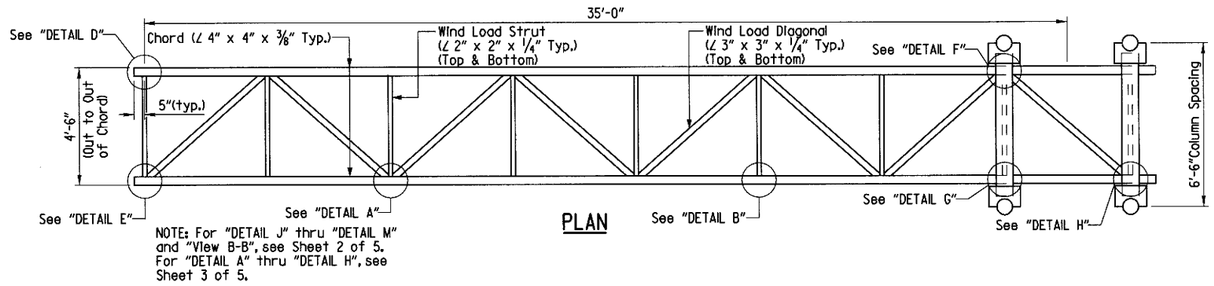
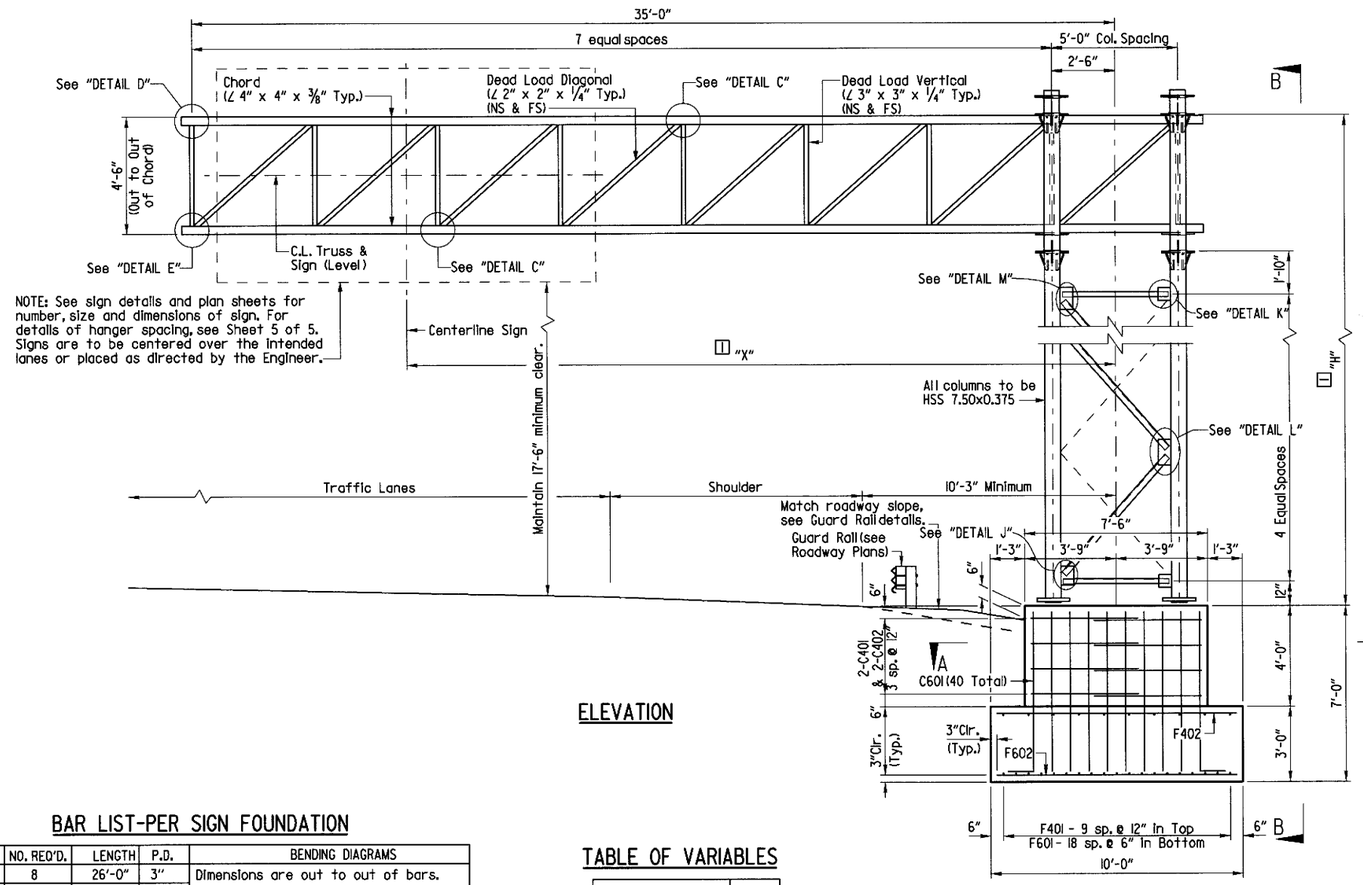
				JOB NO.		061190	137	190

(1) SEE TABLE OF VARIABLES - CANT. SIGN STR. - 60052



PLAN

NOTE: For "DETAIL J" thru "DETAIL M" and "View B-B", see Sheet 2 of 5. For "DETAIL A" thru "DETAIL H", see Sheet 3 of 5.

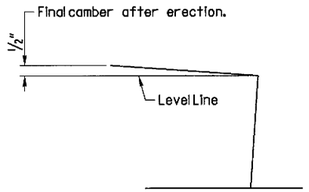


ELEVATION

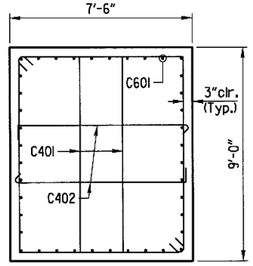
(1) NOTE: The Contractor shall make field measurements to determine the following:

1) To verify that dimension "X" is sufficient to center the sign over the intended lane while maintaining minimum horizontal clearances.
2) To determine the column height "H" required to maintain the minimum vertical clearance with the centerline of the sign located at the C.L. of the truss. If the structure height "H" exceeds 30'-0" contact the Engineer.

These verifications and measurements are required prior to submittal of the shop drawings. The column height "H" shall be shown on the shop drawings with a note stating that the Contractor has made the required field measurements.



TRUSS CAMBER DIAGRAM



SECTION A-A

BAR LIST-PER SIGN FOUNDATION

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
C401	8	26'-0"	3"	Dimensions are out to out of bars.
C402	8	8'-0"	3"	
C601	40	7'-2"	4½"	
F401	10	14'-6"	Str.	
F402	15	9'-6"	Str.	
F601	19	14'-6"	Str.	
F602	29	9'-6"	Str.	

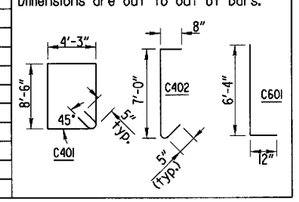


TABLE OF VARIABLES

STRUCTURE NUMBER	"X"
0C-040-60-50	22'-3"
0C-040-60-51	21'-0"

TABULAR DATA BY: HX DATE: 11/2017
CHECKED BY: PK DATE: 12/2017

APPROXIMATE QUANTITIES (FOR INFORMATION ONLY)

STRUCTURE NUMBER	CLASS S CONCRETE (CU. YDS.)	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.)
EACH STRUCTURE	26.7	1,635	57

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 1 OF 5
DETAILS OF 35'
STEEL CANTILEVER SIGN STRUCTURE
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/23/2017 FILENAME: B061190XX TL.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: No Scale
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REVISED DATE:

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				JOB NO.		061190	138	190

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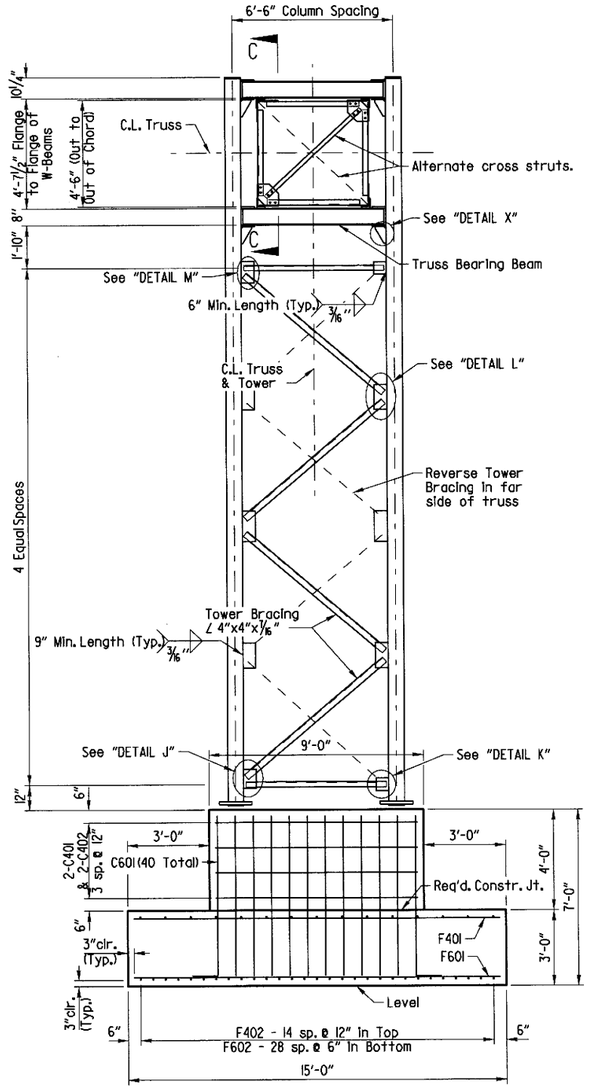
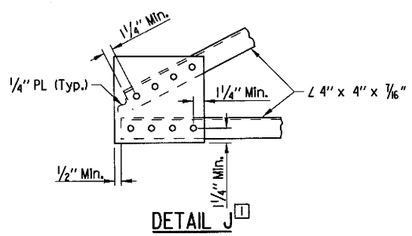


VIEW B-B



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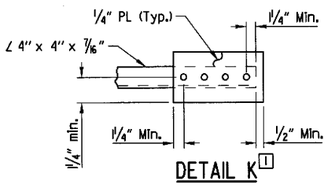

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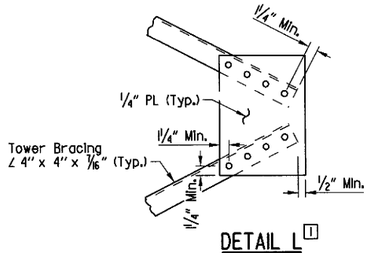
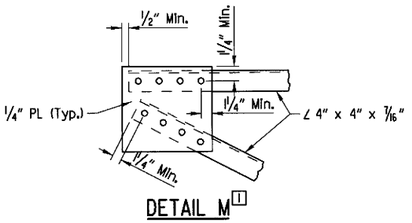
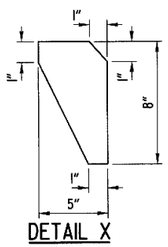


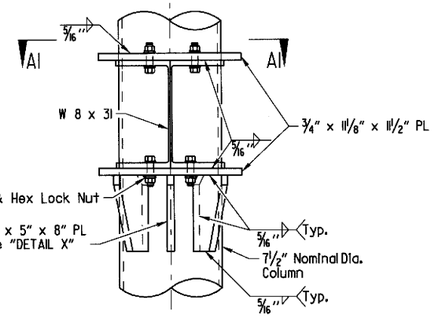
DETAIL L [1]



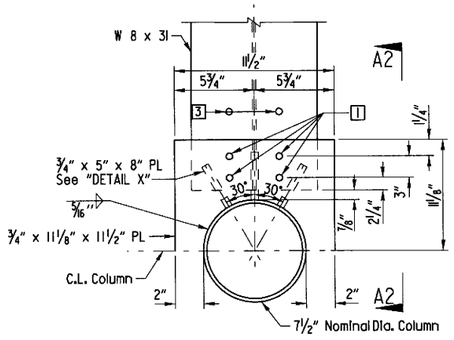
DETAIL M [1]



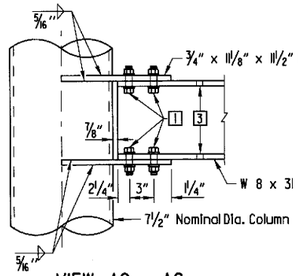
DETAIL X



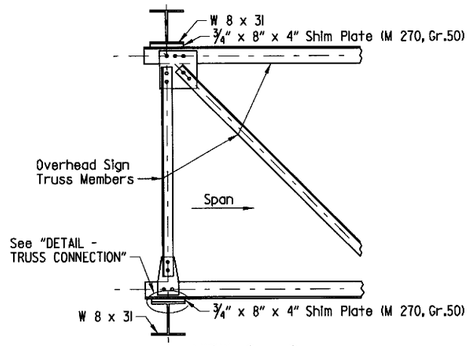
DETAIL - TRUSS BEARING SUPPORT



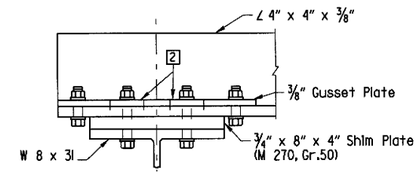
VIEW A1 - A1



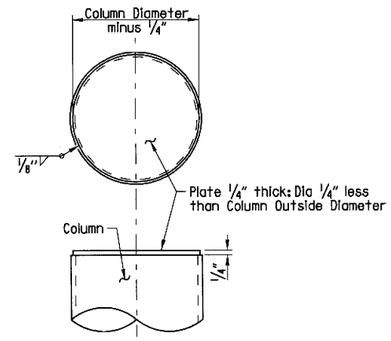
VIEW A2 - A2
¾" x 5" x 8" Plate
not shown for clarity



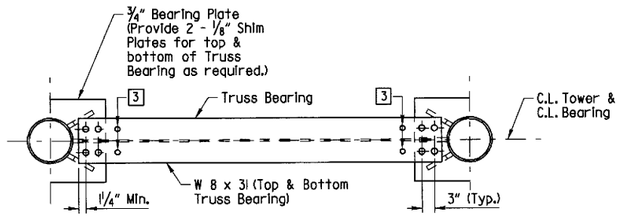
VIEW C - C



DETAIL - TRUSS CONNECTION



END CAP DETAIL



PLAN AT TRUSS BEARING

[1] Bolts shall be ¾" ø Dia. and open holes shall be 15/16". Minimum center to center bolt spacing shall be 2½". Dimensions shown are typical.

[2] 11/16" x 2" Slotted Hole in Gusset Plate and Chord Angle. Use plate washer on Gusset plate side. 11/16" ø holes in ¾" shim plate and beam flange.

[3] 11/16" Dia. holes at top and bottom flanges of W 8 x 31.

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 2 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/23/2017 FILENAME: B061190XX_T2.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: No Scale
STR. NO. SEE TABLE OF VARIABLES DRAWING NO. 60053

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REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	139	190

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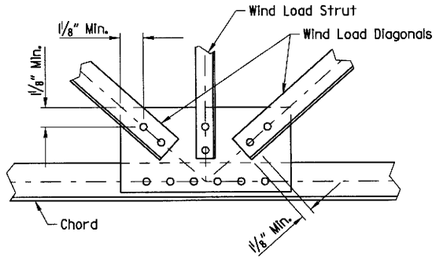
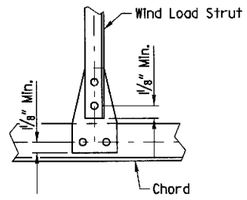


DETAIL A [1]



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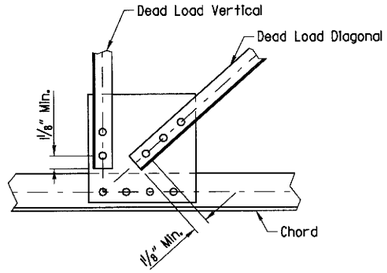

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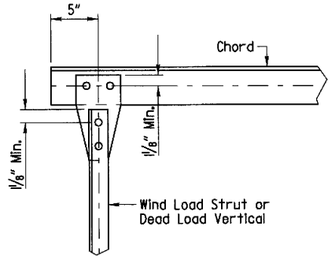

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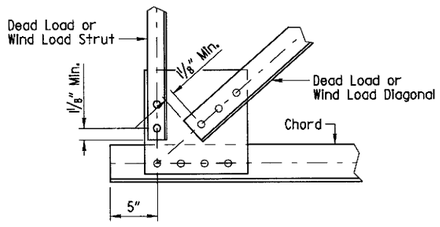
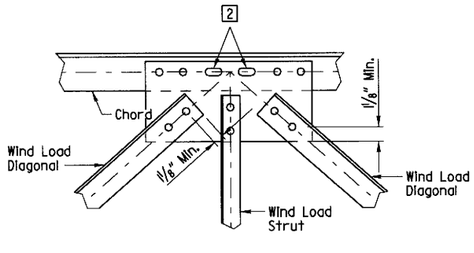
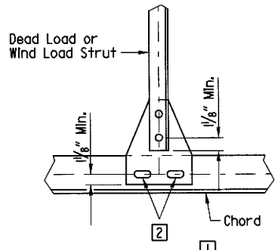


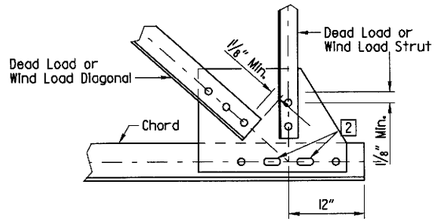
DETAIL E [1]



DETAIL F [1]



DETAIL G [1]



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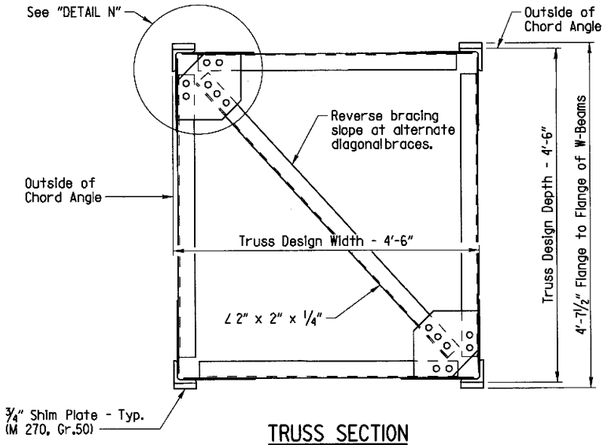
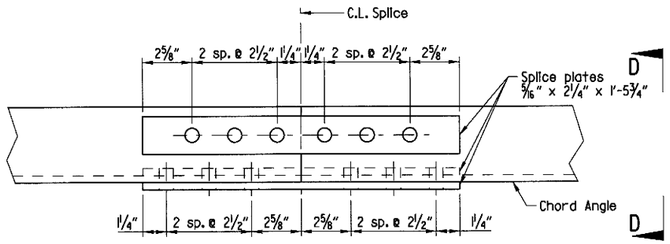
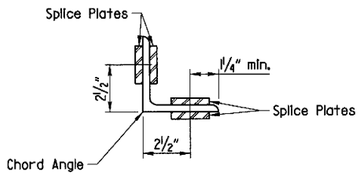


TRUSS SECTION

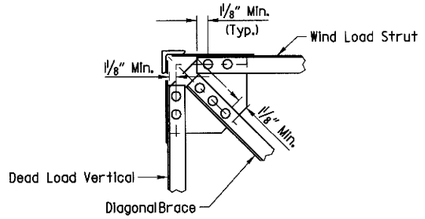


Note: Chord angles may be spliced in convenient lengths for galvanizing and sign placement.

CHORD SPLICE [3]



VIEW D - D



DETAIL N

Note: Unless otherwise noted, thickness of all Gusset Plates shall be ⅜".

[1] Dimensions shown are typical.

[2] 11/16" x 2" Slotted Hole in Gusset Plate and Chord Angle. Use plate washer on Gusset plate side.

[3] Bolts shall be ¾" ø Dia. and open holes shall be 15/16". Minimum center to center bolt spacing shall be 2½".

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 3 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/23/2017 FILENAME: B061190XX_T3.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: No Scale
STR. NO. SEE TABLE OF VARIABLES DRAWING NO. 60054

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REVISED DATE:

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				JOB NO.		061190	140	190

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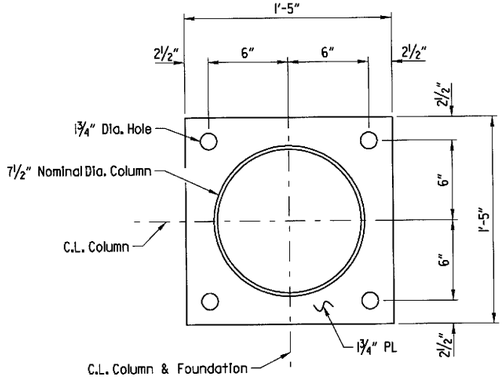
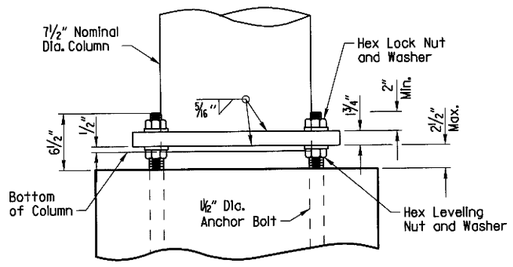
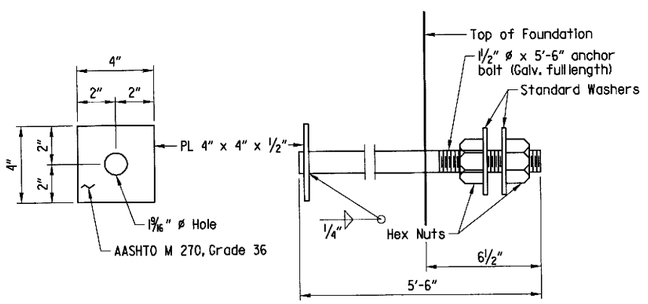


PLAN - COLUMN BASE



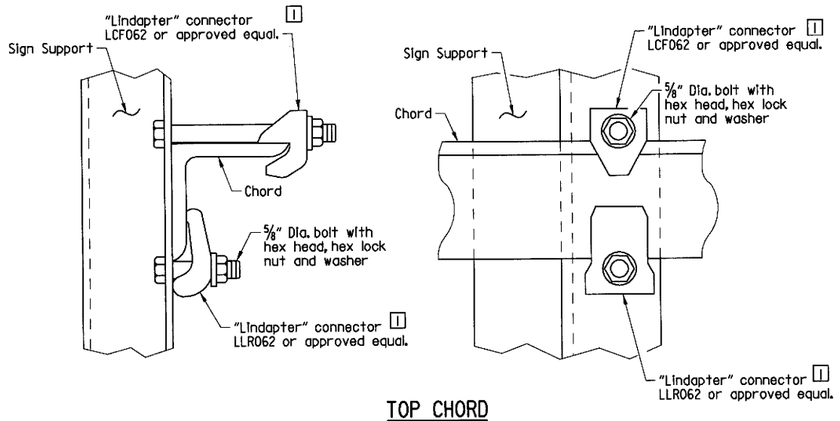
Note: Diameter of hole in base plate to be 1/8" larger than column diameter.

ELEVATION - COLUMN BASE

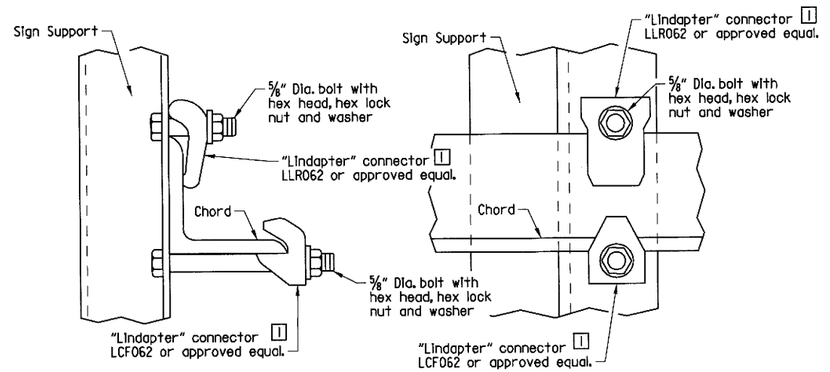


Anchor bolts shall comply with AASHTO M 314, Grade 55, with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for bolts shall be as specified in Subsection 807.07.

ANCHOR BOLT DETAIL



TOP CHORD

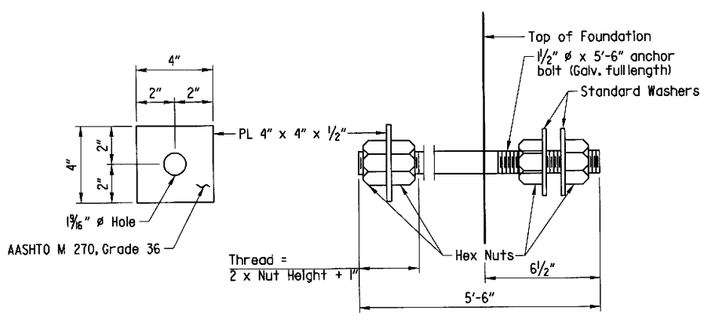


BOTTOM CHORD

[1] All "Lindapter" connectors or approved equal shall be installed according to manufacturer's recommendations. All connectors, bolts, nuts and washers shall be galvanized.

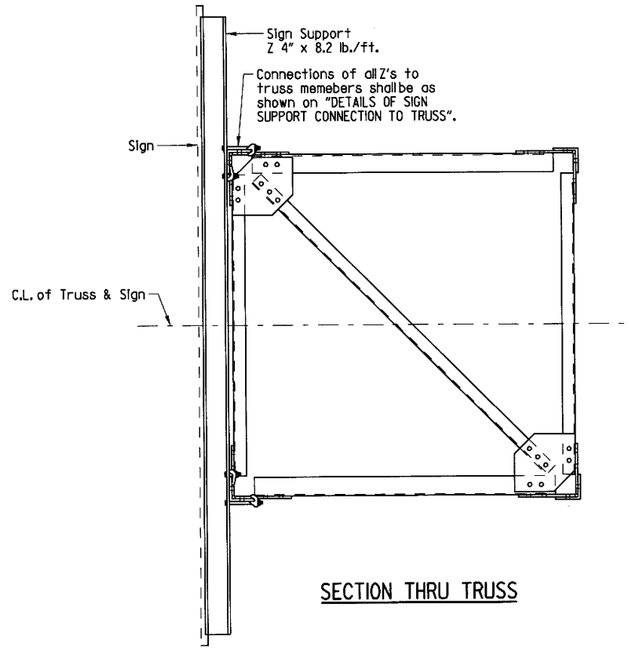
Note: Install all support connectors clear of the gusset plates and splice locations.

DETAILS OF SIGN SUPPORT CONNECTION TO TRUSS

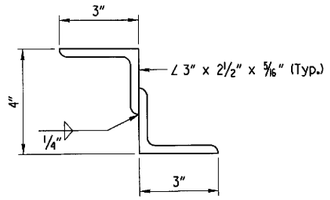


Anchor bolts shall comply with AASHTO M 314, Grade 55, with Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for bolts shall be as specified in Subsection 807.07.

ALTERNATE ANCHOR BOLT DETAIL



SECTION THRU TRUSS



NOTE: Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 4 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: WKL DATE: 10/23/2017 FILENAME: B061190XX_T4.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: No Scale
STR. NO. SEE TABLE OF VARIABLES DRAWING NO. 60055

Megan.Land 9/17/2018 2:06:44 PM
WORKSPACE: AHTD_Bridge
Y:\Projects\MAUMELLE.154459.1-40_Interchange\06-Design\Drawings\Bridge\B061190XX_T4.dgn
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	141	190
				(1) SEE TABLE OF VARIABLES - CANT. SIGN STR. - 60056				

GENERAL NOTES:

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2014 Edition, with applicable Supplemental Specifications and Special Provisions. Section and Subsection refer to the Specifications unless otherwise noted in the plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition 2013.

Basic Wind Speed = 90 mph.
Fatigue Category: I

This structure is approved for 235 square feet of sign area. Use of additional sign area must be approved by the Engineer. If the structure height ("H") exceeds 30'-0" contact the Engineer.

FOUNDATION MATERIALS AND STRENGTHS:

Class S Concrete	f'c = 3,500 psi
Reinforcing Steel (Gr. 60, AASHTO M 31 or M 322, Type A)	fy = 60,000 psi

Structural steel sign support members shall comply with the following specifications:

Angles:	AASHTO M 270, Grade 36 (Fy = 36,000 psi)
Plate, W-Section:	AASHTO M 270, Grade 50 (Fy = 50,000 psi)
[1] Pipe:	ASTM A139, Gr. C, straight-seam welded (Fy = 42,000 psi), ASTM A500, Gr. B (Fy = 42, 000 psi), ASTM A501, Gr. B (Fy = 50,000 psi), ASTM A714, Class 2, Grade II, Type E or S (Fy = 50,000 psi)
Z-Shapes:	AASHTO M 270, Grade 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A1011, SS, Grade 36, Type 2, or Grade 40
Bolts:	ASTM A325, Type 1
Locknuts - Approved Type:	Meeting or exceeding AASHTO M 292
Washers:	ASTM F436
Nuts:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H

The Contractor shall make check measurements in the field and make any adjustments necessary to meet the required clearances and to fit the new structure to the existing conditions.

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

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

All steel shall be galvanized according to Subsection 807.19. Steel completely encased in concrete may not be galvanized. Galvanized coating damaged during transport, handling or erection shall be field repaired in accordance with Subsection 807.88.

All main load carrying tension members greater than ½" in thickness shall conform to the requirements of the Longitudinal Charpy V-Notch test specified for Zone 1 minimum service temperature. This work and materials shall be paid for in accordance with Job Special Provision "Steel Sign Structures".

Field splices shall be located in order to avoid sign panel connections. There shall be a maximum of two field splices and they shall be spaced a minimum of 15 feet apart.

Truss field sections shall be shop assembled. Entire truss shall be fully assembled and lifted into place as one unit on to tower supports. All truss member connections shall be bolted connections.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether temporary or permanent, a formal request with detailed drawings shall be submitted to the Engineer for approval. All welding shall conform to Subsection 807.26 except welding of tubular sections shall conform to AWS D1.1 Structural Welding Code.

No circumferential butt welds will be allowed in any pipe sections.

All fillet welds of critical members shall be tested according to AWS D1.1 Structural Welding Code - Steel using the magnetic particle method. Critical welds shall include: column to base plate and truss bottom support to column.

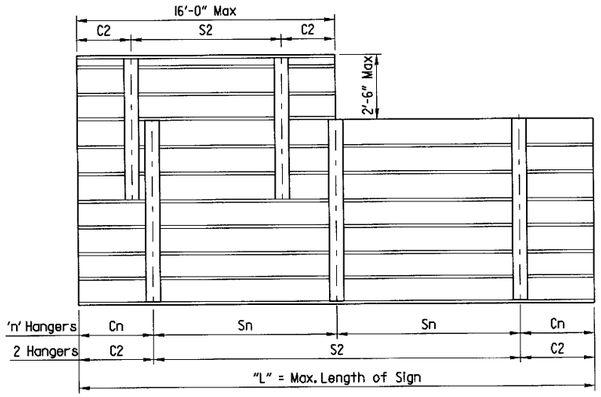
Connections shall be bolted with high-strength bolts. Unless otherwise noted, bolts shall be ⅝" diameter and open holes shall be 11/16". Bolt spacing shall be 2¼" for ⅝" diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of all members.

All truss frame bolts shall comply with ASTM A325 Type 1, galvanized according to Subsection 807.06. Nuts and washers for ASTM A325 Type 1 bolts shall be furnished and galvanized in accordance with Subsection 807.06.

Lock nuts to be equipped with nylon locking inserts or other approved type locking system. Lock nuts to be installed according to manufacturer's recommendations.

Anchor bolts shall comply with AASHTO M 314, Grade 55 including Supplementary Requirement S1, and galvanized according to Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07. Anchor bolts shallbe pretensioned in accordance with Special Provisions Job No. 061190 "Steel Sign Structures".

Shoring may be required to protect existing shoulders during excavation. Any shoring required shall not be paid for directly, but shall be considered incidental to the item "Steel Cantilever Sign Structure (___)". The excavations for the footings shall be backfilled before the structure is attached to the foundations.



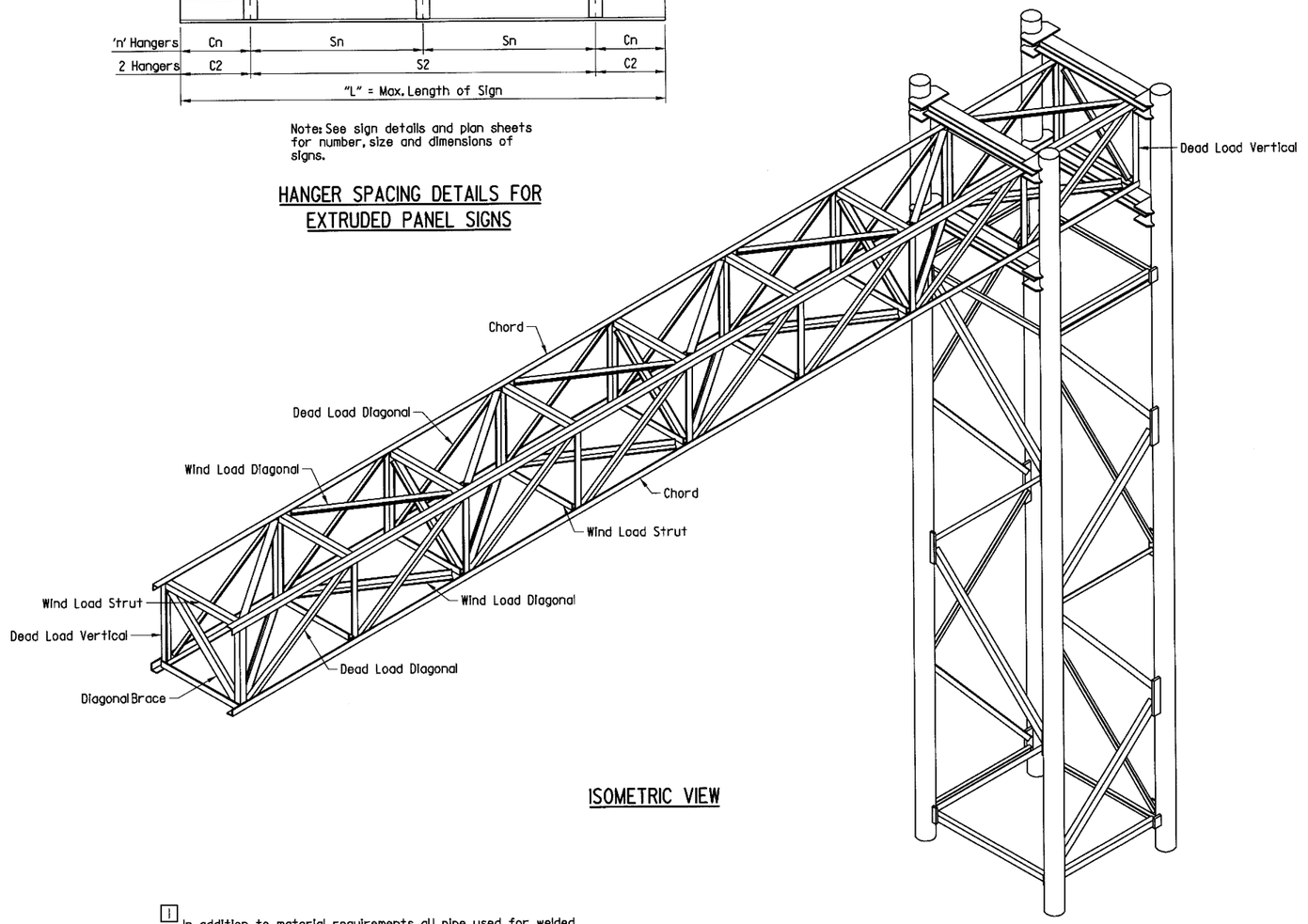
Note: See sign details and plan sheets for number, size and dimensions of signs.

HANGER SPACING DETAILS FOR EXTRUDED PANEL SIGNS

HANGER VARIABLES

Max. Length of Sign = "L"	"n" Hangers	Cantilever Length "Cn"	Hanger Spacing 'Sn'
15'-0"	2 Hangers	0.21x 'L'	0.58 x 'L'
30'-0"	3 Hangers	0.145 x 'L'	0.355 x 'L'

Hanger spacing and cantilever length shall be rounded to the nearest inch.



ISOMETRIC VIEW

[1] In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4 using the following equation:

CE = %C + %Mn/6 + %Cu/40 + %Ni/20 + %Cr/10 - %Mo/50 - %V/10

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No.14501 STEPHEN F. HARPER

9/17/18

BRIDGE ENGINEER
PRINT DATE: 9/17/2018

SHEET 5 OF 5
DETAILS OF 35' STEEL CANTILEVER SIGN STRUCTURE

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/23/2017 FILENAME: B061190XX_T5.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: No Scale
STR. NO. SEE TABLE OF VARIABLES DRAWING NO. 60056

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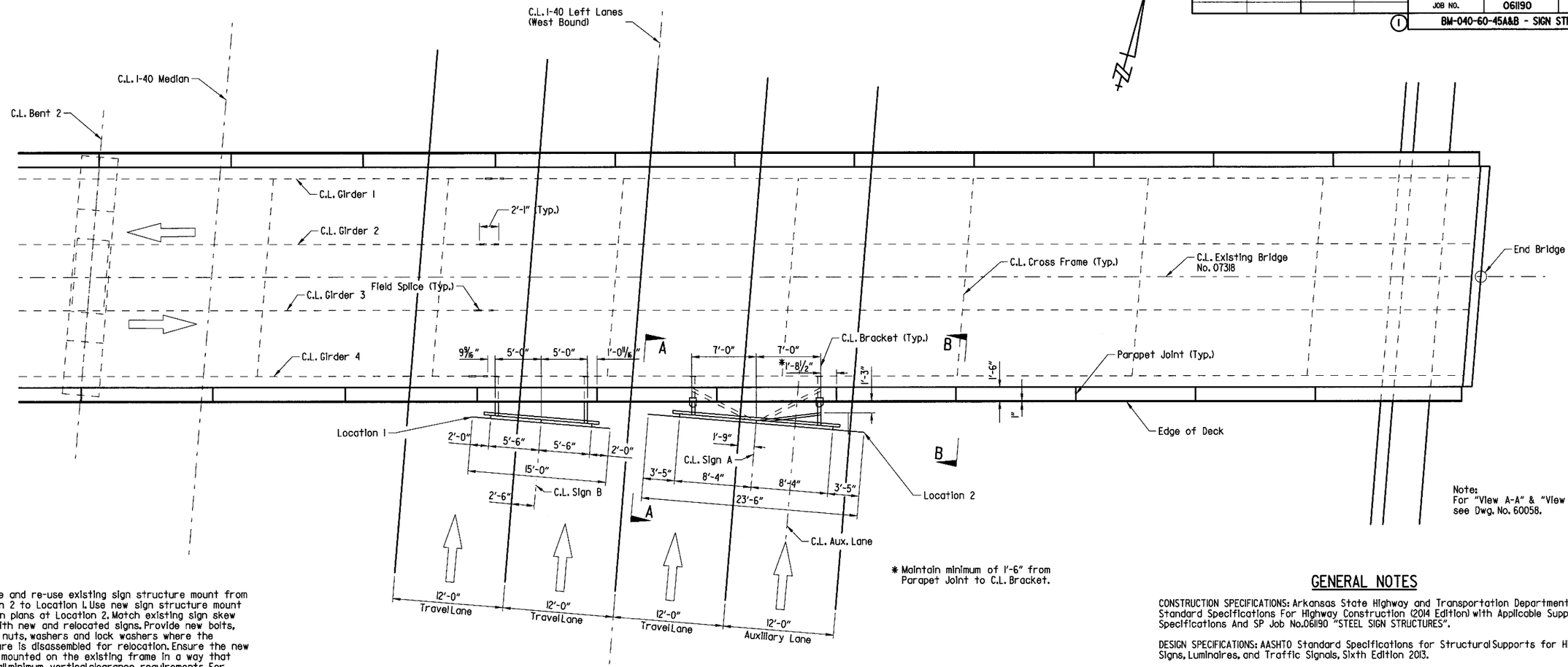
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	142	190
(1) BM-040-60-45A&B - SIGN STR. - 60057				



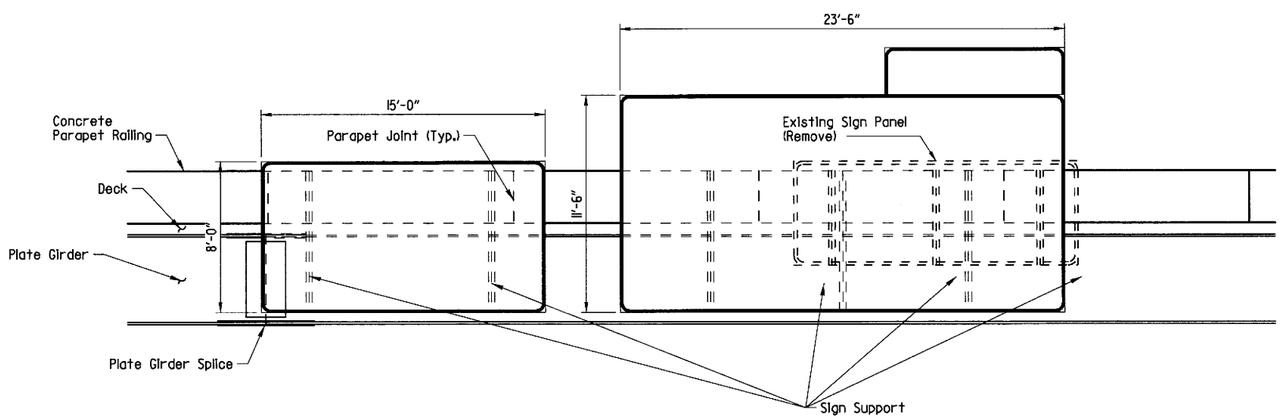
Note:
For "View A-A" & "View B-B", see Dwg. No. 60058.

Note: Relocate and re-use existing sign structure mount from Location 2 to Location 1. Use new sign structure mount shown in plans at Location 2. Match existing sign skew angle with new and relocated signs. Provide new bolts, u-bolts, nuts, washers and lock washers where the structure is disassembled for relocation. Ensure the new sign is mounted on the existing frame in a way that meets all minimum vertical clearance requirements. For relocated frame and sign B, the Contractor shall set sign panel and low frame members 6" min. above bottom flange of existing main bridge girder.

* Maintain minimum of 1'-6" from Parapet Joint to C.L. Bracket.

LOCATION SKETCH

No Scale



ELEVATION OF SIGN

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

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2014 Edition) with Applicable Supplemental Specifications And SP Job No.061190 "STEEL SIGN STRUCTURES".

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition 2013.

BASIC WIND SPEED: 90 m.p.h.

MATERIALS AND STRENGTHS:
Structural Steel (AASHTO M 207, Gr. 36, Fy = 36,000 psi)
Bolts (ASTM A325, Type I)
Nuts (ASTM A563, Grade DH or AASHTO M 292, Grade 2H)
Washers (ASTM F436)
Locknuts (Approved Type, meeting or exceeding AASHTO M 292)

Structural members of sign support shall be galvanized in accordance with Subsection 807.19.

Bolts, nuts and washers shall be galvanized in accordance with Subsection 807.06.

Locknuts to be equipped with nylon locking inserts or other approved locking system. Locknuts to be installed according to Manufacturers recommendations.

The Contractor shall make check measurements in the field and make any adjustments necessary to avoid any diaphragms, splice plates and joints in parapet on the bridge. This may include shifting the sign structure with approval from the Engineer.

The cost of all labor, materials and equipment required for the fabrication and installation of the bridge mounted sign structure shall be included in the item "STEEL BRIDGE MOUNTED SIGN STRUCTURE".

For details of existing bridge structure, See Reference Dwg. Nos. 55722-55746.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

LAYOUT OF BRIDGE MOUNTED SIGN STRUCTURES A & B - NORMAN ROAD

ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	10/2017	FILENAME:	B06190XX_T6.dgn
CHECKED BY:	PK	DATE:	12/2017		
DESIGNED BY:	HX	DATE:	11/2017	SCALE:	AS NOTED
STR. NO.	BM-040-60-45A&B			DRAWING NO.	60057

Leonard,Speed 8/20/2018 2:26:00 PM
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REVISED DATE:

DATE	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.		061190	143	190
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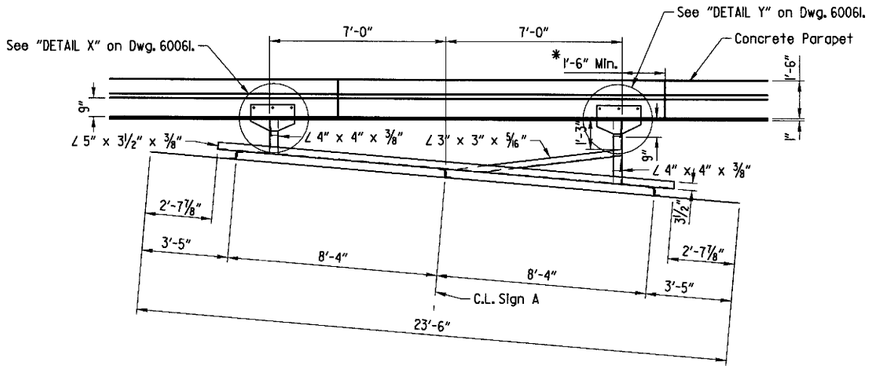
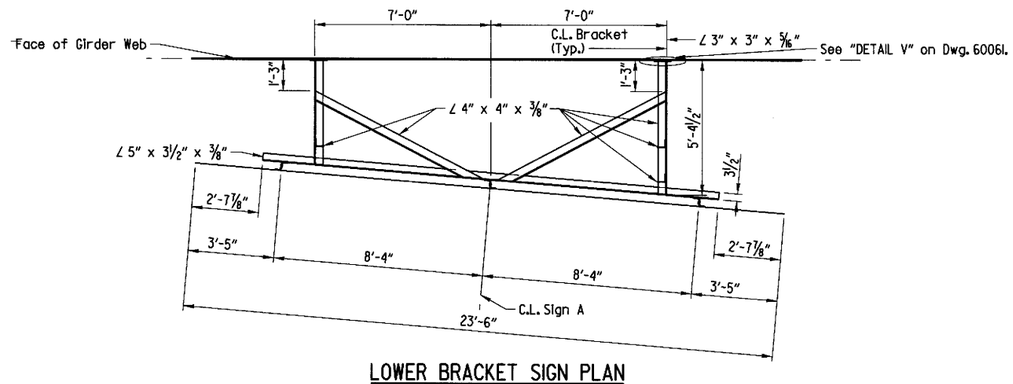
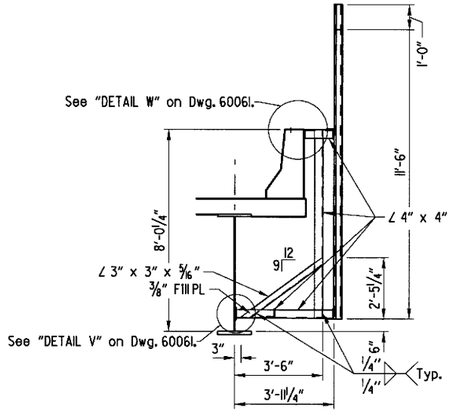


UPPER BRACKET SIGN PLAN

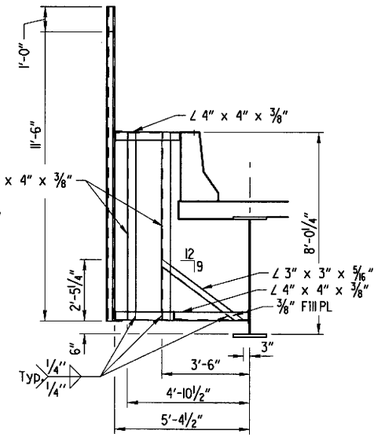
* Maintain minimum of 1'-6" from Parapet Joint to C.L. Bracket.



LOWER BRACKET SIGN PLAN



VIEW A - A



VIEW B - B

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REVISED DATE:

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 1 OF 2
DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE B - NORMAN ROAD
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/2017 FILENAME: B061190XX_T9.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: ½" = 1'-0"
STR. NO. BM-040-60-45A DRAWING NO. 60058

DATE	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.		061190	144	190
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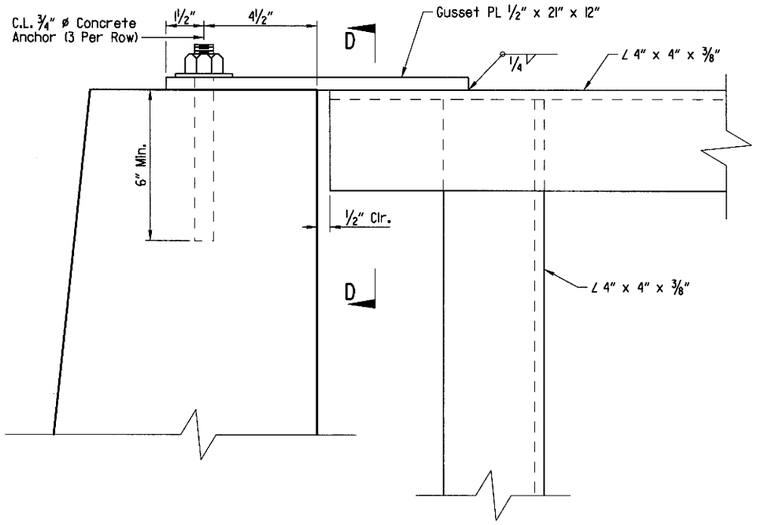
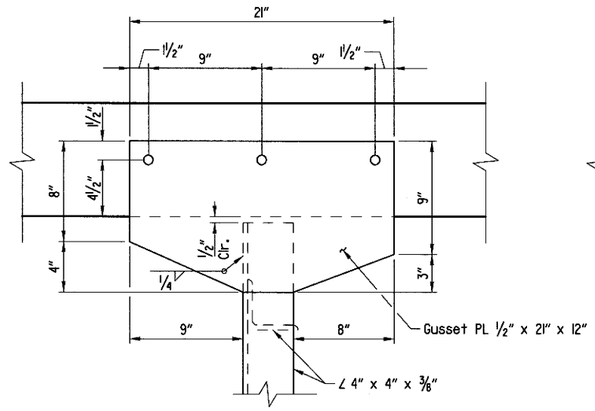


DETAIL W
No Scale



DETAIL X
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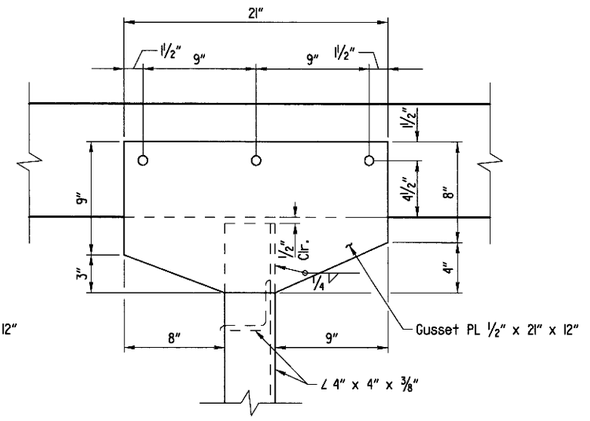

DETAIL Y
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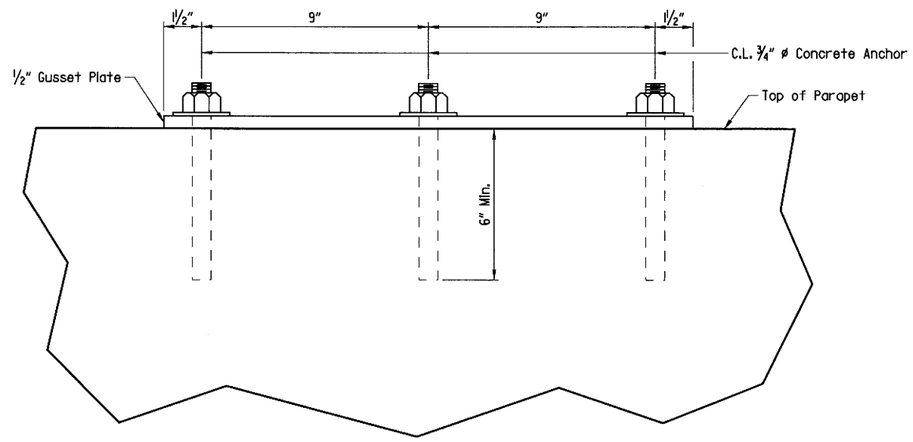
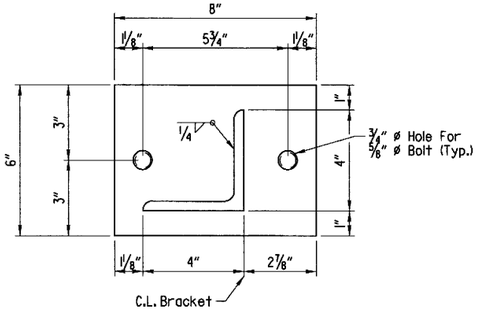


The Concrete anchors shall be drilled and grouted into place, the anchors shall be set and fixed using a OPL approved epoxy grout system in accordance with manufacturers recommendations and shall have the following ultimate capacities:

Shear 10,000 lbs.
Tension 9,000 lbs.

VIEW D - D
No Scale



DETAIL V
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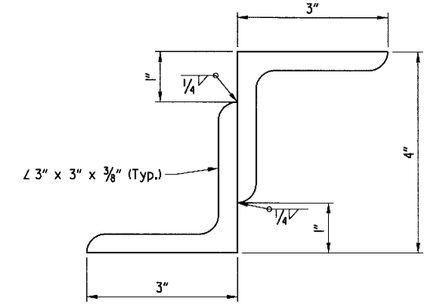

NOTE:
Structural Z Sign Support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SIGN SUPPORT
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER
8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 2 OF 2
DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE B - NORMAN ROAD
ROUTE SECTION
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/2017 FILENAME: B061190XX_T10.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: AS NOTED
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REVISED DATE:

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				JOB NO.		061190	145	190
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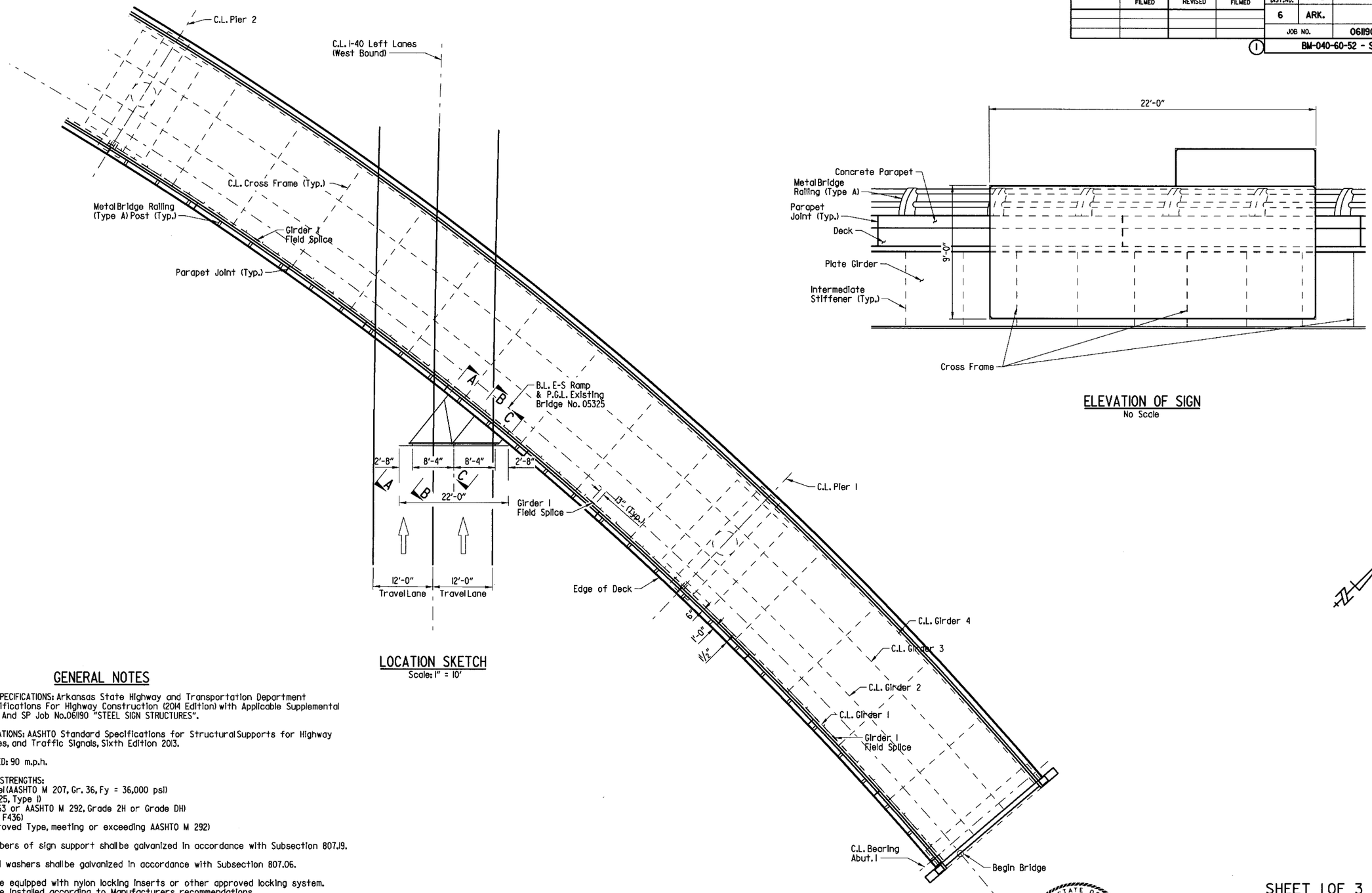

LOCATION SKETCH
Scale: 1" = 10'

ELEVATION OF SIGN
No Scale

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications For Highway Construction (2014 Edition) with Applicable Supplemental Specifications And SP Job No.061190 "STEEL SIGN STRUCTURES".

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, Sixth Edition 2013.

BASIC WIND SPEED: 90 m.p.h.

MATERIALS AND STRENGTHS:
Structural Steel (AASHTO M 207, Gr. 36, Fy = 36,000 psi)
Bolts (ASTM A325, Type 1)
Nuts (ASTM A563 or AASHTO M 292, Grade 2H or Grade DH)
Washers (ASTM F436)
Locknuts (Approved Type, meeting or exceeding AASHTO M 292)

Structural members of sign support shall be galvanized in accordance with Subsection 807.19.

Bolts, nuts and washers shall be galvanized in accordance with Subsection 807.06.

Locknuts to be equipped with nylon locking inserts or other approved locking system. Locknuts to be installed according to Manufacturers recommendations.

The Contractor shall make check measurements in the field and make any adjustments necessary to avoid any diaphragms, splice plates and joints in parapet on the bridge. This may include shifting the sign structure with approval from the Engineer.

The cost of all labor, materials and equipment required for the fabrication and installation of the bridge mounted sign structure shall be included in the item "STEEL SIGN STRUCTURES".

For details of existing bridge structure, See Reference Dwg. Nos. 17383-17394.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
8/20/18
BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 1 OF 3
DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE - E-S RAMP
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/2017 FILENAME: B061190XX_T1l.dgn
CHECKED BY: PK DATE: 12/2017
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REVISED DATE:

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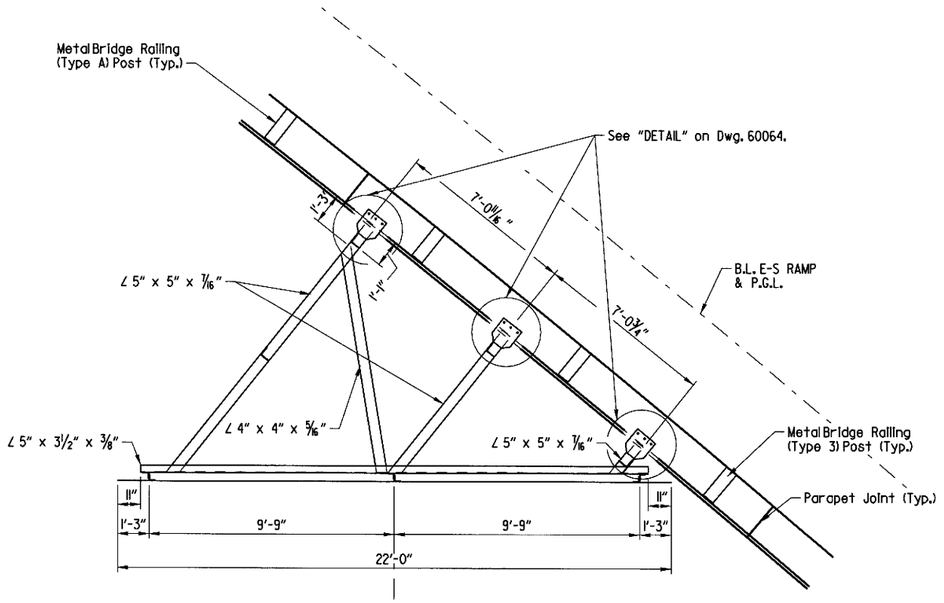
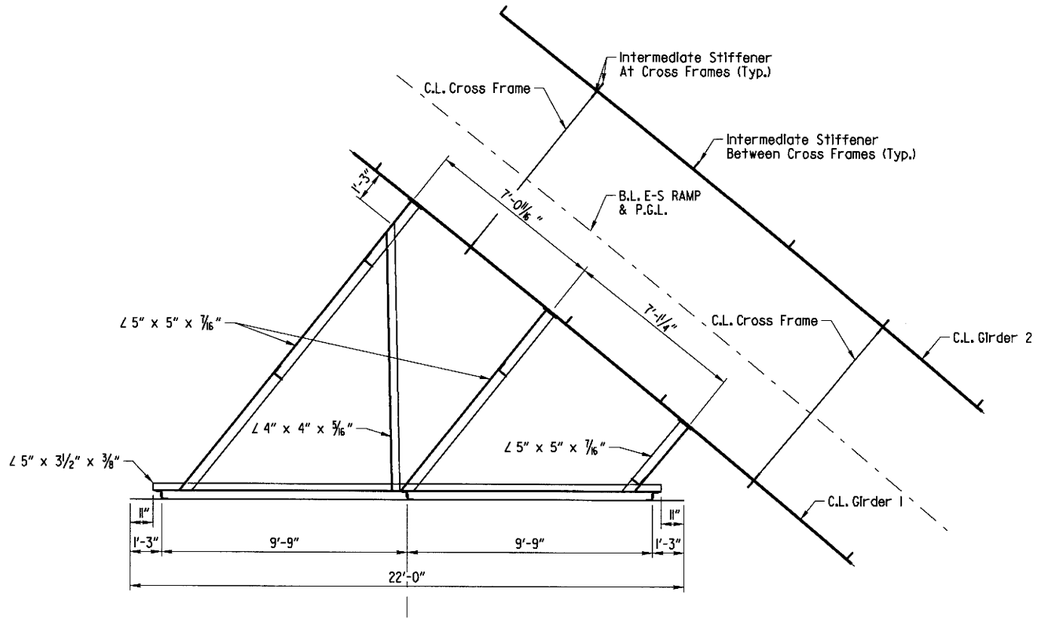
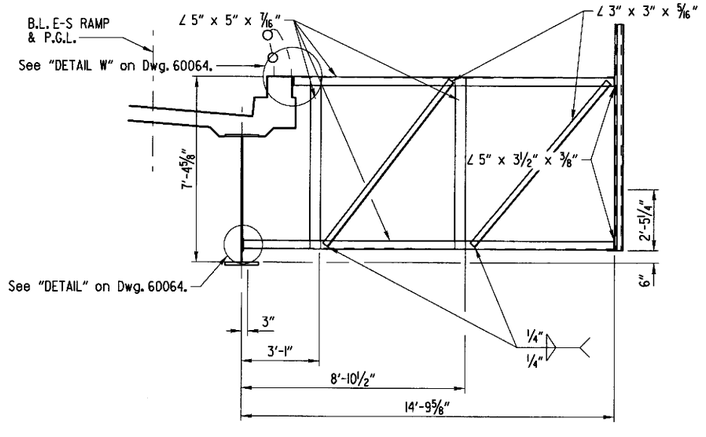


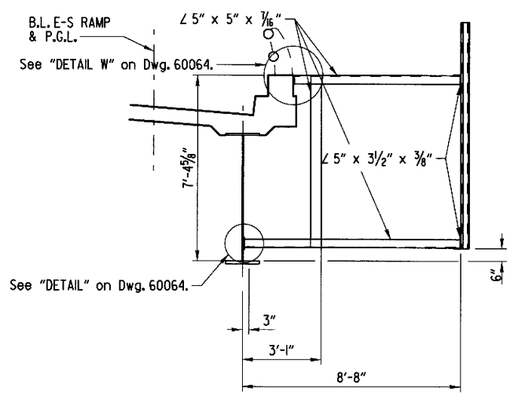
UPPER BRACKET SIGN PLAN



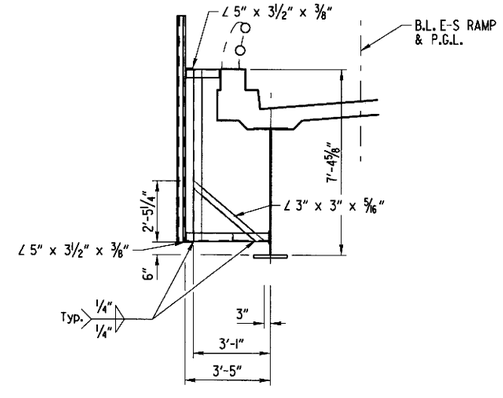
LOWER BRACKET SIGN PLAN



VIEW A-A



VIEW B-B



VIEW C-C

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 2 OF 3
DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE - E-S RAMP

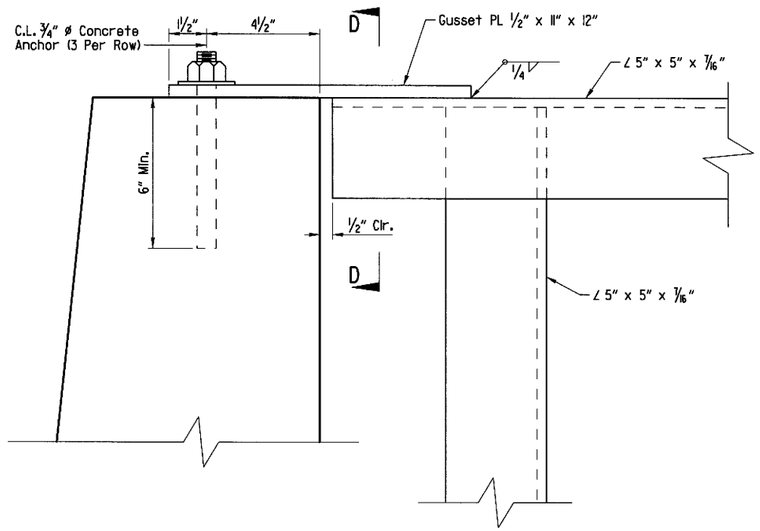
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

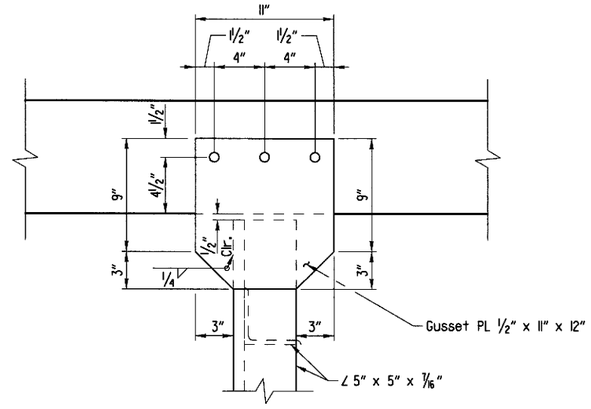
DRAWN BY: MKL DATE: 10/2017 FILENAME: B06119OXX_T12.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: No Scale
STR. NO. BM-040-60-52 DRAWING NO. 60061

Leonard.Speed 8/20/2018 2:21:06 PM
WORKSPACE: AHTD
Y:\VP-Projects\MAUMELLE_I54459_I-40_Interchange\06-Design\Drawings\Bridge\B06119OXX_T12.dgn
REVISED DATE:

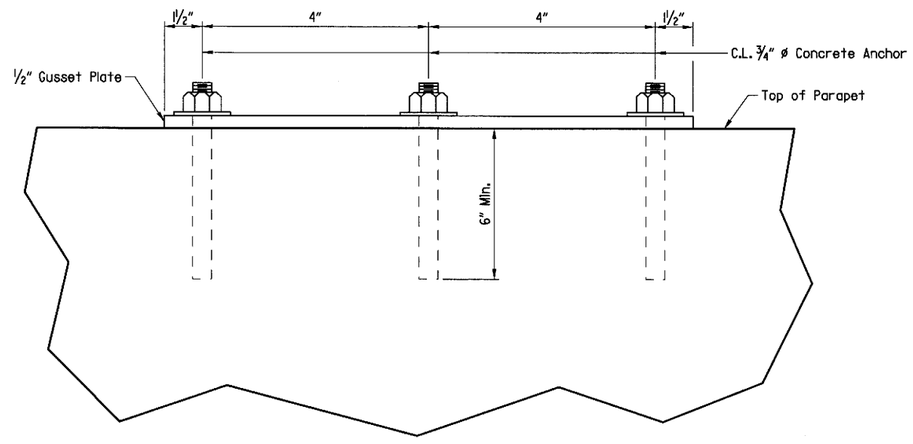
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	147	190
				(1)	BM-040-60-52 - SIGN STR. - 60062			



DETAIL W
No Scale



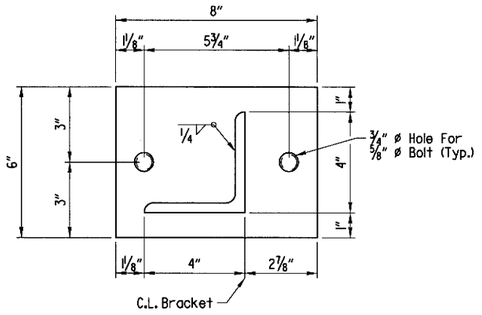
DETAIL
No Scale



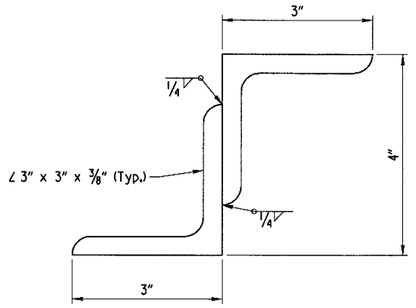
The Concrete anchors shall be drilled and grouted into place, the anchors shall be set and fixed using a QPL approved epoxy grout system in accordance with manufacturers recommendations and shall have the following ultimate capacities:

Shear 10,000 lbs.
Tension 9,000 lbs.

VIEW D - D
No Scale



DETAIL V
No Scale



NOTE:
Structural Z Sign Support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SIGN SUPPORT
No Scale

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.14501
STEPHEN F. HARPER

8/20/18

BRIDGE ENGINEER
PRINT DATE: 8/20/2018

SHEET 3 OF 3
DETAILS OF BRIDGE MOUNTED SIGN STRUCTURE - E-S RAMP
ROUTE SECTION

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 10/2017 FILENAME: B06119OXX_T13.dgn
CHECKED BY: PK DATE: 12/2017
DESIGNED BY: HX DATE: 11/2017 SCALE: AS NOTED
STR. NO. BM-040-60-52 DRAWING NO. 60062

Leonard.Speed 8/20/2018 2:26:07 PM
WORKSPACE: ATD
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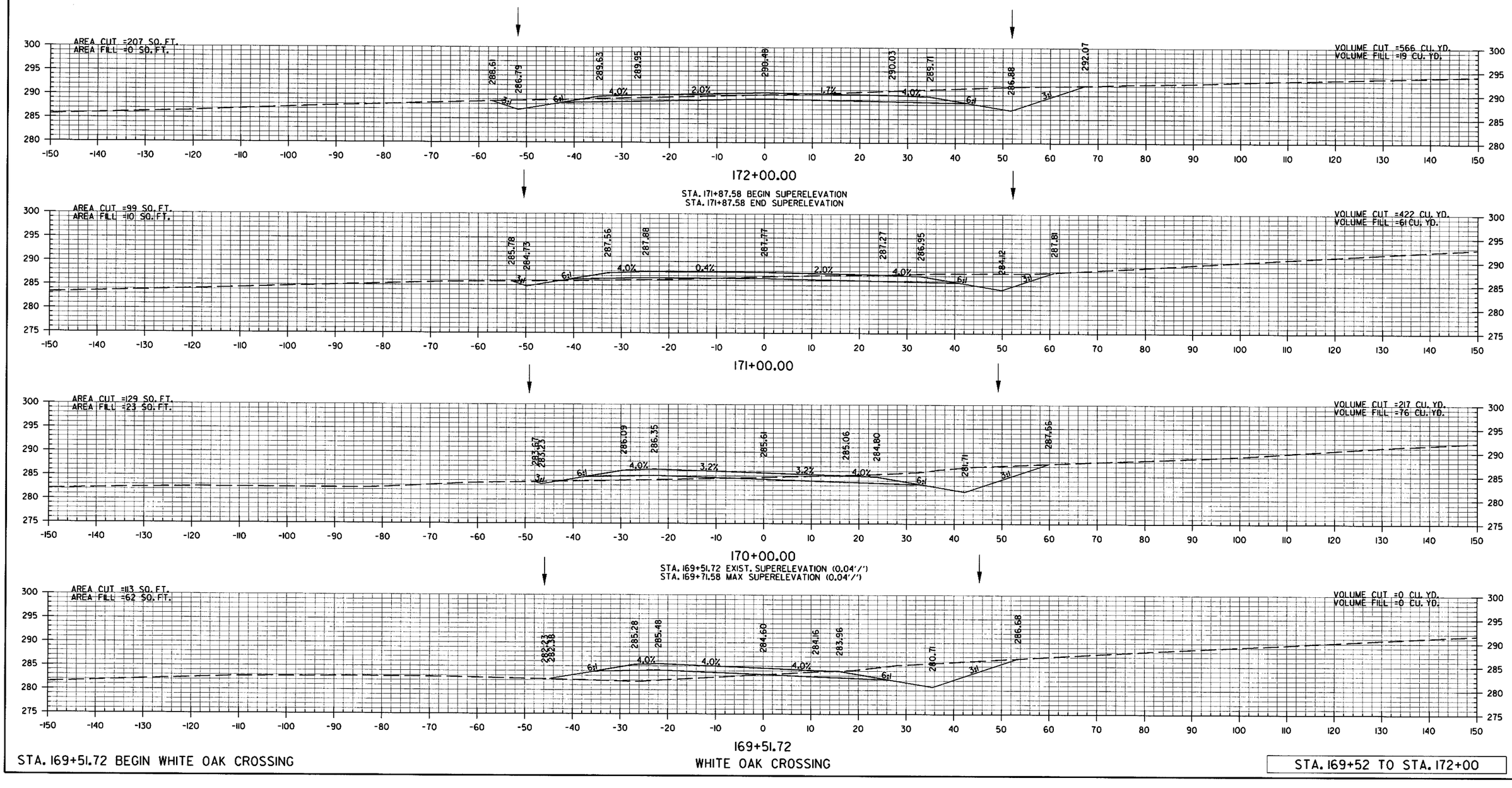
REVISED DATE:

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	148	190
(2)	CROSS SECTIONS			



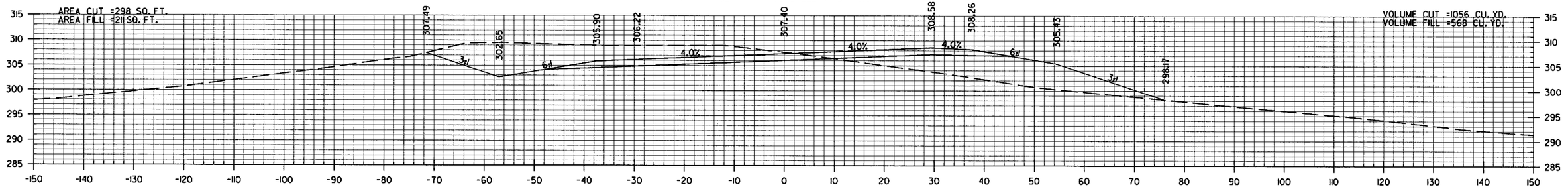
STA. 169+51.72 BEGIN WHITE OAK CROSSING

STA. 169+52 TO STA. 172+00

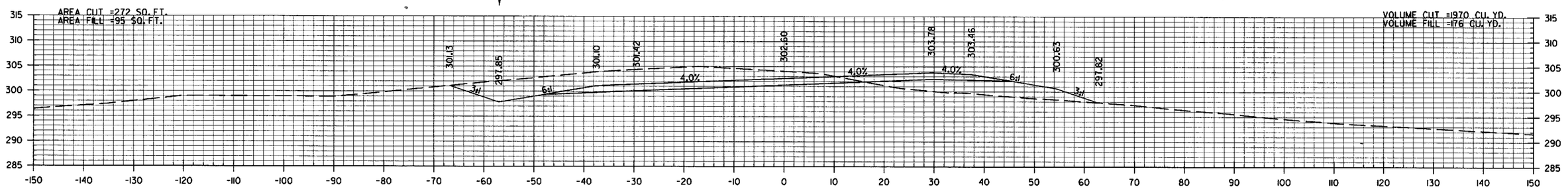
Leonard.Speed 7/23/2018 12:53:01 PM
WORKSPACE: AHTD
Y:\Projects\MAUMELLE.154459.I-40.Interchange\06-Design\Drawings\r061190.21.CX.001.dgn
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	149	190
				(2)	CROSS SECTIONS			

STA. 176+02.57 MAX SUPERELEVATION (0.04'/')

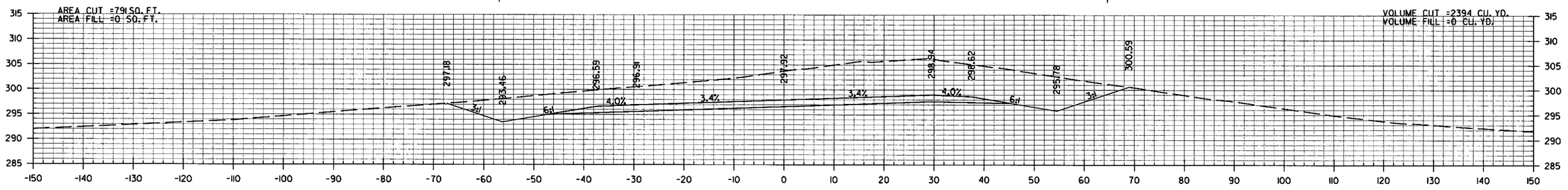


176+00.00

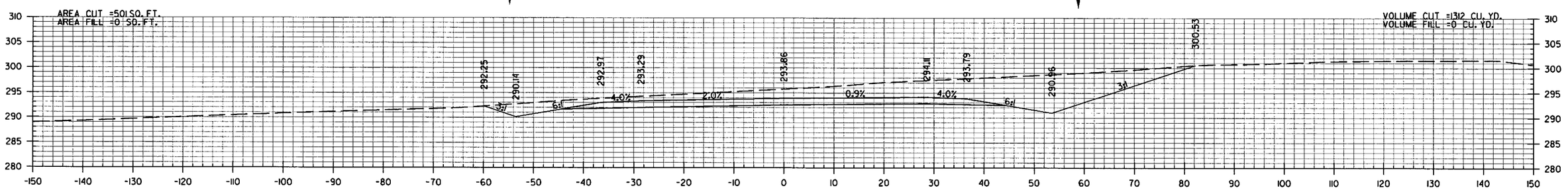


175+00.00

STA. 174+21.84 MAX SUPERELEVATION (0.04'/')



174+00.00



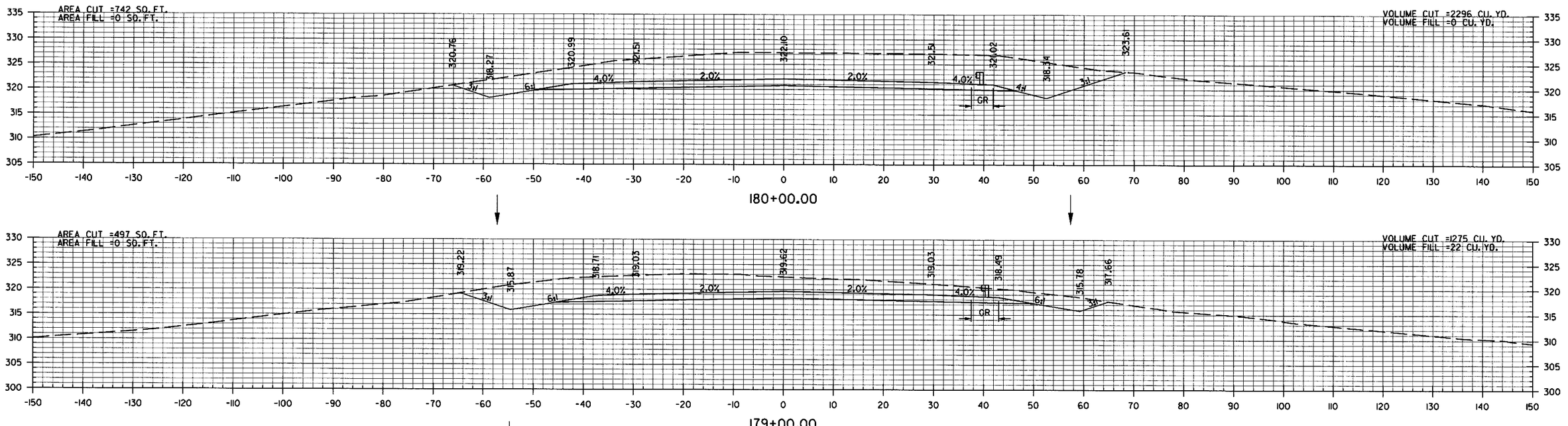
173+00.00

WHITE OAK CROSSING

STA. 173+00 TO STA. 176+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	150	190
				(2)	CROSS SECTIONS			

BEGIN SM-I MATERIAL FOR MSE WALL STA. 180+68 = 0 CU. YDS.



STA. 177+00 TO STA. 180+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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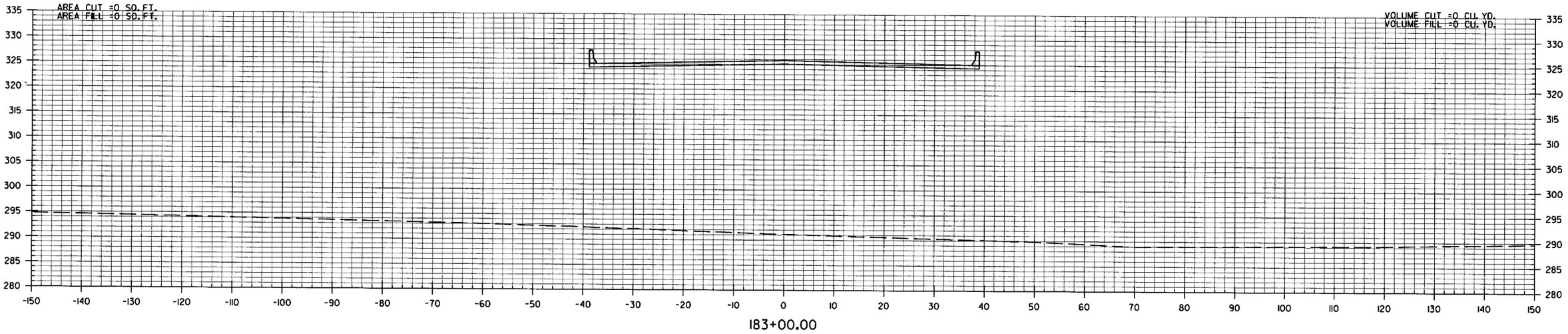
				JOB NO.		061190	151	190
				(2)	CROSS SECTIONS			



STA. 181+00 TO STA. 183+00

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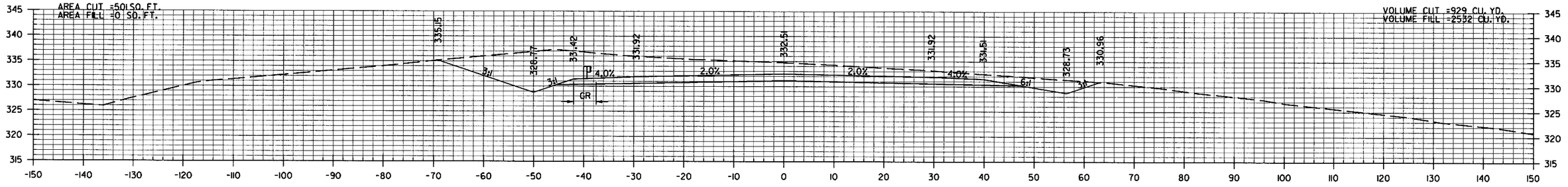
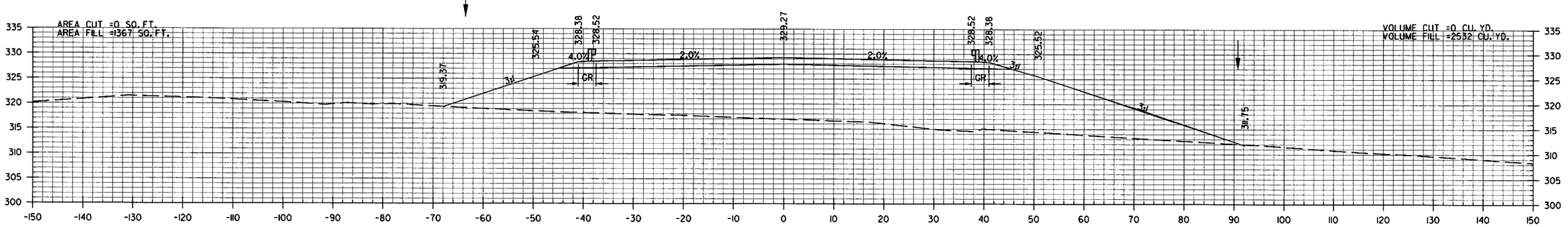
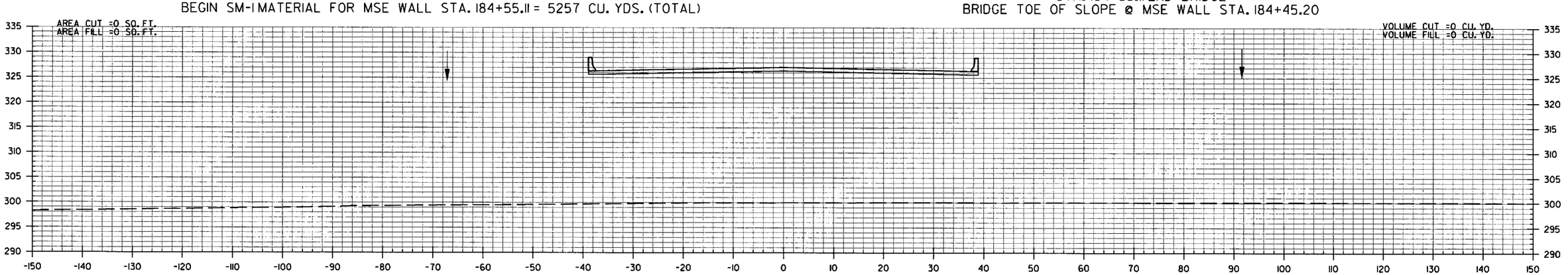
				(2)	CROSS SECTIONS			







STA. 184+00 TO STA. 186+00

Leonard Speed 7/23/2018 12:53:07 PM
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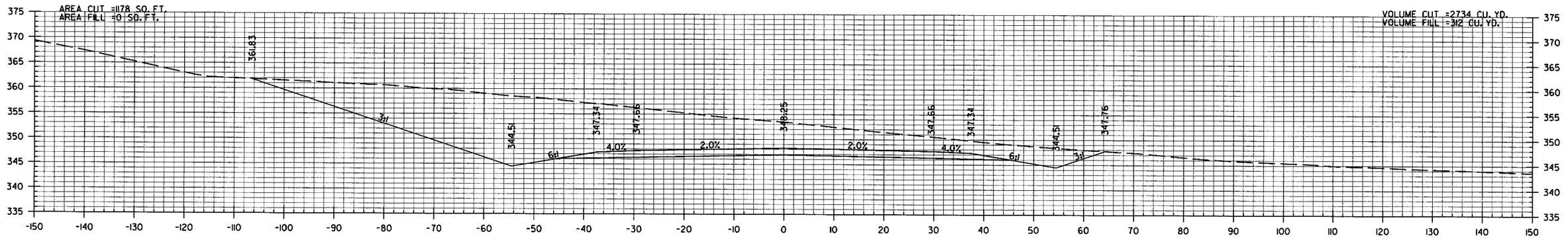
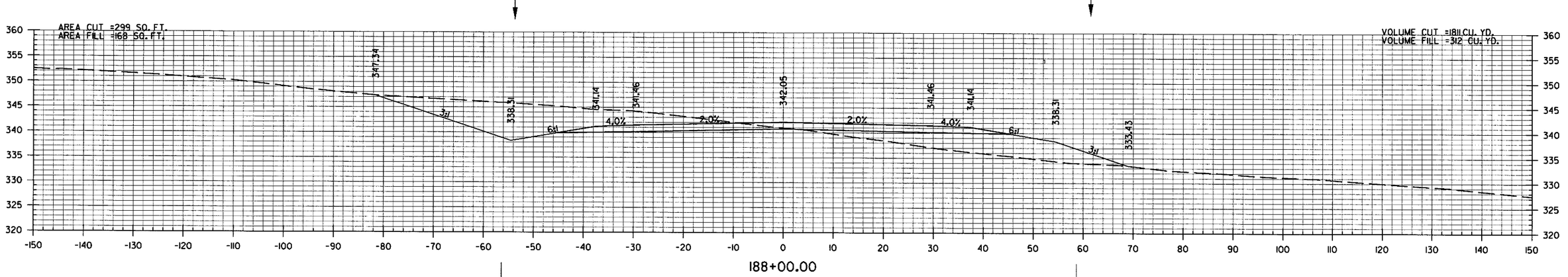
XYP:50 Proj:MAUMELLE.I54459.1-40_Interchange\06-Design\Drawings\v061190.21.CX.001.dgn
REVISED DATE: **REVDATE**

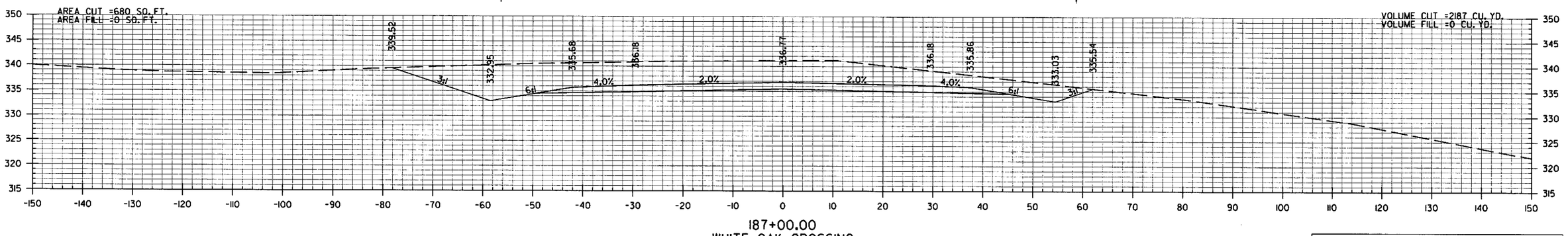
DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	153	190

(2) CROSS SECTIONS







STA. 187+00 TO STA. 189+00

LeonprofSpeed 7/23/2018 12:53:09 PM
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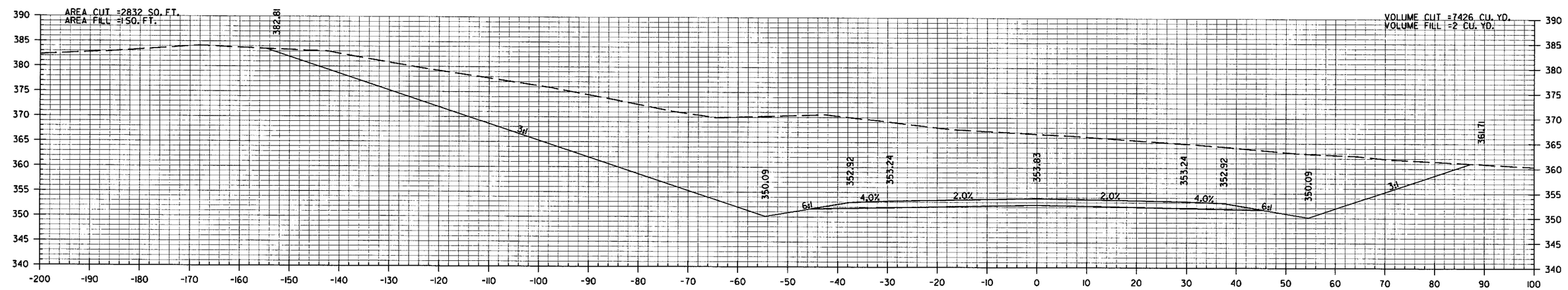
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	154	190

(2) CROSS SECTIONS

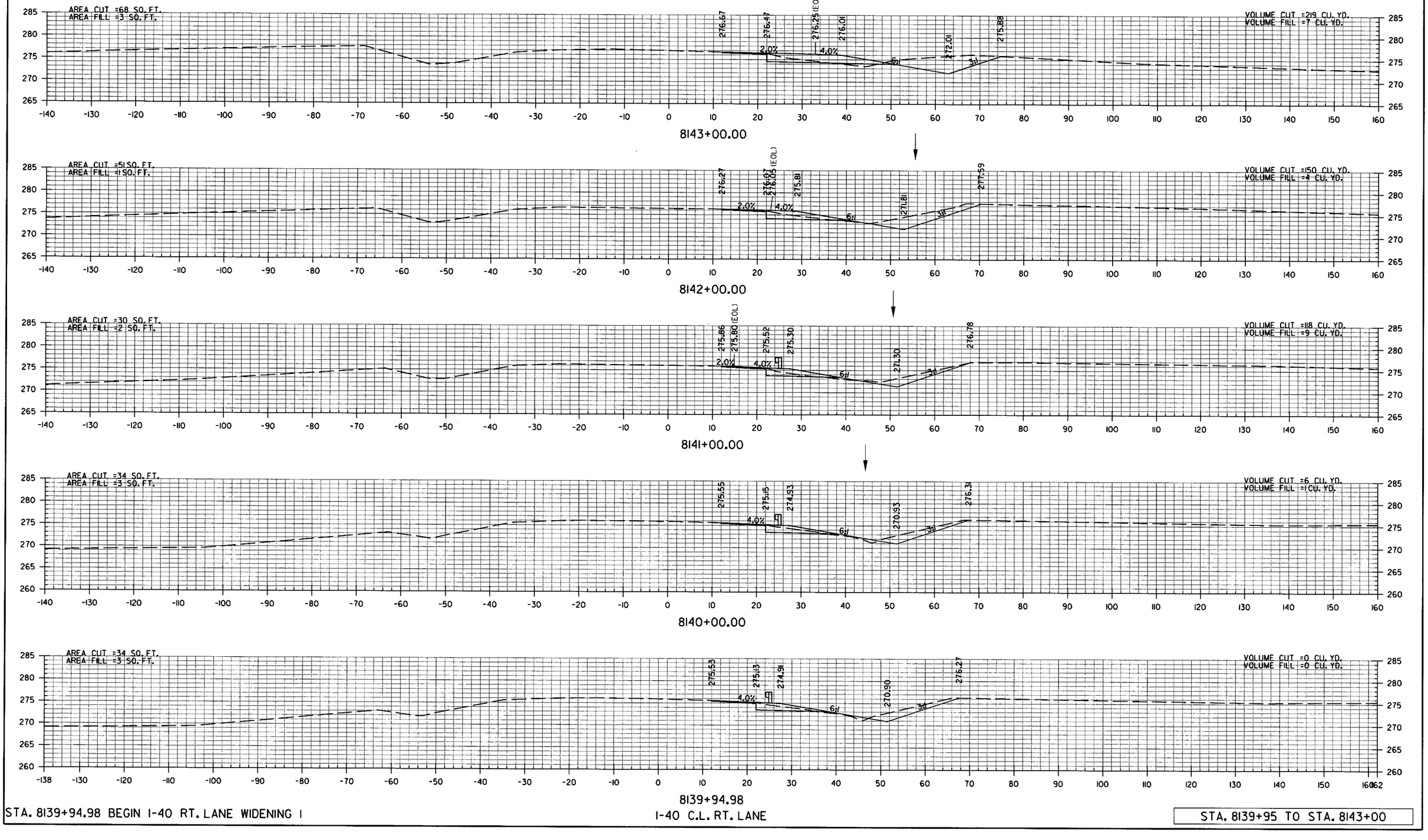
STA. 190+00.00 END WHITE OAK CROSSING



190+00.00
WHITE OAK CROSSING

STA. 190+00 TO STA. 190+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	155	190
				(2)	CROSS SECTIONS			

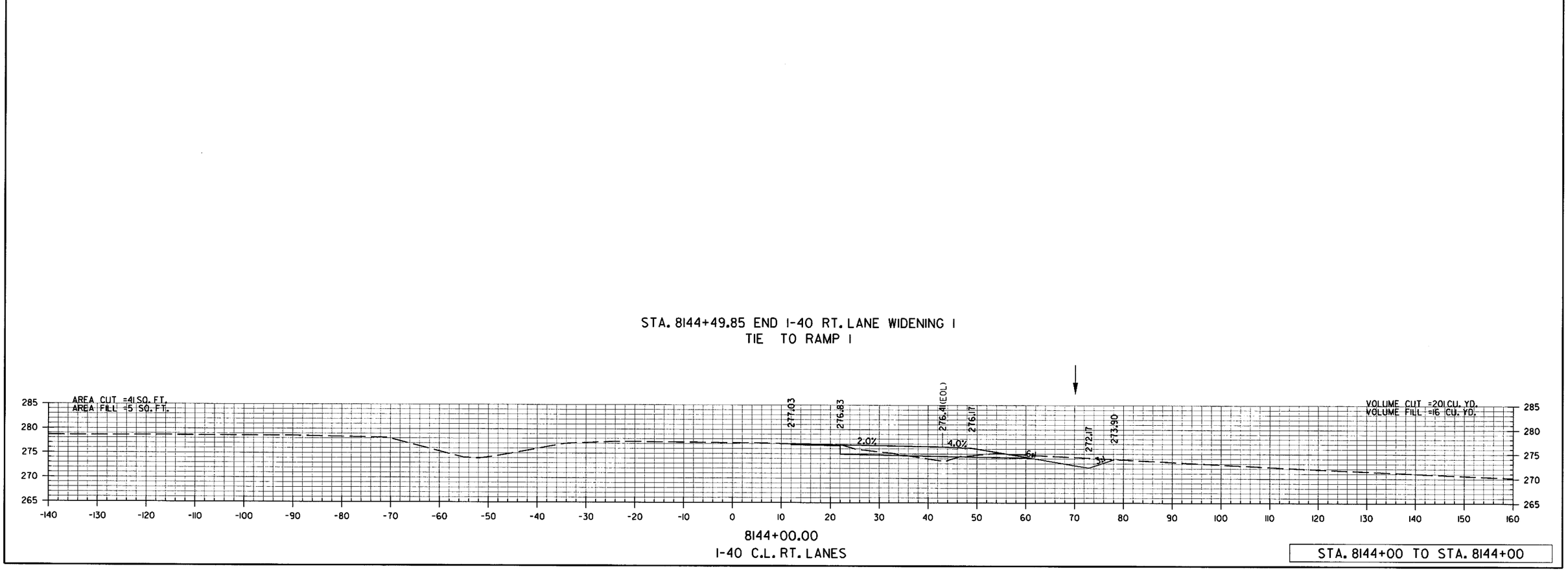


STA. 8139+94.98 BEGIN I-40 RT. LANE WIDENING I

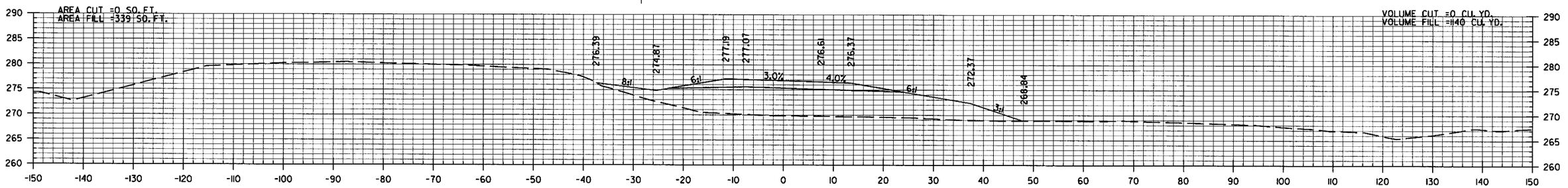
I-40 C.L. RT. LANE

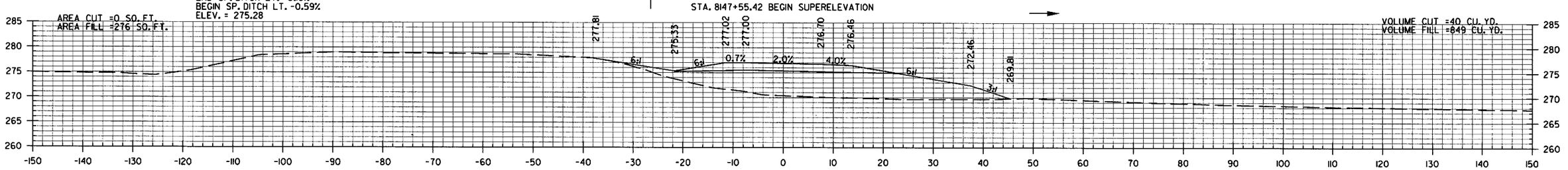
STA. 8139+95 TO STA. 8143+00

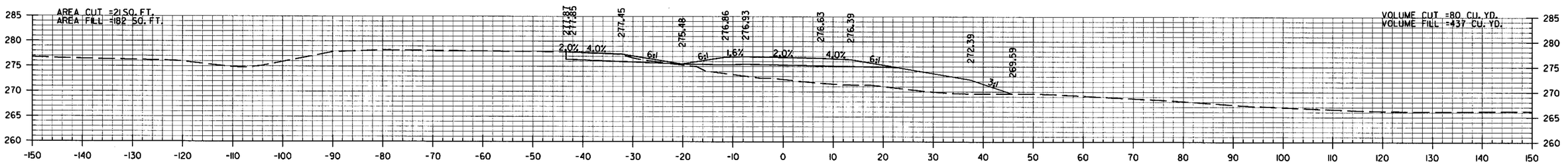
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	156	190
				(2)	CROSS SECTIONS			

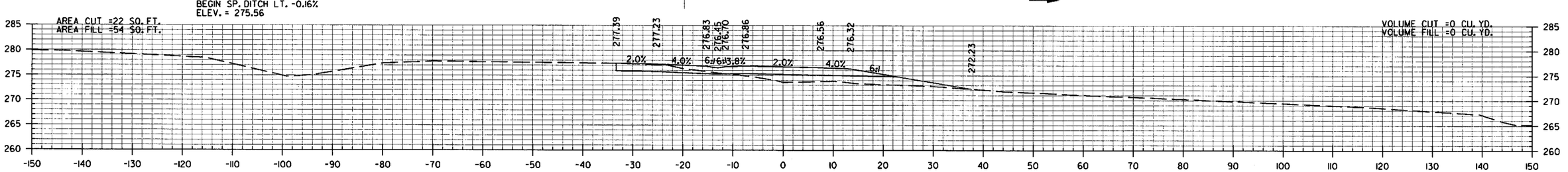


DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	157	190
				(2)	CROSS SECTIONS			









STA. 8144+49.85 BEGIN RAMP 1

RAMP 1

STA. 8145+00 TO STA. 8148+00

Leonard Speed 7/23/2018 12:53:15 PM
WORKSPACE: ARDOT
YOUR DGN FILE: \\AUMELLE_154459.1-40_Interchange\06-Design\Drawings\061190_2L_CX_001.dgn
REVISED DATE: ##REVDATE##

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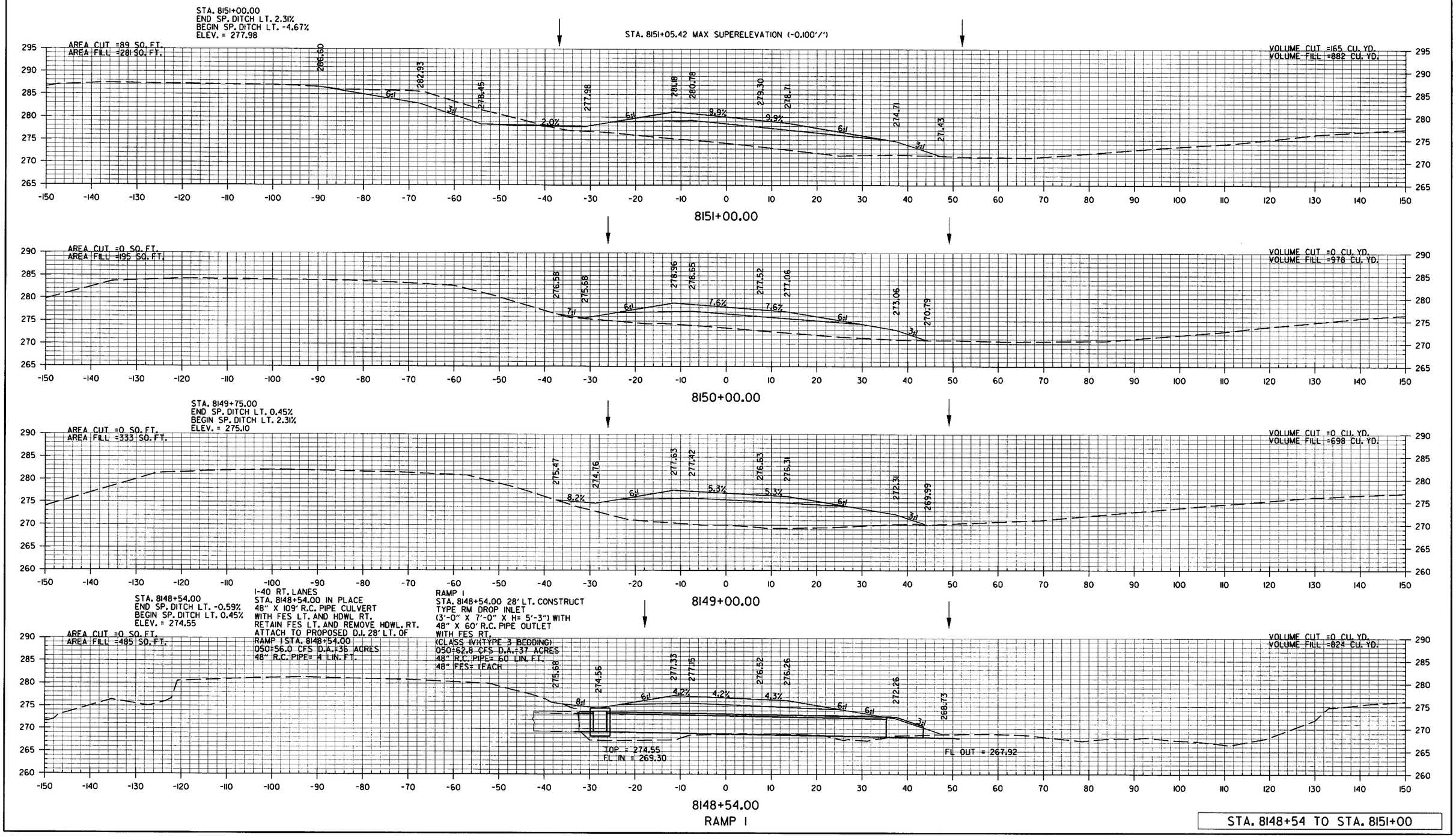

STA. 8148+54 TO STA. 8151+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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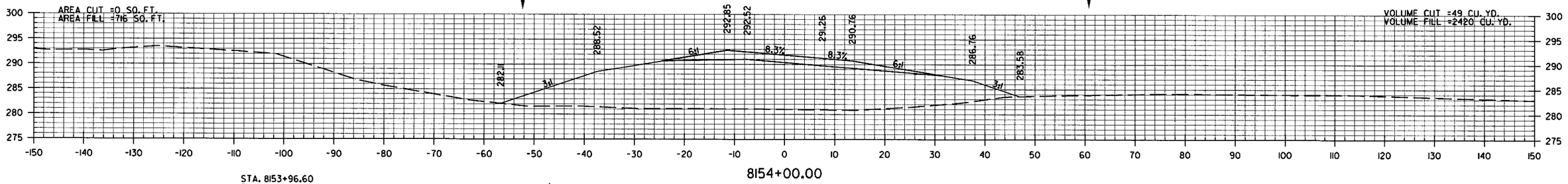
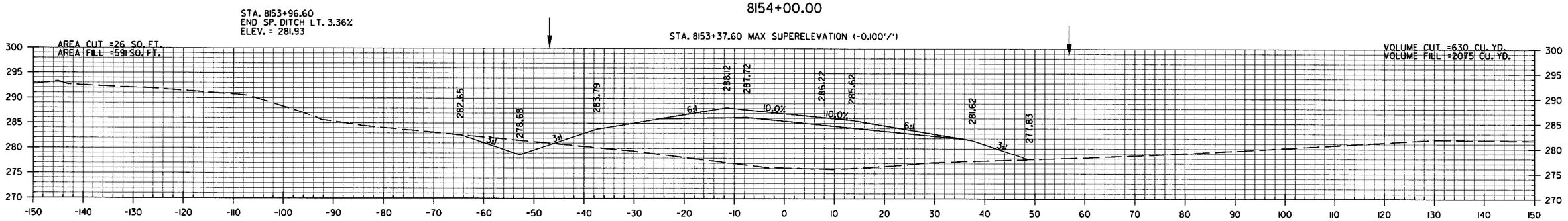
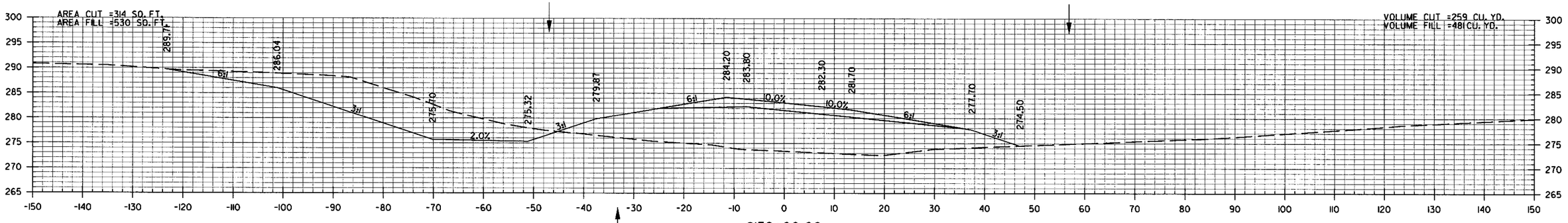
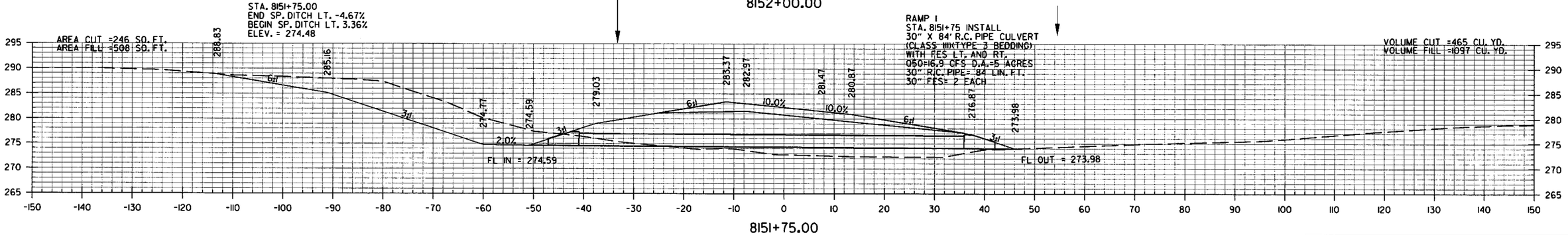
				JOB NO.		061190	159	190
				(2)	CROSS SECTIONS			







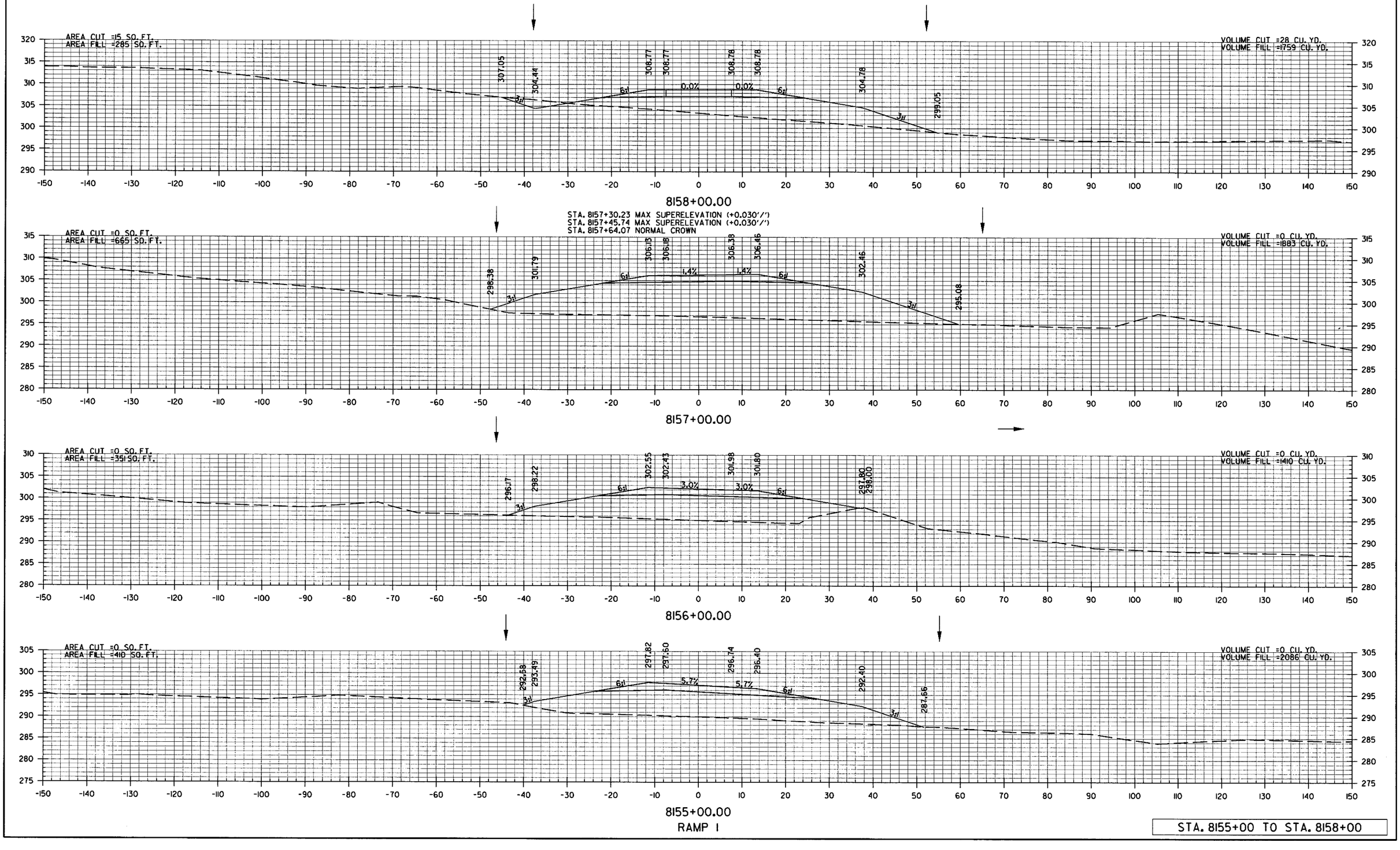


STA. 8151+75 TO STA. 8154+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	160	190

(2) CROSS SECTIONS

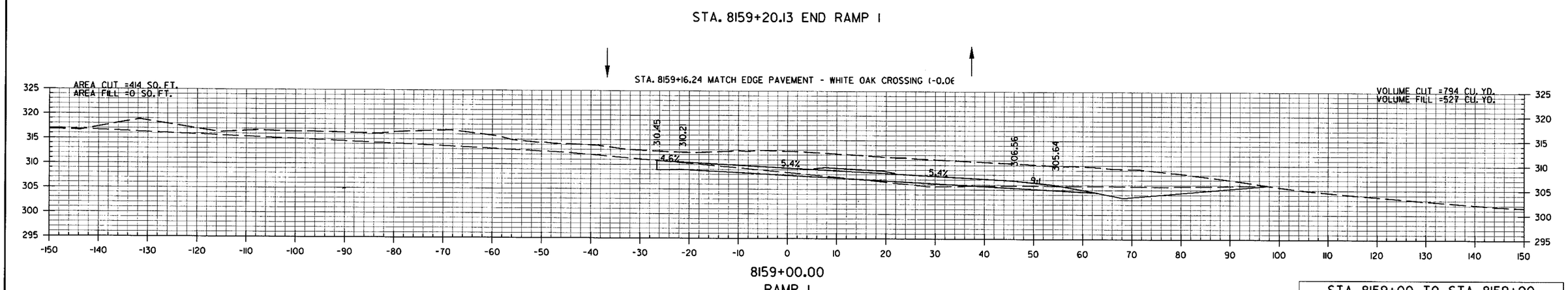


STA. 8155+00 TO STA. 8158+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	161	190

(2) CROSS SECTIONS



STA. 8159+00 TO STA. 8159+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	162	190

(2) CROSS SECTIONS

STA. 8157+03.57 BEGIN RAMP 2

RAMP 2

STA. 8158+00 TO STA. 8160+00

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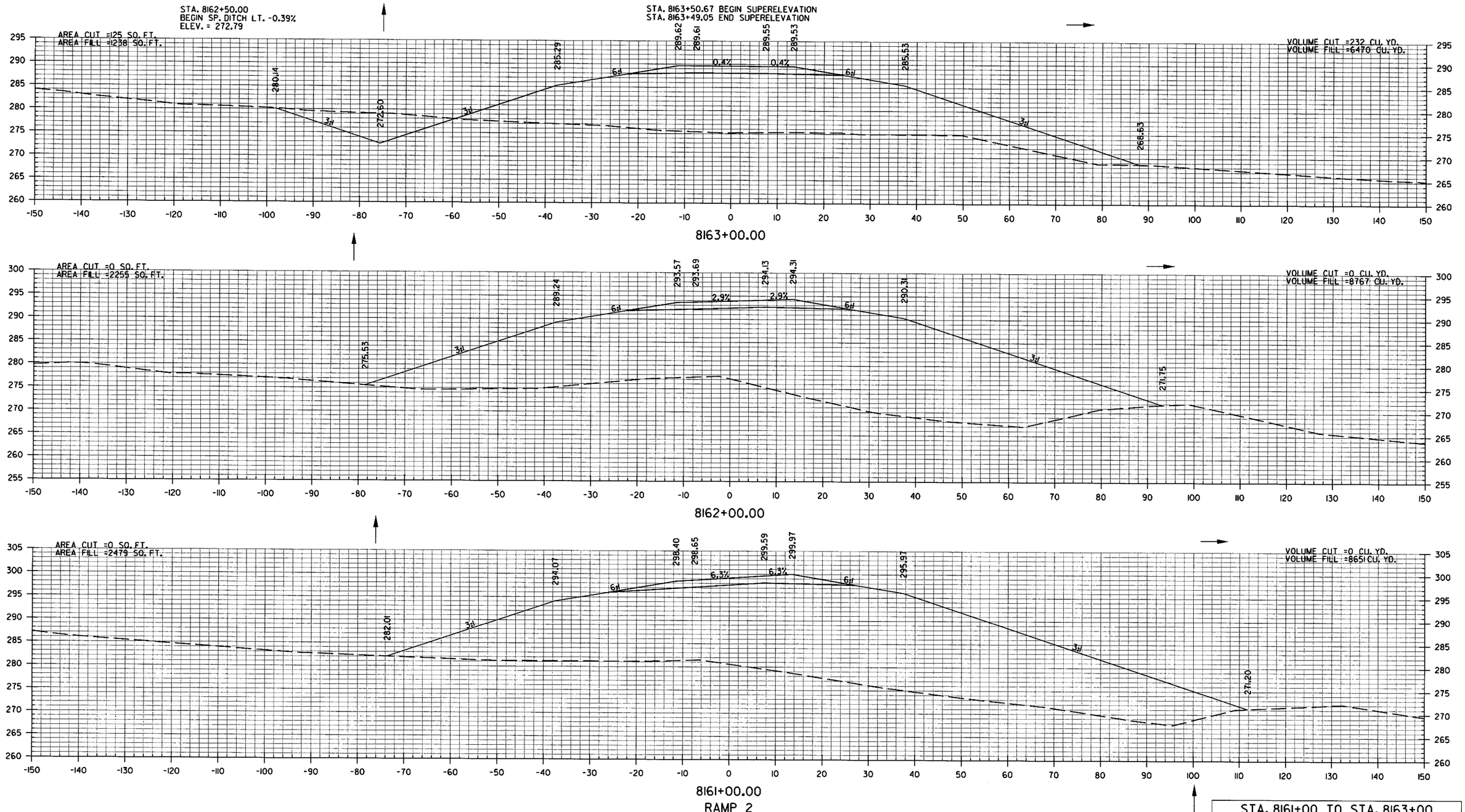
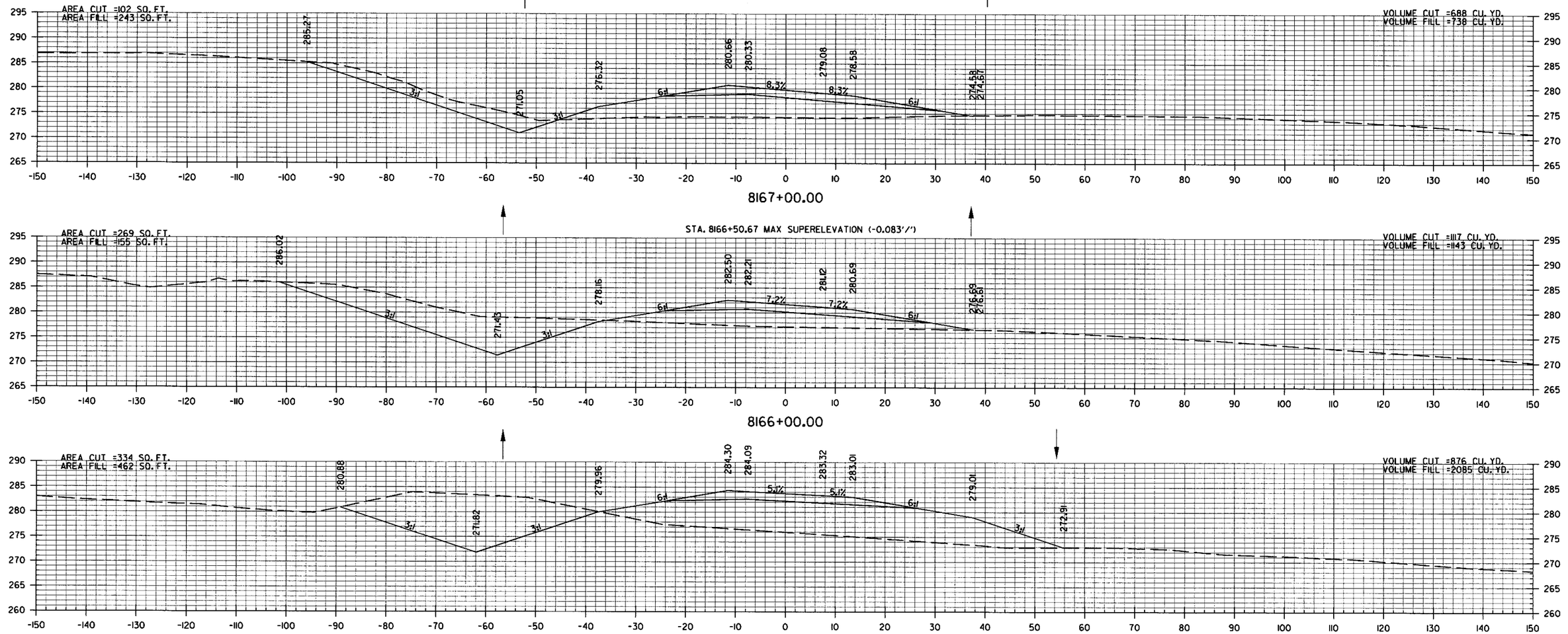
				(2)	CROSS SECTIONS			



DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	164	190

(2) CROSS SECTIONS



STA. 8164+00 TO STA. 8167+00

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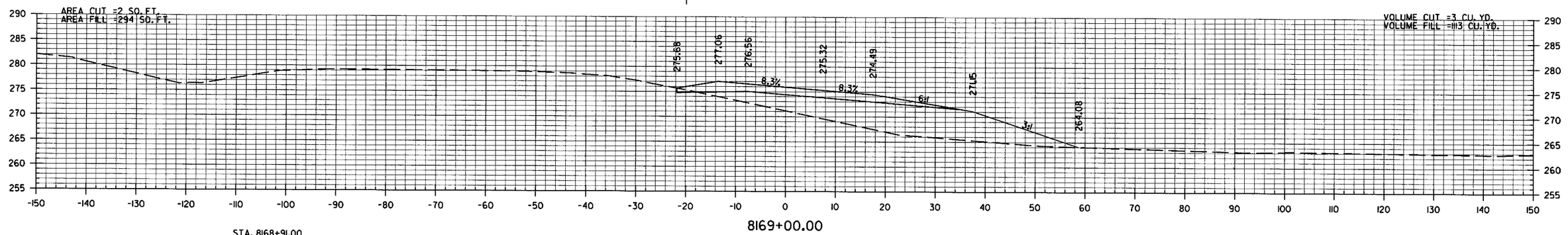
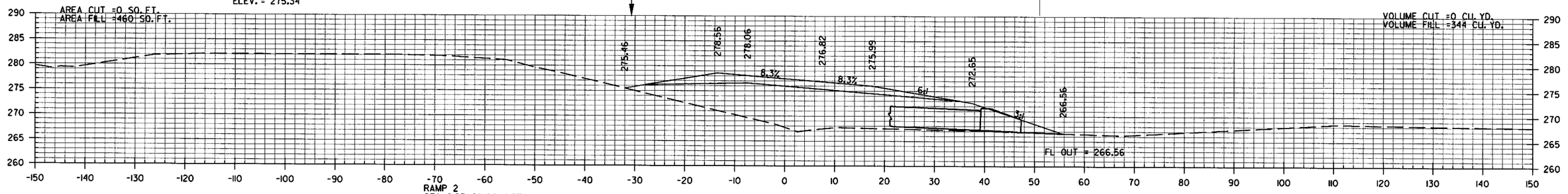


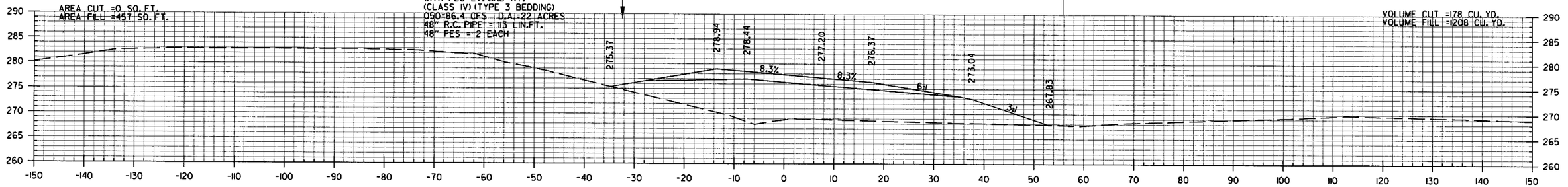
8169+00.00

STA. 8168+91.00
END SP. DTICH LT. 5.49%
ELEV. = 275.34



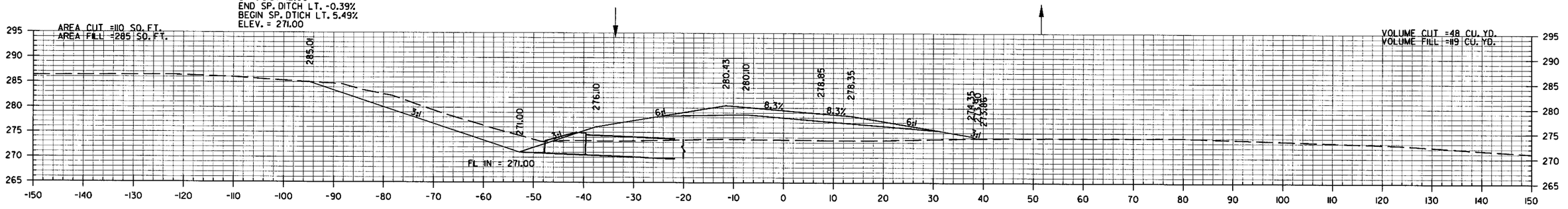
8168+20.23

RAMP 2
STA. 8167+60.00 INSTALL
48" X 113' R.C. PIPE CULVERT
45° RT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS IV) (TYPE 3 BEDDING)
Q50=86.4 CFS D.A.=22 ACRES
48" R.C. PIPE = 113 LIN.FT.
48" FES = 2 EACH



8168+00.00

STA. 8167+12.06
END SP. DITCH LT. -0.39%
BEGIN SP. DTICH LT. 5.49%
ELEV. = 271.00

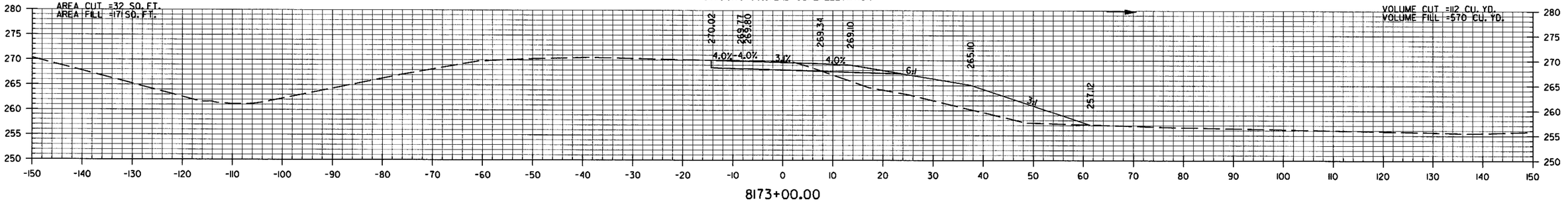


8167+12.06
RAMP 2

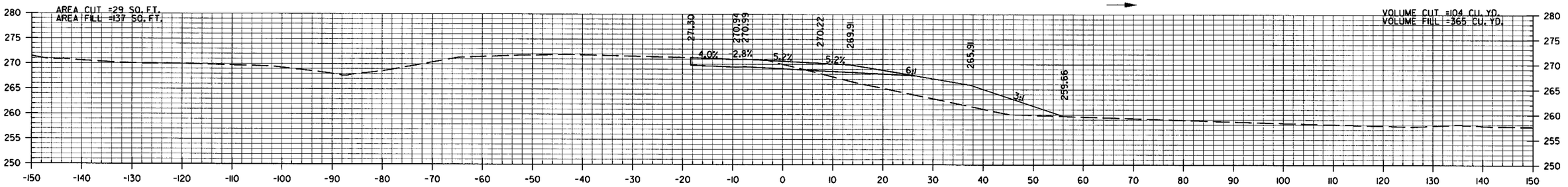
STA. 8167+12 TO STA. 8169+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	166	190
				(2)		CROSS SECTIONS		

STA. 8173+75.28 END RAMP 2
TIE TO I-40 RT. LANE WIDENING II
STA. 8173+50.51 END SUPERELEVATION

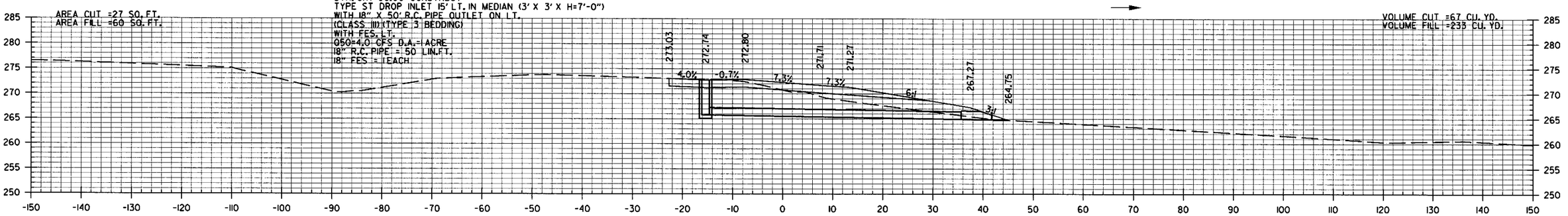


8173+00.00



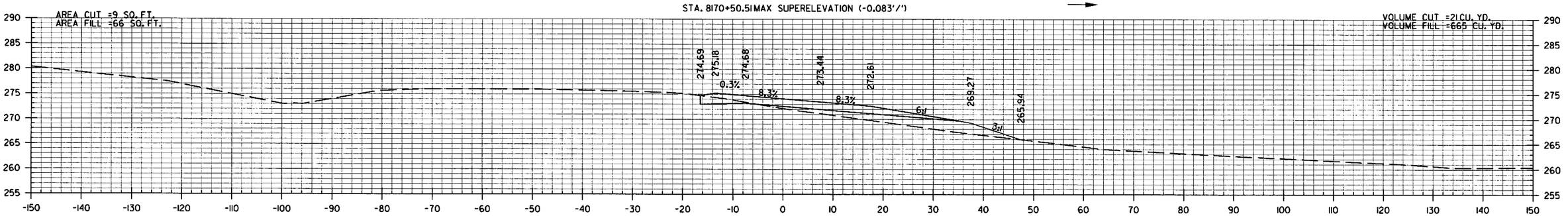
8172+00.00

RAMP 2
STA. 8171+00.00 CONSTRUCT
TYPE ST DROP INLET 15' LT. IN MEDIAN (3' X 3' X H=7'-0")
WITH 18" X 50' R.C. PIPE OUTLET ON LT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES, LT.
Q50=4.0 CFS D.A.= 1 ACRE
18" R.C. PIPE = 50 LIN.FT.
18" FES = 1 EACH



8171+00.00

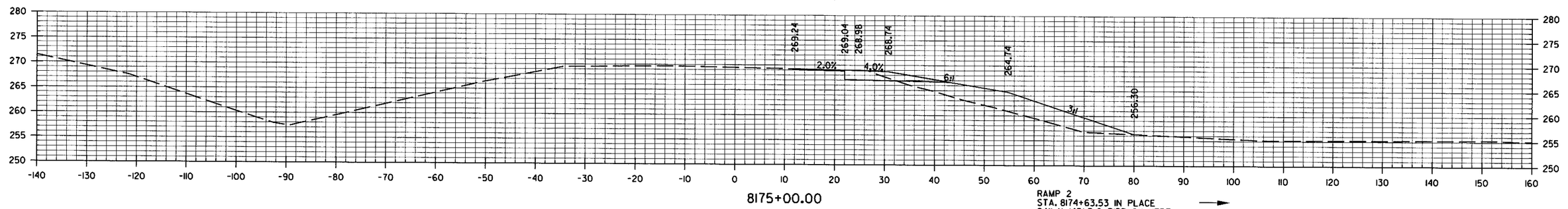
STA. 8170+50.51 MAX SUPERELEVATION (-0.083'/')



8170+00.00
RAMP 2

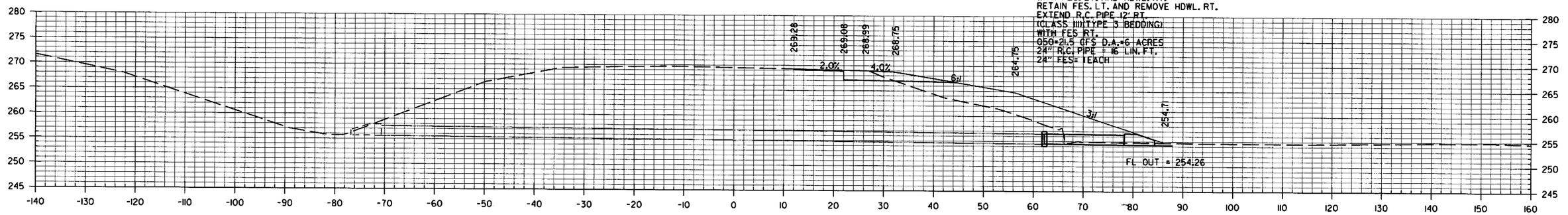
STA. 8170+00 TO STA. 8173+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	167	190
				(2)	CROSS SECTIONS			

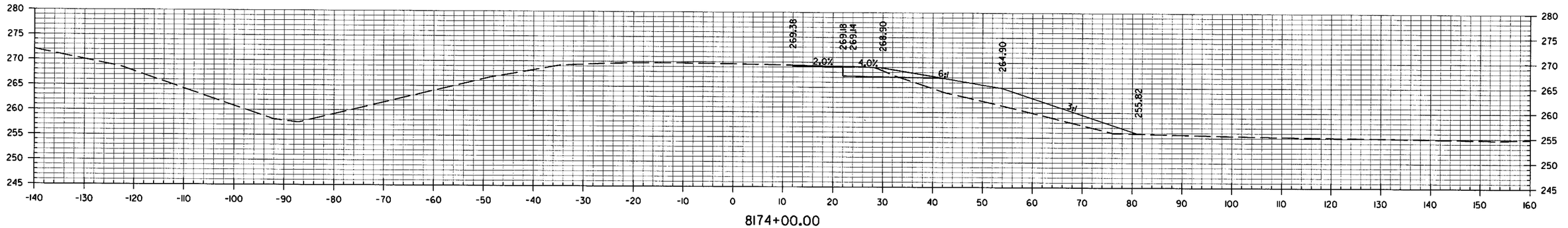


8175+00.00

RAMP 2
STA. 8174+63.53 IN PLACE
24" X 143' R.C. PIPE CULVERT
WITH FES. LT. AND HDWL. RT.
RETAIN FES. LT. AND REMOVE HDWL. RT.
EXTEND R.C. PIPE 12' RT.
(CLASS III TYPE 3 BEDDING)
WITH FES RT.
Q50=21.5 CFS D.A.=6 ACRES
24" R.C. PIPE = 16 LIN. FT.
24" FES= 1 EACH



8174+63.53



8174+00.00

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Y:\Projects\WAUMELLE_154459_I-40_Interchange\06-Design\Drawings\r061190_2i_CX_001.dgn
REVISED DATE: **REVDATE**

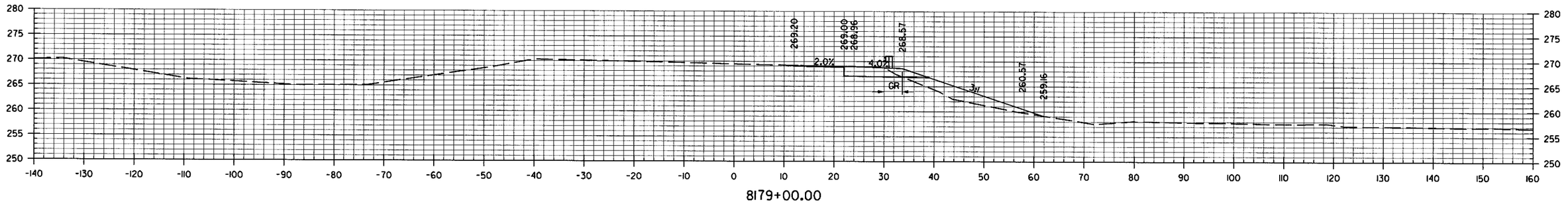
STA. 8173+75.11 BEGIN I-40 RT. LANE WIDENING II

I-40 C.L. RT. LANES

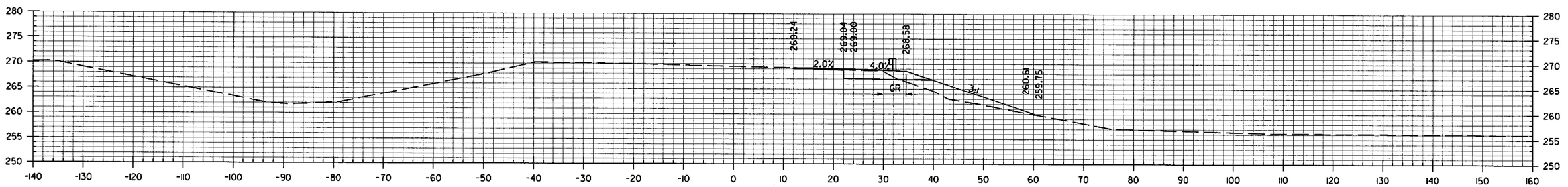
STA. 8174+00 TO STA. 8175+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	168	190
				(2)	CROSS SECTIONS			

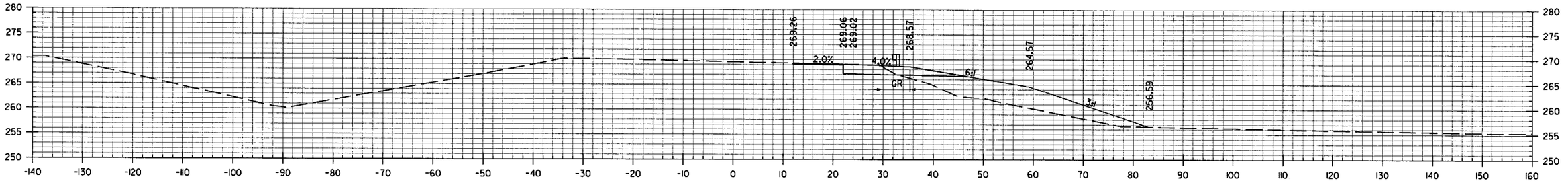
BEGIN BRIDGE STA. 8179+71.70



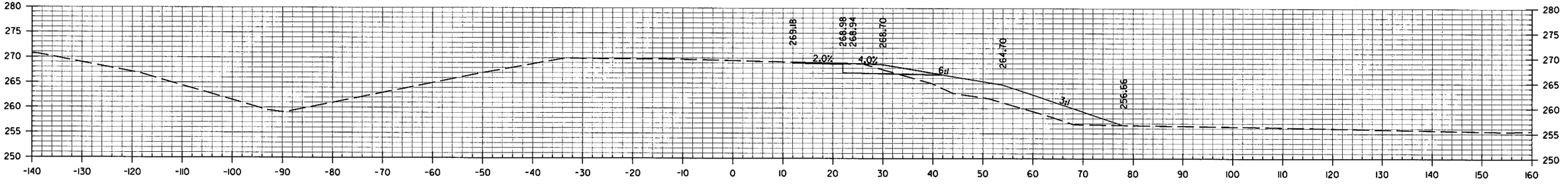
8179+00.00



8178+00.00



8177+00.00



8176+00.00

I-40 C.L. RT. LANES

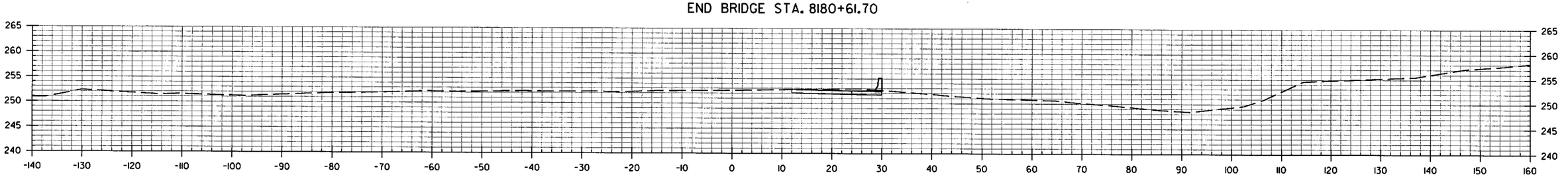
STA. 8176+00 TO STA. 8179+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	169	190

(2) CROSS SECTIONS

STA. 8180+98.20 END I-40 RT. LANE WIDENING II

END BRIDGE STA. 8180+61.70



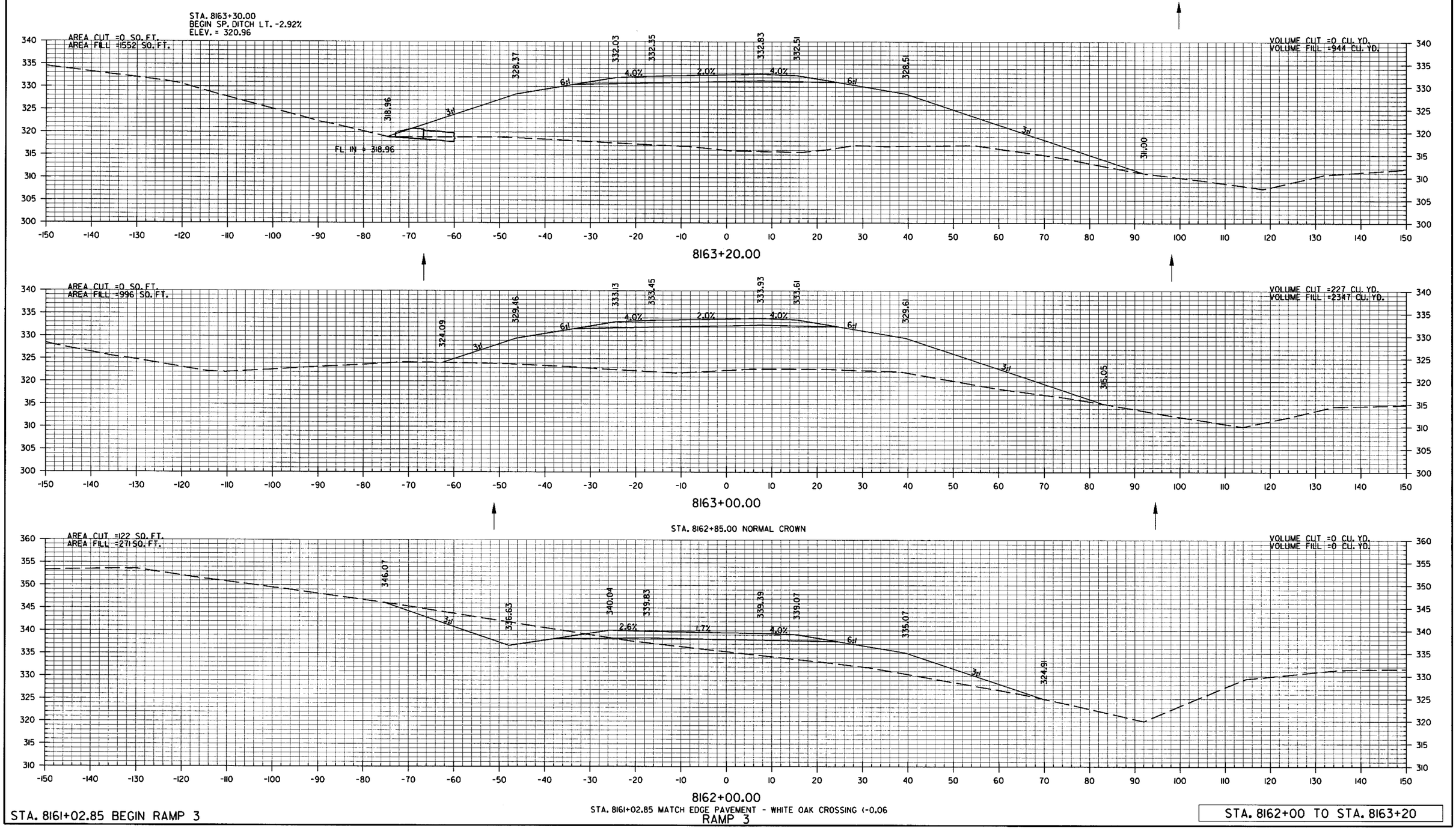
8180+00.00

I-40 C.L. RT. LANES

STA. 8180+00 TO STA. 8180+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	170	190
				(2)	CROSS SECTIONS			

RAMP 3
STA. 8163+39.24 INSTALL
24" X 164' R.C. PIPE CULVERT
14° RT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS III) (TYPE 3 BEDDING)
Q50=8.8 CFS D.A.=3 ACRES
24" R.C. PIPE = 164 LIN.FT.
24" FES = 2 EACH



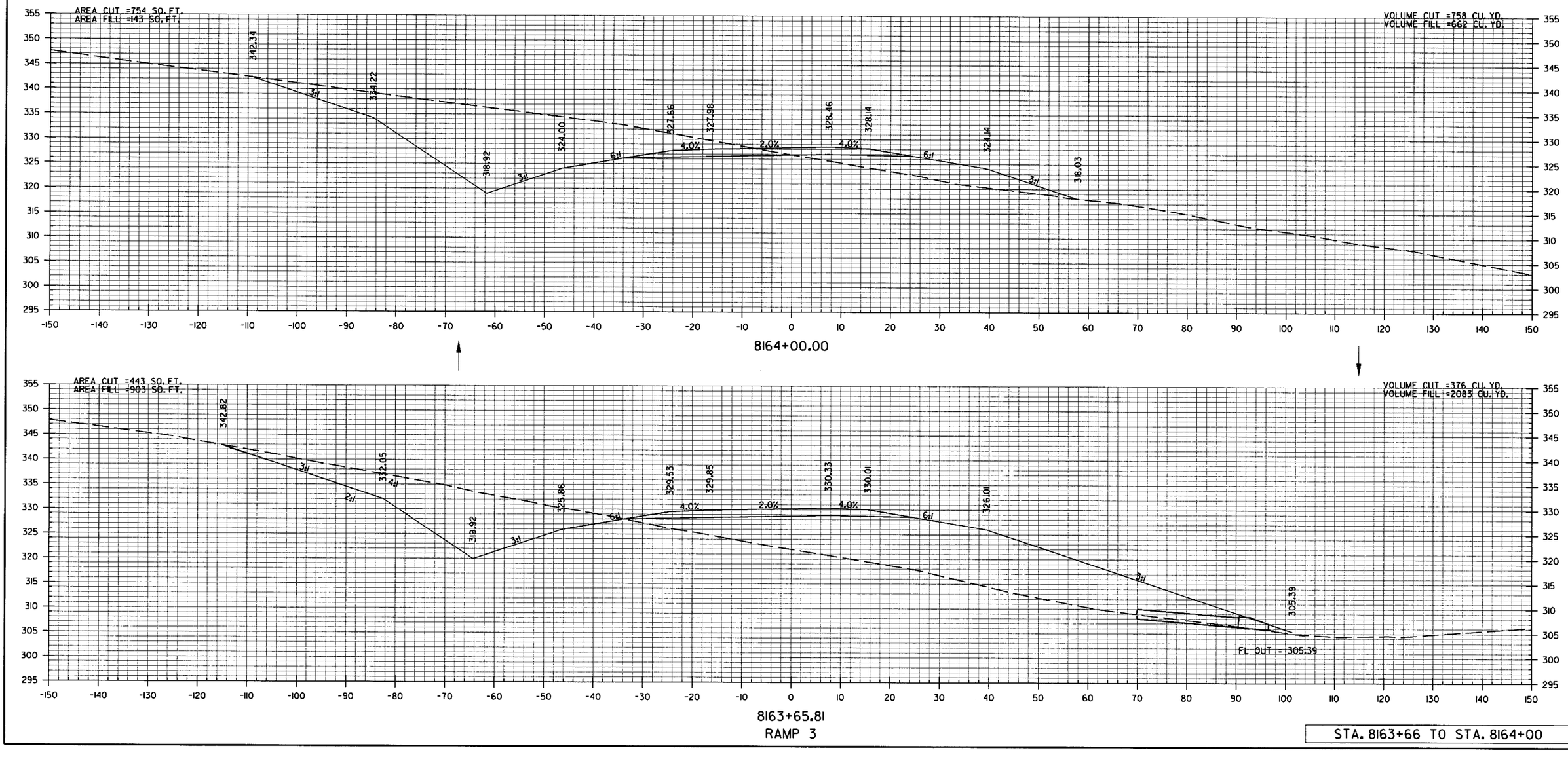
STA. 8161+02.85 BEGIN RAMP 3

STA. 8161+02.85 MATCH EDGE PAVEMENT - WHITE OAK CROSSING (-0.06
RAMP 3

STA. 8162+00 TO STA. 8163+20

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	171	190

(2) CROSS SECTIONS



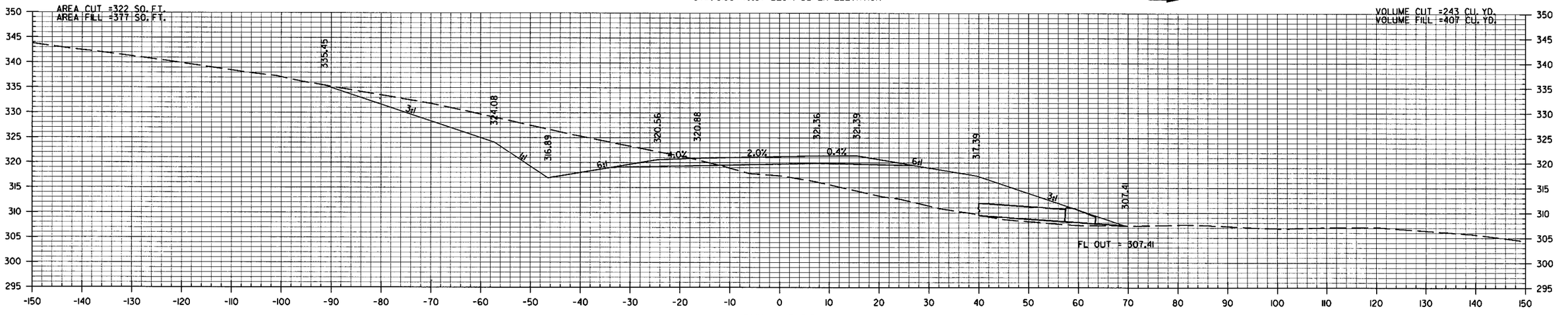
STA. 8163+66 TO STA. 8164+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	172	190
				(2)	CROSS SECTIONS			

STA. 8165+40.57 BEGIN SUPER ELEVATION

AREA CUT =322 SQ. FT.
AREA FILL =377 SQ. FT.

VOLUME CUT =243 CU. YD.
VOLUME FILL =407 CU. YD.



8165+30.00

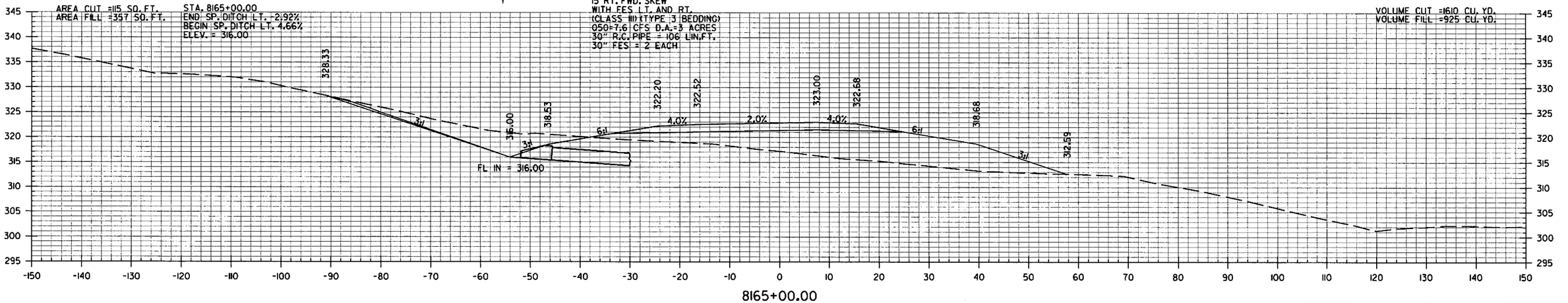
STA. 8165+25.00
END SP. DITCH LT. 4.66%
ELEV. = 317.16

STA. 8165+00.00
END SP. DITCH LT. -2.92%
BEGIN SP. DITCH LT. 4.66%
ELEV. = 316.00

RAMP 3
STA. 8165+13.13 INSTALL
30" X 106' R.C. PIPE CULVERT
15°RT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS III) (TYPE 3 BEDDING)
Q50=7.6 CFS D.A.=3 ACRES
30" R.C. PIPE = 106 LIN.FT.
30" FES = 2 EACH

AREA CUT =115 SQ. FT.
AREA FILL =357 SQ. FT.

VOLUME CUT =1610 CU. YD.
VOLUME FILL =925 CU. YD.

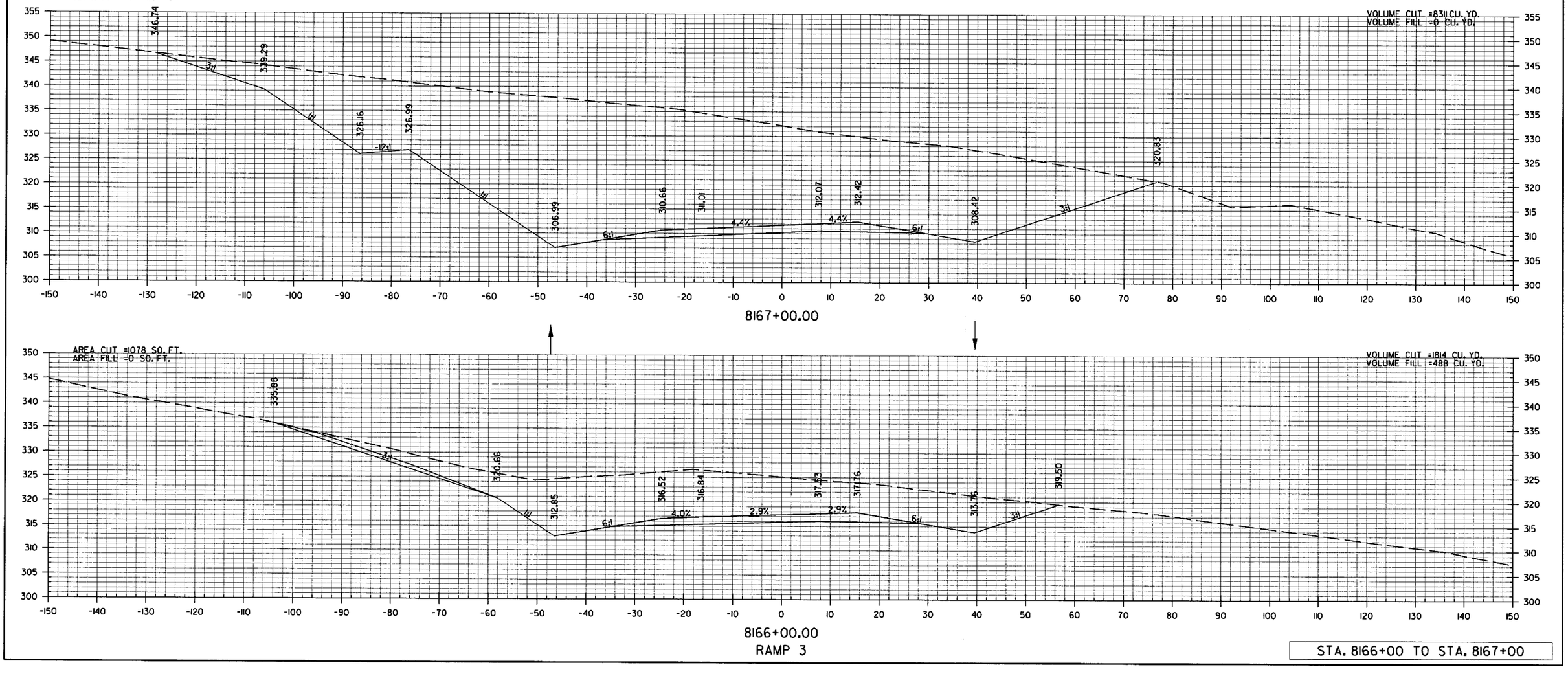


8165+00.00
RAMP 3

STA. 8165+00 TO STA. 8165+30

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	173	190
(2)	CROSS SECTIONS			



STA. 8166+00 TO STA. 8167+00

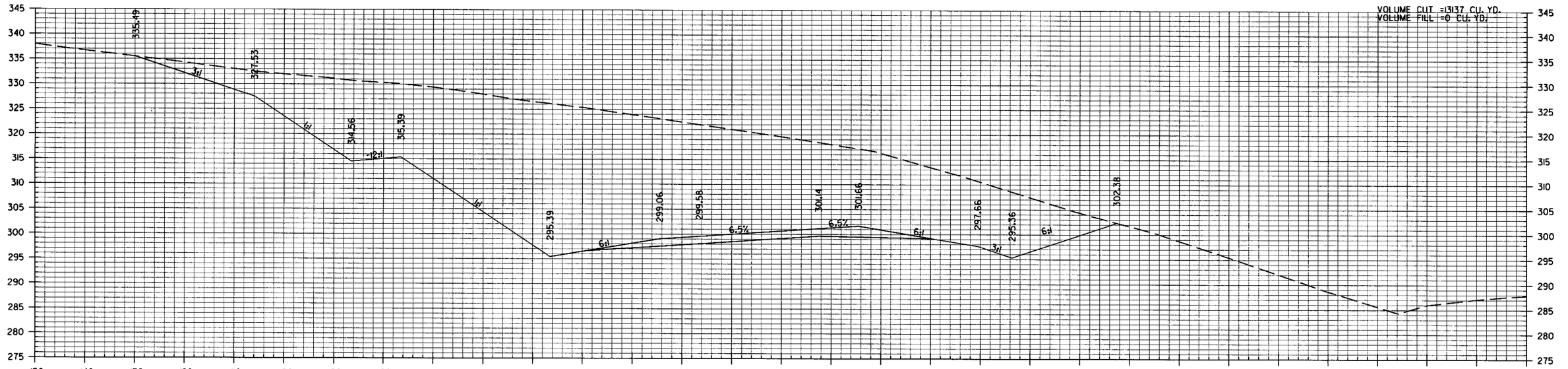
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	174	190

(2) CROSS SECTIONS

AREA CUT =3169 SQ. FT.
AREA FILL =0 SQ. FT.

STA. 8169+00.00
BEGIN SP. DITCH LT. -6.01%
ELEV. = 295.39

VOLUME CUT =13137 CU. YD.
VOLUME FILL =0 CU. YD.



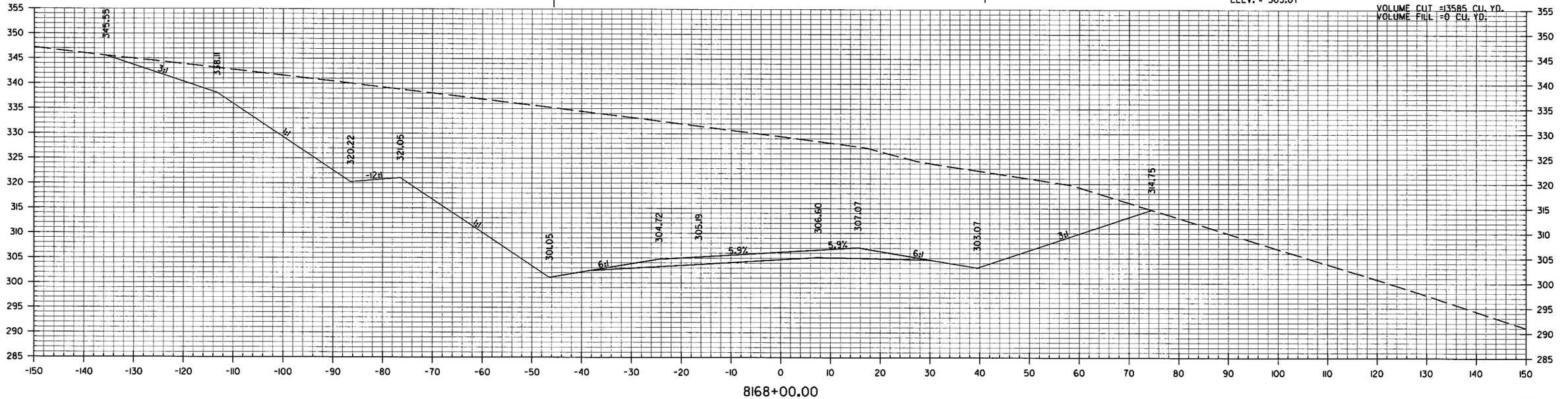
8169+00.00

AREA CUT =3925 SQ. FT.
AREA FILL =0 SQ. FT.

STA. 8168+40.57 MAX SUPERELEVATION (+0.065'/')

STA. 8168+00.00
BEGIN SP. DITCH RT. -7.72%
ELEV. = 303.07

VOLUME CUT =13585 CU. YD.
VOLUME FILL =0 CU. YD.



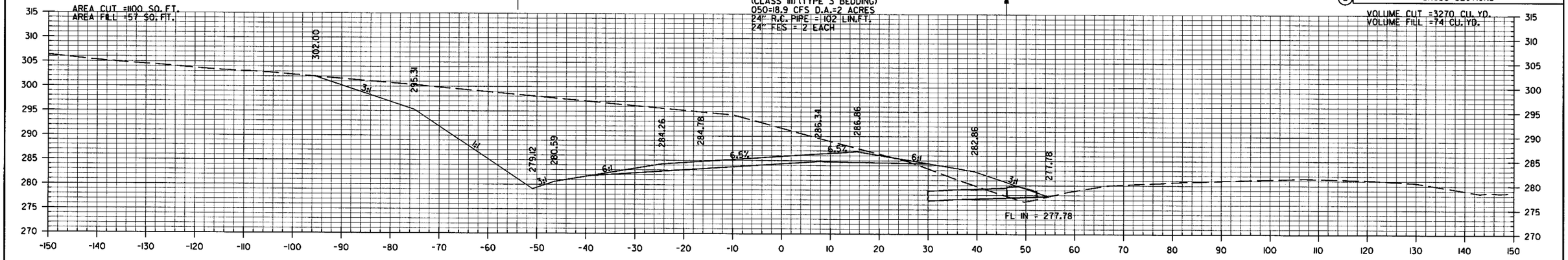
8168+00.00
RAMP 3

STA. 8168+00 TO STA. 8169+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	175	190

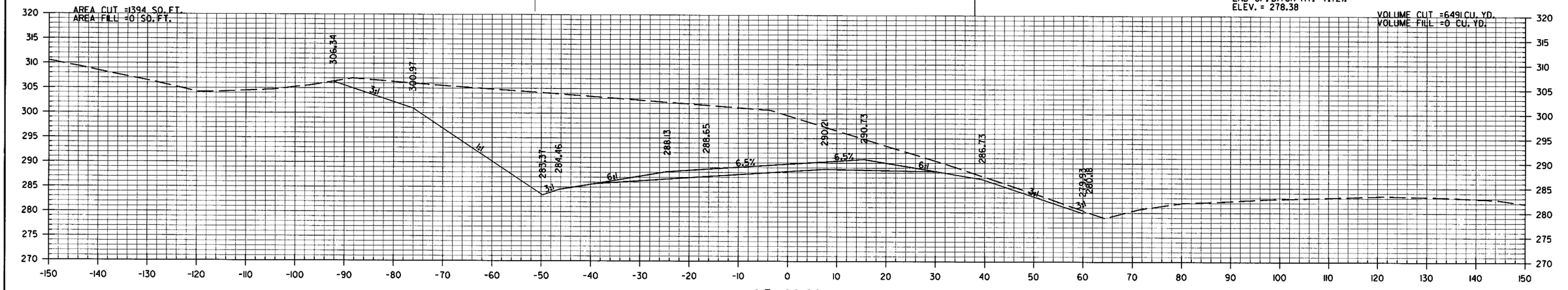
(2) CROSS SECTIONS

RAMP 3
STA. 8172+00.00 INSTALL
24" X 102' R.C. PIPE CULVERT
30° LT. FWD. SKEW
WITH FES LT. AND RT.
(CLASS III) (TYPE 3 BEDDING)
Q50=18.9 CFS D.A.=2 ACRES
24" R.C. PIPE = 102 LIN.FT.
24" FES = 2 EACH

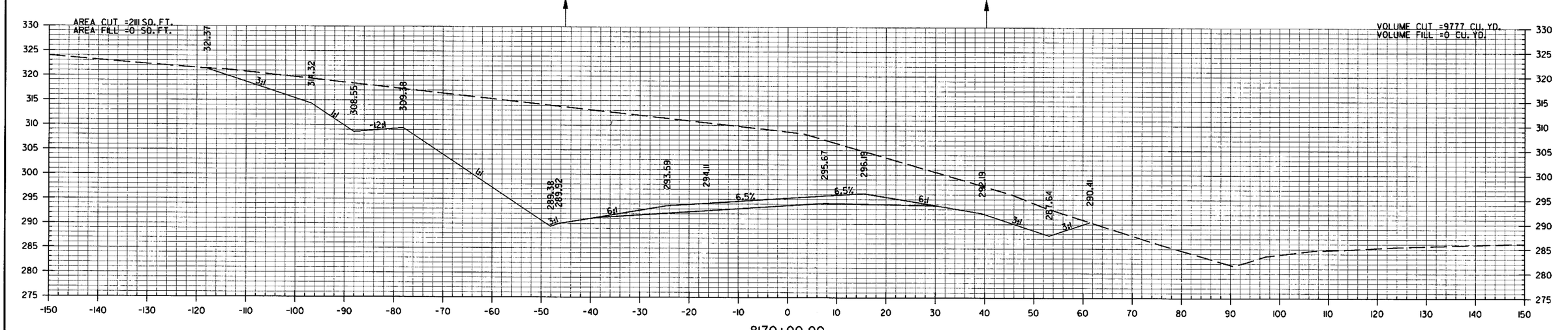


8171+70.80

STA. 8171+20.00
END SP. DITCH RT. -7.72%
ELEV. = 278.38



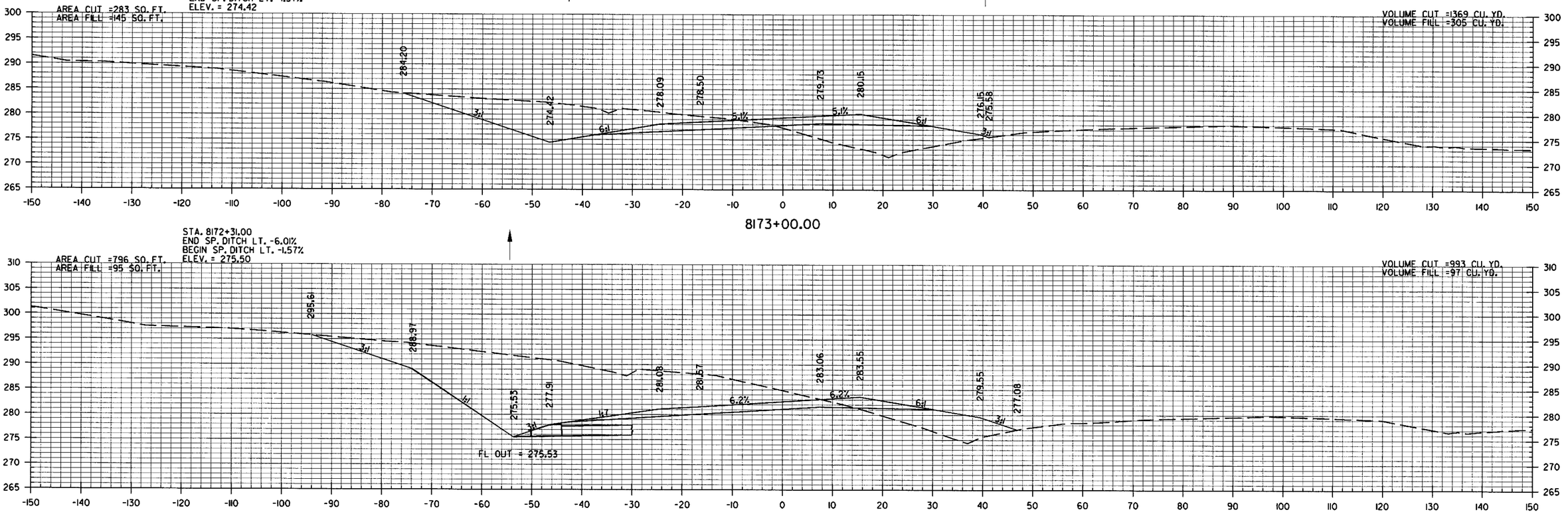
8171+00.00



8170+00.00
RAMP 3

STA. 8170+00 TO STA. 8171+71

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	176	190
				(2)	CROSS SECTIONS			



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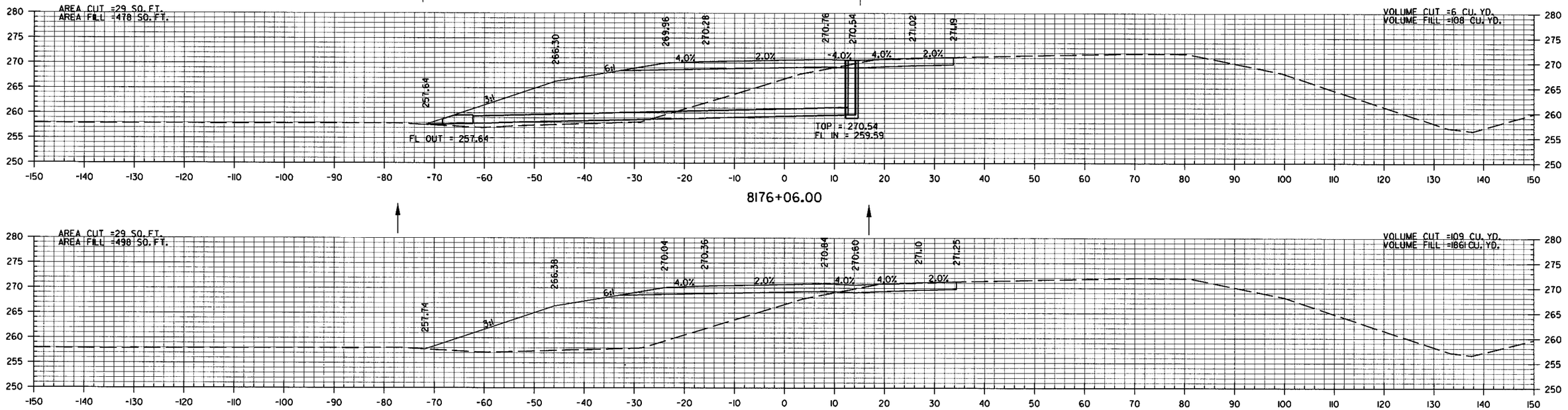
YOUR SETTINGS
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	177	190
				(2)		CROSS SECTIONS		

RAMP 3
STA. 8176+06.00 CONSTRUCT
TYPE ST DROP INLET 15' RT. IN MEDIAN (3' X 3' X H=10'-0")
WITH 18" X 75' R.C. PIPE OUTLET ON LT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES. LT.
Q50=4.0 CFS D.A.=1 ACRE
18" R.C. PIPE = 75 LIN.FT.
18" FES = 1 EACH

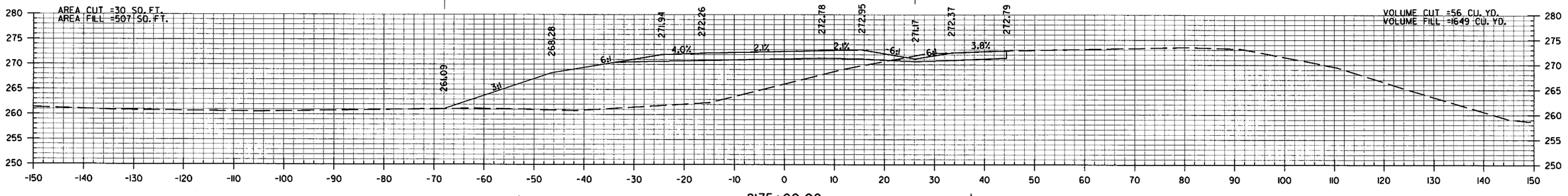
STA. 8176+57.90 END RAMP 3
TIE TO I-40 LT. LANE WIDENING III



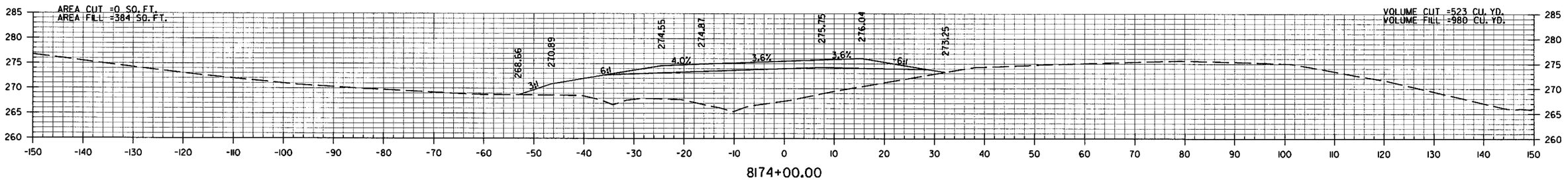
8176+06.00

8176+00.00

STA. 8175+09.88 END SUPERELEVATION



8175+00.00



8174+00.00
RAMP 3

STA. 8174+00 TO STA. 8176+06

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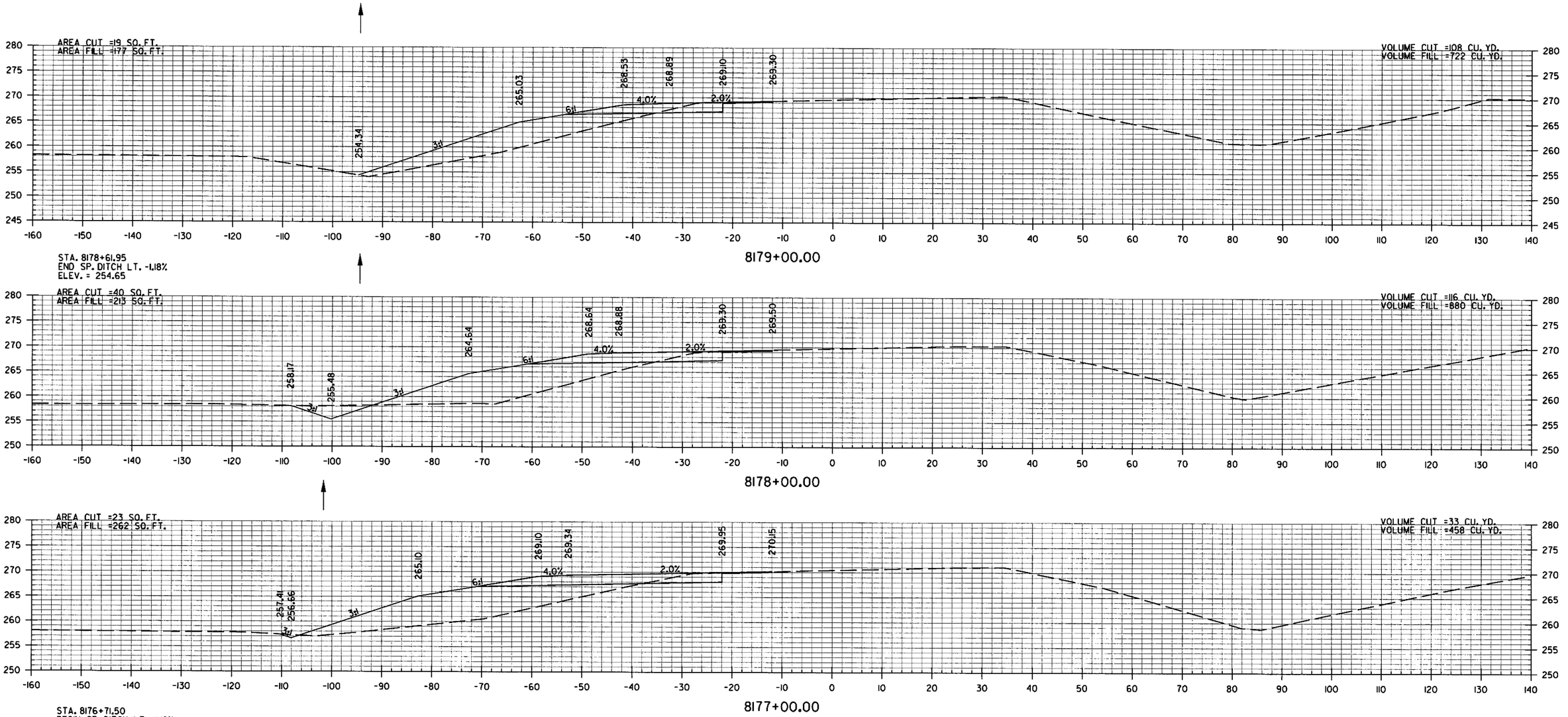
REVISED DATE: **REVDATE**

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	178	190
				(2)	CROSS SECTIONS			



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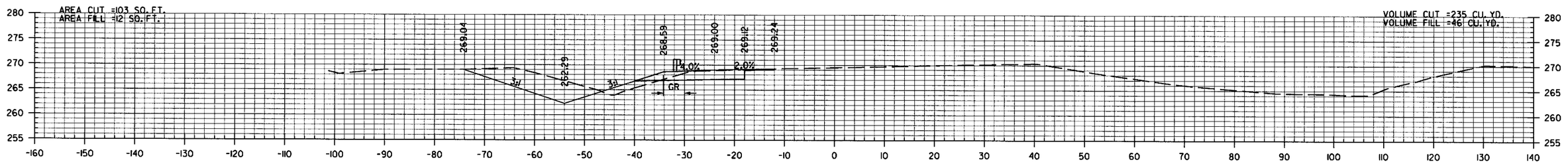
REVISED DATE: **REVDATE**

STA. 8176+58.63 BEGIN I-40 LT. LANE WIDENING III

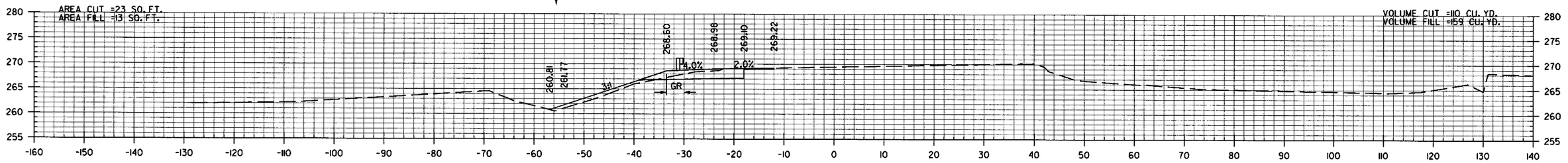
I-40 C.L. LT. LANES

STA. 8177+00 TO STA. 8179+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	179	190
				(2)	CROSS SECTIONS			



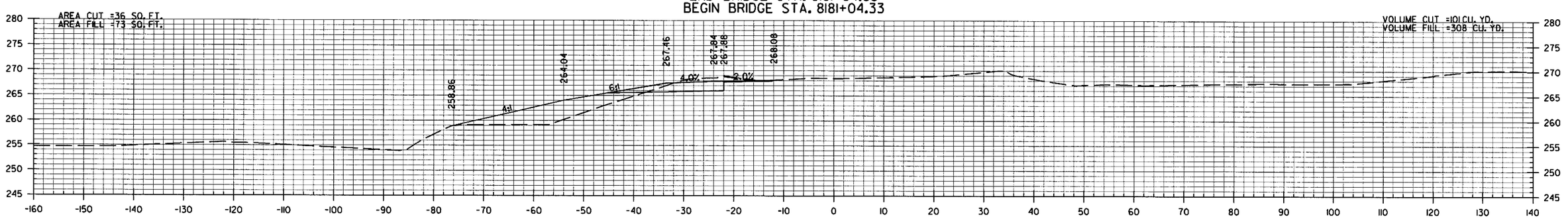
8183+00.00



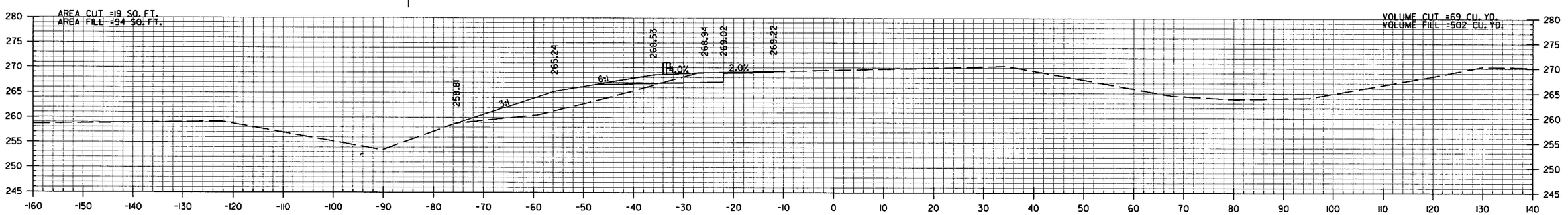
8182+00.00

END BRIDGE STA. 8181+94.33

BEGIN BRIDGE STA. 8181+04.33



8181+00.00

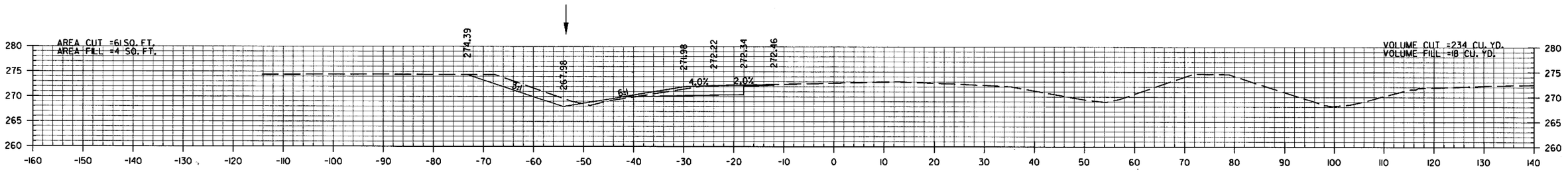


8180+00.00

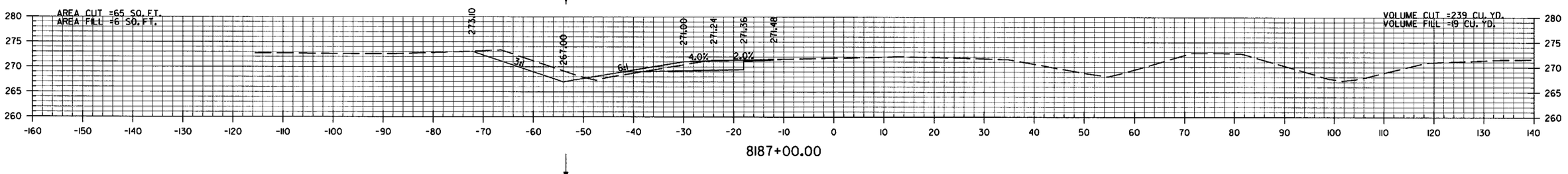
I-40 C.L. LT. LANES

STA. 8180+00 TO STA. 8183+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	180	190
				(2)	CROSS SECTIONS			



8188+00.00



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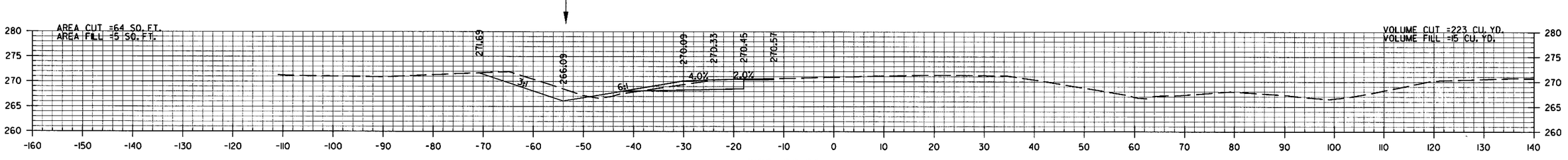

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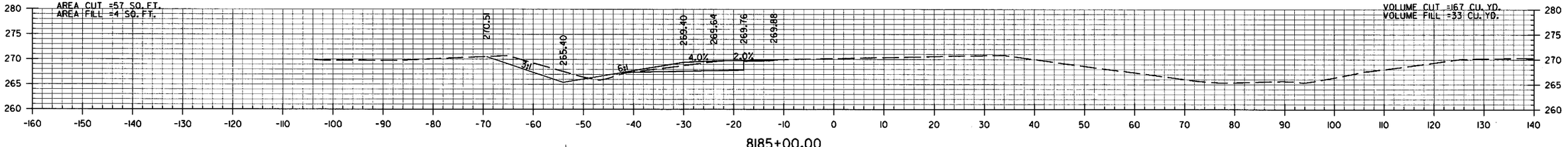
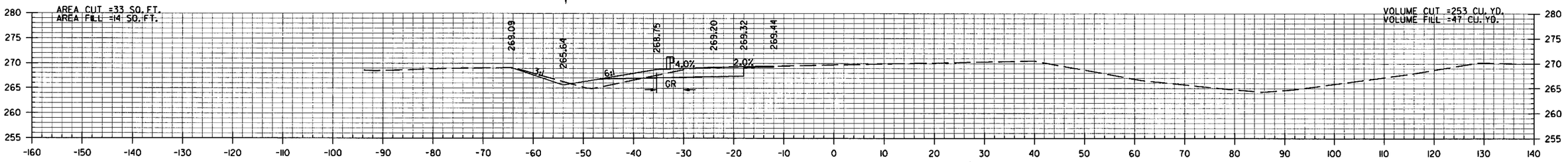


8185+00.00

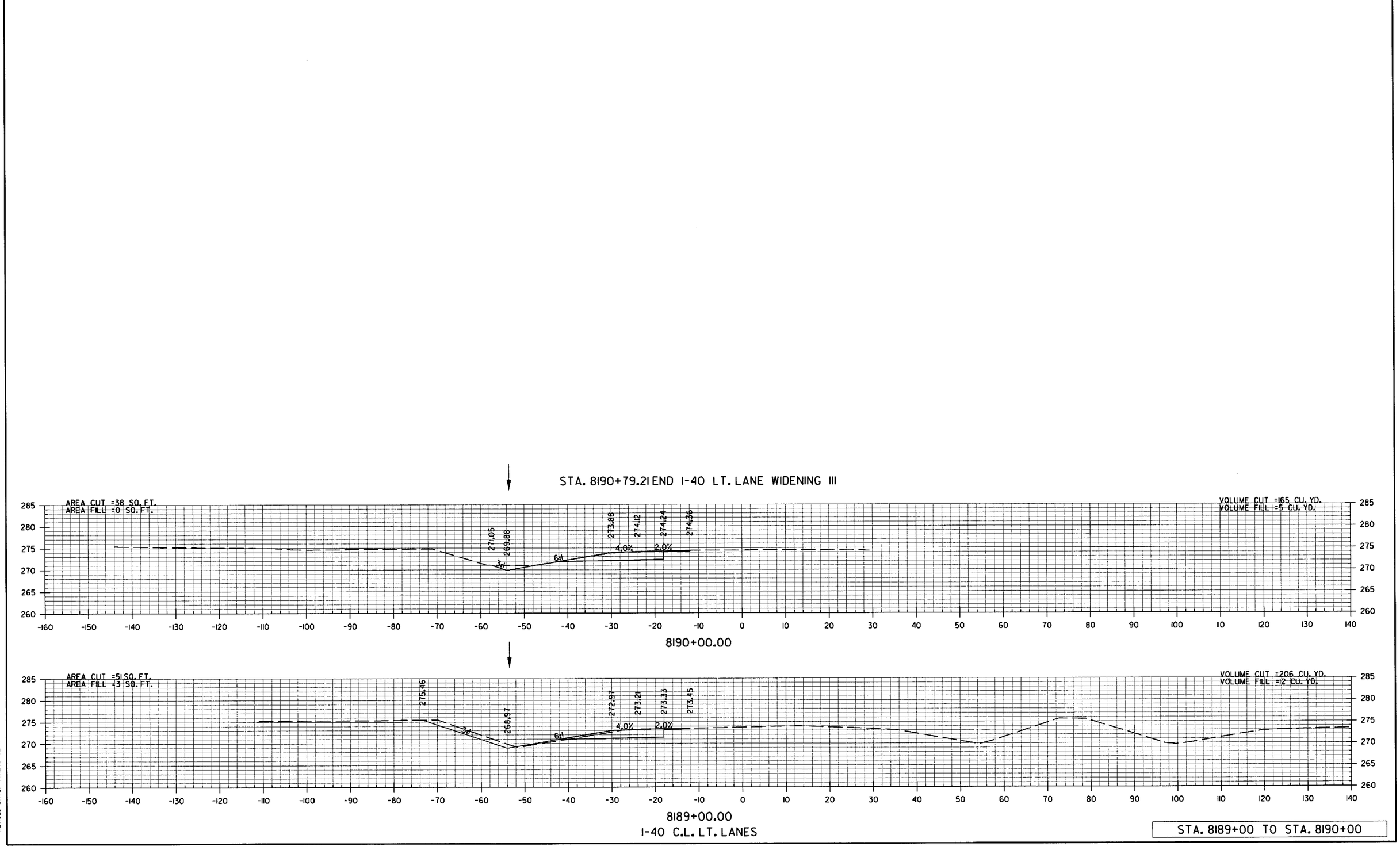


8184+00.00

I-40 C.L. LT. LANES

STA. 8184+00 TO STA. 8188+00

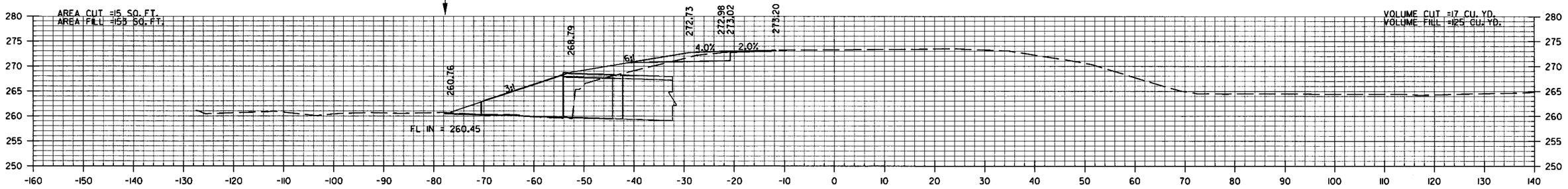
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	181	190
				(2)	CROSS SECTIONS			



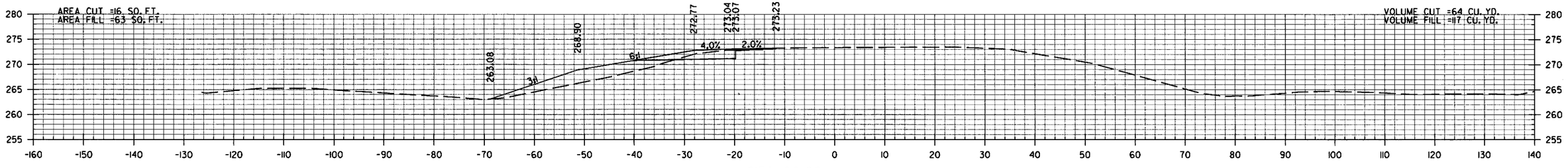
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	182	190
				(2)	CROSS SECTIONS			

STA. 8138+86.41 IN PLACE
8' X 7' X 127' R.C. BOX CULVERT
30° LT. FWD. SKEW
WITH 3:1 WINGS LT. AND RT.
RETAIN AND EXTEND 15' LT.
FOR A COMPLETED LENGTH OF 142'

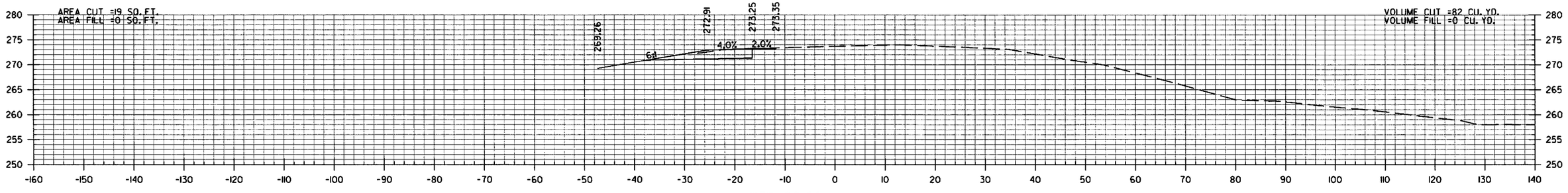
STA. 8139+58.84 END TAPER
BEGIN ACCELERATION LANE



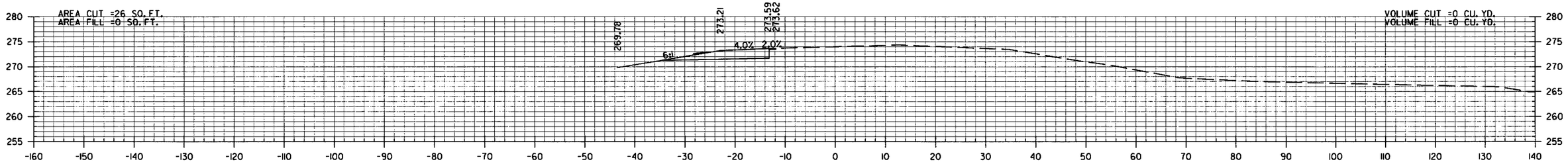
8139+31.20



8139+00.00



8138+00.00



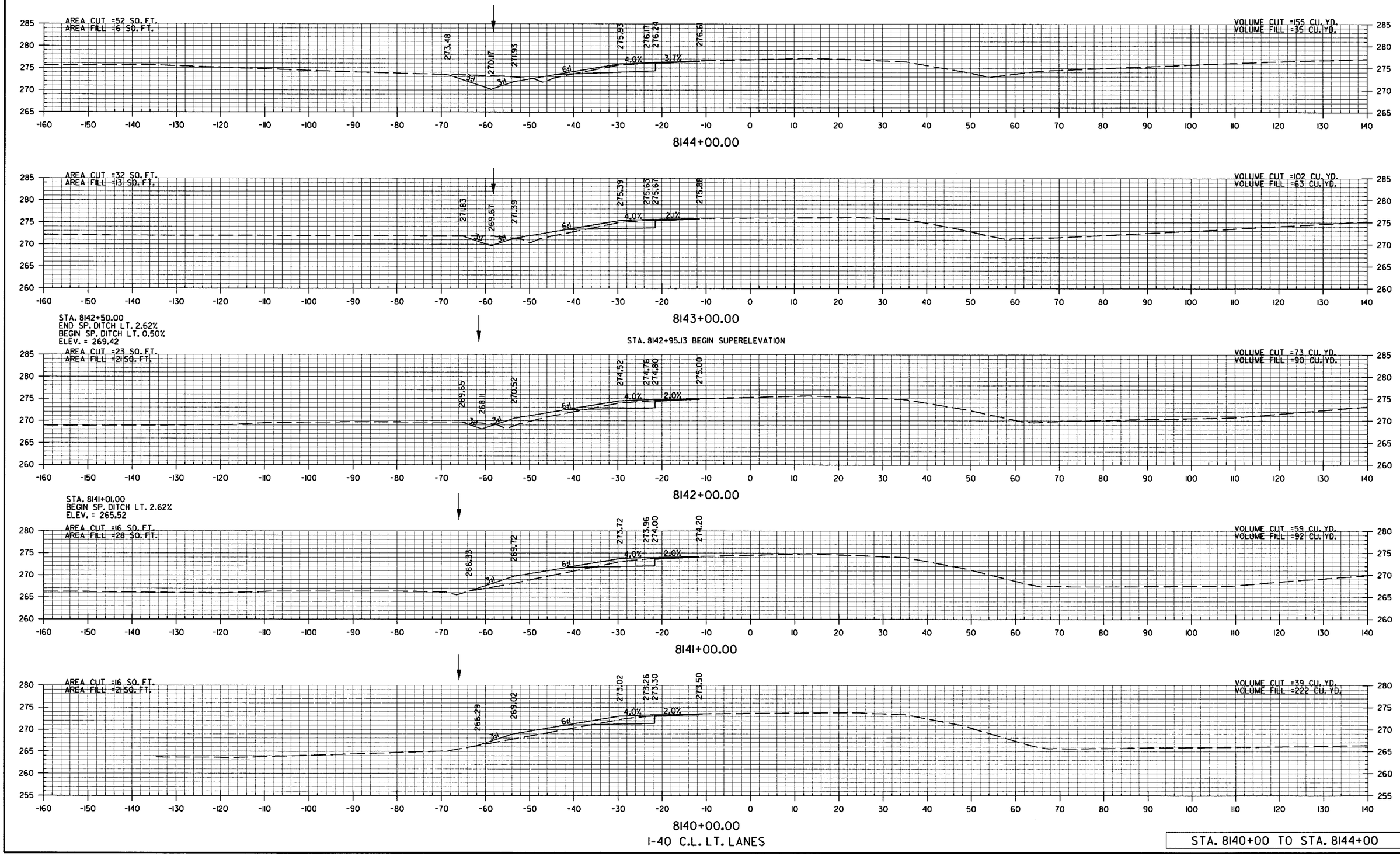
8137+00.00

STA. 8136+58.84 BEGIN I-40 LT. LANE WIDENING IV

I-40 C.L. LT. LANES

STA. 8137+00 TO STA. 8139+31

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	183	190
				(2)		CROSS SECTIONS		

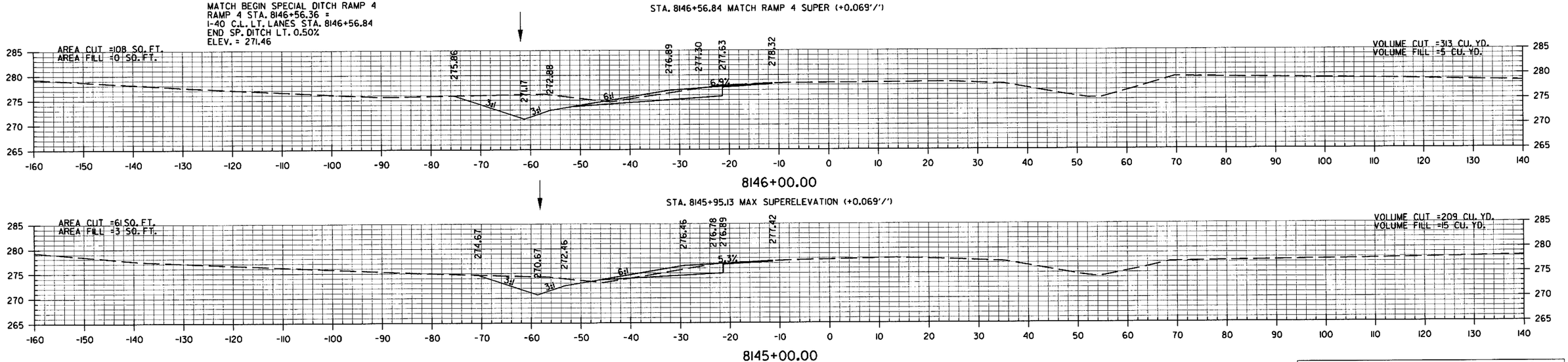


DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	184	190

(2) CROSS SECTIONS

STA. 8146+58.84 END I-40 LT. LANE WIDENING IV
TIE TO RAMP 4



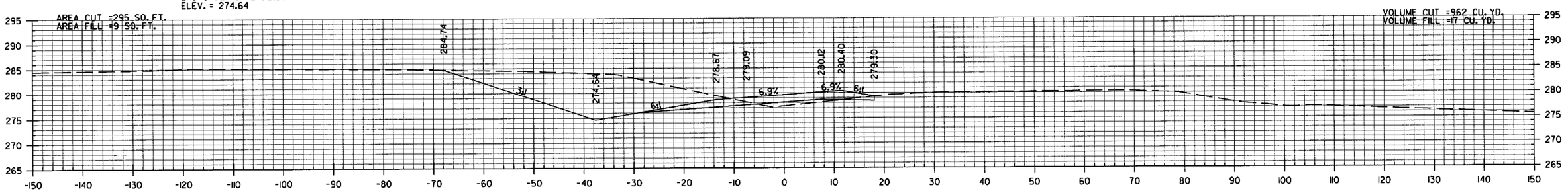
STA. 8145+00 TO STA. 8146+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	185	190
				(2)	CROSS SECTIONS			

STA. 8148+00.00
END SP. DITCH LT. 2.25%
ELEV. = 274.64

AREA CUT =295 SQ. FT.
AREA FILL =9 SQ. FT.

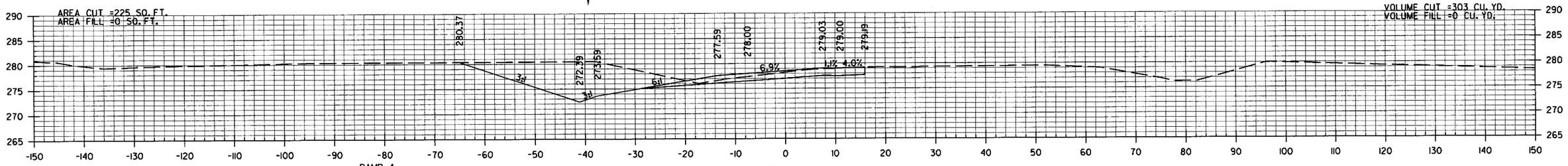
VOLUME CUT =962 CU. YD.
VOLUME FILL =17 CU. YD.



8148+00.00

AREA CUT =225 SQ. FT.
AREA FILL =0 SQ. FT.

VOLUME CUT =303 CU. YD.
VOLUME FILL =0 CU. YD.



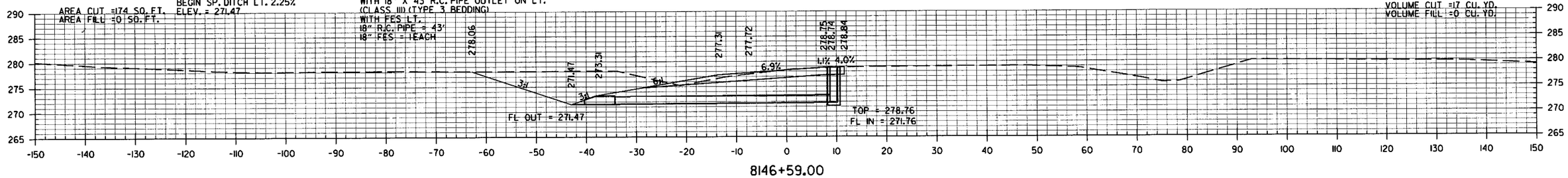
8147+00.00

STA. 8146+59.00
END SP. DITCH LT. 0.50%
BEGIN SP. DITCH LT. 2.25%
ELEV. = 271.47

RAMP 4
STA. 8146+59.00 9.5' RT. CONSTRUCT
TYPE ST DROP INLET
(3' X 3' X H=7'-0")
WITH 18" X 43' R.C. PIPE OUTLET ON LT.
(CLASS III) (TYPE 3 BEDDING)
WITH FES LT.
18" R.C. PIPE = 43'
18" FES = 1 EACH

AREA CUT =174 SQ. FT.
AREA FILL =0 SQ. FT.

VOLUME CUT =17 CU. YD.
VOLUME FILL =0 CU. YD.



8146+59.00

RAMP 4 STA. 8146+56.36 =
I-40 C.L. LT. LANES STA. 8146+56.84
BEGIN SP. DITCH LT. 0.50%
ELEV. = 271.46

STA. 8146+56.36 MATCH I-40 LEFT LANE WIDENING SUPER (+0.069'/')

STA. 8146+56.36 BEGIN RAMP 4

RAMP 4

STA. 8146+59 TO STA. 8148+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		061190	186	190
(2) CROSS SECTIONS				

STA. 8150+39.59
END SP. DITCH LT. -3.14%
BEGIN SP. DITCH LT. 5.68%
ELEV. = 275.59

STA. 8150+73.30 MAX SUPERELEVATION (+0.069'/')

AREA CUT =111 SQ. FT.
AREA FILL =340 SQ. FT.

VOLUME CUT =98 CU. YD.
VOLUME FILL =333 CU. YD.

282.93 | 276.62 | 280.59 | 284.59 | 285.00 | 286.04 | 286.31 | 282.31 | 278.36 | 278.36 | 278.78

6:1 | 3:1 | 6.9% | 0.07%

FL IN = 275.62

8150+39.59

I-40 LT. LANES
STA. 8150+20.00 IN PLACE
48" X 110' R.C. PIPE CULVERT
WITH FES RT. AND LT.
RETAIN FES RT. AND REMOVE FES LT.
ATTACH TO PROPOSED JUCTION BOX
RT. OF RAMP 4 STA. 8150+12.00
Q50=35.5 CFS D.A.= 31 ACRES

RAMP 4
STA. 8150+12.00 52' RT. CONSTRUCT
TYPE E JUNCTION BOX
IN MEDIAN (6' X 9' X H=5'-0")
WITH 48" X 89' R.C. PIPE INLET
STA. 8150+25.00
15° LT. FWD. SKEW
WITH FES LT.
(CLASS IV) (TYPE 3 BEDDING)
Q50=29.2 CFS D.A.=23 ACRES
48" R.C. PIPE = 89 LIN. FT.
48" FES = 1 EACH

AREA CUT =80 SQ. FT.
AREA FILL =312 SQ. FT.

VOLUME CUT =33 CU. YD.
VOLUME FILL =114 CU. YD.

282.6 | 276.46 | 279.67 | 283.67 | 284.08 | 285.12 | 285.39 | 28.39 | 278.53 | 278.53 | 278.59

6:1 | 3:1 | 6.9% | 0.072.07

TOP = 278.89
FL OUT = 273.89

8150+12.00

STA. 8150+12.00
END SP. DITCH RT. -0.25%
BEGIN SP. DITCH RT. -0.62%
ELEV. = 278.53

AREA CUT =69 SQ. FT.
AREA FILL =202 SQ. FT.

VOLUME CUT =378 CU. YD.
VOLUME FILL =458 CU. YD.

282.38 | 276.83 | 279.29 | 283.29 | 283.70 | 284.74 | 285.01 | 281.01 | 278.56 | 278.56 | 280.03

6:1 | 3:1 | 6.9% | 0.07%

8150+00.00

STA. 8149+60.00
BEGIN SP. DITCH LT. -3.14%
ELEV. = 278.09

STA. 8149+80.00
BEGIN SP. DITCH RT. -0.25%
ELEV. = 278.61

AREA CUT =135 SQ. FT.
AREA FILL =46 SQ. FT.

VOLUME CUT =795 CU. YD.
VOLUME FILL =101 CU. YD.

282.93 | 276.58 | 280.58 | 280.99 | 282.02 | 282.30 | 279.13

6:1 | 3:1 | 6.9%

8149+00.00
RAMP 4

STA. 8149+00 TO STA. 8150+40

Leonard.Speed 7/23/2018 12:54:00 PM
WORKSPACE: AHTD
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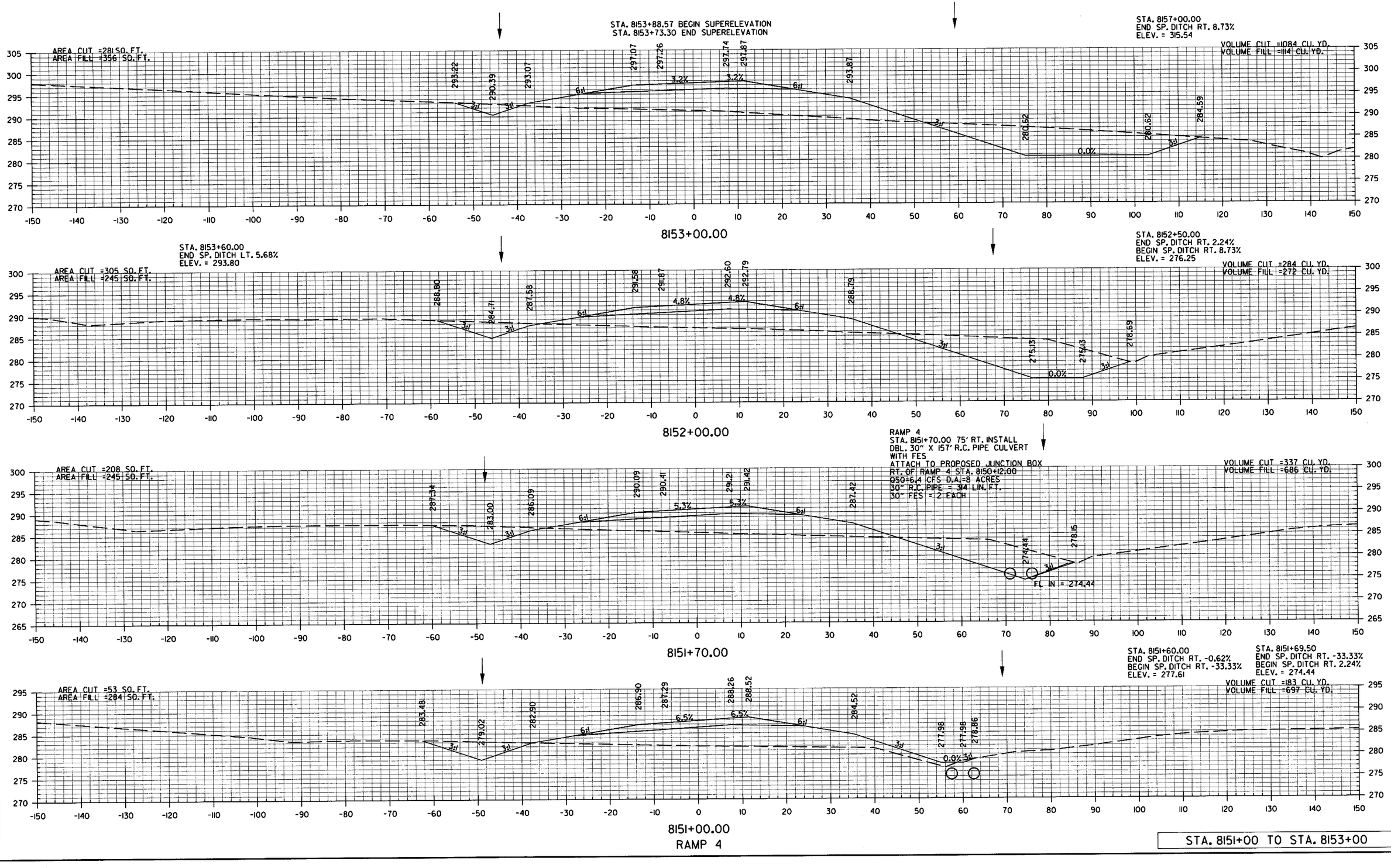
REVISED DATE: ***REVDATE***

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	187	190
				(2)	CROSS SECTIONS			



STA. 8151+00 TO STA. 8153+00

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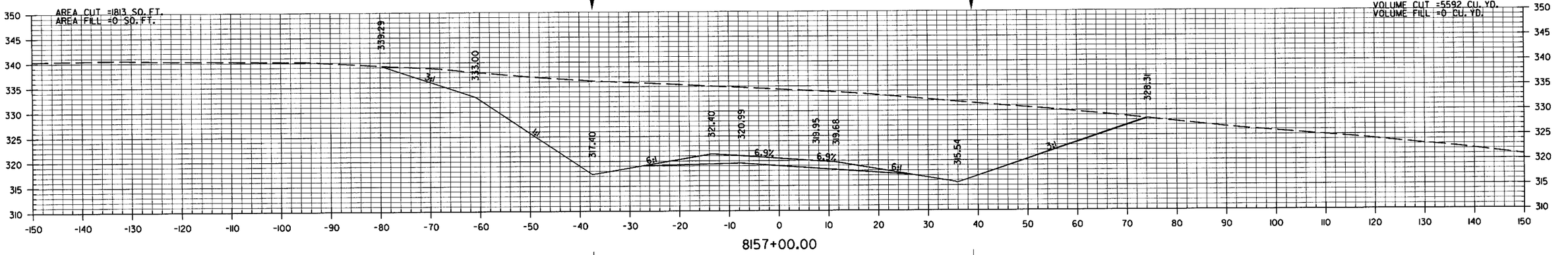
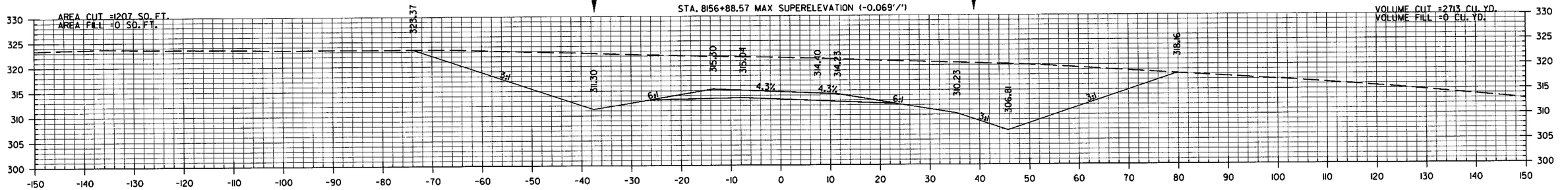
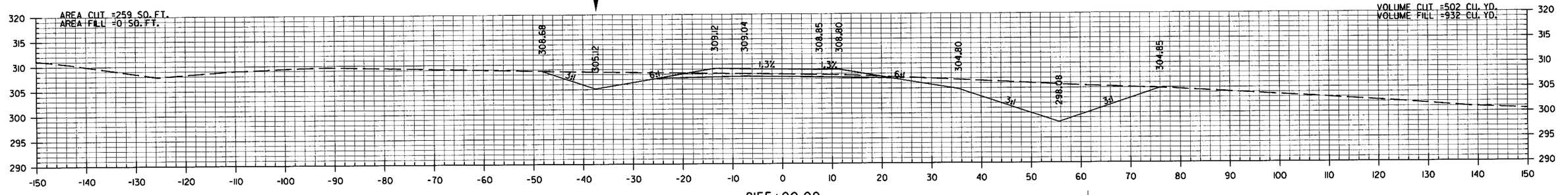
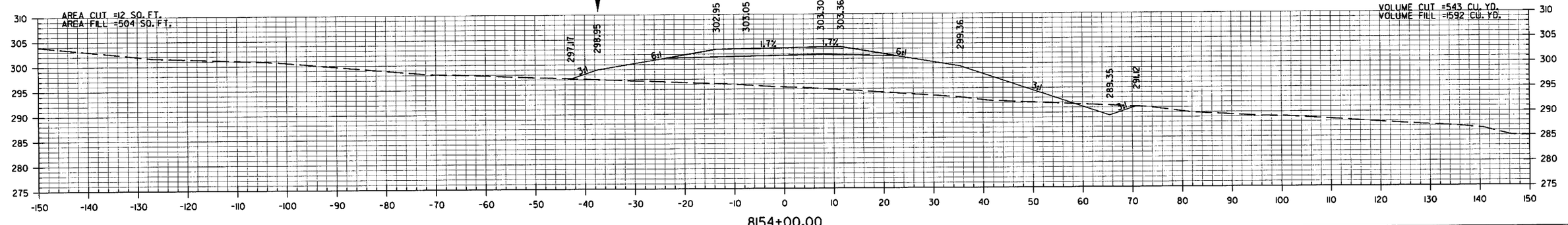
REVISED DATE: ##REVDATE##

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	188	190
				(2)	CROSS SECTIONS			



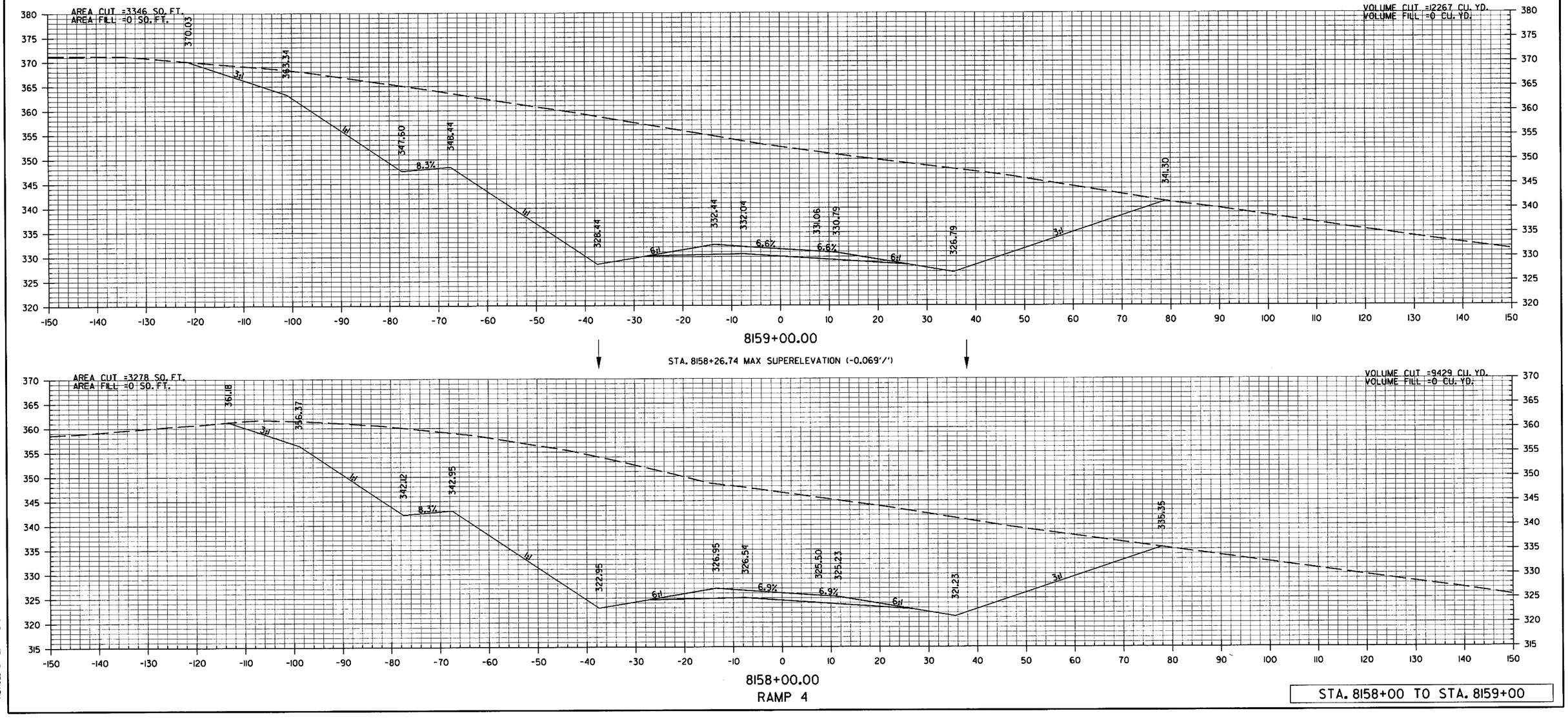






STA. 8154+00 TO STA. 8157+00

DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	189	190
				(2)	CROSS SECTIONS			



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WORKSPACE: MIDD
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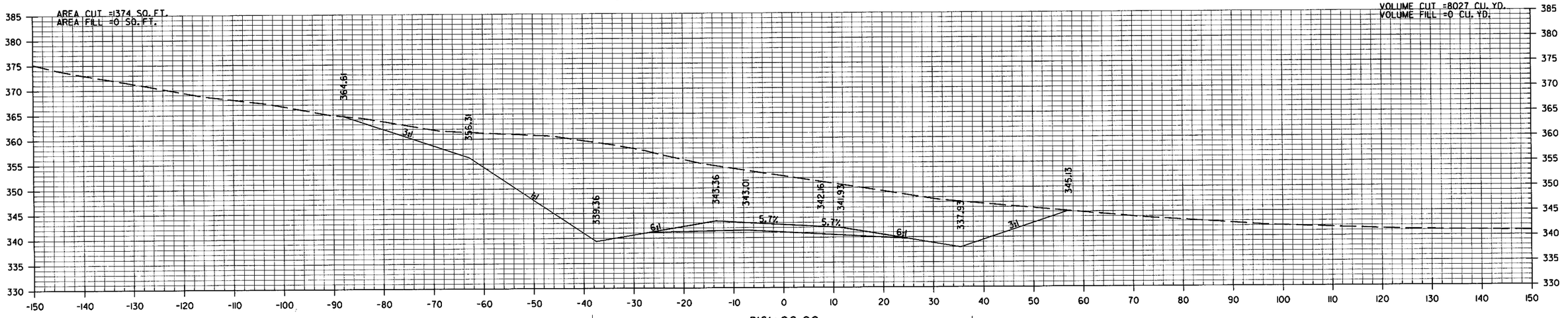
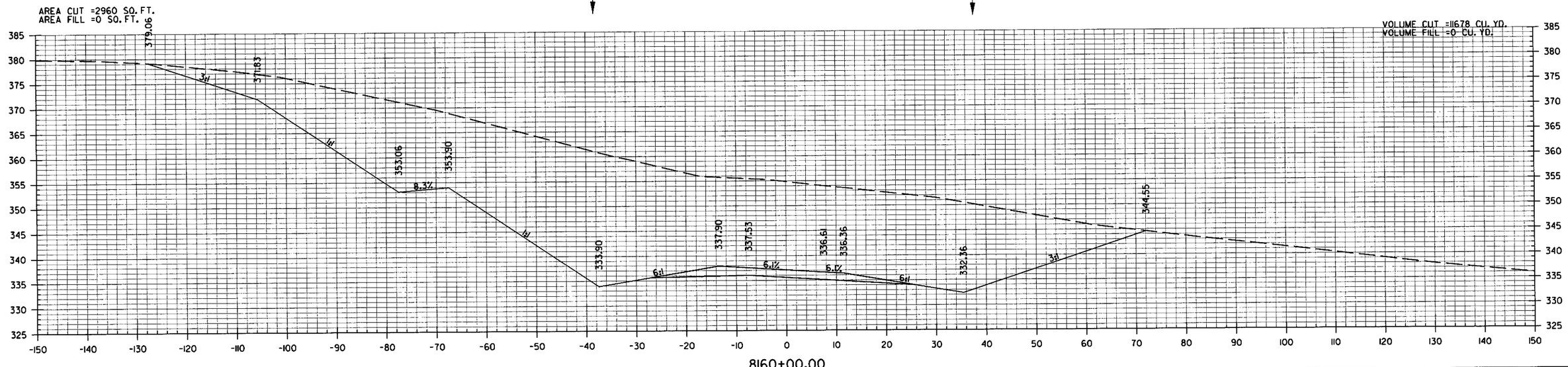
DATE	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061190	190	190
				(2)	CROSS SECTIONS			

STA. 8161+42.37 END RAMP 4

STA. 8161+42.37 MATCH EDGE PAVEMENT - WHITE OAK CROSSING (-0.0E

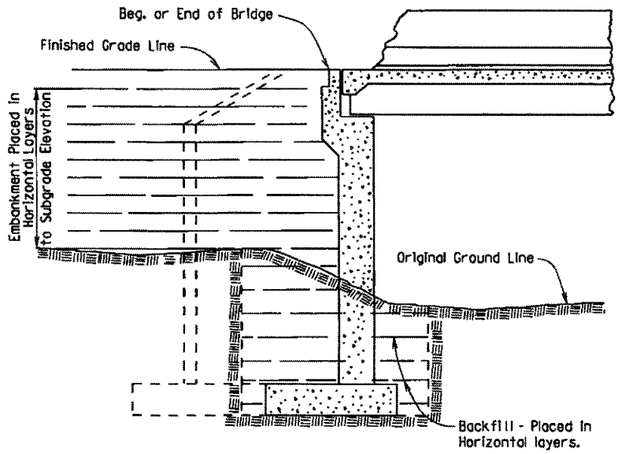




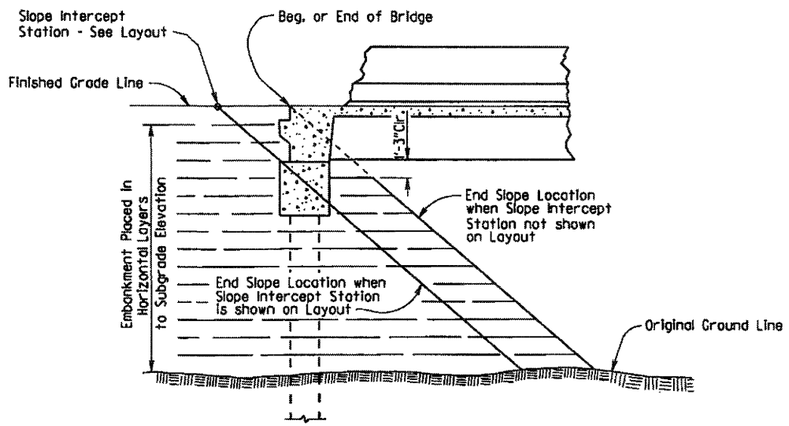
STA. 8160+00 TO STA. 8161+00

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

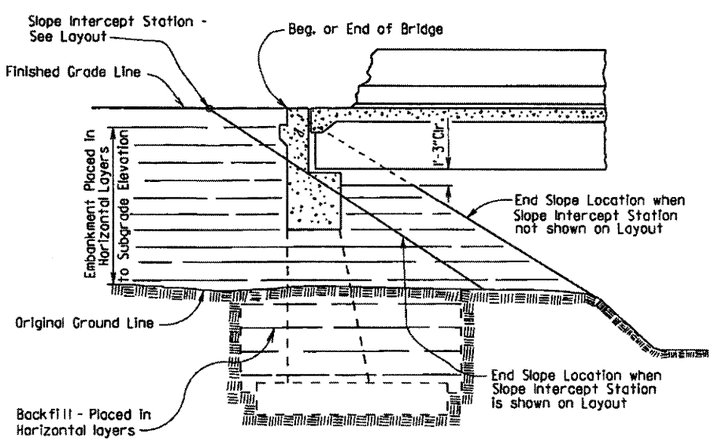
1 EMBANKMENT & BACKFILL 55000



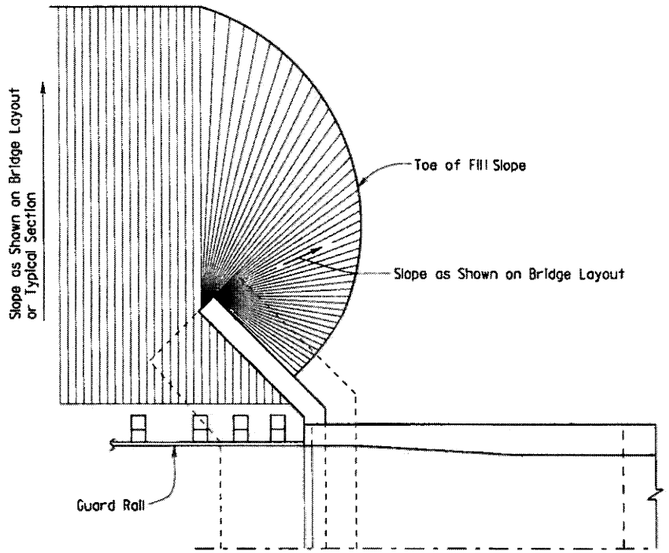
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



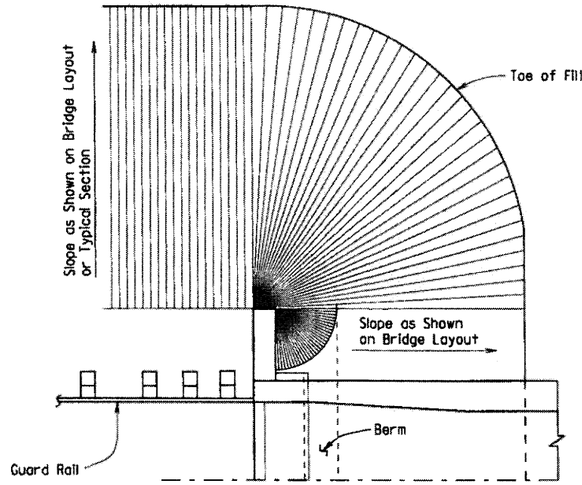
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



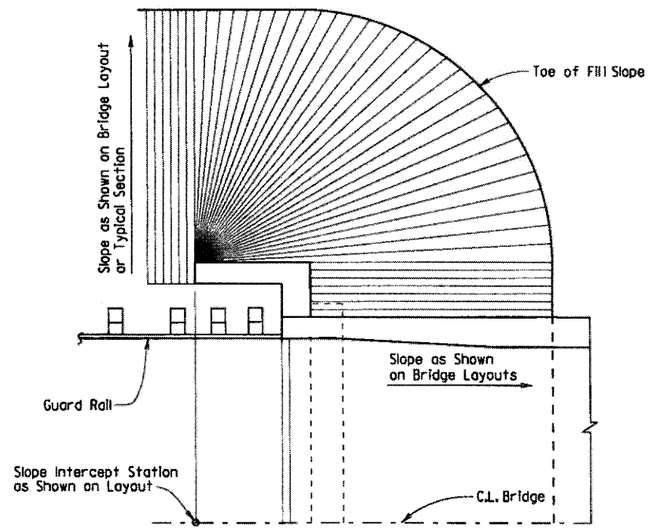
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



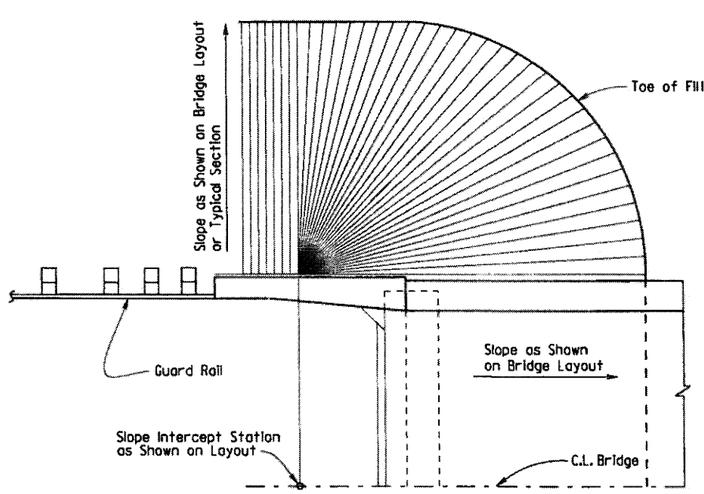
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

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

STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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

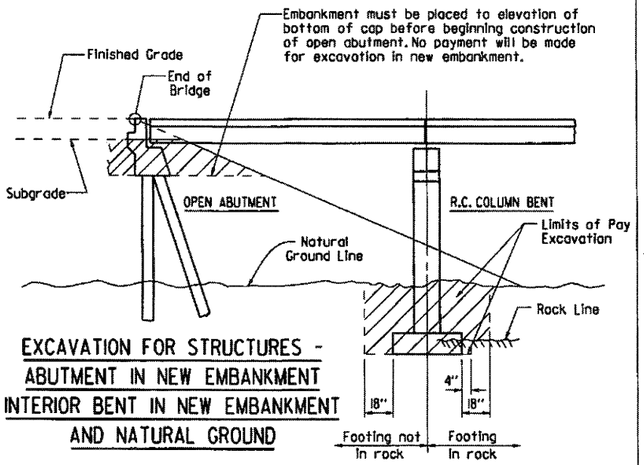
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

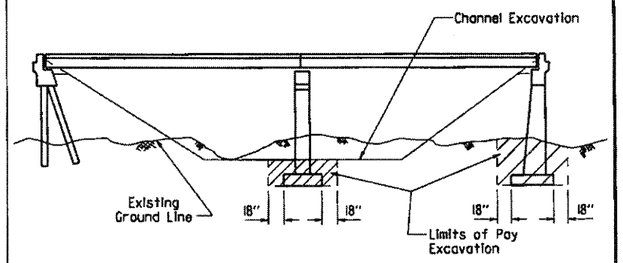
DRAWING NO. 55000

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

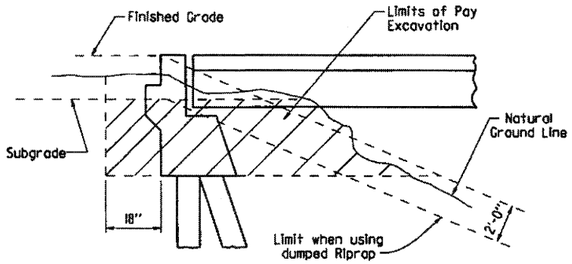
(1) RIPRAP & EXCAV. 55001



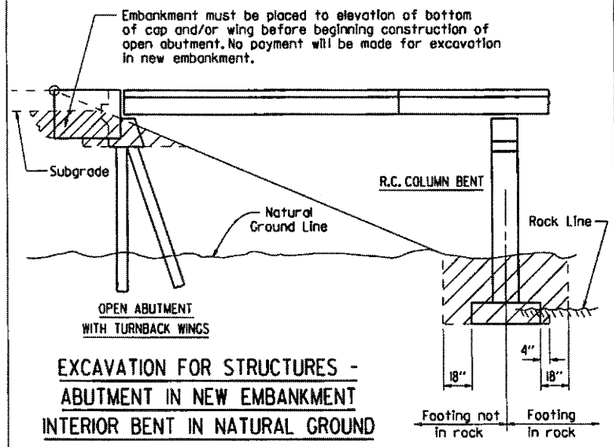
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



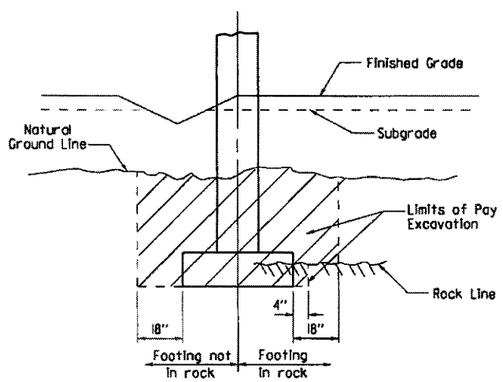
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



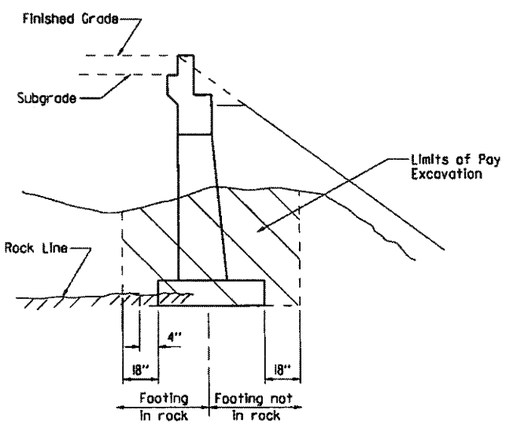
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



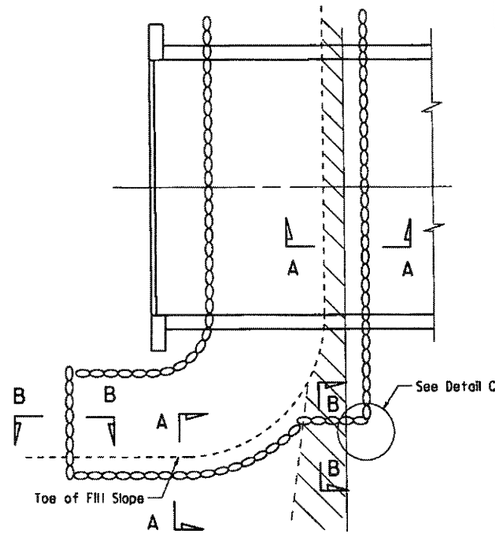
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



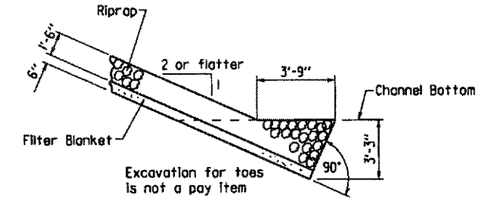
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



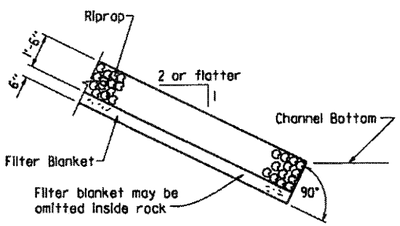
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



PLAN OF DUMPED RIPRAP



SECTION A-A
(Toe Excavation in Soil)

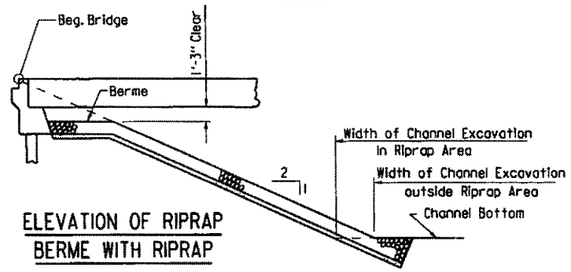


SECTION A-A
(Toe Excavation in Rock)

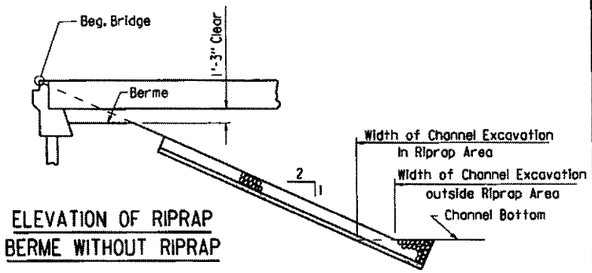
Note : Use this type of toe when rock is encountered which is in a stable condition.

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

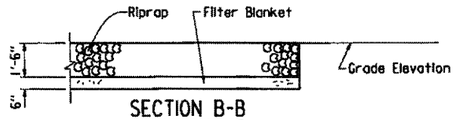
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



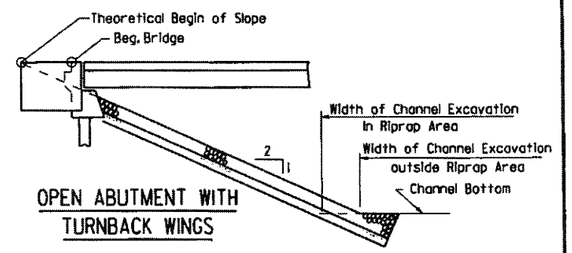
ELEVATION OF RIPRAP BERME WITH RIPRAP



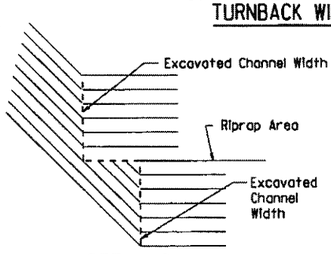
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



DETAIL C

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

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b5500l.dgn

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

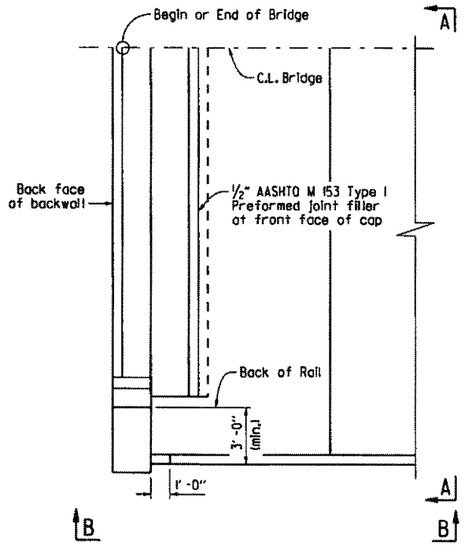
DESIGNED BY: STD. DATE:

DRAWING NO. 55001

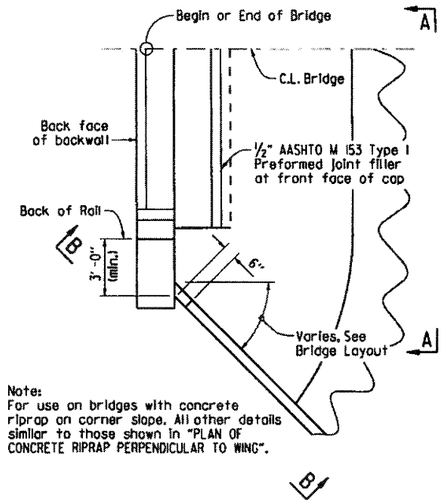
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

① CONCRETE RIPRAP 55002

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.



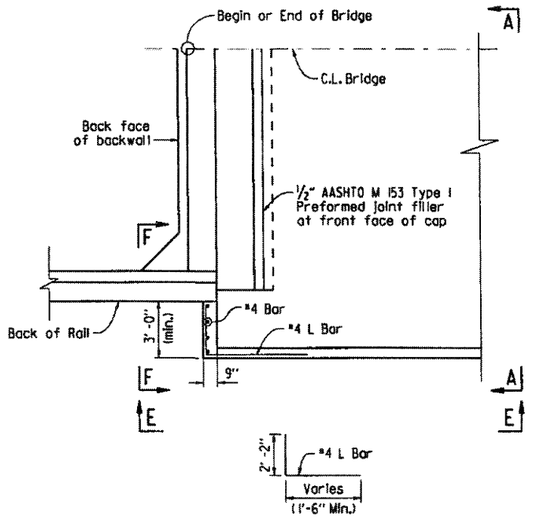
PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING
¼" = 1'-0"



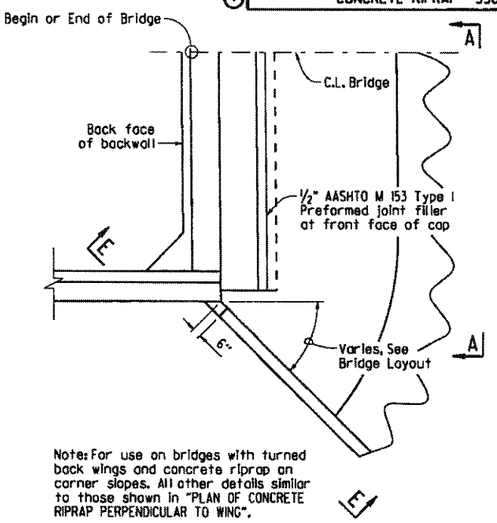
Note:
For use on bridges with concrete riprap on corner slope. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP AT ANGLE TO WING
¼" = 1'-0"

Note:
For use on bridges with turned back wings. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".



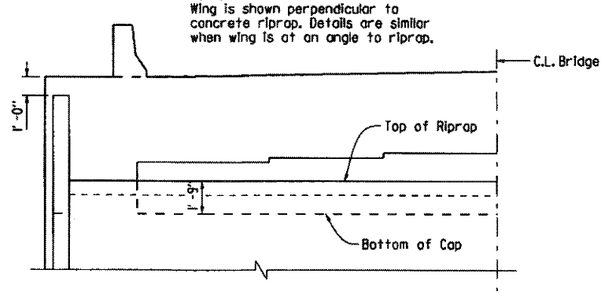
PLAN OF CONCRETE RIPRAP PERPENDICULAR TO TURNED BACK WING
¼" = 1'-0"



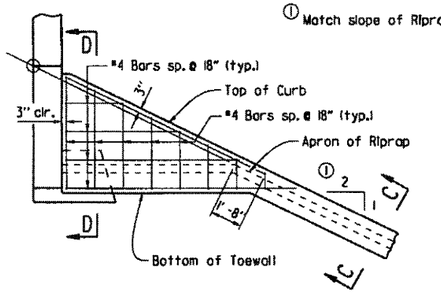
Note: For use on bridges with turned back wings and concrete riprap on corner slopes. All other details similar to those shown in "PLAN OF CONCRETE RIPRAP PERPENDICULAR TO WING".

PLAN OF CONCRETE RIPRAP AT ANGLE FROM TURNED BACK WING
¼" = 1'-0"

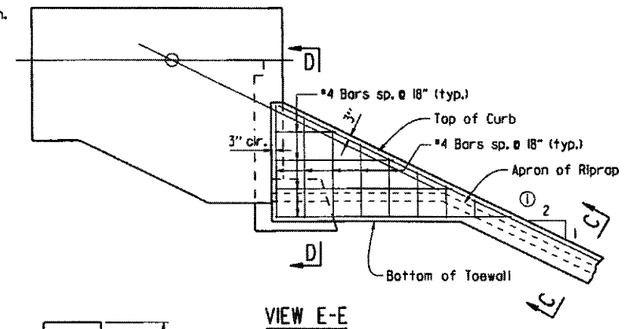
Note:
Wing is shown perpendicular to concrete riprap. Details are similar when wing is at an angle to riprap.



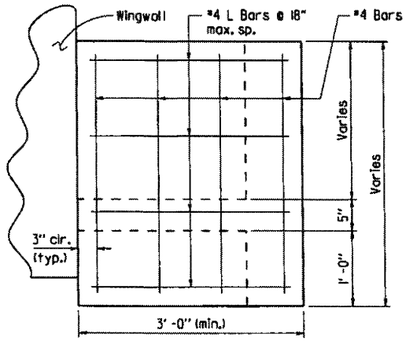
VIEW A-A
¼" = 1'-0"



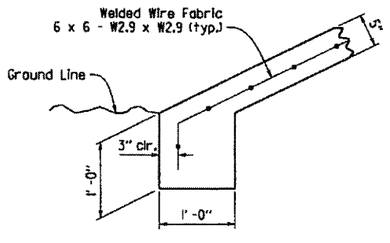
VIEW B-B
¼" = 1'-0"



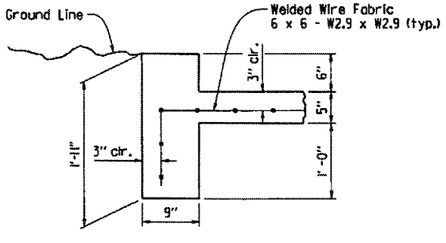
VIEW E-E
¼" = 1'-0"



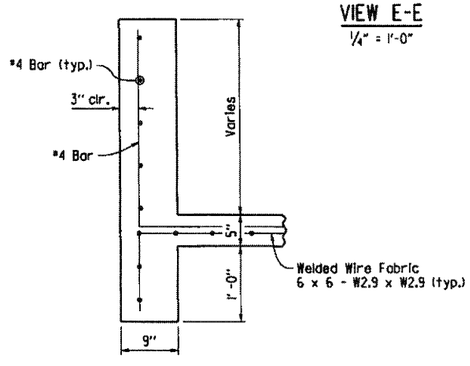
VIEW F-F
1" = 1'-0"



TOE OF CONCRETE RIPRAP
1" = 1'-0"



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



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

GENERAL NOTES

All concrete shall be Class A with a minimum compressive strength, f'c = 2,100 psi.

Welded wire fabric shall conform to AASHTO M55 or M221.

STANDARD DETAILS FOR CONCRETE RIPRAP

ARKANSAS STATE HIGHWAY COMMISSION

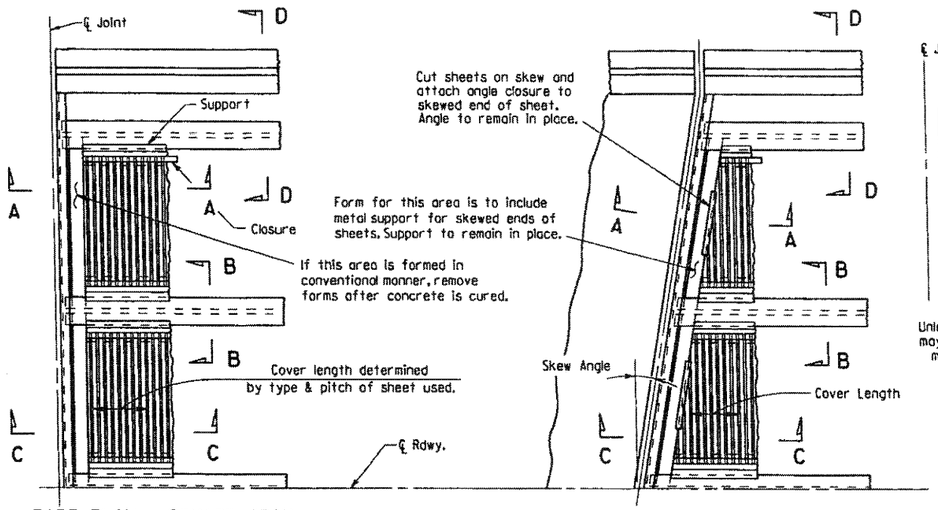
LITTLE ROCK, ARK.

DRAWN BY: ACP DATE: 2/27/2014 FILENAME: b55002.dgn
CHECKED BY: BEF DATE: 2/27/2014 SCALE: AS SHOWN
DESIGNED BY: Std. DATE: ---

DRAWING NO. 55002

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

① BRIDGE DECK FORMS 55005

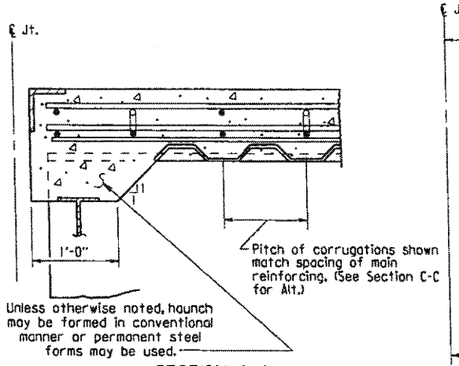


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

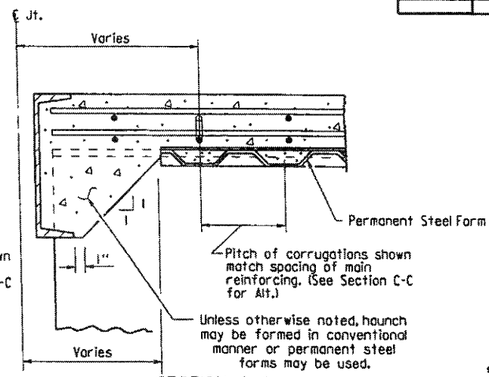
3/8" = 1'-0"



SECTION A-A

N.T.S.

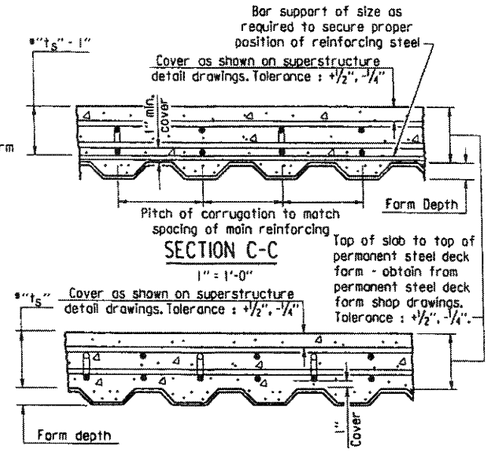
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



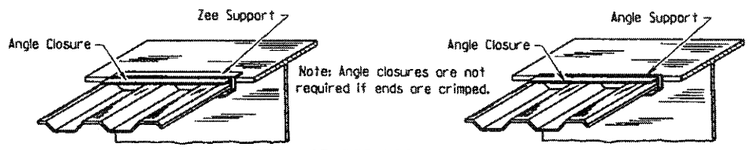
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

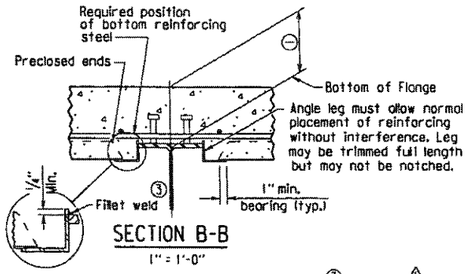
1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

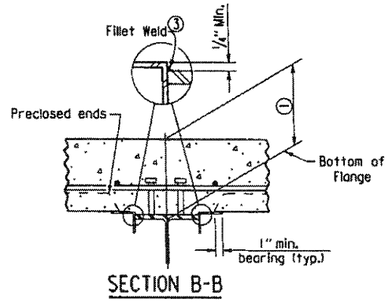


SECTION B-B

1" = 1'-0"

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

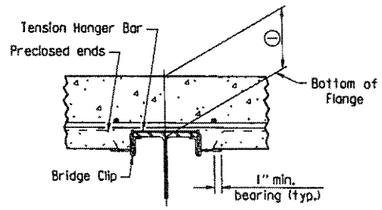
③ ⚠ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

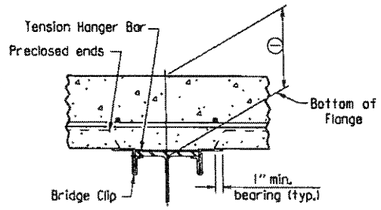
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

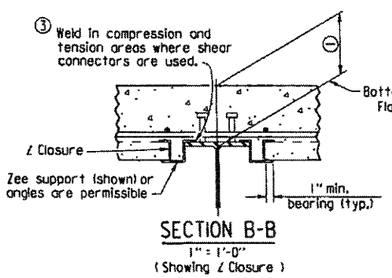
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

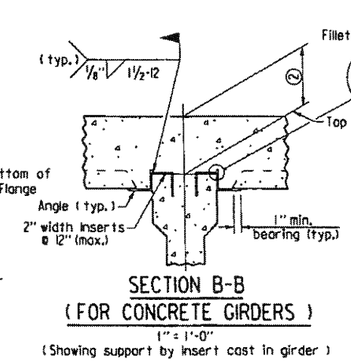
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

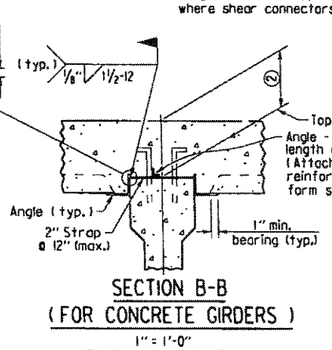


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by insert cast in girder)

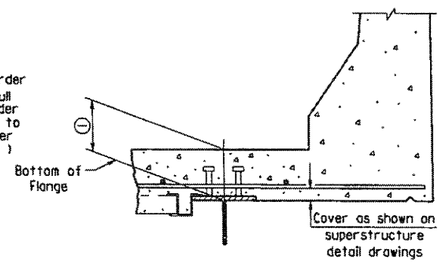


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

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

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

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

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

DRAWING NO. 55005

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

GENERAL NOTES

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

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

DESIGN SPECIFICATIONS: See Bridge Layout(s).

SUPERSTRUCTURE NOTES:

MATERIALS AND STRENGTHS:

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

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

CONCRETE:

All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted.

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

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

The concrete deck (roadway surface) shall be given a tine finish in accordance with Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Sidewalks shall receive a broomed finish as specified for final finishing in Subsection 802.19 for Class 6 Broomed Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam or girder. When permitted, the use of a longitudinal strike-off will require that a vertical camber adjustment be made in the strike-off to account for the future dead load deflection due to any railings, median barrier, and sidewalks.

REINFORCING STEEL:

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

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

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

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

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

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

Unless otherwise noted, field connections shall be bolted with ¾" ø high-strength bolts using 1⅛" ø open holes. Holes for ¾" ø high-strength bolts may be ⅞" ø if a washer is supplied for use under both the nut and head of the bolt. The use of oversized holes will not be allowed on main members unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam or girder webs and on the bottom of the beam or girder flanges.

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

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

STRUCTURAL STEEL (W-BEAMS):

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

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

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

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

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

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

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

STRUCTURAL STEEL (PLATE GIRDERS):

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

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

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

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

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

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

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

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

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

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

SUBSTRUCTURE NOTES:

CONCRETE:

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

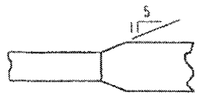
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

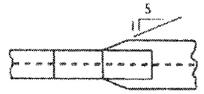
DRAWN BY: A.M.S. DATE: 9-2-2015 FILENAME: b55006.dgn
CHECKED BY: B.E.F. DATE: 9-2-2015 SCALE: NO SCALE
DESIGNED BY: STD. DATE:

DRAWING NO. 55006

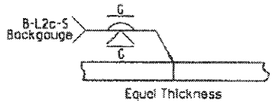
PRINT DATE: 9/21/2015

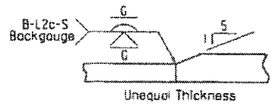
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				①	STEEL BRIDGE STRUCTURES 55007			



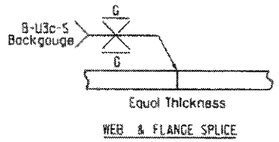


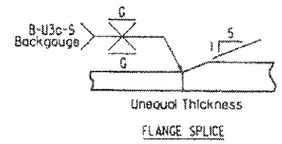
FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS





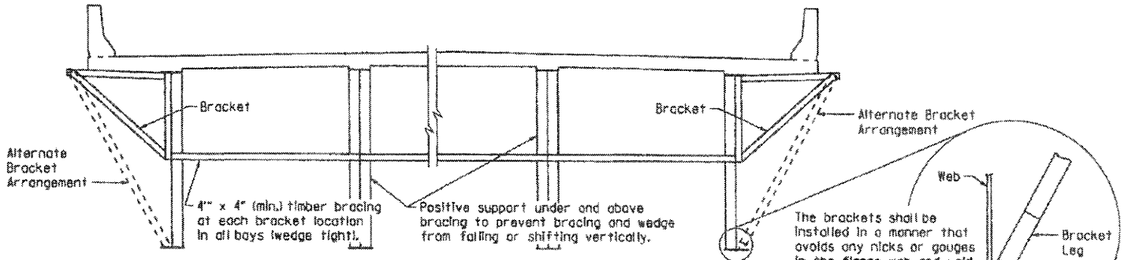
(Use when Base Metal Thickness is Equal to or Less than 2")





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

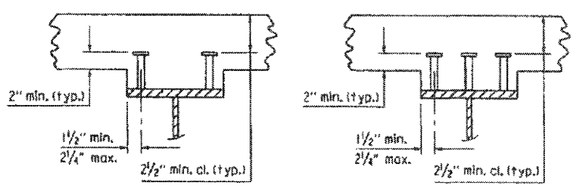
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



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

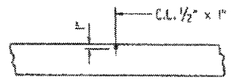
SCREED RAIL SUPPORT FOR PLATE GIRDERS

(USE WHEN WEB DEPTHS ARE 48" OR GREATER)



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

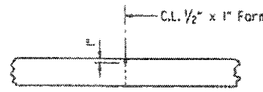
SHEAR CONNECTOR DETAIL



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

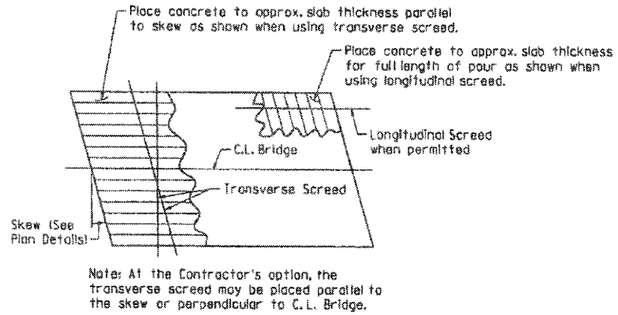
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab Joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck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

TRANSVERSE SLAB JOINT DETAIL



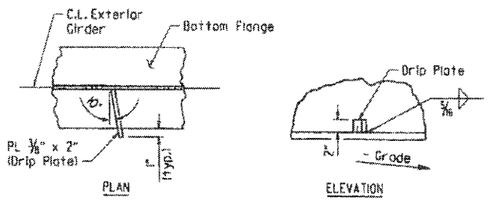
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

LONGITUDINAL CONSTRUCTION JOINT



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

CONCRETE PLACEMENT PROCEDURE FOR BRIDGES WITH SKEW



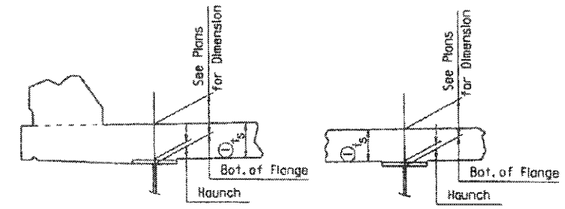
Drip Plate to be welded to the outer side of the bottom flange of the exterior girders.

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

BOTTOM FLANGE DRIP PLATE

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

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

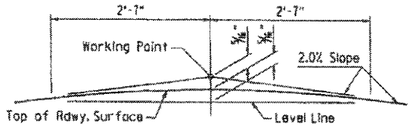


① Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

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

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

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE



NOTE: Working Point matches Theoretical Roadway Grade.

ROUNDING DETAIL

BRIDGES IN NORMAL CROWN

WELD TABLE

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

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

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

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

STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 2/11/2016
CHECKED BY: AWS DATE: 2/11/2016
DESIGNED BY: STD. DATE: —
FILENAME: b55007.dgn
SCALE: No Scale

DRAWING NO. 55007

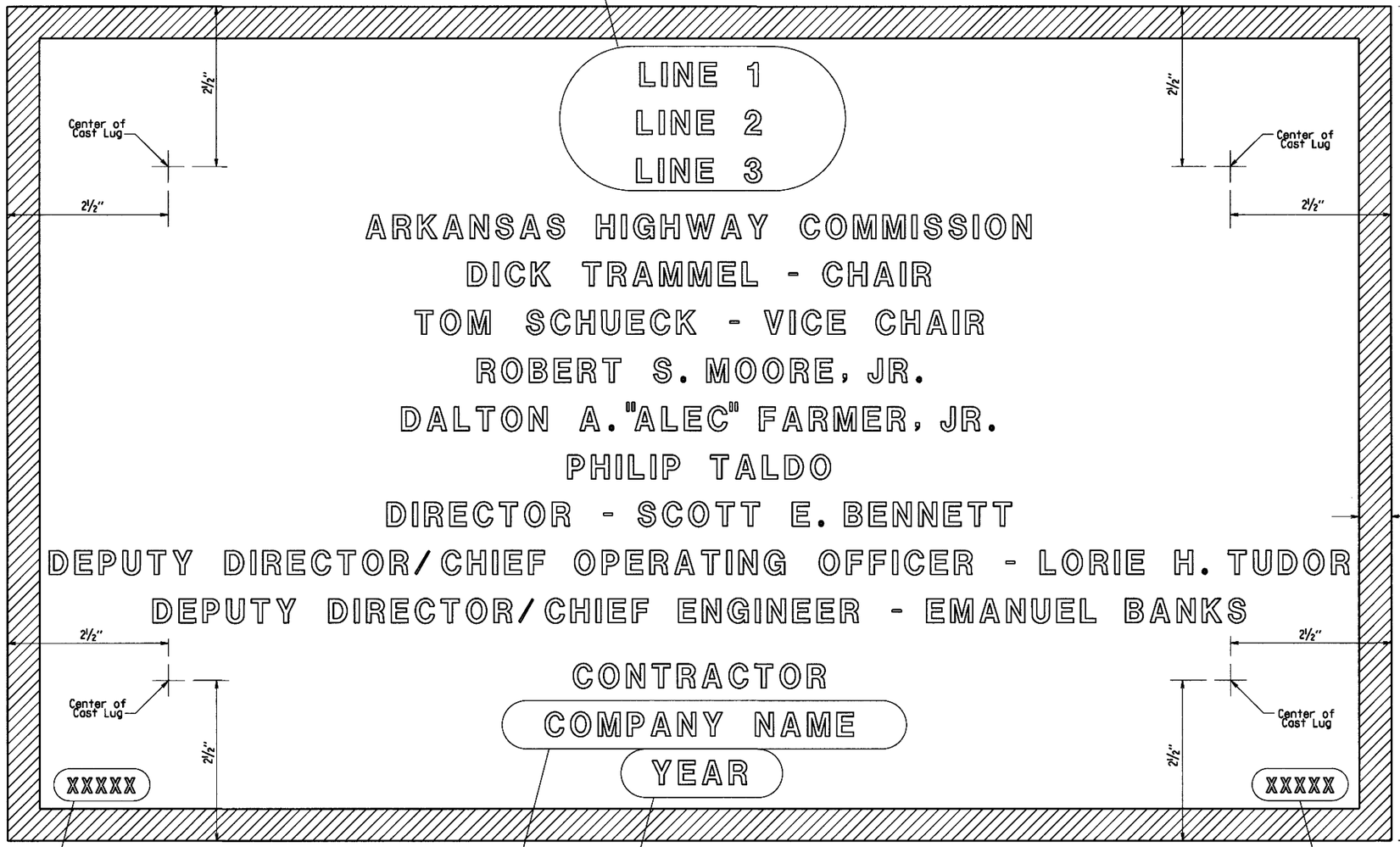
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
12-1-14			
1-14-15			
1-17-17			

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

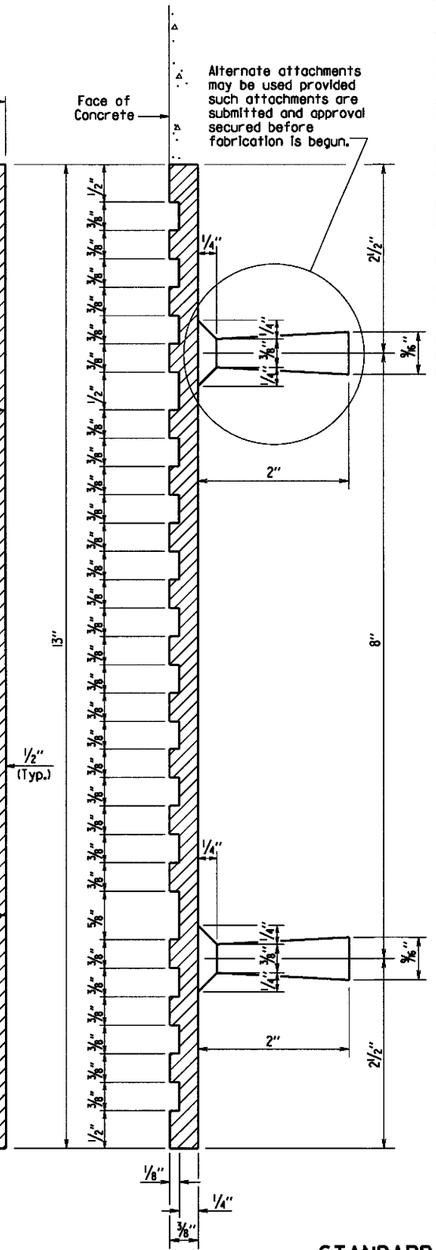
1 TYPE D NAME PLATE 55010

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.

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



TYPICAL BRIDGE NAME PLATE



GENERAL NOTES

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

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

Body of plate shall be 1/4" thick and shall include four tapering cone lugs 3/8" to 3/16"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.

3 Added New Commissioner
1-17-17 KDH Checked By: CRE

2 Revised Chair and Vice Chair
Added New Commissioner
1-14-15 KDH Checked By: CRE

1 Revised Deputy Director/
Chief Engineer
Added Deputy Director/
Chief Operating Officer
12-1-14 KDH Checked By: CRE

STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55010.dgn
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55010

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/24/16				8	ARK.			
				JOB NO.				
				①	STEEL H-PILES			55020

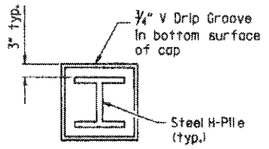
GENERAL NOTES FOR STEEL H-PILES:

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

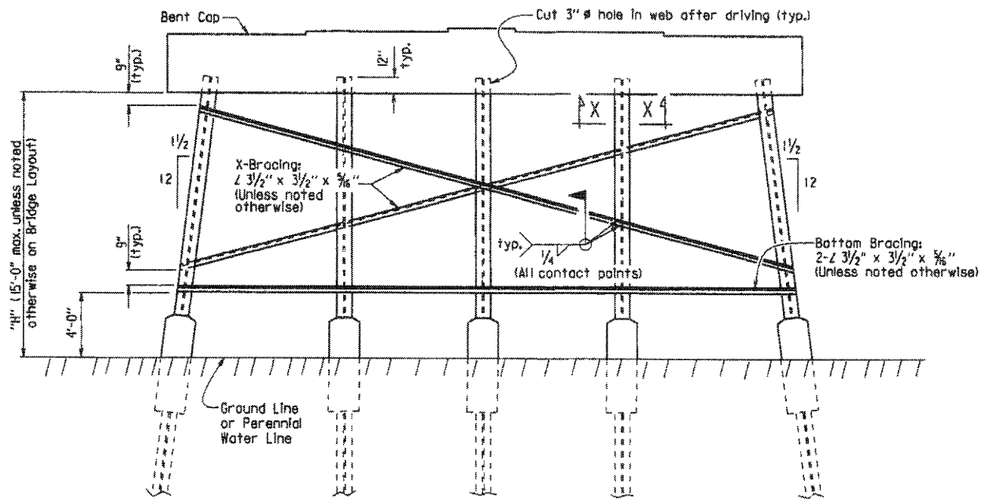
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

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

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



VIEW X-X



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

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

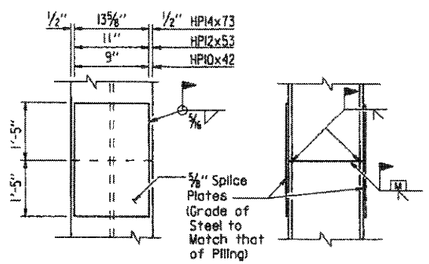
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

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

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

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



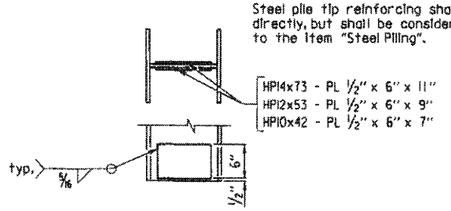
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

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

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

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



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

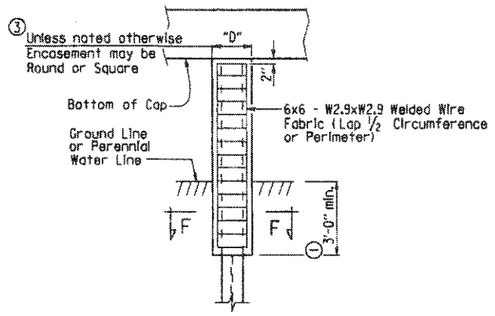
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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

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

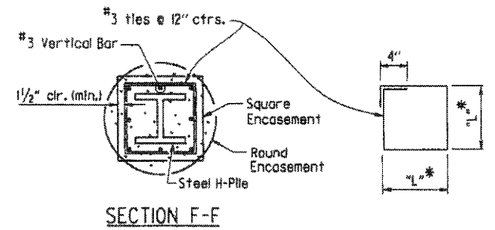
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

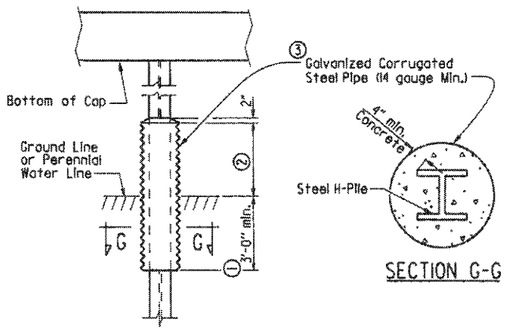


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

Pile Size	"D" Square Encsmt.	"D" Round Encsmt.	"L"*
HPI0x42	1'-7"	2'-0"	1'-4"
HPI2x53	1'-8"	2'-2"	1'-5"
HPI4x73	1'-11"	2'-6"	1'-8"



SECTION G-G

① Unless otherwise noted on Bridge Layout.

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

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

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

ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL H-PILES

(Shown with Partial Height Encasement)

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

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

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

BRIDGE ENGINEER

STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

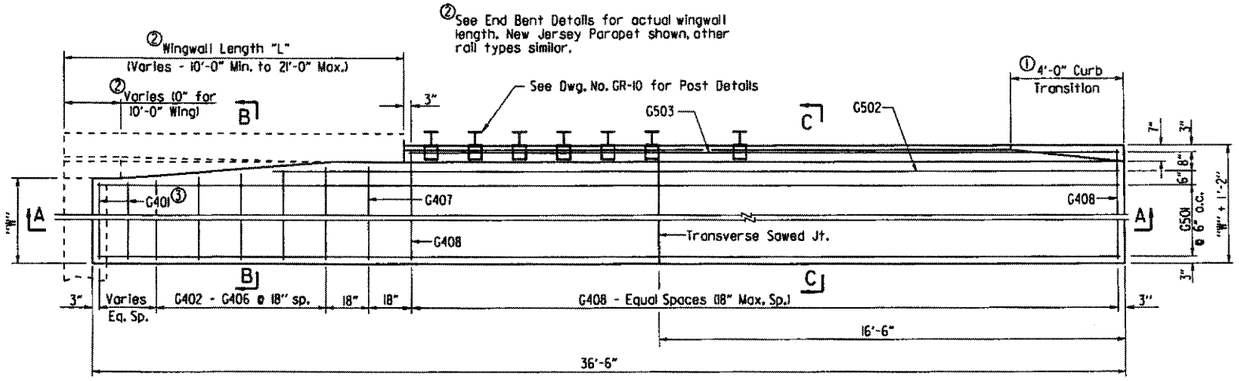
DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55020.dgn
CHECKED BY: B.E.F. DATE: 2/27/2014 SCALE: NO SCALE
DESIGNED BY: STD. DATE: —

DRAWING NO. 55020

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				
				① TYPE C GUTTERS				55030C

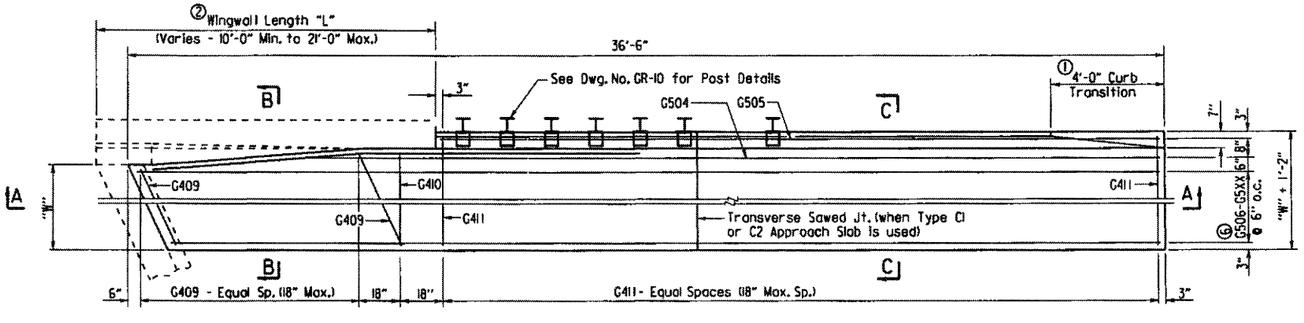
①Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

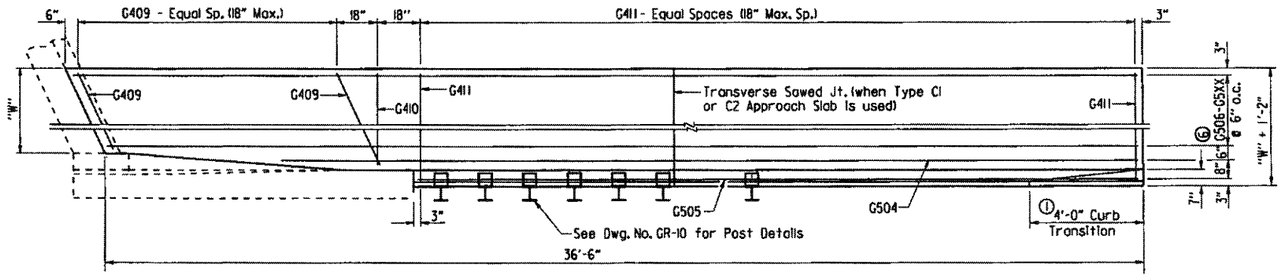
Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



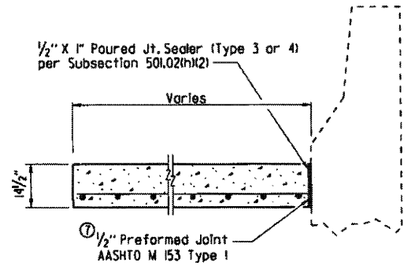
③Provide G401 bars @ 18" max. spacing. Number of G401 bars vary with wingwall length. No G401 bars required for 10'-0" wingwalls.

HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE

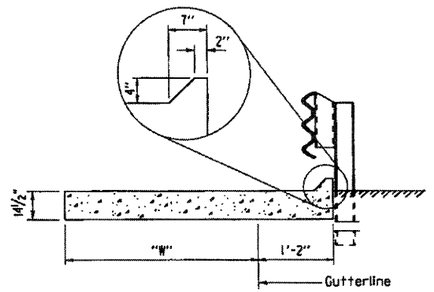




PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

BAR LIST FOR ONE TYPE C GUTTER

	Mark	No. Req'd. for Width "W" 4'-0"	6'-0"	8'-0"	10'-0"	Length
Square Bridge	G401	④	④	④	④	"W" - 4"
	G402-G406	1 each	1 each	1 each	1 each	"W"-3" to "W"+2"
	G407	1	1	1	1	"W"+3"
	G408	④	④	④	④	"W"+ 10"
	G501	8	12	16	20	36'-2"
	G502	1	1	1	1	(41'-11") - "L"
	G503	1	1	1	1	(37'-2") - "L"
Skewed Bridge	G409	④	④	④	④	⑤
	G410	1	1	1	1	"W"+3"
	G411	④	④	④	④	"W"+ 10"
	G504	1	1	1	1	⑤
	G505	1	1	1	1	⑤
	G506 - G5XX⑥	1 each	1 each	1 each	1 each	⑤

④No. Req'd. varies with Skew and Wingwall Length.

⑤Bar Lengths vary with Skew and Wingwall Length.

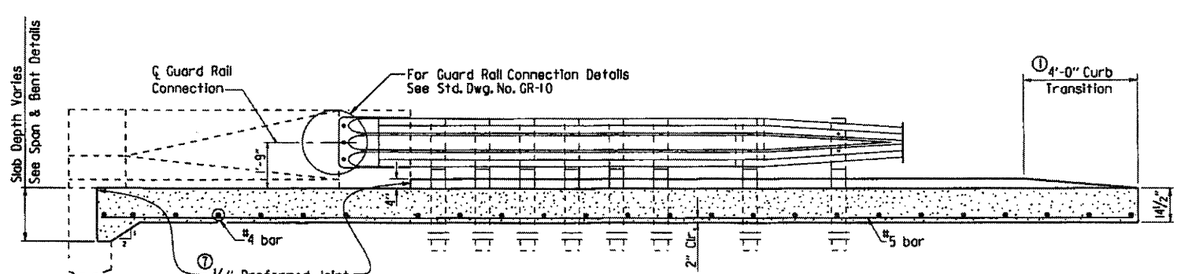
⑥G513 for "W" = 4'
G517 for "W" = 6'
G521 for "W" = 8'
G525 for "W" = 10'

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

(FOR INFORMATION ONLY)

"W" Width (ft.)	Reinforcing Steel (Lbs.)	Concrete (Cu. Yds.)
4	445	8.30
6	630	11.55
8	810	14.80
10	995	18.10

Quantities are based on "L" = 10'-0".



SECTION A-A

⑦Eliminate Type I Preformed Joint at end bent backwall and at face of wingwalls when gutters used with Type C2 Approach Slabs. Poured joint sealer is required, however backer rod shall be eliminated.

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

GENERAL NOTES

All concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement and shall be poured in the dry.

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

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

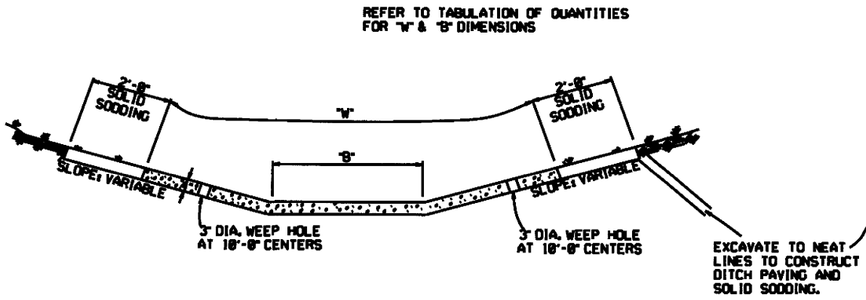
STANDARD DETAILS FOR TYPE C APPROACH GUTTERS

ARKANSAS STATE HIGHWAY COMMISSION

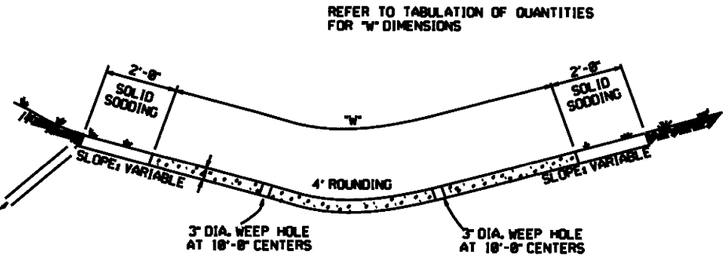
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 2/27/2014 FILENAME: b55030c.dgn
CHECKED BY: K.W.Y. DATE: 2/27/2014 SCALE: ⅜" = 1'-0" or As Shown
DESIGNED BY: STD. DATE: _____

DRAWING NO. 55030C

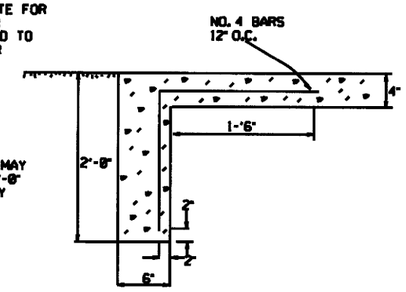


TYPE A



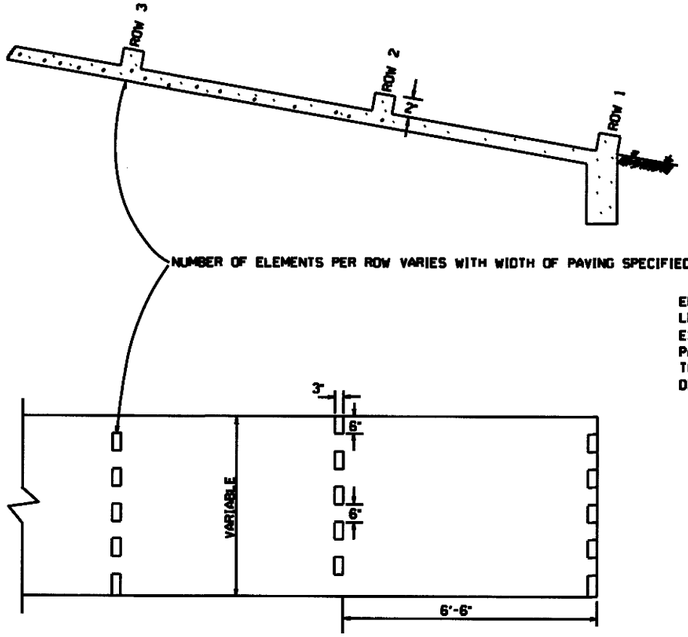
TYPE B

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

TOE WALL DEPTH MAY BE ALTERED TO 1'-8" WHEN DIRECTED BY THE ENGINEER IN ROCK EXCAVATION



ENERGY DISSIPATORS
(NO SCALE)

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

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.

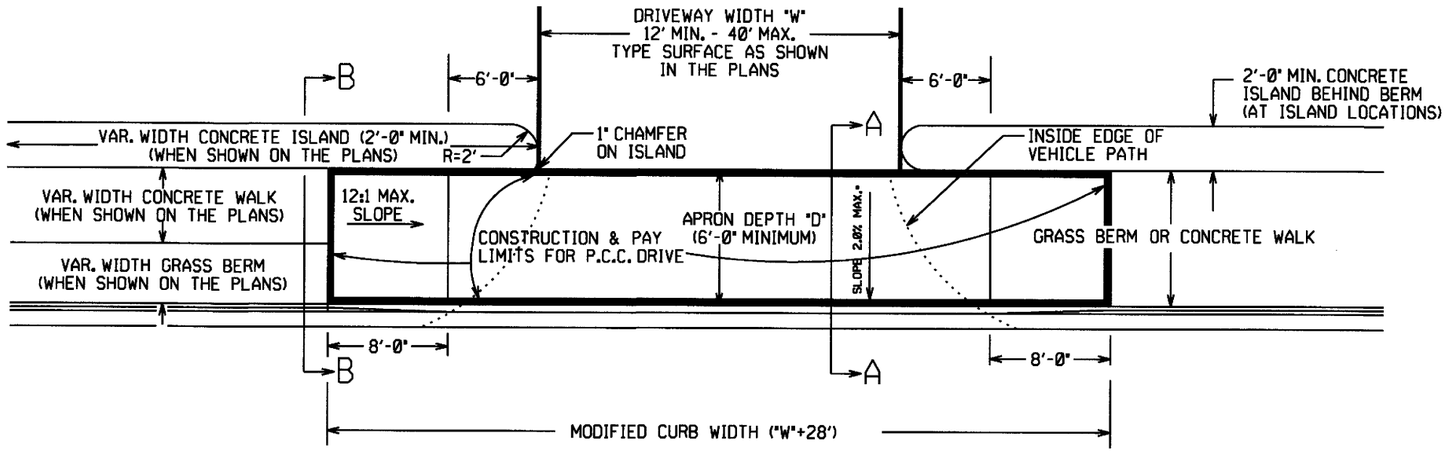
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED GENERAL NOTE ABOUT SOLID SODDING	
11-30-8	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	653-7-15-88
4-3-87	REVISED ENERGY DISSIPATOR	671-4-3-87
1-5-87	MODIFIED NOTE ON ENERGY DISS.	662-1-5-87
1-1-86	ADDED NOTE TO ENERGY DISS.	655-12-1-86
1-1-84	ENERGY DISSIPATOR DETAILS ADDED	508-11-1-84
11-1-84	EXCAVATION DETAILS ADDED TYPES A & B	
10-2-72	REVISED AND REDRAWN	508-10-2-72

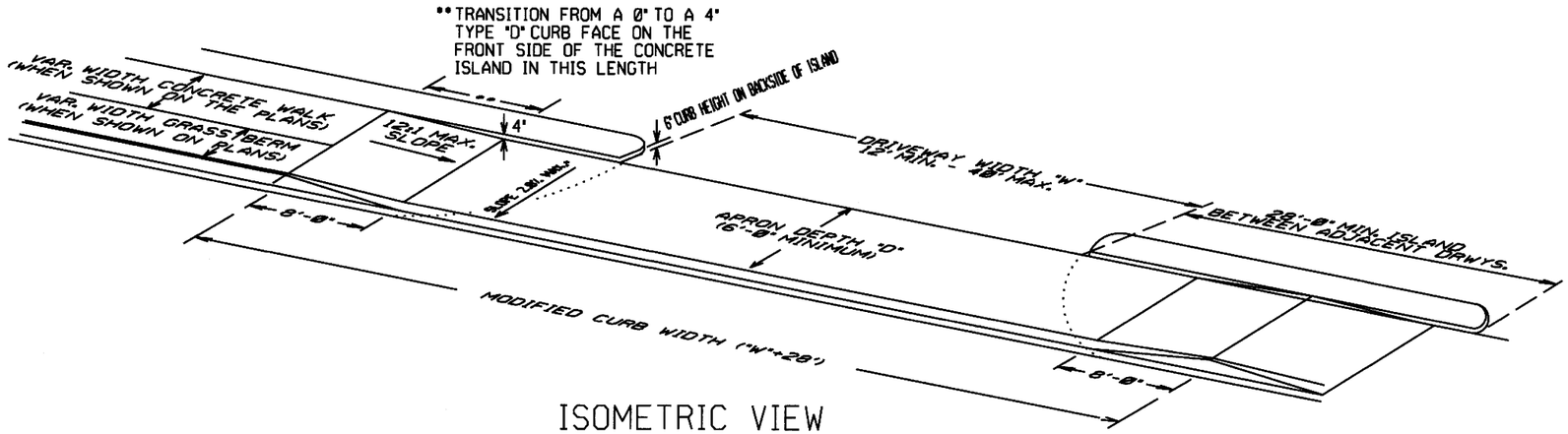
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

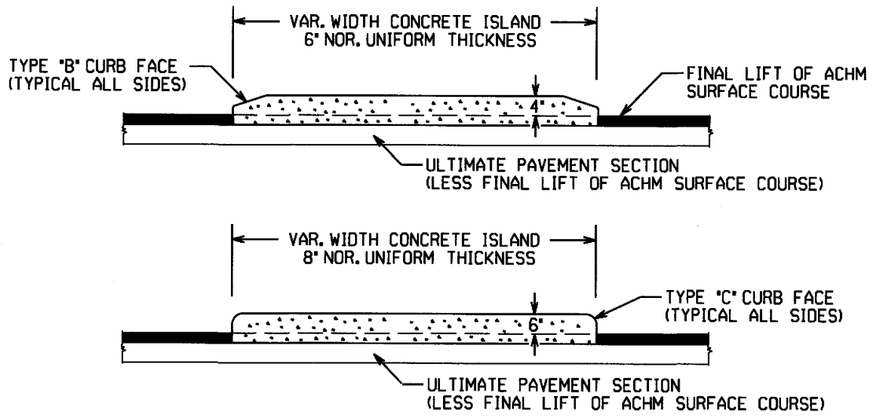
STANDARD DRAWING CDP-1



PLAN VIEW

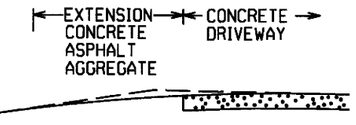


ISOMETRIC VIEW



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

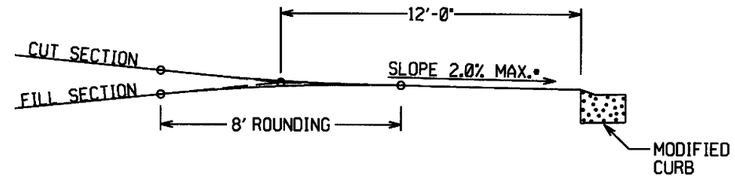
2: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
4" ACHM BINDER COURSE.(1") OR
4" ACHM BASE COURSE (1-1/2")

3: ASPHALT - 2" ACHM SURFACE COURSE (1/2")
7" AGGREGATE BASE COURSE

4: AGGREGATE - 6" AGGREGATE BASE COURSE

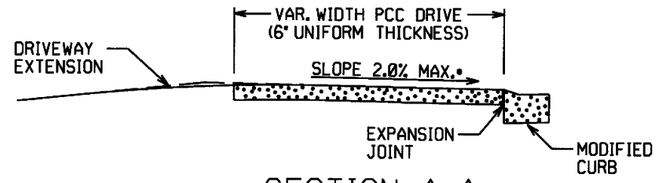
THE TYPE OF EXTENSION SHALL BE AS SHOWN IN THE PLANS. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, SUBSTITUTE A LOWER NUMBERED TYPE OF EXTENSION IN LIEU OF THE TYPE SPECIFIED IN THE PLANS, BUT AT NO ADDITIONAL COST TO THE DEPARTMENT.

DRIVEWAY EXTENSION DETAILS

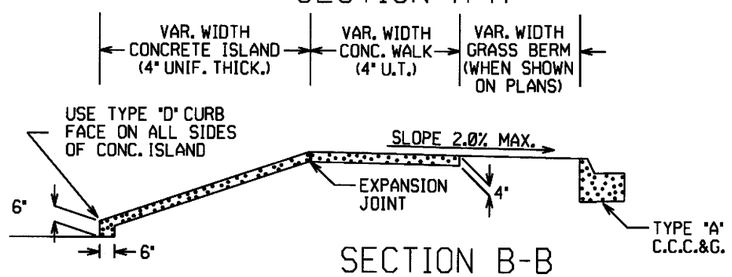


DRIVEWAY VERTICAL ALIGNMENT DETAILS

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



SECTION A-A



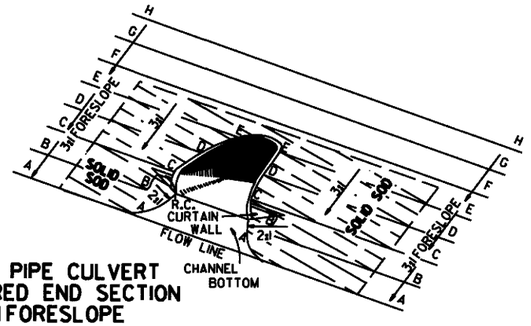
SECTION B-B
CURBED ISLAND BEHIND WALK

DATE REV	DATE FILMED	DESCRIPTION
2-27-14		REVISED PLAN & ISOMETRIC VIEW
11-29-07		ADDED CHANNELIZATION ISLAND WITH TYPE C CURB FACE & REVISED DRIVEWAY SLOPE NOTE & VERTICAL ALIGNMENT DETAIL
11-10-05		REV. APRON SLOPE & DEPTH OF AGG. BASE.
8-22-02		ADDED ISLAND DETAILS & NOTES
3-30-00		REV. MOD. CURB WIDTH & TRANS. NOTE
11-19-98		REVISED NOTES
11-18-98		REDRAWN AND REISSUED

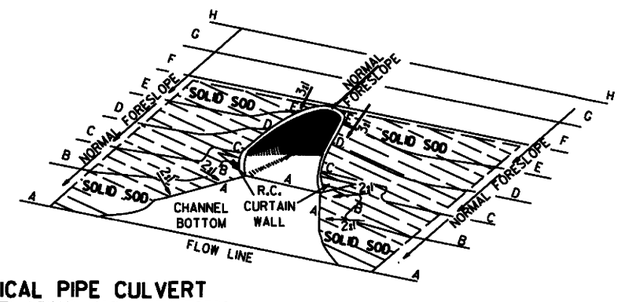
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DRIVEWAYS & ISLANDS

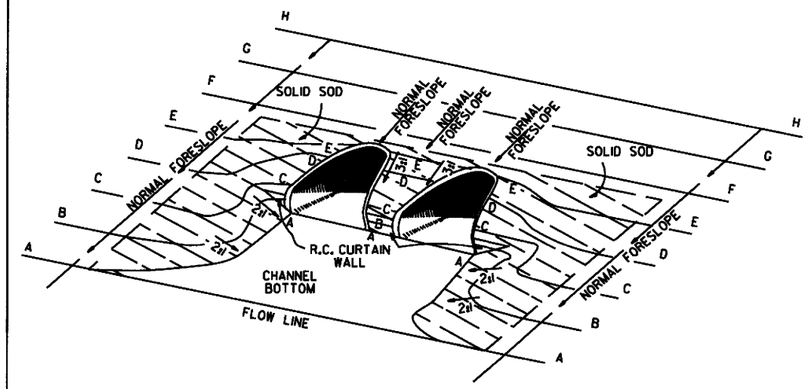
STANDARD DRAWING DR-1



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



TYPICAL PIPE CULVERT
WITH FLARED END SECTION
& FLATTENED ADJACENT SLOPES



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

R.C. CURTAIN WALL
DIMENSIONS & QUANTITIES

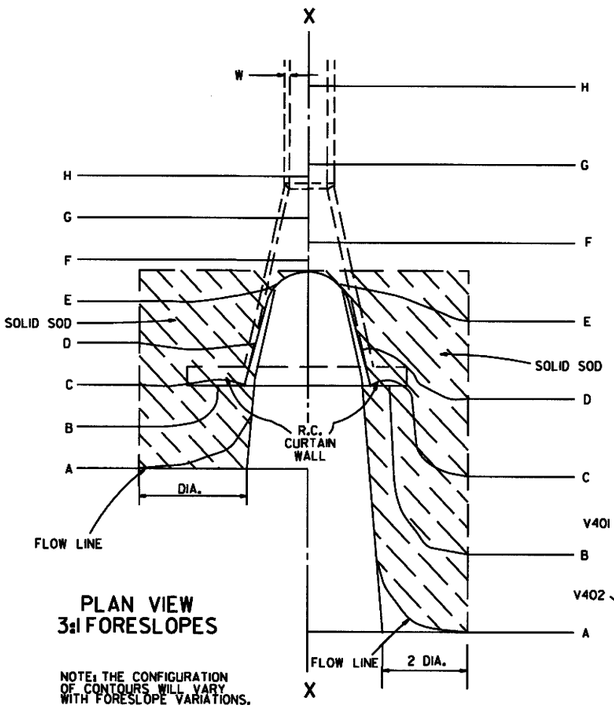
PIPE DIA.	H_1	L_1	L	L (DBL.)/2	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
					CONC.	REINF. STEEL	CONC.	REINF. STEEL
					CU. YDS.	LBS.	CU. YDS.	LBS.
18"	11½"	3'-5"	8'-0"	6'-3"	0.31	27.7	0.45	39.5
24"	1'-0½"	4'-6"	9'-6"	7'-6"	0.37	33.4	0.53	48.0
30"	1'-3½"	5'-7"	11'-0"	9'-0"	0.45	39.0	0.67	59.0
36"	1'-7"	6'-8"	13'-0"	10'-6"	0.58	52.6	0.83	73.9
42"	2'-1½"	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'-9½"	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.

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.	L	NO.
18"	7'-8"	2	1'-11½"	4	1'-7½"	8	8"	8	12'-2"	2	1'-11½"	4	8"	2	1'-7½"	10	8"	14
24"	9'-2"	2	2'-2"	4	1'-8½"	10	8"	9	14'-8"	2	2'-2"	4	8"	2	1'-8½"	12	8"	18
30"	10'-8"	2	2'-4½"	4	1'-11½"	10	8"	12	17'-8"	2	2'-4½"	4	8"	2	1'-11½"	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'-9½"	8	2'-9½"	16	8"	15	23'-8"	2	3'-9½"	8	8"	4	2'-9½"	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'-8½"	12	3'-5½"	20	8"	17	27'-8"	2	4'-9"	12	8"	6	3'-5½"	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

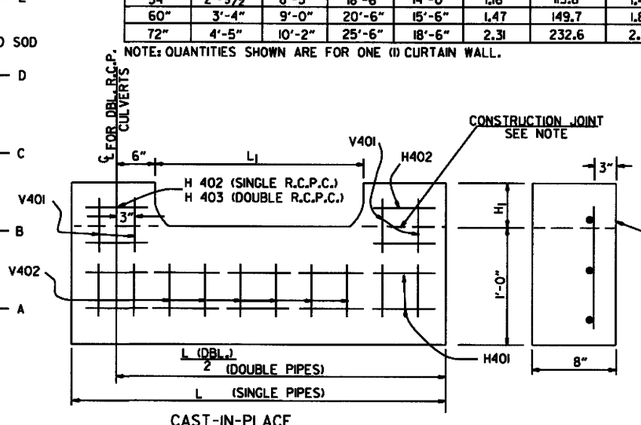
ALL REINFORCING STEEL #4 BARS @ 6" O.C.



PLAN VIEW
3:1 FORESLOPES

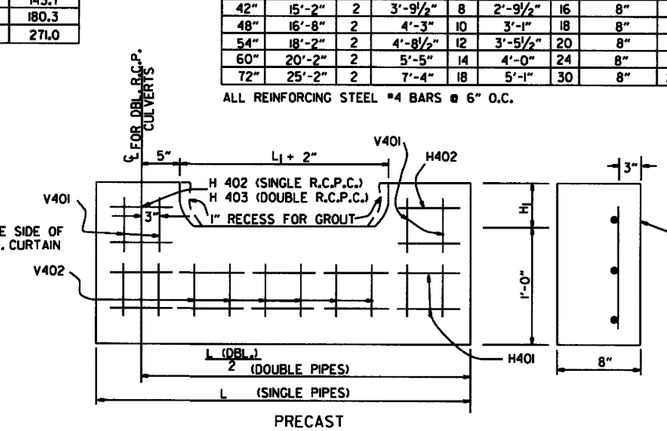
NOTE: THE CONFIGURATION OF CONTOURS WILL VARY WITH FORESLOPE VARIATIONS.

PLAN VIEW
FLATTENED FORESLOPES



CAST-IN-PLACE

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



PRECAST

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

R.C. CURTAIN WALL DETAILS

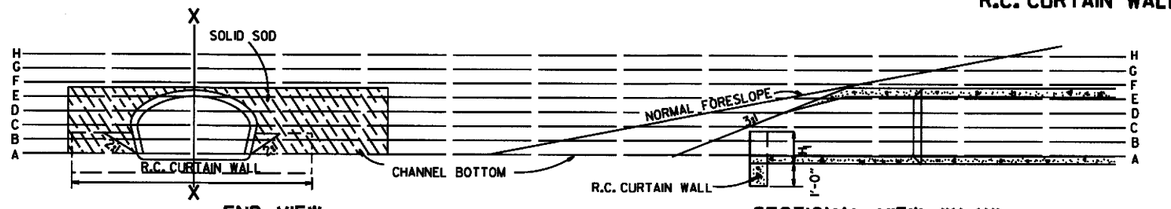
SOLID SODDING

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

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

GENERAL NOTES

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 ¾".
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 W10 x W10 MAY BE USED IN LIEU OF REINFORCING BARS.



END VIEW

SECTIONAL VIEW "X-X"

DATE	REVISION	FILMED
10-18-96	ADDED NOTE TO SOLID SODDING	
10-12-95	CORRECTED SPELLING	
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	

ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

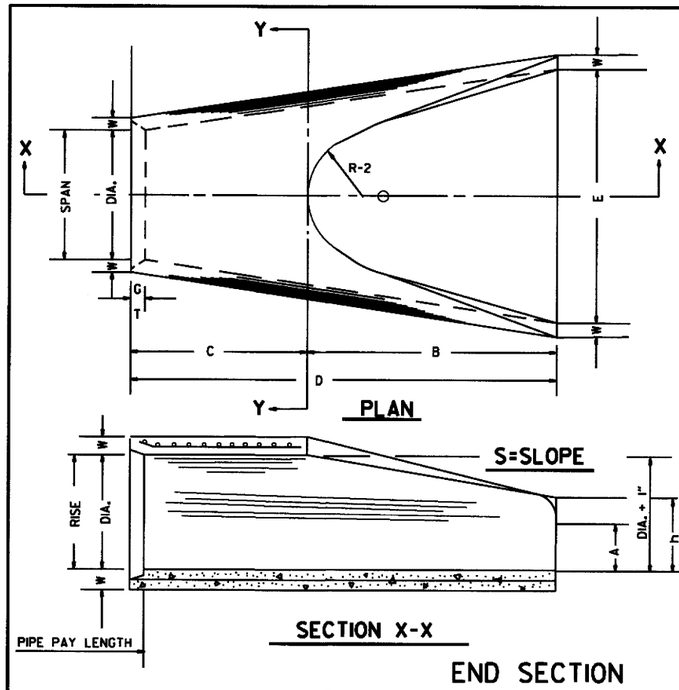
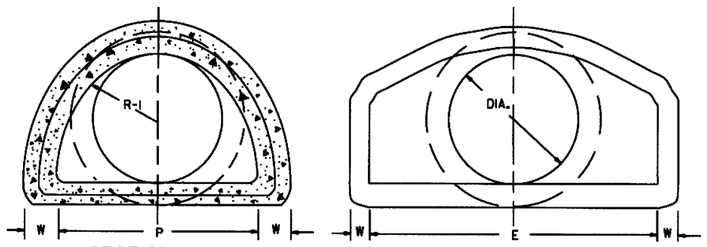


TABLE OF DIMENSIONS

DIA.	WALL	A	B	C	D	E	S	DIA. + 1"	P	R-1	R-2	G-T	WT.	h
18"	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3sl	19"	29"	15½"	12"	2"	1000	1'-0½"
24"	3"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	3sl	25"	33⅜"	16⅝"	14"	2½"	1600	1'-1½"
30"	3½"	1'-0"	4'-6"	1'-7¾"	6'-1¾"	5'-0"	3sl	31"	37"	18½"	15"	3¼"	1940	1'-4⅝"
36"	4"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	6'-0"	3sl	37"	47⅛"	24⅝"	20"	3½"	4100	1'-8"
42"	4½"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	3sl	43"	53⅛"	27½"	22"	3½"	5380	2'-2½"
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	3sl	49"	56½"	28½"	22"	3½"	6550	2'-6"
54"	5½"	2'-4"	6'-6"	1'-10"	8'-4"	7'-6"	3sl	55"	65½"	33⅛"	24"	4"	8750	2'-10½"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3sl	61"	72½"	36⅝"	24"	4"	9270	3'-5"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3sl	73"	77⅛"	38⅝"	24"	5"	13250	4'-6"

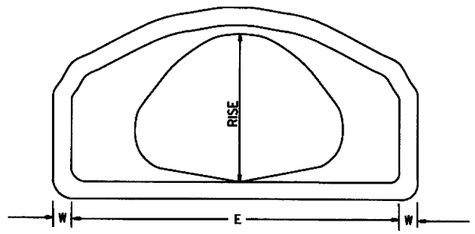


NOTE: TONGUE END ON UPSTREAM SECTION
GROOVE END ON DOWNSTREAM SECTION

ARCH PIPE

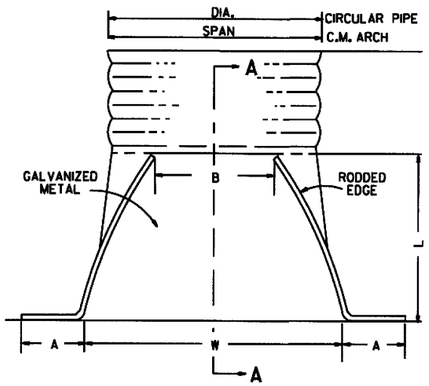
EQUIV. DIA.	• SPAN AASHTO M 206	• SPAN AHD NOMINAL	• RISE AASHTO M 206	• RISE AHD NOMINAL	W	A	B	C	D	E	P	R2	G-T	S
	INCHES													
15	18	18	11	11	2"	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1½"	2½sl
18	22	22	13½	14	2½"	5"	2'-0"	4'-1"	6'-1"	3'-6"	32⅛"	13"	2½"	2½sl
21	26	26	15½	16	2¾"	7"	2'-3"	3'-10"	6'-1"	4'-0"	34⅛"	14"	2½"	2½sl
24	28½	29	18	18	3"	9"	2'-3"	3'-10"	6'-1"	5'-0"	36⅝"	15"	2½"	2½sl
30	36¼	36	22½	23	3½"	10"	3'-1"	3'-0½"	6'-1½"	6'-0"	47⅛"	20"	3"	2½sl
36	43¾	44	26⅞	27	4"	10½"	4'-0"	2'-11½"	6'-1½"	6'-6"	54⅝"	22"	3½"	2½sl
42	51⅝	51	31⅝	31	4½"	11½"	4'-7"	1-10¼"	6'-5¼"	7'-2"	59½"	23"	3¾"	2½sl
48	58½	59	36	36	5"	1'-3"	5'-3"	2'-10¾"	8'-1¾"	7'-10"	70⅝"	24"	4¼"	2½sl
54	65	65	40	40	5½"	1'-7"	5'-3"	2'-11"	8'-2"	8'-6"	72⅛"	24"	4¾"	2½sl
60	73	73	45	45	6"	1'-10"	5'-6"	2'-8"	8'-2"	9'-0"	77⅝"	24"	5"	2½sl

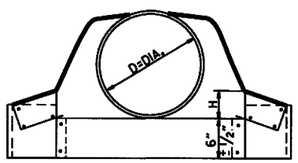
• THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO M 206.



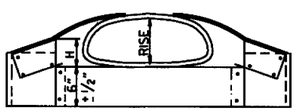
END VIEW
CONCRETE ARCH PIPE

END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS





CIRCULAR PIPE



C.M. ARCH PIPE

CIRCULAR PIPE

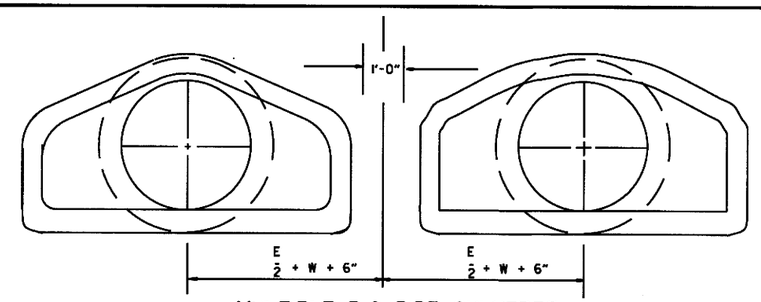
D. DIA.	GAUGE	A 1" ±	B. MAX.	H 1" ±	L 1½" ±	W 2" ±	S
		INCHES					
12	16	6	6	6	21	24	2½sl
15	16	7	8	6	26	30	2½sl
18	16	8	10	6	31	36	2½sl
21	16	9	12	6	36	42	2½sl
24	16	10	13	6	41	48	2½sl
30	14	12	16	8	51	60	2½sl
36	14	14	19	9	60	72	2½sl
42	12	16	22	11	69	84	2½sl
48	12	18	27	12	78	90	2½sl
54	12	18	30	12	84	102	2sl
60	12	18	33	12	87	114	1½sl
66	12	18	36	12	87	120	1½sl
72	12	18	39	12	87	126	1 1/3sl

C.M. ARCH PIPE

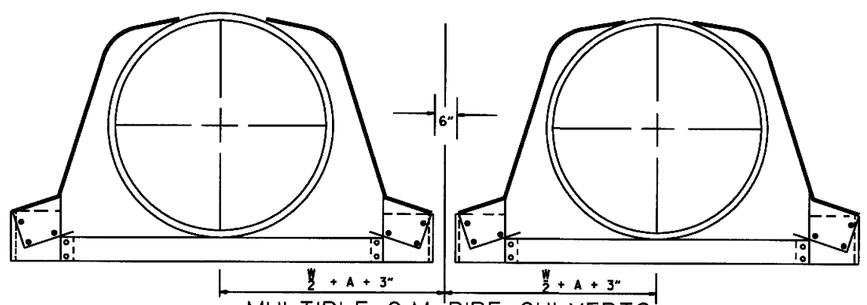
EQUIV. DIA.	SPAN	RISE	A 1" ±	B MAX.	H 1" ±	L 1½" ±	W 2" ±	S	GAUGE
	INCHES								
15"	17	13	7	9	6	19	30	2½sl	16
18"	21	15	7	10	6	23	36	2½sl	16
21"	24	18	8	12	6	28	42	2½sl	16
24"	28	20	9	14	6	32	48	2½sl	16
30"	35	24	10	16	6	39	60	2½sl	14
36"	42	29	12	18	8	46	75	2½sl	14
42"	49	33	13	21	9	53	85	2½sl	12
48"	57	38	18	26	12	63	90	2½sl	12
54"	64	43	18	30	12	70	102	2¼sl	12
60"	71	47	18	33	12	77	114	2¼sl	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



MULTIPLE R.C. PIPE CULVERTS



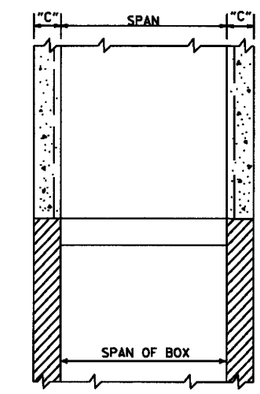
MULTIPLE C.M. PIPE CULVERTS

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

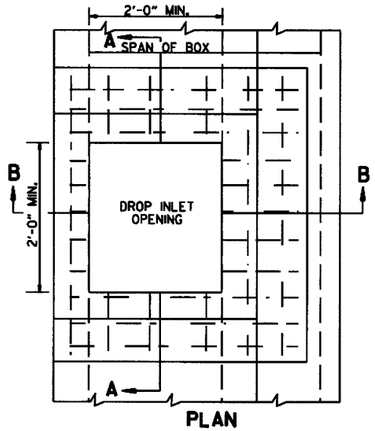
ARKANSAS STATE HIGHWAY COMMISSION

FLARED END SECTION

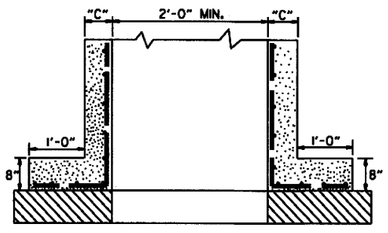
STANDARD DRAWING FES-2



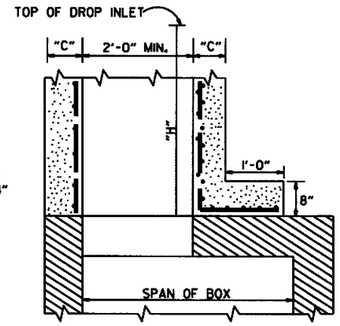
SECTION B-B



PLAN

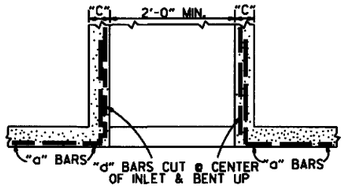


SECTION A-A

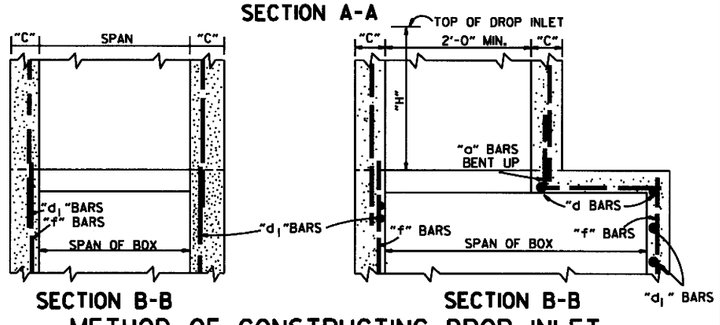


SECTION B-B

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



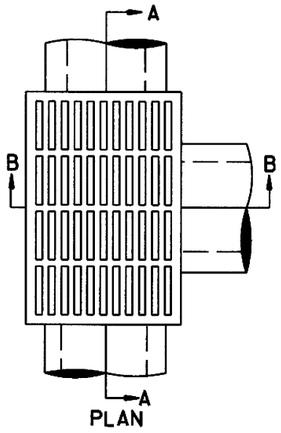
SECTION A-A



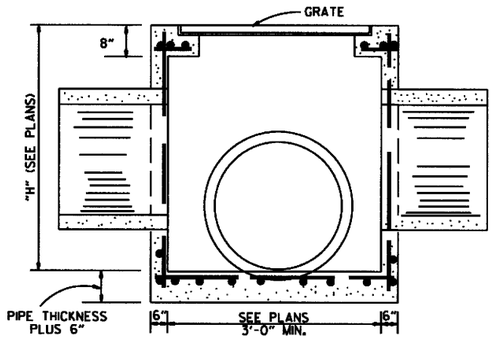
SECTION B-B SECTION B-B

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

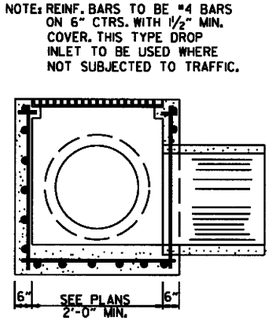
NOTE: "C" DIMENSIONS AND REINFORCING BAR SIZES, SHALL CONFORM TO THOSE SHOWN ON STANDARD DRAWING FOR DROP INLET.



PLAN

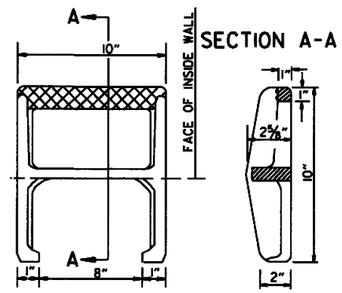


SECTION A-A



SECTION B-B

DROP INLET (TYPE E)

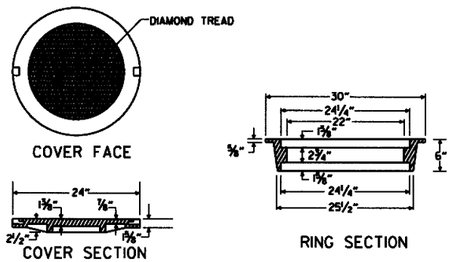


APPROX. WEIGHT = 11 LBS. (CAST IRON)

PLAN

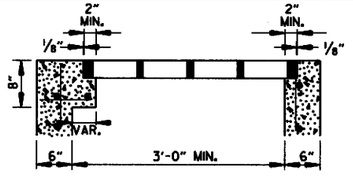
NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

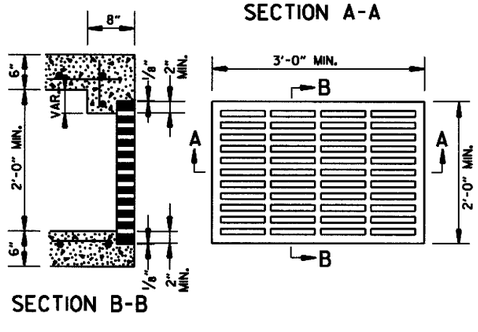


APPROXIMATE TOTAL WEIGHT = 333 LBS.

HEAVY DUTY RING & COVER



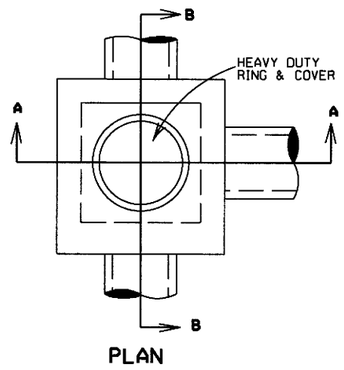
SECTION A-A



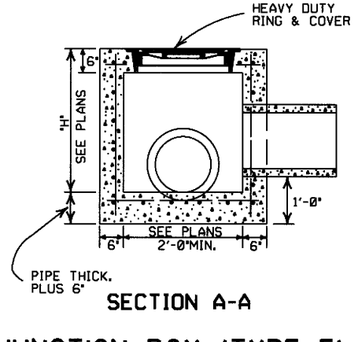
SECTION B-B

APPROXIMATE MINIMUM WATERWAY OPENING = 260 SQ. IN.

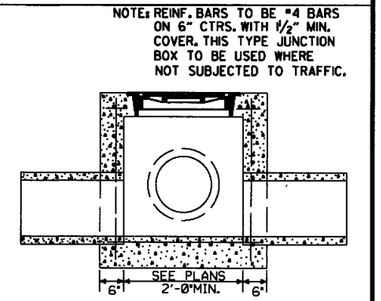
GRATE FOR TYPE E DROP INLET



PLAN

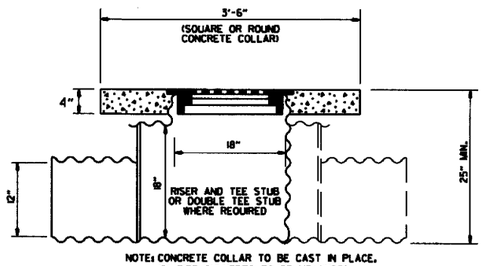


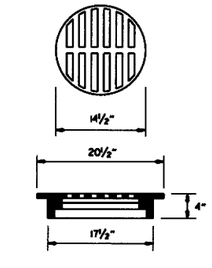
SECTION A-A



SECTION B-B

JUNCTION BOX (TYPE E)





DETAIL OF YARD DRAIN

GENERAL NOTES:

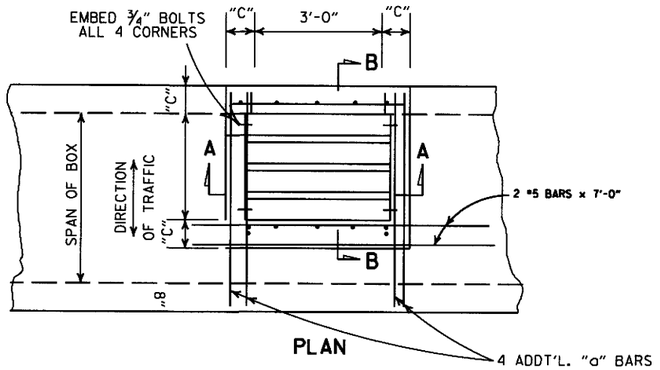
1. ALL EXPOSED CORNERS SHALL BE ¾" CHAMFERED.
2. STEPS SHALL BE INSTALLED ON 16" CENTERS ON ALL INLETS 4'-0" HIGH OR OVER, OR AS APPROVED BY THE ENGINEER.
3. EXPANSION JOINT MATERIAL SHALL BE ¾" PREFORMED FIBER.
4. GRATE OR GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B. GRATE MAY BE USED WITHOUT FRAME.
5. GRATE AND FRAME SHALL NOT BE PAINTED.
6. GRATE SHALL BE BICYCLE SAFE.
7. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
8. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M105 CLASS 35B & AASHTO M306.
9. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
10. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

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

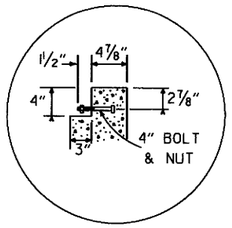
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS & JUNCTION BOXES

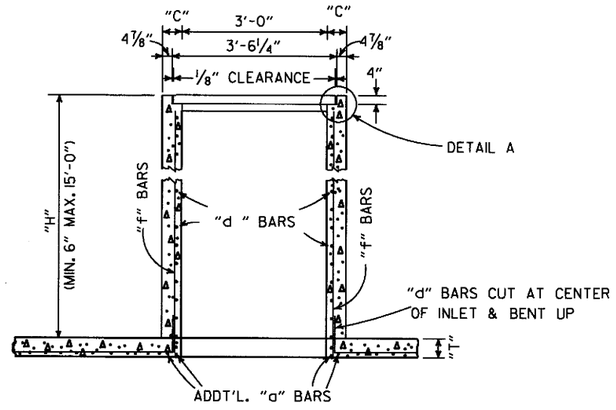
STANDARD DRAWING FPC-9



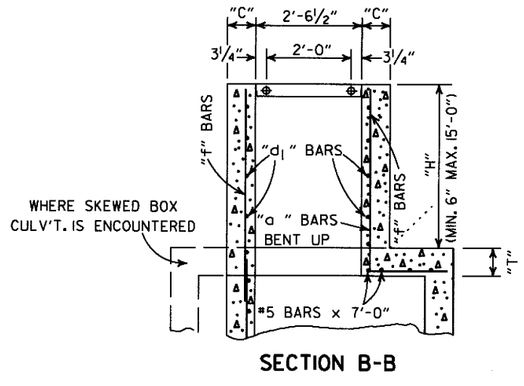
PLAN



DETAIL A



SECTION A-A

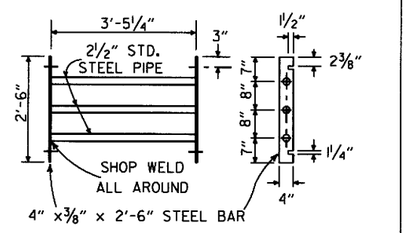


SECTION B-B

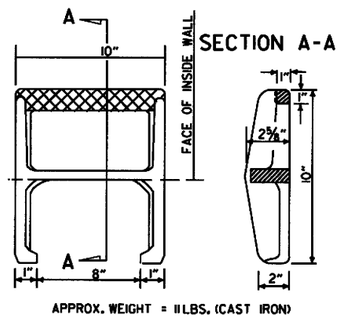
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

DIMENSIONS & REINF. BARS FOR D.I. TO BE THE SAME AS THOSE SHOWN ON APPLICABLE STD. BARREL DRAWING FOR R.C. BOX CULVERTS.

DROP INLET TYPE "TM" FOR REINFORCED CONC. BOX CULVERTS



GRATE DETAIL



APPROX. WEIGHT = 111 LBS. (CAST IRON)

PLAN

NOTE: THIS DETAIL IS TYPICAL. OTHERS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

DETAIL OF STEP FOR DROP INLET

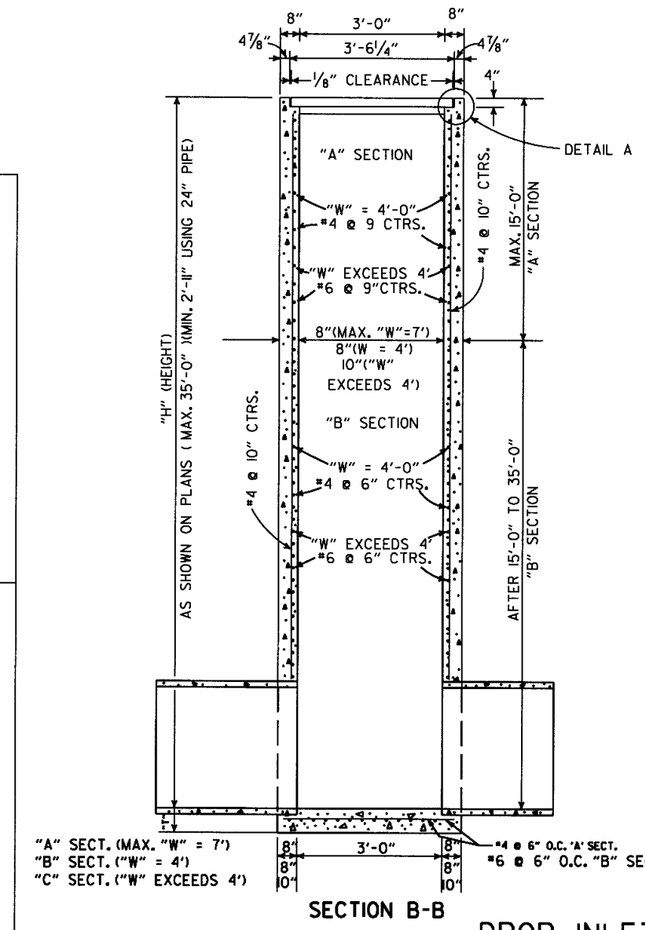
GENERAL NOTES:

1. STEEL PIPE FOR GRATES AND BOLTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 807. BOLTS SHALL CONFORM TO ONE OF THE FOLLOWING: ASTM A193, GRADE B8 CLASS 1 OR 2, ASTM A307 OR AASHTO M 164.
2. STEEL PIPE FOR GRATES SHALL BE "STANDARD WEIGHT" PIPE CONFORMING TO ASTM A53 NATIONAL STANDARD PIPE.
3. BOLTS, NUTS, WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232 OR AASHTO M 298, CLASS 40 OR 50.
4. ALL EXPOSED CORNERS TO HAVE ¾" CHAMFER.
5. ALL #4 AND #5 REINFORCING BARS TO HAVE 1½" COVER. LARGER SIZES TO HAVE 2" COVER.
6. THE COMPLETE PIPE GRATE SHALL BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

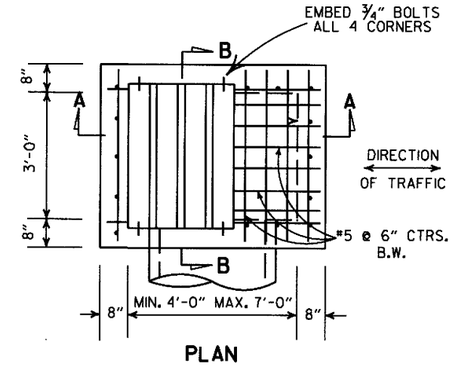
TABLE OF "W" DIMENSIONS

I.D. PIPE	SKEW OF CROSS DRAIN		
	STRAIGHT	30°	45°
	"W"	"W"	"W"
24"	4'-0"	4'-0"	4'-0"
30"	4'-0"	4'-0"	4'-5"
36"	4'-0"	4'-3"	5'-3"
42"	4'-3"	4'-11"	6'-1"
48"	4'-10"	5'-7"	6'-11"

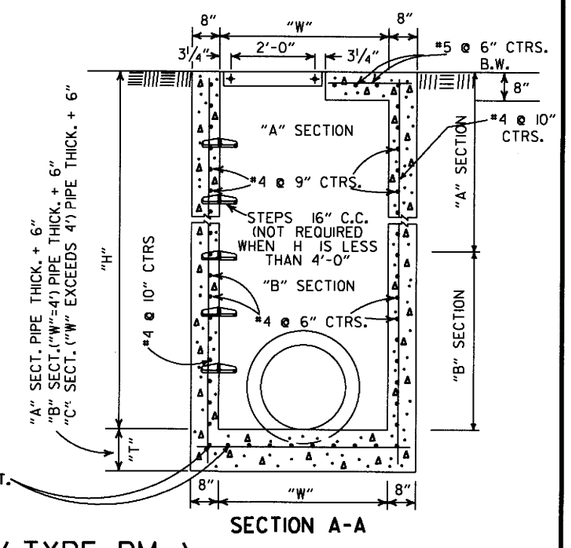
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

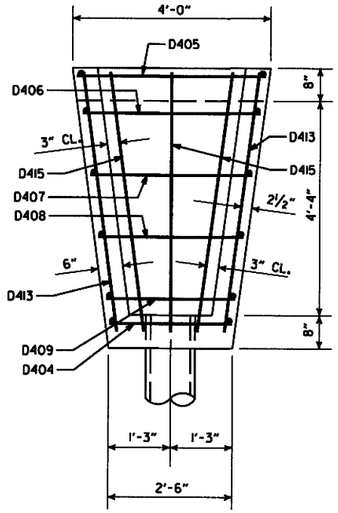
DROP INLET(TYPE RM)

REVISED		DATE FILMED
8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT PAINTING OF GRATE	8-15-91
11-30-89	ALTERED DETAIL A	11-30-89
7-15-88	REVISED STEP DETAIL, TM & RM D.I. & GRATE DETAIL	719-7-15-88
10-2-72	REVISED AND REDRAWN	542-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS

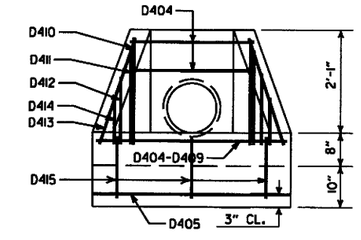
STANDARD DRAWING FPC-9D



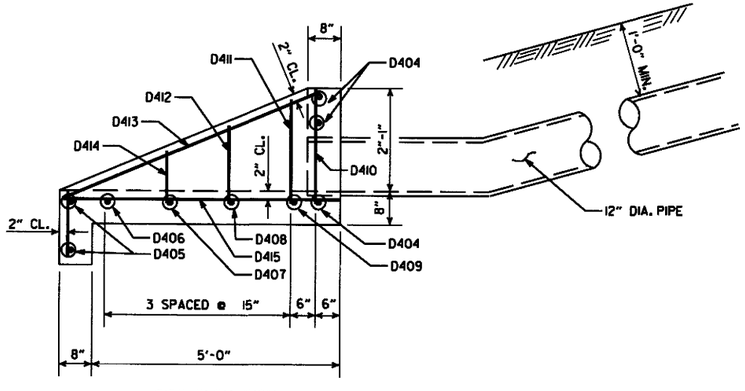
PLAN

BAR LIST (CONCRETE SPILLWAY)

MARK	NO. REQ'D.	LENGTH	BENDING DIAGRAM
D404	3	2'-2"	5'-4"
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	2" P.D. D415

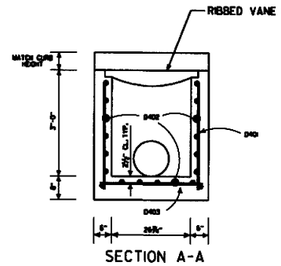


FRONT ELEVATION



SIDE ELEVATION
CONCRETE SPILLWAY

DETAILS OF CONCRETE SPILLWAY (TYPE A)

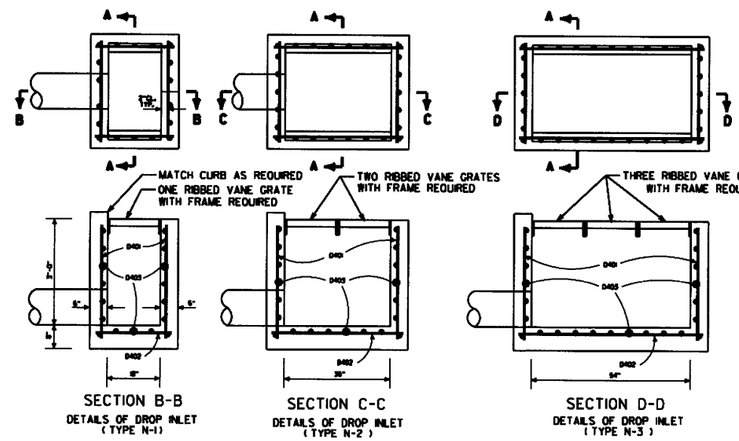


SECTION A-A

BAR LIST (DROP INLET)

MARK	TYPE N-1		TYPE N-2		TYPE N-3	
	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
D401	20	3'-0"	26	3'-0"	32	3'-0"
D402	19	2'-2"	19	3'-8"	19	5'-2"
D403	17	2'-11"	20	2'-11"	23	2'-11"

ALL BARS #4 @ 6" SPACING



SECTION B-B
DETAILS OF DROP INLET
(TYPE N-1)

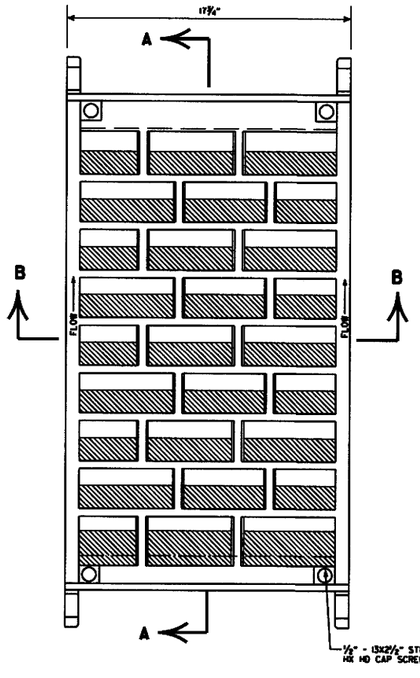
SECTION C-C
DETAILS OF DROP INLET
(TYPE N-2)

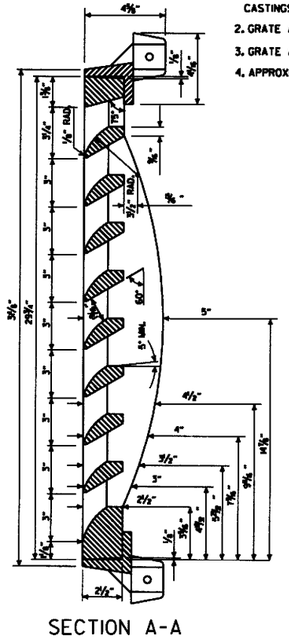
SECTION D-D
DETAILS OF DROP INLET
(TYPE N-3)

DETAILS OF DROP INLET

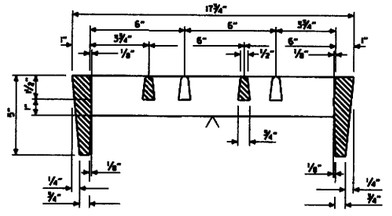
GENERAL NOTES (GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105 CLASS 35B & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.

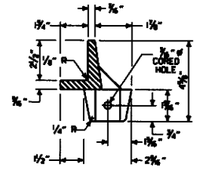




SECTION A-A



SECTION B-B



SECTION THRU FRAME

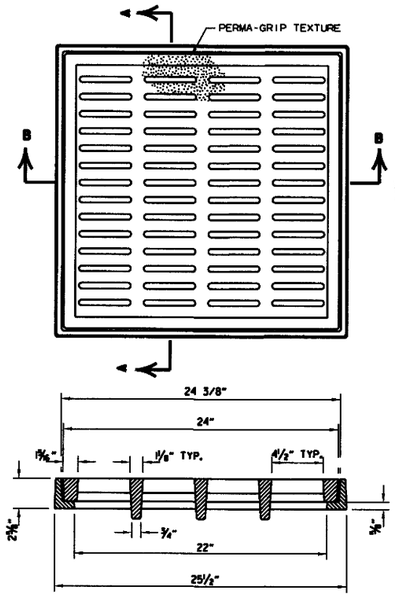
DETAILS OF RIBBED VANE GRATE AND FRAME

DATE REVISED	DATE FILMED	DESCRIPTION
7-02-98		REVISED SECT. A-A DETAIL OF DROP INLET & ADDED AASHTO REF. TO NOTE 1, REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
8-15-91		ISSUED

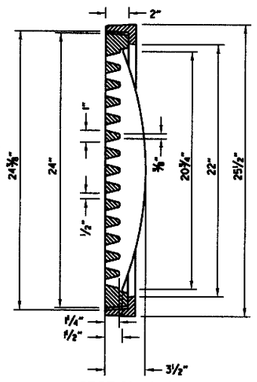
ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF DROP INLETS AND SPILLWAY OUTLET

STANDARD DRAWING FPC-9N



SECTION B-B

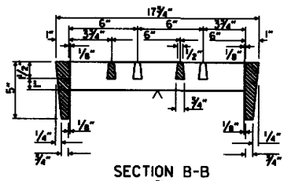


SECTION A-A

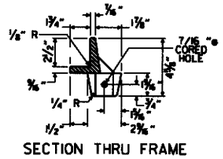
GENERAL NOTES (PEDESTRIAN GRATE & FRAME)

1. THE PEDESTRIAN GRATE SHALL BE ORIENTED IN THE TOP OF THE DROP INLET SO THAT THE ½" OPENINGS ARE PERPENDICULAR TO THE PATH OF PEDESTRIAN TRAVEL.
2. THE PEDESTRIAN GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
3. THE GRATE AND FRAME SHALL NOT BE PAINTED.
4. THE GRATE AND FRAME SHALL BE INSTALLED IN THE DROP INLET IN THE ASSEMBLED POSITION.
5. THE APPROXIMATE WEIGHT OF THE GRATE AND FRAME SHALL BE 218 LBS.
6. THE MINIMUM WATERWAY OPENING SHALL BE 122 SQ. IN.

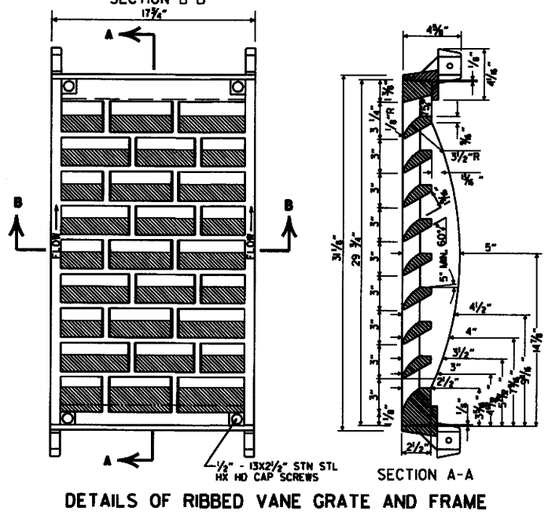
DETAILS OF PEDESTRIAN GRATE AND FRAME



SECTION B-B



SECTION THRU FRAME

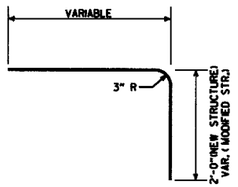


SECTION A-A

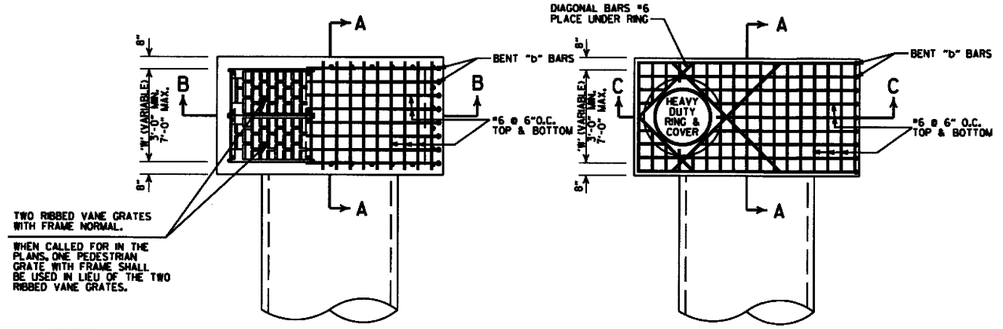
DETAILS OF RIBBED VANE GRATE AND FRAME

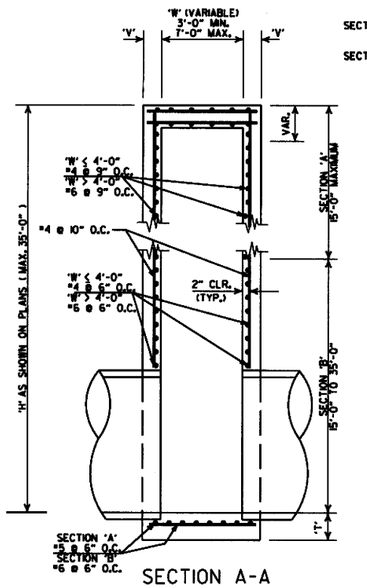
GENERAL NOTES (RIBBED VANE GRATE & FRAME)

1. RIBBED VANE GRATE AND FRAME SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. GRATE AND FRAME SHALL NOT BE PAINTED.
3. GRATE AND FRAME SHALL BE INSTALLED IN DROP INLET IN ASSEMBLED POSITION.
4. APPROXIMATE WEIGHT OF GRATE SHALL BE 170 LBS.



DETAIL OF BENT "b" BAR



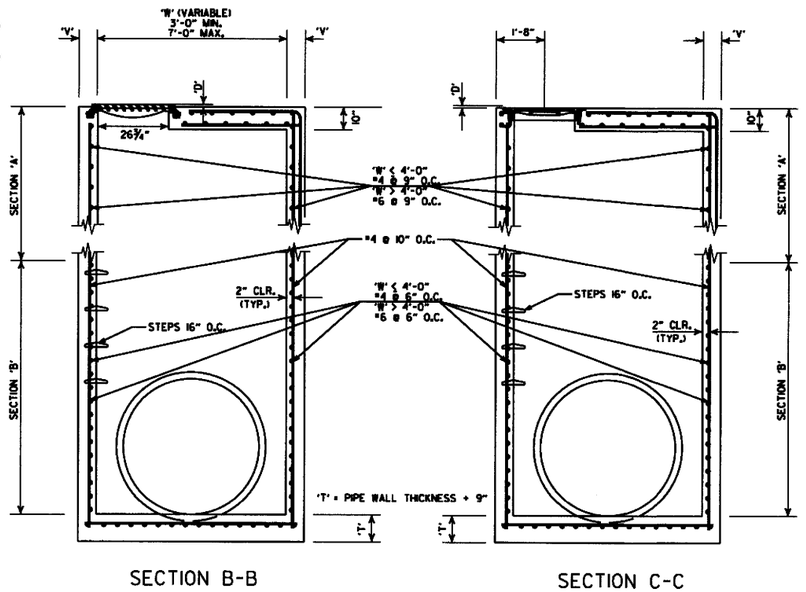


SECTION A-A

SECTION 'A'
"V" = 8"

SECTION 'B' (W)≤4'-0"
"V" = 8"

SECTION 'B' (W)>4'-0"
"V" = 10"

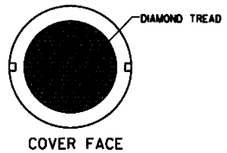


SECTION B-B

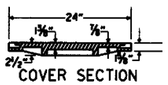
SECTION C-C

DETAILS OF DROP INLET (TYPE ST)

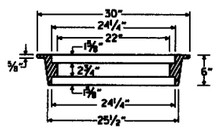
DETAILS OF JUNCTION BOX (TYPE ST)



COVER FACE



COVER SECTION



RING SECTION

HEAVY DUTY RING & COVER

APPROXIMATE TOTAL WEIGHT = 333 LBS.

GENERAL NOTES (TYPE ST DROP INLET & JUNCTION BOX)

1. THE "D" DIMENSION SHALL MATCH THE FINAL LIFT OF ACHM SURFACE COURSE SHOWN IN THE PLANS WHEN ASPHALT PAVING SURROUNDS THE GRATE OR RING COVER, AND SHALL BE 0" AT OTHER INSTALLATIONS.
2. THE STEPS SHALL BE OMITTED WHERE 'H' IS LESS THAN 4'-0".
3. ALL EXPOSED CORNERS ARE TO HAVE A ¾" CHAMFER.

GENERAL NOTES (HEAVY DUTY RING & COVER):

1. HEAVY DUTY RING AND COVER SHALL BE CONSTRUCTED OF CAST IRON AND SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GRAY IRON CASTINGS AASHTO M 105, CLASS 35B, & AASHTO M 306.
2. HEAVY DUTY RING AND COVER SHALL NOT BE PAINTED.
3. HEAVY DUTY RING SHALL ALWAYS BE INSTALLED WITH FLANGE ON TOP.
4. DIMENSIONS SHOWN FOR RING AND COVER ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR CASTINGS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR CASTING DESIGNS MAY BE MADE BY REFERRING TO PREVIOUSLY APPROVED DRAWINGS.

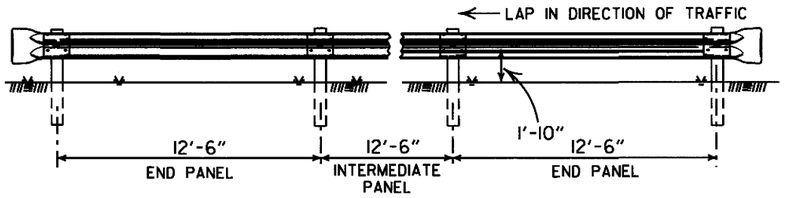
DATE REVISED	DATE FILMED	DESCRIPTION
7-26-12		REMOVED NOTE 4, REVISED 'T', REVISED BOTTOM SLAB REBAR FOR SECTION 'A', SHOWED REBAR CLEARANCE IN SECTIONS
11-16-01		ADDED NOTE 4
1-12-00		REVISED HEAVY DUTY RING & COVER
5-13-99		ADDED PEDESTRIAN FRAME & GRATE
7-02-98		REMOVED NOTE 5, REV. DIMENSIONS, ADDED HEAVY DUTY RING & COVER ADDED AASHTO REF. REVISED GRATE
10-18-96		REVISED ASTM REF. TO AASHTO
10-1-92		REVISED & REISSUED
8-15-91	8-15-91	REVISED & REISSUED

ARKANSAS STATE HIGHWAY COMMISSION

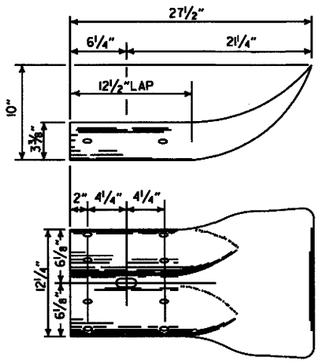
DETAILS OF DROP INLET & JUNCTION BOX (TYPE ST)

STANDARD DRAWING FPC-9S

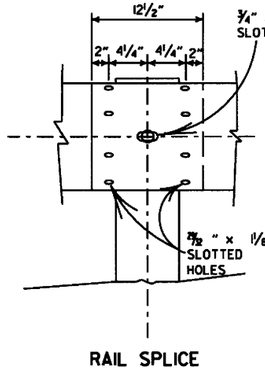
PLAN



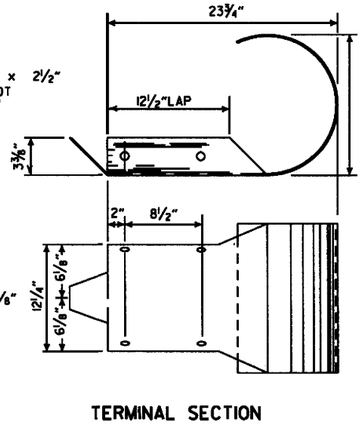
ELEVATION



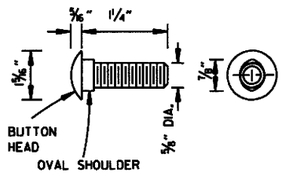
TERMINAL SECTION



RAIL SPLICE

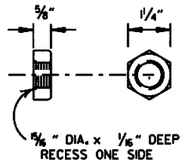


TERMINAL SECTION

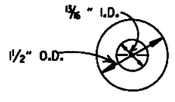


SPLICE BOLT

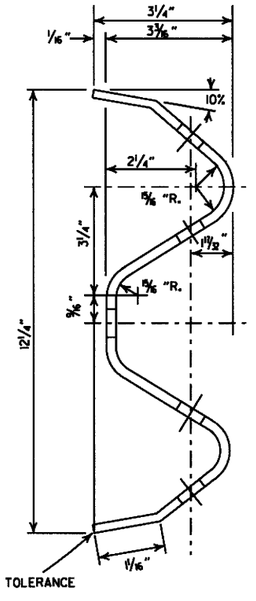
NOTE: POST BOLT SAME EXCEPT LENGTH.



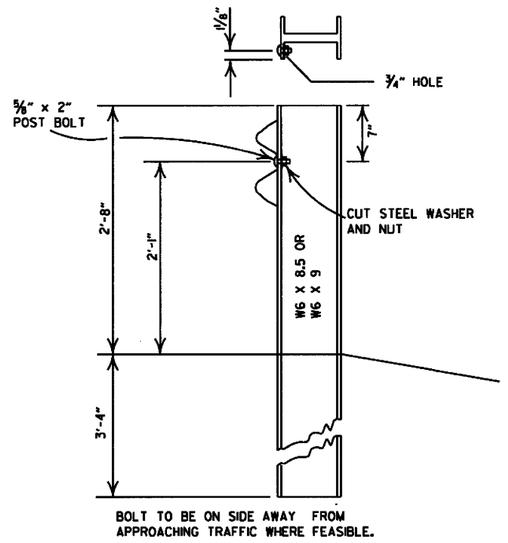
NUT



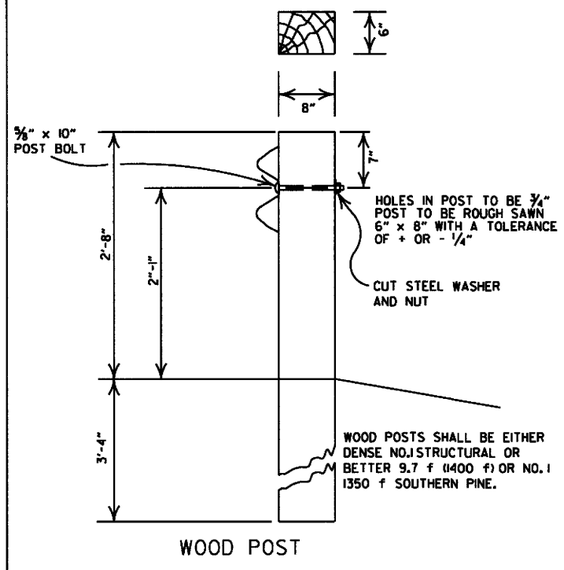
CUT STEEL WASHER



SECTION THRU RAIL



STEEL POST



WOOD POST

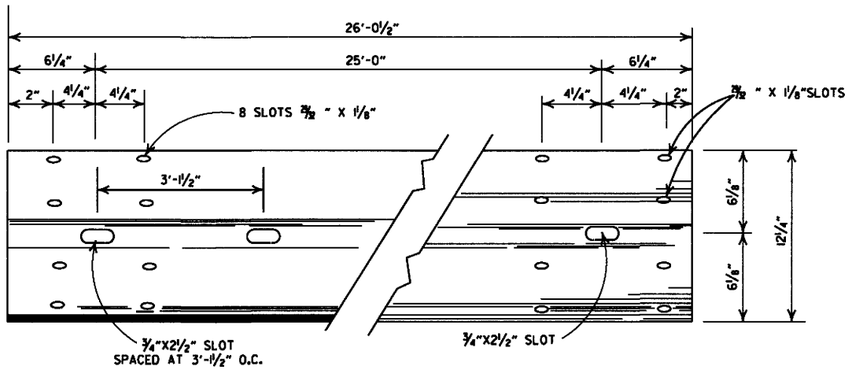
DETAILS OF POST CONNECTIONS

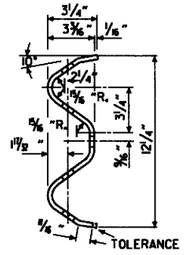
DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
08-22-02	REVISED DIMENSION ON STEEL POST	
8-16-01	REVISED STEEL AND WOOD POST	
08-12-98	REMOVED CONCRETE POST	
10-18-96	CHANGED WOOD POST NOTE	10-18-96
06-02-94	ADDED ALTERNATE STEEL POST SIZE	
08-05-93	REVISED STEEL POSTS SIZE	8-5-93
08-15-91	DELETE STEEL PLATE WASHER & ADDED TYPE C TO TITLE	8-15-91
10-30-87	REMOVED DEV. PLCMNT. ON HWY.	555-11-20-87
01-04-83	GRADE FOR WOOD POSTS	679-1-4-83
10-01-77	HARDENED WASHER	922-10-1-72
10-02-72	REVISED & REDRAWN	521-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

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

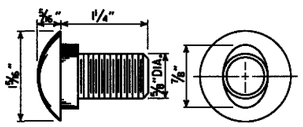
STANDARD DRAWING GR-7



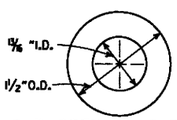


DETAILS OF W-BEAM GUARD RAIL

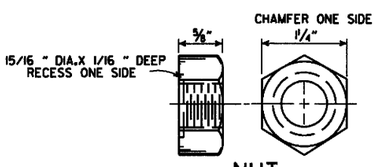
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



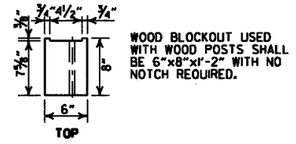
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



CUT STEEL WASHER

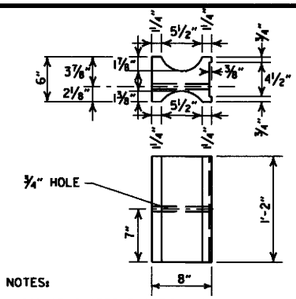


NUT



WOOD BLOCKOUT USED WITH WOOD POSTS SHALL BE 6"x8"x1'-2" WITH NO NOTCH REQUIRED.

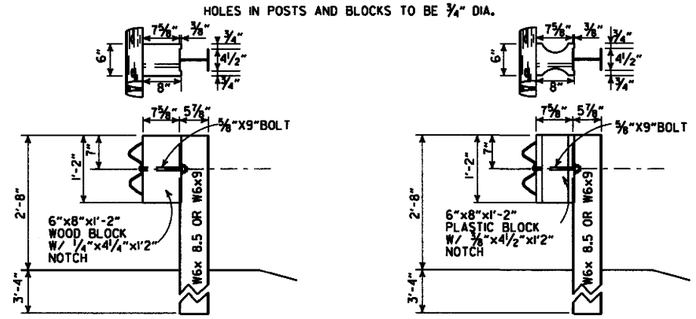
WOOD BLOCKOUT (W-BEAM)



NOTES:

1. SIMILAR SHAPED PLASTIC BLOCKOUTS MAY BE USED AS LONG AS THEY MEET REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.

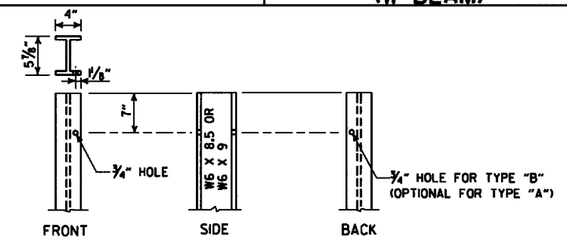
PLASTIC BLOCKOUT (W-BEAM)



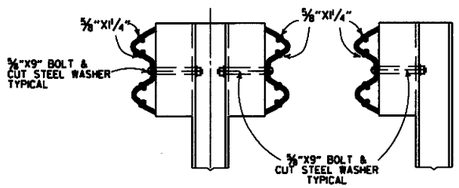
WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)



STEEL POST



TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS (W-BEAM)

-GENERAL NOTES-

ALL BOLTS SHALL BE SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN ¾" BEYOND IT.

WHERE W-BEAM GUARD RAIL CONTINUES, THE INTERMEDIATE SECTIONS SHALL HAVE A POST SPACING OF 6'-3" UNLESS OTHERWISE NOTED.

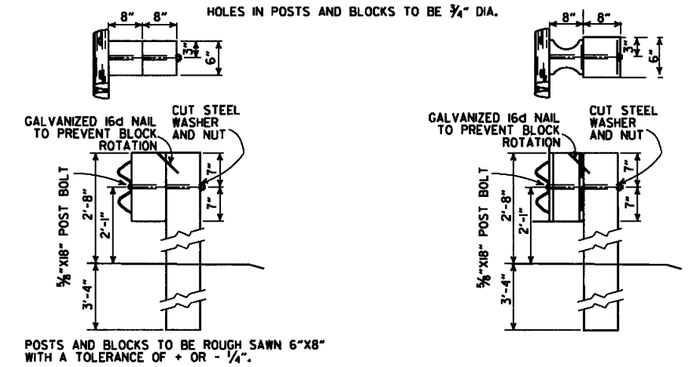
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

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 9.7# (1400 f) OR NO.1 1350 f SOUTHERN PINE.

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



POSTS AND BLOCKS TO BE ROUGH SAWN 6"X8" WITH A TOLERANCE OF + OR - ¼".

WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

DATE	REVISION	FILMED
11-16-17	REVISED GENERAL NOTES AND RAISED GUARD RAIL HEIGHT 3"	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
10-15-09	ADDED REFERENCE TO MASH	
04-10-03	REVISED GENERAL NOTES	
08-22-02	REVISED DIMENSION ON WOOD & PLASTIC BLOCKOUT CONNECTIONS & STEEL POST	
11-16-01	REVISED WOOD BLOCKOUT & DETAILS OF WOOD LINE POST CONNECTIONS	
03-30-00	REMOVED GUARD RAIL AT BRIDGE ENDS	
01-12-00	ADDED PLASTIC BLOCKOUT	
08-12-98	REV. BLOCKOUTS TO WOOD, DELETED CONC. POST & REV. GENERAL NOTE, DELETED DET. OF 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	
04-03-97	REMOVED "LAP IN DIRECTION OF TRAFFIC" NOTE & PLACED ARROWS ON WASHERS	
10-18-96	REVISED WOOD POST NOTE	
06-02-94	ADDED ALT. STEEL POST SIZE	
08-05-93	REVISED STEEL POST SIZE	8-5-93
10-01-92	REDRAWN & REVISED	10-1-92
08-15-91	REVISED WASHER NOTE	8-15-91
08-02-90	REV. GEN. NOTE & DEPTH OF ANC. POST IN ROCK	8-2-90
07-15-88	REVISED SECTION 3 & GENERAL NOTES	
03-04-88	REV. ANCHOR POST ,ELEV. NOTES & POST IN ROCK	780-3-4-88
10-30-87	REVISED WOOD LINE POST DETAIL	546-10-30-87
10-09-87	REDRAWN & REVISED	802-10-9-87

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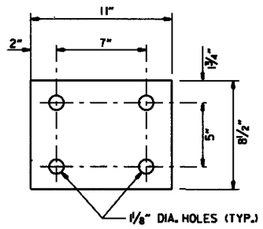
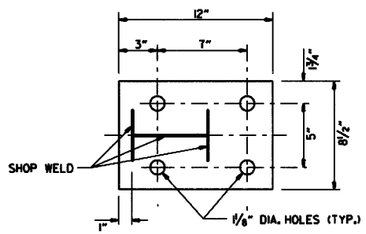
GUARD RAIL DETAILS

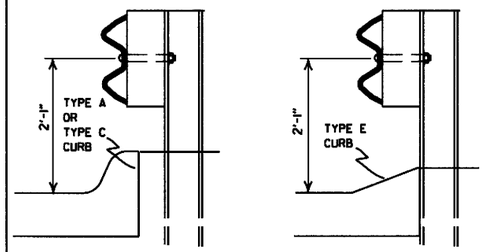
STANDARD DRAWING GR-8





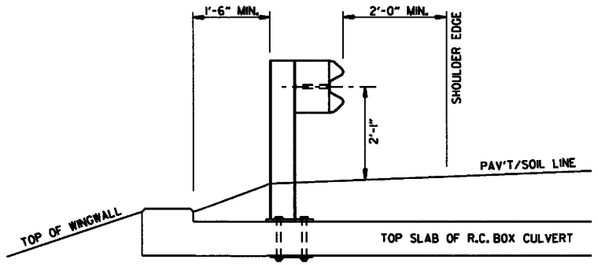
WASHER PLATE **BASE PLATE**

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

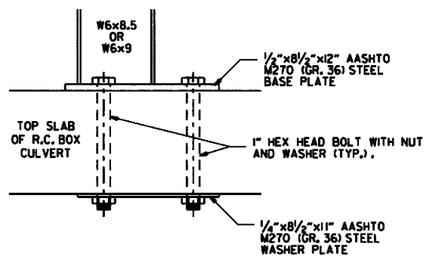


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

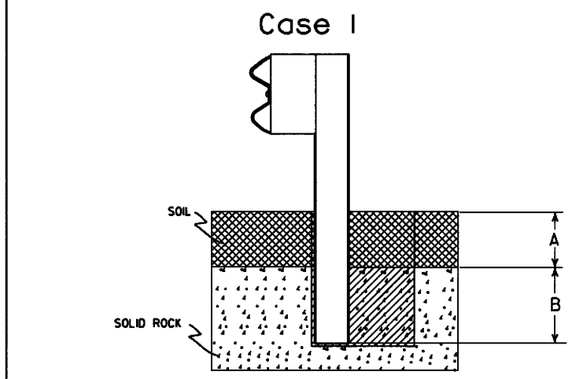
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.

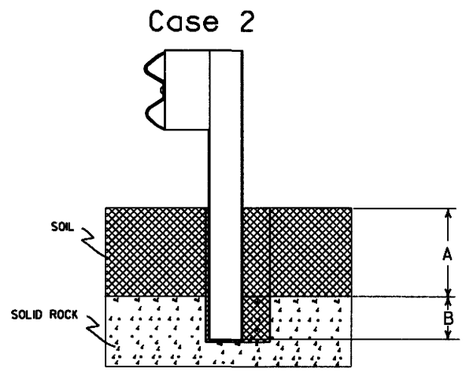


SECTION A-A

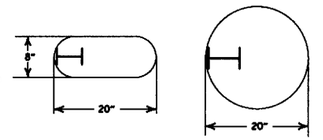


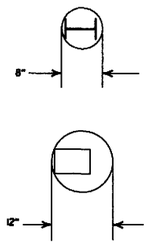
DETAIL OF CONNECTION



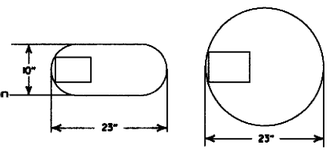


Plan View Steel Posts
Either hole configuration acceptable





Plan View Wood Posts
Either hole configuration acceptable



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

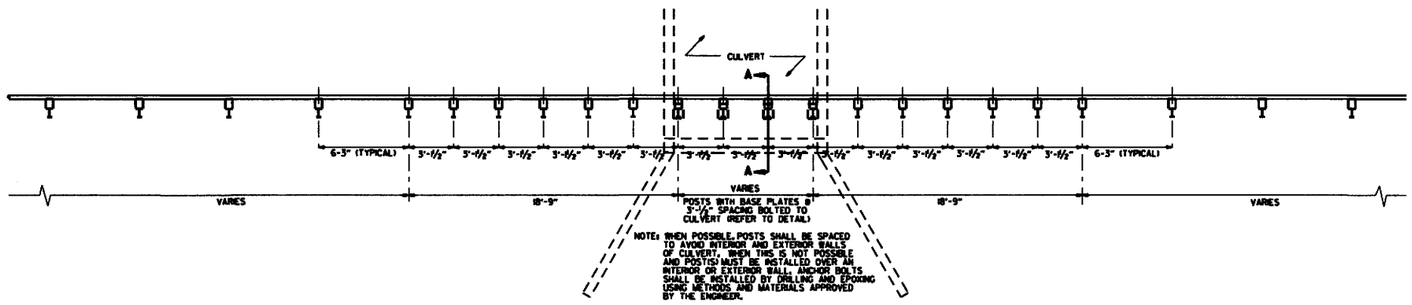
Zone A:
Backfill according to Section 617.03(a).

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

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

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

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



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

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

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURB; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS. ADDED DETAIL FOR GUARD RAIL PLACEMENT AT LOW-FILL CULVERTS	
03-30-00	REMOVED CONCRETE INSERT ANCHOR	
08-12-98	CHANGED STEEL SPACER BLOCK TO WOOD BLOCKOUT. ADDED DET. OF GUARD RAIL CONNECTION TO R.C. BOX CULV'T., DELETED DET. OF STEEL LINE POST CONN'L & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POSTPLACE. IN SOLID ROCK.	
04-03-96	PLACED ARROWS AT CUT STEEL WASHERS	4-3-96
10-18-96	REV. ASTM REF. TO AASHTO	
11-22-95	ADDED OPTIONAL HOLES	
06-02-94	REVISED ALTERNATE POST SIZE	
08-05-93	REVISED STEEL POST SIZE	
10-01-92	REDRAWN & REVISED	10-1-92
08-02-90	DEL. WASHER ON ANCHOR ASSEMBLY	8-2-90
07-15-88	CONFORMED TO 1988 SPECS	
03-04-88	REVISED ANCHOR NOTE	
10-30-87	REVISED ANCHOR ASSEMBLY	712-10-30-87
10-30-87	REVISED PLACEMENT BEHIND CURB	547-10-30-87
10-09-87	REDRAWN & REVISED	803-10-9-87

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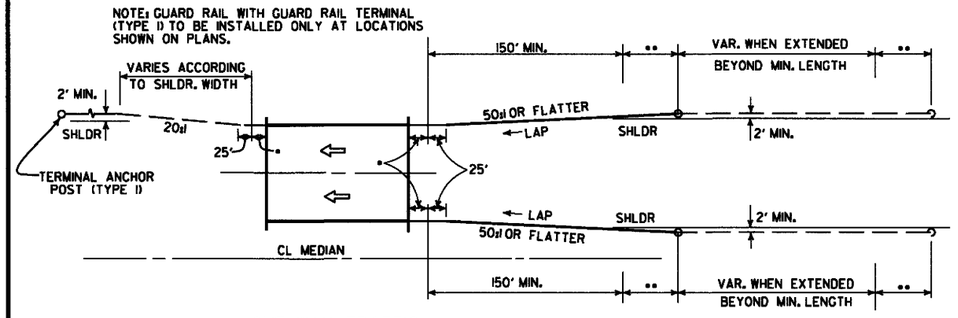
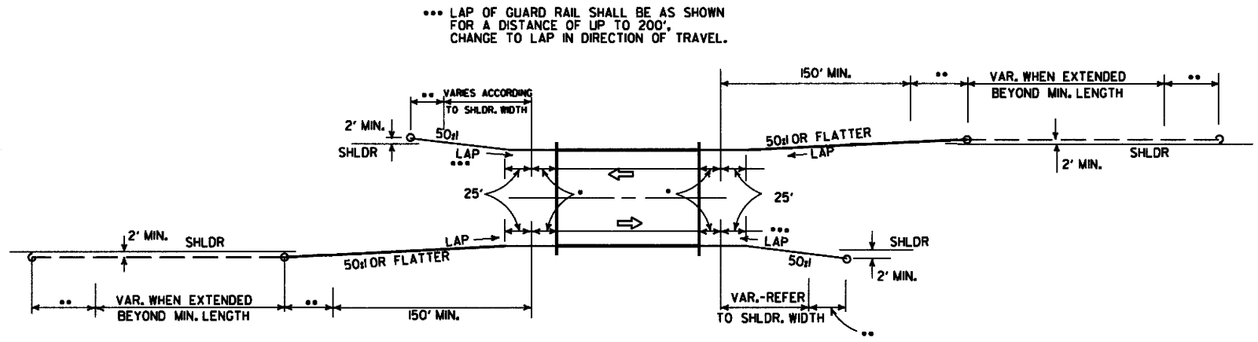
GUARD RAIL DETAILS

STANDARD DRAWING GR-8A

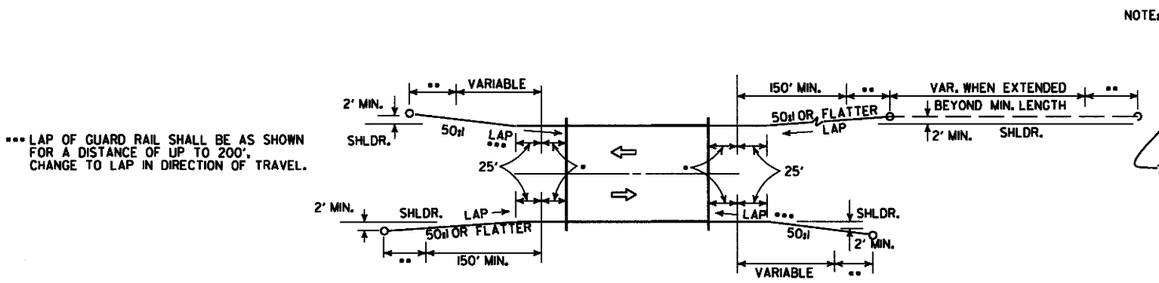


ONE-WAY TRAFFIC

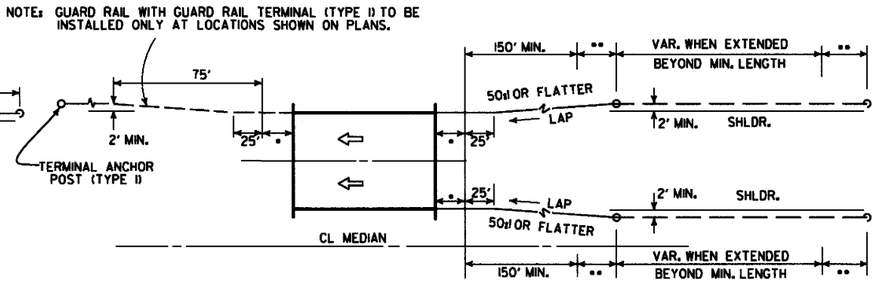


TWO-WAY TRAFFIC

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



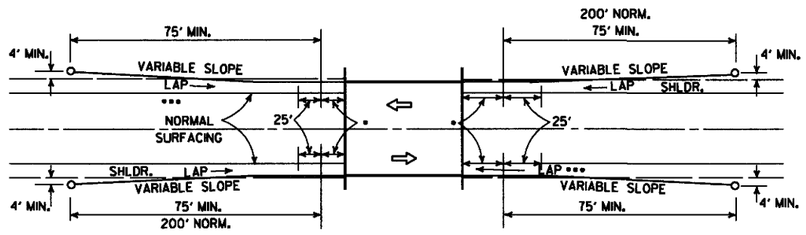
TWO-WAY TRAFFIC



ONE-WAY TRAFFIC

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

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



LEGEND

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

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

DATE	REVISION	DATE FILM
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. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87	REDRAWN & REVISED	

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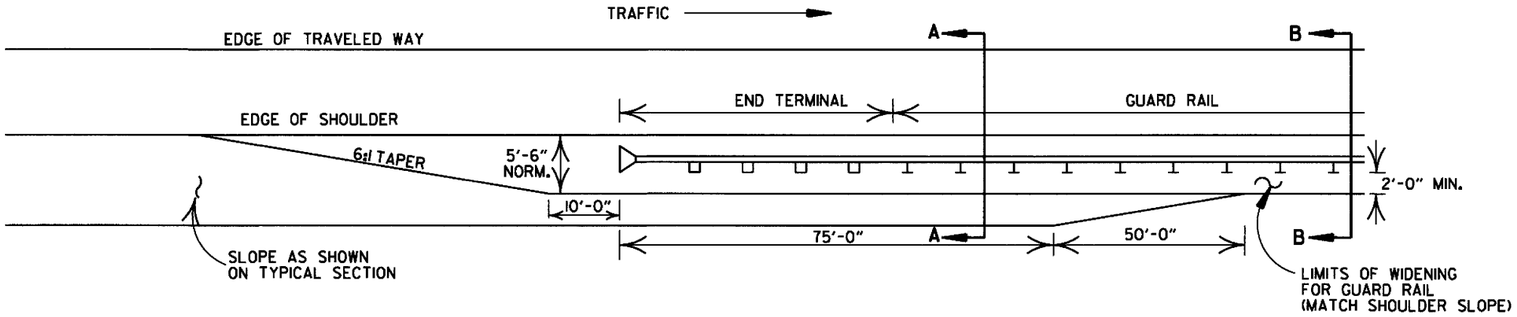
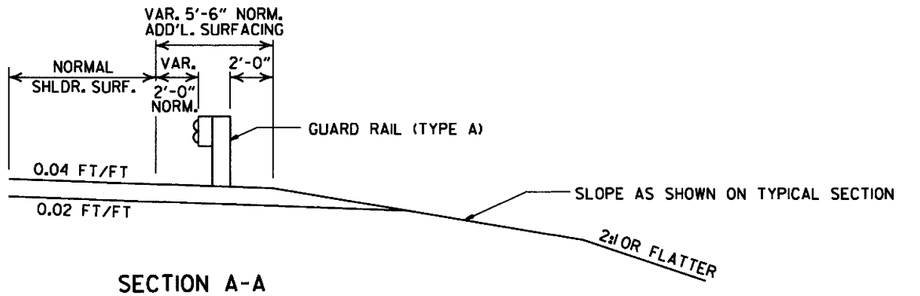
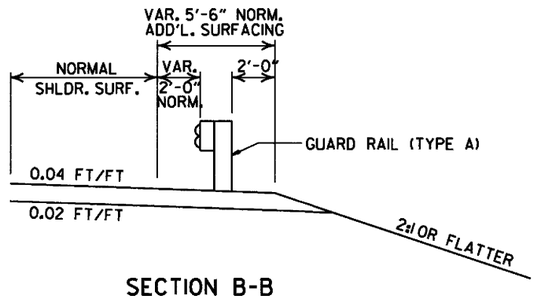
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





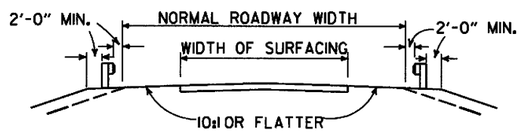
SECTION A-A



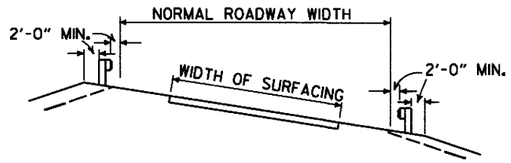
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

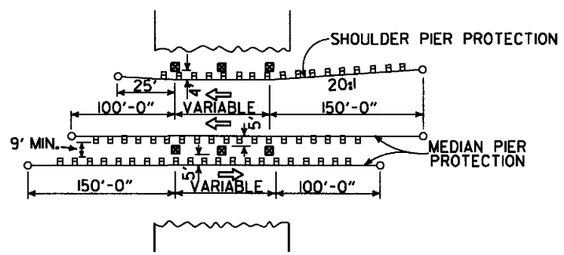


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

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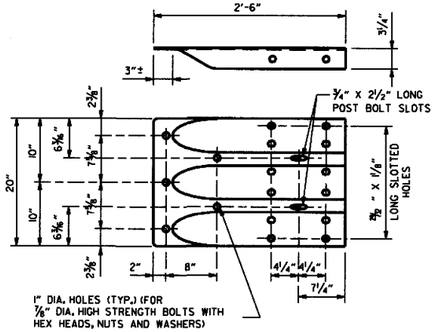
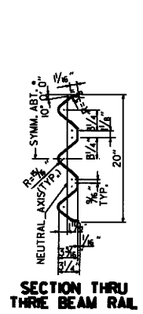
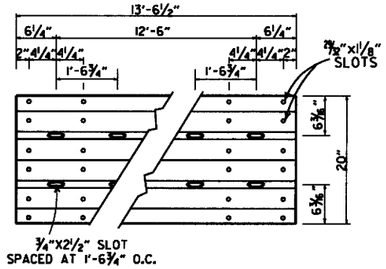
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

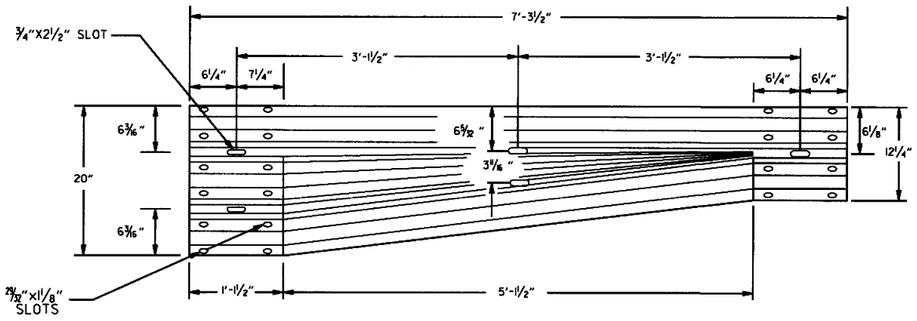


SPECIAL END SHOE

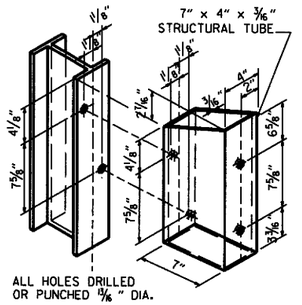




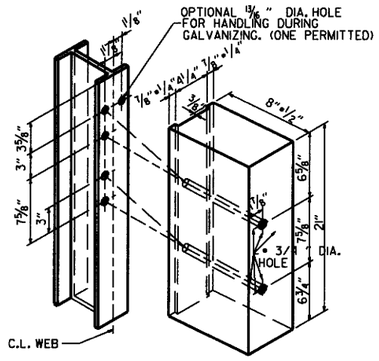
THRIE BEAM RAIL



TRANSITION SECTION



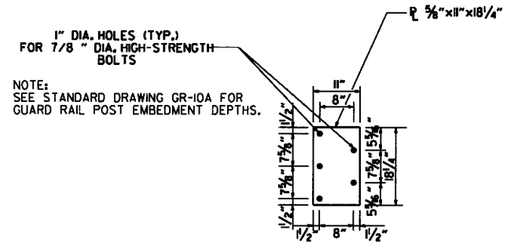
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

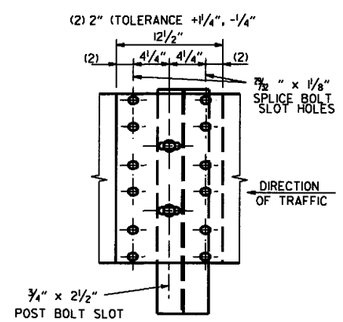
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

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



CONNECTOR PLATE

CONNECTOR PLATE SHALL BE AASHTO M270, GR. 36 AND SHALL BE GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO SUBSECTION 807.19 OF THE STANDARD SPECIFICATIONS. CONNECTOR PLATE TO BE BOLTED TO SPECIAL END SHOE USING ⅞" DIA. HIGH STRENGTH BOLTS, WITH THE HEADS PLACED ON THE TRAFFIC FACE. WASHERS SHALL BE USED UNDER THE HEAD AND NUT. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND SHALL CONFORM TO SUBSECTION 807.06.



THRIE BEAM RAIL SPLICE AT POST

GENERAL NOTES:

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

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 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.

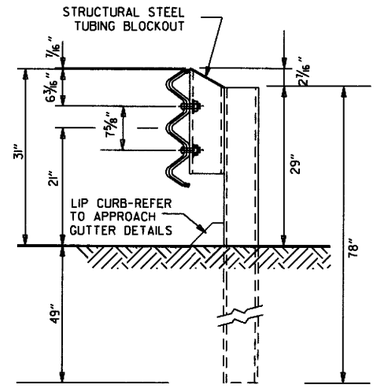
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 # (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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

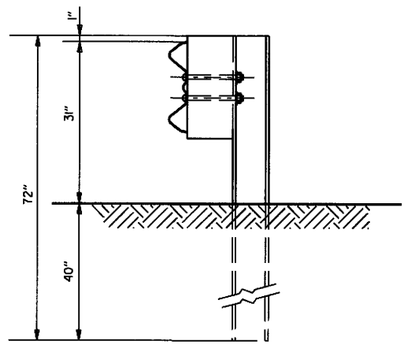
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

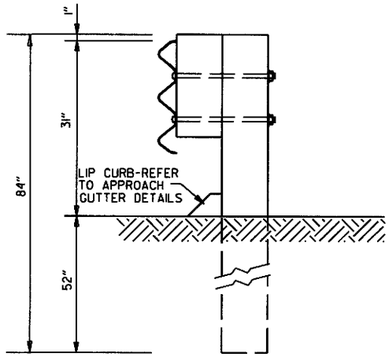
STANDARD DRAWING GR-10



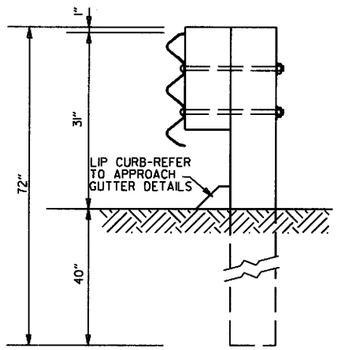
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



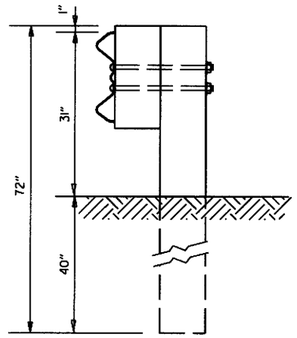
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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



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



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

GENERAL NOTES:

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

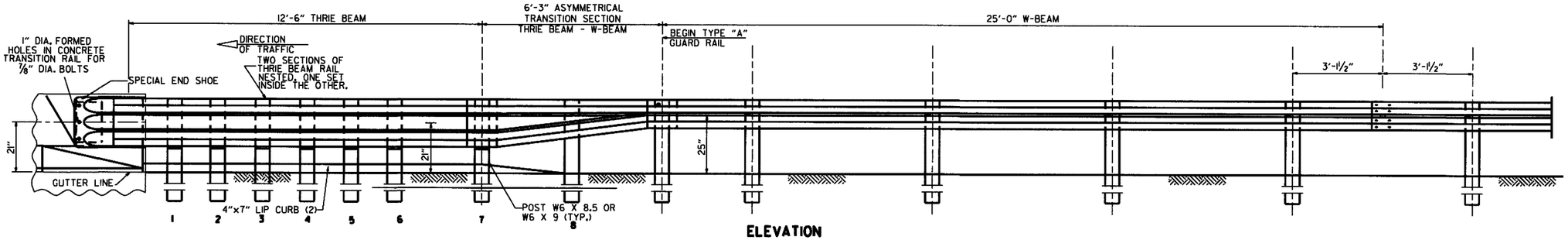
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	REVISED GUARD RAIL HEIGHT, CHANGED STD. DWG. NUMBER FROM GR-10A TO GR-11	
07-14-10	REVISED POST & DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

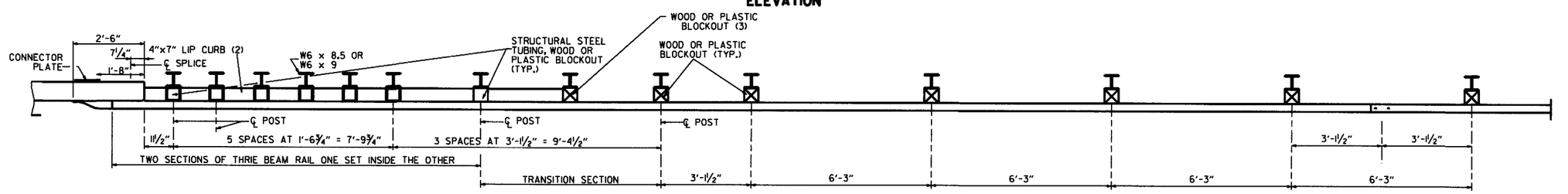
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

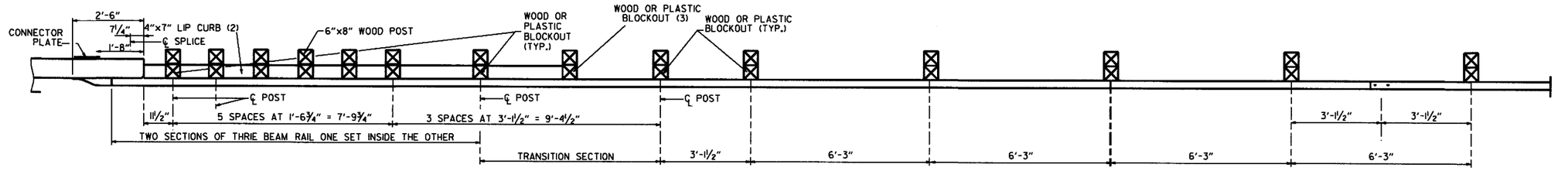
STANDARD DRAWING GR-11



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 I.

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

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

ALL LAP SPLICES, INCLUDING SPECIAL END SHOES, SHALL BE MADE IN THE DIRECTION SHOWN ON STANDARD DRAWINGS GR-9 & GR-13.

REFER TO STD. DRWG. GR-11 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.

POSTS SHALL BE PLACED AT THE MID-SPAN OF THE W-BEAM.

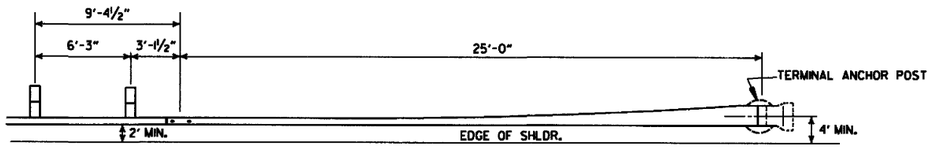
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7 f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
11-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

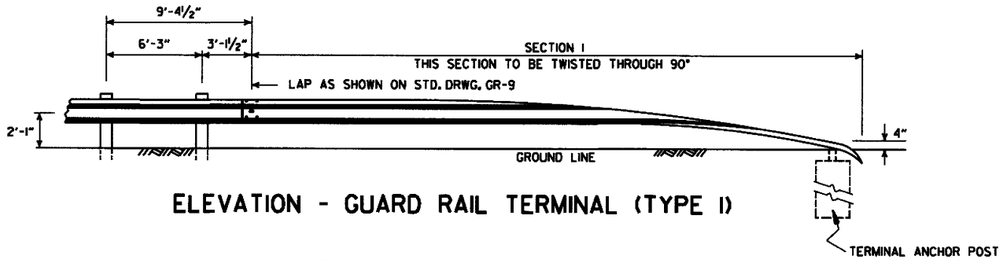
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-12

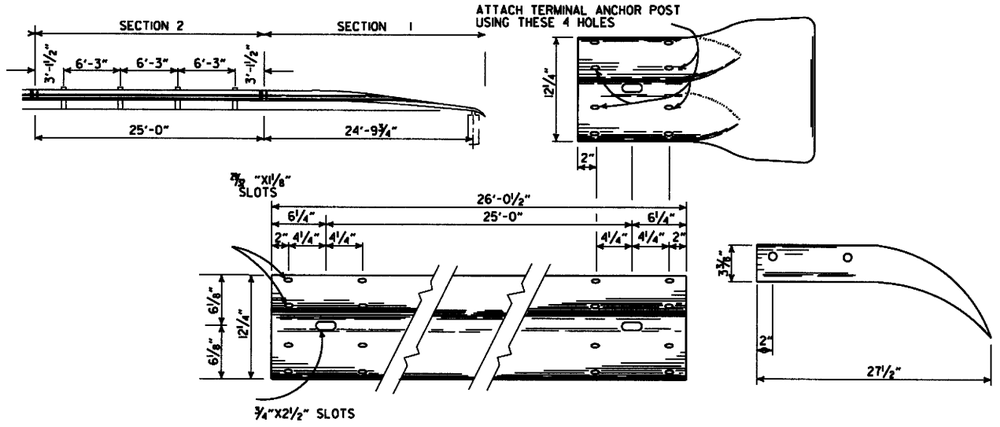


PLAN - GUARD RAIL TERMINAL (TYPE I)



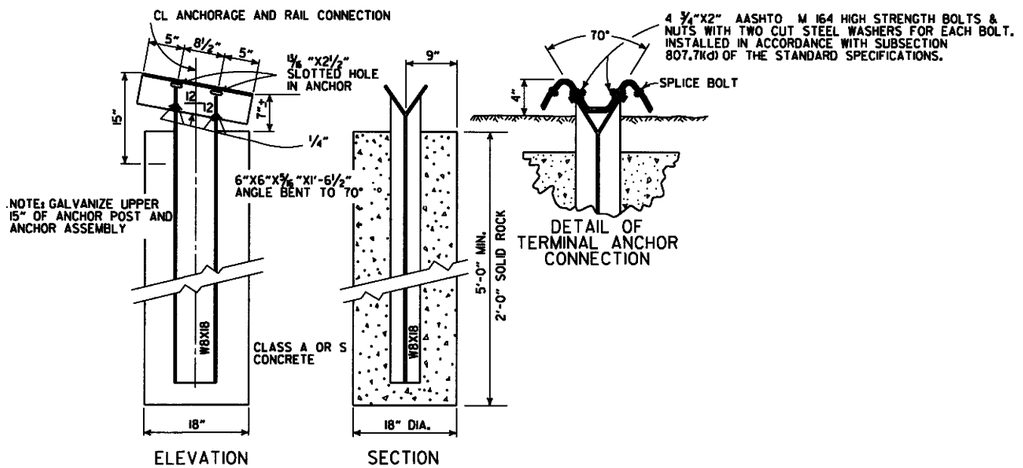
ELEVATION - GUARD RAIL TERMINAL (TYPE I)

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 I

TERMINAL SECTION



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

DETAIL OF TERMINAL ANCHOR POST (TYPE I)

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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GRT-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	13½	14
21	26	26	15½	16
24	28½	29	18	18
30	36¼	36	22½	23
36	43⅜	44	26⅝	27
42	51⅛	51	31⅝	31
48	58½	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77½	77
108	138	138	87⅛	87
120	154	154	96⅞	97
132	168¾	169	106½	107

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

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

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

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

CONSTRUCTION SEQUENCE

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

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

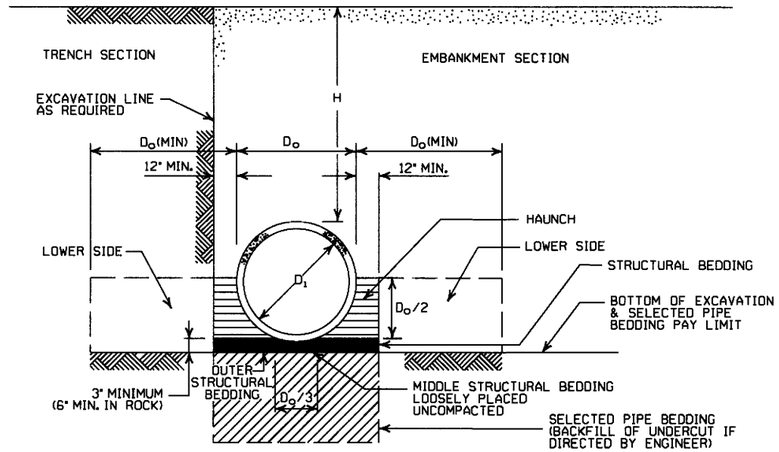
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

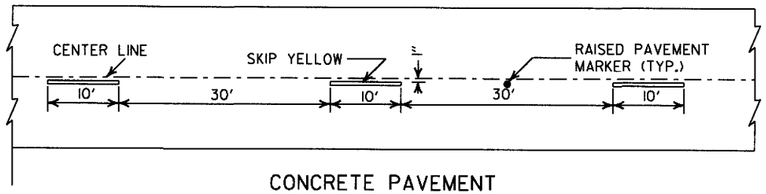
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

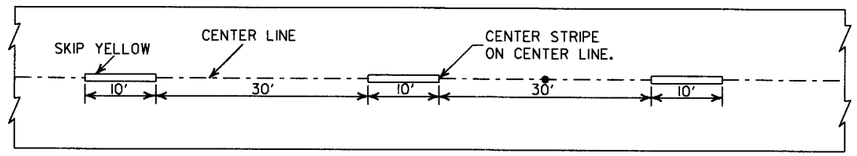
CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.

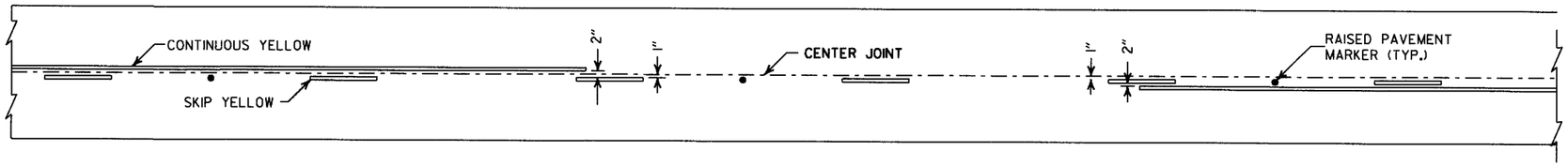


CONCRETE PAVEMENT

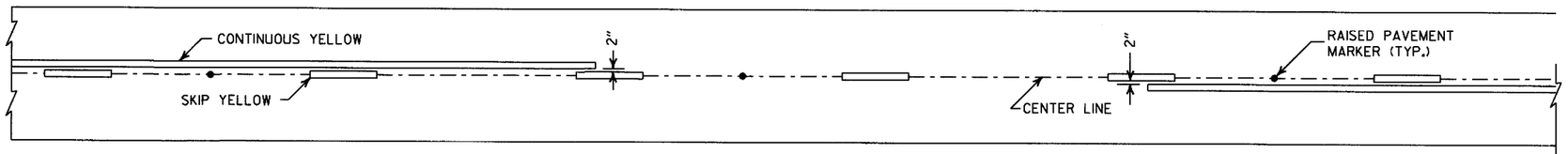


ASPHALT PAVEMENT

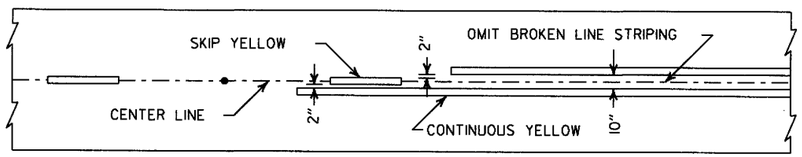
BROKEN LINE STRIPING



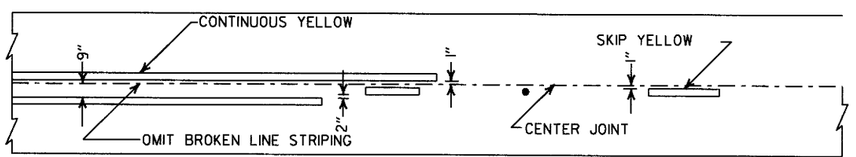
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

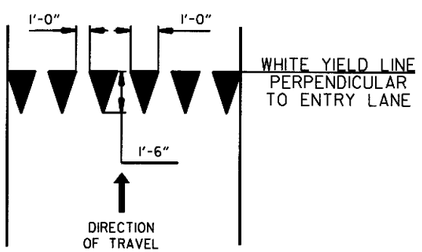


ASPHALT PAVEMENT

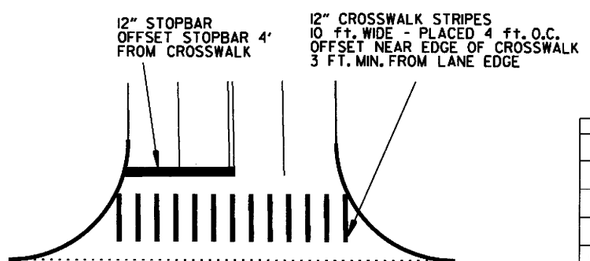


CONCRETE PAVEMENT

STRIPING AT ADJACENT NO PASSING LANES

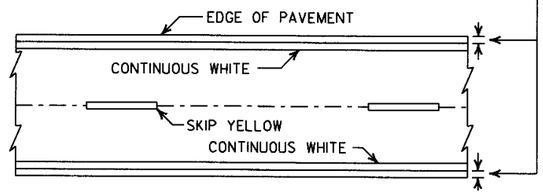


YIELD LINE DETAIL



CROSSWALK AND STOPBAR DETAILS

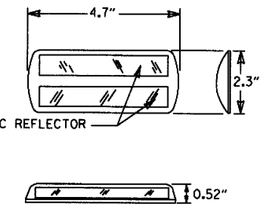
2" FOR ASPHALT OR CONCRETE PAVEMENT
6" FOR BITUMINOUS SURFACE TREATMENT



PAVEMENT EDGE LINE MARKING

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

TYPE II
RED/CLEAR OR
YELLOW/YELLOW



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

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION	
6-1-17	ADDED YIELD LINE DETAIL	
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
11-17-10	REVISED GENERAL NOTES & REMOVED PLOWABLE PVMT MRKRS	
11-18-04	REVISED NOTE 2 & GENERAL NOTES	
8-22-02	ADDED CROSSWALK & STOPBAR DTLS.	
7-02-98	ADDED DETAILS OF STD. RAISED PAV'T. MARKERS	
4-26-96	REV. NOTES 3&4; ADDED R.P.M.	
9-30-80	DRAWN	1-9-30-80
DATE	REVISION	FILMED

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

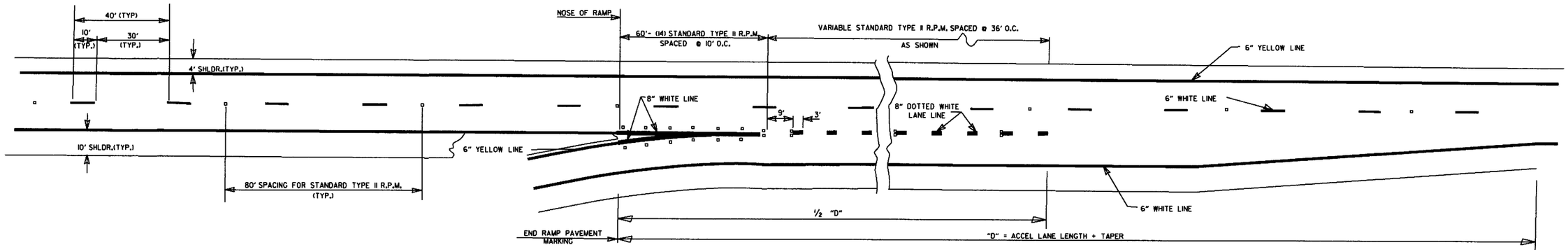
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

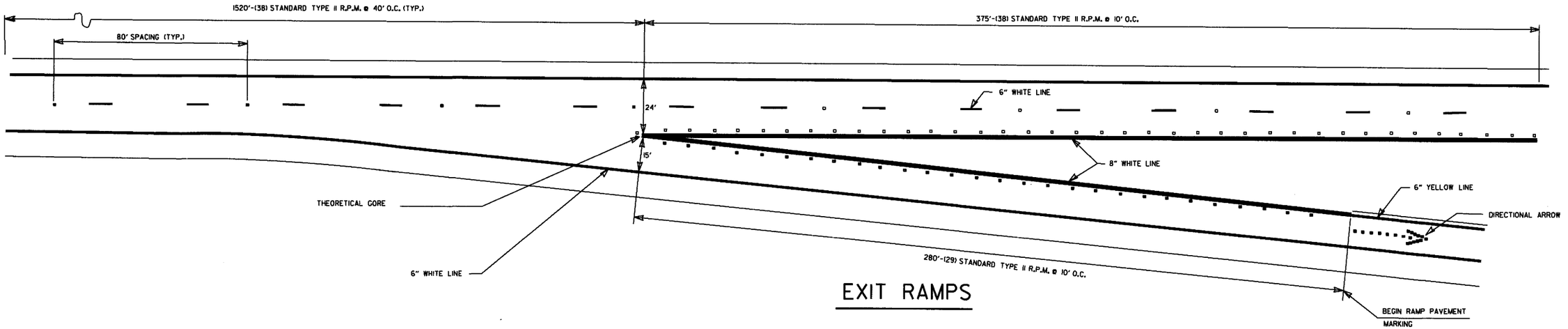
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

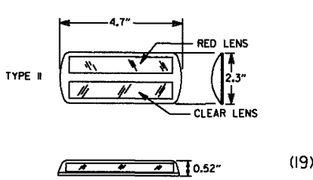
6" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

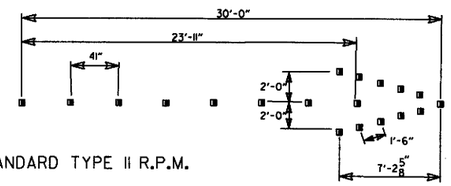


EXIT RAMPS



DETAIL OF
STANDARD
RAISED PAVEMENT MARKERS

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



(19) STANDARD TYPE II R.P.M.

DIRECTIONAL ARROWS

GENERAL NOTES:

THIS DRAWING SHOULD BE CONSIDERED AS TYPICAL ONLY AND THE FINAL LOCATION OF THE STRIPING AND 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
12-8-16	REVISED RAISED PAV'T MARKERS FOR 80' SPACING; REVISED WIDTH OF STRIPING	
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS	
7-26-12	REVISED RPM NOTATION	
12-15-11	REVISED RPMs ACCORDING TO LATEST POLICY	
11-17-10	REMOVED PLOWABLE PAVEMENT MARKERS	
6-3-10	REVISED PER 2009 MUTCD	
11-18-04	REVISED NOTES	
8-22-02	ADDED & REVISED NOTES; REV. ENTRANCE & EXIT RAMPS	
5-18-00	REMOVED HASHMARKS	
7-02-98	CHANGED TYPES TO ROMAN NUMERALS	
4-26-96	ADDED DIMENSIONS & QUANTITIES; REVISED LANE WIDTH ON EXIT RAMP	
2-2-95	PLACED IN USE	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

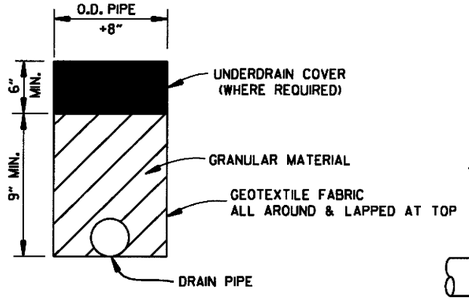
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

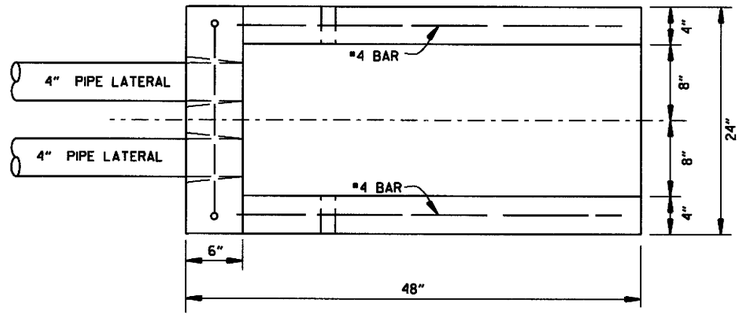
STANDARD DRAWING PM-2

NOTE:

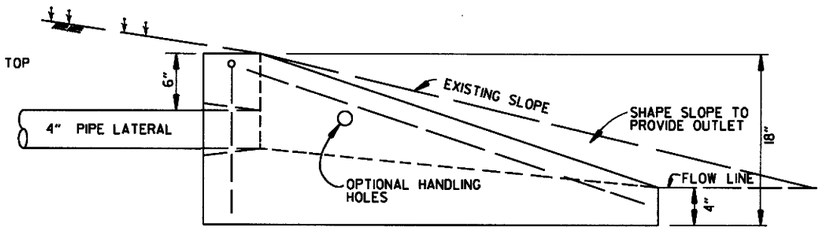
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

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

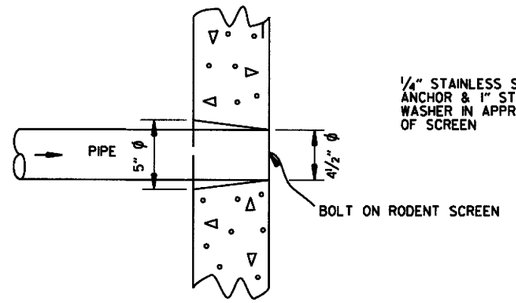




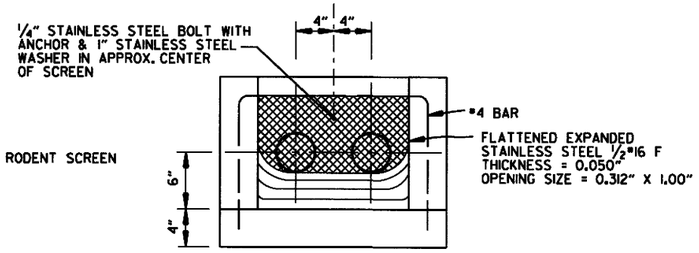
PLAN VIEW



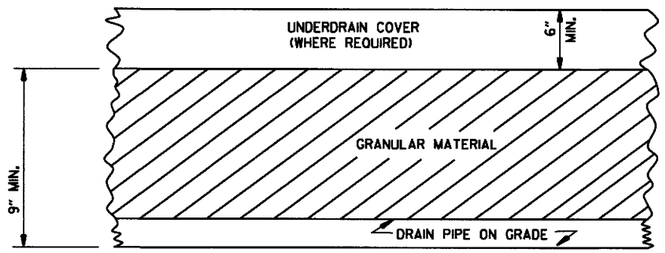
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE



FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

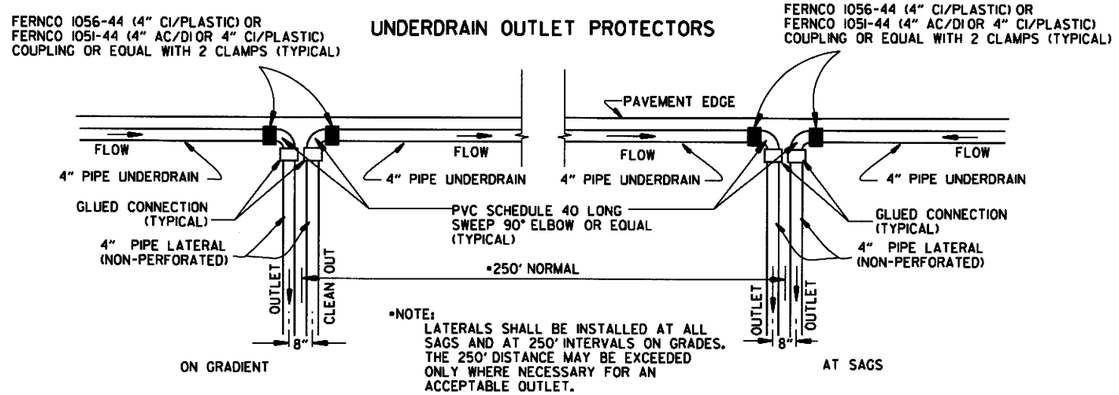
4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

UNDERDRAIN OUTLET PROTECTORS



*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
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE: 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

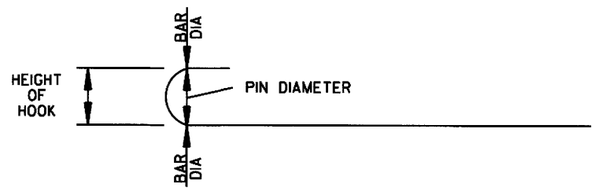
DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

STEEL FABRICATION: REINFORCING STEEL FABRICATION SHALL CONFORM TO THE DIMENSIONS LISTED IN THE TABLE BELOW:

BAR SIZE	PIN DIAMETER	HOOK EXTENSION "K"
3	2¼"	4"
4	3 "	4½"
5	3¾"	5"
6	4½"	6"
7	5¼"	7"
8	6"	8"

IF THE OVERALL HEIGHT OF THE HOOK (SEE DIAGRAM BELOW) FOR A "b", "b1", "b2" or "b3" BENT BAR IS GREATER THAN THE CORRESPONDING TOP OR BOTTOM SLAB THICKNESS, LESS 2¾ INCHES, EACH BENT BAR SHALL BE REPLACED WITH ONE HOOKED BAR AND ONE STRAIGHT BAR, USING LENGTHS AS SHOWN IN THE TABLE BELOW. THE TWO BARS SHALL BE THE SAME DIAMETER AS, AND PLACED AT THE SAME SPACING AS, THE "b", "b1", "b2" OR "b3" BENT BARS THEY REPLACE.



NOTE: DIMENSIONS OF BARS ARE MEASURED OUT TO OUT OF BARS.

OVERALL HEIGHT OF HOOKED BAR DIAGRAM

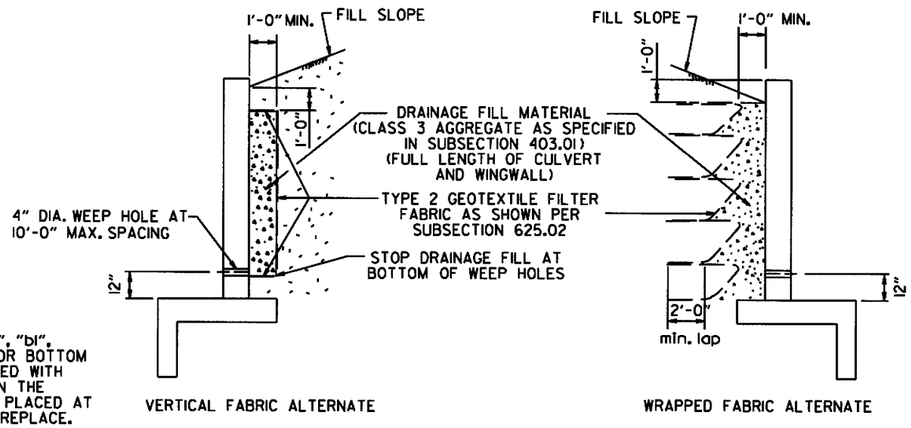
THE HOOKED BARS SHALL BE PLACED IN THE BOTTOM OF THE TOP SLAB AND THE TOP OF THE BOTTOM SLAB. THE STRAIGHT BARS SHALL BE PLACED IN THE TOP OF THE TOP SLAB AND THE BOTTOM OF THE BOTTOM SLAB. SEE TABLE BELOW FOR LENGTHS OF REPLACEMENT HOOKED AND STRAIGHT BARS.

FOR SKEWED CULVERTS, THE REPLACEMENT STRAIGHT BAR MAY HAVE TO BE CUT IN FIELD TO FIT.

REPLACEMENT BAR LENGTHS TABLE

BAR SIZE: "b", "b1", "b2" OR "b3"	LENGTH OF HOOKED BAR	LENGTH OF STRAIGHT BAR
#4	L + 1' - 0"	SEE "c" BAR LENGTH
#5	L + 1' - 2"	SEE "c" BAR LENGTH
#6	L + 1' - 4"	SEE "c" BAR LENGTH
#7	L + 1' - 8"	SEE "c" BAR LENGTH
#8	L + 1' - 10"	SEE "c" BAR LENGTH
#9	L + 2' - 6"	SEE "c" BAR LENGTH

L = "OW" - 3 INCHES



WINGWALL & CULVERT DRAINAGE DETAIL

REINFORCED CONCRETE BOX CULVERT GENERAL NOTES

CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI.

REINFORCING STEEL SHALL BE AASHTO M 31 OR M 53, GRADE 60.

CONSTRUCTION AND MATERIALS FOR WINGWALL & CULVERT DRAINAGE, INCLUDING WEEP HOLES AND GRANULAR MATERIAL, SHALL BE SUBSIDIARY TO THE BID ITEM, "CLASS S CONCRETE".

MEMBRANE WATERPROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION 815 OF THE STANDARD SPECIFICATIONS.

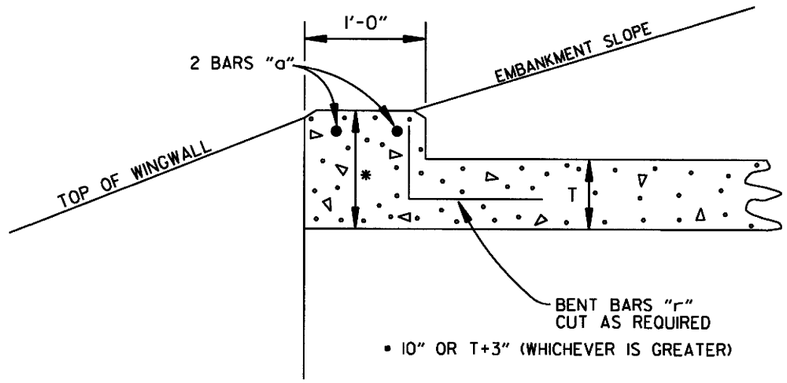
MEMBRANE WATERPROOFING SHALL BE APPLIED TO ALL CONSTRUCTION JOINTS IN THE TOP SLAB AND THE SIDEWALLS OF R.C. BOX CULVERTS AS DIRECTED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THIS ITEM, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS BID FOR THE R.C. BOX CULVERT.

REINFORCING STEEL TOLERANCES: THE TOLERANCES FOR REINFORCING STEEL SHALL MEET THOSE LISTED IN "MANUAL OF STANDARD PRACTICE" PUBLISHED BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI) EXCEPT THAT THE TOLERANCE FOR TRUSS BARS SUCH AS FIGURE 3 ON PAGE 7-4 OF THE CRSI MANUAL SHALL BE MINUS ZERO TO PLUS ½ INCH.

WEEP HOLES IN BOX CULVERT WALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE BOTTOM SLAB.

WEEP HOLES IN WINGWALLS SHALL HAVE A MAXIMUM HORIZONTAL SPACING OF 10'-0" AND SHALL BE SPACED TO CLEAR ALL REINFORCING STEEL. THERE SHALL BE A MINIMUM OF TWO (2) WEEP HOLES IN EACH WINGWALL. THE DRAIN OPENING SHALL BE 4" DIAMETER AND SHALL BE PLACED 12" ABOVE THE TOP OF THE WINGWALL FOOTING.

THE REQUIREMENTS SHOWN ON THIS DRAWING SHALL SUPERCEDE THE CORRESPONDING REQUIREMENTS ON ALL REINFORCED CONCRETE BOX CULVERT STANDARD DRAWINGS.



NOTE: FOR ALL SKEWED R.C. BOX CULVERTS THE LENGTH "K" OF THE MODIFIED HEADWALL SHALL BE EQUAL TO THE ROADWAY LENGTH "RL". THE ENDS OF THE HEADWALL SHALL BE CONSTRUCTED PARALLEL TO THE SKEW ANGLE OF THE BOX CULVERT.

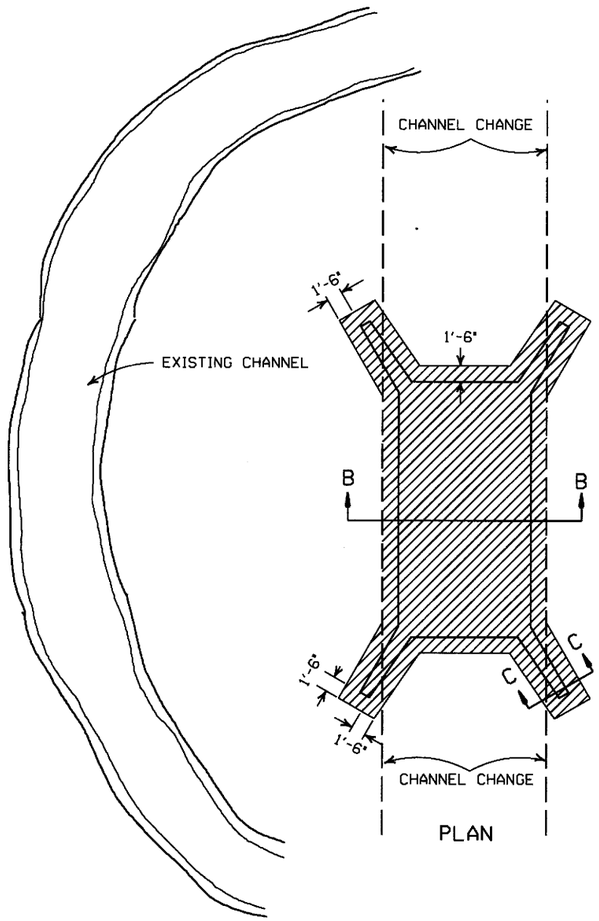
R.C. BOX CULVERT HEADWALL MODIFICATIONS

DATE	REVISION	DATE FILMED
7/26/12	REV. DRAINAGE FILL MATERIAL & DETAIL	
12/15/11	REQUIRE WEEP HOLES IN BOX CULVERT WALLS	
5-25-06	REV. GEN. NOTES AND DETAILS FOR WEEP HOLES; BAR DIAGRAM	
11-16-01	ADDED WINGWALL DRAINAGE DETAIL/EDITED GEN. NOTES	
10-18-96	REV. ASTM REF. TO AASHTO & ADDED BAR DIAGRAM	
10-12-95	MOVED SOLID SODDING DETAIL TO RCB-2	
6-2-94	ADDED SOLID SODDING PLAN DETAIL	
8-5-93	REVISED PIN DIAMETER TO SPECS.	
8-15-91	DRAWN AND ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

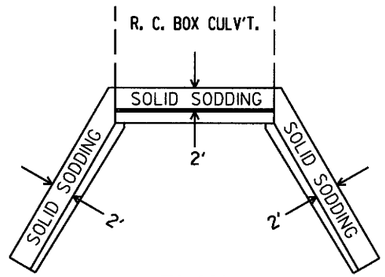
REINFORCED CONCRETE BOX CULVERT DETAILS

STANDARD DRAWING RCB-1



PLAN

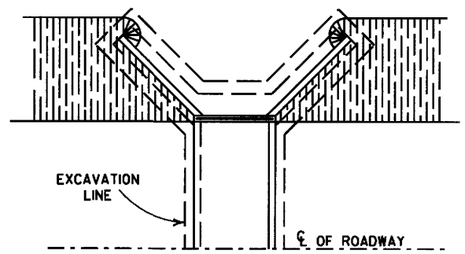
SOLID SODDING



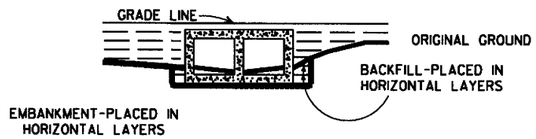
PLAN

PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.

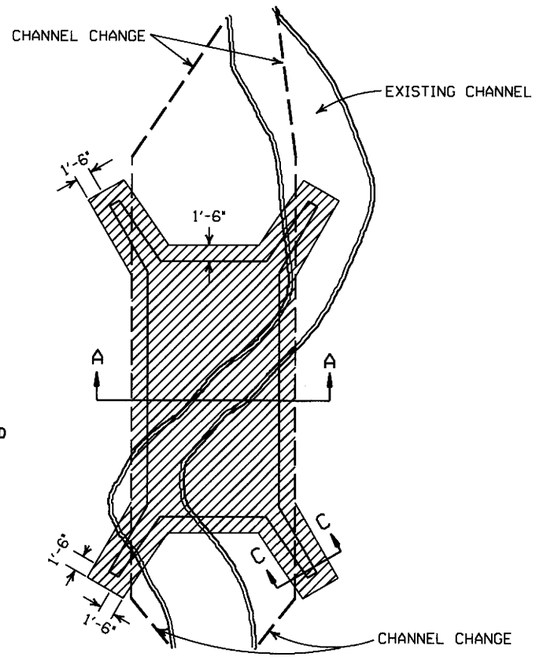


PLAN

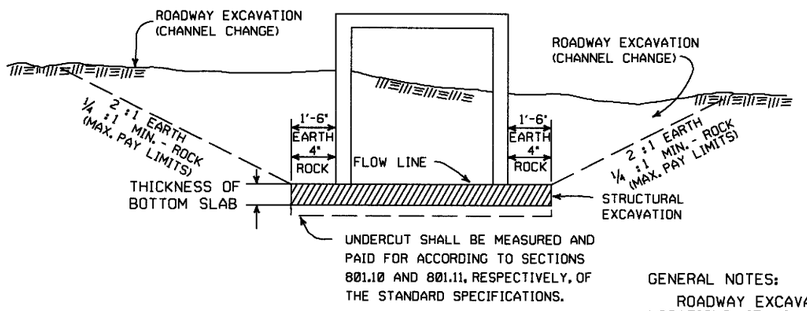


LONGITUDINAL SECTION

BACKFILL DETAILS FOR BOX CULVERT

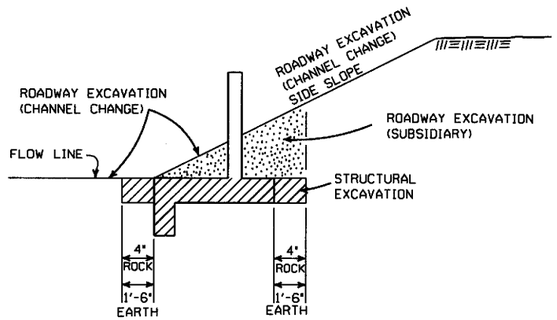


PLAN

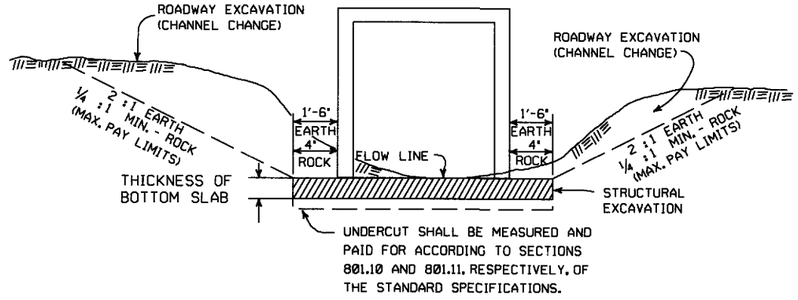


SECTION B-B

DETAILS FOR NEW CHANNELS



SECTION C-C



SECTION A-A

DETAILS THROUGH EXISTING CHANNELS

GENERAL NOTES:

ROADWAY EXCAVATION (CHANNEL CHANGE) WILL BE PAID FOR AT R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS ACTUALLY CUT AND WILL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS ABOVE THE FLOW LINE. ROADWAY EXCAVATION (CHANNEL CHANGE) SHALL BE MEASURED BY CROSS SECTIONS AND VOLUMES COMPUTED BY AVERAGE END AREA METHOD. ALL CHANNEL CHANGES SHALL BE BROUGHT TO GRADE PRIOR TO MAKING ANY EXCAVATION FOR STRUCTURES.

EXCAVATION FOR STRUCTURES WILL BE PAID FOR AT ALL R.C. BOX CULVERT LOCATIONS. IT WILL BE PAID TO THE LIMITS SHOWN AND SHALL BE CONFINED TO THAT PORTION OF THE INDICATED AREA THAT IS BELOW THE CHANNEL FLOW LINE.

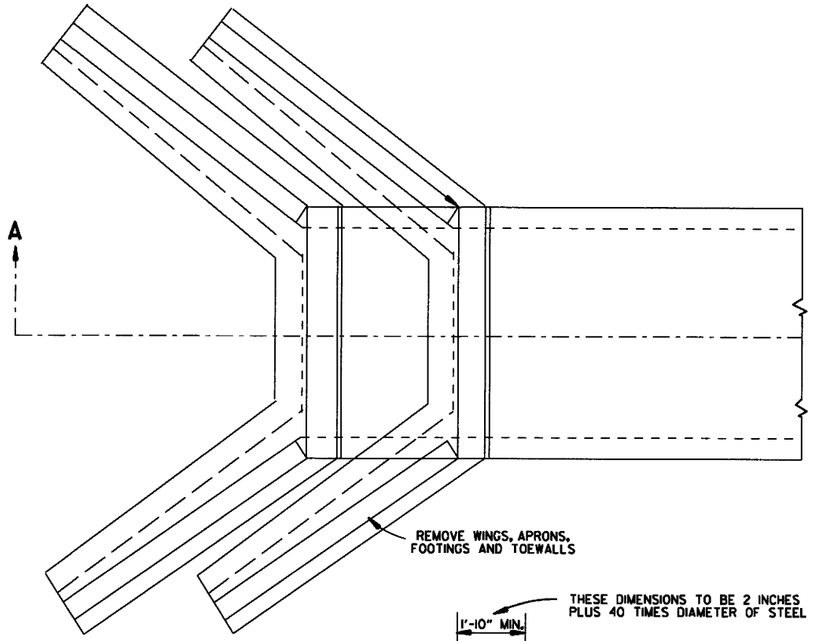
ROADWAY EXCAVATION SHOWN IN SECTION C-C ABOVE AS SUBSIDIARY WILL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT PAYMENT WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION.

DATE	REVISION	FILMED
11-20-03	REVISED SECTION A-A NOTE	
8-22-02	REVISED SECTION B-B NOTE	
10-12-95	COMBINED 1891B AND 1888A	
1-4-83	REVISED GENERAL NOTES	674-1-4-83
	AND ADDED MAXIMUM PAY	
	LIMIT NOTES.	
2-2-76	EXCAV. PAY LIMITS	917-2-2-76
10-2-72	REVISED AND REDRAWN	564-10-16-72

ARKANSAS STATE HIGHWAY COMMISSION

EXCAVATION PAY LIMITS, BACKFILL, & SOLID SODDING FOR BOX CULVERTS

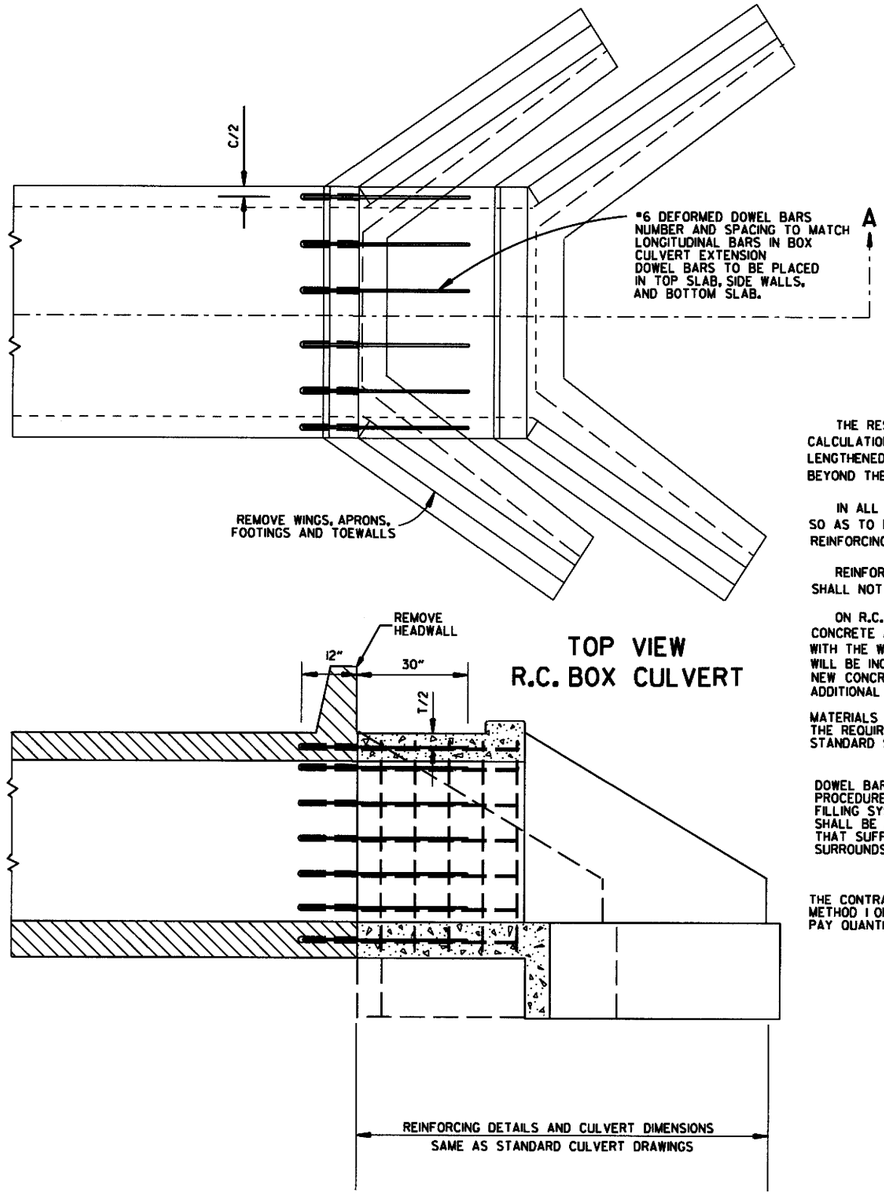
STANDARD DRAWING RCB-2



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 1



TOP VIEW
R.C. BOX CULVERT

SECTION A-A

METHOD 2

GENERAL NOTES

	USE FOR METHOD
THE RESIDENT ENGINEER WILL MAKE INDIVIDUAL CALCULATIONS OF QUANTITIES FOR EACH STRUCTURE LENGTHENED, MAKING NO ALLOWANCE FOR OVERBREAKAGE BEYOND THE LINES INDICATED.	1
IN ALL INSTANCES CONCRETE SHALL BE REMOVED SO AS TO PERMIT FULL 40 DIAMETER SPLICE OF REINFORCING STEEL.	1
REINFORCING STEEL REMOVED FROM EXISTING STRUCTURE SHALL NOT BE REUSED IN CONSTRUCTING EXTENSION.	1&2
ON R.C. BOX CULVERTS THAT HAVE AN EXISTING CONCRETE APRON; THE CONCRETE APRON SHALL BE REMOVED WITH THE WINGS. THE COST OF REMOVING ALL OLD CONCRETE WILL BE INCLUDED IN THE PRICE BID PER CUBIC YARD FOR NEW CONCRETE OF THE CLASS SPECIFIED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.	1&2
MATERIALS FOR SECURING DOWEL BARS SHALL MEET THE REQUIREMENTS OF SECTION 507.02 OF THE STANDARD SPECIFICATIONS.	2
DOWEL BARS SHALL BE INSTALLED AS FOLLOWS; THE DRILLING PROCEDURE SHALL BE APPROVED BY THE ENGINEER. THE FILLING SYSTEM SHALL BE APPROVED BY THE ENGINEER, AND SHALL BE AN INJECTION-TYPE SYSTEM WHICH WILL INSURE THAT SUFFICIENT MATERIAL IS INJECTED SO IT COMPLETELY SURROUNDS THE BARS AND FILLS THE HOLES.	2
THE CONTRACTOR SHALL HAVE THE OPTION OF USING EITHER METHOD 1 OR METHOD 2, REGARDLESS OF WHICH METHOD IS USED. PAY QUANTITIES WILL BE CALCULATED BASED ON METHOD 1.	1&2

NOTE:
NO PART OF THIS STANDARD IS TO BE USED FOR ANY DETAILS RELATIVE TO NEW CONSTRUCTION.

SEE STANDARD DRAWING LISTED IN TABULATION OF STRUCTURES FOR ALL NEW CONSTRUCTION DETAILS.

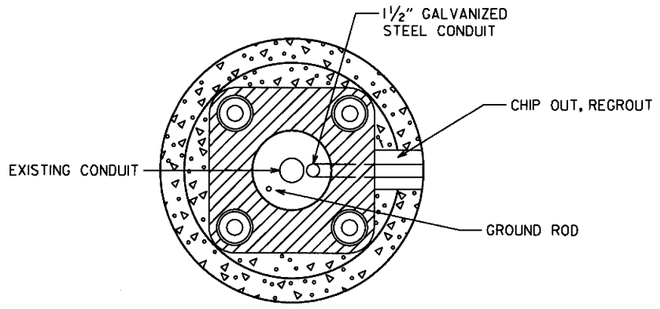
DATE	REVISION	DATE FILM
10-12-95	CHANGED DRAWING # FROM 144-A	
4-1-93	ADDED GENERAL NOTE	
10-1-92	ADDED ALT. METHOD OF EXTENSION	
11-30-89	REDRAWN	
1-4-83	ELIMINATED CONCRETE CLASS	
12-20-56	RETRACED	

ARKANSAS STATE HIGHWAY COMMISSION

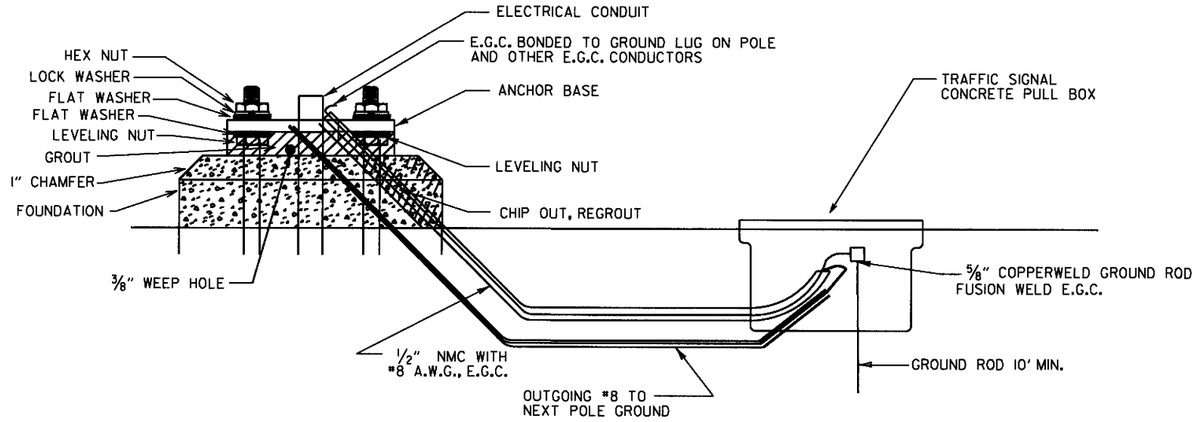
METHOD OF EXTENDING EXISTING R.C. BOX CULVERTS

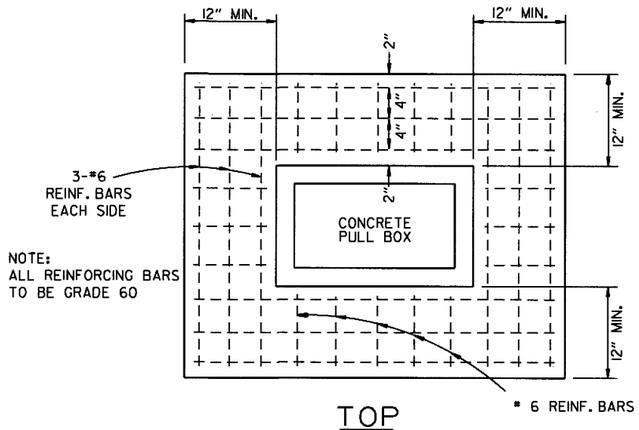
STANDARD DRAWING RCB-3

CONDUIT ENTRY TO EXISTING POLE BASE

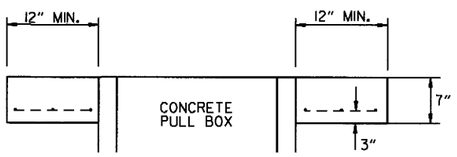


ANCHOR BASE



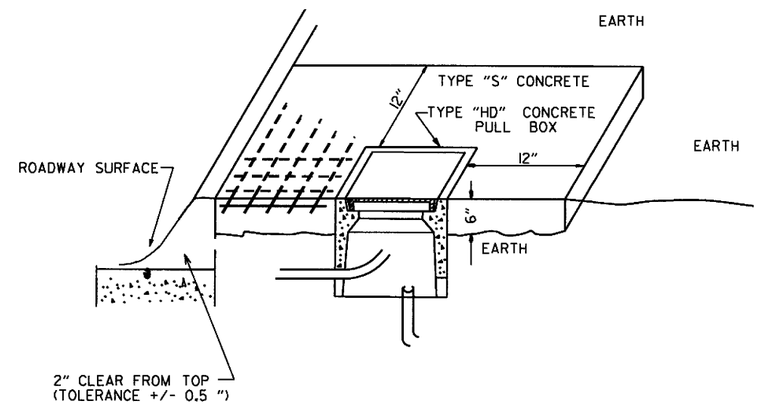


TOP

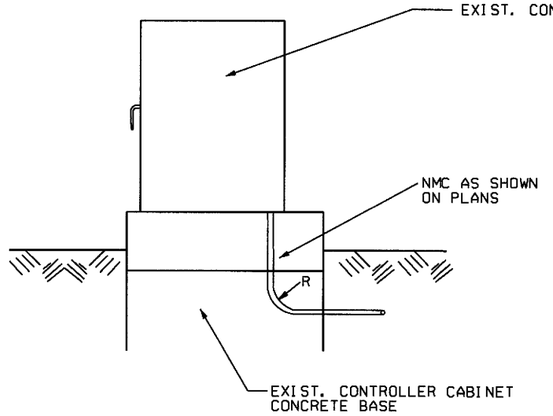


ELEVATION

TYPE "HD" CONCRETE PULL BOX DETAIL



CONDUIT ENTRY TO EXISTING CONTROLLER CABINET



NOTE: ENTRY TO CABINET SHALL BE THROUGH A CUT IN THE BASE SUFFICIENT TO PROVIDE ADEQUATE CONDUIT RADIUS FOR ITEM.

NOTE:
ALL TYPE 1 AND TYPE 2 HD CONCRETE PULL BOXES ARE INSTALLED WITH AN APRON OF CONCRETE 12" WIDE AND 7" IN DEPTH. ALL PAYMENT SHALL BE INCLUDED IN THE PRICE OF THE TYPE HD CONCRETE PULL BOX. THE CONCRETE PULL BOX SHALL BE INSTALLED FLUSH TO SURROUNDING GRADE UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. THE CONCRETE SHALL BE CLASS "S". THREE #6 REINFORCING BARS IN THE APRON ON ALL SIDES OF THE CONCRETE PULL BOX IS REQUIRED IN CONCRETE.

DATE	REVISION	FILMED
11-16-17	REVISED NOTES	
09-02-15	REVISED PULL BOX DEPTH	
09-12-13	ISSUED AS STANDARD DRAWING	
05-21-09	REVISED GROUNDING	
07-31-08	ADDED & REVISED CONDUIT ENTRY	
06-23-04	REVISED CLEARANCE AT CURB ENTRY	
01-04-02	ADDED REINFORCING TO BOX APRON	
07-02-01	REVISED	
12-27-99	REVISED NOTES	
11-18-98	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

HEAVY DUTY PULL BOX

STANDARD DRAWING SD-6

NOTES:
PEDESTRIAN AND TRAFFIC SIGNAL HEAD SIGNS:
EACH ITEM "TRAFFIC SIGNAL HEAD (4 SEC., 1-WAY)" SHALL INCLUDE A SPECIAL SIGN AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD UNLESS REMOVED WITHIN THE SIGNAL PLAN NOTES.

EACH ITEM "TRAFFIC SIGNAL HEAD (3 SEC., 1-WAY)" TO BE USED AS A LEFT TURN INDICATION ONLY SHALL INCLUDE A SIGN (R10-10) AS SHOWN, ATTACHED TO THE MAST ARM OR SPAN ASSEMBLY 12" TO THE RIGHT OF THE SIGNAL HEAD.

EACH PEDESTRIAN PUSHBUTTON SHALL HAVE ONE R10-3E SIGN ATTACHED TO THE POLE ABOVE THE BUTTON. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 723 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL SIGN BLANKS SHALL BE CONSTRUCTED OF ALUMINUM ALLOY (ASTM DESIGNATION B-209, ALLOY 5052-H38) WITH THICKNESS OF 0.100 INCH.

GENERAL NOTES:
1. MAST ARM POLES SHALL BE MOUNTED A MINIMUM OF FOUR (4') FEET BEHIND CURB OR SHOULDER.

2. OCTAGONAL POLES AND ARMS MEETING THE REQUIREMENTS OF THE PLANS SPECIFICATIONS CAN BE INSTALLED IN LIEU OF ROUND. ALL POLES AND ARMS IN A JOB MUST BE THE SAME SHAPE.

3. MINIMUM STRUCTURAL REQUIREMENTS:
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION (2001) WITH 2003 AND 2006 INTERIMS.

USE FATIGUE CATEGORY I FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS 65 MPH AND GREATER AT THE STRUCTURE LOCATION AND ON ROUTES WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY II FOR ALL STRUCTURES ON ROUTES WHERE THE SPEED LIMIT IS LESS THAN 65 MPH AND GREATER THAN 45 MPH WITH MAST ARMS LESS THAN 60' AND ON ROUTES WHERE THE SPEED LIMITS OF 45 MPH AND LESS WITH AN MAST ARM OF 60' OR LONGER.

USE FATIGUE CATEGORY III FOR ALL STRUCTURES WHERE THE SPEED LIMIT IS 45 MPH AND LESS AND MAST ARMS LESS THAN 60'.

CONSTRUCTION SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) WITH APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

BASE WIND SPEED: 90 MPH.

STEEL MEMBERS CONSIDERED MAIN LOAD CARRYING MEMBERS WITH A THICKNESS GREATER THAN ½" SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05 OF THE STANDARD SPECIFICATIONS.

DEAD LOAD: AS A MINIMUM, DESIGN SHALL BE BASED ON THE FIXED ATTACHMENTS SHOWN BELOW OR AS MODIFIED IN THE PLANS.

ALL SIGNAL HEADS TO BE ONE WAY, TWELVE (12") INCH AND HAVE FIVE (5") INCH BACK PLATES:

SIGNAL HEADS AT THE END OF MAST ARM - ONE 4 SEC., 85 LB., 14.5 SQ. FT., ONE SIGN MOUNTED 3 FEET FROM SIGNAL HEAD (2'-0" X 2'-6"; 20 LB.) REMAINING SIGNAL HEADS SPACED AT 8 FT. (3 SEC., 56 LB., 8.3 SQ. FT.):
DESIGN TO ACCOMMODATE:
2 SIGNAL HEADS FOR MAST ARMS 10 FT. TO 16 FT.
3 SIGNAL HEADS FOR MAST ARMS 18 FT. TO 24 FT.
4 SIGNAL HEADS FOR MAST ARMS OVER 26 FT.

STREET NAME SIGN - 72" X 18", 36 LB., MOUNTED SUCH THAT OUTSIDE EDGE IS NOT GREATER THAT 12 FT. FROM POLE. DEPENDING UPON POSITION OF SIGNAL HEAD ADJACENT TO POLE, SIGN MAY OVERLAP POLE SHAFT.
ROADWAY LUMINAIRES (WHERE REQUIRED ON PLAN SHEET) - VARIABLE ARM LENGTH (MAX. WT. 75 LB., 3.3 SQ. FT.)
PEDESTRIAN SIGNALS - TWO 1 SEC., 12 INCH MOUNTED 8 FT. FROM BASE OF POLE. POST MOUNTED 3 SEC. SIGNAL HEAD AT 10 FT. ON SIDE OF POLE.

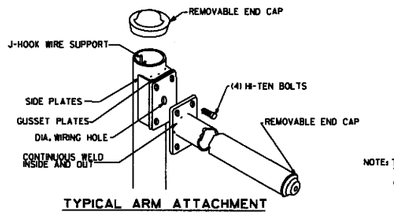
4. POLE/MAST ARM CAP - POLE AND MAST ARM CAPS SHALL BE PROVIDED, FABRICATED OF EITHER STEEL OR CAST ALUMINUM.

5. HAND HOLE - HAND HOLES SHALL BE 4 IN. X 6 IN. FOR STANDARD, AND 3 IN. X 5 IN. FOR PED POLES. MINIMUM PLACED APPROXIMATELY 12 INCHES FROM BASE, AND SHALL BE FIXED WITH A BOLT DOWN COVER. A VACCUM FORMED ABS COVER IS AN ACCEPTABLE ALTERNATE TO STEEL. POLES GREATER THAN 21 FT. IN HEIGHT (FOR ROADWAY LUMINAIRE ATTACHMENT) SHALL INCLUDED A HAND HOLE WITHIN 12 INCHES OF MAST ARM(S) ATTACHMENT(S).

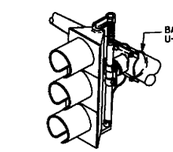
6. POLE/MAST ARM TAPER SLOPE - AVERAGE TAPER OF SIGNAL MAST ARMS AND POLE SHAFT SHALL BE 0.125 TO 0.15 INCHES PER FOOT.

MAST ARM CENTERLINE ANGLE AT ATTACHMENT POINT WITH POLE SHALL MAINTAIN NOT LESS THAN 0.5 DEGREES OR MORE THAN 4 DEGREES POSITIVE SLOPE WITH A LINE PERPENDICULAR TO THE POLE CENTERLINE. THE MAST ARM SHALL MAINTAIN A POSITIVE SLOPE AFTER IT IS PLACED UNDER LOAD.

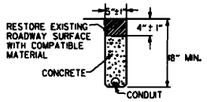
7. NUT COVERS - EACH POLE SHALL INCLUDE A BOLT DOWN NUT COVER FOR EACH ANCHOR BOLT.



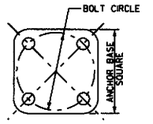
TYPICAL ARM ATTACHMENT



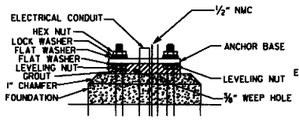
NOTE: THE SIGNAL SHALL BE CONNECTED TO THE MAST ARM BY BRACKETING AS DIRECTED BY THE ENGINEER.



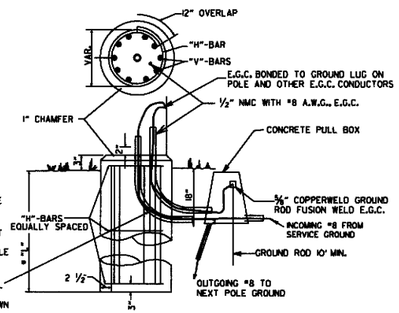
TRENCHING DETAIL
(FOR SAW CUT TRENCH IN ROADWAY)



ANCHOR BASE



THE SWEEPING "L" IN THE FOUNDATION SHALL BE THE SAME SIZE AS THE CONDUIT FROM THE FOUNDATION TO THE PULL BOX AS SHOWN ON THE PLANS.

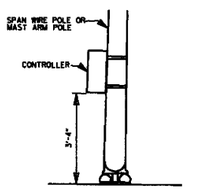


THE GROUND ROD SHALL BE FUSION WELDED TO A 10'-#8 A.W.G. SOLID COPPER GROUND WIRE. ATTACHMENT TO THE PRIMARY GROUND MAY BE BY AN APPROVED CLAMP. THE GROUND ROD IS TO BE LOCATED IN THE CONCRETE PULL BOX.

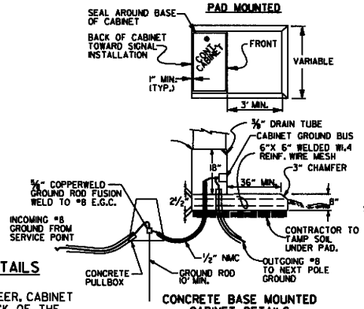
TYPICAL FOUNDATION DETAILS

POLE FOUNDATION MINIMUM DIMENSIONS AND STEEL REINFORCING. ALL REINFORCING STEEL SHALL BE GRADE 40 MIN.

ARM LENGTH	FOUNDATION DIAMETER	DEPTH "L"*	STEEL VERTICAL	STEEL HORIZONTAL	STEEL O.C.
PED	30"	7'-0"	12-#7 (6'-6")	10-#4	8.44"
2' TO 12'	30"	10'-6"	12-#7 (10'-0")	15-#4	8.42"
OVER 12' TO 20'	30"	11'-6"	12-#7 (11'-0")	16-#4	8.66"
OVER 20' TO 35'	36"	12'-6"	13-#8 (12'-0")	17-#4	8.88"
OVER 35' TO 50'	36"	13'-6"	13-#8 (13'-0")	19-#4	8.56"
OVER 50' TO 72'	42"	14'-6"	18-#8 (14'-0")	20-#4	8.74"
TWINS TO 20'	30"	16'-0"	12-#6 (15'-6")	22-#4	8.76"
TWINS OVER 20' TO 44'	36"	16'-0"	13-#8 (15'-6")	22-#4	8.76"
TWINS OVER 44' TO 50'	42"	16'-0"	18-#8 (15'-6")	22-#4	8.76"
TWINS OVER 50' TO 72'	42"	16'-6"	18-#8 (16'-0")	23-#4	8.64"



SPAN WIRE SUPPORT POLE AND MAST ARM POLE MOUNTED



CONCRETE BASE MOUNTED CABINET DETAILS

CONTROLLER CABINET MOUNTING DETAILS

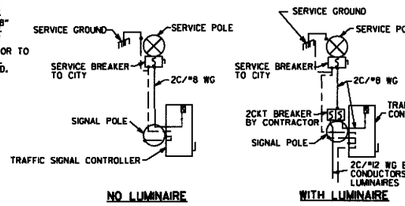
NOTE:
UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CABINET ORIENTATION SHALL BE SUCH THAT THE BACK OF THE CABINET IS PARALLEL TO THE STREET AND POSITIONED TO ALLOW VISIBILITY OF THE SIGNAL DISPLAY WHILE OBSERVING THE CONTROLLER FRONT PANEL.

8. GROUND ROD - A 10' X ⅝" GROUND ROD SHALL BE INSTALLED IN THE CONCRETE PULL BOX FOR EACH POLE AND THE CONTROLLER. PAYMENT FOR THE GROUND ROD AND ½" NMC SHALL BE INCLUDED IN ITEM 714 FOR SIGNAL POLES AND ITEM 701 FOR THE CONTROLLER. THE CONCRETE PULL BOX AND CONDUCTOR BOX SHALL BE PAID SEPERATELY.

9. POLE BASE/FOUNDATION - ANCHOR BOLTS SHALL INCLUDE AS A MINIMUM, ONE LEVELING NUT, TWO FLAT WASHERS, ONE LOCK WASHER, AND ONE HEX NUT. PERIMETER OF ANCHOR BASE SHALL BE GROUTED WITH A ¼" WEEP HOLE. ALL CONCRETE SHALL BE CLASS "S" OR GREATER.

10. CONCRETE - ALL CONCRETE FOR CONTROLLER CABINET AND POLE FOUNDATIONS SHALL BE CLASS "S" OR GREATER.

11. PEDESTRIAN PHASES - PEDESTRIAN MOVEMENTS SHALL BE PUSH BUTTON ACTUATED AND CONCURRENTLY TIMED, UNLESS OTHERWISE INDICATED ON THE PLAN SHEET(S). FURNISHING AND INSTALLING PEDESTRIAN PUSH SWITCH SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM 707 PEDESTRIAN SIGNAL HEAD.



SERVICE DISCONNECT
NOTE: ELECTRICAL GROUND CONDUCTOR IS BONDED TO ALL METAL ENCLOSURES

* WHEN THE GROUND ELEVATION AT THE POLE IS LOWER THAN THE ROADWAY ELEVATION, THE LENGTH OF FOUNDATION ABOVE THE GROUND MAY BE INCREASED TO PROVIDE THE REQUIRED SIGNAL HEAD CLEARANCE ABOVE THE ROADWAY. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 18" OR LESS, NO INCREASE IN DEPTH "L" WILL BE REQUIRED. WHEN THE REQUIRED LENGTH OF FOUNDATION ABOVE THE GROUND IS 5'-6" OR LESS, INCREASE DEPTH "L" BY 1'-0". FOR LENGTHS GREATER THAN 5'-6", DEPTH "L" SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING, AS SHOWN IN THE TABLE, SHALL BE PROVIDED FOR THE LENGTH OF THE EXTENDED SHAFT AND #4 TIES SHALL BE PROVIDED AT A SPACING NOT TO EXCEED 9" ON CENTERS. PAYMENT WILL BE IN ACCORDANCE WITH SECTION 714 TRAFFIC SIGNAL MAST ARM AND POLE WITH FOUNDATION OF THE STANDARD SPECIFICATIONS.

** IN LIEU OF DESIGNING THE STRUCTURE TO RESIST PERIODIC GALLOPING, A VIBRATORY MITIGATION DEVICE MAY BE PROVIDED BY THE POLE MANIFACTURER. THE VIBRATORY MITIGATION DEVICE SHALL BE AN ANTI-GALLOPING PANEL CONSISTING OF A 60" X 16" X 0.125" SIGN BLANK MOUNTED NEAR THE END OF THE MAST ARM NOT TO EXCEED ONE QUARTER OF THE LENGTH OF THE MAST ARM FROM THE END OF THE MAST ARM WITH THE LONG AXIS OF THE PANEL COLLINEAR WITH THE LONG AXIS OF THE MAST ARM. THE PANEL SHOULD BE MOUNTED AT SUCH THE HEIGHT AS TO PROVIDE AT LEAST 6" CLEAR FROM THE TOP OF ANY SIGNAL ASSEMBLY OF SIGN PANEL LOCATED ON THE MAST ARM WITHIN THE LENGTH OF THE ANTI-GALLOPING PANEL.

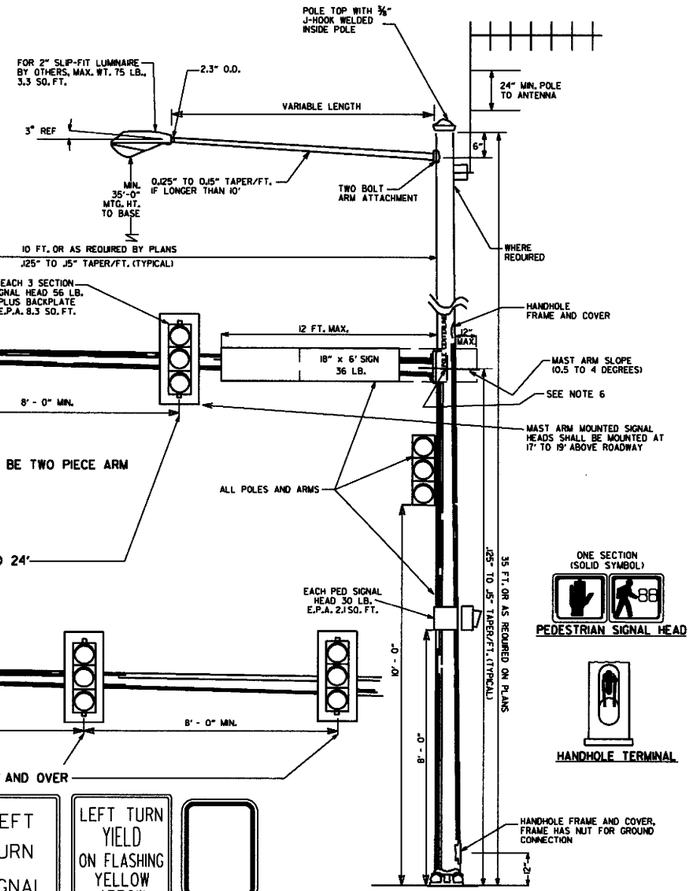
TRUCK-INDUCED GUST LOADS SHALL BE EXCLUDED FOR FATIGUE DESIGN FOR ALL STRUCTURES EXCEPT MAST ARMS MOUNTED OVER FACILITIES WITH POSTED SPEEDS OF 65 MPH OR GREATER AT THE LOCATION OF THE STRUCTURE.

SIGNAL OPERATION NOTES:

FLASHING OPERATION - PRIOR TO NORMAL OPERATION, SIGNAL SHALL BE FLASHED FOR A PERIOD OF 3 TO 5 WORK DAYS OR AS DIRECTED BY THE ENGINEER. SIGNAL SHALL BE PLACED IN OPERATION ONLY ON A REGULAR WORK DAY, EXCEPT FRIDAY.

THE CONTRACTOR MAY BE REQUIRED TO ALTER THE FLASHING DISPLAY DURING THE TEMPORARY FLASH PERIOD, AT THE TIME THE INTERSECTION IS PLACED IN PERMANENT OPERATION, THE FLASH SEQUENCE SHALL THEN BE RETURNED TO THAT INDICATED ON THE PLAN SHEETS. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THESE ALTERATION IN FLASH SEQUENCE.

SPECIAL NOTE: 90 MPH WIND ZONE DESIGN, SEE NOTE 3. MINIMUM STRUCTURAL REQUIREMENTS.



R10-10 SPECIAL

DATE	REVISION	FILMED
11-16-17	REVISED NOTES, ADDED PEDESTRIAN SIGNAL HEAD DETAIL, ADDED HANDHOLE TERMINAL DETAIL, ADDED TRENCHING DETAIL	
02-27-14	REVISED NOTES.	
09-12-13	ISSUED AS STANDARD DRAWING	
12-08-16	REVISED NOTES	
02-27-14	REVISED NOTES	
09-12-13	ISSUED AS STANDARD DRAWING	
07-21-11	REVISED VMD, SIGNAL HEADS	
05-21-09	REVISED GROUNDING	
07-31-08	REVISED GROUNDING	
04-25-08	ADDED VIBRATORY MITIGATION DEVICE & NOTES	
04-16-08	REVISED AASHTO NOTES	
04-17-08	REVISED TO 2001 AASHTO STANDARDS	
10-12-04	REVISED CABINET ORIENTATION	
06-23-04	REVISED	
05-11-04	REV. NOTE 3/AASHTO REQUIREMENTS	
06-11-01	REV. NOTES & POLE MAST ARM SLOPE	
04-11-01	REVISED POLE TAPERS	
04-25-00	REV. NOTES & SIGNAL HEAD PLACEMENT	
11-22-99	REVISED FOUNDATION DETAILS	
11-17-98	REVISED DETAILS AND NOTES	
11-21-95	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

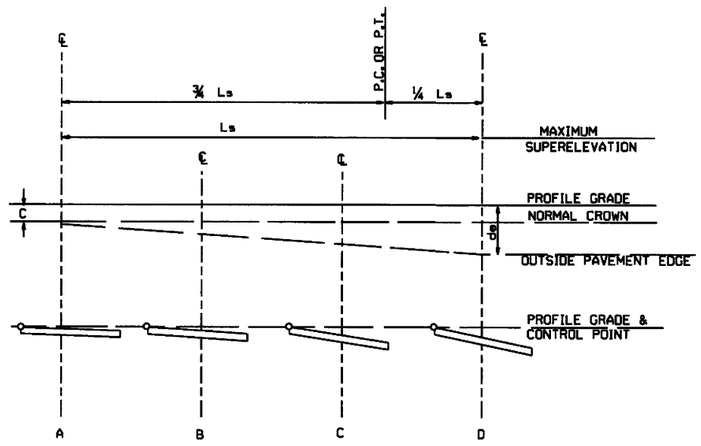
STEEL POLE WITH MAST ARM

STANDARD DRAWING SD-11

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	65 MPH e	65 MPH Ls (FT) MINIMUM	65 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N. C.			N. C.			N. C.			N. C.			N. C.			N. C.			N. C.		
0° 30'	N. C.			N. C.			N. C.			N. C.			0.022			N. C.			N. C.		
0° 45'	N. C.			N. C.			R. C.			0.022			0.023			0.025			0.028		
1° 00'	N. C.			N. C.			0.021			0.026			0.030			0.033	250	350	0.037	275	350
1° 15'	N. C.			R. C.			0.026			0.032			0.037			0.041			0.046		
1° 30'	N. C.			0.021	175	250	0.031	200	300	0.037	225	350	0.043	250	350	0.048			0.054		
1° 45'	N. C.			0.025			0.036			0.043			0.049			0.055			0.062		
2° 00'	R. C.			0.028			0.040			0.048			0.055			0.062			0.070		
2° 15'	R. C.			0.031			0.045			0.053			0.061	265		0.069	265		0.078	300	
2° 30'	0.021			0.034			0.049			0.058			0.067	280		0.075	280		0.085	315	400
2° 45'	0.023			0.037			0.053			0.063			0.072	295		0.081	300		0.091	335	
3° 00'	0.025			0.040			0.057			0.067	230		0.077	260		0.087	315		0.096	350	
3° 15'	0.027			0.043			0.061			0.072	245		0.082	275		0.090	325	400	0.098	360	450
3° 30'	0.029			0.046			0.065	205		0.076	255		0.086	285		0.095	340		0.100	360	
3° 45'	0.031			0.049			0.069	215		0.080	265		0.090	295	400	0.097	345				
4° 00'	0.033			0.051			0.072	225		0.083	270		0.093	305		0.099	350				
4° 30'	0.037			0.056			0.078	240		0.087	280		0.096	315							
5° 00'	0.040			0.061			0.083	250		0.091	295		0.098	320							
5° 30'	0.043			0.066	185		0.088	260		0.094	300										
6° 00'	0.046			0.070	190		0.092	270		0.096	305										
6° 30'	0.050			0.074	200		0.095	280	350	0.100	315										
7° 00'	0.053			0.078	210		0.098	285													
7° 30'	0.056			0.081	215		0.099	290													
8° 00'	0.058			0.084	220	300	0.100	290													
8° 30'	0.061			0.087	225																
9° 00'	0.063			0.089	230																
10° 00'	0.068	160		0.094	235																
11° 00'	0.072	170		0.097	250																
12° 00'	0.076	175		0.099	250																
13° 00'	0.080	180		0.100	250																
14° 00'	0.083	190																			
15° 00'	0.086	195																			
16° 00'	0.089	200																			
17° 00'	0.091	200																			
18° 00'	0.093	205																			
19° 00'	0.095	210																			
20° 00'	0.097	215	300																		
21° 00'	0.098	215																			
22° 00'	0.099	215																			
23° 00'	0.099	215																			
24° 00'	0.100	220																			

D MAX = 24° 45' | D MAX = 13° 15' | D MAX = 8° 15' | D MAX = 6° 30' | D MAX = 5° 15' | D MAX = 4° 15' | D MAX = 3° 30'



ONE-WAY TRAFFIC
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de+C)}{Ls} - C$

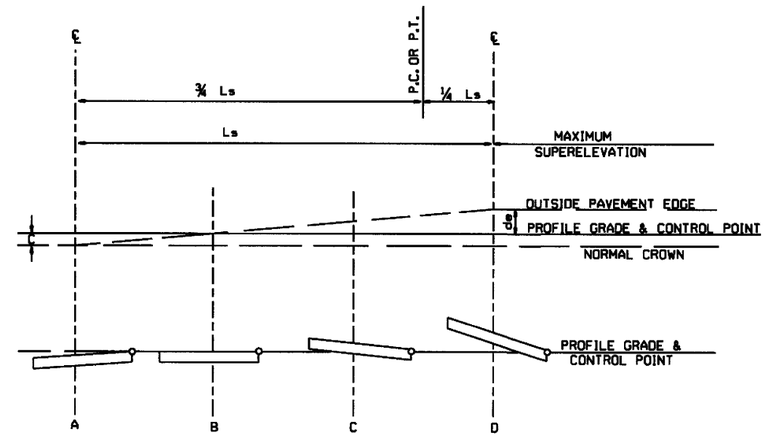
ABBREVIATIONS

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

GENERAL NOTES

1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT SIMPLER CALCULATIONS.
4. MINIMUM Ls VALUES MAY BE USED FOR RAMPS; DESIRABLE VALUES SHALL APPLY TO MAIN LANES.
5. DIVIDED PAVEMENTS WIDER THAN 4 LANES SHALL HAVE ADDITIONAL TRANSITION LENGTHS AS FOLOWS:

6 LANE DIVIDED---------+20%
8 LANE DIVIDED---------+50%



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILLMED
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

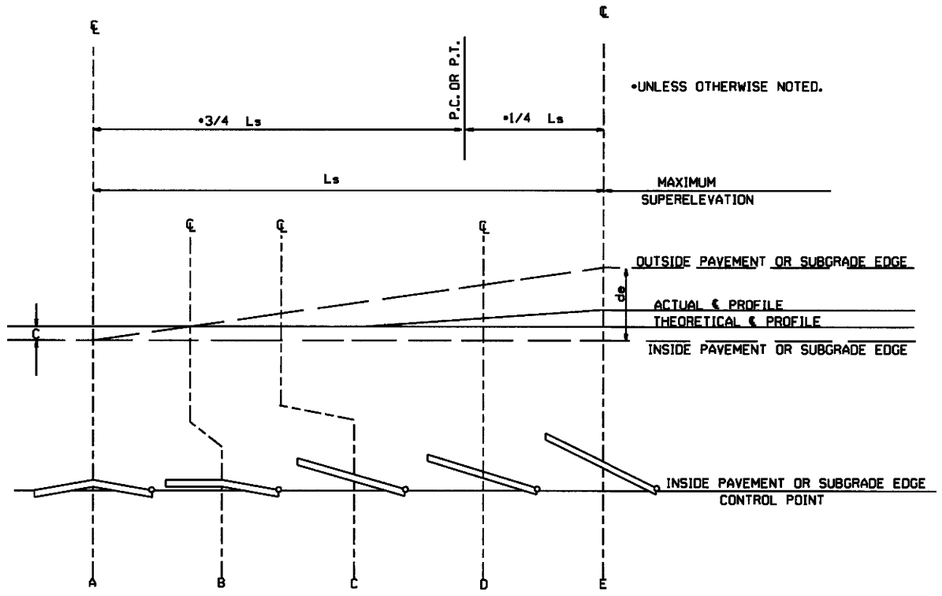
SUPERELEVATION TABLE FOR TWO - WAY TRAFFIC

DEGREE OF CURVE	30 MPH e	30 MPH Ls (FT) MINIMUM	30 MPH Ls (FT) DESIRABLE	40 MPH e	40 MPH Ls (FT) MINIMUM	40 MPH Ls (FT) DESIRABLE	50 MPH e	50 MPH Ls (FT) MINIMUM	50 MPH Ls (FT) DESIRABLE	55 MPH e	55 MPH Ls (FT) MINIMUM	55 MPH Ls (FT) DESIRABLE	60 MPH e	60 MPH Ls (FT) MINIMUM	60 MPH Ls (FT) DESIRABLE	70 MPH e	70 MPH Ls (FT) MINIMUM	70 MPH Ls (FT) DESIRABLE
0° 15'	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
0° 30'	N.C.			N.C.			N.C.			0.022			N.C.			N.C.		
0° 45'	N.C.			N.C.			R.C.			0.026			0.023			0.028		
1° 00'	N.C.			N.C.			0.021			0.032			0.030			0.037	275	300
1° 15'	N.C.			R.C.			0.026			0.037			0.037			0.046		
1° 30'	N.C.			0.021			0.031	200		0.043	225		0.043	250		0.054		
1° 45'	N.C.			0.025			0.036			0.048		300	0.049		300	0.062		
2° 00'	R.C.			0.028	175		0.040			0.053			0.055			0.070		
2° 15'	R.C.			0.031			0.045		250	0.058			0.061			0.078	300	350
2° 30'	0.021			0.034			0.049			0.063			0.067			0.085	315	
2° 45'	0.023			0.037			0.053			0.067	230		0.072	260		0.091	325	
3° 00'	0.025			0.040		200	0.057			0.072	245		0.077	275		0.096	350	400
3° 15'	0.027	150		0.043			0.061			0.076	255		0.082	285		0.098	360	
3° 30'	0.029			0.046			0.065	205		0.080	265		0.086	295		0.100	360	
3° 45'	0.031			0.049			0.069	215		0.083	270		0.090	295	350			
4° 00'	0.033			0.051			0.072	225		0.087	280		0.093	305				
4° 30'	0.037			0.056			0.078	240		0.091	295		0.096	315				
5° 00'	0.040			0.061			0.083	250		0.094	300	350	0.098	320				
5° 30'	0.043			0.066	185		0.088	260		0.096	305		0.100	315				
6° 00'	0.046			0.070	190		0.092	270		0.100	315							
6° 30'	0.050			0.074	200		0.095	280	300									
7° 00'	0.053			0.078	210		0.098	285										
7° 30'	0.056			0.081	215		0.099	290										
8° 00'	0.058			0.084	220		0.100	290										
8° 30'	0.061			0.087	225	250												
9° 00'	0.063			0.089	230													
10° 00'	0.068	160		0.094	235													
11° 00'	0.072	170		0.097	250													
12° 00'	0.076	175		0.099	250													
13° 00'	0.080	180		0.100	250													
14° 00'	0.083	190																
15° 00'	0.086	195																
16° 00'	0.089	200																
17° 00'	0.091	200																
18° 00'	0.093	205																
19° 00'	0.095	210																
20° 00'	0.097	215	250															
21° 00'	0.098	215																
22° 00'	0.099	215																
23° 00'	0.099	215																
24° 00'	0.100	220																

D MAX = 24° 45' | D MAX = 13° 15' | D MAX = 8° 15' | D MAX = 6° 30' | D MAX = 5° 15' | D MAX = 3° 30'

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.)



*UNLESS OTHERWISE NOTED.

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

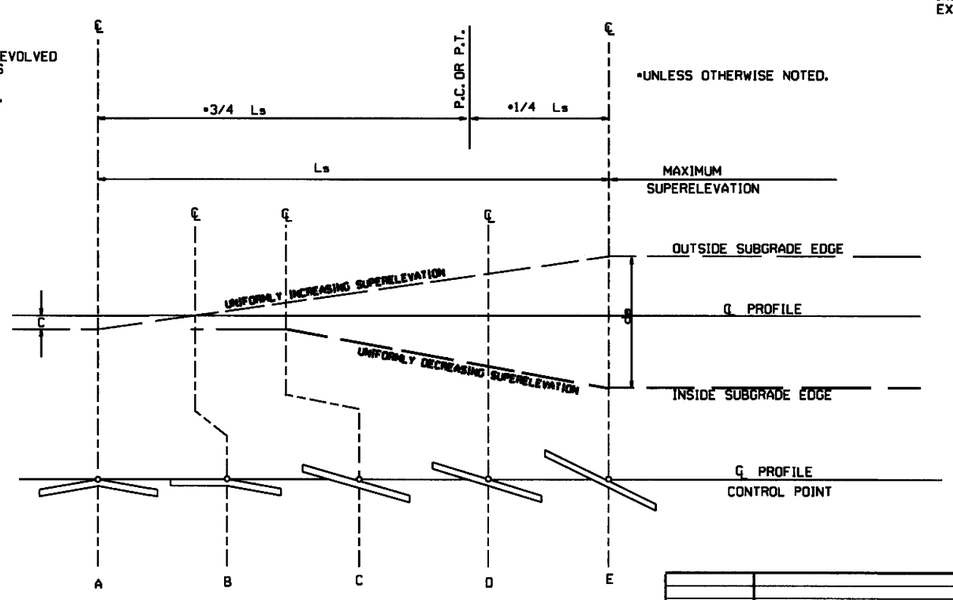
NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

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

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%



*UNLESS OTHERWISE NOTED.

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

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

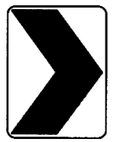
ARKANSAS STATE HIGHWAY COMMISSION

TABLES AND METHOD OF SUPERELEVATION FOR TWO-WAY TRAFFIC

STANDARD DRAWING SE-2

R1-1
30"X30"

W1-3
30"X30"
(LT. OR RT.)



W1-8
18"X24"

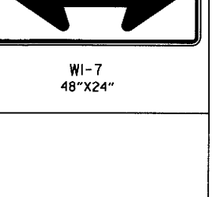
W2-5
30"X30"

W3-1
36"X36"

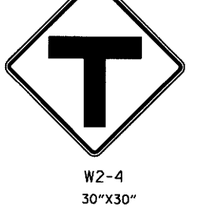
W5-1
36"X36"

M6-3
21"X15"

R1-2
36"X36"X36"

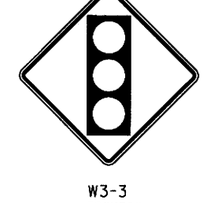


W1-4
30"X30"
(LT. or RT.)

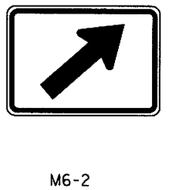


W2-1
30"X30"

S1-1
36"X36"

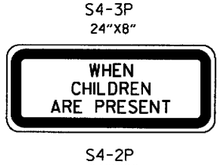


W3-2
36"X36"



County
Route Marker
M1-6
24"X24"

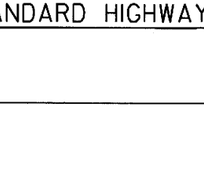
NOTE: REFLECTORIZED YELLOW LEGEND (COUNTY NAME, ROUTE LETTER & NUMBER) & BORDER ON A BLUE BACKGROUND.



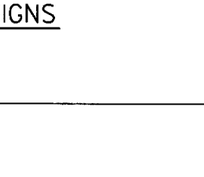
M6-4
21"X15"

R2-1
24"X30"

W1-5
30"X30"
(LT. or RT.)



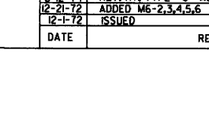
W2-2
30"X30"



W5-2
36"X36"

W8-3
36"X36"

R1-3P
18"X6"



M6-5
21"X15"

W1-1
30"X30"
(LT. or RT.)

W1-6
48"X24"

W1-7
48"X24"

W2-3
30"X30"
(LT. or RT.)

W5-3
36"X36"

W13-1P
18"X18"

M6-1
21"X15"

NOTE: ALL M6 SIGNS TO BE MADE WITH REFLECTORIZED YELLOW ARROW & BORDER WITH BLUE BACKGROUND.

M6-6
21"X15"

W1-2
30"X30"
(LT. or RT.)

W2-4
30"X30"

W10-1
36" DIAMETER

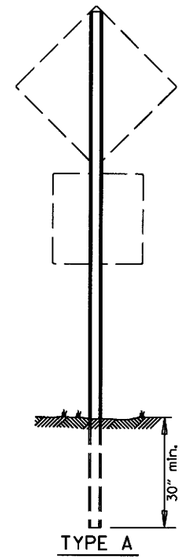
W3-3
36"X36"

M6-2
21"X15"

S4-3P
24"X8"

S4-2P
24"X10"

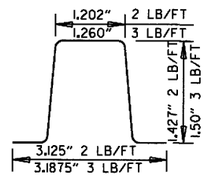
OM-3
12"X36"
(LT. or RT.)



TYPE A

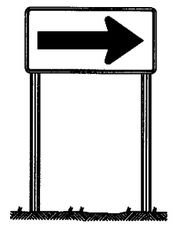
MINIMUM DIMENSIONS SHOWN

SUPPORT SECTION

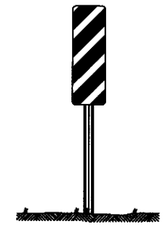


(U-CHANNEL)
STANDARD SUPPORT
ASSEMBLIES

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



TYPE B



TYPE C

MINIMUM WEIGHT

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

STANDARD HIGHWAY SIGNS

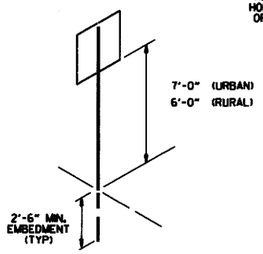
DATE	REVISION	DATE FILMED
9-12-13	DELETED JOB NO. BLOCK; REVISED R1-3 TO R1-3P	
4-17-08	REVISED SIGN DESIGNATION - W3-1 & W3-2	
4-10-03	REVISED W5-2, W8-3, OM-3; ADDED W1-8	
1-5-81	REDRAWN	960-1-15-81
9-15-78	ADDED W14-3	877-9-15-78
9-2-76	POST WT.	623-9-3-76
5-3-76	STEEL POST WT. FROM 2#-3#; ADDED S4-2 & S4-3	504-5-3-76
8-12-74	REV. HT. TYPE "C" ASSEMBLY	500-8-21-74
12-21-72	ADDED M6-2,3,4,5,6	500-12-21-72
12-1-72	ISSUED	562-12-1-72

SUPPORT ASSEMBLIES

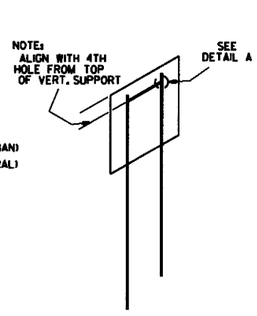
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD HIGHWAY SIGNS
AND SUPPORT ASSEMBLIES

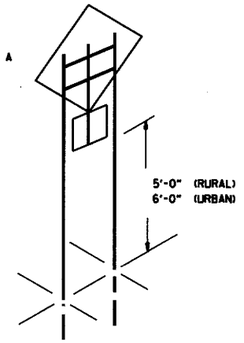
STANDARD DRAWING SHS-1



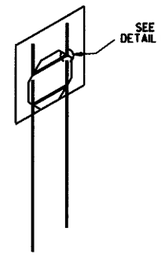
U-1



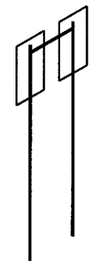
U-2



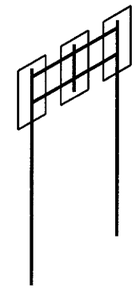
U-2 (A)



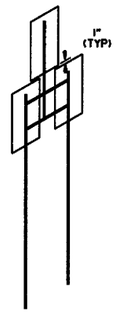
U-2 (B)



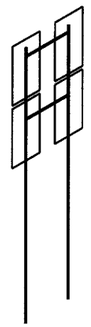
U-2 (1)



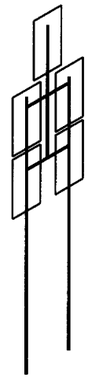
U-2 (2)



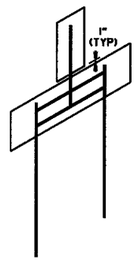
U-2 (3)



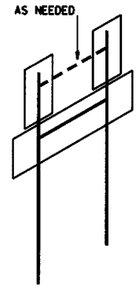
U-2 (4)



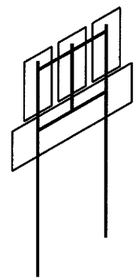
U-2 (5)



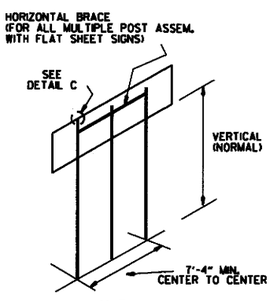
U-2 (6)



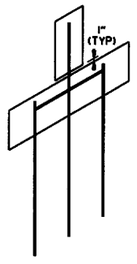
U-2 (7)



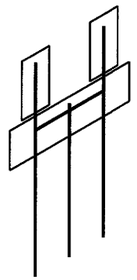
U-2 (8)



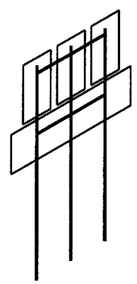
U-3



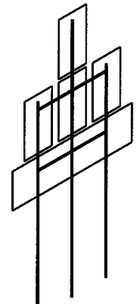
U-3 (1)



U-3 (2)



U-3 (3)



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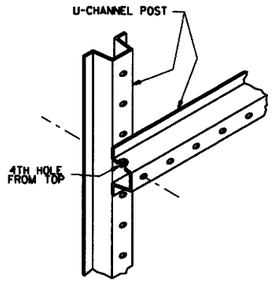
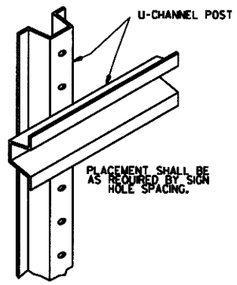


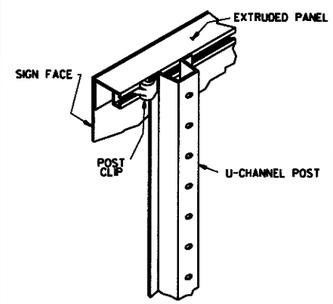
DETAIL A

SHOWING HORIZONTAL BRACE



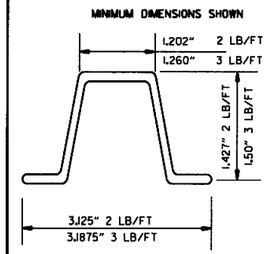
DETAIL B

SHOWING BACK-TO-BACK INSTALLATION



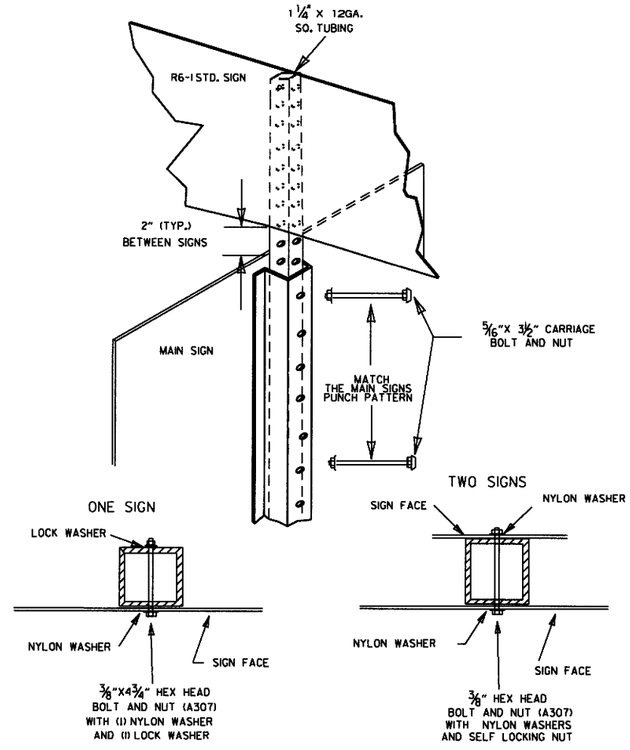
DETAIL C

SHOWING GUIDE SIGN MOUNTING WITH EXTRUDED PANELS



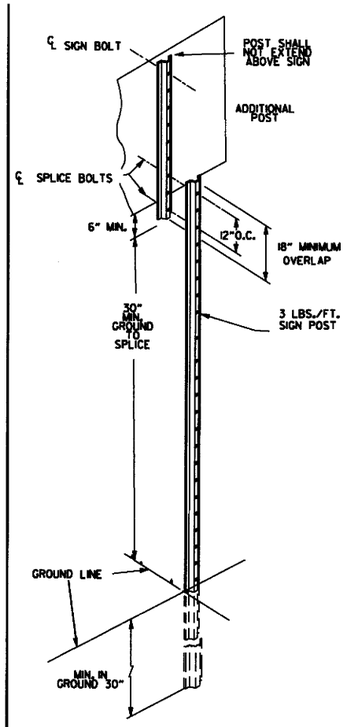
DETAIL D

U-CHANNEL POST



DETAIL E

R6-1 EXTENSION FOR U-CHANNEL POST



DETAIL F

DETAIL OF SPLICES

NOTES:

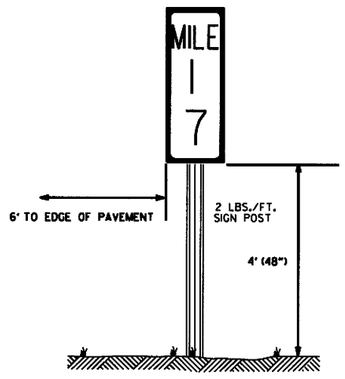
SIGNS AT LEAST 8' IN LENGTH MAY BE INSTALLED ON THREE 3 LB. POST. IN NO CASE SHALL THERE BE MORE THAN TWO 3 LB. POSTS WITHIN A 7' PATH.

SPLICES NECESSARY TO ATTAIN PROPER MOUNTING HEIGHT SHALL BE AS SHOWN IN DETAIL (F).

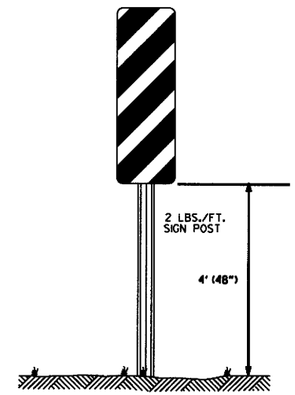
NORMAL INSTALLATIONS WILL REQUIRE 5/16" DIA. CARRIAGE BOLTS TO MOUNT SIGNS TO POST AND TO ASSEMBLE THE VARIOUS POST SUPPORTS.

ALL SIGN POSTS SHALL BE PLUMB.

THE POST FOR "TYPE U" SUPPORTS SHALL BE HOT DIP GALVANIZED.



TYPICAL MILE MARKER INSTALLATION



TYPICAL OM-3 INSTALLATION AT EDGE OF OBSTRUCTION

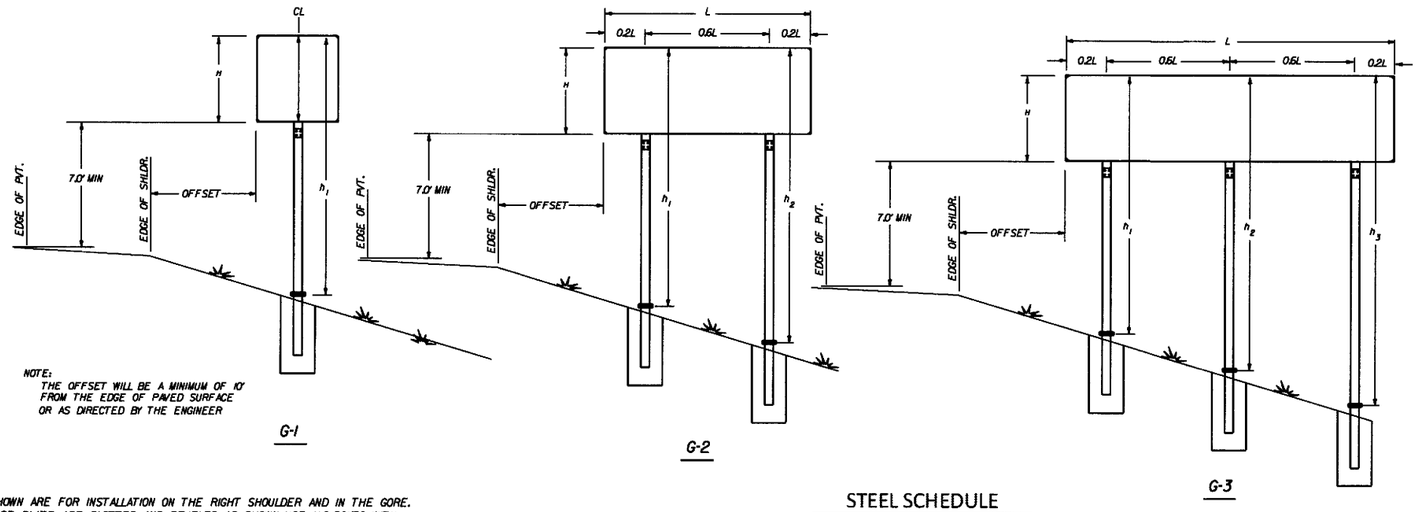
DATE	REVISION	FILMED
2-27-14	REVISED NOTES.	
9-12-13	REVISED U-2(3), U-2(6), U-3(1), DETAIL D; ADDED DETAILS E & F; ADDED TYPICAL MARKERS	
10-9-03	REMOVED ROUND POST & REVISED SPACING	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL	6-8-95
2-2-95	REDRAWN	2-2-95

ARKANSAS STATE HIGHWAY COMMISSION

U-CHANNEL POST ASSEMBLIES

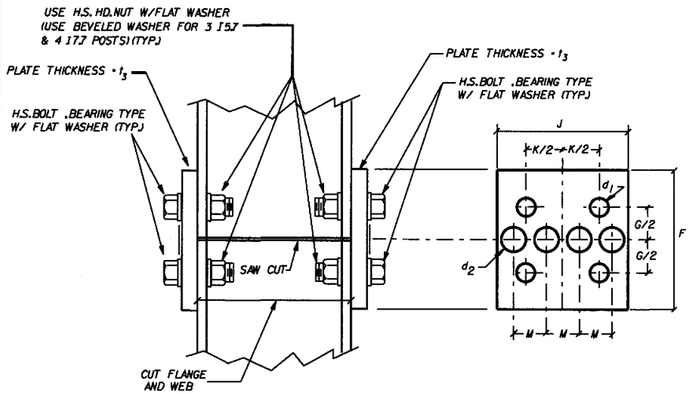
STANDARD DRAWING SHS-2

POST SIZE	BASE CONNECTION DATA										FUSE PLATE DATA									WT. OF EACH FUSE PLATE LBS.
	BOLT SIZE	BOLT TORQUE (INCH/LBS)	A	B	C	D	E	t_1	t_2	W	R	F	G		J	K	M	d_1	d_2	t_3	BOLT SIZE	
W 6X9	5/8" x 2 3/4"	450"-480"	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	9/32"	4 1/4"	2"		4"	2 1/4"	1"	9/16"	3/4"	1/4"	1/2" x 1 1/2"	1.01
W 6X12												5"	2 1/2"		6"	3 1/2"	1 1/2"	11/16"	1 1/4"	3/8"	5/8" x 2 1/4"	2.51
W 6X15												5"	2 1/2"		5 1/4"	2 3/4"	1 1/4"	13/16"	1 1/16"	3/8"	3/4" x 2 1/4"	2.26
W 8X18	3/4" x 3 1/2"	750"-1050"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	3/32"	5 1/2"	2 1/2"		5 1/4"	2 3/4"	1 1/4"	13/16"	1"	1/2"	3/4" x 2 1/4"	3.35
W 8X21												6"	3"		5 3/4"	2 3/4"	1 3/8"	13/16"	1"	1/2"	3/4" x 2 1/4"	4.03
W 10X22																						
W 10X26												6"	3"		6 1/2"	3 1/2"	1 5/8"	13/16"	1 5/16"	1/2"	3/4" x 2 1/4"	4.47
W 12X26																						



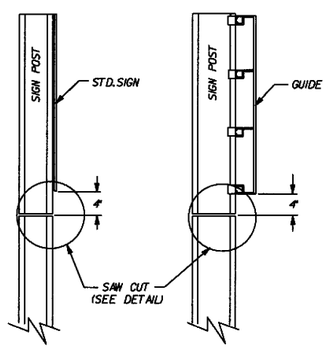
NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER

G-1 G-2 G-3



NOTE: USE H.S. HEX HEAD BOLTS, HEX HEAD NUTS AND BEVEL OR FLAT WASHERS (WHERE REQ.) UNDER NUTS. ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM-A36, ASTM-A441, ASTM-572 GRADE 50, OR ASTM-A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.

NOTE: BOLT HOLES, USED IN THE MOUNTING OF STANDARD SIGNS SHALL BE LOCATED IN THE FLANGE ADJACENT TO THE REAR EDGE OF PAVEMENT FOR SINGLE POST ASSEMBLIES AND IN THE OUTSIDE FLANGES FOR MULTIPLE POST ASSEMBLIES.



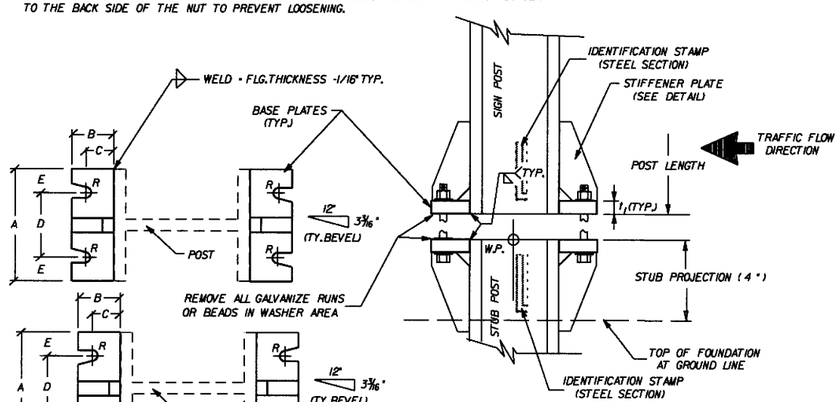
NOTE: POST SHALL BE SAW CUT AFTER GALVANIZING AND THE CUT SURFACE TREATED, AFTER PLATE IS INSTALLED AND ALL BOLTS FULLY TIGHTENED, WITH AN APPROVED ZINC SOLDER MEETING THE FEDERAL SPEC. O-G-93 (STICK ONLY).

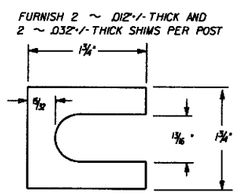
STANDARD SIGNS GUIDE SIGNS

FUSE PLATE DETAILS

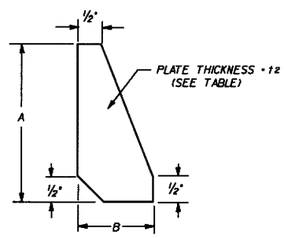
NOTE: SECTIONS SHOWN ARE FOR INSTALLATION ON THE RIGHT SHOULDER AND IN THE GORE. BOLT HOLES IN BASE PLATE ARE SLOTTED AND BEVELED AS SHOWN. USE H.S. BOLTS WITH HEX HD., HEX NUT AND THREE FLAT WASHERS FOR EACH BOLT. SEE TABLE FOR BOLT DIA. AND TORQUE.

NOTE: ASSEMBLE SIGN POST TO STUB POST USING THE BOLTS SPEC. IN THE TABLE AND AS SHOWN IN THE ELEVATION DETAILS. THERE SHALL BE THREE FLAT WASHERS ON EACH BOLT LOCATED AS SHOWN IN THE ELEVATIONS. USE A SHIM TO PLUMB THE SIGN POST, THEN TIGHTEN THE BOLTS USING A 12" TO 15" WRENCH UNTIL THE WASHERS AND SHIMS ARE SEATED AND THE BOLT THREADS ARE CLEAR. THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE). THE BURR THREADS ADJACENT TO THE BACK SIDE OF THE NUT TO PREVENT LOOSENING.





SHIM DETAIL



STIFFENER PLATE DETAIL

GENERAL NOTES

TIGHTEN THE HIGH STRENGTH BOLTS IN THE BASE CONNECTION ONLY TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.

BASE PLATES AND STIFFENER PLATES SHALL BE OF THE SAME MATERIAL AS THE PRIMARY SUPPORT POST'S WHICH THEY ARE WELDED.

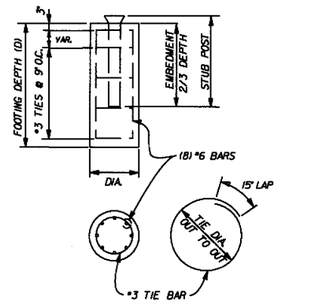
REFER TO THE PLANS FOR FOOTING DIMENSIONS.

EACH STUB POST AND SIGN POST SHALL HAVE A PERMANENT IDENTIFYING STAMP WHICH SPECIFIES THE STEEL SECTION USED. IF THE CONTRACTOR ELECTS TO SHIP THE STUB POST SEPARATE FROM THE SIGN POST A MATCH MARK SYSTEM WILL BE REQUIRED.

STEEL SCHEDULE

FOOTING DIAMETER	#3 TIE BARS		
	DIAMETER	BAR LENGTH	POUNDS
INCHES	INCHES	FEET	
18	12	4.39	1.65
24	18	5.96	2.24
30	24	7.53	2.83
36	30	9.1	3.42

FOOTINIG DEPTH	#6 STRAIGHT BARS		
	BAR LENGTH	NUMBER REQ'D.	POUNDS
FEET	FEET		
2.50	2.00	8	24.03
3.00	2.50	8	30.04
3.50	3.00	8	36.05
4.00	3.50	8	42.06
4.50	4.00	8	48.06
5.00	4.50	8	54.07
5.50	5.00	8	60.08
6.00	5.50	8	66.09
6.50	6.00	8	72.10
7.00	6.50	8	78.10
7.50	7.00	8	84.11
8.00	7.50	8	90.12



FOOTING QUANTITIES

FOOTINIG DEPTH	NUMBER TIE BARS REQ'D	18" DIAMETER		24" DIAMETER		30" DIAMETER		36" DIAMETER	
		CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL	CLASS S CONCRETE	REINF STEEL
FEET		CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)	CU. YD.	(GRADE 60)
2.50	4	0.16	31						
3.00	4	0.20	37						
3.50	5	0.23	44						
4.00	6	0.26	52	0.47	56				
4.50	6	0.29	58	0.52	62				
5.00	7	0.33	66	0.58	70	0.91	74		
5.50	8			0.64	78	1.00	83		
6.00	8			0.70	84	1.09	89	1.57	93
6.50	9					1.18	98	1.70	103
7.00	10					1.27	106	1.83	112
7.50	10							1.96	118
8.00	11							2.09	128

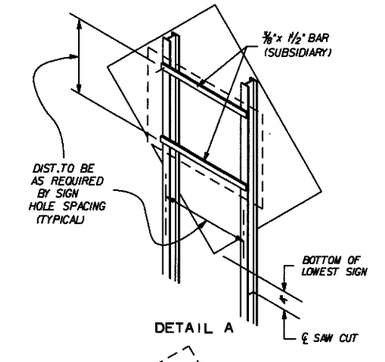
SIGN POST AND STUB POST

DATE	REVISION	FILMED
9-12-13	ISSUED	

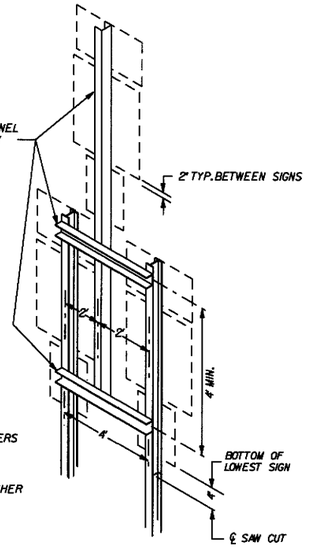
ARKANSAS STATE HIGHWAY COMMISSION

DETAIL OF BREAKAWAY SIGN SUPPORTS FOR GUIDE SIGNS

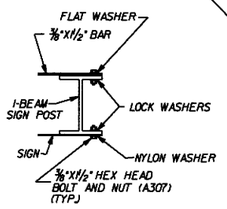
STANDARD DRAWING SHS-3



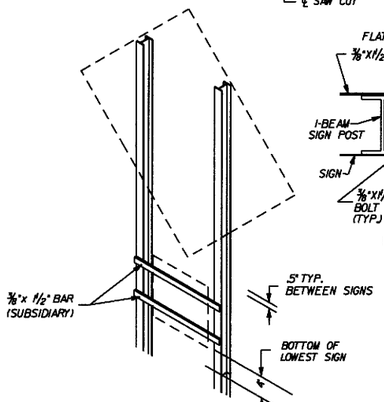
DETAIL A



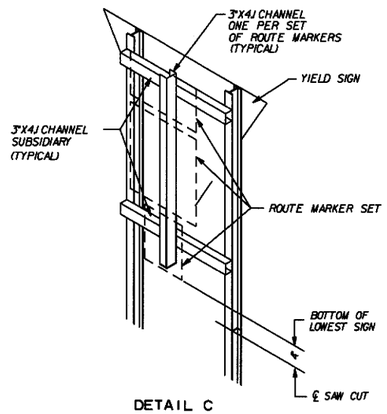
DETAIL D



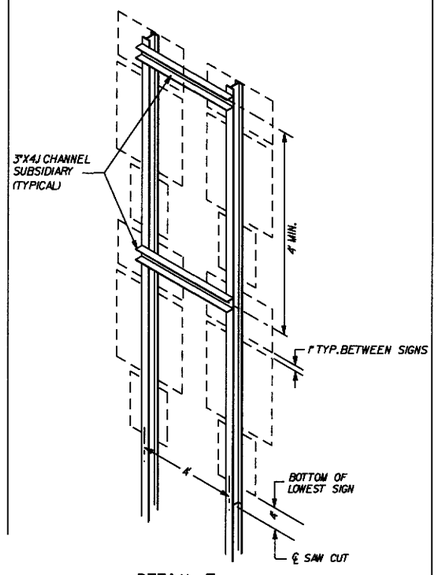
DETAIL F



DETAIL B



DETAIL C



DETAIL E

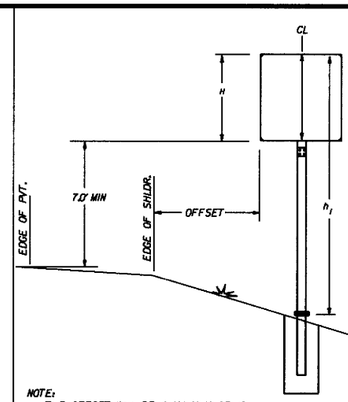
NOTE

ALL ADDITIONAL MOUNTING HARDWARE, BOLTS, NUTS, CHANNELS AND BAR STRAPS REQUIRED TO MOUNT SECONDARY SIGNS WILL BE CONSIDERED TO BE SUPPLEMENTAL TO THE MAIN SIGN SUPPORT SPECIFIED. PAYMENT WILL BE CONSIDERED SUBSIDIARY TO THE MAIN SUPPORT.

THE GALVANIZED STEEL CHANNEL AND BAR SUPPORTS MAY BE ASTM A-36.

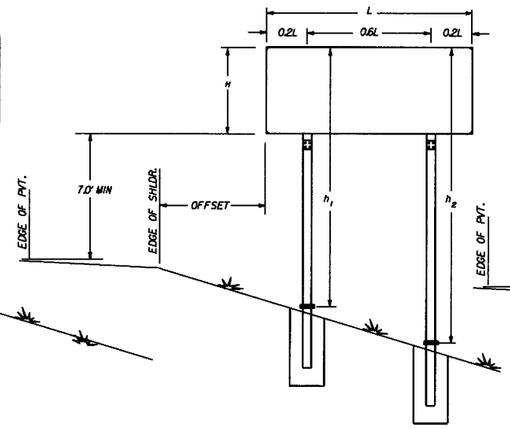
REFER TO THE P.C. RUTLEDGE FORMULA ON PAGE 58 OF THE AASHTO PUBLICATION "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS.

ALL BOLT HOLES SHALL BE 1/8" DIA. UNLESS OTHERWISE SHOWN.

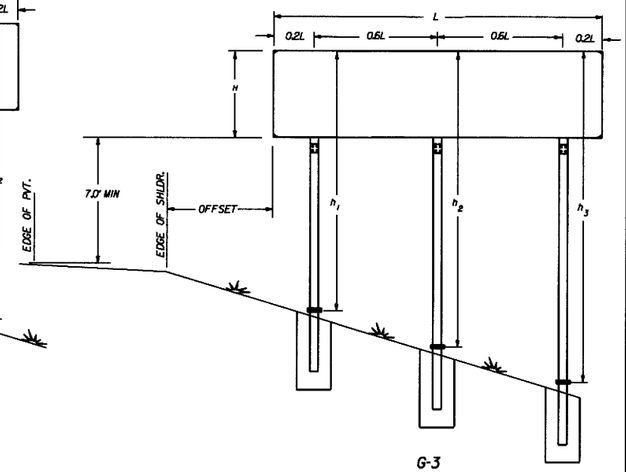


G-1

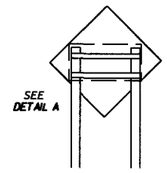
NOTE:
THE OFFSET WILL BE A MINIMUM OF 10' FROM THE EDGE OF PAVED SURFACE OR AS DIRECTED BY THE ENGINEER.



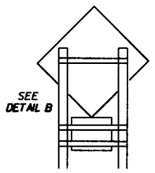
G-2



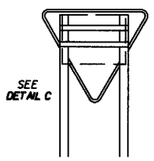
G-3



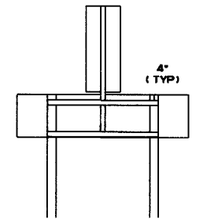
G2-1



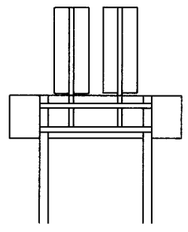
G2-2



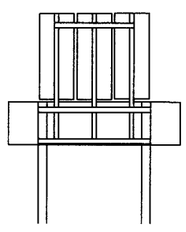
G2-3



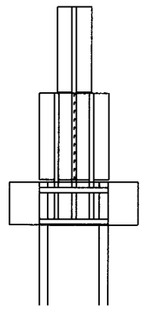
G2-4



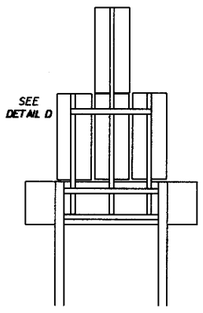
G2-5



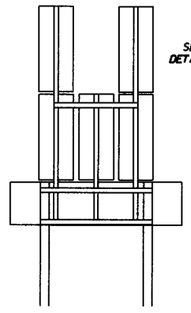
G2-6



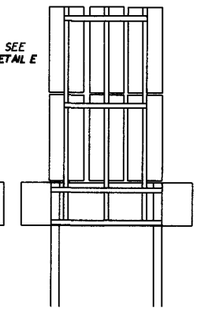
G2-7



G2-8



G2-9

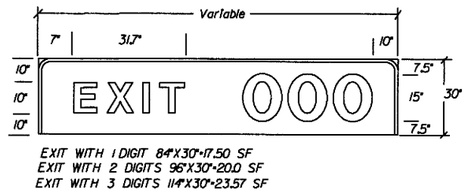


G2-10

			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF BREAKAWAY SIGN SUPPORTS FOR STANDARD SIGNS
9-12-13	ISSUED		STANDARD DRAWING SHS-4
DATE	REVISION	FILMED	

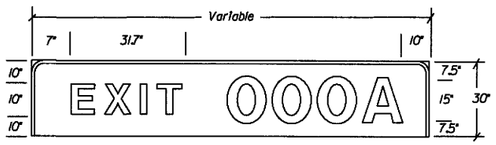
TYPICAL DETAIL

TYPE A



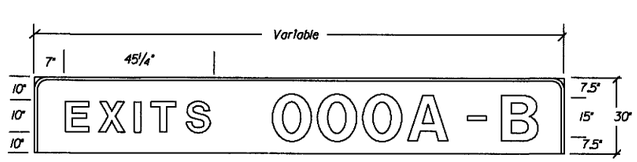
EXIT WITH 1 DIGIT 84"X30"=17.50 SF
EXIT WITH 2 DIGITS 96"X30"=20.0 SF
EXIT WITH 3 DIGITS 114"X30"=23.57 SF

TYPE B



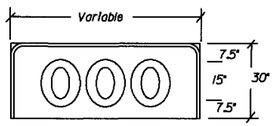
EXIT WITH 1 DIGIT PLUS "A"OR"B" 96"X30"=20.0 SF
EXIT WITH 2 DIGITS PLUS "A"OR"B" 114"X30"=23.57 SF
EXIT WITH 3 DIGITS PLUS "A"OR"B" 126"X30"=26.25 SF

TYPE C



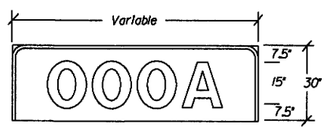
EXITS WITH 1 DIGIT PLUS "A"&"B" 132"X30"=27.50 SF
EXITS WITH 2 DIGITS PLUS "A"&"B" 150"X30"=31.25 SF
EXITS WITH 3 DIGITS PLUS "A"&"B" 168"X30"=35.00 SF

TYPE D



1 DIGIT 24"X30"=5.0 SF
2 DIGITS 42"X30"=8.75 SF
3 DIGITS 60"X30"=12.50 SF

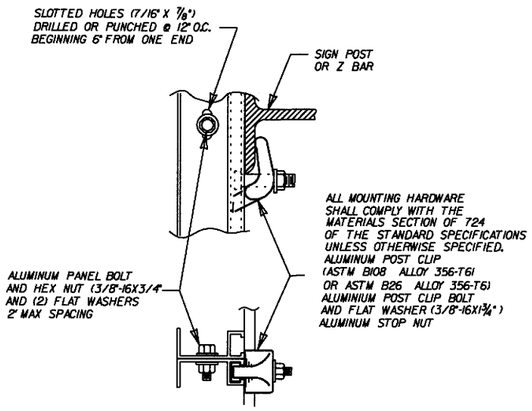
TYPE E

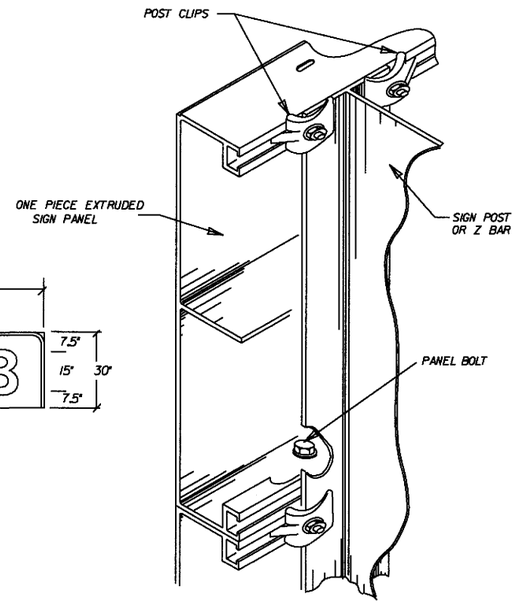


1 DIGIT PLUS "A"OR"B" 42"X30"=8.75 SF
2 DIGITS PLUS "A"OR"B" 60"X30"=12.50 SF
3 DIGITS PLUS "A"OR"B" 78"X30"=16.25 SF

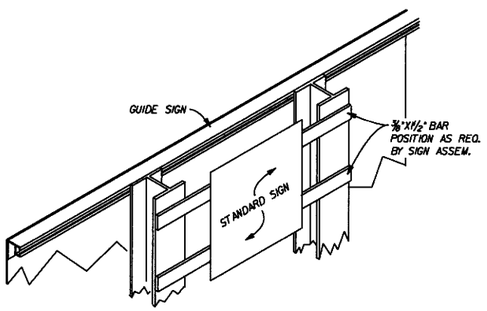
EXIT PANEL DETAILS

NOTE: EXIT NUMBER PANELS SHALL HAVE WHITE LEGENDS AND BORDERS. THE BACK GROUND COLOR WILL BE AS USE SPECIFIES. SHEETING TYPE WILL BE THE SAME AS THE GUIDE SIGN WHICH THE EXIT PANEL IS ATTACHED OR AS SPECIFIED IN THE PLANS. PAYMENT FOR ALL POST CLIPS, BOLTS, AND ANGLES SHALL BE SUBSIDIARY TO THE ITEM "EXIT NUMBER PANEL".

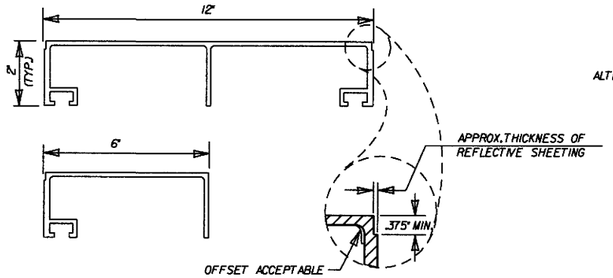




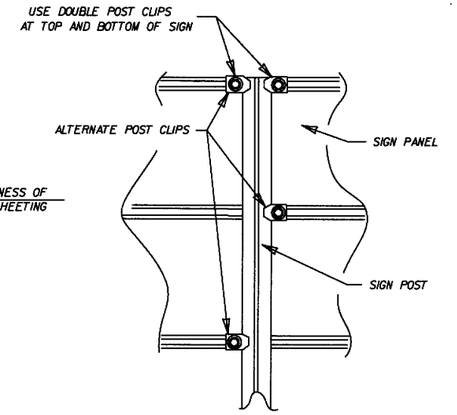
MOUNTING HARDWARE



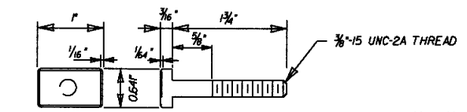
SECONDARY SIGN INSTALLATION ON BACKSIDE OF GUIDE SIGN



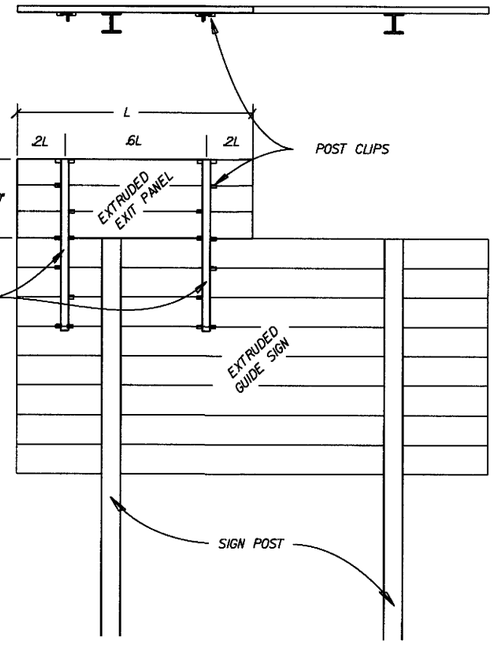
ONE PIECE EXTRUDED SIGN PANELS



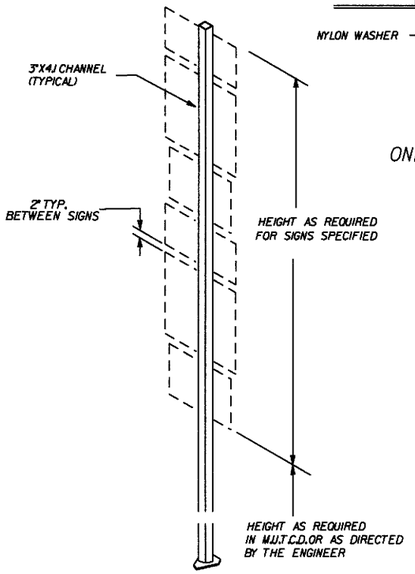
POST CLIP PLACEMENT

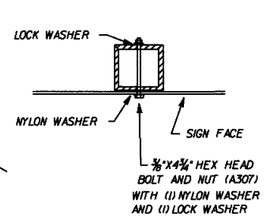


POST CLIP BOLT

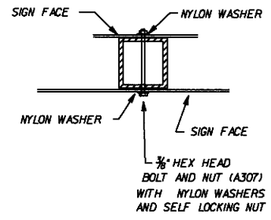


			ARKANSAS STATE HIGHWAY COMMISSION
			DETAILS OF GUIDE SIGN PANELS
9-12-13	ISSUED		STANDARD DRAWING SHS-5
DATE	REVISION	FILMED	





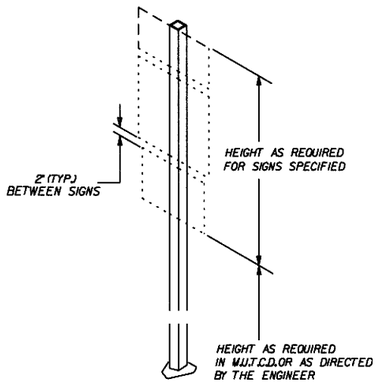
ONE SIGN



TWO SIGNS

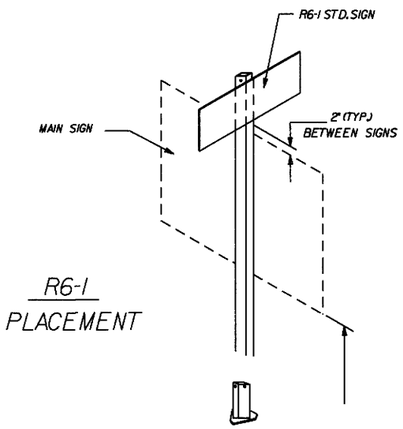
CHANNEL SHALL BE FULL LENGTH OF RECTANGULAR AND SQUARE SIGNS AND SHALL EXTEND ½" BEYOND BOLT HOLES ON DIAMOND OR IRREGULAR SHAPED SIGNS.

MOUNTING HARDWARE

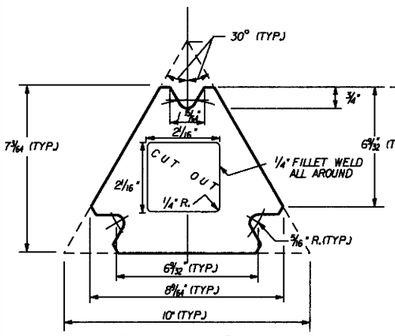


TYPE-I

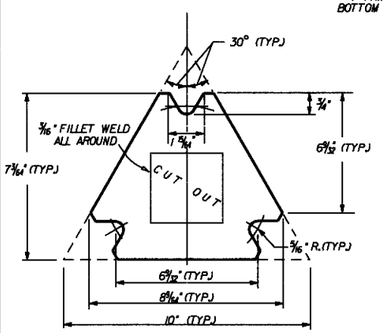
BASIS OF ESTIMATE
APPROX. 100 lbs STEEL



R6-1 PLACEMENT



TOP PLATE



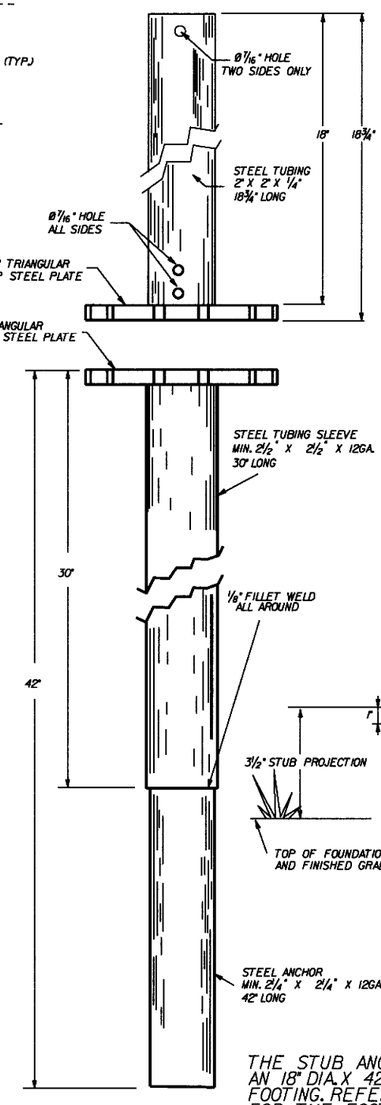
BOTTOM PLATE

GENERAL NOTES:

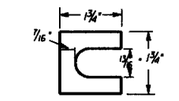
THE TOP PLATE OF TRIANGULAR SLIP BASES SHALL HAVE THE SAME EXTERIOR DIMENSIONS AS THE BOTTOM PLATE.

INSIDE DIAMETER OF THE SIGN POST SHALL BE CUT THROUGH THE CENTER OF THE TOP PLATE WITH THE HOLE EDGE BEVELED AS SHOWN. THE BEVEL END SHALL BE TANGENT TO THE BOLT HOLE . ANY MISALIGNMENT SHALL BE REMOVED BY GRINDING . FACE OF BEVEL SHALL BE FINISHED TO A MINIMUM SMOOTHNESS OF 1·500 .

OTHER MASH COMPLIANT BREAKAWAY SIGN SUPPORTS THAT HAVE THE SAME TOP PLATE DIMENSIONS AND SUPPORT 2¼" x 2¼" SQUARE TUBE SIGN POSTS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.

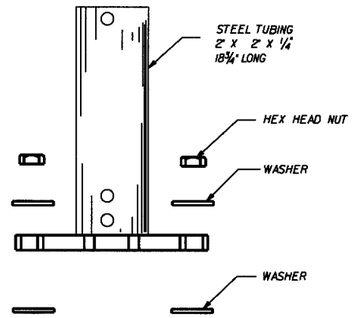


THE STUB ANCHOR SHALL BE SET IN AN 18" DIA. X 42" DEEP CONCRETE FOOTING. REFER TO STD. DRWG. SHS-3 FOR THE FOOTING DETAILS.

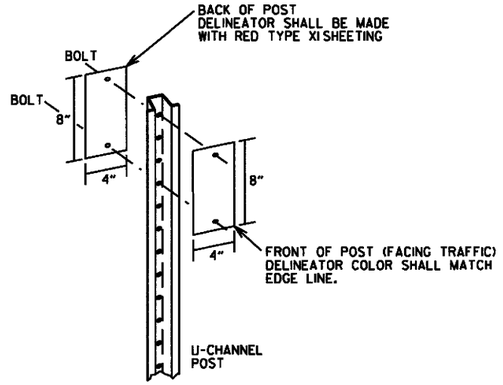


FURNISH (2) .012" THICK AND (2) .032" THICK SHIMS PER POST

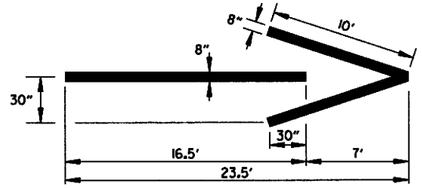
SHIM DETAIL



			ARKANSAS STATE HIGHWAY COMMISSION
			DETAIL OF OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS
9-12-13 DATE	ISSUED REVISION	FILMED	STANDARD DRAWING SHS-7



TYPE 2 DELINEATOR DETAILS



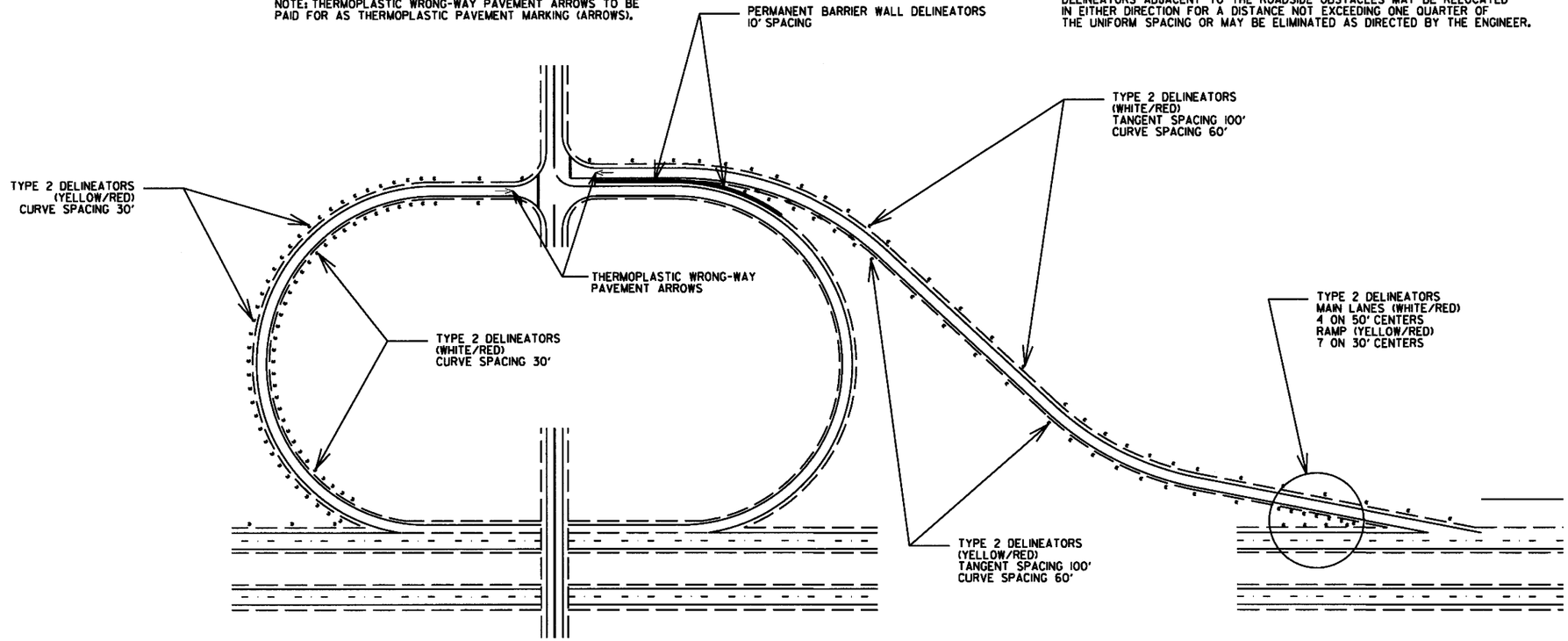
THERMOPLASTIC WRONG-WAY
PAVEMENT ARROWS

NOTE: THERMOPLASTIC WRONG-WAY PAVEMENT ARROWS TO BE PAID FOR AS THERMOPLASTIC PAVEMENT MARKING (ARROWS).

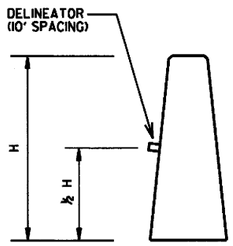
LEGEND

DELINEATOR

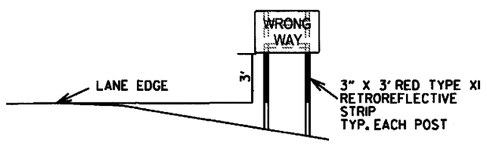
NOTE: WHEN UNIFORM SPACING IS INTERRUPTED BY ROADSIDE OBSTACLES, DELINEATORS ADJACENT TO THE ROADSIDE OBSTACLES MAY BE RELOCATED IN EITHER DIRECTION FOR A DISTANCE NOT EXCEEDING ONE QUARTER OF THE UNIFORM SPACING OR MAY BE ELIMINATED AS DIRECTED BY THE ENGINEER.



TYPICAL EXIT RAMP DELINEATOR PLACEMENT

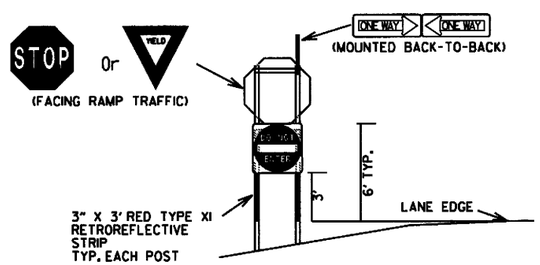


PERMANENT BARRIER WALL
DELINEATOR DETAIL



WRONG-WAY SIGN ASSEMBLY DETAILS

NOTES
1. WRONG-WAY SIGNS MAY BE MOUNTED ON THE BACK SIDE OF EXISTING SIGN SUPPORTS WHERE POSSIBLE.
2. WRONG-WAY SIGNS ARE NORMALLY GATED, BUT MAY BE OFFSET WHEN BARRIER WALLS ARE PRESENT ON THE INSIDE SHOULDER. IN SUCH CASES, THE SIGN ON THE INSIDE SHOULDER SIDE MAY BE LOCATED PAST THE END OF THE BARRIER WALL. IN RARE CASES WHERE THE BARRIER WALL EXTENDS TO OR NEAR THE MAIN LANES, BOTH SIGNS MAY BE LOCATED ON THE OUTSIDE SHOULDER SIDE OF THE RAMP, WITH APPROXIMATELY 300' SPACING BETWEEN THE SIGNS.



RAMP INTERSECTION SIGN ASSEMBLY DETAILS

THE DELINEATORS SHALL BE PLACED AT A 4' HEIGHT MEASURED FROM THE PAVEMENT EDGE TO THE BOTTOM OF THE DELINEATOR. DELINEATOR POSTS SHALL BE PLACED 2 TO 8 FT. OUTSIDE THE OUTER EDGE OF THE SHOULDER, OR IF APPROPRIATE, IN LINE WITH THE ROADSIDE BARRIER THAT IS 8 FT. OR LESS OUTSIDE THE OUTER EDGE OF THE SHOULDER.

DELINEATOR SPACING IN CURVES SHALL BE REDUCED TO 30' WHEN THE RAMP ADVISORY SPEED IS 30 MPH OR LESS.

IF MULTIPLE LANES EXIST AT THE RAMP TERMINAL, THE THERMOPLASTIC WRONG-WAY ARROW SHALL BE PLACED AS CLOSE TO THE RAMP TERMINAL TURNOUT AS POSSIBLE.

DATE	REVISION	FILMED
11-16-17	ADDED NOTES	
06-01-17	RE-DRAWN	
09-12-13	ISSUED AS STANDARD DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

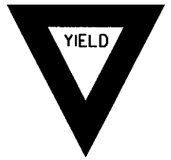
TYPICAL EXIT RAMP SIGN AND DELINEATOR DETAILS

STANDARD DRAWING SHS-8

R1-1

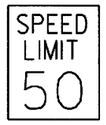
STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1



STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

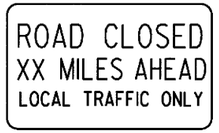
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

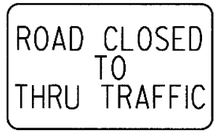
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W2I-5a

STD. 36"X36"
FWY. 48"X48"

WI-1

STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

WI-3

STD. 48"X48"

WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8

STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

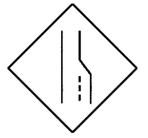
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

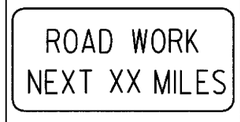
W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

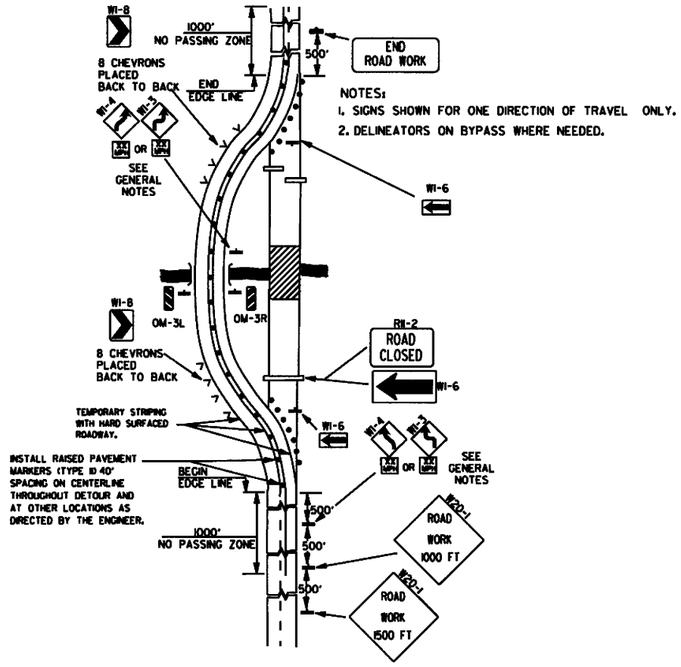
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

DATE	REVISION	FILMED
4-13-17	DELETED RSP-1 & ADDED W21-5a	
9-2-15	REVISED REDUCED SPEED LIMIT AHEAD SIGNS REVISED ROAD WORK NEXT XX MILES	
12-15-11	REVISED W24-1	
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

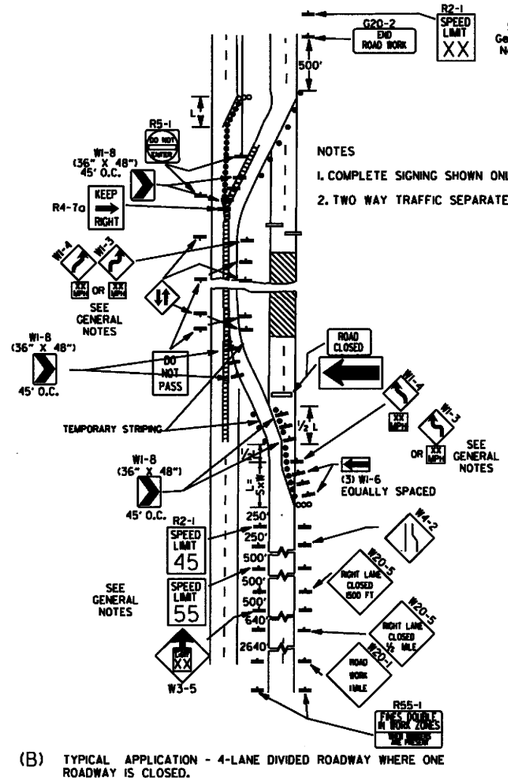
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

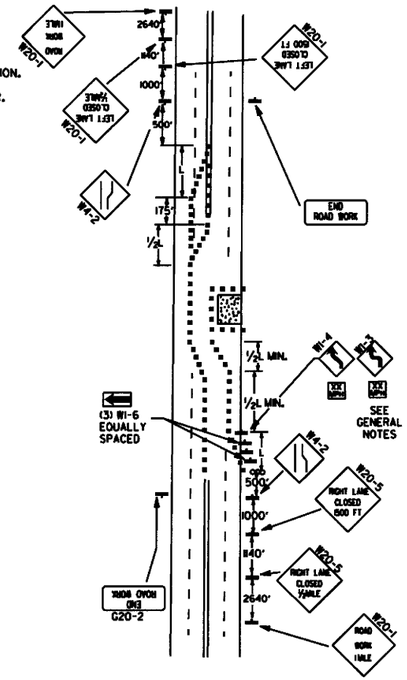
STANDARD DRAWING TC-1



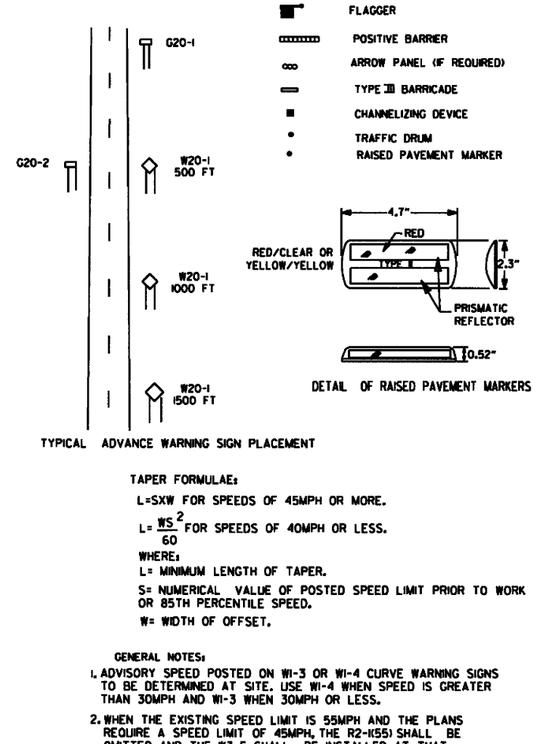
(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.



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

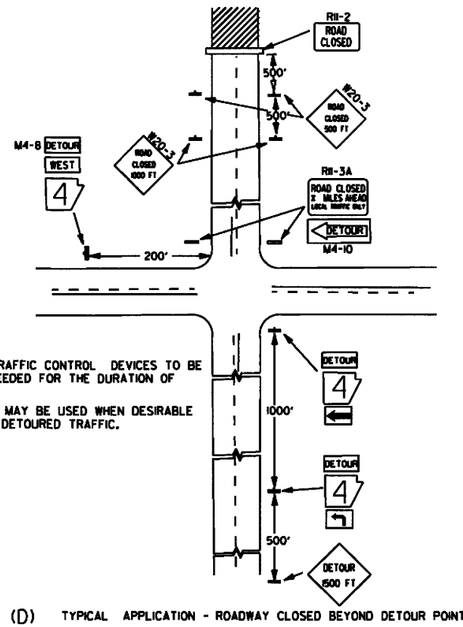


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



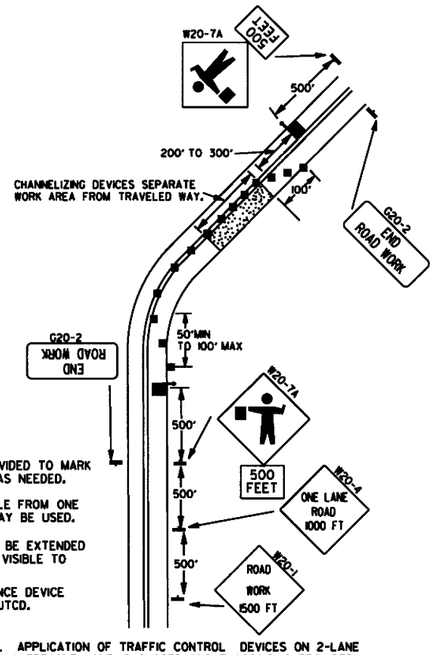
DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT



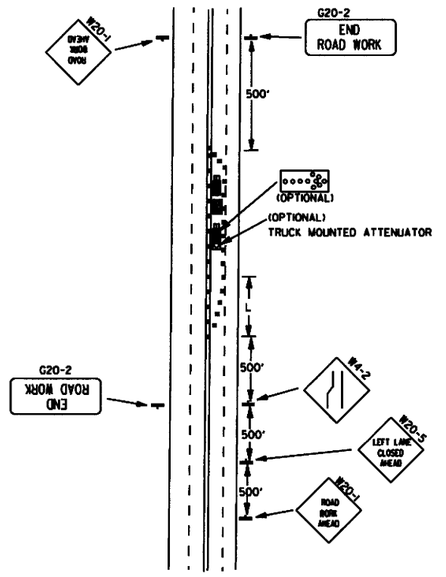
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

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



NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) OPTIONAL. REFER TO MUTCD.

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



(F) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WITH INSIDE LANE CLOSED.

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

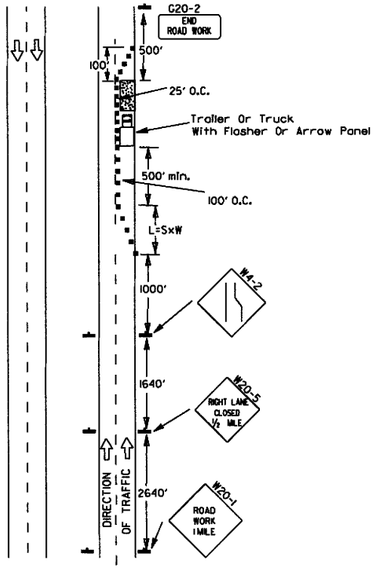
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-K55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED AT THAT LOCATION. ADDITIONAL R2-145MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
3. WHEN THE EXISTING SPEED LIMIT IS 65MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 55MPH, THE R2-K45) SHALL BE OMITTED. ADDITIONAL R2-155MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1MILE INTERVALS. AT THE END OF THE WORK AREA A R2-KXX) SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
4. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT. BEYOND THE TAPER, MAXIMUM SPACING SHALL BE TWO TIMES THE SPEED LIMIT, OR AS DIRECTED BY THE ENGINEER.
5. WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SIGNS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
6. PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION IN THE MINDS OF VEHICLE OPERATORS SHALL BE REMOVED OR OBLITERATED AS SOON AS PRACTICABLE.
7. TRAILER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE DELINEATED BY AFFIXING CONSPICUITY MATERIAL IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER, WHEN PLACED ON OR ADJACENT TO THE SHOULDER AND NOT BEHIND A POSITIVE BARRIER, THESE DEVICES SHALL BE DELINEATED BY PLACING FIVE (5) TRAFFIC DRUMS, EQUALLY SPACED ALONG THE TRAFFIC SIDE OF THE DEVICE.
8. DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH THE APPROVAL OF THE ENGINEER. REQUESTING APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE AHTD QUALIFIED PRODUCTS LIST.

DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2, ADDED NOTE 8, REVISED DRAWING (A) & REPLACED R2-5A WITH W3-5	
9-12-13	REVISED DETAIL OF RAISED PAVEMENT MARKERS	
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

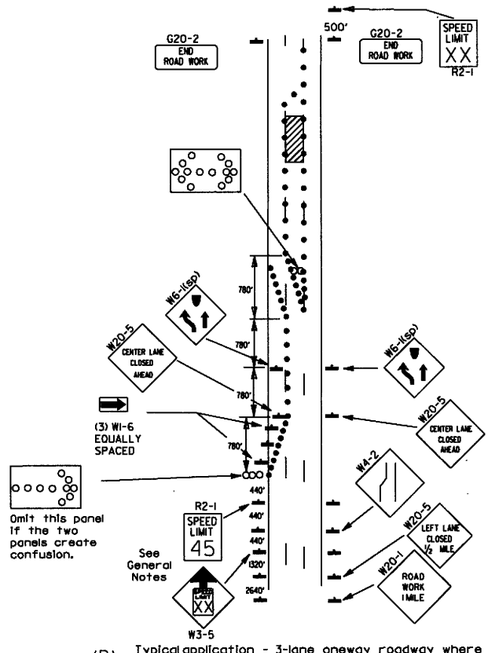
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-2



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



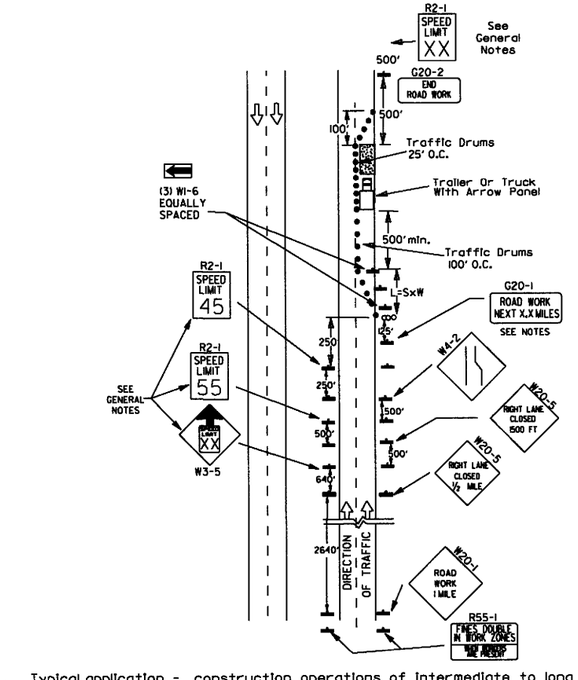
(B) Typical application - 3-lane oneway roadway where center lane is closed.

KEY:

- Arrow Panel (If Required)
- Channelizing Device
- Traffic drum

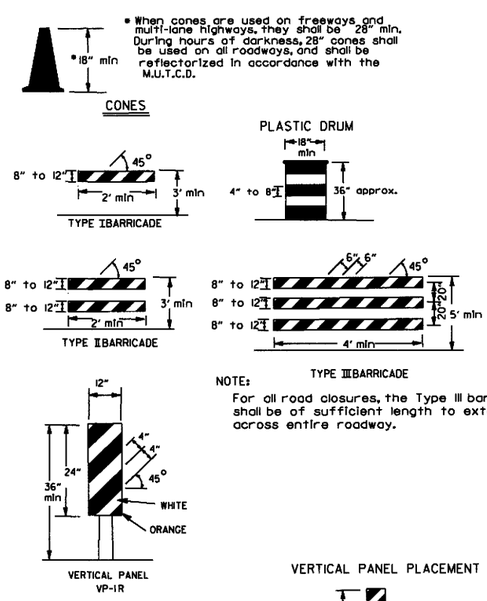
GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.



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

Channelizing devices



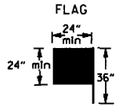
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

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

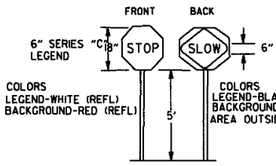
* When shown on the plans concrete barrier will be used.
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

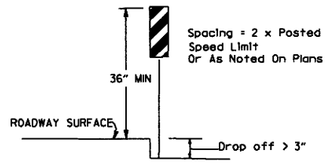


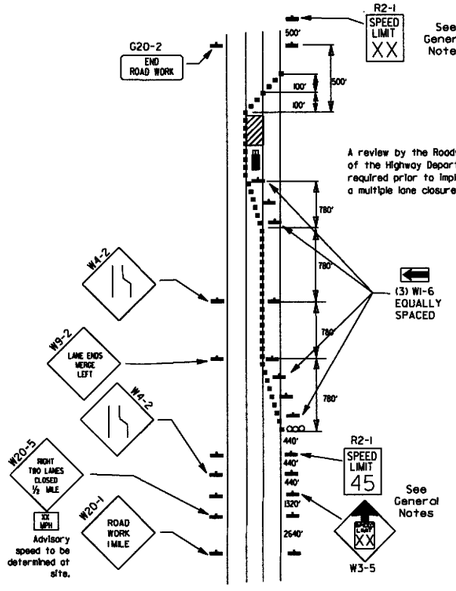
Flag shall be of good grade red material

STOP SLOW PADDLE



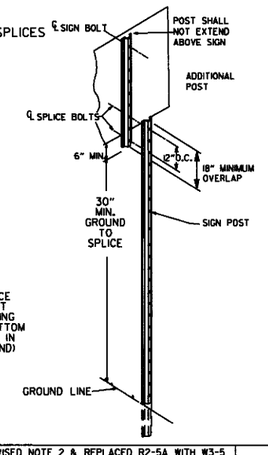
VERTICAL PANEL PLACEMENT





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

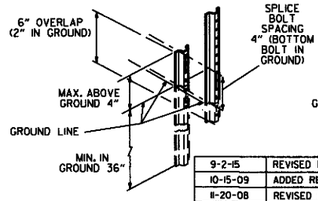
DETAIL OF SPLICES



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

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

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



DATE	REVISION	FILMED
9-2-15	REVISED NOTE 2 & REPLACED R2-5A WITH W3-5	
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1& REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

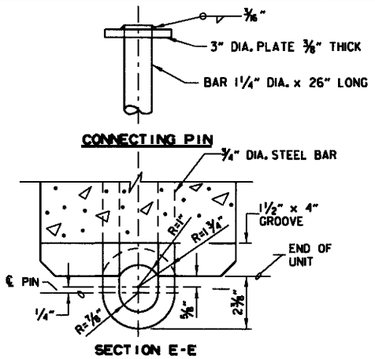
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

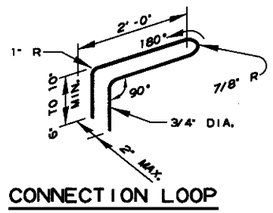
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

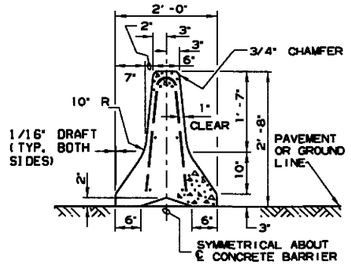
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 7", 1'-6", 1" MIN. CLEAR TO BAR; 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP
V-1	VERTICAL IN BARRIER(3) EACH END & (2) AT EACH DRAIN SLOTS	#5	(16)	TOTAL LENGTH 4'-9", 2 3/16" R, 12°, 9 1/2", 2'-1 3/8", 4 3/8"



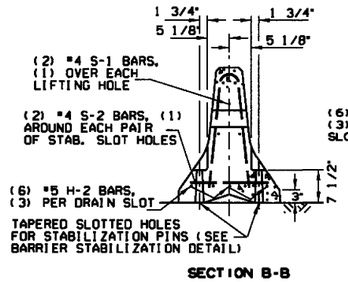
CONNECTION DETAILS



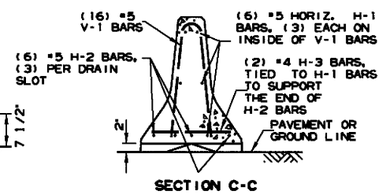
CONNECTION LOOP



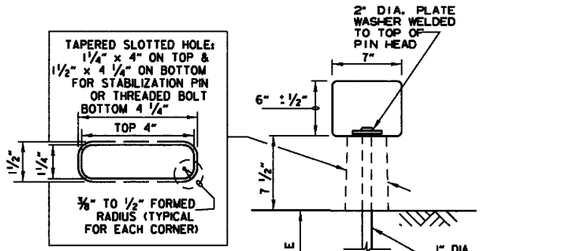
SECTION A-A



SECTION B-B



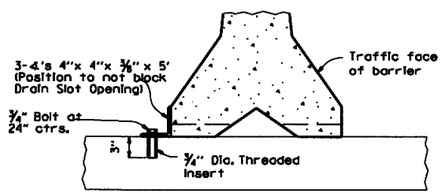
SECTION C-C



BARRIER STABILIZATION DETAIL

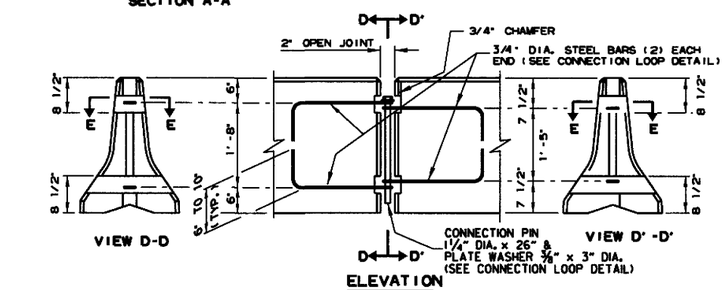
BARRIER STABILIZATION DETAIL
ROADWAY SECTION

(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



NOTE: 3/4" Threaded Inserts shall be cast in place for all new bridge decks and drilled and grouted for existing bridge decks. Inserts shall have a minimum ultimate load capacity of 8000 lbs. in tension. After removal of barrier, bolts, and angles, the inserts shall be filled with approved non-shrink epoxy.

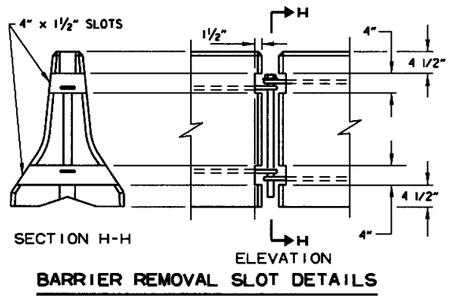
BARRIER STABILIZATION DETAIL
BRIDGE DECKS



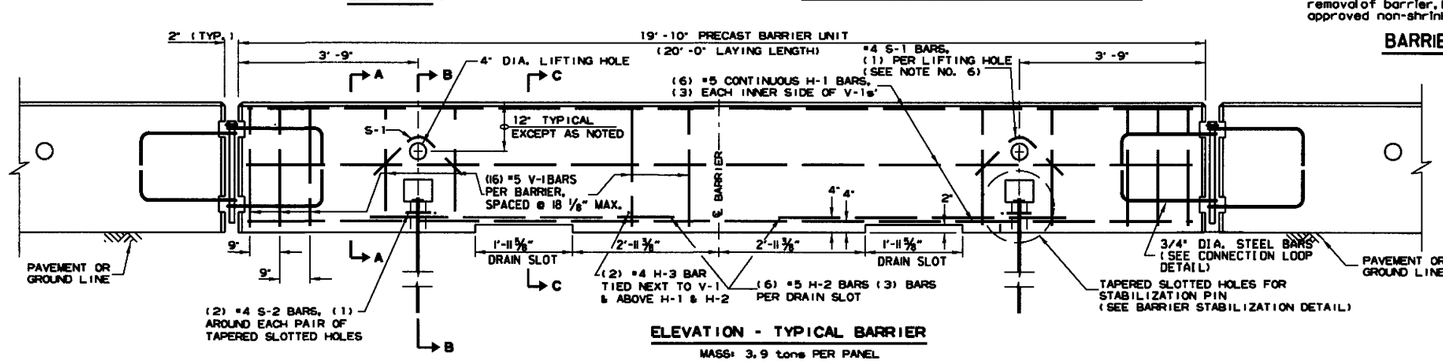
VIEW D-D

VIEW D'-D'

ELEVATION



BARRIER REMOVAL SLOT DETAILS



ELEVATION - TYPICAL BARRIER

MASS: 3.9 tons PER PANEL

General Notes

(1) The contractor shall furnish the Precast Concrete Barrier Units and shall be responsible for the manufacture, shipment, storage, placement and removal. At the completion of the project, the precast units will remain the property of the contractor.

(2) Materials shall meet the following minimum requirements:
Concrete: 2500 psi compressive strength at 28 days.
Reinforcing Steel: AASHTO M 31 or M 53, Grade 60
Structural Steel: AASHTO-M270 Grade 36 shall be used for the Connection Pin, Connection Loops, and Stabilization Pins. A One Piece Pin with a 3" rounded top may be used in place of the detailed Connection Pin.
Delineators: Delineators shall be mounted at 10' spacing on top of precast barrier.

In applications where barrier walls within 6 feet of a traffic lane, additional delineators shall be placed on the barrier at 10' spacing approximately one (1) foot from the top of the barrier. Delineators shall be on the AHTD Qualified Products List for Construction Concrete Barrier Markers.
Delineator color shall be in accordance with the Manual on Uniform Traffic Control Devices.
Payment for delineators shall be considered included in the price bid per Lin. Ft. for "Furnishing and Installing Precast Concrete Barrier". The contractor shall certify to the Engineer that the material and the design used in the precast barrier units meets the requirements as shown on this standard drawing.

(3) Other Precast Concrete Barriers that have been crash tested and approved by the Federal Highway Administration to meet the requirements of NCHRP-350 test level 3 or Manual For Assessing Safety Hardware (MASH) will be accepted in lieu of the barrier shown. Drain slots shall be provided as needed or as directed by the Engineer. The Contractor shall furnish a certification of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) compliance for any other types of precast barrier to be used. The certification shall state that the precast concrete barrier meets the requirements of NCHRP Report 350 or Manual For Assessing Safety Hardware (MASH) and include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments. Precast concrete barrier units shall be fabricated and installed in accordance with crash testing and documentation provided in the FHWA approval letter. Mixing of shapes will not be allowed in a continuous line of units.

(4) Dowel holes in pavement or bridge slabs that are to remain in place shall be filled. Holes in concrete pavement and bridge slabs shall be filled with an approved non-shrink epoxy grout. Holes in asphalt pavement shall be filled with an approved asphalt joint filler. Payment for drilling and filling holes to be included in the price for various barrier items.

(5) Attach Units To Roadway Surface with Stabilization Pins and to Deck Slabs using bolts when required.

(6) A 4" White PVC Sleeve may be used to form the Lifting Hole and if used the Sleeve is to be left in place.

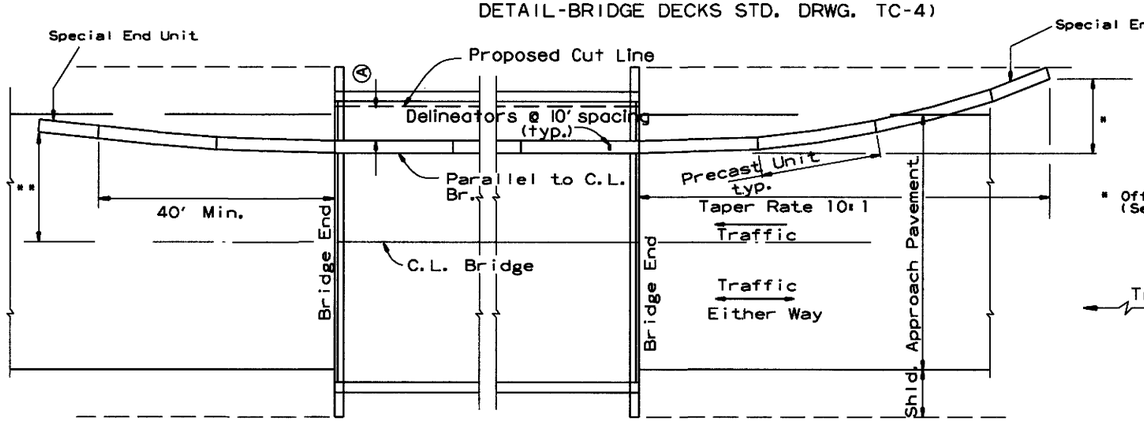
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	ISSUED NEW DRAWING	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

STANDARD DRAWING TC-4

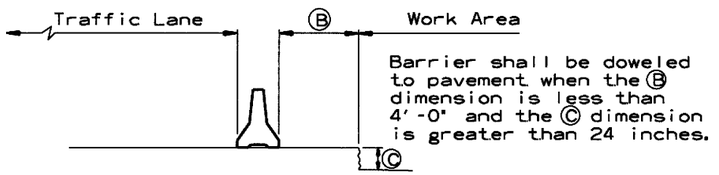
Ⓐ 4 feet or greater preferred. If less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECKS STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

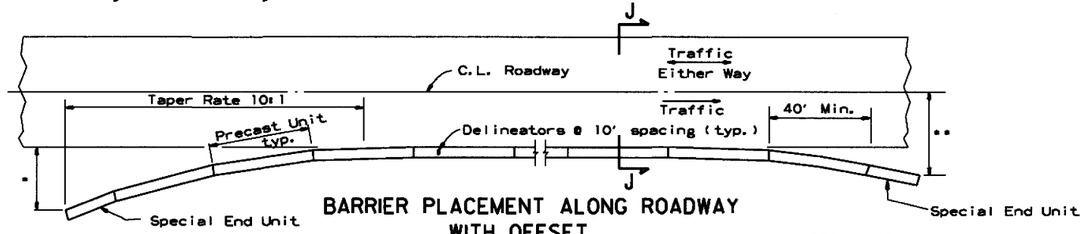


Barrier shall be doweled to pavement when the Ⓑ dimension is less than 4'-0" and the Ⓒ dimension is greater than 24 inches.

SECTION J-J

No Scale

* Offset Distance (See Table)



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

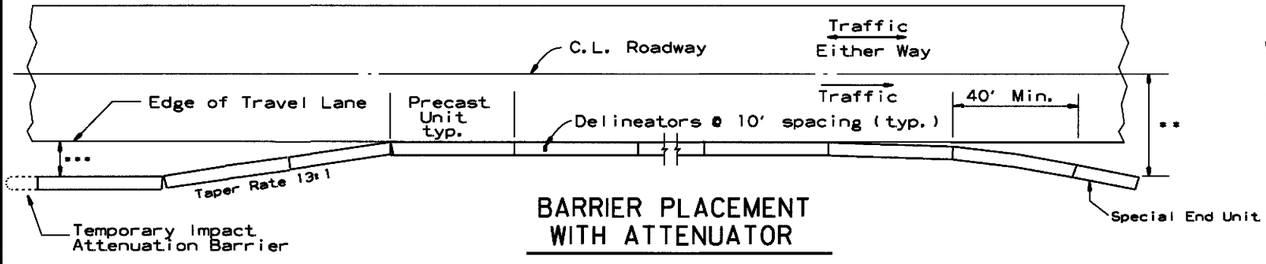
** Offset Distance For Two Way Traffic Only

* Offset Distance (See Table)

Offset Distance Table

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

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



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

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

** Offset Distance For Two Way Traffic Only

SPECIAL END UNIT

No Scale

General Notes

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

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
5-25-06	REVISED BARRIER PLACEMENT	
8-22-02	ISSUED NEW DRAWING	

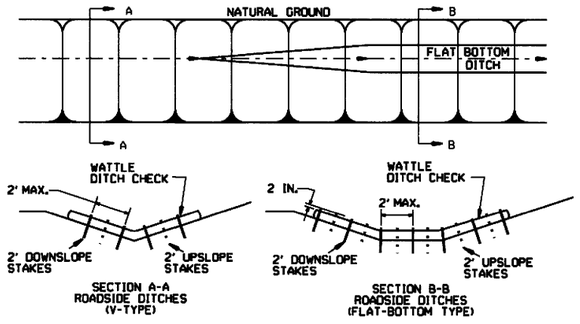
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

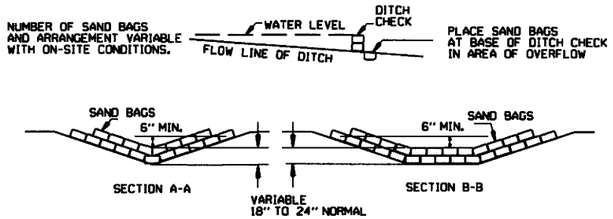
STANDARD DRAWING TC-5

GENERAL NOTES

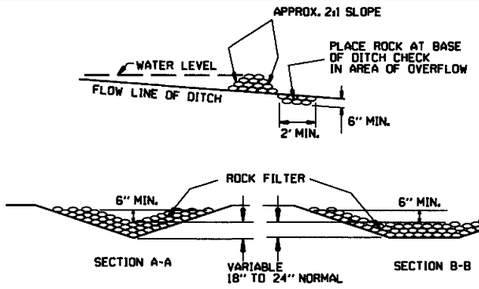
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

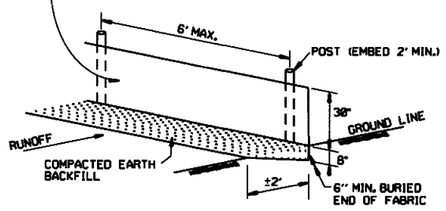


ROCK DITCH CHECK (E-6)

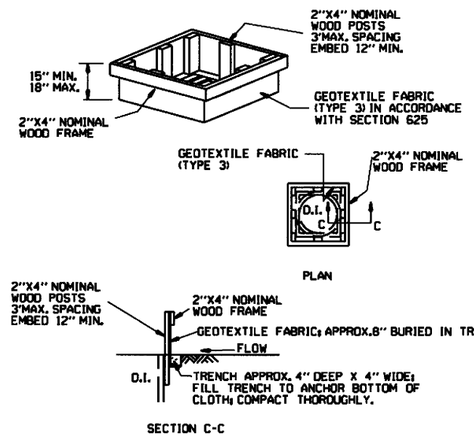
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

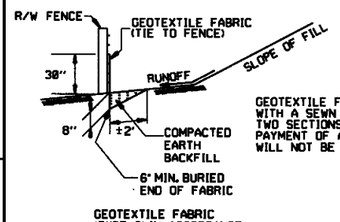
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



SILT FENCE (E-11)

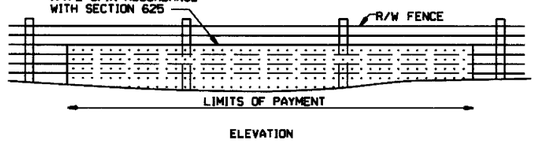


DROP INLET SILT FENCE (E-7)



GENERAL NOTES

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



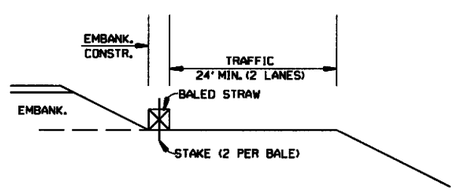
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

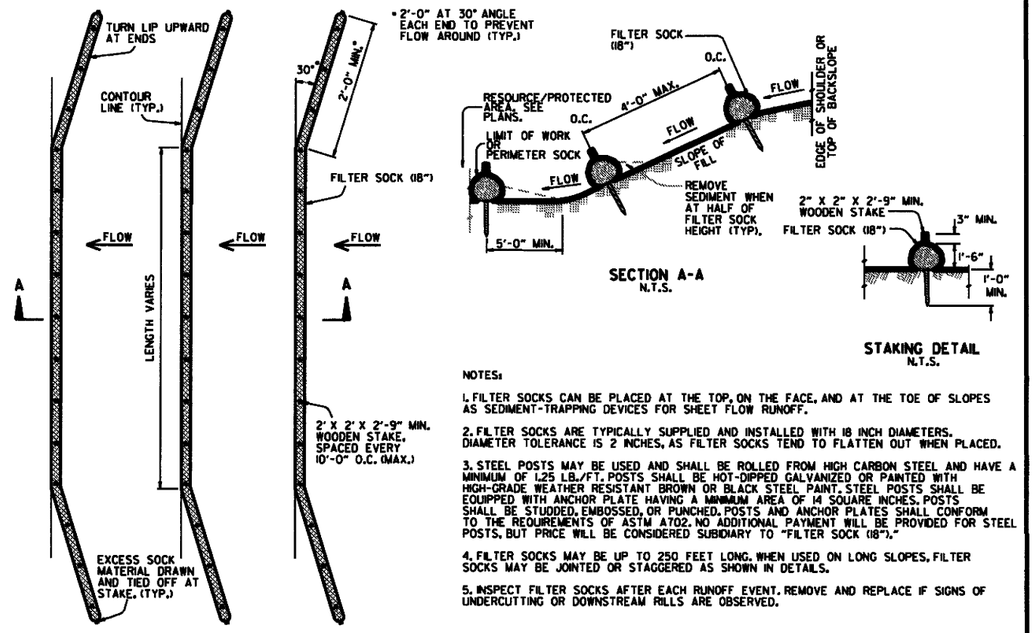
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

2. NO GAPS SHALL BE LEFT BETWEEN BALES.

3. BALED STRAW FILTER BARRIERS COMPLETED AND ACCEPTED WILL BE MEASURED BY THE BALE IN PLACE AS AUTHORIZED BY THE ENGINEER AND WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER BALE FOR BALED STRAW DITCH CHECKS.



BALED STRAW FILTER BARRIER (E-2)



NOTES:

1. FILTER SOCKS CAN BE PLACED AT THE TOP, ON THE FACE, AND AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES FOR SHEET FLOW RUNOFF.

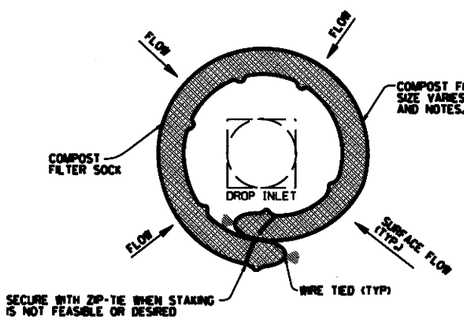
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES, AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR STEEL POSTS, BUT PRICE WILL BE CONSIDERED SUBIDIARY TO "FILTER SOCK (18")."

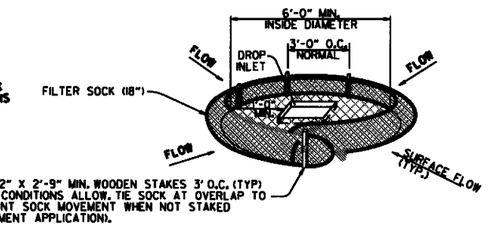
4. FILTER SOCKS MAY BE UP TO 250 FEET LONG, WHEN USED ON LONG SLOPES. FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)



DROP INLET PLAN VIEW
N.T.S.



DROP INLET PERSPECTIVE VIEW
N.T.S.

NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

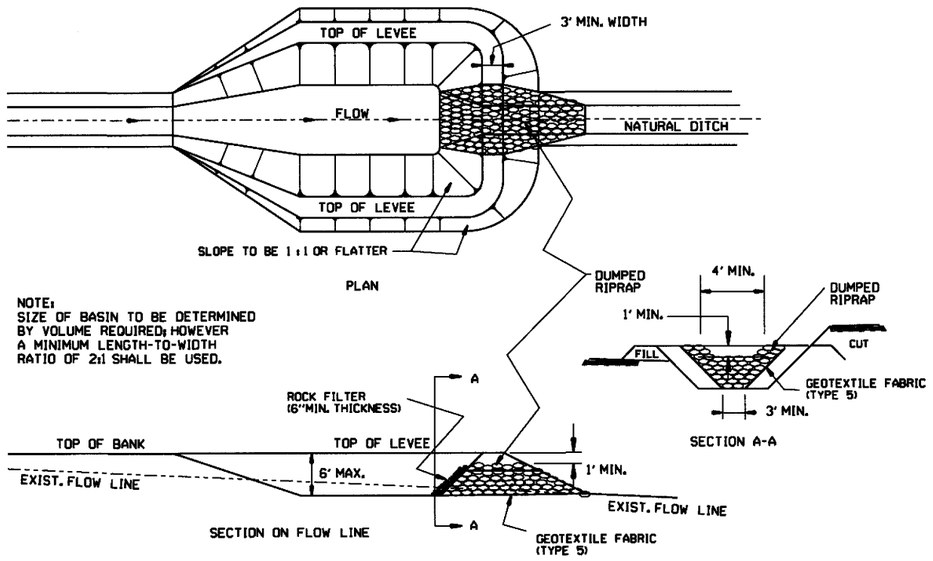
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 13" BURIED END OF FABRIC	
06-02-94	REVISED E-1,4,7 & 11; DELETED E-2 & 3	6-2-94
04-01-93	REDRAWN	
10-01-92	REDRAWN	
08-02-76	ISSUED R.D.M.	298-7-28-76

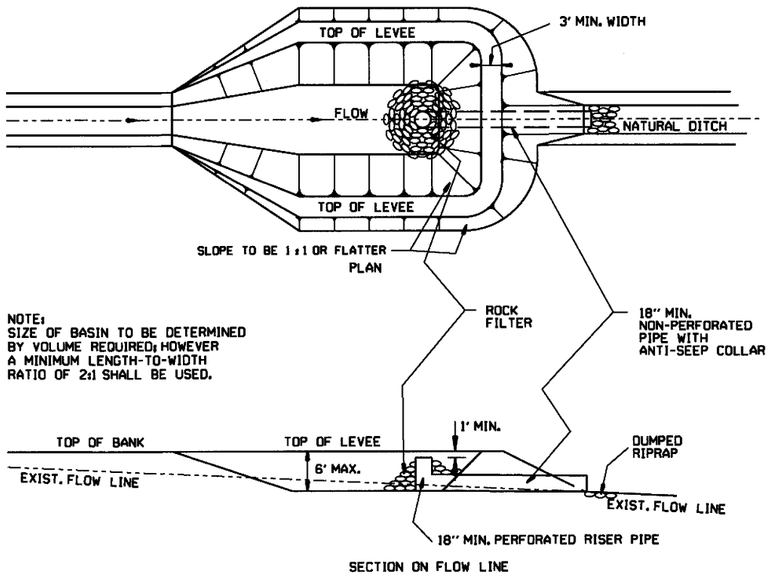
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

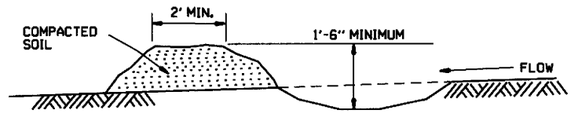
STANDARD DRAWING TEC-1



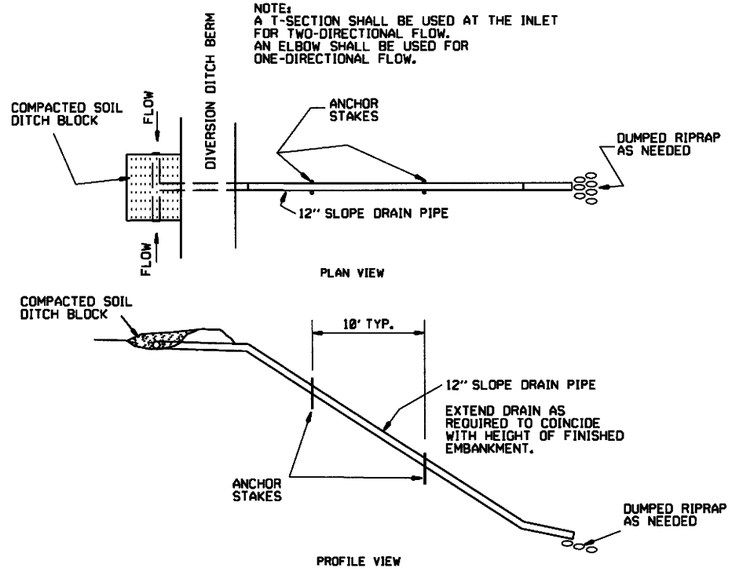
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



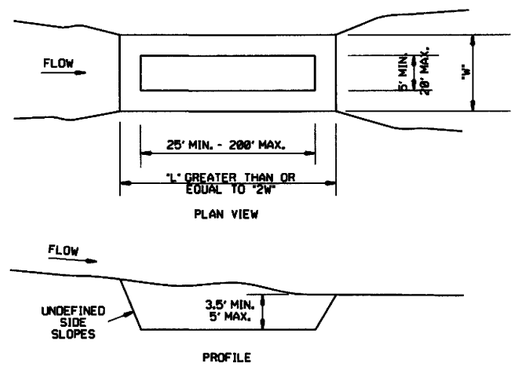
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



DIVERSION DITCH (E-8)



SLOPE DRAIN (E-12)



SEDIMENT BASIN (E-14)

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

ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

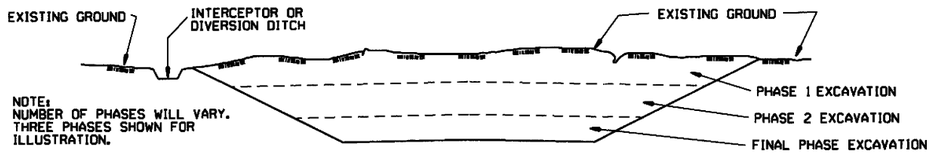
STANDARD DRAWING TEC-2

CLEARING AND GRUBBING

CONSTRUCTION SEQUENCE

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

EXCAVATION



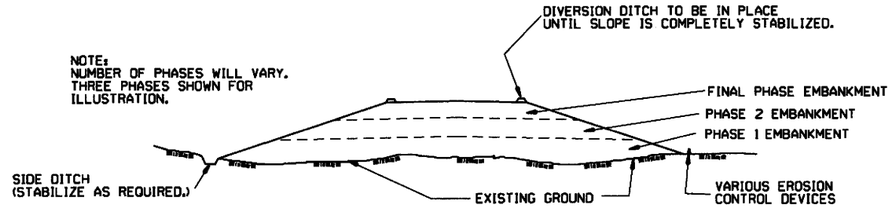
GENERAL NOTE

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

CONSTRUCTION SEQUENCE

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

EMBANKMENT



GENERAL NOTE

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

CONSTRUCTION SEQUENCE

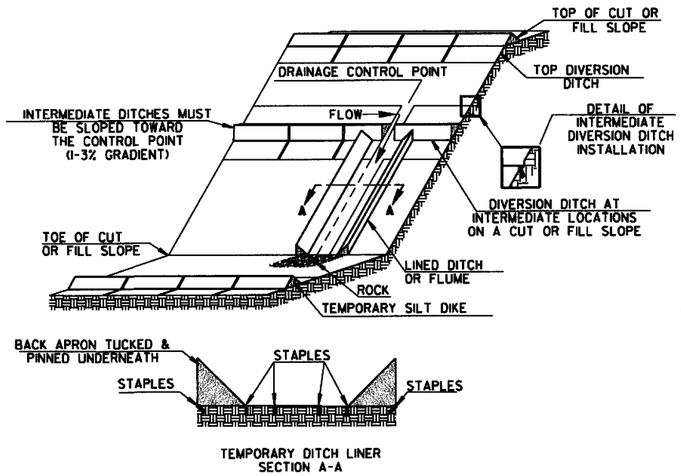
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD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

DATE	REVISION	FILMED
11-03-94	CORRECTED SPELLING	
6-2-94	Drawn & Issued	6-2-94

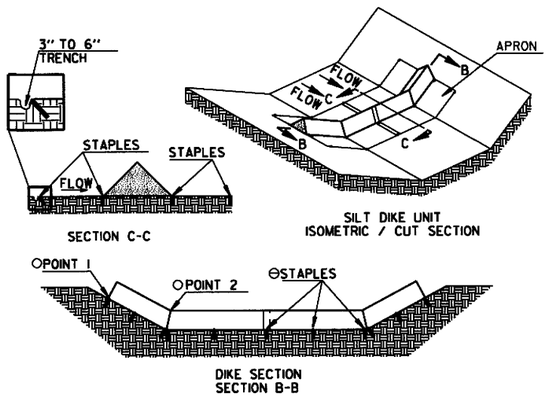
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-3



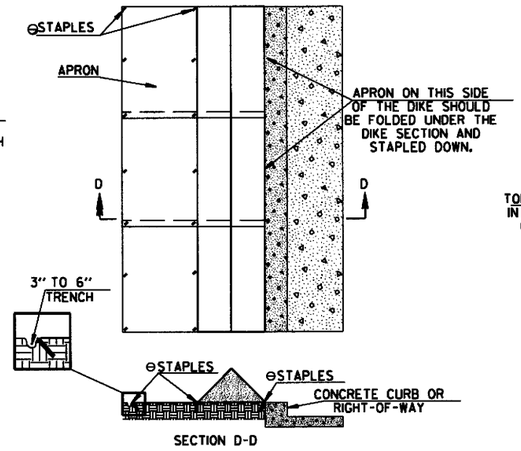
TRIANGULAR SILT DIKE INSTALLATION FOR DIVERSION DITCH AND/OR DITCH LINER



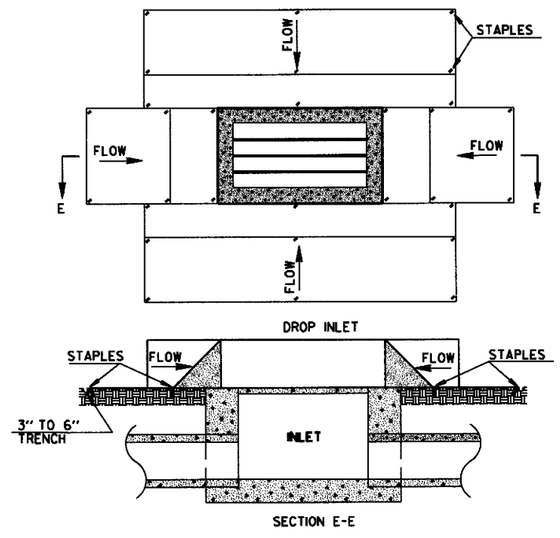
TRIANGULAR SILT DIKE INSTALLATION FOR ROADWAY DITCH OR DRAINAGE DITCH

○ POINT "1" MUST BE HIGHER THAN POINT "2" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

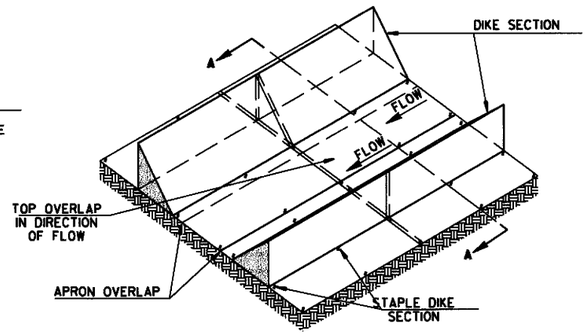
⊖ STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE UNIT AS SHOWN ON THE DIAGRAM.



TRIANGULAR SILT DIKE INSTALLATION FOR CONTINUOUS BARRIER



TRIANGULAR SILT DIKE INSTALLATION FOR DROP INLETS



TRIANGULAR SILT DIKE INSTALLATION FOR TEMPORARY DITCH LINER

GENERAL NOTES

1. THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, AND MAINTAINING THE TRIANGULAR SILT DIKE. THE DIKES SHALL BE USED AS A CONTINUOUS LINE BARRIER AT THE TOE OF SLOPE OR ACROSS THE ROADWAY DITCH TO CONTAIN SEDIMENT AND MINIMIZE EROSION, OR AS DIRECTED BY THE ENGINEER. THESE DIKES SHALL BE INSTALLED AND LOCATED AS SOON AS CONSTRUCTION WILL ALLOW OR AS DIRECTED BY THE ENGINEER.

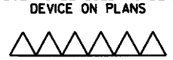
2. TRIANGULAR SILT DIKE SHALL BE TRIANGULAR SHAPED HAVING A HEIGHT OF AT LEAST 8" TO 10" IN THE CENTER WITH EQUAL SIDES AND A 16" TO 20" BASE. THE TRIANGULAR SHAPED INNER MATERIAL SHALL BE URETHANE FOAM. THE OUTER COVER SHALL BE A WOVEN GEOTEXTILE FABRIC PLACED AROUND THE INNER MATERIAL & ALLOWED TO EXTEND BEYOND BOTH SIDES OF THE TRIANGLE 24" TO 36". THIS FABRIC SHOULD BE MILDEW RESISTANT, ROT-PROOF AND RESISTANT TO HEAT AND ULTRAVIOLET RADIATION MEETING REQUIREMENTS FOR SEDIMENT CONTROL IN AASHTO M288. THE DIKES SHALL BE ATTACHED TO THE GROUND WITH WIRE STAPLES. THE STAPLES SHALL BE NO. 11 GAUGE WIRE AND BE AT LEAST 6" TO 8" LONG. STAPLES SHALL BE PLACED AS SHOWN ON THESE DETAILS.

   THE CONTRACTOR SHALL INSPECT ALL DIKES AFTER EACH RAINFALL EVENT OF AT LEAST 0.5" OR GREATER. ANY DEFICIENCIES OR DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR. ACCUMULATED SILT OR DEBRIS SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. IF THE DIKES ARE DAMAGED OR INADVERTENTLY MOVED DURING THE SILT REMOVAL PROCESS, THE CONTRACTOR SHALL IMMEDIATELY REPLACE AFTER DAMAGE OCCURS.

3. ACCEPTED TRIANGULAR SILT DIKE, MEASURED AS PROVIDED ABOVE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR TRIANGULAR SILT DIKE. PRICE BID WILL INCLUDE THE COST OF FURNISHING THE DIKES, INSTALLING, MAINTAINING AND REMOVAL WHEN DIRECTED BY THE ENGINEER.

SYMBOLOGY

SYMBOL TO BE USED TO DENOTE DEVICE ON PLANS



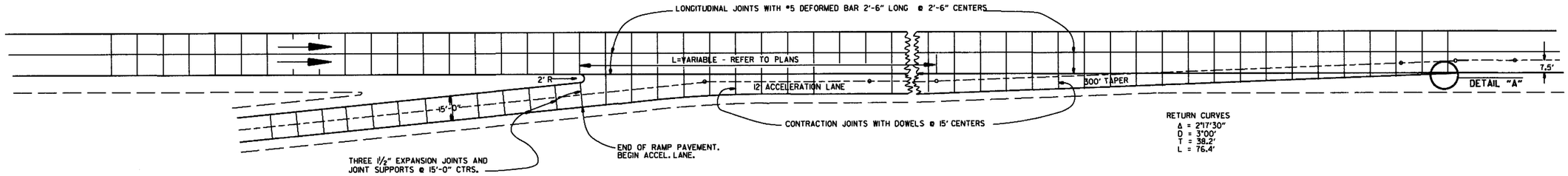
NOTE: SILT DIKE SHOULD ONLY BE USED FOR DROP INLETS IN SUMP LOCATIONS.

DATE	REVISION	FILMED
7-26-12	REVISED GENERAL NOTE 2.	
12-15-11	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

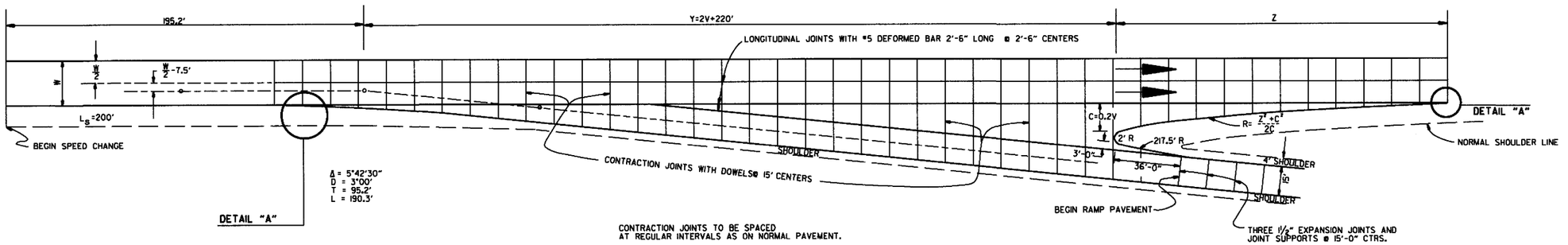
TEMPORARY EROSION CONTROL DEVICES

STANDARD DRAWING TEC-4



ENTRANCE RAMP

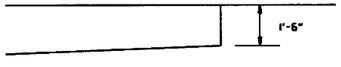
NOTE: JOINT SPACING ON THE MAIN LANES SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO THESE JOINT LAYOUTS. THE MAIN LANE JOINT SPACING MAY BE REDUCED TO A 12' MINIMUM.



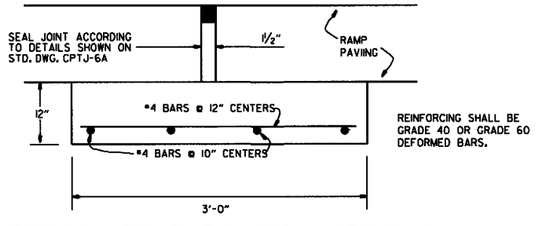
EXIT RAMP

EXIT RAMP

DESIGN SPEED V	X Y	NOSE OFFSET C	LENGTH NOSE TAPER Z	RETURN RADIUS R	ADDITIONAL SURFACING SQ. YDS.
40	300.0	8.0	96.0	580.0	602.43
50	320.0	10.0	120.0	725.0	687.29
60	340.0	12.0	168.0	1182.0	790.55
70	360.0	14.0	210.0	1582.0	902.27



DETAIL "A"



DETAIL OF EXPANSION JOINT & JOINT SUPPORT

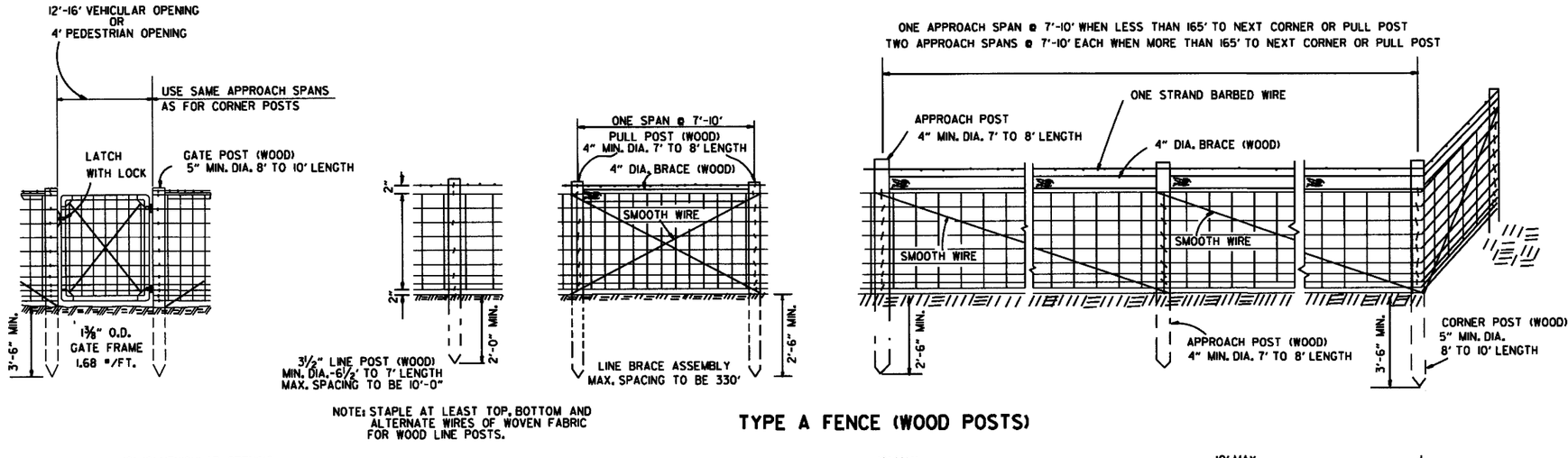
NOTE: THE EXPANSION JOINTS SHALL BE MEASURED AND PAID FOR AS P.C.C. PAVEMENT (RAMP THICKNESS). WHEN RAMP PAVING IS ASPHALT, EXPANSION JOINT IS NOT REQUIRED.
THE JOINT SUPPORT MAY BE CONSTRUCTED WITH CLASS "A", "S", OR PAVING CONCRETE. PAYMENT FOR THE JOINT SUPPORT SHALL BE FOR THE CONTRACT UNIT PRICE BID FOR THE CLASS OF CONCRETE USED. ALL OTHER WORK AND MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE JOINT SUPPORT SHALL BE INCLUDED IN THE PRICE BID FOR THE ABOVE ITEMS.

DATE	REVISION	DATE FILM'D
8-22-02	DELETED NOTE	
11-16-01	CORRECTED SPELLING ON ENTRANCE RAMP NOTE	
5-13-99	ADDED, EDITED AND DELETED NOTES	
11-03-94	ADDED NOTE RE: REINF. BARS	
10-1-92	ADDED DETAIL A & OTHER MINOR CHANGES	10-1-92
1-25-90	REVISED EXPANSION JOINT	1-25-90
7-15-88	CONFORM'D TO 1988 SPECIFICATIONS	55C-7-15-88
3-2-81	ISSUED	511-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

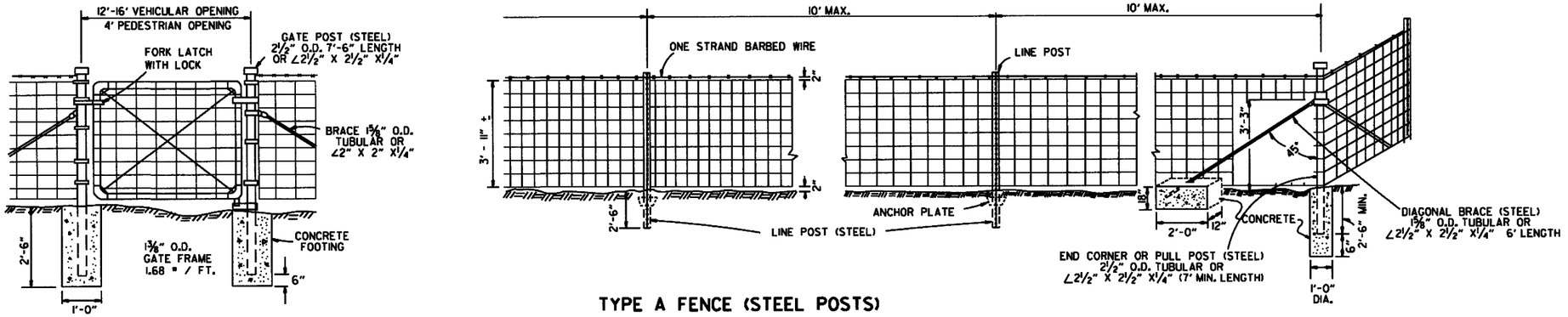
DETAILS OF STANDARD TURNOUT FOR ENTRANCE & EXIT RAMPS (NON-REINFORCED)

STANDARD DRAWING TR-1A

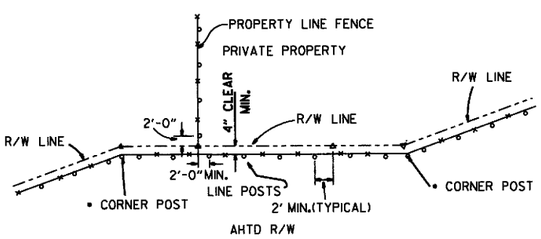


NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)



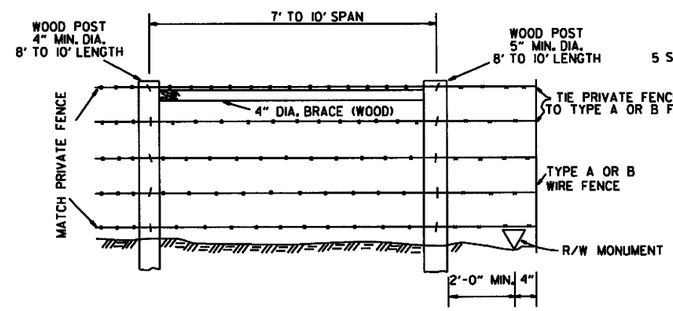
TYPE A FENCE (STEEL POSTS)



•NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

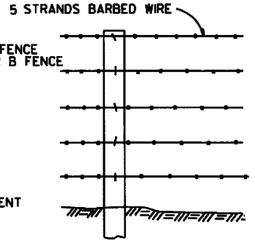
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



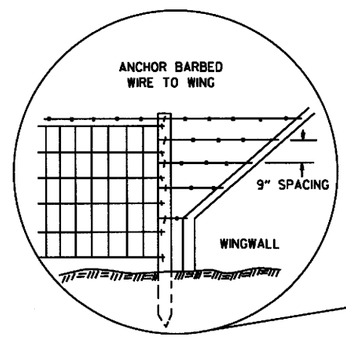
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

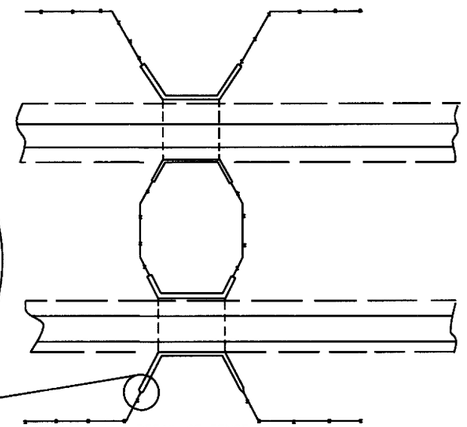
PRIVATE FENCE TERMINAL INSTALLATION



SPACING AND SIZE OF POSTS FOR TYPE B FENCE SHALL BE THE SAME AS TYPE A FENCE.

TYPE B FENCE





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

GENERAL NOTES:

STEEL LINE POSTS SHALL BE GALVANIZED, 7 FT. IN LENGTH.

TUBULAR END, CORNER, PULL, OR DIAGONAL BRACES MUST CONFORM TO THE DIMENSIONS AND WEIGHTS SPECIFIED ON STANDARD DRAWING WF-3 (CHAIN LINK).

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

GATE HINGES AND LATCHES WITH LOCKS TO BE OF A TYPE APPROVED BY THE ENGINEER. DRIVEWAY GATES, EITHER SINGLE 12' OR 16' OR DOUBLE 6' TO 8' OPENINGS 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 BY MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON THE 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 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 SUFFIEICNT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO THE BRIDGE ABUTMENTS OR CULVERT WINGWALLS.

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

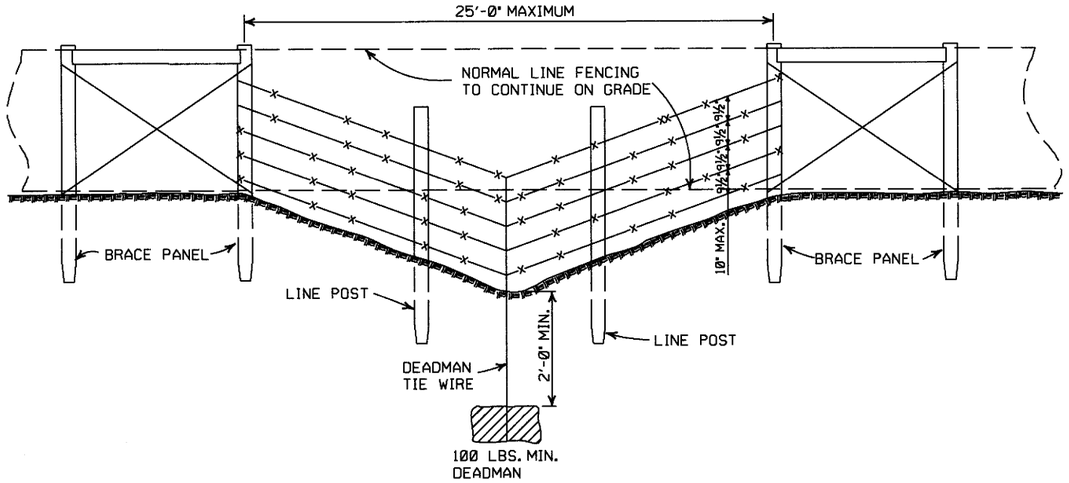
SPLICE FOR BARBED WIRE BETWEEN PULL POST ASSEMBLY SHALL BE BY THE "EYE METHOD": AS DESCRIBED AS FOLLOWS: THE ENDS OF THE BARBED WIRE SHALL BE BENT TO FORM A LOOP. THE LOOPS SHALL BE CONNECTED. AFTER THE LOOPS ARE CONNECTED THE ENDS OF THE WIRE SHALL BE WRAPPED AROUND THE PROJECTING WIRE A MINIMUM OF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

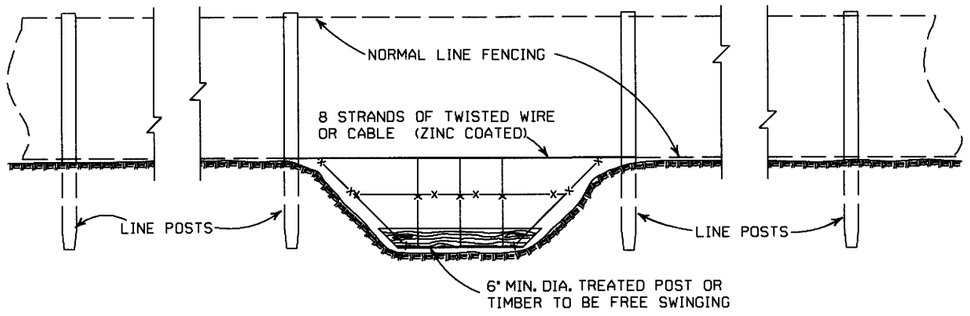
DATE	REVISION	DATE FILMED
8-22-02	REVISED GENERAL NOTES	
10-18-96	REVISED ASTM REF. TO AASHTO	
11-22-95	REVISED R-O-W LOCATION DETAIL	
6-2-94	ADDED CORNER POST NOTE	6-2-94
8-5-93	REVISED R-O-W LOCATION DETAIL	8-5-93
10-1-92	ADDED STAPLE NOTE	
8-2-90	REV'D PULL POST LENGTH	
11-30-89	DELETED CLASS CONC.	
7-15-88	ADDED SPLICE NOTES	
7-15-88	ADDED HEIGHT DIMENSION	
4-3-87	REVISED VARIOUS NOTES	
	AND GENERAL NOTES	
11-1-84	MAX. POST SPACING	
1-4-83	MIN. DIA. LINE POST	
10-2-72	REVISED & REDRAWN	

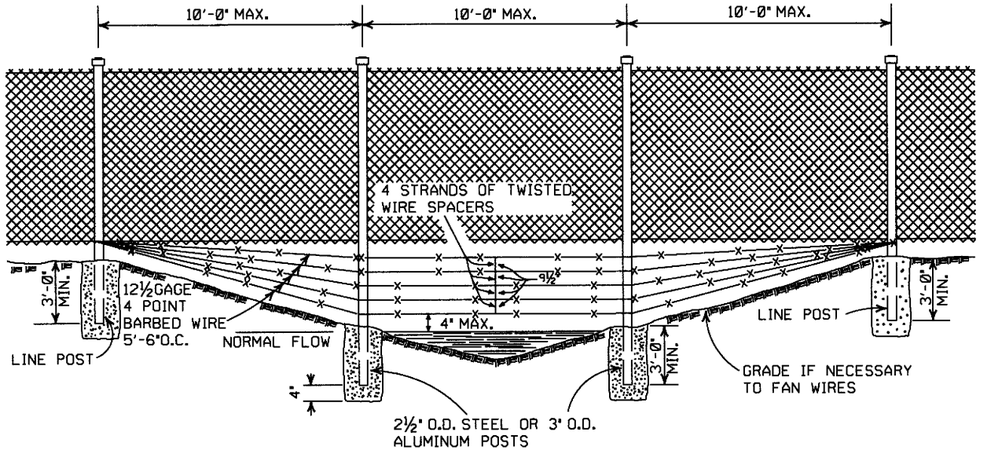
ARKANSAS STATE HIGHWAY COMMISSION

WIRE FENCE
TYPE A AND B

STANDARD DRAWING WF-1







GENERAL NOTES:

THESE INSTALLATIONS TO BE USED WHERE NORMAL FENCING INSTALLATION WOULD CAUSE THE COLLECTING OF DRIFT IN THE CHANNEL OR THE DEPRESSION WILL NOT PERMIT NORMAL INSTALLATION. INSTALLATIONS WILL BE MADE ONLY WHERE DIRECTED BY THE ENGINEER.

WHEN A FENCE LINE APPROACHES A DITCH, GULLY OR DEPRESSION, THE LAST POST ON LEVEL GROUND SHALL BE PLACED CLOSE ENOUGH TO THE EDGE OF THE DROP OFF THAT THE FENCE MAY BE STRUNG TO THE POST IN THE DEPRESSION WITHOUT TOUCHING THE GROUND.

IN TERRAIN OF SUCH EXTREME IRREGULARITY THAT MINOR GRADING WILL NOT BE FEASIBLE, THE NORMAL FENCE SHALL CONTINUE ON GRADE AND THE GULLIES OR DEPRESSIONS TREATED BY AUXILIARY FENCES AS SHOWN.

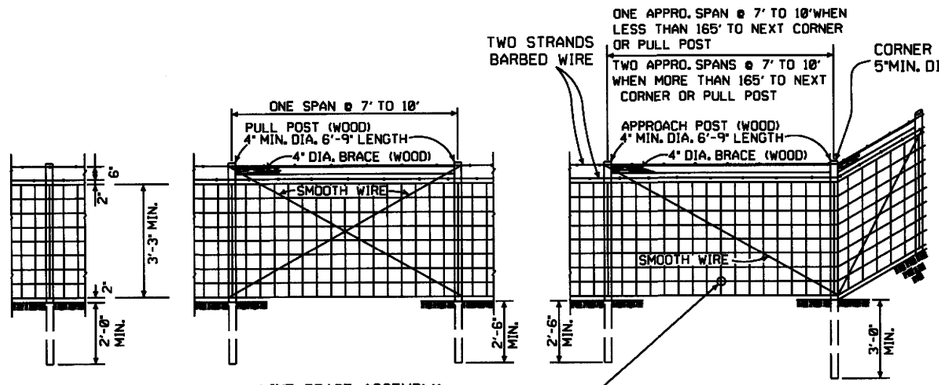
PAYMENT FOR THE TYPE INSTALLATION USED WILL NOT BE MADE DIRECTLY BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR WIRE FENCE OR CHAIN LINK FENCE.

DATE	REVISION	FILMED
4-20-79	REVISED TOP RAIL & TENSION WIRE	696-4-20-79
10-2-72	REVISED AND REDRAWN	529-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

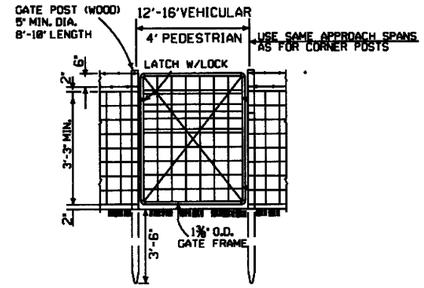
WIRE FENCE WATER GAPS

STANDARD DRAWING WF-2



LINE BRACE ASSEMBLY
MAX. SPACING TO BE 330'

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



TYPE C FENCE (WOOD POSTS)

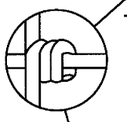
GENERAL NOTES:

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

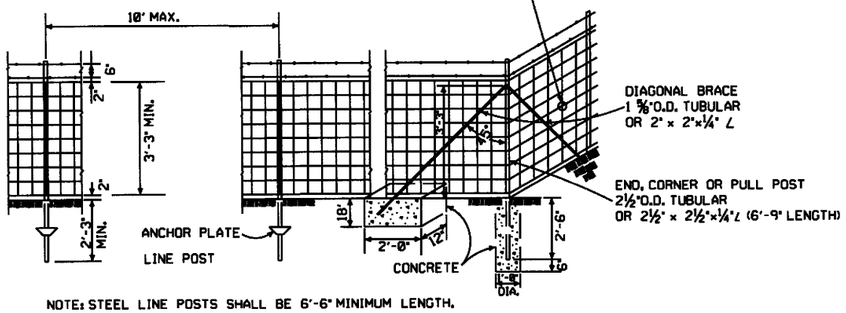
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.

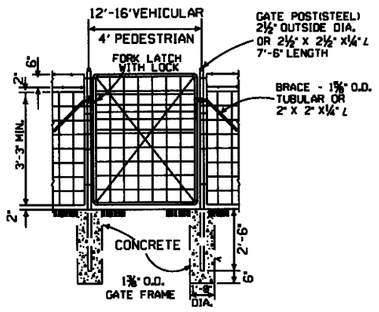
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED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

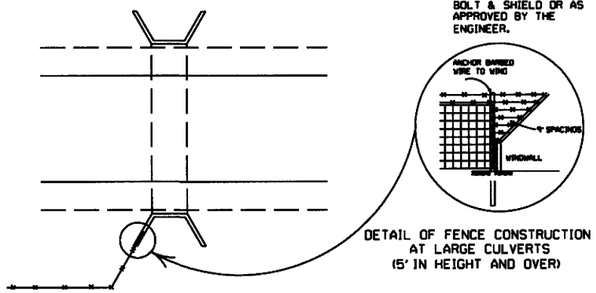
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF THE BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED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



OTHER APPROVED TIES WILL BE PERMITTED







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.

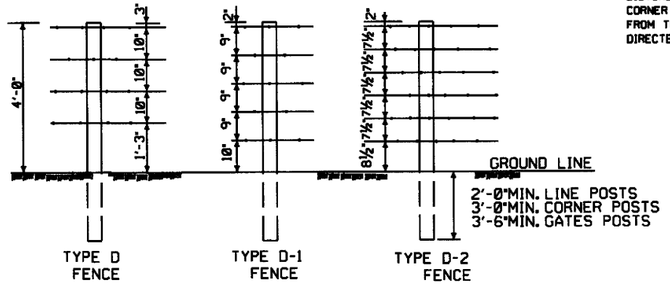
SPLICE FOR WOVEN WIRE BETWEEN PULL POST SHALL BE BY THE "WESTERN UNION METHOD" AS DESCRIBED AS FOLLOWS: THE VERTICAL WIRES FOR EACH END OF THE FENCE FABRIC SHALL BE PLACED SIDE BY SIDE AND THE PROJECTING HORIZONTAL WIRES SHALL BE WRAPPED A MINIMUM OF 4 TIMES AROUND THE HORIZONTAL WIRES OF THE FIRST WEB.

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

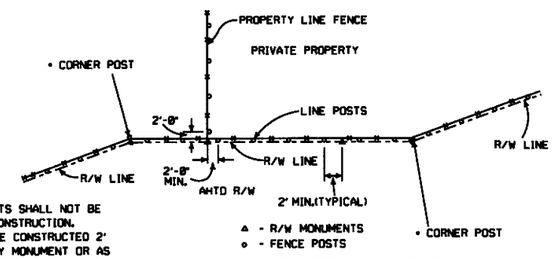
NOTE: STEEL LINE POSTS SHALL BE 6'-6" MINIMUM LENGTH.

TYPE C FENCE (STEEL POSTS)

4 STRANDS BARBED WIRE (D)
5 STRANDS BARBED WIRE (D-1)
6 STRANDS BARBED WIRE (D-2)

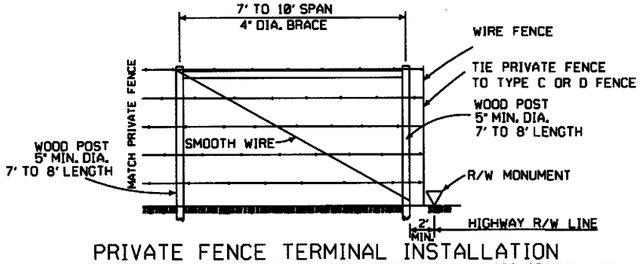


NOTE: SPACING AND SIZE (EXCEPT LENGTH) OF POSTS, APPROACH SPANS, PULL POST ASSEMBLIES, AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES ON WOOD POSTS AND APPROVED FASTENERS ON STEEL POSTS.

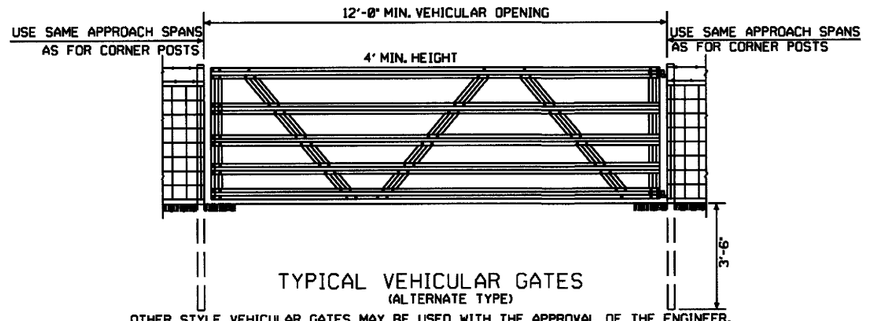


• NOTE: RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY FENCE CONSTRUCTION. CORNER POSTS SHALL BE CONSTRUCTED 2' FROM THE RIGHT-OF-WAY MONUMENT OR AS DIRECTED BY THE ENGINEER.

RIGHT-OF-WAY FENCE LOCATION



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



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

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					

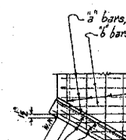
BAR LIST FOR BARREL SECTION 60'-0" IN LENGTH - TWO 30° SKEWED ENDS.

DEPTH OF COVER D	CLEAR SPANS S	CLEAR HEIGHT H	"a" bars STRAIGHT In Top and Bottom Slabs of Barrel. SPACING	"a" bars NO. REQ'D	"a" bars LENGTH	"a₁" bars STRAIGHT In Top and Bottom Slab of Barrel- (Two of each Length) SPACING	"a₁" bars NO. REQ'D	"a₁" bars LENGTH	"b" bars BENT - See Diagrams below In Top and Bottom Slabs of Barrel- Alternate with "a" bars. SIZE	"b" bars SPACING	"b" bars NO. REQ'D	"b" bars LENGTH	"b₁" bars In Top and Bottom Slabs of Barrel - one end hooked (Sum of each Length) Alternate with "a" bars. SIZE	"b₁" bars SPACING	"b₁" bars NO. REQ'D	"b₁" bars LENGTH	"j" bars STRAIGHT Longitudinal in Top Slab of Barrel. SIZE	"j" bars SPACING	"j" bars NO. REQ'D	"j" bars LENGTH	"d" bars STRAIGHT Longitudinal in Sidewalls. SIZE	"d" bars SPACING	"d" bars NO. REQ'D	"d" bars LENGTH	"e" bars STRAIGHT Longitudinal in Bottom Slab of Barrel. SIZE	"e" bars SPACING	"e" bars NO. REQ'D	"e" bars LENGTH	"f" bars STRAIGHT Verticals in Sidewalls. SIZE	"f" bars SPACING	"f" bars NO. REQ'D	"f" bars LENGTH	K_1 bars STRAIGHT In Bottom of Headwall. SIZE	K_1 bars NO. REQ'D	K_1 bars LENGTH	K_2 bars STRAIGHT In Top of Headwall and Apron (2 Each) SIZE	K_2 bars NO. REQ'D	K_2 bars LENGTH
D	S	H	SIZE	SPACING	NO. REQ'D	LENGTH	SPACING	NO. REQ'D	LENGTH	X	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	SPACING	NO. REQ'D	LENGTH	SIZE	NO. REQ'D	LENGTH	SIZE	NO. REQ'D	LENGTH
0'-0" TO 5'-0" MAXIMUM	1 @ 4'	2'	#5	13"	108	4'-9"																									#4	12"	120	2'-11"	#5	6	5'-6"	#5	8	6'-8"
		3'			108	6'-9"																											120	3'-11"		6	"		8	"
		4'			108	6'-9"	#5	13"	108	5'-10"	"																						120	4'-11"		6	"		8	"
		5'			108	6'-9"			108	5'-10"	"																						120	5'-11"		6	"		8	"
		6'			108	6'-11"			108	6'-0"	3'-1"																						120	6'-11"		6	5'-8"		8	6'-10"
	1 @ 5'	3'			104	6'-3"			104	6'-10"	5'-8"																						120	5'-0"		6	"		8	7'-10"
		4'			104	6'-3"			104	6'-10"	"																						120	5'-0"		6	"		8	"
		5'	#6	18"	104	6'-10"	#6	13"	104	6'-10"	4'-10"	#7	7																			120	6'-0"	#6	6	"	#8	8	8'-1"
		6'			106	7'-1"			106	7'-1"	5'-10"																						120	7'-0"		6	6'-10"		8	8'-0"
		7'			106	7'-1"			106	7'-1"	5'-11"																						120	8'-0"		6	6'-11"		8	8'-1"
	1 @ 6'	5'			114	7'-10"	6'-8"		114	7'-10"	6'-8"																						120	4'-1"		6	7'-0"		8	9'-0"
		6'			116	7'-10"	"		116	7'-10"	"																						120	5'-1"		6	"		8	"
		7'			116	7'-10"	"		116	7'-10"	"																						120	6'-1"		6	"		8	"
		8'			116	8'-0"	"		116	8'-0"	6'-10"																						120	7'-1"		6	8'-0"		8	9'-0"
	1 @ 7'	5'	#6	12"	114	8'-5"	3'-6"		114	8'-5"	3'-6"																						120	5'-0"		6	8'-1"		8	9'-0"
		6'			116	8'-5"	"		116	8'-5"	"																						120	6'-0"		6	"		8	"
		7'			116	8'-5"	"		116	8'-5"	"																						120	7'-0"		6	"		8	"
		8'			116	8'-5"	"		116	8'-5"	6'-10"																						120	8'-0"		6	8'-2"		8	9'-0"
	1 @ 8'	6'			122	8'-10"	7'-8"		122	8'-10"	7'-8"																						120	5'-2"		6	9'-0"		8	10'-2"
		7'			122	8'-10"	"		122	8'-10"	"																						120	6'-2"		6	"		8	"
		8'			122	9'-1"	7'-11"		122	9'-1"	7'-11"																						120	7'-2"		6	"		8	"
		9'			122	9'-2"	8'-0"		122	9'-2"	8'-0"																						120	8'-2"		6	"		8	"
	1 @ 9'	6'	#6	11"	122	9'-5"	7'-10"		122	9'-5"	7'-10"																						120	5'-3"		6	9'-0"		8	10'-2"
		7'			122	9'-1"	7'-11"		122	9'-1"	7'-11"																						120	6'-3"		6	"		8	"
		8'			124	9'-8"	8'-0"		124	9'-8"	8'-0"																						120	7'-3"		6	"		8	"
		9'			124	9'-8"	"		124	9'-8"	"																						120	8'-3"		6	"		8	"
	1 @ 10'	7'	#6	12"	124	10'-0"	8'-2"		124	10'-0"	8'-2"																						120	6'-4"		6	9'-0"		8	10'-2"
		8'			124	10'-0"	"		124	10'-0"	"																						120	7'-4"		6	"		8	"
		9'			124	10'-0"	"		124	10'-0"	"																						120	8'-4"		6	"		8	"
		10'			124	10'-0"	"		124	10'-0"	"																						120	9'-4"		6	"		8	"
	1 @ 11'	8'	#6	11"	126	10'-3"	8'-4"		126	10'-3"	8'-4"																						120	7'-5"		6	9'-0"		8	10'-2"
		9'			126	10'-3"	"		126	10'-3"	"																						120	8'-5"		6	"		8	"
		10'			126	10'-3"	"		126	10'-3"	"																						120	9'-5"		6	"		8	"
		11'			126	10'-3"	"		126	10'-3"	"																						120	10'-5"		6	"		8	"
	1 @ 12'	9'	#6	11"	128	10'-6"	8'-6"		128	10'-6"	8'-6"																						120	8'-6"		6	9'-0"		8	10'-2"
		10'			128	10'-6"	"		128	10'-6"	"																						120	9'-6"		6	"		8	"
		11'			128	10'-6"	"		128	10'-6"	"																						120	10'-6"		6	"		8	"
		12'			128	10'-6"	"		128	10'-6"	"																						120	11'-6"		6	"		8	"

T These bars are in the skewed portion of barrel only. The length of "a" bars and overall length X of "b" bars vary by 1'-11" for 18" spacing, 1'-9" for 12" spacing and 1'-7" for 11" spacing.

BAR SIZE	PIN DIAM.	K	ADD FOR HOOKS
#6	3"	5"	1'-2"
#7	$3\frac{5}{8}$"	$5\frac{3}{8}$"	1'-6"
#6	3"	5"	0'-7"
#7	$3\frac{5}{8}$"	$5\frac{3}{8}$"	0'-8"

BENDING DIAGRAMS FOR BARS "b" & "b₁"

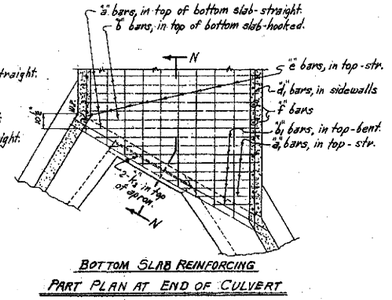


NOTE:- Dimensions are to centers of bars. ("b" and "b₁")

DOWEL BARS FOR TWO HEADWALLS

SPAN	SIZE	SPACING	NO. REQ'D	LENGTH	X	Dowel bars "f" in Two Headwalls.
4'	#6	12"c	12	2'-6"	1'-9"	
5'	#6	12"c	16	2'-7"	1'-5½"	
6'	#6	12"c	18	2'-8"	1'-0"	
7'	#6	12"c	20	2'-9"	1'-6½"	
8'	#6	12"c	22	2'-11"	1'-5½"	
9'	#6	12"c	26	3'-0"	1'-6"	
10'	#6	12"c	28	3'-1"	1'-6½"	
11'	#6	12"c	30	3'-2"	1'-7"	
12'	#6	12"c	32	3'-3"	1'-7½"	

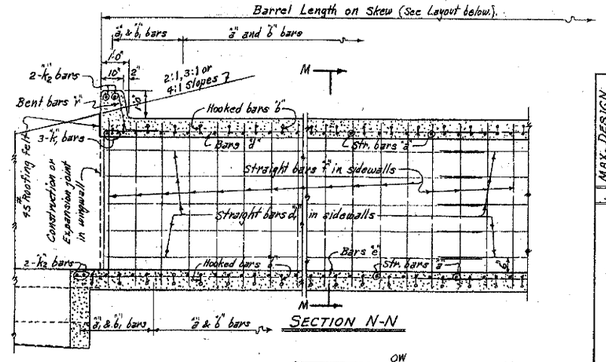
TOP SLAB REINFORCING
PART PLAN AT END OF CULVERT



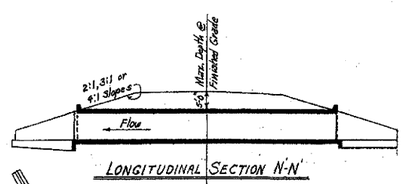
BOTTOM SLAB REINFORCING
PART PLAN AT END OF CULVERT

Checked by:- R.M.S. 5-8-63
Checked by:-
Checked by:-
Designed by:- W.C.H. 1-23-63.
Drawn by:- W.C.H. 2-24-64.
Quantities by:- W.C.H. 4-2-64

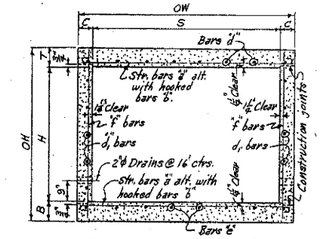
NOTE:- For Details of Standard Wings and bar lists, see Drawing No. W-X302-1 or W-X302-2; W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.



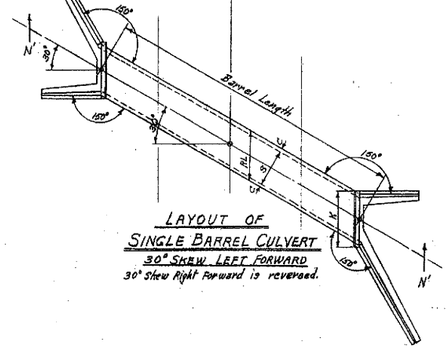
SECTION N-N



LONGITUDINAL SECTION N-N'



TYPICAL SECTION M-M



LAYOUT OF
SINGLE BARREL CULVERT
30° SKEW LEFT FORWARD
30° Skew Right Forward is reversed.

DESIGN LIVE LOAD
H20-S16 LOADING A.A.S.H.O. 1961
AND
SPECIAL MILITARY LOADING
Two 24,000 Lb Axles @ 4'-0" ctrs

UNIT STRESSES:-
Class S Concrete (n=10) 1200 #/s"
Reinforcing Steel 20,000 #/s"

NOTE:- This drawing to be used in conjunction with Standard Wing Drawing Nos. W-X302-1 or W-X302-2, W-X303-1 or W-X303-2, and W-X304-1 or W-X304-2. Also W-X30.

GENERAL NOTES

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.
REINFORCING STEEL:- Reinforcing to be deformed bars of intermediate or hard grade.
BAR LAP:- In computing the quantities of steel from the tables add one lap for each additional 33'-0" length of barrel over 32'-0". Lap longitudinal bars 30 diameters min.
CONSTRUCTION JOINTS:- Construction joints between wingwalls, sidewalls and slabs shall be only where shown on plans.
SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

MAX. DESIGN DEPTH OF COVER	BARREL DIMENSIONS CLEAR SPANS	CLEAR HEIGHT	SQ. FT. OPENING	OVERALL WIDTH	THICKNESS OF TOP SLAB	THICKNESS OF SIDEWALLS OR BOTTOM SLAB	THICKNESS OF BOTTOM SLAB	OVERALL HEIGHT	ROADWAY LENGTH	LENGTH OF HEADWALLS	QUANTITIES REINFORCING STEEL CLASS S CONC. PER LIN. FT. OF BARREL	TOTAL FOR 60'-0" LENGTH OF BARREL	PER LIN. FT. OF BARREL	ADDITIONAL PER LAP
D	S	H	A	OW	T	C	B	OH	RL	K	Cu.Yd.	LB.	LB.	LB.
5'-0"	1 @ 4'	2'	8	5'-0"	6"			3'-1½"	5'-9½"	6'-11½"	0.282	2 622	41.99	17.95
		3'	12	5'-0"	6"			4'-1½"	"	"	0.319	2784	44.16	18.62
		4'	16	5'-0"	7"	6½"		5'-1½"	"	"	0.356	2946	46.83	21.29
		5'	20	5'-0"	7"			6'-1½"	"	"	0.394	3107	49.50	22.96
		6'	24	5'-2"	7"			7'-1½"	5'-11⅝"	7'-1½"	0.494	3335	52.96	26.63
	1 @ 5'	3'	15	6'-0"	6"			4'-2½"	6'-11⅝"	8'-1"	0.380	3541	55.55	22.19
		4'	20	6'-0"	6"			5'-2½"	"	"	0.417	3703	58.23	23.86
		5'	25	6'-0"	6"	7"	7½"	6'-2½"	"	"	0.454	3865	60.90	25.53
		6'	30	6'-2"	7"			7'-2½"	7'-1⅝"	8'-3⅝"	0.535	9091	64.49	27.20
		7'	35	6'-3"	7½"			8'-2½"	7'-2⅝"	8'-4⅞"	0.604	4283	67.63	28.87
	1 @ 6'	3'	18	7'-0"	6"			4'-3½"	8'-1"	9'-2⅞"	0.446	4221	66.29	26.76
		4'	24	7'-0"	6"			5'-3½"	"	"	0.493	9363	68.96	26.43
		5'	30	7'-0"	6"	7½"	8"	6'-3½"	"	"	0.520	4595	71.69	28.10
		6'	36	7'-2"	7"			7'-3½"	8'-3⅝"	9'-5¾"	0.602	4772	75.31	29.77
		7'	42	7'-9"	7½"			8'-3½"	8'-4¾"	9'-6¾"	0.671	4966	78.98	31.44
		8'	48	7'-4"	8"			9'-3½"	8'-5⅝"	9'-7¾"	0.746	5870	88.97	33.11
	1 @ 7'	4'	28	8'-0"	6"			5'-5"	9'-2⅝"	10'-4⅝"	0.568	5146	81.32	29.01
		5'	35	8'-0"	6"			6'-5"	"	"	0.605	5307	84.00	30.68
		6'	42	8'-2"	7"	8½"	8½"	7'-5"	9'-5¾"	10'-7"	0.608	5558	87.76	32.35
		7'	49	8'-3"	7½"			8'-5"	9'-6¾"	10'-8¾"	0.767	5755	90.98	34.02
		8'	56	8'-4"	8"			9'-5"	9'-7¾"	10'-9¾"	0.832	6100	96.65	35.69
	1 @ 8'	5'	40	8'-6"	9"			10'-5"	9'-9¾"	10'-11⅝"	0.996	6649	105.59	37.36
		6'	48	9'-2"	7"			6'-5"	10'-0⅝"	11'-1½"	0.676	6114	95.24	33.32
		7'	56	9'-3"	7½"	9½"	9½"	7'-5"	10'-0⅝"	11'-1½"	0.759	6357	99.12	34.99
		8'	64	9'-4"	8"			8'-5"	10'-0⅝"	11'-1½"	0.842	6720	105.05	38.33
	1 @ 9'	6'	48	9'-2"	7"			7'-5"	"	"	0.797	6518	101.79	34.66
		7'	56	9'-3"	7½"			8'-5"	10'-0⅝"	11'-1½"	0.869	6720	105.05	38.33
		8'	64	9'-4"	8"			9'-5"	10'-0⅝"	11'-1½"	0.942	7070	110.81	40.00
		9'	72	9'-6"	9"			10'-5"	10'-1⅝"	12'-1½"	1.057	7627	119.92	41.67
		10'	80	9'-8"	10"			11'-5"	11'-2"	12'-3⅜"	1.184	8043	126.47	43.34
	1 @ 10'	5'	45	10'-2"	7"			6'-8"	11'-8½"	12'-10⅝"	0.894	7356	114.92	37.66
		6'	54	10'-3"	7½"			7'-8"	11'-10"	13'-0"	0.910	7564	118.06	39.23
		7'	63	10'-3"	7½"			8'-8"	"	"	0.957	7725	120.71	40.90
		8'	72	10'-4"	8"	10"	10"	9'-8"	11'-11⅝"	13'-1"	1.033	8081	126.59	42.57
		9'	81	10'-6"	9"			10'-8"	12'-1⅛"	13'-3⅝"	1.148	8625	135.80	44.24
		10'	90	10'-8"	10"			11'-8"	12'-3⅜"	13'-5⅝"	1.274	9068	142.66	45.91
		11'	99	10'-10"	11"			12'-8"	12'-5⅝"	13'-8"	1.416	9526	150.90	47.58
	1 @ 11'	5'	50	11'-2"	7"			6'-9½"	12'-10⅛"	14'-0⅝"	0.957	8359	130.69	40.13
		6'	60	11'-3"	7½"			7'-9½"	12'-11⅝"	14'-1⅝"	1.026	8567	133.99	41.80
		7'	70	11'-3"	7½"			8'-9½"	"	"	1.071	8729	136.66	43.47
		8'	80	11'-4"	8"	10½"	11"	9'-9½"	13'-1"	14'-3"	1.147	9110	142.55	45.14
		9'	90	11'-6"	9"			10'-9½"	13'-3½"	14'-5⅝"	1.263	9634	151.32	46.81
		10'	100	11'-8"	10"			11'-9½"	13'-5⅝"	14'-7¾"	1.391	10,019	158.89	48.98
		11'	110	11'-10"	11"			12'-9½"	13'-8"	14'-10⅛"	1.532	10,597	166.71	50.15
		12'	120	12'-0"	12"			13'-9½"	13'-10⅝"	15'-0⅝"	1.685	11,278	178.67	51.82
	1 @ 12'	6'	66	12'-4"	8"			7'-10½"	14'-0⅝"	15'-2⅝"	1.153	9888	155.14	46.12
		7'	77	12'-4"	8"			8'-10½"	"	"	1.202	10,099	157.83	47.79
		8'	88	12'-5"	8"	11"	11½"	9'-10½"	"	"	1.252	10,364	163.06	49.46
		9'	99	12'-7"	9"			10'-10½"	14'-1⅝"	15'-3⅝"	1.368	10,952	172.60	51.13
		10'	110	12'-8"	10"			11'-10½"	14'-2⅝"	15'-3⅝"	1.497	11,399	179.70	52.80
		11'	121	12'-10"	11"			12'-10½"	14'-3⅝"	15'-4⅞"	1.638	11,927	187.67	54.47
		12'	132	13'-0"	12"			13'-10½"	14'-5"	15'-6"	1.792	12,569	198.19	56.14
	1 @ 10'	6'	72	13'-4"	8"			8'-10"	15'-4⅝"	16'-6½"	1.284	11,081	172.30	48.69
		7'	84	13'-6"	8"			9'-10"	"	"	1.333	11,293	174.87	50.36
		8'	96	13'-6"	8"			10'-10"	"	"	1.383	11,561	180.15	52.03
		9'	108	13'-6"	9"	12½"	12"	11'-10"	15'-7⅝"	16'-9"	1.500	12,162	189.85	53.70
		10'	120	13'-8"	10"			12'-10"	15'-8⅝"	16'-10⅝"	1.630	12,625	197.07	55.37
		11'	132	13'-10"	11"			13'-10"	15'-10⅝"	17'-0⅝"	1.772	13,113	205.16	57.04
		12'	144	14'-0"	12"			14'-10"	16'-4"	17'-6⅜"	1.926	13,795	217.95	58.71

* For remainder of quantities see Std. Wing Drawings listed at left. Total steel quantities listed above include one lap of longitudinal bars.

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

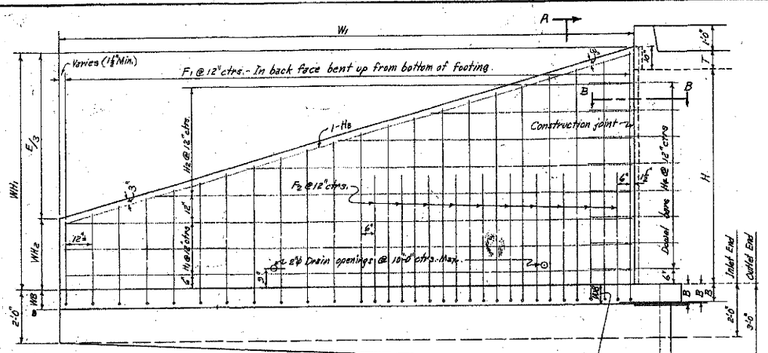
DETAILS OF STANDARD BARREL SECTIONS
FOR
REINFORCED CONCRETE BOX CULVERTS
30° SKEW

4',5',6',7',8',9',10',11' & 12' SPANS SINGLES

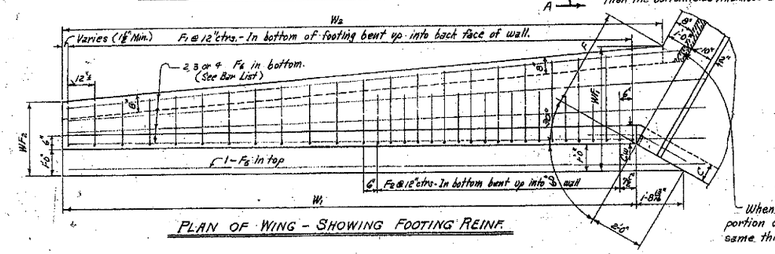
2:1, 3:1 OR 4:1 SLOPES UNDER 5'-0" COVER

STANDARD DRAWING NO. R-130X-0

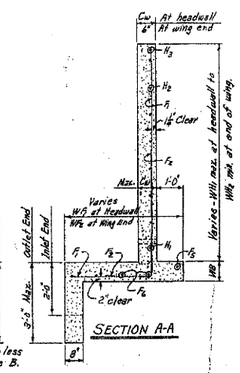
FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



REAR ELEVATION OF WING - SHOWING BACK FACE REINF.

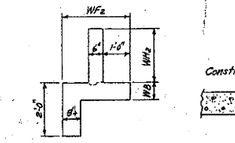


PLAN OF WING - SHOWING FOOTING REINF.

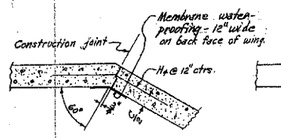


SECTION A-A

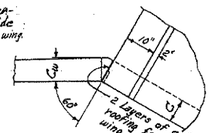
When B is more than WB, the shaded portion of the apron shall be made the same thickness as the barrel base B.



END VIEW OF WING



SECTION B-B THRU CONSTRUCTION JOINT



DETAIL AT TOP OF WING

Note:- Payment for membrane waterproofing and roofing felt to be included in the price bid for Class S Concrete.

WING DIMENSIONS

CLEAR HEIGHT OF BOX	THICKNESS OF WING FOOTING	THICKNESS OF WING = C	WINGWALL HEIGHTS		WIDTHS OF WING FOOTINGS		PERPENDICULAR DIMENSION	LENGTH OF WINGWALLS	INSIDE FOOTING DIMENSION	* QUANTITY PER WING CLASS S CONCRETE	
			AT HEADWALL	AT END OF WING	AT HEADWALL	AT END OF WING	PERPENDICULAR FOOTING DIMENSION	PERPENDICULAR DIST. FROM HEAD. TO END OF WING		INLET END	OUTLET END
H	WB	Cw	WH1	WH2	W5	W3	F	E	W1	W2	CU.YD.	CU.YD.
2'	7"	6"	2'-10"	0'-8"	2'-9"	2'-0"	0'-11⅞"	6'-6"	7'-6"	7'-1⅝"	0.889	0.986
3'	7"	6"	3'-10"	1'-0"	2'-8"	2'-1½"	1'-4⅜"	8'-6"	9'-9⅝"	9'-2⅝"	1.338	1.466
4'	7"	6"	4'-10"	1'-4"	3'-0"	2'-3"	1'-8"	10'-6"	12'-1⅞"	12'-1⅝"	1.868	2.027
5'	7"	6"	5'-10"	1'-8"	3'-6"	2'-4½"	2'-1⅝"	12'-6"	14'-5⅝"	14'-1⅞"	2.478	2.668
		7"	5'-10"	1'-8"	3'-6"	2'-4½"	2'-1⅝"	12'-6"	14'-5⅝"	14'-1⅞"	2.582	2.772
6'	8"	7"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅞"	3.440	3.661
		7⅞"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅝"	3.511	3.732
		8"	6'-10"	2'-0"	3'-8"	2'-6"	2'-6½"	14'-6"	16'-9"	17'-1⅝"	3.582	3.803
7'	8⅝"	7⅝"	7'-10"	2'-8"	4'-2"	2'-7½"	3'-1¼"	16'-6"	19'-0⅝"	19'-8⅜"	4.505	4.758
		8"	7'-10"	2'-8"	4'-2"	2'-7½"	3'-1¼"	16'-6"	19'-0⅝"	19'-8⅜"	4.597	4.851
8'	9"	8"	8'-10"	2'-8"	4'-8"	2'-9"	3'-8"	18'-6"	21'-4½"	22'-0"	5.761	6.047

* Quantity per wing does not include headwall or that portion of apron or toewall for the length W3.

APRON DIMENSION W3

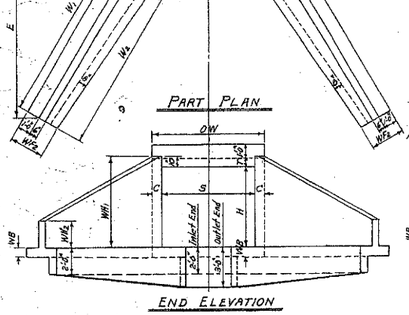
W3 = (OW - 2F)

CLEAR SPAN S	CLEAR HEIGHT H	2 x FOOTING DIMENSION 2F	SINGLE BARREL CULVERT OW	SINGLE BARREL CULVERT W3	DOUBLE BARREL CULVERT OW	DOUBLE BARREL CULVERT W3	TRIPLE BARREL CULVERT OW	TRIPLE BARREL CULVERT W3	QUADRUPLE BARREL CULVERT OW	QUADRUPLE BARREL CULVERT W3	QUINTUPLE BARREL CULVERT OW	QUINTUPLE BARREL CULVERT W3
4'	2'	1'-11⅝"	5'-0"	3'-0⅝"	9'-8"	7'-8⅝"	14'-4"	12'-4⅝"	19'-0"	17'-0⅝"	23'-8"	21'-8⅝"
	3'	2'-8⅜"	5'-0"	2'-3⅜"	9'-8"	6'-11⅛"	14'-4"	11'-7⅛"	19'-0"	16'-3⅛"	23'-8"	20'-11⅛"
	4'	3'-6"	5'-0"	1'-6"	9'-8"	6'-2"	14'-4"	10'-10"	19'-0"	15'-6"	23'-8"	20'-2"
	5'	4'-3⅜"	5'-0"	0'-8⅜"	9'-8"	5'-4⅜"	14'-4"	10'-0⅜"	19'-0"	14'-8⅜"	23'-8"	19'-8⅜"
	6'	5'-0⅝"	5'-2"	0'-1¼"	9'-11"	4'-10⅝"	14'-8"	9'-7⅝"	19'-5"	14'-1⅝"	24'-2"	19'-1⅝"
5'	3'	2'-8⅜"	6'-0"	3'-3⅜"	11'-8"	8'-11⅛"	17'-4"	14'-7⅛"	23'-0"	20'-3⅛"	28'-8"	25'-11⅛"
	4'	3'-6"	6'-0"	2'-6"	11'-8"	8'-2"	17'-4"	13'-10"	23'-0"	19'-6"	28'-8"	25'-2"
	5'	4'-3⅜"	6'-0"	1'-8⅜"	11'-8"	7'-4⅜"	17'-4"	13'-0⅜"	23'-0"	18'-8⅜"	28'-8"	24'-8⅜"
	6'	5'-0⅝"	6'-2"	1'-1¼"	11'-11"	6'-10⅝"	17'-8"	12'-7⅝"	23'-5"	18'-1⅝"	29'-2"	24'-1⅝"
	7'	6'-2⅝"	6'-5"	0'-0¼"	12'-1"	5'-10⅝"	17'-11"	11'-8⅝"	23'-9"	17'-4⅝"	29'-7"	23'-4⅝"
6'	3'	2'-9⅜"	7'-0"	4'-3⅜"	13'-8"	10'-11⅛"	20'-4"	17'-7⅛"	27'-0"	24'-3⅛"	33'-8"	30'-11⅛"
	4'	3'-6"	7'-0"	3'-6"	13'-8"	10'-2"	20'-4"	16'-10"	27'-0"	23'-6"	33'-8"	30'-2"
	5'	4'-3⅜"	7'-0"	2'-8⅜"	13'-8"	9'-6⅜"	20'-4"	16'-0⅜"	27'-0"	22'-8⅜"	33'-8"	29'-8⅜"
	6'	5'-0⅝"	7'-2"	2'-1¼"	13'-11"	8'-10⅝"	20'-8"	15'-7⅝"	27'-5"	22'-1⅝"	34'-2"	29'-1⅝"
	7'	6'-2⅝"	7'-5"	1'-0¼"	14'-1"	7'-10⅝"	20'-11"	14'-8⅝"	27'-9"	21'-4⅝"	34'-7"	28'-4⅝"
	8'	7'-1⅜"	7'-8"	0'-0"	14'-2"	6'-10"	21'-0"	13'-8"	27'-10"	20'-6"	34'-8"	27'-10"
7'	4'	3'-6"	8'-0"	4'-6"	15'-8"	12'-2"	23'-4"	19'-10"	31'-0"	27'-6"	38'-8"	35'-2"
	5'	4'-3⅜"	8'-0"	3'-8⅜"	15'-8"	11'-4⅜"	23'-4"	19'-0⅜"	31'-0"	26'-8⅜"	38'-8"	34'-8⅜"
	6'	5'-0⅝"	8'-2"	3'-1¼"	15'-11"	10'-10⅝"	23'-8"	18'-7⅝"	31'-5"	26'-1⅝"	39'-2"	34'-1⅝"
	7'	6'-2⅝"	8'-5"	2'-0¼"	16'-1"	9'-10⅝"	23'-11"	17'-8⅝"	31'-9"	25'-4⅝"	39'-7"	33'-4⅝"
	8'	7'-1⅜"	8'-8"	1'-0"	16'-2"	8'-10"	24'-0"	16'-8"	31'-10"	24'-6"	39'-8"	32'-10"
8'	4'	3'-6"	9'-0"	5'-6"	17'-8"	14'-2"	26'-8"	22'-10"	35'-0"	31'-6"	43'-8"	40'-2"
	5'	4'-3⅜"	9'-2"	4'-10⅜"	17'-11"	13'-7⅜"	26'-8"	22'-0⅜"	35'-6"	31'-1⅜"	44'-2"	39'-10⅜"
	6'	5'-0⅝"	9'-2"	4'-3⅛"	17'-11"	12'-10⅝"	26'-8"	21'-1⅝"	35'-5"	30'-1⅝"	44'-2"	39'-1⅝"
	7'	6'-2⅝"	9'-5"	3'-0⅛"	18'-1"	11'-10⅝"	26'-11"	20'-0⅝"	35'-9"	29'-4⅝"	44'-7"	38'-4⅝"
	8'	7'-1⅜"	9'-9"	2'-0"	18'-2"	10'-10"	27'-0"	19'-0"	35'-10"	28'-6"	44'-8"	37'-10"
9'	5'	4'-3⅜"	10'-2"	5'-10⅜"	19'-11"	15'-7⅜"	29'-8"	25'-4⅜"	39'-5"	35'-1⅜"	49'-2"	44'-10⅜"
	6'	5'-0⅝"	10'-3"	5'-2⅛"	20'-1"	15'-0⅝"	29'-11"	24'-3⅝"	39'-9"	34'-3⅝"	49'-7"	44'-3⅝"
	7'	6'-2⅝"	10'-3"	4'-0⅛"	20'-1"	13'-10⅝"	29'-11"	23'-2⅝"	39'-9"	33'-4⅝"	49'-7"	43'-4⅝"
	8'	7'-1⅜"	10'-10"	3'-0"	20'-2"	12'-10"	30'-0"	22'-0"	39'-10"	32'-6"	49'-8"	42'-6"
10'	5'	4'-3⅜"	11'-2"	6'-10⅜"	21'-11"	17'-7⅜"	32'-8"	28'-4⅜"	43'-5"	39'-1⅜"	54'-2"	49'-10⅜"
	6'	5'-0⅝"	11'-3"	6'-2⅛"	22'-1"	17'-0⅝"	32'-11"	27'-10⅝"	43'-9"	38'-3⅝"	54'-7"	49'-3⅝"
	7'	6'-2⅝"	11'-3"	5'-0⅛"	22'-1"	15'-10⅝"	32'-11"	26'-9⅝"	43'-9"	37'-4⅝"	54'-7"	48'-4⅝"
	8'	7'-1⅜"	11'-4"	4'-0"	22'-2"	14'-10"	33'-0"	25'-8"	43'-10"	36'-6"	54'-8"	47'-10"
11'	6'	5'-0⅝"	12'-4"	7'-3⅛"	24'-2"	19'-1⅝"	36'-0"	30'-11⅝"	47'-10"	42'-3⅝"		
	7'	6'-2⅝"	12'-4"	6'-1⅛"	24'-2"	17'-11⅝"	36'-0"	29'-9⅝"	47'-10"	41'-4⅝"		
	8'	7'-1⅜"	12'-5"	5'-0"	24'-3"	16'-10"	36'-0"	28'-8"	47'-10"	40'-6"		
12'	6'	5'-0⅝"	13'-4"	8'-3⅛"	26'-2"	21'-1⅝"	39'-0"	33'-11⅝"	51'-10"	46'-3⅝"		
	7'	6'-2⅝"	13'-4"	7'-1⅛"	26'-2"	19'-11⅝"	39'-0"	32'-9⅝"	51'-10"	45'-4⅝"		
	8'	7'-1⅜"	13'-5"	6'-0"	26'-2"	18'-10"	39'-0"	31'-8"	51'-10"	44'-6"		

QUANTITIES

CLEAR SPAN S	CLEAR HEIGHT H	THICKNESS OF WINGWALL Cw	THICKNESS OF WING FOOTING WB	REINFORCING STEEL * FOR 4 WINGS	CLASS S CONCRETE - 4 WINGS HEADWALLS, WINGWALLS, FOOTINGS, TOEWALLS AND APRONS				
					SINGLE BARREL CULVERT	DOUBLE BARREL CULVERT	TRIPLE BARREL CULVERT	QUADRUPLE BARREL CULVERT	QUINTUPLE BARREL CULVERT
S	H	Cw	WB	LB.	CU.YD.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
4'	2'	6"	7"	108.0	4.50	5.96	6.42	7.38	8.34
	3'	6"	7"	169.4	6.26	7.21	8.17	9.13	10.09
	4'	6"	7"	259.6	8.33	9.28	10.24	11.20	12.16
	5'	6"	7"	357.8	10.72	11.68	12.64	13.60	14.56
	6'	7"	8"	583.1	14.55	15.53	16.52	17.51	18.49
5'	3'	6"	7"	164.9	6.97	7.68	8.79	9.96	11.12
	4'	6"	7"	259.6	8.54	9.70	10.87	12.03	13.20
	5'	6"	7"	357.8	10.94	12.10	13.26	14.43	15.59
	6'	7"	8"	583.1	14.77	15.96	17.15	18.34	19.54
	7'	7⅛"	8⅛"	1134.6	18.94	20.15	21.37	22.59	23.80
6'	3'	6"	7"	164.9	6.68	8.06	9.42	10.80	12.18
	4'	6"	7"	259.6	8.75	10.14	11.49	12.87	14.25
	5'	6"	7"	357.8	11.15	12.53	13.89	15.27	16.65
	6'	7"	8"	583.1	14.98	16.39	17.78	19.18	20.59
	7'	7⅛"	8⅛"	1134.6	19.15	20.58	22.00	23.43	24.86
	8'	8"	9"	1425.6	24.09	25.53	26.96	28.39	29.83
7'	4'	6"	7"	259.6	8.97	10.58	12.15	13.76	15.35
	5'	6"	7"	357.8	11.36	12.97	14.58	16.15	17.75
	6'	7"	8"	583.1	15.20	16.82	18.42	20.04	21.66
	7'	7⅛"	8⅛"	1134.6	19.38	21.02	22.69	24.28	25.92
	8'	8"	9"	1425.6	24.32	25.97	27.60	29.25	30.89
8'	4'	6"	7"	259.6	9.19	11.03	12.82	14.65	16.45
	5'	7"	7"	357.8	12.03	13.89	15.70	17.55	19.36
	6'	7"	8"	583.1	15.92	17.27	19.09	20.93	22.75
	7'	7⅛"	8⅛"	1134.6	19.59	21.46	23.30	25.16	26.99
	8'	8"	9"	1425.6	24.54	26.97	28.29	30.11	31.94
9'	5'	7"	7"	357.8	12.26	14.39	16.37	18.45	20.47
	6'	7⅛"	8"	583.1	15.99	18.09	20.09	22.19	24.23
	7'	7⅛"	8⅛"	1134.6	19.81	21.91	23.96	26.06	28.10
	8'	8"	9"	1425.6	24.76	26.86	28.91	31.00	33.05
10'	5'	7"	7"	357.8	12.49	14.80	17.05	19.26	21.52
	6'	7⅛"	8"	583.1	16.17	18.50	20.77	22.99	25.28
	7'	7⅛"	8⅛"	1134.6	20.09	22.37	24.64	26.87	29.15
	8'	8"	9"	1425.6	24.98	27.31	29.58	31.81	34.10
11'	6'	8"	8"	583.1	16.69	19.27	21.76	24.23	
	7'	8"	8⅛"	1134.6	20.64	23.22	25.71	28.18	
	8'	8"	9"	1425.6	25.19	27.77	30.27	32.74	
12'	6'	8"	8"	583.1	16.92	19.75	22.95	25.18	
	7'	8"	8⅛"	1134.6	20.87	23.69	26.90	29.13	
	8'	8"	9"	1425.6	25.42	28.25	30.96	33.69	

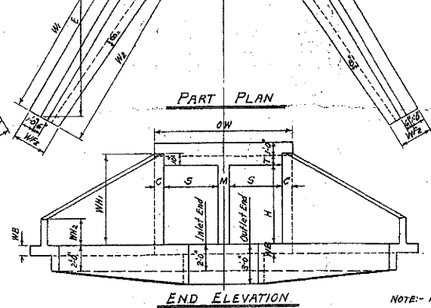
* For reinforcing steel in Headwalls and Aprons, See Details of Standard Barrel Sections for R.C. Box Culverts for the desired Span and Height.



PART PLAN

END ELEVATION

SINGLE BARREL CULVERT

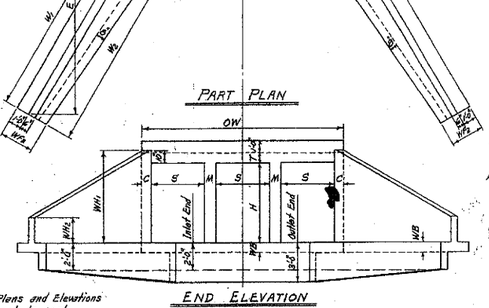


PART PLAN

END ELEVATION

DOUBLE BARREL CULVERT

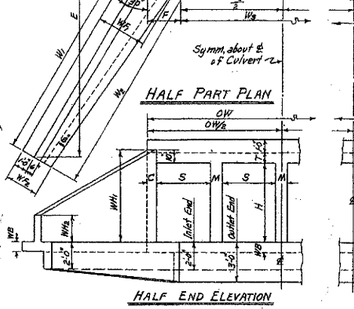
NOTE:- Plans and Elevations are not to scale.



PART PLAN

END ELEVATION

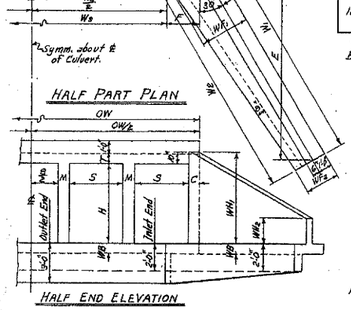
TRIPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUADRUPLE BARREL CULVERT



HALF PART PLAN

HALF END ELEVATION

QUINTUPLE BARREL CULVERT

BAR LIST FOR ONE WING - 4 REQUIRED

CLEAR HEIGHT H	F1 BENT: In bottom of footing bent up into back face of wing. One bar of each length. SIZE	SPACING	No. REQD	LENGTHS VARY MIN.	LENGTHS VARY MAX.	X MIN.	X MAX.	Y MIN.	Y MAX.
2'	#3	12"	8	1'-6"	3'-10"	0'-8"	1'-0"	6'-11"	2'-11"
3'	#3	12"	10	2'-2"	5'-2"	0'-10"	1'-3"	11'-5"	4'-6"
4'	#3	12"	13	2'-9"	6'-6"	0'-11"	1'-7"	11'-6"	5'-0"
5'	#3	12"	15	2'-11"	7'-10"	1'-1"	1'-11"	11'-11"	6'-0"
6'	#4	12"	17	3'-6"	9'-3"	1'-2"	2'-5"	12'-5"	7'-1"
7'	#4	12"	20	3'-9"	10'-9"	1'-3"	2'-9"	12'-7"	8'-1"
8'	#4	12"	22	4'-4"	12'-3"	1'-5"	3'-2"	13'-0"	9'-2"

CLEAR HEIGHT H	F2 BENT: In bottom of footing, bent up into back face of wing. Alt. with F1 bars. SIZE	SPACING	No. REQD	LENGTH	X	Y
2'	—	—	—	—	—	—
3'	—	—	—	—	—	—
4'	—	—	—	—	—	—
5'	#3	12"	4	3'-6"	1'-1"	2'-6"
6'	#3	12"	4	4'-6"	1'-9"	3'-3"
7'	#4	12"	7	5'-6"	1'-7"	4'-0"
8'	#4	12"	10	6'-6"	1'-10"	4'-9"

CLEAR HEIGHT H	F5 STRAIGHT: Longitudinal in top of wing footing heel. SIZE	NO. REQD	LENGTH
2'	#3	1	9'-8"
3'	#3	1	12'-8"
4'	#3	1	15'-9"
5'	#3	1	16'-8"
6'	#3	1	19'-8"
7'	#4	1	21'-4"
8'	#4	1	23'-8"

CLEAR HEIGHT H	F6 STRAIGHT: Longitudinal in bottom of wing footing toe. SIZE	NO. REQD	LENGTH
2'	#3	2	8'-6"
3'	#3	2	11'-6"
4'	#3	3	13'-6"
5'	#3	3	16'-8"
6'	#3	3	18'-6"
7'	#4	4	21'-8"
8'	#4	4	23'-8"

CLEAR HEIGHT H	H1 STRAIGHT: Horizontal in back face of wing. SIZE	SPACING	No. REQD	LENGTH
2'	#3	12"	1	7'-2"
3'	#3	12"	1	9'-6"
4'	#3	12"	1	11'-10"
5'	#3	12"	2	14'-2"
6'	#3	12"	2	16'-6"
7'	#3	12"	2	18'-9"
8'	#4	12"	2	21'-1"

CLEAR HEIGHT H	H2 STRAIGHT: Horizontal in back face of wing. One bar of each length. SIZE	SPACING	No. REQD	LENGTHS VARY MAX.	LENGTHS VARY MIN.
2'	—	—	—	—	—
3'	#3	12"	3	9'-6"	4'-6"
4'	#3	12"	3	11'-10"	4'-3"
5'	#3	12"	4	14'-2"	4'-6"
6'	#3	12"	4	16'-6"	4'-6"
7'	#4	12"	5	17'-9"	4'-6"
8'	#4	12"	5	17'-9"	4'-6"

CLEAR HEIGHT H	H3 STRAIGHT: In back face of wing at top on slope. SIZE	NO. REQD	LENGTH
2'	—	—	—
3'	#3	1	7'-9"
4'	#3	1	9'-9"
5'	#3	1	12'-2"
6'	#3	1	14'-2"
7'	#3	1	16'-5"
8'	#3	1	18'-5"

CLEAR HEIGHT H	H4 BENT: Dowels thru construction joint at headwall. SIZE	SPACING	No. REQD	LENGTH	X
2'	#3	12"	2	2'-8"	1'-9"
3'	#3	12"	3	2'-8"	1'-9"
4'	#3	12"	4	2'-8"	1'-9"
5'	#3	12"	5	2'-8"	1'-9"
6'	#3	12"	6	2'-8"	1'-9"
7'	#4	12"	7	3'-6"	1'-9"
8'	#4	12"	8	3'-6"	1'-9"

CLEAR HEIGHT H	QUANTITY REINFORCING STEEL PER WING LB.
2'	27.0
3'	41.1
4'	63.7
5'	89.5
6'	145.8
7'	283.7
8'	356.4

BAR BENDING DIAGRAMS

NOTE:- Dimensions are to bar centers.

MEMBRANE:- A membrane waterproofing 12" wide, consisting of three mopings of waterproofing asphalt and two alternate layers of treated cotton fabric shall be applied to the back face of wing to cover the construction joints in wings.

REVISIONS:- Membrane added. 5-10-66 W.C.H.

Designed By:- W.C.H. 8-20-62. Checked By:- RMS 1-9-63
Drawn By:- W.C.H. 12-4-62. Checked By:- RMS 1-31-63
Quantities By:- W.C.H. 12-14-62. Rechecked By:- RMS 3-23-63

GENERAL NOTES:-

CONCRETE:- All concrete to be Class S, and shall be poured in the dry. All exposed corners to have ¾" chamfers.

REINFORCING STEEL:- Reinforcing steel to be deformed bars of intermediate or hard grade.

CONSTRUCTION JOINTS:- Construction joints between wingwall, footings and sidewalls shall be only where shown on plans.

SPECIFICATIONS:- Arkansas State Highway Commission Standard Specifications for Highway Construction and applicable Special Provisions.

UNIT STRESSES:-

Class S Concrete (n=10) 1200#/□"
Reinforcing Steel 20,000#/□"

NOTE:- This drawing to be used in conjunction with Standard Barrel Sections, Drawing Nos. as listed below.

SINGLES	DOUBLES	TRIPLES	QUADRUPLES	QUINTUPLES
R-100X-0	R-200X-0	R-300X-0	R-400X-0	R-500X-0
R-100X-X1	R-200X-X1	R-300X-X1	R-400X-X1	R-500X-X1
R-100X-X2	R-200X-X2	R-300X-X2	R-400X-X2	
	R-200X-X3	R-300X-X3		

CLASS S CONCRETE

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF STANDARD WINGS FOR REINFORCED CONCRETE BOX CULVERTS

4', 5', 6', 7', 8', 9', 10', 11' & 12' SPANS — 3:1 SLOPES

SINGLES, DOUBLES, TRIPLES, QUADRUPLES & QUINTUPLES. — ALL DEPTHS OF COVER FOR H = 8'-0" OR LESS

STANDARD DRAWING NO. W-X003-1