DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	1	68
				(2) DE ROCHE CREEK STRS. & APPRS. (S)				

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS

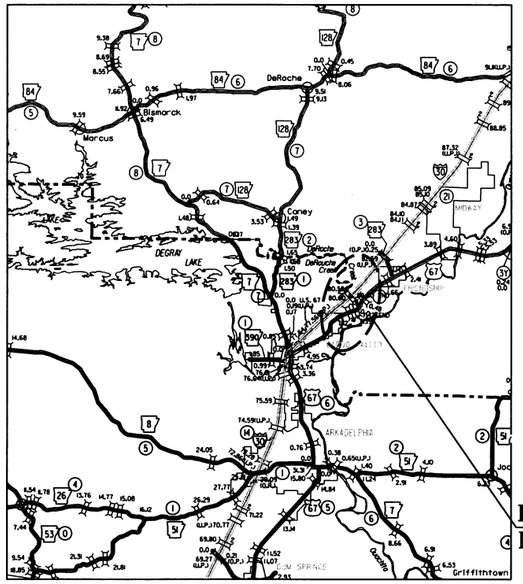
DE ROCHE CREEK STRS. & APPRS. (S)

CLARK AND HOT SPRING COUNTIES

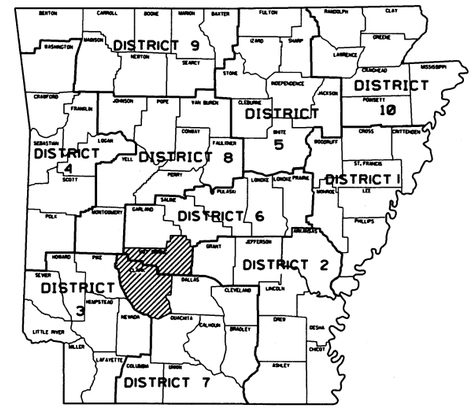
ROUTE 30 SECTIONS 14 & 21

FED. AID PROJ. NHPP-1030(3)

JOB 012307



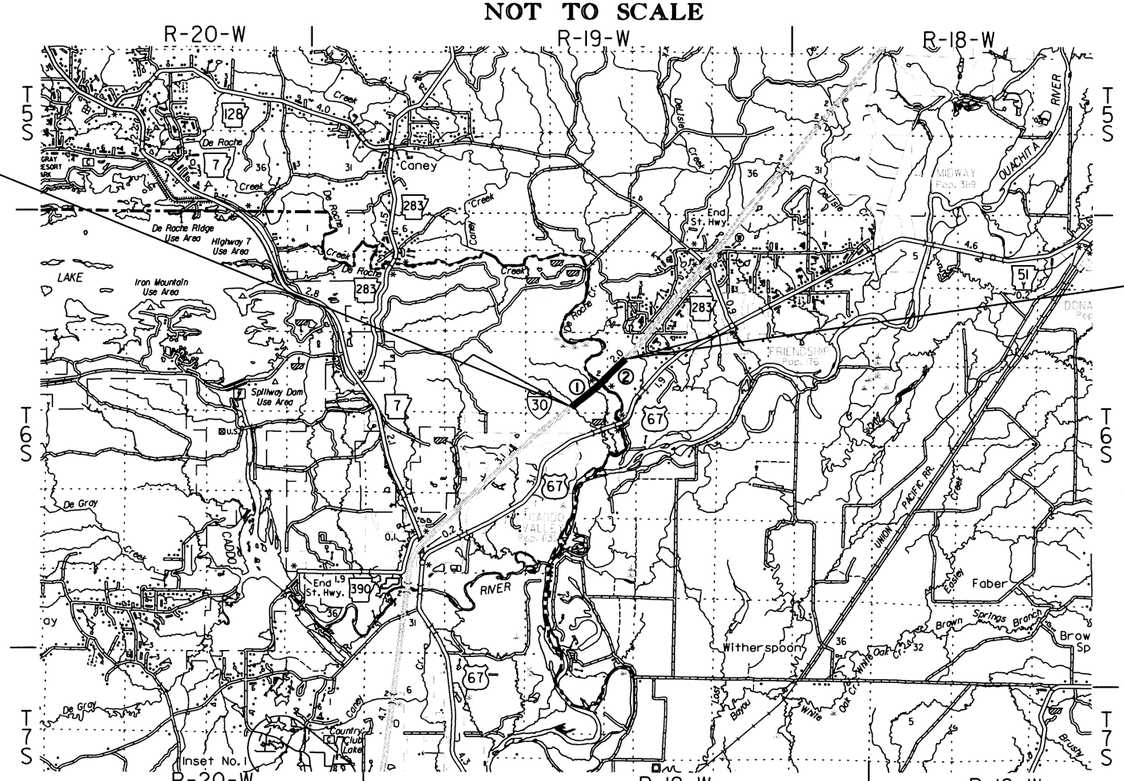
VICINITY MAP



ARKANSAS HIGHWAY DISTS. 6 & 7

NOT TO SCALE

STA. 4388+00.00
BEGIN JOB 012307
LOG MILE 80.50


R-20-W
R-19-W
R-18-W
T5S
T6S
T7S
Caney
De Roche
Creek
De Roche Ridge Use Area
Highway 7 Use Area
Iron Mountain Use Area
Spillway Dam Use Area
Inset No. 1
Country Club Lake
Dam
End St. Hwy.
LAKE
RIVER
Ouachita River
Union Pacific RR
Witherspoon
Faber
Brown Springs Branch
White Oak Creek
Brewer
Dona
Friendship
Cemetery
Church
Cem.
Ch.
Sch.
Pt.
Br.
Cr.
Mt.
Ft.
Ln.
Rd.
St.
Hwy.
Co.
Ave.
Blvd.
Dr.
Pl.
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	2	68
				(2)	INDEX OF SHEETS & STANDARD DRAWINGS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
★ ★ ★
No.10887
SCOTT P. THORNSBERRY
4-9-2019

INDEX OF SHEETS

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2	INDEX OF SHEETS AND STANDARD DRAWINGS		
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50	END BENT DETAILS (SHEET 5 OF 5)	A&B 7427	60312
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52	DETAILS OF 170'- 0" COMPOSITE PLATE GIRDER SPAN (SHEET 1 OF 9)	A&B 7427	60314
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57	DETAILS OF 170'- 0" COMPOSITE PLATE GIRDER SPAN (SHEET 6 OF 9)	A&B 7427	60319
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60	DETAILS OF 170'- 0" COMPOSITE PLATE GIRDER SPAN (SHEET 9 OF 9)	A&B 7427	60322
61	DETAILS OF TYPE SPECIAL APPROACH SLAB & GUTTER (SHEET 1 OF 3)	A&B 7427	60323
62	DETAILS OF TYPE SPECIAL APPROACH SLAB & GUTTER (SHEET 2 OF 3)	A&B 7427	60324
63	DETAILS OF TYPE SPECIAL APPROACH SLAB & GUTTER (SHEET 3 OF 3)	A&B 7427	60325
64 - 68	CROSS SECTIONS		

BRIDGE STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
55000	STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS	02-27-14
55001	STANDARD DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND COMPUTING EXCAVATION FOR STRUCTURES	02-27-14
55005	STANDARD DETAILS FOR PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS	03-24-16
55006	STANDARD GENERAL NOTES FOR STEEL BRIDGE STRUCTURES	09-02-15
55007	STANDARD DETAILS FOR STEEL BRIDGE STRUCTURES	02-11-16
55010	STANDARD DETAILS FOR TYPE D BRIDGE NAME PLATE	01-15-19
55020	STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS	03-24-16

ROADWAY STANDARD DRAWINGS

DRWG.NO.	TITLE	DATE
CDP-1	CONCRETE DITCH PAVING	12-08-16
FPC-9D	DETAILS OF DROP INLETS	08-22-02
GR-8	GUARD RAIL DETAILS	11-16-17
GR-8A	GUARD RAIL DETAILS	11-16-17
GR-9	GUARD RAIL DETAILS	04-17-08
GR-9A	GUARD RAIL DETAILS	04-17-08
GR-10	GUARD RAIL DETAILS	11-16-17
GR-11	GUARD RAIL DETAILS	11-16-17
GR-12	GUARD RAIL DETAILS	11-16-17
PCC-1	CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PCM-1	METAL PIPE CULVERT FILL HEIGHTS & BEDDING	02-27-14
PM-1	PAVEMENT MARKING DETAILS	06-01-17
PM-2	PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS	12-08-16
PU-1	DETAILS OF PIPE UNDERDRAIN	12-08-16
SE-1	TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC	01-09-87
TC-1	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	04-13-17
TC-2	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-3	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	09-02-15
TC-4	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION-TEMPORARY PRECAST BARRIER	02-27-14
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	06-02-94
TEC-3	TEMPORARY EROSION CONTROL DEVICES	11-03-94
WF-1	WIRE FENCE TYPE A AND B	08-22-02

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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
04/25/2019				6	ARK.			
06/10/2019				JOB NO.		012307	3	68

(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 012307
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
306-1 _____	QUALITY CONTROL AND ACCEPTANCE
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
410-2 _____	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
600-2 _____	INCIDENTAL CONSTRUCTION
604-1 _____	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
605-1 _____	CONCRETE DITCH PAVING
617-1 _____	GUARDRAIL TERMINAL (TYPE 2)
620-1 _____	MULCH COVER
621-1 _____	FILTER SOCKS
800-1 _____	STRUCTURES
802-3 _____	CONCRETE FOR STRUCTURES
804-2 _____	REINFORCING STEEL FOR STRUCTURES
808-1 _____	INSTALLATION OF ELASTOMERIC BEARINGS
808-2 _____	ELASTOMERIC BEARINGS
JOB 012307 _____	ASSESSMENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC
JOB 012307 _____	AUTOMATED WORK ZONE INFORMATION SYSTEM
JOB 012307 _____	BIDDING REQUIREMENTS AND CONDITIONS
JOB 012307 _____	BRIDGE DECK REPAIR
JOB 012307 _____	BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT
JOB 012307 _____	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 012307 _____	CARGO PREFERENCE ACT REQUIREMENTS
JOB 012307 _____	CLASS C FLY ASH IN PORTLAND CEMENT CONCRETE PAVEMENT AND CLASS S(AE) CONCRETE
JOB 012307 _____	CONCRETE DITCH PAVING
JOB 012307 _____	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 012307 _____	CONSTRUCTION PROJECT INFORMATION SIGN
JOB 012307 _____	DESIGNATED PARKING AND VIEWING AREAS
JOB 012307 _____	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB 012307 _____	DISADVANTAGED BUSINESS ENTERPRISE BIDDER'S RESPONSIBILITIES
JOB 012307 _____	DRILLED SHAFT FOUNDATIONS
JOB 012307 _____	ENHANCED THERMOPLASTIC PAVEMENT MARKING
JOB 012307 _____	EXTENSION FOR PIPE CULVERTS
JOB 012307 _____	FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT
JOB 012307 _____	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 012307 _____	LATERAL BRIDGE SLIDE
JOB 012307 _____	MAINTENANCE OF TRAFFIC
JOB 012307 _____	MANDATORY ELECTRONIC CONTRACT
JOB 012307 _____	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB 012307 _____	MOBILE SPEED NOTIFICATION SYSTEM
JOB 012307 _____	MODULAR GLARE SHIELD
JOB 012307 _____	NESTING SITES OF MIGRATORY BIRDS
JOB 012307 _____	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB 012307 _____	OFF-SITE RESTRAINING CONDITIONS FOR NORTHERN LONG-EARED BATS
JOB 012307 _____	PARTNERING REQUIREMENTS
JOB 012307 _____	PERCENT WITHIN LIMITS
JOB 012307 _____	PORTABLE CONSTRUCTION LIGHTING
JOB 012307 _____	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB 012307 _____	PROCECUTION AND PROGRESS WITH BID SCHEDULE
JOB 012307 _____	RESTRICTIONS ON THE USE OF RECYCLED ASPHALT PAVEMENT MATERIAL
JOB 012307 _____	RUMBLE STRIP REMOVAL
JOB 012307 _____	SECTION 404 NATIONWIDE 26 PERMIT REQUIREMENTS
JOB 012307 _____	SITE USE (A+B+C METHOD) - CALENDAR DAY CONTRACT
JOB 012307 _____	SOIL STABILIZATION
JOB 012307 _____	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 012307 _____	STONE BACKFILL
JOB 012307 _____	STORM WATER POLLUTION PREVENTION PLAN
JOB 012307 _____	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 012307 _____	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 012307 _____	TRAFFIC CONTROL SUPERVISOR
JOB 012307 _____	UTILITY ADJUSTMENTS
JOB 012307 _____	VALUE ENGINEERING
JOB 012307 _____	WARM MIX ASPHALT
JOB 012307 _____	WIRE ROPE SAFETY FENCE (POST REPAIR)
JOB 012307 _____	WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS
JOB 012307 _____	WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

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 ENSURE 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. THE SEQUENCE AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS IS A GENERAL OUTLINE FOR THE CONSTRUCTION OF THIS PROJECT, AND IN NO WAY IS IT INTENDED TO COVER EVERY ITEM IN THE PROJECT. ITEMS NOT CRITICAL TO THE CONSTRUCTION SEQUENCE MAY BE CONSTRUCTED IN ANY STAGE AS APPROVED BY THE RESIDENT ENGINEER.
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
6-10-2019

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* LEVELING TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER TO CORRECT SUPERELEVATION AND ELEVATION OF EXISTING PAVEMENT

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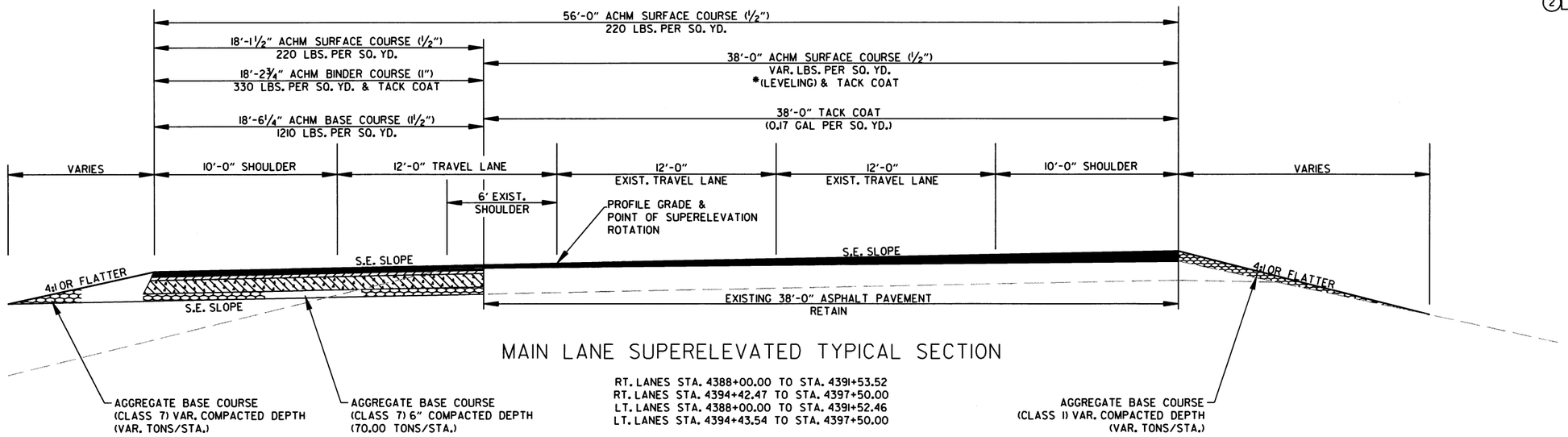
				6	ARK.			
				JOB NO.		012307	4	68
				(2)	TYPICAL SECTIONS OF IMPROVEMENT			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
3-29-2019



MAIN LANE SUPERELEVATED TYPICAL SECTION

RT. LANES STA. 4388+00.00 TO STA. 4391+53.52
RT. LANES STA. 4394+42.47 TO STA. 4397+50.00
LT. LANES STA. 4388+00.00 TO STA. 4391+52.46
LT. LANES STA. 4394+43.54 TO STA. 4397+50.00

NOTES:

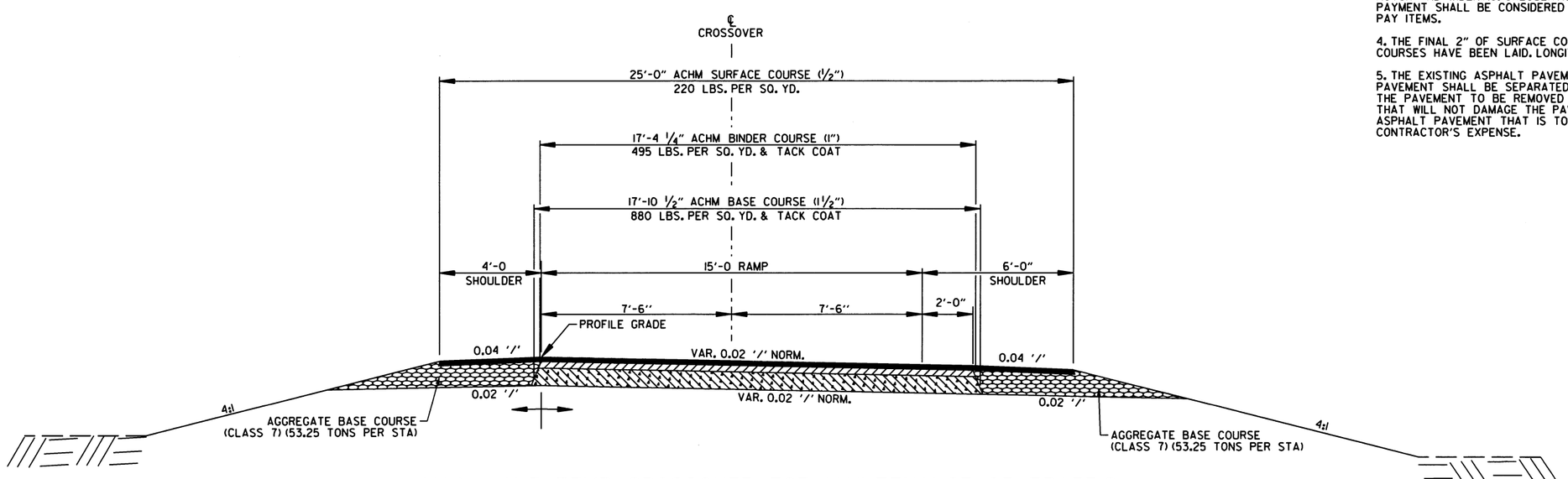
1. REFER TO CROSS SECTIONS FOR DEVIATIONS FROM NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

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. ASPHALT FOR LEVELING OF EXISTING PAVEMENT SHALL BE PLACED ONLY IFAND WHERE DIRECTED BY THE ENGINEER. CALCULATIONS FOR THE AMOUNT OF LEVELING AND/OR LEVELING OPERATIONS SHALL BE PERFORMED BEFORE CONSTRUCTING NOTCH AND WIDENING. CALCULATIONS WILL NOT BE PAID FOR DIRECTLY, BUT PAYMENT SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS PAY ITEMS.

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

5. 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.



MAIN LANE TEMP. CROSSOVER FOR MAINTENANCE OF TRAFFIC

(SHOWN IN CROSSOVER DIRECTION)

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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
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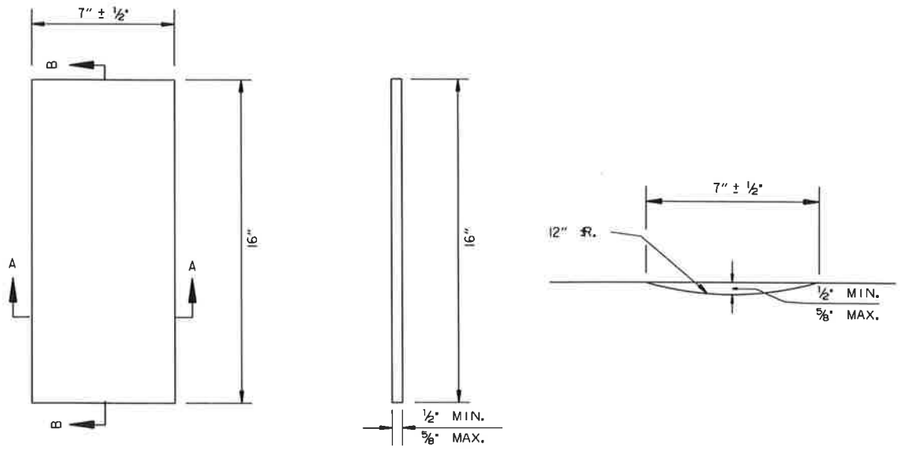
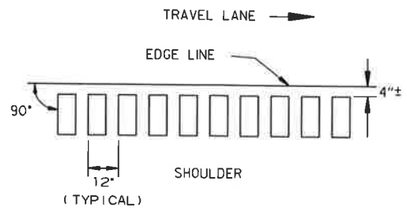
				JOB NO.		012307	5	68
				(2)		SPECIAL DETAILS		



PLAN SECTION B-B SECTION A-A

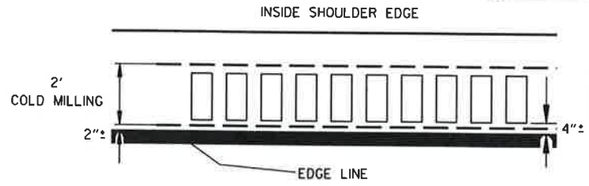
DETAILS OF RUMBLE STRIPS



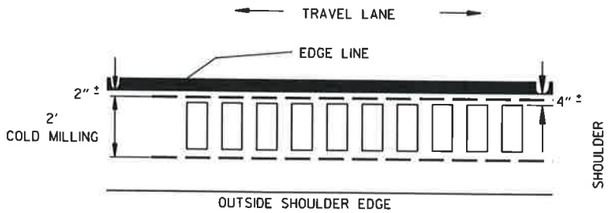
LOCATION PLAN OF RUMBLE STRIPS LEFT OR RIGHT SHOULDER

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.

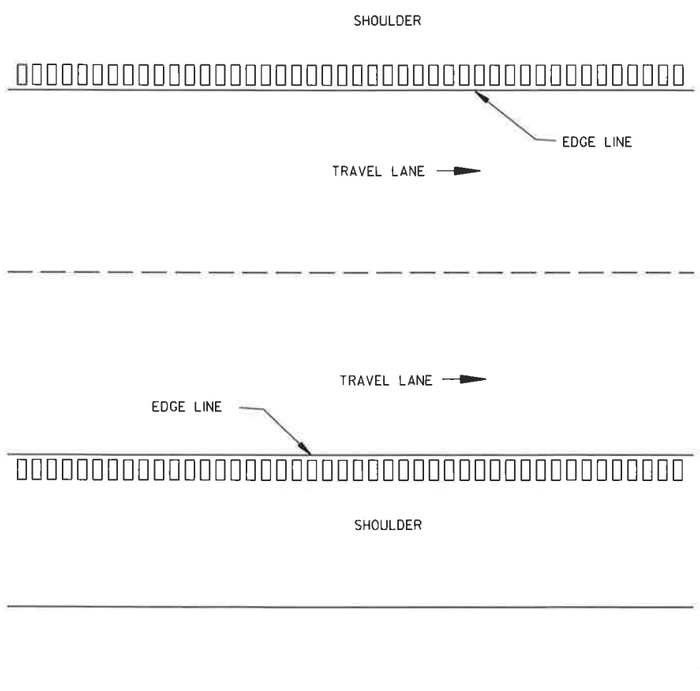


PLAN VIEW

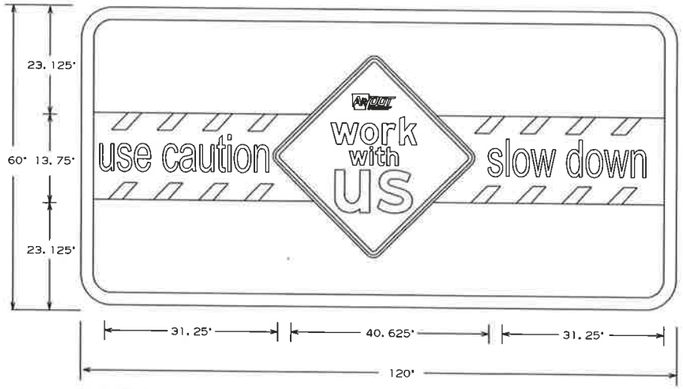


PLAN VIEW

DETAIL OF RUMBLE STRIP REMOVAL IN INSIDE SHOULDERS (ASPHALT)



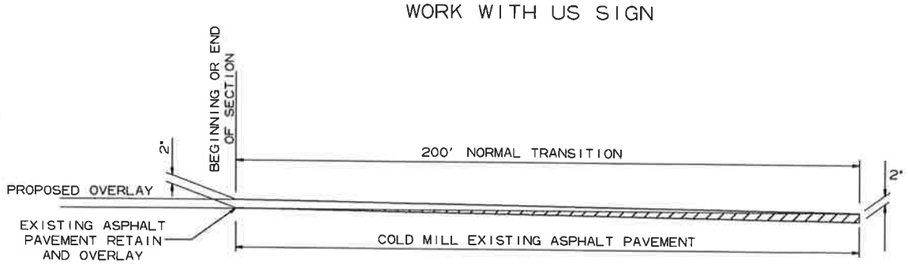
PLAN VIEW



2" WHITE BORDER, 2" RADII, GREEN BACKGROUND
"use caution/slow down" 5.31" NIVEAU GROTESK, REGULAR FONT x 1.5Y
"work with us" FRUTIGER LT 75 BLACK FONT

NOTE: DIGITAL ART WORK FILE AVAILABLE FROM ARDOT MAINTENANCE DIVISION SIGN SHOP 501-569-2665.
THIS SIGN SHALL BE PLACED 2640' PRECEDING THE FIRST ADVANCE WARNING SIGN, IN THE DIRECTION OF TRAFFIC.

WORK WITH US SIGN



DETAIL FOR TRANSITIONS

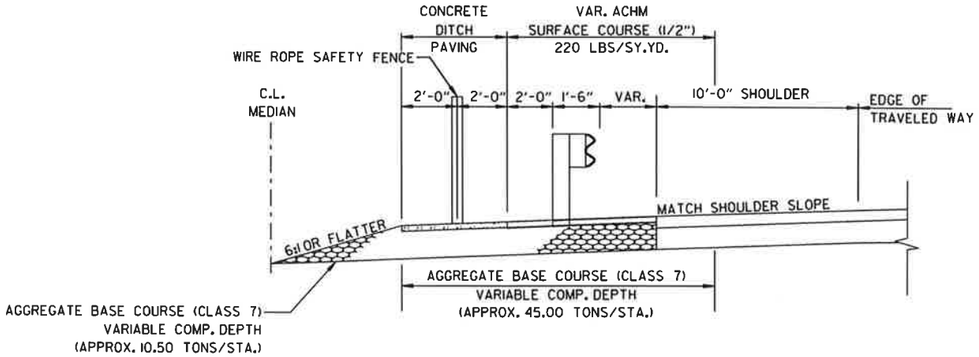
6.0" Radius, 1.3" Border, Black on Orange;
"Job XXXXXX" C 2K; "Start Date Mo Year" C 2K;
"Est Completion Mo Year" C 2K; "IDRIVE " Arial;
" ARKANSAS.COM " Arial;

CONSTRUCTION PROJECT INFORMATION SIGN

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
6-10-2019

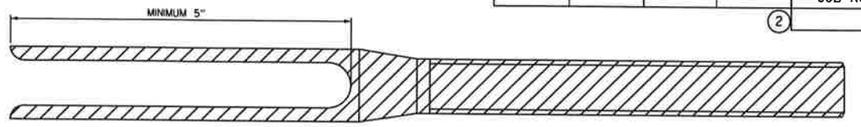
leonard.speed 6/10/2019 4:25:06 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_163836_I-30 Lateral Bridge Slide\Design\CIVIL\Drawings\R012307_05_SD_001.dgn
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
06/10/2019				6	ARK.			
				JOB NO.		012307	6	68
				(2)	SPECIAL DETAILS			

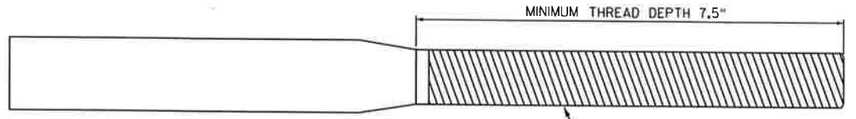


SECTION DETAIL OF SHOULDER WIDENING FOR GUARDRAIL
& OVERLAP ENDS OF WIRE ROPE SAFETY FENCE - INSIDE SHOULDER

REFER TO STANDARD DRAWINGS GR-8, GR-9, GR-9A, GR-10, GR-11, GR-12 FOR ADDITIONAL INFORMATION.



SECTION VIEW

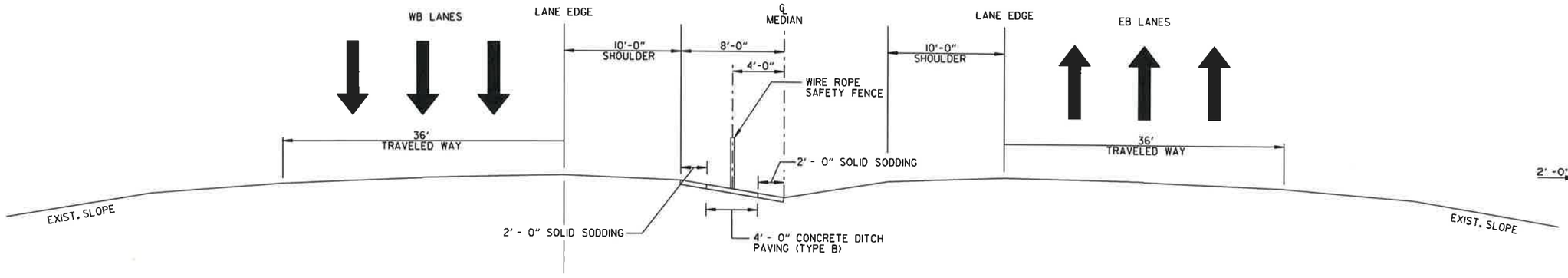


ELEVATION VIEW

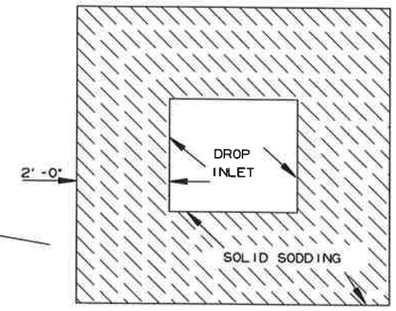
NOTE:
REFER TO "WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS" SPECIAL PROVISION FOR ADDITIONAL REQUIREMENTS.

THREADED TERMINAL DETAIL

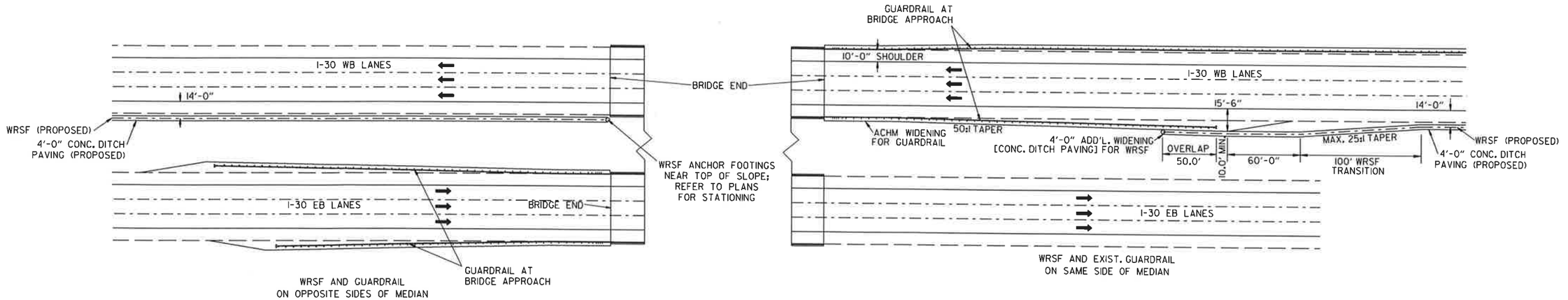
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.10887
SCOTT P. THORNSBERRY
6-10-2019



TYPICAL SECTION OF IMPROVEMENT
FOR WIRE ROPE SAFETY FENCE LEFT OF CENTERLINE



DETAIL FOR SOLID SODDING
AROUND DROP INLETS



DETAIL OF WIRE ROPE SAFETY FENCE AT BRIDGE END

REFER TO PLANS FOR RELATIVE PLACEMENT OF GUARDRAIL AND WIRE ROPE SAFETY FENCE AT EACH BRIDGE END

leonard.speed 6/10/2019 4:25:30 PM
WORKSPACE: ARDOT
Y:\Projects\ARDOT_163836_I-30 Lateral Bridge Slide\Design\CIVIL\Drawings\R012307_05_SD_001.dgn
REVISED DATE: $$REVDATE$$

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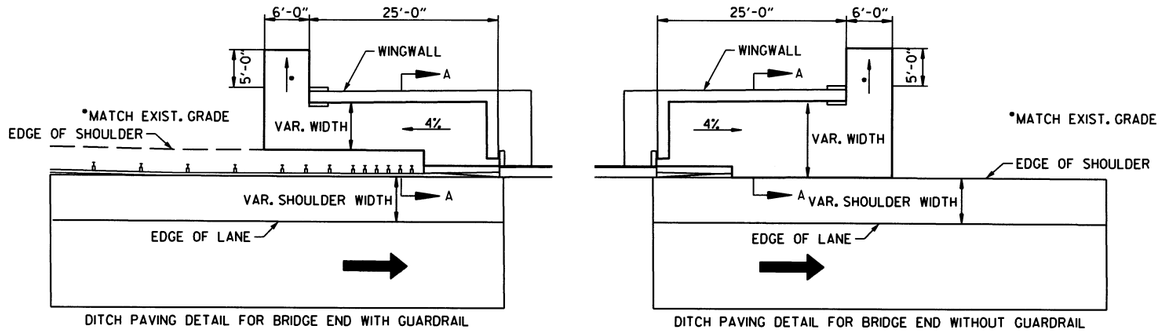
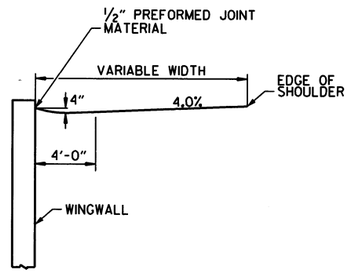
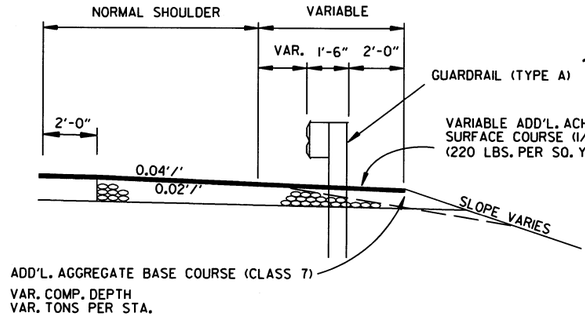
				JOB NO.		012307	7	68
				(2)	SPECIAL DETAILS			



CONCRETE DITCH PAVING DETAILS FOR BRIDGE ENDS



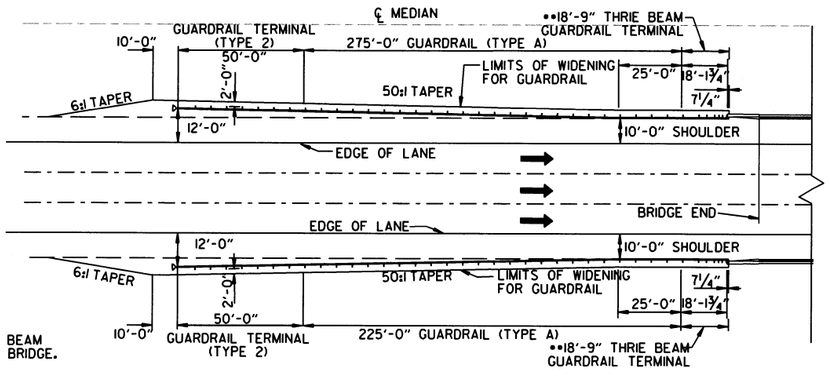
SECTION A-A



WIDENING FOR GUARDRAIL

NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-9, GR-9A, GR-10, GR-11, GR-12 FOR ADDITIONAL INFORMATION.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
SCOTT P. THORNSBERRY
No.10887
3-29-2019

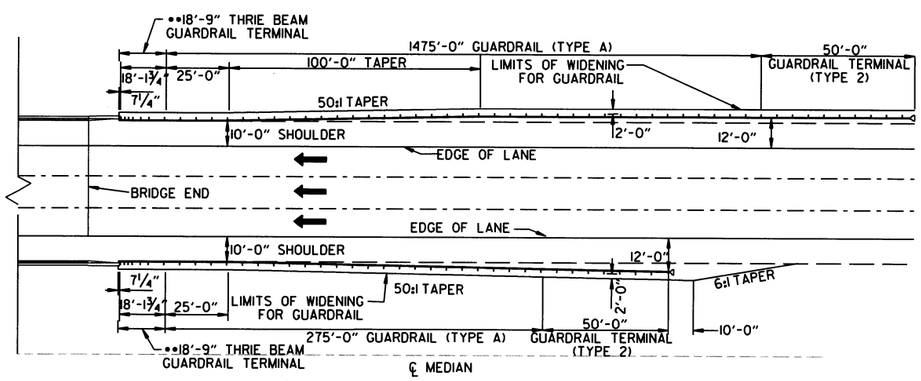


** PARAPET WALL WITH THRIE BEAM GUARDRAIL CONNECTION AT BRIDGE. SEE STD. DWG. GR-10.

GUARDRAIL DETAIL FOR EB MAIN LANES

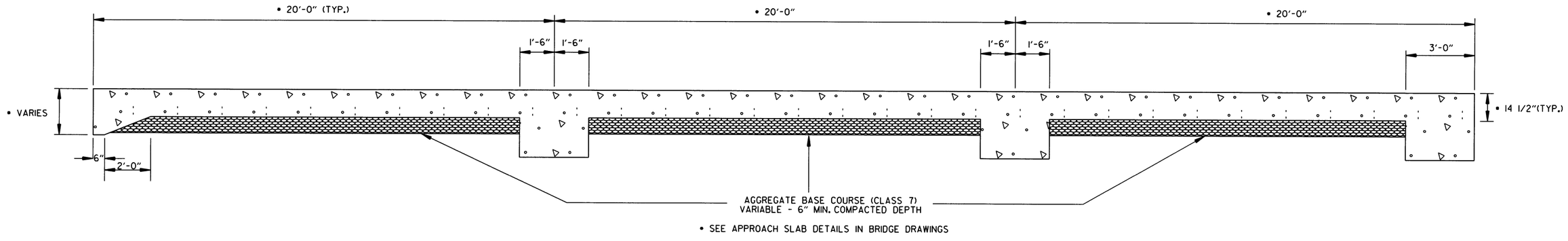
NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-9, GR-9A, GR-10, GR-11, GR-12 FOR ADDITIONAL INFORMATION.

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



GUARDRAIL DETAIL FOR WB MAIN LANES

NOTE: REFER TO STANDARD DRAWINGS GR-8, GR-9, GR-9A, GR-10, GR-11, GR-12 FOR ADDITIONAL INFORMATION.



• SEE APPROACH SLAB DETAILS IN BRIDGE DRAWINGS

SECTION OF APPROACH SLAB

Leonard.Speed 3/29/2019 3:01:12 PM
WORKSPACE: AHTD
XYZ: Arkansas State Plane North 0301 (1983) (US Feet)
REVISED DATE: $$REVDATE$$
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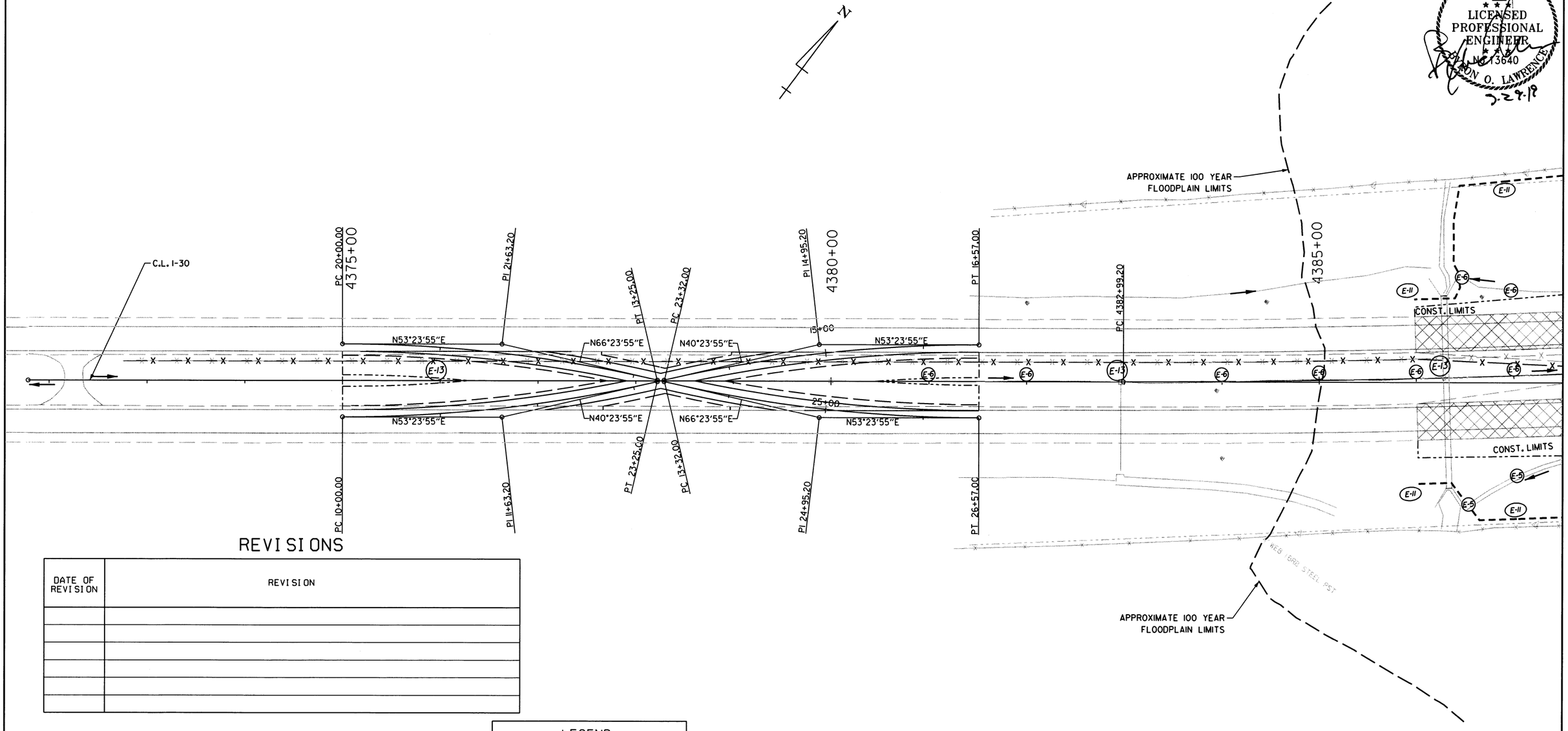
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	8	68

(2) TEMPORARY EROSION CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
NO. 13640
JASON O. LAWRENCE
3.29.19



REVISIONS

DATE OF REVISION	REVISION

LEGEND

- E-7 = DROP INLET SILT FENCE
- 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 I SHALL BE RETAINED UNTIL FINAL STABILIZATION.

C.L. I-30 C.L. MEDIAN SILT FENCE (E-11)		LIN FT.
STA. 4386+00 TO 4387+00	LT.	197
STA. 4386+00 TO 4387+00	RT.	108

C.L. I-30 C.L. MEDIAN COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)		LIN FT.
STA. 4375+00 TO 4386+28	MEDIAN	60

C.L. I-30 C.L. MEDIAN ROCK DITCH CHECKS (E-6)		EACH
STA. 4386+50 TO 4387+00	LT.	2
STA. 4381+00 TO 4387+00	MEDIAN	6

C.L. I-30 C.L. MEDIAN SAND BAG DITCH CHECKS (E-5)		EACH
STA. 4386+50 TO 4387+00	RT.	2

TEMPORARY EROSION CONTROL DETAILS
ALL STAGES

Leonard.Speed 3/29/2019 3:04:15 PM
WORKSPACE: ARTDOT
VISSIM 64 bit | ARTDOT_163835_I-30 Lateral Bridge Slide\Design\CIVIL\Drawings\R012307_05E_EC1_001.dgn
REVISED DATE: ##REVDATE##

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				6	ARK.			
				JOB NO.		012307	9	68
				(2) TEMPORARY EROSION CONTROL DETAILS				

DE ROCHE CREEK IS NEAR AN ECOLOGICALLY SENSITIVE WATERBODY. A 25' VEGETATED BUFFER ZONE IS REQUIRED

REVISIONS

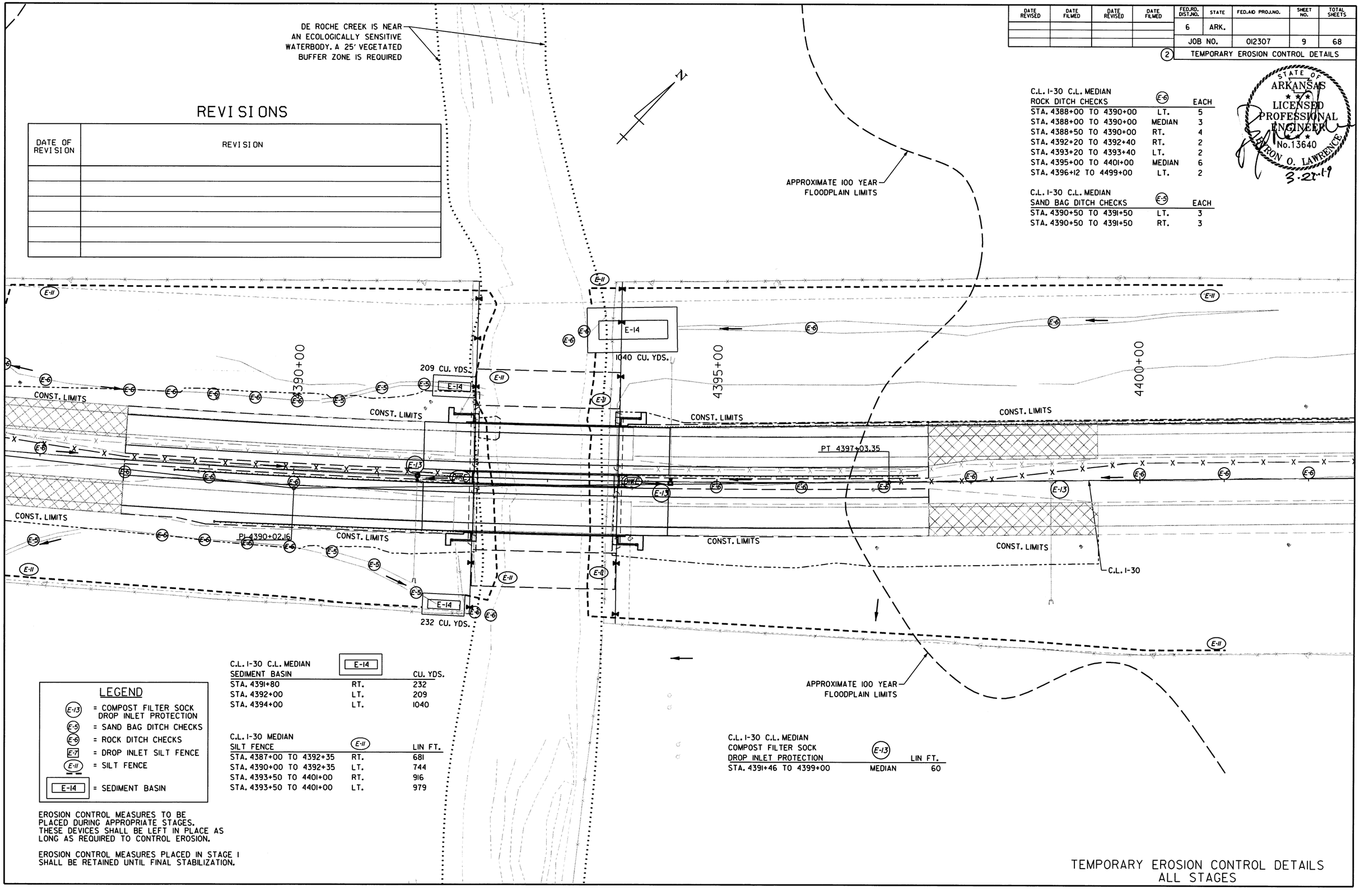
DATE OF REVISION	REVISION

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

C.L. I-30 C.L. MEDIAN ROCK DITCH CHECKS	(E-6)	EACH
STA. 4388+00 TO 4390+00	LT.	5
STA. 4388+00 TO 4390+00	MEDIAN	3
STA. 4388+50 TO 4390+00	RT.	4
STA. 4392+20 TO 4392+40	RT.	2
STA. 4393+20 TO 4393+40	LT.	2
STA. 4395+00 TO 4401+00	MEDIAN	6
STA. 4396+12 TO 4499+00	LT.	2

C.L. I-30 C.L. MEDIAN SAND BAG DITCH CHECKS	(E-5)	EACH
STA. 4390+50 TO 4391+50	LT.	3
STA. 4390+50 TO 4391+50	RT.	3

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
AARON O. LAWRENCE
3-27-19



LEGEND

- (E-13) = COMPOST FILTER SOCK DROP INLET PROTECTION
- (E-5) = SAND BAG DITCH CHECKS
- (E-6) = ROCK DITCH CHECKS
- (E-7) = DROP INLET SILT FENCE
- (E-11) = SILT FENCE
- [E-14] = SEDIMENT BASIN

C.L. I-30 C.L. MEDIAN SEDIMENT BASIN	[E-14]	CU. YDS.
STA. 4391+80	RT.	232
STA. 4392+00	LT.	209
STA. 4394+00	LT.	1040

C.L. I-30 MEDIAN SILT FENCE	(E-11)	LIN FT.
STA. 4387+00 TO 4392+35	RT.	681
STA. 4390+00 TO 4392+35	LT.	744
STA. 4393+50 TO 4401+00	RT.	916
STA. 4393+50 TO 4401+00	LT.	979

C.L. I-30 C.L. MEDIAN COMPOST FILTER SOCK DROP INLET PROTECTION	(E-13)	LIN FT.
STA. 4391+46 TO 4399+00	MEDIAN	60

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 UNTIL FINAL STABILIZATION.

TEMPORARY EROSION CONTROL DETAILS
ALL STAGES

Leonard.Speed 3/29/2019 3:01:18 PM
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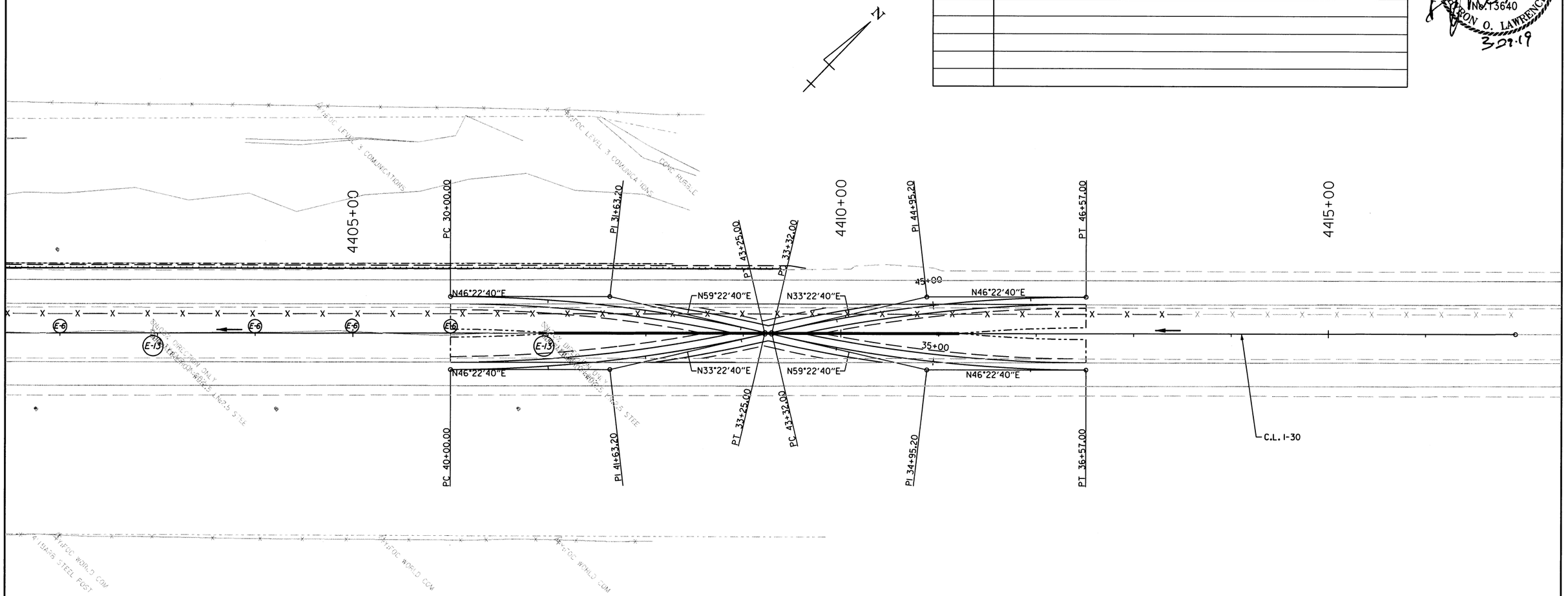
XYZ: (601)-(671)-(0)-(0) NAD83 (2011) (US Feet)
REVISED DATE: ##REVDATE##
PROJECT: 16383A I-30 Later at Bridge Slide \Design\CIVIL\Drawings\R012307.05E.EC1.002.dgn

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	10	68
				(2)	TEMPORARY EROSION CONTROL DETAILS			

REVISIONS

DATE OF REVISION	REVISION

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
3-29-19



LEGEND

E-7 = DROP INLET 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 UNTIL FINAL STABILIZATION.

C.L. I-30 C.L. MEDIAN COMPOST FILTER SOCK DROP INLET PROTECTION	(E-13)	LIN FT.
STA. 4402+95 TO 4410+90	MEDIAN	40

C.L. I-30 C.L. MEDIAN ROCK DITCH CHECKS	(E-6)	EACH
STA. 4400+02 TO 4306+00	MEDIAN	4

TEMPORARY EROSION CONTROL DETAILS
ALL STAGES

Leonard.Speed 3/29/2019 3:01:21 PM
WORKSPACE: AHTD
PROJECT: ROUTE 163836,I-30 LateralBridge Slide\Design\CIVIL\Drawings\R012307.05E.EC0.003.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.			
				JOB NO.		012307	11	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

SEQUENCE OF CONSTRUCTION:

STAGE 1 OPERATIONS:
INSTALL ADVANCE WARNING SIGNS.
INSTALL TEMPORARY EROSION CONTROL DEVICES.
CONSTRUCT BRIDGE SUPERSTRUCTURE ON TEMPORARY SUPPORTS AND BRIDGE SUBSTRUCTURE UNDER EXISTING MAIN LANES.

STAGE 2 OPERATIONS:
INSTALL ADVANCE WARNING SIGNS.
CLOSE BOTH INSIDE LANES ON MAIN LANES.
REMOVE WIRE ROPE SAFETY FENCE AND RUMBLE STRIPS IN CONSTRUCTION AREAS.
CONSTRUCT CROSSOVERS AND CONSTRUCTION PAVEMENT MARKINGS IN MEDIAN AREA.

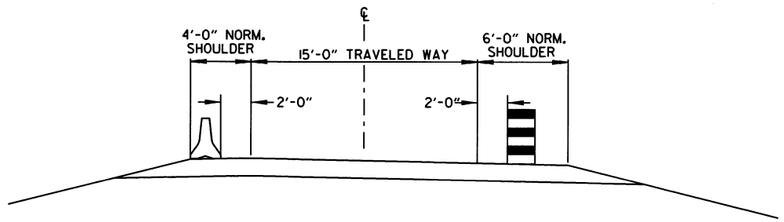
STAGE 3A OPERATIONS:
SHIFT EB I-30 MAIN LANE TRAFFIC TO OUTSIDE SHOULDER.
INSTALL PRIMARY EB MAIN LANE PRECAST CONCRETE BARRIER WITH MODULAR GLARE SHIELDS AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
ROUTE WB I-30 MAIN LANE TRAFFIC THROUGH CROSSOVER ONTO INSIDE LANE OF EB MAIN LANES.
PERFORM EXISTING WB BRIDGE DEMOLITION AND BRIDGE SLIDE.
RECONSTRUCT APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 3A MAINTENANCE OF TRAFFIC.

STAGE 3B OPERATIONS:
SHIFT WB I-30 MAIN LANE TRAFFIC TO WB OUTSIDE SHOULDER AND RETURN EB I-30 MAIN LANE TRAFFIC TO NORMAL FLOW.
INSTALL PRIMARY WB MAIN LANE PRECAST CONCRETE BARRIER AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
RETURN WB I-30 MAIN LANE TRAFFIC TO TWO TRAVEL LANES.
RECONSTRUCT REMAINING WB APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 3B MAINTENANCE OF TRAFFIC.
REMOVE AND INSTALL WB MEDIAN GUARDRAIL.
INSTALL INSIDE WB PERMANENT PAVEMENT MARKINGS AS DIRECTED.

STAGE 4A OPERATIONS:
SHIFT WB I-30 MAIN LANE TRAFFIC TO OUTSIDE SHOULDER.
INSTALL PRIMARY WB MAIN LANE PRECAST CONCRETE BARRIER WITH MODULAR GLARE SHIELDS AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
ROUTE EB I-30 MAIN LANE TRAFFIC THROUGH CROSSOVER ONTO INSIDE LANE OF WB MAIN LANES.
PERFORM EXISTING EB BRIDGE DEMOLITION AND BRIDGE SLIDE.
RECONSTRUCT APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 4A MAINTENANCE OF TRAFFIC.

STAGE 4B OPERATIONS:
SHIFT EB I-30 MAIN LANE TRAFFIC TO OUTSIDE SHOULDER AND RETURN WB I-30 MAIN LANE TRAFFIC TO NORMAL FLOW.
INSTALL PRIMARY EB MAIN LANE PRECAST CONCRETE BARRIER AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
RETURN EB I-30 MAIN LANE TRAFFIC TO TWO TRAVEL LANES.
RECONSTRUCT REMAINING EB APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 4B MAINTENANCE OF TRAFFIC.
REMOVE AND INSTALL EB MEDIAN GUARDRAIL.
REMOVE MEDIAN CROSSOVERS AND INSTALL WB PERMANENT PAVEMENT MARKINGS.

STAGE 5 OPERATIONS:
SHIFT EB TRAFFIC TO PERMANENT LOCATION AND INSTALL REMAINING PERMANENT PAVEMENT MARKINGS, GUARDRAIL AND WIRE ROPE SAFETY FENCE.



TYPICAL TRAFFIC DRUM AND BARRIER WALL PLACEMENT AT CROSSOVERS

Leonard Speed 3/29/2019 3:01:23 PM
WORKSPACE: AHTD
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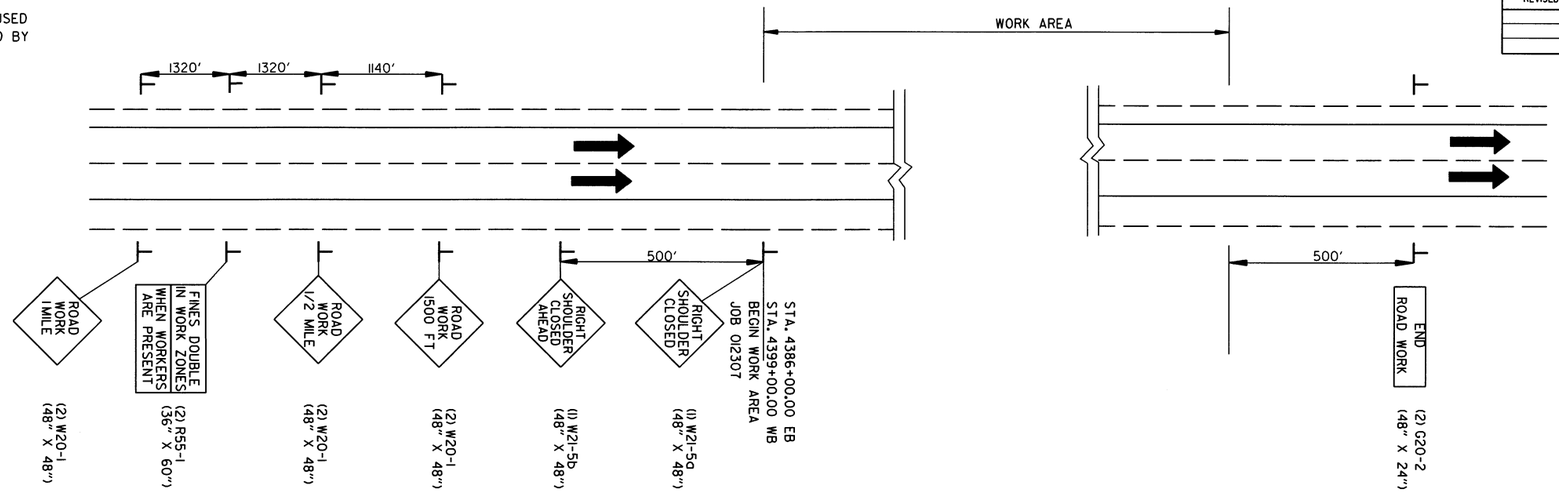
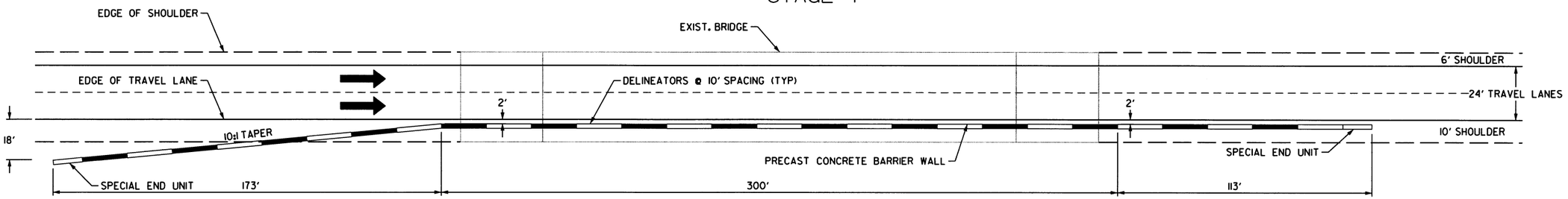
REVISED DATE: ##REVDATE##

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	12	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

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

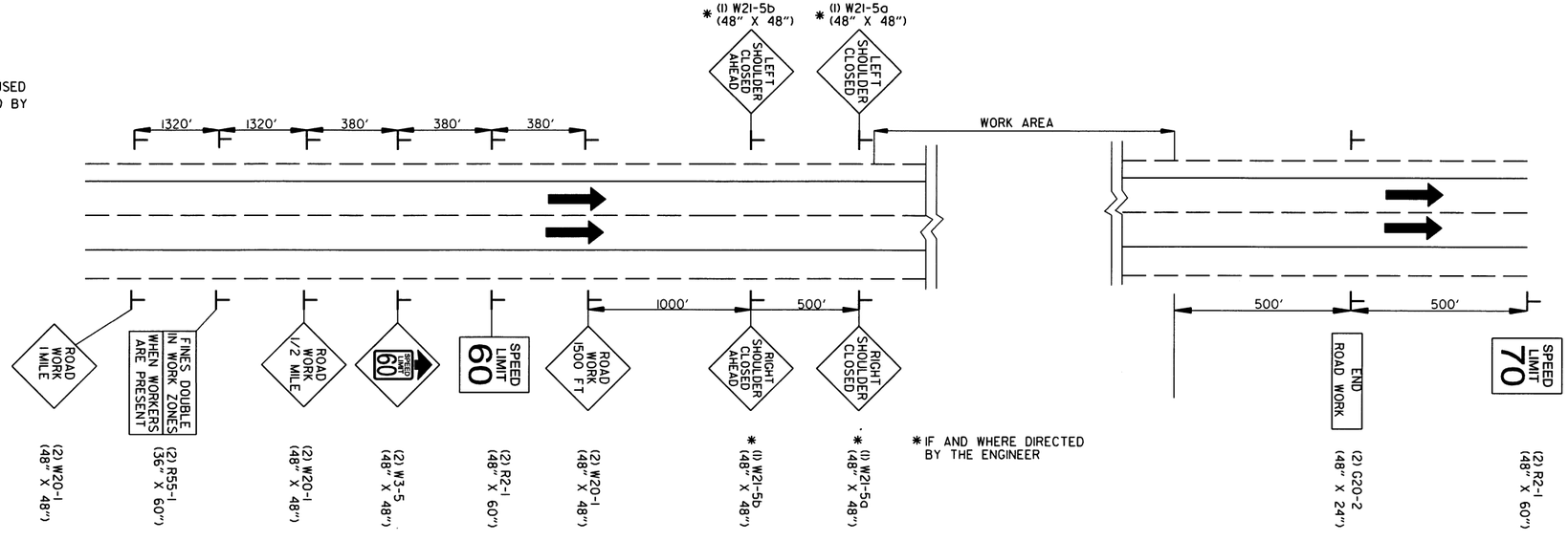


ADVANCE SIGNS AT BEGINNING AND END OF JOB
STAGE 1



PRECAST CONCRETE BARRIER WALL PLACEMENT ALONG BRIDGE
STAGE 1

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



* IF AND WHERE DIRECTED BY THE ENGINEER

LEGEND

- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- PRECAST CONCRETE BARRIER WALL

ADVANCE SIGNS AT BEGINNING AND END OF JOB
STAGES 3B & 4B

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE WARNING SIGNS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

Leonard.Speed 3/29/2019 3:01:26 PM
WORKSPACE: AHTD
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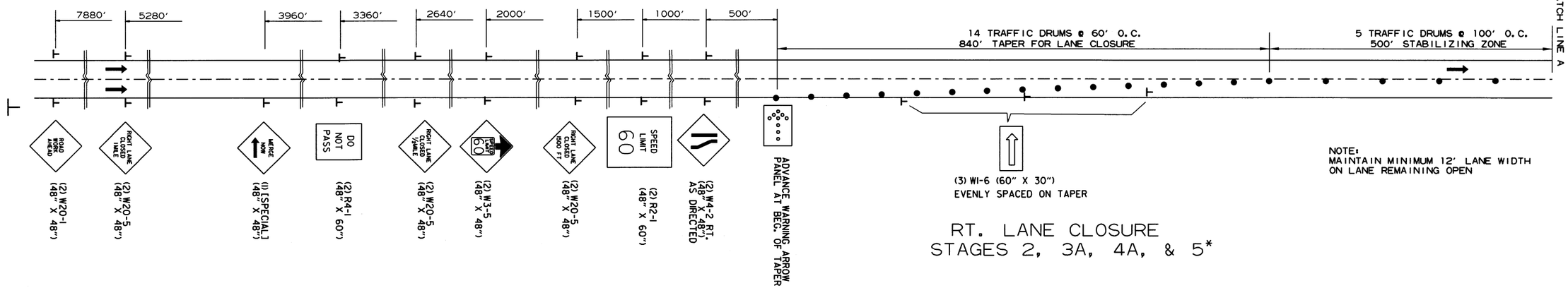
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	13	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

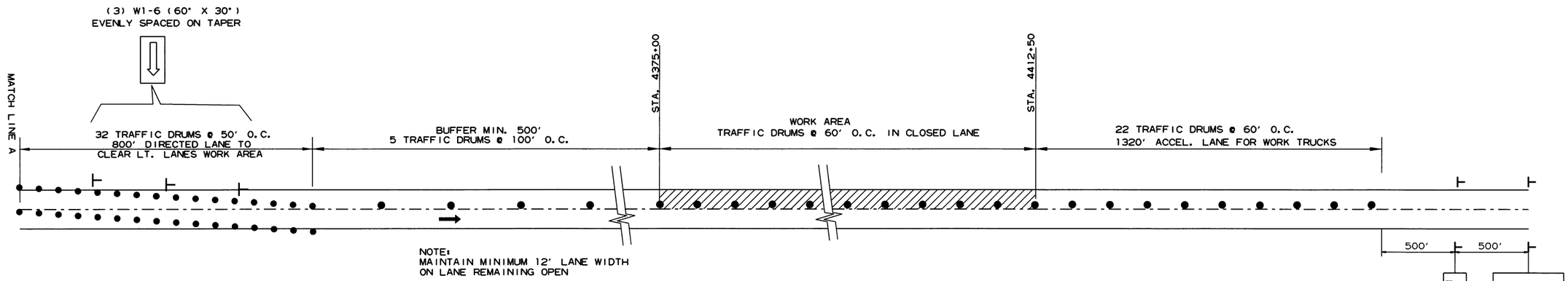
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

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



RT. LANE CLOSURE
STAGES 2, 3A, 4A, & 5*

* IF AND WHERE DIRECTED BY THE ENGINEER



DIVERSION FOR LT. LANE WORK ZONE
STAGE 2 & 5*

LEGEND

- TRAFFIC DRUM
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS

MAINTENANCE OF TRAFFIC DETAILS
ADVANCE WARNING SIGNS

LeonardSpeed 3/29/2019 3:04:28 PM
WORKSPACE: AHTD
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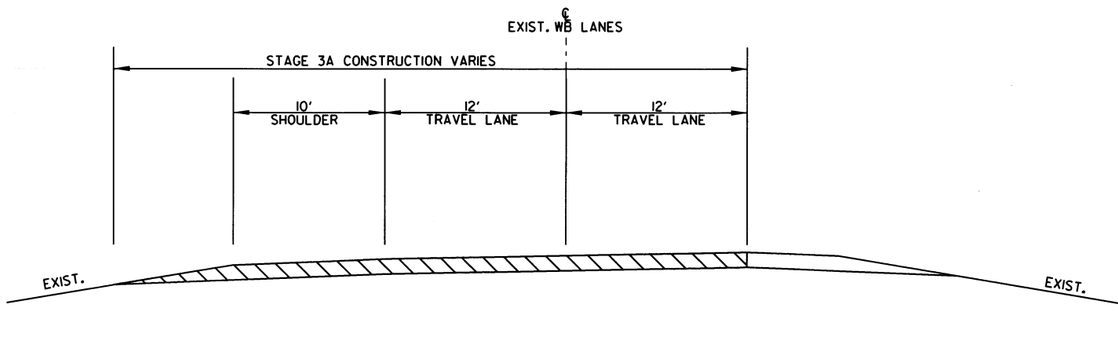
REVISED DATE: $$REVDATE$$

SEQUENCE OF CONSTRUCTION:

STAGE 3A OPERATIONS:
SHIFT EB I-30 MAIN LANE TRAFFIC TO OUTSIDE SHOULDER.
INSTALL PRIMARY EB MAIN LANE PRECAST CONCRETE BARRIER WITH MODULAR GLARE SHIELDS AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
ROUTE WB I-30 MAIN LANE TRAFFIC THROUGH CROSSOVER ONTO INSIDE LANE OF EB MAIN LANES.
PERFORM EXISTING WB BRIDGE DEMOLITION AND BRIDGE SLIDE.
RECONSTRUCT APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 3A MAINTENANCE OF TRAFFIC.

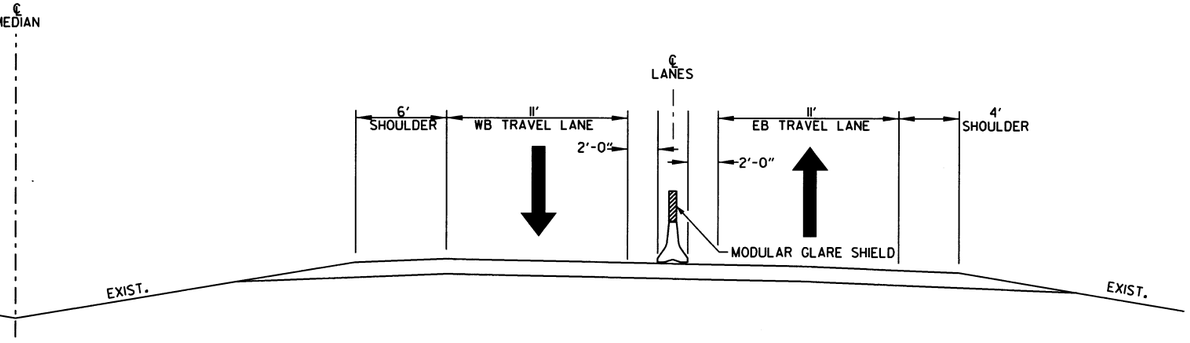
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	14	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019



STAGE 3A CONSTRUCTION - I-30 WB

STA. 4386+00.00 TO 4399+50.00



STAGE 3A MAIN LANE HEAD-TO-HEAD FOR MAINTENANCE OF TRAFFIC

STA. 4375+00 TO 4412+50.00

MAINTENANCE OF TRAFFIC DETAILS
STAGE 3A - TYPICAL SECTION

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	15	68

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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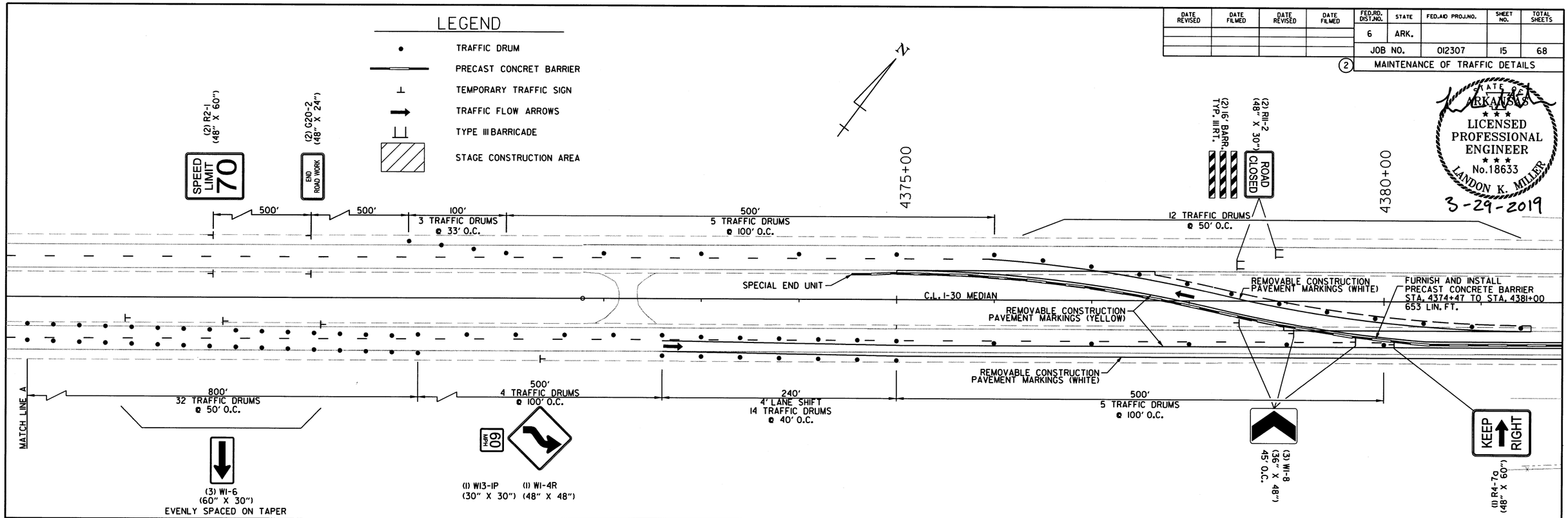
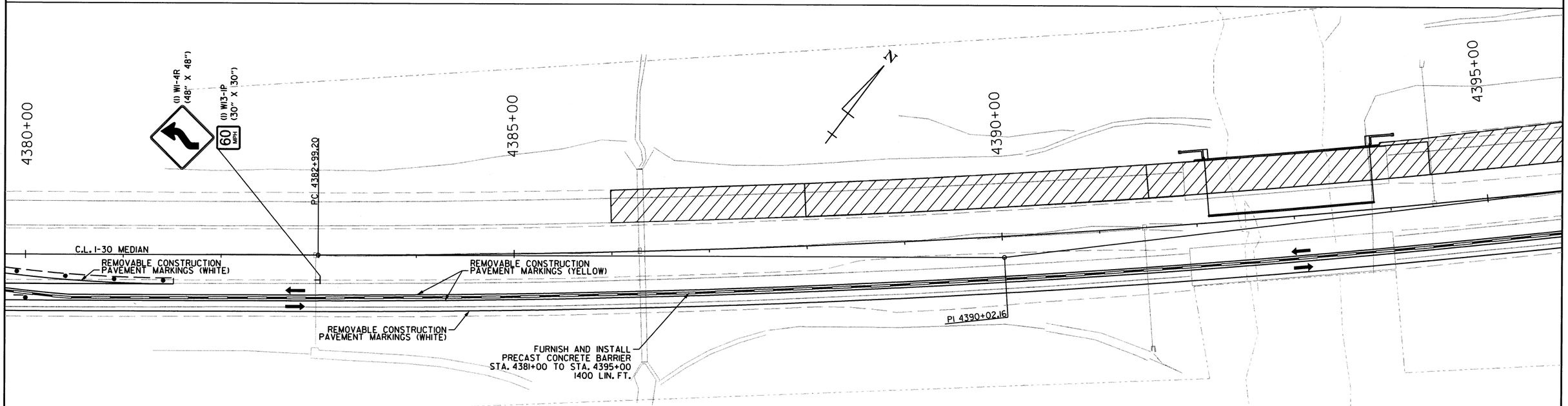
LEGEND

- TRAFFIC DRUM
- PRECAST CONCRETE BARRIER
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- STAGE CONSTRUCTION AREA





MAINTENANCE OF TRAFFIC DETAILS STAGE 3A

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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.			
				JOB NO.		012307	16	68

(2) MAINTENANCE OF TRAFFIC DETAILS

LEGEND

- TRAFFIC DRUM
- PRECAST CONCRETE BARRIER
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- STAGE CONSTRUCTION AREA

STATE OF ARKANSAS
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4395+00 4400+00 4405+00 4410+00

PT 4397+03.35

C.L. I-30 MEDIAN

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)

FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4395+00 TO STA. 4406+00 1100 LIN. FT.

(1) RII-2 (48" X 30") ROAD CLOSED

(1) WI-6 (60" X 30")

(16') BARR. TYP. III LT.

(3) WI-8 (36" X 48") 45' O.C.

4410+00

14 TRAFFIC DRUMS @ 50' O.C.

400' MODULAR GLARE SHIELD

4415+00

(1) WI-4L (48" X 48")

(1) WI3-IP (30" X 30") 60 MPH

500' 5 TRAFFIC DRUMS @ 100' O.C.

360'

800' 8 TRAFFIC DRUMS @ 100' O.C.

MATCH LINE A

FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4406+00 TO STA. 4413+20 720 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)

TEMPORARY IMPACT ATTENUATION BARRIER

C.L. I-30 MEDIAN

100' 3 DRUMS @ 33' O.C.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

500' 5 TRAFFIC DRUMS @ 100' O.C.

240' 4' LANE SHIFT 14 TRAFFIC DRUMS @40' O.C.

500' 500'

(3) WI-8 (36" X 48") 45' O.C.

60 MPH

(1) WI3-IP (30" X 30")

(1) WI-4L (48" X 48")

END ROAD WORK

(2) G20-2 (48" X 24")

70 SPEED LIMIT

(2) R2-1 (48" X 60")

MAINTENANCE OF TRAFFIC DETAILS STAGE 3A

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REVISED DATE: $$REVDATE$$

SEQUENCE OF CONSTRUCTION:

STAGE 3B OPERATIONS:
SHIFT WB I-30 MAIN LANE TRAFFIC TO WB OUTSIDE SHOULDER AND RETURN EB I-30 MAIN LANE TRAFFIC TO NORMAL FLOW.
INSTALL PRIMARY WB MAIN LANE PRECAST CONCRETE BARRIER AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
RETURN WB I-30 MAIN LANE TRAFFIC TO TWO TRAVEL LANES.
RECONSTRUCT REMAINING WB APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 3B MAINTENANCE OF TRAFFIC.
REMOVE AND INSTALL WB MEDIAN GUARDRAIL.
INSTALL INSIDE WB PERMANENT PAVEMENT MARKINGS AS DIRECTED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	17	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
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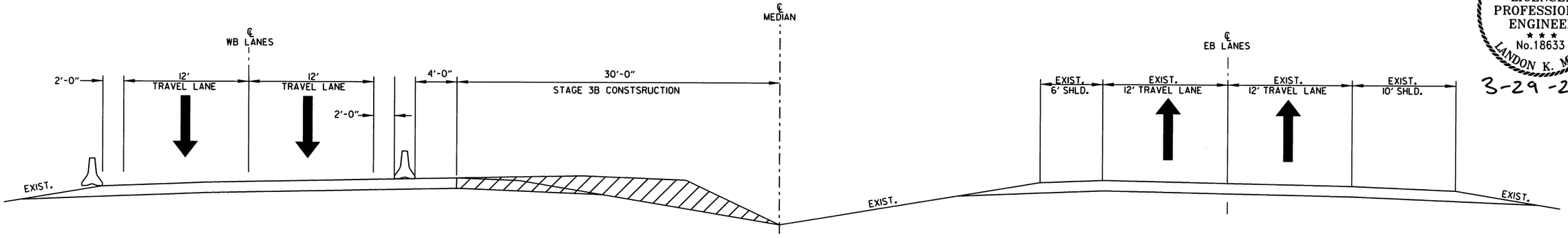
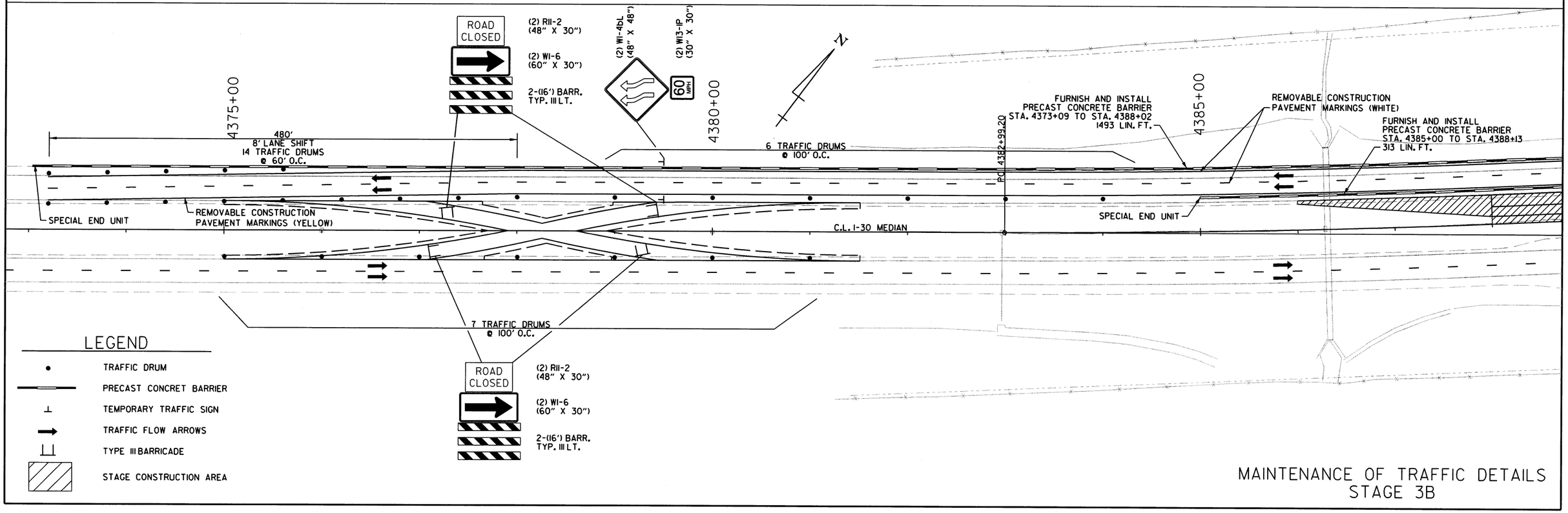
LANDON K. MILLER
3-29-2019



STAGE 3B CONSTRUCTION - I-30

STA. 4386+00.00 TO 4399+50.00



MAINTENANCE OF TRAFFIC DETAILS STAGE 3B

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REVISED DATE: ##REVDATE##

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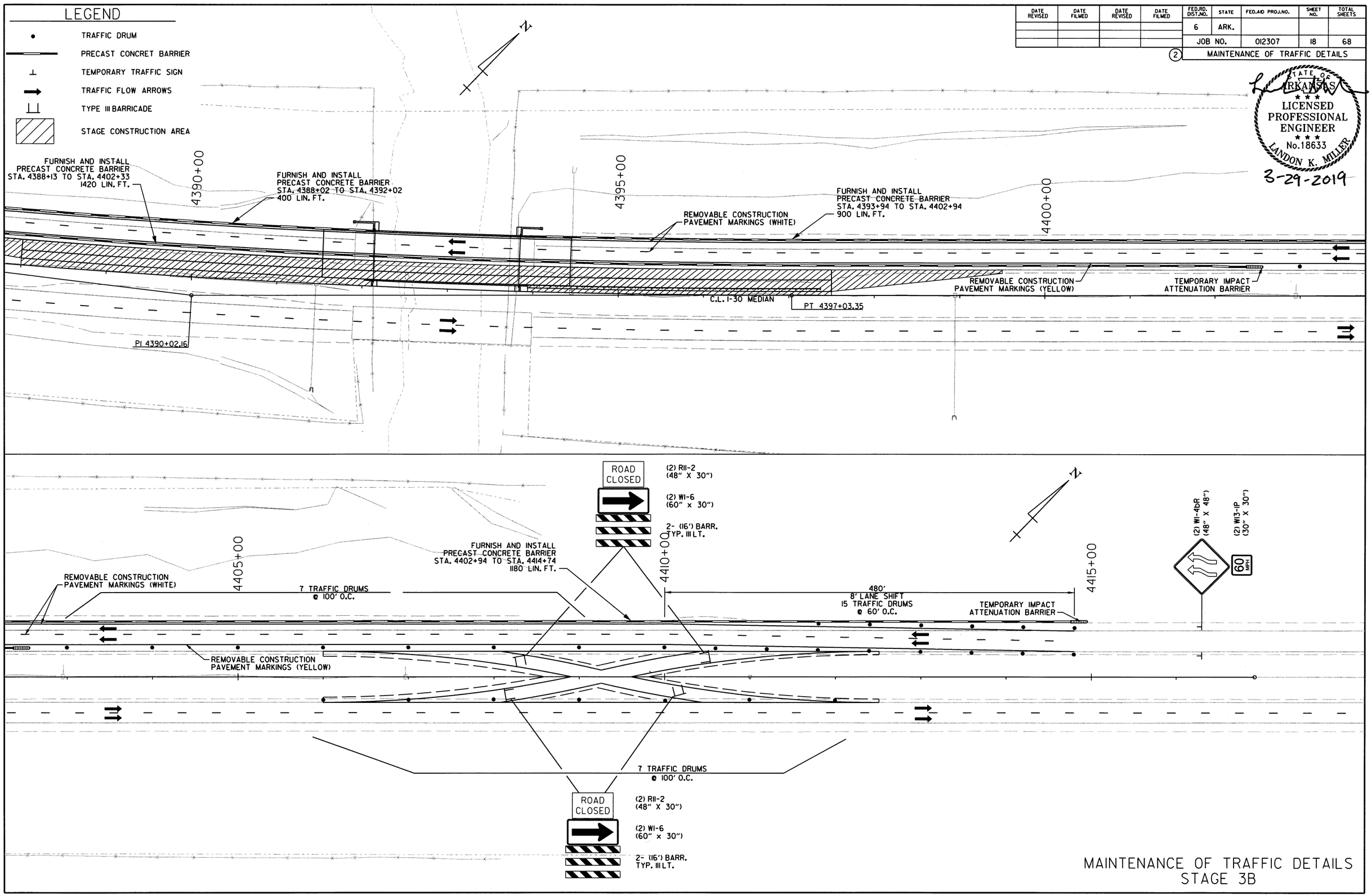
				6	ARK.			
				JOB NO.		012307	18	68

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

LEGEND

- TRAFFIC DRUM
- PRECAST CONCRETE BARRIER
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- STAGE CONSTRUCTION AREA



MAINTENANCE OF TRAFFIC DETAILS STAGE 3B

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REVISED DATE: $$REVDATE$$

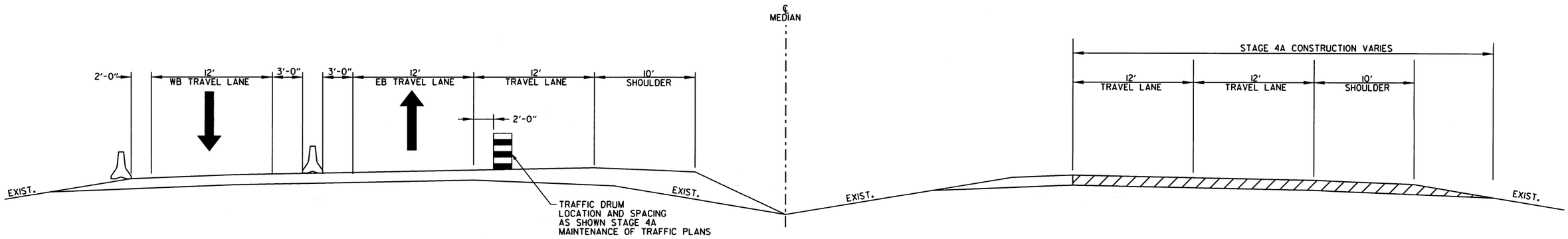
SEQUENCE OF CONSTRUCTION:

STAGE 4A OPERATIONS:
SHIFT WB I-30 MAIN LANE TRAFFIC TO OUTSIDE SHOULDER.
INSTALL PRIMARY WB MAIN LANE PRECAST CONCRETE BARRIER WITH MODULAR GLARE SHIELDS AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
ROUTE EB I-30 MAIN LANE TRAFFIC THROUGH CROSSOVER ONTO INSIDE LANE OF WB MAIN LANES.
PERFORM EXISTING EB BRIDGE DEMOLITION AND BRIDGE SLIDE.
RECONSTRUCT APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 4A MAINTENANCE OF TRAFFIC.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	19	68

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019



STAGE 4A MAIN LANE HEAD-TO-HEAD FOR MAINTENANCE OF TRAFFIC
STA. 4381+75.00 TO STA. 4406+75.00

STAGE 4A CONSTRUCTION - I-30 EB
STA. 4386+00.00 TO STA. 4399+50.00

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4A - TYPICAL SECTION

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	20	68

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

LEGEND

- TRAFFIC DRUM
- PRECAST CONCRETE BARRIER
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- STAGE CONSTRUCTION AREA

MATCH LINE A

(2) R2-1 (48" X 60")
SPEED LIMIT 70
500'
(2) G20-2 (48" X 24")
END ROAD WORK
500'
SPECIAL END UNIT
4375+00
480'
8' LANE SHIFT
14 TRAFFIC DRUMS @60' O.C.
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)
(3) W1-8 (36" X 48") 45' O.C.
(1) W1-4L (48" X 48")
60 MPH
(1) W13-1P (24" X 24")
4380+00
REMAIN IN PLACE PRECAST CONCRETE BARRIER STA. 4373+09 TO STA. 4383+02 993 LIN. FT.
2 TRAFFIC DRUMS @ 33' O.C.
TEMPORARY IMPACT ATTENUATION BARRIER
FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4374+37 TO STA. 4383+37 900 LIN. FT.
C.L. I-30 MEDIAN
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)
PC 4382+99.20
800'
8 TRAFFIC DRUMS @ 100' O.C.
360'
500'
5 TRAFFIC DRUMS @ 100' O.C.
400'
MODULAR GLARE SHIELD
14 TRAFFIC DRUMS @ 50' O.C.
60 MPH
(1) W13-1P (24" X 24")
(1) W1-4L (48" X 48")
(3) W1-8 (36" X 48") 45' O.C.
(16") BARR. TYP. III L.T.
(1) W1-6 (60" X 30")
ROAD CLOSED
(1) R11-2 (48" X 30")

4385+00
REMAIN IN PLACE PRECAST CONCRETE BARRIER STA. 4383+02 TO STA. 4392+02 900 LIN. FT.
FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4383+37 TO STA. 4397+37 1400 LIN. FT.
C.L. I-30 MEDIAN
82+99.20
4390+00
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)
10 TRAFFIC DRUMS @ 100' O.C.
PI 4390+02.16
4395+00
PT 4397+03.35

MAINTENANCE OF TRAFFIC DETAILS STAGE 4A

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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.			
				JOB NO.		012307	21	68

(2) MAINTENANCE OF TRAFFIC DETAILS

STATE OF ARKANSAS
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LANDON K. MILLER
3-29-2019

LEGEND

- TRAFFIC DRUM
- PRECAST CONCRETE BARRIER
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- STAGE CONSTRUCTION AREA

4395+00 4400+00 4405+00

REMAIN IN PLACE
PRECAST CONCRETE BARRIER
STA. 4394+00 TO STA. 4407+00
1300 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

4 TRAFFIC DRUMS @ 100' O.C.

PT 4397+03.35

C.L. I-30 MEDIAN

FURNISH AND INSTALL
PRECAST CONCRETE BARRIER
STA. 4397+37 TO STA. 4406+37
900 LIN. FT.

3 TRAFFIC DRUMS @ 50' O.C.

60 MPH — (1) W13-1P (24" X 24")

(1) W1-4R (48" X 48")

(2) R5-1 (48" X 48") — DO NOT ENTER

4410+00 4415+00

REMAIN IN PLACE
PRECAST CONCRETE BARRIER
STA. 4407+00 TO STA. 4414+80
780 LIN. FT.

(1) W21-5a (24" X 24") — RIGHT SHOULDER CLOSED

(1) W1-4R (48" X 48") — 60 MPH — (1) W13-1P (24" X 24")

(1) W21-5b (24" X 24") — RIGHT SHOULDER CLOSED AHEAD

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

3 TRAFFIC DRUMS @ 100' O.C.

480'
8' LANE SHIFT
15 TRAFFIC DRUMS @ 60' O.C.

500'
4 TRAFFIC DRUMS @ 100' O.C.

800'
32 TRAFFIC DRUMS @ 50' O.C.

MATCH LINE A

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

C.L. I-30 MEDIAN

TEMPORARY IMPACT ATTENUATION BARRIER

SPECIAL END UNIT

11 TRAFFIC DRUMS @ 50' O.C.

500'
5 TRAFFIC DRUMS @ 100' O.C

100'
3 TRAFFIC DRUMS @ 33' O.C

500'

500'

FURNISH AND INSTALL
PRECAST CONCRETE BARRIER
STA. 4406+37 TO STA. 4412+70
633 LIN. FT.

KEEP RIGHT — (1) R4-7a (48" X 60")

(3) W1-8 (36" X 48") 45 O.C.

ROAD CLOSED — (2) R11-2 (48" X 30")

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

END ROAD WORK — (2) G20-2 (48" X 24")

SPEED LIMIT 70 — (2) R2-1 (48" X 60")

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4A

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SEQUENCE OF CONSTRUCTION:
STAGE 4B OPERATIONS:
SHIFT EB I-30 MAIN LANE TRAFFIC TO OUTSIDE SHOULDER AND RETURN WB I-30 MAIN LANE TRAFFIC TO NORMAL FLOW.
INSTALL PRIMARY EB MAIN LANE PRECAST CONCRETE BARRIER AND REMOVABLE CONSTRUCTION PAVEMENT MARKINGS.
RETURN EB I-30 MAIN LANE TRAFFIC TO TWO TRAVEL LANES.
RECONSTRUCT REMAINING EB APPROACH SLABS AND ROADWAY APPROACH WORK AS SHOWN IN STAGE 4B MAINTENANCE OF TRAFFIC.
REMOVE AND INSTALL EB MEDIAN GUARDRAIL.
REMOVE MEDIAN CROSSOVERS AND INSTALL WB PERMANENT PAVEMENT MARKINGS.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	22	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
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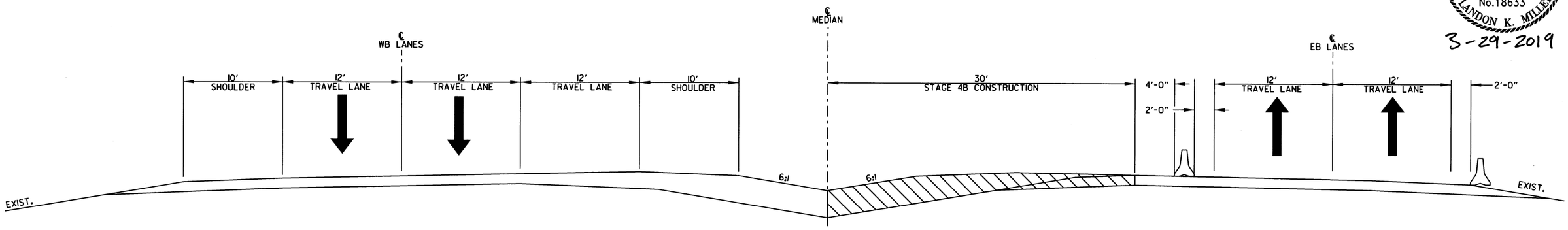
No.18633
LANDON K. MILLER
3-29-2019



STAGE 4B CONSTRUCTION

STA. 4386+00.00 TO STA. 4399+50.00

MAINTENANCE OF TRAFFIC DETAILS
STAGE 4B - TYPICAL SECTION

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	23	68

(2) MAINTENANCE OF TRAFFIC DETAILS

LEGEND

- TRAFFIC DRUM
- PRECAST CONCRET BARRIER
- TEMPORARY TRAFFIC SIGN
- TRAFFIC FLOW ARROWS
- TYPE III BARRICADE
- STAGE CONSTRUCTION AREA

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

4380+00 4385+00 4390+00

PC 4382+99.20

C.L. I-30 MEDIAN

TEMPORARY IMPACT ATTENUATION BARRIER

FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4382+00 TO STA. 4393+00 1100 LIN. FT.

TEMPORARY IMPACT ATTENUATION BARRIER

480' 8' LANE SHIFT 13 TRAFFIC DRUMS @ 60' O.C.

FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4378+03 TO STA. 4392+03 1400 LIN. FT.

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

PI 4390+02.16

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)

60 MPH

(2) W13-1P (30" X 30")

(2) W1-4DR (48" X 48")

4395+00 4400+00 4405+00

TEMPORARY IMPACT ATTENUATION BARRIER

PT 4397+03.35

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)

REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)

FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4393+00 TO STA. 4402+93 993 LIN. FT.

C.L. I-30 MEDIAN

SPECIAL END UNIT

480' 8' LANE SHIFT 14 TRAFFIC DRUMS @ 60' O.C.

SPECIAL END UNIT

FURNISH AND INSTALL PRECAST CONCRETE BARRIER STA. 4393+93 TO STA. 4407+86 1393 LIN. FT.

60 MPH

(2) W13-1P (30" X 30")

(2) W1-4BL (48" X 48")

MAINTENANCE OF TRAFFIC DETAILS STAGE 4B

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WORKSPACE: AHTD
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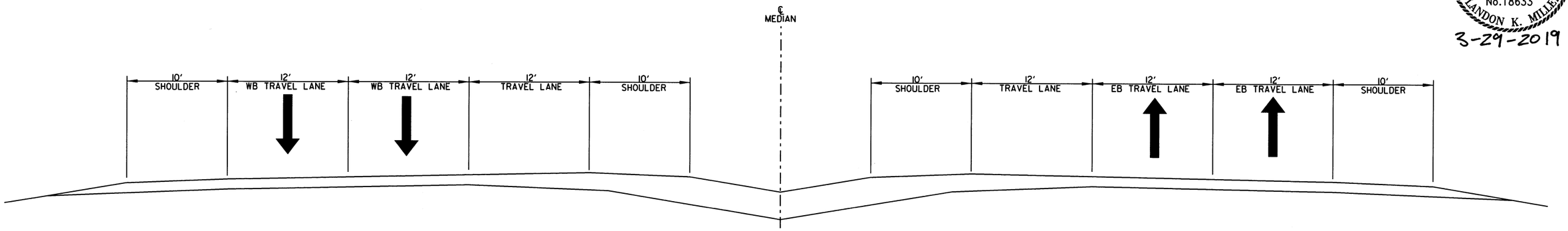
REVISED DATE: $REVDATE$

SEQUENCE OF CONSTRUCTION:

STAGE 5 OPERATIONS:
SHIFT EB TRAFFIC TO PERMANENT LOCATION AND INSTALL REMAINING PERMANENT PAVEMENT MARKINGS, GUARDRAIL AND WIRE ROPE SAFETY FENCE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	24	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 18633
LANDON K. MILLER
3-29-2019



STAGE 5A MAINTENANCE OF TRAFFIC TYPICAL SECTION

STA. 4388+00.00 TO STA. 4397+50.00

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WORKSPACE: AHTD
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MAINTENANCE OF TRAFFIC DETAILS
STAGE 5 - TYPICAL SECTION

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	25	68
				(2)	MAINTENANCE OF TRAFFIC DETAILS			

LEGEND

TRAFFIC FLOW ARROWS

N

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18633
LANDON K. MILLER
3-29-2019

4390+00

4395+00

4400+00

PI 4390+02.16

PT 4397+03.35

MAINTENANCE OF TRAFFIC DETAILS
STAGE 5

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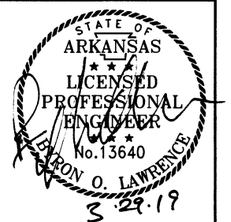
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	26	68
				(2)	PERMANENT PAVEMENT MARKINGS DETAILS			

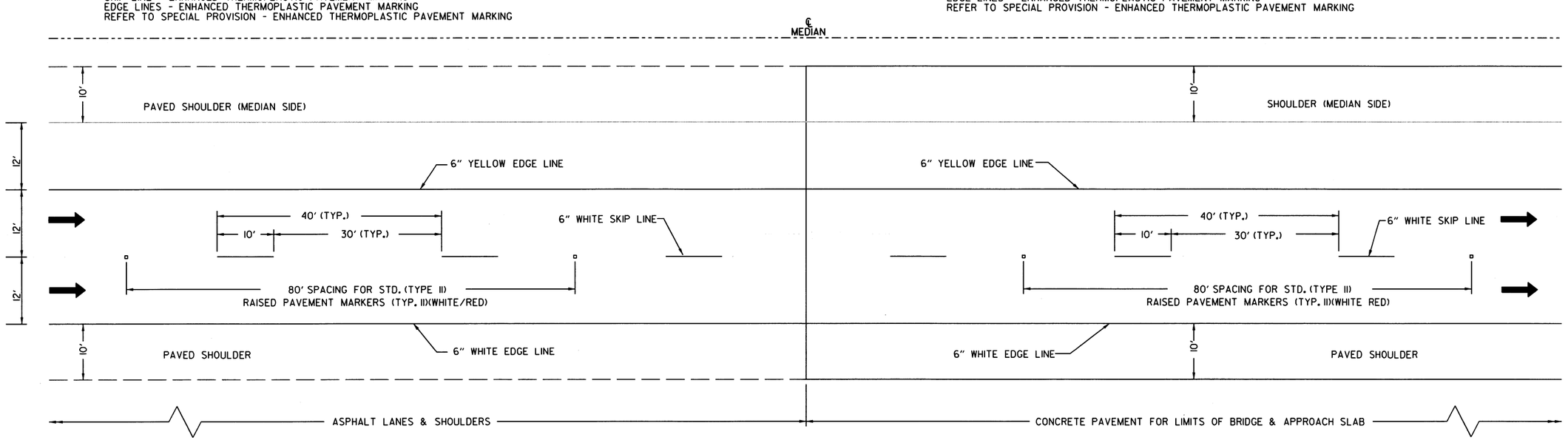


ASPHALT ROADWAY

SKIP LINE - ENHANCED THERMOPLASTIC PAVEMENT MARKING
EDGE LINES - ENHANCED THERMOPLASTIC PAVEMENT MARKING
REFER TO SPECIAL PROVISION - ENHANCED THERMOPLASTIC PAVEMENT MARKING

CONCRETE BRIDGE

SKIP LINE - ENHANCED THERMOPLASTIC PAVEMENT MARKING
EDGE LINES - ENHANCED THERMOPLASTIC PAVEMENT MARKING
REFER TO SPECIAL PROVISION - ENHANCED THERMOPLASTIC PAVEMENT MARKING



PERMANENT PAVEMENT MARKING DETAILS

SEE STANDARD DRAWINGS PM-1 AND PM-2
FOR ADDITIONAL INFORMATION

Leonard Speed
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	27	68
				(2)	SOIL BORINGS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
3.29.19

SUMMARY SOIL CLASSIFICATION TEST RESULTS - DE ROCHE 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			
B-2	4394+17	2.0 - 3.5	14	52	14	38	46	SC	A-7-6
B-2	4394+17	13.5 - 15.0	14	41	15	26	50	CL	A-7-6
B-3	4393+57	2.0 - 3.5	14	25	13	12	39	SC	A-6
B-5	4391+84	2.0 - 3.5	15	32	19	13	30	SC	A-2-6
B-5	4391+84	13.5 - 15.0	16	41	19	22	41	SC	A-7-6
B-6	4391+27	2.0 - 3.5	17	31	17	14	52	CL	A-6
B-7	4391+18	3.5 - 5.0	19	46	21	25	55	CL	A-7-6
B-7	4391+18	13.5 - 15.0	8	41	17	24	24	SC	A-2-7
B-8	4391+67	0.5 - 2.0	13	20	14	6	47	SC-SM	A-4
B-8	4391+67	5.0 - 6.5	15	35	21	14	33	SC	A-2-6
B-8	4391+67	18.5 - 20.0	15	37	18	19	40	SC	A-6
P-1	4395+92	3.5 - 5.0	19	41	15	26	48	SC	A-7-6
P-2	4396+97	3.5 - 5.0	14	30	14	16	41	SC	A-6
P-4	4394+43	3.5 - 5.0	11	40	12	28	35	SC	A-2-6
P-6	4394+42	5.0 - 6.5	7	44	15	29	50	CL	A-7-6
P-7	4391+19	3.5 - 5.0	14	32	19	13	37	SC	A-6
P-9	4391+68	3.5 - 5.0	9	29	18	11	10	SP-SC	A-2-6
P-10	4390+05	2.0 - 3.5	13	18	15	3	20	SM	A-2-4
P-11	4389+13	3.5 - 5.0	17	52	27	25	44	SC	A-7-6

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.

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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
04/25/2019				6	ARK.			
06/10/2019				JOB NO.		012307	28	68
				(2)		QUANTITIES		

CONSTRUCTION PAVEMENT MARKINGS AND PERMANENT PAVEMENT MARKINGS

DESCRIPTION	STAGE 1	STAGE 2	STAGE 3A	STAGE 3B	STAGE 4A	STAGE 4B	END OF JOB	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (BLACKOUT)	RAISED PAVEMENT MARKERS	ENHANCED THERMOPLASTIC PAVEMENT MARKING	
											TYPE II	6" WHITE	6" YELLOW
	LIN. FT. - EACH							LIN. FT.			(WHITE/RED) EACH	LIN. FT.	
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (WHITE)			5762	5200	7922	3700		22584					
REMOVABLE CONSTRUCTION PAVEMENT MARKINGS (YELLOW)			7996	4160	7366	2960			22482				
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED)							34				34		
ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")							3375					3375	
ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")							5305						5305
* ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.										9013			
TOTALS:								22584	22482	9013	34	3375	5305

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

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
ALAN O. LAWRENCE
6-10-2019

AUTOMATED WORK ZONE INFORMATION SYSTEM

LOCATION	FURNISH AND INSTALL VEHICLE DETECTION SYSTEM	FURNISH AND INSTALL CLOSED CIRCUIT TELEVISION	FURNISH AND INSTALL VARIABLE MESSAGE SIGN	FURNISH AND INSTALL PUBLIC NOTIFICATION SYSTEM	* AWIS OPERATION	AWIS MOBILIZATION	* DEVICE RELOCATION
	EACH	EACH	EACH	EACH	MONTH	LUMP SUM	EACH
3 EACH @ 1 MI SPACING ON EACH DIRECTION OF I-30 APPROACHING THE WORK ZONE, AND 1 INSIDE WORK ZONE	7						
INSTALL AT DE ROCHE CREEK BRIDGE SITE		1					
IN ADVANCE OF THE FOLLOWING EXITS: I-30 WB - BEFORE EXIT 91 SOCIAL HILL, BEFORE EXIT 83 FRIENDSHIP HWY. 283. IN ADVANCE OF THE FOLLOWING EXITS: I-30 EB - BEFORE EXIT 73 ARKADELPHIA, BEFORE EXIT 78 CADDO VALLEY HOT SPRINGS.			4				
I-30 WB AT EXIT 83 FRIENDSHIP, I-30 EB AT EXIT 78 CADDO VALLEY HOT SPRINGS				2			
					14		
ESTIMATED QUANTITY: IF AND WHERE DIRECTED BY THE ENGINEER						1.00	5
TOTALS:	7	1	4	2	14	1.00	5

* QUANTITIES ESTIMATED. REFER TO SECTION 104.03 OF THE STANDARD SPECIFICATIONS

REMOVAL AND DISPOSAL OF ITEMS

STATION	STATION	LOCATION	APPROACH SLAB	APPROACH GUTTER	RUMBLE STRIPS	WIRE ROPE SAFETY FENCE	GUARDRAIL
			EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.
4372+75	4391+90	RT. OF I-30 LT. LANES				1915	
4394+00	4413+50	RT. OF I-30 LT. LANES				1950	
4375+00	4381+50	LT. & RT. OF C.L. I-30 MEDIAN			1300		
4406+00	4412+50	LT. & RT. OF C.L. I-30 MEDIAN			1300		
4388+64	4391+83	LT. OF I-30 RT. LANES					319
4389+17	4391+83	RT. OF I-30 RT. LANES					266
4391+54	4394+42	LT. & RT. OF C.L. I-30	4	8			
4394+07	4409+88	LT. OF I-30 LT. LANES					1581
4394+07	4397+28	RT. OF I-30 LT. LANES					321
TOTALS:			4	8	2600	3865	2487

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.

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	STAGE 1	STAGE 2	STAGE 3A	STAGE 3B	STAGE 4A	STAGE 4B	STAGE 5*	MAXIMUM NUMBER REQUIRED	TOTAL SIGNS REQUIRED		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	MODULAR GLARE SHIELD	PORTABLE CONSTRUCTION LIGHTING	MOBILE SPEED NOTIFICATION SYSTEM
											NO.	SQ. FT.		RIGHT	LEFT								
			LIN. FT. - EACH										EACH	LIN. FT.				EACH		DAY	WEEK	LIN. FT.	DAY	EACH
W20-1	ROAD WORK 1 MILE	48"x48"	4			4		4		4	4	64.0												
W20-1	ROAD WORK 1/2 MILE	48"x48"	4			4		4		4	4	64.0												
W20-1	ROAD WORK 1500 FT.	48"x48"	4			4		4		4	4	64.0												
W20-1	ROAD WORK AHEAD	48"x48"		4	4		4		4	4	4	64.0												
W20-5	RIGHT LANE CLOSED 1 MILE	48"x48"		4	4		4		4	4	4	64.0												
W20-5	RIGHT LANE CLOSED 1/2 MILE	48"x48"		4	4		4		4	4	4	64.0												
W20-5	RIGHT LANE CLOSED 1500 FT.	48"x48"		4	4		4		4	4	4	64.0												
G20-2	END ROAD WORK	48"x24"	4	4	4	4	4	4	4	4	4	32.0												
W1-4R	REVERSE CURVE RT.	48"x48"			2		2			2	2	32.0												
W1-4L	REVERSE CURVE LT.	48"x48"			2		2			2	2	32.0												
W1-4bR	REVERSE CURVE RT. (TWO LANES)	48"x48"				2		2		2	2	32.0												
W1-4bL	REVERSE CURVE LT. (TWO LANES)	48"x48"				2		2		2	2	32.0												
W13-1P	SPEED LIMIT (ADVISORY)	30"x30"			4	4	4	4		4	4	25.0												
R11-2	ROAD CLOSED	48"x30"			3	8	3			8	8	80.0												
W1-6	LARGE ARROW	60"x30"		12	10	8	10		12	12	12	150.0												
W1-8	CHEVRONS	36"x48"			9		9			9	9	108.0												
R2-1	SPEED LIMIT "70"	48"x60"		4	4	4	4	4	4	4	4	80.0												
R2-1	SPEED LIMIT "60"	48"x60"		4	4	4	4	4	4	4	4	80.0												
R4-1	DO NOT PASS	48"x60"		4	4		4		4	4	4	80.0												
R4-7a	KEEP RIGHT	48"x60"			1		1			1	1	20.0												
R55-1	FINES DOUBLE IN WORK ZONES	36"x60"	4			4		4		4	4	60.0												
SPECIAL	MERGE NOW	48"x48"		2	2		2		2	2	2	32.0												
W1-6	ONE-DIRECTION LARGE ARROW	60"x30"				8				8	8	100.0												
W3-5	REDUCED SPEED AHEAD "60"	48"x48"		4	4	4	4	4	4	4	4	64.0												
W4-2 RT	MERGE LT.	48"x48"		4	4	4	4	4	4	4	4	64.0												
* W21-5a	RIGHT SHOULDER CLOSED	48"x48"	2			1		1		2	2	32.0												
* W21-5b	RIGHT SHOULDER CLOSED AHEAD	48"x48"	2			1		1		2	2	32.0												
* W21-5a	LEFT SHOULDER CLOSED	48"x48"				1		1		1	1	16.0												
* W21-5b	LEFT SHOULDER CLOSED AHEAD	48"x48"				1		1		1	1	16.0												
SPECIAL	WORK WITH US (USE CAUTION, SLOW DOWN)	60"x120"	2	2	2	2	2	2	2	2	2	100.00												
	TRAFFIC DRUMS			282	143	56	152	27	282	282			282											
*	MOBILE SPEED NOTIFICATION SYSTEM																							2
	TYPE III BARRICADE-RT. (16')				48		48			48				48										
	TYPE III BARRICADE-LT. (16')					128				128					128									
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER			1172		2701	1833	2100		7806						7806								
	RELOCATING PRECAST CONCRETE BARRIER					1172	3873	5706	4886	15637							15637							
	TEMPORARY IMPACT ATTENUATION BARRIER						2	1	3	6								6						
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)						2	1	3	6									6					
*	ADVANCE WARNING ARROW PANEL			2	2		2		2	2										30				
*	PORTABLE CHANGEABLE MESSAGE SIGN		2	2	2	2	2	2	2	2											12			
	MODULAR GLARE SHIELD				400		400			400												800		
	PORTABLE CONSTRUCTION LIGHTING				4		4			4													32	
TOTALS:											1747.0		282	48	128	7806	15637	6	6	30	12	800	32	2

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

NOTE: THE QUANTITY OF TRAFFIC DRUMS PROVIDED IS FOR BOTH SIDES OF THE ROADWAY FOR THE FULL LENGTH OF THE JOB. HOWEVER, THE INSTALLATION OF TRAFFIC DRUMS SHALL NEVER EXCEED THE ACTUAL WORK AREA BY MORE THAN 1/4 MILE, UNLESS APPROVED BY THE ENGINEER

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

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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
05/02/2019				6	ARK.			
06/10/2019				JOB NO.		012307	29	68
				(2)	QUANTITIES			

EARTHWORK

STATION	STATION	LOCATION / DESCRIPTION	UNCLASSIFIED EXCAVATION	COMPACTED EMBANKMENT	* SOIL STABILIZATION
			CU. YD.		TON
4375+00.00	4381+50.00	CROSSOVERS 1A/1B	2407	1926	2
4388+00.00	4397+00.00	MAIN LANES	588	5506	6
4406+00.00	4412+50.00	CROSSOVERS 2A/2B	2407	1926	2
TOTALS:			5402	9358	10

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

REMOVAL AND DISPOSAL OF FENCE

STATION	STATION	LOCATION	FENCE
			LIN. FT.
4392+00	4392+00	LT. & RT. OF C.L. I-30	420
4393+70	4393+70	LT. & RT. OF C.L. I-30	410
TOTAL:			830

WIRE ROPE SAFETY FENCE

STATION	STATION	LOCATION	WIRE ROPE SAFETY FENCE	WRSF END TERMINAL	DITCH PAVING					WRSF (POST REPAIR)	TEMPORARY TERMINAL ANCHOR FOR WRSF
					LENGTH	WIDTH	CONCRETE DITCH PAVING (TYPE B)	SOLID SODDING	WATER		
			LIN. FT.	EACH	LIN. FT.	LIN. FT.	SQ. YD.	SQ. YD.	M. GAL.	EACH	EACH
4372+75	4392+10	LT OF C.L. MAIN LANES	1935	2	1935	4	860	860	10.8		
4396+77	4413+50	LT OF C.L. MAIN LANES	1673	1	1673	4	744	744	9.4		
4413+50											1
ENTIRE PROJECT										** 10	
TOTALS:			3608	3			1604	1604	20.2	10	1

** QUANTITY ESTIMATED. SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL					TEMPORARY EROSION CONTROL									
			SEEDING	LIME	MULCH COVER	WATER	SECOND SEEDING APPLICATION	TEMPORARY SEEDING	MULCH COVER	WATER	SAND BAG DITCH CHECKS (E-5)	ROCK DITCH CHECKS (E-6)	SILT FENCE (E-11)	FILTER SOCK (18") (E-13)	SEDIMENT BASIN (E-14)	OBLITERATION OF SEDIMENT BASIN	*SEDIMENT REMOVAL & DISPOSAL
			ACRE	TON	ACRE	M.GAL.	ACRE	ACRE	ACRE	M.GAL.	BAG	CU.YD.	LIN. FT.	LIN.FT.	CU.YD.	CU.YD.	CU. YD.
ENTIRE	PROJECT	CLEARING AND GRUBBING						9.14	9.14	186.5	176	108	3625	160	1481	1481	1659
ENTIRE	PROJECT	STAGE 1						9.14	9.14	186.5							
ENTIRE	PROJECT	STAGE 2						2.00	2.00	40.8							
ENTIRE	PROJECT	STAGE 3/4	9.14	18.28	9.14	932.3	9.14										
*ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.			2.29	4.58	2.29	233.6	2.29	13.96	13.96	284.8	44	24		320	370	370	370
TOTALS:			11.43	22.86	11.43	1165.9	11.43	34.24	34.24	698.6	220	132	3625	480	1851	1851	2029

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
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.

FENCING

STATION	STATION	LOCATION	WIRE FENCE (TYPE A)	* 16'-0" GATES
			LIN. FT.	EACH
4392+12	4392+12	RT. OF I-30 RT. LANES	91	
4392+12	4392+12	LT. OF I-30 LT. LANES	165	
4393+84	4393+84	RT. OF I-30 RT. LANES	95	1
4393+84	4393+84	LT. OF I-30 LT. LANES	161	
TOTALS:			512	1

* DENOTES ALTERNATE BID ITEM.

RUMBLE STRIPS IN ASPHALT SHOULDERS

STATION	STATION	LOCATION	* RUMBLE STRIPS IN ASPHALT SHOULDERS
			LIN.FT.
4385+00	4391+52	LT. & RT. OF I-30 LT. LANES	652
4385+00	4391+53	LT. & RT. OF I-30 RT. LANES	653
4394+43	4400+00	LT. & RT. OF I-30 RT. LANES	557
4394+44	4400+00	LT. & RT. OF I-30 LT. LANES	556
TOTAL:			2418

* 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 SPECIAL)	APPROACH SLABS (TYPE SPECIAL)	REINFORCING STEEL-RDWY. (GR. 60)	AGGREGATE BASE CRS. (CLASS 7)	STONE BACKFILL
			CU.YD.	CU.YD.	POUND	TON	TON
4391+52.46	4392+12.46	LT. LANES		118.67	16972	84.00	738.6
4391+52.46	4392+12.46	LT. LANES	63.61		4436	52.11	
4391+53.52	4392+13.52	RT. LANES		118.67	16972	84.00	727.8
4391+53.52	4392+13.52	RT. LANES	63.61		4436	52.11	
4393+82.47	4394+42.47	RT. LANES		118.67	16972	84.00	646.8
4393+82.47	4394+42.47	RT. LANES	63.61		4436	52.11	
4393+83.54	4394+43.54	LT. LANES		118.67	16972	84.00	616.7
4393+83.54	4394+43.54	LT. LANES	63.61		4436	52.11	
TOTALS:			254.44	474.68	85632	544.44	2729.9

NOTE: USE T =14.5" FOR 10' SHOULDER.

STRUCTURES

STATION	STATION	DESCRIPTION	TEMPORARY CULVERTS	DROP INLETS ADJUSTED TO GRADE	SOLID SODDING	WATER	STD. DWG. NOS.
			18"	TYPE H			
			LIN. FT.	EACH	SQ.YD.	M.GAL.	
4407+06	4411+21	C.L. MEDIAN	415				PCC-1, PCM-1
4391+46		C.L. MEDIAN		1	3	0.04	
4394+45		C.L. MEDIAN		1	3	0.04	
TOTALS:			415	2	6	0.08	

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.

GUARDRAIL

STATION	STATION	LOCATION	GUARDRAIL (TYPE A)	THRIE BEAM GUARDRAIL TERMINAL	GUARDRAIL TERMINAL (TYPE 2)
			LIN. FT.	EACH	
4388+58.81	4392+02.56	LT. OF I-30 RT. LANES	275	1	1
4389+09.28	4392+03.03	RT. OF I-30 RT. LANES	225	1	1
4393+93.56	4397+37.31	RT. OF I-30 LT. LANES	275	1	1
4393+94.04	4409+87.79	LT. OF I-30 LT. LANES	1525	1	1
TOTALS:			2300	4	4

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BRYAN O. LAWRENCE
6-10-2019

Scott.Thornsberry 6/7/2019 2:6:48 PM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_163836_I-30 Lateral Bridge Slide\Design\CIVIL\Drawings\R012307_08B_QYT_00A.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.			
				JOB NO.		012307	30	68

(2) QUANTITIES

SELECTED PIPE BEDDING

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

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

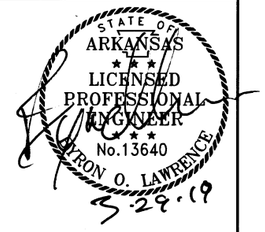
CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
			STATION	
4388+00	4397+50	C.L. I-30	10	10
4375+00	4381+50	CROSSOVER 1A/1B		7
4406+00	4412+50	CROSSOVER 2A/2B		7
TOTALS:			**10**	**24**

BENCH MARKS

STATION	LOCATION	BENCH MARKS
		EACH
4392+12	LEFT LANE BRIDGE END	1
TOTAL:		**1**

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



COLD MILLING ASPHALT PAVEMENT

STATION	STATION	LOCATION	AVG. WIDTH	COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.
4386+00.00	4388+00.00	C.L. I-30 LT. MAIN LANES	38.00	844.44
4386+00.00	4388+00.00	C.L. I-30 RT. MAIN LANES	38.00	844.44
4389+75.00	4390+50.00	C.L. I-30 LT. MAIN LANES	38.00	316.67
4397+50.00	4399+50.00	C.L. I-30 LT. MAIN LANES	41.50	922.22
4397+50.00	4399+50.00	C.L. I-30 RT. MAIN LANES	38.00	844.44
TOTAL:				**3772.21**

NOTE: AVERAGE MILLING DEPTH 1".

ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC

LOCATION	TON	TACK COAT
		GALLON
ENTIRE PROJECT - TO BE USED IF AND WHERE	5	10
DIRECTED BY THE ENGINEER		
TOTALS:	**5**	**10**

BASIS OF ESTIMATE:
ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC...25 TON/MILE
TACK COAT FOR MAINTENANCE OF TRAFFIC.....50 GAL./MILE

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.
4391+82.00	4392+13.00	LT. OF I-30 LT. LANES	31.00	10.75	37.03	13.78	0.17
4391+82.00	4392+13.00	RT. OF I-30 RT. LANES	31.00	8.25	28.42	13.78	0.17
4393+84.00	4394+15.00	LT. OF I-30 LT. LANES	31.00	8.33	28.69	13.78	0.17
4393+84.00	4394+15.00	RT. OF I-30 RT. LANES	31.00	10.50	36.17	13.78	0.17
TOTALS:					**130.31**	**55.12**	**0.68**

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

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.	GALLONS / SQ.YD.	GALLON	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.	TOTAL PG 76-22
			FEET			FEET				FEET			TON	FEET			TON	FEET			TON
MAIN LANES																					
4386+00.00	4388+00.00	C.L. I-30 RT. MAIN LANES TRANSITION	200.00			38.00	844.44	0.17	143.55									38.00	844.44	220.00	92.89
4386+00.00	4388+00.00	C.L. I-30 LT. MAIN LANES TRANSITION	200.00			38.00	844.44	0.17	143.55									38.00	844.44	220.00	92.89
4388+00.00	4391+53.52	C.L. I-30 RT. MAIN LANES	353.52			38.00	1492.64	0.05	74.63									38.00	1492.64	220.00	164.19
4388+00.00	4391+53.52	C.L. I-30 RT. MAIN LANES - INSIDE WIDENING	353.52	127.00	448.97	36.36	1428.22	0.05	71.41	18.52	727.47	1210.00	440.12	18.23	716.07	330.00	118.15	18.13	712.15	220.00	78.34
4388+00.00	4391+52.46	C.L. I-30 LT. MAIN LANES	352.46			38.00	1488.16	0.05	74.41									38.00	1488.16	220.00	163.70
4388+00.00	4391+52.46	C.L. I-30 LT. MAIN LANES - INSIDE WIDENING	352.46	127.00	447.62	36.36	1423.94	0.05	71.20	18.52	725.28	1210.00	438.79	18.23	713.93	330.00	117.80	18.13	710.01	220.00	78.10
4394+42.47	4397+50.00	C.L. I-30 RT. MAIN LANES	307.53			38.00	1298.46	0.05	64.92									38.00	1298.46	220.00	142.83
4394+42.47	4397+50.00	C.L. I-30 RT. MAIN LANES - INSIDE WIDENING	307.53	127.00	390.56	36.36	1242.42	0.05	62.12	18.52	632.83	1210.00	382.86	18.23	622.92	330.00	102.78	18.13	619.50	220.00	68.15
4394+43.54	4397+50.00	C.L. I-30 LT. MAIN LANES	306.46			38.00	1293.94	0.05	64.70									38.00	1293.94	220.00	142.33
4394+43.54	4397+50.00	C.L. I-30 LT. MAIN LANES - INSIDE WIDENING	306.46	127.00	389.20	36.36	1238.10	0.05	61.91	18.52	630.63	1210.00	381.53	18.23	620.75	330.00	102.42	18.13	617.35	220.00	67.91
4397+50.00	4399+50.00	C.L. I-30 RT. MAIN LANES TRANSITION	200.00			38.00	844.44	0.17	143.55									38.00	844.44	220.00	92.89
4397+50.00	4399+50.00	C.L. I-30 LT. MAIN LANES TRANSITION	200.00			38.00	844.44	0.17	143.55									38.00	844.44	220.00	92.89
MAINTENANCE OF TRAFFIC																					
11+87.99	14+87.48	CROSSOVER 1A	299.49			35.23	1172.34	0.05	58.62	17.88	594.99	880.00	261.80	17.35	577.35	495.00	142.89	25.00	831.92	220.00	91.51
21+85.59	23+03.74	CROSSOVER 1B	118.15			35.23	462.49	0.05	23.12	17.88	234.72	880.00	103.28	17.35	227.77	495.00	56.37	25.00	328.19	220.00	36.10
23+62.66	24+86.13	CROSSOVER 1B	123.47			35.23	483.32	0.05	24.17	17.88	245.29	880.00	107.93	17.35	238.02	495.00	58.91	25.00	342.97	220.00	37.73
31+71.48	34+67.78	CROSSOVER 2A	296.30			35.23	1159.85	0.05	57.99	17.88	588.65	880.00	259.01	17.35	571.20	495.00	141.37	25.00	823.06	220.00	90.54
41+73.02	42+94.34	CROSSOVER 2B	121.32			35.23	474.90	0.05	23.75	17.88	241.02	880.00	106.05	17.35	233.88	495.00	57.89	25.00	337.00	220.00	37.07
43+53.27	44+69.09	CROSSOVER 2B	115.82			35.23	453.37	0.05	22.67	17.88	230.10	880.00	101.24	17.35	223.28	495.00	55.26	25.00	321.72	220.00	35.39
ADDITIONAL FOR LEVELING & SUPERELEVATION CORRECTION																					
4388+00.00	4391+53.52	C.L. I-30 RT. MAIN LANES	353.52			38.00	1492.64	0.17	253.75									38.00	1492.64	679.33	507.00
4394+42.47	4397+50.00	C.L. I-30 RT. MAIN LANES	307.53			38.00	1298.46	0.17	220.74									38.00	1298.46	679.33	441.04
4388+00.00	4391+52.46	C.L. I-30 LT. MAIN LANES	352.46			38.00	1488.16	0.17	252.99									38.00	1488.16	679.33	505.48
4394+43.54	4397+50.00	C.L. I-30 LT. MAIN LANES	306.46			38.00	1293.94	0.17	219.97									38.00	1293.94	679.33	439.51
ADDITIONAL FOR GUARDRAIL WIDENING																					
4388+16.69	4392+02.69	C.L. I-30 LT. OF RT. MAIN LANES	386.00	18.97	73.22													4.95	212.30	220.00	23.35
4388+65.15	4392+03.04	C.L. I-30 RT. OF RT. MAIN LANES	337.89	18.97	64.10													3.96	148.67	220.00	16.35
4393+93.70	4397+81.40	C.L. I-30 RT. OF LT. MAIN LANES	387.70	18.97	73.55													3.82	164.56	220.00	18.10
4393+94.04	4409+87.79	C.L. I-30 LT. OF LT. MAIN LANES	1593.75	18.97	302.33													4.50	796.88	220.00	87.66
TOTALS:					**2189.55**		**24063.11**		**2277.27**		**4850.98**		**2582.61**		**4745.17**		**953.84**		**21490.44**		**3643.94**

BASIS OF ESTIMATE:
ACHM SURFACE COURSE (1/2").....94.7% MIN. AGGR.....5.3% ASPHALT BINDER
ACHM BINDER COURSE (1").....95.6% MIN. AGGR.....4.4% ASPHALT BINDER
ACHM BASE COURSE (1 1/2").....96.0% MIN. AGGR.....4.0% 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.

LeonardSpeed 3/29/2019 3:02:05 PM
MicroStation V8i
Y:\Projects\ArDOT_163836_I-30 LateralBridge Slide\Design\CIVIL\Drawings\R012307_08B_QYT_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
06/10/2019				6	ARK.			
				JOB NO.		012307	31	68
				①	A&B7427 - QUANTITIES - 60302			

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 012307

BRIDGE NUMBER	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NUMBER	205	801	SS & 802	SP,SS,& 802	803	SS & 804	SS & 804	SS & 805	SP,SS,& 807	SS & 808	812	816	816	SP JOB 012307	SP JOB 012307	SP JOB 012307	SP JOB 012307	SP JOB 012307	SP JOB 012307	SP JOB 012307	⚠ SP & 822
			ITEM	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. _)	UNCLASSIFIED EXCAVATION FOR STRUCTURES -BRIDGE	CLASS S CONCRETE -BRIDGE	CLASS S(AE) CONCRETE -BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL-BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	① STEEL PILING (HP 12X53)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270,GR 50W)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATE (TYPE D)	DUMPED RIPRAP	FILTER BLANKET	DRILLED SHAFT (72" DIA.)	PERMANENT STEEL CASING (84" DIA.)	CROSSHOLE SONIC LOGGING (72" DIA.)	CORING DRILLED SHAFT	TEMPORARY FALSEWORK (SITE NO. _)	BRIDGE JACKING (SITE NO. _)	LATERAL SLIDE (SITE NO. _)	BRIDGE DECK REPAIR
			UNIT	LUMP SUM	CU. YD.	CU. YD.	CU. YD.	GAL.	POUND	POUND	LIN. FT.	POUND	CU. IN.	EACH	CU. YD.	SQ. YD.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	SQ. YD.
A7427	INTERSTATE 30 OVER DE ROCHE CREEK	END BENT NO. 1			111	141.22			33,160		20		3,754		232	426	74	30	2	37				
		END BENT NO. 2			145	140.08			33,160		30		3,754		422	788	84	30	2	42				
		170'-0" COMP. PLATE GIRDER SPAN					426.70	24.7		91,490		510,390		1										
		SITE NO. 1 (BRIDGE A3853)		1																				
																					1	1	1	10
TOTAL FOR BRIDGE NO. A7427				1	256	281.30	426.70	24.7	66,320	91,490	50	510,390	7,508	1	654	1,214	158	60	4	79	1	1	1	
B7427	INTERSTATE 30 OVER DE ROCHE CREEK																							
		END BENT NO. 1			157	141.85			33,160		20		3,754		332	617	74	30	2	37				
		END BENT NO. 2			149	140.65			33,160		30		3,754		402	750	82	30	2	41				
		170'-0" COMP. PLATE GIRDER SPAN					430.80	24.7		92,570		510,390		1										
		SITE NO. 2 (BRIDGE B3853)		1																				
																					1	1	1	220
TOTAL FOR BRIDGE NO. B7427				1	306	282.50	430.80	24.7	66,320	92,570	50	510,390	7,508	1	734	1,367	156	60	4	78	1	1	1	
		TOTALS FOR JOB NO. 012307			562	563.80	857.50	49.4	132,640	184,060	100	1,020,780	15,016	2	1,388	2,581	314	120	8	157				②230

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)". All piles shall conform to Std. Dwg. No. 55020.

② The contractor shall repair portions of the existing bridge decks for Bridge Numbers A & B 3853 in need of repair thoughout construction as dirtected by the Engineer. The quantity shown is for estimating and bidding purposes only; actual quantity to be determined in the field.

⚠ Bridge deck repair quantity added for maintaining existing bridge decks for Bridge Numbers A & B 3853 during construction, 6/10/2019, Drawn By: HSS, Checked By: MKL.

6/10/2019

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.18919
HUSSAM S. SALEEM

BRIDGE ENGINEER
PRINT DATE: 6/11/2019

SCHEDULE OF BRIDGE QUANTITIES
DE ROCHE CREEK STRS. & APPRS. (S)
CLARK AND HOT SPRING COUNTIES
ROUTE 30 SECTIONS 14 & 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 02/2019 FILENAME: B012307_QXl.dgn
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: -- DATE: --
BRIDGE NO. A&B7427 DRAWING NO. 60302 SCALE: No Scale

Scott.Thornsberry 6/11/2019 10:38:32 AM
WORKSPACE: ARDOT
Y:\Projects\ArDOT_163836.1-30 Lateral Bridge Slide\Design\BRIDGE\Drawings\B012307_QXl.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
04/25/2019				6	ARK.			
05/02/2019				JOB NO.		012307	32	68
06/10/2019				(2)	SUMMARY OF QUANTITIES AND REVISIONS			

SUMMARY OF QUANTITIES (BOX 1 OF 2)

ITEM NUMBER	ITEM		QUANTITY	UNIT
201	CLEARING		10	STATION
201	GRUBBING		24	STATION
202	REMOVAL AND DISPOSAL OF FENCE		830	LIN. FT.
202	REMOVAL AND DISPOSAL OF APPROACH SLABS		4	EACH
202	REMOVAL AND DISPOSAL OF APPROACH GUTTERS		8	EACH
SP	REMOVAL OF RUMBLE STRIP		2600	LIN. FT.
SP & 202	REMOVAL AND DISPOSAL OF WIRE ROPE SAFETY FENCE		3865	LIN. FT.
202	REMOVAL AND DISPOSAL OF GUARDRAIL		2487	LIN. FT.
SP & 207	STONE BACKFILL		2730	TON
210	UNCLASSIFIED EXCAVATION		5402	CU. YD.
210	COMPACTED EMBANKMENT		9358	CU. YD.
SP & 210	SOIL STABILIZATION		10	TON
SS & 303	AGGREGATE BASE COURSE (CLASS 7)		2734	TON
SS & 401	TACK COAT		2287	GAL.
SP, SS, & 405	MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")		2480	TON
SP, SS, & 405	ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2")		103	TON
SP, SS, & 406	MINERAL AGGREGATE IN ACHM BINDER COURSE (1")		912	TON
SP, SS, & 406	ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1")		42	TON
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")		3451	TON
SP, SS, & 407	ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2")		193	TON
412	COLD MILLING ASPHALT PAVEMENT		3772	SQ. YD.
SP, SS, & 414	ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC		5	TON
504	APPROACH SLABS		474.68	CU. YD.
504	APPROACH GUTTERS		254.44	CU. YD.
601	MOBILIZATION		1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE		1	EACH
SP & 603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SP & 603	TRAFFIC CONTROL SUPERVISOR		1.00	LUMP SUM
603	18" TEMPORARY CULVERT		415	LIN. FT.
SS & 604	SIGNS		1747	SQ. FT.
SS & 604	BARRICADES		176	LIN. FT.
SS & 604	TRAFFIC DRUMS		282	EACH
604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER		7806	LIN. FT.
SP	MOBILE SPEED NOTIFICATION SYSTEM		2	EACH
604	RELOCATING PRECAST CONCRETE BARRIER		15637	LIN. FT.
604	REMOVABLE CONSTRUCTION PAVEMENT MARKINGS		54079	LIN. FT.
604	ADVANCE WARNING ARROW PANEL		30	DAY
SP & 604	PORTABLE CHANGEABLE MESSAGE SIGN		12	WEEK
SP	MODULAR GLARE SHIELD		800	LIN. FT.
SP	PORTABLE CONSTRUCTION LIGHTING		32	DAY
SP	AWIS MOBILIZATION		1.00	LUMP SUM
SP	AWIS OPERATION		14	MONTH
SP	DEVICE RELOCATION		5	EACH
SP	FURNISH AND INSTALL CLOSED CIRCUIT TELEVISION SYSTEM		1	EACH
SP	FURNISH AND INSTALL PUBLIC NOTIFICATION SYSTEM		2	EACH
SP	FURNISH AND INSTALL VARIABLE MESSAGE SIGN		4	EACH
SP	FURNISH AND INSTALL VEHICLE DETECTION SYSTEM		7	EACH
SP, SS, & 605	CONCRETE DITCH PAVING (TYPE B)		1734	SQ. YD.
606	SELECTED PIPE BEDDING		50	CU. YD.
610	DROP INLETS ADJUSTED TO GRADE		2	EACH
617	GUARDRAIL (TYPE B)		2300	LIN. FT.
SS & 617	GUARDRAIL TERMINAL (TYPE 2)		4	EACH
SS & 617	THRIE BEAM GUARDRAIL TERMINAL		4	EACH
SP	TEMPORARY TERMINAL ANCHOR FOR WIRE ROPE SAFETY FENCE		1	EACH
SP	WIRE ROPE SAFETY FENCE		3608	LIN. FT.
SP	WIRE ROPE SAFETY FENCE END TERMINAL		3	EACH
SP	WIRE ROPE SAFETY FENCE (POST REPAIR)		10	EACH
619	WIRE FENCE (TYPE A)		512	LIN. FT.
* 619	16' STEEL GATES	(ALTERNATE NO. 1)	1	EACH
* 619	16' ALUMINUM GATES	(ALTERNATE NO. 2)	1	EACH
620	LIME		23	TON
620	SEEDING		11.43	ACRE
SS & 620	MULCH COVER		45.67	ACRE
620	WATER		1885.5	M. GAL.
621	TEMPORARY SEEDING		34.24	ACRE
621	SILT FENCE		3625	LIN. FT.
621	SAND BAG DITCH CHECKS		220	BAG
621	SEDIMENT BASIN		1851	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN		1851	CU. YD.
621	SEDIMENT REMOVAL AND DISPOSAL		2029	CU. YD.
621	ROCK DITCH CHECKS		132	CU. YD.
SS & 621	FILTER SOCK (18")		480	LIN. FT.
623	SECOND SEEDING APPLICATION		11.43	ACRE
624	SOLID SODDING		1665	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
642	RUMBLE STRIPS IN ASPHALT SHOULDERS		2418	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")		3375	LIN. FT.
SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")		5305	LIN. FT.
721	RAISED PAVEMENT MARKERS (TYPE II)		34	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER		6	EACH
731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)		6	EACH
SS & 804	REINFORCING STEEL-ROADWAY (GRADE 60)		85632	POUND

* DENOTES ALTERNATE BID ITEMS.

SUMMARY OF QUANTITIES (BOX 2 OF 2)

ITEM NUMBER	ITEM	QUANTITY	UNIT
	STRUCTURES OVER 20' SPAN		
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)	1.00	LUMP SUM
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 2)	1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
SP	TEMPORARY FALSEWORK (SITE NO. 1)	1.00	LUMP SUM
SP	TEMPORARY FALSEWORK (SITE NO. 2)	1.00	LUMP SUM
SP	BRIDGE JACKING (SITE NO. 1)	1.00	LUMP SUM
SP	BRIDGE JACKING (SITE NO. 2)	1.00	LUMP SUM
SP	LATERAL SLIDE (SITE NO. 1)	1.00	LUMP SUM
SP	LATERAL SLIDE (SITE NO. 2)	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	562	CU. YD.
SS & 802	CLASS S CONCRETE-BRIDGE	563.80	CU. YD.
SP, SS, & 802	CLASS S(AE) CONCRETE-BRIDGE	857.50	CU. YD.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	49.4	GAL.
SS & 804	REINFORCING STEEL-BRIDGE (GRADE 60)	132640	POUND
SS & 804	EPOXY COATED REINFORCING STEEL (GRADE 60)	184060	POUND
SS & 805	STEEL PILING (HP 12X53)	100	LIN. FT.
SP	CORING DRILLED SHAFT	157	LIN. FT.
SP	DRILLED SHAFT (72" DIAMETER)	314	LIN. FT.
SP	PERMANENT STEEL CASING (84" DIAMETER)	120	LIN. FT.
SP	CROSSHOLE SONIC LOGGING (72" DIAMETER)	8	EACH
SP, SS, & 807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)	1020780	POUND
SS & 808	ELASTOMERIC BEARINGS	15016	CU. IN.
812	BRIDGE NAME PLATE (TYPE D)	2	EACH
816	DUMPED RIPRAP	1388	CU. YD.
816	FILTER BLANKET	2581	SQ. YD.
SP & 822	BRIDGE DECK REPAIR	230	SQ. YD.

REVISIONS

DATE	REVISION	SHEET NUMBER
4/25/2019	ADDED MOBILE SPEED NOTIFICATION SYSTEMS. REMOVED SETTLEMENT AGREEMENT SPECIAL PROVISION AND ADDED MOBILE SPEED NOTIFICATION SYSTEMS SPECIAL REVISION.	3, 28 , 32
5/2/2019	ADDED 'WORK WITH US SIGN' QUANTITY	29, 32
6/10/2019	ADDED 'WORK WITH US SIGN" SPECIAL DETAIL AND REVISED SIGN QUANTITY. REVISED MOT SP, REMOVED SITE USE (A+C) SP, AND ADDED SITE USE (A+B+C) SP. REMOVED 18" RCP QUANTITY, REMOVED TYPE RM DROP INLET QUANTITY, ADDED QUANTITY FOR DROP INLETS ADJUSTED TO GRADE. ADDED QUANTITY AND SP FOR PATCHING BRIDGE DECK.	3, 5-6, 28-29, 31-32, 39, 65-66

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
REG. No. 13640
LEON O. LAWRENCE
6/10/2019

Scott.Thornsberry 6/1/2019 10:18:37 AM
WORKSPACE: ARDOT
WORKFLOW: ARDOT_I53836_I-30 LotterolBridge Slides\Design\CIVIL\Drawings\R012307_088_01T_00.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.			
				JOB NO.		012307	33	68
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
CYRON O. LAWRENCE
5-29-19

SURVEY CONTROL COORDINATES

Project Name: s070460
Date: 3/1/2017
Coordinate System: ARKANSAS STATE PLANE - SOUTH ZONE BASED ON GPS CONTROL, 100029 - 100029A
PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

Point Name	Northing	Easting	Elev	Feature	Description
1	1875704.8057	999139.7803	264.413	CTL	STD AHTD MON. STAMPED PN: 1 I-30
2	1876153.8556	999756.3358	252.239	CTL	STD AHTD MON. STAMPED PN: 2 I-30
3	1876644.8663	1000412.6316	236.029	CTL	STD AHTD MON. STAMPED PN: 3 I-30
4	1877036.7341	1000845.4880	229.742	CTL	STD AHTD MON. STAMPED PN: 4 I-30
5	1877575.8140	1001430.3010	245.766	CTL	STD AHTD MON. STAMPED PN: 5 I-30
6	1878142.9614	1002031.5025	270.356	CTL	STD AHTD MON. STAMPED PN: 6 I-30
7	1878687.7448	1002604.6434	293.385	CTL	STD AHTD MON. STAMPED PN: 7 I-30
100	1873293.8014	999100.3822	252.771	GPS	AHTD GPS MON 100029
101	1873980.7275	1000878.1129	205.146	GPS	AHTD GPS MON 100029A
900	1875918.0587	999426.0094	258.555	TBM	SQ CUT S SIDE CONC DI TOPO REFERENCES
901	1876155.8558	999745.2135	251.323	TBM	SQ CUT S END OF CONC DI I-30
902	1876334.5587	999986.5593	244.550	TBM	SQ CUT S END CONC DI TOPO REFERENCES
903	1876909.9658	1000670.2465	231.872	TBM	SQ CUT SE CRNR BR S BOUND I-30
904	1877050.5603	1000828.6826	231.896	TBM	SQ CUT NE CRNR BR S BOUND I-30
905	1877372.2999	1001200.9526	235.548	TBM	SQUARE CUT IN DI TOPO REFERENCES I-30
906	1877648.7075	1001490.4704	246.989	TBM	SQUARE CUT IN S END OF DI I-30
907	1877925.4381	1001781.7333	258.853	TBM	SQUARE CUT IN S END OF DI I-30
908	1878293.4238	1002168.4266	274.634	TBM	SQUARE CUT IN S END OF DI I-30
909	1878569.5773	1002458.2814	285.942	TBM	SQUARE CUT IN S END OF DI I-30
910	1878851.0583	1002751.5835	298.463	TBM	SQUARE CUT IN S END OF DI I-30

*Note - Rebar and Cap - Standard - 5/8" Rebar with 2" Aluminum Cap stamped
*(standard markings common to all caps), or as indicated
(other markings indicated in the point description of the individual point).
ALL DISTANCES ARE GROUND.
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.9999111221 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME s070460gi.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE
AT A SPECIFIC POINT.

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

BASIS OF BEARING:
ARKANSAS STATE PLANE GRID BEARINGS - 0302-SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: 100029 - 100029A
CONVERGENCE ANGLE: 00-34-37 LEFT AT PN: 4 LT: 34-12-50N LG: 093-01-50W
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

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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.			
				JOB NO.		012307	34	68
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 10640
AARON O. LAWRENCE
3.29.19

ALIGNMENT NAME: C.L. I-30

POINT	STATION	TYPE	NORTHING	EASTING
8000	4371+78.45	POB	1875668.9250	999090.4215
8001	4382+99.20	PC	1876337.1642	999990.1618
	4390+02.15	PI	1876756.2973	1000554.4970
8002		CC	1885536.6128	993157.7098
8003	4397+03.35	PT	1877241.2658	1001063.3706
8004	4416+92.38	POE	1878613.4943	1002503.2390

ALIGNMENT NAME: CROSSOVER 1A

POINT	STATION	TYPE	NORTHING	EASTING
8005	10+00.00	PC	1875830.5409	999370.9205
	11+63.20	PI	1875927.8484	999501.9386
8006		CC	1876980.4720	998516.8640
8007	13+25.00	PT	1876052.1345	999607.7093
8008	13+32.00	PC	1876057.4687	999612.2489
	14+95.21	PI	1876181.7549	999718.0196
8009		CC	1875129.1312	1000703.0942
8010	16+57.00	PT	1876279.0623	999849.0376

ALIGNMENT NAME: CROSSOVER 1B

POINT	STATION	TYP	NORTHING	EASTING
8011	20+00.00	PC	1875890.7512	999326.2022
	21+63.20	PI	1875988.0586	999457.2203
8012		CC	1874740.8201	1000180.2587
8013	23+25.00	PT	1876053.3995	999606.7698
8014	23+32.00	PC	1876056.2038	999613.1883
	24+95.21	PI	1876121.5446	999762.7378
8015		CC	1877368.7831	999039.6994
8016	26+57.00	PT	1876218.8521	999893.7559

ALIGNMENT NAME: CROSSOVER 2A

POINT	STATION	TYP	NORTHING	EASTING
8017	30+00.00	PC	1877887.0089	1001686.5879
	31+63.20	PI	1877999.6010	1001804.7299
8018		CC	1876850.0905	1002674.7955
8019	33+25.00	PT	1878082.7311	1001945.1715
8020	33+32.00	PC	1878086.2990	1001951.1991
	34+95.21	PI	1878169.4291	1002091.6408
8021		CC	1879318.9395	1001221.5751
8022	36+57.00	PT	1878282.0212	1002209.7827

ALIGNMENT NAME: CROSSOVER 2B

POINT	STATION	TYP	NORTHING	EASTING
8023	40+00.00	PC	1877832.7160	1001738.3304
	41+63.20	PI	1877945.3080	1001856.4723
8024		CC	1878869.6344	1000750.1228
8025	43+25.00	PT	1878081.5905	1001946.2586
8026	43+32.00	PC	1878087.4396	1001950.1121
	44+95.21	PI	1878223.7220	1002039.8983
8027		CC	1877299.3957	1003146.2479
8028	46+57.00	PT	1878336.3141	1002158.0403

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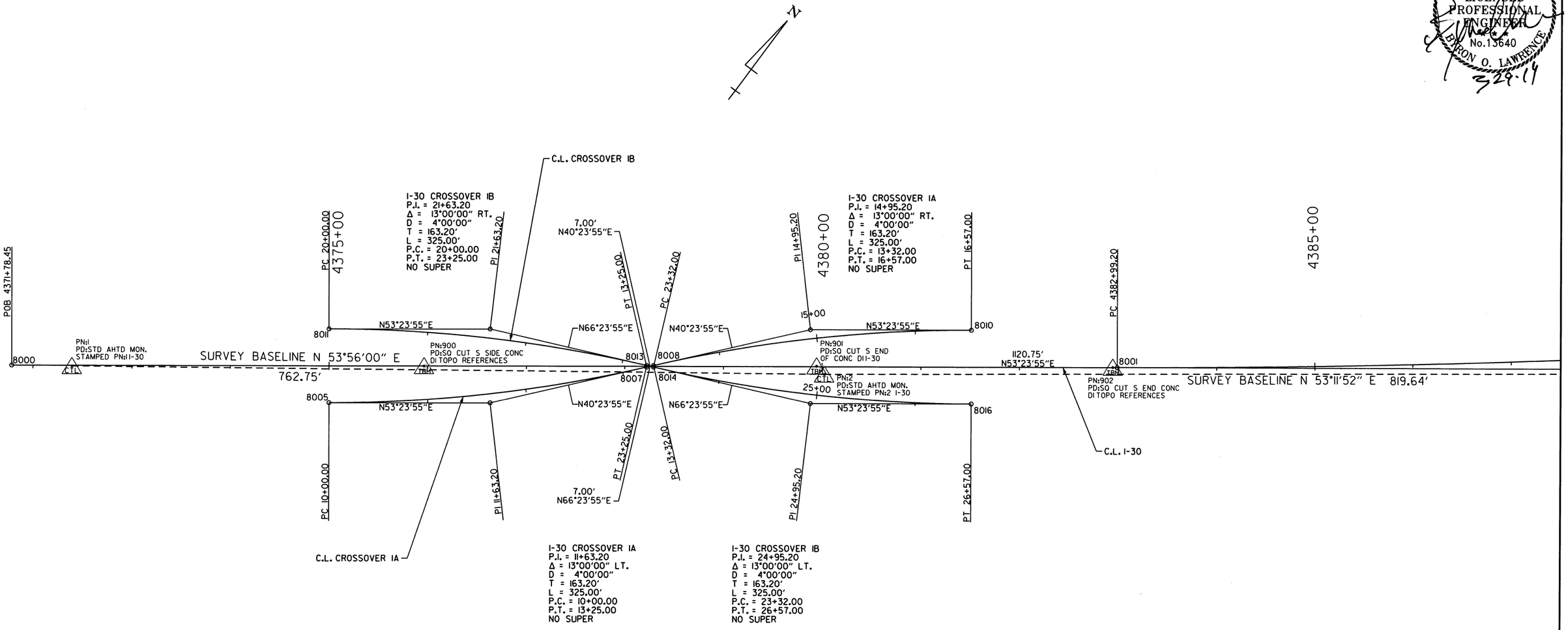
REVISED DATE: $$REVDATE$$

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	35	68

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
3-29-19



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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.			
				JOB NO.		012307	36	68
				(2)	SURVEY CONTROL DETAILS			

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
3-29-19

I-30 C.L. MEDIAN
P.I. = 4390+02.16
Δ = 7°01'15" LT.
D = 0°30'00"
T = 702.96'
L = 1404.15'
P.C. = 4382+99.20
P.T. = 4397+03.35
e = 0.020'/'
Ls = 350'

4390+00

4395+00

4400+00

C.L. I-30

PN:3
PD:STD AHTD MON.
STAMPED PN:3 I-30

N53°23'55"E

PI 4390+02.16

583.89'

N46°22'40"E

PN:903
PD:SO CUT SE CRNR
BR S BOUND I-30

I SURVEY BASELINE N 47°50'43" E

PN:904
PD:SO CUT NE CRNR
BR S BOUND I-30

PN:4
PD:STD AHTD MON.
STAMPED PN:4 I-30

PT 4397+03.35

8003'

SURVEY BASELINE N 47°19'49" E 795.37'

1989.03'
N46°22'40"E

PN:905
PD:SQUARE CUT IN DI
TOPO REFERENCES I-30

PN:5
PD:STD AHTD MON. STAMPED PN:5 I-30

Leonard.Speed 3/29/2019 3:02:18 PM
WORKSPACE: AHTD
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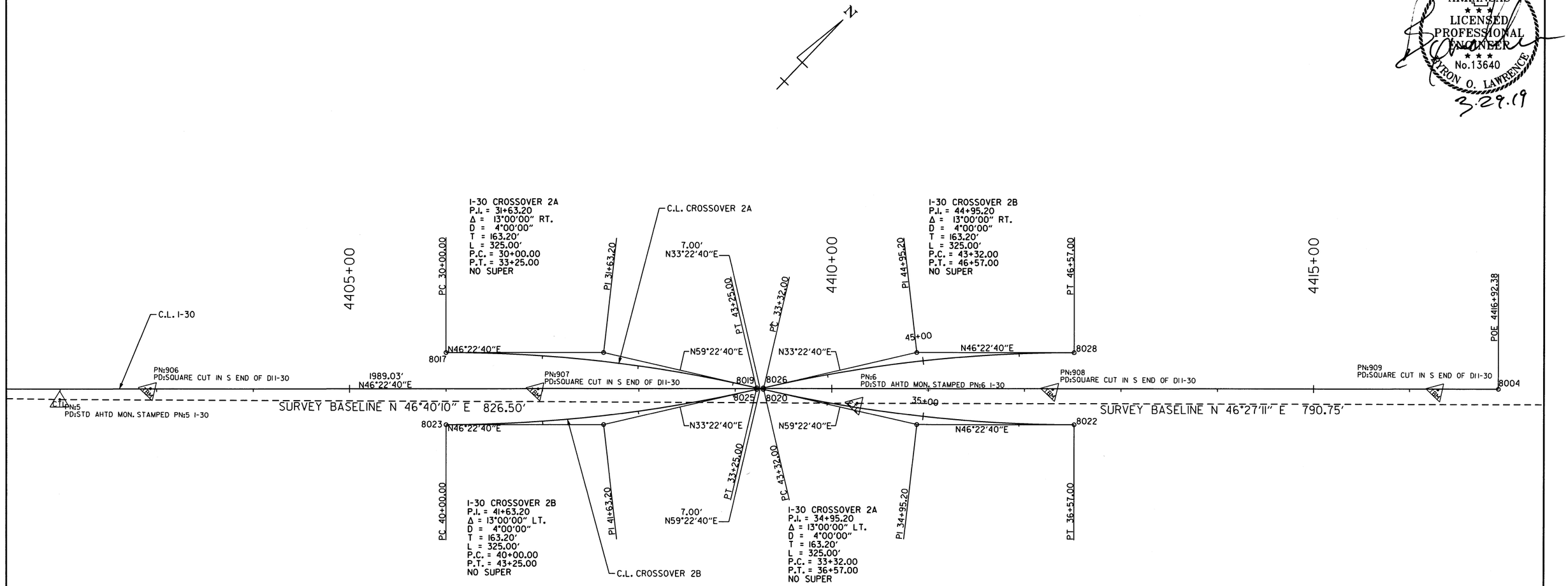
REVISED DATE: ##REVDATE##

SURVEY CONTROL DETAILS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	37	68

(2) SURVEY CONTROL DETAILS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No.13640
BYRON O. LAWRENCE
3.29.19



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REVISED DATE: ###E\DATE##

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	38	68

(2) PLAN AND PROFILE STA. 4372+00 - STA. 4387+00

I-30 CROSSOVER IB
P.I. = 21+63.20
Δ = 13°00'00" RT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 20+00.00
P.T. = 23+25.00
NO SUPER

COVER EXIST. DROP INLET AT STA. 4380+00 AS DIRECTED BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE TEMPORARY CROSSOVER. REMOVE COVER WHEN CROSSOVERS REMOVED. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR VARIOUS CONTRACT ITEMS.

STA. 4380+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3'-6" X H=3'-6")
WITH 24" X 86' R.C. PIPE OUTLET
ON RT.
RETAIN

I-30 CROSSOVER IA
P.I. = 14+95.20
Δ = 13°00'00" RT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 13+32.00
P.T. = 16+57.00
NO SUPER

MAIN LANES STA. 4375+00.00, 37.50' LT.=
C.L. I-30 CROSSOVER IB STA. 20+00.00

MAIN LANES STA. 4381+51.26, 37.50' LT.=
C.L. I-30 CROSSOVER IA STA. 16+57.00

EXIST. R/W & C/A

STA. 4372+75.00 BEGIN WRSF
20' LT. OF C.L.
(L.M. 80.21)

POB 437I+78.45

PC 20+00.00
4375+00

C.L. I-30 CROSSOVER IB

PI 21+63.20

PT 13+25.00

PC 23+32.00

PI 14+95.20

4380+00

PT 16+57.00

WIRE ROPE SAFETY FENCE
20' LT. OF I-30 C.L.
WITH CONCRETE DITCH PAVING
TYPE B (4'-0")

STA. 4383+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3'-6" X H=3'-6")
WITH 24" X 86' R.C. PIPE OUTLET
ON RT.
RETAIN

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

I-30 C.L. MEDIAN
P.I. = 4390+02.16
Δ = 7°01'15" LT.
D = 0°30'00"
T = 702.96'
L = 1404.15'
P.C. = 4382+99.20
P.T. = 4397+03.35
e = 0.020'/'
Ls = 350'

PC 4382+99.20

4385+00

+00.00

200' TRANSITION TO MATCH EXIST.

CONST. LIMITS

6'
10'
24'
4'
16'
60'

N53°23'55"E
N66°23'55"E
N40°23'55"E

8000
8001
8005
8007
8008
8010
8013
8014
8016

15+00
25+00

C.L. I-30

CONST. LIMITS

STA. 4374+60 IN PLACE
4' X 4' X 284' R.C. BOX CULVERT
30° RT. FWD. SKEW
RETAIN

STA. 4376+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3'-6" X H=3'-6")
WITH 24" X 100' R.C. PIPE OUTLET
ON RT.
RETAIN

C.L. I-30 CROSSOVER IA

PI 11+63.20

PT 23+25.00

PC 13+32.00

I-30 CROSSOVER IA
P.I. = 11+63.20
Δ = 13°00'00" LT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 10+00.00
P.T. = 13+25.00
NO SUPER

I-30 CROSSOVER IB
P.I. = 24+95.20
Δ = 13°00'00" LT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 23+32.00
P.T. = 26+57.00
NO SUPER

PI 24+95.20

PC 10+00.00

PT 26+57.00

LEGEND

PAVEMENT TRANSITION

MAIN LANES STA. 4375+00.00, 37.50' RT.=
C.L. I-30 CROSSOVER IA STA. 10+00.00

MAIN LANES STA. 4381+51.26, 37.50' RT.=
C.L. I-30 CROSSOVER IA STA. 26+57.00

EXIST. R/W & C/A

STA. 4386+40 IN PLACE
6' X 6' X 198' R.C. BOX CULVERT
WITH TYPE K DROP INLET
IN MEDIAN (4' X 2' X H=4'-8")
RETAIN

I-30 MAIN LANES

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
AARON O. LAWRENCE
4-9-2019

CROSSOVER IB

PVI 20+00.00 ELEV. 263.84
PVI 23+30.00 ELEV. 260.04
PVI 24+50.61 ELEV. 257.15
PVC 22+35.00 ELEV. 261.13
PVT 24+25.00 ELEV. 257.78
CROSSOVER IB PROFILE GRADE
EXISTING GROUND
-1.09% (EXIST.)
-1.15%
2.38%
-2.44% (EXIST.)
VC=190.00'
K=155
e=-0.29'

I-30 LT. LANES

EXISTING GROUND AT PG. LT. LANES
+00.00 MED. 237.02
200' TRANSITION TO MATCH EXIST.
-0.63% MED. DT. GR.
2" MIN. OVERLAY AND SUPERELEVATION CORRECTION

CROSSOVER IA

PVI 10+00.00 ELEV. 264.27
PVI 12+50.00 ELEV. 261.80
PVI 14+48.96 ELEV. 256.86
PVC 11+35.00 ELEV. 262.94
PVT 13+65.00 ELEV. 258.95
CROSSOVER IA PROFILE GRADE
EXISTING GROUND
-0.99% (EXIST.)
-0.99%
-2.49%
-2.49% (EXIST.)
VC=230.00'
K=154
e=-0.43'

I-30 RT. LANES

EXISTING GROUND AT PG. RT. LANES
+00.00 MED. 237.02
2" MIN. OVERLAY AND SUPERELEVATION CORRECTION
200' TRANSITION TO MATCH EXIST.
-0.63% MED. DT. GR.

280 270 260 250 240 230 220
19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00
9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00
4381+00 4382+00 4383+00 4384+00 4385+00 4386+00 4387+00

leonard.speed 4/9/2019 4:29:39 PM
WORKSPACE: AHTD
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REVISED DATE: ##RETDATE##

GUARDRAIL	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
STA. 4388+58.81 TO STA. 4392+02.56 LT. OF I-30 RT. LANES =	275 LIN. FT.	1 EACH	1 EACH
STA. 4389+09.28 TO STA. 4392+03.03 RT. OF I-30 RT. LANES =	225 LIN. FT.	1 EACH	1 EACH
STA. 4393+93.56 TO STA. 4397+37.31 RT. OF I-30 LT. LANES =	275 LIN. FT.	1 EACH	1 EACH
STA. 4393+94.04 TO STA. 4409+87.79 LT. OF I-30 LT. LANES =	1525 LIN. FT.	1 EACH	1 EACH

CONCRETE DITCH PAVING (TYPE B)

STA.	STA.	SIDE	LENGTH	"W"	SQ. YDS.
STA. 4391+82	STA. 4392+13	LT. & RT. OF I-30 LT. LANES	31 LIN. FT.	10'-9"	37.03
STA. 4391+82	STA. 4392+13	LT. & RT. OF I-30 LT. LANES	31 LIN. FT.	8'-3"	28.42
STA. 4393+84	STA. 4394+15	LT. & RT. OF I-30 RT. LANES	31 LIN. FT.	8'-4"	28.69
STA. 4393+84	STA. 4394+15	LT. & RT. OF I-30 RT. LANES	31 LIN. FT.	10'-6"	36.17

REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 4388+64 TO STA. 4391+83 LT. OF I-30 RT. LANES = 319 LIN. FT.
STA. 4389+17 TO STA. 4391+83 RT. OF I-30 RT. LANES = 266 LIN. FT.
STA. 4394+07 TO STA. 4409+88 LT. OF I-30 LT. LANES = 1581 LIN. FT.
STA. 4394+07 TO STA. 4397+28 RT. OF I-30 LT. LANES = 321 LIN. FT.

DE ROCHE CREEK IS NEAR AN ECOLOGICALLY SENSITIVE WATERBODY. A 25' VEGETATED BUFFER IS REQUIRED.

I-30 C.L. MEDIAN
P.I. = 4390+02.16
Δ = 7°01'15" LT.
D = 0°30'00"
T = 702.96'
L = 1404.15'
P.C. = 4382+99.20
P.T. = 4397+03.35
e = 0.020'/'
Ls = 350'

STA. 4394+45 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3" X H=3'-0")
WITH 18" X 126' BIT. COATED
C.M. PIPE OUTLET ON LT.
ADJUST TO GRADE

STA. 4391+46 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3" X H=3'-0")
WITH 18" X 120' BIT. COATED
C.M. PIPE OUTLET ON RT.
ADJUST TO GRADE

STA. 4399+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3" X H=3'-0")
WITH 18" X 144' BIT. COATED
C.M. PIPE OUTLET ON RT.
RETAIN

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
06/10/2019			

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		012307	39	68

(2) PLAN AND PROFILE STA. 4387+00 - 4402+00

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
AARON O. LAWRENCE
6/04/19

LEGEND
PAVEMENT TRANSITION
COLD MILLING

APPROXIMATE 100 YEAR FLOODPLAIN LIMITS

WIRE ROPE SAFETY FENCE
4' LT. OF C.L. I-30
WITH CONCRETE DITCH PAVING
TYPE B (4'-0")

STA. 4392+10.00 END WRSF
4' LT. OF C.L. I-30
(L.M. 80.58)

WIRE ROPE SAFETY FENCE
20' LT. OF C.L. I-30
WITH CONCRETE DITCH PAVING
TYPE B (4'-0")

STA. 4396+76.80 END WRSF ON WB FORESLOPE BEHIND GUARDRAIL
(L.M. 80.67)

BRIDGE A7427
STA. 4392+12.73 TO STA. 4393+83.27
CONSTRUCT 170'-6½" X 56'-0" CLEAR ROADWAY WIDTH
170'-0" COMPOSITE PLATE GIRDER SPAN (ON CHORDS)

BRIDGE B7427
STA. 4392+13.27 TO STA. 4393+82.73
CONSTRUCT 169'-5½" X 56'-0" CLEAR ROADWAY WIDTH
170'-0" COMPOSITE PLATE GIRDER SPAN (ON CHORDS)

BRIDGE SUPERSTRUCTURE TO BE CONSTRUCTED ON TEMPORARY SUPPORTS

STA. 4391+52.46 BEGIN APPROACH SLAB CONST. LIMITS

STA. 4391+53.52 END OVERLAY

STA. 4394+43.54 END APPROACH SLAB CONST. LIMITS

STA. 4394+42.47 BEGIN OVERLAY
STA. 4392+14.90 TO STA. 4394+27.04
EXISTING BRIDGE NOS. 3853A&B
212.14' X 38.5' SUPERSTRUCTURE COMPOSED OF R.C. COMPOSITE I-BEAM SPANS (3@ 70') & SUBSTRUCTURE COMPOSED OF 2-COLUMN BENTS ON SPREAD FOOTINGS
REMOVE AS EXISTING BRIDGE STRUCTURE
SITE NO. 1 = 1.00 LUMP SUM
SITE NO. 2 = 1.00 LUMP SUM

PI 4390+02.16
PT 4397+03.35

STA. 4388+00.00
BEGIN JOB 012307
L.M. 80.50

STA. 4397+50.00
END JOB 012307

200' TRANSITION TO MATCH EXIST.
CONST. LIMITS
EXIST. R/W & C/A
C.L. I-30
N53°23'55"E
N46°22'40"E
10'
24'
14'
DITCH

*WITHIN BOUNDS OF SUPER RANGES PROVIDED CORRECT EXIST. CROSS SLOPES TO GRADES INDICATED.

RIGHT LANES*
STA. 4388+00 BEGIN SUPERELEVATION (0.02'/') MATCH EXIST.
STA. 4394+50.00 MAX. SUPERELEVATION (0.02'/')
STA. 4398+00.00 END SUPERELEVATION (-0.02'/') MATCH EXIST.

LEFT LANES*
STA. 4388+00.00 NORMAL CROWN (-0.02'/') MATCH EXIST.
STA. 4398+00.00 NORMAL CROWN (-0.02'/') MATCH EXIST.

FENCE (TYPE A)
STA. 4392+12 LT. OF L.M.L = 165 LIN. FT.
STA. 4392+12 RT. OF R.M.L = 90 LIN. FT.
STA. 4393+84 LT. OF L.M.L = 160 LIN. FT.
STA. 4393+84 RT. OF R.M.L = 94 LIN. FT.

I-30 MAIN LANES

VC=800.00'
K=253
e=3.16'

VC=800.00'
K=243
e=3.29'

LT. LANES PROFILE GRADE
RT. LANES PROFILE GRADE
EXISTING GROUND AT PG. LT. LANES
EXISTING GROUND AT PG. RT. LANES

PVI 4388+00.00 ELEV. 237.24
PVC 4388+50.00 ELEV. 236.37
PVI 4388+00.00 ELEV. 237.75
PVC 4388+50.00 ELEV. 236.82
PVI 4392+50.00 ELEV. 229.40
PVI 4392+50.00 ELEV. 229.36
PVT 4396+50.00 ELEV. 235.05
PVI 4397+00.00 ELEV. 235.76
PVI 4397+50.00 ELEV. 236.75
PVI 4397+50.00 ELEV. 236.74

C.L. BRIDGE A BEGIN BRIDGE A STA. 4392+12.73
C.L. BRIDGE A END BRIDGE A STA. 4393+83.27
C.L. BRIDGE B BEGIN BRIDGE B STA. 4392+13.27
C.L. BRIDGE B END BRIDGE B STA. 4393+82.73

-0.63% MED. DT. GR.
-1.74%
1.41%
-1.86%
1.42%
0.46% MED. DT. GR.
+92.00 MED. 235.77
+00.00 MED. 235.76
+50.00 MED. 235.11

TOP = 231.63
FL = 225.63 (EXIST.)
TOP = 232.14
FL = 225.00 (EXIST.)

HISTORICAL H.W. ELEV = 212.2
050 H.W. DESIGN ELEV. = 213.7

2" MIN. OVERLAY AND SUPERELEVATION CORRECTION

I-30 LT. LANES (BRIDGE A)
I-30 RT. LANES (BRIDGE B)

240
230
220
210
200

4387+00 4388+00 4389+00 4390+00 4391+00 4392+00 4393+00 4394+00 4395+00 4396+00 4397+00 4398+00 4399+00 4400+00 4401+00 4402+00

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WORKSPACE: ARDOT
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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.			
				JOB NO.		012307	40	68
				(2)	PLAN AND PROFILE STA. 4402+00 - 4415+00			

EXIST. R/W & C/A

EXIST. R/W & C/A

MAIN LANES STA. 4406+00.00, 37.50' LT.=
C.L. I-30 CROSSOVER 2A STA. 30+00.00

WIRE ROPE SAFETY FENCE
20' LT. OF C.L. I-30
WITH CONCRETE DITCH PAVING
TYPE B (4'-0")

4405+00

I-30 CROSSOVER 2A
P.I. = 31+63.20
Δ = 13°00'00" RT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 30+00.00
P.T. = 33+25.00
NO SUPER

PC 30+00.00

PI 31+63.20

COVER EXIST. DROP INLET AT STA. 4411+00 AS DIRECTED BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE TEMPORARY CROSSOVER. REMOVE COVER WHEN CROSSOVERIS REMOVED. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR VARIOUS CONTRACT ITEMS.

STA. 4411+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3' X H=3'-6")
WITH 24" X 86' R.C. PIPE
OUTLET ON RT.
RETAIN

4410+00

PI 43+25.00

PT 33+25.00

PI 44+95.20

I-30 CROSSOVER 2B
P.I. = 44+95.20
Δ = 13°00'00" RT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 43+32.00
P.T. = 46+57.00
NO SUPER

PT 46+57.00

MAIN LANES STA. 4412+51.26, 37.50' LT.=
C.L. I-30 CROSSOVER 2B STA. 46+57.00

4415+00

STA. 4413+50.00 END WRSF
20' LT. OF C.L. I-30
(L.M. 80.98)

C.L. I-30 CROSSOVER 2B

C.L. I-30 CROSSOVER 2A

45+00

35+00

N46°22'40"E

N59°22'40"E

N33°22'40"E

C.L. I-30

CONST. LIMITS

C.L. I-30 CROSSOVER 2B

C.L. I-30 CROSSOVER 2A

PC 40+00.00

PI 41+63.20

PT 33+25.00

PC 43+32.00

PI 34+95.20

PT 36+57.00

I-30 CROSSOVER 2B
P.I. = 41+63.20
Δ = 13°00'00" LT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 40+00.00
P.T. = 43+25.00
NO SUPER

I-30 CROSSOVER 2A
P.I. = 34+95.20
Δ = 13°00'00" LT.
D = 4°00'00"
T = 163.20'
L = 325.00'
P.C. = 33+32.00
P.T. = 36+57.00
NO SUPER

STA. 4403+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3' X H=3'-0")
WITH 18" X 172' BIT. COATED
C.M. PIPE OUTLET ON LT.
RETAIN

MAIN LANES STA. 4406+00.00, 37.50' RT.=
C.L. I-30 CROSSOVER 2B STA. 40+00.00

STA. 4407+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 3' X H=3'-0")
WITH 18" X 200' BIT. COATED
C.M PIPE OUTLET ON LT.
RETAIN

STA. 4407+06 TO 4411+21 INSTALL
TEMPORARY 18" X 415' CULVERT IN MEDIAN
NOTE: USE OF PLASTIC PIPE IS PROHIBITED
UNLESS 2' OF COVER BELOW SUBGRADE
CAN BE ACHIEVED.

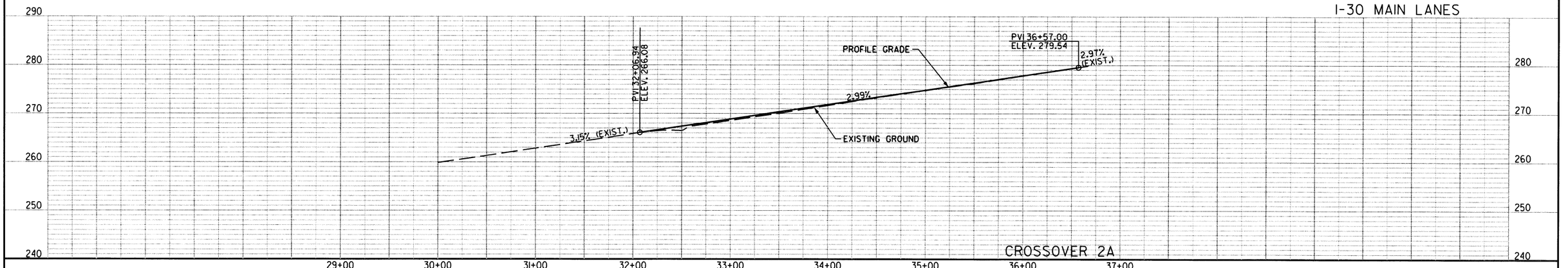
STA. 4415+00 IN PLACE
TYPE H DROP INLET
IN MEDIAN (4' X 5' X H=3'-6")
WITH 24" X 116' R.C. PIPE INLET ON LT.
& 24" X 122' R.C. PIPE OUTLET ON RT.
WITH "L" HEADWALL ON LT.
45° LT. FWD. SKEW
RETAIN

MAIN LANES STA. 4412+51.26, 37.50' RT.=
C.L. I-30 CROSSOVER 2A STA. 36+57.00

EXIST. R/W & C/A

EXIST. R/W & C/A

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 13640
BYRON O. LAWRENCE
4-9-2009



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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.			
				JOB NO.		012307	41	68
				(1)		A7427 - LAYOUT - 60303		

For R/W Data and Guardrail Details, See Roadway Plans.

Note:
Use Type Special Approach Slabs and Gutters at both ends of bridge, See Dwg. Nos. 60323 to 60325.

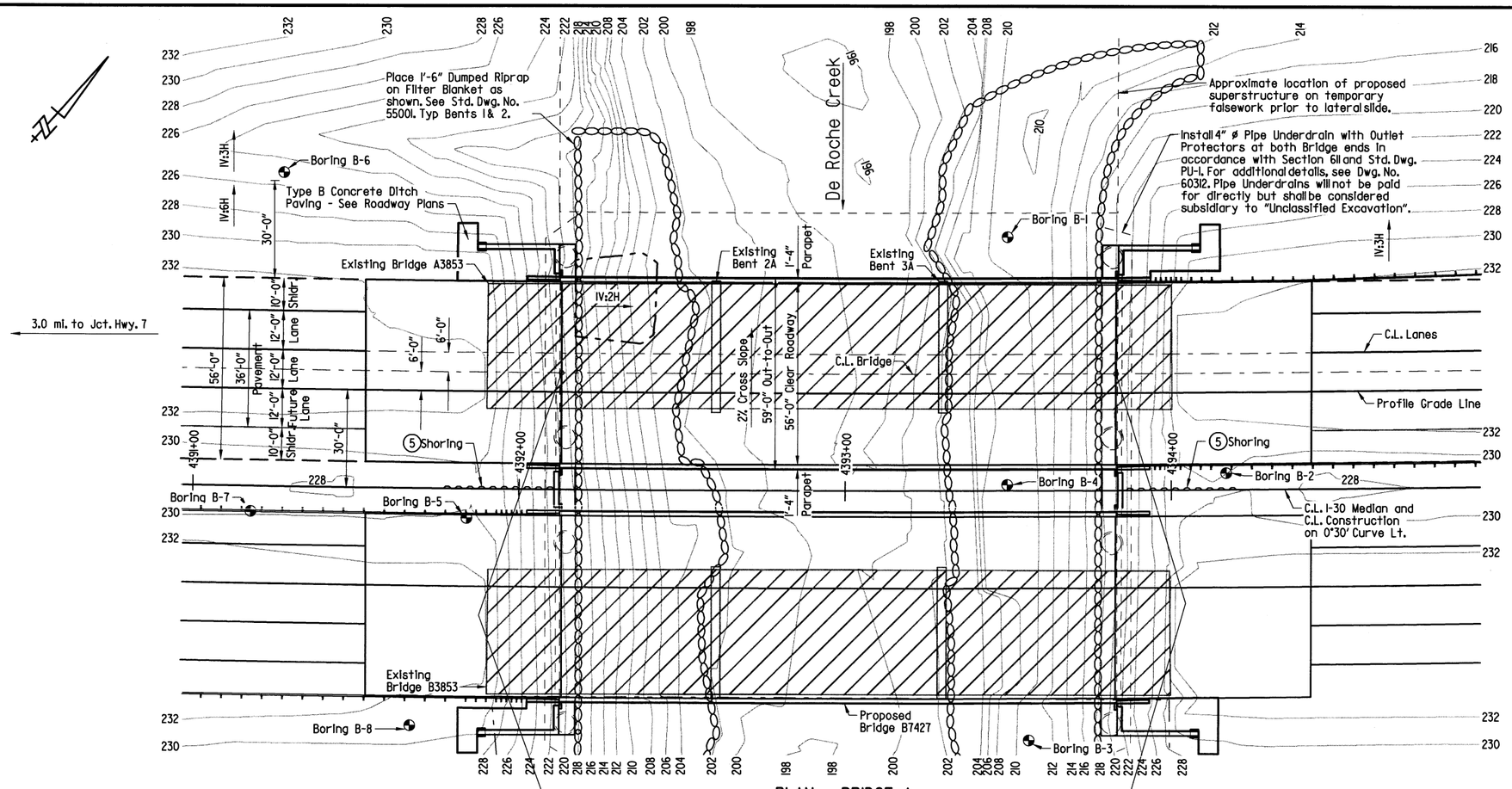
For General Notes, see Dwg. No. 60305.

For Boring Legend, see Dwg. No. 60305.

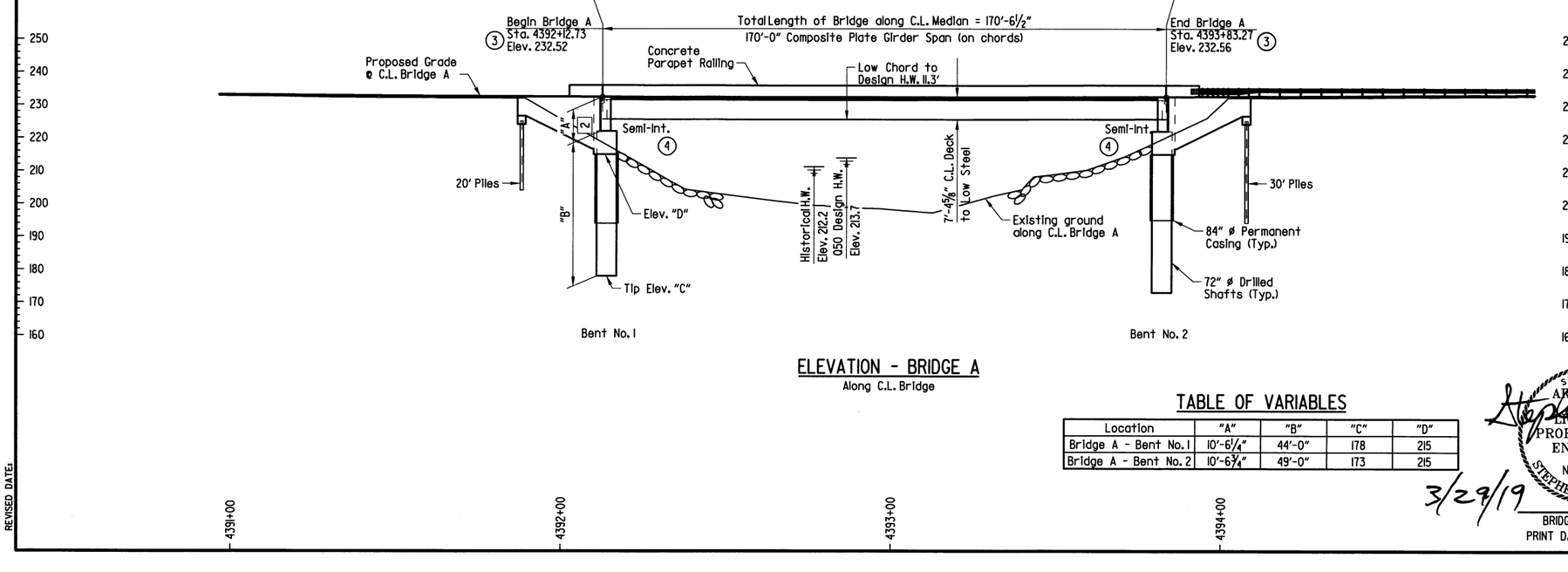
HORIZONTAL CURVE DATA

C.L. I-30 Median
P.I. = 4390+02.16
Δ = 7°01'15" LT.
D = 0°30'00"
T = 702.96'
L = 1404.15'

Note:
C.L. Median is on a 0°30'00" Curve left. Longitudinal lines shall be constructed on curves concentric w/ C.L. Median Stations. Begin/End Bridge Lines are normal to plate girders built on 170'-0" chords. For more information refer to Staking Diagram on Dwg. No. 60306.



PLAN - BRIDGE A



ELEVATION - BRIDGE A

Along C.L. Bridge

TABLE OF VARIABLES

Location	"A"	"B"	"C"	"D"
Bridge A - Bent No. 1	10'-6¼"	44'-0"	178	215
Bridge A - Bent No. 2	10'-6¾"	49'-0"	173	215

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	11620	213.3	213.9
Base	100	13640	214.1	214.7
Extreme	500	18800	215.8	216.8
Overtopping	>500	>500	>500	>500

(1) Unconstricted water surface without structure or roadway approaches.

Q100 backwater elevation for existing structure = 215.2 feet.

Proposed Low Bridge Chord Elevation = 225.02 feet at Sta. 4392+91.77.

Drainage area = 50.9 square miles.

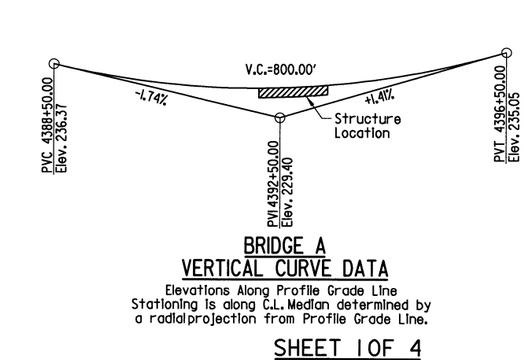
Historical H.W. Elev. = 212.2 Feet (from 1963 Construction plans)

(2) Dimensions are taken from centerline Top of Deck ℄ Begin/End Bridge to Top of End Bent cap.

(3) Elevations shown in elevation view are along C.L. Bridge. Stationing is along C.L. Median. Stations shown in elevation view are determined by a radial projection from C.L. Bridge to C.L. Median. For more information refer to Staking Diagram on Dwg. No. 60306.

(4) Bent No. 1 will be restrained for longitudinal movement and Bent No. 2 will be free to move longitudinally.

(5) Shoring may be required during construction, see SP Job No. 012307 "Shoring".



BRIDGE A VERTICAL CURVE DATA

Elevations Along Profile Grade Line
Stationing is along C.L. Median determined by a radial projection from Profile Grade Line.

SHEET 1 OF 4
LAYOUT OF BRIDGES
INTERSTATE 30 OVER DE ROCHE CREEK
DE ROCHE CREEK STRS. & APPRS. (S)
CLARK AND HOT SPRING COUNTIES
ROUTE 30 SECTIONS 14 & 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

DRAWN BY: MKL DATE: 11/2018
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: SFH DATE: 01/2018
BRIDGE NO. A7427
FILENAME: B012307_LXI.dgn
SCALE: 1" = 20'
DRAWING NO. 60303

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WORKSPACE: ARDOT
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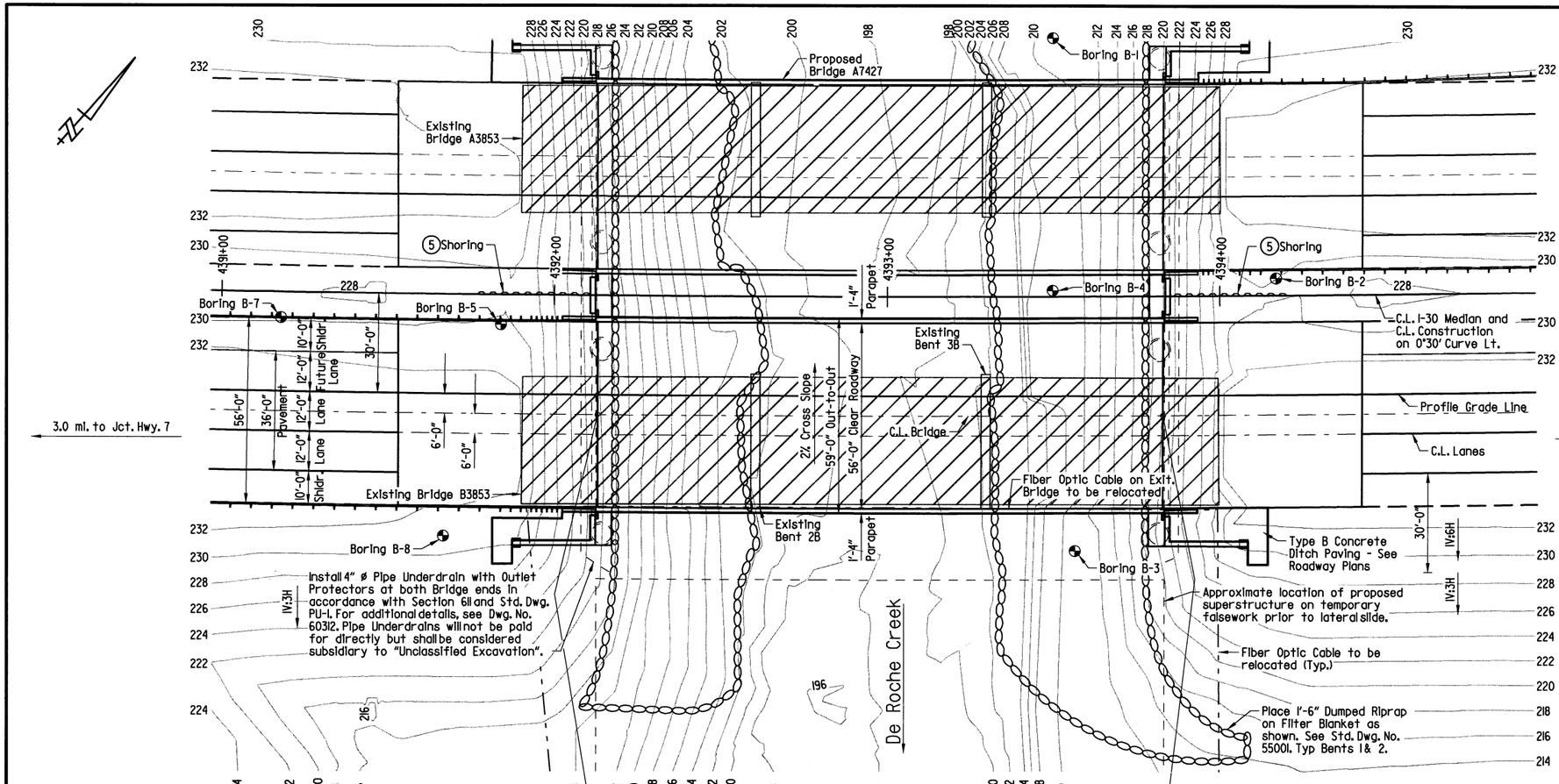
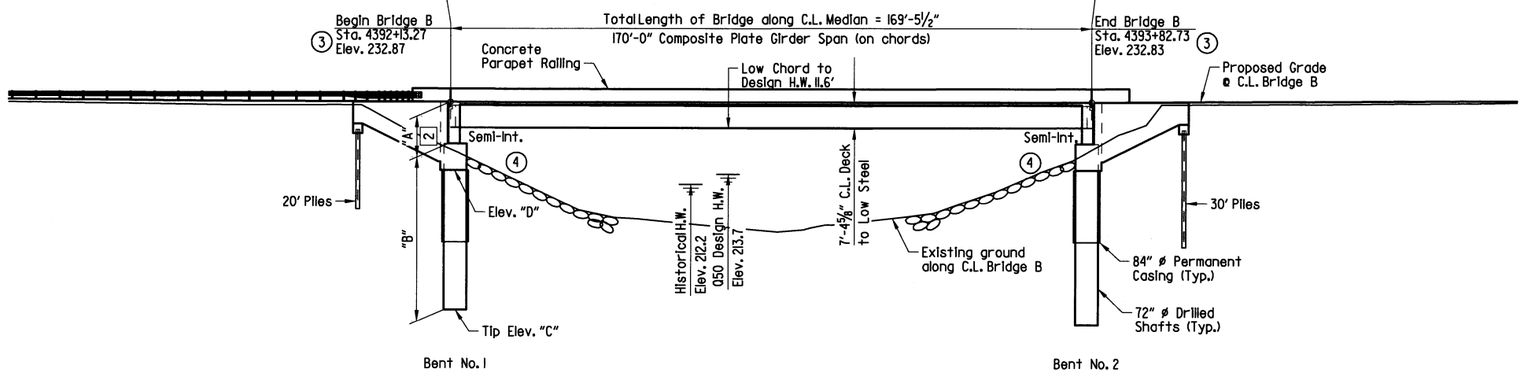
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	42	68
				(1) B7427 - LAYOUT - 60304				



PLAN - BRIDGE B



ELEVATION - BRIDGE B

Along C.L. Bridge

TABLE OF VARIABLES

Location	"A"	"B"	"C"	"D"
Bridge B - Bent No. 1	10'-10⅞"	44'-0"	178	215
Bridge B - Bent No. 2	10'-9⅝"	48'-0"	174	215

For R/W Data and Guardrail Details, See Roadway Plans.

Note:
Use Type Special Approach Slabs and Gutters at both ends of bridge, See Dwg. Nos. 60323 to 60325.

For General Notes, see Dwg. No. 60305.

For Boring Legend, see Dwg. No. 60305.

HORIZONTAL CURVE DATA

C.L. I-30 Median
P.I. = 4390+02.16
Δ = 7°01'15" LT.
D = 0°30'00"
T = 702.96'
L = 1404.15'

Note:
C.L. Median is on a 0°30'00" Curve left. Longitudinal lines shall be constructed on curves concentric w/ C.L. Median Stations. Begin/End Bridge Lines are normal to plate girders built on 170'-0" chords. For more information refer to Staking Diagram on Dwg. No. 60306.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	(1) NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	11620	213.3	213.9
Base	100	13640	214.1	214.7
Extreme	500	18800	215.8	216.8
Overtopping	>500	>500	>500	>500

(1) Unconstricted water surface without structure or roadway approaches.

Q100 backwater elevation for existing structure = 215.2 feet.

Proposed Low Bridge Chord Elevation = 225.33 feet at Sta. 4393+03.84.

Drainage area = 50.9 square miles.

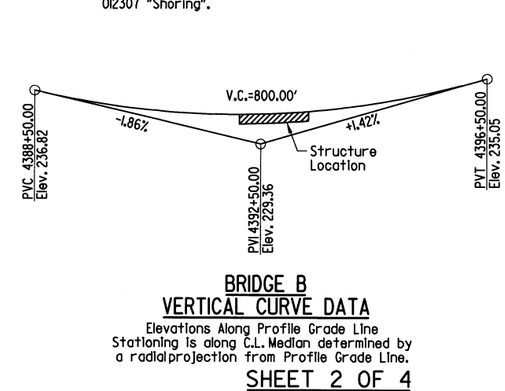
Historical H.W. Elev. = 212.2 Feet (from 1963 Construction plans)

(2) Dimensions are taken from centerline Top of Deck ℄ Begin/End Bridge to Top of End Bent cap.

(3) Elevations shown in elevation view are along C.L. Bridge. Stationing is along C.L. Median. Stations shown in elevation view are determined by a radial projection from C.L. Bridge to C.L. Median. For more information refer to Staking Diagram on Dwg. No. 60306.

(4) Bent No. 1 will be restrained for longitudinal movement and Bent No. 2 will be free to move longitudinally.

(5) Shoring may be required during construction, see SP Job No. 012307 "Shoring".



BRIDGE B VERTICAL CURVE DATA

Elevations Along Profile Grade Line
Stationing is along C.L. Median determined by a radial projection from Profile Grade Line.

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 2 OF 4
LAYOUT OF BRIDGES
INTERSTATE 30 OVER DE ROCHE CREEK
DE ROCHE CREEK STRS. & APPRS. (S)
CLARK AND HOT SPRING COUNTIES
ROUTE 30 SECTIONS 14 & 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 11/2018
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: SFH DATE: 01/2018
BRIDGE NO. B7427
FILENAME: B012307_LX2.dgn
SCALE: 1" = 20'
DRAWING NO. 60304

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WORKSPACE ARDOT_I63836_I-30 Lateral Bridge Slide\Design\BRIDGE\Drawings\B012307_LX2.dgn
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	43	68
				(1)		A&BT427 - LAYOUT - 60305		

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, Seventh Edition (2014) with current Interim Specifications.

LIVE LOADING: HL-93

SEISMIC ZONE: 1 S_{DI}=0.11 SITE CLASS = C

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. 50W)	Fy = 50,000 psi

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

STEEL PILING: Wing wall piling at Bridge A Bent No. 1 and Bridge B Bent No. 1 shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons per pile and into the material designated as Interbedded Sandstone and Shale on the boring legend. Wing wall piling at Bridge A Bent No. 2 and Bridge B Bent No. 2 shall be HP12x53 (Grade 50) and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 95 tons per pile and into the material designated as Sandstone on the boring legend. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with Section 805. Actual lengths are to be determined in the field. The Contractor shall use approved steel H-pile driving points on all piles.

DRILLED SHAFTS: Foundations for end bents shall consist of Drilled Shafts. All Drilled Shafts shall be founded into moderately hard to hard shale or sandstone 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. 012307 "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. 012307 "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 S Tined Bridge Roadway Surface Finish.

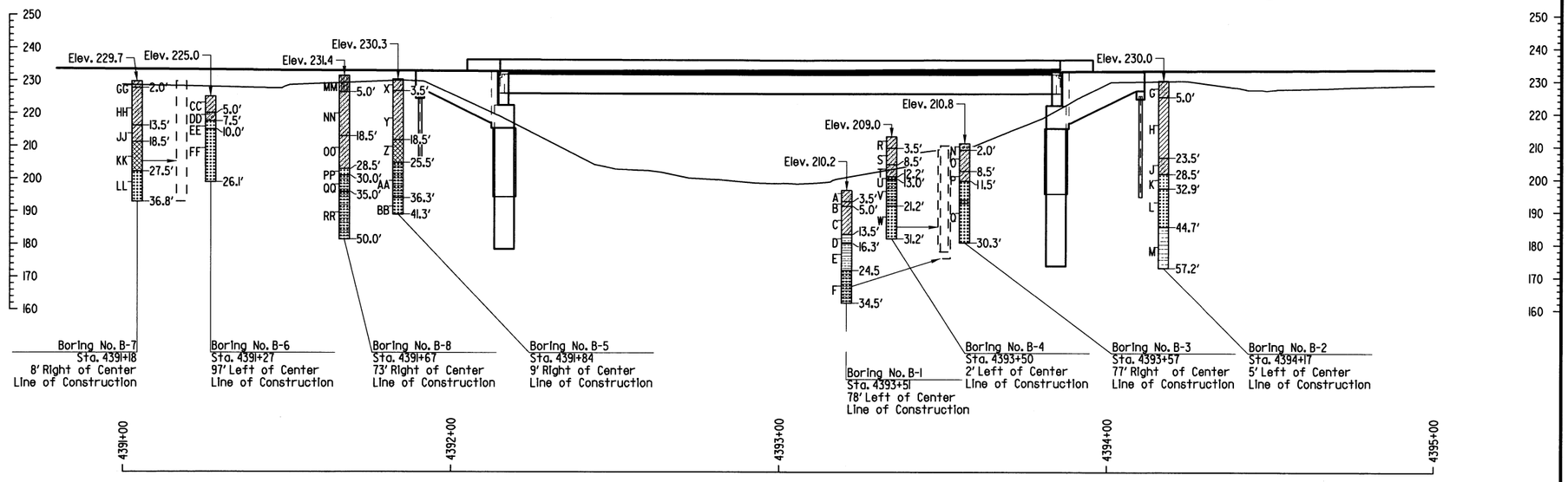
PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the roadway face and top of the concrete parapet rail. Class I Protective Surface Treatment shall meet the requirements of Section 803.

DETAIL DRAWINGS	DRAWING NOS.
Elastomeric Bearings	60313
End Bents	60308 - 60312
170'-0" Composite Plate Girder Span	60314 - 60322
Type Special Approach Slabs & Gutters	60323 - 60325
Standard General Notes	55006
Steel Piling	55020

EXISTING BRIDGES: Existing Bridge Nos. A3853 and B3853 (log 80.6) are 42.25' wide and 210' long and consist of 3 - 70' Steel Beam 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. Existing Bridge No. A3853 has a millable geogrid and an approximate 2" asphalt overlay.

REMOVAL AND SALVAGE: Existing Bridge Nos. A3853 and B3853 shall be removed in accordance with Section 205 and the details shown on Dwg. No. 60307. 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.

MAINTENANCE OF TRAFFIC: See Roadway Plans



ELEVATION OF SOIL BORINGS

Along C.L. Median

"N" VALUES

Boring No. B-1
Sta. 4393+51 - 78' Left of Center Line of Construction

1.0 - 2.0	N=14	5.5 - 6.5	N=2
2.5 - 3.5	N=16	9.0 - 10.0	N=2
4.0 - 5.0	N=3	13.5 - 13.8	N=50/3"

Boring No. B-2
Sta. 4394+17 - 5' Left of Center Line of Construction

1.0 - 2.0	N=9	14.0 - 15.0	N=12
2.5 - 3.5	N=13	19.0 - 20.0	N=9
4.0 - 5.0	N=19	24.0 - 25.0	N=1
5.5 - 6.5	N=16	28.5 - 29.0	N=50/6"
9.0 - 10.0	N=10		

Boring No. B-3
Sta. 4393+57 - 77' Right of Center Line of Construction

1.0 - 2.0	N=50
2.5 - 3.5	N=3
4.0 - 5.0	N=3
5.5 - 6.5	N=2
9.0 - 10.0	N=7

Boring No. B-4
Sta. 4393+50 - 2' Left of Center Line of Construction

1.0 - 2.0	N=19
2.5 - 3.5	N=28
4.0 - 5.0	N=8
5.5 - 6.5	N=2
9.0 - 10.0	N=15

Boring No. B-5
Sta. 4391+84 - 9' Right of Center Line of Construction

1.0 - 2.0	N=9	9.0 - 10.0	N=6
2.5 - 3.5	N=10	14.0 - 15.0	N=6
4.0 - 5.0	N=8	18.5 - 19.0	N=50/6"
5.5 - 6.5	N=5	23.5 - 23.7	N=50/2"

Boring No. B-6
Sta. 4391+27 - 97' Left of Center Line of Construction

1.0 - 2.0	N=5 (No Recovery)
2.5 - 3.5	N=11
4.0 - 5.0	N=31
6.0 - 6.5	N=50/6"

Boring No. B-7
Sta. 4391+18 - 8' Right of Center Line of Construction

1.0 - 2.0	N=15	9.0 - 10.0	N=4
2.5 - 3.5	N=11	14.0 - 15.0	N=20
4.0 - 5.0	N=6	18.5 - 19.0	N=50/6"
5.5 - 6.5	N=14	23.5 - 24.0	N=50/6"

Boring No. B-8
Sta. 4391+67 - 73' Right of Center Line of Construction

1.0 - 2.0	N=14	14.0 - 15.0	N=9
2.5 - 3.5	N=9	19.0 - 20.0	N=5
4.0 - 5.0	N=7	24.0 -25.0	N=69
5.5 - 6.5	N=10	25.5 - 26.5	N=27
9.0 - 10.0	N=5	28.5 - 28.9	N=50/5"

BORING LEGEND

A- FILL- SANDY LEAN CLAY (CL), with tree roots and sandstone pieces, brown
B- SANDY LEAN CLAY (CL), with sandstone pieces, brown, soft
C- LEAN CLAY WITH SAND (CL), with sandstone pieces, brown and gray, soft
D- SHALE, dark gray, moderately hard
E- SHALE, dark gray, hard, extremely fractured, very close fracture spacing
F- INTERBEDDED SANDSTONE AND SHALE, dark gray and gray, well cemented, extremely fractured, very close fracture spacing

G- CLAYEY SAND (SC), reddish-brown, loose to medium dense
H- SANDY LEAN CLAY (CL), reddish-brown and gray, stiff to very stiff
J- CLAYEY SAND (SC), gray, very loose
K- HIGHLY WEATHERED SANDSTONE, reddish-brown and gray, poorly cemented
L- SANDSTONE, with clay seams, gray, poorly cemented to cemented, very close joint spacing, highly weathered
M- SHALE, dark gray, hard, moderately fractured, unweathered, 45 degree bedding dip

N- FILL - WELL GRADED SAND WITH GRAVEL (SW), with highly weathered sandstone, reddish-brown and brown
O- CLAYEY SAND (SC), with gravel and clay seams, brown and reddish-brown, very loose
P- CLAYEY SAND (SC), dark gray, loose
Q- SANDSTONE, with iron staining, gray, cemented, close to moderate joint spacing, near vertical spiral fractures, 45 degree joint dip, quartz regrowth, shale seam from 17.3 feet to 18.3 feet

R- FILL - CLAYEY SAND (SC), with gravel, brown and reddish-brown
S- CLAYEY SAND (SC), gray and dark gray, loose to very loose
T- SANDY LEAN CLAY (CL), with sandstone pieces, dark gray and brown, stiff to very stiff
U- HIGHLY WEATHERED SANDSTONE, brown poorly cemented
V- INTERBEDDED SANDSTONE AND SHALE, dark gray, cemented, extremely fractured, very close fracture spacing, vertical fractures
W- SANDSTONE, gray cemented, moderately fractured, moderate joint spacing, 45 degree fractures

X- FILL - CLAYEY SAND (SC), brown and light brown
Y- CLAYEY SAND (SC), with sandstone pieces, brown and reddish-brown, loose
Z- HIGHLY WEATHERED SHALE, brown and dark gray, soft
AA- INTERBEDDED SANDSTONE AND SHALE, gray and dark gray, hard, moderate joint spacing, close bedding, unweathered, 45 degree joint dip
BB- SANDSTONE, gray, cemented, moderate joint spacing, wide spacing, unweathered, 45 degree joint dip

CC- SANDY LEAN CLAY (CL), with rootlets, brown and reddish-brown, medium stiff to hard
DD- CLAYEY GRAVEL (GC), with sandstone fragments, reddish-brown, very dense
EE- HIGHLY WEATHERED SANDSTONE, with cobbles, gray, poorly cemented
FF- SANDSTONE, gray, cemented, moderate joint spacing, massive bedding, unweathered to slightly weathered, joints at about 45 degrees below about 19 feet

GG- FILL - SANDY LEAN CLAY (CL), with sandstone and wood pieces, brown and reddish-brown
HH- SANDY LEAN CLAY (CL), with shale and sandstone pieces, brown, reddish-brown and gray, soft to stiff
JJ- CLAYEY SAND (SC), with gravel, reddish-brown and brown, medium dense
KK- HIGHLY WEATHERED SHALE, brown and gray, soft
LL- SANDSTONE, gray, poorly cemented, close joint spacing, weathered, 45 degree joint dip, iron stained joints

MM- FILL - SILTY, CLAYEY SAND (SC-SM), with gravel, reddish-brown
NN- FILL - CLAYEY SAND (SC), with shale and sandstone fragments, reddish-brown and brown
OO- CLAYEY SAND (SC), with shale and sandstone pieces, reddish-brown and gray, loose to very dense
PP- HIGHLY WEATHERED SANDSTONE, dark gray and reddish-brown, poorly cemented
QQ- INTERBEDDED SANDSTONE AND SHALE, gray and dark gray, hard, extremely fractured, close joint spacing, moderately weathered, 45 degree bedding
RR- INTERBEDDED SANDSTONE AND SHALE, gray and dark gray, hard, slightly fractured, moderate joint spacing, unweathered, 45 degree bedding

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 3 OF 4
LAYOUT OF BRIDGES
INTERSTATE 30 OVER DE ROCHE CREEK
DE ROCHE CREEK STRS. & APPRS. (S)
CLARK AND HOT SPRING COUNTIES
ROUTE 30 SECTIONS 14 & 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	11/2018	FILENAME:	B012307_LX3.dgn
CHECKED BY:	SFH	DATE:	02/2019		
DESIGNED BY:	SFH	DATE:	01/2018	SCALE:	1" = 20'
BRIDGE NO.	A&B7427			DRAWING NO.	60305

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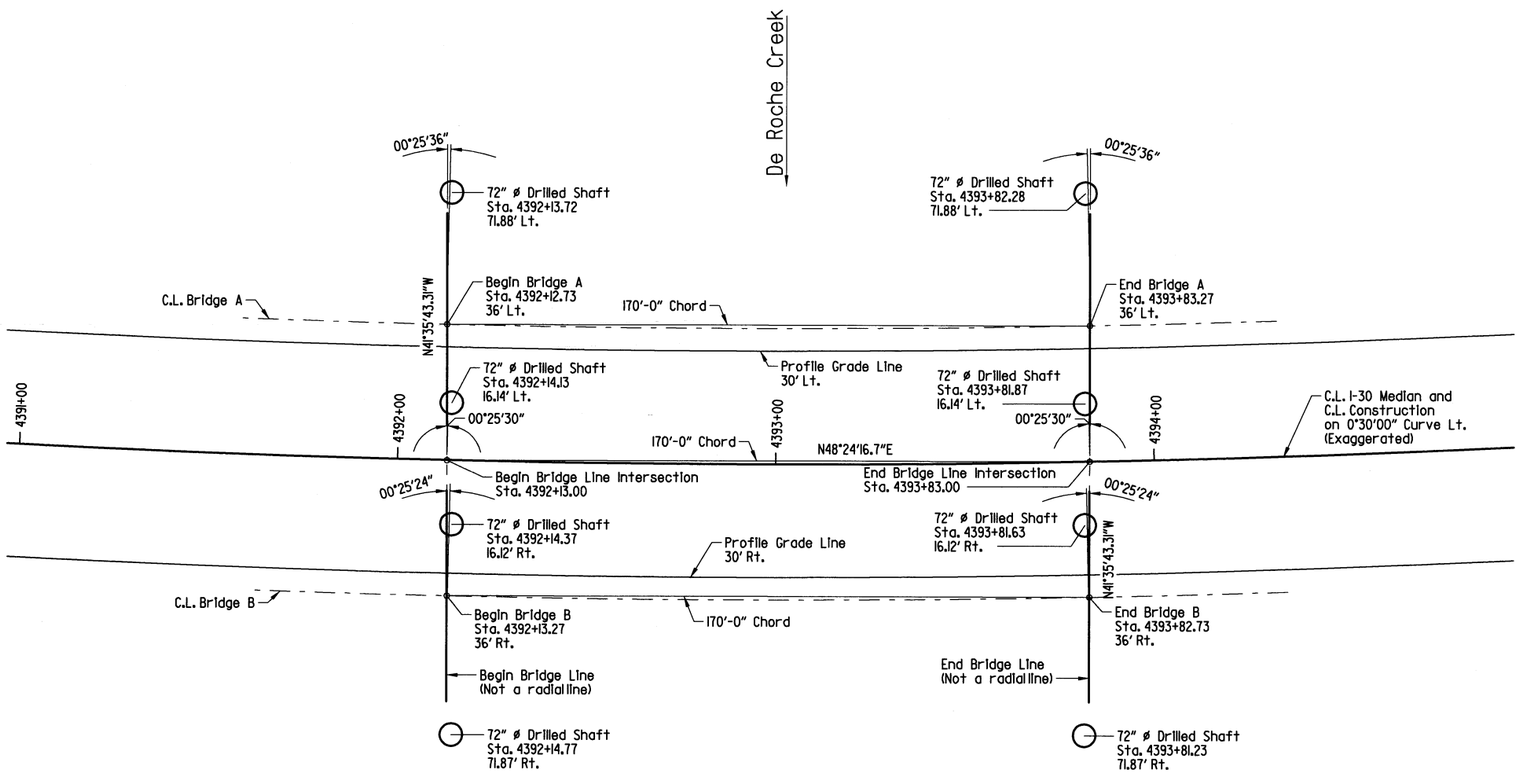
WORKSPACE: ARDOT
Y:\Projects\ARDOT_163836_I-30 Lateral Bridge Slide\Design\BRIDGE\Drawings\B012307_LX3.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	44	68
				(1)	A&B7427 - LAYOUT - 60306			

HORIZONTAL CURVE DATA

C.L. I-30 Median
P.I. = 4390+02.16
Δ = 1°01'15" LT.
D = 0°30'00"
T = 702.96'
L = 1404.15'

Note:
Stationing is along C.L. Median. Stations shown at C.L. Bridges are determined by a radial projection from C.L. Bridge to C.L. Median.



STAKING DIAGRAM

SHEET 4 OF 4
LAYOUT OF BRIDGES
INTERSTATE 30 OVER DE ROCHE CREEK
DE ROCHE CREEK STRS. & APPRS. (S)
CLARK AND HOT SPRING COUNTIES
ROUTE 30 SECTIONS 14 & 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

DRAWN BY: MKL DATE: 11/23/2018 FILENAME: B012307_LX4.dgn
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: MKL DATE: 03/2018 SCALE: NO SCALE
BRIDGE NO. A&B7427 DRAWING NO. 60306

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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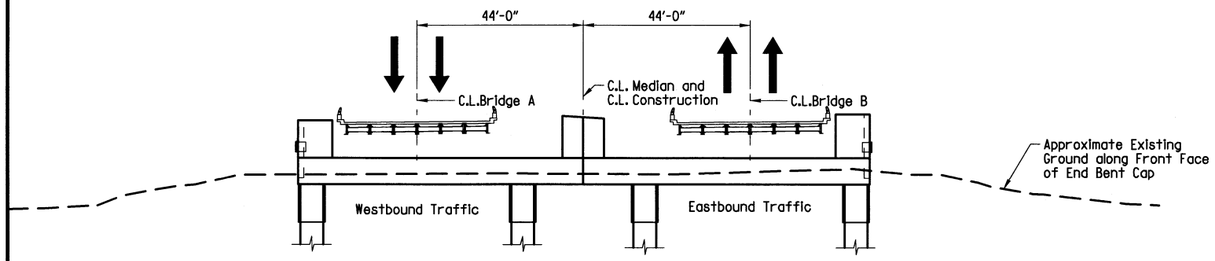
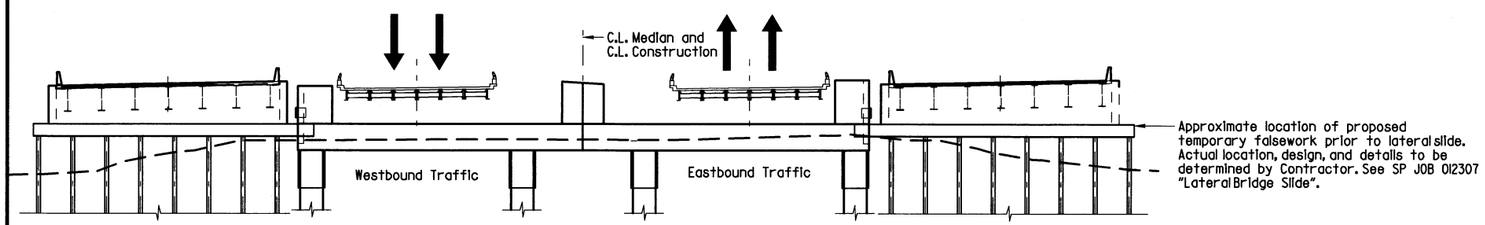
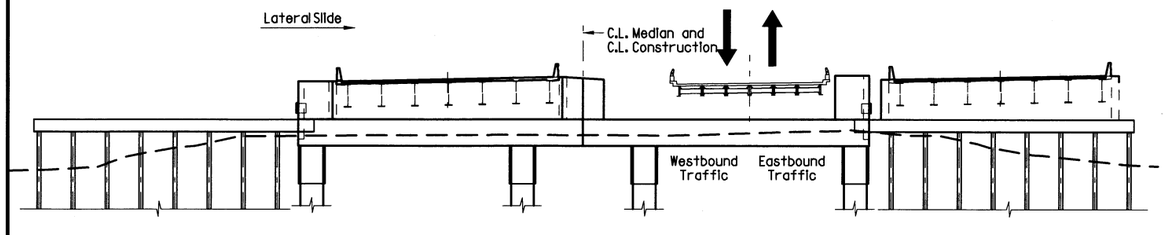
				JOB NO.		012307	45	68
				(1)	A&B7427 - STAGING - 60307			



STEP 1
(Looking Forward)
MOT Stage 1 construct substructure under existing bridges.

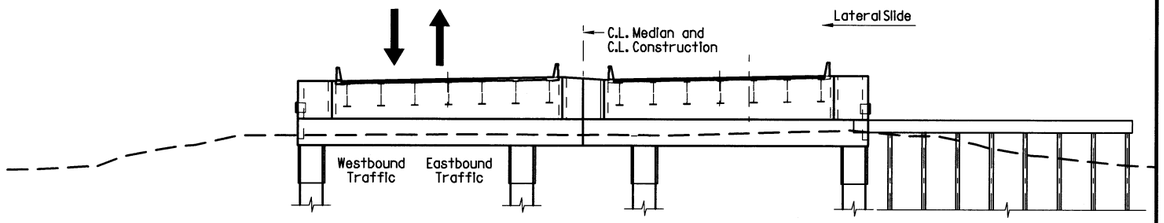


STEP 2
(Looking Forward)
MOT Stage 1 construct superstructure on temporary foundations.

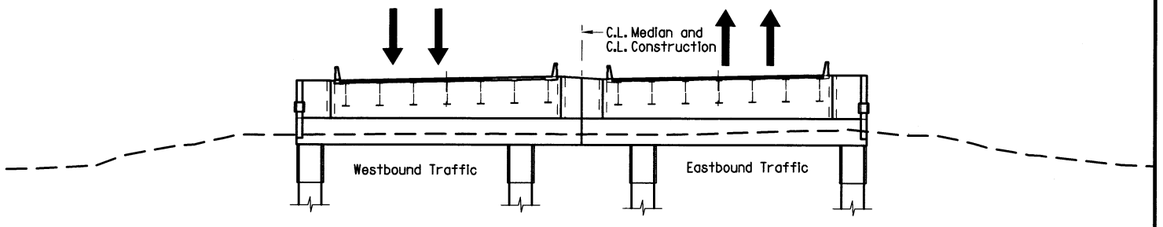


STEP 3
(Looking Forward)
MOT Stage 3A demolish existing Bridge A, slide new Bridge A (WB), complete approaches.

Note:
For additional Maintenance of Traffic details, see Roadway Plans.



STEP 4
(Looking Forward)
MOT Stage 4A demolish existing Bridge B, slide new Bridge B (EB), complete approaches.



COMPLETE
(Looking Forward)

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

PROPOSED CONSTRUCTION SEQUENCE
INTERSTATE 30 OVER DE ROCHE CREEK
DE ROCHE CREEK STRS. & APPRS. (S)
CLARK AND HOT SPRING COUNTIES
ROUTE 30 SECTIONS 14 & 21
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	11/2018	FILENAME:	B012307_ZX1.dgn
CHECKED BY:	SFH	DATE:	02/2019		
DESIGNED BY:	SFH	DATE:	03/2018	SCALE:	No Scale
BRIDGE NO.	A&B7427		DRAWING NO.		60307

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	46	68

(1) A&B7427 - END BENTS - 60308

Notes:
For Sections B-B, C-C, X-X and View F-F, see Dwg. No. 60309.

For Sections G-G, H-H, J-J, and K-K, see Dwg. No. 60310.

(1) C.L. Girder position (offset from C.L. Bridge) is shown for end bridge location. Adjust orientation for begin bridge location.

(2) Length of Permanent Casing shown is for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job No. 012307 "Drilled Shaft Foundations". Permanent casing shall not extend below top of competent rock without approval from the Engineer.

(3) Minimum penetration into competent rock below permanent casing.

(4) Position concrete restrainers adjacent to end concrete diaphragms and use ½" preformed joint material between surfaces.

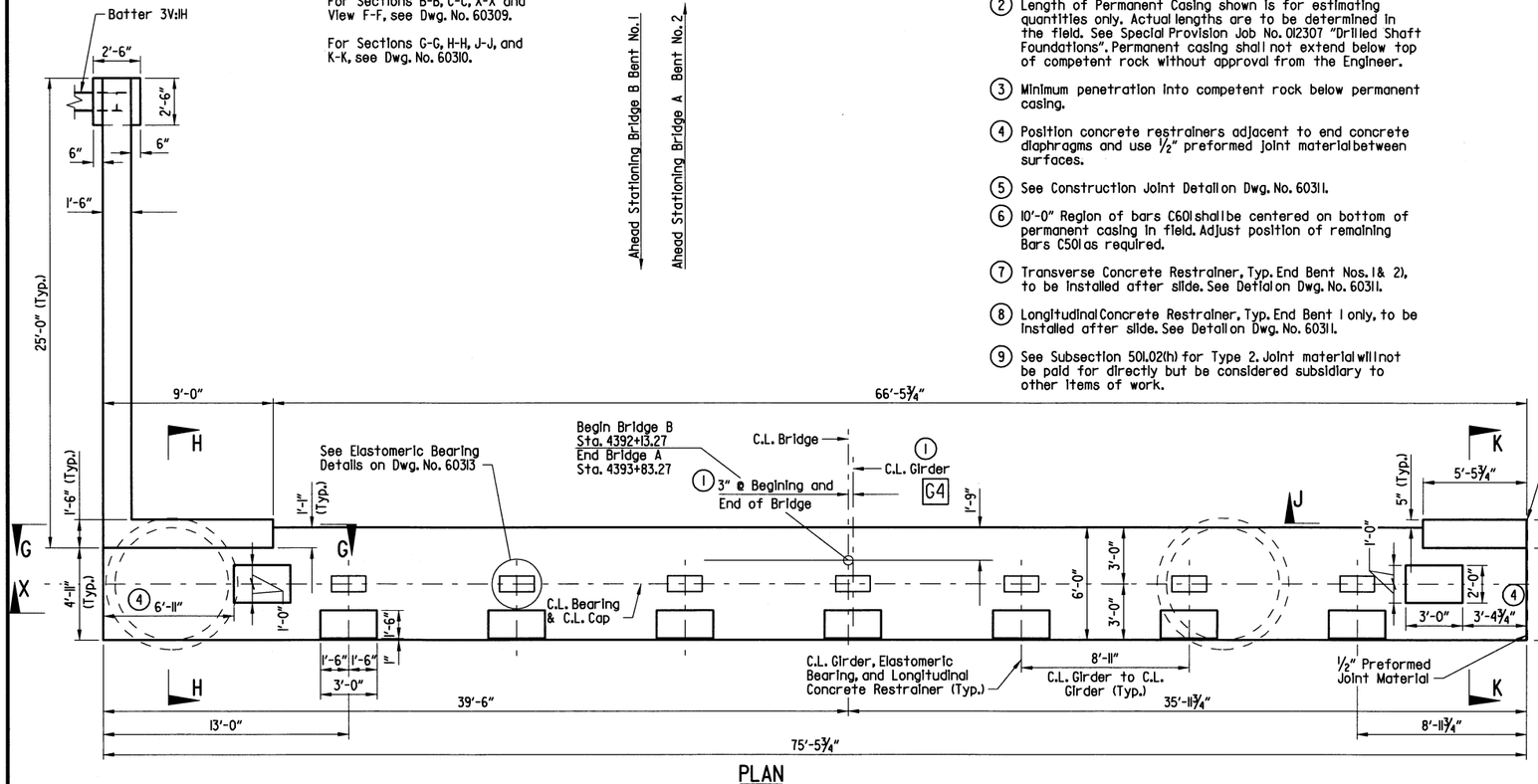
(5) See Construction Joint Detail on Dwg. No. 60311.

(6) 10'-0" Region of bars C601 shall be centered on bottom of permanent casing in field. Adjust position of remaining Bars C501 as required.

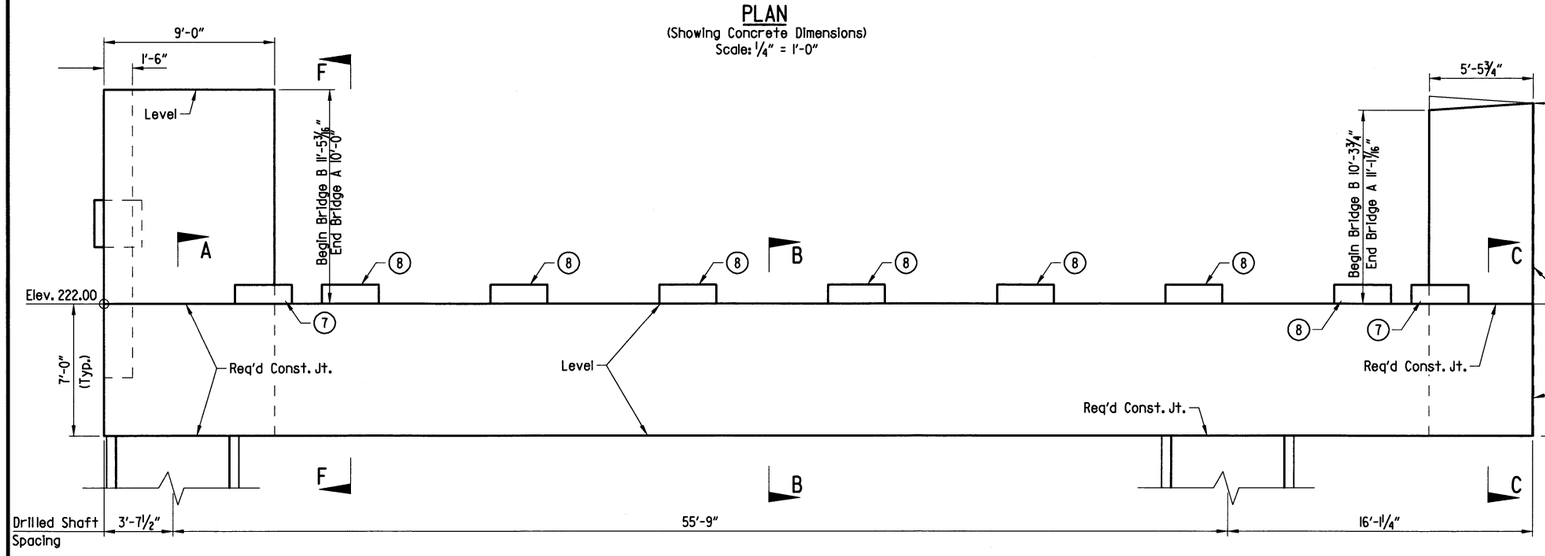
(7) Transverse Concrete Restrainer, Typ. End Bent Nos. 1 & 2), to be installed after slide. See Detail on Dwg. No. 60311.

(8) Longitudinal Concrete Restrainer, Typ. End Bent 1 only, to be installed after slide. See Detail on Dwg. No. 60311.

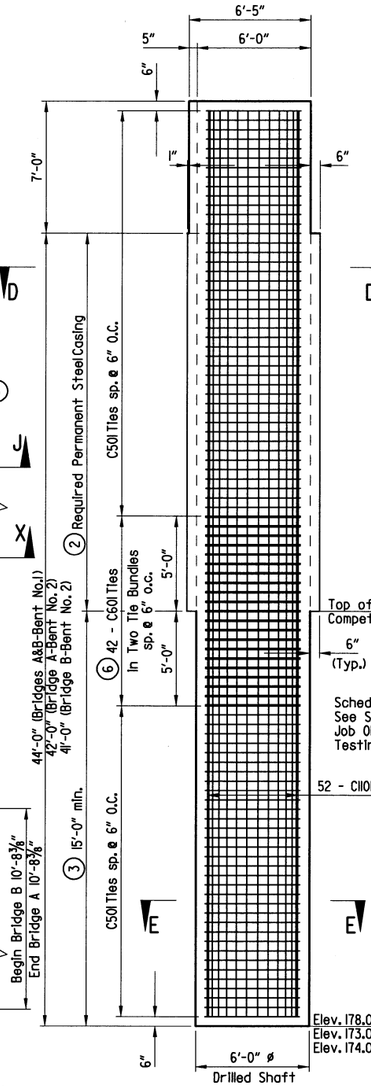
(9) See Subsection 501.02(h) for Type 2. Joint material will not be paid for directly but be considered subsidiary to other items of work.



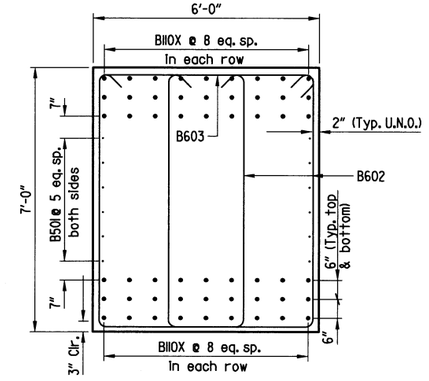
PLAN
(Showing Concrete Dimensions)
Scale: ¼" = 1'-0"



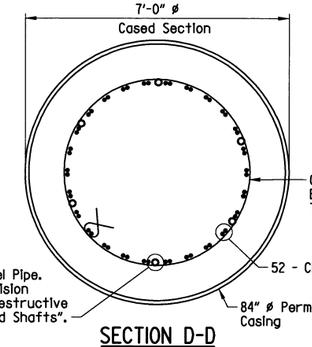
ELEVATION
(Showing Concrete Dimensions)
Scale: ¼" = 1'-0"



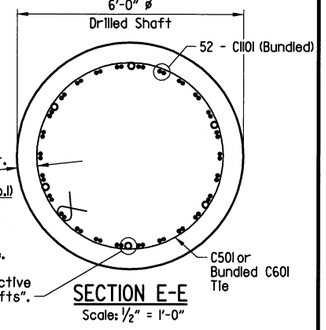
SECTION A-A
Drilled Shaft Reinforcing
Scale: ¼" = 1'-0"



SECTION A-A
(Cap Reinforcing)
Scale: ½" = 1'-0"



SECTION D-D
Scale: ½" = 1'-0"



SECTION E-E
Scale: ½" = 1'-0"

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 1 OF 5
END BENT DETAILS
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 02/2019 FILENAME: B012307_AXI.dgn
CHECKED BY: CYY DATE: 02/2019
DESIGNED BY: JAZ DATE: 01/2019 SCALE: As Shown
BRIDGE NO. A&B7427 DRAWING NO. 60308

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	47	68

(1) A&B7427 - END BENTS - 60309

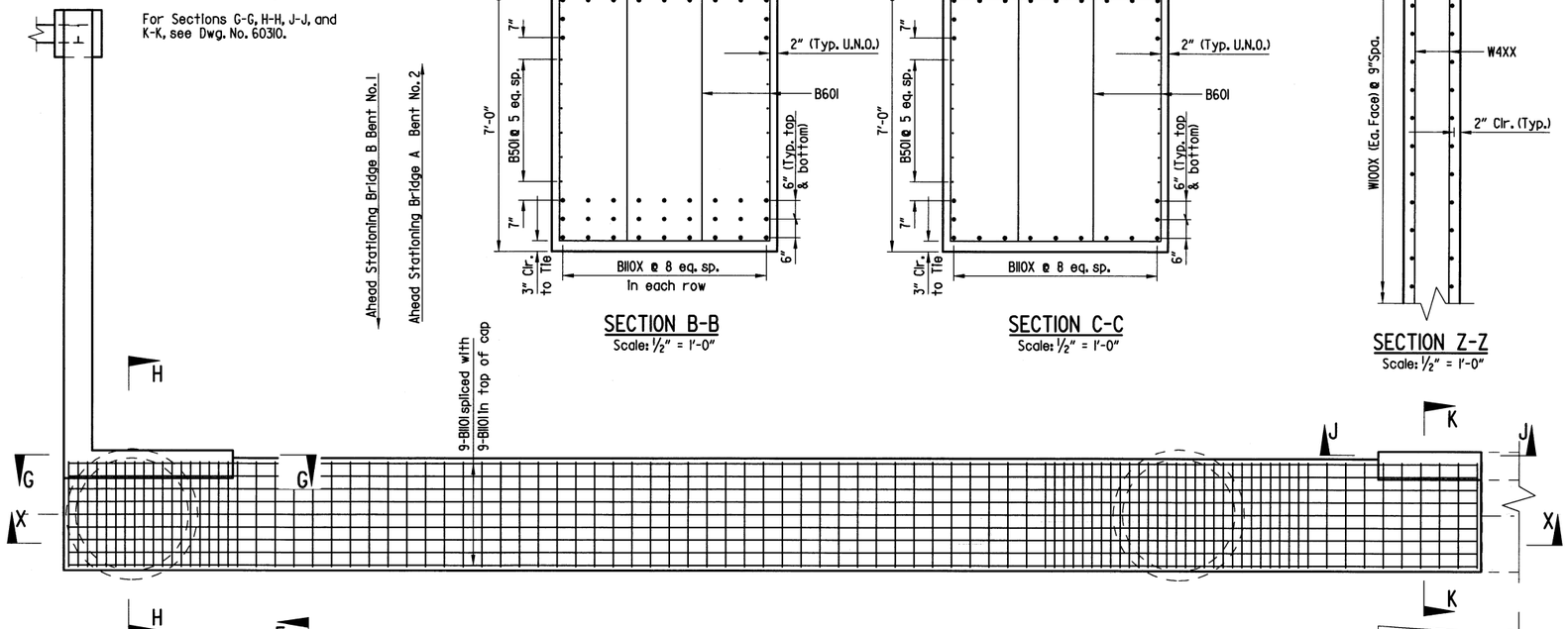
Notes:
For Section A-A Dwg. No. 60308.

For Sections G-G, H-H, J-J, and K-K, see Dwg. No. 60310.

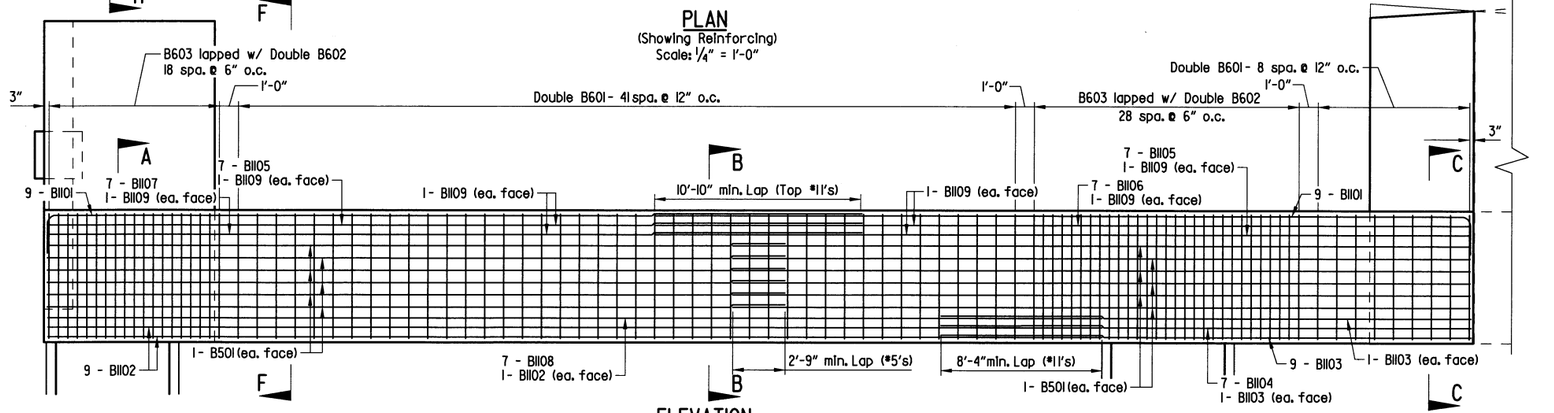
Ahead Stationing Bridge B Bent No.1

Ahead Stationing Bridge A Bent No.2

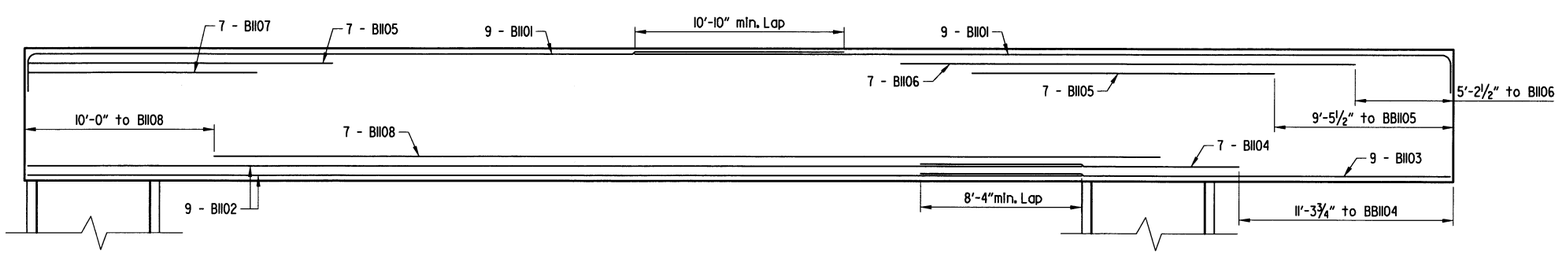
9-B1101 spliced with 9-B1101 in top of cap



PLAN
(Showing Reinforcing)
Scale: 1/4" = 1'-0"

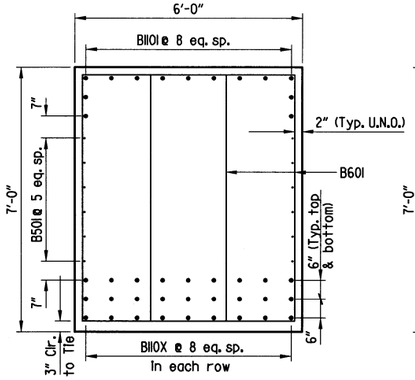


ELEVATION
(Showing Reinforcing)
Scale: 1/4" = 1'-0"

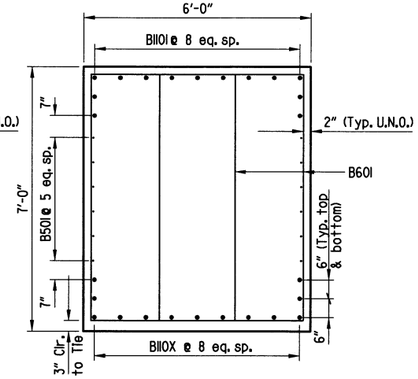


SECTION X-X
(Showing Interior Reinforcing)
Scale: 1/4" = 1'-0"

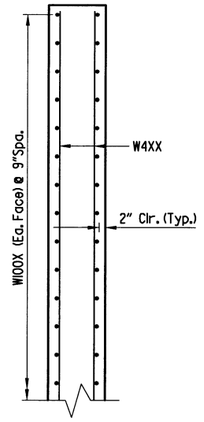
Note:
Concrete restrainer blocks not shown on this drawing for clarity.



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



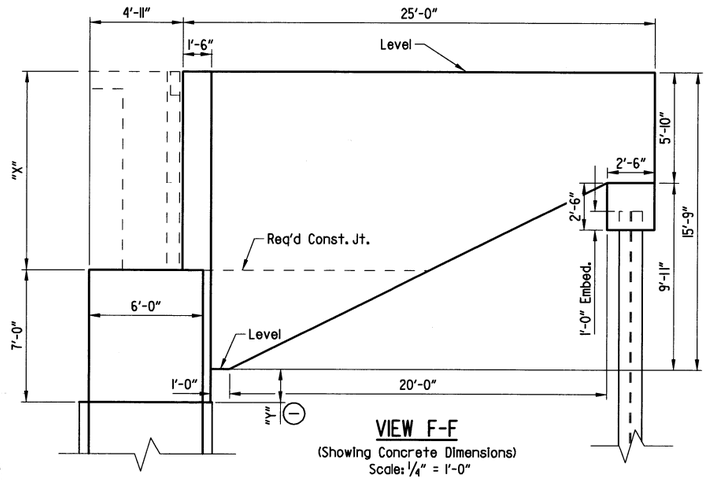
SECTION C-C
Scale: 1/2" = 1'-0"



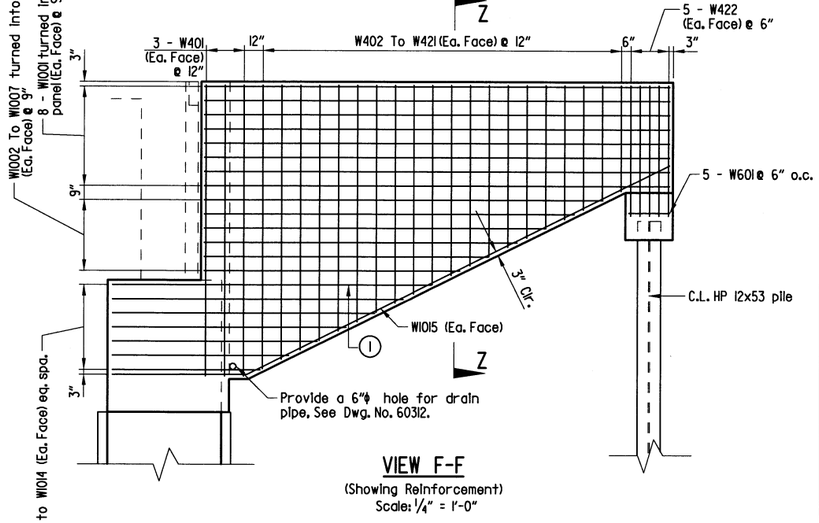
SECTION Z-Z
Scale: 1/2" = 1'-0"

	"X"	"Y"
Bridge A - Bent No.1	9'-11 1/2"	1'-2 1/2"
Bridge A - Bent No.2	10'-0"	1'-3"
Bridge B - Bent No.1	11'-5 3/16"	2'-8 3/16"
Bridge B - Bent No.2	11'-4 11/16"	2'-7 11/16"

(1) Trim Bar W1008 in field as required to accomodate variation in Dimension "Y".



VIEW F-F
(Showing Concrete Dimensions)
Scale: 1/4" = 1'-0"



VIEW F-F
(Showing Reinforcement)
Scale: 1/4" = 1'-0"

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 2 OF 5
END BENT DETAILS
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	02/2019	FILENAME:	B012307_AX2.dgn
CHECKED BY:	CYY	DATE:	02/2019		
DESIGNED BY:	JAZ/MKL	DATE:	01/2019	SCALE:	As Shown
BRIDGE NO.	A&B7427			DRAWING NO.	60309

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WORKSPACE: ARDOT
Y:\Projects\ArDOT_163836.1-30 Lateral Bridge Slide\Design\BRIDGE\Drawings\B012307_AX2.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	48	68
				(1)	A&B7427 - END BENTS - 60310			

Notes:
For Section A-A Dwg. No. 60308.

For Sections B-B, C-C, X-X, and View F-F, see Dwg. No. 60309.

Ahead Stationing Bridge A Bent No.1

Ahead Stationing Bridge B Bent No.2

(1) C.L. Girder position (offset from C.L. Bridge) is shown for end bridge location. Adjust orientation for begin bridge location.

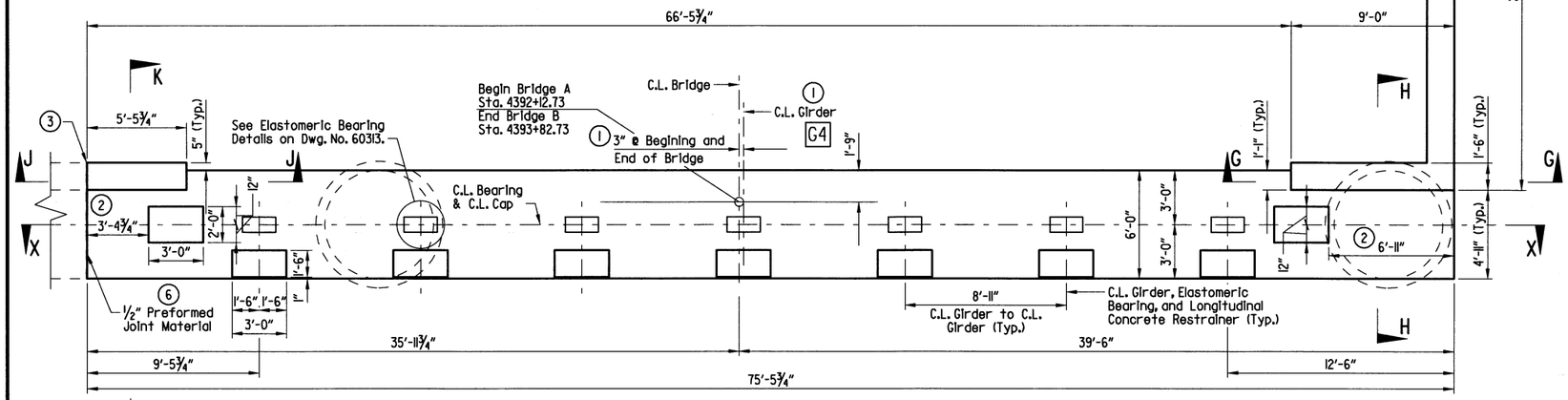
(2) Position concrete restrainers to contact end concrete diaphragms and use ½" preformed joint material between surfaces.

(3) See Construction Joint Detail on Dwg. No. 60311.

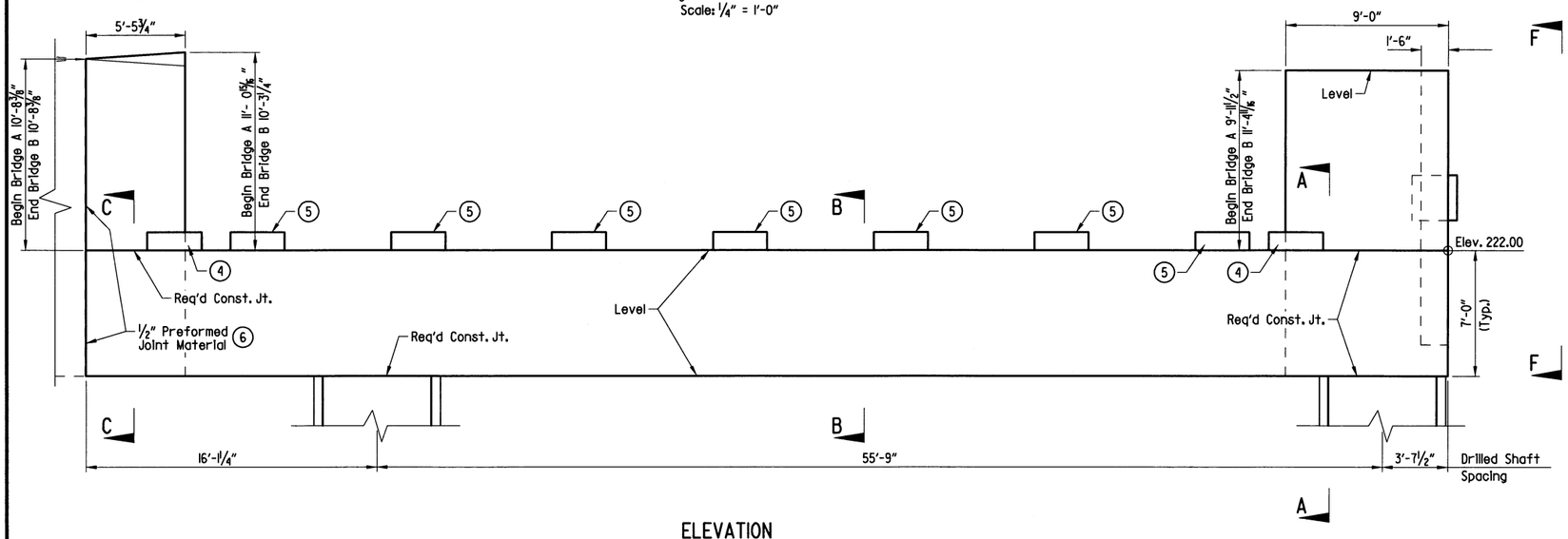
(4) Transverse Concrete Restrainer, to be installed after slide. See Detail on Dwg. No. 60311.

(5) Longitudinal Concrete Restrainer, Typ. End Bent 1 only, to be installed after slide. See Detail on Dwg. No. 60311.

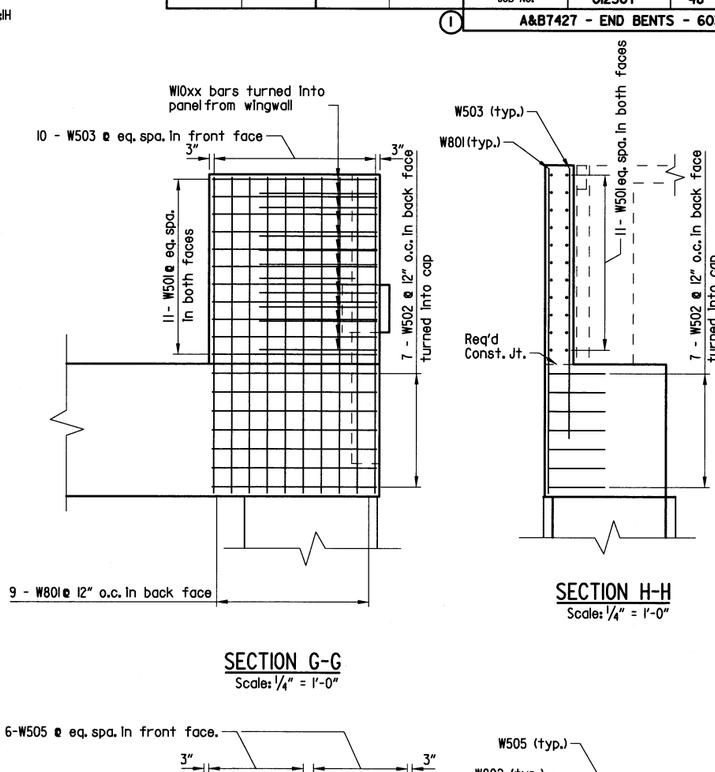
(6) See Subsection 501.02(h) for Type 2. Joint material will not be paid for directly but be considered subsidiary to other items of work.



PLAN
(Showing Concrete Dimensions)
Scale: ¼" = 1'-0"

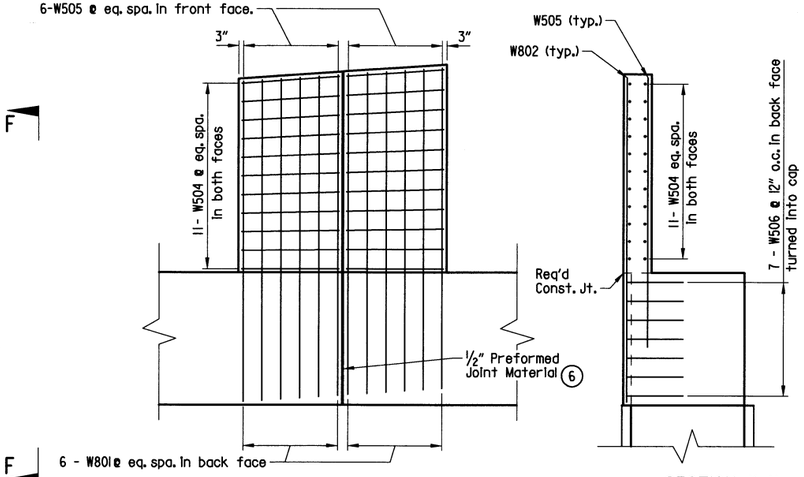


ELEVATION
(Showing Concrete Dimensions)
Scale: ¼" = 1'-0"



SECTION G-G
Scale: ¼" = 1'-0"

SECTION H-H
Scale: ¼" = 1'-0"



SECTION J-J
Scale: ¼" = 1'-0"

SECTION K-K
Scale: ¼" = 1'-0"

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 3 OF 5
END BENT DETAILS
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	02/2019	FILENAME:	B012307_AX3.dgn
CHECKED BY:	CYY	DATE:	02/2019		
DESIGNED BY:	JAZ/MKL	DATE:	01/2019	SCALE:	As Shown
BRIDGE NO.	A&B7427			DRAWING NO.	60310

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WORKSPACE: ARDOT
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	49	68
				①	A&B7427 - END BENTS - 60311			

Notes:
For Section A-A Dwg. No. 60308.

For Sections B-B, C-C, X-X, and View F-F, see Dwg. No. 60309.

For Sections G-G, H-H, J-J, and K-K, see Dwg. No. 60310.

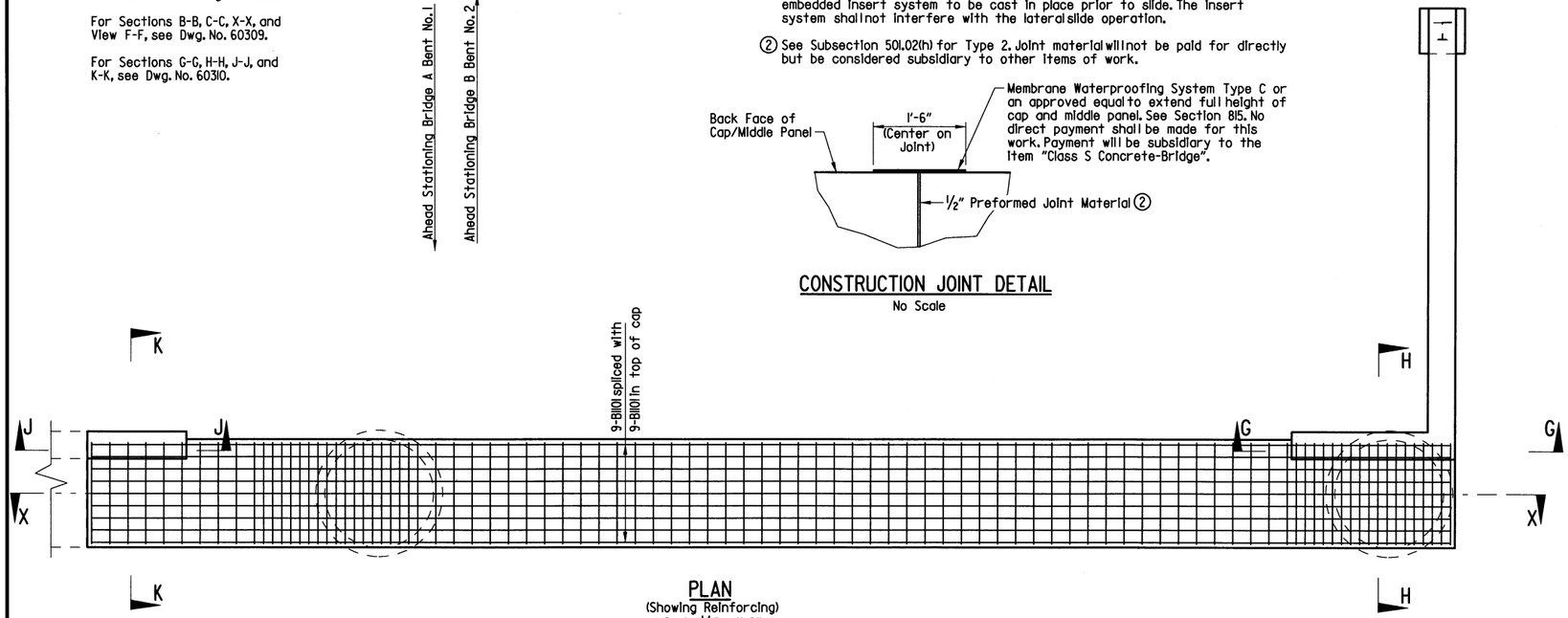
Ahead Stationing Bridge A Bent No.1

Ahead Stationing Bridge B Bent No.2

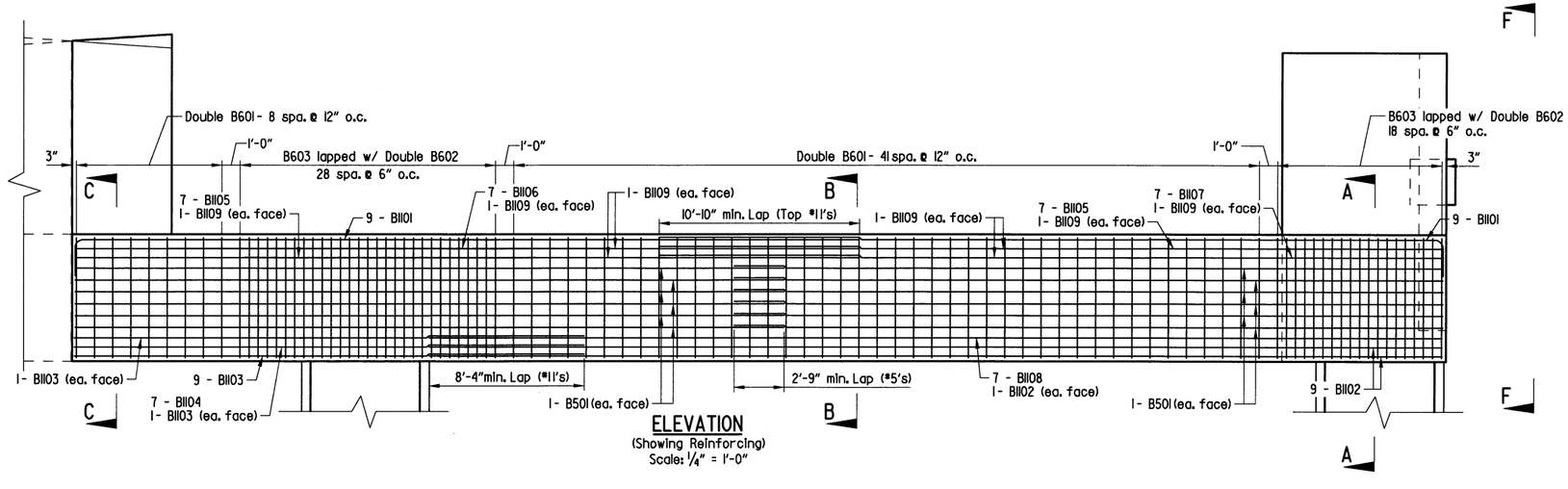
① Concrete Restrainer reinforcement shall be drilled and grouted into place following the bridge slide. The reinforcement shall be set and fixed using a QPL epoxy grout system in accordance with manufacturer's recommendations. The Contractor should exercise care to locate cap reinforcing and avoid when drilling. As an alternate, the Contractor may submit for approval an embedded insert system to be cast in place prior to slide. The insert system shall not interfere with the lateral slide operation.

② See Subsection 501.02(h) for Type 2. Joint material will not be paid for directly but be considered subsidiary to other items of work.

CONSTRUCTION JOINT DETAIL
No Scale

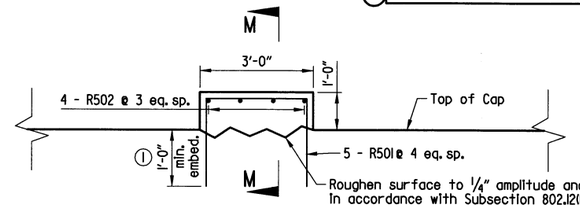


PLAN
(Showing Reinforcing)
Scale: ¼" = 1'-0"

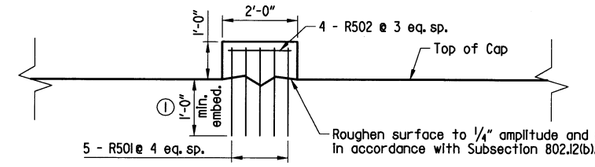


ELEVATION
(Showing Reinforcing)
Scale: ¼" = 1'-0"

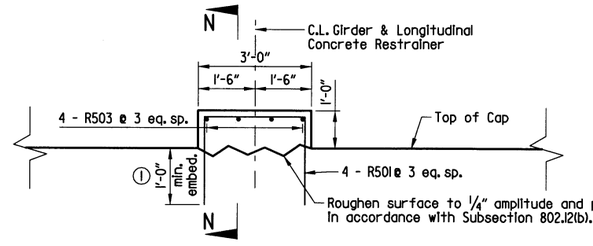
Note:
Concrete restrainer blocks not shown on this drawing for clarity.



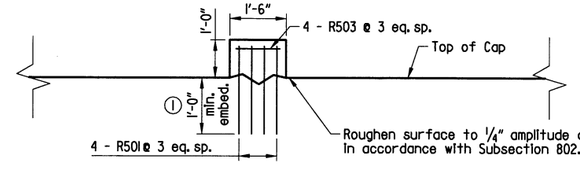
TYPICAL TRANSVERSE CONCRETE RESTRAINER DETAIL
End Bents 1 & 2
Scale: ½" = 1'-0"



SECTION M-M
End Bents 1 & 2
Scale: ½" = 1'-0"



TYPICAL LONGITUDINAL CONCRETE RESTRAINER DETAIL
End Bent 1 Only
Scale: ½" = 1'-0"



SECTION N-N
End Bent 1 Only
Scale: ½" = 1'-0"

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 4 OF 5
END BENT DETAILS
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	02/2019	FILENAME:	B012307_AX4.dgn
CHECKED BY:	CYY	DATE:	02/2019		
DESIGNED BY:	JAZ/MKL	DATE:	01/2019	SCALE:	As Shown
BRIDGE NO.	A&B7427		DRAWING NO.	60311	

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WORKSPACE: ARDOT
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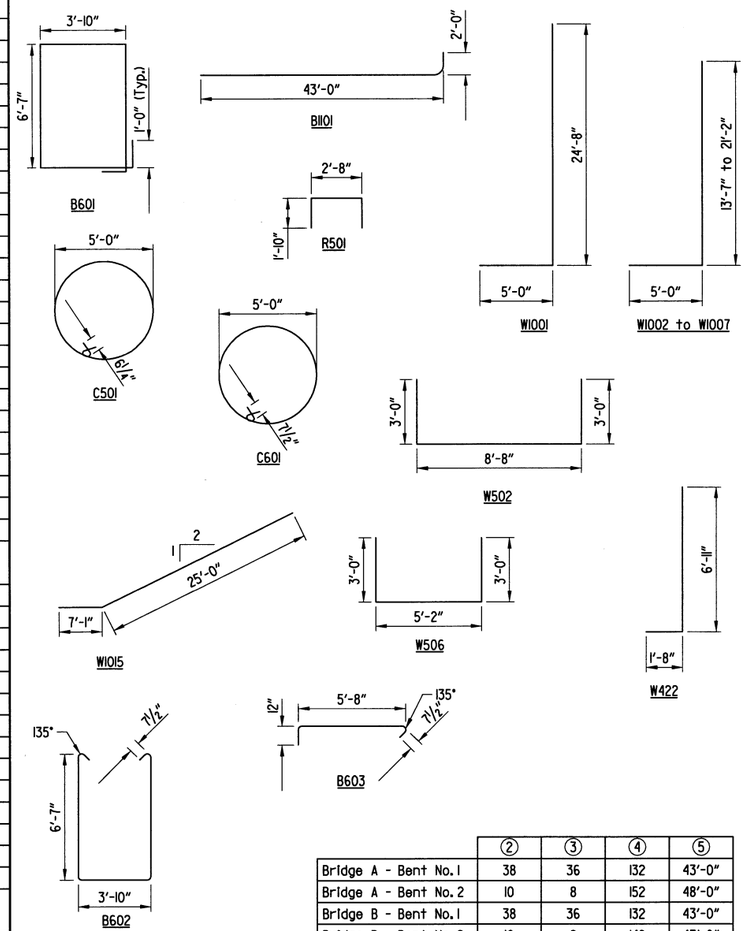
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	50	68
				①	A&B7427 - END BENTS - 60312			

BAR LIST- PER END BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B501	24	39'-0"	Str.
B601	102	24'-0"	4½"
B602	96	18'-4"	4½"
B603	48	7'-4"	4½"
B1101	18	44'-8"	11¼"
B1102	20	55'-8"	Str.
B1103	13	28'-0"	Str.
B1104	7	16'-11"	Str.
B1105	14	16'-0"	Str.
B1106	7	24'-0"	Str.
B1107	7	12'-0"	Str.
B1108	7	50'-0"	Str.
B1109	8	43'-1"	Str.
R501	②	6'-2"	2½"
R502	③	1'-8"	Str.
① C501	④	17'-1"	3¾"
① C601	84	17'-4"	4½"
① C1101	104	⑤	Str.
W401	6	15'-5"	Str.
W402 to W421	2 ea.	5'-8" to 15'-0"	Str.
W422	10	8'-6"	3"
W501	22	8'-8"	Str.
W502	7	14'-6"	2½"
W503	10	14'-6"	Str.
W504	22	5'-2"	Str.
W505	6	13'-0"	Str.
W506	6	11'-0"	Str.
W601	5	2'-2"	Str.
W801	15	16'-6"	Str.
W1001	16	29'-5"	10"
W1002 to W1007	2 ea.	25'-10" to 18'-3"	10"
② W1008 to W1014	2 ea.	16'-10" to 7'-9"	Str.
W1015	2	32'-1"	10"

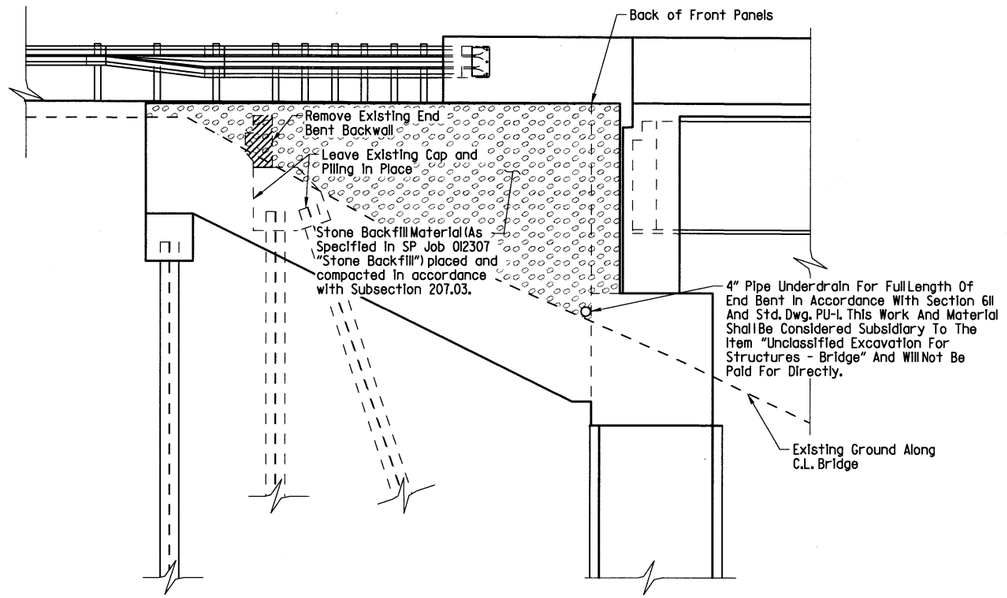
BENDING DIAGRAMS
Dimensions are out to out of bars.



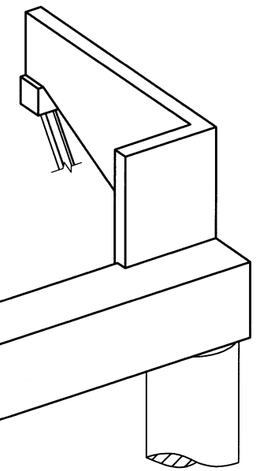
	②	③	④	⑤
Bridge A - Bent No. 1	38	36	132	43'-0"
Bridge A - Bent No. 2	10	8	152	48'-0"
Bridge B - Bent No. 1	38	36	132	43'-0"
Bridge B - Bent No. 2	10	8	148	47'-0"

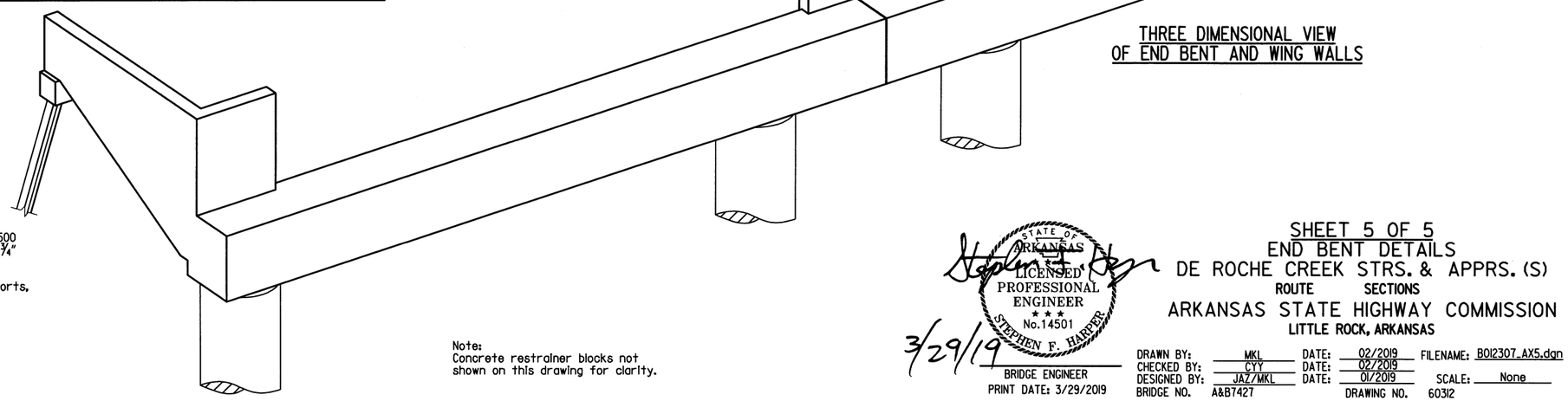
① Non-Pay Item - Subsidiary to Pay Item "Drilled Shaft (72" Dia.)"

② Trim Bar W1008 in field as required to accomadate variation in Dimension "Y" as shown on Dwg. No. 60309.



END BENT EMBANKMENT DETAIL





THREE DIMENSIONAL VIEW
OF END BENT AND WING WALLS

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 M 31 or M 322, Type A with Mill Test Reports, Grade 60 (yield strength = 60,000 psi.).

All pilling shall be AASHTO M 270 Grade 50, Fy=50 ksi.

Drilled shafts shall conform to SP Job No. 012307 "Drilled Shaft Foundations".

For additional information, see Layout.

Note:
Concrete restrainer blocks not shown on this drawing for clarity.

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 5 OF 5
END BENT DETAILS
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	02/2019	FILENAME:	B012307_AX5.dgn
CHECKED BY:	CYY	DATE:	02/2019		
DESIGNED BY:	JAZ/MKL	DATE:	01/2019	SCALE:	None
BRIDGE NO.	A&B7427			DRAWING NO.	60312

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WORKSPACE: ARDOT
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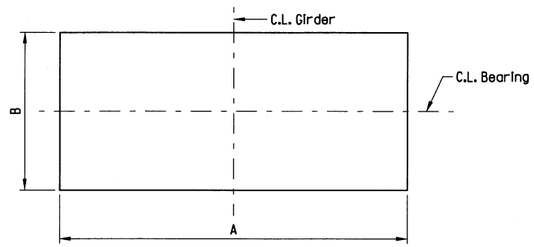
REVISED DATE:

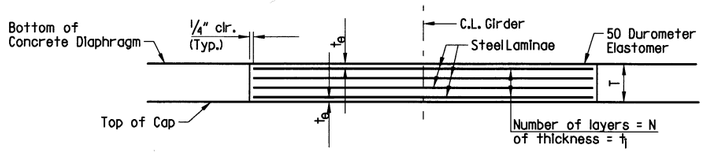
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	51	68

(1) A&B7427 - ELASTOMERIC BEARINGS - 60313

Prior to setting the superstructure in its final location, the Contractor shall verify the orientation and position of the bearings.



ELASTOMERIC BEARING - PLAN VIEW



ELASTOMERIC BEARING - FRONT 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

BRIDGE NO.	LOCATION		NO. OF BEARINGS EACH BENT	(1) MAXIMUM DESIGN LOAD (kip)	ELASTOMERIC PAD						
	BENT NO(S)	GIRDER NO.			A	B	N	t_1	t_e	NO. & THICKNESS OF STEEL LAMINAE	T
A & B7427	1 & 2	ALL	7	296.0	22"	10"	3	0.5"	0.25"	4 @ 12 ga.	2 7/16"

(1) Maximum Load = Service I Limit State

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 (except that no external load plate is provided) and shall be paid for at the unit price bid for "Elastomeric Bearings".

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

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

DETAILS OF ELASTOMERIC BEARINGS DE ROCHE CREEK STRS. & APPRS. (S)

ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 02/2019 FILENAME: B012307_EXI.dgn
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: MKL DATE: 10/2018 SCALE: None
BRIDGE NO. A&B7427 DRAWING NO. 60313

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WORKSPACE: ARDOT
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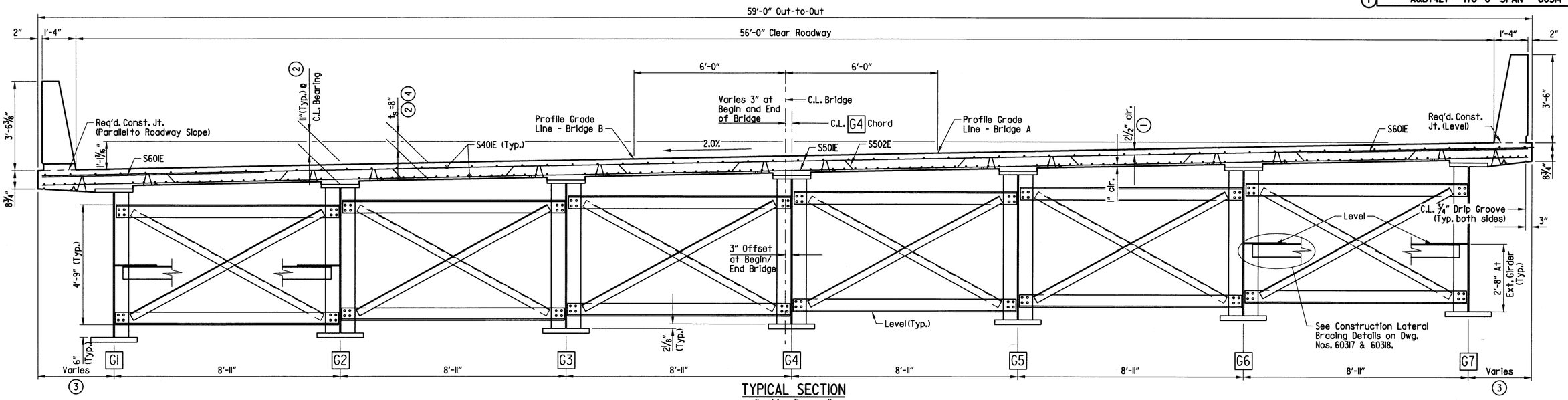
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	52	68
				(1)	A&B7427 - 170'-0" SPAN - 60314			



TYPICAL SECTION
(Looking Forward)
Shown near Bridge Ends

BAR LIST - PER BRIDGE

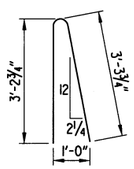
MARK	NO. REQ'D.	LENGTH	PIN DIA.
S401E	900	35'-6"	Str.
S501E	342	58'-8"	Str.
S502E	170	59'-11"	3"
S601E	682	8'-9"	Str.
P401E	132	6'-0"	Str.
P501E	606	6'-8"	3¾"
P502E	606	5'-4"	3¾", 6"
P503E	80	6'-0"	3¾"
P504E	176	14'-8"	Str.
P505E	44	15'-2"	Str.
P506E	44	9'-8"	Str.
D501E	364	17'-2"	2½"
D502E	170	9'-8"	2½"
D503E	(5)	4'-5"	Str.
D504E (Bridge A)	16	9'-5"	Str.
D505E (Bridge A)	16	10'-6"	Str.
D506E (Bridge B)	16	9'-8"	Str.
D507E (Bridge B)	16	10'-10"	Str.
D601E	(6)	58'-8"	Str.
D602E	40	5'-5"	Str.
D603E	8	5'-2"	Str.
D604E	8	4'-8"	Str.
D605E	94	4'-0"	Str.

BENDING DIAGRAMS
Dimensions are out to out of bars.

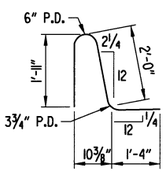
Note: All bars designated with an "E" suffix are to be epoxy coated

(7) ½" Over tolerance
No Under tolerance

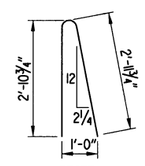
S502E



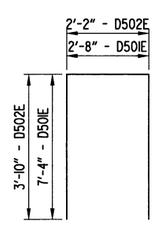
P501E



P502E



P503E



D501E & D502E

Bridge	(5)	(6)
A	168	80
B	176	84

Slab Reinforcing

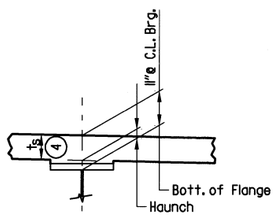
Transverse: S501E @ 12" o.c. in top and bottom — Alternate
S502E @ 12" o.c. bent up over beams —
S601E @ 6" o.c. under each parapet bundled w/ #5 in top @ both gutterlines

Longitudinal: S401E placed as shown in top and bottom

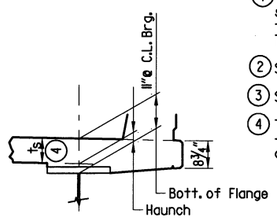
Notes:
Class I Protective Surface Treatment shall be applied to the roadway surface and the face and top of concrete parapet rails.

At the Contractors option, in lieu of providing bars 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 S502E. Bars in top and bottom shall be epoxy coated.

Bar positions or clearances from the forms shall be maintained by means of stays, ties, hangers, or other approved devices per Subsection 804.06.



Interior Girder



Exterior Girder

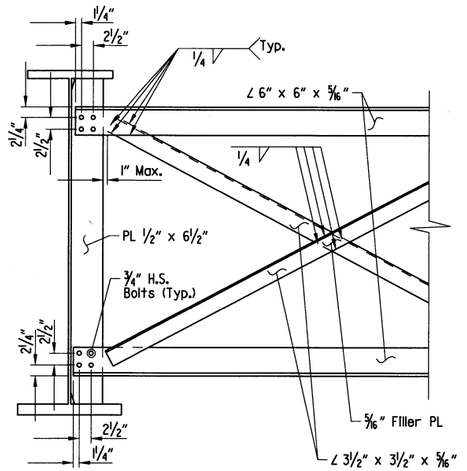
Note:
C.L. Median is on a 0°30'00" Curve left. Longitudinal lines shall be constructed on curves concentric w/ C.L. Median Stations. Begin/End Bridge Lines are normal to plate girders built on 170'-0" chords. For more information refer to Staking Diagram on Dwg. No. 60306.

(1) Tolerance: Minus = ¼"; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "Adjustment for Slab Thickness Tolerance".

(2) See "Adjustment for Slab Thickness Tolerance".

(3) See "Table of Cantilever Offsets" on Dwg. No. 60317.

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



CROSSFRAME DETAIL

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.

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 1 OF 9
DETAILS OF
170'-0" COMPOSITE PLATE GIRDER SPAN
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 01/2018
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: MKL DATE: 01/2018
BRIDGE NO. A&B7427
FILENAME: B012307_SXI.dgn
SCALE: ½" = 1'-0"
DRAWING NO. 60314

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WORKSPACE_ARDOT
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	53	68

(1) A&B7427 - 170'-0" SPAN - 60315

(1) Expanded Polystyrene (EPS) conforming to ASTM C578-15b. Type VII with 1/8" hardboard. Match Bearing Pad thickness.

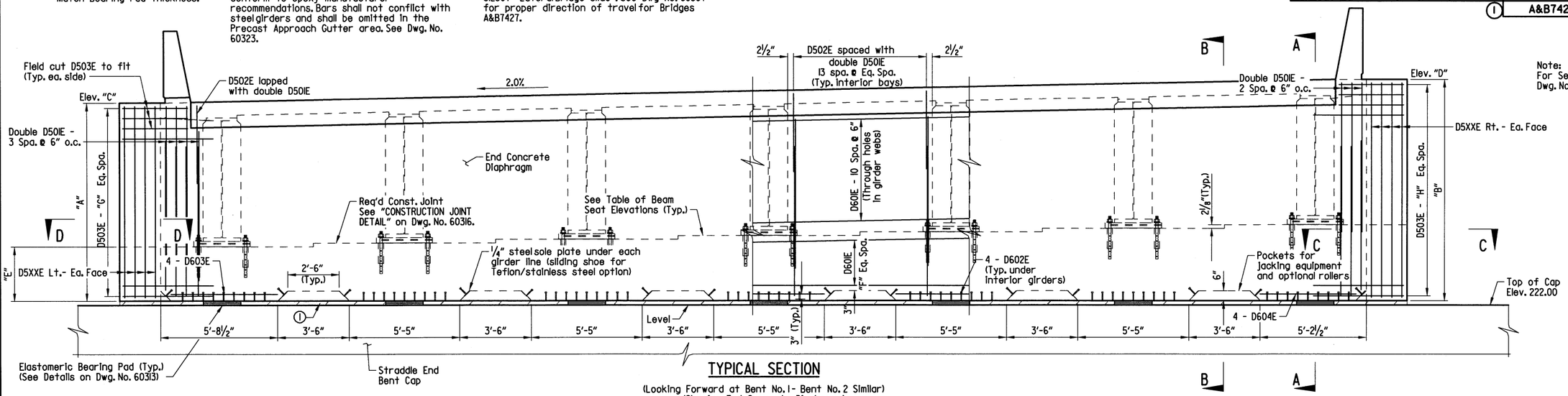
(2) Bar D605E shall be drilled and set using a QPL approved epoxy or non-shrink grout that completely fills the holes. Embedment shall conform to epoxy manufacturer recommendations. Bars shall not conflict with steel girders and shall be omitted in the Precast Approach Gutter area. See Dwg. No. 60323.

(3) Point of application of lateral jacking force at End Concrete Diaphragm along C.L. Bearing. See requirements for lateral bridge slide in SP 012307 "Lateral Bridge Slide". See Dwg No. 60307 for proper direction of travel for Bridges A&B7427.

(4) Beam Seat Elevations refer to finished position with elastomeric bearings installed.

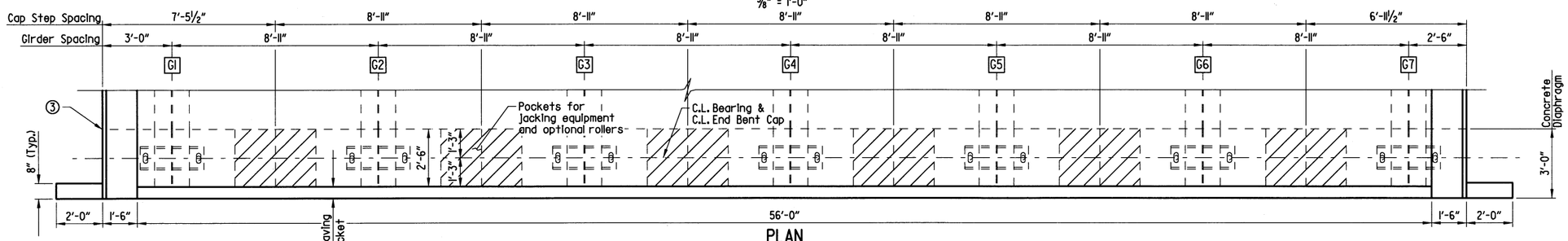
(5) See Subsection 501.02(h) for Type 2 Joint material will not be paid for directly but be considered subsidiary to other items of work.

Note:
For Sections C-C and D-D, see Dwg. No. 60316.



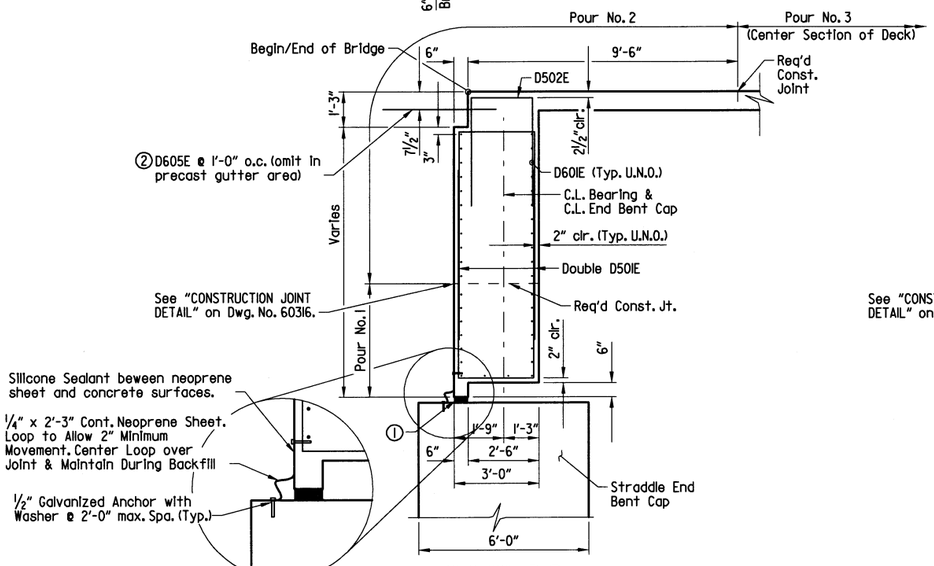
TYPICAL SECTION

(Looking Forward at Bent No. 1 - Bent No. 2 Similar)
(Showing End Concrete Diaphragm)
3/8" = 1'-0"



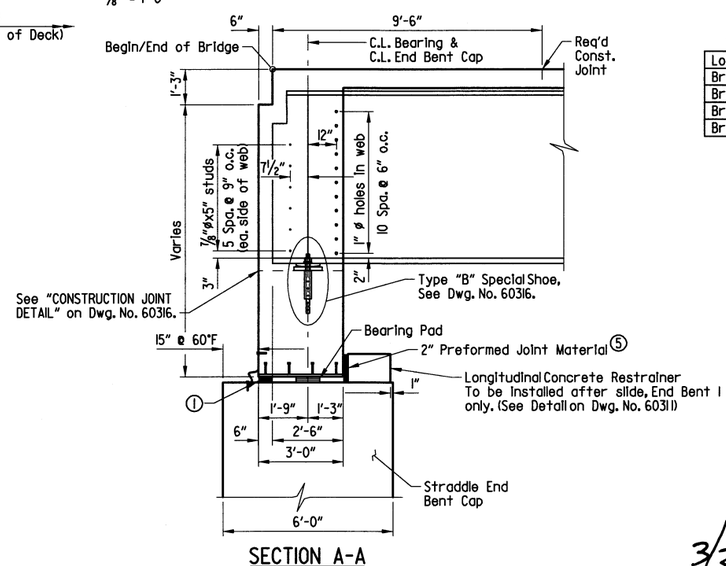
PLAN

3/8" = 1'-0"



SECTION B-B

3/8" = 1'-0"



SECTION A-A

3/8" = 1'-0"
(Reinforcing Not Shown for Clarity)

TABLE OF VARIABLES

Location	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	D5XXE Lt./Rt.
Bridge A - End Bent 1	9'-9 7/8"	10'-10 1/2"	231.96	233.08	2'-8 3/4"	7	19	21	D504E/D505E
Bridge A - End Bent 2	9'-9 7/8"	10'-11"	232.00	233.12	2'-9 1/4"	7	19	21	D504E/D505E
Bridge B - End Bent 1	10'-1 7/8"	11'-2 3/4"	232.31	233.43	3'- 0 5/8"	8	20	22	D506E/D507E
Bridge B - End Bent 2	10'-0 7/8"	11'-2 1/4"	232.27	233.39	3'- 0 1/2"	8	20	22	D506E/D507E

TABLE OF BEAM SEAT ELEVATIONS (4)

Location	G1	G2	G3	G4	G5	G6	G7
Bridge A - End Bent 1	224.93	225.11	225.29	225.47	225.65	225.82	226.00
Bridge A - End Bent 2	224.97	225.15	225.33	225.51	225.69	225.86	226.04
Bridge B - End Bent 1	225.28	225.46	225.64	225.82	225.10	226.17	226.35
Bridge B - End Bent 2	225.24	225.42	225.60	225.78	225.96	226.13	226.31

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 2 OF 9
DETAILS OF
170'-0" COMPOSITE PLATE GIRDER SPAN
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 11/2018
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: SFH DATE: 01/2018
BRIDGE NO. A&B7427
FILENAME: B012307_SX2.dgn
SCALE: As Shown
DRAWING NO. 60315

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WORKSPACE: ARDOT
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		012307	54	68
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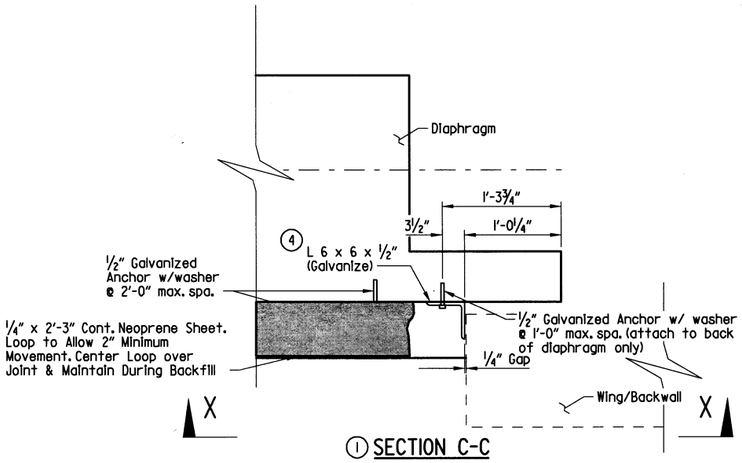


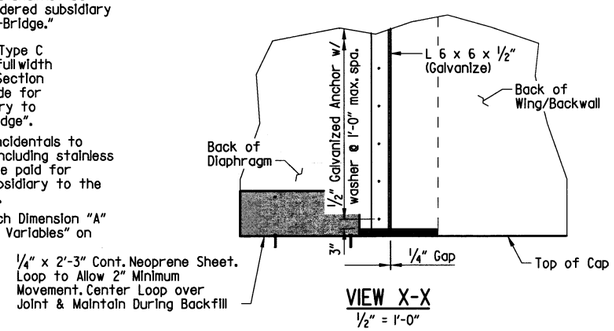
(1) SECTION C-C
1" = 1'-0"

(1) All costs of neoprene sheet, Expanded Polystyrene, steel angles, and concrete anchors shall not be paid for directly, but will be considered subsidiary to the Item "Class S(AE) Concrete-Bridge."

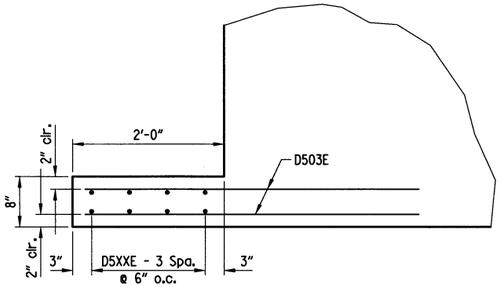
(2) Membrane Waterproofing System Type C or an approved equal to extend full width of end concrete diaphragm. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the Item "Class S(AE) Concrete-Bridge".

(3) All costs of labor, materials, and incidentals to fabricate and install Sole Plates, including stainless steel sheets and studs shall not be paid for directly but will be considered subsidiary to the Item "Class S(AE) Concrete-Bridge".

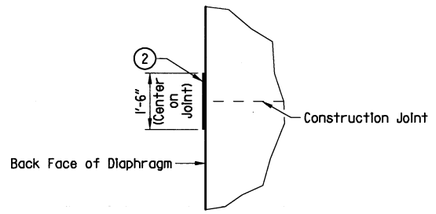
(4) Length of Angle members to match Dimension "A" or "B" as required. See "Table of Variables" on Dwg. No. 60315.



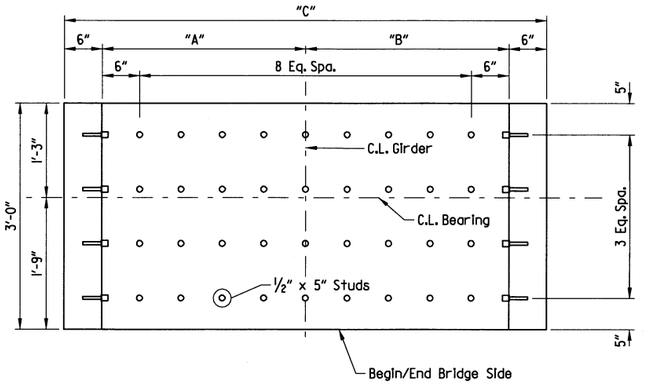
VIEW X-X
½" = 1'-0"



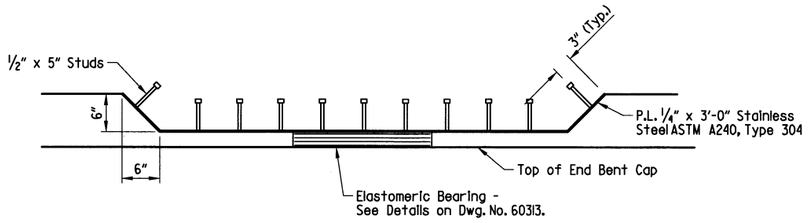
SECTION D-D
1" = 1'-0"



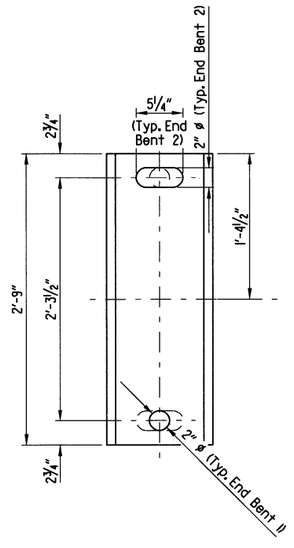
CONSTRUCTION JOINT DETAIL
No Scale



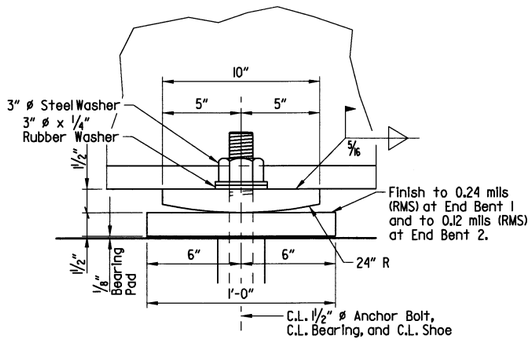
(3) PLAN - SOLE PLATE
1" = 1'-0"



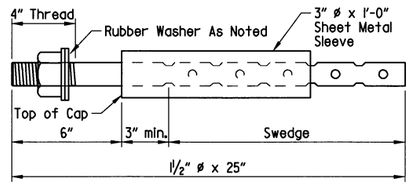
(3) END VIEW - SOLE PLATE
1" = 1'-0"



PLAN TYPE "B" SPECIAL SHOE
No Scale



ELEVATION TYPE "B" SPECIAL SHOE
No Scale



ANCHOR BOLT DETAIL
No Scale

Anchor Bolts, Nuts and Washers to be according to Subsection 807.07. Indentations shall be circular with rounded bottoms and staggered as shown above. Rubber washer shall be closed cell expanded rubber, meeting the requirements of ASTM D1056 - 85 2B2 E2, and shall be considered subsidiary to the Item of "Structural Steel In Plate Girder Spans (M 270, Gr. 50)". Anchor Bolts, Nuts and Washers shall be paid for at the unit price bid for "Structural Steel In Plate Girder Spans (M 270, Gr. 50)". Anchor Bolts shall be Grade 55.

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 masonry. Bolts placed in drilled holes shall be 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 of "Structural Steel In Plate Girder Spans (M 270, Gr. 50W)".

TABLE OF SOLE PLATE VARIABLES

Location	"A"	"B"	"C"
G1	3'-0"	3'-2½"	6'-2½"
G2 - G6	3'-2½"	3'-2½"	6'-5"
G7	3'-2½"	2'-6"	5'-8½"

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 3 OF 9
DETAILS OF
170'-0" COMPOSITE PLATE GIRDER SPAN
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 01/2018
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: SFH DATE: 01/2018
BRIDGE NO. A&B7427
FILENAME: B012307_SX3.dgn
SCALE: As Shown
DRAWING NO. 60316

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WORKSPACE: ARDOT
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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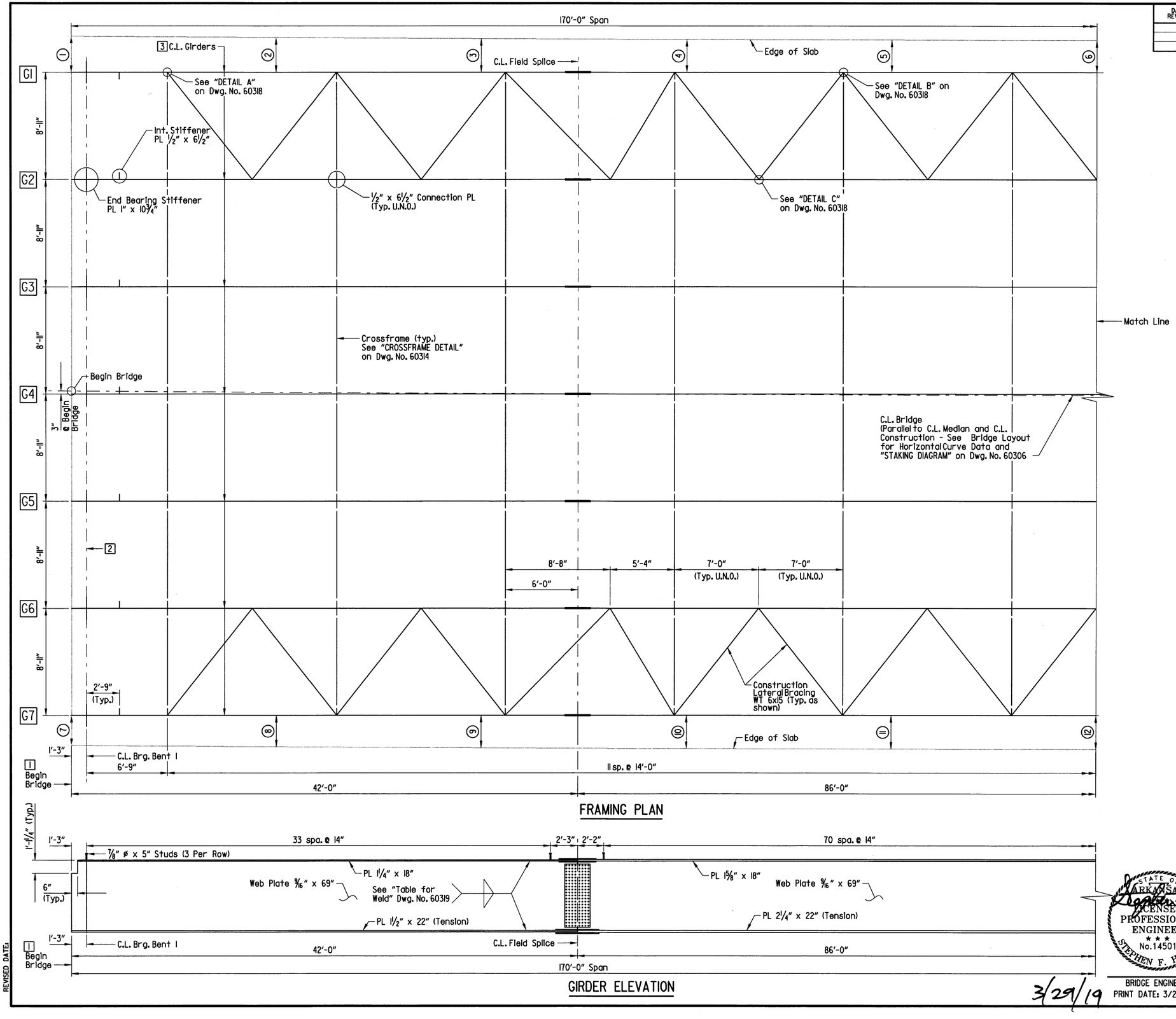
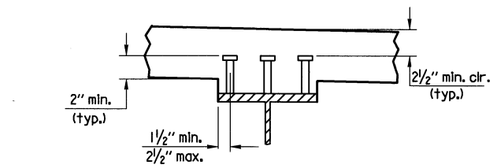
				JOB NO.		012307	55	68
				(1)	A&B7427 - 170'-0" SPAN - 60317			



FRAMING PLAN

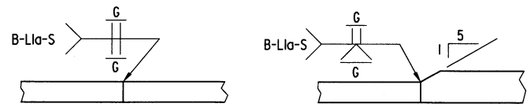
GIRDER ELEVATION



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



Equal Thickness
WEB SPLICE

Unequal Thickness
FLANGE SPLICE

DETAILS OF WELDED SPLICES

No Scale

TABLE OF CANTILEVER OFFSETS

10th Points	Offset	Dist. to Begin/End Bridge (Along C.L. Girder)
(1)	3'-0"	0'-0"
(2)	2'-10⅝"	17'-0"
(3)	2'-9⅞"	34'-0"
(4)	2'-8⅞"	51'-0"
(5)	2'-8⅜"	68'-0"
(6)	2'-8⅜"	85'-0"
(7)	2'-6"	0'-0"
(8)	2'-7⅜"	17'-0"
(9)	2'-8⅞"	34'-0"
(10)	2'-9⅜"	51'-0"
(11)	2'-9⅝"	68'-0"
(12)	2'-9¾"	85'-0"

Note:
U.N.O., all structural steel shall be AASHTO M 270, Gr. 50W.

1 See "Section A-A" on Dwg. No. 60315 for end bent details.

2 The Contractor shall provide temporary bracing along C.L. Bearing prior to concrete diaphragm placement.

3 Placed parallel to a chord from C.L. Bridge at Begining of Bridge to C.L. Bridge at End of Bridge.

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

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

3/29/19

SHEET 4 OF 9
DETAILS OF
170'-0" COMPOSITE PLATE GIRDER SPAN
DE ROCHE CREEK STRS. & APPRS. (S)

ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 11/2018 FILENAME: B012307_SX4.dgn
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: MKL DATE: 10/2018 SCALE: 1/4" = 1'-0"
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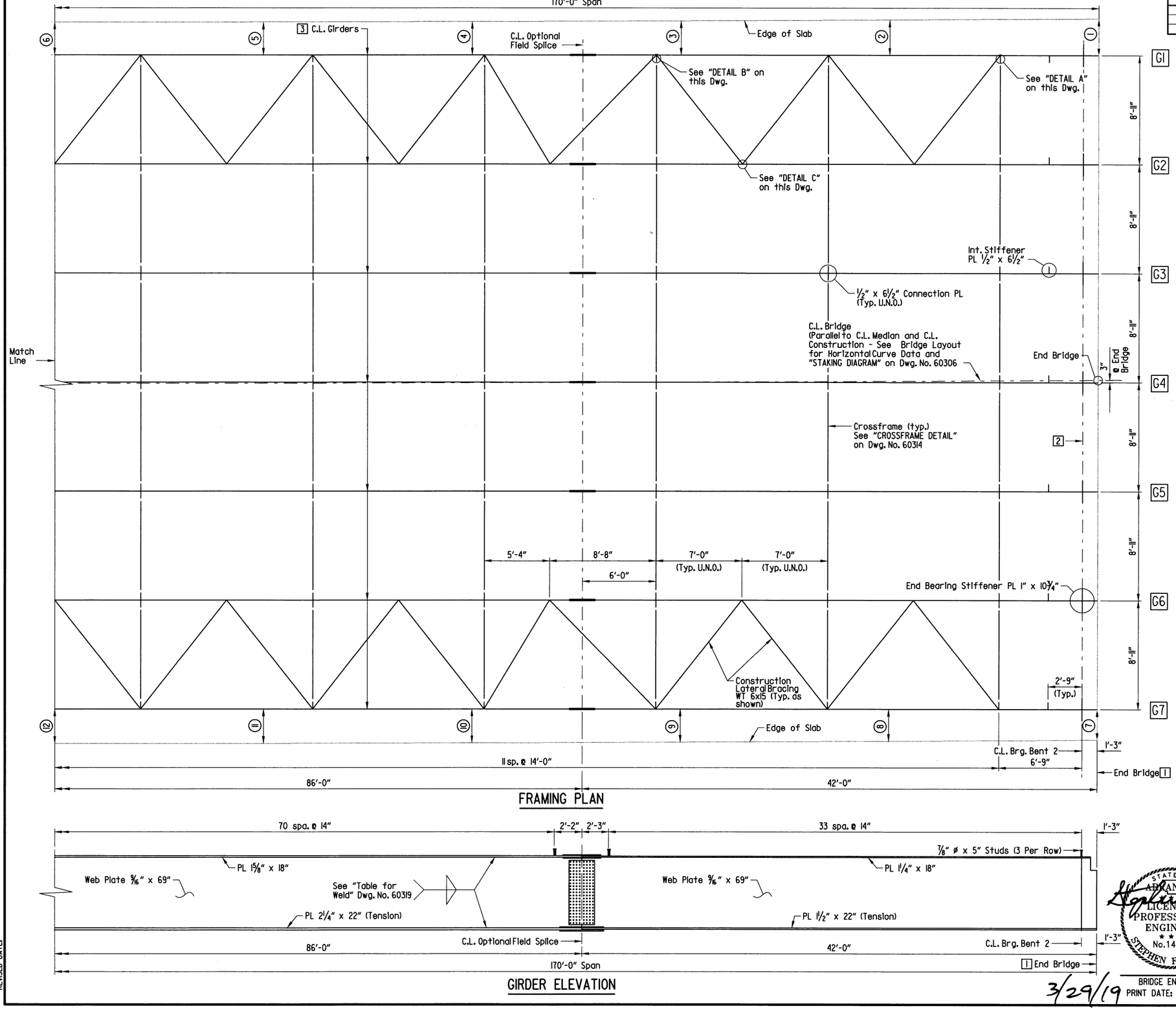
REVISED DATE:

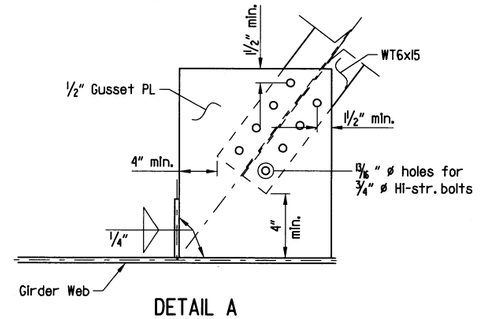
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		012307	56	68

(1) A&B7427 - 170'-0" SPAN - 60318



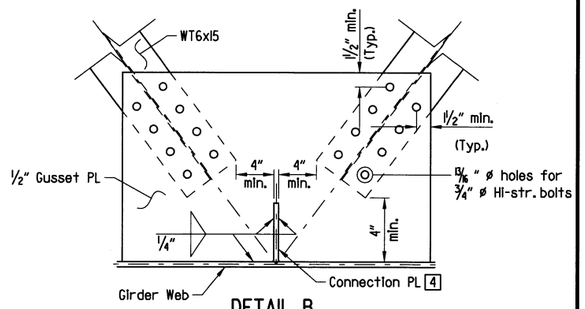
FRAMING PLAN

GIRDER ELEVATION



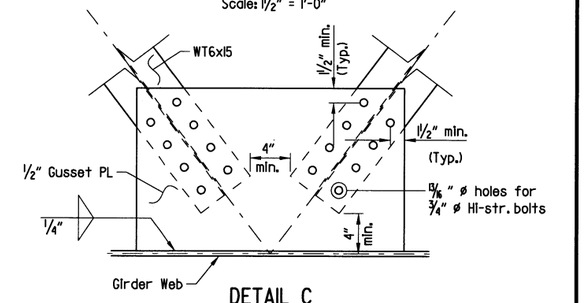
DETAIL A

Scale: 1½" = 1'-0"



DETAIL B

Scale: 1½" = 1'-0"



DETAIL C

Scale: 1½" = 1'-0"

Note:
U.N.O., all structural steel shall be AASHTO M 270, Gr. 50W.

1 See "Section A-A" on Dwg. No. 60315 for end bent details.

2 The Contractor shall provide temporary bracing along C.L. Bearing prior to concrete diaphragm placement.

3 Placed parallel to a chord from C.L. Bridge at Begining of Bridge to C.L. Bridge at End of Bridge.

4 Connection plates shall be discontinuous at lateral bracing gusset plates. See GUSSET PLATE AND CONNECTION PLATE DETAIL on Dwg. No. 60319.

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

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

3/29/19

SHEET 5 OF 9

DETAILS OF 170'-0" COMPOSITE PLATE GIRDER SPAN DE ROCHE CREEK STRS. & APPRS. (S)

ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARKANSAS

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REVISED DATE:

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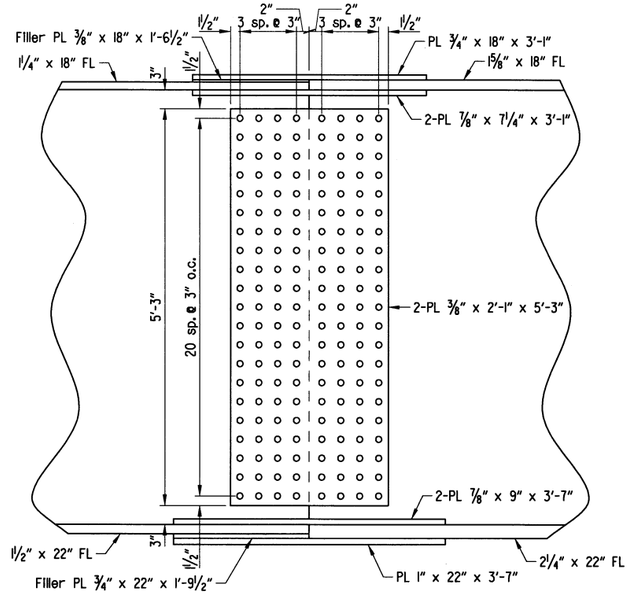
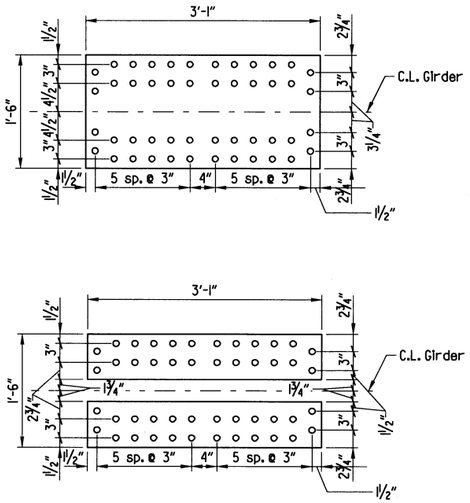


TYPICAL FIELD SPLICE DETAILS

1" = 1'-0"

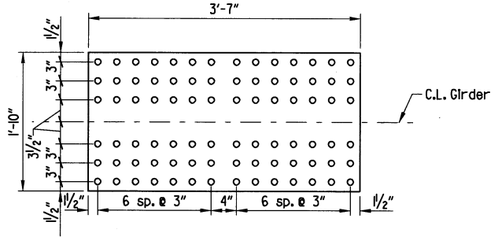
Note:
Bolted field splices shown may be elliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

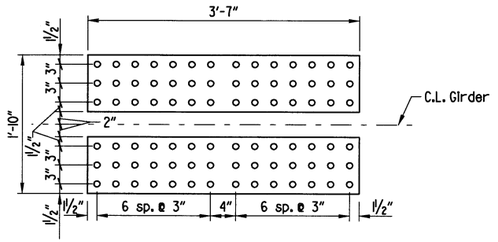
All field splice bolts shall be 7/8" ø Hi-str. bolts.
All holes for splice bolts shall be 15/16" ø.
All field splice plates shall be AASHTO M 270 Gr. 50W steel.



TOP FLANGE

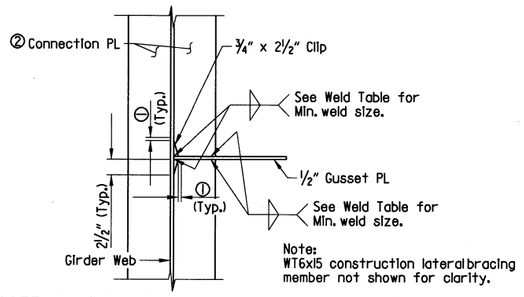
1" = 1'-0"





BOTTOM FLANGE

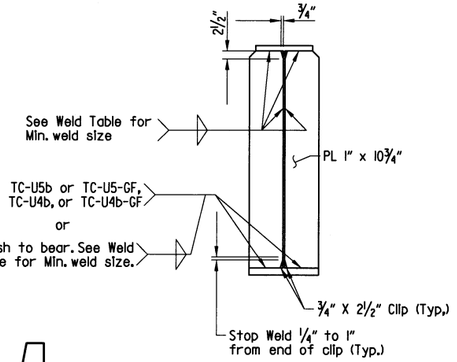
1" = 1'-0"



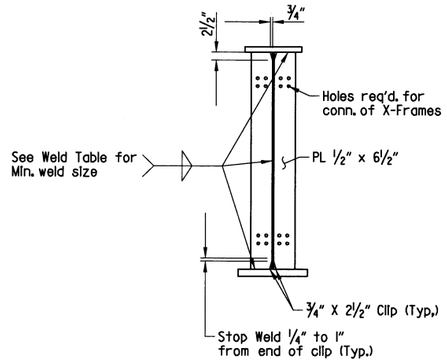
GUSSET PLATE AND CONNECTION PLATE DETAIL

①Stop Weld 1/4" to 1" from end of clip.

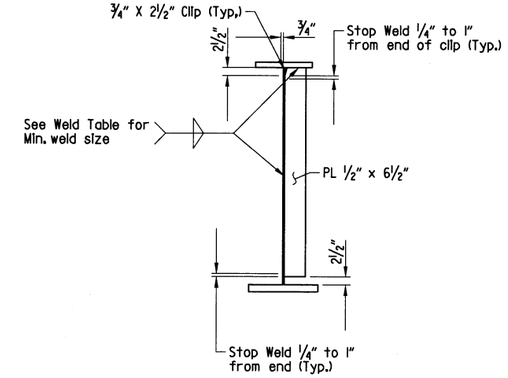
②Connection plates shall be discontinuous at lateral bracing gusset plates.



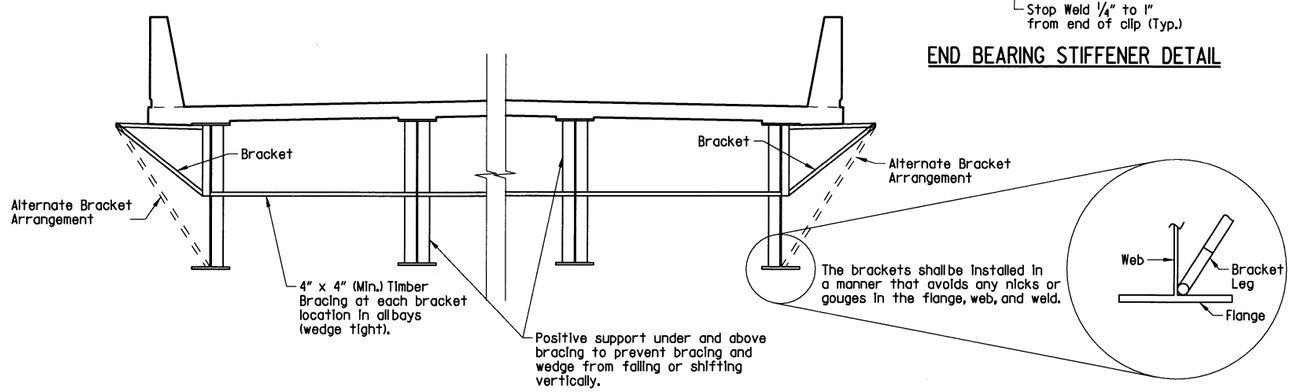
END BEARING STIFFENER DETAIL



CROSS FRAME CONNECTION PLATE DETAIL



INT. STIFFENER DETAIL



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 this drawing. 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 (M 270, Gr. 50W)".

SCREED RAIL SUPPORT

No Scale

TABLE FOR WELD

Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

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

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 6 OF 9
DETAILS OF
170'-0" COMPOSITE PLATE GIRDER SPAN
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY: MKL DATE: 08/08/2018 FILENAME: B012307_SX6.dgn
CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: MKL DATE: 08/08/2018 SCALE: As Shown
BRIDGE NO. A&B7427 DRAWING NO. 60319

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WORKSPACE: ARDOT
Y:\Projects\ARDOT_163836_I-30 Lateral Bridge Slide\Design\BRIDGE\Drawings\B012307_SX6.dgn
REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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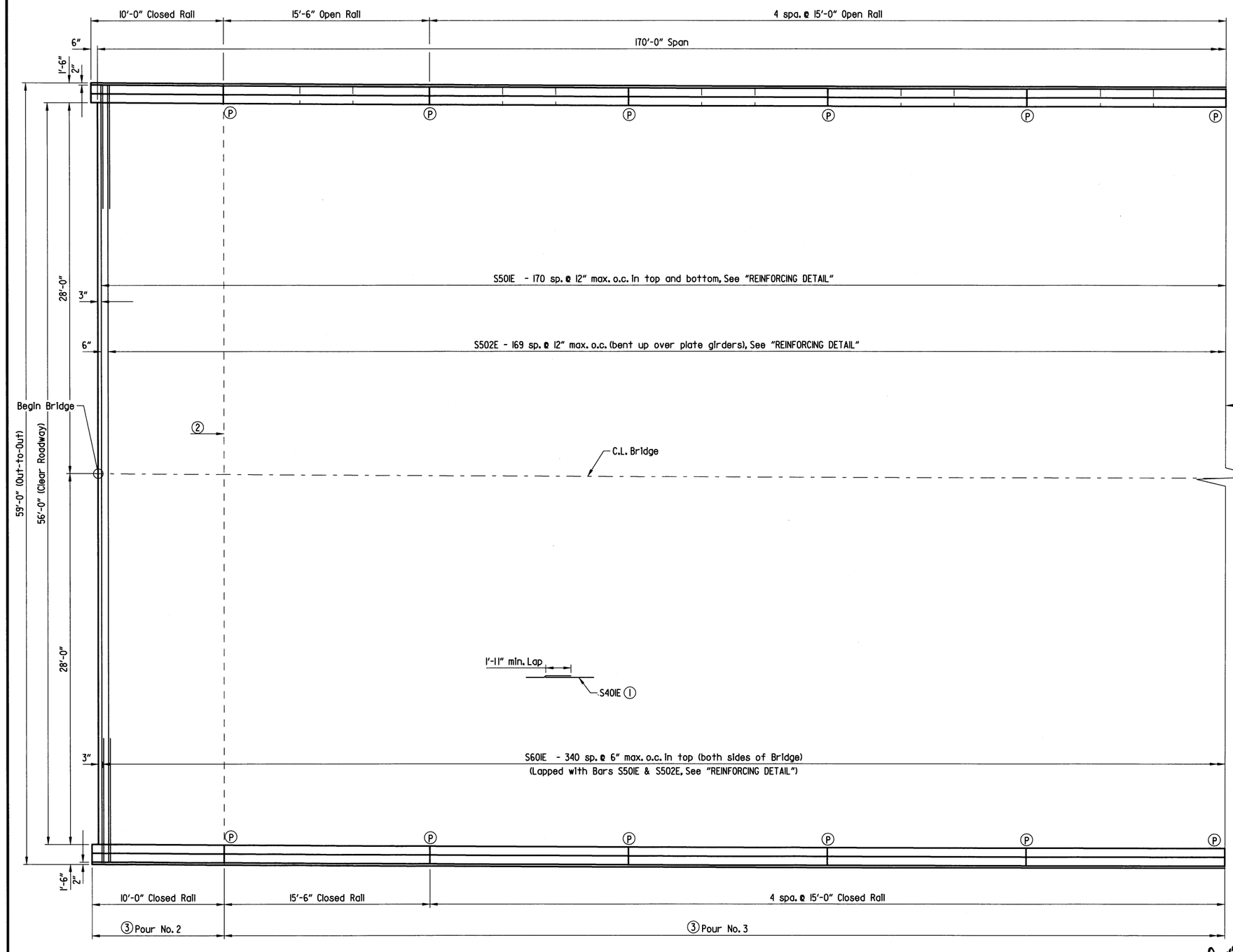
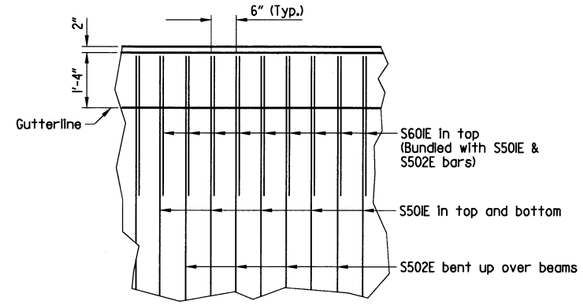
				JOB NO.		012307	58	68
				(1)	A&B7427 - 170'-0" SPAN - 60320			



REINFORCING PLAN AND POURING SEQUENCE

(P) Partial depth parapet joint at this location. (Stop 1'-6" above top of slab)
(1) Placed as shown in "Typical Section", See Dwg. No. 60314.
(2) Pouring Sequence Construction Joint
(3) See Dwg. No. 60315 for Pour No. 1 in lower portion of End Concrete Diaphragms.



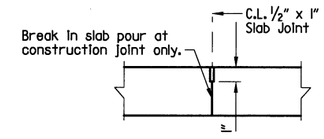
REINFORCING DETAIL

No Scale

Note:
C.L. Median is on a 0°30'00" Curve left. Longitudinal lines shall be constructed on curves concentric w/ C.L. Median. Begin/End Bridge Lines and transverse reinforcing steel are normal to plate girders built on 170'-0" chords. For more information refer to Staking Diagram on Dwg. No. 60306.

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed and all pours (2) must be placed before pour (3) 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.

The Contractor shall not deviate from the pouring sequence shown.



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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 7 OF 9
DETAILS OF 170'-0" COMPOSITE PLATE GIRDER SPAN DE ROCHE CREEK STRS. & APPRS. (S)

ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY:	SFH	DATE:	02/2019		
DESIGNED BY:	MKL	DATE:	01/2018	SCALE:	1/4" = 1'-0"
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REVISED DATE:

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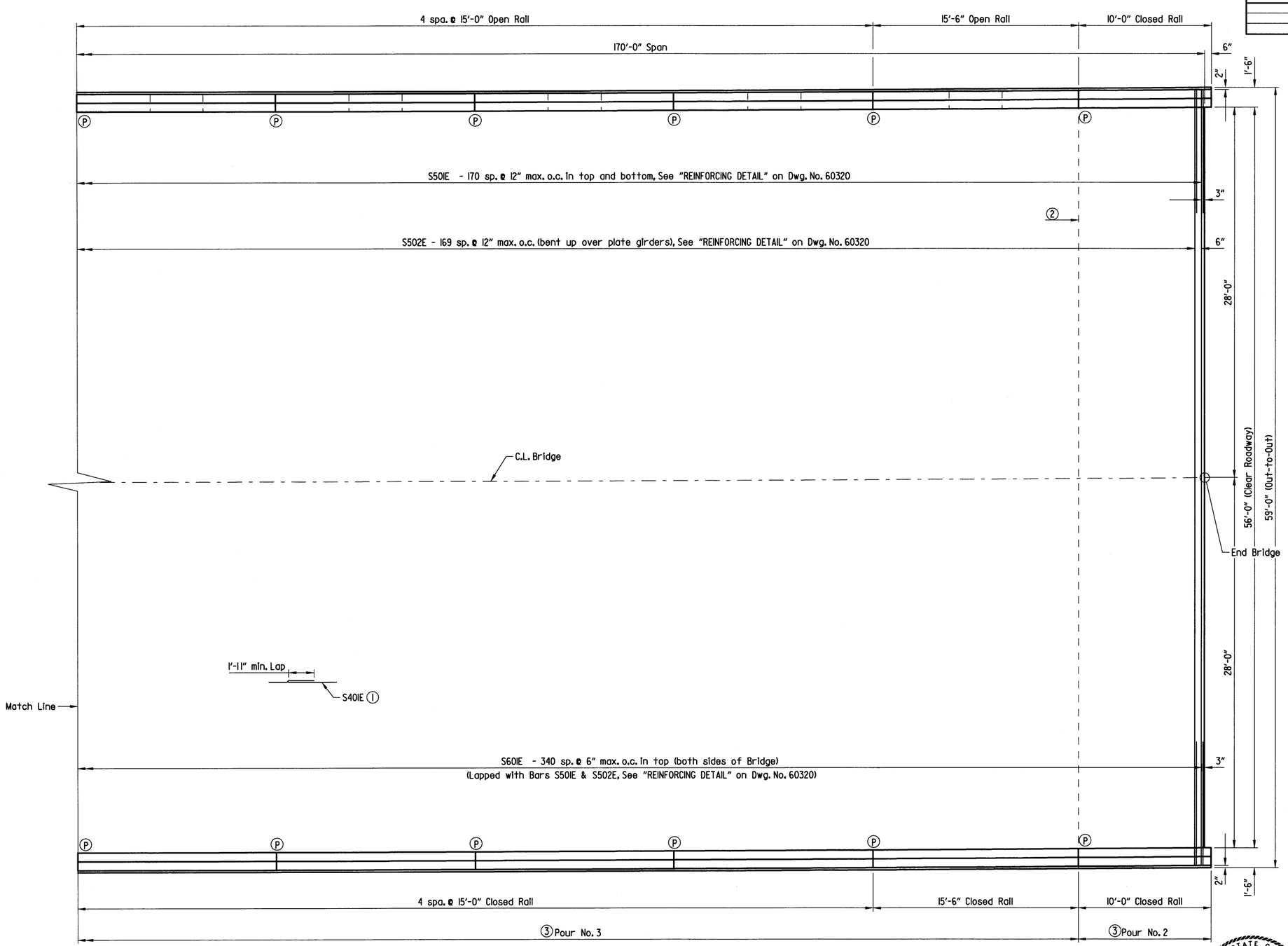
				JOB NO.		012307	59	68

(1) A&B7427 - 170'-0" SPAN - 60321



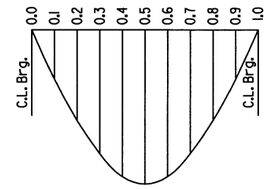
REINFORCING PLAN AND POURING SEQUENCE

(P) Partial depth parapet joint at this location. (Stop 1'-6" above top of slab)
(1) Placed as shown in "Typical Section", See Dwg. No. 60314.
(2) Pouring Sequence Construction Joint
(3) See Dwg. No. 60315 for Pour No. 1 in lower portion of End Concrete Diaphragms.

Note:
C.L. Median is on a 0°30'00" Curve left. Longitudinal lines shall be constructed on curves concentric w/ C.L. Median. Begin/End Bridge Lines and transverse reinforcing steel are normal to plate girders built on 170'-0" chords. For more information refer to Staking Diagram on Dwg. No. 60306.

Note:
Pours with the same number may be placed simultaneously or separately. All pours (1) must be placed before pour (2) can be placed and all pours (2) must be placed before pour (3) 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.

The Contractor shall not deviate from the pouring sequence shown.



DEAD LOAD DEFLECTION DIAGRAM

No Scale

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	0.826	0.826	2.801	2.418	3.120	2.753
	0.2	1.544	1.544	5.233	4.518	5.830	5.143
	0.3	2.076	2.076	7.036	6.074	7.841	6.918
	0.4	2.411	2.411	8.170	7.053	9.107	8.035
	0.5	2.525	2.525	8.558	7.388	9.540	8.417
	0.6	2.411	2.411	8.170	7.053	9.107	8.035
	0.7	2.076	2.076	7.036	6.074	7.841	6.918
	0.8	1.544	1.544	5.233	4.518	5.830	5.143
	0.9	0.826	0.826	2.801	2.418	3.120	2.753
	1.0	0	0	0	0	0	0

Notes:
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.

The Contractor shall carefully consider the chorded girders in combination with the curved roadway alignment in determining the required girder profiles. See Staking Diagram on Dwg. No. 60306 and Framing Plan on Dwg. Nos. 60317 and 60318.

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14501
STEPHEN F. HARPER
3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 8 OF 9
DETAILS OF 170'-0" COMPOSITE PLATE GIRDER SPAN DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: MKL DATE: 01/2018 SCALE: 1/4" = 1'-0"
BRIDGE NO. A&B7427 DRAWING NO. 60321

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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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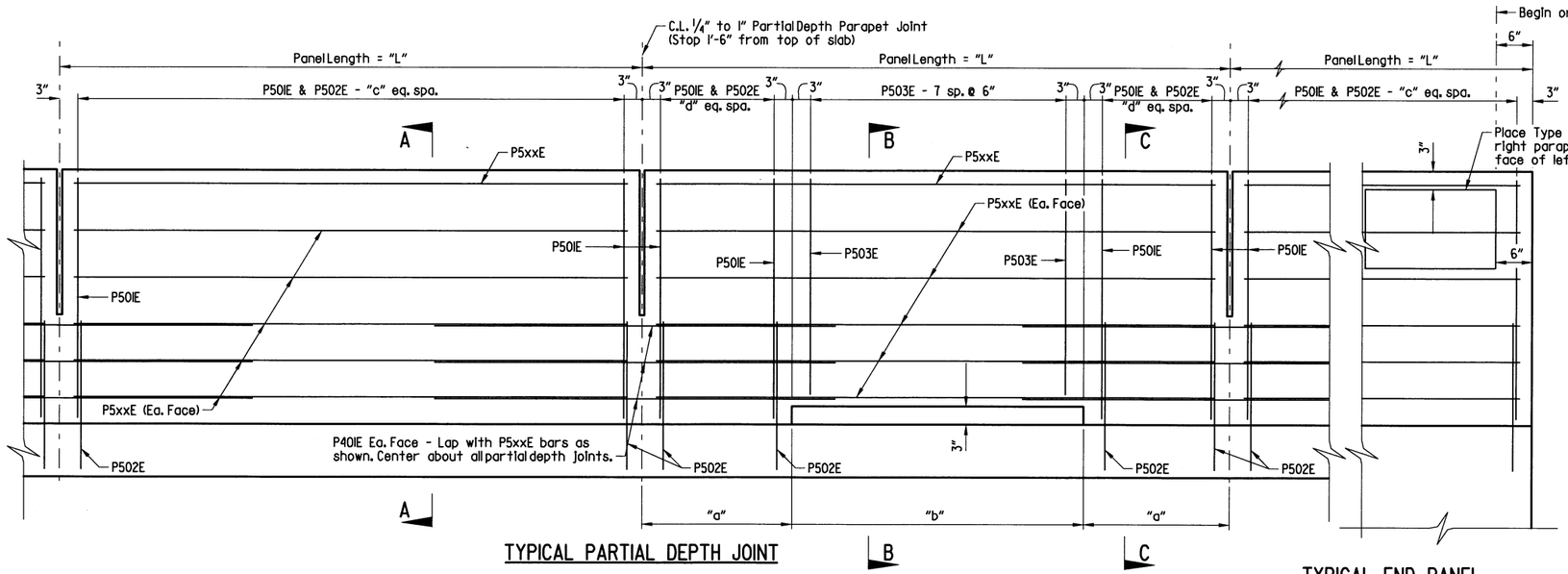
				JOB NO.		012307	60	68
				(1)	A&B7427 - 170'-0" SPAN - 60322			



TYPICAL PARTIAL DEPTH JOINT

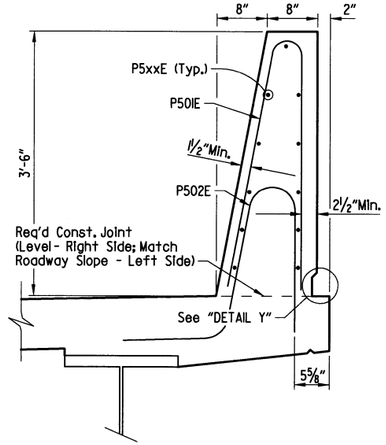
TYPICAL CLOSED PANEL PARAPET RAIL

TYPICAL OPEN PANEL PARAPET RAIL

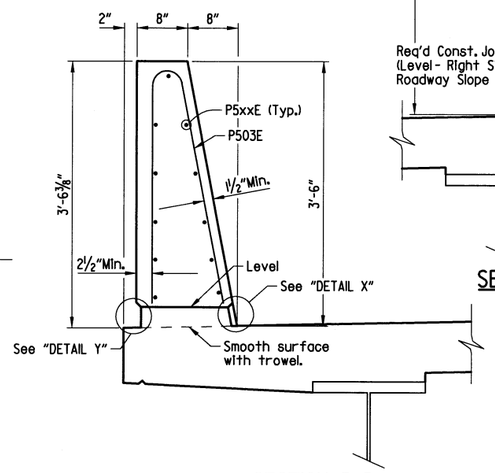
TYPICAL END PANEL

ELEVATION - CONCRETE PARAPET RAIL

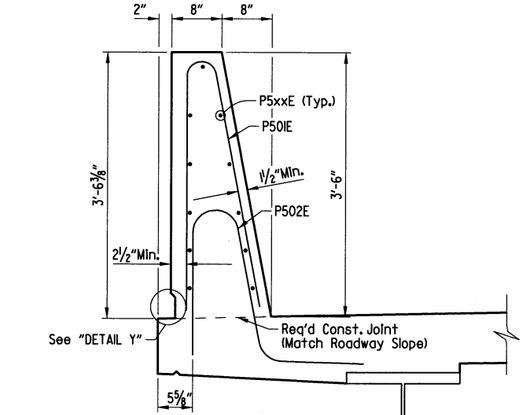
(As viewed from roadway side of Parapet)



SECTION A-A



SECTION B-B

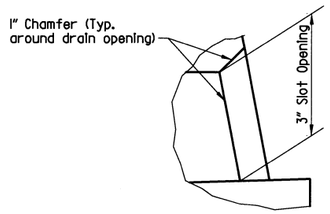


SECTION C-C

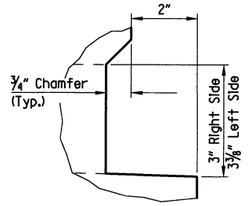
PARAPET RAIL VARIABLES

Panel Length "L"	Panel Type	"a"	"b"	"c"	"d"	P5xxE Bars
15'-0"	closed	-----	-----	29	-----	P504E
15'-0"	open	5'-6"	4'-0"	-----	10	P504E
15'-6"	closed	-----	-----	30	-----	P505E
15'-6"	open	5'-9"	4'-0"	-----	11	P505E
10'-0"	closed	-----	-----	19	-----	P506E

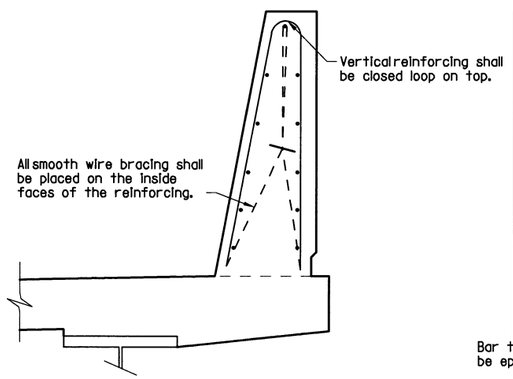
Note:
For location of partial depth parapet joints, see Dwg. Nos. 60320 and 60321.



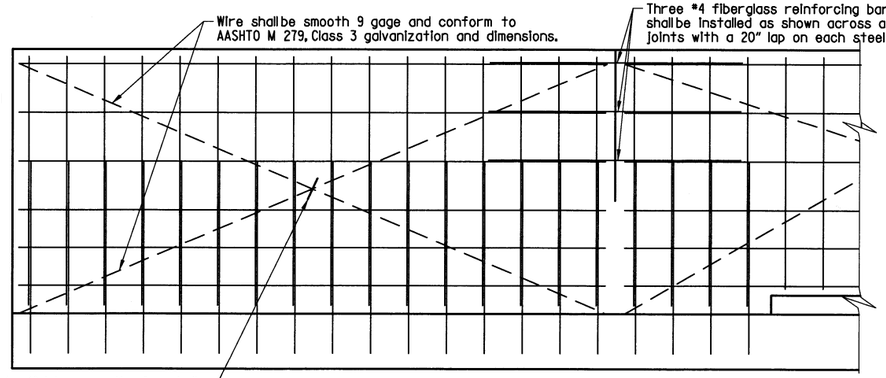
DETAIL X



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 SLIP FORMING OF CONCRETE PARAPET RAIL

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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 9 OF 9
DETAILS OF
170'-0" COMPOSITE PLATE GIRDER SPAN
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	MKL	DATE:	03/2018	FILENAME:	B012307_SX9.dgn
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BRIDGE NO.	A&B7427		DRAWING NO.		60322

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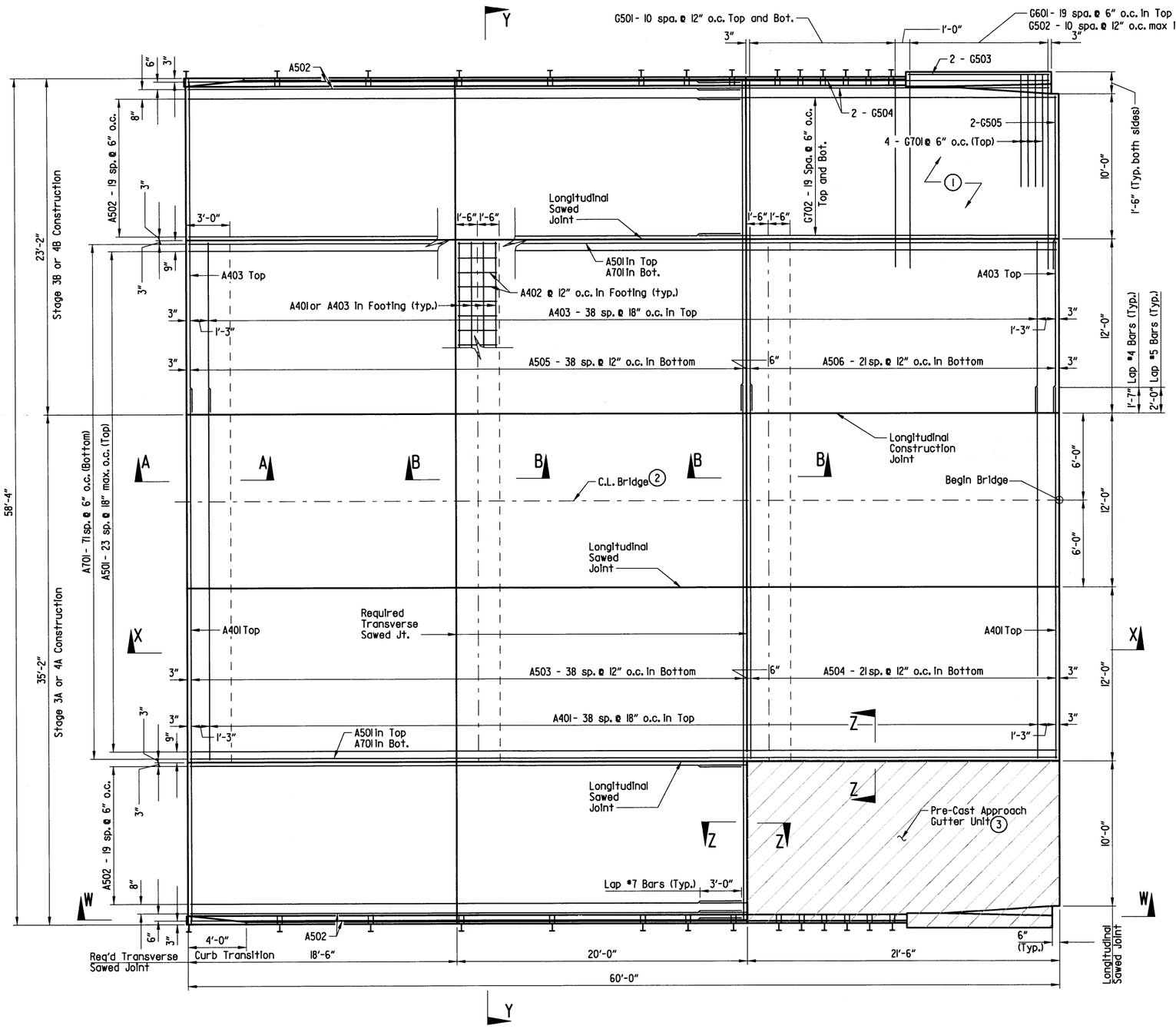
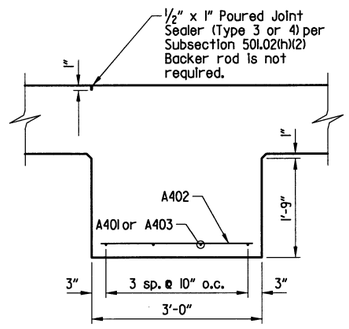
				JOB NO.		012307	61	68

(1) A&B7427 - APP. SLAB & GUTTER - 60323



PLAN - APPROACH SLAB & GUTTER
Scale: 1/4" = 1'-0"
(Shown for Begin Bridge B7427 - other locations similar)



SECTION B-B
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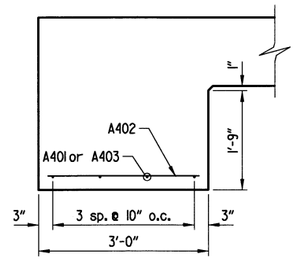

SECTION A-A
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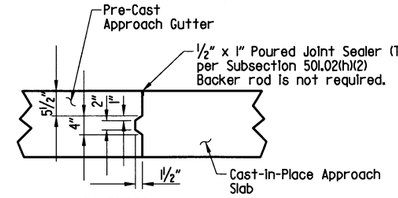

SECTION Z-Z
3/4" = 1'-0"

(1) Approach gutter and railing reinforcing is duplicated for the cast-in-place portion (Stage 3B or 4B). See Dwg. No. 60325 for additional details.

(2) Parallel to C.L. I-30 Median and C.L. Construction on 0°30' Curve Lt.

(3) See Dwg. No. 60325 for Pre-Cast Approach Gutter reinforcement.

Note:
Construct Approach Slabs & Gutters on arcs concentric to C.L. Median. Place longitudinal bars on arcs concentric to C.L. Median. Place transverse bars radially.

Note:
For Sections W-W and X-X, see Dwg. No. 60324.

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 M 31 or M 322, 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

3/29/19
BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 1 OF 3
DETAILS OF TYPE SPECIAL APPROACH SLAB & GUTTER
DE ROCHE CREEK STRS. & APPRS. (S)
ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

DRAWN BY:	HSS	DATE:	11/2018	FILENAME:	B012307_ASXI.dgn
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REVISED DATE:

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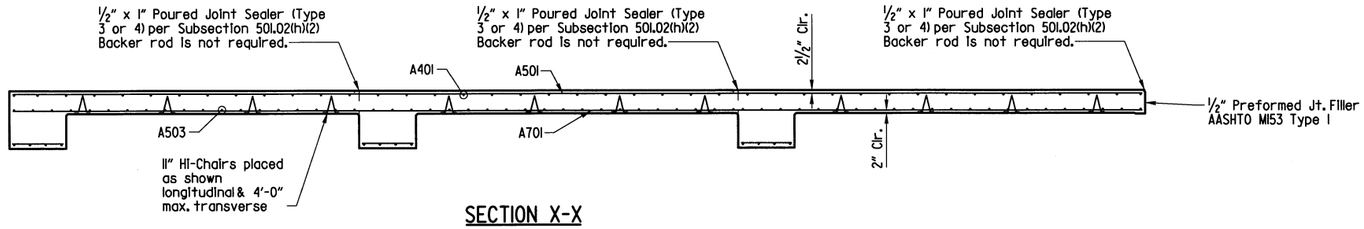
				(1) A&B7427 - APP. SLAB & GUTTER - 60324				



SECTION X-X
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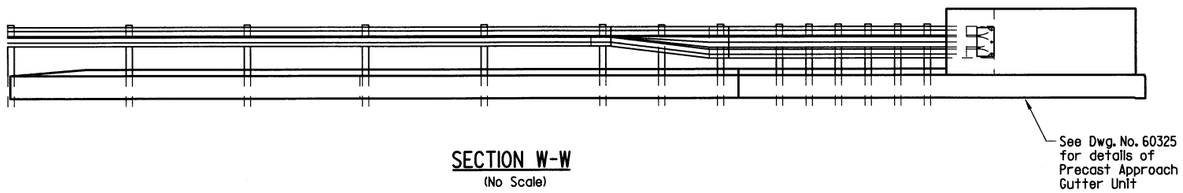

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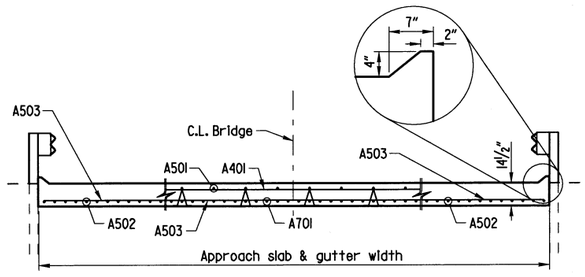

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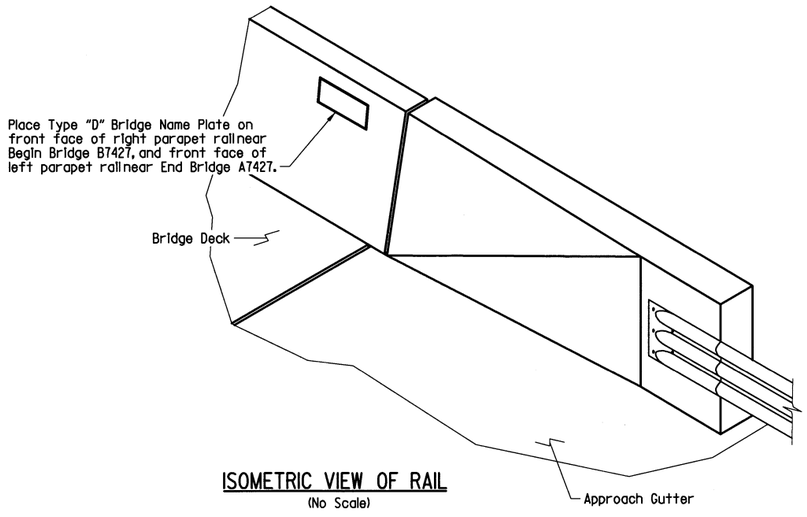


ISOMETRIC VIEW OF RAIL
(No Scale)

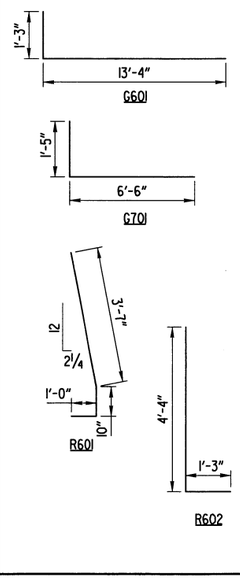
QUANTITIES FOR ONE TYPE SPECIAL APPROACH SLAB

Length (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yds)
60'-0"	19,190	169.89

(1) BAR LIST FOR TYPE SPECIAL APPROACH SLAB & GUTTERS (PER BRIDGE END)

MARK	NO. REQ'D.	LENGTH	PIN DIA.
A401	53	25'-7"	Str.
A402	111	2'-8"	Str.
A403	53	11'-8"	Str.
A501	26	59'-8"	Str.
A502	44	38'-2"	Str.
A503	39	37'-2"	Str.
A504	22	26'-0"	Str.
A505	39	22'-10"	Str.
A506	22	11'-8"	Str.
A701	72	59'-8"	Str.
G501	11	13'-0"	Str.
G502	11	13'-4"	Str.
G503	2	9'-8"	Str.
G504	4	22'-10"	Str.
G505	2	23'-4"	Str.
G601	20	14'-5"	4½"
G701	4	7'-9"	5¼"
G702	20	24'-6"	Str.
R401	12	9'-8"	Str.
R601	11	5'-3"	4½"
R602	11	5'-5"	4½"

BENDING DIAGRAMS
Dimensions are out to out of bars.



(1) See Dwg. No. 60325 for Pre-Cast Approach Gutter reinforcement.

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 2 OF 3
DETAILS OF TYPE SPECIAL APPROACH SLAB & GUTTER
DE ROCHE CREEK STRS. & APPRS. (S)

ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY: SFH DATE: 02/2019
DESIGNED BY: HSS DATE: 11/2018
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SCALE: As Shown
BRIDGE NO. A&B7427
DRAWING NO. 60324

meganJand 3/29/2019 3:50:13 PM
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REVISED DATE:

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		012307	63	68
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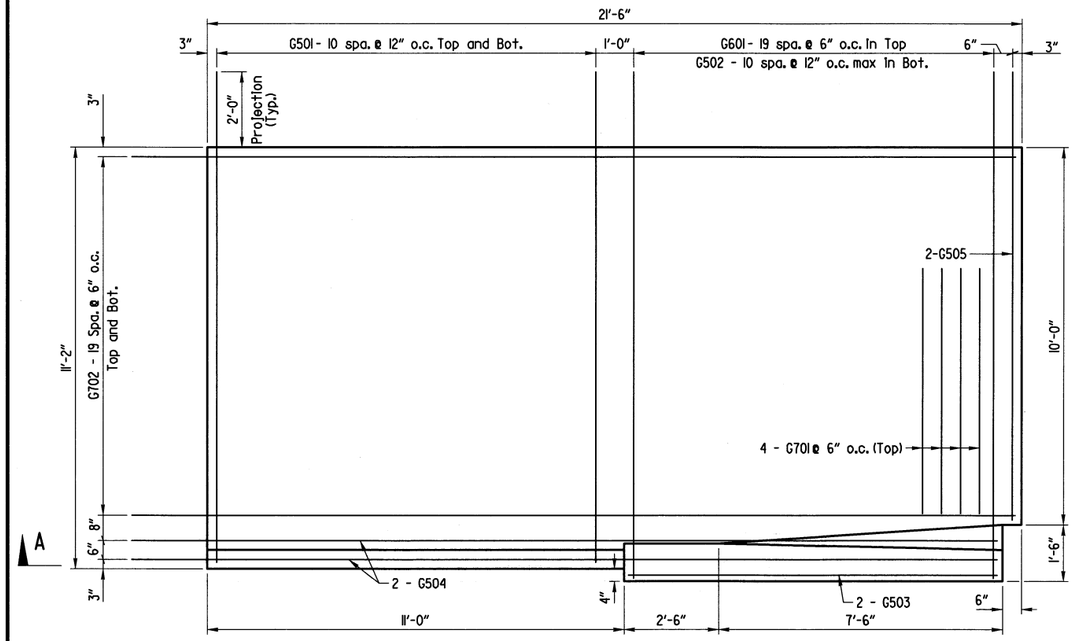
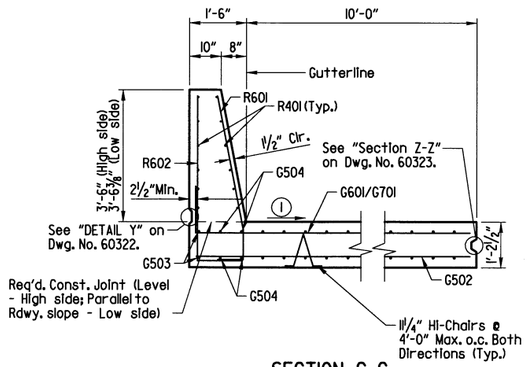
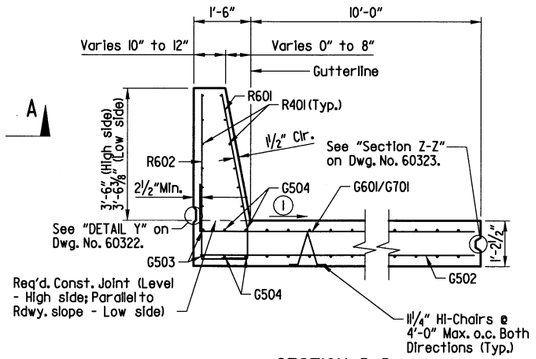


PLAN - PRECAST APPROACH GUTTER

(Shown for Begin Bridge B7427 - adjust orientation at other locations)

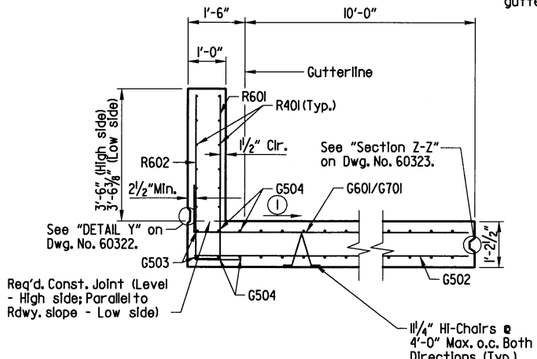


SECTION C-C

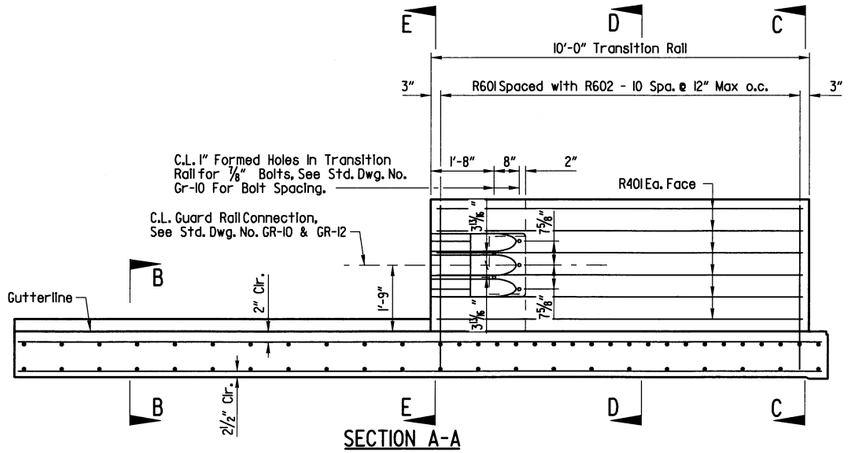


SECTION D-D

(1) Match Roadway cross-slope as required at a given approach gutter location



SECTION E-E

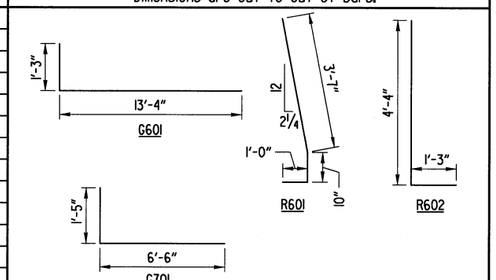


SECTION A-A

BAR LIST FOR TYPE SPECIAL PRECAST APPROACH GUTTER (PER BRIDGE END)

MARK	NO. REQ'D.	LENGTH	PIN DIA.
G501	11	13'-0"	Str.
G502	11	13'-4"	Str.
G503	2	9'-8"	Str.
G504	4	22'-10"	Str.
G505	2	23'-4"	Str.
G601	20	14'-5"	4½"
G701	4	7'-9"	5¼"
G702	20	24'-6"	Str.
R401	12	9'-8"	Str.
R601	11	5'-3"	4½"
R602	11	5'-5"	4½"

BENDING DIAGRAMS
Dimensions are out to out of bars.



QUANTITIES FOR ONE TYPE SPECIAL PRECAST APPROACH GUTTER

Length (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yds)
21'-6"	2,218	12.39

GENERAL NOTES

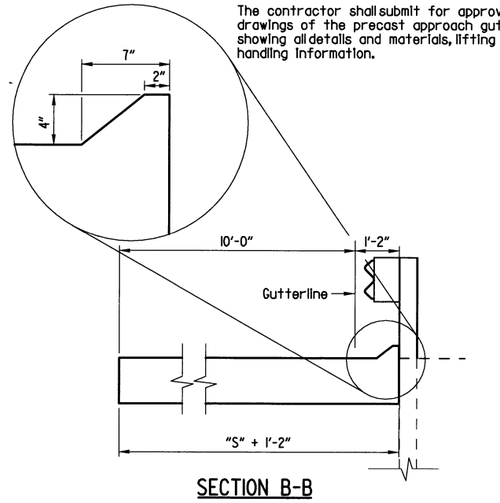
Concrete shall be Class S(AE) (f'c = 4,000 psi).

Reinforcement Steel shall conform to AASHTO M 31 or M 322, 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.

The contractor shall submit for approval shop drawings of the precast approach gutters showing all details and materials, lifting points and handling information.



SECTION B-B

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

3/29/19

BRIDGE ENGINEER
PRINT DATE: 3/29/2019

SHEET 3 OF 3
DETAILS OF TYPE SPECIAL APPROACH SLAB & GUTTER
DE ROCHE CREEK STRS. & APPRS. (S)

ROUTE SECTIONS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARKANSAS

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CHECKED BY:	SFH	DATE:	02/2019		
DESIGNED BY:	HSS	DATE:	11/2018	SCALE:	½" = 1'-0"
BRIDGE NO.	A&B7427			DRAWING NO.	60325

meganland 3/29/2019 3:50:14 PM
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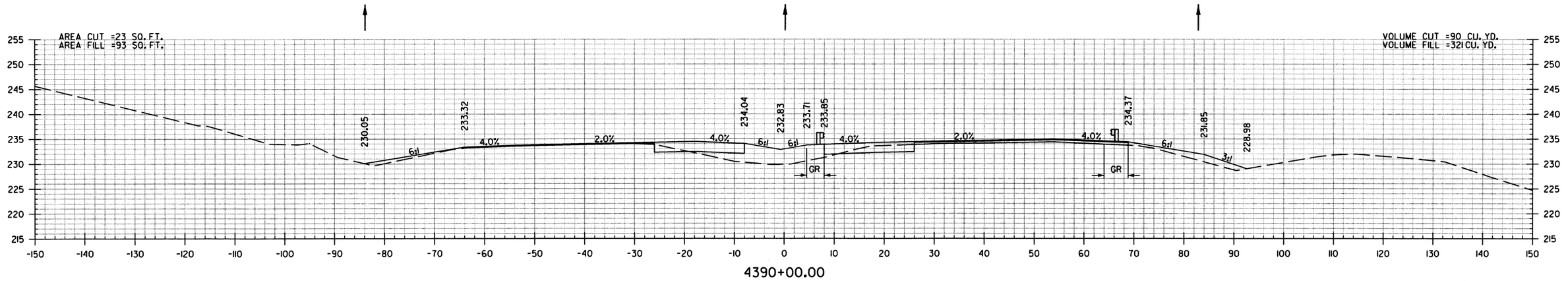

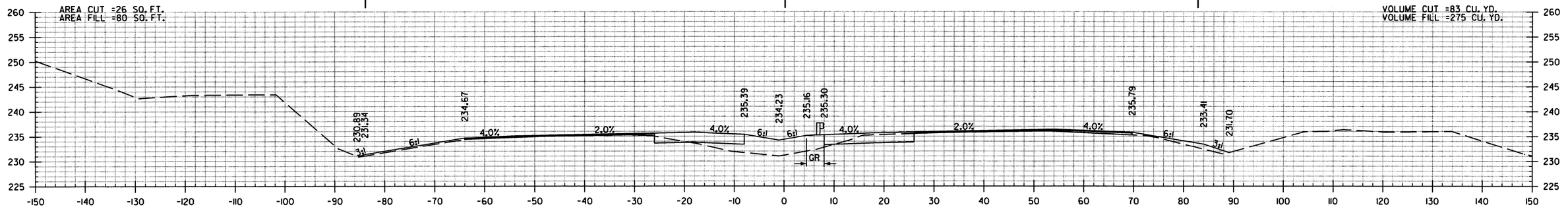

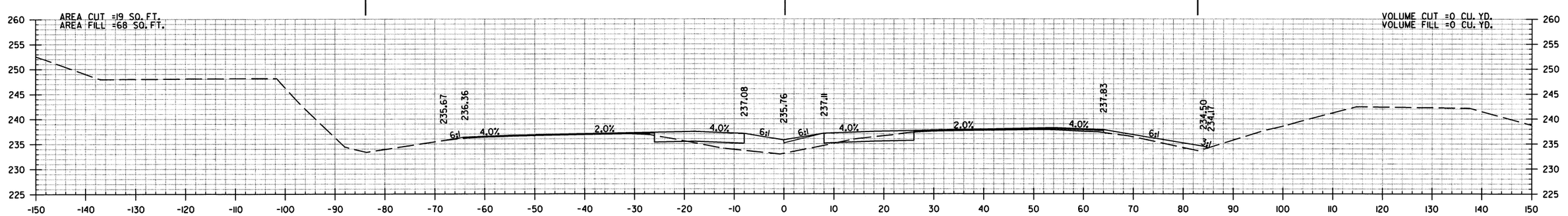

STA. 4388+00.00 BEGIN JOB 012307

STA. 4388+00 TO STA. 4390+00

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REVISED DATE: ##REVDATE##

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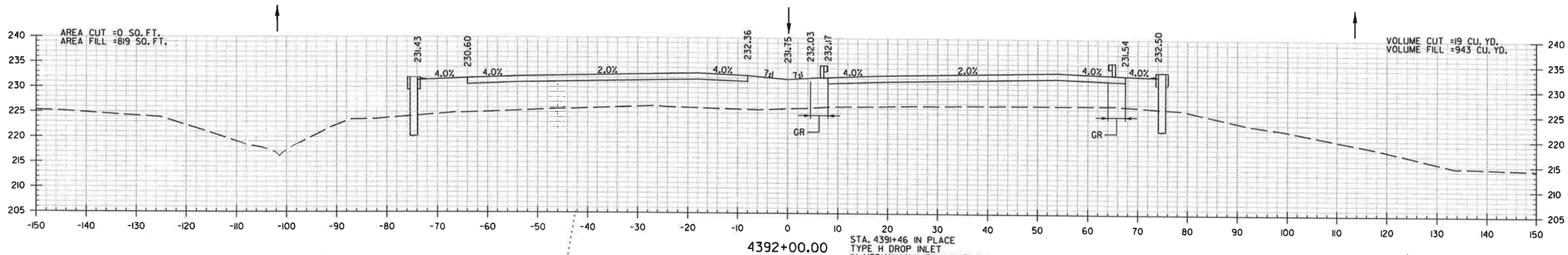
STA. 4392+13.27 BEGIN BRIDGE B



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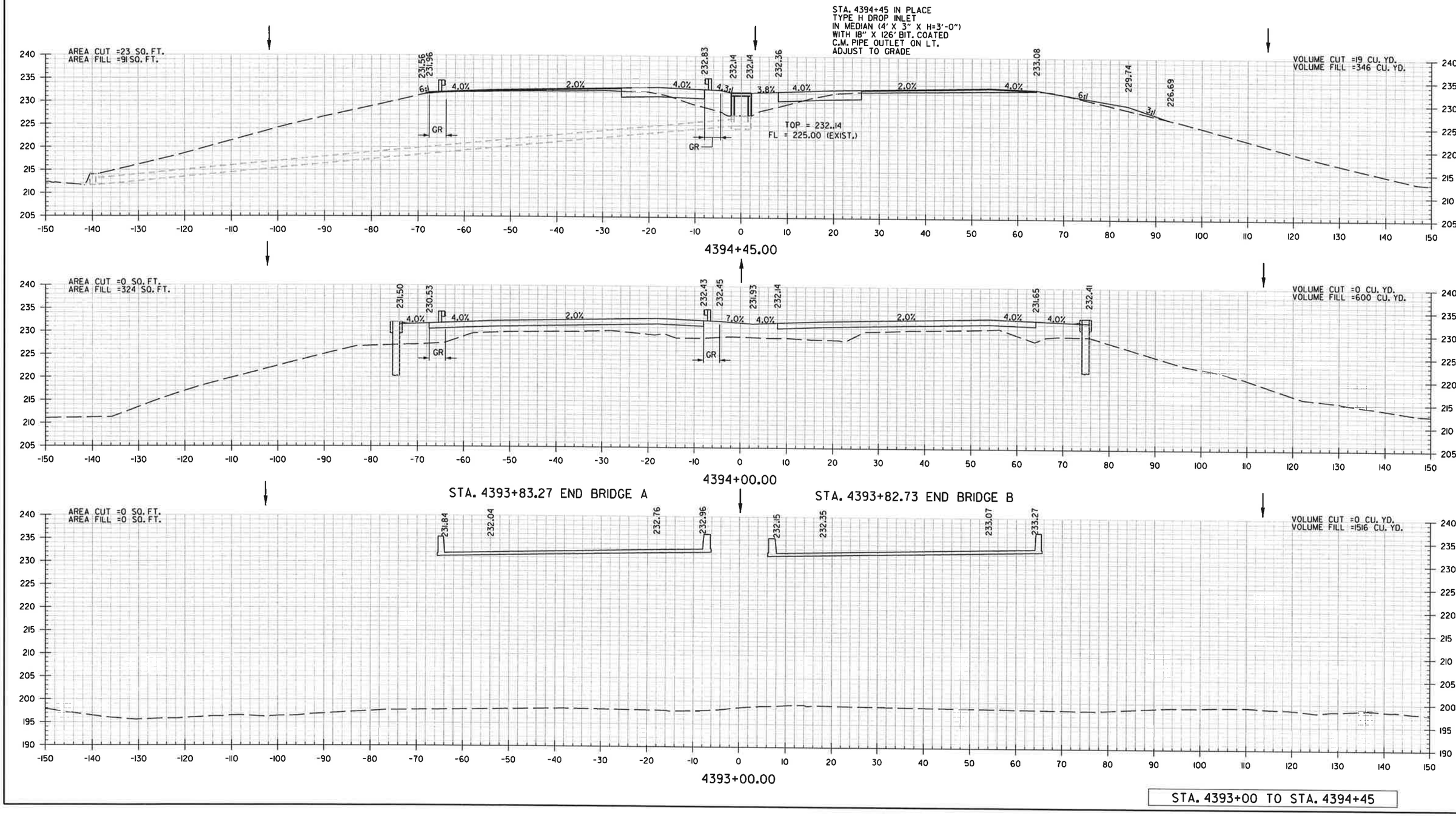

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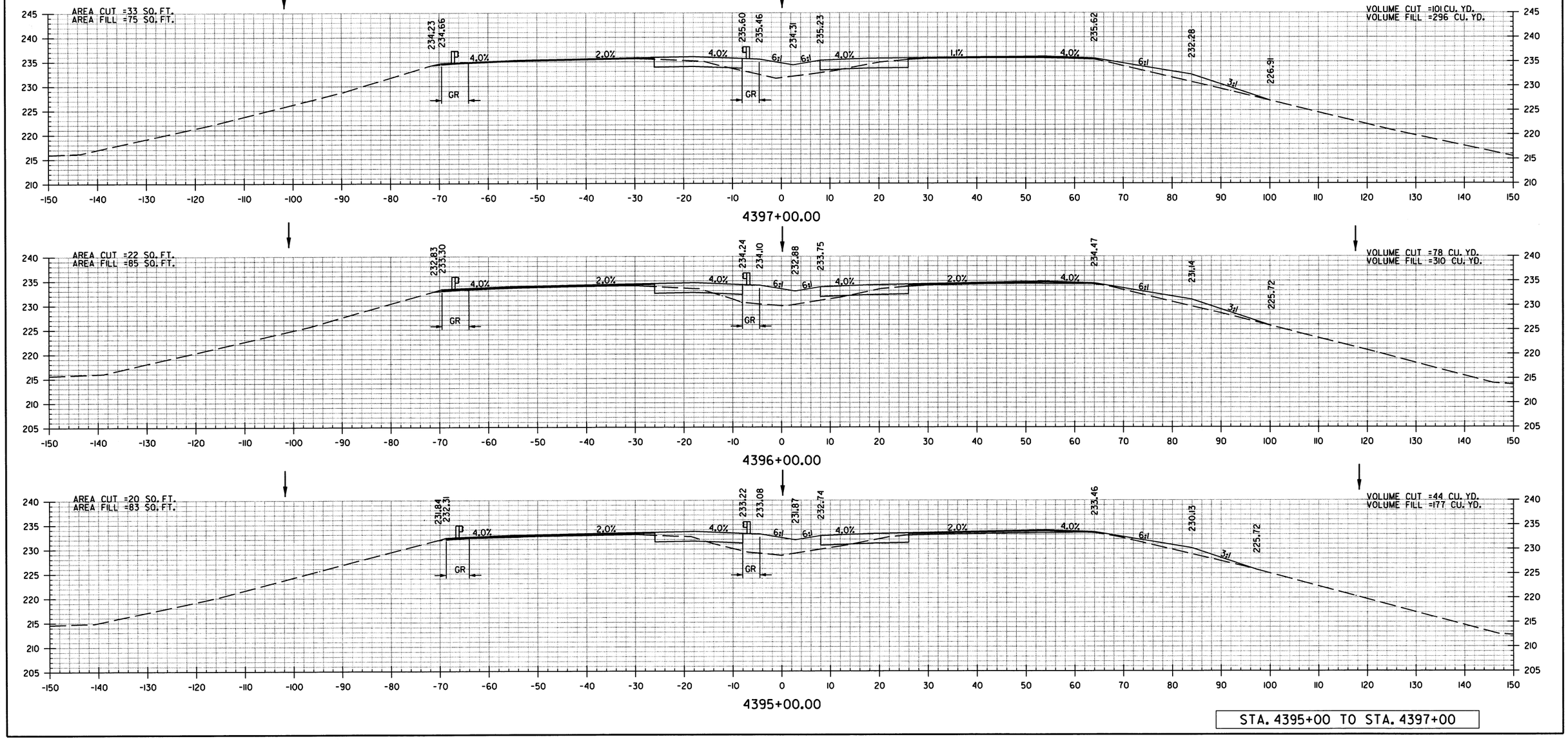

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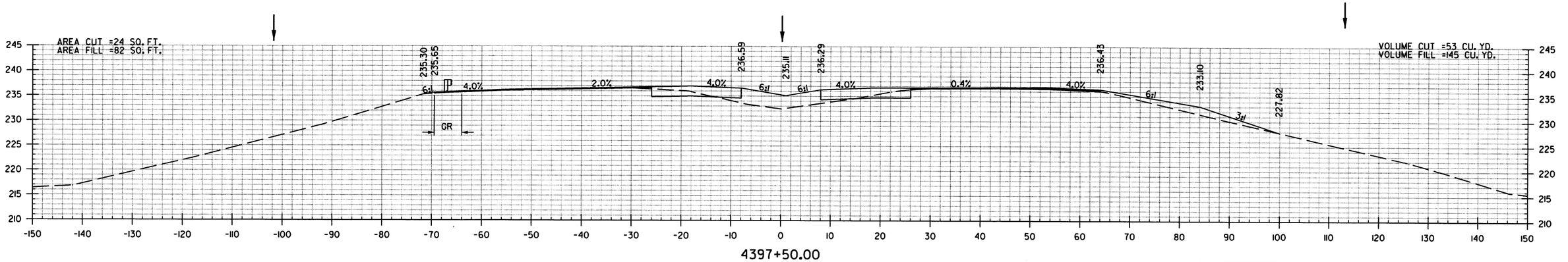

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				JOB NO.				
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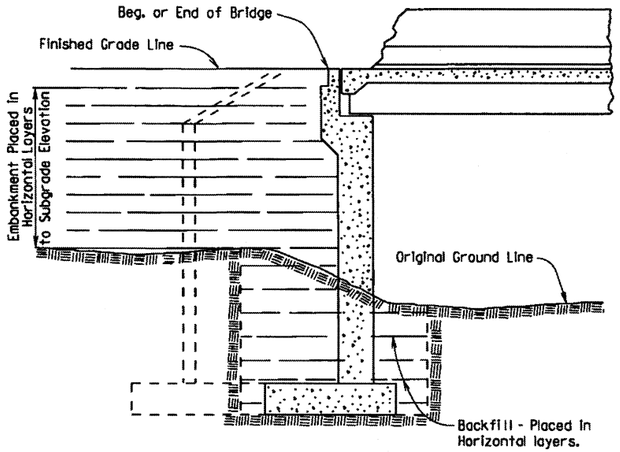
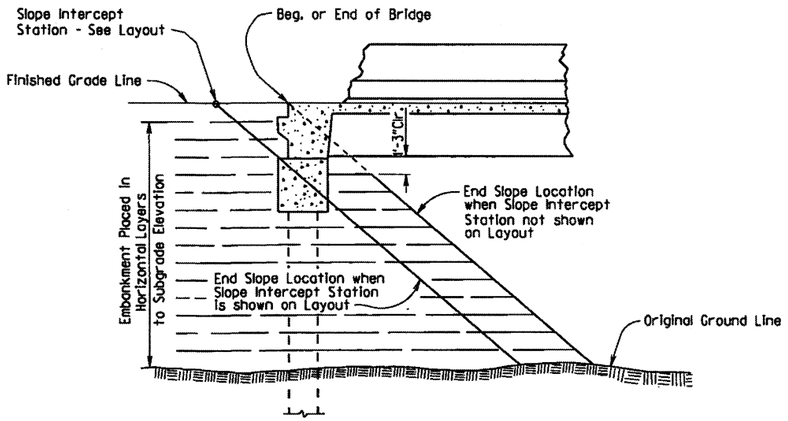
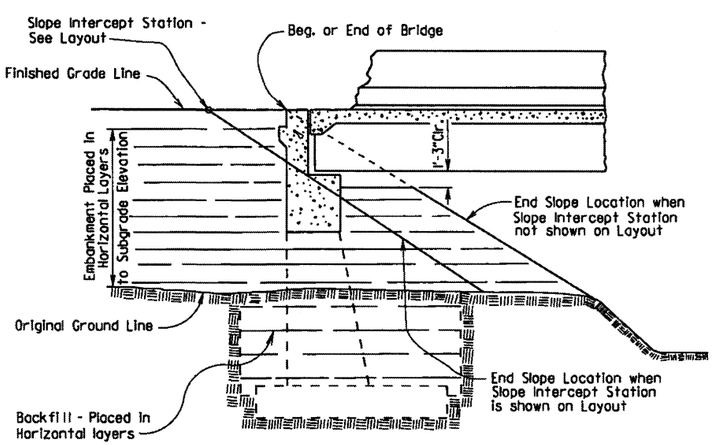


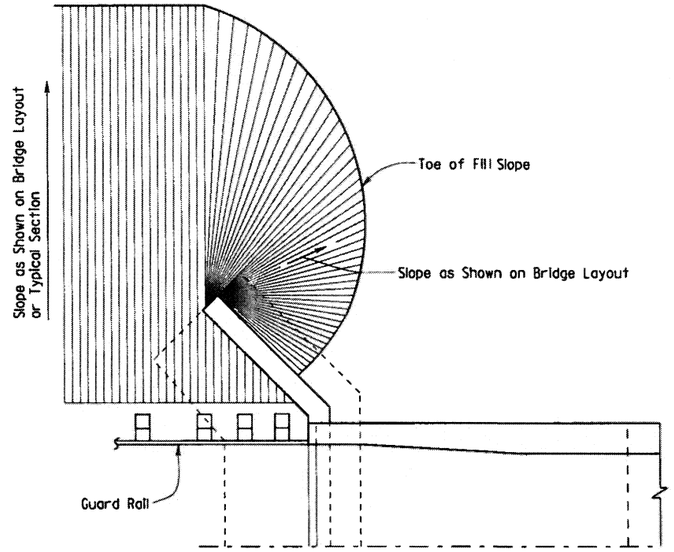
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



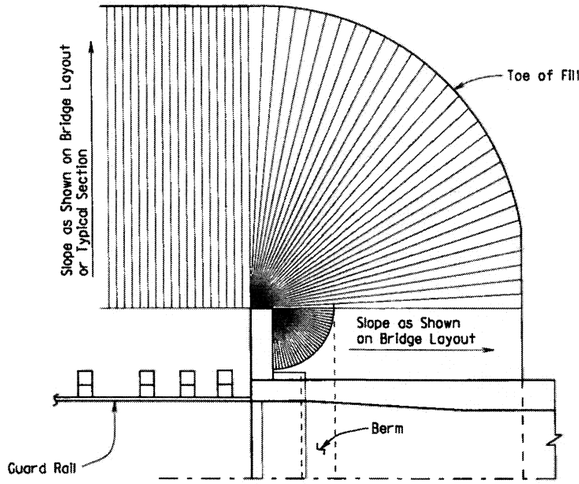
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



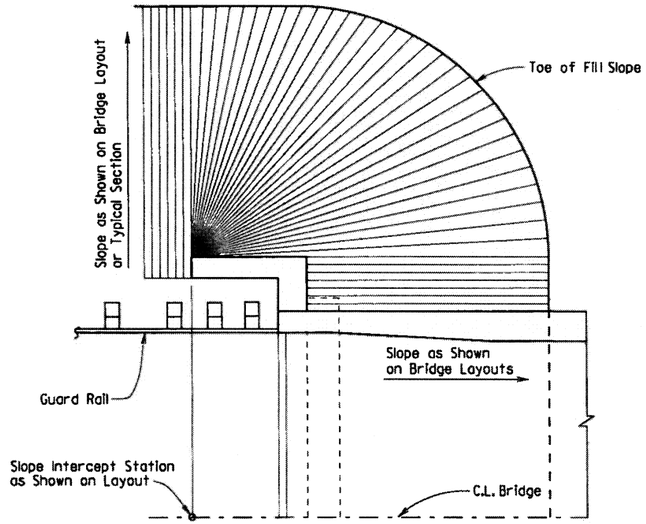
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



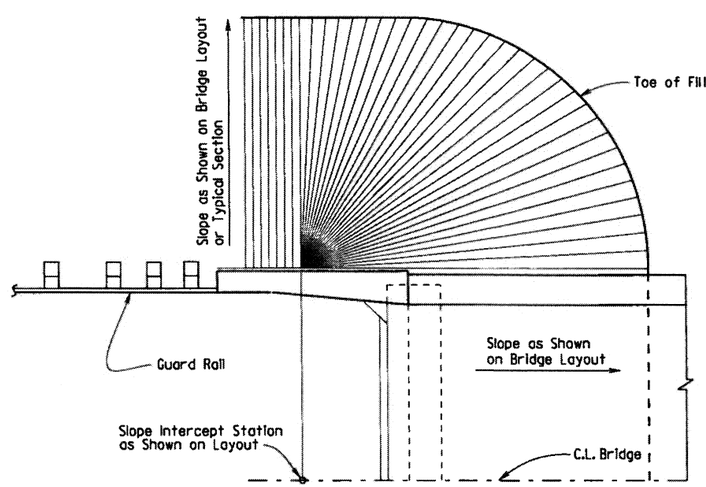
VERTICAL WALL ABUTMENTS



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

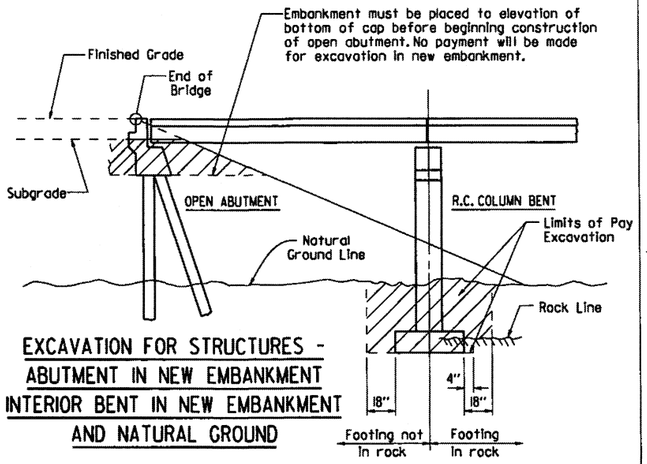
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE

DESIGNED BY: STD. DATE: -

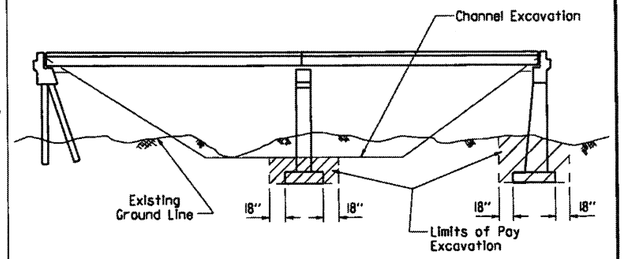
DRAWING NO. 55000

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.				

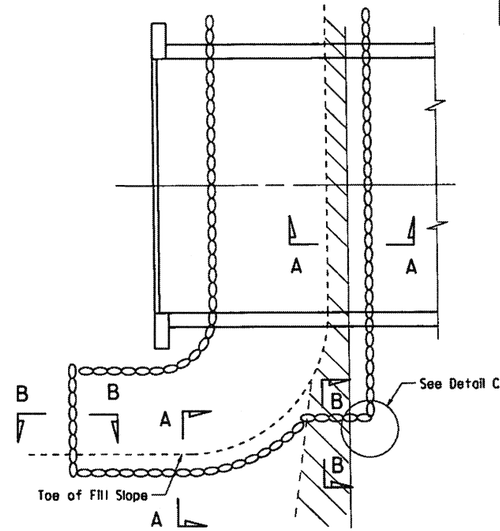
1 RIPRAP & EXCAV. 55001



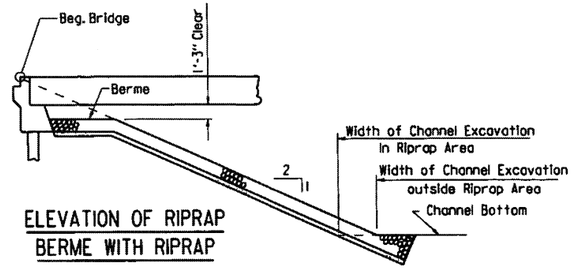
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



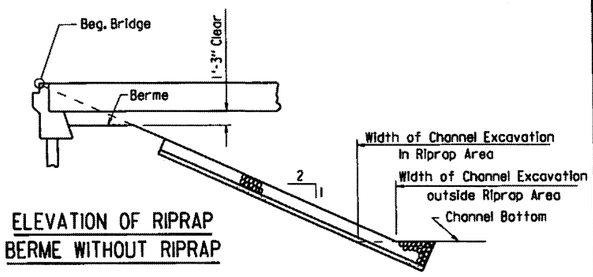
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



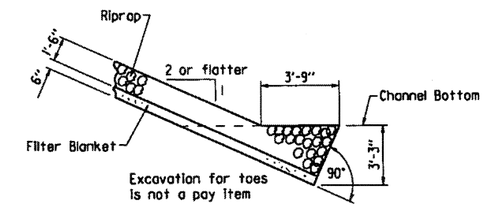
PLAN OF DUMPED RIPRAP



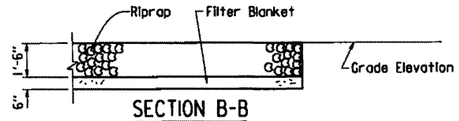
ELEVATION OF RIPRAP BERME WITH RIPRAP



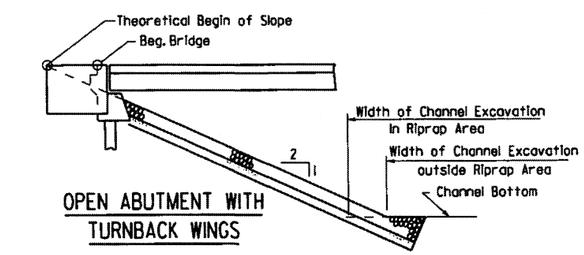
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



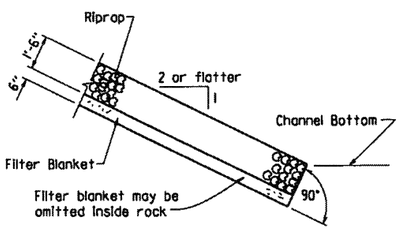
SECTION A-A
(Toe Excavation in Soil)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS

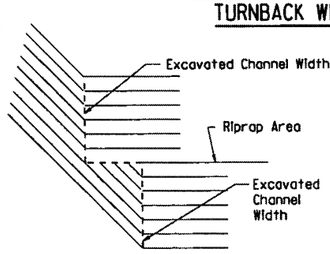


SECTION A-A
(Toe Excavation in Rock)

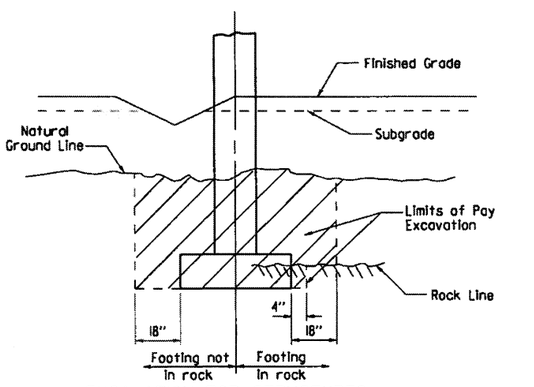
Note : Use this type of toe when rock is encountered which is in a stable condition.

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

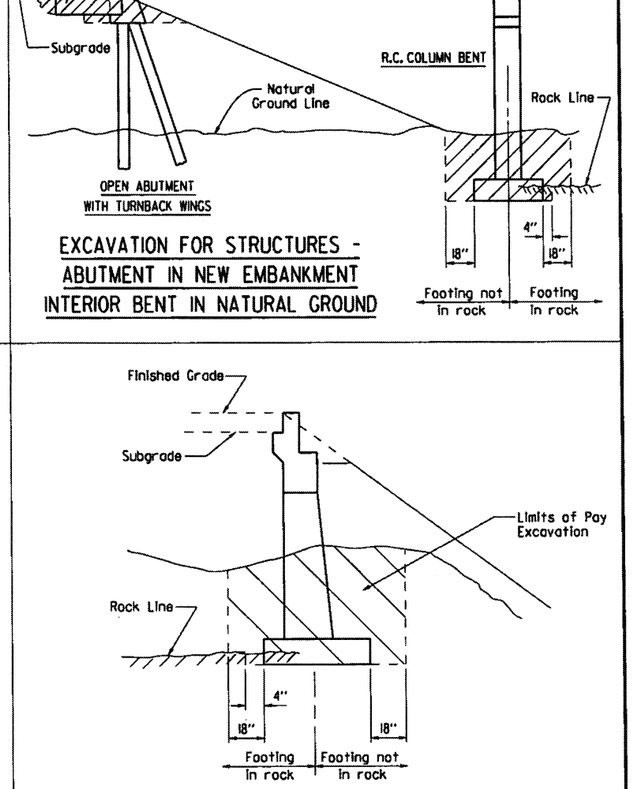
Note : Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



DETAIL C



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



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

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

EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT

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

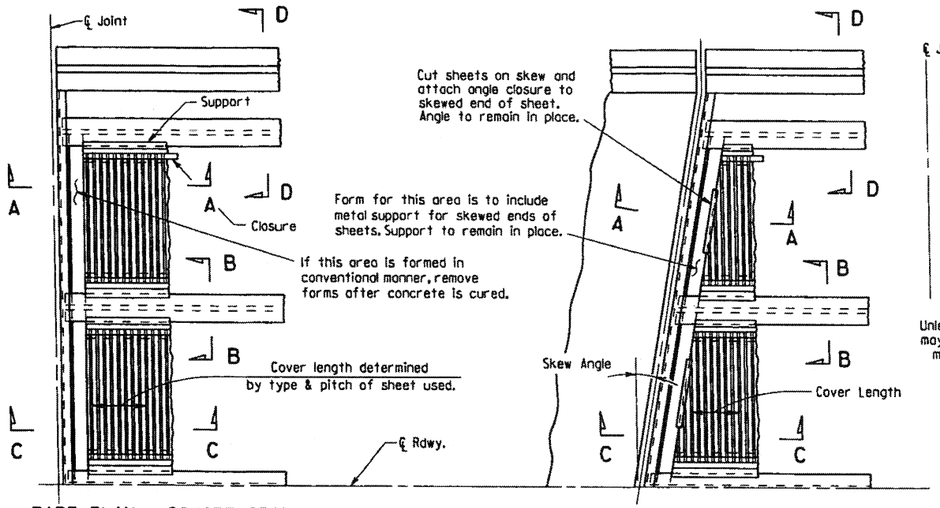
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY:	KDH	DATE:	2-27-2014	FILENAME:	b55001.dgn
CHECKED BY:	BEF	DATE:	2-27-2014	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:			

DRAWING NO. 55001

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

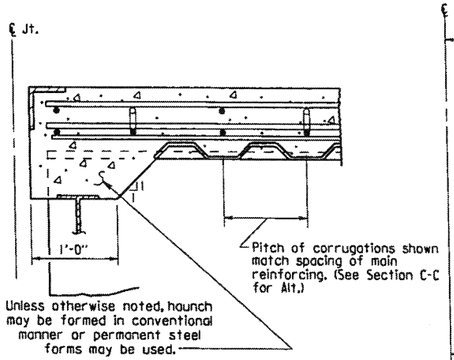


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

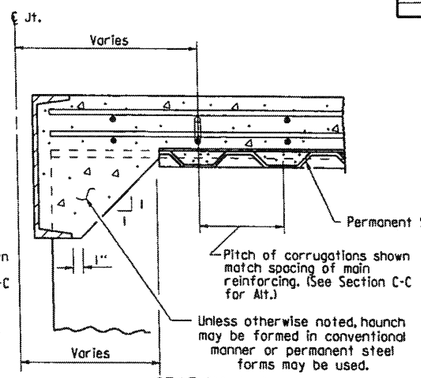
PART PLAN - SKEWED SPAN

3/8" = 1'-0"



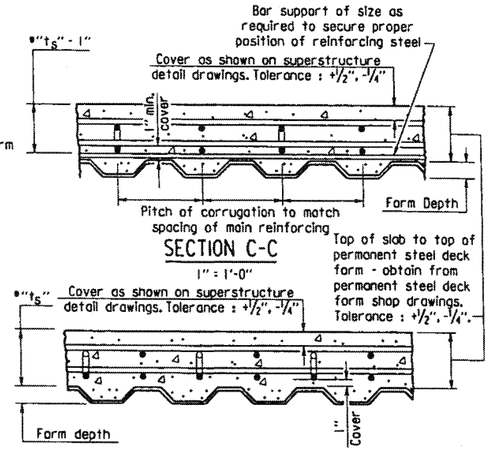
SECTION A-A

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



SECTION A-A

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

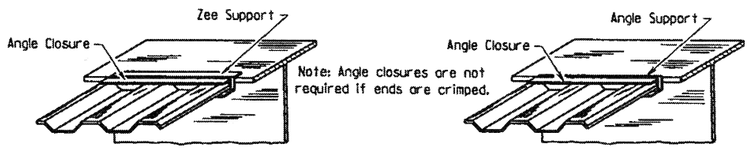


SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

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



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*"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.

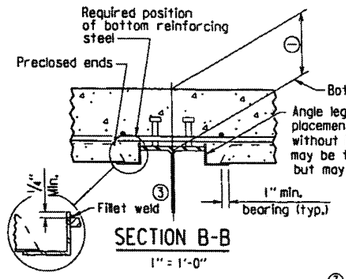
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Engineer.

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.

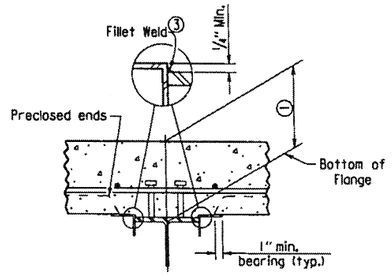
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition), with applicable Supplemental Specifications and Special Provisions.



SECTION B-B

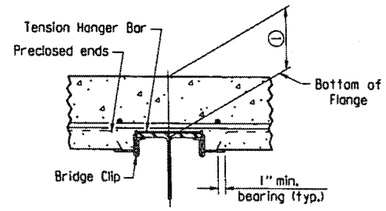
1" = 1'-0"
(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

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



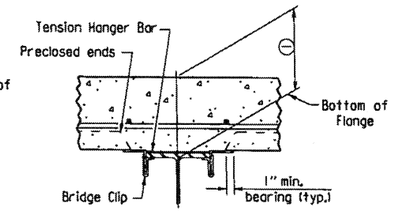
SECTION B-B

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



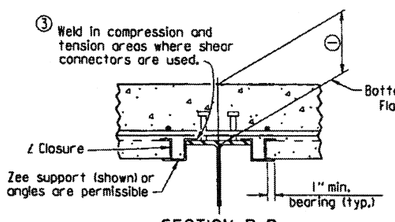
SECTION B-B

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



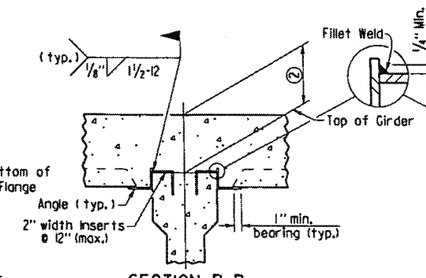
SECTION B-B

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



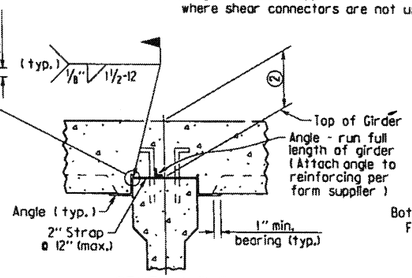
SECTION B-B

1" = 1'-0"
(Showing ∠ Closure)



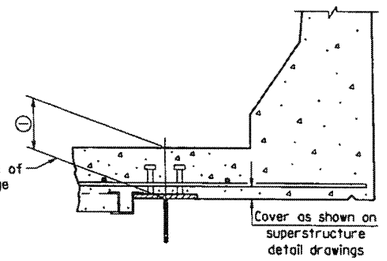
SECTION B-B (FOR CONCRETE GIRDERS)

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.

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

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

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

STRUCTURAL STEEL (W-BEAMS):

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

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

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

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

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

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

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

STRUCTURAL STEEL (PLATE GIRDERS):

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

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

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

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

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

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

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

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

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

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

SUBSTRUCTURE NOTES:

CONCRETE:

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

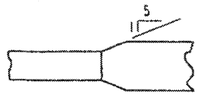
STANDARD GENERAL NOTES
FOR STEEL BRIDGE STRUCTURES

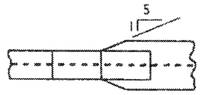
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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

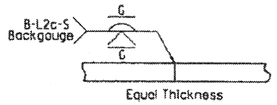
DRAWING NO. 55006

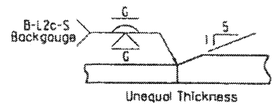
PRINT DATE: 9/21/2015



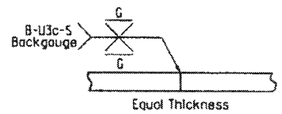


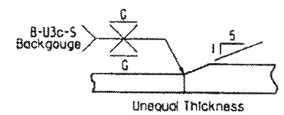
FLANGE SPLICE AT UNEQUAL BOTTOM FLANGE WIDTHS





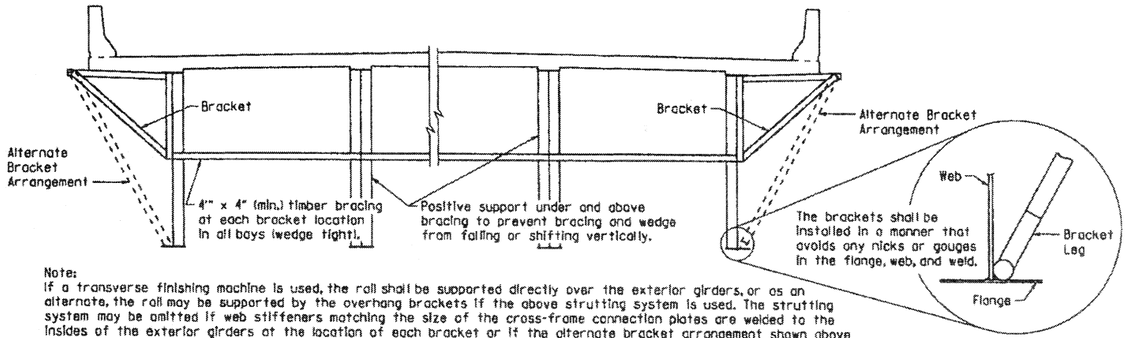
(Use when Base Metal Thickness is Equal to or Less than 2")





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

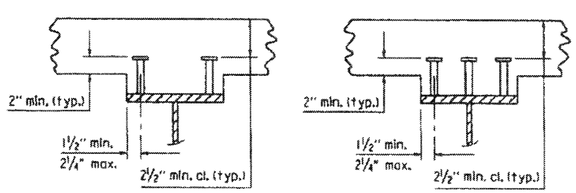
DETAILS OF WELDED SPLICES FOR PLATE GIRDERS



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)



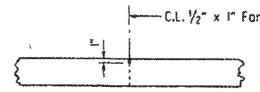
Stud Shear Connectors shall be automatically end welded to the beam or girder flange in accordance with the recommendations of the Manufacturer. See plan details for number and size.

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.

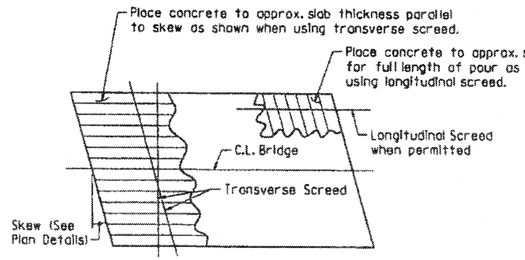
ADDITIONAL NOTES IF SIDEWALKS OR RAISED MEDIANS ARE REQUIRED:
Slab joints shall be installed before the sidewalk or raised median is poured. After installation of the joint in the sidewalk or raised median and prior to pouring the parapet rail, the joint sealer shall be placed extending across the deck slab from gutterline to gutterline and ocrasss 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



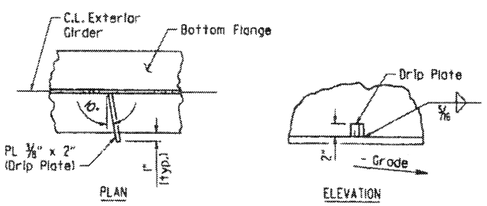
Use ½" x 1" Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. This joint shall be formed. Seal color shall be gray or other color similar to concrete.

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.

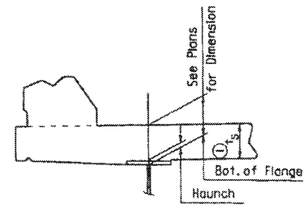
Locate drip plate 5'-0" from C.L. Bearing on high side of each Bent, unless otherwise noted in the plans.

BOTTOM FLANGE DRIP PLATE

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

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				

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

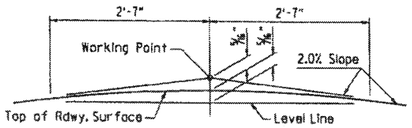


① Tolerance when removable deck forming is used is + ½", - ¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

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	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
12-1-14		1-15-19		6	ARK.			
1-14-15				JOB NO.				
1-17-17								

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	

21½"

2½" Center of Cast Lug 2½"

LINE 1
LINE 2
LINE 3

ARKANSAS HIGHWAY COMMISSION
TOM SCHUECK - CHAIR
ROBERT S. MOORE, JR. - VICE CHAIR
DALTON A. "ALEC" FARMER, JR.
PHILIP TALDO
KEITH GIBSON
DIRECTOR - SCOTT E. BENNETT
DEPUTY DIRECTOR/CHIEF OPERATING OFFICER - LORIE H. TUDOR
DEPUTY DIRECTOR/CHIEF ENGINEER - EMANUEL BANKS

CONTRACTOR
COMPANY NAME
YEAR

2½" Center of Cast Lug 2½"

XXXXX XXXXX

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

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

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

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

TYPICAL BRIDGE NAME PLATE

Face of Concrete

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

1/2" (Typ.)

13" 8" 2½"

1/4" 3/16" 2" 1/8" 1/4" 3/8"

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 5/16" 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.

④ Revised Chair and Vice Chair Added New Commissioner
1-15-19 CGP Checked By: CRE

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				6	ARK.			
				JOB NO.				
				①		STEEL H-PILES		55020

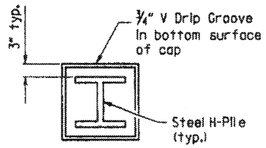
GENERAL NOTES FOR STEEL H-PILES:

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

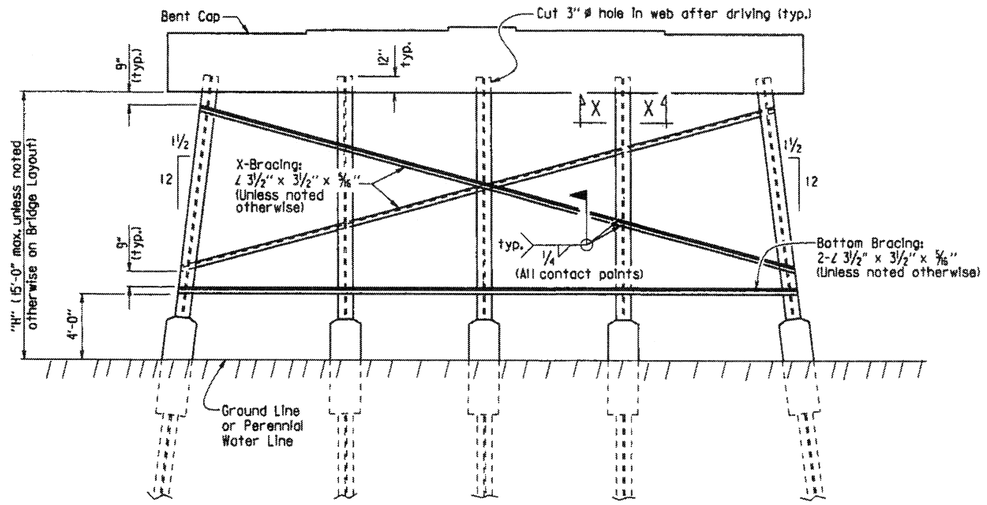
See Bridge Layout and Bent Details for pile size, estimated length, spacing, pile anchorage (if required) and for driving information.

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

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



VIEW X-X



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

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

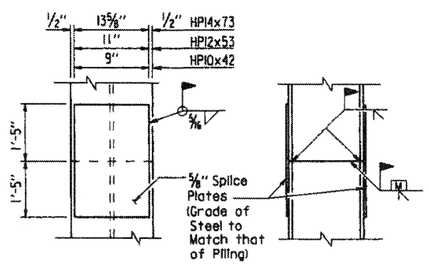
Omit X-Bracing and Bottom Bracing when "H" is 5 feet or less.

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

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

TYPICAL DETAILS OF H-PILE TRESTLE INTERMEDIATE BENT

(Shown with Partial Height Encasement)



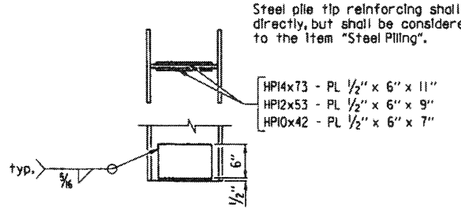
The Contractor may for his own convenience and at his own expense provide as many as three splices per pile. Minimum spacing between splices shall be 5 feet.

TYPICAL SPLICE DETAILS

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

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

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



REINFORCING DETAIL FOR STEEL H-PILE TIP

GENERAL NOTES FOR H-PILE ENCASEMENTS:

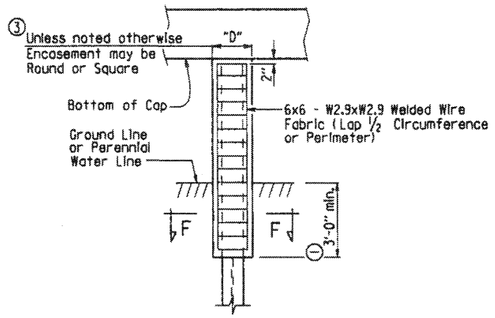
⚠ See Bridge Layout for additional notes, any pile encasement restrictions and required location of pile encasements.

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

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

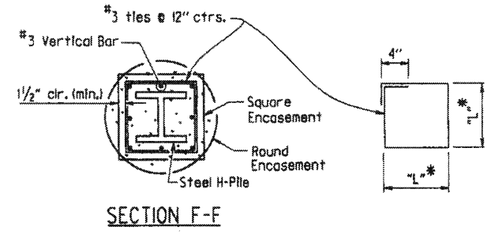
Welded Wire Fabric shall conform to AASHTO M 55 or M 221. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

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



PILE ENCASEMENT DETAIL FOR STEEL H-PILES

④ (Shown with Encasement to Bottom of Cap)

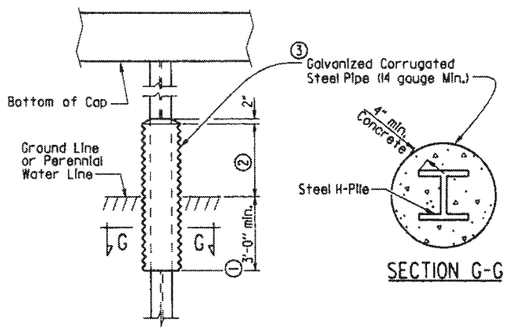


SECTION F-F

*Measured out-to-out of bar.

TABLE OF VARIABLES FOR PILE ENCASEMENT

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



SECTION G-G

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

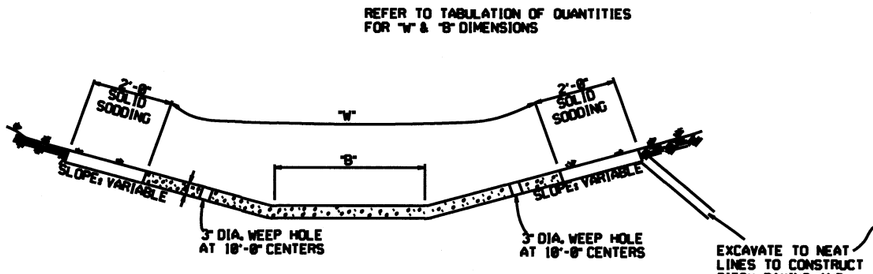
STANDARD DETAILS FOR STEEL H-PILES AND PILE ENCASEMENTS

ARKANSAS STATE HIGHWAY COMMISSION

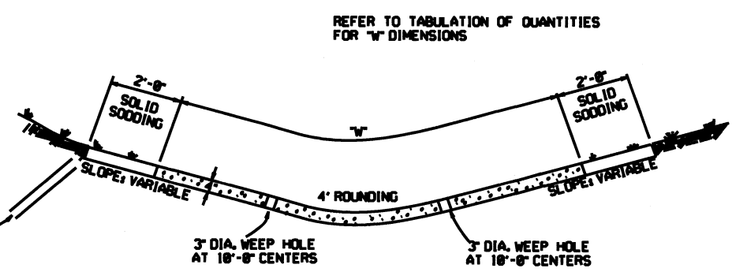
LITTLE ROCK, ARK.

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: —

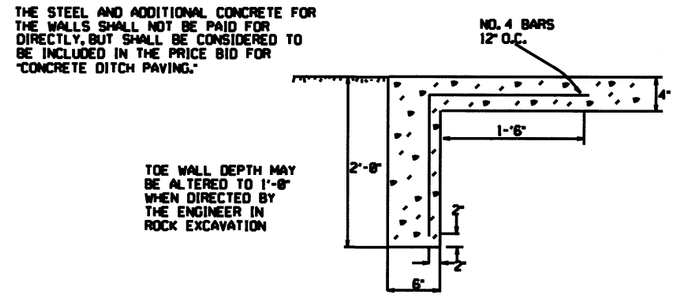
DRAWING NO. 55020



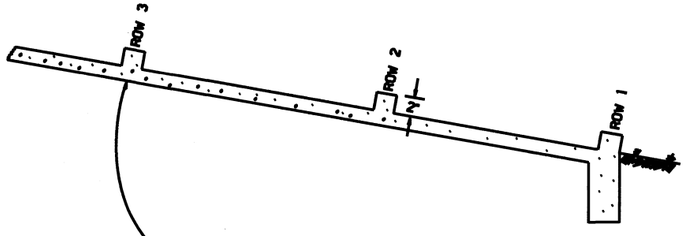
TYPE A

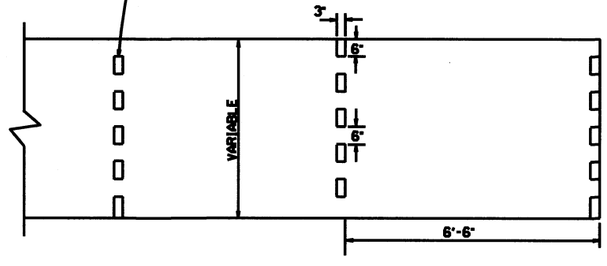


TYPE B



TOE WALL DETAIL FOR CONCRETE DITCH PAVING





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.

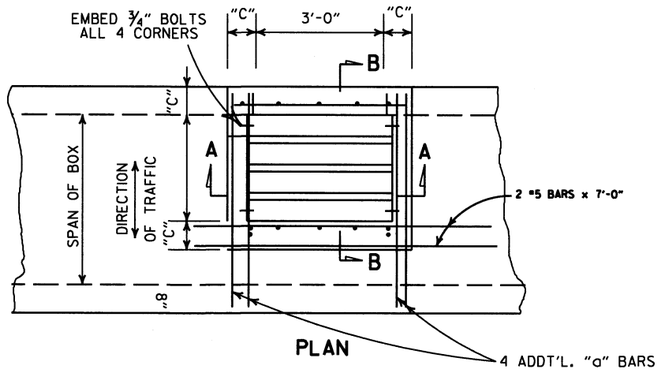
1" WIDE TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CONCRETE DITCH PAVING AT 45' INTERVALS. THE SPACE SHALL BE FILLED WITH APPROVED JOINT FILLER COMPLYING WITH AASHTO M213.

DATE	REVISION	DATE FILM'D
12-8-16	CORRECTED ENERGY DISSIPATOR DRAWING AND NOTE	
11-17-10	ADDED GENERAL NOTE	
6-2-94	ADDED NOTE ABOUT SOLID SODDING	
11-30-89	ELIMINATED MIN. ROWS OF ELEMENTS	111-30-89
7-15-88	REVISED DISSIPATOR NOTE	651-7-15-88
4-1-87	REVISED ENERGY DISSIPATOR	871-4-1-87
9-1-87	MODIFIED NOTE ON ENERGY DISS.	812-9-1-87
12-1-86	ADDED NOTE TO ENERGY DISS.	649-12-1-86
11-1-84	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

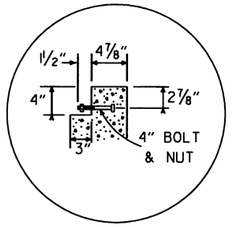
ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE DITCH PAVING

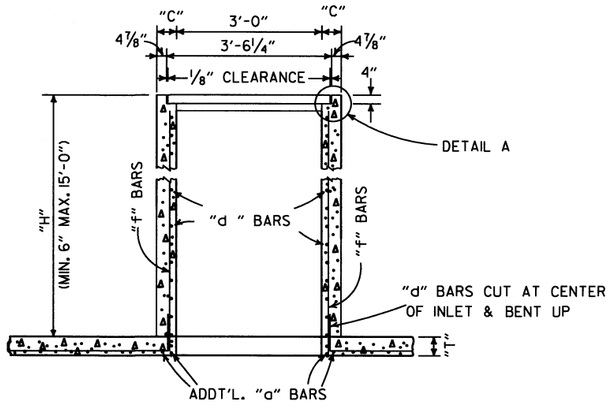
STANDARD DRAWING CDP-1



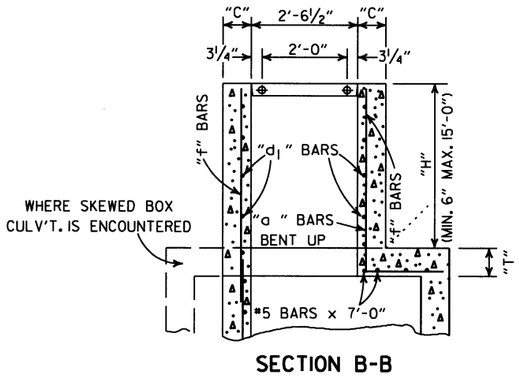
PLAN



DETAIL A



SECTION A-A

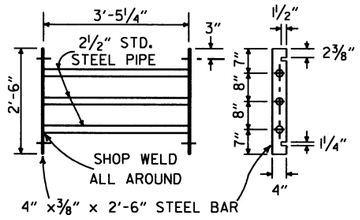


SECTION B-B

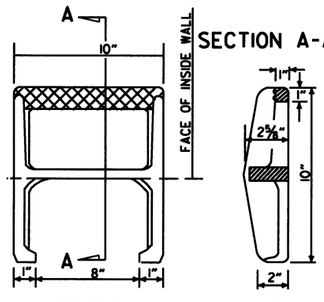
NOTE: ADDT'L.REINF. STEEL TO BE INCLUDED IN UNIT PRICE BID PER TYPE "TM" D.I.

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

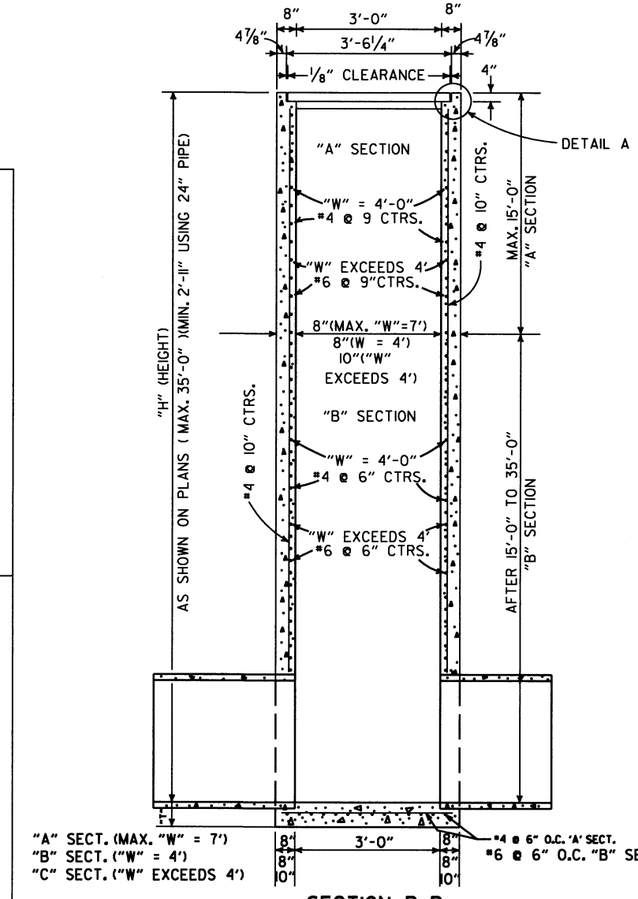
GENERAL NOTES:

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.

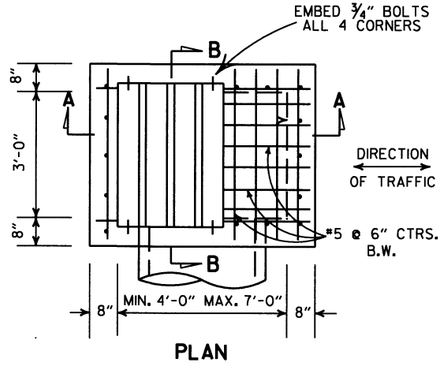
TABLE OF "W" DIMENSIONS

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"

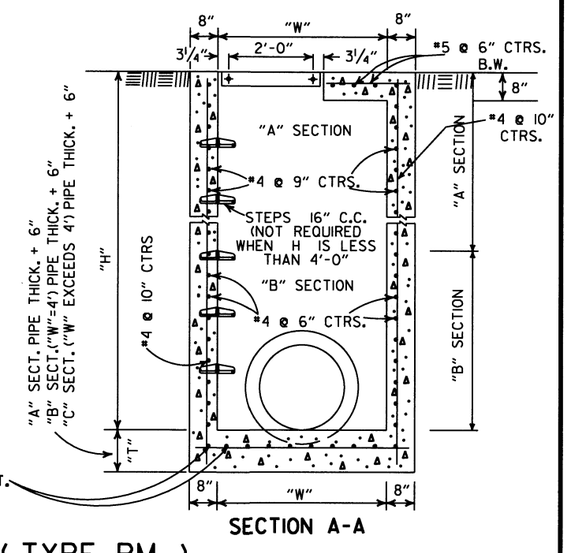
NOTE: DIMENSIONS SHOWN ABOVE ARE FOR PIPES INTERSECTING DROP INLET ON ONE SIDE ONLY. FOR SKEWED PIPES INTERSECTING BOTH SIDES OF DROP INLET, "W" WILL NEED TO BE INCREASED OR AXIS OF INTERSECTING PIPES WILL NEED TO BE SHIFTED.



SECTION B-B



PLAN



SECTION A-A

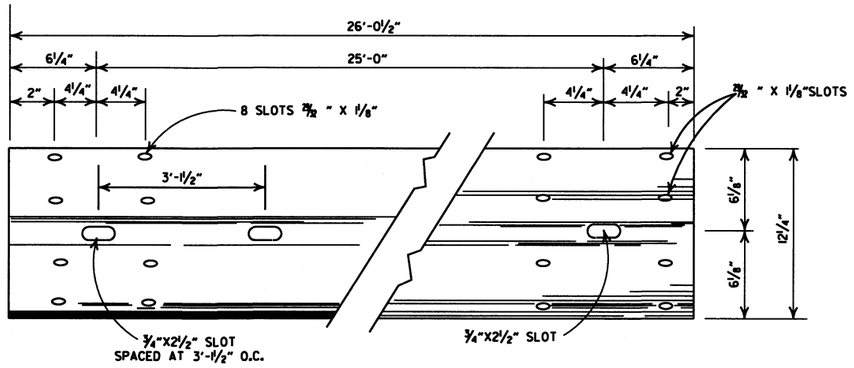
DROP INLET(TYPE RM)

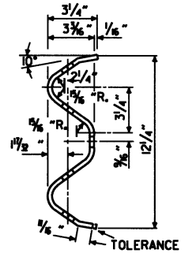
REVISED		DATE FILMED
8-22-02	ADDED & REVISED DIMENSION TO SECTION A-A	
1-12-00	CORRECTED DIMENSION ON SECTION B-B	
11-06-97	ADDED DIMENSION TO SECTION A-A	
10-18-96	REVISED ASTM REF. TO AASHTO AND ADDED NOTE TO TABLE OF "W" DIMENSIONS	
10-1-92	ADDED DIRECTION OF TRAFFIC	10-1-92
8-15-91	ADDED NOTE ABOUT 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

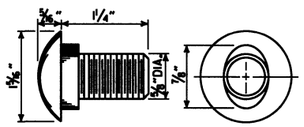
STANDARD DRAWING FPC-9D



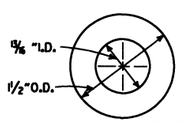


DETAILS OF W-BEAM GUARD RAIL

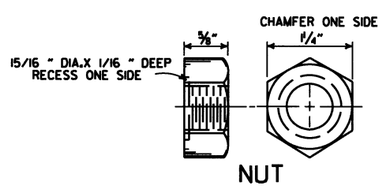
RAIL SECTION OF CLOSELY SIMILAR DIMENSIONS AND COMPARABLE STRENGTH MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



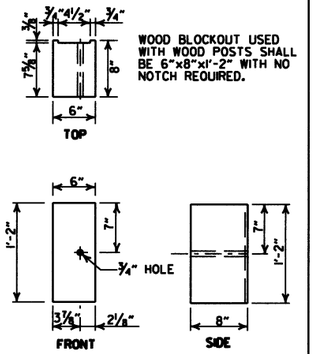
SPLICE BOLT
POST BOLT - SAME EXCEPT LENGTH



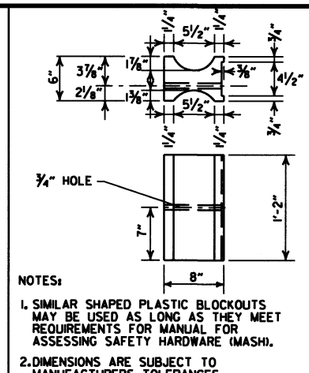
CUT STEEL WASHER



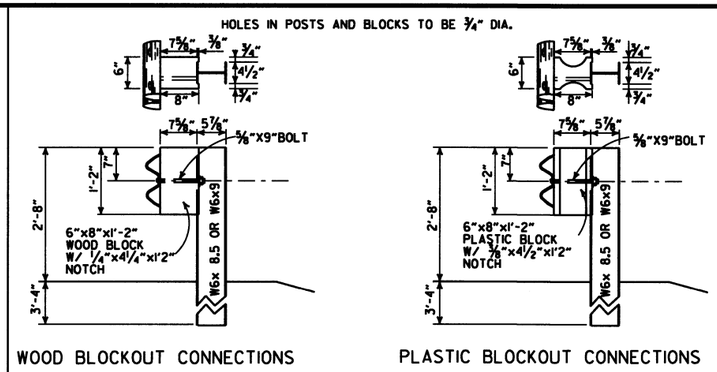
NUT



WOOD BLOCKOUT (W-BEAM)



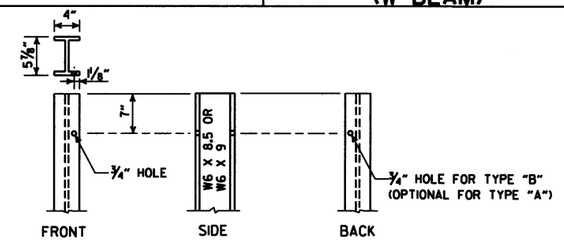
PLASTIC BLOCKOUT (W-BEAM)



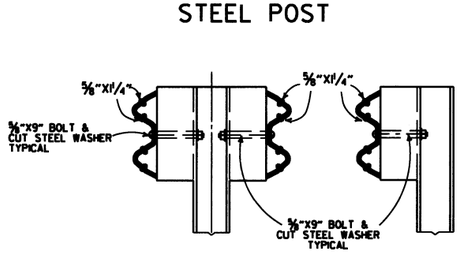
WOOD BLOCKOUT CONNECTIONS

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.

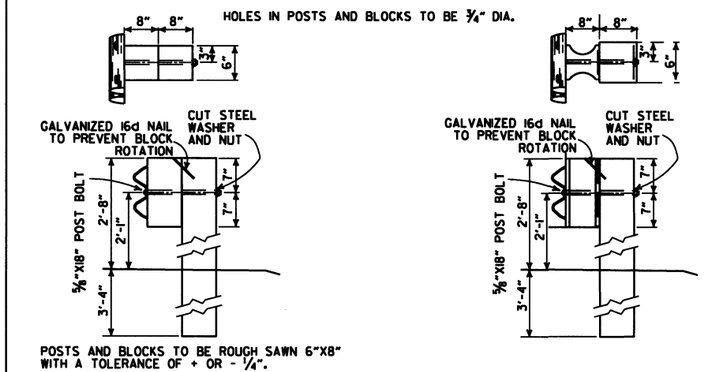
W-BEAM GUARD RAIL REPRESENTING INTERMEDIATE SECTIONS WILL BE MEASURED ALONG THE ROADWAY FACE FROM CENTERLINE OF POST TO CENTERLINE OF POST.

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 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

CONTRACTOR SHALL HAVE THE OPTION OF USING WOOD BLOCKOUTS FOR W-BEAM GUARD RAIL OR PLASTIC BLOCKOUTS, AS LONG AS BLOCKOUT USED MEETS REQUIREMENTS FOR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR W-BEAM GUARD RAIL.



WOOD BLOCKOUT CONNECTIONS

PLASTIC BLOCKOUT CONNECTIONS

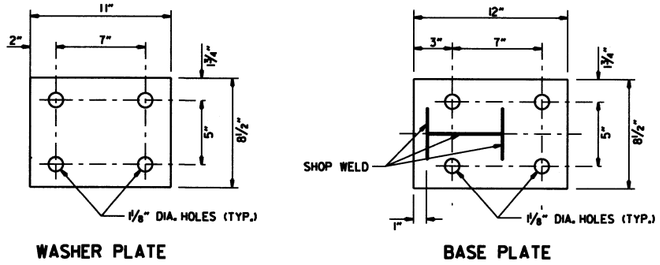
DETAILS OF WOOD LINE POST CONNECTIONS (W-BEAM)

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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

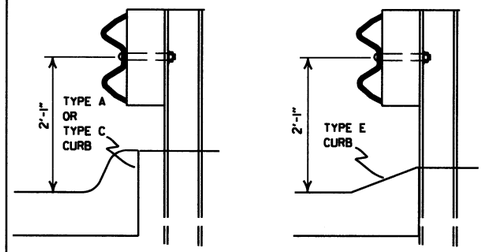
STANDARD DRAWING GR-8



WASHER PLATE

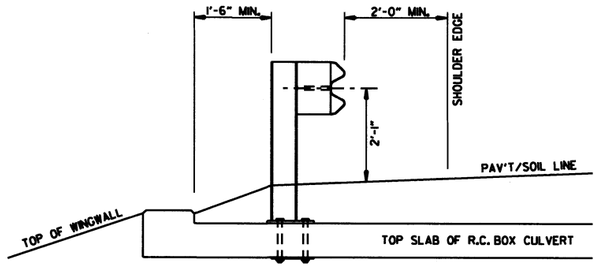
BASE PLATE

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

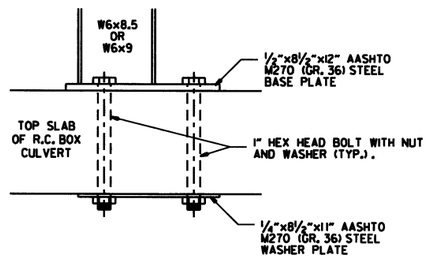


DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB (W-BEAM)

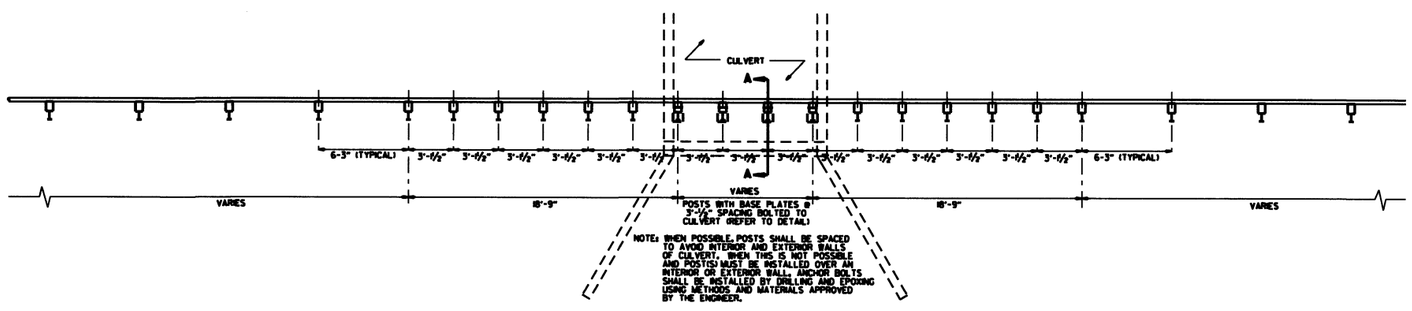
FOR DESIGN SPEEDS OF 50 MPH OR LESS ALL CURB FACES, AS SHOWN ON STD. DRWG. CG-1, MAY BE USED. FOR DESIGN SPEEDS OF 55 MPH OR MORE TYPE "E" CURB FACE SHALL BE USED.



SECTION A-A



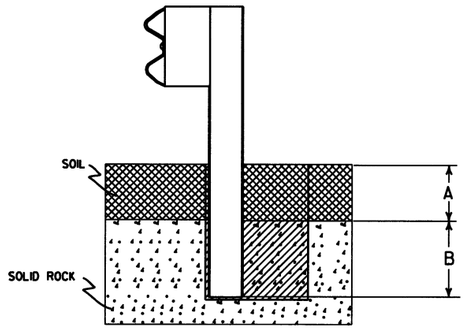
DETAIL OF CONNECTION



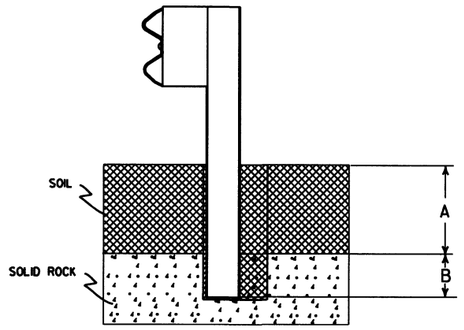
PLAN LAYOUT OF TYPE A GUARD RAIL AT LOW-FILL CULVERTS

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.

Case 1

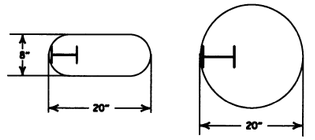


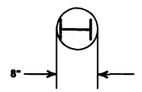
Case 2



Plan View Steel Posts

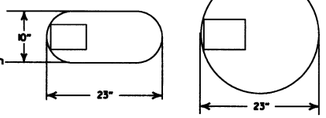
Either hole configuration acceptable

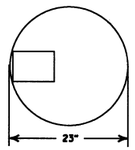


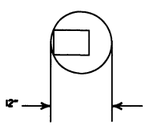


Plan View Wood Posts

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)

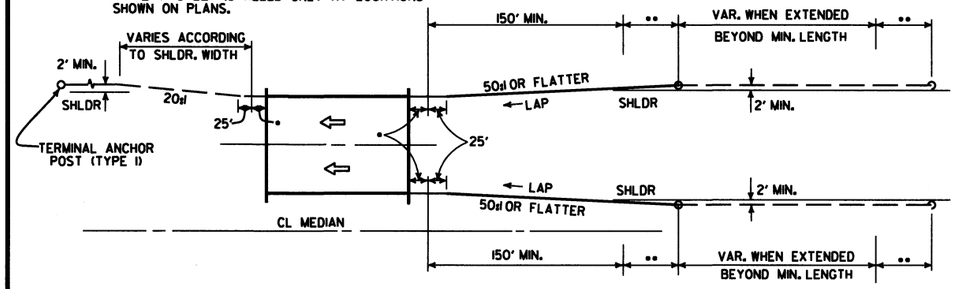
DATE	REVISION	FILMED
8-16-17	REVISED GUARD RAIL HEIGHT	
07-14-10	RAISED HEIGHT OF GUARD RAIL 1"	
04-12-07	REVISED DETAIL OF GUARD RAIL PLACEMENT BEHIND CURB	
11-10-05	ADDED GUARD RAIL PLACEMENT BEHIND CURBS; REVISED DETAIL OF CONNECTION	
11-18-04	REVISED POST PLACEMENT IN ROCK & CULVERT CONNECTION DETAILS, 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. & ADDED DET. OF GUARD RAIL PLACE. BEHIND CURB & DET. OF POST PLACE. 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

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

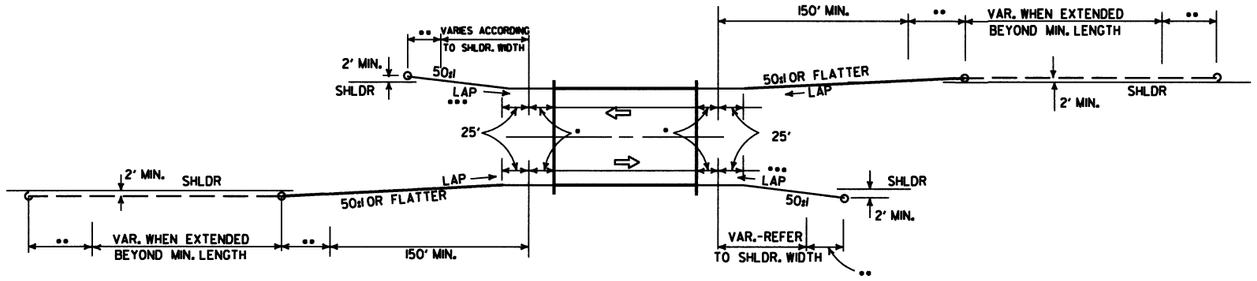
STANDARD DRAWING GR-8A

NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



ONE-WAY TRAFFIC

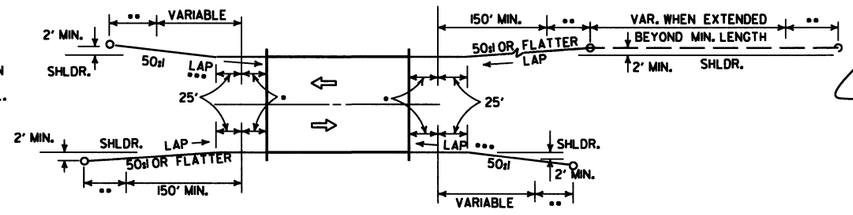
••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

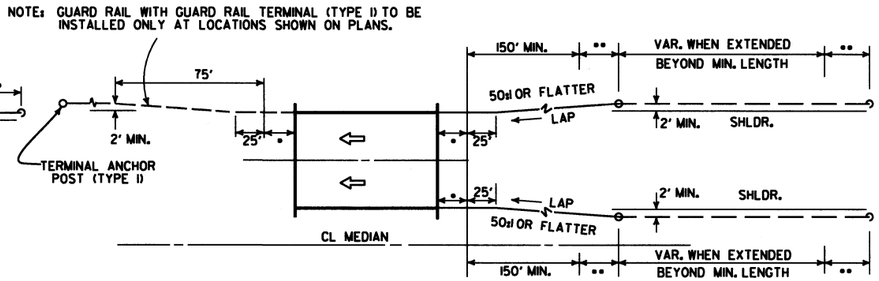
METHODS OF INSTALLATION OF GUARD RAIL AT LESS THAN FULL SHOULDER WIDTH BRIDGES USING GUARD RAIL TERMINAL (TYPE 2)

••• LAP OF GUARD RAIL SHALL BE AS SHOWN FOR A DISTANCE OF UP TO 200', CHANGE TO LAP IN DIRECTION OF TRAVEL.



TWO-WAY TRAFFIC

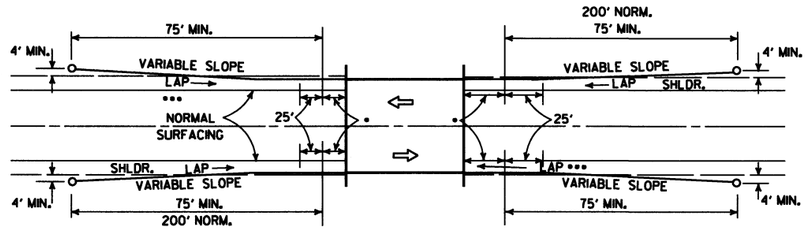
NOTE: GUARD RAIL WITH GUARD RAIL TERMINAL (TYPE I) TO BE INSTALLED ONLY AT LOCATIONS SHOWN ON PLANS.



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.



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

LEGEND

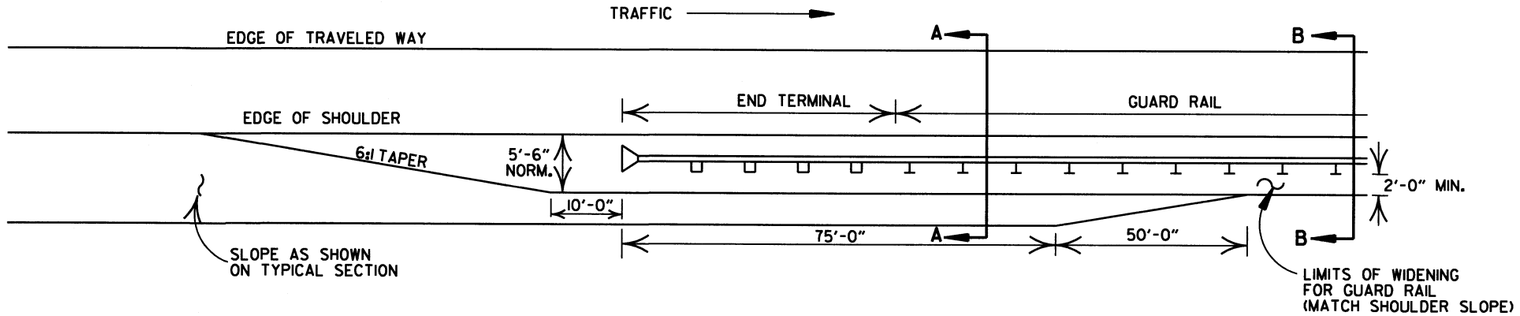
- • THRIE BEAM GUARD RAIL TERMINAL
- •• GUARD RAIL TERMINAL (TYPE 2)

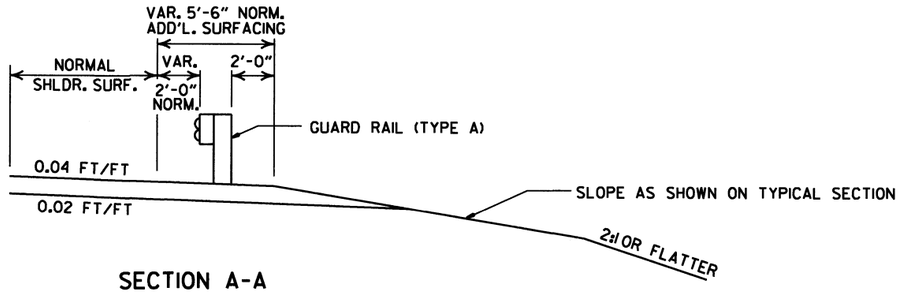
DATE	REVISION	DATE FILM
4-17-08	REVISED LAYOUTS	
11-10-05	REMOVED GUARD RAIL NOTES AND DETAILS	
11-16-01	DELETED NOTE-METHOD OF INSTALLATION OF GUARD RAIL USING GUARD RAIL TERM. (TY. I)	
1-12-00	ADDED CONSTRUCTION NOTE	1-12-00
6-26-97	REVISED LAYOUT	
10-1-92	REDRAWN & REVISED	10-1-92
	ADDED NOTE	
10-9-87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

ARKANSAS STATE HIGHWAY COMMISSION

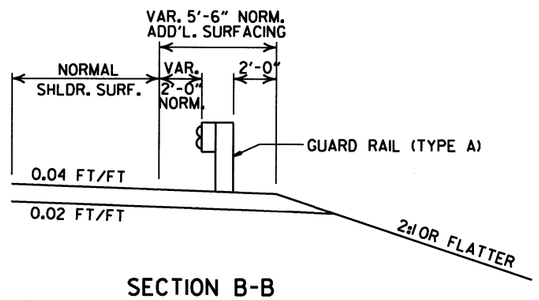
GUARD RAIL DETAILS

STANDARD DRAWING GR-9





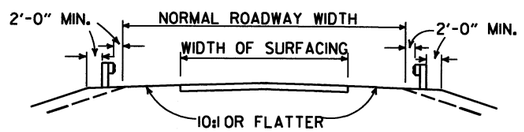
SECTION A-A



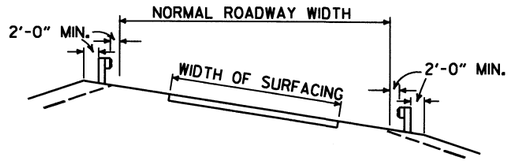
SECTION B-B

DETAILS OF WIDENING FOR GUARD RAIL

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

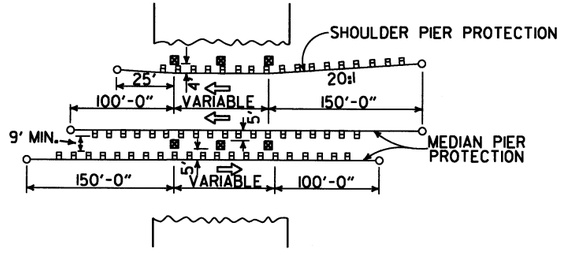


SECTION ON TANGENT



SECTION ON CURVE

DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



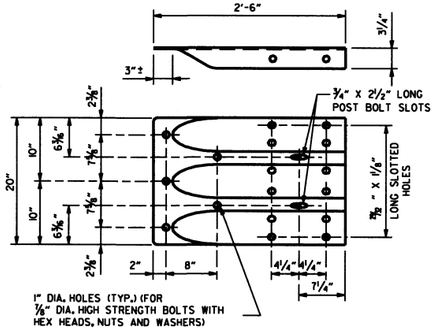
METHOD OF INSTALLATION OF GUARD RAIL AT FIXED OBSTACLE

DATE	REVISION	DATE FILM
4-17-08	MINOR REVISION	
11-10-05	DRAWN	

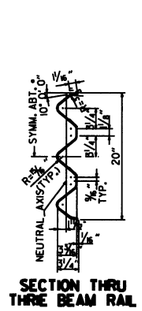
ARKANSAS STATE HIGHWAY COMMISSION

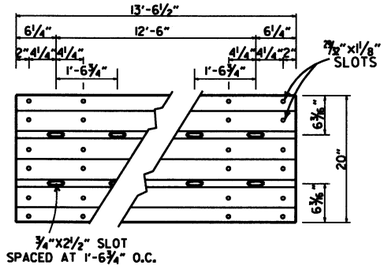
GUARD RAIL DETAILS

STANDARD DRAWING GR-9A

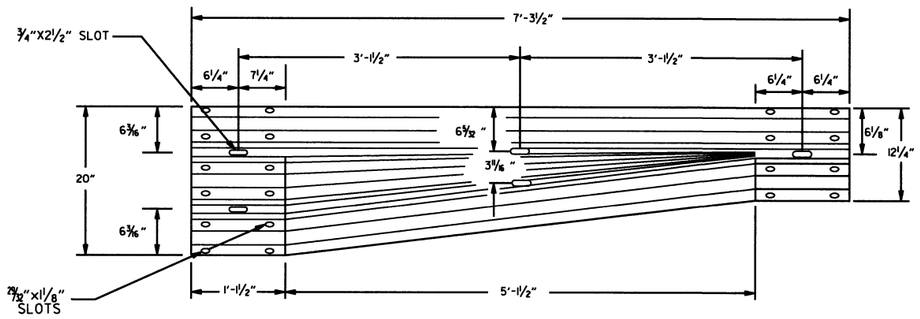


SPECIAL END SHOE

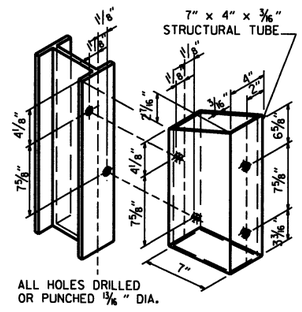




THRIE BEAM RAIL

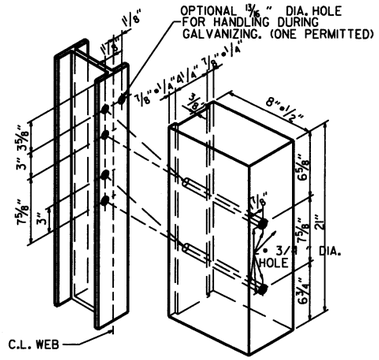


TRANSITION SECTION



ATTACH BLOCKOUT TO POST USING ⅝" DIA. HEX HEAD BOLTS WITH 1½" O.D. CUT STEEL WASHERS AND NUT.

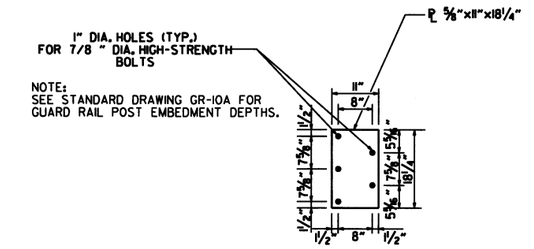
STRUCTURAL STEEL TUBING BLOCKOUT DETAIL



ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED

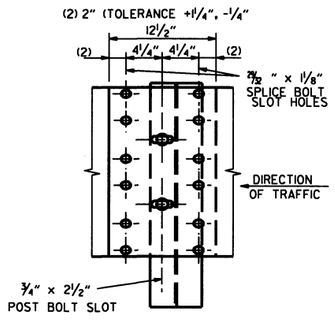
HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKOUTS

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.

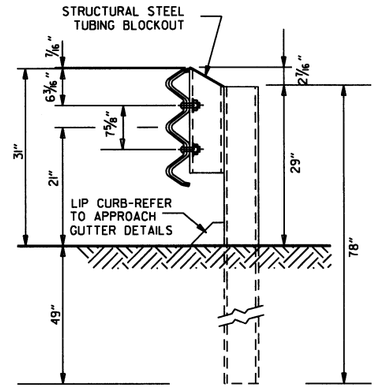
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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	

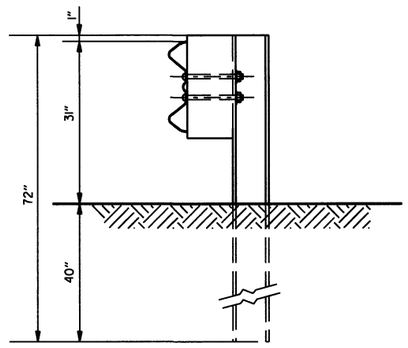
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

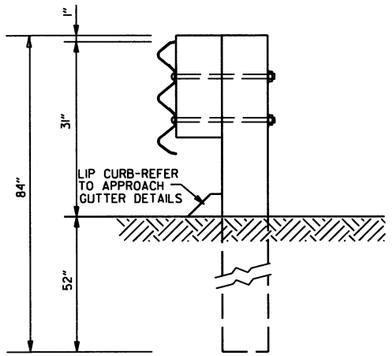
STANDARD DRAWING GR-10



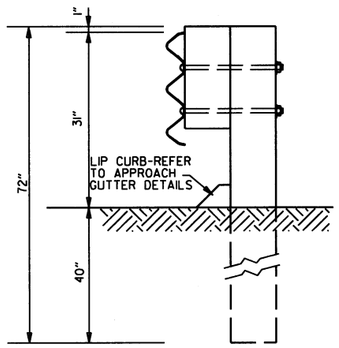
THRIE BEAM RAIL WITH STEEL TUBING BLOCKOUT
AND STEEL POST
POSTS 1-7



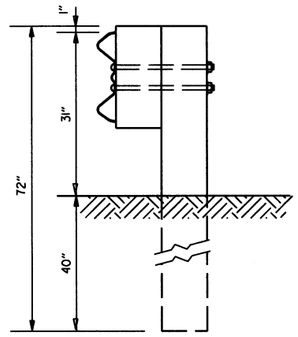
W-BEAM TO THRIE BEAM TRANSITION RAIL
WITH WOOD OR PLASTIC BLOCKOUT AND STEEL POST
POST 8



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.

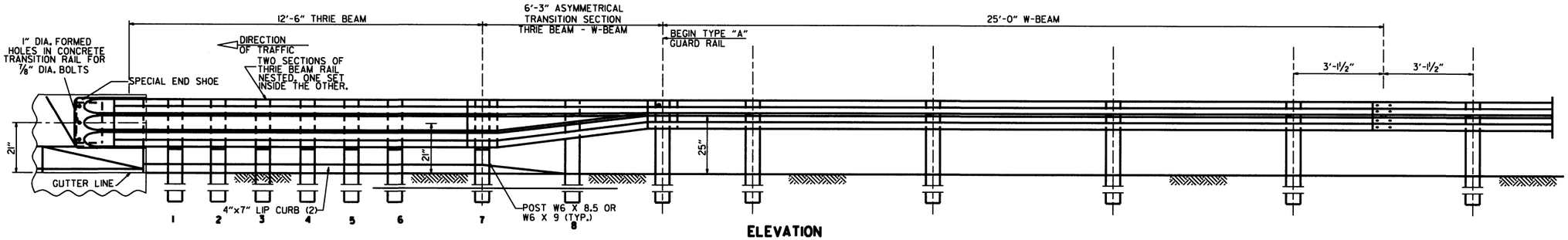
WOOD POSTS & WOOD BLOCKS SHALL BE EITHER DENSE NO. 1 STRUCTURAL OR BETTER 9.7f (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

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 8 DIMENSIONS	
11-29-07	ADDED PLASTIC BLOCKOUTS	
08-22-02	REVISED LIP CURB NOTE	
03-30-00	DRAWN & ISSUED	

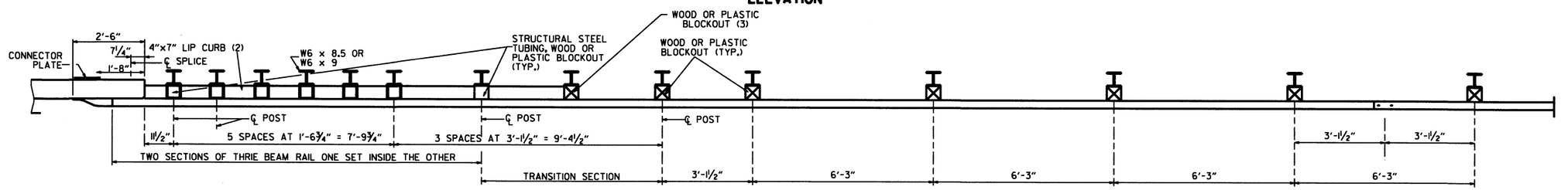
ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

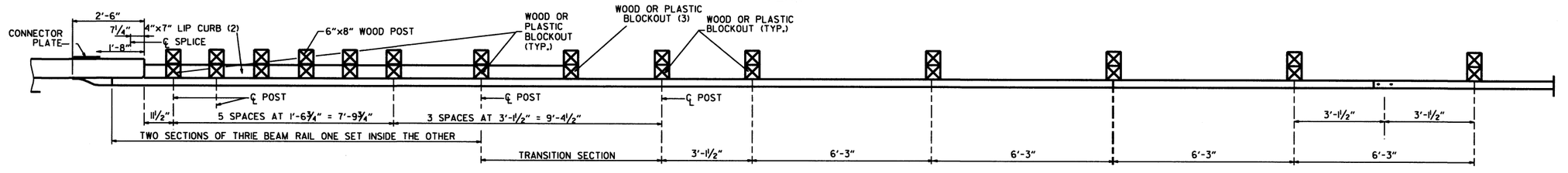
STANDARD DRAWING GR-11



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# (1400 f) OR NO. 1 1350 f SOUTHERN PINE.

DATE	REVISION	FILMED
8-16-17	RE-DRAWN FROM STD. DWG. GR-10 & ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

GUARD RAIL DETAILS

STANDARD DRAWING GR-12

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	26⅞	27
42	51⅛	51	31 11/16	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.

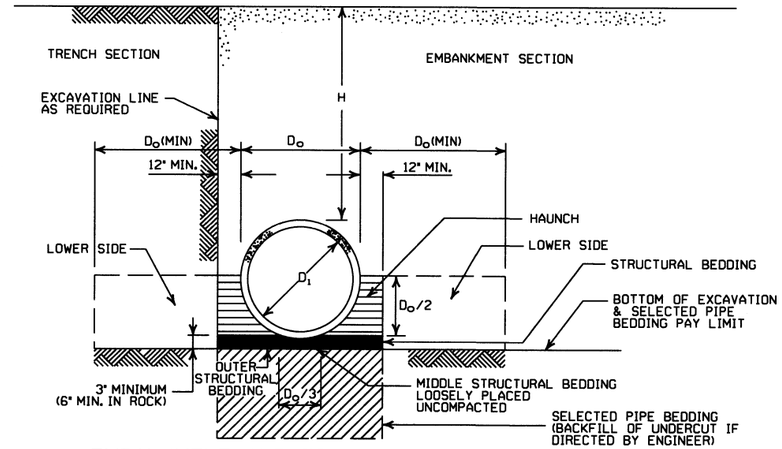
- LEGEND -

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

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

* SM-3 WILL NOT BE ALLOWED.

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



EMBANKMENT AND TRENCH INSTALLATIONS

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

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.

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."

DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECIFICATIONS	
5-18-00	REVISED TYPE 3 BEDDING & ADDED NOTE	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

CONCRETE PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCC-1

CORRUGATED STEEL PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS (INCHES)				
		0.064	0.079	0.109	0.138	0.168
2⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM						
12	1	84	91			
15	1	67	73			
18	1	56	61			
24	1	42	46	59		
30	2	34	36	47		
36	2		30	39	41	
42	2		43	67	70	73
48	2		37	58	61	64
② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, BOLTED, OR HELICAL LOCK-SEAM						
36	1	48	60	88	111	118
42	1	41	51	72	90	102
48	1	36	45	64	77	85
54	2	32	40	59	71	79
60	2	29	36	53	64	71
66	2	26	33	47	58	64
72	2	24	30	44	53	59
78	2		28	41	49	54
84	2		26	38	45	51
90	2		24	35	43	45
96	2		22	33	40	44
102	2			31	38	42
108	2			30	35	39
114	2			28	34	37
120	2			27	32	35

CORRUGATED ALUMINUM PIPE (ROUND)

PIPE DIAMETER (INCHES)	① MINUMUM COVER TOP OF PIPE TO TOP OF GROUND "H" (FEET)	MAX. FILL HEIGHT "H" ABOVE TOP OF PIPE (FEET)				
		METAL THICKNESS IN INCHES				
		0.060	0.075	0.105	0.135	0.164
		2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM				
12	1	45	45			
18	2	30	30	52		
24	2	22	22	39	41	
30	2		18	31	32	34
36	2.5		15	26	27	28
42	2			43	43	44
48	2			40	41	43
54	2			35	37	38
60	2				33	34
66	2					31
72	2					29

CONSTRUCTION SEQUENCE

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

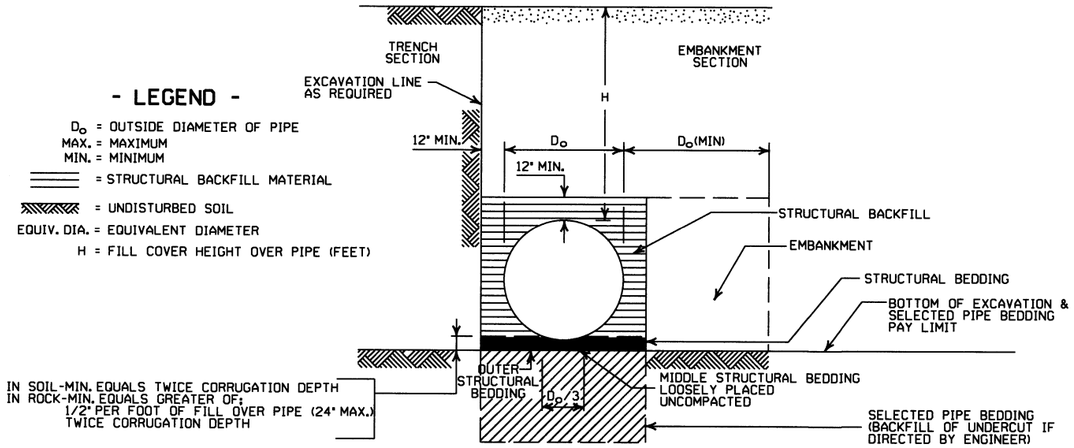
NOTE: STRUCTURAL BACKFILL AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF METAL PIPE.

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

③ SM-3 WILL NOT BE ALLOWED.

EQUIVALENT METAL THICKNESSES AND GAUGES

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



EMBANKMENT AND TRENCH INSTALLATIONS

1. STRUCTURAL BACKFILL, EMBANKMENT, AND OUTER STRUCTURAL BEDDING MATERIAL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY ACCORDING TO THE TYPE OR CLASS OF MATERIAL USED.
2. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE (ROUND).
3. INSTALALTION TYPE 1 SHALL BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 2⅔" X ½" CORRUGATION.
4. INSTALLATION TYPE 1 OR 2 MAY BE USED FOR CORRUGATED STEEL OR ALUMINUM PIPE ARCHES WITH 3" X 1" OR 5" X 1" CORRUGATION.

GENERAL NOTES

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

CORRUGATED METAL PIPE ARCHES

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL			ALUMINUM		
			MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MIN. THICKNESS REQUIRED INCHES	① MIN. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1	MAX. HEIGHT OF FILL, "H" (FT.) INSTALLATION TYPE 1
			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			2 ⅔ INCH BY ½ INCH CORRUGATION RIVETED OR HELICAL LOCK-SEAM		
15	17x13	3	0.064	2	15	0.060	2	15
18	21x15	3	0.064	2	15	0.060	2	15
21	24x18	3	0.064	2.25	15	0.060	2.25	15
24	28x20	3	0.064	2.5	15	0.075	2.5	15
30	35x24	3	0.079	3	12	0.075	3	12
36	42x29	3½	0.079	3	12	0.105	3	12
42	49x33	4	0.079	3	12	0.105	3	12
48	57x38	5	0.109	3	13	0.135	3	13
54	64x43	6	0.109	3	14	0.135	3	14
60	71x47	7	0.138	3	15	0.164	3	15
66	77x52	8	0.168	3	15			
72	83x57	9	0.168	3	15			

EQUIV. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINUMUM CORNER RADIUS (INCHES)	STEEL				ALUMINUM			
			MIN. THICKNESS REQUIRED INCHES	② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM			MIN. THICKNESS REQUIRED INCHES	② 3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL LOCK-SEAM		
				INSTALLATION		INSTALLATION		INSTALLATION		INSTALLATION
				TYPE 2	TYPE 1	TYPE 2		TYPE 2	TYPE 1	TYPE 2
36	40x31	5	0.079	3	2	12	0.075	3	2	12
42	46x36	6	0.079	3	2	13	0.075	3	2	13
48	53x41	7	0.079	3	2	13	0.075	3	2	13
54	60x46	8	0.079	3	2	13	0.075	3	2	13
60	66x51	9	0.079	3	2	13	0.075	3	2	13
66	73x55	12	0.079	3	2	15	0.075	3	2	15
72	81x59	14	0.079	3	2	15	0.075	3	2	15
78	87x63	14	0.079	3	2	15	0.075	3	2	15
84	95x67	16	0.109	3	2	15	0.105	3	2	15
90	103x71	16	0.109	3	2	15	0.105	3	2	15
96	112x75	18	0.109	3	2	15	0.105	3	2	15
102	117x79	18	0.109	3	2	15	0.105	3	2	15
108	128x83	18	0.138	3	2	15	0.105	3	2	15

① FOR MINIMUM COVER VALUES, "H" SHALL INCLUDE A MINIMUM 12" OF PAVEMENT AND/OR BASE.

② WHERE THE STANDARD 2 2/3"x ½" CORRUGATION AND GAUGE IS SPECIFIED FOR A GIVEN DIAMETER, A PIPE OF THE SAME DIAMETER WITH A 3" x 1" OR 5" x 1" CORRUGATION MAY BE SUBSTITUTED, PROVIDING IT IS GAUGED FOR A FILL HEIGHT CONDITION EQUAL TO OR GREATER THAN THE MAXIMUM FILL HEIGHT CONDITION FOR THE SPECIFIED GAUGE AND CORRUGATION.

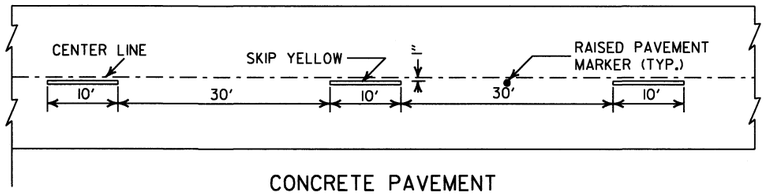
DATE	REVISION	DATE FILMED
2-27-14	REVISED GENERAL NOTE 1.	
12-15-11	REVISED FOR LRFD DESIGN SPECS	
3-30-00	REVISED INSTALLATIONS	
11-06-97	ISSUED	

ARKANSAS STATE HIGHWAY COMMISSION

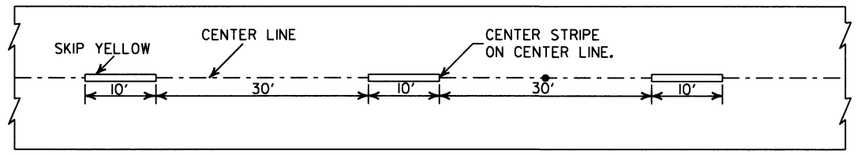
METAL PIPE CULVERT FILL HEIGHTS & BEDDING

STANDARD DRAWING PCM-1

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.

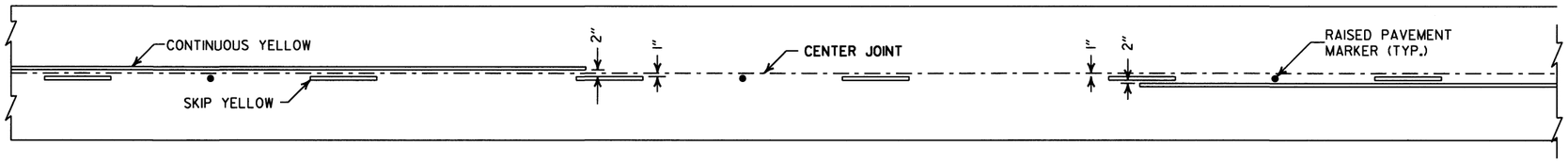


CONCRETE PAVEMENT

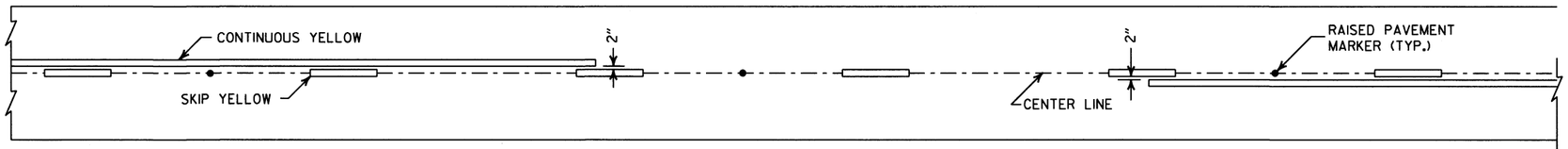


ASPHALT PAVEMENT

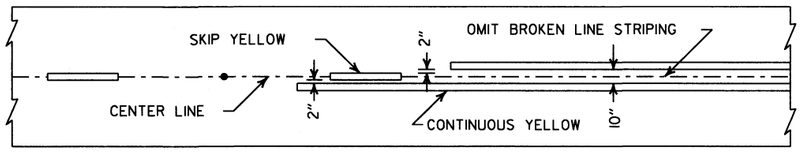
BROKEN LINE STRIPING



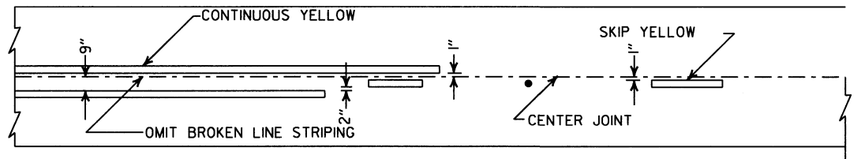
SOLID LINE STRIPING ON CONCRETE PAVEMENT



SOLID LINE STRIPING ON ASPHALT PAVEMENT

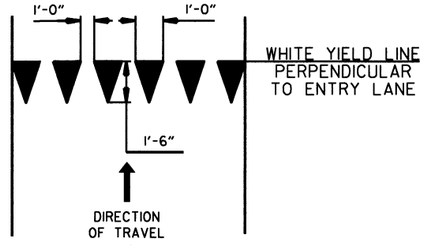


ASPHALT PAVEMENT

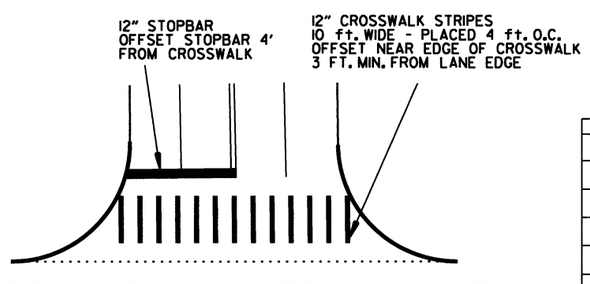


CONCRETE PAVEMENT

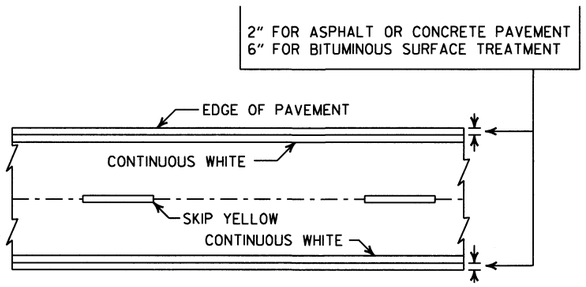
STRIPING AT ADJACENT NO PASSING LANES



YIELD LINE DETAIL



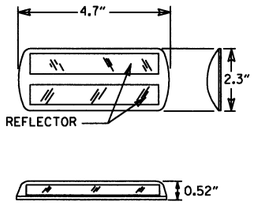
CROSSWALK AND STOPBAR DETAILS



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	FILMED
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

ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

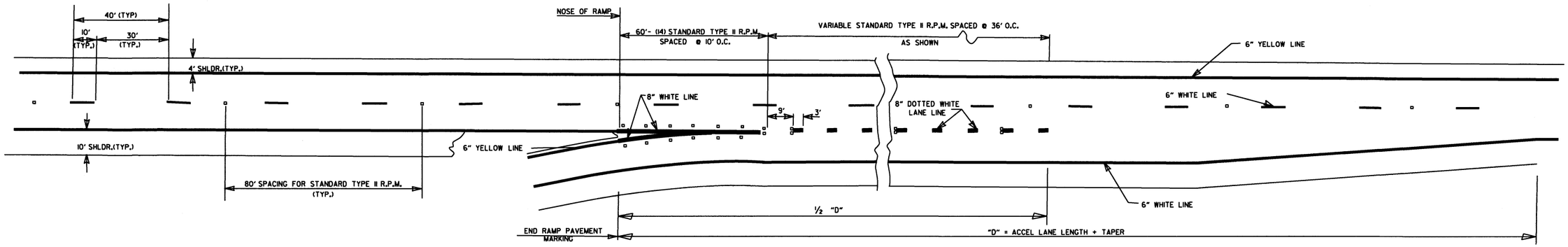
PAVEMENT MARKING QUANTITIES
(BASED ON 700' ACCEL. LANE + 300' TAPER)

ENTRANCE RAMP

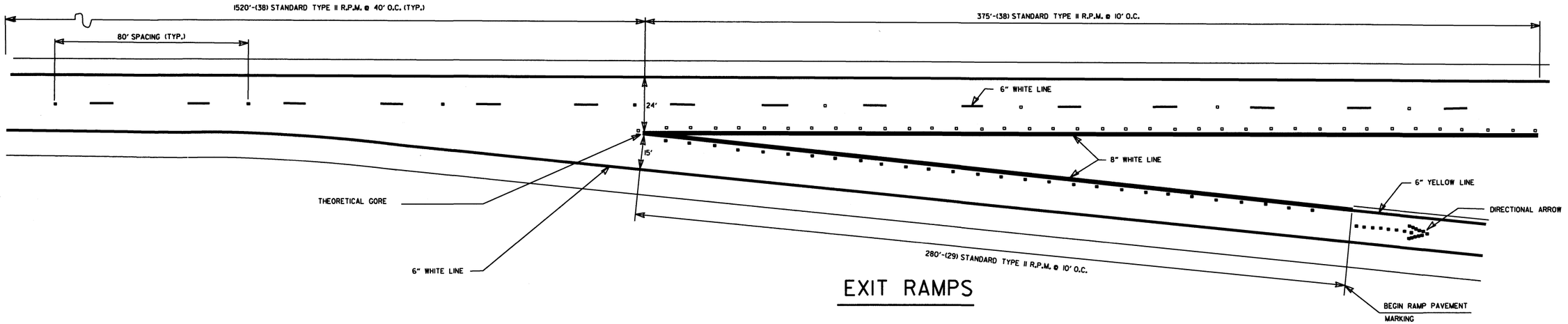
8" WHITE = 228 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH

EXIT RAMP

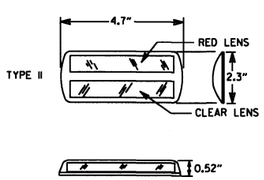
6" WHITE = 280 LIN. FT.
8" WHITE = 655 LIN. FT.
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 48 EACH
RAISED PAVEMENT MARKERS TYPE II (WHITE/RED) = 38 EACH



ENTRANCE RAMPS

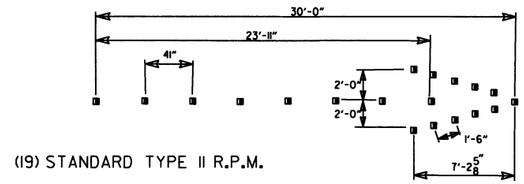


EXIT RAMPS



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

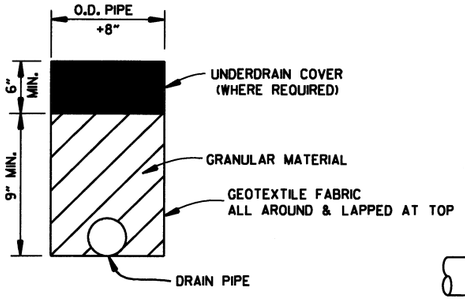
PERMANENT PAVEMENT MARKING ON ACCESS CONTROLLED ROADWAYS

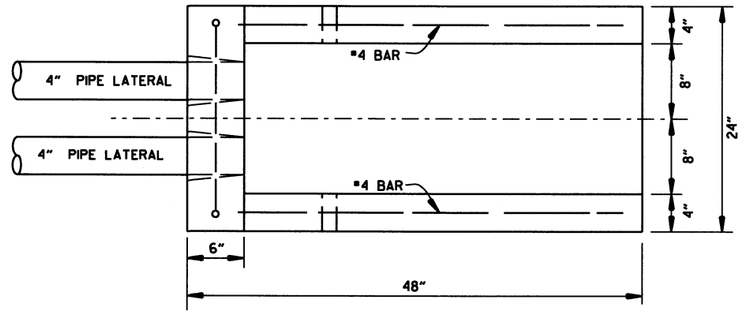
STANDARD DRAWING PM-2

NOTE:

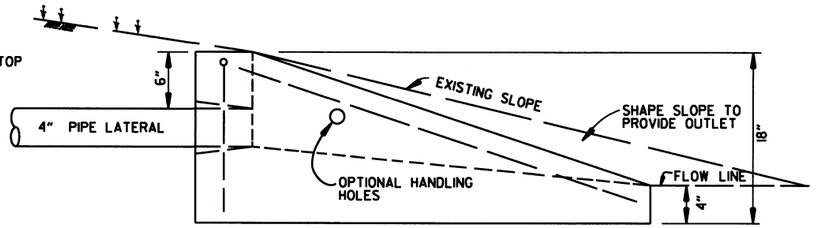
1. UNLESS OTHERWISE SPECIFIED ON THE PLANS, THE UNDERDRAIN COVER SHALL BE THOROUGHLY COMPACTED EARTH AND SHALL BE SUBSIDIARY TO PIPE UNDERDRAIN.

2. GRANULAR MATERIAL SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. LAP FABRIC 12" OR THE WIDTH OF THE TRENCH AT THE TOP.

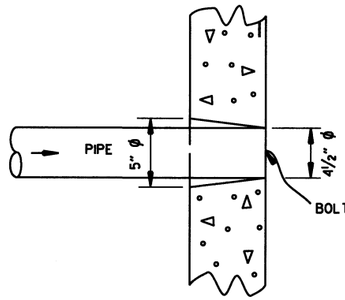




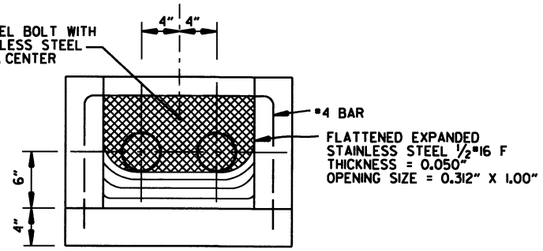
PLAN VIEW



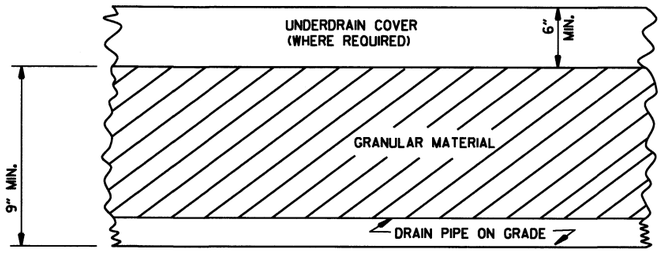
SIDE VIEW



DETAIL OF HOLE FOR 4" PIPE

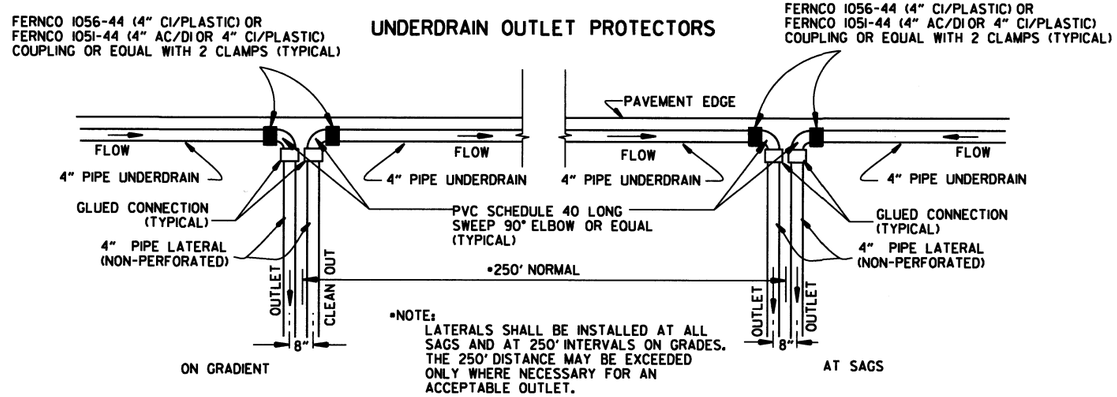


FRONT VIEW
(DETAIL OF RODENT SCREEN)



DETAILS OF PIPE UNDERDRAIN

UNDERDRAIN OUTLET PROTECTORS



DETAIL OF PIPE UNDERDRAIN LATERALS WHEN PLACED ALONG PAVEMENT EDGE

NOTE: PVC PIPE FOR LATERALS SHALL MEET THE REQUIREMENTS OF ASTM D 1785 (LATEST REVISION) FOR SCHEDULE 40 PIPE.

NOTES FOR PIPE UNDERDRAINS

1. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 625 FOR TYPE I. PAYMENT FOR GEOTEXTILE FABRIC AND GRANULAR FILTER MATERIAL SHALL BE INCLUDED IN THE PRICE BID PER LIN. FT. FOR "4" PIPE UNDERDRAINS" IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

2. 4" NON-PERFORATED SCHEDULE 40 PVC PIPE LATERALS WITH OUTLET PROTECTORS SHALL BE INSTALLED AS SHOWN HEREON. LATERALS WILL BE MEASURED AND PAID FOR AS "4" PIPE UNDERDRAINS." UNDERDRAIN OUTLET PROTECTORS WILL BE MEASURED AND PAID FOR BY THE UNIT IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS.

3. EXISTING 4" PIPE UNDERDRAINS MAY BE CONNECTED TO PROPOSED DROP INLETS OR EXTENDED WHERE DIRECTED BY THE ENGINEER. PAYMENT FOR CONNECTING TO DROP INLETS SHALL BE CONSIDERED INCLUDED IN THE PRICE BID FOR "4" PIPE UNDERDRAINS."

4. THE LOCATION OF ALL LATERALS SHALL BE MARKED WITH 4" X 12" PERMANENT PAVEMENT MARKING TAPE (TYPE III WHITE) AT THE OUTSIDE EDGE OF THE SHOULDER, PLACED TRANSVERSE TO TRAFFIC. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS.

5. PAYMENT FOR THE RODENT SCREEN SHALL BE INCLUDED IN THE PRICE BID PER EACH FOR "UNDERDRAIN OUTLET PROTECTORS."

6. ANY EXISTING UNDERDRAINS THAT INTERFERE WITH INSTALLATION OF THE NEW UNDERDRAIN SYSTEM SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS CONTRACT ITEMS. EXISTING UNDERDRAIN OUTLET PROTECTORS SHALL BE REMOVED UNDER THE ITEM "REMOVAL AND DISPOSAL OF UNDERDRAIN OUTLET PROTECTORS."

7. AT LOCATIONS WHERE A SINGLE LATERAL IS USED THE CONTRACTOR SHALL HAVE THE FOLLOWING OPTIONS: 1. INSTALL OUTLET PROTECTOR AS SHOWN ON STANDARD DRAWING PU-1 AND GROUT THE UNUSED HOLE OR 2. INSTALL AN OUTLET PROTECTOR WITH A SINGLE HOLE.

DATE	REVISION	DATE FILMED
12-8-16	ADDED NOTES FOR PIPE UNDERDRAINS, REVISED RODENT SCREEN DETAIL AND NOTES, REMOVED NOTE 1 FOR GRANULAR MATERIAL, ADDED NOTE FOR GEOTEXTILE FABRIC	
4-10-03	REVISED NOTE 3	
1-12-00	REVISED DETAIL OF UNDERDRAIN LATERALS	
11-18-98	REVISED NOTE	
10-18-96	REVISED MIN. DEPTH & GEOTEXTILE FABRIC	
4-26-96	ADDED LATERAL NOTE; 5½" TO 5"	
11-22-95	REVISED LATERALS	
7-20-95	REVISED LATERALS & ADDED NOTE	
11- 3-94	REVISED FOR DUAL LATERALS	11- 3-94
10- 1-92	SUBSTITUTED GEOTEXTILE	10- 1-92
8-15-91	ADDED POLYEDTHYLENE PIPE	8-15-91
11- 8-90	DELETED ALTERNATE NOTE	11- 8-90
1-25-90	ADDED 4" SNAP ADAPTER	1-25-90
11-30-89	DEL. (SUBGRADE); ADDED (WHERE REQUIRED)	11-30-89
7-15-88	ISSUED P.L.M.	647-7-15-88

ARKANSAS STATE HIGHWAY COMMISSION

DETAILS OF PIPE UNDERDRAIN

STANDARD DRAWING PU-1

SUPERELEVATION TABLE FOR ONE - WAY TRAFFIC

DEGREE OF CURVE	30 MPH			40 MPH			50 MPH			55 MPH			60 MPH			65 MPH			70 MPH		
	e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)		e	Ls (FT)	
		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE		MINIMUM	DESIRABLE
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.			N.C.			N.C.			N.C.		
0° 45′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 00′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 15′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 30′	N.C.			N.C.			N.C.			N.C.			N.C.			N.C.			N.C.		
1° 45′	N.C.			0.021			0.021			0.022			0.023			0.025			0.028		
2° 00′	N.C.			0.025			0.026			0.026			0.030			0.033			0.037		
2° 15′	N.C.			0.028			0.031			0.029			0.033			0.041			0.046		
2° 30′	0.021			0.031			0.036			0.032			0.037			0.048			0.054		
2° 45′	0.023			0.034			0.040			0.037			0.043			0.055			0.062		
3° 00′	0.025			0.037			0.045			0.043			0.049			0.062			0.070		
3° 15′	0.027			0.040			0.049			0.048			0.055			0.069			0.078		
3° 30′	0.029			0.043			0.053			0.053			0.061			0.075			0.085		
3° 45′	0.031			0.046			0.057			0.058			0.067			0.081			0.091		
4° 00′	0.033			0.049			0.061			0.063			0.074			0.087			0.098		
4° 30′	0.037			0.051			0.065			0.067			0.077			0.087			0.098		
5° 00′	0.040			0.056			0.069			0.072			0.082			0.090			0.098		
5° 30′	0.043			0.061			0.072			0.076			0.086			0.093			0.100		
6° 00′	0.046			0.066	185		0.078	240		0.080	285		0.090	295		0.096	315				
6° 30′	0.050			0.070	190		0.083	250		0.083	270		0.093	305		0.099	350				
7° 00′	0.053			0.074	200		0.088	260		0.087	280		0.096	315							
7° 30′	0.056			0.078	210		0.092	270		0.091	295		0.098	320							
8° 00′	0.059			0.081	215		0.095	280		0.094	300										
8° 30′	0.061			0.084	220		0.098	285		0.096	305										
9° 00′	0.063			0.087	225		0.099	290		0.100	315										
9° 30′	0.065			0.089	230		0.100	295													
10° 00′	0.068	160		0.091	235																
11° 00′	0.072	170		0.094	245																
12° 00′	0.076	175		0.097	250																
13° 00′	0.080	180		0.099	255																
14° 00′	0.083	190		0.100	260																
15° 00′	0.086	195																			
16° 00′	0.089	200																			
17° 00′	0.091	200																			
18° 00′	0.093	205																			
19° 00′	0.095	210																			
20° 00′	0.097	215																			
21° 00′	0.098	215																			
22° 00′	0.099	215																			
23° 00′	0.099	215																			
24° 00′	0.100	220																			
			150			175			200			225			250			250			275	
																	265				300
																	280				315
																	300				325
																	315				335
																	325				350
																	340				360
																	345				360
																	350				360
			250			250			300			350			350			350				350
																					400
																					450
																					360
																					360
																					360
			300			300			350			400			400			400				360

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′

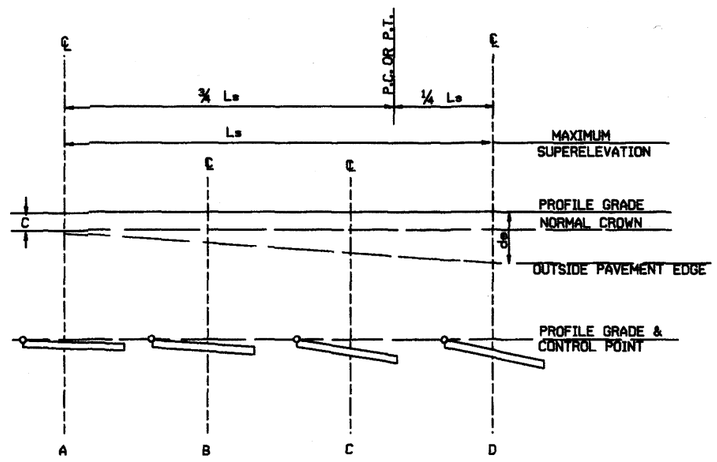
ABBREVIATIONS

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

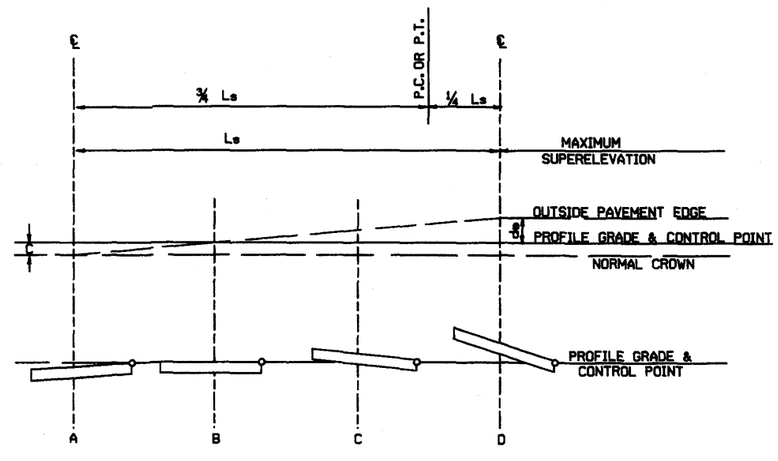
1. ON PAVEMENT WITH ONE-WAY TRAFFIC, THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
2. SUPERELEVATION VALUES SHOWN ON THE CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.
3. LENGTHS FOR Ls MAY BE ROUNDED IN MULTIPLES OF 25 FT. OR 50 FT. TO PERMIT 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
INSIDE LANE

SUPERELEVATION FORMULA = $S = -\frac{L(de-C)}{Ls} - C$



ONE-WAY TRAFFIC
OUTSIDE LANE

SUPERELEVATION FORMULA = $S = +\frac{L(de+C)}{Ls} - C$

DATE	REVISION	DATE FILMED
01-09-87	ISSUED	578-1-15-87

ARKANSAS STATE HIGHWAY COMMISSION

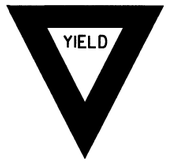
TABLES AND METHOD OF SUPERELEVATION FOR ONE-WAY TRAFFIC

STANDARD DRAWING SE-1

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

W3-5

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

W3-5a

STD. 36"X36"
EXPWY. 48"X48"
FWY. 48"X48"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

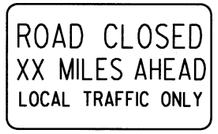
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

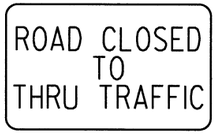
48"X30"

RII-3A



60"X30"

RII-4



60"X30"

W21-5a

STD. 36"X36"
FWY. 48"X48"

WI-1

STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

WI-3

STD. 48"X48"

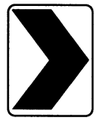
WI-4

STD. 48"X48"

WI-6

STD. 48"X24"
SPECIAL 60"X30"

WI-8



STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

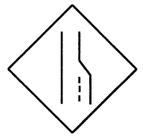
W3-1

STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1

STD. 36"X36"

WI-4b

STD. 48"X48"

R56-1

STD. 18"X18"

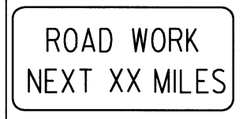
W8-11

STD. 36"X36"
FWY. 48"X48"

W8-9

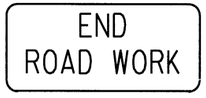
STD. 36"X36"
FWY. 48"X48"

G20-1



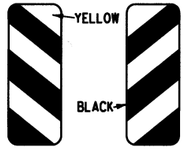
60"X24"

G20-2



48"X24"

OM-3L OM-3R



12"X36"

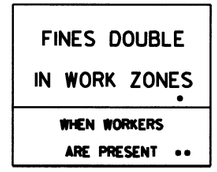
M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1



36"X60"

• USE 6" C LETTERS
•• USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.
3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.
- 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.
- 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.
6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.
7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.
8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.
10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

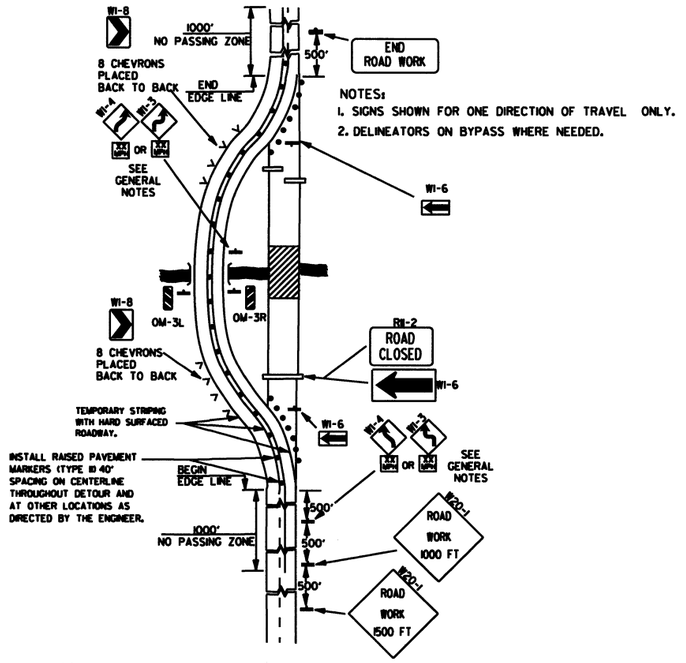
• NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY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

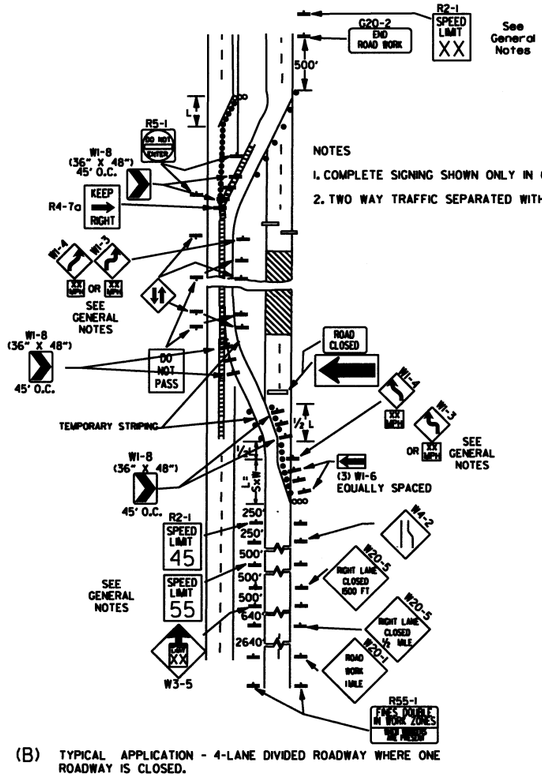
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-1



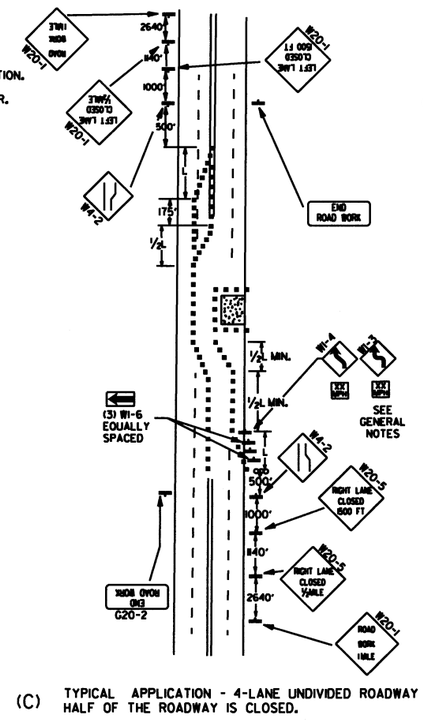
NOTES:
1. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. DELINEATORS ON BYPASS WHERE NEEDED.

(A) TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON A 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED.

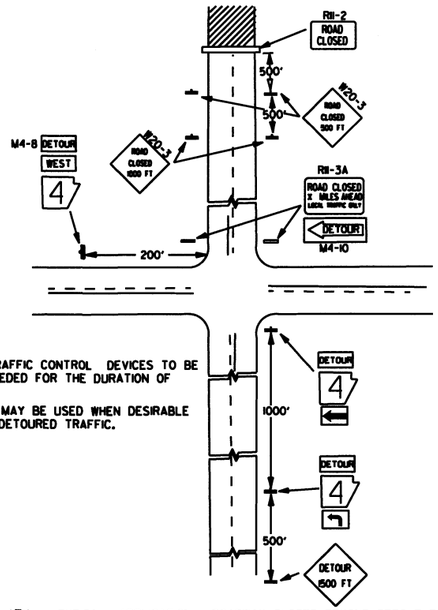


NOTES
1. COMPLETE SIGNING SHOWN ONLY IN CROSSOVER DIRECTION.
2. TWO WAY TRAFFIC SEPARATED WITH POSITIVE BARRIER.

(B) TYPICAL APPLICATION - 4-LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED.

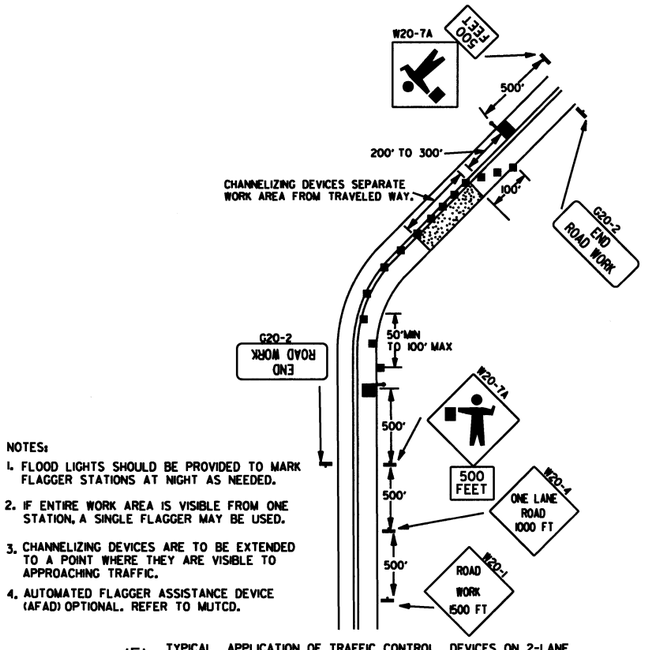


(C) TYPICAL APPLICATION - 4-LANE UNDIVIDED ROADWAY WHERE HALF OF THE ROADWAY IS CLOSED.



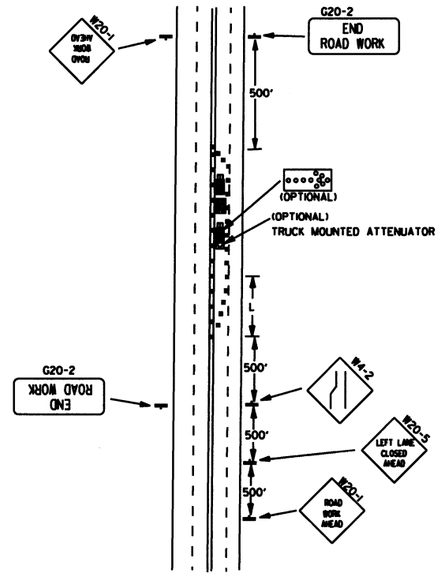
NOTES:
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. STREET NAMES MAY BE USED WHEN DESIRABLE FOR DIRECTING DETOURED TRAFFIC.

(D) TYPICAL APPLICATION - ROADWAY CLOSED BEYOND DETOUR POINT.

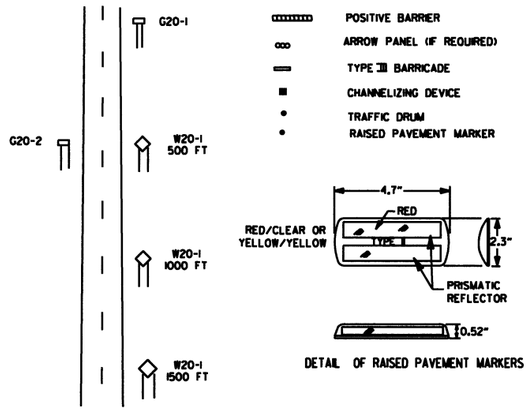


NOTES:
1. FLOOD LIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.
2. IF ENTIRE WORK AREA IS VISIBLE FROM ONE STATION, A SINGLE FLAGGER MAY BE USED.
3. CHANNELIZING DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. AUTOMATED FLAGGER ASSISTANCE 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.



DETAIL OF RAISED PAVEMENT MARKERS

TYPICAL ADVANCE WARNING SIGN PLACEMENT

TAPER FORMULAE:

L=SXW FOR SPEEDS OF 45MPH OR MORE.

$L = \frac{WS^2}{60}$ FOR SPEEDS OF 40MPH OR LESS.

WHERE:
L= MINIMUM LENGTH OF TAPER.
S= NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
W= WIDTH OF OFFSET.

GENERAL NOTES:

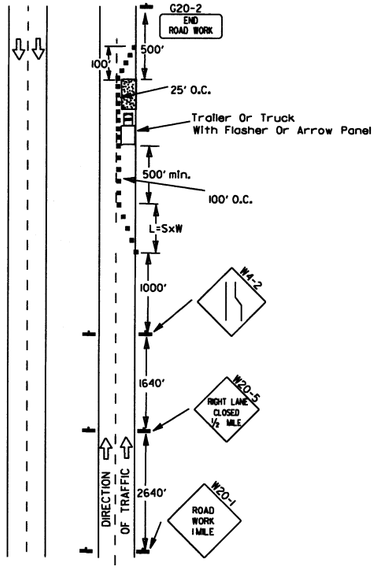
1. ADVISORY SPEED POSTED ON W1-3 OR W1-4 CURVE WARNING SIGNS TO BE DETERMINED AT SITE. USE W1-4 WHEN SPEED IS GREATER THAN 30MPH AND W1-3 WHEN 30MPH OR LESS.
2. WHEN THE EXISTING SPEED LIMIT IS 55MPH AND THE PLANS REQUIRE A SPEED LIMIT OF 45MPH, THE R2-K55) SHALL BE OMITTED AND THE W3-5 SHALL BE INSTALLED 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	
3-8-10	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	

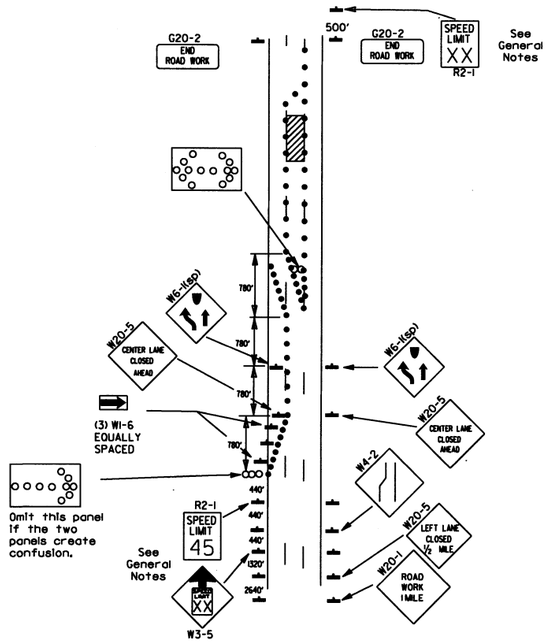
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

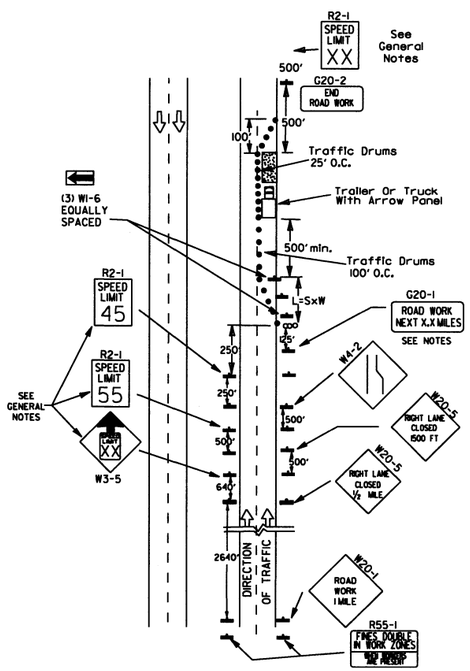
STANDARD DRAWING TC-2



(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.



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

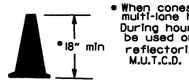
KEY:

- ○○○ Arrow Panel (If Required)
- ■ Channelizing Device
- ● Traffic drum

GENERAL NOTES:

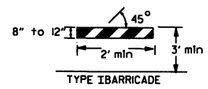
1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the W3-5 shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile 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 1 mile 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.

Channelizing devices

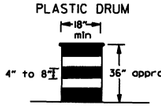


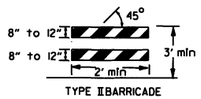
- When cones are used on freeways and multi-lane highways, they shall be 28" min. During hours of darkness, 28" cones shall be reflectorized in accordance with the M.U.T.C.D.

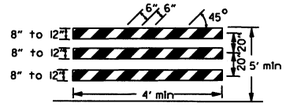
CONES

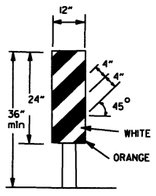


PLASTIC DRUM









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

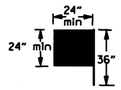
TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

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-I 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.

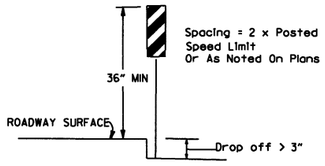
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.

FLAG

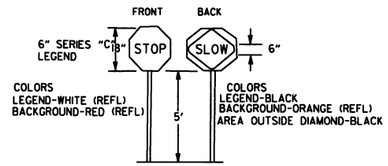


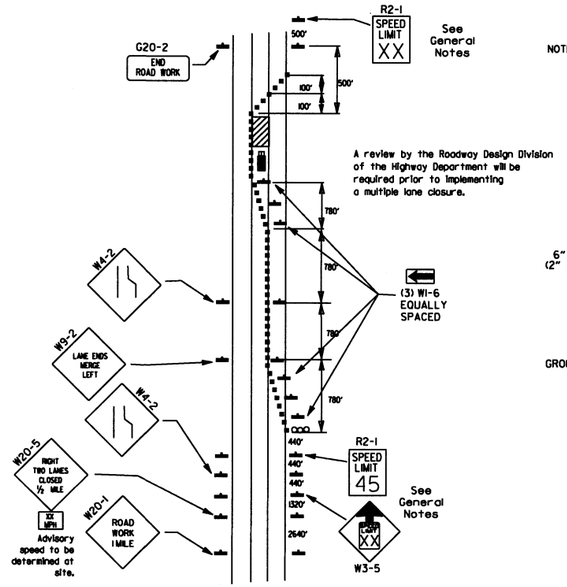
Flag shall be of good grade red material

VERTICAL PANEL PLACEMENT



STOP SLOW PADDLE





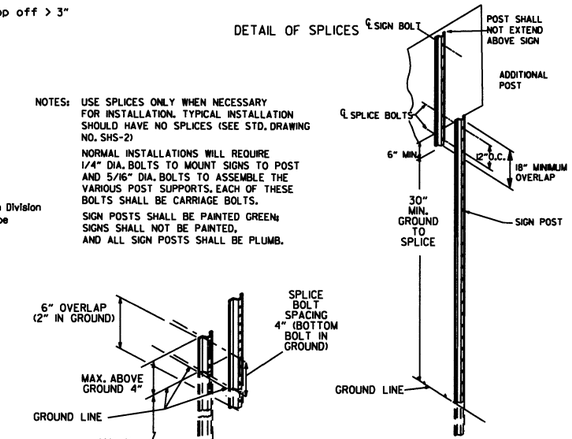
(D) Typical application - closing multiple lanes of a multilane highway.

NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DETAIL OF SPLICES



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	

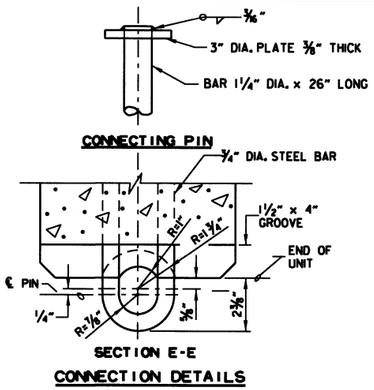
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

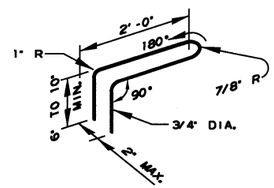
STANDARD DRAWING TC-3

REINFORCING BAR TABLE PER BARRIER UNIT

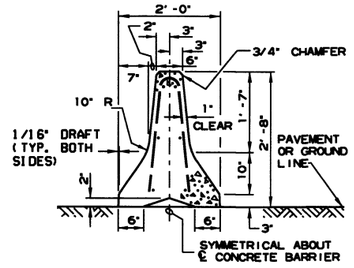
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	HORIZONTAL IN BARRIER TIED INSIDE V-1 BARS	#5	(6)	19'-3"
H-2	CENTERED ABOVE DRAIN SLOTS LONG. & TRANSVERSELY	#5	(6)	6'-6"
H-3	TIED ABOVE H-1 BARS TO SUPPORT H-2, TIED TO V-1	#4	(2)	1'-6"
S-1	OVER LIFT HOLES	#4	(2)	2'-5", LIFTING HOLE, 90°, 3 3/8" R
S-2	HORIZ. AROUND SLOTS BETWEEN V-1'S @ DRAIN SLOTS	#4	(2)	1 1/2" R, SLOTS, 1" MIN. CLEAR TO BAR, 5'-1" BAR W/(4) 1 1/2" R BENDS & MIN. 1'-0" OVERLAP, 1'-6"
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", 4 3/8", 2'-1 3/8"



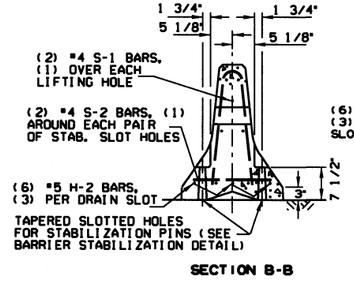
CONNECTION DETAILS



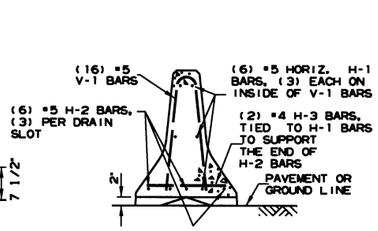
CONNECTION LOOP



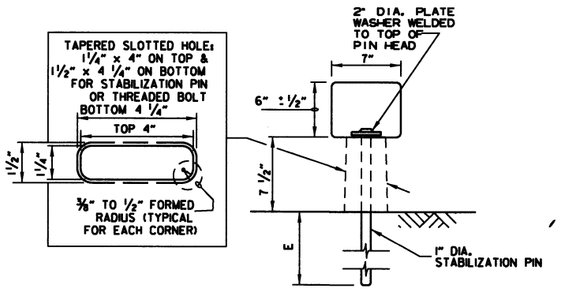
SECTION A-A



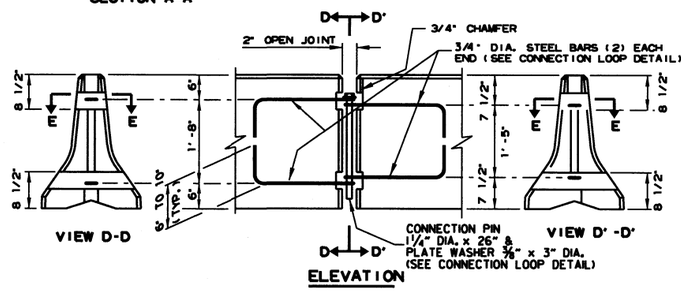
SECTION B-B

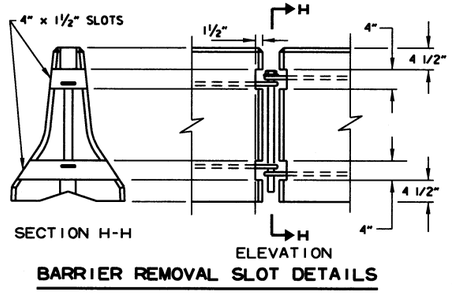


SECTION C-C



BARRIER STABILIZATION DETAIL



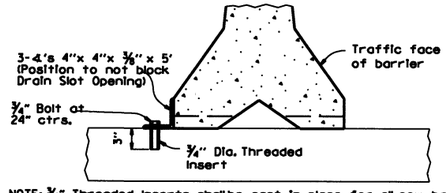


BARRIER REMOVAL SLOT DETAILS

BARRIER STABILIZATION DETAIL

ROADWAY SECTION

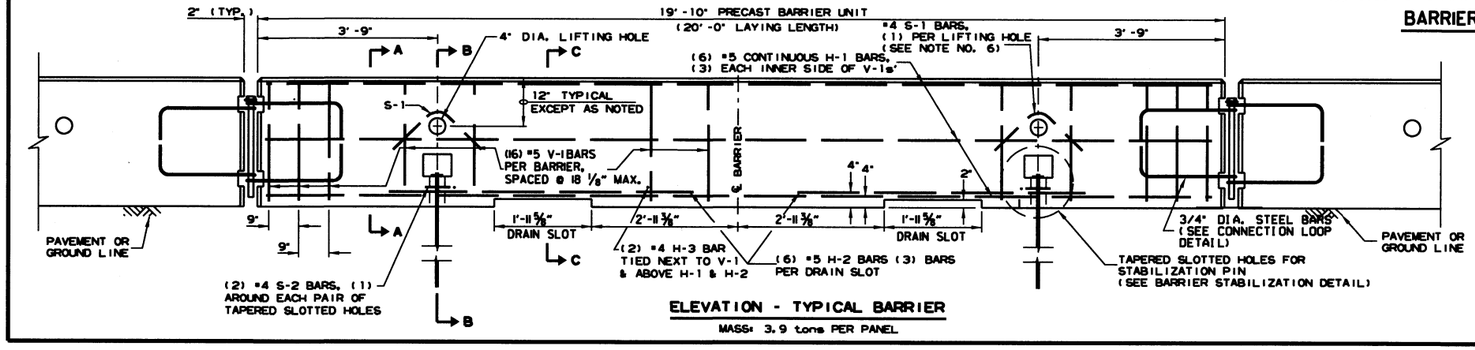
(E) 4" - Concrete Pavement
8" - Asphalt Pavement
12" - Shoulder Areas



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



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.

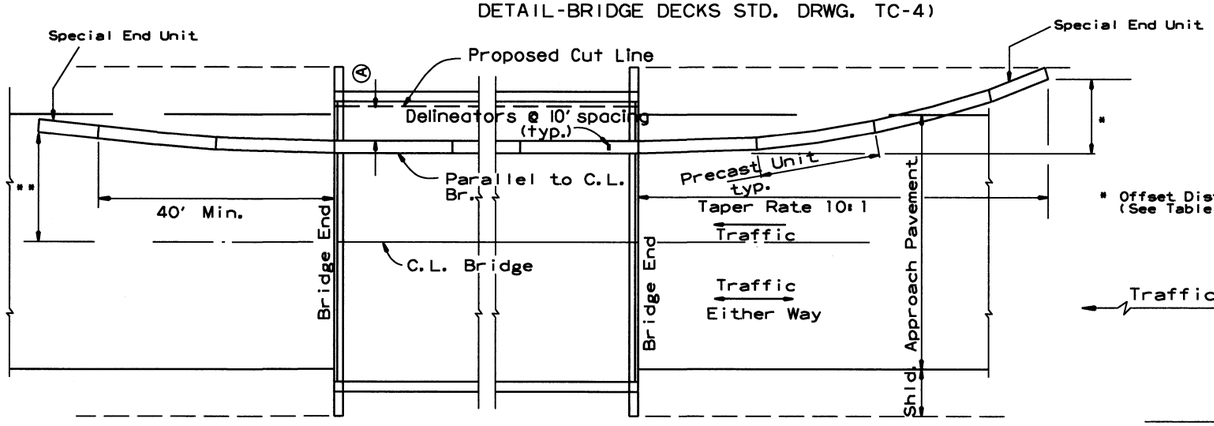
DATE	REVISION	FILMED
2-27-14	REVISED BARRIER STABILIZATION DETAIL	
10-15-09	ADDED REFERENCE TO MASH	
8-5-09	REV. NOTE 3 CONCERNING DRAIN SLOTS	
11-29-07	REVISED NOTE 3	
5-25-06	DELETED GENERAL NOTE 7	
11-18-04	REVISED BARRIER STABILIZATION DETAIL BRIDGE DECKS	
4-10-03	REVISED GENERAL NOTE 2	
8-22-02	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)

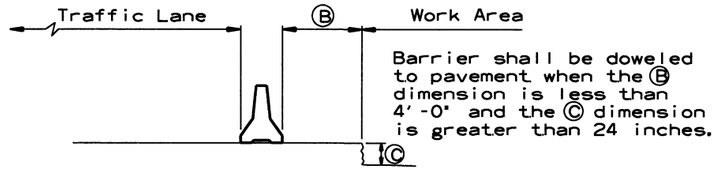


BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only

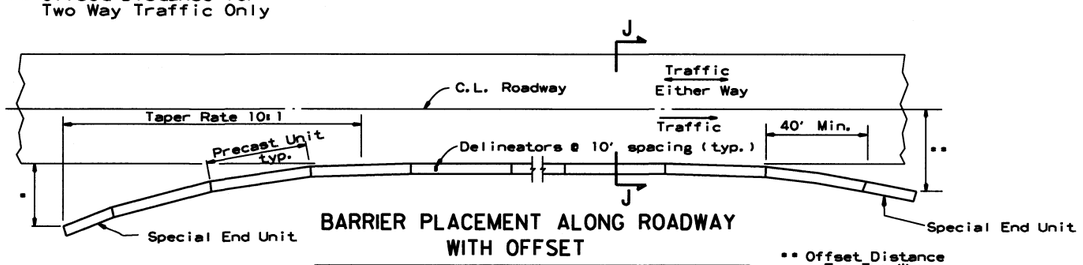
* Offset Distance (See Table)



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



BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

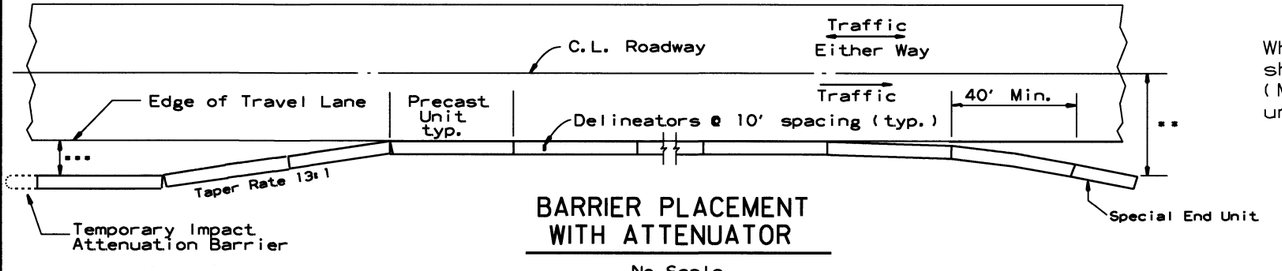
* Offset Distance (See Table)

** Offset Distance For Two Way Traffic Only

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.

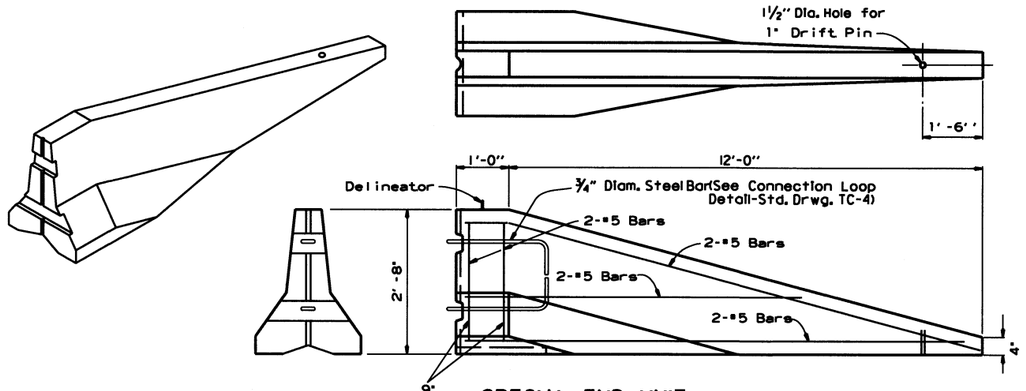


BARRIER PLACEMENT WITH ATTENUATOR

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	

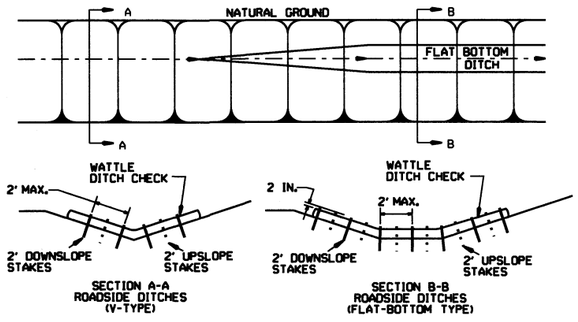
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER

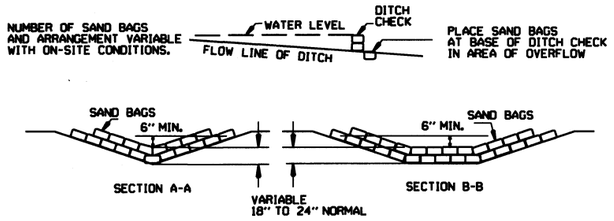
STANDARD DRAWING TC-5

GENERAL NOTES

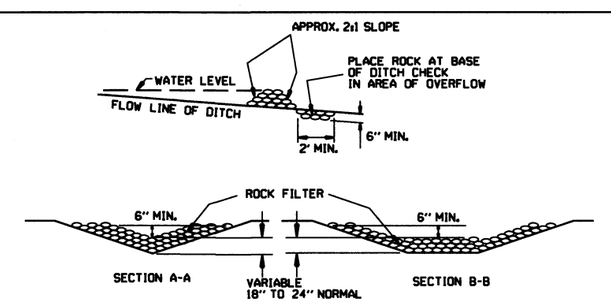
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.



WATTLE DITCH CHECK (E-1)



SAND BAG DITCH CHECK (E-5)

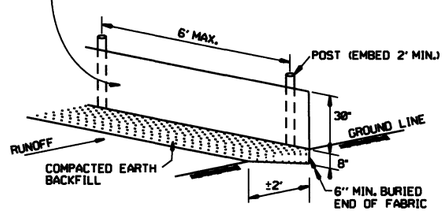


ROCK DITCH CHECK (E-6)

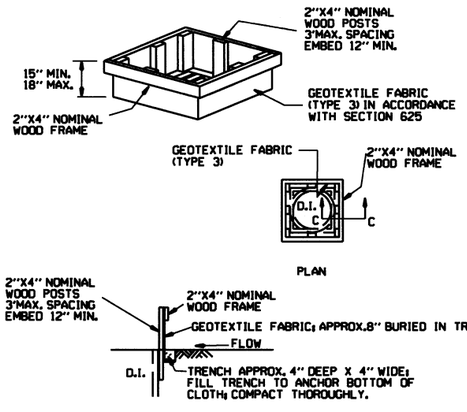
GENERAL NOTES

GEOTEXTILE FABRIC (TYPE 4) IN ACCORDANCE WITH SECTION 625

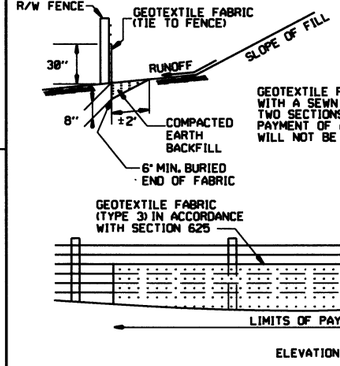
GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER WITH A SEWN SEAM ONLY AT A SUPPORT POST OR TWO SECTIONS OF FENCE MAY BE OVERLAPPED INSTEAD. PAYMENT OF ADDITIONAL MATERIAL FOR OVERLAP WILL NOT BE MADE.



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.

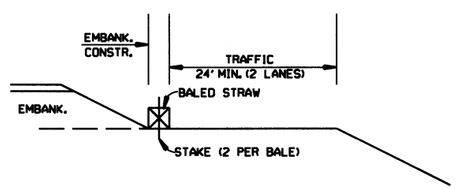
SILT FENCE ON R/W FENCE (E-4)

GENERAL NOTES

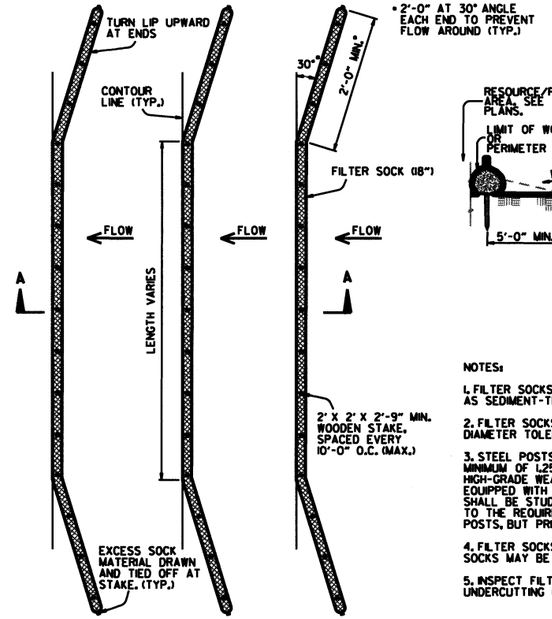
1. STRAW BALES SHALL BE INSTALLED SO THAT THE BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES. THE BALES SHALL BE A MINIMUM OF 30 INCHES IN LENGTH.

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.

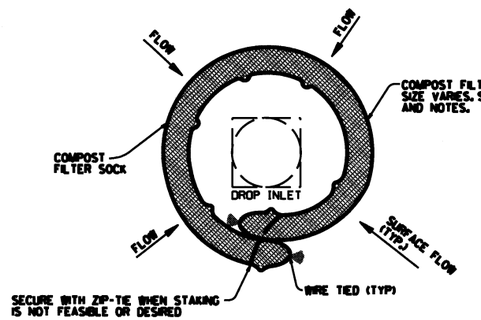
2. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED WITH 18 INCH DIAMETERS. DIAMETER TOLERANCE IS 2 INCHES. AS FILTER SOCKS TEND TO FLATTEN OUT WHEN PLACED.

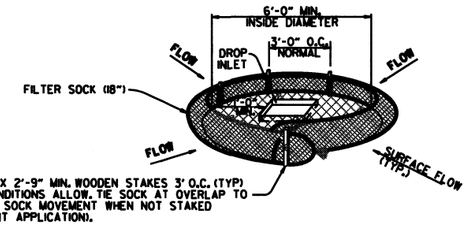
3. STEEL POSTS MAY BE USED AND SHALL BE ROLLED FROM HIGH CARBON STEEL AND HAVE A MINIMUM OF 1.25 LB./FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH-GRADE WEATHER RESISTANT BROWN OR BLACK STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. 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 SUBSIDIARY TO "FILTER SOCK (18")."

4. FILTER SOCKS MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED OR STAGGERED AS SHOWN IN DETAILS.

5. INSPECT FILTER SOCKS AFTER EACH RUNOFF EVENT. REMOVE AND REPLACE IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

FILTER SOCK ALONG SLOPE (E-3)





NOTES:

1. OVERLAP ENDS OF SOCK (1' MIN. 3' MAX.).

2. USE 18" DIA. SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

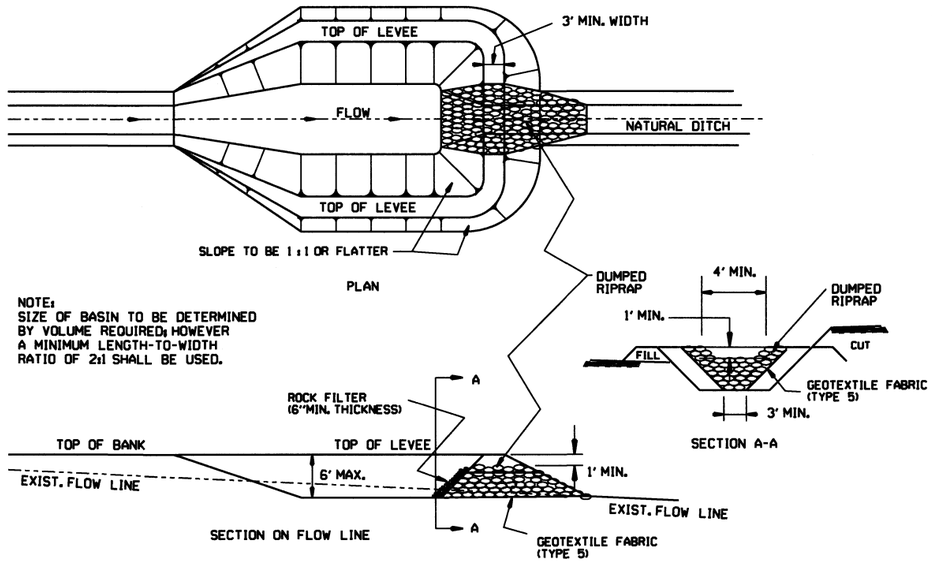
COMPOST FILTER SOCK DROP INLET PROTECTION (E-13)

DATE	REVISION	FILMED
11-16-17	ADDED FILTER SOCK E-3 AND E-13	
12-15-11	DELETED BALED STRAW DITCH CHECK & ADDED WATTLE DITCH CHECK	
11-18-98	ADDED NOTES	
07-02-98	ADDED BALED STRAW FILTER BARRIER (E-2)	
07-20-95	REVISED SILT FENCE E-4 AND E-11	7-20-95
07-15-94	REV. E-4 & E-11 MIN. 15" 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

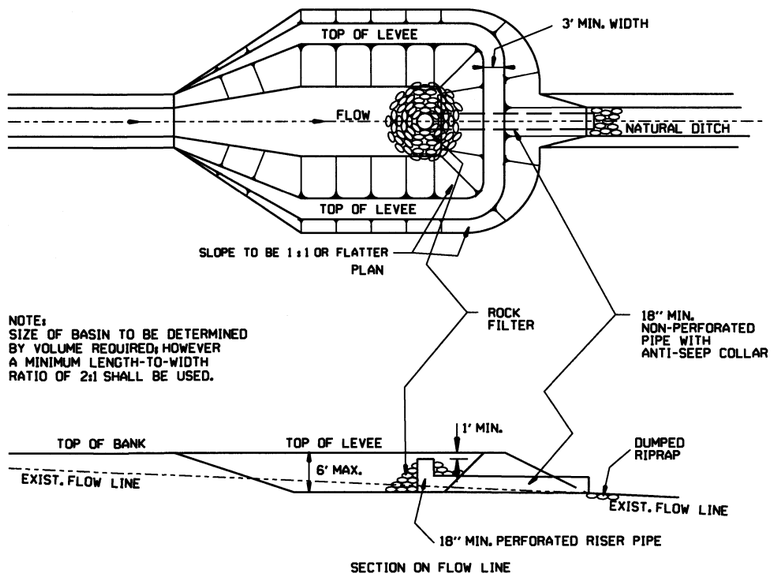
ARKANSAS STATE HIGHWAY COMMISSION

TEMPORARY EROSION CONTROL DEVICES

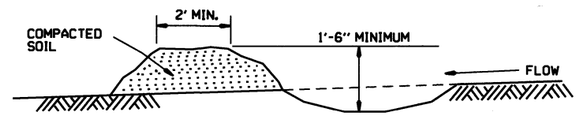
STANDARD DRAWING TEC-1



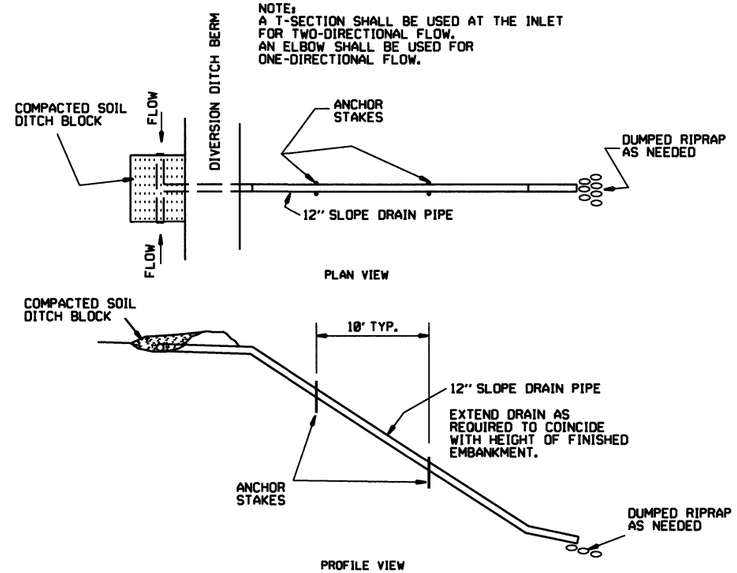
SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)



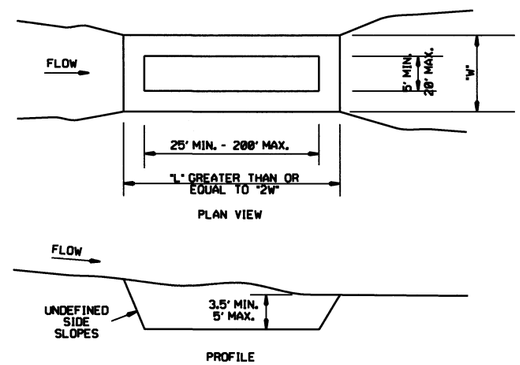
SEDIMENT BASIN WITH PIPE OUTLET (E-10)



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

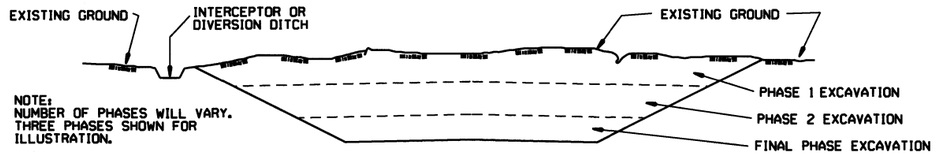
STANDARD DRAWING TEC-2

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



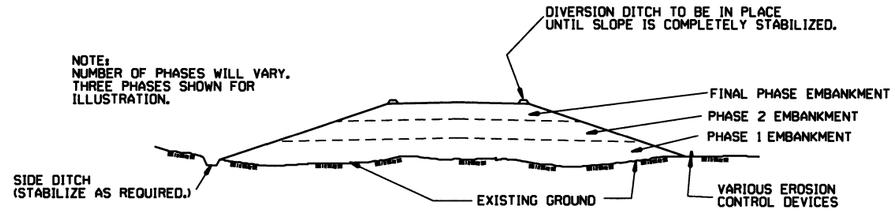
GENERAL NOTE

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

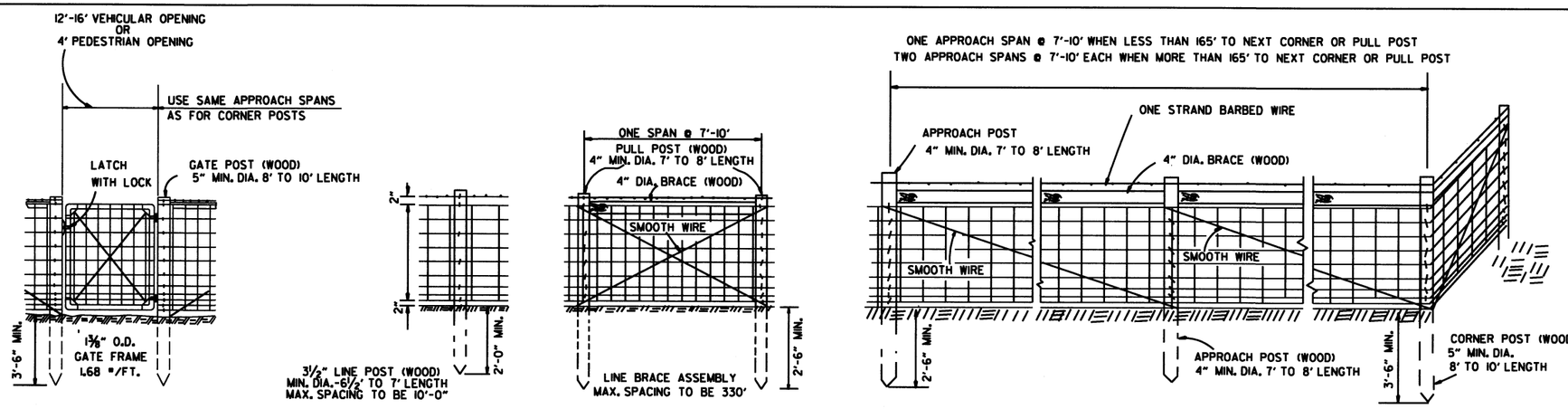
1. CONSTRUCT DIVERSION DITCHES, DITCH CHECKS, SEDIMENT BASINS, SILT FENCES, OR OTHER EROSION CONTROL DEVICES AS SPECIFIED.
2. PLACE PHASE 1 EMBANKMENT WITH PERMANENT OR TEMPORARY SEEDING. PROVIDE DIVERSION DITCHES AND SLOPE DRAINS IF EMBANKMENT CONSTRUCTION IS TO BE TEMPORARILY ABANDONED FOR A PERIOD 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

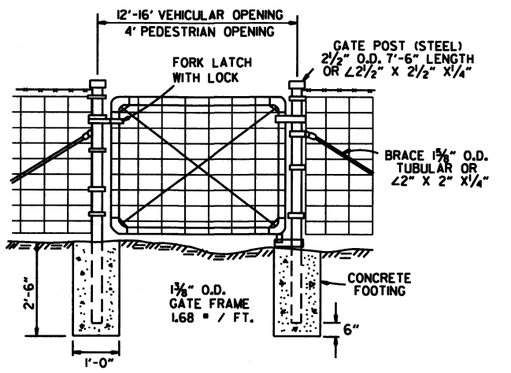
TEMPORARY EROSION CONTROL DEVICES

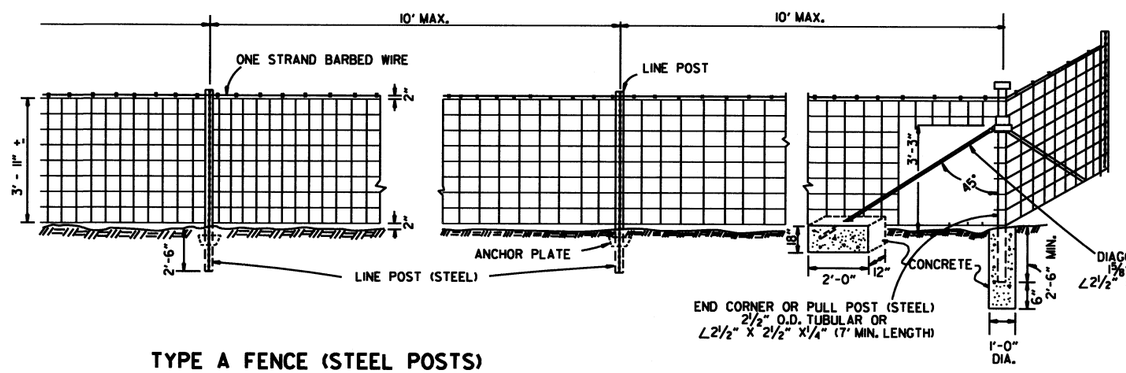
STANDARD DRAWING TEC-3



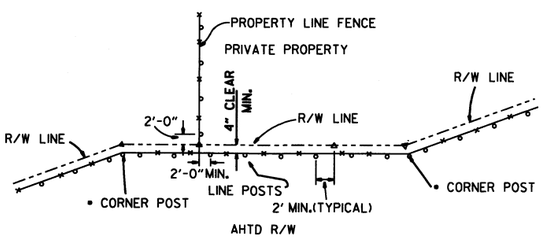
NOTE: STAPLE AT LEAST TOP, BOTTOM AND ALTERNATE WIRES OF WOVEN FABRIC FOR WOOD LINE POSTS.

TYPE A FENCE (WOOD POSTS)





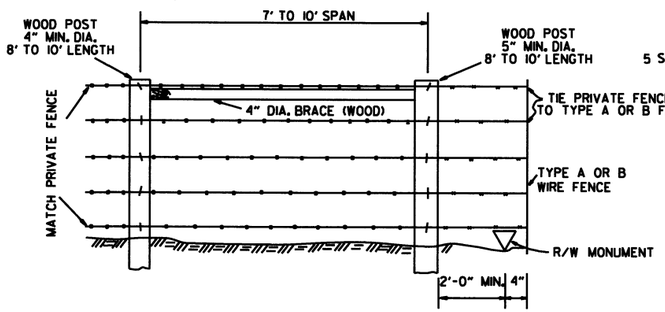
TYPE A FENCE (STEEL POSTS)



•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.

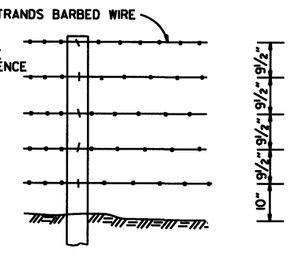
△ - R/W MONUMENTS
○ - FENCE POSTS

RIGHT-OF-WAY FENCE LOCATION



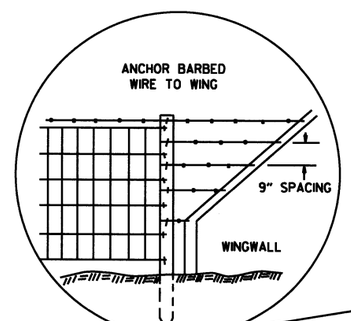
WHERE EXISTING PRIVATE FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN WITH TYPE A FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

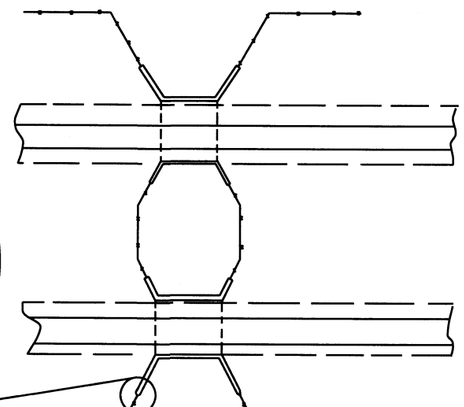
PRIVATE FENCE TERMINAL INSTALLATION



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